

KOLMEKS
EFFICIENT RELIABILITY

PUMP SERVICE

General notes

Kolmeks pumps do not require regular service. The pump shaft seal is a mechanical seal (not used in wet motor pumps). It is a part which undergoes wear and which must be replaced if it starts to leak. Please note that a leakage of a few drops per hour can be quite normal, especially when pumping water-glycol mixtures.

The pump motor bearings are pre-lubricated and can thus withstand several years of continuous use. In case of any motor malfunction, we recommend replacing the whole motor unit.

Motor unit replacement

The pump motor unit includes: motor, sealing flange, impeller and seals.

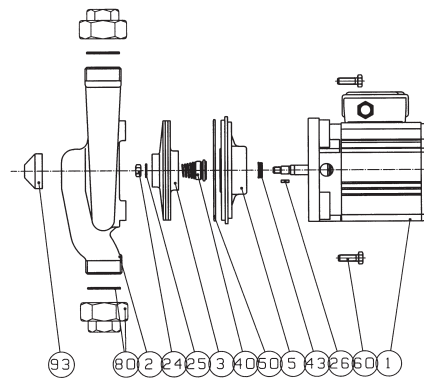
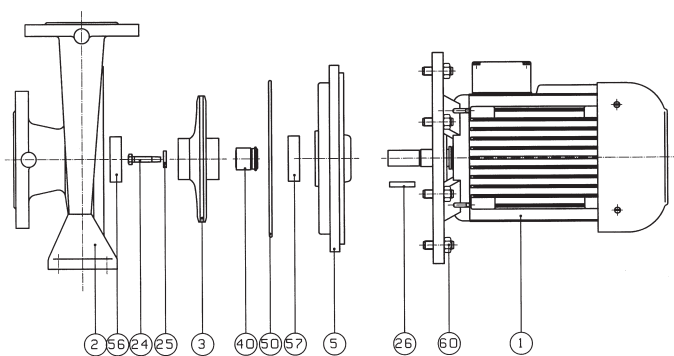
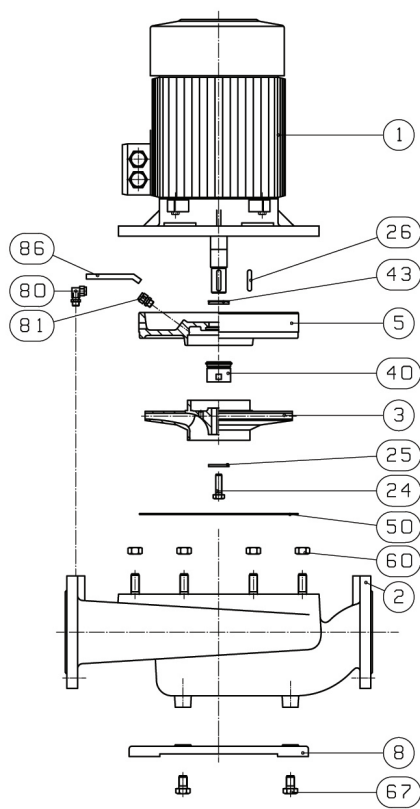
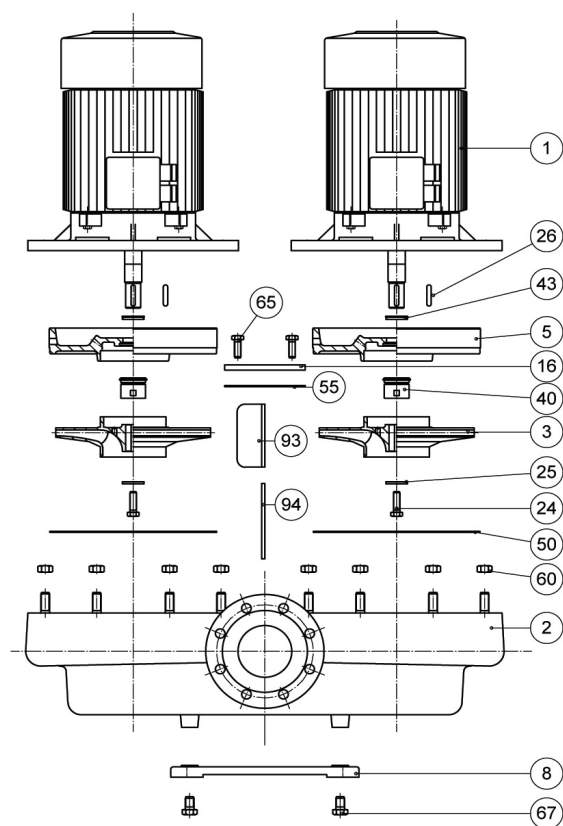
If a motor malfunction or a seal leak occurs, replacing the motor unit is simple and quick and does not require long periods of stand-by or operation downtime. There is no need to carry out procedures on the piping, because there is no need to detach the pump housing.

