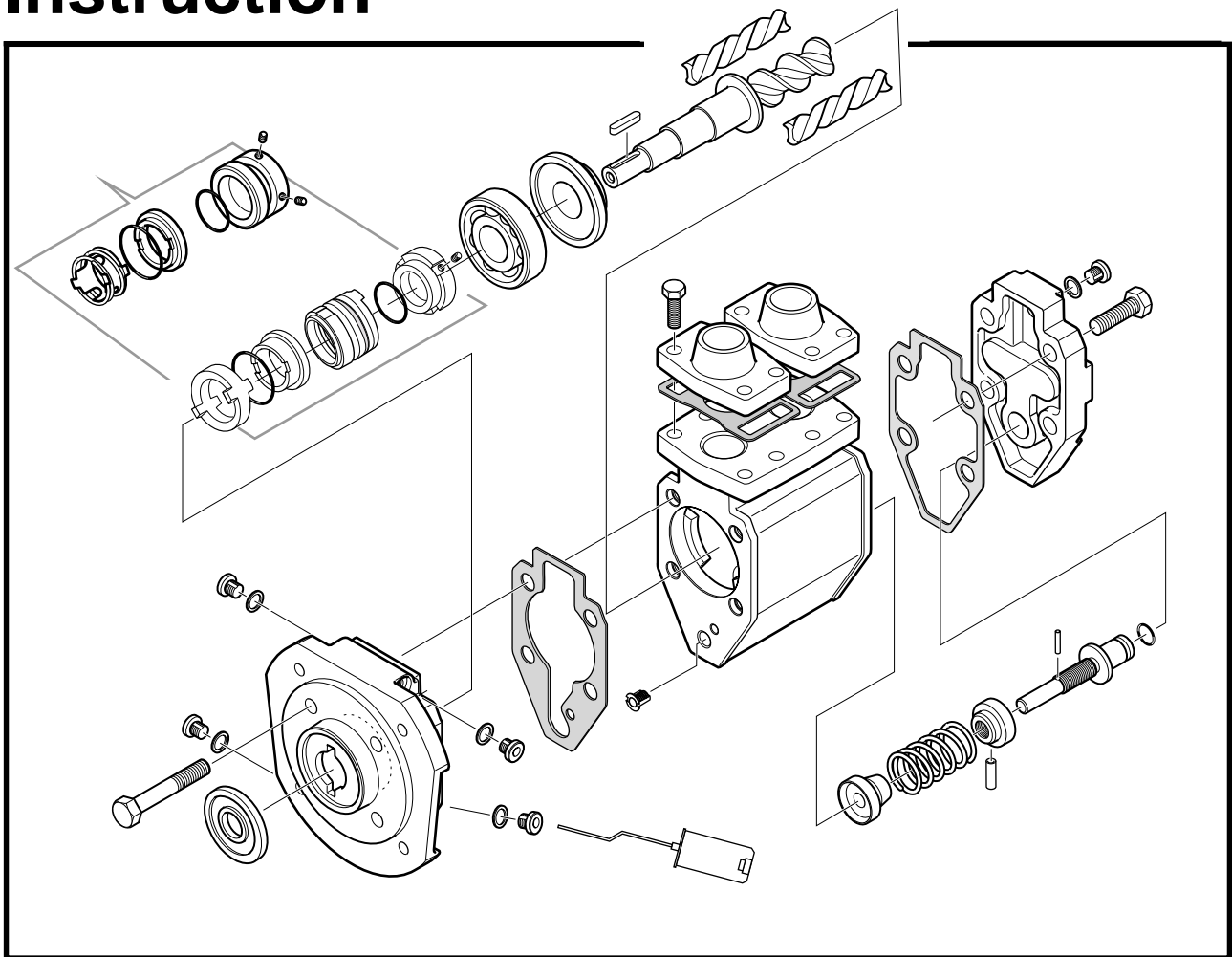


## Maintenance and Service Instruction



This instruction is valid for all ACE pump models shown on page 2

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Sectional view	5
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**Before commencing any work, read this instruction carefully! Failure to comply with these instructions may cause damage and personal injury!**

For more information about the pumps identification code, technical data and performance we refer to the ACE Product description. For more information about the pumps installation, Start-up and trouble shooting we refer to the IMO Installation and Start-up instruction for Low Pressure Pumps.

## List of components

**Valid for all pumps in sizes: ACE 025/032/038 Rotor diameter and Generation: L3/K3/N3**

With version codes:

N	V	B	P
	T		
	Q		

**Also valid for pump options: A101**

**The version code is composed of the letters in the 4 columns.**

*Example of pump designations std: ACE 025L3 NTBP;*

*option: ACE 038N3 NVBP A101*

Pos no	Denomination	Q-ty	Components included in spare parts sets:								Notes	Explanations:
			G011	G012	G050	G053	G054	G057	G070	G082		
1010	Power rotor	1	x					(x)				
1020	Power rotor	1		x				x				G011: Rotor set
113	Key	1	x	x				x				
122	Ball bearing	1	x	x				x				G012: Rotor set
125	Secondary seal	1			x	x	x	x			1	
201	Idler rotor	2	x					(x)				G050: Shaft seal
202	Idler rotor	2		x				x				
351	Balancing bush	1	x	x				x				G053: Minor kit
401	Pump body	1										
416	Suction flange	1										G054: Major kit
417	Screw	8										
418	Gasket to suction flange	1				x	x	x				G057: Joint kit
423	Gasket to discharge flange	1				x	x	x				G070: Valve element
427	Discharge flange	1										G082: Seal Guard kit
440	Return valve	1										
451	Screw	4										Notes:
453	Screw	4										1) Version NTBP and NQBP
462	Plug	1										
462A	Sealing washer	1				x	x	x				2) Version NQBP only
463	Plug	1										
463A	Sealing washer	1				x	x	x				3) Including Gasgenerator
501	Front cover	1										
506	Gasket	1				x	x	x				
509	Shaft seal	1			x	x	x					
537	Deaeration plug	2										
537A	Washer	2				x	x	x				
551	Rear cover	1										
556	Gasket	1				x	x	x				
557	Plug	1										
557A	Washer	1				x	x	x				
605	O-ring	1				x	x	x	x			
608	Valve spindle	1						x		x		
608A	Tension pin	1						x		x		
6120	Set screw	1						x		x		
613	Pin	1						x		x		
614	Valve piston	1						x		x		
615	Valve spring	1						x		x		
7310	Compl. Seal Guard	1								x	2,3	
732	Gas generator	1								x	2	

