

MG1S14 cartridge seals for stock pumps

Stora Enso Kvarnsveden is a modern paper mill situated on the Dalälven river near the city of Borlänge in the center of Sweden. The mill was founded in 1900 and employs today 800 staff. On four paper machines one million tons of paper are produced a year. Spruce pulpwood is utilized as raw material for newsprint, improved newsprint and uncoated magazine paper.

Numerous mechanical seals are installed in stock pumps which are used to transport pulp of varying stock consistency to different parts of the process, for example from the machine chest to the paper machine headbox. Depending on the operating conditions, the level of standardization and preferences, Stora Enso applies single mechanical seals with or without flush or quench, or double mechanical seals with appropriate supply systems. Because reduction of water consumption plays a major role and is a necessity in the pulp & paper industry, plant operators have a keen demand on single seal solutions which normally run in dead-end mode (i.e. without flushing) but can be operated with a flush if required.



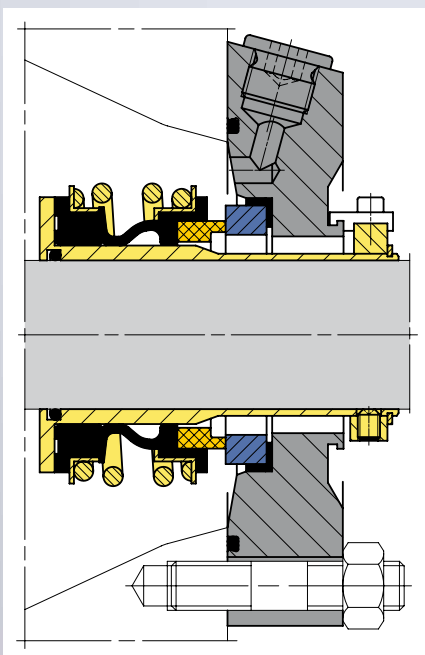
Pump installation at Stora Enso Kvarnsveden

The EagleBurgmann solution

The new MG1S14 seal concept from EagleBurgmann is the answer to the operators' technical requirements and the demand for prolonged service life (MTBR) and easy handling. The successful and service-proven EagleBurgmann MG elastomer bellows seal series has been extended to cover special applications in the pulp & paper industry. MG1S14 comes with a completely redesigned cover and is available for standard pump types and sizes of the ABS Scanpump series and for Sulzer Ahlström APP pumps. The seals' core components are standard parts of the MG series. This means greater economy because of lower costs and reduced stock.

The advantages at a glance

- Multi-purpose seal: a single seal which can be operated with or without flush
- No adapter needed: no accumulation of fibers between adapter and cover
- Longer service life due to cavity-free design, open space above the seal faces and a large single spring rotating in the product: hence free circulation around the seal faces, no clogging of the seal can occur
- Protection of pump/shaft sleeve due to stationary design and shaft sleeve: no dynamically loaded O-Ring which could cause damages
- Safe and straightforward installation due to pre-assembled unit



Operating conditions

Medium: White water
Temperature: 60 °C (140 °F)
Pressure: 8 ... max. 10 bar
(116 ... 145 PSI max.)
Speed: 1,490 min⁻¹
Shaft size: 57 mm (2.24")
Pump type: Scanpump bearing 3B
Seal type: EagleBurgmann MG1S14-G60-E1
Materials: BQ1VGG

Stora Enso Kvarnsveden applied the new MG1S14 seal successfully e.g. in a Scanpump installed prior to the disc filter. The seal performs to the satisfaction of the plant operator and without any problems. Stora Enso is completely satisfied with EagleBurgmann's MG1S14.

They appreciate this special MG1 in cartridge design with flush connection because it is easy to fit while seal and spare parts have a competitive price. As around 40 seals are currently running at the plant, Stora Enso is looking forward to further equipment with EagleBurgmann seals.

Wide operation range

Shaft diameter:
d = 33 ... 90 mm (1.30" ... 3.54")
Pressure: p₁ = 16 bar (232 PSI)
with face material combination Q1/B,
12 bar (174 PSI)
with face material combination Q1/Q1
Temperature: t ... 80 °C (176 °F)
Stock density: without flush: ... 2.5 %
with flush ... 4 %