

INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

PROGRESSIVE CAVITY PUMP

KIBER KSF / KSFT



Translation of the original manual

01.611.30.14EN

(0) 2025/05



INOXPA S.A.U.

Telers, 60
17820 - Banyoles (Spain)

assume responsibility for declaring that

| | |
|----------------|---|
| Machine: | PROGRESSIVE CAVITY PUMP |
| Model: | KIBER KSF / KIBER KSFT |
| Type: | KIBER KSF-20, KIBER 2KSF-20, KIBER KSF-25, KIBER 2KSF-25, KIBER KSF-30, KIBER 2KSF-30, KIBER KSF-40, KIBER 2KSF-40, KIBER KSF-50, KIBER 2KSF-50, KIBER KSF-60, KIBER KSF-80, KIBER KSFT-20, KIBER 2KSFT-20, KIBER KSFT-25, KIBER 2KSFT-25, KIBER KSFT-30, KIBER 2KSFT-30, KIBER KSFT-40, KIBER 2KSFT-40, KIBER KSFT-50, KIBER 2KSFT-50, KIBER KSFT-60, KIBER KSFT-80 |
| Serial number: | IXXXXXXXXXX to IXXXXXXXXXX XXXXXXXXXXIINXXX to XXXXXXXXXXXIINXXX |

complies with the applicable provisions in the following directives:

Machinery directive 2006/42/EC
Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment
Regulation (EC) No 1935/2004
Regulation (EC) No 2023/2006

and with the following harmonised standards and/or regulations:

EN ISO 12100:2010
EN 809:1998+A1:2009/AC:2010
EN 60204-1:2018
EN ISO 14159:2008
EN 1672-2:2005+A1:2009
EN 12162:2001+A1:2009
EN ISO 13857:2019
EN IEC 63000:2018

The person signing this document drafted this Technical File.

David Reyero Brunet
Technical Office Manager
24 April 2025



Document: 01.611.30.15EN

Revision: (0) 2025/04



INOXPA S.A.U.

Telers, 60
17820 - Banyoles (Spain)

assume responsibility for declaring that

Machine: **PROGRESSIVE CAVITY PUMP**

Model: **KIBER KSF / KIBER KSFT**

Type: **KIBER KSF-20, KIBER 2KSF-20, KIBER KSF-25, KIBER 2KSF-25, KIBER KSF-30, KIBER 2KSF-30, KIBER KSF-40, KIBER 2KSF-40, KIBER KSF-50, KIBER 2KSF-50, KIBER KSF-60, KIBER KSF-80, KIBER KSFT-20, KIBER 2KSFT-20, KIBER KSFT-25, KIBER 2KSFT-25, KIBER KSFT-30, KIBER 2KSFT-30, KIBER KSFT-40, KIBER 2KSFT-40, KIBER KSFT-50, KIBER 2KSFT-50, KIBER KSFT-60, KIBER KSFT-80**

Serial number: **IXXXXXXXXXX to IXXXXXXXXXX
XXXXXXXXXXIINXXX to XXXXXXXXXXXIINXXX**

complies with the applicable provisions of the following regulations:

Supply of Machinery (Safety) Regulations 2008
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (as amended)

and with the following harmonised standards:

EN ISO 12100:2010
EN 809:1998+A1:2009/AC:2010
EN 60204-1:2018
EN ISO 14159:2008
EN 1672-2:2005+A1:2009
EN 12162:2001+A1:2009
EN ISO 13857:2008
EN IEC 63000:2018

The person signing this document drafted this Technical File.

David Reyer Brunet
Technical Office Manager
24 April 2025



Document: 01.611.30.16EN
Revision: (0) 2025/04

1. Table of contents

| | |
|--|----|
| 1. Table of contents | |
| 2. General considerations | |
| 2.1. Instruction manual | 5 |
| 2.2. Regarding compliance with the instructions | 5 |
| 2.3. Warranty | 5 |
| 3. Safety | |
| 3.1. Warning symbols..... | 6 |
| 3.2. General safety instructions | 6 |
| 4. General information | |
| 4.1. Description | 7 |
| 4.2. Application..... | 7 |
| 5. Installation | |
| 5.1. Taking delivery of the pump..... | 8 |
| 5.2. Identifying the pump | 8 |
| 5.3. Transportation and storage..... | 8 |
| 5.4. Location | 9 |
| 5.5. Pipework..... | 9 |
| 5.6. Auxiliary system for mechanical seals | 10 |
| 5.7. Pressure bypass | 11 |
| 5.8. Electrical installation | 12 |
| 6. Start-up | |
| 6.1. Start-up | 13 |
| 6.2. Checks when starting up the pump | 13 |
| 7. Troubleshooting | |
| 8. Maintenance | |
| 8.1. General considerations..... | 15 |
| 8.2. Check the mechanical seal | 15 |
| 8.3. Tightening torque | 15 |
| 8.4. Storage..... | 15 |
| 8.5. Cleaning..... | 15 |
| 8.6. Disassembling and assembling the pump..... | 16 |
| 9. Technical specifications | |
| 9.1. Particle size | 23 |
| 9.2. Weights | 23 |
| 9.3. KIBER KSF pump dimensions | 23 |
| 9.4. KIBER KSF pump with pressure bypass dimensions..... | 24 |
| 9.5. KIBER KSFT pump dimensions..... | 24 |
| 9.6. KIBER KSF pump exploded view and parts list..... | 25 |
| 9.7. KIBER KSFT pump exploded view and parts list..... | 27 |
| 9.8. Strengthened transmission..... | 29 |
| 9.9. Cooled mechanical seal | 29 |
| 9.10. Mechanical seal with a drag pin | 30 |

2. General considerations

2.1. INSTRUCTION MANUAL

This manual contains information about taking delivery of, installing, operating, assembling, disassembling and maintaining KIBER KSF and KIBER KSFT pumps.

Read the instructions carefully before starting up the pump, familiarise yourself with how the pump functions and operates, and follow the instructions provided closely. These instructions must be kept in a designated location near the installation area.

The information published in the instruction manual is based on current data.

INOXPA reserves the right to amend this instruction manual without prior notice.

2.2. REGARDING COMPLIANCE WITH THE INSTRUCTIONS

Failing to comply with the instructions may prove hazardous for operators, the environment and the machine, and may lead to a loss of rights for damage claims.

Failure to comply may derive in the following risks:

- the malfunction of important machine/plant functions,
- specific maintenance and repair procedure errors,
- potential electrical, mechanical, and chemical risks,
- potential environmental harm from released substances.

2.3. WARRANTY

Any warranty will be immediately and legally deemed void, and INOXPA will also be compensated for any product civil liability claim submitted by third parties, if:

- service and maintenance work took place without following the service instructions, our staff did not perform the repairs, or they were performed without our written authorisation,
- there are modifications to our material without prior written authorisation,
- neither the parts used nor the lubricants are INOXPA originals,
- the material was used incorrectly, negligently or without following the instructions and for the intended purpose.
- the pump parts are damaged from being subjected to high pressure because a safety valve is not in place.

The General Terms of Delivery already in your possession also apply.



The machine cannot be modified in any way without first checking with the manufacturer. For your safety, use original spare parts and accessories. The manufacturer will no longer be liable should other parts be used. Written authorisation from INOXPA is required for any potential change to the service conditions.

Please do not hesitate to contact us if you have any queries or require more in-depth explanations about specific data (adjustments, assembly, disassembly and so on).

3. Safety

3.1. WARNING SYMBOLS



General warning of danger to persons and/or the skid



Electrical hazard

ATTENTION

A safety instruction to prevent damage to the skid and/or its functions

3.2. GENERAL SAFETY INSTRUCTIONS



Read the instruction manual carefully before installing and starting up the pump. If in doubt, contact INOXPA.

3.2.1. During installation



Always consider the [Technical specifications of section 9](#).

Never start up the pump before connecting it to the pipework.

Check the specifications of the motor are correct, especially if there is a risk of an explosion due to the operating conditions.



Authorised staff must carry out all electrical work during installation.

3.2.2. During operation



Always consider the [Technical specifications of section 9](#).

3.2.3. During operation



Always consider the [Technical specifications of section 9](#).

NEVER remove the pump until the pipes have been emptied. Remember that fluid will always remain inside the body of the pump (if it does not come with a purge). Bear in mind that the fluid being pumped may be hazardous or extremely hot. Consult the regulations in effect in each country for these cases.

Do not leave loose parts on the floor.



ALWAYS disconnect the electrical power supply to the pump before starting maintenance.

Remove the fuses and disconnect the cables from the motor terminals.

Authorised staff must carry out all electrical work.

4. General information

4.1. DESCRIPTION

The compact and robust design KIBER KSF and KIBER KSFT progressive cavity pumps are part of the INOXPA range of positive displacement progressive cavity pumps for use with viscous fluids.

The pump contains two hydraulic parts, namely the rotor and the stator. The rotor is a circular cross-section worm screw. The stator has two ribs and its pitch is twice the rotor, meaning empty cavities remain between the stator and the rotor that are used to move the fluid. When the rotor turns inside the stator, the cavities move along from suction to discharge.

These types of pumps are suitable for pressures up to 6 bar for a single-phase stator and 12 bar for double-phase stator.

KSF pumps are designed with a totally hygienic and easy to clean transmission. On the KIBER KSFT, countersunk screws are used to secure the bolts. The discharge nozzle is eccentric.

A more robust transmission with a longer life for use in tough working conditions is available for the industrial sector.

The standard connections are DIN 11851. Other types of pump connections (CLAMP, SMS, RJT, EN 1092-1 PN-16 type 11, and so on) can also be chosen. Every part that comes into contact with the product being pumped is made of AISI 316L stainless steel. The stator is made of NBR, in accordance with the FDA standard, and an EN 12756 L1K mechanical seal is used for the standard seal.

This skid is suitable for use with food processes.