Seal kits and O-rings for SC frequency converter pumps

Connection G or DN	Grey cast iron EN-GJL-200 PN10	Nodular cast iron EN-GJS-400 PN16	Bronze CuSn10Zn2 PN10	Stainless steel AISI 316 PN 16	Shaft seal, PN10 Ø [mm] materials	O-ring Size [mm]	O-ring Material	Motor [kW]
G 3/4	AE-20/4 SC_	no	no	no	12, carbon/ SiC Viton	123 X 2,5	NBR	0,08 and 0,2
	AE-20/2 SC_	no	no	no	12, carbon/ SiC Viton	123 X 2,5	NBR	0,65
G 1	AE-25/4 SC_	no	AEP-25/4 SC_	no	12, carbon/ SiC Viton	123 X 2,5	NBR	0,08 and 0,2
	AE-26/4 SC_	no	AEP-26/4 SC_	no	12, carbon/ SiC Viton	123 X 2,5	NBR	0,08 and 0,2
	AE-25/2 SC_	no	AEP-25/2 SC_	no	12, carbon/ SiC Viton	123 X 2,5	NBR	0,65
	AE-26/2 SC_	no	AEP-26/2 SC_	no	12, carbon/ SiC Viton	123 X 2,5	NBR	0,65
G 1 1/4	AE-32/4 SC_	no	AEP-32/4 SC_	no	12, carbon/ SiC Viton	145 X 2,5	NBR	0,2-0,37
	AE-33/4 SC_	no	AEP-33/4 SC_	no	12, carbon/ SiC Viton	145 X 2,5	NBR	0,2-0,37
DN 32	L-32/4 SC_	no	no	no	12, carbon/ SiC EPDM	100 X 2,5	NBR	0,08 and 0,2
	L-32/2 SC_	no	no	no	12, carbon/ SiC EPDM	100 X 2,5	NBR	0,65
DN 40	L-40A/4 SC_	no	no	no	12, carbon/ SiC EPDM	145 X 2,5	NBR	0,2-0,37
DN 50	L-50A/4 SC_	no	LP-50A/4 SC_	no	12, carbon/ SiC EPDM	150 X 3	NBR	0,2 and 0,55
DN 65	L-65A/4 SC_	LH-65A/4 SC_	no	no	18, carbon/ SiC EPDM	179,3 X 5,7	EPDM	0,55 and 0,75
DN 80	L-80A/4 SC_	LH-80A/4 SC_	no	no	18, carbon/ SiC EPDM	179,3 X 5,7	EPDM	0,55 and 0,75
DN 100	AL-1102/4 SC_	ALH-1102/4 SC_	ALP-1102/4 SC_	ALS-1102/4 SC_	18, carbon/ SiC EPDM	179,3 X 5,7	EPDM	0,75

Spare parts

No.	NAME	No.	NAME
1	Electric motor	40	Mechanical seal
2	pump housing	50	O-ring / Gasket
3	Impeller	55	Gasget (AT- and T-series)
5	Sealing flange	56/57	Wear ring (N-series)
8	Base plate	60	Nut / Screw
16	Cover (AT- and T-series)	65	Screw (AT- and T-series)
24	Nut / Screw	67	Screw
25	Washer	80	Pipe joint (AMK-25,-26, AHV-25, AE-26,-33, AP-33)
26	Key	80/81	Pipe joint (ALH-series)
		86	Pipe (ALH-series)
		93	Flap device (AT- and T-series)
		94	Pin (AT- and T-series)



Replacing motor unit for pumps less than 1.5 kW

Note! Only an authorized person may carry out the replacement.



