

# Специальное оборудование

## Технические характеристики

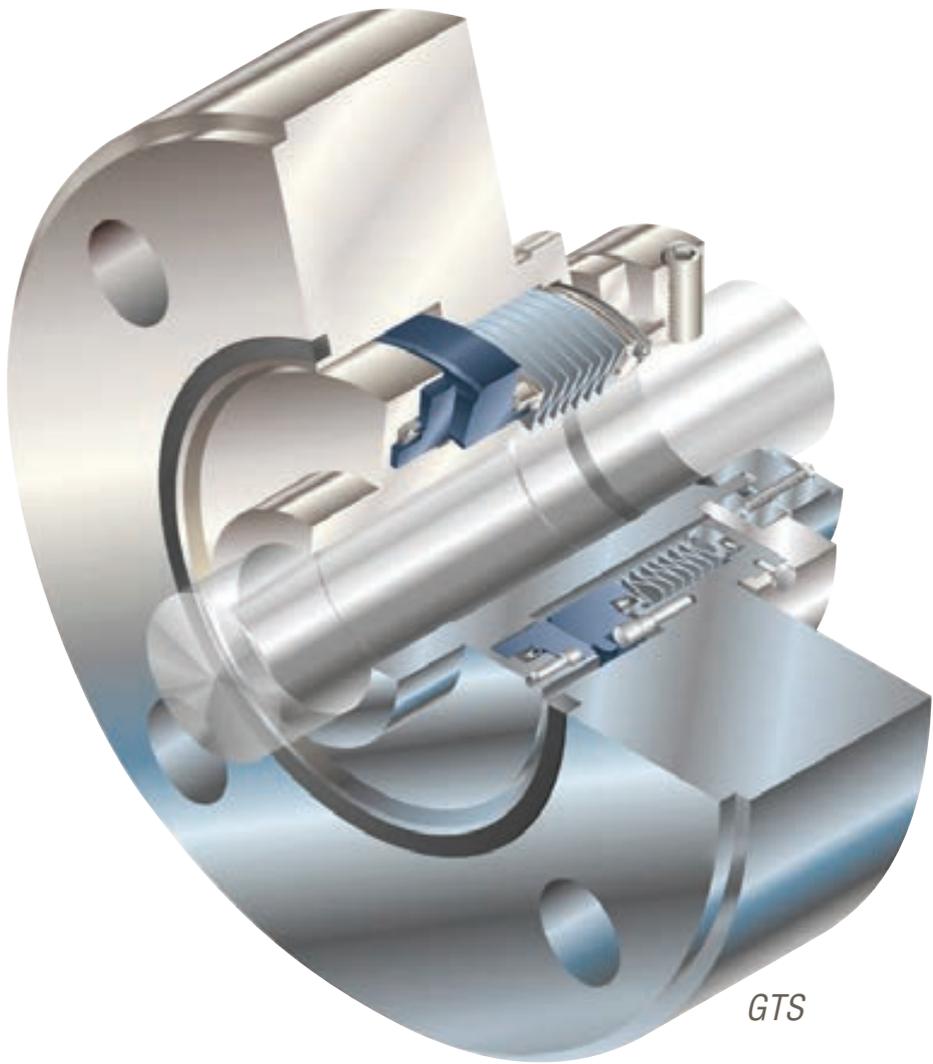
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*GTS*

## OEM AND SPECIAL DUTY

Flexibility, reliability and low total cost are fundamental to the general industrial and specialty equipment requirements of OEMs. And Flowserve delivers. Global OEM customers will find a variety of mechanical seals developed specifically with OEMs in mind. That means seals for just about anything: seals for a high-speed, high- pressure integrally geared pump; special configurations for a low- speed, high- viscosity positive displacement pump; and much more. We can even help with custom designs. Reach out to our experienced team.