4.2. APPLICATION

KIBER KSF and KIBER KSFT pumps are suitable for high and low viscosity products, and for products containing soft particles.

Some of the main applications include pumping oil, wine, concentrates, viscous food products and beverages in general.

The characteristic curve of the pump defines the intended use.

ATTENTION



Each pump type has a limited field of use. The pump was selected for certain pumping conditions when ordering. INOXPA will not be liable for any potential damage should the purchaser have provided incomplete information (type of fluid, RPM, and so on).

5. Installation

5.1. TAKING DELIVERY OF THE PUMP



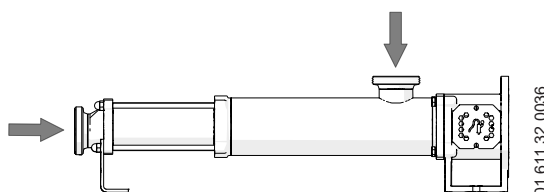
INOXPA will not be liable for any damage to the material during shipping or unpacking. Visually check the packaging remains intact.

The following documentation comes with the pump:

- shipping documents,
- a quick installation guide with access to the full instruction manual.

Unpack the pump and check:

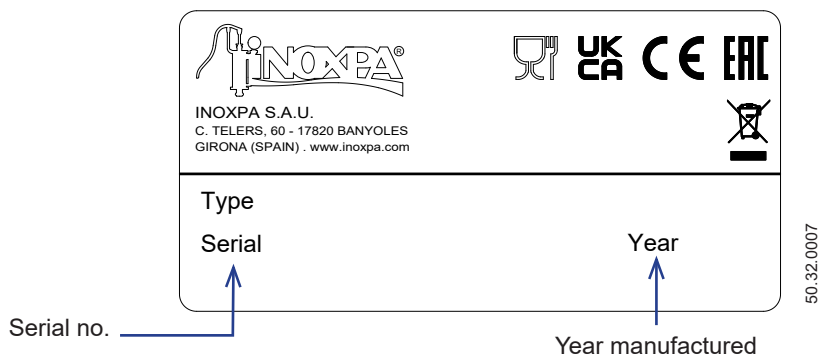
- The suction and discharge connections on the pump, removing any remaining packaging material.



- Check that the pump and motor have not been damaged.
- If not in good condition and/or parts are missing, the shipping carrier must submit a report as soon as possible.

5.2. IDENTIFYING THE PUMP

Each pump has a nameplate containing basic data to identify the model.



5.3. TRANSPORTATION AND STORAGE

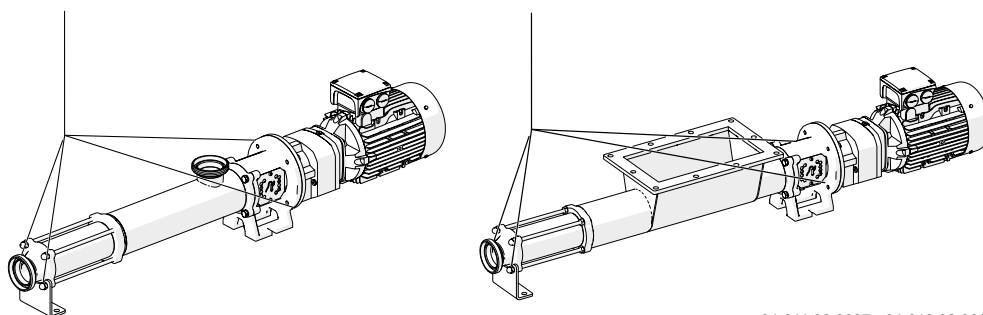
ATTENTION



KIBER KSF and KIBER KSFT pumps may be too heavy to be stored manually. Use a suitable means of transportation. Use the points indicated in the diagram for lifting the pump. Only authorised staff should transport the pump. Do not work or walk underneath heavy loads.

Lift the pump as indicated below:

- Always use two supporting points located as far away from each other as possible.



01.611.32.0037 - 01.612.32.0001

- Secure the points to prevent slippage.

See section [9. Technical specifications](#) for the dimensions and weights of the skid.

5.4. LOCATION

- Place the pump as close as possible to the suction tank, and below the fluid level whenever possible.
- Place the pump so there is enough space around it to provide access to both the pump and the motor. See section [9. Technical specifications](#) for the dimensions and weights of the skids.
- Place the pump on a flat and level surface.
- The base must be rigid, horizontal and protected against vibrations.

ATTENTION



Ensure suitable ventilation when installing the pump.
Any outdoor pump installation must be under a roof. The location must allow for easy access for inspection or maintenance tasks.



If the hopper remains uncovered once the KSF pump is installed in the system, it must be covered to prevent accidental operator access to the moving parts of the pump.

5.4.1. Excessive temperatures

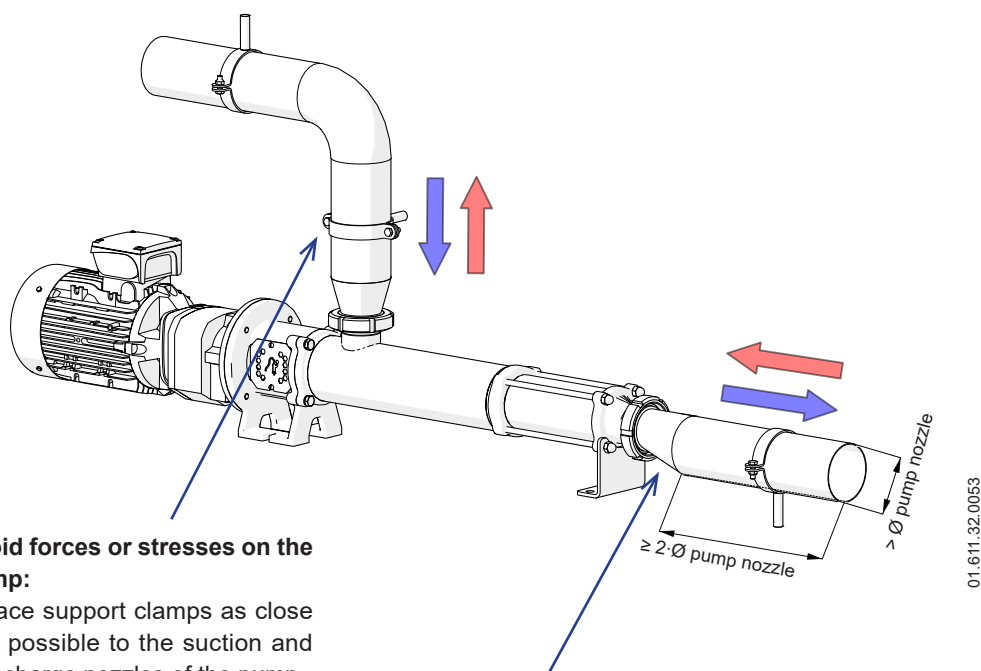
Temperatures inside and around the pump may become high depending on the fluid being pumped.



From 68°C upwards, protective measures must be taken for staff, and warnings posted regarding the potential hazard when touching the pump.
The selected protection type should not fully isolate the pump. This allows for greater cooling of the bearings and lubrication of the bearing housing.

5.5. PIPEWORK

Ideal installation for maximum pump efficiency:



01.611.32.0053

Avoid forces or stresses on the pump:

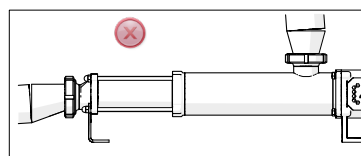
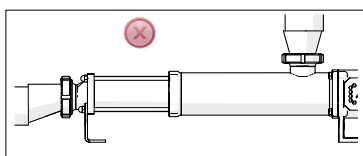
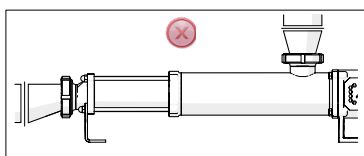
Place support clamps as close as possible to the suction and discharge nozzles of the pump. Expansion seals can be fitted between the pump and the suction/discharge pipes to absorb potential product volume changes, reduce mechanical stresses and reduce noise from vibrations.

Suitable suction and discharge pipes to prevent air pockets forming:

Use as few elbows and connections as possible.
Suction pipes: elbows placed as far as possible from the suction and eccentric reduction with horizontal suction.
Discharge pipe: concentric reduction.

Aligning the pump to the pipes correctly:

Pump nozzle centre ↔ pipe centre



01.611.32.0054

ATTENTION



The expansion seals must NOT compensate for incorrect assembly or be used to correct for incorrect pipe alignment.
Ensure the expansion seal connections are properly secured.

5.5.1. Shut-off valves

The pump can be isolated for maintenance. This involves installing shut-off valves to the suction and discharge connections of the pump.

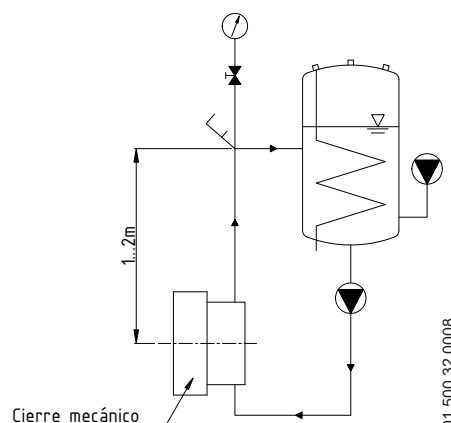


These valves must ALWAYS be open when the pump is operating.

5.6. AUXILIARY SYSTEM FOR MECHANICAL SEALS

The auxiliary system for the cooled mechanical seal is to be an external low-pressure buffer fluid.

The external fluid of the auxiliary system can be supplied using an open or closed circuit. If supplied using a closed circuit with a tank, the tank must be mounted vertically, within a maximum radius of 1 m from the double mechanical seal and 1 to 2 m above it. This distance can be smaller if a recirculation pump is installed.



