

Bedienungsanleitung



Dickstoffpumpen

Hygienepumpen

nach dem Exzentrerschneckenprinzip

Typ F 550 ...

Typ F 560 ...



Operating Instructions

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High Viscosity Liquid Pumps Type F 550...

Sanitary Pumps Type F 560...

eccentric worm-drive design



Mode d'Emploi

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Pompes pour produits visqueux Type F 550...

Pompes sanitaires Type F 560...

à vis hélicoïdale excentrée

High viscosity liquid pumps Type F 550 ...

F 550 GS : planetary gear ratio 1:15,9 F 550 GS6 : planetary gear ratio 1:6,75 F 550 S : bearing flange in aluminium alloy F 550 SF : bearing flange in stainless steel	B : version with stuffing box	X : version approved for use in Zone 0	A: fluids class IIA B: fluids class IIB	50/21 : outer tube Ø = 50 mm eccentric worm Ø = 21 mm	54/26 : outer tube Ø = 54 mm eccentric worm Ø = 26 mm	TR : horizontal version	Explosion-proof designation	EC-Type-Examination Certificate No.
F 550 GS				50/21	54/26			
F 550 GS	B			50/21	54/26			
F 550 GS		X	A	50/21	-		Ex II 1/2 G IIA T4	PTB 99 A TEX 4050 X
F 550 GS		X	B	50/21	-		Ex II 1/2 G IIB T4	PTB 99 A TEX 4051 X
F 550 GS6				50/21	54/26			
F 550 GS6	B			50/21	54/26			
F 550 S				50/21	54/26			
F 550 S	B			50/21	54/26			
F 550 S				50/21	54/26	TR		
F 550 S	B			50/21	54/26	TR		
F 550 S		X	A	50/21	-		Ex II 1/2 G IIA T4	PTB 99 A TEX 4050 X
F 550 S		X	B	50/21	-		Ex II 1/2 G IIB T4	PTB 99 A TEX 4051 X
F 550 SF				50/21	54/26			
F 550 SF	B			50/21	54/26			
F 550 SF				-	54/26	TR		
F 550 SF	B			-	54/26	TR		
F 550 SF		X	A	50/21	-		Ex II 1/2 G IIA T4	PTB 99 A TEX 4050 X
F 550 SF		X	B	50/21	-		Ex II 1/2 G IIB T4	PTB 99 A TEX 4051 X

Sanitary Pumps Type F 560 ...

F 560 GS : planetary gear ratio 1:15,9 F 560 S : bearing flange in stainless steel	1 : outlet Rd 58 x 1/6"; electrolytically polished 2 : outlet G 1 1/2 A; electrolytically polished 3 : outlet Clamp 2"; electrolytically polished 3A : outlet Clamp 2"; ground and polished to 3A standards	X : version approved for use in Zone 0	A: fluids class IIA B: fluids class IIB	50/21 : outer tube Ø = 50 mm eccentric worm Ø = 21 mm	54/26 : outer tube Ø = 54 mm eccentric worm Ø = 26 mm	Explosion-proof designation	EC-Type-Examination Certificate No.
F 560 GS	1			50/21	54/26		
F 560 GS	2			50/21	54/26		
F 560 GS	3			50/21	54/26		
F 560 GS	3A			50/21	54/26		
F 560 GS	1	X	A	50/21	-	Ex II 1/2 G IIA T4	PTB 99 ATEX 4052 X
F 560 GS	1	X	B	50/21	-	Ex II 1/2 G IIB T4	PTB 99 ATEX 4053 X
F 560 GS	2	X	A	50/21	-	Ex II 1/2 G IIA T4	PTB 99 ATEX 4052 X
F 560 GS	2	X	B	50/21	-	Ex II 1/2 G IIB T4	PTB 99 ATEX 4053 X
F 560 S	1			50/21	54/26		
F 560 S	2			50/21	54/26		
F 560 S	3			50/21	54/26		
F 560 S	3A			50/21	54/26		
F 560 S	1	X	A	50/21	-	Ex II 1/2 G IIA T4	PTB 99 ATEX 4052 X
F 560 S	1	X	B	50/21	-	Ex II 1/2 G IIB T4	PTB 99 ATEX 4053 X
F 560 S	2	X	A	50/21	-	Ex II 1/2 G IIA T4	PTB 99 ATEX 4052 X
F 560 S	2	X	B	50/21	-	Ex II 1/2 G IIB T4	PTB 99 ATEX 4053 X