Starting situation. The pump is running normally.



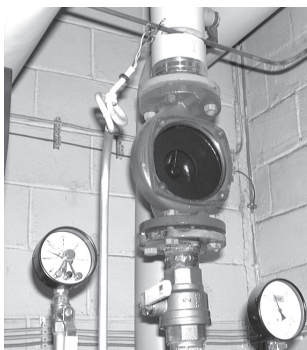
1) Stop the pump, open any possible safety switch and remove fuses. Ensure that no one is able to switch the current on, even by accident, during the replacement. Close the valves.



2) Detach the motor cable. Open the screws/bolts of the operating unit.



3) Lift the operation unit from the pump housing. Watch out for hot water!



4) Replace the gasket/O-ring of the housing.



5) Install a new motor unit. Tighten the screws/bolts of the unit evenly.



6) Connect the motor cable and open the valves. Start the pump and check the direction of rotation. Vent the system. Monitor the operation of the pump.

Replacing motor unit for pumps over 1.5 kW

Note! Only an authorized person may carry out the replacement.



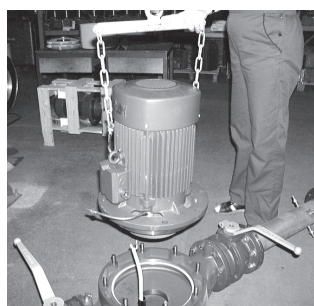
Starting situation: The pump is running normally.



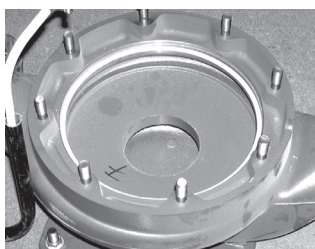
1) Stop the pump, open a possible safety switch and remove fuses. Ensure that no one is able to switch the current on, even by accident, during the replacement. Close the valves.



2) Close the valves and detach the connecting cable of the motor. Next, detach the flush pipe (in ALH pumps). Open the screws/bolts of the operation unit.



3) Lift the operation unit by means of a hoist. Watch out for hot water!



4) Replace the gasket/O-ring of the housing.



5) Install a new motor unit. Tighten the screws/bolts of the unit evenly.



6) Connect the motor cable and open the valves. Start the pump and check the direction of rotation. Vent the system. Monitor the operation of the pump.

Replacing impeller



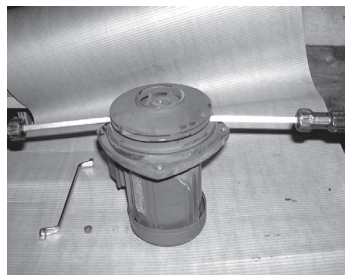
1) Detach the motor unit as usual (see Replacing motor and replacement motor unit).



2) Install the motor unit in a vertical position.



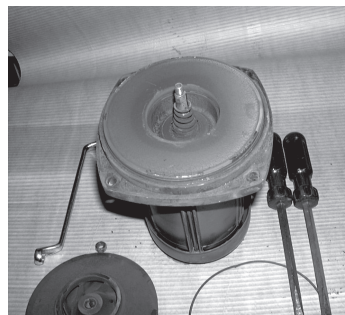
3) Open the screw/bolt of the impeller.



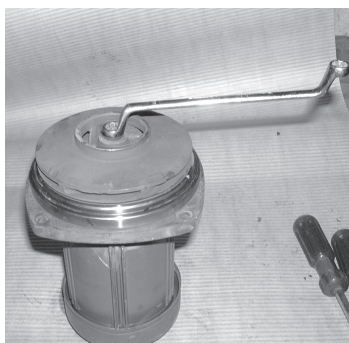
4) Use screwdrivers to detach the impeller.



5) Use an extractor if necessary.



6) The motor unit is without an impeller. Replace the shaft seal when necessary (see Replacing a shaft seal).



