# Системы опоры уплотнения

# Технические характеристики

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# **SEAL SUPPORT SYSTEMS**

Flowserve seal support systems help ensure years of safe, reliable and cost-effective mechanical seal operation. Flowserve employs a specialized engineering team with years of experience recommending or designing systems to suit specific applications, specifications and unique customer requirements. With a full range of products that meet ASME Section VII Division 1, API, PED, NR13 and numerous other regional and international standards, Flowserve fulfills the global needs of the oil and gas, chemical, power, water and general industries.

# **Seal Support Systems** – Quick Reference

Product Type	Sub-Type	Flows to	Pressures	Temperatures	Volume
Buffer/Barrier Fluid Reservoirs	Industrial & API Process	_	to 82.3 bar (1200 psi)	to 148°C (300°F)	to 20 L (5 gal)
Bladder Accumulators	Industrial & API Process	-	to 82.3 bar (1200 psi)	to 148°C (300°F)	20 to 50 L (5 to 13 gal)
Piston Accumulators	Industrial & API Process	_	to 75.8 bar (1100 psi)	to 148°C (300°F)	to 11.4 L (3 gal)
Buffer/Barrier Gas Panels	Industrial & API Process	14.2 lpm (30 SCFH)	to 34.4 bar (500 psi)	to 93°C (200°F)	_
Circulators	Industrial & API Process	15 lpm (4 gpm)	to 27.6 bar (400 psi)	4.4°C to 60°C (40°F to 140°F)	_
682 Water Seal Coolers	API Process	_	to 275 bar (4000 psi) to 371°C (700°F) (coil)	_	_
Water Seal Coolers	Industrial Process	_	to 183 bar (2650 psi) to 95°C (200°F)	_	_
Airfin Seal Cooler	Industrial Process	_	to 80 bar (1200 psi)	to 425°C (800°F)	_

### SEAL SUPPORT SYSTEMS



INDUSTRIAL & API PROCESS

### **Buffer/Barrier Fluid Reservoirs**

Flowserve reservoirs are available for dual pressurized (Plan 53A) and dual non-pressurized (Plan 52) mechanical seals. Options are available for utilizing water or oil as barrier fluid.

- Extended seal life made possible by reliable supply of clean buffer/barrier fluid for cooling and lubrication
- · Reduced maintenance and operating costs with optimal buffer/barrier fluid management
- Increased reservoir life with corrosion-resistant 304, 316 or 316L construction
- Compliance with API 682, ASME Section VIII, ASME B31.3, PED and/or TRD as required
- Application flexibility provided by configurations and instrumentation that are easily adapted to local standards as well as application and customer requirements

**SPECIFICATIONS** 

Press: to 82.3 bar (1200 psi) Temp: to 148°C (300°F) Volume: to 20 L (5 gal)

Refer to literature FSD239 at /library.



INDUSTRIAL & API PROCESS

### **Bladder Accumulators**

Plan 53B barrier systems are available with multiple options for accumulator sizes, coolers and piping. Compliant with API 682, ASME Section VIII, ASME B31.3, PED and/or TRD as required.

- Increased seal life at higher barrier seal pressures
- Improved reliability by preventing nitrogen entrainment in the barrier fluid
- Ease of installation provided by design that does not require connection to a plant nitrogen utility
- Application flexibility provided by configurations and instrumentation that are easily adapted to local standards as well as application and customer requirements
- · Improved reliability made possible by the ability to monitor each seal individually

**SPECIFICATIONS** 

Press: to 82.3 bar (1200 psi) Temp: to 148°C (300°F) Volume: 20 to 50 L (5 to 13 gal)



# **Piston Accumulators**

Flowserve Plan 53C piston accumulators can be built with multiple options for cooling coils, external heat exchanges and instrumentation to fit customer requirements. Compliant with ASME or PED as required.