### OEM and Special Duty – Quick Reference

Product	Sub-Type	Pressures	Temperatures	Speeds	Sizes
<b>Pac-Seal®</b>	Industrial Process	to 27 bar (400 psi)	-40°C to 204°C (-40°F to 400°F)	to 25 m/s (83 fps)	15.8 to 150 mm (0.625 to 6.000 in)
<b>PL Series</b>	Industrial Process	Vacuum to 10.3 bar (150 psi)	-18°C to 150°C (0°F to 300°F)	to 23 m/s (60 fps)	35 to 53 mm (1.375 to 2.750 in)
<b>PSS 4</b>	Industrial Process	Vacuum to 30 bar (450 psi)	-18°C to 121°C (0°F to 250°F)	to 19.3 m/s (3800 fpm)	38 to 152 mm (1.500 to 6.000 in)
<b>LS-300</b>	High-Viscosity Process	to 10.3 bar (150 psi)	-53°C to 149°C (-65°F to 300°F)	to 3.5 m/s (12 fps)	19.1 to 76.2 mm (0.750 to 3.000 in)
<b>GTS</b>	Steam Turbines	to 20.7 bar (300 psi)	100°C to 343°C (212°F to 650°F)	3 to 46 m/s (10 to 150 fps)	54 to 181 mm (2.125 to 7.125 in)
<b>GSS</b>	Specialty Equipment	to 86.2 bar (1250 psi)	-62°C to 204°C (-80°F to 400°F)	1500 to 36 000 rpm	25.4 to 31.8 mm (1.000 to 1.250 in)
<b>GLS</b>	Specialty Equipment	to 86.2 bar (1250 psi)	-62°C to 204°C (-80°F to 400°F)	1500 to 36 000 rpm	25.4 to 31.8 mm (1.000 to 1.250 in)
<b>GSG</b>	Specialty Equipment	to 17.2 bar (250 psi)	-40°C to 204°C (-40°F to 400°F)	1500 to 36 000 rpm	to 31.8 mm (1.250 in)
<b>Circpac MD</b>	Specialty Equipment	Vacuum to 6.9 bar (100 psi)	-40°C to 593°C (-40°F to 1100°F)	to 46 m/s (150 fps)	25.4 to 457 mm (1.000 to 18.000 in)
<b>Bulk-Tite™</b>	Specialty Equipment	Vacuum to 3.3 bar (50 psi)	0°C to 121°C (32°F to 250°F)	16.6 m/s (54 fps)	12 to 152 mm (0.500 to 6.000 in)

## OEM AND SPECIAL DUTY

### INDUSTRIAL PROCESS

## Pac-Seal



The Pac-Seal family of component seals is available in numerous designs and styles, including diaphragm elastomer bellows to fit a wide range of standard industrial and custom equipment applications.

- Low cost of ownership enabled by readily available components with multiple material options
- Excellent reliability ensured by standardized features, including crimped-head rotary units and hex-torque drive
- Easy installation with no set screws or setting clips
- Custom designs with flexible inventory, logistics and packaging solutions for high-volume OEM orders ensure the right supply requirements are fully achieved

### SPECIFICATIONS

Press. to: 27 bar (400 psi)  
Temp: -40°C to 204°C (-40°F to 400°F)  
Speeds to: 25 m/s (83 fps)  
Sizes: 15.8 to 150 mm  
(0.625 to 6.000 in)

Refer to literature FSD258 at /library.

### INDUSTRIAL PROCESS

## PSS 4



The PSS 4 semi-cartridge split seal is ideal for pump and mixer applications. With only two major components, it makes installation quick and easy without requiring equipment teardown.

- Exclusive 3D Key technology assures optimum face alignment in both axial and radial direction, reducing leakage and installation time
- Unique setting tabs eliminate all seal positioning, measuring and marking, assuring installation success
- Easily handles mixer equipment runout up to 1.5 mm (0.060 in) TIR radial shaft movement
- Fully split design installs easily around the shaft, outside the seal chamber, eliminating the need to dismantle the equipment

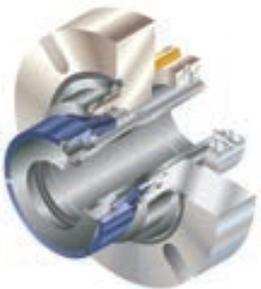
### SPECIFICATIONS

Press.: Vacuum to 30 bar (450 psi)  
Temp: -18°C to 121°C (0°F to 250°F)  
Speeds: to 19.3 m/s (3800 fpm)  
Sizes: 38 to 152 mm  
(1.500 to 6.000 in); contact  
Flowserve for larger sizes

Refer to literature FSD272 at /library.