Safety Instructions

- Only use the pump for its intended purpose.
- Never leave the pump unattended.
- The pump has to be used in vertical position only (except for horizontal versions).
- Install the pump in a way which ensures that it cannot fall into the container.
- Only use the pump with a suitable hose.
- Ensure that the hose is securely fixed to the hosetail.
- Regularly check the hose and connections to ensure safe operation.
- The pump should not be immersed deeper into the liquid than the outlet connection.



- **Comply with all relevant safety instructions.**
Wear appropriate protective clothing.
(Face shield, protective gloves, etc.).

- **Comply with the operating instructions of the motor.**
(some three-phase motors have their safety instructions contained with the terminal box).
- **Never operate the pump dry.**
- **The pump should not be exposed to the weather.**
- **Clean after each operation.**
- **Never store the motor in areas in which corrosive vapours exist.**

Safety Instructions



- If the eccentric worm-drive pump is operated against a closed outlet, a by-pass (pressure relief) valve must be used.

Before starting operation

- Make sure that the supply voltage corresponds to the voltage indicated on the name plate.
When using compressed air motors, please do not exceed the maximum operating pressure of 6 bars and use a filter-regulator-lubricator unit.
- When using compressed air motors, adjust the speed by a ball valve in the air supply line. Do not exceed the maximum speed of 1000 rpm.
- Before inserting the electrical plug into the socket, ensure that the Start/Stop switch is set to "0" (Stop).
On compressed air motors, close the ball valve in the air supply line.
- Immerse the pump into the liquid and secure it in a vertical position by the use of a compression gland or a container clamp.
- Immerse the flexible hose end into the container to be filled and secure it by an appropriate device.

For use in hazardous areas



- When transferring flammable fluids class IIA and IIB, temperature class T1 to T4 , only use pumps which are tested and approved for according to Directive 94/9/EC-ATEX 100a, category 1/2, for use in hazardous area ZONE 0.

F 550 GSXA-50/21	class IIA
F 550 SXA-50/21	class IIA
F 550 SFXA-50/21	class IIA
F 560 GS..XA-50/21	class IIA
F 560 S..XA-50/21	class IIA

F 550 GSXB-50/21	class IIB and IIA
F 550 SXB-50/21	class IIB and IIA
F 550 SFXB-50/21	class IIB and IIA
F 560 GS..XB-50/21	class IIB and IIA
F 560 S..XB-50/21	class IIB and IIA

The outer tube and the stator housing of the pump are marked with the explosion class.

The stator in PTFE white may not be mounted into a stator housing marked "IIB".

The stator in PTFE white may not be used in conjunction with an outer tube marked "IIB".

- Only use explosion-proof electric or compressed air motors which are tested and approved according to Directive 94/9/EC-ATEX 100a, category 2, for use in hazardous area ZONE 1.
Comply with the operating instructions of the motor.
- Observe EC-Type-Examination Certificate and/or Certificate of Conformity.
- The pump is not approved for stationary installation in hazardous area Zone 0.
- Never operate the pump dry.

