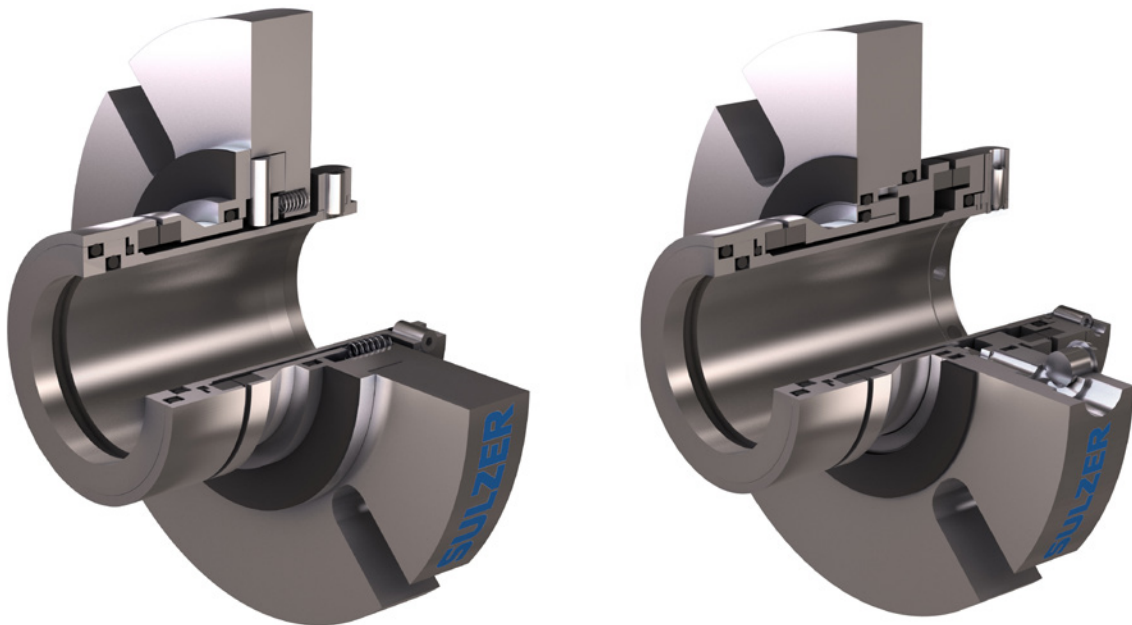


TS1, TS2 and TS2P Cartridge Mechanical Seals



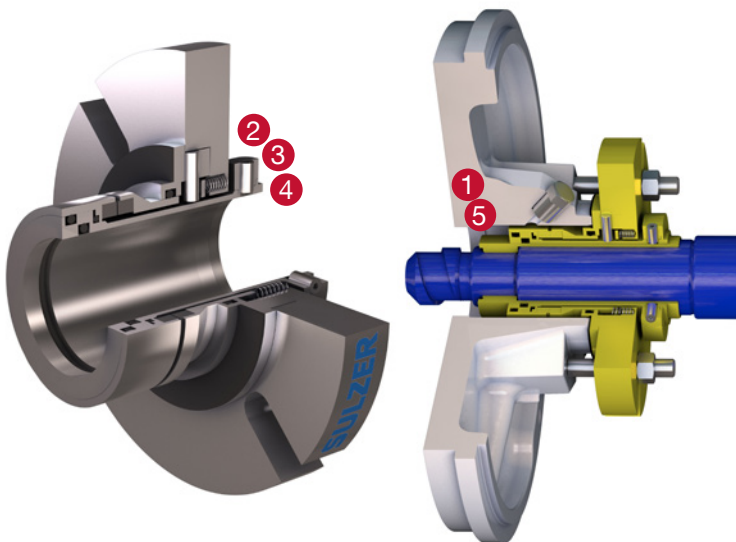
Simple and Robust Design Maximize Reliability in Operation

- 1 TS1 and TS2 cartridge seals are designed as universal shaft seals for the seal chamber of the standard gland packing casing cover and for the standard shaft sleeve of the gland packing.
- 2 The cartridge seal forms one solid unit having its own sleeve, fixing flange, seal faces, springs and all necessary O-rings, gaskets, setting clips and fixing crews.
- 3 By the setting clips, the cartridge seal is set radially and axially in the right location during assembly.
- 4 The seal is fixed on the pump shaft or on the shaft sleeve by set screws and into the casing cover by studs and nuts utilizing fixing slots (4x90°) on the seal flange.
- 5 Since cartridge seals can be fitted to the standard casing cover of all kinds of pumps and rotating flow machines, it is possible to use the same seal types in a variety of pumps and other machines.

