

Service guide

## APP pumps

APP 1.5 - 3.5

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 1.5-3.5

Tools needed:

- Shaft seal tool (code no. 180B4148)
- Press bush
- Allen key 5mm
- 2 Screwdrivers

**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 and assembling the pump



1. Unscrew the 4 mounting screws and remove seal SAE flange.  
**Do not yet unscrew the 2 lower screws.**



2. Wet the shaft and shaft seal with clean (filtered) soap water. Gently lever the shaft seal assembly free using 2 screwdrivers.



3. Unscrew the 2 lower screws.



4. Carefully turn the whole pump over so that the shaft is facing down. Support the pump in a suitable hollow base so that the pump is not supported by the shaft.



5. Remove the housing.



6. Remove the pistons, retaining plate, retaining ball, spring guide, and spring from the cylinder barrel.



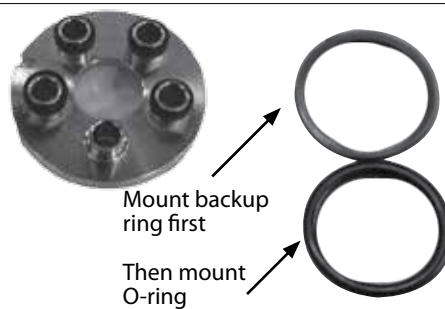
7. Remove the cylinder barrel.



8. Remove the port plate.



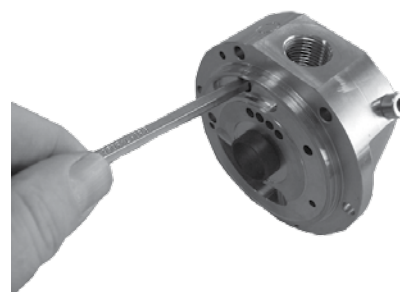
9. Gently lever the valve plate assembly free with the aid of a screwdriver.



10. Replace the O-rings and the back-up rings on the valve plate. Mount the new back-up rings on the new valve plate first and then mount the new O-rings. Wet the O-rings and back-up rings with clean (filtered) soap water.



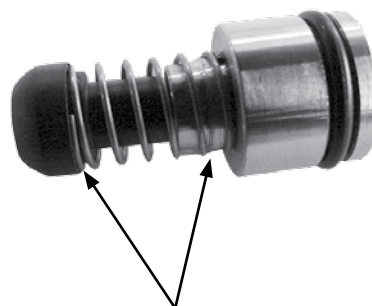
11. Gently press, by hand, the valve onto the cylinder barrel.



12. Gently push flushing valve out using the Allen key.



13. Remove spring from poppet and poppet guide and remove O-ring from poppet guide.



14. Press new spring onto shoulders of poppet guide and poppet so it is stuck on both collars. Then mount new O-ring on poppet guide.



15. Turn flushing valve upside down. If not properly assembled, spring will fall out.



16. Mount flushing valve by pressing it into the hole.



17. 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**



18. Replace the O-ring on the port flange and position the new cylinder barrel on the port plate.



19. Position the new spring, new spring guide, new retainer guide, new retainer plate and new pistons.



20. Position the housing on the port flange and over the guide pin.



21. Hold the pump together and carefully turn it over to rest on the housing. To prevent seizing-up, lubricate the threads on the 4 screws and screw them into the port flange and the housing. Use Molykote D paste from Dow Corning or Klüber UH1 84-201 from Klüber Lubrication. Tighten the 2 flange screws to a torque according to exploded view.



22. Mount the new shaft seal following the instructions on the next pages.

**Wet torpedo and new shaft seal with soap. Do not use silicone grease.** Slide the shaft seal over the torpedo with carbon seal free face pointing upwards. **Be careful not to damage the carbon seal face on the shaft seal.**

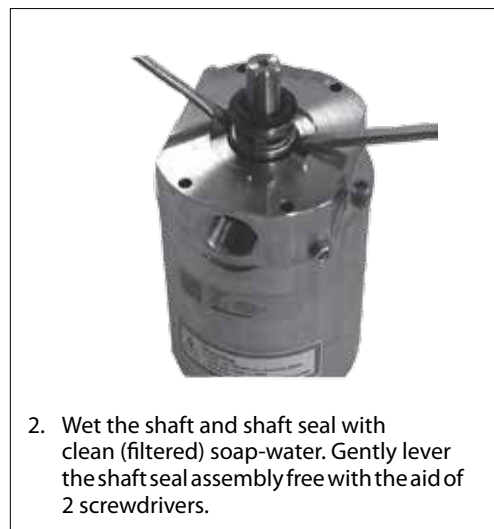


23. Replace the O-ring on the SAE flange.



24. Lubricate the threads on the 4 screws with grease and screw them into the pump and tighten by hand. Use Molykote D paste from Dow Corning or Klüber UH1 84-201 from Klüber Lubrication.