Auxiliary fluid pipes are recommended to be made of stainless steel and as short and straight as possible so that the auxiliary fluid can flow easily.

The auxiliary fluid should always enter at the bottom and exit at the top of the seal chamber to avoid creating preferential pathways and to ensure the chambers are constantly filled with product.

Check the fluid level regularly. A change in the fluid level may indicate a leak from the double mechanical seal or from the auxiliary system circuit.

In addition to having its own preventive maintenance, the auxiliary fluid must be drained and changed after each seal failure or change.

The end user is always responsible for the choice of auxiliary fluid. INOXPA are not liable for the choice of auxiliary fluid.



ATTENTION

The auxiliary fluid for mechanical seals must always circulate when the pump is running.

5.6.1. Buffer fluid: cooled mechanical seal (quench)

Fluid at low pressure (buffer fluid) is used for the cooled mechanical seal (quench). The maximum pressure of the auxiliary fluid must be 50 kPa (0.5 bar) and the minimum flow rate of the auxiliary fluid must be 30 l/hour.

It is important that the auxiliary fluid is filtered and impurity-free in order to extend the useful life of the mechanical seal as much as possible. Furthermore, it must be chemically compatible with the pumped product to avoid any undesired reaction in the event of accidental mixing and with the materials of the mechanical seal so it doesn't get damaged.



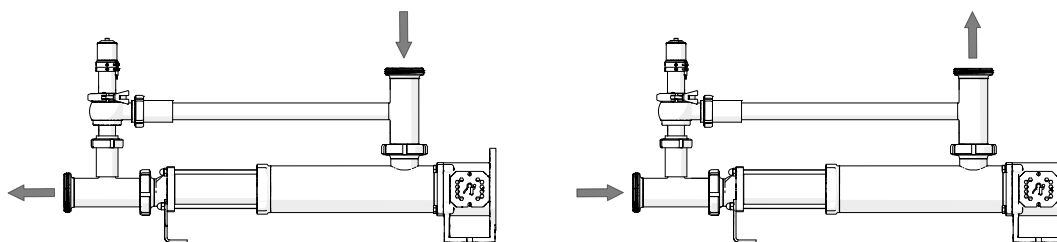
ATTENTION

The auxiliary fluid must be chemically compatible with the products requiring pumping and the materials of the mechanical seal.

5.7. PRESSURE BYPASS

If the pump comes with a pressure bypass, the pump can only rotate in one direction. This direction can be reversed if required by fitting a relief valve as shown in the following figure. The relief valve

comes set at the maximum pressure, which is 6 bar for the single-phase pump and 10 bar for double-phase pumps.



01.611.32.0041 - 0042



INOXPA always produce the pump with the bypass fitted to operate with the suction in the housing and discharge from the front.



If the pump does not come with a built-in pressure bypass, a relief valve or another device to limit the pressure to 6 bar for pumps with single-phase stator and 12 bar for pumps with double-phase stator must be fitted.

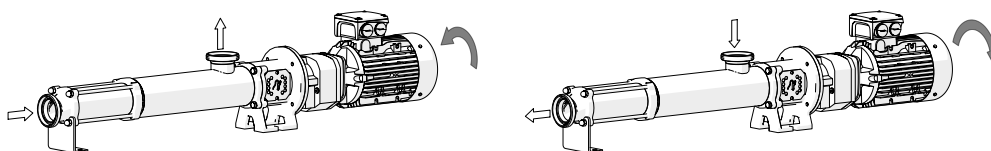
5.8. ELECTRICAL INSTALLATION



Qualified staff should connect the electric motors. Take whatever measures are necessary to prevent connection and cable faults.



The electrical equipment, and the terminals and components of the control system, may still carry a charge even when they are disconnected. Coming into contact with them can jeopardise operator safety or cause irreversible damage to the material. Ensure the motor is stopped before handling the valve.



01.611.32.0039 - 0040

ATTENTION



ALWAYS ensure there is fluid inside the pump when checking the direction of rotation of the motor.

For models with a sealing chamber in the mechanical seal, always ensure that the pump is filled with fluid before checking the direction of rotation.

6. Start-up



Read the instructions in section 5. [Installation](#) carefully before starting up the pump. Read section 9. [Technical specifications](#) carefully. INOXPA are not liable for the skid being used incorrectly.



NEVER touch the pump or the pipes if hot fluids are being pumped.

6.1. START-UP

- Open the suction and discharge pipe shut-off valves completely.
- Should fluid not flow towards the pump, fill it with the fluid to be pumped.



ATTENTION

The pump must NEVER rotate when dry.

- Check that the electrical power supply matches the indications on the motor nameplate.
- Check the motor rotates in the right direction.
- If the pump comes with double or cooled mechanical seal, fit the auxiliary connections in accordance with the values stated in chapter 9. [Technical specifications](#).

6.2. CHECKS WHEN STARTING UP THE PUMP

- Check the pump is not making any strange noises.
- Check the absolute inlet pressure is enough to prevent cavitation in the pump. - Look at the curve to see the minimum pressure required above the vapour pressure (NPSHr).
- Control the discharge pressure.
- Check there are no leaks around the seals.



ATTENTION

Do not use a shut-off valve to regulate the flow rate in the suction pipe. They must be fully open during operation.



ATTENTION

Monitor the consumption of the motor to prevent over-current.

7. Troubleshooting

The table below contains solutions for potential issues while operating the pump. It is assumed that the pump was installed and selected correctly for the use in question. Please contact INOXPA if technical support is required.

| | | | | | | | | | |
|---|---|---|---|---|--|--|--|--|--|
| Motor over-current. | | | | | | | | | |
| The pump flow rate or pressure falls short. | | | | | | | | | |
| There is no pressure on the discharge side. | | | | | | | | | |
| Irregular discharge flow rate / pressure. | | | | | | | | | |
| Noise and vibrations. | | | | | | | | | |
| The pump gets clogged. | | | | | | | | | |
| Pump overheated. | | | | | | | | | |
| Abnormal wear. | | | | | | | | | |
| Mechanical seal leak. | | | | | | | | | |
| | | | | | PROBABLE CAUSES | | SOLUTIONS | | |
| • | • | | | | Rotating in the wrong direction. | | Reverse the rotation direction. | | |
| • | • | • | • | | NPSH falls short. | | Increase the available NPSH: <ul style="list-style-type: none"> - Raise the suction tank. - Lower the pump. - Reduce the vapour pressure. - Increase the diameter of the suction pipe. - Shorten and simplify the suction pipe. | | |
| | | • | | | Pump not purged. | | Purge or fill. | | |
| • | • | • | • | • | Cavitation. | | Increase the suction pressure. | | |
| • | • | • | • | • | The pumps sucks air. | | Check the suction pipe and every connection. | | |
| | | • | • | • | Suction pipe blocked. | | Check the suction pipe and any filters. | | |
| • | | • | | | Discharge pressure too high. | | Reduce the pressure losses if necessary, by increasing the pipe diameter for example. | | |
| • | | • | • | • | Flow rate too high. | | Reduce the speed. | | |
| • | • | • | • | • | Fluid too viscous. | | Reduce the viscosity by heating the fluid, for example. | | |
| • | | • | • | • | Fluid temperature too high. | | Cool the fluid to reduce the temperature. | | |
| | | | | • | Mechanical seal damaged or worn. | | Replace the seal. | | |
| | | | | • | O-rings unsuitable for the fluid. | | Fit the correct O-rings after consulting the supplier. | | |
| • | | • | | | Tension in the pipework. | | Connect the pipes to the pump without tension and align the coupling. | | |
| | | • | • | • | Foreign objects in the fluid. | | Place a filter onto the suction pipe. | | |
| | • | | | • | Mechanical seal spring tension is too low. | | Adjust as indicated in this manual. | | |
| • | • | | | | Pump speed too low. | | Increase the speed. | | |
| • | • | | | | Pump too small. | | Choose a larger size. | | |
| • | | • | | • | Stator worn or has operated when dry. | | Replace the stator. | | |
| • | | • | • | • | Pump and/or motor not secured on the skid. | | Secure the pump and/or motor, check the pipes are connected without tension. | | |
| | • | | | | Drop in flow rate. | | Replace the worn stator. | | |

8. Maintenance

8.1. GENERAL CONSIDERATIONS

Just like any other machine, this pump requires maintenance. The instructions in this manual cover spare part identification and replacement. These instructions were drafted for maintenance staff and those responsible for spare part supply.



Read section carefully [9. Technical specifications](#).

Only qualified, trained persons equipped with the necessary means for the work can perform maintenance.

Every replaced part or material must be properly disposed of or recycled in accordance with the current directives in each area.



ALWAYS disconnect the pump before starting any maintenance work.



This symbol indicates that the product should be taken to sorting facilities for recovery and recycling and not be disposed of as unsorted waste.

8.2. CHECK THE MECHANICAL SEAL

Check regularly for any leaks around the shaft. In the event of mechanical seal leaks, replace the seal in accordance with the instructions provided in section [8.6. Disassembling and assembling the pump](#).

8.3. TIGHTENING TORQUE

| Size | Nm | lbf-ft |
|------|-----|--------|
| M6 | 10 | 7 |
| M8 | 21 | 16 |
| M10 | 42 | 31 |
| M12 | 74 | 55 |
| M16 | 112 | 83 |

8.4. STORAGE

The pump must be completely drained of fluids before storing. Avoid exposing the parts to excessively humid environments as much as possible.

8.5. CLEANING



Using aggressive cleaning products such as caustic soda and nitric acid can burn the skin. Wear rubber gloves during all cleaning procedures. Always wear safety glasses.

8.6.1. CIP (Clean-in-place) cleaning

The pump will not need to be disassembled if it is installed into a system with a CIP process.

If there is not an automatic cleaning process, remove the pump as indicated in the section [8.6. Disassembling and assembling the pump](#).