For use in hazardous areas

- The explosion-proof motor, the planetary gear as well as the pump/motor coupling must definitely be outside the barrel or container.
- Make sure that the motor (electric or compressed air) does not exceed a capacity of 1,5 kW nor a speed of 1000 rpm.
- Only use electrically conductive hoses (see TRbF 131 part 2).
- Only use an explosion-proof plug or an explosion-proof cable terminal box when making connections to the motor.
- If the electrical socket or the terminal box is positively located outside of the hazardous area, connection to explosion-proof equipment must not be undertaken.
- Connect an earth continuity conductor (see pages 24 and 25).



Regularly check motors according to the relevant national safety regulations and/or rules for prevention of accidents (In the Federal Republic of Germany these are e.g. VBG 4).



Repairs to explosion-proof motors should only be carried out by the manufacturer or by an authorized repair depot.



The installation and operation must comply with the relevant Health & Safety Regulations. (In the Federal Republic of Germany these are "TRbF" and also "BG Chemie").

Before starting operation in hazardous areas



The use of the pump and adjacent equipment requires a complete and definite equipotential bonding. An equipotential bonding consists in an electrically conductive connection between the motor and the pump according to standards EN 50 014:1994-03 Paragraph 15 and DIN VDE 0165:1991-02 Paragraph 5.3.3.

The high viscosity liquid pump is to be arranged in a way that no friction and impinge sparks will form.

- 1** Connect the earth continuity conductor (earth wire) to the designated screw on the explosion-proof motor.
- 2** Connect the earth continuity conductor (earth wire) to the designated screw on the pump.
- 3** The containers should be grounded separately, if they are not already grounded by the mode of installation.
- 4** Only use electrically conductive hoses (see TRbF 131 part 2).
This will provide a conductive path for the pump, hoses and fittings.
- 5** Only use an explosion-proof plug or an explosion-proof terminal box when making connections to the mains.

Definition of explosion-proof protection :

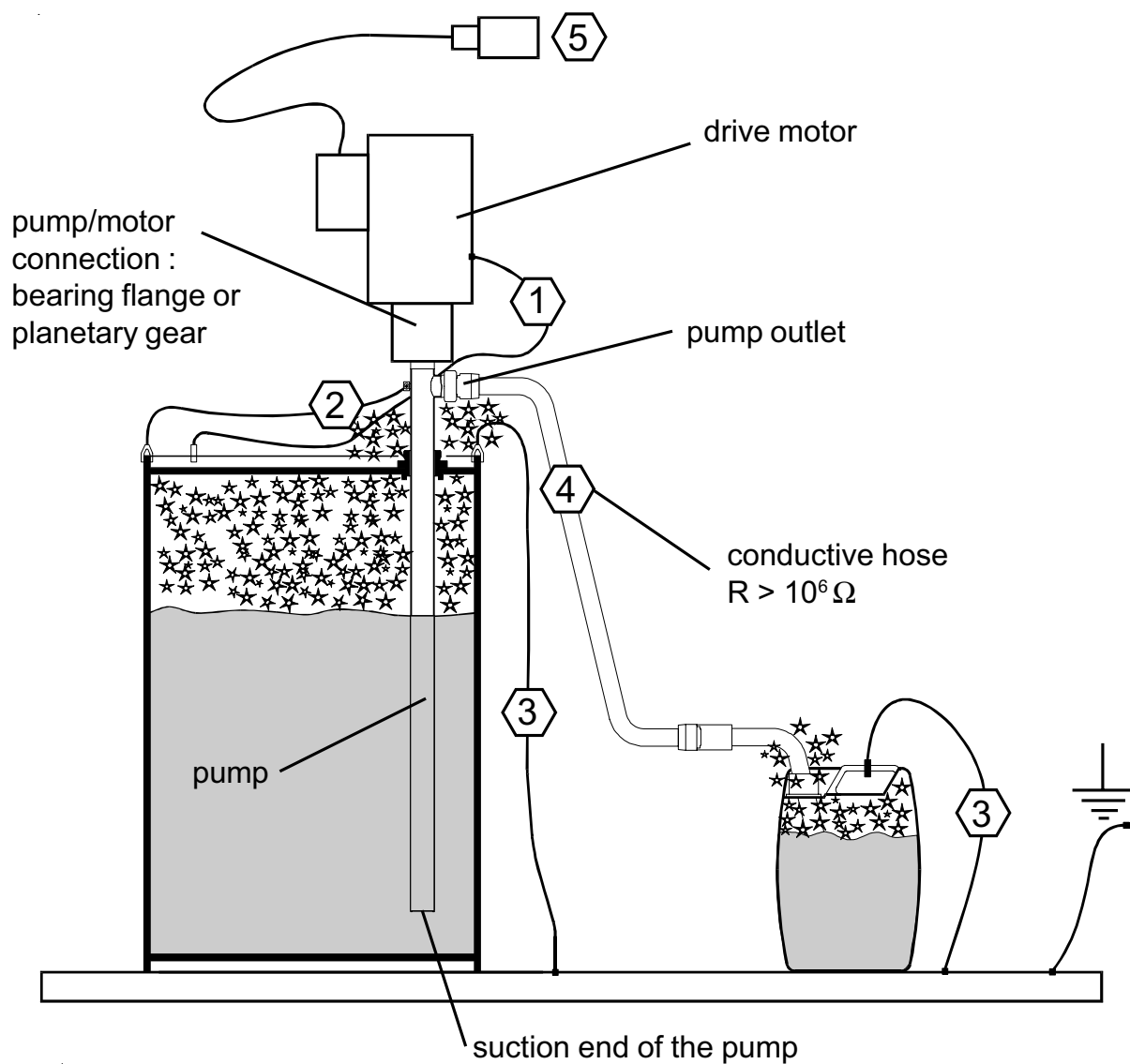
Category 1 (ZONE 0) :