# Exploded view

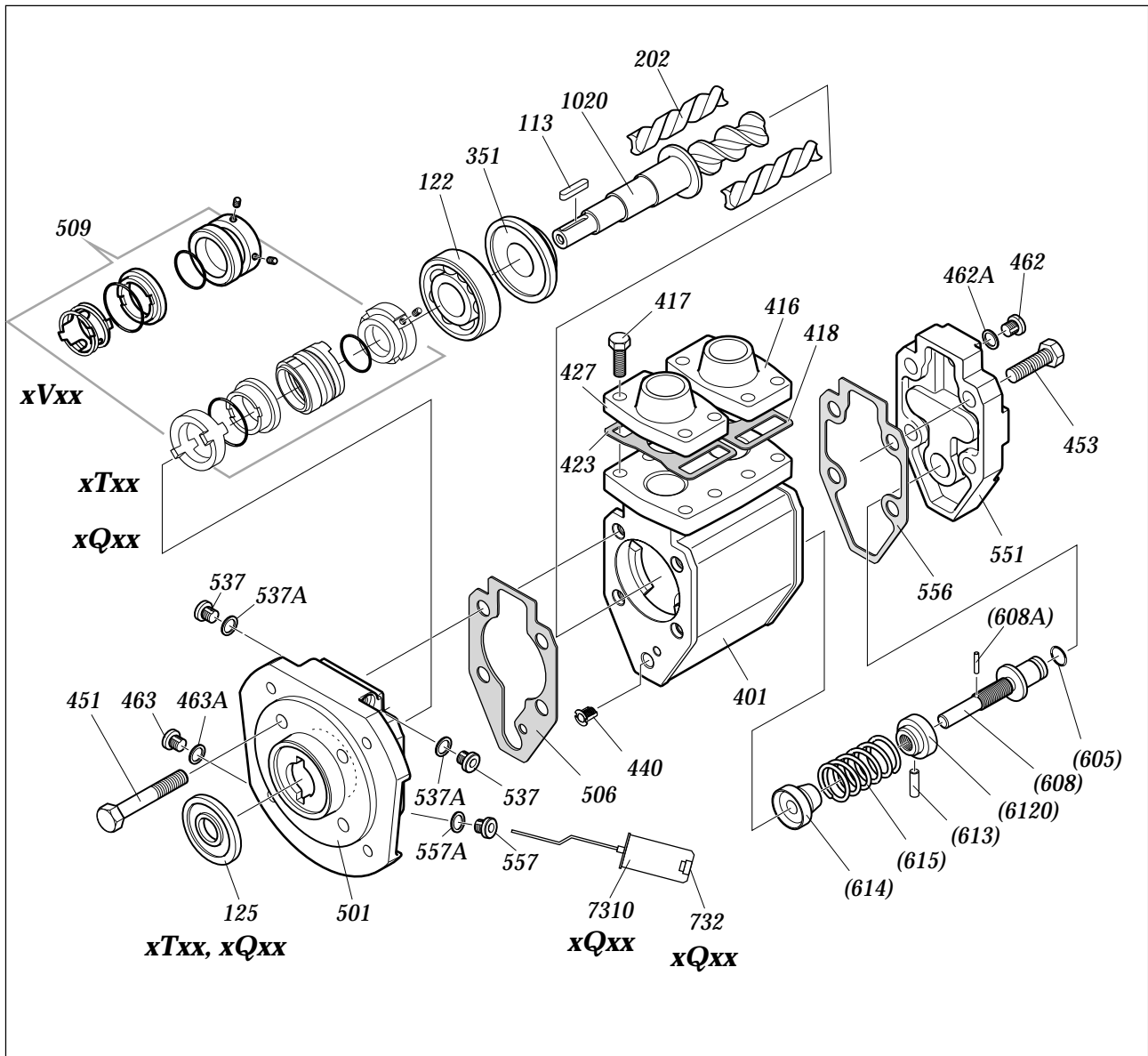


Fig. 1



All work carried out on the pump has to be performed in such a manner that risks for personal injury are observed!



When handling liquids which may involve fire hazards appropriate precautions to avoid danger are to be taken.



When handling liquids that may harm skin use gloves and/or protective clothing.



In case of failure for a system with elevating pressure fluid jets may cause injury and/or damage.



Before any maintenance work, ensure that the driver is deenergized and the pump hydraulically isolated.



Oil leakage may make the floor slippery and cause personal injury.



Connecting and disconnecting of electric cables must be done only by personnel authorized to do such work.

# Ordering code

Item	Spare Parts sets	Part numbers for pump size		
		025	032	038
G012	<b>Rotor set CW-rotation (std)</b>			
	Low lead-L3	190486	190485	–
	Low lead-K3	–	–	190482
	Normal lead-N3	190487	190484	190483
G011	<b>Rotor set CCW-rotation</b>			
	Normal lead-N3	190492	190491	190488
G050	Shaft seal-xVxx	189964	189964	189964
	Shaft seal-xTxx	190495	190495	190497
	Shaft seal-xQxx	190495	190495	190497
G053	Minor kit-xVxx	190501	190710	190500
	Minor kit-xTxx	190503	190712	190499
	Minor kit-xQxx	190503	190712	190499
G054	Major kit=G012(G011)+G053+G070			
G057	Joint kit-xVxx	190525	190714	190522
	Joint kit-xTxx	190524	190713	190523
	Joint kit-xQxx	190524	190713	190523
G070	Valve element	189873	189873	189873
G082	Sealguard-kit xQxx	190526	190526	190527
125	Secondary seal xTxx, xQxx	190469	190469	190468
732	Gas generator xQxx	190530	190530	190530

