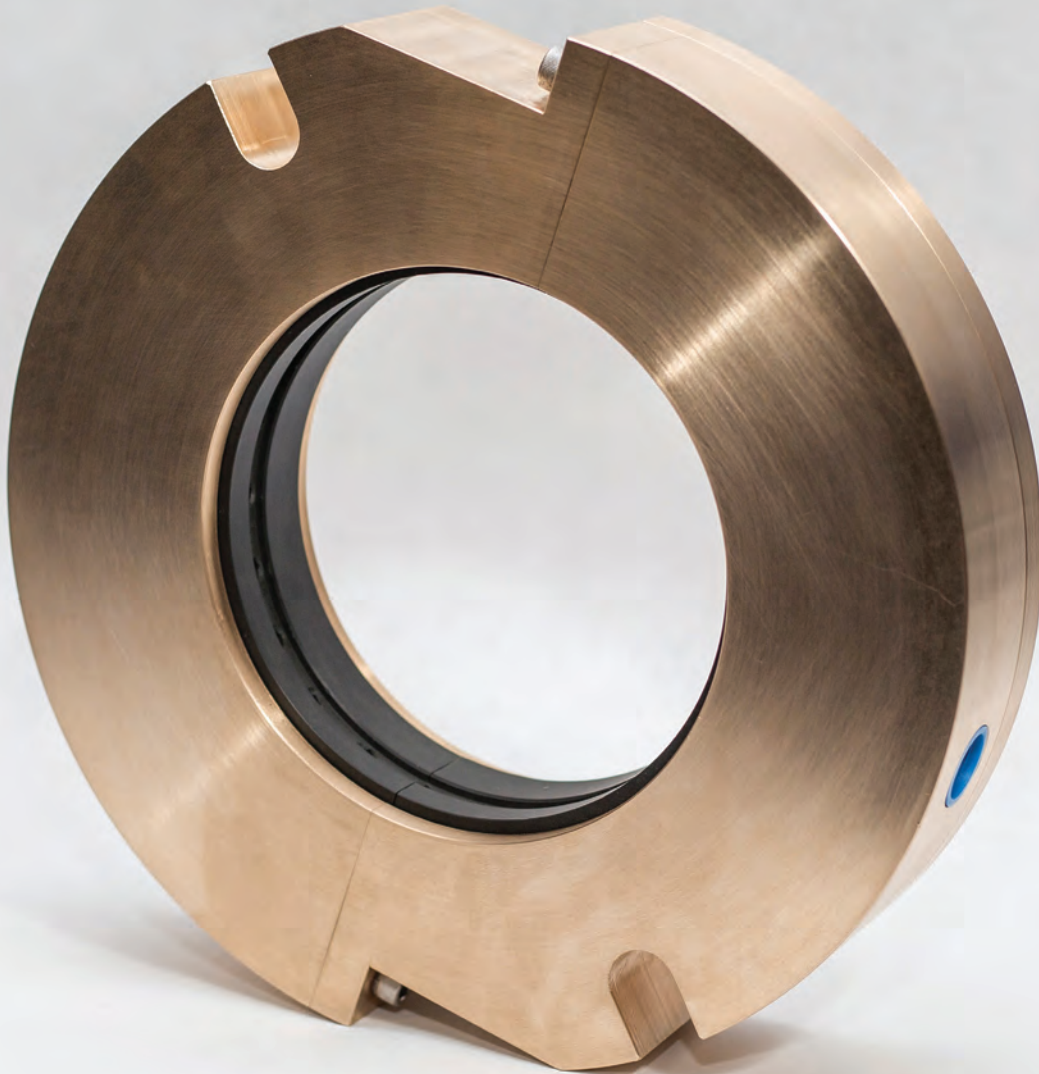


SEPCO Air Seal

The SEPCO Air Seal (SAS) is an engineered pneumatic sealing system designed to seal the shafts of equipment where typical contact seals, such as packing or mechanical seals are ineffective and often too costly to operate and maintain. Designed for wet or dry applications, the seal is particularly successful in powder and bulk solid processes.



