

# *Streamline*™ S-Series **S10 Single & S20 Dual Seals**



## **Streamlines inventory, installation, maintenance and workflow**

- Optimized seal design for plantwide use
- S-Series full featured common gland
- Two-step “bolt & go” installation
- Delivers greater performance and value
- 4th Generation Sealing combines technology with workflow efficiency



*Simply superior  
for standardization,  
workflow efficiency and value*

# Introducing the 4th Generation of Chesterton Innovation

Chesterton has a unique position in the sealing industry, with over a century of continuous innovation under one ownership and brand name. The result of this continuity of effort is a record of patents and innovations unmatched in the world. Chesterton is proud to continue this winning tradition with the introduction of the Streamline S-Series Seals.

## 1st Generation: Component Seals

Chesterton introduced non-fretting seals to lead the way towards seals that won't damage shafts. Other innovations in this period included patented Self-Aligning Stationaries and universal slotted glands.

## 2nd Generation: Cartridge Seals

The Chesterton innovation of off-the-shelf cartridge seals is an enduring contribution to worldwide sealing technology. Cartridge sealing has become the dominant sealing form since that time. It offers increased sealing reliability due to factory presets, and faster, easier installation.

## 3rd Generation: Advanced Technology

Chesterton jumped fully into the computer revolution with the introduction of seal lines engineered and designed with the aid of sophisticated software. This included Finite Element Analysis (FEA) to predict seal face flatness using monolithic faces. This third generation also featured patented innovations such as the Self-Centering Lock Ring, to make seal concentricity easily achievable for greater reliability.

## 4th Generation: Streamline S-Series

The new Streamline S-Series is the culmination of our engineering efforts with with the business of sealing. This is the seal generation that goes beyond sealing to deal with seal process workflow. The result is greater total economies from inventory reduction, less administration, increased reliability, and flexible, cost-saving rebuild options. This 4th Generation of Chesterton sealing brings greater value than ever before possible.



**Streamline**<sup>™</sup>  
**S-Series**

# Streamline™ S-Series

## S10 Single & S20 Dual Seals

### Simply superior for standardization, workflow efficiency and value

New Chesterton Streamline S-Series is engineered to meet the vast majority of plantwide applications with great reliability in service. But the S-Series goes beyond the basics of fluid sealing, to address the economies of total sealing workflow. S-Series will streamline inventory, simplify seal selection, reduce installation complexity and minimize total maintenance costs.

#### Optimized design for plantwide use

S10 Single and S20 Dual Tandem are a matched pair of high performance, robust seals that make standardization easy. These benchmark seals deliver the reliability expected from Chesterton.

#### Common design with interchangeable parts

The S-Series is a complete system with common parts for predictable performance and simplified inventory. No other seal family uses parts commonality better than the S-Series. Unique “cassette within a cartridge” design lets users swap out the S10 for an S20 in a minute. Face materials swap out to match service needs while keeping spares to a minimum.

#### Outstanding performance and value

S-Series Seals can offer better performance because the weaknesses found in other common platform seal designs have been eliminated. Superior value comes from long-term reliability coupled with inventory savings and workflow efficiencies.

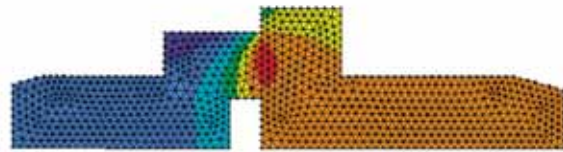
#### Two-step “bolt & go” installation

With the S-Series, just bolt on the gland, tighten the set screws and go. Captive fastened centering pads move out of the way at start up, and won't get lost when it's time to re-set impellers or re-seal.

#### Rebuilding options smooth workflow

Standard options of factory or field rebuilds are easy to execute and economical. But with complete sealing cassettes available at attractive prices, it becomes possible to perform rapid re-sealing with no additional administration relating to rebuilding.

**When you see CHESTERTON,  
you see the future of sealing.**



S-Series face geometry is designed with the aid of Finite Element Analysis (FEA) and computer fluid flow modeling. S-Series faces generate low heat to minimize face distortion for stable, reliable performance.