## Recommendation:

For maintenance the following spare part sets are recommended:

**Set:**                    **To be used:**  
**G057**                    **Joint kit**  
 For dismantling the pump.

**G053**                    **Minor kit**  
 For service.

**G054**                    **Major kit**  
 For repair after damage or greater wear.

## Ordering example:

For IMO-pump ACE 032N3 NVBP, serial number 456789:  
 Shaft seal pos G050 p/n 189964  
 Valve element pos G070 p/n 189873

## Service intervals

The intervals for inspection and replacement of wear parts vary greatly with the properties of the pumped liquid and can only be determined by experience. Pumping liquid which contains abrasive materials, or liquid that is corrosive, will significantly reduce service life and call for shorter service intervals. Wear will normally show as unnormal:

- Vibration
- Noise
- Loss of capacity
- Reduction in flow/pressure
- Leakage



**If the pumps operating temperature exceeds 60°C let the pump cool off before any service, maintenance or dismantling work is commenced to avoid burn injury.**

## Inspection of shaft seal

Excessively leaking shaft seals (more than 10 drops per hour) should be changed without delay, as the leakage normally will grow worse and cause additional damage.

In installations where unplanned shut downs must be avoided, it is advisable to dismantle the pump for a thorough inspection and thereby change out shaft seal and ball bearing, every three years as a max period.

It is recommended always to have the spares included in minor spare part kit available.

## Inspection of rotors

A quick inspection of the idler rotors can be made simply by removing the rear cover. Note that the driver must be deenergized and the pump hydraulically isolated before the rear cover is removed. If a more thorough investigation is needed, proceed as under "Dismantling/Reassembly".