7) Install a new impeller. If required, you can lightly tap the impeller with a rubber mallet until flush with the ridge. Tighten the screw/bolt of the impeller.

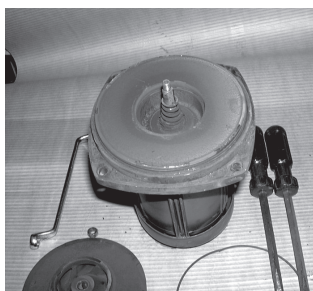


8) Attach the motor unit as usual.

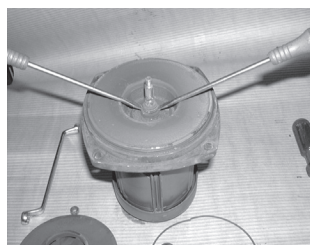
Replacing shaft seal

Detaching seal

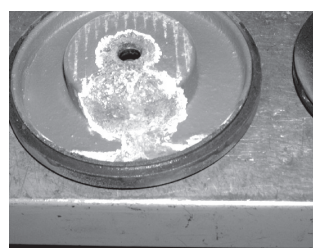
Stop the pump and close the shut-off valves. Detach the motor unit from the pump housing. (see replacing motor unit). Detach the impeller of the pump (see Replacing an impeller).



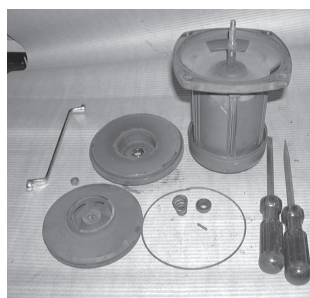
Starting situation. The motor unit with the impeller detached.



1) Detach the shaft seal using two screwdrivers. Do not damage the sealing surface of the shaft.



2) Also detach the sealing flange from the motor front plate using two screwdrivers. If needed, replace the sealing flange with a new one.



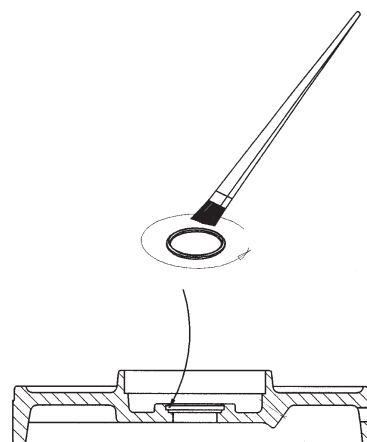
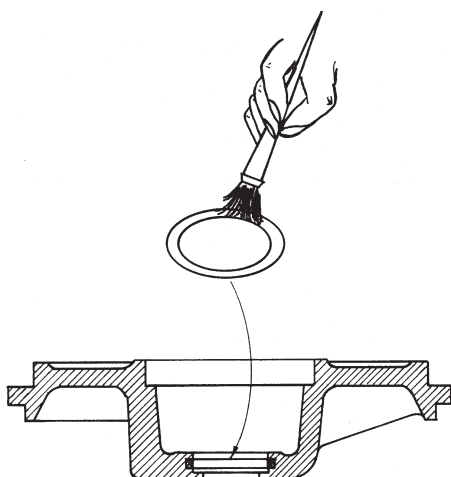
3) The motor unit disassembled, with installation tools.

Installing mechanical seal

Lubricating and installing O-ring

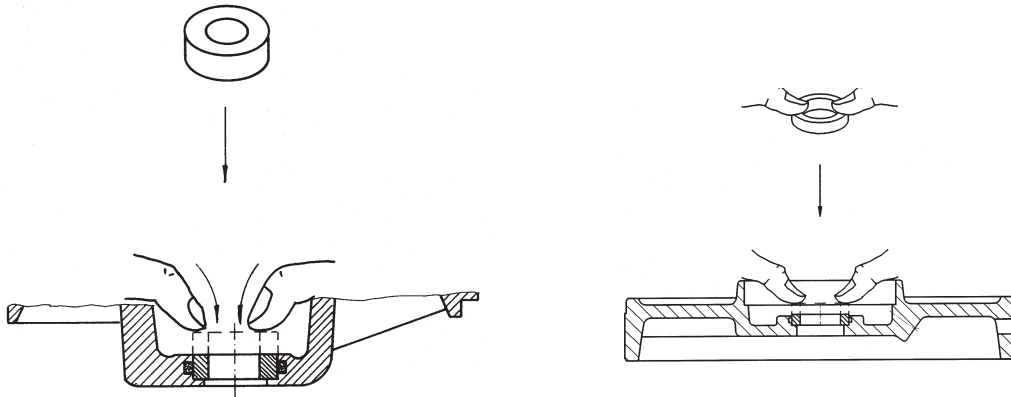
NOTE! Touch the seal parts with clean hands only, and as little as possible and with extreme care.

