

## Simple replacement, double benefit: KSB's direct retrofit mechanical seals



### Easy installation, long service life, low maintenance costs

A pump only works as well as each and every of its individual components. As one of the core components, the mechanical seal plays an important role. Should it fail, high costs are often incurred. For this reason, a high-quality mechanical seal that is fast to replace is crucial for trouble-free pump operation.

KSB's direct retrofit programme offers high-quality mechanical seals that can be installed in the pump quickly and easily without requiring any adjustments. The robust and wear-resistant design of the single seals makes for a long service life which, in turn, ensures low maintenance costs.

#### Our direct retrofit mechanical seals:

- 4HL – for KSB's HPK-L type series
- 4KBL – for KSB's KWP-Bloc type series
- 4OM – for KSB's Omega type series
- 4RD – for KSB's RDLO type series


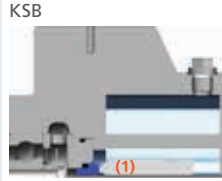


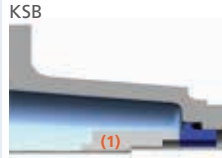
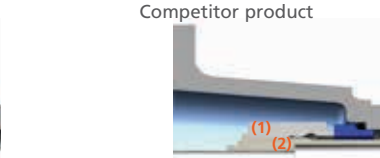

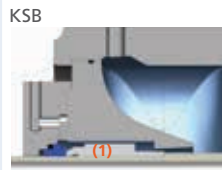
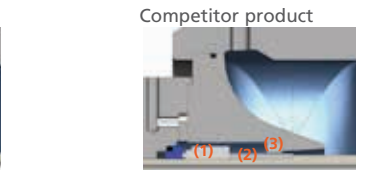



#### Your benefits

- One contact person for the entire system: service, pump, mechanical seal
- High-quality engineering at reasonable prices
- Easy installation – no need for modifications
- Maximum system availability and reliability
- Short delivery and response times as almost all types and sizes are in stock
- On request: special materials without high extra costs

# Technical details of KSB's direct retrofit mechanical seals

All mechanical seals, except for type 4RD, comprise the shaft protecting sleeve or spacer sleeve of the pump. The primary ring is integrated in a complete, dynamic unit which cannot fall apart. The advantage of this design: The dynamic unit can be fitted as one component, eliminating the risk of any damage during installation.

On competitor seals, the dynamic O-ring is fitted on a shaft protecting sleeve. The axial movements of the O-ring can lead to rubbing contact on the shaft protecting sleeve, which will then need to be replaced after some time. On KSB's seals (except 4RD) the dynamic O-ring is always fitted on a part of the mechanical seal, which prevents any damage to the shaft protecting sleeve of the pump. You benefit from low maintenance costs.

	Type	Characteristics
	<p><b>4HL</b> – for KSB's HPK-L type series</p>	<ul style="list-style-type: none"> <li>▪ Shaft protecting sleeve (2) integrated in the seal (1) → Single-piece dynamic unit facilitates installation</li> <li>▪ Visual alignment groove for optimum pre-loading</li> </ul> <div style="display: flex; justify-content: space-around;"> <div data-bbox="871 824 1093 1003"> <p>KSB</p>  </div> <div data-bbox="1093 824 1474 1003"> <p>Competitor product</p>  </div> </div>
	<p><b>4KBL</b> – for KSB's KWP-Bloc type series</p>	<ul style="list-style-type: none"> <li>▪ Shaft protecting sleeve (2) integrated in the seal (1) → Single-piece dynamic unit facilitates installation</li> <li>▪ Multi-spring arrangement outside the fluid → Especially good for fluids with high solids contents</li> </ul> <div style="display: flex; justify-content: space-around;"> <div data-bbox="871 1149 1093 1305"> <p>KSB</p>  </div> <div data-bbox="1093 1149 1474 1305"> <p>Competitor product</p>  </div> </div>
	<p><b>4OM</b> – for KSB's Omega type series</p>	<ul style="list-style-type: none"> <li>▪ Spacer sleeve (2) and throttling ring (3) integrated in the seal (1) → Single-piece dynamic unit facilitates installation → Automatic axial positioning of the seal</li> </ul> <div style="display: flex; justify-content: space-around;"> <div data-bbox="871 1440 1093 1608"> <p>KSB</p>  </div> <div data-bbox="1093 1440 1474 1608"> <p>Competitor product</p>  </div> </div>
	<p><b>4RD</b> – for KSB's RDLO type series</p>	<ul style="list-style-type: none"> <li>▪ Easy to install without adjustment dimension</li> <li>▪ Directly interchangeable</li> </ul> <div style="display: flex; justify-content: space-around;"> <div data-bbox="871 1731 1093 1921"> <p>KSB</p>  </div> <div data-bbox="1093 1731 1474 1921"> <p>Competitor product</p>  </div> </div>