# Sectional view

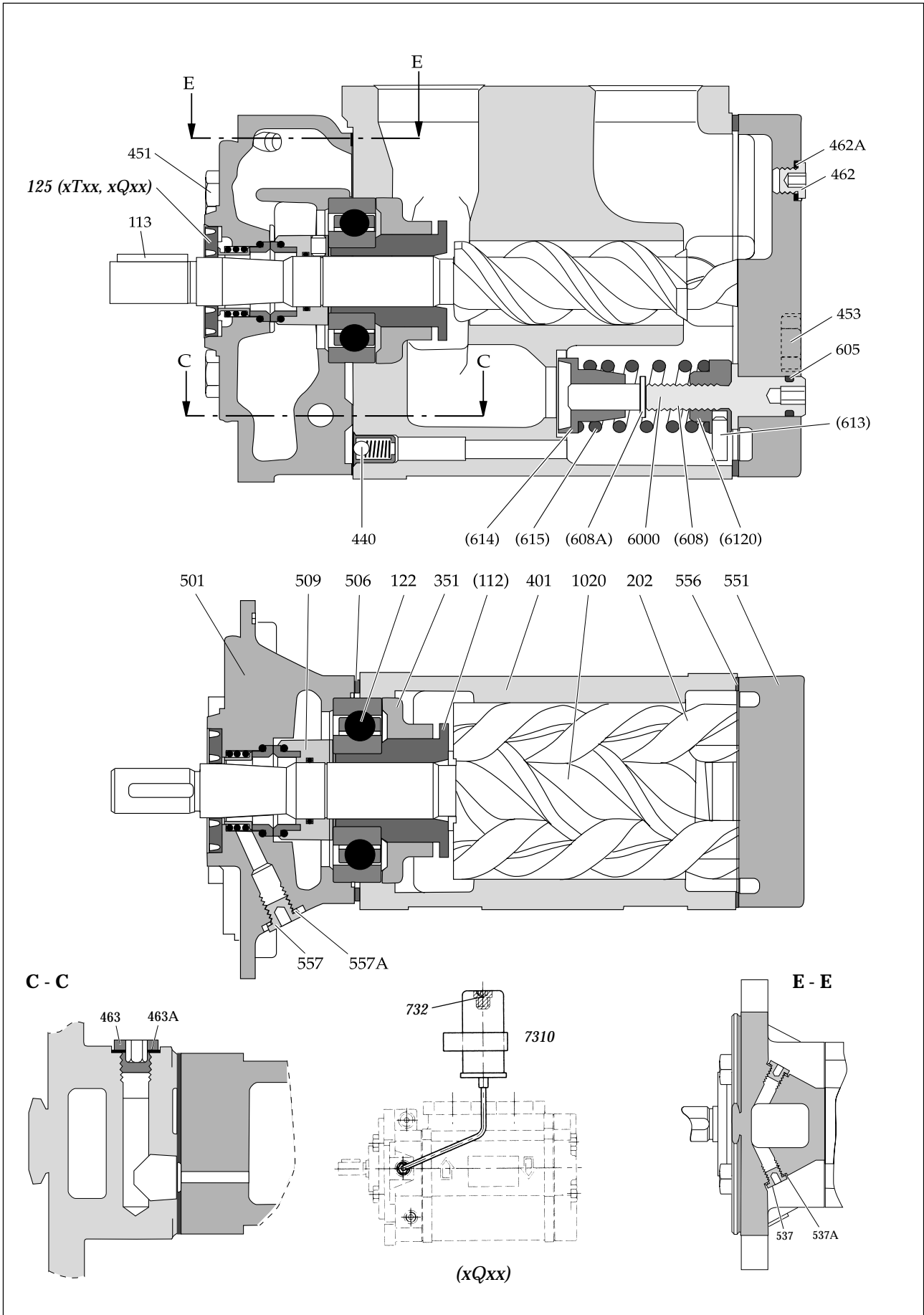


Fig. 2

# Useful tools

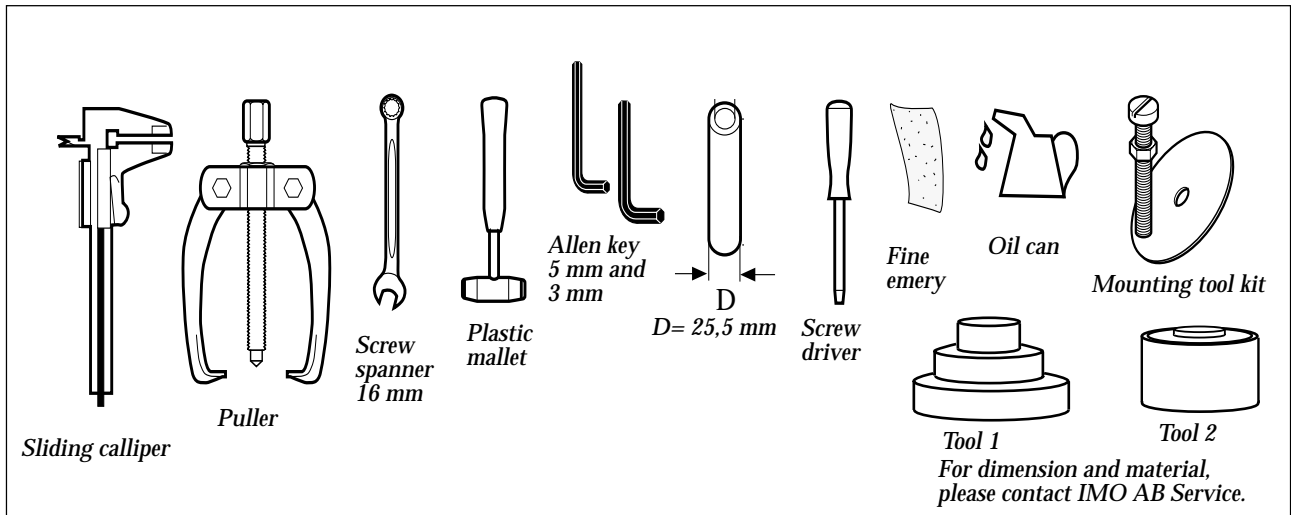


Fig. 3

# Shaft seal - assembly drawing

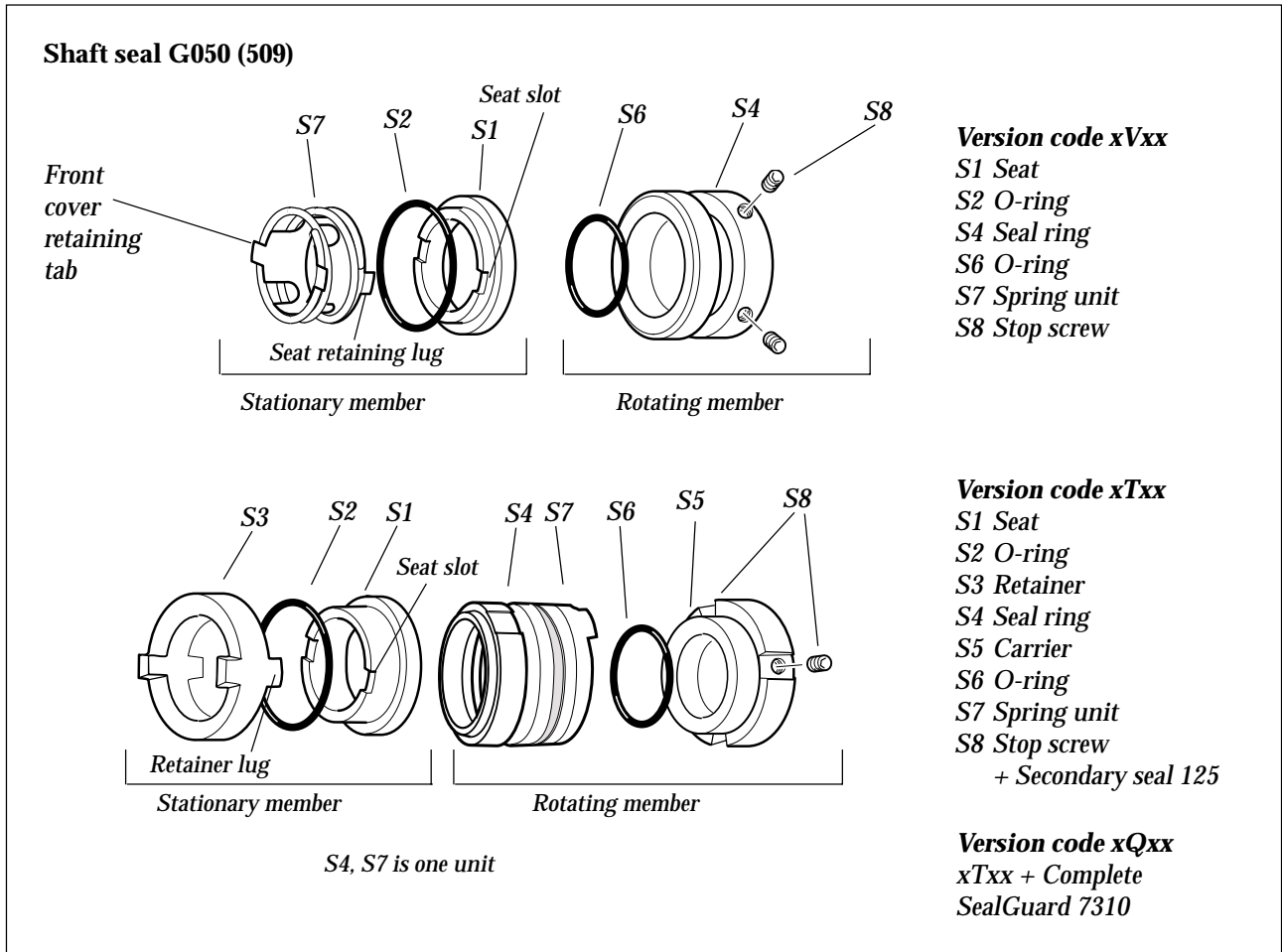


Fig. 4

# Dismantling

**A.**

- Turn the electricity OFF.
- Close the valves.
- Remove the pump from the system.