Cleaning solutions for CIP processes. Only use clear water (chloride-free) to mix with the cleaning agents:

- a. Alkaline solution:** 1% by weight of caustic soda (NaOH) at 70°C (150°F)
 1 Kg NaOH + 100 litres of H₂O = cleaning solution
 or
 2.2 litres of 33% NaOH + 100 litres of H₂O = cleaning solution

- b. Acidic solution:** 0.5% by weight of nitric acid (HNO₃) at 70°C (150°F)
 0.7 litres of 53% HNO₃ + 100 litres of H₂O = cleaning solution



ATTENTION

Monitor the concentration of the cleaning solutions as the pump seals can deteriorate

ALWAYS perform a final rinse with clean water at the end of the cleaning process to remove any traces of cleaning products.

8.6. DISASSEMBLING AND ASSEMBLING THE PUMP

Only qualified staff should assemble and disassemble pumps. Ensure the staff read this instruction manual carefully, and especially the instructions regarding the work they are going to perform.



ATTENTION

Incorrect assembly or disassembly may damage the operation of the pump and result in expensive repair costs and long downtime.

INOXPA are not liable for accidents or damage caused by not complying with the instructions in this manual.

Preparations

Ensure the working environment is clean, as some parts, including the mechanical seal, may need careful handling and others have small tolerances.

Check the parts used were not damaged during transportation. Then inspect the adjusted faces, the coincident faces, the seal, for any burrs, and so on.

Clean the parts and check for any damage after every disassembly. Replace all damaged parts.

Tools

Use suitable tools for assembly and disassembly operations. Use them correctly.

Cleaning

Clean the pump inside and out before disassembling it.



NEVER clean the pump by hand while it is running.

8.6.2. Stator, rotor and sealing rod

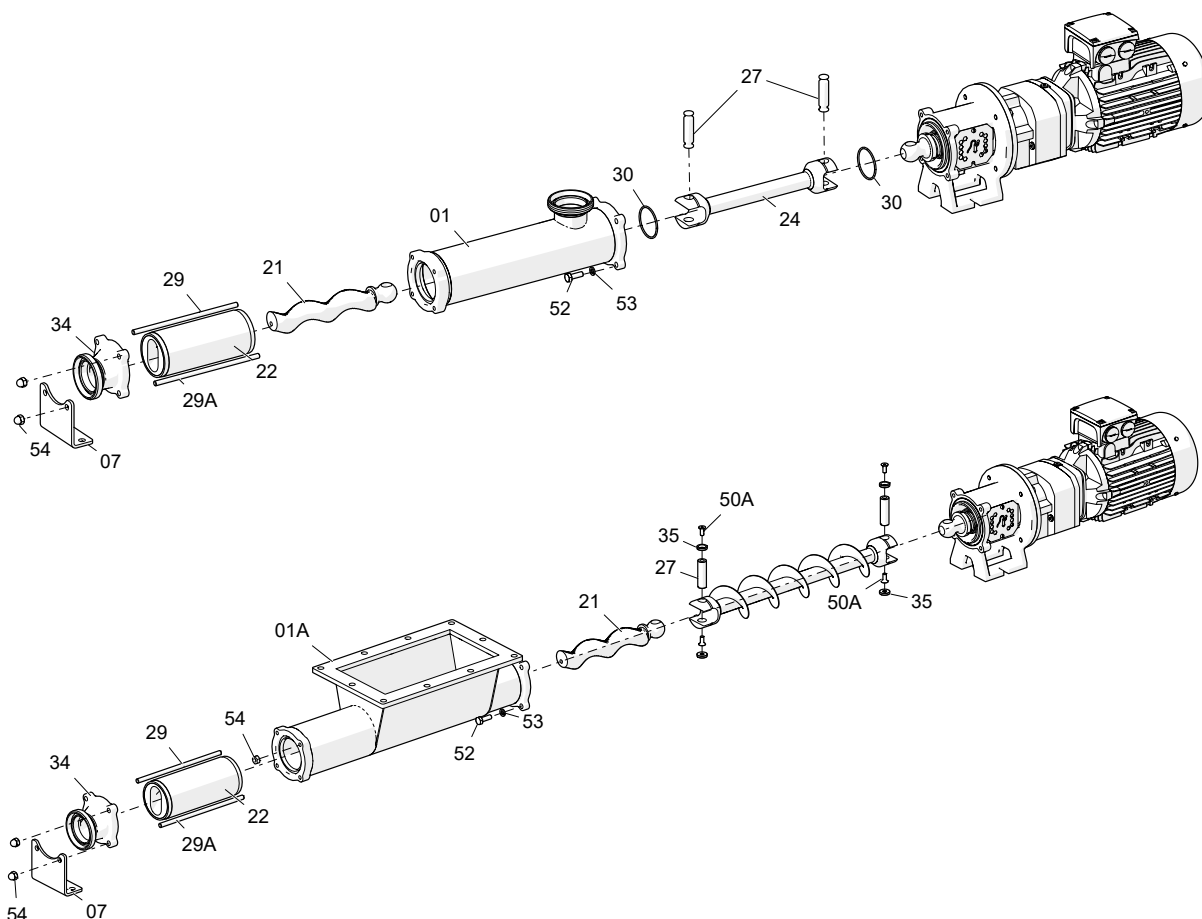
A. Standard transmission

Disassembly

- Loosen the nuts (54) and remove the foot (07) and the discharge nozzle (34).
- Remove the braces (29/29A) to then remove the stator (22). If necessary, secure the rotor (21) by holding the shaft extension (26).
- Remove the screws (52) and the washers (53).
- Remove the body (01/01A) forwards.
- On the KIBER KSF model, remove the locking ring (30) and the bolt (27) so the rotor (21) comes out.
- On the KIBER KSFT model, remove the screws (50), washers (35), bolt (27) to also remove the rotor (21).
- Proceed in the same way on the other side of the sealing rod (24/24A) so it can be removed.

Assembly

- On the KIBER KSF model, use the bolt (27) to attach the sealing rod (24) to the shaft extension (26), and place the locking ring (30) to prevent it from falling.
- For the KIBER KSFT model, use the bolt (27) to attach the sealing rod (24A) to the shaft, using the screws (50) and washers (35) to secure it. Add a little LOCTITE 270 threadlocker to ensure the screws (50) do not loosen.
- Proceed in the same way on the other side of the sealing rod with the rotor (21).
- Fit the body (01/01A) and use the screws (52) and washers (53) to secure it.
- Insert the stator (22) lubricating it with water, and if necessary, secure the rotor (21) by holding the shaft extension (26).
- Fit the discharge nozzle (34) and the foot (07) and use the nuts (54) to secure it.



01.611.32.0043

01.612.32.0002

**ATTENTION**

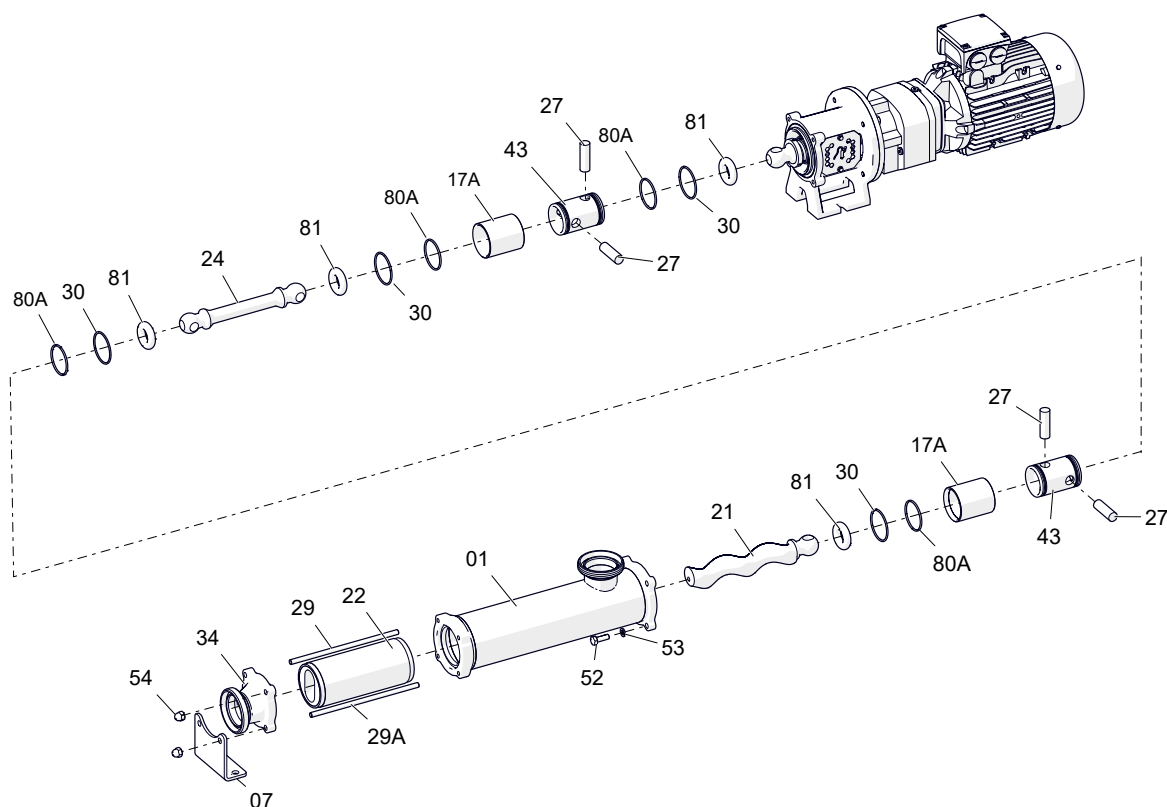
Use soapy water when installing the different parts and joints so they slide better.

