INSTRUCTIONS

Servicing PAH 50 - 100

180R9098

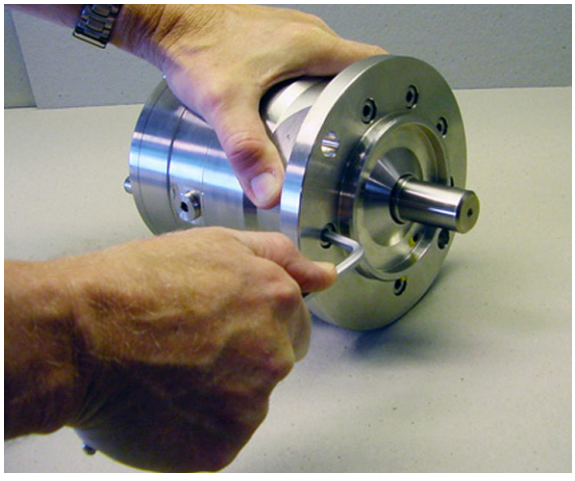
Note: **If the pump is dismantled during the warranty period, the pump is no longer under warranty.**

Dismantling:

1. Tools required for dismantling the PAH 50 - 100 pump.

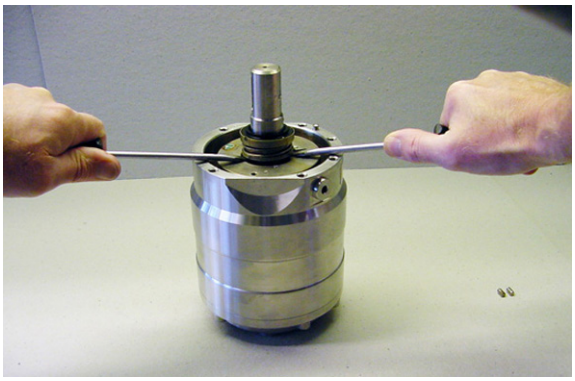
2. Remove parallel key and unscrew front screw M6 (10 mm key).

3. Unscrew screws in front flange.



4. Remove front flange.

5. Remove shaft seal using two screwdrivers.

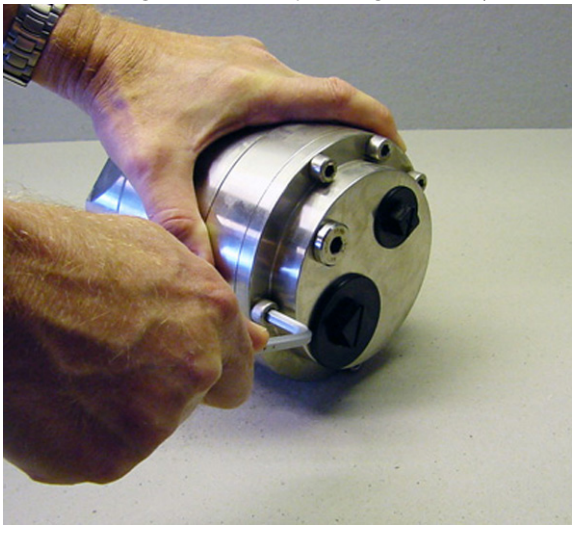


6. Remove guide pin from housing and the two guide pins from swash plate.

7. Remove swash plate using the 4 mm front screw.

8. Remove cylinder barrel from housing.

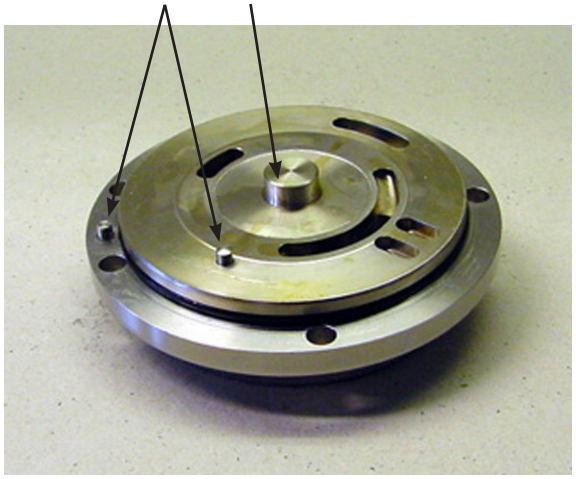
9. Unscrew the eight screws M8 in port flange (6 mm key).