**ATTENTION**  
Use appropriate vessels to collect oil spillage when removing and opening the pump.

Fig. 5

**B.**

- Note the position of the shaft coupling.
- Release the stop screw.

Fig. 6

**C.**

- Remove the shaft coupling.

Fig. 7

**D.**

- Remove the key 113.

Fig. 8

**E.**

- Remove the screws 451.

Fig. 9

**F.**

- Remove the front cover 501 and power rotor 1020.

Fig. 10

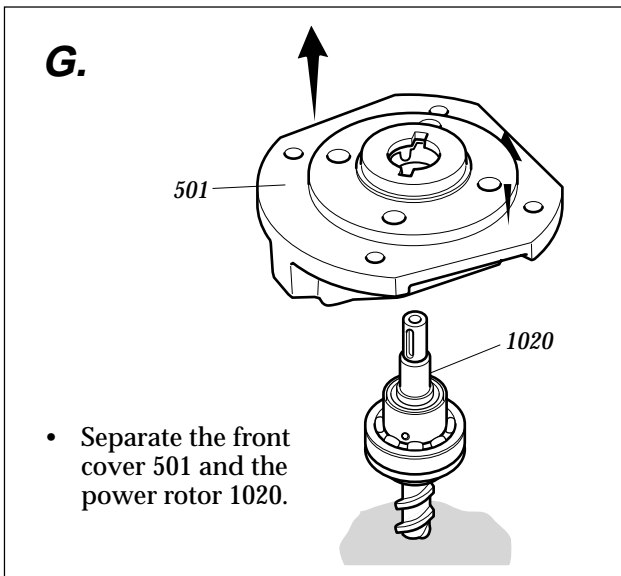


Fig. 11

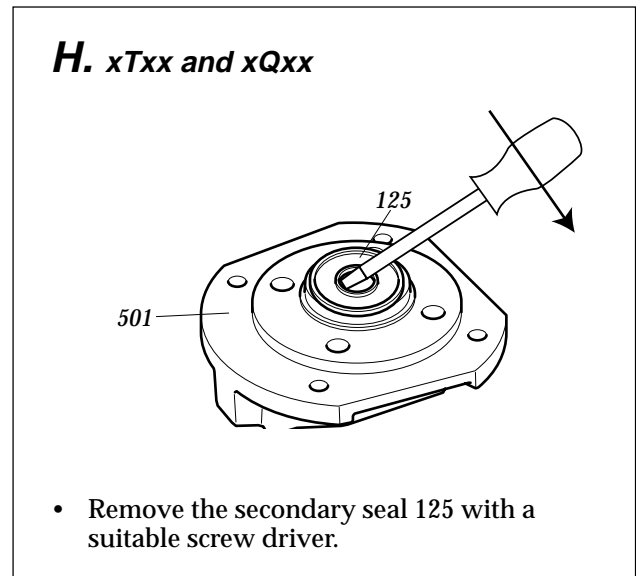


Fig. 12

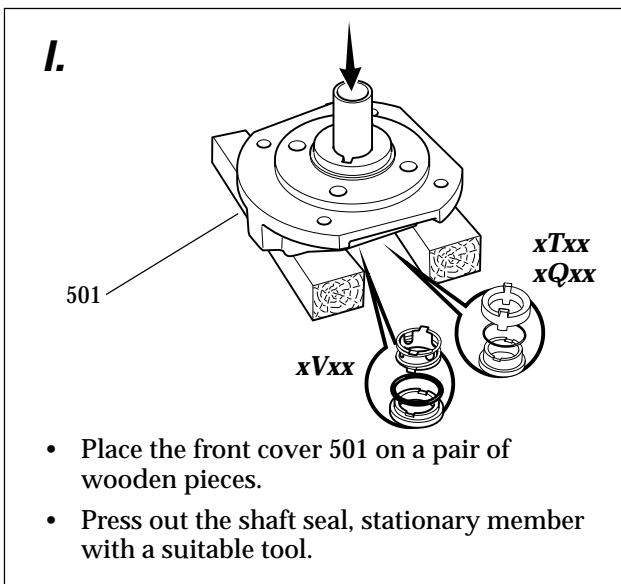


Fig. 13

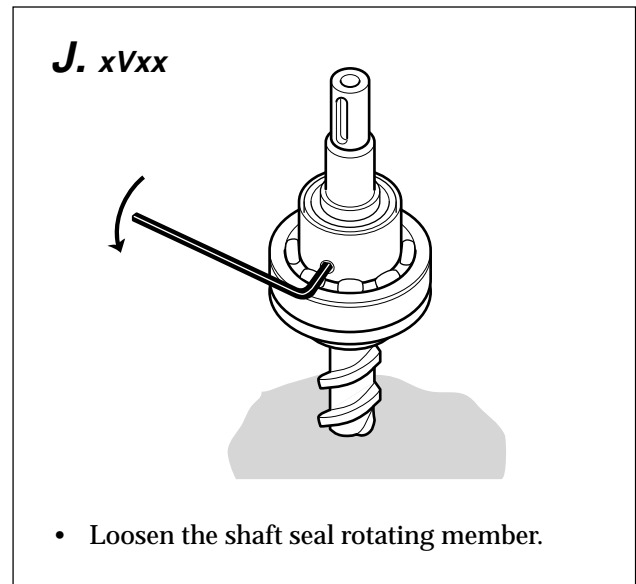


Fig. 14

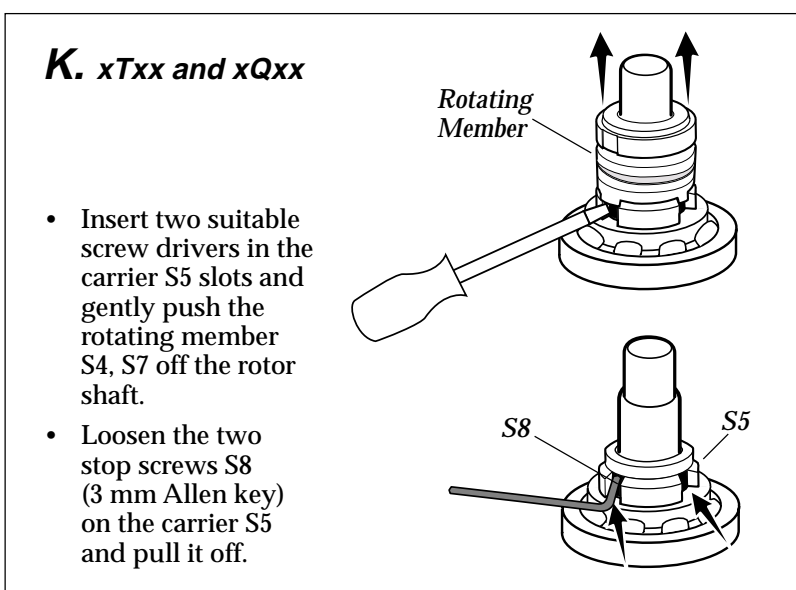


Fig. 15

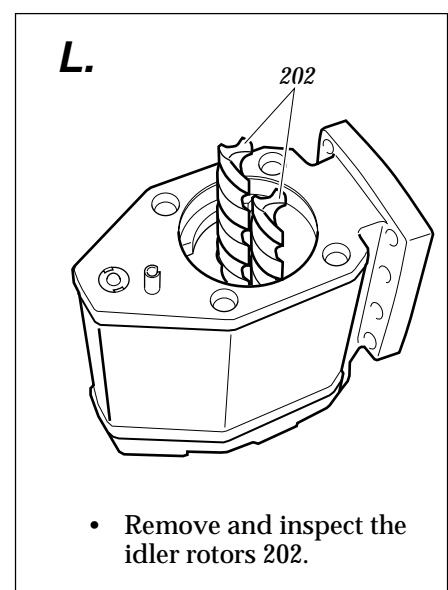


Fig. 16



## Reassembly

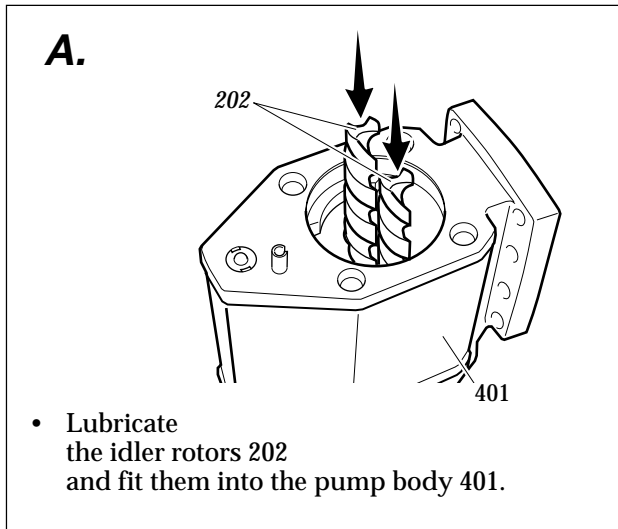


Fig. 17

