INSTRUCTION

Internal pump elements APP5.1-10.2

180R9093

180R9093

This document covers the instructions for changing internal pump elements on the axial piston pumps APP5.1-10.2.

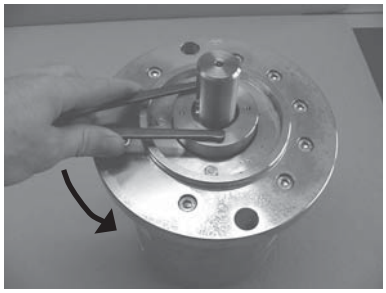
Note: It is essential that the pump is serviced in conditions of absolute cleanliness.

Tools needed:

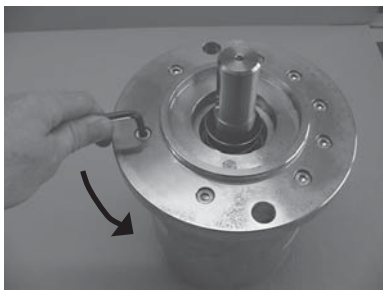
- Shaft seal tool (code no. 180B4162)
- Service set shaft seal (code no. 180B4161)
- Screwdriver

To understand the pump design better, please see exploded view on last page.

1. Unscrew the seal-retaining ring counterclockwise and remove it.



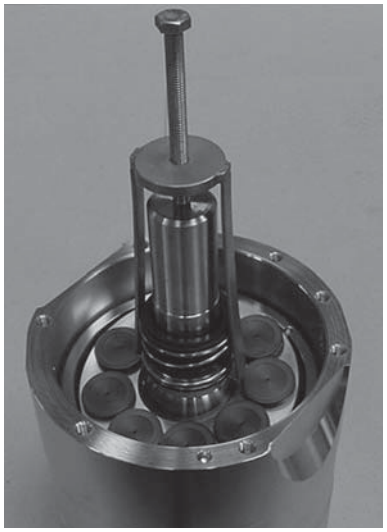
2. Unscrew the 8 screws in the mounting flange.



3. Carefully remove the mounting flange from the housing.

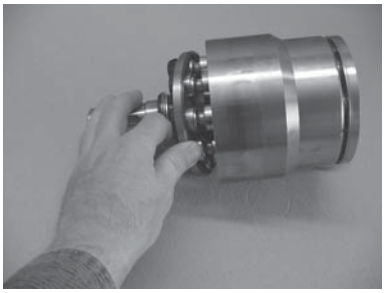
4. Wet the shaft and shaft seal with clean (filtered) soap-water.

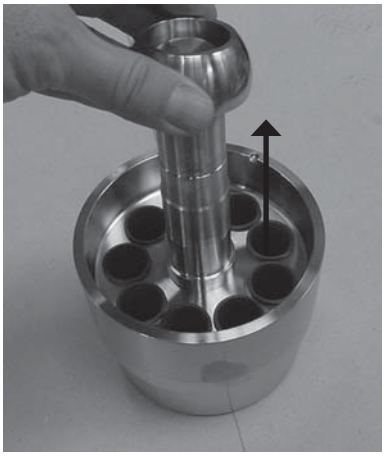
5. Carefully remove the shaft seal assembly using the shaft-seal extractor supplied, provided with the tool set. The extractor must fit underneath the shaft seal.



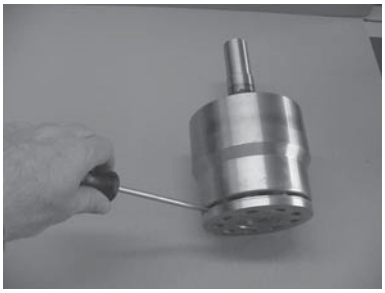
6. Remove the whole cylinder barrel and carefully place it on a suitable clean surface.

7. Remove the pistons, retaining plate, distance ring and retaining ball from the cylinder barrel.





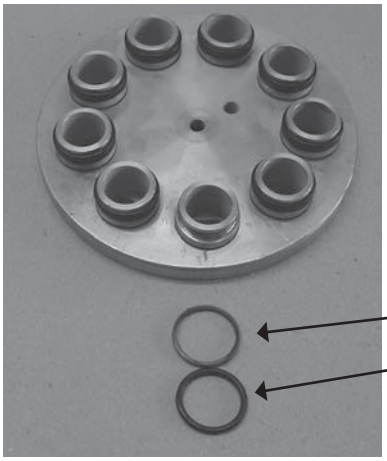
8. Carefully remove the valve plate assembly using a screwdriver.