Check the housing and O-ring groove for the stationary ring in the sealing flange are clean. Check the O-ring and lubricate it with soap water, not with oil. Then install the O-ring in the groove of the sealing flange (in the stationary ring for BO- and BP-marked seals).



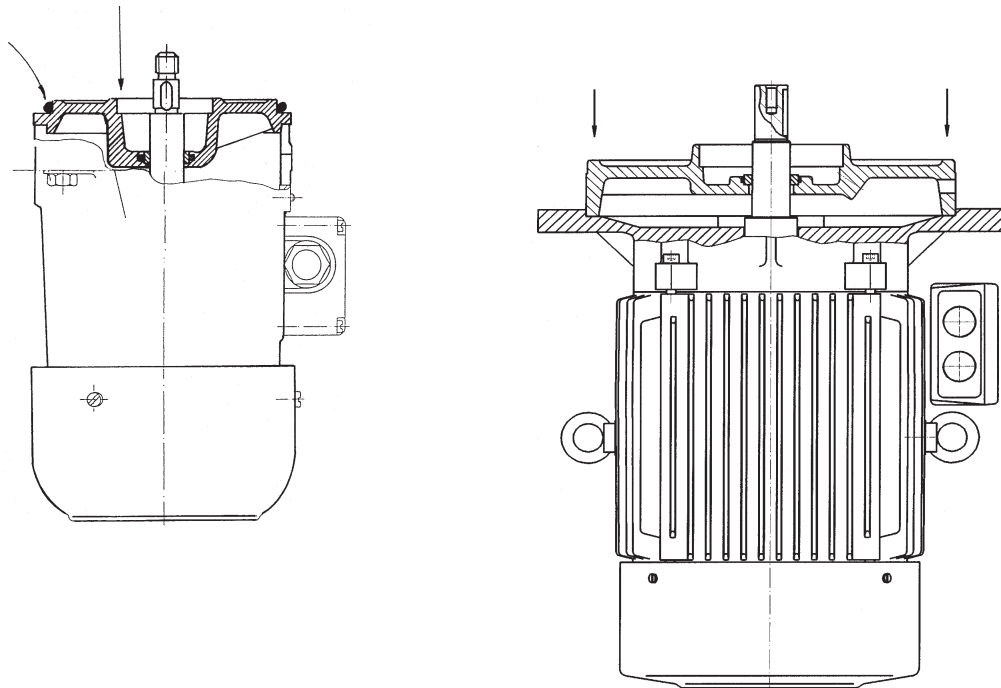
Pressing stationary ring into the sealing flange

Check that the stationary ring is undamaged, clean, smooth and not scratched. If the stationary ring is packed in protective foil, detach it with a knife, carefully minding the rotating surface. Then, remove the grease with a dry and clean cloth. Press the stationary ring into the sealing flange with the smoother surface facing you (the pump). Ensure that the O-ring does not push the ring out. If this happens, use more lubrication. Finally, clean the rotating surface of the stationary ring with a clean and lint-free cloth or towel which is dampened with a suitable organic solvent, e.g. methyl alcohol or spirit. Alternatively, the stationary ring can be installed with a clean lint-free cloth without fingers touching the rotating surface. Finally, the rotating surface should be blown clean with compressed air.