B. Strengthened transmission (option for KIBER KSF only)**Disassembly**

- Loosen the nuts (54) and remove the foot (07) and the discharge nozzle (34).
- Remove the braces (29/29A) to then remove the stator (22), securing the rotor (21) by holding the shaft extension (26) if necessary.
- Remove the screws (52) and the washers (53).
- Remove the body (01) forwards.
- Remove the locking rings (30), the transmission seal collar (17A) and the bolts (27) so that the rotor (21) and one end of the sealing rod (24/24A) come out.
- Proceed in the same way on the other side of the sealing rod so it can be removed.

Assembly

- Place the O-ring (81) onto the shaft extension (26) and onto the sealing rod (24), and the seals (80A) onto the transmission collar (43).
- Place the collar onto the shaft extension (26) and fit the bolt (27) to create the drag and the other one with the sealing rod.
- Place the transmission seal collar (17A) over the collar (43) and use the locking rings (30) to secure it.
- Proceed in the same way on the other side of the sealing rod (24) with the rotor (21).
- Fit the body (01) and use the screws (52) and washers (53) to secure it.
- Insert the stator (22) lubricating it with water, and if necessary, secure the rotor (21) by holding the shaft extension (26).
- Fit the discharge nozzle (34) and the foot (07) and use the nuts (54) to secure it.



01.611.32.0045



ATTENTION

Use soapy water when installing the different parts and joints so they slide better.

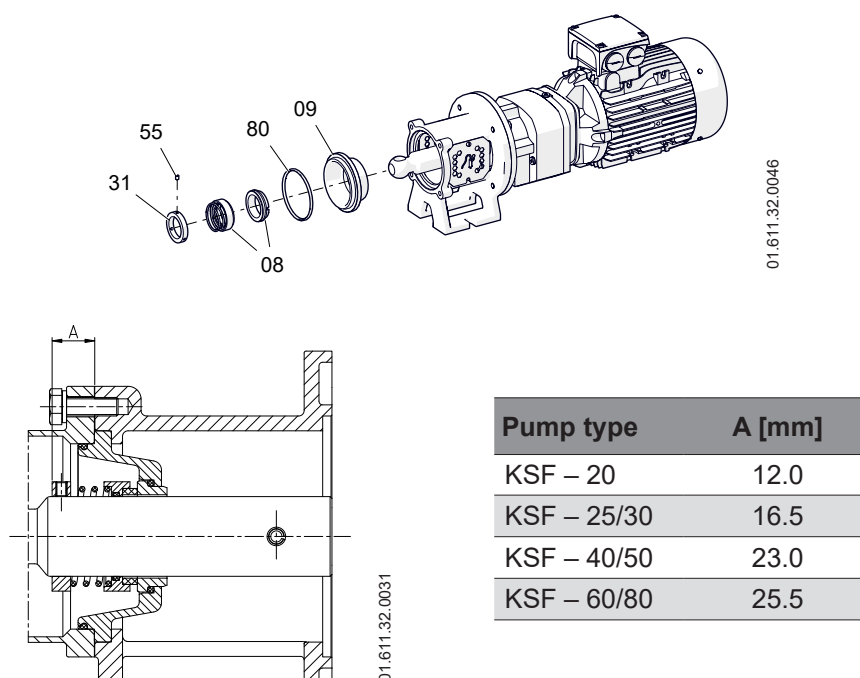
8.6.3. Mechanical seal

Disassembly

- Disassemble in accordance with the previous section.
- If the guards (47A) have not already been removed, remove them now.
- Loosen the studs (55) to remove the sealing ring (31).
- Remove the seal cover (09) to remove it with the mechanical seal (08).
- Lastly, carefully pull out the stationary part of the seal that remained housed in the seal cover.

Assembly

- Fit the fixed part of the mechanical seal (08) and the O-ring (80) onto the seal cover (09).
- Place the cover onto the flange bracket (06A).
- Slide the rotating part of the seal (08) onto the shaft extension (26).
- Place the sealing ring (31) onto the shaft and use the studs (55) to secure it in accordance with assembly level A shown in the following image:



ATTENTION

When assembling the new seal, ensure to fit the parts and the seals using soapy water in order to make them easier to slide.

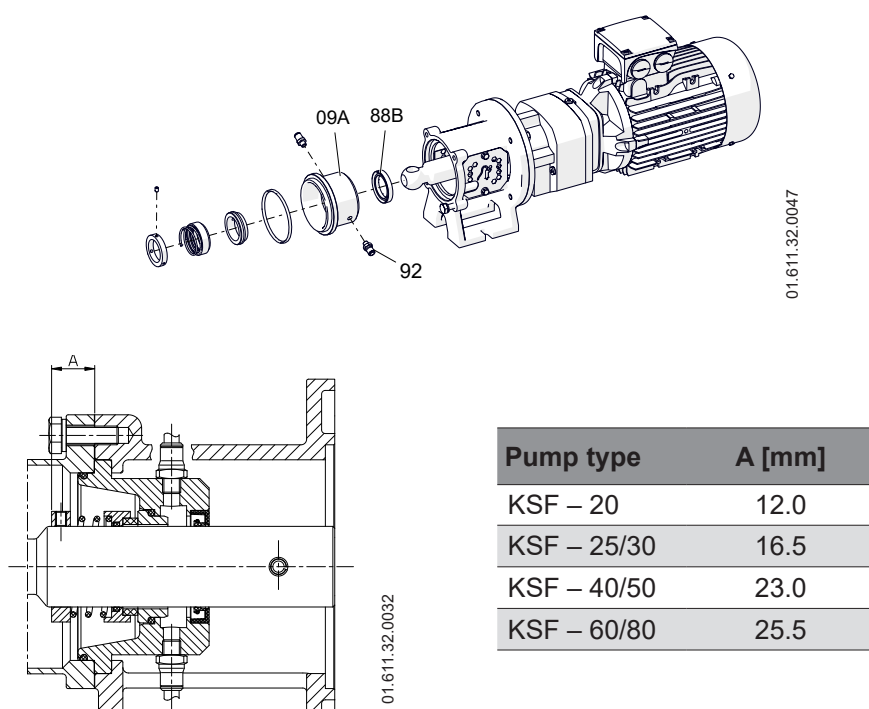
8.6.4. Cooled mechanical seal

Disassembly

- Disassemble in accordance with the section [8.6.2. Stator, rotor and sealing rod](#).
- If the guards (47A) have not already been removed, remove them now.
- Remove the straight connectors (92) from the cover (09A).
- Loosen the studs (55) to remove the sealing ring (31).
- Remove the seal cover (09A) to remove it with the mechanical seal (08) and the seal ring (88B).
- Lastly, carefully pull out the stationary part of the seal that remained housed in the seal cover and the seal ring.

Assembly

- Fit the fixed part of the mechanical seal (08), the seal ring (88B), the O-ring (80) and the connectors (92) to the seal cover (09A) so that the connectors can join the cooling pipes through the bracket holes.
- Place the cover onto the flange bracket (06A).
- Slide the rotating part of the seal (08) onto the shaft extension (05).
- Place the sealing ring (31) onto the shaft and use the studs (55) to secure it in accordance with assembly level A shown in the following image:



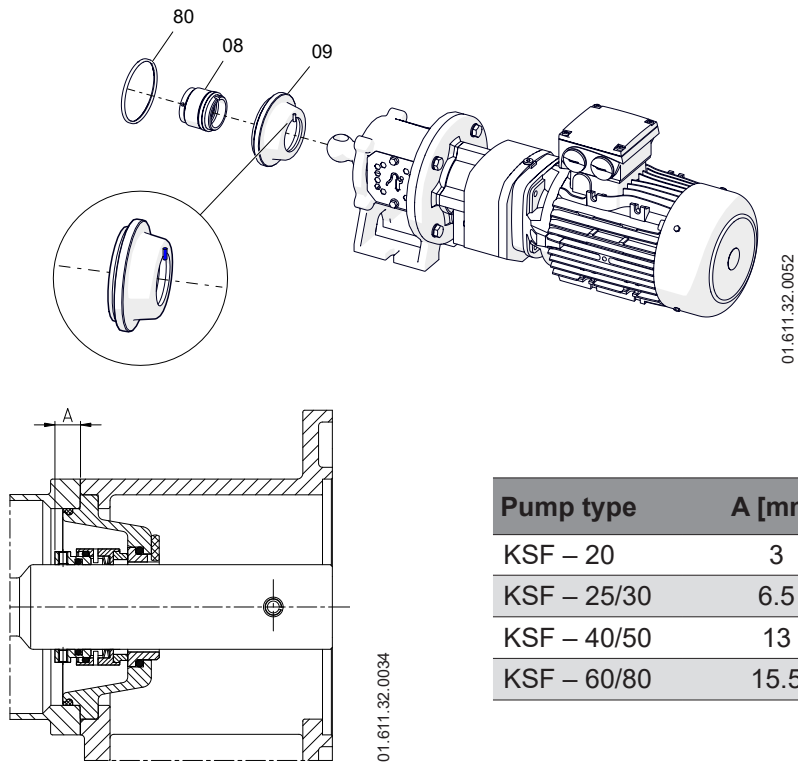
8.6.5. Mechanical seal with a drag pin

Disassembly

- Disassemble in accordance with the [8.6.2. Stator, rotor and sealing rod](#) section.
- If the guards (47A) have not already been removed, remove them now.
- Separate the mechanical seal (08) from the cover (09).
- Separate the mechanical seal cover (09).
- Remove the O-ring (80) from the mechanical seal cover (09).

Assembly

- Fit the O-ring (80) onto the mechanical seal cover (09).
- Place the mechanical seal cover (09) onto the shaft extension (26) of the drive (93).
- Insert the mechanical seal (08) into the cover (09).



