

**KSB mechanical seals for
energy applications**



Single-source supplier: your partner for pumps, valves and service

We are your partner for the entire product life cycle. Customised service solutions, short response times and an extensive product portfolio – no other competitor offers a comparable range of products and services.



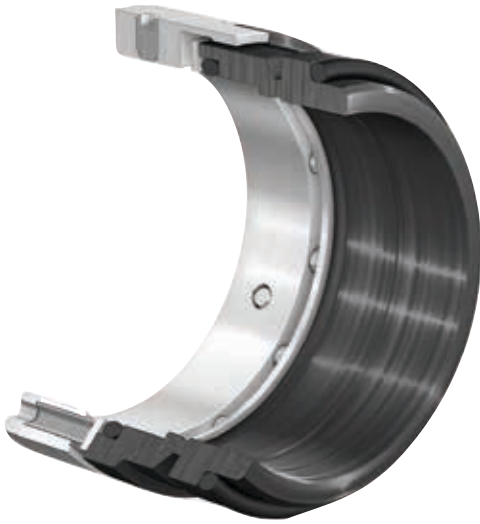
From initial consultancy to planning, installation, operation, maintenance and comprehensive service concepts, we are on hand as your reliable partner to provide solutions for every situation and requirement – over the entire product life cycle. We offer service and spare parts solutions as part of our comprehensive customer care – not only for KSB pumps and valves but also for all sorts of rotating equipment of all makes.

KSB mechanical seals

Our range of tailored spare parts services plays a major role in the service portfolio. This includes KSB mechanical seals. As well as impressing with a robust design, they offer service-friendly installation and optimal integration in the seal chamber. Tried and tested quality.



Perfect sealing solutions for transporting feed water and condensate in power stations



5HG-BM3 for HG

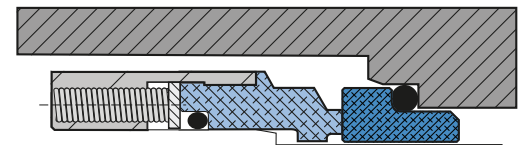
KSB's 5HG-BM3 mechanical seal series is the perfect sealing solution for the HG pump series used for transporting feed water and condensate in power stations. The single mechanical seal can be fitted in the pump in different versions and arrangements, depending on the application. This means that the seal is always optimally matched to the operating conditions. Perfectly matched to the application range of the pump, this high-quality mechanical seal has a very long seal life and ensures reliable operation.

Design	Single mechanical seal
Type	Dynamic or stationary, balanced
Springs	Multi-spring arrangement
Direction of rotation	Bi-directional

Variants

BM3A

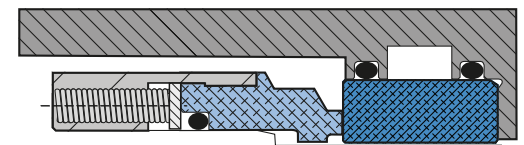
Operating pressure	Up to 40 bar
Temperature	Up to 200 °C*
Seal size	060, 065, 085, 090, 095, 100
Spring travel	± 3 mm



BM3A – Standard variant

BM3C

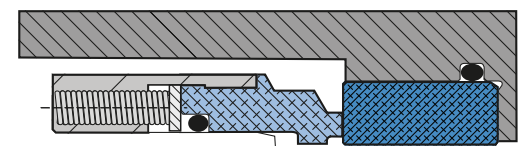
Operating pressure	Up to 40 bar
Temperature	Up to 170 °C*
Seal size	060, 085, 090, 095
Spring travel	± 3 mm



BM3C – Variant with cooled mating ring

BM3S

Operating pressure	Up to 40 bar
Temperature	Up to 200 °C*
Seal size	060, 085, 090, 095
Spring travel	± 3 mm



BM3S – Variant with special mating ring

*Maximum temperature depending on the operating mode of the pump



Robust sealing solutions for applications with **high pressures and temperatures**

4RPQ for RPH

4RPQ is a stationary, balanced cartridge seal with multi-spring arrangement outside the fluid handled. The mechanical seal features threaded connections for flushing out leakage at the atmospheric side.



Design	Single cartridge seal
Type	Stationary, balanced
Springs	Multi-spring arrangement
Direction of rotation	Bi-directional

4EDTMP for RPH

Single mechanical seal specially developed for hot water applications, with hook sleeve and “thermal barrier”. In combination with a cooled pump cover and cooler (Plan 23) optimum operating conditions are ensured in the seal chamber. The mechanical seal comes with a floating throttling bush as standard, which can be used for a gas or steam quench.



Design	Single cartridge seal
Type	Dynamic, balanced
Springs	Multi-spring arrangement
Direction of rotation	Uni-directional



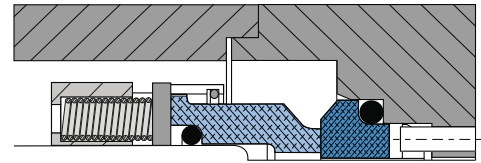
Tailored sealing solutions for the HDA, HDB and HG pump type series

For all applications of these pumps KSB has a perfectly matching mechanical seal on offer. The range comprises the 4HD component seal as well as the cartridge seals 4HDS (4HGS) and 4HDSC (4HGSC). Installing the 4HD is greatly facilitated by a circlip holding together the dynamic unit. The 4HDS (4HGS) cartridge seal is available with a quench connection as standard. High temperatures are accommodated by the 4HDSC (4HGSC) seal with cooled mating ring.

