

**NOTE:** If the pump is disassembled within the warranty period, the pump is no longer covered by the warranty

### DISASSEMBLY

1. Tools required for dismantling the pump



2. Loosen and remove 4 screws



3. Remove mounting flange



4. Remove spring



5. Remove shaft sealing



6. Remove 2 guide pins



7. Remove O-ring



8. Turn pump upside down



12. Remove pistons and retainer plate



9. Loosen and remove 10 screws



13. Remove retainer ball



10. Remove cover



14. Remove retainer



11.



15. Remove spring



16. Remove cylinder barrel



20. Loosen and remove 6 screws



17. Remove port plate



21. Remove port flange



18. Remove 1 guide pin



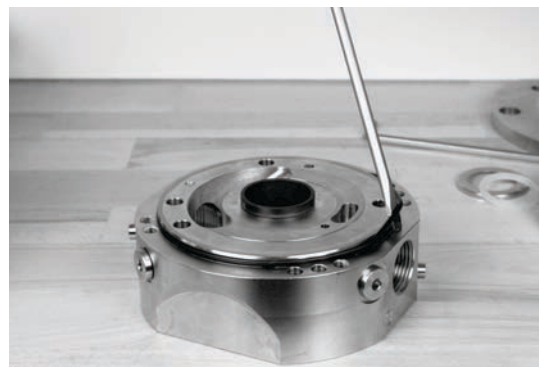
22. Remove 1 guide pin



19. Turn pump upside down and remove 2 washers



23. Remove O-ring from port flange



24. Loosen thrust plate from cylinder barrel



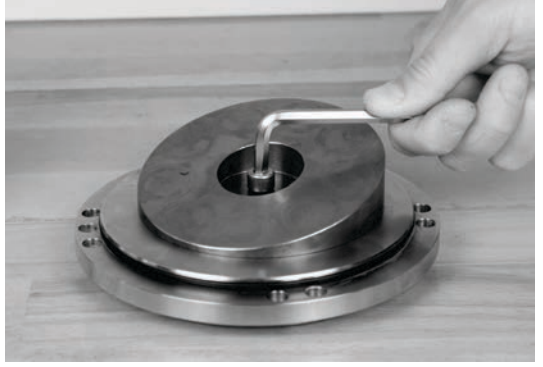
28. Remove 1 guide pin from end cover plate



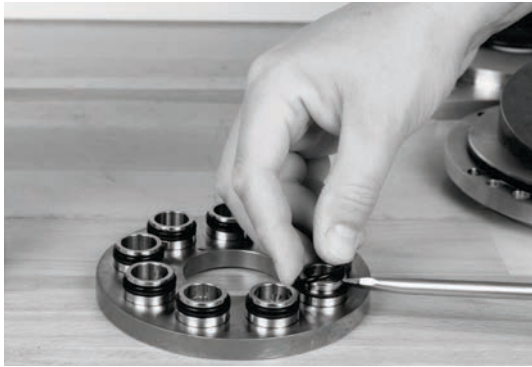
25. Remove thrust plate



29. Loosen and remove screw from swash plate



26. Remove O-rings from thrust plate



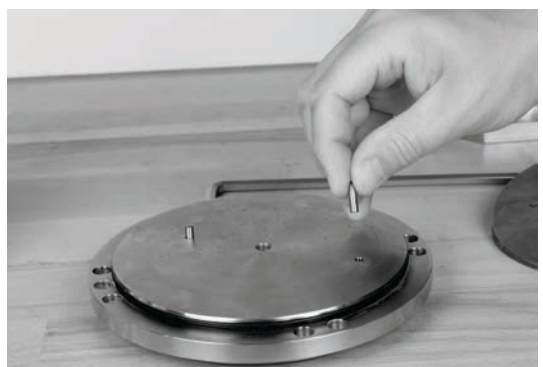
30. Remove swash plate



27. Remove backup rings from thrust plate



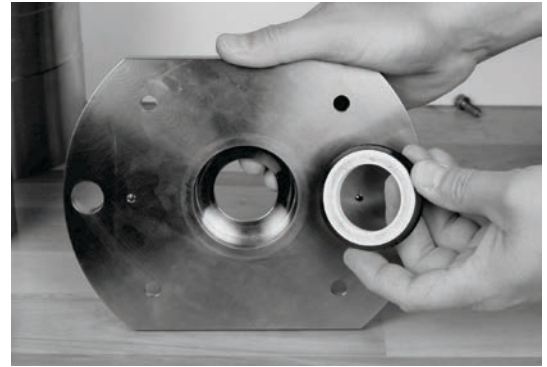
31. Remove 2 guide pins from end cover plate