Both S-10 and S20 Sealing Cassettes use the common S-Series Gland. This unique “cassette-within-a-cartridge” design makes for easy handling and streamlined resealing. Get rapid, reliable re-seal by mounting a new cassette with all new parts and avoid rebuild administrative costs.

# The new benchmark for sealing excellence and value

## S-Series

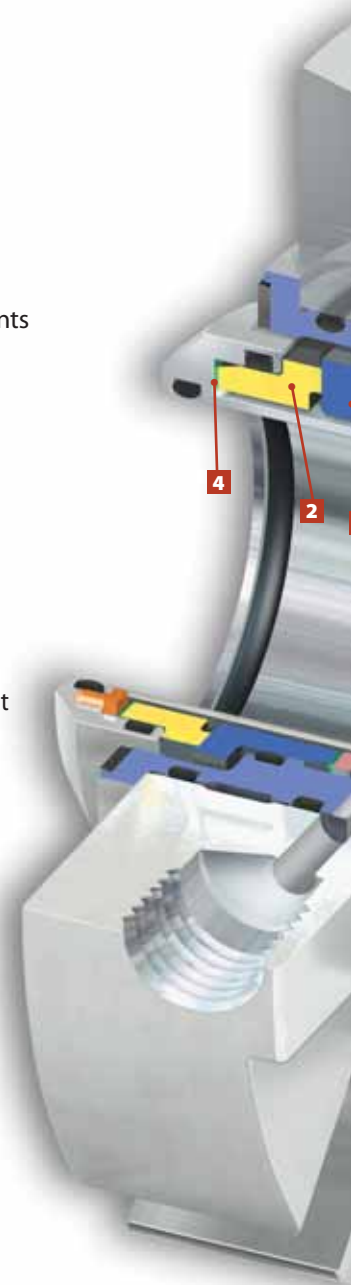
- 1 S-Series Common Parts** reduce inventory while increasing options. The same gland is used for both the single and dual seals to maximize flexibility. Interchangeable cassettes streamline repair administration.
- 2 Optimized Seal Faces** balance low heat generation and distortion to handle a plant's toughest applications. FEA design and robust body withstand high pressures and torques compared to general duty designs.
- 3 Self-Centering Lock Ring™** is a patented mechanism that ensures sleeve concentricity and squares the rotary face to the shaft during installation. This prevents seal face wobble, increasing reliability in tough emissions and slurry services.
- 4 High Torque, Cushioned Drives** eliminate metal to seal face contact on all S-Series faces. Cushioned drives minimize shock and vibration. High strength drive pads resist shear load in tough applications.
- 5 Captive Centering Pads** set precise positioning automatically, then move out of the way at start-up. Non-sparking for safety, and never misplaced for future use.
- 6 Micropolished Faces** reduce drag for maximum face responsiveness. Highly polished surfaces ensure face tracking. Seal face hang-up is minimized.

## S10 Cassette

- 7 Multi-Port Flush** cleans better and prevents localized thermal seal face distortion common with single port systems.
- 8 Floating Throttle Bushing** for maximum safety is standard. Fluids are diverted to quench and drain ports.

## S20 Cassette

- 9 Fully Vented Gland** ensures that liquid surrounds the seal. Eliminates air spaces that prevent barrier fluid flow and increased seal operating temperatures.
- 10 High Flow Pumping Ring** cools inboard and outboard seal faces in high temperature services. Aggressive bi-directional vanes combine with cutwaters to deliver high flow.
- 11 Tandem Configuration** seals on the OD of both sets of seal faces. Proven design for the highest reliability under varying conditions.
- 12 Balance Piston™** enables true hydraulic double balance with no moving O-rings to hang up and fail under pressure reversals. Patent pending, it eliminates the need for wide seal faces, which generate excessive heat and contribute to O-ring failure.



### OPERATING LIMITS

#### S10 & S20 Process Pressure:

- To 450 psig (to 31 bar g)

#### S20 Barrier Pressure:

- To 450 psig (to 31 bar g)
- To 250 psig (to 17 bar g) Inboard Differential

#### Temperature Limits:

- To 300° F (150° C) Ethylene Propylene, PTFE
- To 400° F (205° C) Fluorocarbon, AFLAS\*
- To 500° F (250° C) ChemLast

#### Speed:

- 5,000 FPM (25 m/sec)

For higher pressure and temperature applications, please consult Chesterton.

