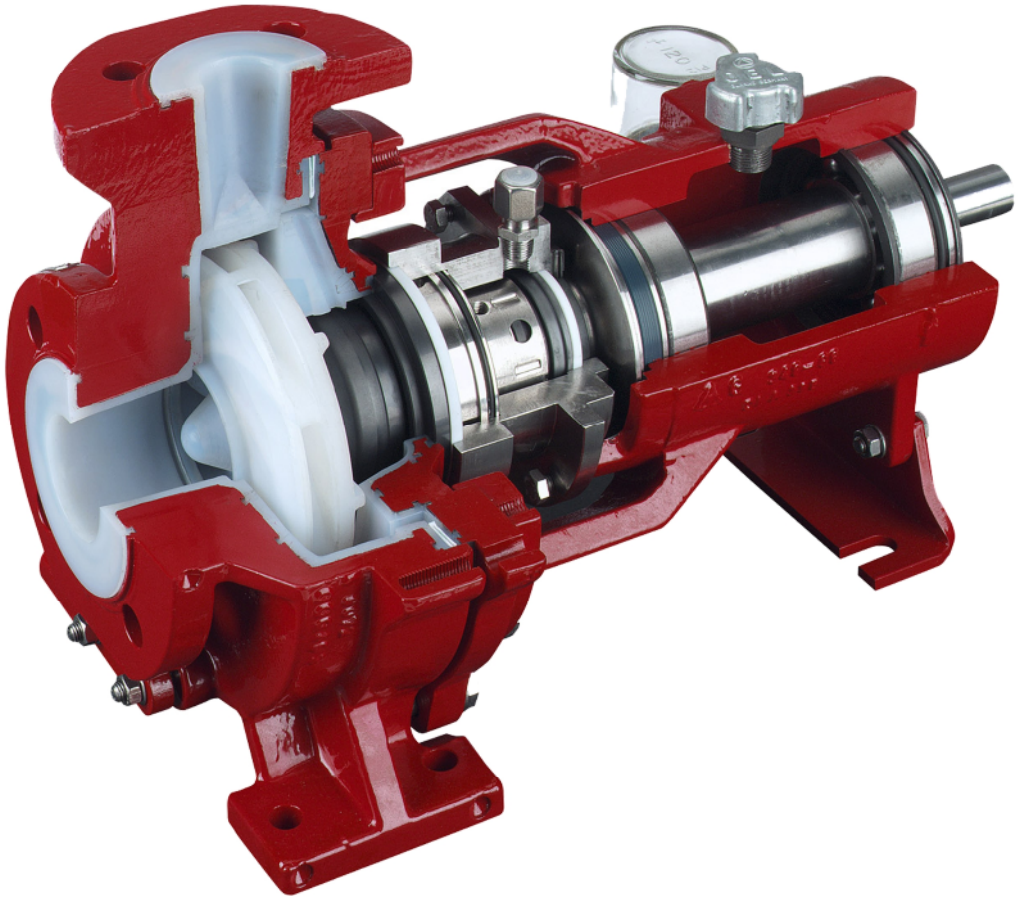
INSTALLATION AND OPERATING MANUAL

Translation of the original manual

Series SCK

Mechanical Seal RG-4

stationary, single



Keep for future use!

This operating manual must be strictly observed before transport, installation, operation and maintenance

9220-061-en Revision 10 Edition 03/2010

RICHTER
Process Pumps & Valves

List of Contents

Relevant documents

- Operating manual SCK long-life grease and oil bath lubrication **9220-050-en**
- Operating manual mechanical seal of the manufacturer

1 Technical data

Manufacturer :

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D-47906 Kempen
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E-Mail: richter-info@idexcorp.com
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Authorised person acc. to machinery directive 2006/42/EG: Gregor Kleining

Designation :

Series SCK mechanical seal:

- RG-4, stationary, single

Materials :

Wetted parts:

Mechanical seal : SSiC, Al_2O_3/PTFE glass, etc., see also data sheet

Temperature range : see installation and operating manual SCK, Section 1.

Temperature classes : see installation and operating manual SCK, Section 2.6.7.

2 Safety, transport and storage

The relevant sections in the adjacent installation and operating manuals apply to safety, transport and storage.

This installation and operating manual is only valid in conjunction with the installation and operating manuals of

SCK long-life grease and oil bath lubrication **9220-050-en**

2.1 Intended use

Single mechanical seals for plastic-lined pumps of the series SCK are suitable for the use of aggressive and pure media.

