ENGINEERING
TOMORROW

Service guide

APP pumps
APP(W) 5.1-10.2
Disassembling and assembling

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Introduction

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

This document covers the instructions for disassembling and assembling the axial piston pump APP(W) 5.1-10.2

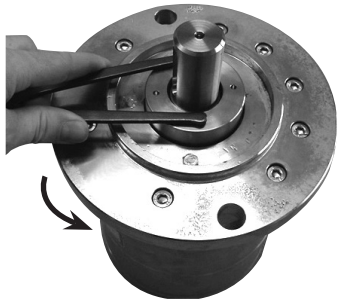
Tools needed:
- Toolset (code no. 180B4162)
- Seal set (code no. 180B4161)
- Screwdriver

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

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

WARNING: Do not reuse disassembled O-ring or shaft seal as they might be damaged.

1. Disassembling the pump



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) water.

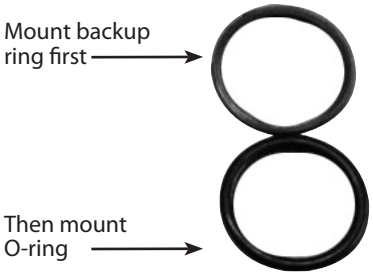
5. Carefully remove the shaft seal assembly using the shaft-seal extractor supplied, provided with the tool set. The extractor must fit underneath the shaft seal.

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

7. Remove the pistons, retainer plate, stop bush and retainer 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.

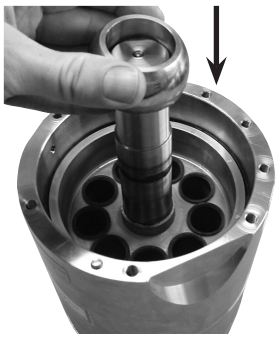
2. Assembling the pump

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

1. 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.

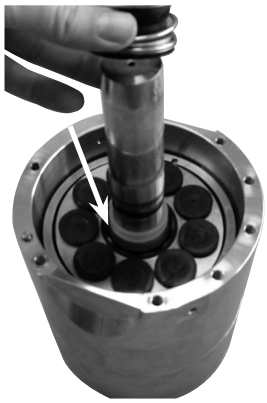
WARNING: Do not reuse disassembled O-ring or shaft seal as they might be damaged.

2. Carefully slide the cylinder barrel into the housing.



3. Fit the retainer guide onto the shoulder of the shaft.
4. Carefully position all the pistons into the retainer plate.

5. 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.



6. Position the new white stop bush on top of the retainer guide.

7. Mount the new shaft seal following the instructions in chapter 5 see page 8-11.

8. Position the guide pin in the housing.

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

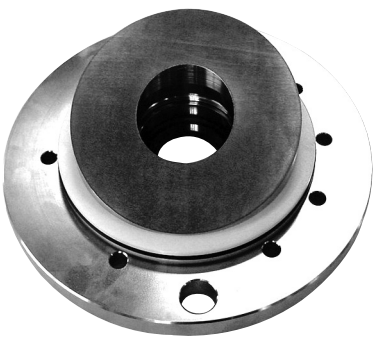
10. Screw the 8 screws into the flange and the housing.

    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.

11. Mount the seal retainer ring Tighten the ring with a torque of 60 ± 5 Nm.

3. Disassembling swash plate

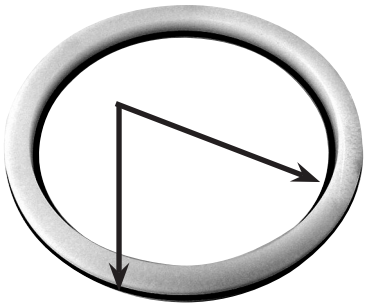
1. Unscrew the screw in the mounting flange.



2. Turn the mounting flange upside down.

3. Remove the swash plate and the spacer.

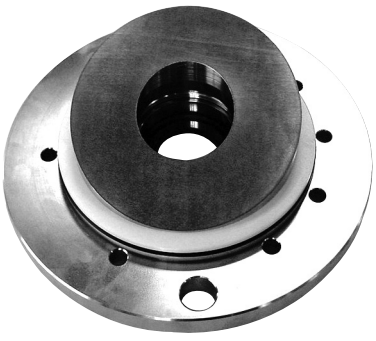
4. Assembling swash plate



1. Replace the O-rings.

2. Mount the spacer on the swash plate.

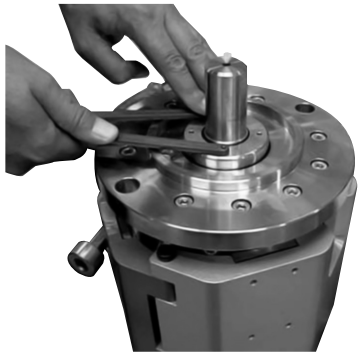
3. Position the swash plate on the mounting flange using the guide pins and fix it with the screw.