### STANDARD MATERIALS

#### Rotary Face:

- Carbon, Silicon Carbide, Tungsten Carbide

#### Stationary Face:

- Silicon Carbide, Tungsten Carbide

#### Elastomers:

- Fluorocarbon, AFLAS\*, EP, ChemLast, PTFE Encapsulated

#### Metal Parts:

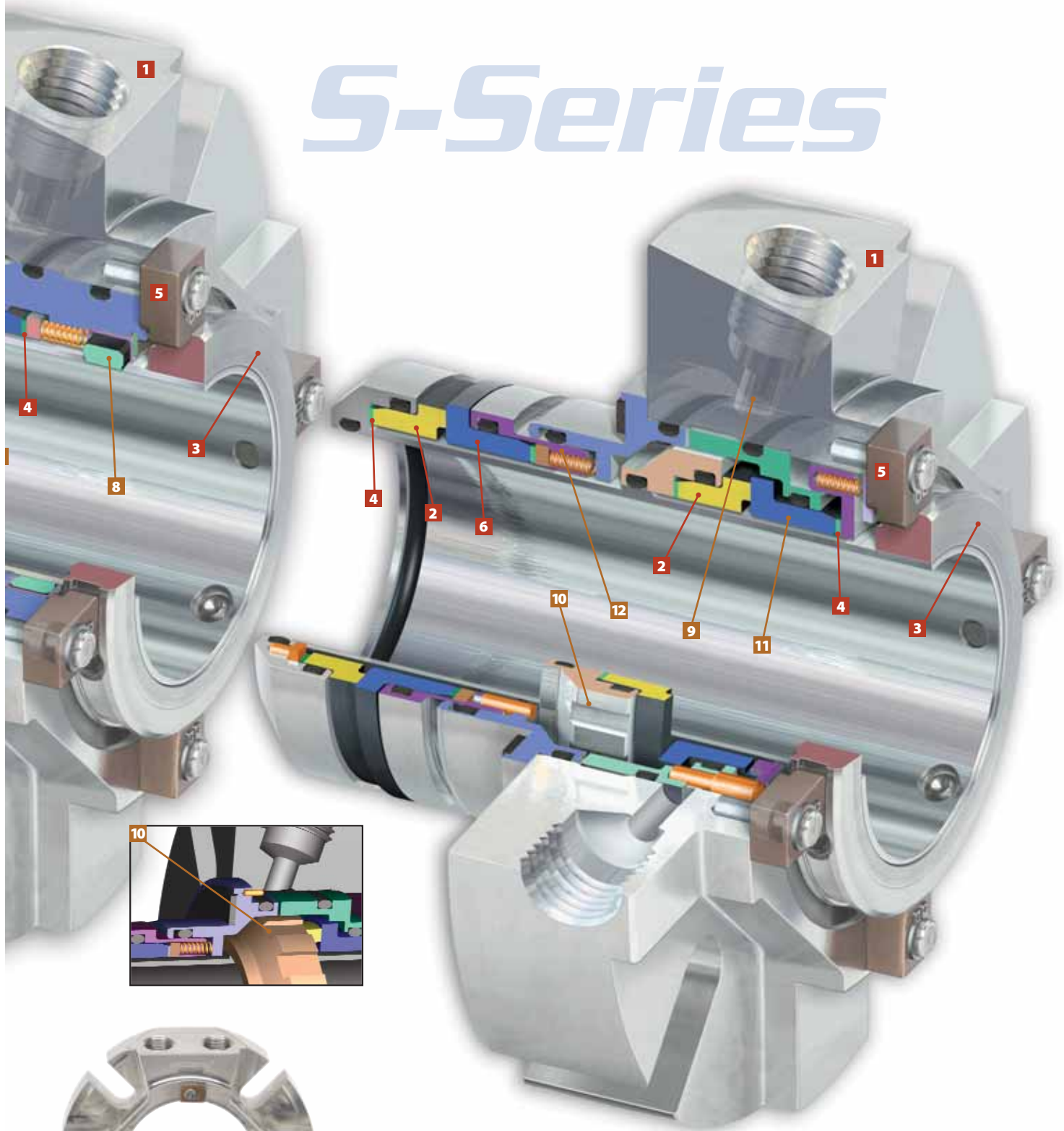
- 316SS all metal parts
- Hastelloy C\*\* springs

Other materials available on request.

