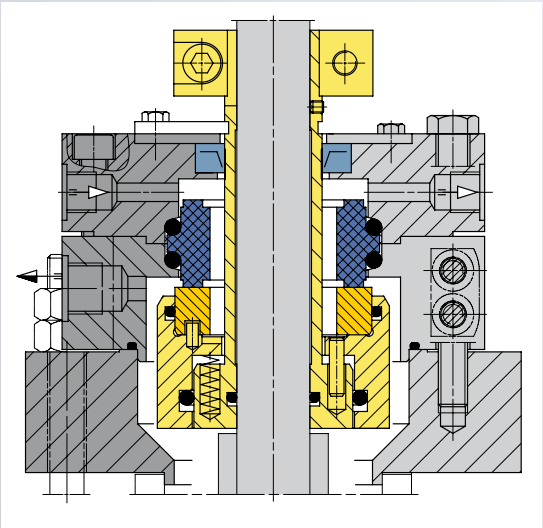
Reliable seal solution for cooling water applications

EagleBurgmann
Rely on excellence

HGH semi-split seal for main cooling water pumps

Main cooling water in the Rostock power station



HGH single mechanical seal

The KNG power station in Rostock is one of the newest coal fired power stations in Germany. It came on-grid in 1994. The plant works very efficiently, has an electrical output of 553 MW, and delivers 150 to 300 MW heat for Rostock's district heating grid. The latest equipment and technology for the furnace and flue gas desulphurization, for example, ensure that the legal emission levels and tolerances are reliably met or even clearly undercut.

The process

The power station's main condenser is supplied with vast quantities of cooling water via two main cooling water pumps. Treated seawater from the Baltic sea is used for this purpose.

The problem

When originally installed, the main cooling water pump was sealed with a compression packing. The highly abrasive sand content of the pumped medium caused a high and unacceptable level of wear on the protective shaft sleeve underneath the compression packing. This resulted in excessive and uncontrollable leaks.

The protective shaft sleeve thus had to be frequently replaced, leading to unscheduled pump downtimes lasting several days. The repair costs were compounded by reduced power station output. For this reason, the operator needed to find an alternative and, above all, a reliable means of sealing the pum.

The EagleBurgmann solution

In 1997, the compression packing was replaced with a type HGH210/225-E1-A1 semi-split EagleBurgmann mechanical seal because of the problem outlined above. The mechanical seal has been in use without maintenance or problems for 12 years of operation until the next scheduled pump overhaul. Type HGH split mechanical seals have already proven their worth in many other applications, typically in cooling water pumps in the fields of water and sewerage engineering, power station technology and seawater desalination plants.

The HGH can be found working successfully in the Vousaari (Finland), Yellow River (China) and Pulau Seraya (Singapore) power stations. It also represents a reliable solution for water turbine applications (e.g., the Sao Joaquim hydroelectric plant in Brazil).

Features and customer benefits

- Split single seal
- Multiple springs
- Independent of the direction of rotation
- Balanced
- Split wearing parts: Sliding elements and O-Rings
- Split stationary seat can be used on both sides
- Springs are product-protected
- Robust and reliable sealing solution
- Cost-effective as the pump does not have to be fully disassembled for maintenance
- Reduces down and assembly times

Operating conditions

Medium: Temperature of Baltic seawater:
t = 25 °C (77 °F)
Max. operating pressure:
p = 2.25 bar (23.63 PSI)
Rotational speed: n = 490 rpm
Shaft diameter: 195 mm
Pump type: Halberg KAAA 1500/110
Sealing solution: Single seal
HGH210/225-E1-A1
Seal material: Q2Q2PGG1

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