32. Remove O-ring from end cover plate



34.



33. Remove shaft sealing from mounting flange



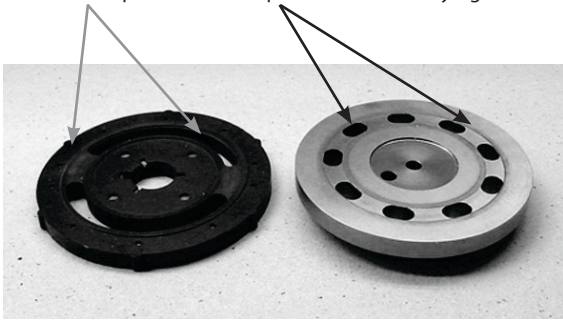
35. Pump disassembled



## INSPECTION:

### Valve and thrust plate

1. Neither valve plate nor thrust plate must show any sign of wear.



2. Hold a ruler against surface of plate and check tightness against a light source.



3. Check that both O-rings and back-up rings are not broken and do not show severe wear.

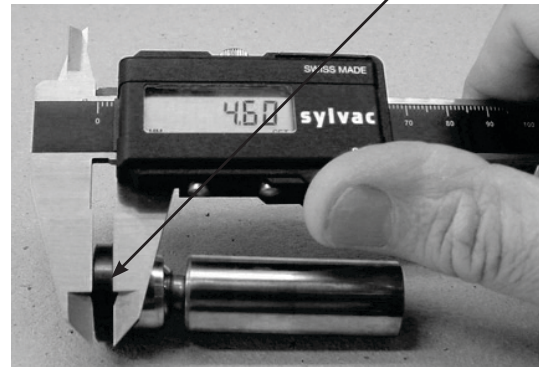
### Swash plate:

1. Check that surface of swash plate is smooth and without any large scratches (depth more than 0.1 mm).



### Pistons

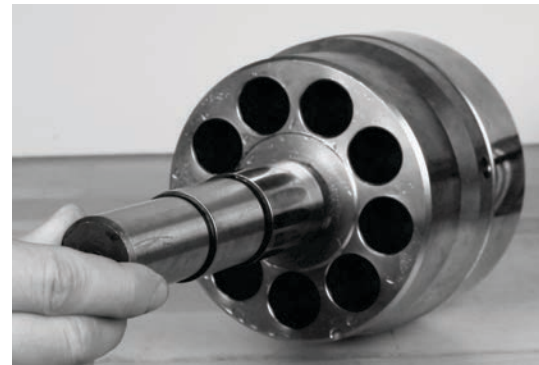
1. Play in ball and socket joint must not exceed 0.1 mm.
2. Thickness of piston shoes must be at least 4.4 mm.



3. Hold a ruler against surfaces of piston shoes to check that the surfaces are even and smooth and without any scratches. It is acceptable that the (black) treated surfaces of the pistons are partly worn.



