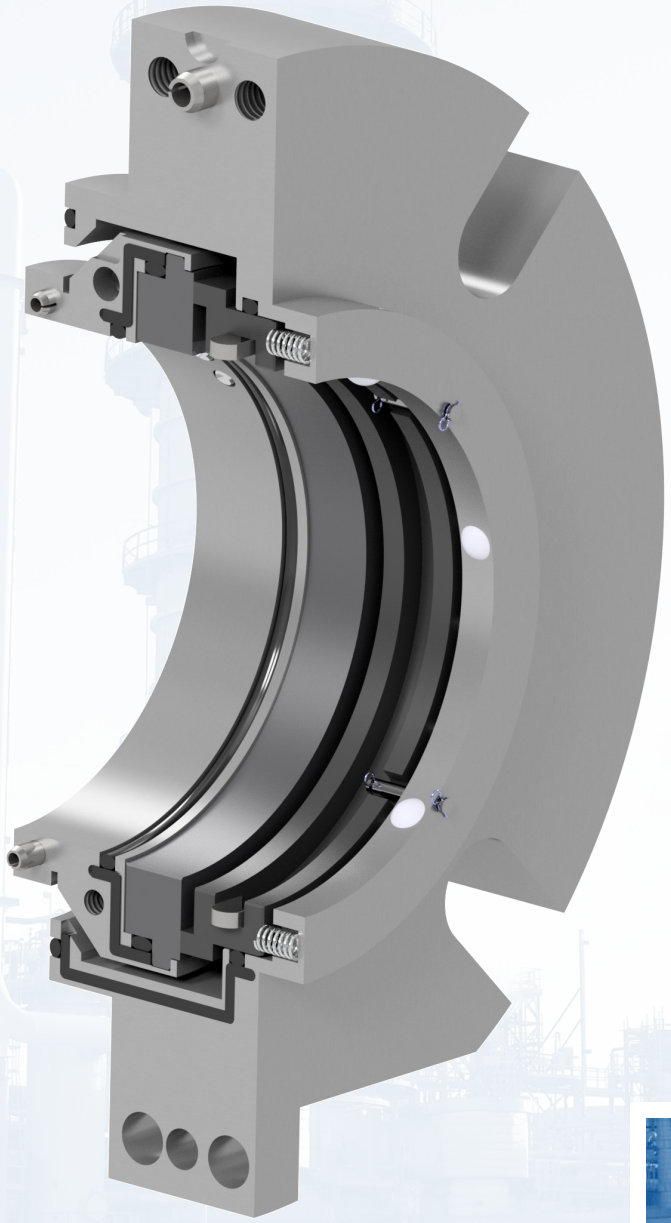
PPC
MECHANICAL SEALS™

# 1200S Split Seal

## *Split single pusher seal*



***CREATING SEALING SOLUTIONS THROUGH INNOVATIVE ENGINEERING***

***MADE IN THE USA***

# 1200S Single Split Seal

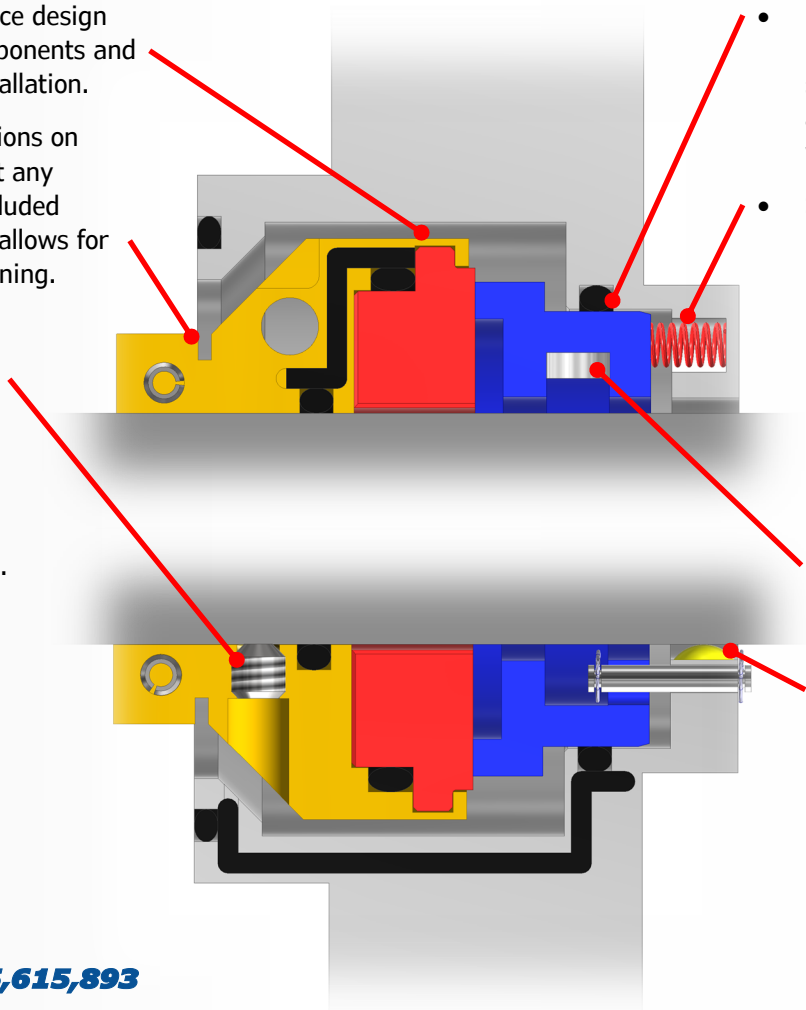
## DESCRIPTION

A split seal provides many benefits over solid seals: lower down time, field repairability, greater movement, and no need to dismantle the equipment during seal replacement. The 1200S single split mechanical seal is designed to have the fewest pieces possible (six) while maintaining the highest mechanical integrity. The rotary assembly is comprised of four pieces, where the silicon carbide splits are installed perpendicular in relation to the metal holder components to eliminate face distortion when tightening the two metal holders. This design also eliminates the need for a seal sleeve (used in two-piece designs), allowing for greater radial movement within the seal.

The robust seal design features large cross-section faces and a stationary spring design to better accommodate equipment misalignment. A balanced face design minimizes heat generation at the sealing interface. The 1200S is designed and available in sizes to upgrade existing packed pumps or solid seals on stuffing box arrangements. For large bore equipment, solid and split adapter plates are available to convert existing installations.

## FEATURES

- Captured rotary face design contains split components and simplifies seal installation.
- Rotary collar positions on equipment without any measurement. Included disposable spacer allows for quick, easy positioning.
- Rotary unit is locked to shaft by set screws.
- Set screw location on product side of seal eliminates potential leak path.
- Can be installed without dismantling equipment.
- Available repair kits allow for field repair of all 1200S seals.



- Dynamic o-ring design provides clean area of stationary face for o-ring to advance upon during face wear.
- Stationary coil springs:
  - ◊ Isolated from the product.
  - ◊ Resist centrifugal forces.
  - ◊ Self-align the seal faces to account for angular misalignment of the equipment.
- Patented alignment clips ensure perfect alignment of stationary faces.
- Seal gland is self-centering, using fixed spacers.
- Large internal clearances allow for excessive radial or axial movement, common on many mixer installations.