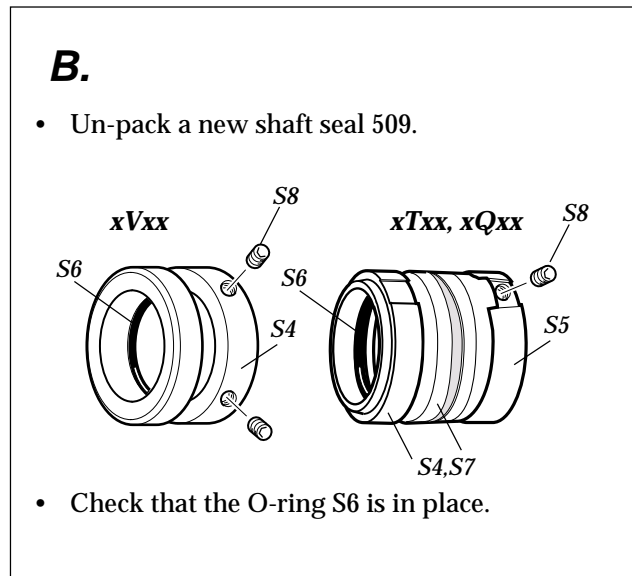


Fig. 18

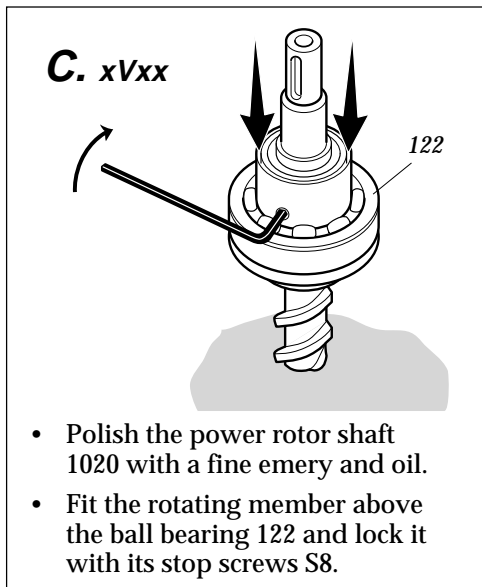


Fig. 19

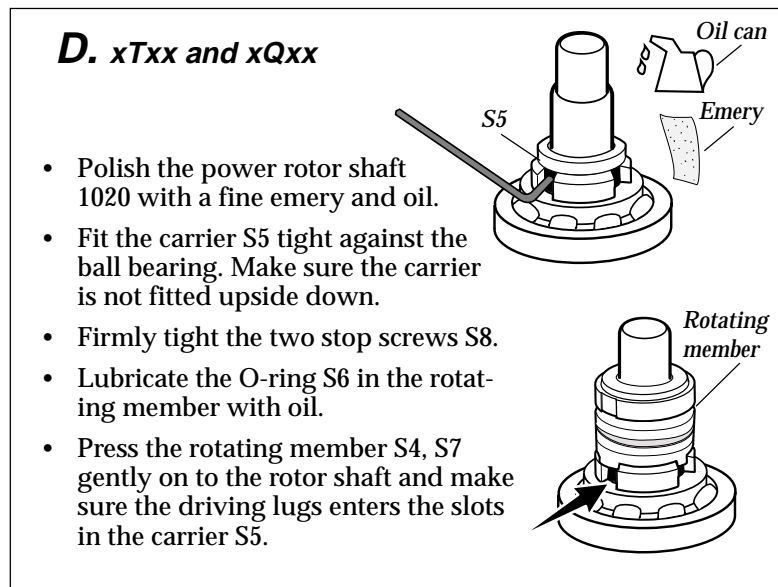


Fig. 20

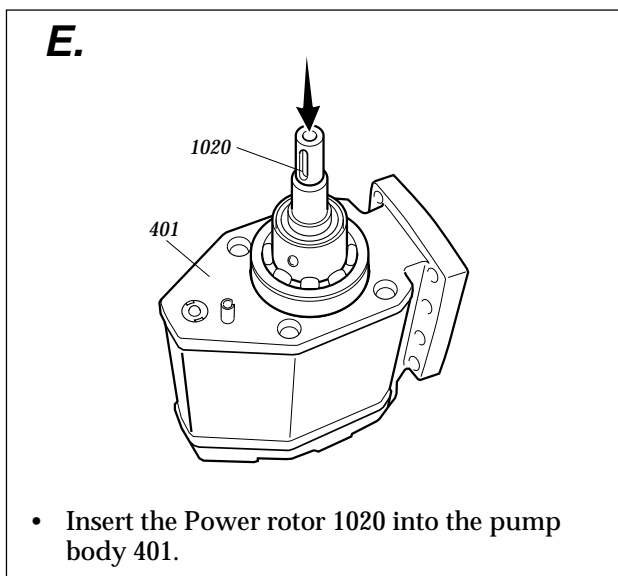


Fig. 21

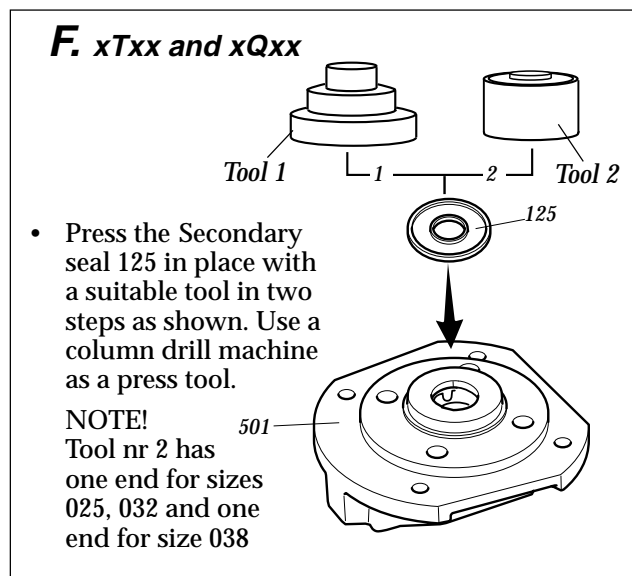


Fig. 22

### G. xVxx

- Fit the spring unit S7 in place. Note the position for the Seat slots and lugs. (See fig 4.)
- Lubricate the O-ring S2 and put it on the seat S1. Fit the seat S1 on top of the spring unit. Watch position of the Seat slots and lugs. (See fig 4.)
- Press the seat gently into the recess in the front cover 501 with a suitable tool as shown.
- Turn the front cover 501 up-side down. The seat shall now remain in the cover.

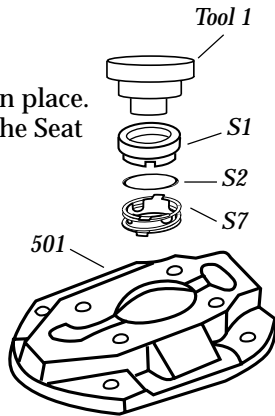


Fig. 23