4. Check bushes in cylinderbarrel for wear and scratches



5. Check main bearing for wear and scratches



## ASSEMBLY

1. Tools required for assembly of the pump



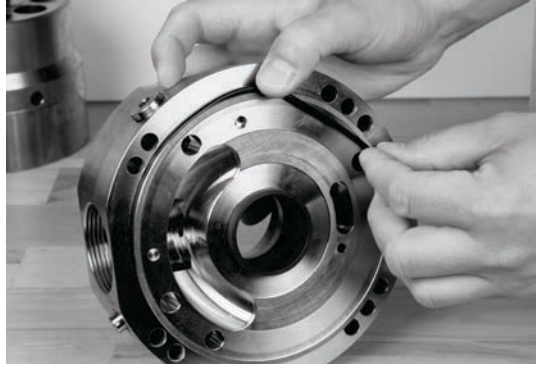
2. Parts needed for assembly of the pump



3. Mount 1 guide pin in housing



4. Mount O-ring in port flange

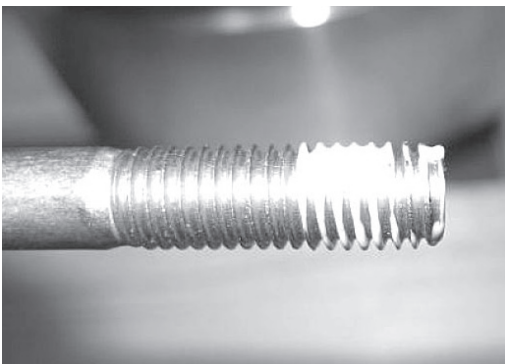


**WARNING:**  
Do not use silicone when assembling the pump.  
Do not reuse disassembled O-rings; they might be damaged. Always use new O-rings.

**Important:**  
It is essential that the pump is serviced in conditions of absolute cleanliness. All parts must be absolute clean before mounting.

### Lubrication:

- To prevent seizing-up, lubricate all threads with PTFE lubrication type.
- O-rings inside pump may be lubricated only with clean filtered water.
- O-rings for port flange, mounting flange and flushing valve must be lubricated.
- It is important to lubricate ALL parts to be assembled with clean filtered water (Especially all PEEK parts).



5. Mount port flange on housing. Use pin as guide



9. Mount 1 guide pin inside the housing on the back side of the port plate



6. Mount 6 screws (M8x55)



10. Mount port plate. Be aware of orientation/guide pin



7. Tighten screws to 30Nm



11. Mount backup rings on the thrust plate



8. Turn pump upside down



12. Mount O-rings on the thrust plate





13. Spray with water on cylinder barrel and thrust plate



14. Mount thrust plate on cylinder barrel



15. Press thrust plate into cylinder barrel



16. Mount cylinder barrel in housing



17. Mount spring



18. Mount retainer on top of the spring



19. Spray with water and mount retainer ball



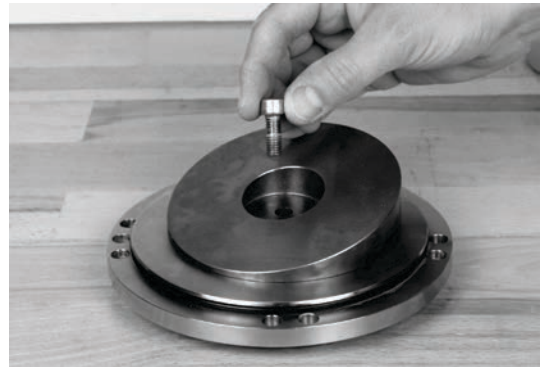
20. Place retainer plate on top of retainer ball



21. Spray with water and mount pistons



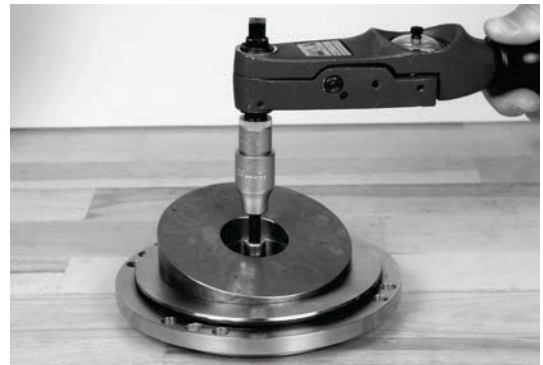
25. Mount screw (M8x20)



