



180PR/442PR Pumping Ring Seals

*High Capacity Pumping Ring Seals for
Maximum Heat Rejection and Reliability*

Applications

- Boiler Feed
- Boiler Circulating
- Heater Drain
- Hot Hydrocarbons



*Seals that cool hot fluids
for increased reliability
and efficiency.*

Chesterton Pumping Ring Seal Benefits

Low Cost, Highly Efficient Cooling

Pumping ring circulates only stuffing box fluid in a closed loop cooling system reducing re-heat costs.

High Temperature Sealing with Standard Materials

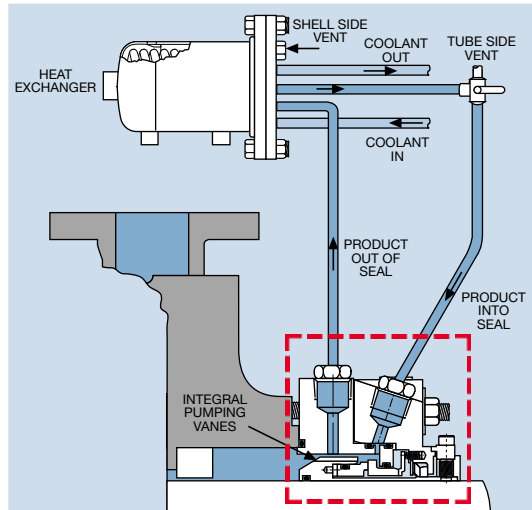
Higher temperatures increase corrosion rates even in hot water service, impurities and treatment. Chemical precipitation is minimized.

Cooling for Ideal Face Lubrication

Effective cooling maintains face flatness, provides adequate liquid viscosity for seal face lubrication and prevents volatile fluids from vaporizing.

Smaller heat exchanger required

The overall heat load is smaller.



Eliminates the need for external injection of cold condensate

The need for an outside source of treated condensate is eliminated with an independent pumping system.

Independent Pumping System

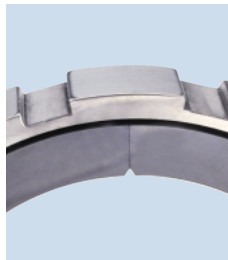
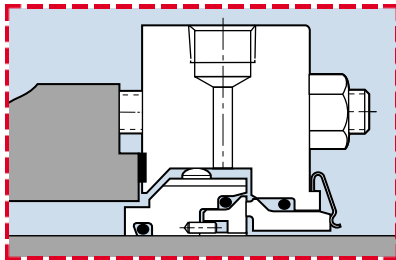
Reduces pressure differentials compared to other cooling arrangements resulting in lower flow velocities, less susceptibility to clogging and erosion and elimination of in-line orifices.

Thermo-siphon performance for hot stand-by conditions

Even when the pump is not running, or the plant is idle, the seal is shielded from the damaging effects of heat.

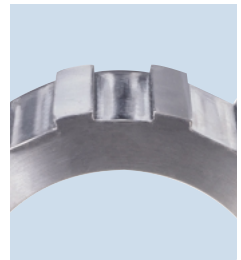
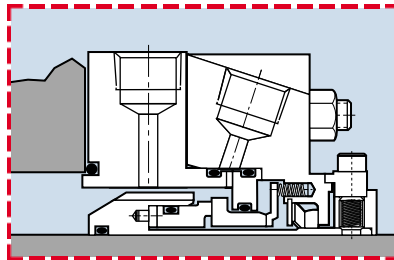
See 442PR and 180PR insets below

442PR Split Seal



- Completely Split
- High Pressure Ball and Socket Elastomers
- Patented Vacuum Capability
- Easy Installation
- To 400 psig (25 bar g)

180PR Seal



- Multiport Injection
- Micro-polished O-ring Surfaces
- High Pressure Seal Faces
- Floating Throttle Bushing
- Cartridge Design
- To 600 psig (40 bar g)

Standard Seal Features

- **Stationary Seal Design** – Eliminates spring fatigue and stuffing box misalignment problems. Ideal for high speed and large equipment.
- **Internally Hydraulically Balanced** – Eliminates the need for special sleeves – low heat generation.
- **Self Centering** – Squares the rotary face to the shaft for consistent reliable operation.
- **Non-fretting** – No wear to equipment sleeves and seal components.
- **Monolithic Seal Faces** – Provide maximum reliability over a wide range of temperatures and pressures by maintaining face flatness. Ideal face lubrication is achieved.

- **Compact Designs** – Small space requirements and fits outside the stuffing box for ease of installation.
- **Field Repairable** – Seal components are easily replaced using original metal parts.
- **High Flow Gland** – Unique cut-water design to provide an ideal flow pattern. Provides efficient seal cooling.

Available in a wide range of sizes:

- 1" to 6" (25mm to 150mm) non-split
- 1" to 12" (25mm to 300mm) split

System Operating Parameters:

- 2500 psig/170 bar g
- 550°F/280°C
- 5000 fpm 25 m/s



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