10. Separate housing and port flange.

11. Remove valve plate from port flange.

12. Remove guide pins and guide.

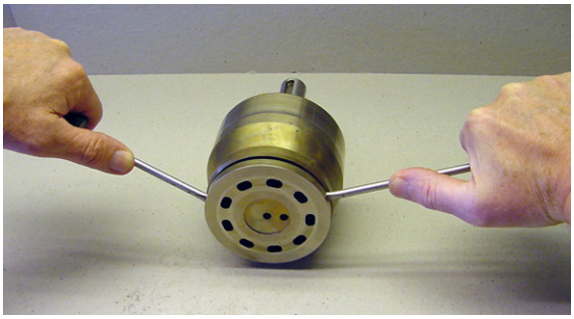


13. Remove pistons.

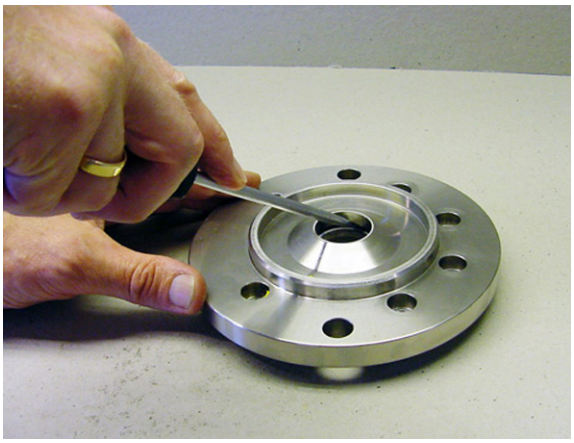
14. Remove retaining plate.

15. Remove retaining ball.

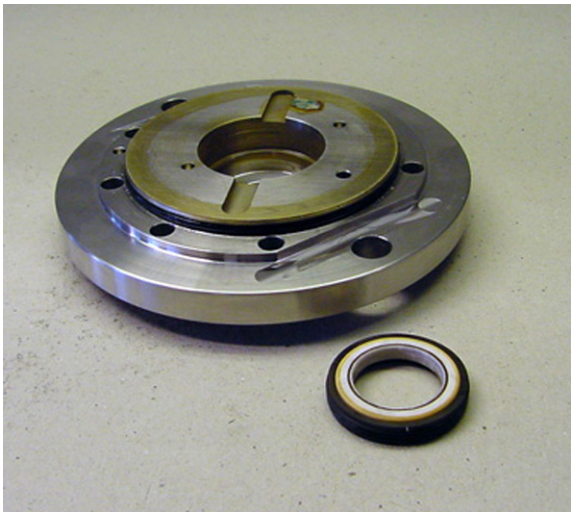
16. Remove thrust plate using two screwdrivers.