FEATURES & BENEFITS

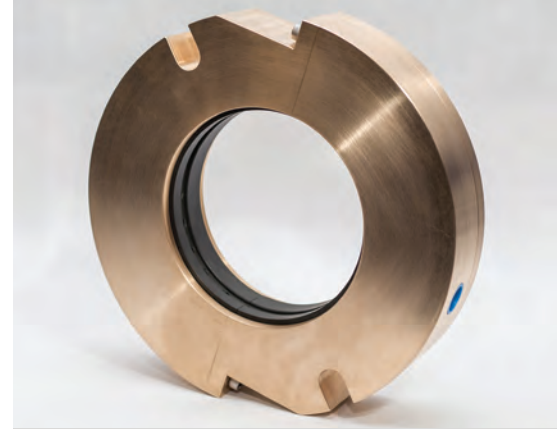
- Efficient design minimizes air use while maintaining internal sealing pressure profile.
- Noncontact design lasts the life of the equipment.
- Resilient to angular and parallel shaft movement.
- Pressures up to 120 psi and materials available for a wide range of temperatures.
- Split seals are available in most designs.
- A wide range of materials are available for most application requirements.
- Requires little to no maintenance after installation.
- Applicable to bulk material handling equipment such as mixers, blenders, agitators, pulpers, screw conveyors, refiners, and rotor valves.

HOW IT WORKS

The SAS relies on engineered clearances to develop a uniform sealing pressure/velocity profile using air or gas. This eliminates low-pressure areas and mitigates the chance of product ingress into the seal.

The pressure profile forms a circumferential boundary layer internally that reduces the effects of shaft movement because the throttle is designed to float. The standard SAS is designed so the air flow in/out of the seal is biased based on system requirements, shown in Figure 4. A third-party CFD analysis reveals the consistent speed of the airflow through the throttle. The throttle creates a uniform velocity profile. Notice the consistent ring around the center in Figure 1. Figure 2 shows the CFD image of the full air flow through the throttle.

Installed correctly, the SAS is essentially a noncontact seal. For situations in which angular misalignment may exist, the SAS-M is recommended. In all cases, the SAS is engineered to meet our the specific requirements and performance expectations of the end user. Also, see Figure 3 for a detailed drawing of a solid assembled SAS.



WHAT IS THE SAS?

It is a true noncontact air seal. that is ideal for difficult-to-seal applications like powder and bulk solids handling. It can be applied to assets such as:

- ✓ Mixers
- ✓ Blenders
- ✓ Agitators
- ✓ Pulpers
- ✓ Screw conveyors
- ✓ Refiners
- ✓ Rotor valves
- ✓ Dryers
- ✓ Elevators

BENEFITS

The SAS significantly reduces operating costs , and end users save on:

- ✓ Product waste
- ✓ Labor and overtime
- ✓ Seal and other component replacements
- ✓ Downtime