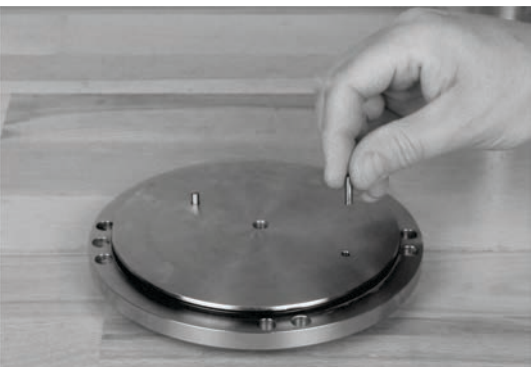
22. Spray with water and mount O-ring on end cover



26. Tighten screw to 30Nm



23. Mount 2 guide pins on endcover



27. Mount 1 guide pin on housing



24. Mount swash plate



28. Spray piston shoes with water



29. Mount endcover on the housing



30. Mount 10 screws (M8x20)



31. Tighten 10 screws to 30Nm



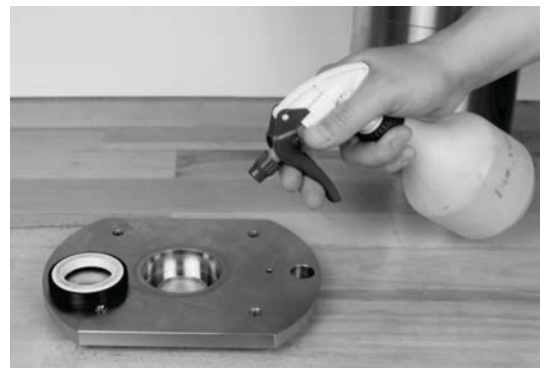
32. Turn pump upside down and mount 2 guide pins



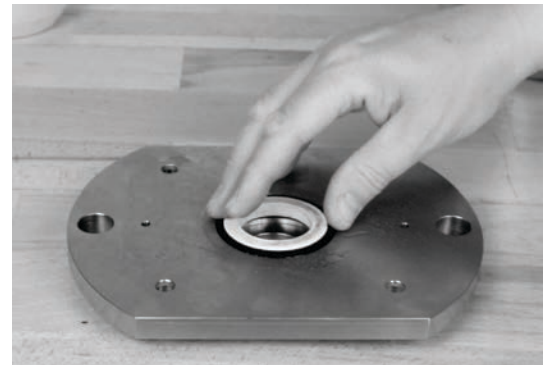
33. Spray with water and mount O-ring



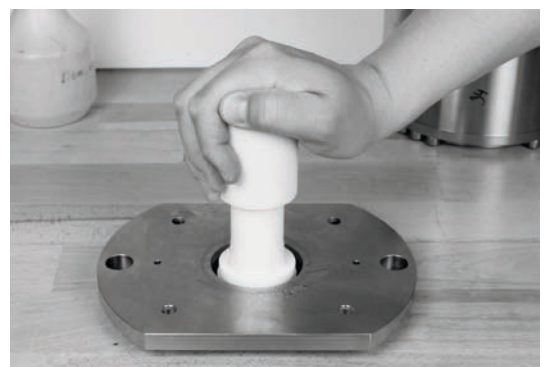
34. Spray shaft sealing with water before mounting