The external part of the pump between the pump suction end and its outlet connection.

Category 2 (ZONE 1) :

The external part of the pump between its outlet and the connection part to the drive motor as well as the internal part of the pump.

(During pumping, the internal part of the pump will always be filled by the liquid).



Version with stuffing box F 550 ..B ...

- On pump models with stuffing box, the stuffing box may be readjusted in case of leakage due to higher wear.
To do so, tighten locking screw by an appropriate tool.

Version with planetary gear F 550 GS ... and F 560 GS ...

Available drive motors :

- ***Commutator motors*** ***F 417, F 417 EL,
F 457, F 457 EL, F 458, F 458 EL, F 458-1,
F 460 Ex, F 460 Ex EL, F 460-1 Ex***
- ***Brushless motor*** ***FBM 4000 Ex***
- ***Compressed air motors*** ***F 416 Ex, F 416-1 Ex, F 416-2 Ex***
- ***Three-phase motor*** ***F 403***
 - Put the motor onto the pump.
 - Firmly tighten union nut by hand.
 - Insert the plug or connect the air supply hose.
 - Switch on the motor.

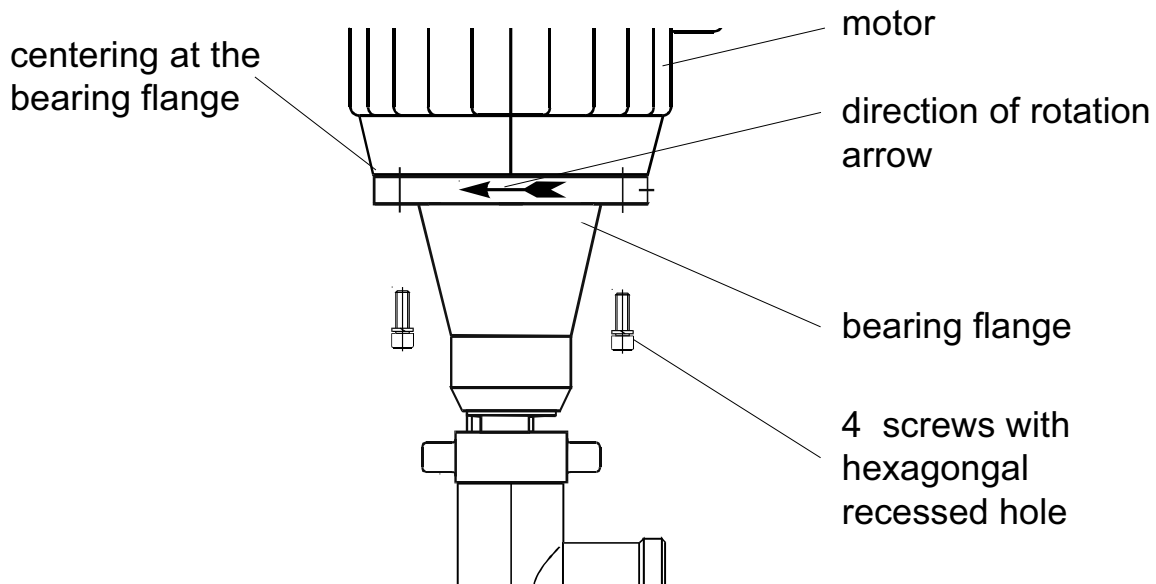
Version with bearing flange F 550 S ... and F 560 S ...

Available drive motors :

- ***Three-phase motors*** ***0,75 to 1,1 kW, 700 or 930 rpm***
- ***Compressed air motors*** ***FPM 4 Ex, FPM 6 Ex, FPM 8 Ex,
maximum speed 1000 rpm***



- Installation, maintenance and repairs to three-phase motors should only be carried out by suitably qualified personnel.
- Only use three-phase motors with a starter including an overload cut-out.
- Make sure that the supply voltage corresponds to the voltage indicated on the name plate.
When using compressed air motors, please do not exceed the maximum operating pressure of 6 bars and use filter-regulator-lubricator unit.
- Check direction of rotation of the motor.
In case of portable use, check the conformity of phases at each socket to guarantee always the same direction of rotation.
(Direction of rotation according to the arrow on the bearing flange).
- Clean bearing flange and motor flange.
- Fit the motor onto the bearing flange and tighten the screws.



- Insert the plug or connect the compressed air hose.
- Switch on the motor.