17. Remove shaft sealing from front flange.



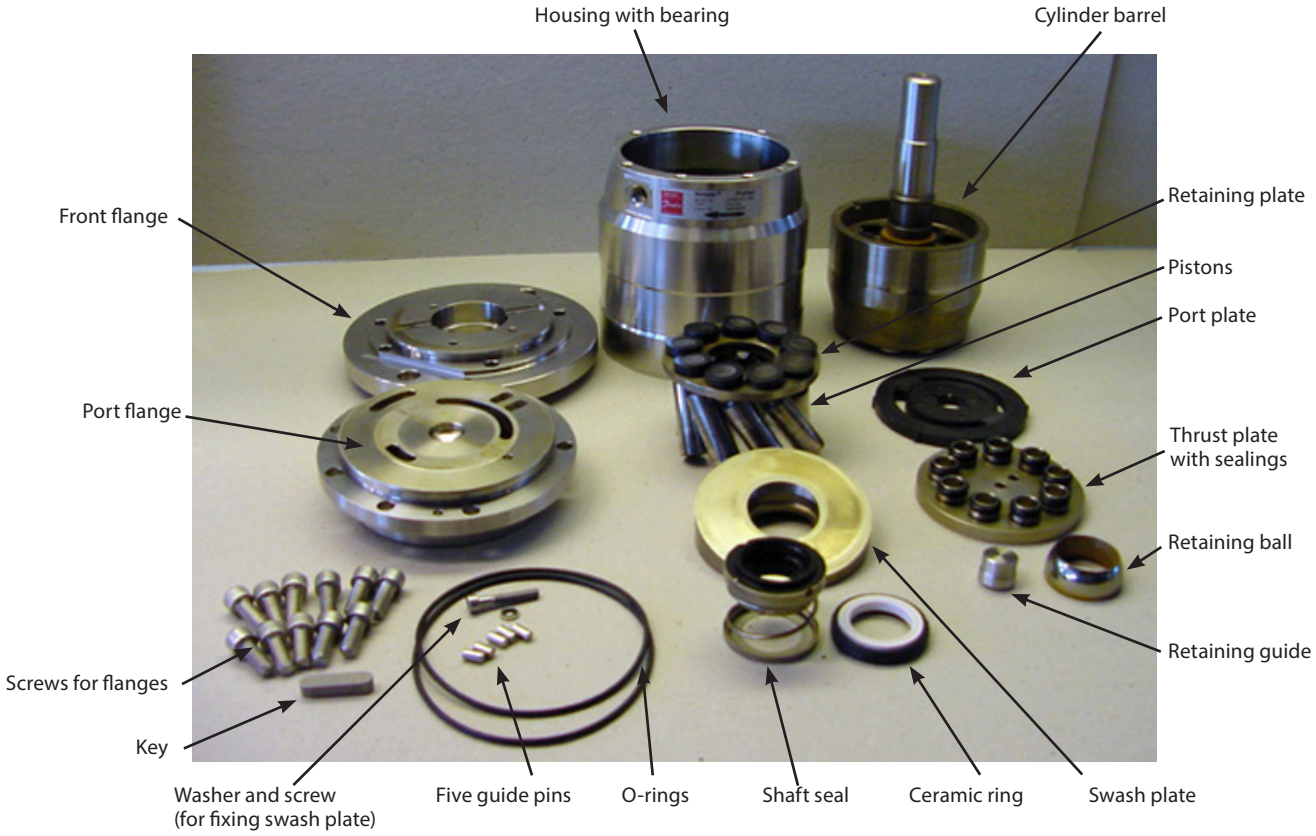
18. The ceramic ring removed from the front flange.



19. Wash all parts and replace all seals (inclusive shaft seal).

20. Inspect all parts carefully (see "Inspection") and replace any worn parts.

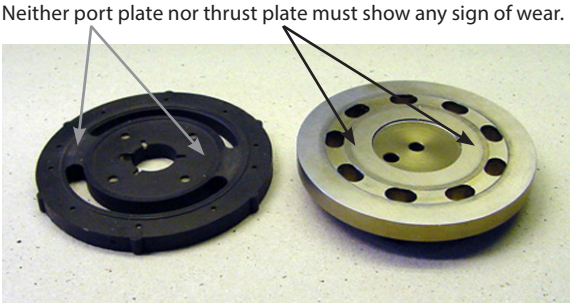
21. If the pump has failed, the reason for the failure must be found and fixed before the repaired pump is re-installed.


Housing with bearing
Cylinder barrel
Front flange
Retaining plate
Pistons
Port plate
Port flange
Thrust plate with sealings
Retaining ball
Retaining guide
Screws for flanges
Key
Washer and screw (for fixing swash plate)
Five guide pins
O-rings
Shaft seal
Ceramic ring
Swash plate

Inspection:

Port plate and thrust plate

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

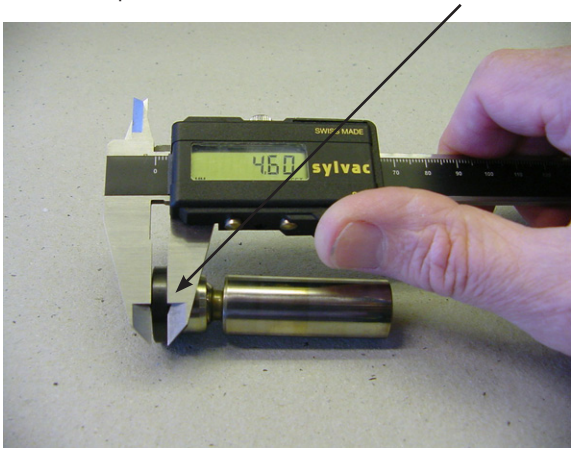


2. Hold a ruler against surface of plate and check tightness against a light source.

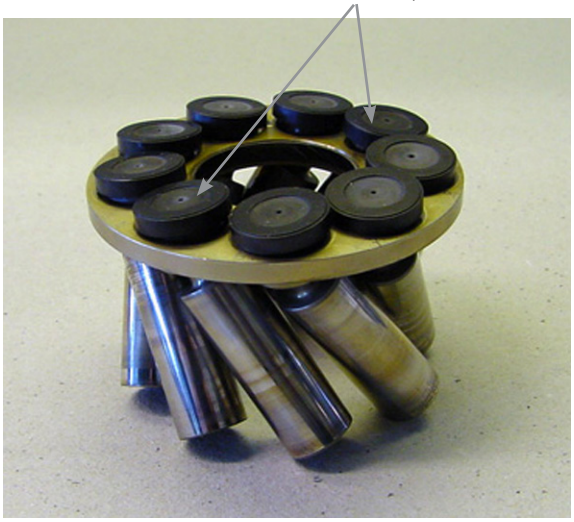
3. Check that both O-rings and back-up rings are not broken and do not show severe wear.

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.

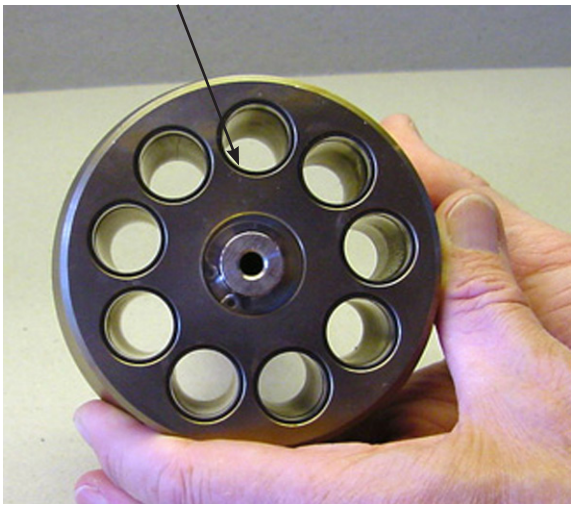


4. <u>Pumps for technical water only:</u>

   It is acceptable that the (black) treated surfaces of the pistons are partly worn.

Cylinder barrel:

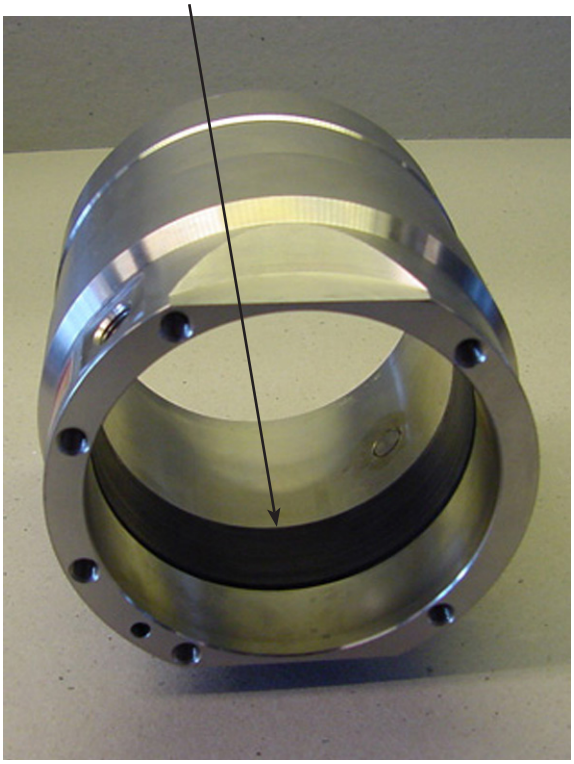
1. Check outer bearing surface for large wear grooves (not critical).
2. Check that bushings are free from seizure and large scratches.



3. Ensure that pistons can move freely in bushings.

Housing:

1. Check bearing (black) for large wear grooves (not critical).



Swash plate:

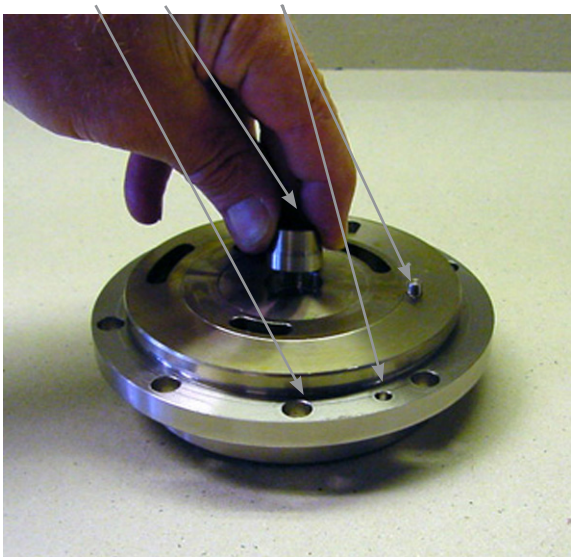
1. Check that surface of swash plate is smooth and without any large scratches (depth more than 0.1 mm).