***U.S. Patent No. 5,615,893***

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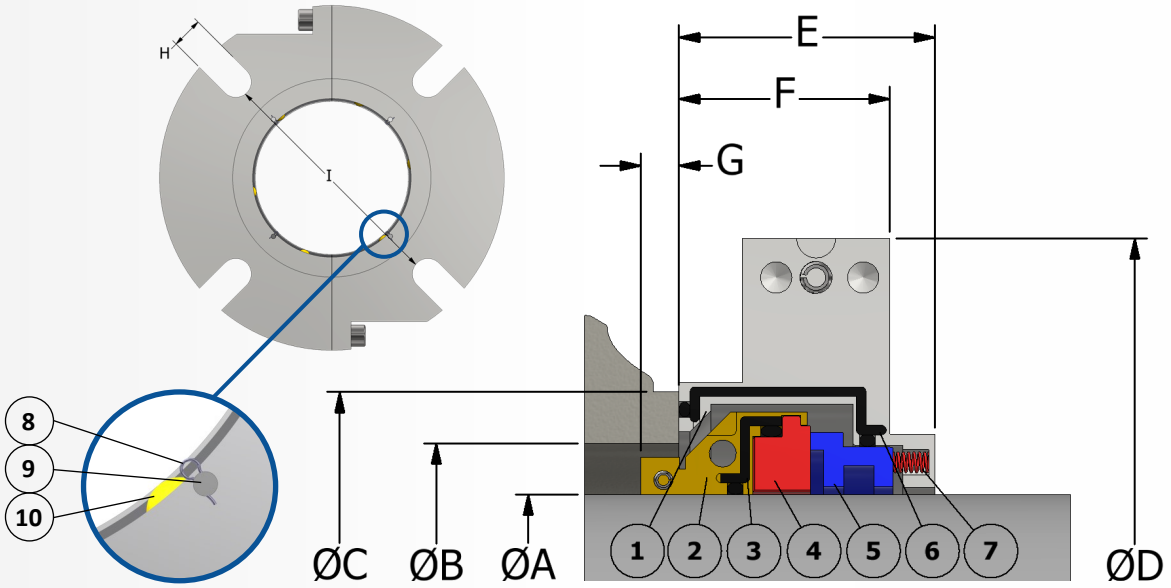
## SEAL DIMENSIONAL DATA

# 1200S Single Split Seal




| ITEM | DESCRIPTION |
|---|---|
| 1 | Gland |
| 2 | Rotary Collar |
| 3 | Collar Seam Gasket |
| 4 | Rotary Face |
| 5 | Stationary Face |
| 6 | Gland Seam Gasket |
| 7 | Springs |
| 8 | Retaining Clips |
| 9 | Anti-rotation Pins |
| 10 | Centering Spacers |