### INDUSTRIAL PROCESS

## PL Series



PL Series seals are pre-engineered single (PL-100) and dual (PL-200) cartridge seals with non-metallic wetted components. They are a cost-effective alternative to high-alloy seals in ASME and ISO pumps in corrosive services.

- Greater reliability from special carbon fiber reinforced PTFE construction that provides excellent corrosion resistance and mechanical properties to maintain seal integrity
- Longer service life and MTBF ensured by springs and pins that are isolated from the product to prevent clogging and chemical attack
- Reduced maintenance costs with replaceable carbon fiber PTFE liner that protects the 316 SS gland
- Affordable alternative to high-alloy single or dual metal seals

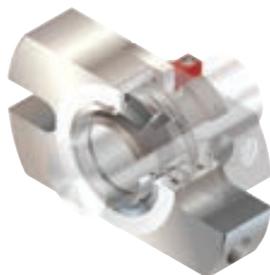
### SPECIFICATIONS

Press.: Vacuum to 10.3 bar (150 psi)  
Temp: -18°C to 150°C (0°F to 300°F)  
Speeds: to 23 m/s (60 fps)  
Sizes: 35 to 53 mm (1.375 to 2.750 in)

## HIGH-VISCOSITY PROCESS

## LS-300

This cartridge-style, multiple dynamic lip seal is designed for highly viscous applications in positive displacement and progressive cavity pumps.



- Greater process accuracy from seal designed to run dry, without the need for an external flush or lubricating barrier fluid
- Reliable operation ensured by triple-lip design effectively seals process from atmosphere at viscosities up to 12 000 cP
- Installation ease assured by preset cartridge
- Application flexibility enabled by design that is interchangeable between standard and universal bracket pumps with just a gasket change
- Ease of field maintenance made possible by optional repair kit

## SPECIFICATIONS

Press. to: 10.3 bar (150 psi)  
Temp: -53°C to 149°C (-65°F to 300°F)  
Speeds to: 3.5 m/s (12 fps)  
Sizes: 19.1 to 76.2 mm  
(0.750 to 3.000 in)

Refer to literature FSD117 at /library.

## STEAM TURBINES

## GTS

The most reliable steam seal in the industry, the GTS is a metal bellows seal designed to bring the benefits of mechanical seals to steam turbines and handle slow roll operation.



- Significant energy savings and improved safety made possible by design that replaces carbon rings on steam turbines, significantly reducing steam leakage
- Greater reliability through precision face topography technology, ensuring non-contacting, non-clogging operation able to recover from upset conditions
- Long-lasting, high-temperature and corrosive environment performance enabled by Alloy 718 bellows
- Application versatility enabled by internal or external cartridge design, adaptable for diverse turbines

## SPECIFICATIONS

Press. to: 20.7 bar (300 psi)  
Temp: 100°C to 343°C (212°F to 650°F)  
Speeds: 3 to 46 m/s (10 to 150 fps)  
Sizes: 54 to 181 mm (2.125 to 7.125 in)

Refer to literature FSD107 at /library.

## SPECIALTY EQUIPMENT

## GSS

GSS gas-lubricated, non-contacting pusher seals provide superior reliability in high-speed, integrally geared pumps and compressors.



- Longer service life and MTBF enabled by non-contacting precision face topography, eliminating wear at near-zero power consumption
- Installation ease for startup success is provided by a standardized cartridge with a non-clamped rotating face mounted for high-speed performance
- Meets all requirements for low emission containment seals in hydrocarbon pumping applications
- Configurable as a single compressor seal, dual pressurized barrier gas seal, or dry-running containment seal

## SPECIFICATIONS

Press. to: 86.2 bar (1250 psi)  
Temp: -62°C to 204°C (-80°F to 400°F)  
Speeds: 1500 to 36 000 rpm  
Sizes: 25.4 to 31.8 mm  
(1.000 to 1.250 in)

Refer to literature FSD102 at /library.