Design	Single mechanical seal
Type	Dynamic, balanced
Springs	Multi-spring arrangement
Direction of rotation	Bi-directional

4HD

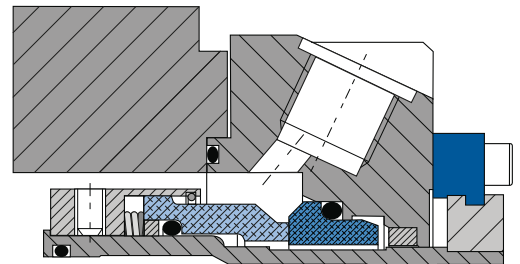
Operating pressure	Up to 25 bar
Temperature	Up to 200 °C*
Spring travel	± 3 mm to ± 4 mm**



4HD – Component seal

4HDS / 4HGS

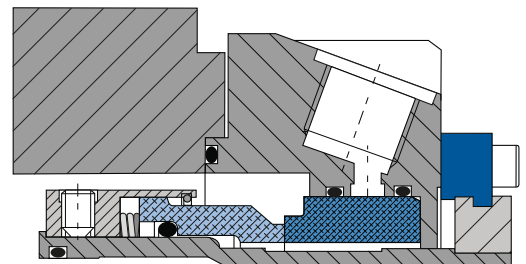
Operating pressure	Up to 30 bar
Temperature	Up to 150 °C*
Spring travel	± 3 mm to ± 4 mm**



4HDS – Cartridge seal

4HDSC / 4HGSC

Operating pressure	Up to 30 bar
Temperature	Up to 160 °C*
Spring travel	± 3 mm to ± 4 mm**



4HDSC – Cartridge seal with cooled mating ring

* Maximum temperature depending on the operating mode of the pump. In combination with a cooler (Plan 23) suitable for higher temperatures. For this operating mode the seal is designed with a pumping screw (uni-directional).

** Depending on the seal size

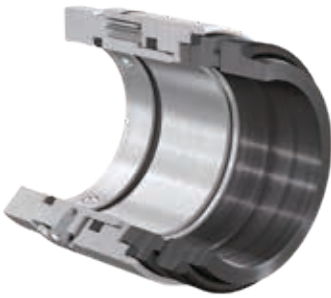
4KST for HPH



The robust 4KST single mechanical seal is designed for operating conditions with extremely high pressures and temperatures, making it the perfect match for HPH hot water pumps. The special design with hook sleeve does away with the need for an axial adjusting dimension; the seal is always perfectly positioned on the pump shaft.

Design	Single mechanical seal
Type	Stationary, balanced
Springs	Multi-spring arrangement
Direction of rotation	Bi-directional

4HL for HPK-L, Etanorm-RSY and 4HLQ for HPK-L



The 4HL single mechanical seal is used for the HPK-L and Etanorm-RSY type series.

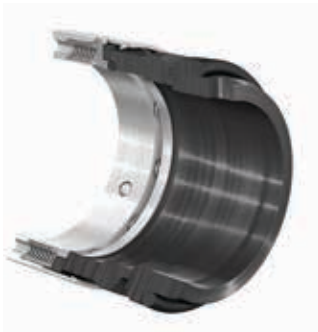


Combined with the 4HLQ with quench system, this is an optimal sealing solution for demanding fluids.

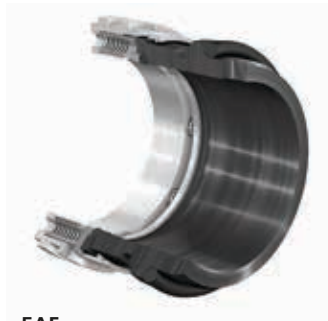
Design 4HL	Single mechanical seal
Design 4HLQ*	Single cartridge seal
Type 4HL	Dynamic, balanced
Type 4HLQ*	Dynamic, unbalanced
Springs	Multi-spring arrangement
Direction of rotation	Bi-directional

* Available in similar design for Etanorm-RSY

5A and 5B for all KSB pump type series with a standardised seal to EN 12756



5BHP



5AF

Design	Single mechanical seal
Type 5A	Dynamic, unbalanced
Type 5B	Dynamic, balanced
Operating pressure	5A: up to 16 bar dynamic 5B: up to 25 bar dynamic Up to 37.5 bar static
Temperature	-30 °C to 220 °C*

* Maximum temperature depending on the operating mode of the pump

The standardised seal to EN 12756 can be used for a large variety of applications, also with a quench system or as a double seal in back-to-back arrangement. For applications with very high pressures, standardised seal 5BHP is used. The special shape of the primary ring prevents tilting of the seal faces. 5AF is a variant of the standardised seal with pumping screw.

KSB auxiliary systems

KSB is able to provide the full range of seal auxiliary systems for all kinds of application. KSB's thermosyphon systems, quench systems and heat exchangers supply the mechanical seals with clean and cool fluids in order to increase the seals' life time.

Thermosyphon system

The SDPN16 system supplies double mechanical seals with pressurised barrier fluid (Plan 53A) or unpressurised buffer fluid (Plan 52). It is used for applications where leakage to atmosphere must be minimised, collected or completely ruled out.

Quench system

The KWT51 system is used to provide an atmospheric quench to single mechanical seals. It is used for applications where leakage to atmosphere must be collected or diluted.

Heat exchanger

The RWT23 tube-in-tube heat exchanger is used for cooling the fluid handled in the seal chamber of single or double mechanical seals. It prevents vaporisation of the fluid handled between the seal faces. This markedly increases the seal life.



SDPN16

Pressure	Up to 16 bar
Temperature	-60 °C to 200 °C
Total volume	8 litres

KWT51

Pressure	Unpressurised
Temperature	-40 °C to 120 °C
Total volume	3 litres

RWT23

Process side	Up to 50 bar / -29 °C to 270 °C
Cooling water side	Up to 20 bar / -29 °C to 100 °C



Technology that **makes its mark**

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