### 1200S DIMENSIONS FOR STANDARD BORE SEAL CHAMBER (METRIC SERIES)

| A SEAL SIZE | B (MIN) | B (MAX) | C (MIN) | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 38 mm | 2.25 | 2.50 | 2.75 | 5.00 | 2.19 | 1.78 | 0.28 | 0.56 | 2.94 |
| 40 mm | 2.33 | 2.58 | 2.83 | 5.00 | 2.19 | 1.78 | 0.28 | 0.56 | 3.01 |
| 43 mm | 2.44 | 2.69 | 2.94 | 5.50 | 2.19 | 1.78 | 0.28 | 0.56 | 3.13 |
| 45 mm | 2.53 | 2.78 | 3.03 | 5.50 | 2.19 | 1.78 | 0.28 | 0.56 | 3.21 |
| 50 mm | 2.75 | 3.00 | 3.25 | 5.50 | 2.19 | 1.78 | 0.28 | 0.56 | 3.44 |
| 55 mm | 3.67 | 3.17 | 3.42 | 6.25 | 2.19 | 1.78 | 0.28 | 0.69 | 3.61 |
| 60 mm | 3.13 | 3.38 | 3.63 | 6.50 | 2.19 | 1.78 | 0.28 | 0.69 | 3.81 |
| 65 mm | 3.31 | 3.81 | 4.06 | 6.62 | 2.19 | 1.78 | 0.28 | 0.69 | 4.12 |
| 70 mm | 3.63 | 4.25 | 4.69 | 7.75 | 2.56 | 2.06 | 0.38 | 0.69 | 5.03 |
| 75 mm | 3.83 | 4.45 | 4.89 | 8.00 | 2.56 | 2.06 | 0.38 | 0.72 | 5.23 |
| 80 mm | 4.03 | 4.65 | 5.09 | 8.25 | 2.56 | 2.06 | 0.38 | 0.72 | 5.43 |
| 85 mm | 4.25 | 4.88 | 5.31 | 8.38 | 2.56 | 2.06 | 0.38 | 0.72 | 5.66 |
| 90 mm | 4.42 | 5.04 | 5.48 | 8.75 | 2.56 | 2.06 | 0.38 | 0.81 | 5.73 |
| 95 mm | 4.63 | 5.25 | 5.69 | 8.75 | 2.56 | 2.06 | 0.38 | 0.81 | 5.94 |
| 100 mm | 4.82 | 5.44 | 5.88 | 9.00 | 2.56 | 2.06 | 0.38 | 0.81 | 6.22 |
| 110 mm | 5.21 | 5.83 | 6.27 | 9.50 | 2.56 | 2.06 | 0.38 | 0.81 | 6.52 |
| 115 mm | 5.41 | 6.03 | 6.47 | 9.50 | 2.56 | 2.06 | 0.38 | 0.81 | 6.72 |
| 120 mm | 5.63 | 6.25 | 6.69 | 9.75 | 2.56 | 2.06 | 0.38 | 0.81 | 7.03 |
| 125 mm | 5.80 | 6.92 | 7.42 | 11.00 | 3.56 | 3.00 | 0.50 | 0.94 | 7.55 |
| 135 mm | 6.19 | 7.32 | 7.82 | 11.38 | 3.56 | 3.00 | 0.50 | 0.94 | 7.94 |
| 140 mm | 6.38 | 7.50 | 8.00 | 11.50 | 3.56 | 3.00 | 0.50 | 0.94 | 8.13 |
| 150 mm | 6.79 | 7.91 | 8.41 | 12.00 | 3.56 | 3.00 | 0.50 | 0.94 | 8.54 |
| 155 mm | 6.98 | 8.10 | 8.60 | 12.00 | 3.56 | 3.00 | 0.50 | 0.94 | 8.73 |
| 175 mm | 7.77 | 8.89 | 9.39 | 13.00 | 3.56 | 3.00 | 0.50 | 0.94 | 9.52 |

Note: For complete dimensional data, request a copy of typical drawing T-3900 (inch) or T-5177 (metric) from a PPC Mechanical Seals representative.