35. Mount shaft sealing



36. Use tool and press shaft sealing into place



37. Mount transparent ring



41. Spray with water



38. Mount metal ring



42. Mount sealing (smallest diameter pointing down)



39. Mount spring



43. Mount mounting flange



40. Mount special tool on shaft



44. Mount 4 screws



45. Tighten screws to 30Nm

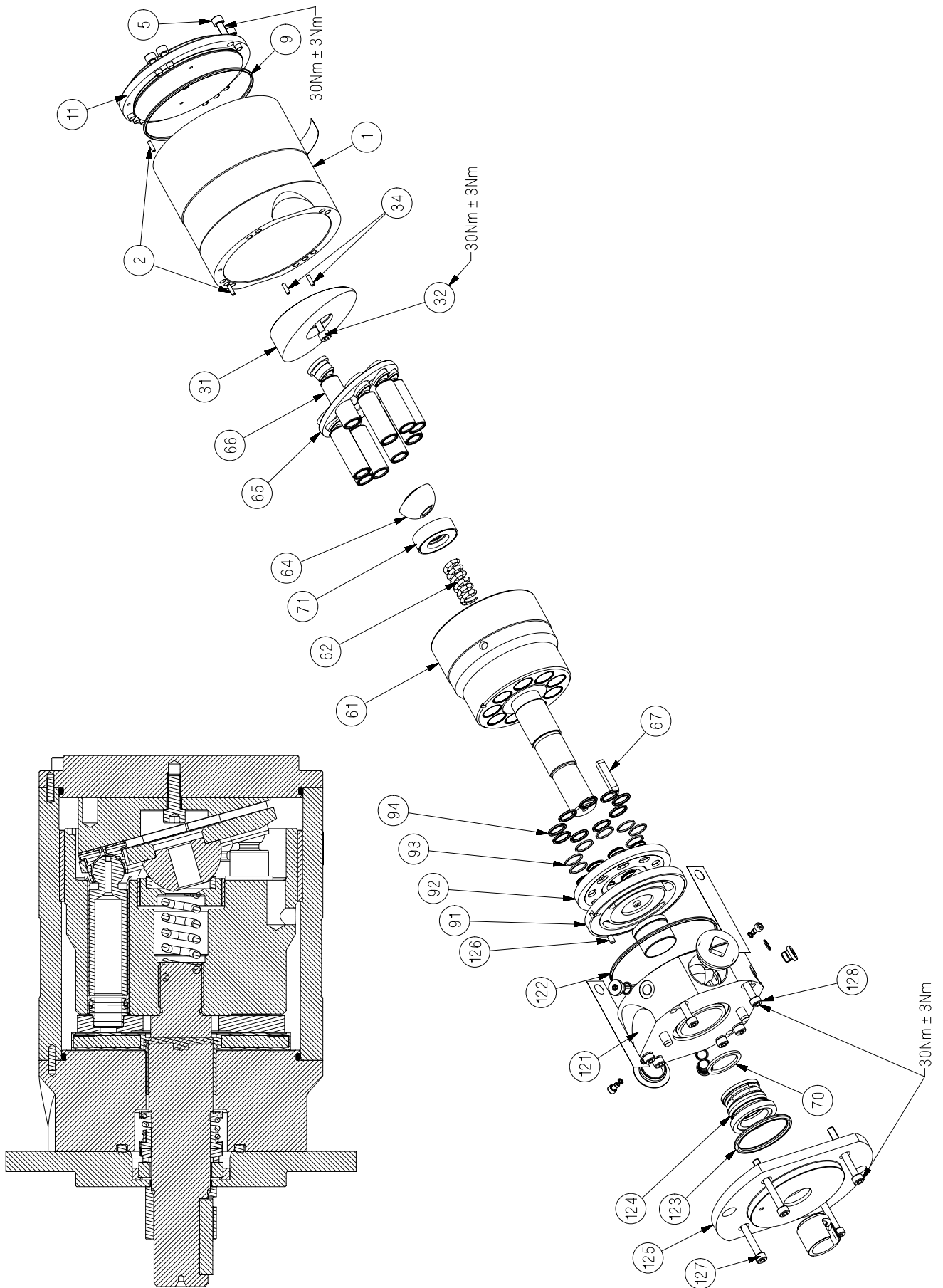


46. Finished



Spare parts list for PAHT 50-90				180B4196 - Seal set (PAHT 50-90)	180B4195 - Cylinder barrel set (PAHT 50-90)	180B4192 - Valve plate set (PAHT 50-70)	180B4193 - Valve plate set (PAHT 80-90)	180B4194 - Piston set (PAHT 50-90)	180B4252 - Swash plate set (PAHT 50)	180B4255 - Swash plate set (PAHT 63)	180B4258 - Swash plate set (PAHT 70)	180B4253 - Swash plate set (PAHT 80)	180B4256 - Swash plate set (PAHT 90)
Pos.	Qty.	Designation	Material										
1	1	Housing	AISI 316										
2	2	Pin ø4 x 14	AISI 304	x									
5	10	Screw M8 x 16	AISI 304	x									
9	1	O-ring ø135 x 3	NBR	x									
11	1	End cover CW	AISI 316										
31	1	Swash plate	AISI 431						x	x	x	x	x
32	1	Screw M8 x 20	AISI 304						x	x	x	x	x
34	2	Pin ø4 x 14	AISI 304						x	x	x	x	x
61	1	Cylinder barrel	AISI 431		x								
62	1	Spring	1.4462					x					
64	1	Retainer ball	AISI 431					x					
65	1	Retainer plate	AISI 304					x					
66	9	Piston	AISI 431/ PEEK					x					
67	1	Key 8 x 7 x 32	AISI 316Ti	x									
70	1	Washer	Polypropylen	x									
71	1	Retainer	AISI 304 / PEEK					x					
91	1	Port plate	AISI 304 / PEEK			x	x						
92	1	Valve plate	AISI 431			x	x						
93	9	Back up ring	PTFE			x	x						
94	9	O-ring ø18,3 x 2,4	NBR			x	x						
121	1	Port flange	AISI 316										
122	1	O-ring ø135 x 3	NBR	x									
123	1	O-ring Ø65 x 5	NBR	x									
124	1	Shaft sealing	AISI 304 / NBR	x									
125	1	End cover	AISI 316										
126	1	Pin ø6 x 10	AISI 304			x	x						
127	6	Screw M8 x 70	AISI 304	x									
128	4	Screw M8 x 55	AISI 304	x									
	1	Service instruction		x									