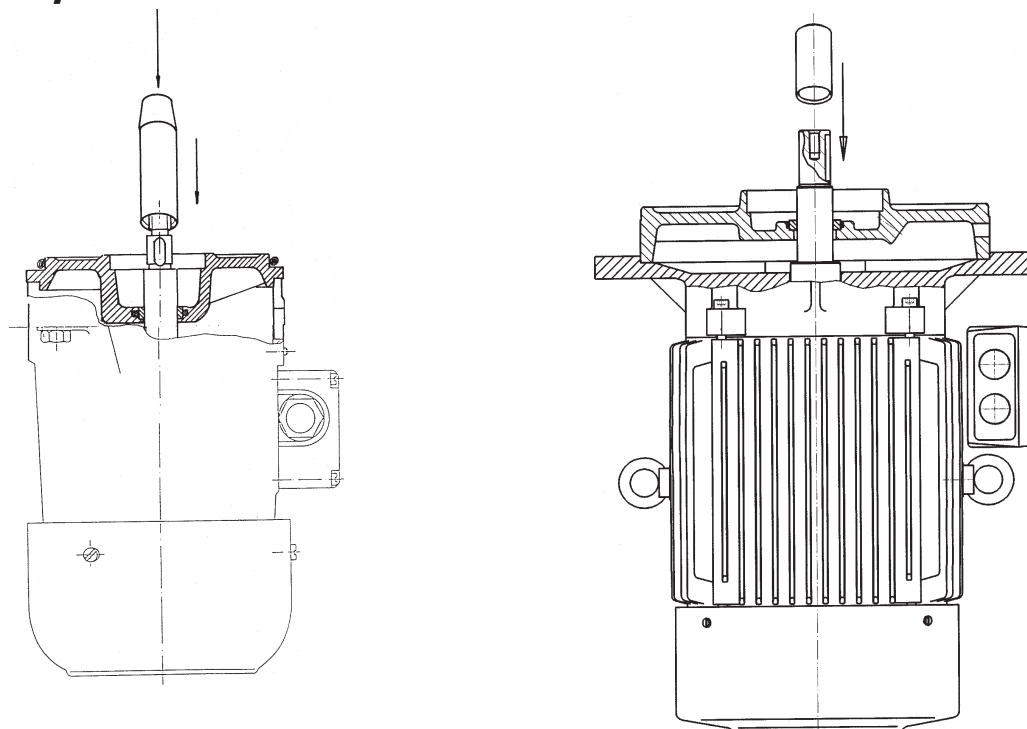


Installing sealing flange onto D-end motor flange

Install the sealing flange onto the motor. Place the assembly sleeve of the installation tool so that it forms a shaft extension. In large pumps, first install the sealing flange onto the motor and then the stationary ring (BO- and BP-marked seals).