## OEM AND SPECIAL DUTY

### SPECIALTY EQUIPMENT

#### GLS



The GLS is the liquid service configuration of the Flowserve GSS. It is designed to fit the unique installation envelop and operating speeds present in integrally geared pumps.

- High-pressure performance enabled by successful operation up to 86.2 bar (1250 psi) in flashing hydrocarbons
- Longer service life assured by operation with no measureable face wear or worn taper due to enhanced seal face flatness provided by the non-clamped rotating SiC face
- Meets all requirements for low emission seals in hydrocarbon pumping applications
- Configurable as a single seal, dual unpressurized seal with liquid buffer, dual unpressurized seal with gas buffer, or dual pressurized seal with liquid barrier

#### SPECIFICATIONS

Press. to: 86.2 bar (1250 psi)  
Temp: -62°C to 204°C (-80°F to 400°F)  
Speeds: 1500 to 36 000 rpm  
Sizes: 25.4 to 31.8 mm  
(1.000 to 1.250 in)

Refer to literature FSD102 at /library.

### SPECIALTY EQUIPMENT

#### GSG



GSG seals are specifically designed for integrally geared pumps and compressors in high-speed, oil-flooded gearbox applications.

- Energy savings and improved safety enabled by innovative Hydrodynamic Surface Tension (HST) face topography that provides near-zero leakage performance
- Reliable high-speed operation enabled by proprietary laser-machined wavy face
- Greater durability and service life assured by seal face materials suitable for frequent starts and stops
- Upgrade ease made possible by direct replacement of existing gearbox seals without equipment modification

#### SPECIFICATIONS

Press. to: 17.2 bar (250 psi)  
Temp: -40°C to 204°C (-40°F to 400°F)  
Speeds: 1500 to 36 000 rpm  
Sizes to: 31.8 mm (1.250 in)

Refer to literature FSD102 at /library.

### SPECIALTY EQUIPMENT

#### Circpac MD



The Circpac MD is a segmented circumferential seal designed for fans, blowers, dryers, turbines, centrifuges and other rotating equipment.

- Superior performance with lower gas consumption ensured by hydraulically balanced ring design that consistently outperforms packing, bushings, labyrinths and felt seals
- Installation ease with radially split seal housing that mounts outside the seal chamber without modification or dismantling
- Increased durability provided by robust carbon rings with foul-resistant joints and large bearing pads that maintain integrity during off-design operation
- Application flexibility with multiple ring configurations that can be staged for reduced leakage, pressurized for zero process emissions, or added for emergency backup

#### SPECIFICATIONS

Press.: Vacuum to 6.9 bar (100 psi)  
Temp: -40°C to 593°C  
(-40°F to 1100°F)  
Speeds to: 46 m/s (150 fps)  
Sizes: 25.4 to 457 mm  
(1.000 to 18.000 in)

Refer to literature FSD195 at /library.

## SPECIALTY EQUIPMENT

## BulkTite

Designed for rotating equipment handling powder and bulk solids, BulkTite seals improve sealing performance with non-wearing, low-maintenance solutions for screw conveyors, rotary airlocks, mixers, de-lumpers and more.



- Easy cartridge seal installation, minimizing downtime
- Superior seal life with 3.2 mm (0.125 in) radial shaft movement, up to 2° angular misalignment and axial shaft movement
- Minimal gas consumption for reduced operating costs

## SPECIFICATIONS

Press. to: Vacuum to 3.3 bar (50 psi)

Temp: 0°C to 121°C (32°F to 250°F)

Speeds to: 16.6 m/s (54 fps)

Sizes: 12 to 152 mm  
(0.500 to 6.000 in)

Refer to literature FSD267 at /  
library.

## По вопросам продаж и поддержки обращайтесь:

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