PPC MECHANICAL SEALS™

## SEAL DIMENSIONAL DATA

# 1200S Single Split Seal

### 1200S DIMENSIONS FOR STANDARD BORE SEAL CHAMBER (INCH SERIES)

| A SEAL SIZE | B (MIN) | B (MAX) | C (MIN) | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1.500 | 2.25 | 2.50 | 2.75 | 5.00 | 2.19 | 1.78 | 0.28 | 0.56 | 2.94 |
| 1.625 | 2.38 | 2.63 | 2.88 | 5.00 | 2.19 | 1.78 | 0.28 | 0.56 | 3.06 |
| 1.687 | 2.44 | 2.69 | 2.94 | 5.19 | 2.19 | 1.78 | 0.28 | 0.56 | 3.13 |
| 1.750 | 2.50 | 2.75 | 3.00 | 5.50 | 2.19 | 1.78 | 0.28 | 0.56 | 3.19 |
| 1.875 | 2.63 | 2.88 | 3.13 | 5.50 | 2.19 | 1.78 | 0.28 | 0.56 | 3.31 |
| 1.937 | 2.75 | 3.00 | 3.25 | 5.50 | 2.19 | 1.78 | 0.28 | 0.56 | 3.44 |
| 2.000 | 2.75 | 3.00 | 3.25 | 5.50 | 2.19 | 1.78 | 0.28 | 0.56 | 3.44 |
| 2.125 | 2.88 | 3.13 | 3.38 | 6.00 | 2.19 | 1.78 | 0.28 | 0.69 | 3.56 |
| 2.187 | 2.94 | 3.19 | 3.44 | 6.25 | 2.19 | 1.78 | 0.28 | 0.69 | 3.62 |
| 2.250 | 3.00 | 3.25 | 3.50 | 6.25 | 2.19 | 1.78 | 0.28 | 0.69 | 3.69 |
| 2.375 | 3.13 | 3.38 | 3.63 | 6.50 | 2.19 | 1.78 | 0.28 | 0.69 | 3.81 |
| 2.437 | 3.25 | 3.75 | 4.00 | 6.50 | 2.19 | 1.78 | 0.28 | 0.69 | 4.06 |
| 2.500 | 3.25 | 3.75 | 4.00 | 6.50 | 2.19 | 1.78 | 0.28 | 0.69 | 4.06 |
| 2.625 | 3.38 | 3.88 | 4.13 | 6.62 | 2.19 | 1.78 | 0.28 | 0.69 | 4.19 |
| 2.687 | 3.44 | 3.94 | 4.19 | 6.68 | 2.19 | 1.78 | 0.28 | 0.69 | 4.25 |
| 2.750 | 3.63 | 4.25 | 4.69 | 7.75 | 2.56 | 2.06 | 0.38 | 0.69 | 5.03 |
| 2.875 | 3.75 | 4.38 | 4.81 | 7.88 | 2.56 | 2.06 | 0.38 | 0.72 | 5.15 |
| 2.937 | 3.81 | 4.44 | 4.88 | 8.00 | 2.56 | 2.06 | 0.38 | 0.72 | 5.21 |
| 3.000 | 3.88 | 4.50 | 4.94 | 8.00 | 2.56 | 2.06 | 0.38 | 0.72 | 5.28 |
| 3.125 | 4.00 | 4.63 | 5.06 | 8.12 | 2.56 | 2.06 | 0.38 | 0.72 | 5.41 |
| 3.250 | 4.13 | 4.75 | 5.19 | 8.25 | 2.56 | 2.06 | 0.38 | 0.72 | 5.53 |
| 3.375 | 4.25 | 4.88 | 5.31 | 8.38 | 2.56 | 2.06 | 0.38 | 0.72 | 5.66 |
| 3.437 | 4.31 | 4.94 | 5.38 | 8.50 | 2.56 | 2.06 | 0.38 | 0.81 | 5.72 |
| 3.500 | 4.38 | 5.00 | 5.44 | 8.50 | 2.56 | 2.06 | 0.38 | 0.81 | 5.78 |
| 3.625 | 4.50 | 5.13 | 5.56 | 8.63 | 2.56 | 2.06 | 0.38 | 0.81 | 5.91 |
| 3.750 | 4.63 | 5.25 | 5.69 | 8.75 | 2.56 | 2.06 | 0.38 | 0.81 | 5.94 |
| 3.875 | 4.75 | 5.31 | 5.81 | 8.88 | 2.56 | 2.06 | 0.38 | 0.81 | 6.07 |
| 4.000 | 4.88 | 5.50 | 5.94 | 9.00 | 2.56 | 2.06 | 0.38 | 0.81 | 6.28 |
| 4.250 | 5.13 | 5.75 | 6.19 | 9.25 | 2.56 | 2.06 | 0.38 | 0.81 | 6.44 |
| 4.375 | 5.25 | 5.88 | 6.32 | 9.38 | 2.56 | 2.06 | 0.38 | 0.81 | 6.56 |
| 4.437 | 5.31 | 5.94 | 6.38 | 9.50 | 2.56 | 2.06 | 0.38 | 0.81 | 6.72 |
| 4.500 | 5.38 | 6.00 | 6.44 | 9.50 | 2.56 | 2.06 | 0.38 | 0.81 | 6.69 |
| 4.750 | 5.63 | 6.25 | 6.69 | 9.75 | 2.56 | 2.06 | 0.38 | 0.81 | 7.03 |
| 5.000 | 5.88 | 7.00 | 7.50 | 11.00 | 3.56 | 3.00 | 0.50 | 0.94 | 7.63 |
| 5.250 | 6.13 | 7.25 | 7.75 | 11.25 | 3.56 | 3.00 | 0.50 | 0.94 | 7.88 |
| 5.375 | 6.25 | 7.38 | 7.88 | 11.38 | 3.56 | 3.00 | 0.50 | 0.94 | 8.00 |
| 5.500 | 6.38 | 7.50 | 8.00 | 11.50 | 3.56 | 3.00 | 0.50 | 0.94 | 8.13 |
| 5.875 | 6.75 | 7.88 | 8.38 | 11.88 | 3.56 | 3.00 | 0.50 | 0.94 | 8.50 |
| 6.000 | 6.88 | 8.00 | 8.50 | 12.00 | 3.56 | 3.00 | 0.50 | 0.94 | 8.63 |
| 6.250 | 7.13 | 8.25 | 8.75 | 12.25 | 3.56 | 3.00 | 0.50 | 0.94 | 8.88 |
| 6.500 | 7.38 | 8.50 | 9.00 | 12.50 | 3.56 | 3.00 | 0.50 | 0.94 | 9.13 |
| 7.000 | 7.88 | 9.00 | 9.50 | 13.00 | 3.56 | 3.00 | 0.50 | 0.94 | 9.63 |
| 7.125 | 8.00 | 9.13 | 9.63 | 13.00 | 3.56 | 3.00 | 0.50 | 0.94 | 9.75 |
| 8.625 | 9.50 | 10.63 | 11.13 | 14.62 | 3.56 | 3.00 | 0.50 | 0.94 | 11.25 |