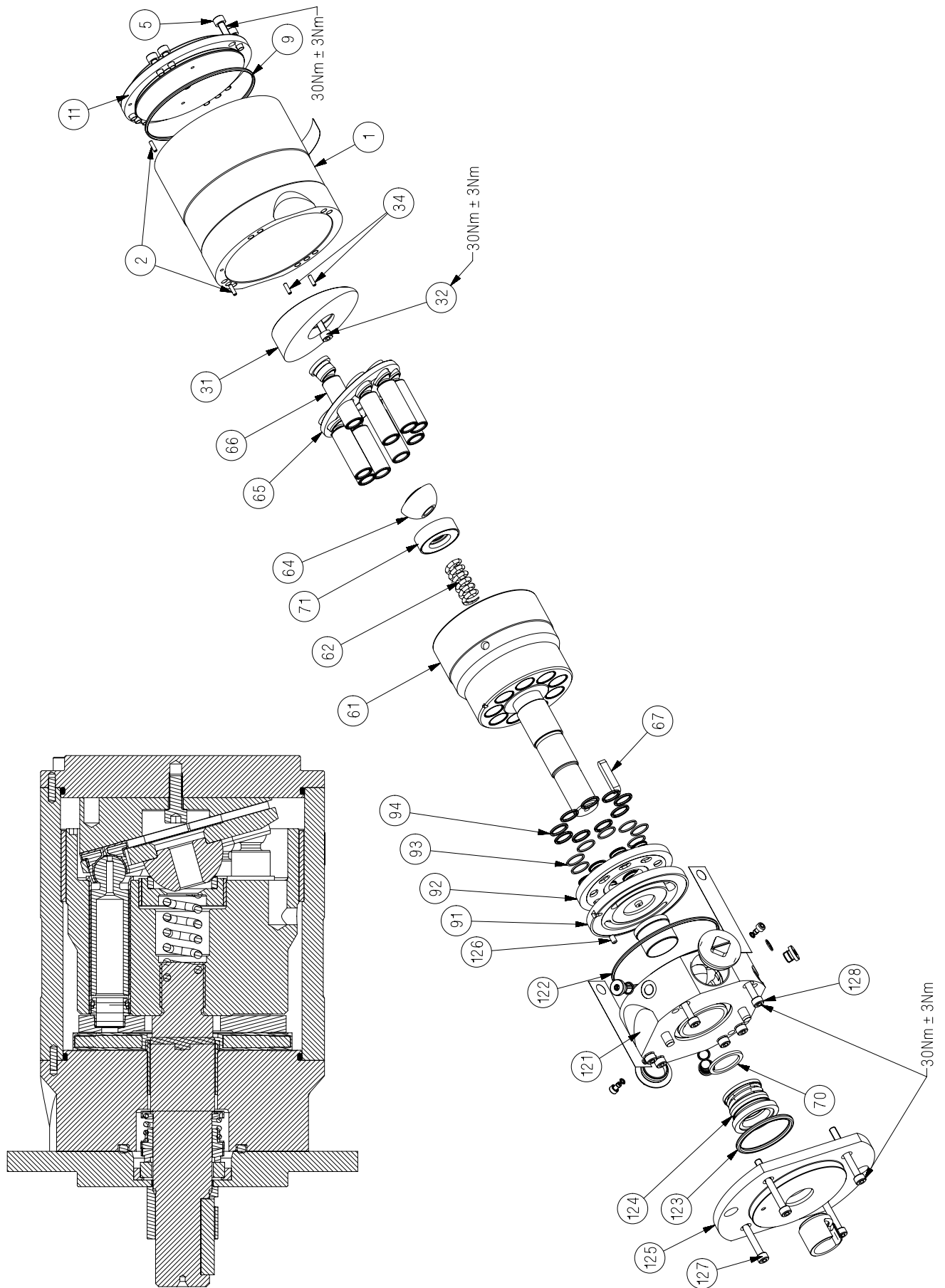
Exploded view for  
PAHT 50-90



Spare parts list for PAHT G 50-90				180B4341 - Seal set (PAHT G 50-90)	180B4339 - Cylinder barrel set (PAHT G 50-90)	180B4340 - Valve plate set (PAHT G 50-70)	180B4344 - Valve plate set (PAHT G 80-90)	180B4343 - Piston set (PAHT G 50-90)	180B4326 - Swash plate set (PAHT G 50)	180B4327 - Swash plate set (PAHT G 63)	180B4328 - Swash plate set (PAHT G 70)	180B4329 - Swash plate set (PAHT G 80)	180B4330 - Swash plate set (PAHT G 90)
Pos.	Qnt.	Designation	Material										
1	1	Housing	AISI 316										
2	2	Pin ø4 x 14	AISI 304	x									
5	10	Screw M8 x 16	AISI 304	x									
9	1	O-ring ø135 x 3	NBR	x									
11	1	End cover CW	AISI 316										
31	1	Swash plate	AISI 431						x	x	x	x	x
32	1	Screw M8 x 20	AISI 304						x	x	x	x	x
34	2	Pin ø4 x 14	AISI 304						x	x	x	x	x
61	1	Cylinder barrel	AISI 431		x								
62	1	Spring	1.4462					x					
64	1	Retainer ball	AISI 431					x					