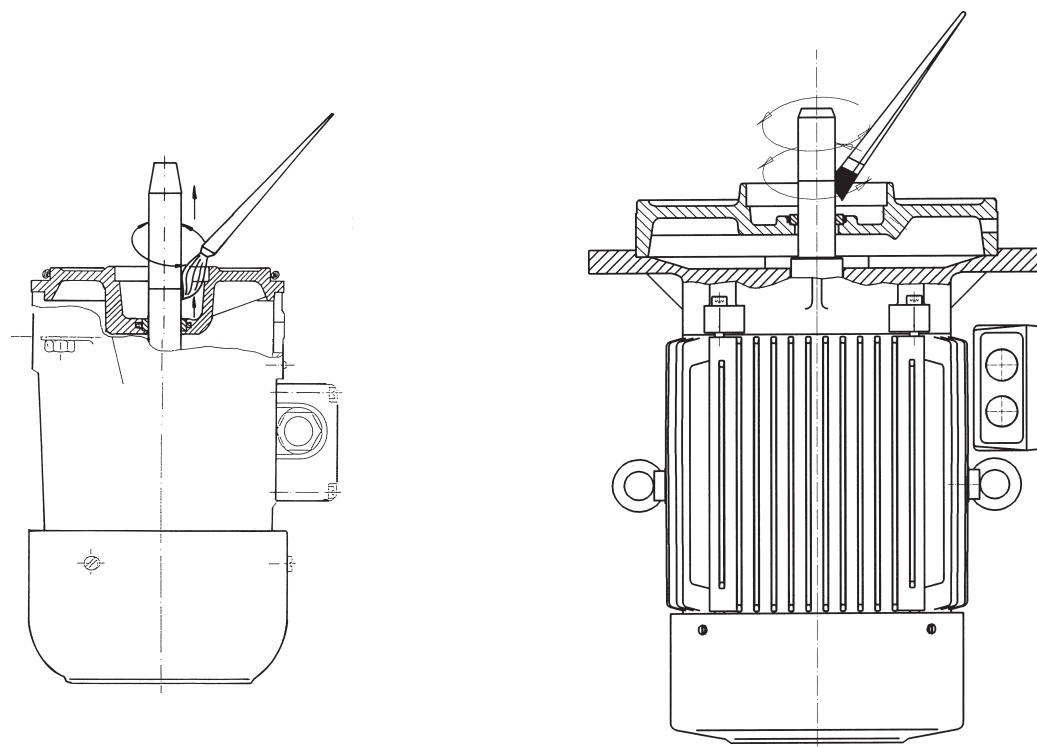


Assembly sleeve as shaft extension



Soaping assembly sleeve

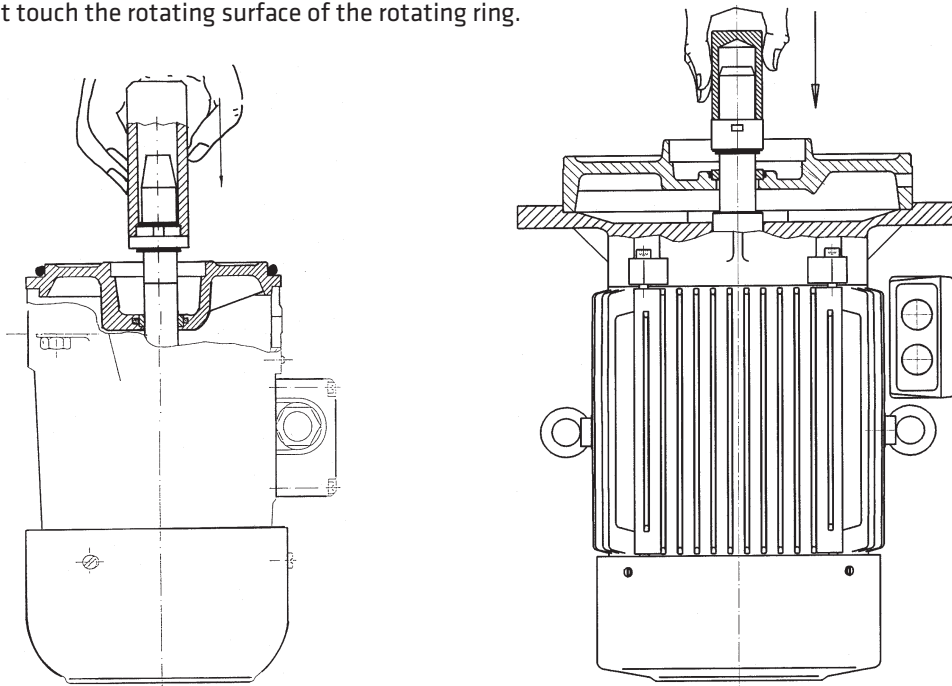
Check that the seal body, bellows and rotating ring are clean and undamaged. If the rotating surface of the rotating ring is dirty, clean it with a clean and lint-free cloth which is dampened with a suitable organic solvent, e.g. methyl alcohol or spirit. Lubricate the shaft and the seal elastomer bellows suitably with soapy water, not with oil.



Pushing bellows onto shaft

Detach the spring (if separate) and, using even pressure, push the bellows onto the shaft using the installation mandrel until the rotating surfaces meet. Do not press too hard. If the spring is attached to the frame, install the whole seal onto the shaft from its bellows part (end of seal) by pushing with a suitable sleeve. If the rotating ring of the seal does not stay fast in the seal, install it first and ensure that when installing the seal frame, the frame and the rotating ring are in place correctly.

Note! Do not touch the rotating surface of the rotating ring.



Installing spring, back plate and impeller

Rotate the shaft slightly and carefully and ensure that the seal fits well. Then, install spring, back plate (if separate) and impeller.