Technical Specifications / Material Alternatives

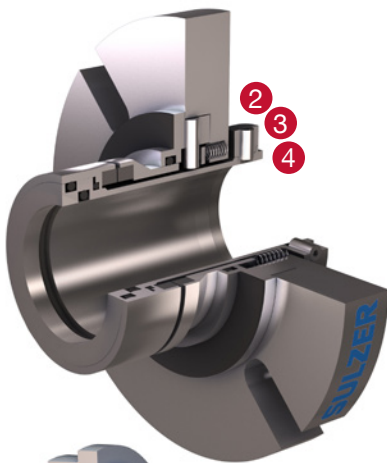
	TS1	TS1 with Flushing	TS2 / TS2P
P_{max}	25 bar / 363 psi	25 bar / 363 psi	25 bar / 363 psi
V_{max}	25 m/s / 82 ft/s	25 m/s / 82 ft/s	25 m/s / 82 ft/s
T_{max}	125°C / 257°F	140°C / 284°F with internal flushing 140°C / 284°F with external flushing	180°C / 355°F
Seal faces	SiC/SiC, C/SiC	SiC/SiC, C/SiC	SiC/SiC-SiC/SiC SiC/SiC-C/SiC
O-rings	EPDM, FKM	EPDM, FKM	EPDM, FKM
Other parts	AISI 316, AISI 329	AISI 316, AISI 329	AISI 316, AISI 329

TS1 Cartridge Single Mechanical Seals



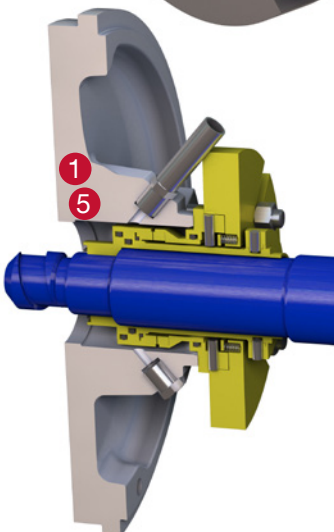
- The seal faces are lubricated by the pumped liquid pumped through the impeller balancing holes into the seal chamber
 - Positive inlet pressure is required
 - Impeller balancing holes are required
- **Liquids:**
 - Clean and slightly contaminated liquids
 - Viscous liquids
 - Fibrous slurries up to 2 - 4 % depending on quality
- Temperature up to 125°C / 257°F

TS1 Cartridge Single Mechanical Seals with Flushing



Internal Recirculation Liquids

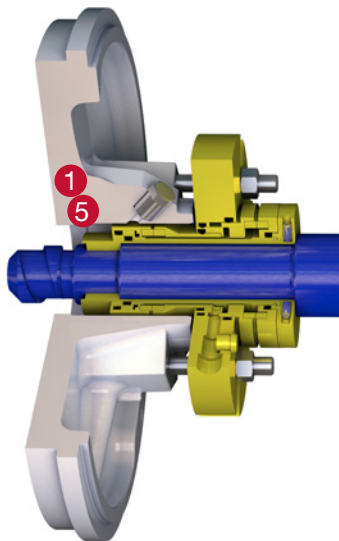
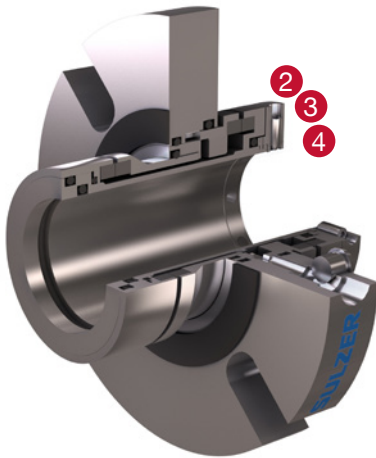
- The seal faces are lubricated by the pumped liquid which is circulated through a pipe from the discharge pipe into the seal chamber
 - Positive or negative inlet pressure
 - Impeller balancing holes are not required, but can be
- **Liquids:**
 - Clean and slightly contaminated liquids
 - Viscous liquids up to 250 cSt
- Temperature up to 140°C / 284°F depending on the seal chamber pressure



External Flush Liquids

- The seal faces are lubricated by external clean flushing liquid led through a pipe from an external source into the seal chamber
 - Positive or negative inlet pressure
 - Impeller balancing holes are not required, but can be
- **Liquids:**
 - Clean and slightly contaminated liquids
 - Viscous liquids up to 4,000 cSt
 - Fibrous slurries up to 8%
 - Non-fibrous slurries up to 70%
 - Liquids containing large solids
- Temperature up to 140°C / 284°F

TS2 Cartridge Mechanical Seals



- The seal faces are lubricated by non-pressurized (quench) or pressurized (barrier) external clean sealing liquid led through a pipe/hose from an external source into the seal between the seal face pairs
 - Positive or negative inlet pressure
 - Impeller balancing holes are not required, but can be
- Temperature of the out-flowing sealing liquid may not exceed 60°C / 140°F
- Liquids:
 - Clean and slightly contaminated liquids
 - Viscous liquids up to 4,000 cSt
 - Fibrous slurries up to 8%
 - Liquids containing large solids
- Temperature up to 180°C / 355°F

TS2P Cartridge Mechanical Seal

Sulzer TS2P seal is intended for use especially in closed circulation sealing liquid systems. The seal has a structure that pumps sealing liquid, so a separate circulation pump for sealing liquid is not needed.

We Do What We Say

Customer Partnership

- We are **reliable partners**.
- We provide a **high level of service**.
- We **make our customers more competitive**.



Committed People

- We drive **accountability**.
- We are **open and transparent**.
- We are **team players**.



Operational Excellence

- We **focus on results**.
- We take **initiative** and work within **established processes**.
- We **act safely**.



A Global Specialist at Your Doorstep

Sulzer serves clients worldwide through a network of over 150 production and service sites and has a strong footprint in emerging markets.





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