\* Asahi Glass Company Ltd. Registered Trademark

\*\* Haynes International, Inc. Registered Trademark

# S-Series



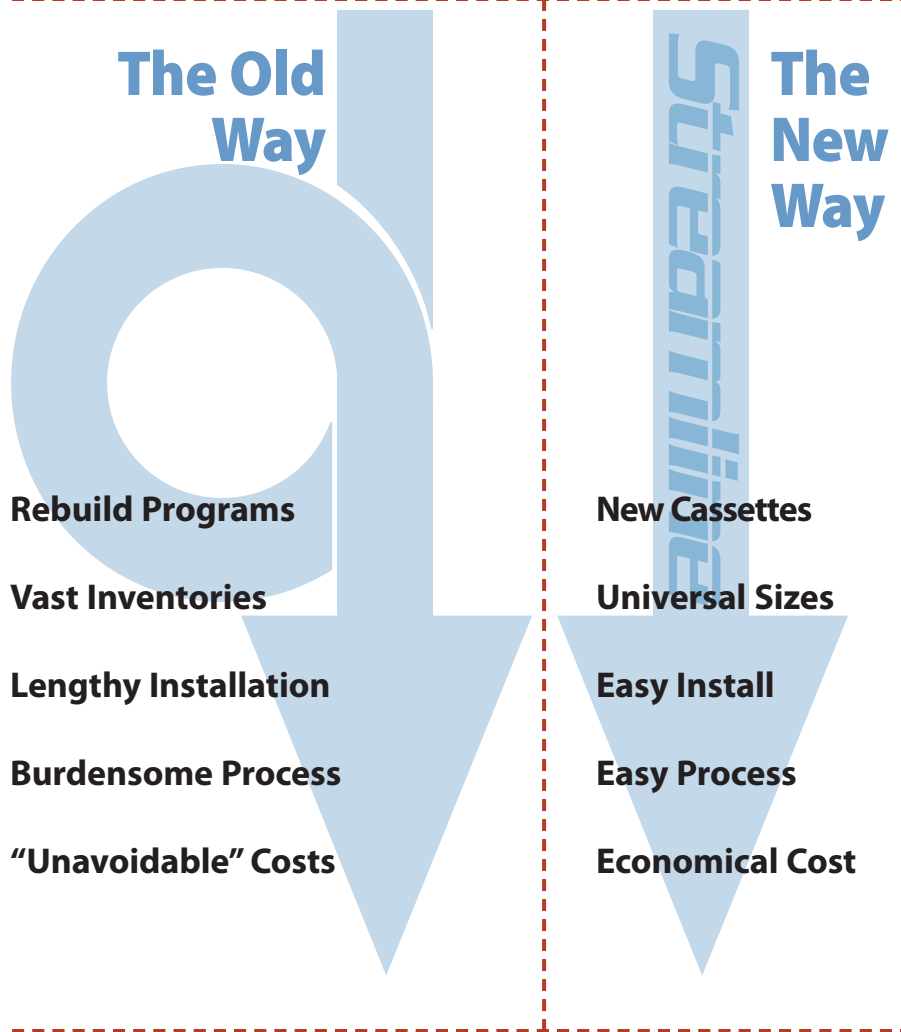
**Streamline™**

**S-Series Gland  
S-Series Single  
& Dual Cassettes  
S-Series Faces**

# Streamline™ S-Series

## S10 Single & S20 Dual Seals

Triggering Event: Seal Replacement Needed



Seal Work Complete, Process Starts Up

Chesterton ISO certificates available on [www.chesterton.com/corporate/iso](http://www.chesterton.com/corporate/iso)

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