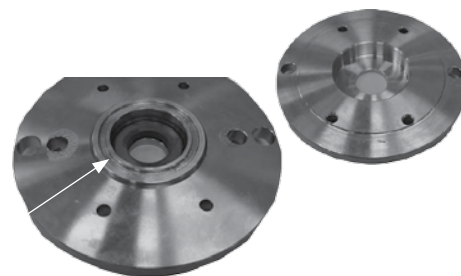
## 2. Change of shaft seal







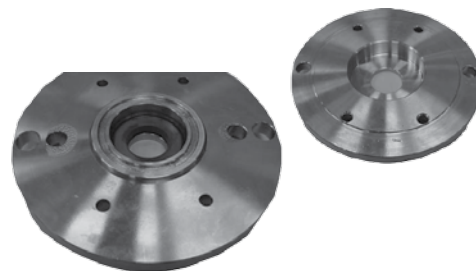
5. Using the plastic tool provided, large diameter first, press the seal home against the shoulder, by hand.



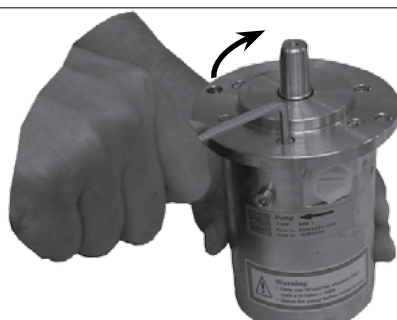
6. Remove ceramic ring from the flange.



7. Push the new ceramic ring into the flange using the plastic tool provided. Make sure the face with the rubber seal is positioned against the shoulder in the flange.  
**Wet the parts with clean (filtered) soap-water before assembly.**