65	1	Retainer plate	AISI 304					x					
66	9	Piston	AISI 431 / PEEK					x					
67	1	Key 8 x 7 x 32	AISI 316Ti	x									
70	1	Washer	Polypropylen	x									
71	1	Retainer	AISI 304 / PEEK					x					
91	1	Port plate	AISI 304 / PEEK			x	x						
92	1	Valve plate	AISI 431			x	x						
93	9	Back up ring	PTFE			x	x						
94	9	O-ring ø18,3 x 2,4	NBR			x	x						
121	1	Port flange	AISI 316										
122	1	O-ring ø135 x 3	NBR	x									
123	1	O-ring Ø65 x 5	NBR	x									
124	1	Shaft sealing	AISI 304 / NBR	x									
125	1	End cover	AISI 316										
126	1	Pin ø6 x 10	AISI 304			x	x						
127	6	Screw M8 x 70	AISI 304	x									
128	4	Screw M8 x 55	AISI 304	x									
	1	Service instruction		x									



Exploded view for  
PAHT G 50-90



**Tool sets**180Z0237 - Tool set  
(PAH / PAHT / PAHT G 20-32)

Qty.	Designation	
1	Shaft bush, topedo	x
1	Press tool 1	x
1	Press tool 2	x

**Danfoss A/S**  
High Pressure Pumps  
DK-6430 Nordborg  
Denmark

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