### H. xTxx and xQxx

- Fit the retainer S3 in place. Note the position for the retainer lugs and cover slots. (See fig 4.)
- Lubricate the O-ring S2 and put it on the seat S1. Fit the seat S1 on top of the retainer. Watch the position of the seat slots and lugs. (See fig 4.)
- Press the seat gently into the recess in the front cover 501 with a suitable tool as shown.
- Turn the front cover 501 up-side down. The seat shall now remain in the cover.

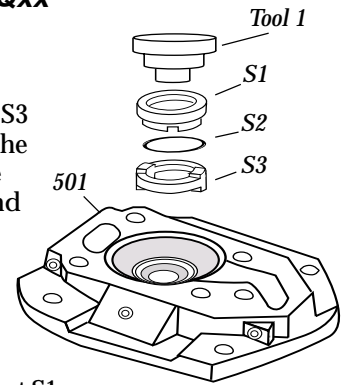


Fig. 24

### I.

- Replace the gasket 506.
- Carefully fit the Front cover 501 on the pump.

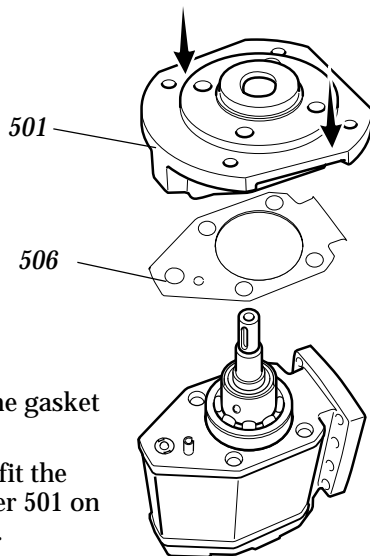


Fig. 25

### J.

- Fit the screws 451.
- Tighten them crosswise, step by step to avoid deformation on bearing outer ring and seal damages.
- Turn the shaft to check that it moves without too much force.