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

5. Change of shaft seal

Tools provided according to 180B4162

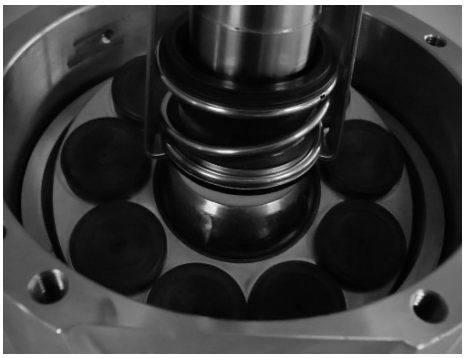


1. Unscrew the seal retaining ring counterclockwise and remove it.

2. Unscrew the 8 screws in the mounting flange.

3. Carefully remove the flange from the casing.
4. Wet the shaft and shaft seal with clean filtered water.

5. Carefully remove the shaft seal assembly using the shaft-seal extractor supplied. The extractor must fit underneath the shaft seal.



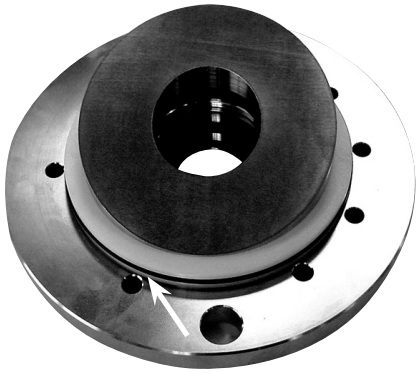
6. Ensure that no dirt has entered into the pump.
   IMPORTANT: If loose particles are observed, the pump must be dismantled and thoroughly cleaned with clean filtered water.

7. Scrap the old stop bush (if black) and place the new white stop bush on top of the retaining guide.

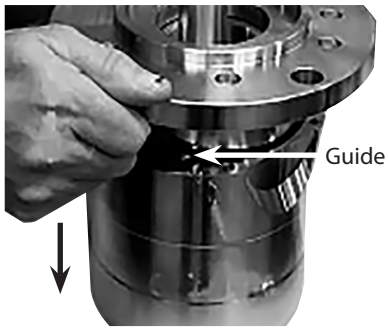
8. Fit the hollow bush (torpedo) onto the shaft.
9. Thoroughly wet the torpedo, shaft and replacement shaft seal with plenty of clean filtered water. **Do not use silicone grease.**

10. Slide the new shaft seal over the torpedo with the carbon seal face pointing upwards (see also drawing on last page).
    IMPORTANT: Be careful not to damage the carbon seal face on the shaft seal.

11. Use the plastic assembly tool provided, large diameter pointing downwards, to press the seal home against the shoulder of the spacer.



12. Remove the old O-ring and fit the new O-ring on the adapter.

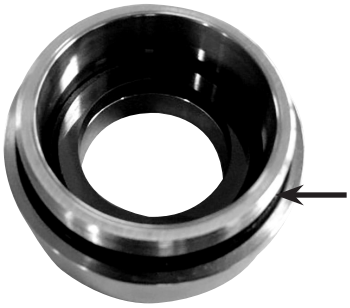


13. Place the guide pin in the casing. Position the combined flange and swash plate onto the guide pin and press it gently, by hand, into the casing.
Ensure not to squeeze the O-ring.

14. Screw the 8 screws into the flange and the casing. **To prevent cold welding, 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.

15. Remove the ceramic ring from the seal retaining ring.
16. Wet the parts with clean filtered water.

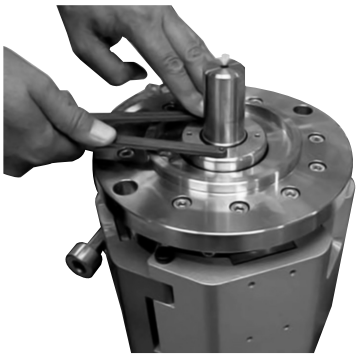
17. Push the new ceramic ring into the retaining ring, using the plastic tool provided.
Make sure the face with the rubber seal is positioned against the shoulder in the retaining ring (see drawing on last page).



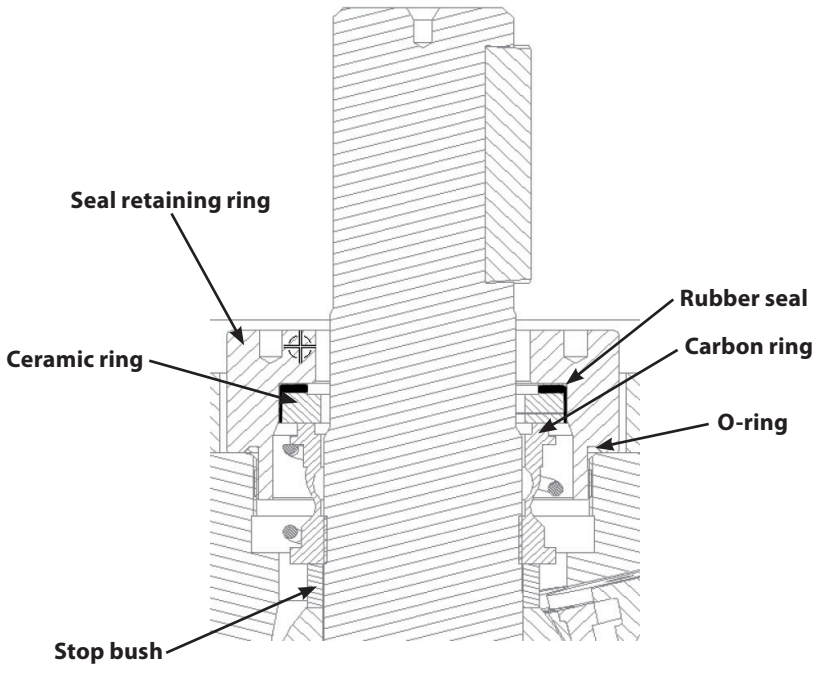
18. Remove the old O-ring and fit the new one on the retaining ring (see also drawing on last page).

