

Recommendations for Screens in Pulp and Paper Applications

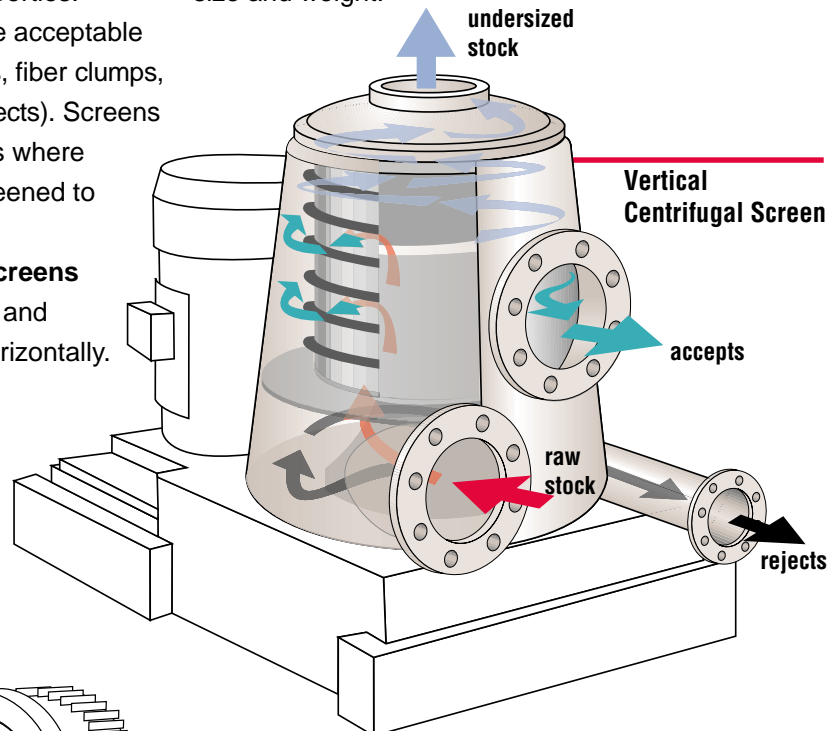
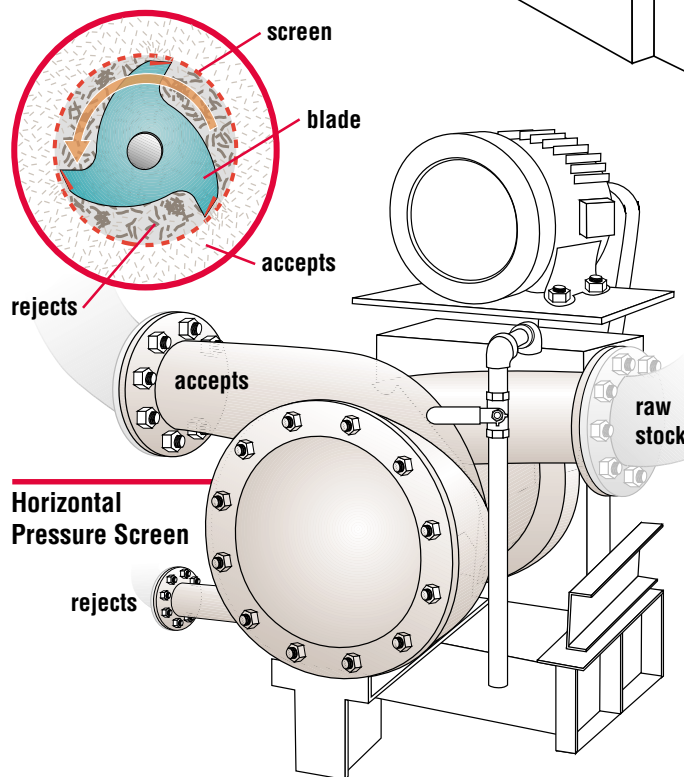
Screens are used in the pulp and paper industry to sort through the different sizes of fibers contained in previously digested stock. Fiber size has a direct impact on paper strength and finish properties.

The goal of screening is to remove the acceptable fibers (accepts) from the remaining chips, fiber clumps, knots, and other non-fibrous material (rejects). Screens and refiners are often applied in a series where unacceptable stock is refined and rescreened to yield proper fiber size.

Pressure screens and **centrifugal screens** are the most common types used today and both can be configured vertically and horizontally.

Pressure screens use moderate pressures to force stock through the screen and most models use a blade to scrape clogs from the screen.

Centrifugal screens use a finned rotor or foiled drum to impart centrifugal force on the stock to force it through the screen and help separate the fibers by size and weight.



Operation

- Continuous operation with the possibility of liquors or bleaching chemicals present.
- Shaft size is 2 - 5 inches
- Vertical systems use a bottom entry shaft similar to bottom entry mixers

Typical Operating Conditions

- 0 - 120 psig (0 -13 bar)
- 200 - 600 rpm
- 0.5 - 4% paper stock

Screen Manufacturers

- Voith-Sulzer
- Bird
- Ingersoll-Rand

Flowserve Seal Recommendations

Application Considerations

- **Reductions in flush rates can greatly reduce yearly mill operating costs.**

The **SL 5000** is a flushless design that works well in screen applications.

- **When using single seals on vertical applications a flush should be used during start-up to lubricate the faces.**

After the machine is running and stock has filled the equipment the flush can be shut off.

- **When using a single seal with no flush, the product must be around the seal to provide lubrication before start-up.**

Depending on the equipment, the gland can be designed to provide a cavity that retains liquid around the faces after the equipment is emptied to provide face lubrication during start-up.

- **The clean design and hard faces of the SL Series seals provide good sealing solutions in pulp screen applications.**

The hard faces with smooth geometry resist slurry abrasion while the drive mechanism and springs are kept away from the process to prevent clogging by paper fibers.