9. Remove the O-rings and back-up rings from the valve plate.

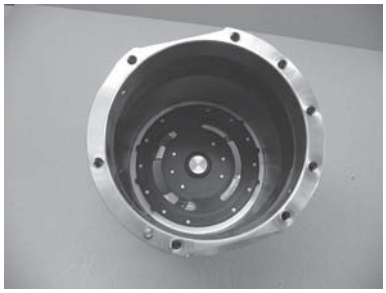
10. Mount the new back-up rings on the new valve plate.

11. Mount the new O-rings.

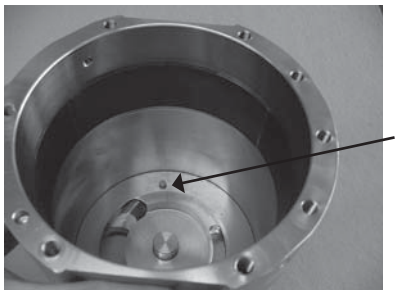


12. Carefully press, by hand, the cylinder barrel onto the valve plate.

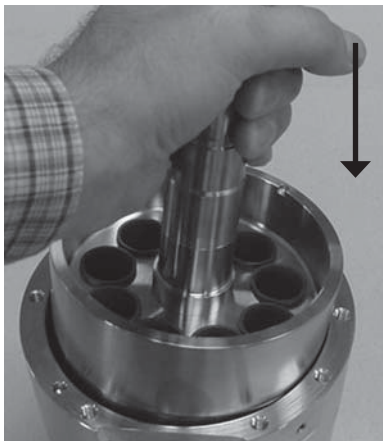
13. Remove the port plate by hand



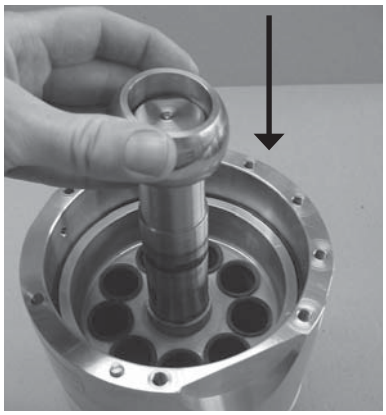
14. When mounting the port plate position the port plate over the guide pin.
IMPORTANT: Make sure that the guide pin is located in the locating hole in the port plate.



15. Carefully slide the cylinder barrel into the housing.



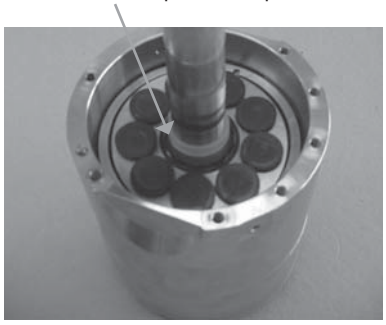
16. Fit the retaining ball onto the shoulder of the shaft.



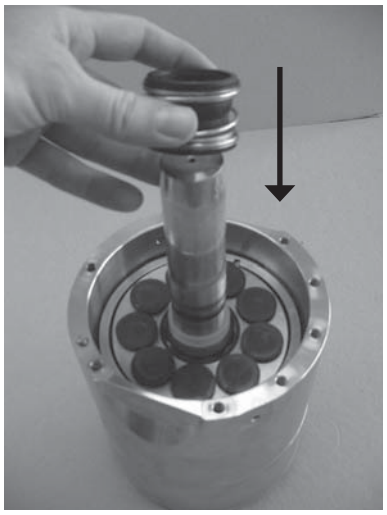
17. Carefully position all the pistons into the retaining ring.

18. Position all the pistons, one in each piston bore, in the cylinder barrel. It may be necessary to tilt the retaining ring to allow the pistons to fit into the piston bores.