19. To prevent cold welding, lubricate the thread and O-ring on the retaining ring with grease, screw it into the pump and tighten it by hand. Use Molykote® D paste from Dow Corning or Klüber UH1 84-201 from Klüber lubrication.

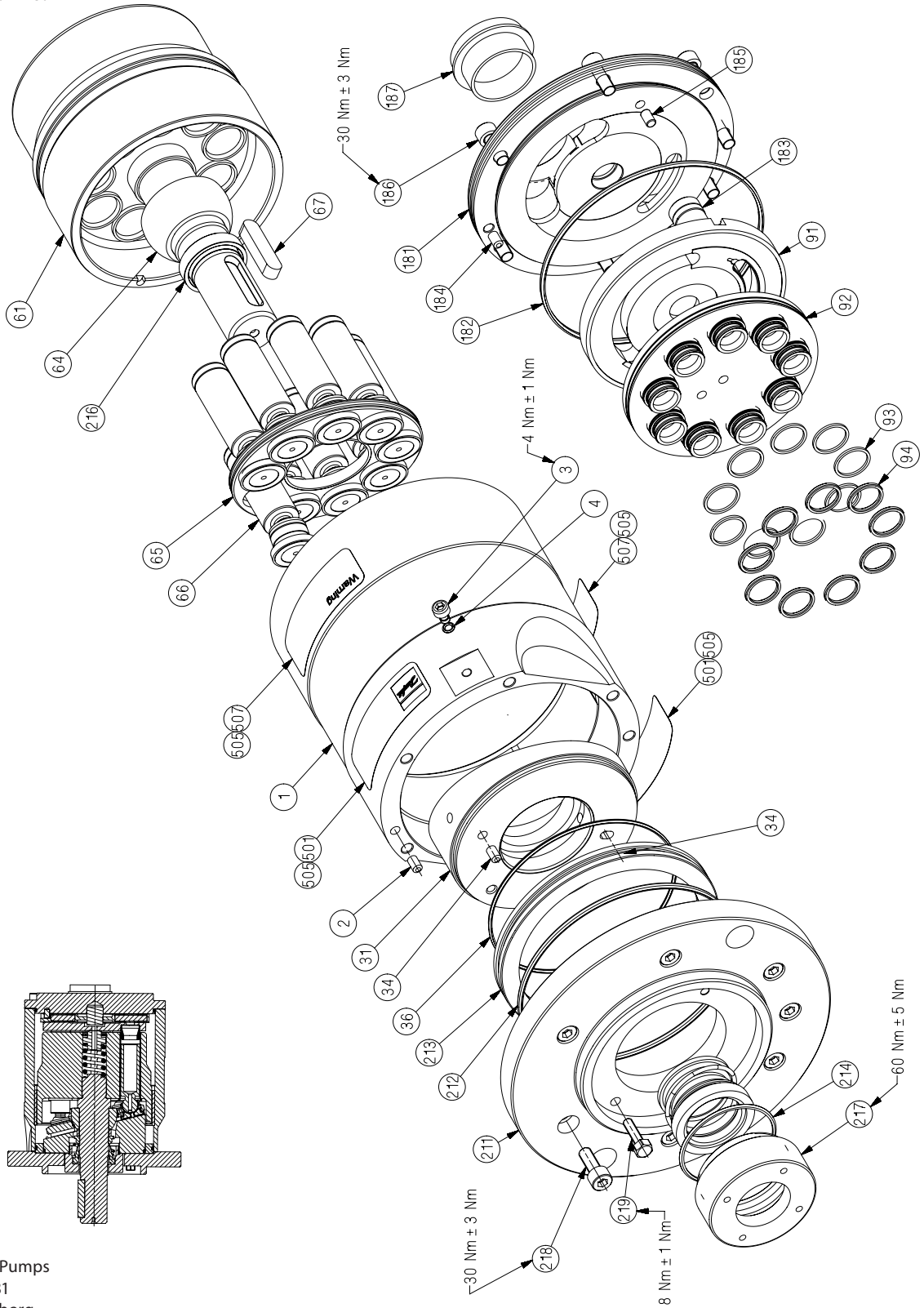
20. Remount the retaining ring and tighten by hand.



21. Tighten the retaining ring to a torque of 60 ± 5 Nm using the tool provided.



6. Exploded view for APP (W) 5.1-10.2



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