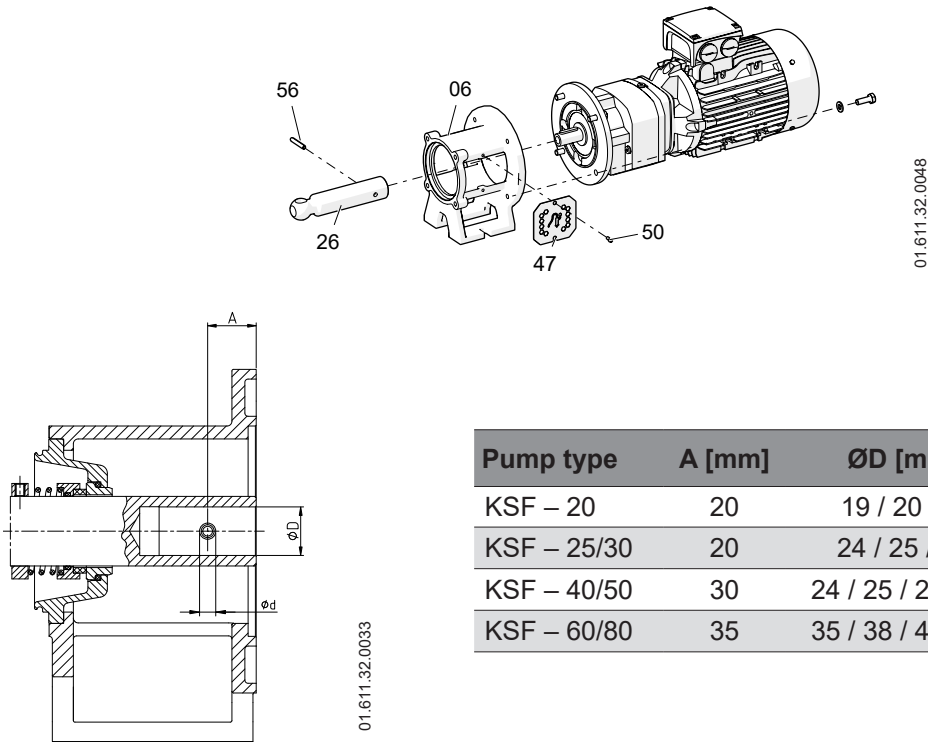
8.6.6. Changing the drive

Disassembly

- Remove the spring pin (56) from the shaft extension (26).
- Remove the screws (52A), the washers (53A) and remove the drive (93).

Assembly

- Drill into the drive shaft based on the indications in the table below.
- Fit the drive (93) onto the flange bracket (06A) and use the screws (52A) and washers (53A) to secure it. Slide the shaft extension (26) over the drive shaft (93) and use the pin (56) to secure it.



9. Technical specifications

| | |
|-------------------------------|--|
| Maximum viscosity | 100 mPa.s. |
| Maximum temperature | 85°C |
| Noise level | 60-80 dB(A) |
| Suction/discharge connections | DIN 11851 |
| Maximum operating pressure | 1200 kPa (12 bar) |
| Maximum differential pressure | Single-phase: 600 kPa (6 bar) Double-phase: 1200 kPa (12 bar) |



Use specific protection if the noise level in the working area exceeds 85 dB (A).

Materials

| | |
|-----------------------------------|-------------------------|
| Parts in contact with the product | 1.4404 (AISI 316L) |
| Other parts in stainless steel | 1.4301 (AISI 304) |
| Seals in contact with the product | FPM |
| Stator | NBR black |
| Other optional seal materials | Check with the supplier |
| Surface finish | Matte |

Mechanical seal

| | |
|--------------------------|-----------------------|
| Seal type | single internal seal |
| Stationary part material | Graphite (C) |
| Rotating part material | Silicon carbide (SiC) |
| Seal material | FPM |

Cooled mechanical seal

| | |
|----------------------------|----------------|
| Maximum operating pressure | 0.5 bar |
| Circulation flow rate | 30 litres/hour |

| Pump type | Volume at 100 rev [litres] | Maximum flow rate [m³/hour] | Maximum pressure [bar] | | Maximum speed [rpm] | Minimum starting torque [Nm] | |
|-----------|----------------------------|-----------------------------|------------------------|--------------|---------------------|------------------------------|--------------|
| | | | Single-phase | Double-phase | | Single-phase | Double-phase |
| KSF-20 | 2.8 | 2.4 | 6 | 12 | 1450 | 18 | 30 |
| KSF-25 | 6.7 | 3.8 | 6 | 12 | 950 | 20 | 36 |
| KSF-30 | 9.8 | 5.6 | 6 | 12 | 950 | 25 | 45 |
| KSF-40 | 23.7 | 13.5 | 6 | 12 | 950 | 45 | 80 |
| KSF-50 | 45.1 | 19.5 | 6 | 12 | 720 | 70 | 125 |
| KSF-60 | 82.0 | 24.6 | 6 | - | 500 | 110 | 190 |
| KSF-80 | 185.4 | 44.5 | 6 | - | 400 | 150 | 260 |

9.1. PARTICLE SIZE



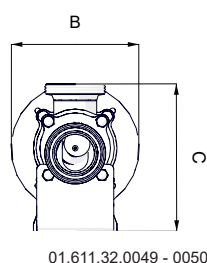
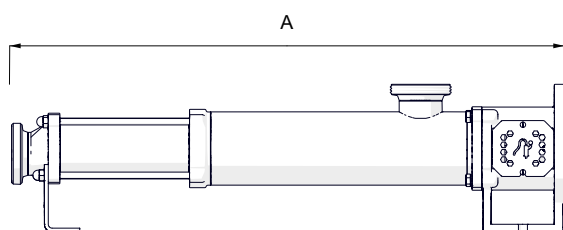
Only soft particles can be pumped

| Pump type | Inner diameter of connections [mm] | Maximum theoretical sphere size [mm] | Recommended theoretical sphere size [mm] |
|-----------|------------------------------------|--------------------------------------|--|
| KSF-20 | 35.0 | 13 | 5 |
| KSF-25 | 48.0 | 18 | 6 |
| KSF-30 | 48.0 | 24 | 8 |
| KSF-40 | 60.5 | 30 | 10 |
| KSF-50 | 72.0 | 40 | 13 |
| KSF-60 | 97.5 | 48 | 16 |
| KSF-80 | 97.5 | 62 | 20 |

9.2. WEIGHTS

| Pump type | Weight [Kg] | Pump type | Weight [Kg] | Pump type | Weight [Kg] | Pump type | Weight [Kg] |
|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| KSF-20 | 10 | 2KSF-20 | 11 | KSFT-20 | 15 | 2KSFT-20 | 18 |
| KSF-25 | 16 | 2KSF-25 | 17 | KSFT-25 | 23 | 2KSFT-25 | 23 |
| KSF-30 | 17 | 2KSF-30 | 18 | KSFT-30 | 24 | 2KSFT-30 | 23 |
| KSF-40 | 28 | 2KSF-40 | 34 | KSFT-40 | 37 | 2KSFT-40 | 26 |
| KSF-50 | 32 | 2KSF-50 | 41 | KSFT-50 | 41 | 2KSFT-50 | 26 |
| KSF-60 | 60 | | | KSFT-60 | 79 | | |
| KSF-80 | 77 | | | KSFT-80 | 96 | | |

9.3. KIBER KSF PUMP DIMENSIONS

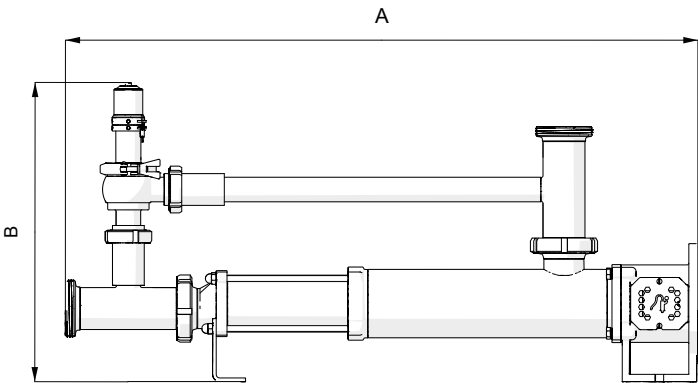


01.611.32.0049 - 0050

| Size | A | B | C |
|---------|------|-----|-----|
| KSF-20 | 490 | 160 | 175 |
| 2KSF-20 | 590 | 160 | 175 |
| KSF-25 | 625 | 160 | 205 |
| 2KSF-25 | 715 | 160 | 205 |
| KSF-30 | 625 | 160 | 210 |
| 2KSF-30 | 775 | 160 | 210 |
| KSF-40 | 860 | 200 | 240 |
| 2KSF-40 | 1050 | 200 | 240 |
| KSF-50 | 940 | 200 | 260 |
| 2KSF-50 | 1190 | 200 | 260 |
| KSF-60 | 1115 | 250 | 310 |
| KSF-80 | 1245 | 250 | 325 |

Measurements in mm

9.4. KIBER KSF PUMP WITH PRESSURE BYPASS DIMENSIONS

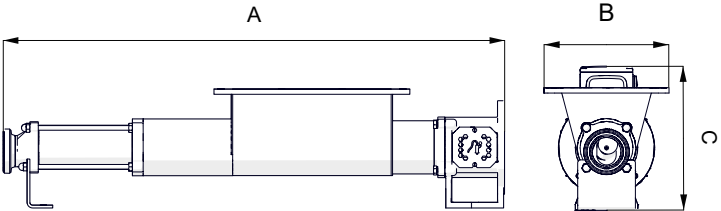


01.611.32.0049

| Size | A | B |
|---------|------|-----|
| KSF-20 | 650 | 410 |
| 2KSF-20 | 750 | 410 |
| KSF-25 | 805 | 460 |
| 2KSF-25 | 895 | 460 |
| KSF-30 | 805 | 460 |
| 2KSF-30 | 955 | 460 |
| KSF-40 | 1080 | 500 |
| 2KSF-40 | 1270 | 500 |
| KSF-50 | 1185 | 530 |
| 2KSF-50 | 1435 | 530 |
| KSF-60 | 1390 | 605 |
| KSF-80 | 1520 | 620 |