19. Position the new white spacer on top of the retaining ball.

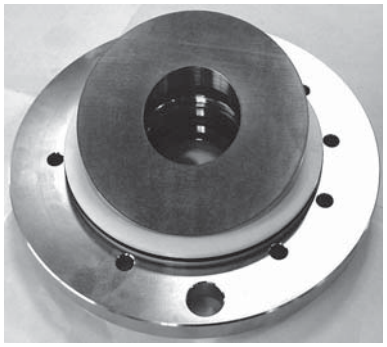


20. Mount the new shaft seal following the instructions in "Shaft Seal - APP 5.1 - 10.2" (521B0738).

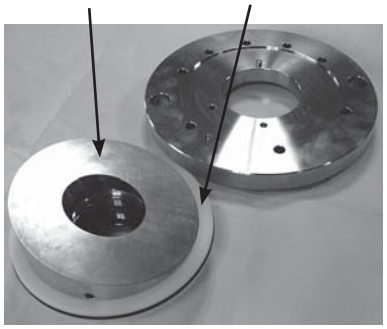


21. Unscrew the screw.

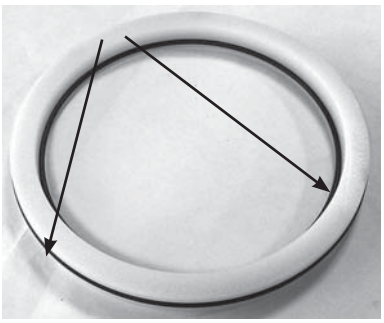
22. Turn the mounting flange upside down.



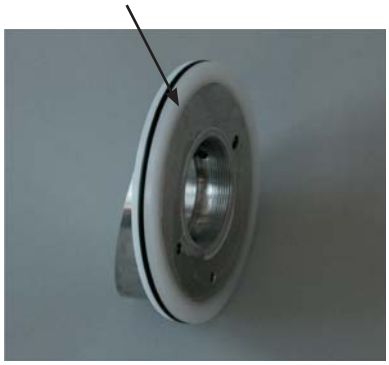
23. Remove the swash plate and the spacer.



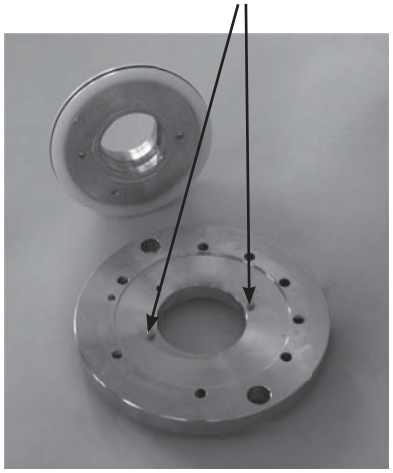
24. Replace the O-rings.



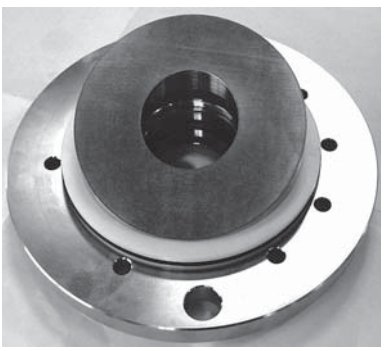
25. Mount the spacer on the swash plate.



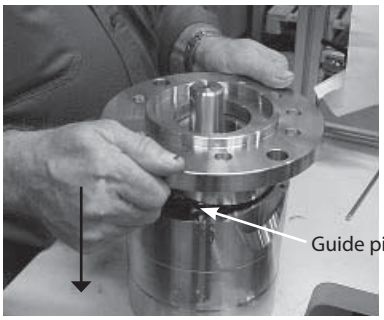
26. Position the swash plate on the mounting flange using the guide pins and fix it with the screw.



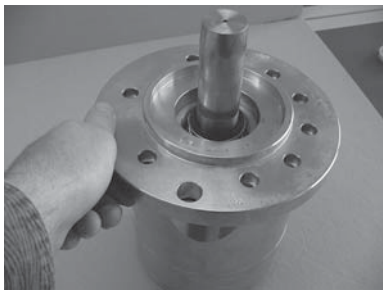
27. The mounting flange is now ready to be mounted on the housing.