Note: For complete dimensional data, request a copy of typical drawing T-3900 (inch) or T-5177 (metric) from a PPC Mechanical Seals representative.

# 1200S Single Split Seal

## MATERIALS OF CONSTRUCTION

**Metallurgy:** 316 SS Standard
*Other materials available, including Duplex SS, Alloy C-276 & Titanium*

**Seal Face Combinations:**

| Stationary | | Rotary |
|---|---|---|
| Carbon (Resin-filled) | vs. | Sintered Silicon Carbide |
| Sintered Silicon Carbide | vs. | Sintered Silicon Carbide |

**Elastomers:** Fluoroelastomer (FKM), EPDM, AFLAS®

**Springs:** Alloy C-276

AFLAS® is a registered trademark of Asahi Glass Co., Ltd.

## OPERATING CONDITIONS

**Seal Operating Limits:**

| Seal Size | Pressure Limit | Speed Limit |
|---|---|---|
| 1.500" - 2.625" | 200 psig (14 bar g) | 3600 RPM |
| 2-750" - 4.750" | 150 psig (10 bar g) | 1750 RPM |
| 4.875" - 7.000" | 100 psig (7 bar g) | 875 RPM |

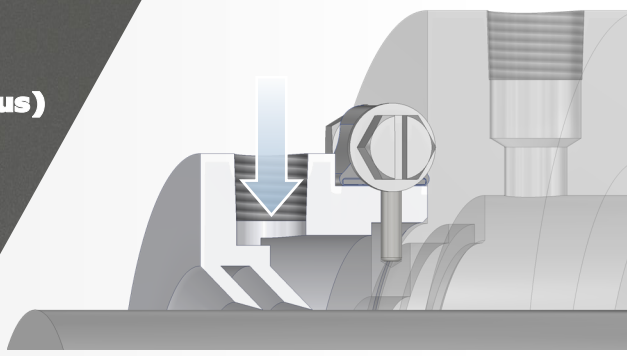
*Contact PPC for sizes greater than 7.000"*

**Process Temperature:** 0 to 250 °F (-18 to 121 °C)
*Contact PPC for specific applications outside these parameters*

## APPLICATIONS

- Pulp and Paper
- Power Generation
- Corn and Grains Processing
- Petrochemicals (non-hazardous)
- Wastewater Treatment
- Water Systems
- Mining

## QUENCH CONTAINMENT LIP SEAL



- Available quench containment system utilizing split lip seal allows for an atmospheric quench on crystallizing services or dry-running applications such as top-entry mixers.
- Designed to attach to existing 1200S seal gland with minimal modifications.


**CONTACT US**
www.ppcmechanicalseals.com • sales@ppcmechanicalseals.com
PH: 1-800-731-7325 • 1-225-356-4333
2769 Mission Drive • Baton Rouge, LA 70805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