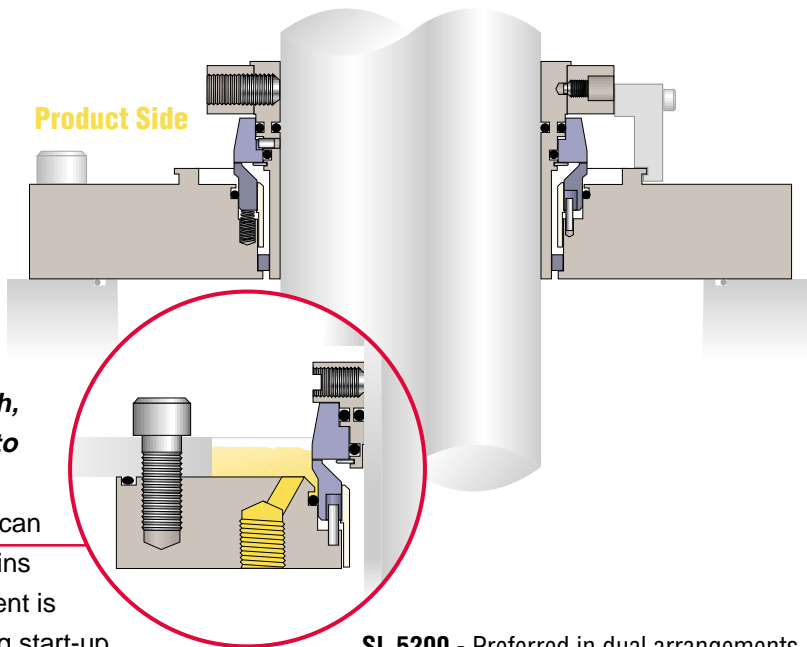
- **Open seal chambers allow greater product flow around the seal faces.**

Often the gland will consist of a large plate that can be designed to keep the area around the seal faces open to product flow which will reduce the opportunity for fiber collection.

- **When a dual seal is required, the SL 5200 with an API Plan 53 or 54 is preferred.**

SL 5000 - Preferred

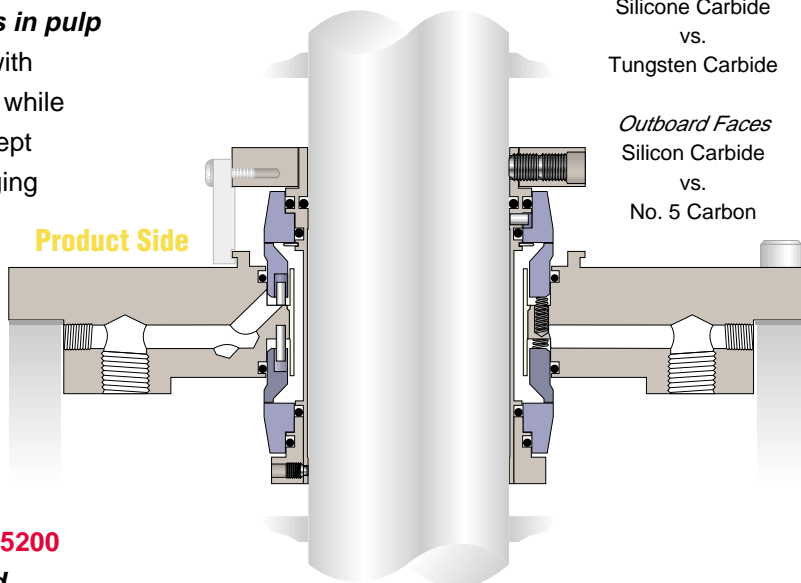
- Typical Face Materials - Silicon Carbide vs. Tungsten Carbide



SL 5200 - Preferred in dual arrangements

Typical Face Materials *Inboard Faces*
Silicone Carbide
vs.
Tungsten Carbide

Outboard Faces
Silicon Carbide
vs.
No. 5 Carbon



The information and specifications presented in this product brochure are believed to be accurate, but are supplied for information purposes only and should not be considered certified or as a guarantee of satisfactory results by reliance thereon. Nothing contained herein is to be construed as a warranty or guarantee, express or implied, with respect to the product. Although Flowserve Corporation can provide general application guidelines, it cannot provide specific information for all possible applications. The purchaser/user must therefore assume the ultimate responsibility for the proper selection, installation, operation and maintenance of Flowserve products. Because Flowserve Corporation is continually improving and upgrading its product design, the specifications, dimensions and information contained herein are subject to change without notice.

Primary Worldwide Flow Solutions Division Locations

United States
Kalamazoo, MI
Phone 616-381-2650
Fax 616-381-8368

Canada
Edmonton, Alberta
Phone 708-463-7958
Fax 708-450-1241

Canada
Scarborough, Ontario
Phone 416-292-2877
Fax 416-292-5190

Netherlands
Roosendaal
Phone 31-165-581400
Fax 31-165-552622

Argentina
Villa Martelli
Phone 54-11-4709-6800
Fax 54-11-4709-7072

Australia
Marayong NSW
Phone 61-2-8822-7100
Fax 61-2-9679-7511

Singapore
Phone 65-746-4318
Fax 65-747-1963

Mexico
Tlalcala
Phone 52-2-461-6791
Fax 52-2-461-6847

Brazil
Sao Paulo
Phone 55-11-4066-8600
Fax 55-11-4066-7014

Japan
Osaka
Phone 81-720-85-5571
Fax 81-720-85-5575

Germany
Dortmund
Phone 49-231-6964-0
Fax 49-231-6964-248

Licenses, authorized agents, and affiliated companies located worldwide.

**ISO 9000
Certified**

www.flowserve.com

FTA154