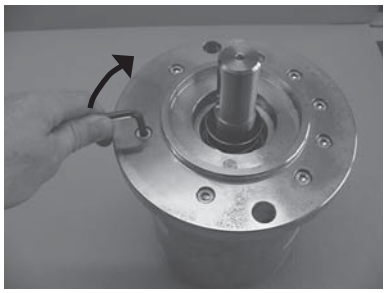
28. Position the guide pin in the housing.



29. Position and carefully press, by hand, the combined flange and swash plate into the housing.
IMPORTANT: Ensure not to cut the O-ring.



30. Screw the 8 screws into the flange and the housing.
Turn each screw 2 rounds at a time to ensure the flange is mounted as straight as possible
Tighten the screws to a torque of 30 ±3 Nm.
To prevent seizing-up, lubricate the threads on the 8 screws with grease, screw them into the pump and tighten by hand.
Use Molykote® D paste from Dow Corning or Klüber UH1 84-201 from Klüber lubrication.



31. Mount the seal retainer ring
Tighten the ring with a torque of 30 ±3 Nm.

Parts list for APP 5.1-10.2

Pos.	Qnt.	Designation	Material	180B4161 - Sealset (APP5,1-10,2)	180B4160 - Cylinder barrel (APP5,1-10,2)	180B4158 - Valve plate set (APP5,1-8,2)	180B4159 - Valve plate set (APP10,2)	180B4156 - Retainer set (APP5,1-8,2)	180B4157 - Retainer set (APP10,2)	180B4154 - Piston set (APP5,1-8,2)	180B4155 - Piston set (APP10,2)	180B4129 - Swashplate set (APP5,1)	180B4130 - Swashplate set (APP6,5)	180B4131 - Swashplate set (APP7,2)	180B4132 - Swashplate set (APP8,2)	180B4133 - Swashplate set (APP10,2)
1	1	Housing	Duplex													
2	1	Pin (ø6*10)	AISI316	X												
3	2	Bleed screw	Duplex	X												
4	2	O-ring (ø4,5*1,5)	NBR	X												
31	1	Swash plate 5,1	Super duplex									X				
31	1	Swash plate 6,5	Super duplex										X			
31	1	Swash plate 7,2	Super duplex											X		
31	1	Swash plate 8,2	Super duplex												X	
31	1	Swash plate 10,2	Super duplex													X
34	2	Pin (ø6*10)	AISI316	X								X	X	X	X	X
36	1	O-ring (ø117*2,5)	NBR	X						X	X	X	X	X	X	X
61	1	Cylinder barrel	Super duplex		X											
64	1	Retainer guide	Super duplex					X	X							
65	1	Retainer plate 5,1-8,2	Super duplex					X								
65	1	Retainer plate 10,2	Super duplex						X							
66	9	Piston 5,1-8,2	Super duplex							X						
66	9	Piston 10,0	Super duplex								X					
67	1	Key 10*8*45	AISI302	X												
91	1	Portplate 5,1-8,2	Super duplex/PEEK			X										
91	1	Portplate 10,2	Super duplex/PEEK				X									
92	1	Valve plate	Super duplex			X	X									
93	9	Backup ring	PEEK	X		X	X									
94	9	O-ring (ø18,3*2,4)	NBR	X		X	X									
181	1	Port flange	Super duplex													
182	1	O-ring (ø135*3)	NBR	X												
183	1	Guide pin	Super duplex													
184	1	Pin (ø6*10)	AISI316	X												
185	1	Pin (ø6*10)	PEEK	X												
186	8	Screw M8*20	AISI316	X												
187	2	Port connection/plug														
211	1	Flange	AISI316													
212	1	O-ring (ø135*3)	NBR	X						X	X	X	X	X	X	X
213	1	Plate	PEHD 1000									X	X	X	X	X
214	1	O-ring (ø58*2)	NBR	X												
215	1	Shaft seal	Hasteloy/NBR	X												
216	1	Stop bush	PEEK	X												
217	1	Bush	Super duplex													
218	8	Screw M8*20	AISI316	X						X	X	X	X	X	X	X
219	1	Screw	AISI316	X								X	X	X	X	X
		Instruction		X	X	X	X	X	X	X	X	X	X	X	X	X

Exploded view