Assembly:

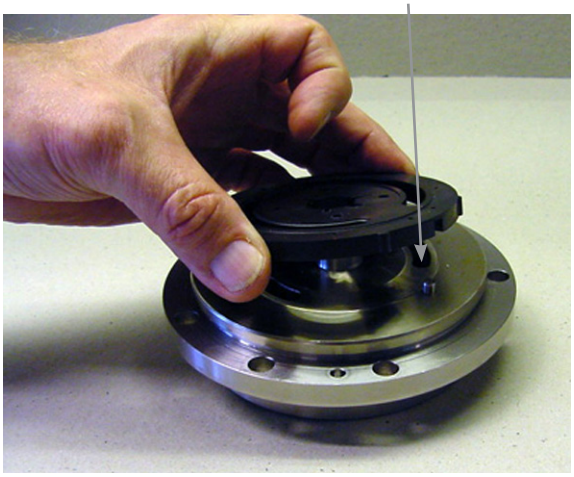
1. Parts and tools required for assembly.

2. Check that all parts are OK. Replace all seals.

3. Mount O-ring, guide and guide pins on port flange.

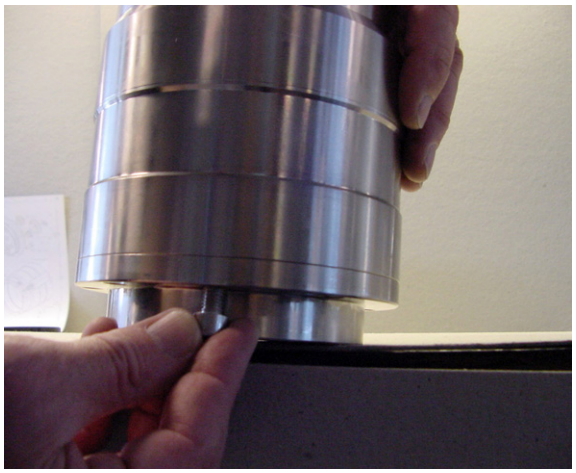


4. Mount valve plate in its right position using pin as guide.



5. Mount housing using pin as guide.

6. Place housing and port flange near table edge and mount screws from below.



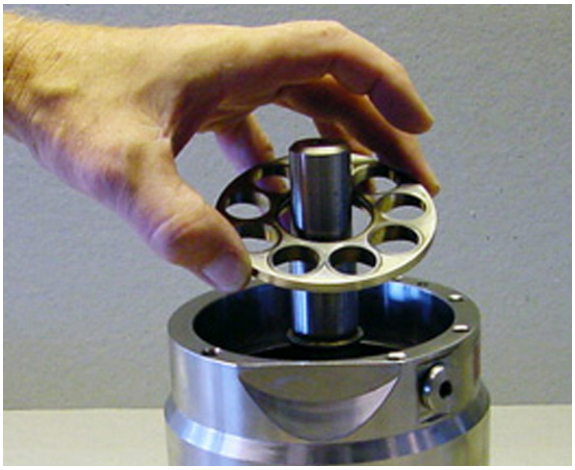
7. Mount thrust plate with sealings on cylinder barrel.

8. Press thrust plate into cylinder barrel using a table or the like as support.

9. Mount cylinder barrel in housing.

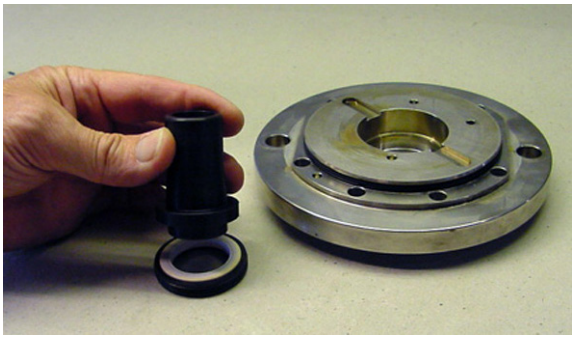
10. Slide retaining ball (smallest diameter pointing upwards) down the shaft.