The instructions contained in the operating manual or contractual documentation are to be observed, if necessary consult the manufacturer.

All the important features are documented in the data sheet included in the scope of delivery.

3 Product description

For a product description of the pump, see the installation and operating manual for the SCK series.

The **sectional drawing** shows a stationary single mechanical seal RG-4. See **Section 7.1**.

All components which come into contact with the process medium are either lined with plastic or are made of other resistant materials, e.g. silicon carbide.

4 Commissioning / Shutdown

4.1 Initial commissioning

See installation and operating manual for the series SCK.

4.2 Mechanical seals

The design and material combination are specified in the data sheet.

The proper condition of the components and the protective facilities must be ensured to prevent any risk from escaping medium.

The regulations and recommendations of the mechanical seal manufacturer must always be observed.

4.2.1 Use in an explosive area

Use in an explosive area means that only mechanical seals may be employed which permit observation of temperature.

The operating manual of the respective mechanical seal manufacturer is an integral part of this general operating manual.

This permits, amongst other things, the calculation of the expected surface temperature at the mechanical seal. The suitability for the permissible temperature class as per ATEX is hereby given.

CAUTION:
The permissible temperature class of the complete unit (pump, mechanical seal, coupling, motor) is determined by the lowest temperature class of the individual components.

Example: Pump **T4**, mechanical seal **T3**, coupling **T4**, motor **T4**

In both cases the unit may only be used in atmospheres which may ignite above the temperature class T3, i.e. >200 °C (>392°F).

4.2.2 Stationary, single mechanical seal RG-4

Pumps fitted with a single mechanical seal must not be started up before they are filled with medium.

Otherwise the single mechanical seal is not lubricated and cooled and could be damaged.

See sectional drawing in **Section 7.1**.

4.3 Improper operation and their consequences (examples)

Inadmissible modes of operation, even for a short time, can result in serious damage to the unit.

In connection with explosion protection, potential sources of ignition (overheating, electrostatic and induced charges, mechanical and electric sparks) may result from these inadmissible modes of operation; their occurrence can only be prevented by adhering to the intended use.
For examples, see installation and operating manual SCK, **Section 6.6**.

5 Maintenance

The regulations of the mechanical seal manufacturer must always be observed.
See also the installation and operating manual for the SCK series.

5.1 Stationary, single mechanical seal RG-4

In normal operations this seal should not drip. For safe operations it is advisable to check the attachment screws of the seal housing for a tight fit from time to time.

Dismantling can be checked using the sectional drawings in **Section 7.2** and **Section 9** in the installation and operating manual SCK, also the available components.

5.2 Dismantling of stationary, single mechanical seal RG-4

- Remove the mating ring **475/1** and the flat gasket **400/1**.
- Remove the back plate (for sequence, see **Sections 4.2.1 and 7.7.4** in the installation and operating manual SCK) with the completely mounted stationary mechanical seal unit.
- Remove the seal face **472/1** and O-ring **412/3**.
- Remove drip ring **516** either with the seal face **472/1** or pull out of the rotary ring carrier **485/1** on its own.
- Remove centering ring **511**.
- Remove seal housing **483**. Pull the entire rotary ring carrier, comprising the rotary ring carrier **485/1**, stud **560/1**, spring **477/1**, thrust ring **474** and O-ring **412/5** out of the seal housing **483**.
- If plastic bearing points of the mating ring **475** or of the shaft sleeve **524** are destroyed, they can be renewed by the pump manufacturer.

5.3 Notes on assembly

- Only use original spare parts.
- Do not use any defective parts.
- The recommendations of the mechanical seal manufacturer are to be observed.
- Bearing pedestal group 3:
  Always make sure that when installing the mechanical seal the labyrinth disc is secured by 2 bolts.
  The bolts must be removed again after assembly of the impeller.
- The rotary ring carrier **485/1** must engage in the spring-type slotted pin **531/1**. Mark position beforehand and check depth.
- Press drip ring **516** into seal face **472/1**.
- The seal face **472/1** must engage in studs **560/1**. Mark position beforehand.
- When pushing on the mating ring **475/1,** make sure that the position of the flat section matches that on the shaft.

