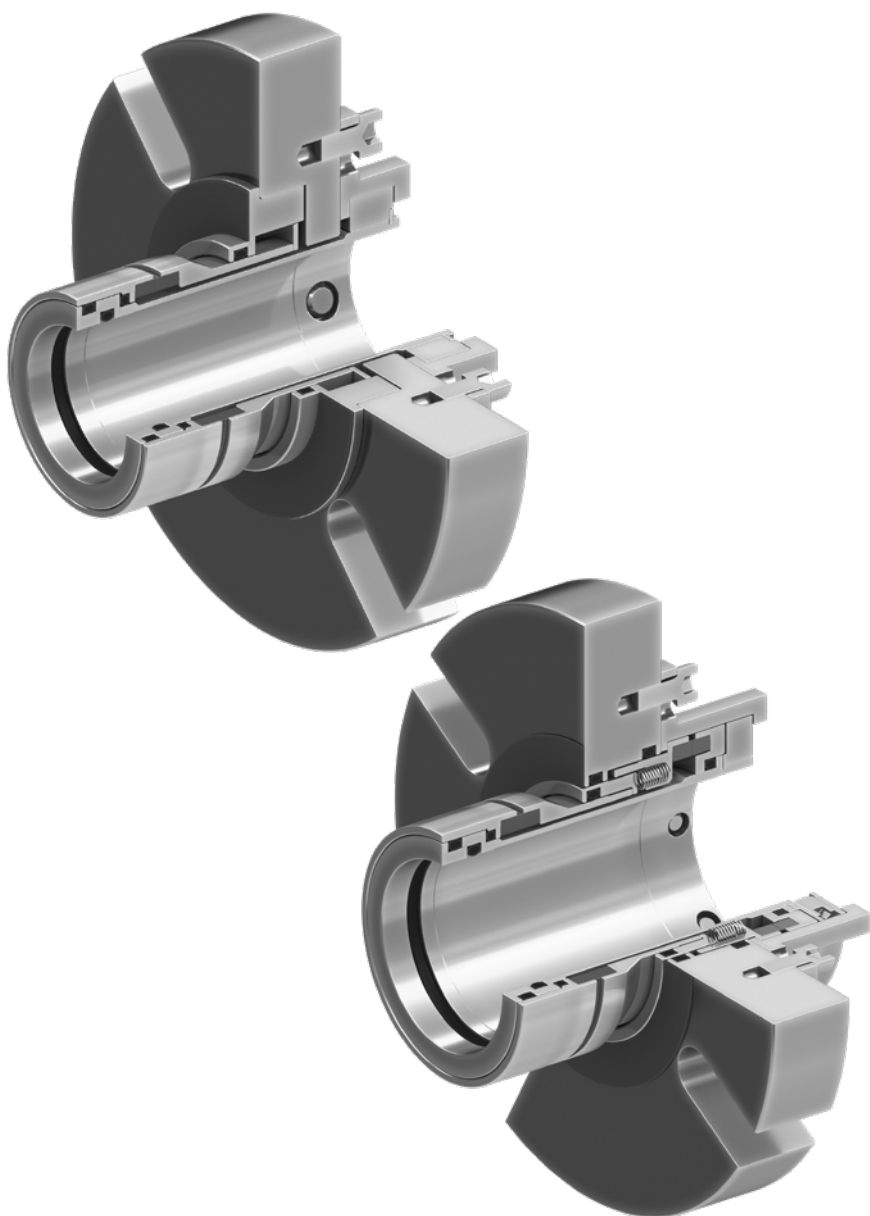


## TS1, TS2 and TS2P cartridge mechanical seals



# Versatile cartridge seals for effective shaft sealing

TS1 and TS2 cartridge seals are designed to be used as universal shaft seals for standard gland packing casing covers and standard shaft sleeves of gland packings.

Each cartridge seal forms a single, self-contained unit with its own sleeve, fixing flange, seal faces, springs, and all the necessary O-rings, gaskets, setting clips, and fixing screws.

Setting clips enable easy and accurate positioning of the cartridge seal during assembly. The seal is secured on the pump shaft or shaft sleeve using set screws, and on the casing cover with studs and nuts.

Cartridge seals can be installed in the standard casing covers of various pumps and rotating equipment. This versatility allows the use of the same seal types in a variety of different pumps and other machinery.

## Technical specifications

|                        | <b>TS1</b>        | <b>TS1 with flushing</b>   | <b>TS2 / TS2P</b> |
|------------------------|-------------------|--|-------------------|
| <b>P<sub>max</sub></b> | 25 bar / 363 psi  | 25 bar / 363 psi   | 25 bar / 363 psi  |
| <b>V<sub>max</sub></b> | 25 m/s / 82 ft./s | 25 m/s / 82 ft./s  | 25 m/s / 82 ft./s |
| <b>T<sub>max</sub></b> | 125°C / 257°F     | 140°C / 284°F with internal flushing<br>140°C / 284°F with external flushing | 180°C / 355°F     |

## Material alternatives

| <b>Part</b>         | <b>TS1</b>   | <b>TS1 with flushing</b> | <b>TS2 / TS2P</b>                |
|---------------------|--|--------------------------|----------------------------------|
| <b>Seal faces</b>   | SiC/SiC, C/SiC   | SiC/SiC, C/SiC           | SiC/SiC-SiC/SiC<br>SiC/SiC-C/SiC |
| <b>O-rings</b>      | EPDM, FKM  | EPDM, FKM                | EPDM, FKM                        |
| <b>Wetted parts</b> | 316 stainless steel (EN 1.4401, EN 1.4436), duplex EN 1.4462, super duplex EN 1.4410 |                          |                                  |