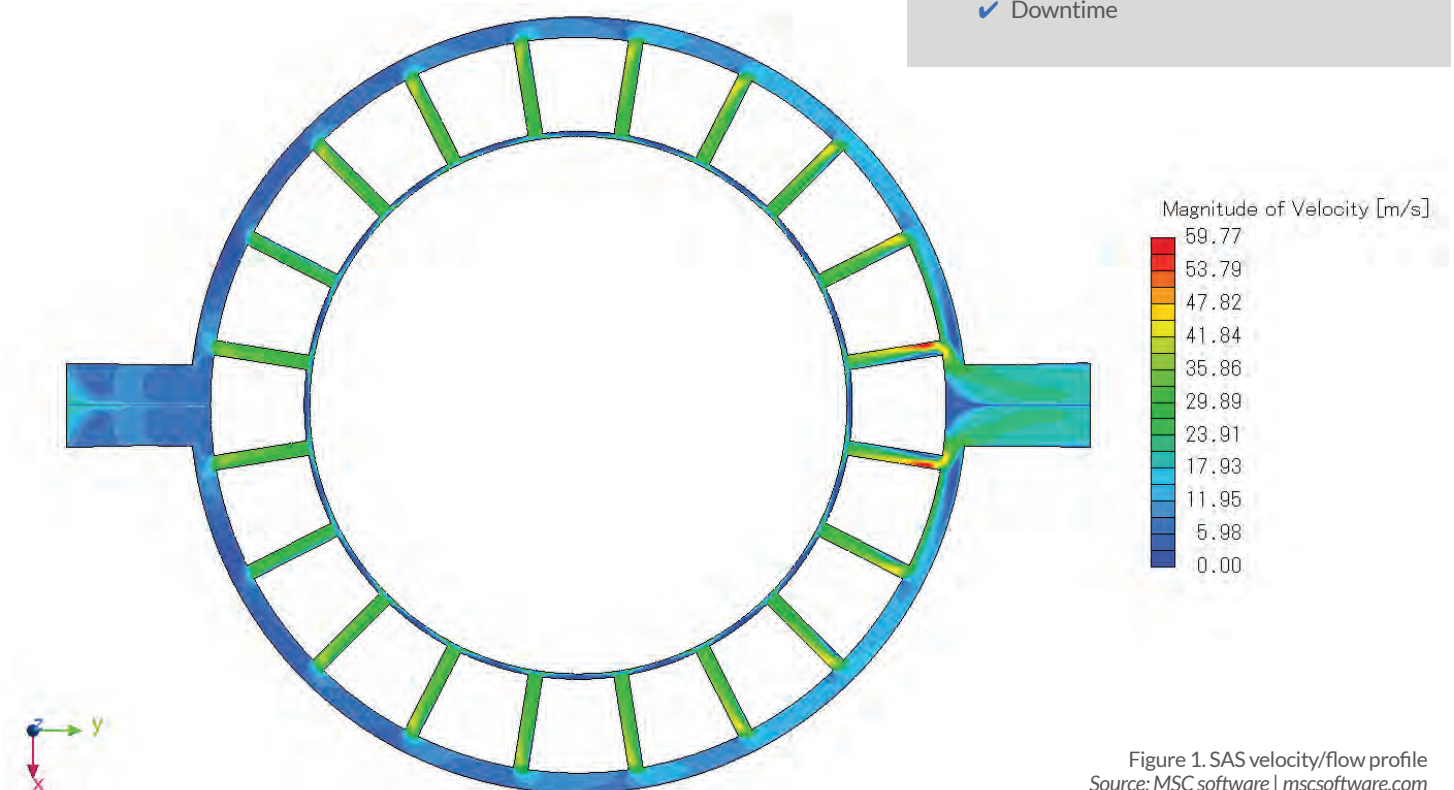


Figure 1. SAS velocity/flow profile
Source: MSC software | mscsoftware.com

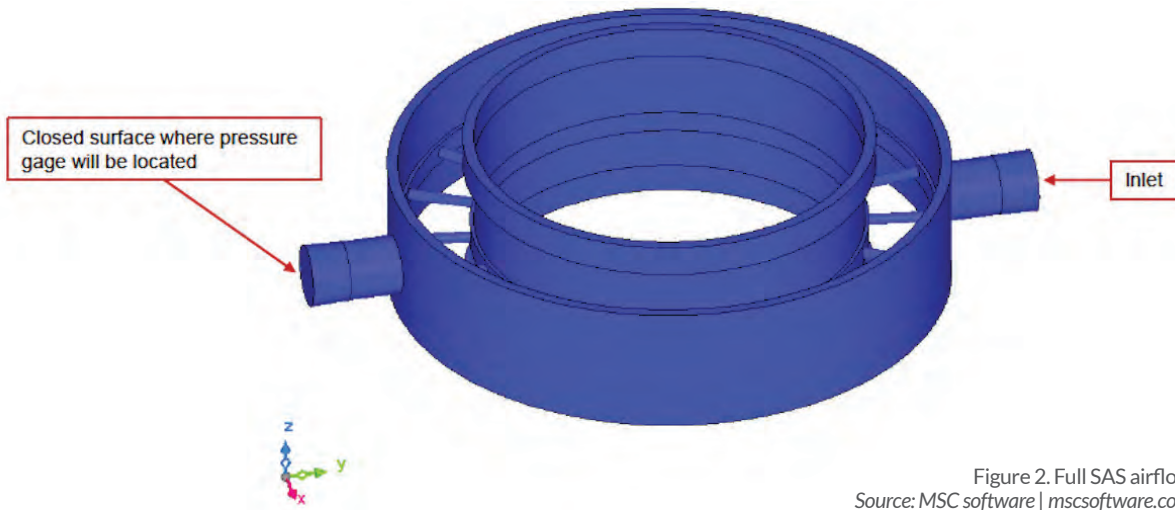


Figure 2. Full SAS airflow
Source: MSC software | mscsoftware.com

MAINTENANCE-FREE SEALING

These SAS requires no maintenance as long as air flows continuously to the seal. By design, product does not enter the seal or throttle area. This eliminates the need for maintenance.