11. Mount retaining plate (smallest centre diameter pointing upwards).



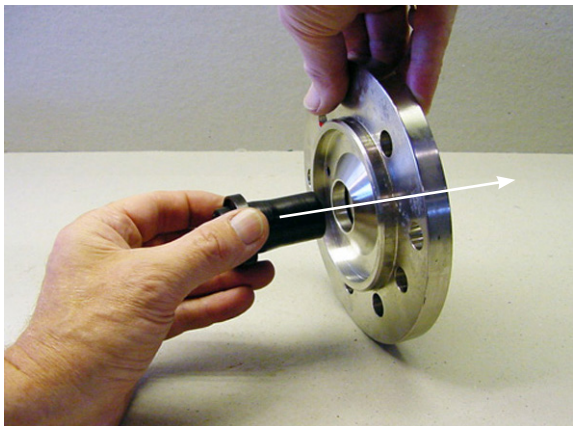
12. Mount pistons.

13. Mount ceramic ring on the tool.



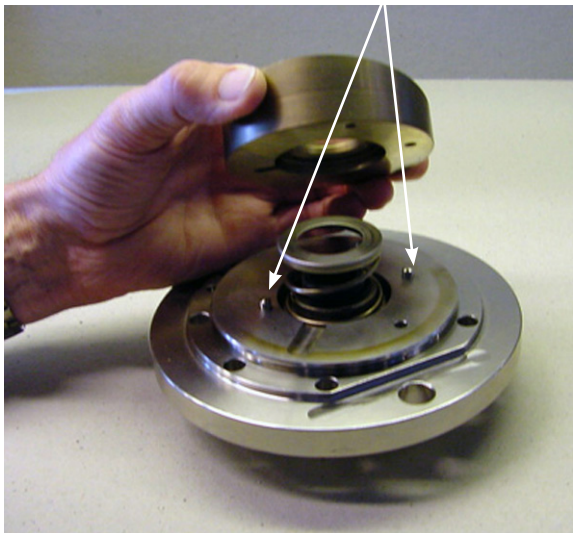
14. Mount ceramic ring by pressing tool as far down in front flange as possible.

15. Push tool through front flange.



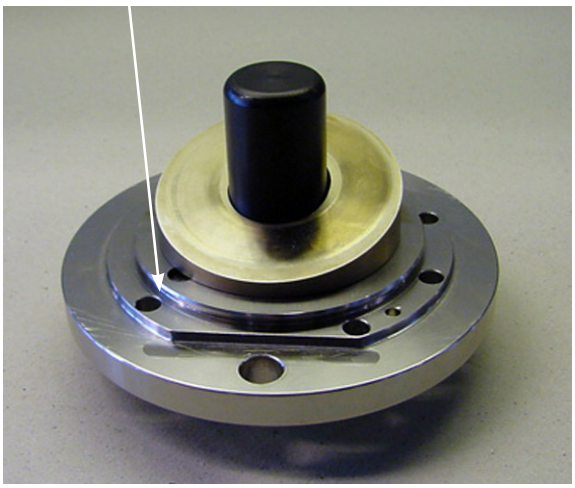
16. Mount shaft seal (carbon surface pointing downwards), spring, and washer (edge pointing downwards) by sliding them over the tool.