Cleaning after each operation

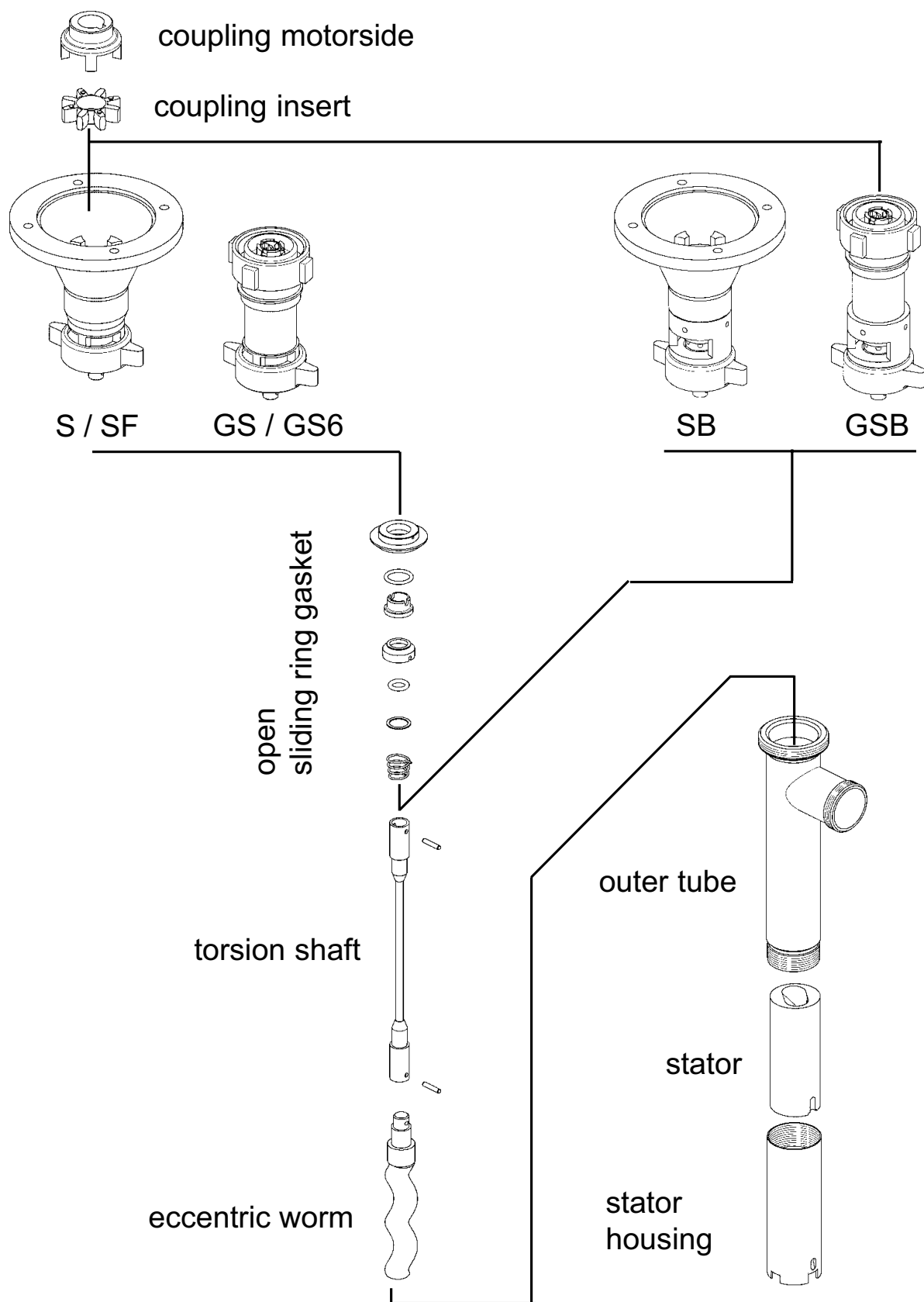
Clean the pump by flushing an appropriate cleaning agent.

- Pump and flexible hose must be compatible with the cleaning agent.
- The pump should not be immersed deeper into the liquid than the outlet connection.
- When using flammable cleaning agents, comply with safety instructions as to explosion-proof equipment.
- After each operation with sticky or self-hardening products, the pump should be flushed with a suitable cleaning agent. The pump should then be dismantled and the mechanical seal carefully cleaned.
- On models F 550... with elastomer stators (NBR, CSM, FPM) a few drops of lubricant (oil, glycerine, etc.) should be put on the stator and on the eccentric worm after cleaning . Afterwards run the motor briefly.