The material of construction keeps wear and corrosion from occurring. However, system upsets happen, and if product enters, the seal can be easily disassembled, cleaned, and reassembled.



Figure 3. Solid assembled SAS drawing

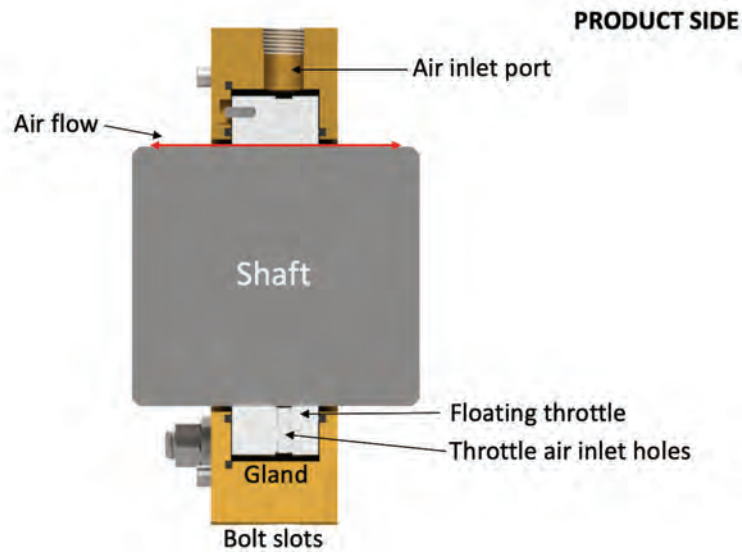
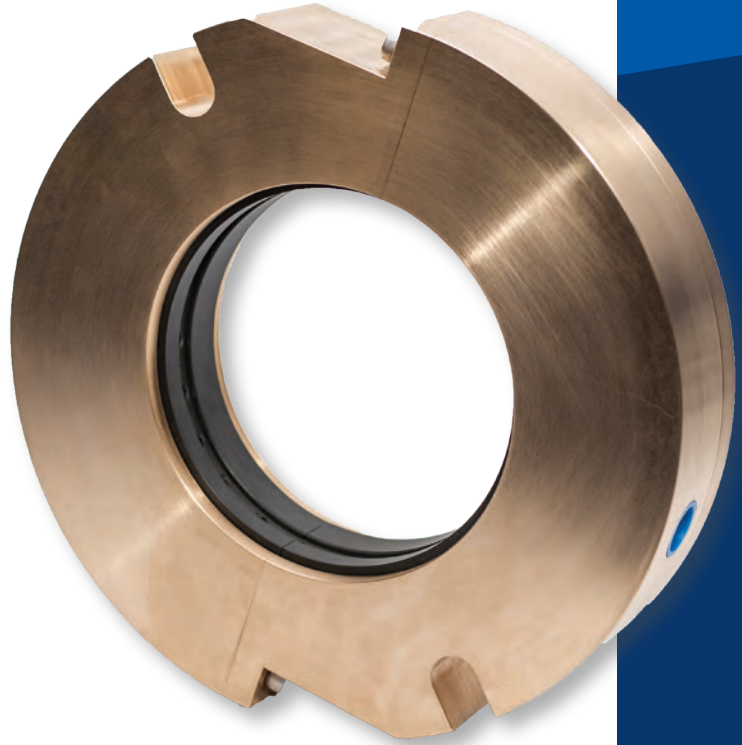


Figure 4. Air flow into and out of the SAS.

If the air supply is turned off during operation and with product introduced, the product may enter the seal. This will lead to the internal air passage way becoming clogged, disrupting the uniformity of the pressure profile. Should this happen, seal disassembly may be required. The seal is very simple and can be easily rebuilt, but contact your rep if this occurs.

SAS STANDARD DESIGN PARAMETERS

Working pressures up to: 120 psi
Maximum misalignment capability
Parallel: 0.0625 inch (total indicator reading)
Angular: 1.5 degrees



INDUSTRIES

Pulp & Paper
Food & Beverage
Oil & Gas
Mining
Chemical
Water & Wastewater
Powder & Bulk Solids Handling
Cement

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