# TS1 cartridge single mechanical seals

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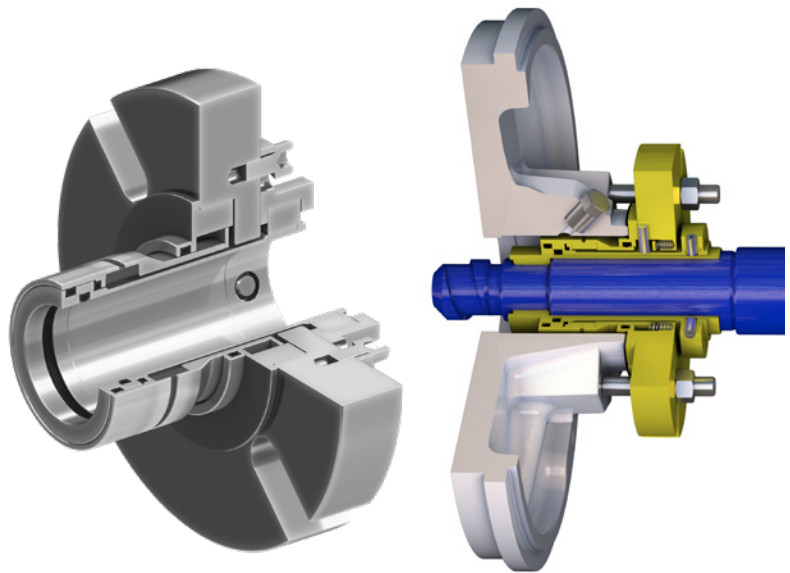
The seal faces are lubricated by the pumped liquid pumped through the impeller balancing holes into the seal chamber

- Positive inlet pressure is required
- Impeller balancing holes are required

Liquids:

- Clean and slightly contaminated liquids
- Viscous liquids
- Fibrous slurries up to 2%

Temperature up to 125°C / 257°F



# TS1 cartridge single mechanical seals with flushing

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## 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

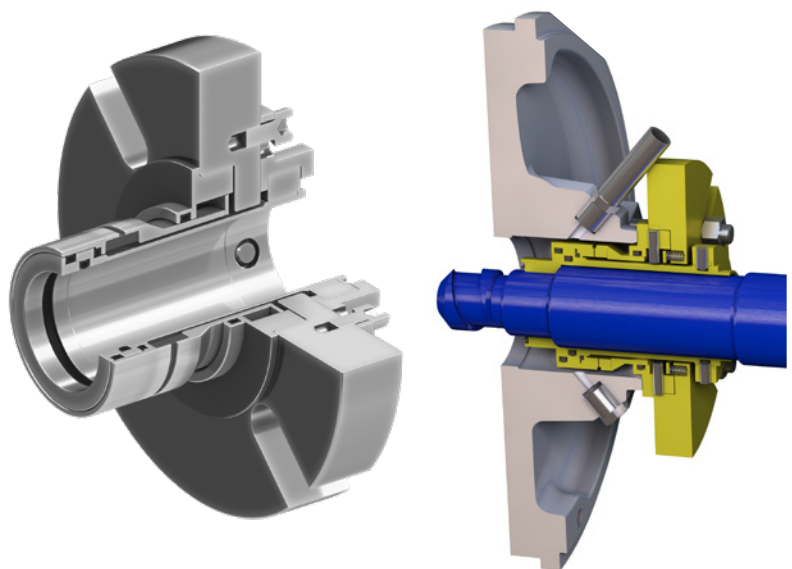
The seal faces are lubricated by external clean flushing liquid led through a pipe from an external source into the seal chamber

- 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

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The seal faces are lubricated by non-pressurized (buffer) or pressurized (barrier) external clean sealing liquid led through a pipe/hose from an external source into the seal between the seal face pairs

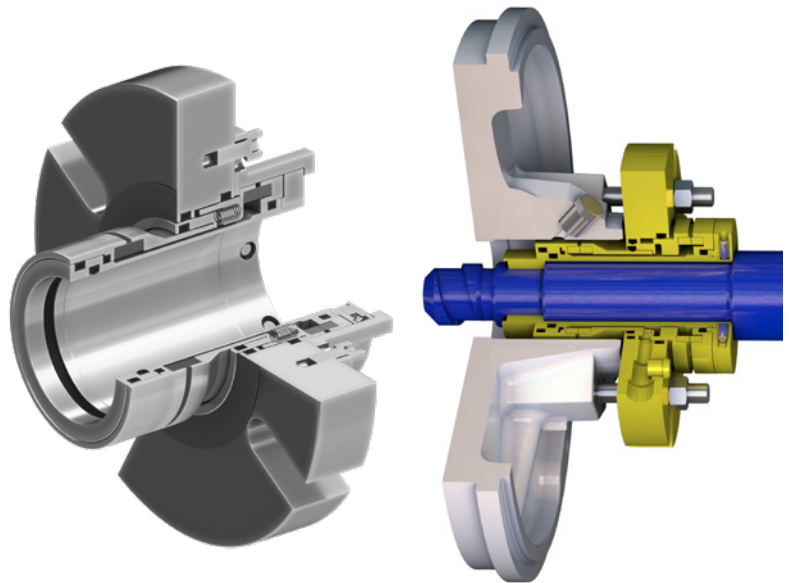
- Positive or negative inlet pressure
- Impeller balancing holes are not required, but can be

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.

**The Sulzer Flow division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.**

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The Flow division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

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