17. Mount swash plate on front flange using pins as guide.

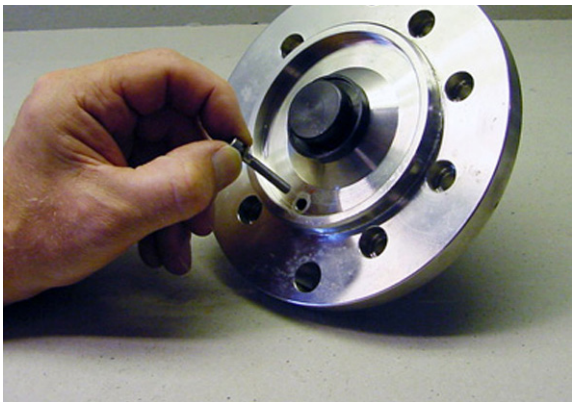


18. Press swash plate against front flange and screw tools together.

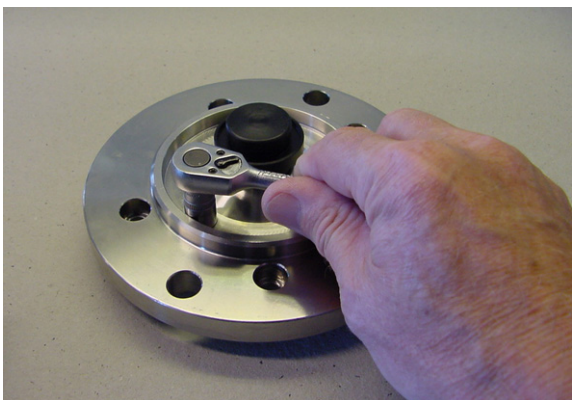
19. Mount O-ring on front flange.



20. Mount washer and screw in front flange to fix swash plate.



21. Tighten screw to a torque of 8 Nm and remove tool.



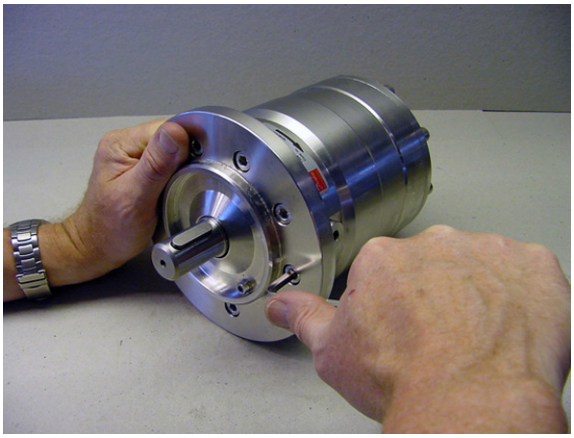
22. Mount tool over shaft.

23. Mount front flange on te housing using pin as guide.

24. Remove tool.

25. Mount screws (eight M8) in front flange.

25. Tighten screws to a torque of 30 Nm and mount parallel key on shaft.



Service kit list for PAH 50 - 100

Pos.	Qnt.	Unit	Designation	Material	180B4121 - Shaft seal	180B4122 - Valve plate	180B4125 - Piston kit (standard pump)	180B4123 - Piston kit (tech. water pump)	180B4126- Cylinder barrel; (standard pump)	180B4124- Cylinder barrel; (tech. water pump)	180Z0237 - Shaft seal tool set
-	1	Pc.	Shaft bush, torpedo	-							X
-	1	Pc.	Press tool for 35 mm shaft	-							X
-	1	Pc.	Mounting screw	-							X
4	1	Pc.	Shaft seal	AISI304/NBR	X						
5	1	Pc.	Housing	AISI304							
6	1	Pc.	Swash plate	Stainless steel (1.4057)							
7	5	Pcs.	Pin	AISI304	X						
10	1	Pc.	Retaining plate	AISI304			X	X			
11	9	Pcs.	Piston	Stainless steel (1.4057)			X	X			
12	9	Pcs.	O-ring	NBR		X					
13	9	Pcs.	Back-up ring	PEEK		X					
14	1	Pc.	Thrust plate	Stainless steel (1.4057)		X					
16	1	Pc.	Retaining ball	Stainless steel (1.4057)			X	X			
17	1	Pc.	Cylinder barrel	Stainless steel (1.4057)					X	X	
18	1	Pc.	Spring	Stainless steel (1.4068)					X	X	
19	1	Pc.	Spring guide	PEEK					X	X	
20	1	Pc.	Cir clips	Stainless steel					X	X	
21	1	Pc.	Valve plate	AISI304/PEEK		X					
22	1	Pc.	Pin	AISI304							
24	1	Pc.	O-ring	NBR	X						
25	1	Pc.	Port flange	AISI304							
26	12	Pcs.	Screw	AISI304	X						
27	1	Pc.	Bleed screw	AISI304							
28	2	Pc.	Bleeding instruction	AISI304							
29	2	Pcs.	Screw	AISI304							
30	1	Pc.	Key	AISI302	X						
31	1	Pc.	Plug	Polymer							
32	1	Pc.	Plug	Polymer							
33	1	Pc.	Sealing	NBR	X						
34	1	Pc.	Screw	AISI304	X						
35	1	Pc.	Front flange	NBR							
36	2	Pcs.	O-ring	NBR							
-	1	Pc.	Service instruction (180R9098)		X	X	X	X	X	X	

Exploded view PAH 50 -100