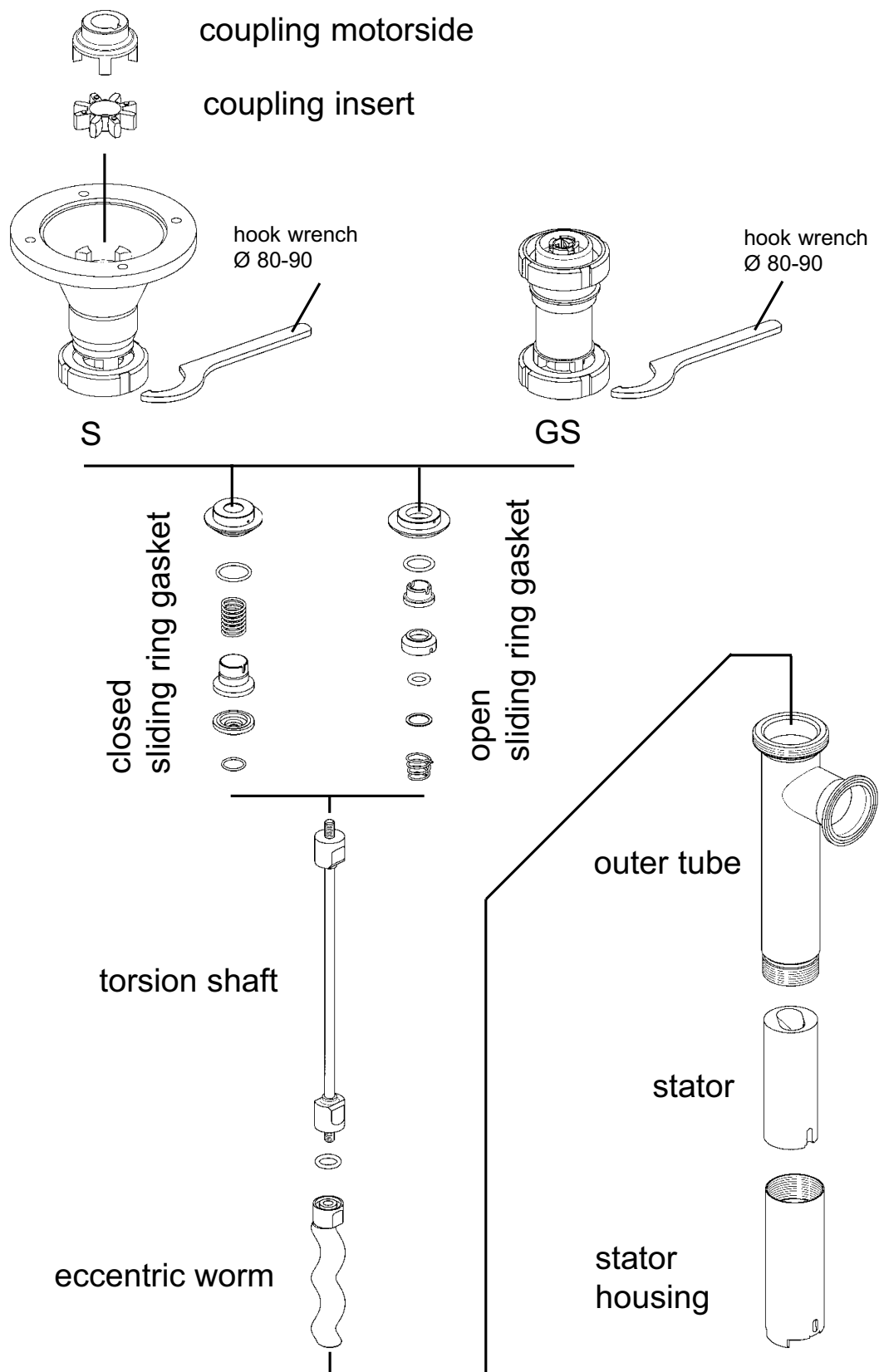
Storage

- Unplug the pump or disconnect the compressed air hose.
- Use a wall bracket to store the pump in a vertical position.

Dismantling / Re-assembly F 550 ...