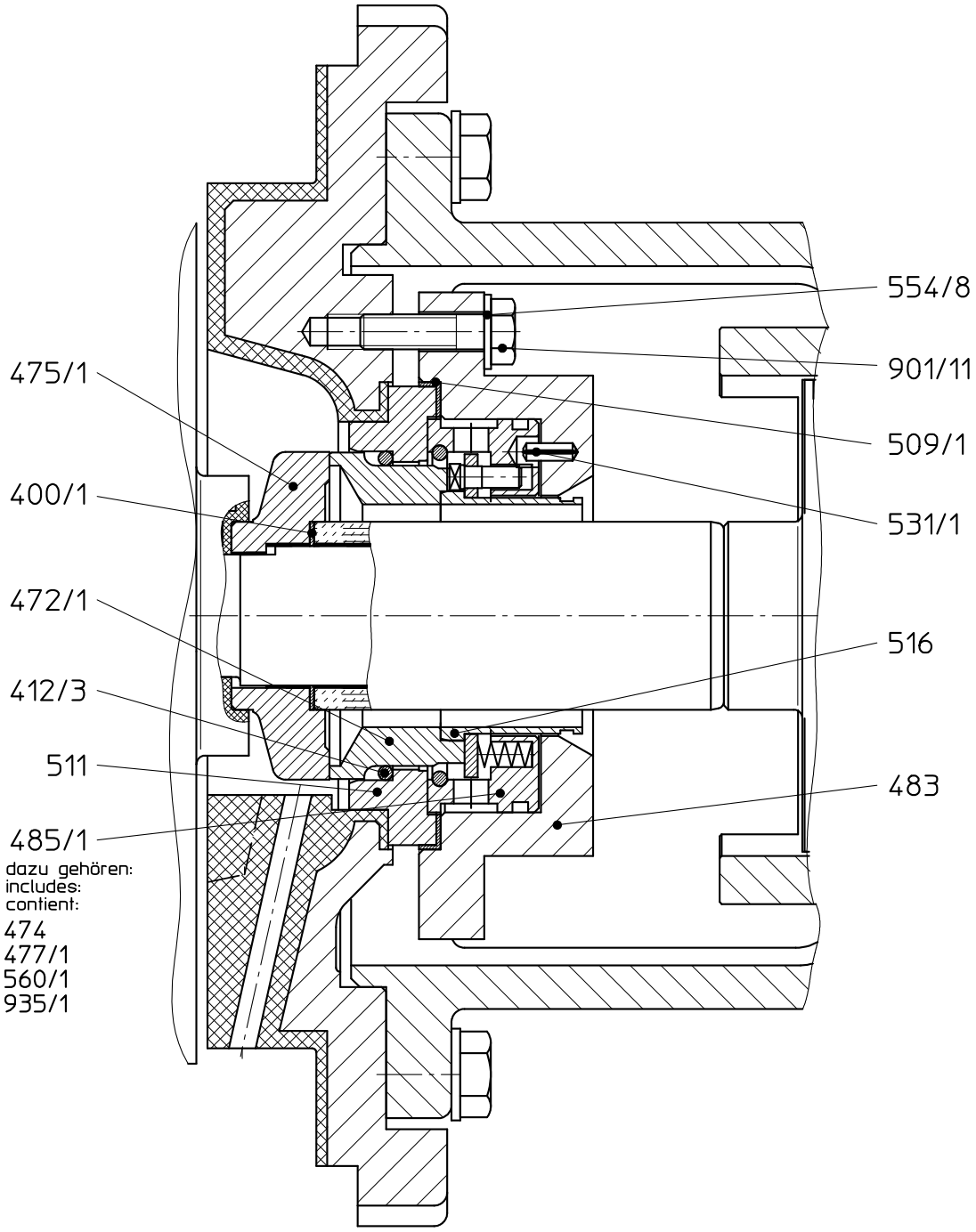
6 Faults

Faults may result from inadmissible modes of operation. Such inadmissible modes of operation – even brief ones – may cause serious damage to the unit.
In connection with explosion protection, potential sources of ignition (overheating, electrostatic and induced charges, mechanical and electric sparks) can result from these inadmissible modes of operation; their occurrence can only be prevented by adhering to the intended use.
See also **Section 2.1**.

Should there be any uncertainty about the remedy to be applied, please inquire at the in-house pump office or at the pump manufacturer's.

See also **Section 8** in the installation and operating manual of the SCK series.

7 Sectional drawing



161 back plate
210 shaft
400/1 flat gasket
412/3 o-ring
472/1 seal face
475/1 mating ring
483 seal housing
485/1 rotary ring carrier
includes
474 thrust ring
477/1 spring
560/1 stud
935/1 snap ring

509/1 intermediate ring
511 centering ring
516 drip ring
524 shaft sleeve
531/1 spring type slotted pin
554/8 washer
901/11 hex. screw