- Improved seal life and reliability ensured by tracking barrier pressure where pump pressure fluctuates or the inboard seal pressure differential must be limited
- Lower operating costs from maintenance and barrier fluid cost savings
- Application flexibility provided by configurations and instrumentation that are easily adapted to local standards as well as application and customer requirements

**SPECIFICATIONS** 

Press: to 75.8 bar (1100 psi) Temp: to 148°C (300°F) Volume: to 11.4 L (3 gal)

### INDUSTRIAL & API PROCESS

### **Buffer/Barrier Gas Panels**

Flowserve Plan 72 and 74 gas panels combine flow monitoring and control elements in a self-contained, easy-to-use unit. For use with unpressurized and pressurized Flowserve gas seals.

- Maximized seal life enabled by supply of clean barrier or buffer gas at optimal conditions
- Compliance with API 682, ASME B31.3 and PED requirements
- Low installation and commissioning costs assured by easy-to-install, self-contained units

### SPECIFICATIONS

Flows to: 14.2 lpm (30 SCFH) Press to: 34.4 bar (500 psi) Temp: to 93°C (200°F)

### INDUSTRIAL & API PROCESS

### **Circulators**

Plan 54 circulators provide clean barrier fluid at a controlled flow rate, pressure and temperature to ensure proper seal performance.

- · Optimized seal operating temperatures ensured by maximum system cooling
- Improved seal reliability with a dependable local system, eliminating the need to connect to a distant and potential unreliable pressure source
- Extended seal life enabled by improved system cleanliness that is maintained using one or more high-quality, full-flow liquid filters
- Application flexibility provided by configurations and instrumentation that are easily adapted to local standards as well as application and customer requirements

### **SPECIFICATIONS**

Flows: to 15 lpm (4 gpm)
Press: to 27.6 bar (400 psi)
Temp: 4.4°C to 60°C (40°F to 140°F)
Refer to literature FSD122 at /

library.

API PROCESS

# **682 Water Seal Coolers**

Flowserve seal coolers are engineered for high-temperature refinery applications and maximized cooling capacity. Two designs available: the full-featured 682 Seal Cooler and the lower-duty LD 682 Seal Cooler.

- Process control ensured by design that isolates the process fluid from the cooling water
- Ease of commissioning with full vent and drain on both product and coolant sides
- Ease of maintenance provided by ability to quickly and easily disassemble and clean the unit without damaging the coils
- Cost-effective application flexibility with multiple corrosion-resistant material options for the coil and shell construction

### **SPECIFICATIONS**

Press: to 275 bar (4000 psi) (coil) Temp: 371°C (700°F) (coil) Refer to literature FSD106 and FPD238 at /library.

### SEAL SUPPORT SYSTEMS



INDUSTRIAL PROCESS

### **Water Seal Cooler**

Water seal coolers lower the temperature of process/barrier fluid to improve seal reliability. Designed and manufactured in accordance with ASME Section VIII, Div 1 and PED.

- Easy installation in limited spaces due to compact design with integral mounting bracket and convenient pipe porting
- Simplified maintenance with quick access to coil, only one bolt fastening the shell, and no disturbance to piping during shell removal
- · High-temperature fittings included as standard

**SPECIFICATIONS** 

Press: to 183 bar (2650 psi) to 95°C (200°F)

Refer to literature FSD174 at /library.

INDUSTRIAL & API PROCESS

### **Airfin Seal Cooler**

The Airfin seal cooler is available in natural convection and forced air designs with a cooling area of 2.5 m<sup>2</sup> (26.8 ft²).



- Lower operating costs ensured by air-cooling technology that eliminates water treatment and disposal
- Improved reliability with cooling water-free design, which prevents accidental shutoff and winter freeze-up
- Minimal installation and maintenance costs with unit design that requires less piping and is less susceptible to fouling

SPECIFICATIONS

Press: to 80 bar (1200 psi) Temp: to 425°C (800°F)

Refer to literature FSD197 at /library.

### The Time Value of Service

Every minute of uptime counts. We get it. We're here to help with sealing technologies, systems and services that minimize downtime, improve equipment reliability and reduce operating expenses — one seal at a time or across an entire unit. And, with our global network of Quick Response Centers, you can rest easy knowing support is near, inventory can ship the same day, and engineered seal repairs can be turned around within days, if not hours.





### По вопросам продаж и поддержки обращайтесь:

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