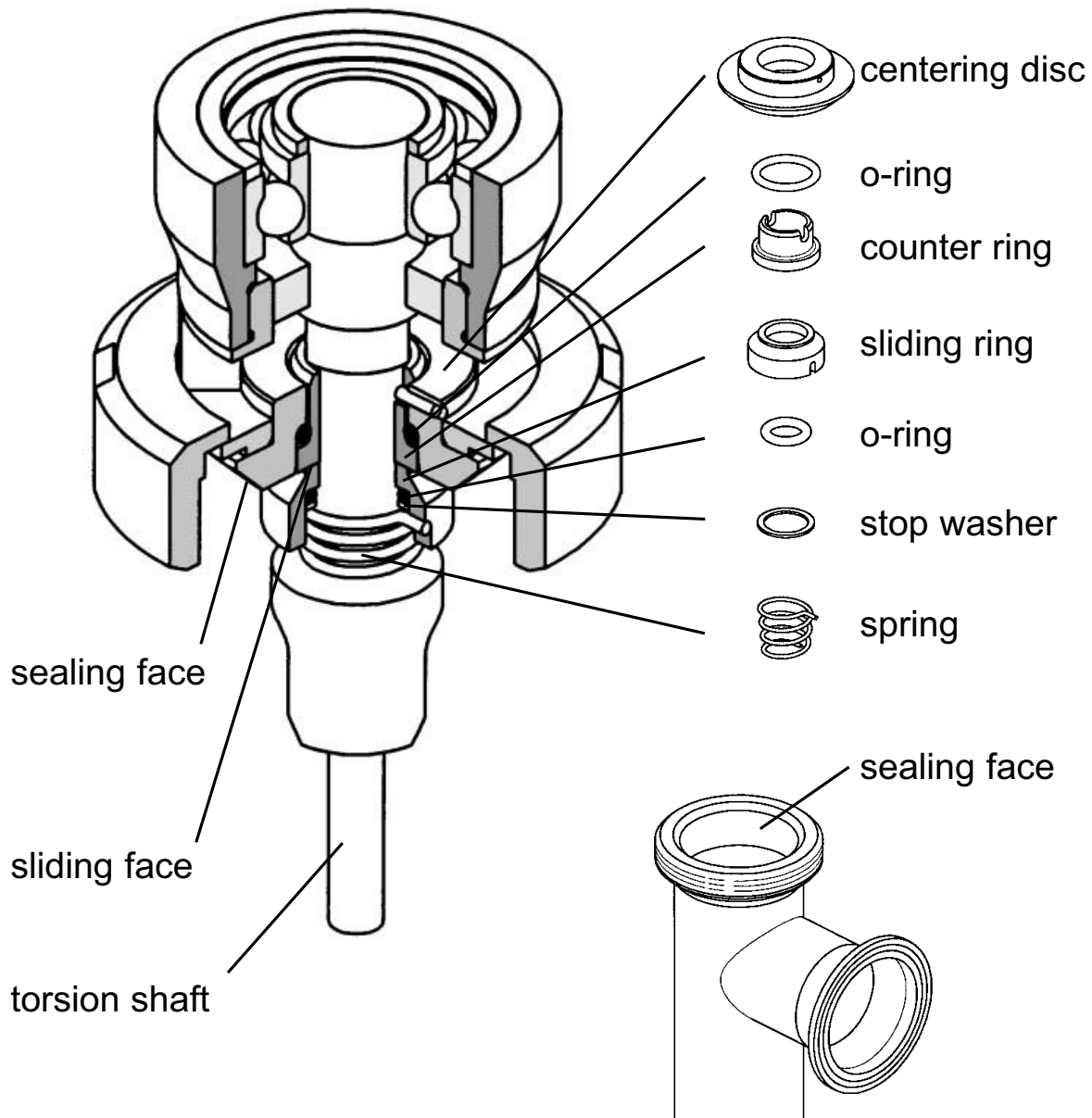
Dismantling / Re-assembly F 560 ...



F 550 ... F 560 ... Dismantling of the open sliding ring gasket (SLRG)



- Make sure that the sealing and sliding faces on the SLRG will not be damaged.
- Make sure that the sealing faces on outer tube and centering disc will not be damaged.
- Do not use any tools in dismantling the SLRG to avoid any damage.



F 560 ... Dismantling of the closed sliding ring gasket (SLRG)



- Make sure that the sealing and sliding faces on the SLRG will not be damaged.
- Make sure that the sealing faces on outer tube and centering disc will not be damaged.
- Do not use any tools in dismantling the SLRG to avoid any damage.