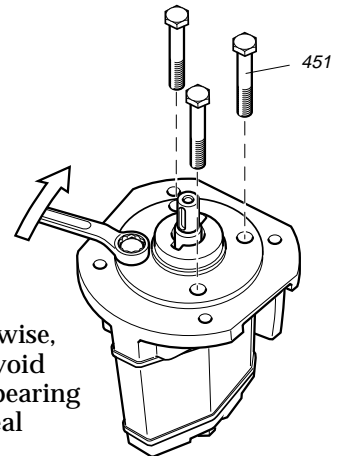


Fig. 26

### K.

- Fit the key 113 back in place.

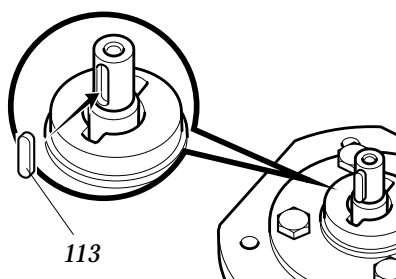


Fig. 27

### L.

- Press on the shaft coupling to its original position.
- Tighten the stop screw.
- Install the pump back into the system and proceed according to instructions under "Start-up" in the Installation manual.

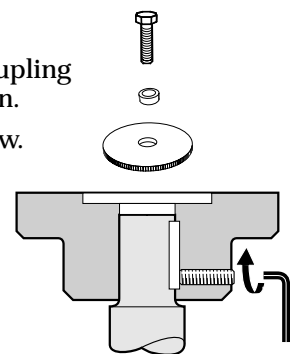


Fig. 28

# Pressure relief valve

## ATTENTION

### Spring tension.

- Release spring tension by turning set screw 6120 CCW as much as possible.
- Loosen and remove the screws 453.
- Separate the valve element from the rear cover 551.
- If necessary, replace the gasket 556 and the O-ring 605.
- Reassemble the parts in reverse order. Be careful to tighten the screws 453 crosswise.
- Readjust the valve pressure according to the "Installation and Start-up Instruction for IMO Low pressure pumps".

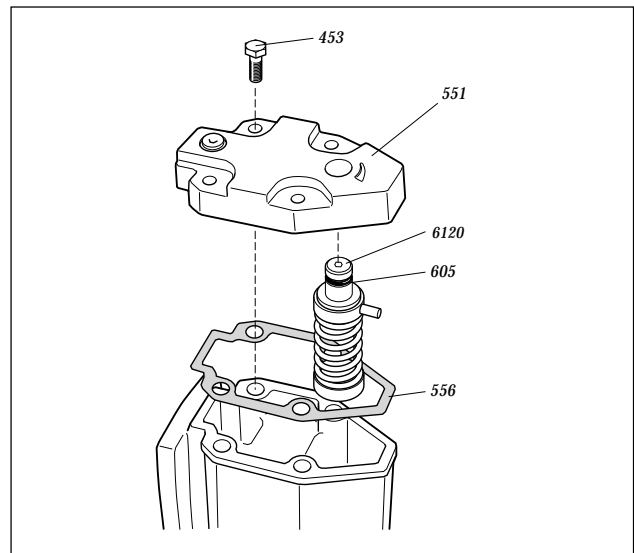


Fig. 29

# SealGuard

Version code N Q B P

## Recharging

- 1) Disconnect the pipe connector (4) from the dispenser (2). Remove the check valve (3).
- 2) Remove the cover disk (10). Remove the gas generator (9) from the dispenser (2) with a 21 mm socket. Dispose the generator in the recycling system for batteries, where available. Push the piston to its "filled" position, and fill the dispenser with high-temperature resistant engine oil. Fit the check valve (3) and the connector (4) to the dispenser.
- 3) Feed oil into the hose (5) and seal compartment, for example with an oil-filled grease gun. Reconnect the hose (5) to the connector (4).
- 4) Fit a new gas generator (9) to the dispenser (2). Tighten with approx. 2 Nm. Clip on the cover disk (10).
- 5) Turn the gas generator set knob (3 mm Allen key) to no. 6 which will make the oil last for about 3 months.

## NOTE!

For longer periods of stand-by, the gas generator set-knob could be set to zero to avoid unnecessary oil consumption.



Keep away from open fire when removing the gas generator.

## ATTENTION

The SealGuard can be readjusted or switched off during operation. Depending on temperature and setting, it can take from hours to a couple of days after starting, until oil is being dispensed.

For more information about SealGuard, read the Installation and start-up Instruction for SealGuard.

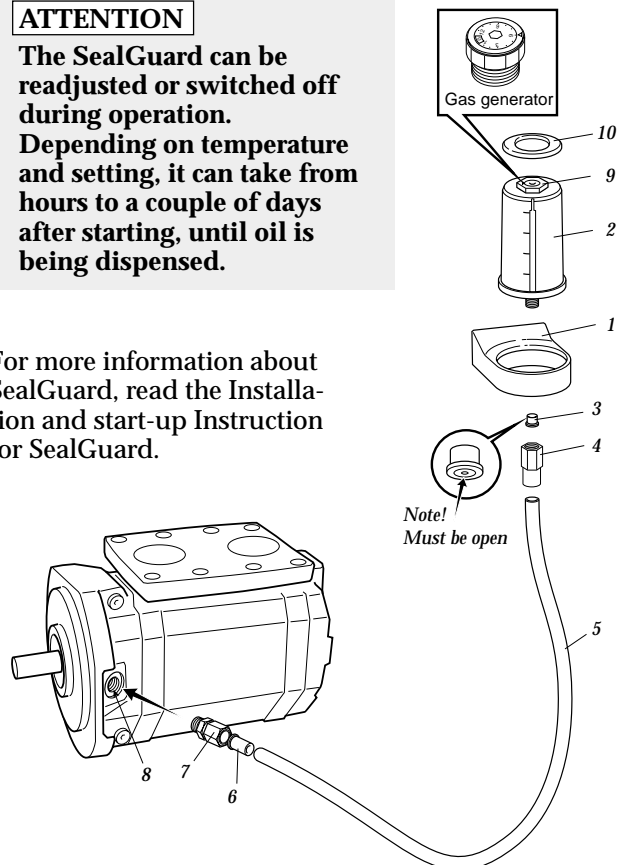


Fig. 30



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