Measurements in mm

9.5. KIBER KSFT PUMP DIMENSIONS

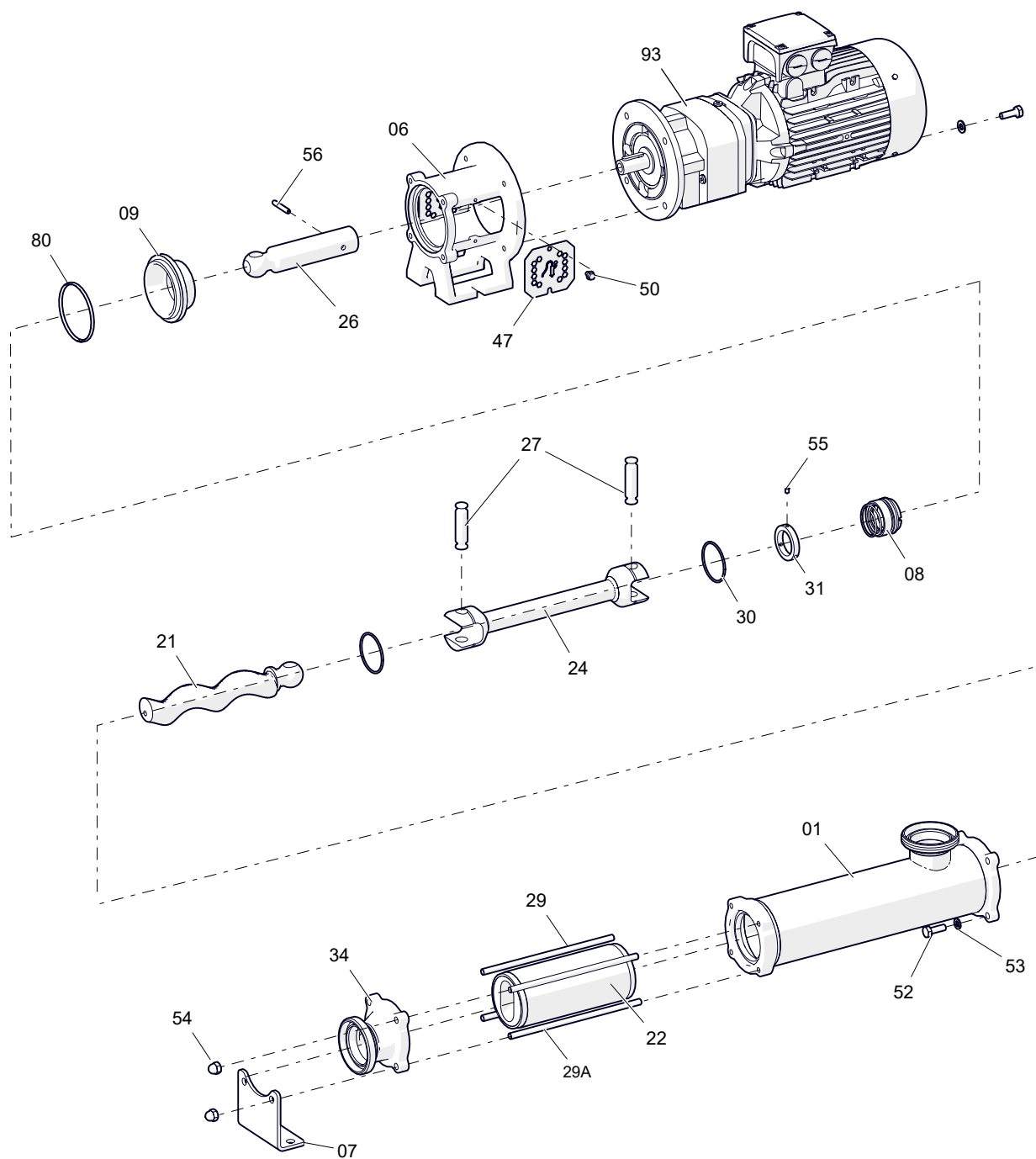


01.612.32.0003 - 0004

| Size | A | B | C |
|----------|------|-----|-----|
| KSFT-20 | 670 | 210 | 180 |
| 2KSFT-20 | 770 | 210 | 180 |
| KSFT-25 | 835 | 250 | 240 |
| 2KSFT-25 | 930 | 250 | 240 |
| KSFT-30 | 835 | 250 | 245 |
| 2KSFT-30 | 985 | 250 | 245 |
| KSFT-40 | 1050 | 260 | 265 |
| 2KSFT-40 | 1240 | 260 | 265 |
| KSFT-50 | 1115 | 260 | 270 |
| 2KSFT-50 | 1365 | 260 | 270 |
| KSFT-60 | 1415 | 340 | 335 |
| KSFT-80 | 1545 | 340 | 350 |

Measurements in mm

9.6. KIBER KSF PUMP EXPLODED VIEW AND PARTS LIST

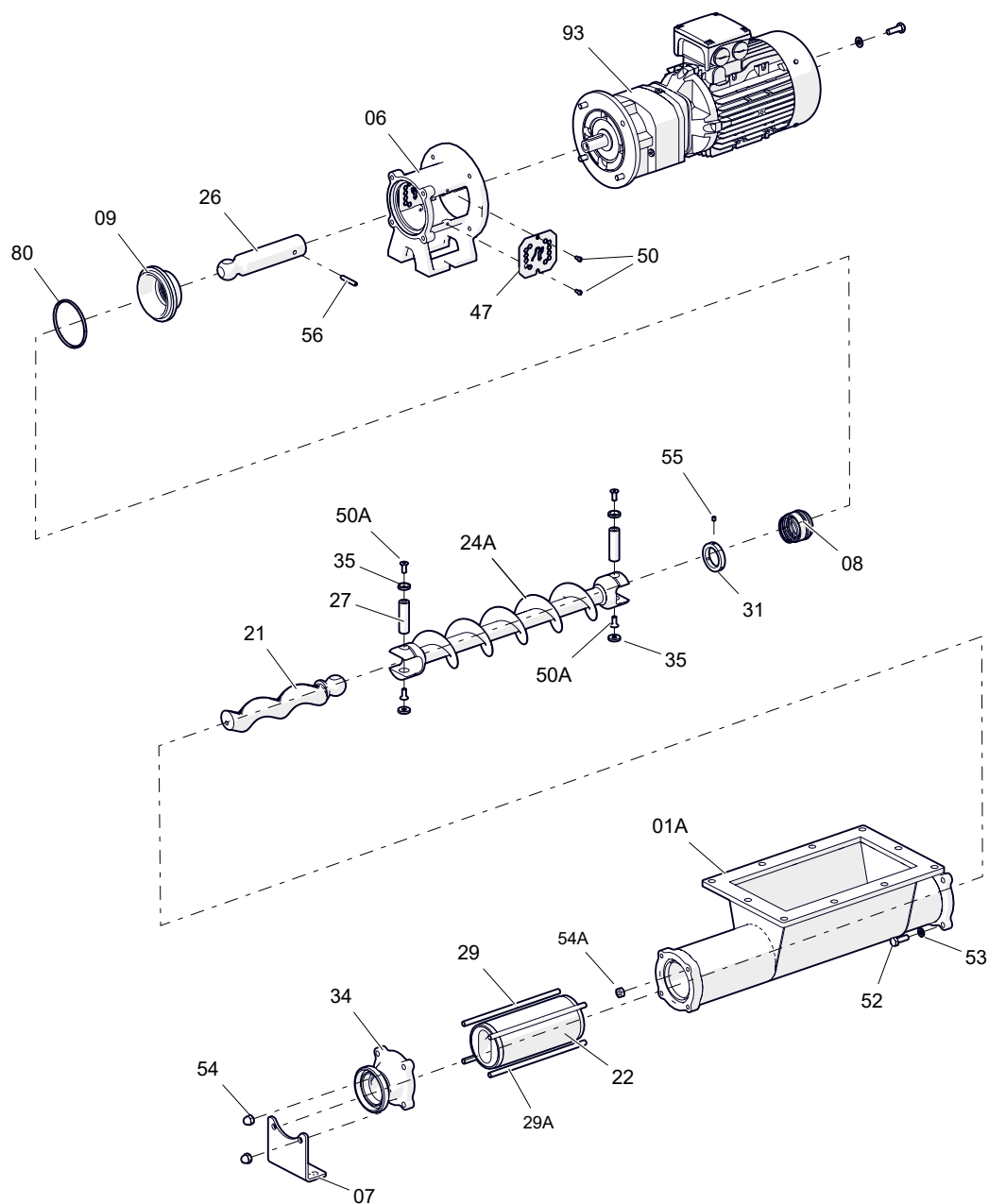


01.611.32.0038

| Position | Description | Quantity | Material |
|----------|------------------|----------|--------------------|
| 01 | Body | 1 | 1.4404 (AISI 316L) |
| 06 | Flange bracket | 1 | GG-25 |
| 07 | Foot | 1 | 1.4301 (AISI 304) |
| 08 | Mechanical seal* | 1 | - |
| 09 | Seal cover | 1 | 1.4404 (AISI 316L) |
| 21 | Rotor | 1 | 1.4404 (AISI 316L) |
| 22 | Stator* | 1 | NBR black |
| 24 | Sealing rod | 1 | 1.4404 (AISI 316L) |
| 26 | Shaft extension | 1 | 1.4404 (AISI 316L) |
| 27 | Bolt* | 2 | 1.4404 (AISI 316L) |
| 29 | Upper brace | 2 | 1.4301 (AISI 304) |
| 29A | Lower brace | 2 | 1.4301 (AISI 304) |
| 30 | Locking ring | 2 | 1.4404 (AISI 316L) |
| 31 | Seal cover ring | 1 | 1.4404 (AISI 316L) |
| 34 | Discharge nozzle | 1 | 1.4404 (AISI 316L) |
| 47 | Guard | 2 | 1.4301 (AISI 304) |
| 50 | Screw | 4 | A2 |
| 52 | Hex screw | 4 | A2 |
| 52A | Hex screw | 4 | A2 |
| 53 | Flat washer | 4 | A2 |
| 53A | Grower washer | 4 | A2 |
| 54 | Cap nut | 4 | A2 |
| 55 | Stud | 3 | A2 |
| 56 | Pin | 1 | Steel |
| 80 | O-ring* | 1 | FPM |
| 93 | Drive | 1 | - |

(*) Recommended spare parts

9.7.KIBER KSFT PUMP EXPLODED VIEW AND PARTS LIST

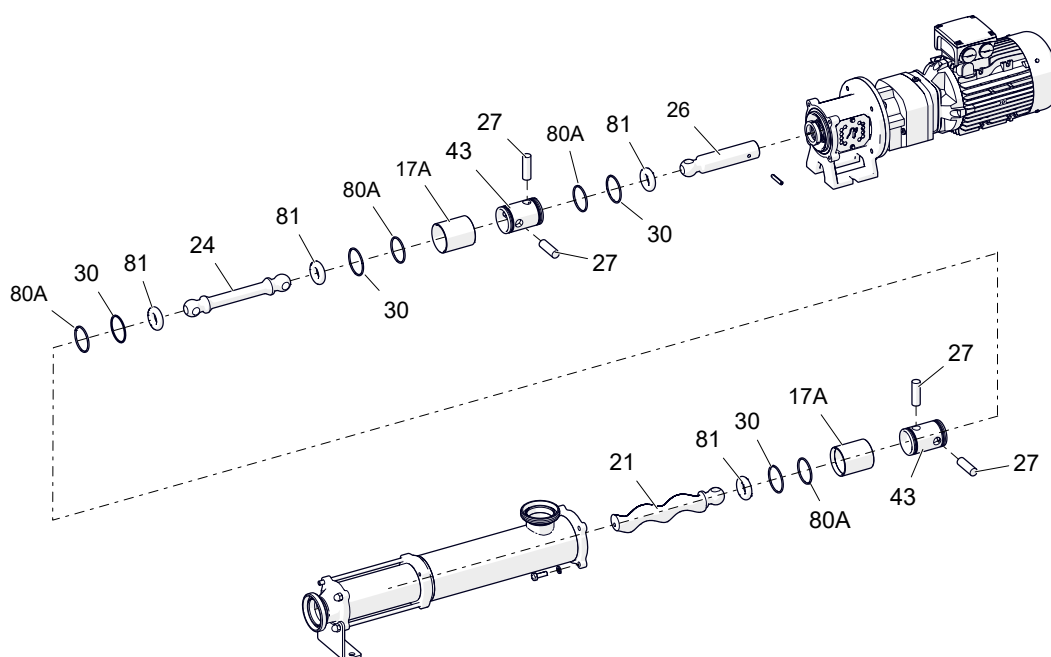


01.612.32.0005

| Position | Description | Quantity | Material |
|----------|-------------------|----------|--------------------|
| 01A | Hopper body | 1 | 1.4404 (AISI 316L) |
| 06A | Flange bracket | 1 | GG-25 |
| 07 | Foot | 2 | 1.4301 (AISI 304) |
| 08 | Mechanical seal* | 1 | - |
| 09 | Seal cover | 1 | 1.4404 (AISI 316L) |
| 21 | Rotor | 1 | 1.4404 (AISI 316L) |
| 22 | Stator* | 1 | NBR black |
| 24A | Worm screw rod | 1 | 1.4301 (AISI 304) |
| 26 | Shaft extension | 1 | 1.4404 (AISI 316L) |
| 27 | Bolt* | 2 | 1.4404 (AISI 316L) |
| 29 | Upper brace | 2 | 1.4301 (AISI 304) |
| 29A | Lower brace | 2 | 1.4301 (AISI 304) |
| 31 | Seal cover ring | 1 | 1.4404 (AISI 316L) |
| 34 | Discharge nozzle | 1 | 1.4404 (AISI 316L) |
| 35 | Bolt washer | 4 | 1.4404 (AISI 316L) |
| 47 | Guard | 2 | 1.4301 (AISI 304) |
| 50 | Screw | 4 | A2 |
| 50A | Countersunk screw | 4 | A2 |
| 52 | Hex screw | 4 | A2 |
| 52A | Hex screw | 4 | A2 |
| 53 | Flat washer | 4 | A2 |
| 53A | Grower washer | 4 | A2 |
| 54 | Cap nut | 4 | A2 |
| 54A | Cap nut | 4 | A2 |
| 55 | Stud | 3 | A2 |
| 56 | Pin | 1 | Steel |
| 80 | O-ring* | 1 | FPM |
| 93 | Drive | 1 | - |

(*) Recommended spare parts

9.8. STRENGTHENED TRANSMISSION

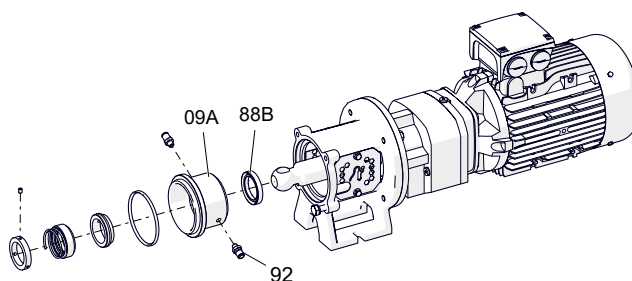


01.611.32.0055

| Position | Description | Quantity | Material |
|----------|--------------------------|----------|--------------------|
| 17A | Transmission seal collar | 2 | 1.4404 (AISI 316L) |
| 21 | Rotor | 1 | 1.4404 (AISI 316L) |
| 24 | Sealing rod | 1 | 1.4404 (AISI 316L) |
| 26 | Shaft extension | 1 | 1.4404 (AISI 316L) |
| 27 | Bolt* | 4 | 1.4404 (AISI 316L) |
| 30 | Locking ring | 4 | 1.4404 (AISI 316L) |
| 43 | Transmission collar | 2 | 1.4404 (AISI 316L) |
| 80A | O-ring* | 4 | NBR |
| 81 | O-ring* | 4 | NBR |

(*) Recommended spare parts

9.9. COOLED MECHANICAL SEAL

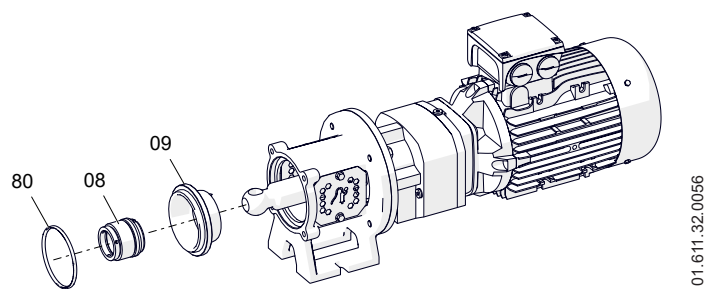


01.611.32.0047

| Position | Description | Quantity | Material |
|----------|--------------------|----------|--------------------|
| 09A | Cooled seal cover | 1 | 1.4404 (AISI 316L) |
| 88B | Seal ring* | 1 | NBR |
| 92 | Straight connector | 2 | 1.4404 (AISI 316L) |

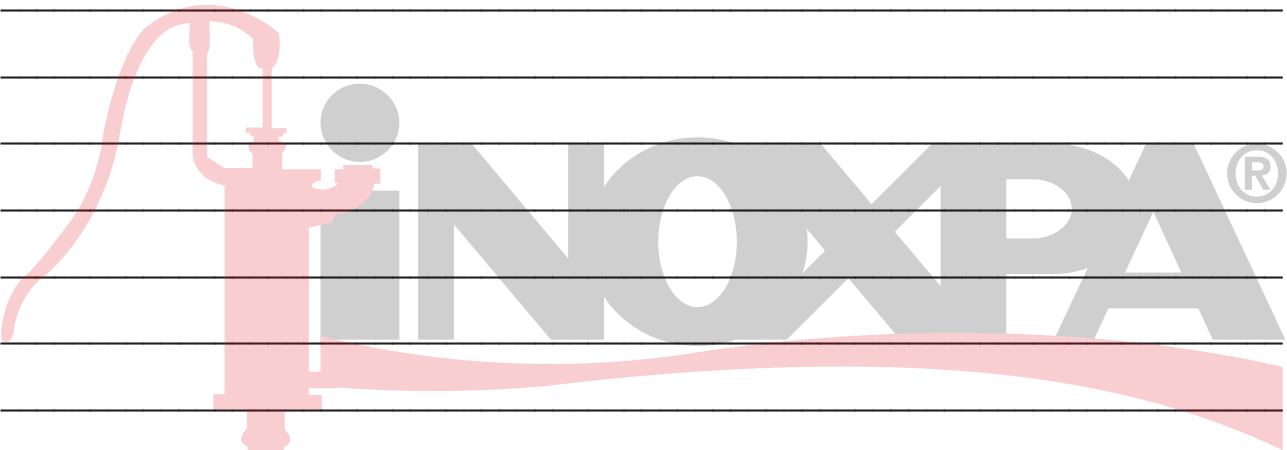
(*) Recommended spare parts

9.10. MECHANICAL SEAL WITH A DRAG PIN



| Position | Description | Quantity | Material |
|----------|---------------------------------|----------|--------------------|
| 08 | Mechanical seal with a drag pin | 1 | - |
| 09 | Mechanical seal cover | 1 | 1.4404 (AISI 316L) |
| 80 | O-ring | 1 | FPM |

NOTES



How to get in touch with INOXPA S.A.U.:

The contact details for each country in our website are constantly updated.

Details available from www.inoxpa.com.



INOXPA S.A.U.
Telers, 60 - 17820 - Banyoles - Spain