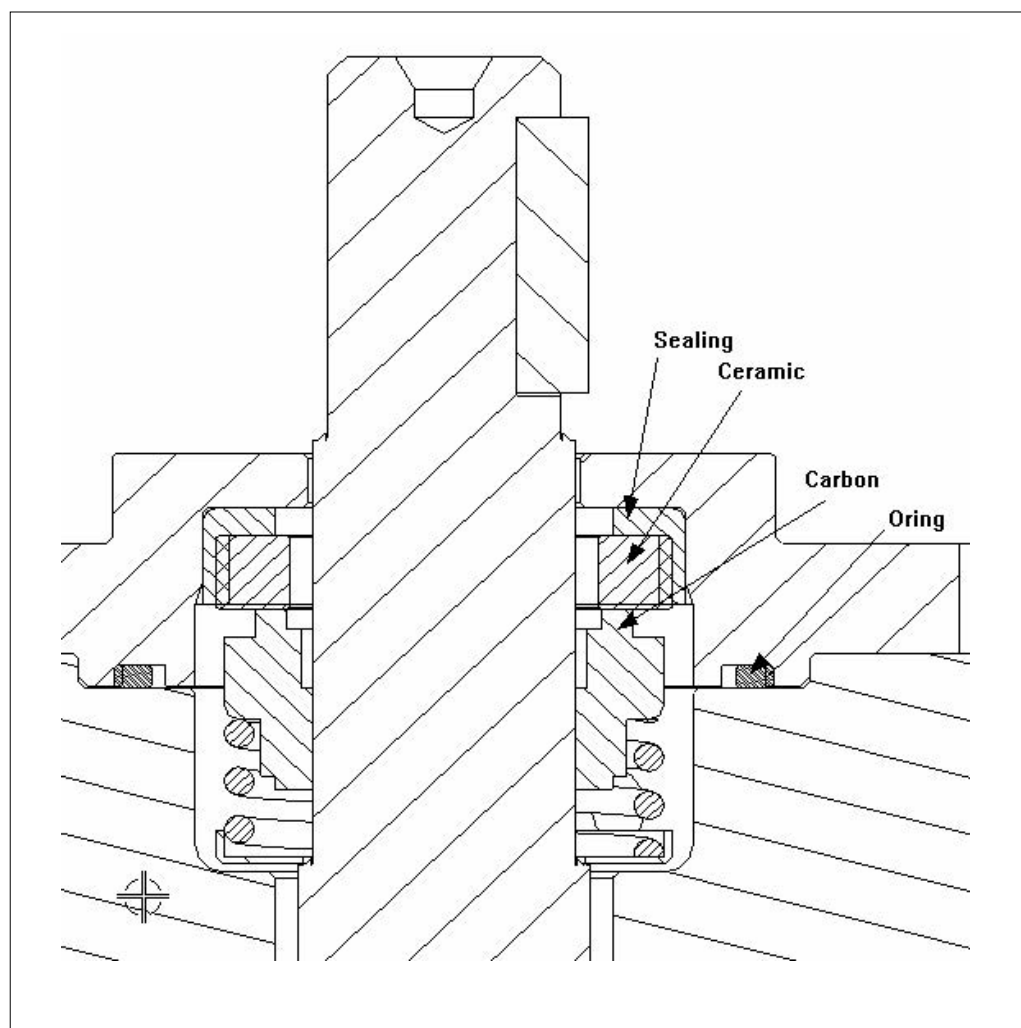


8. Position the O-ring on the seal SAE flange.



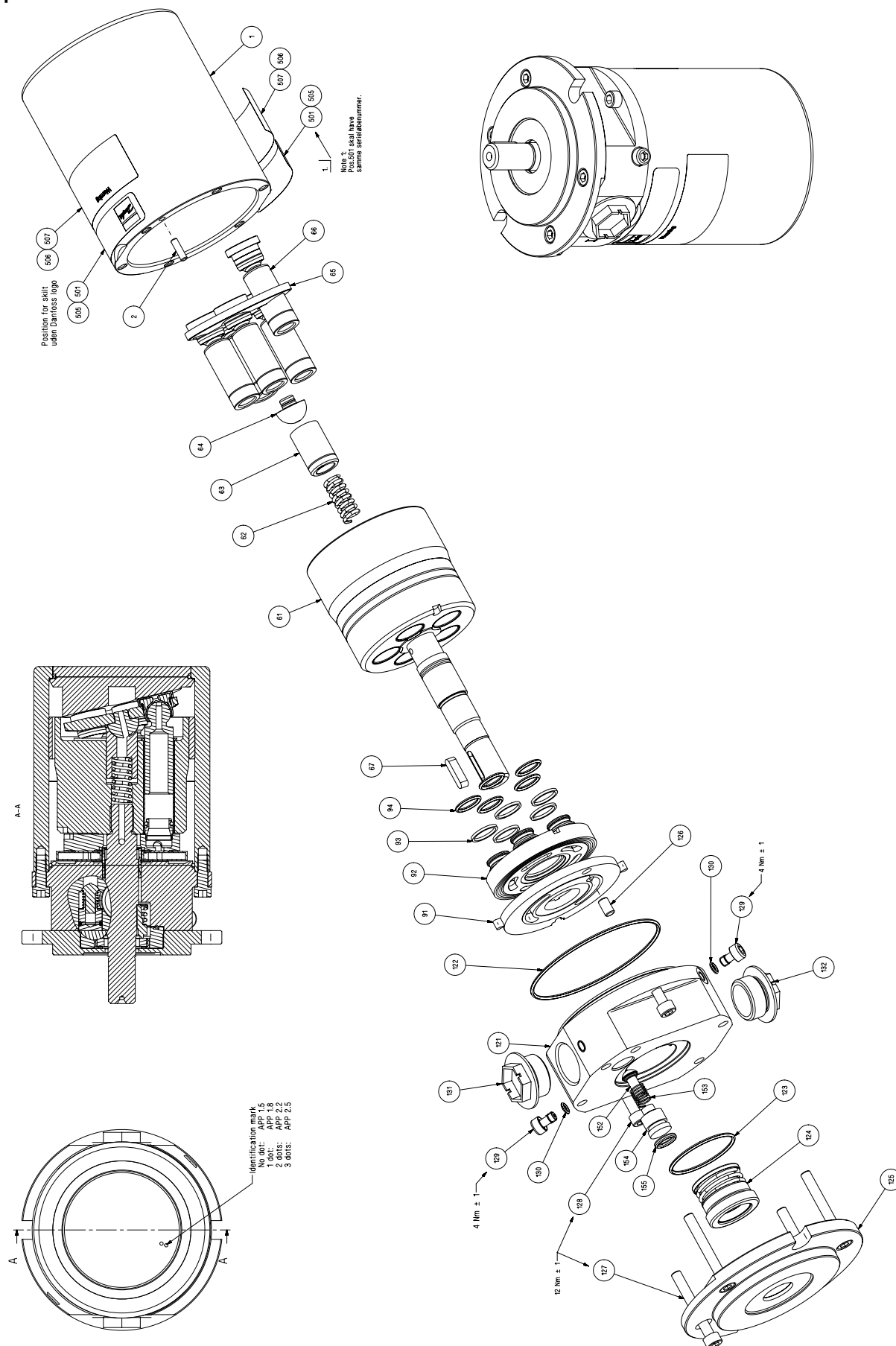
9. **To prevent cold welding, lubricate threads on the 4 screws with grease** and screw them into the pump and tighten by hand. Use Molykote® D paste from Dow Corning or Klüber UH1 84-201 from Klüber lubrication. Tighten the 4 flange screws according to exploded view.



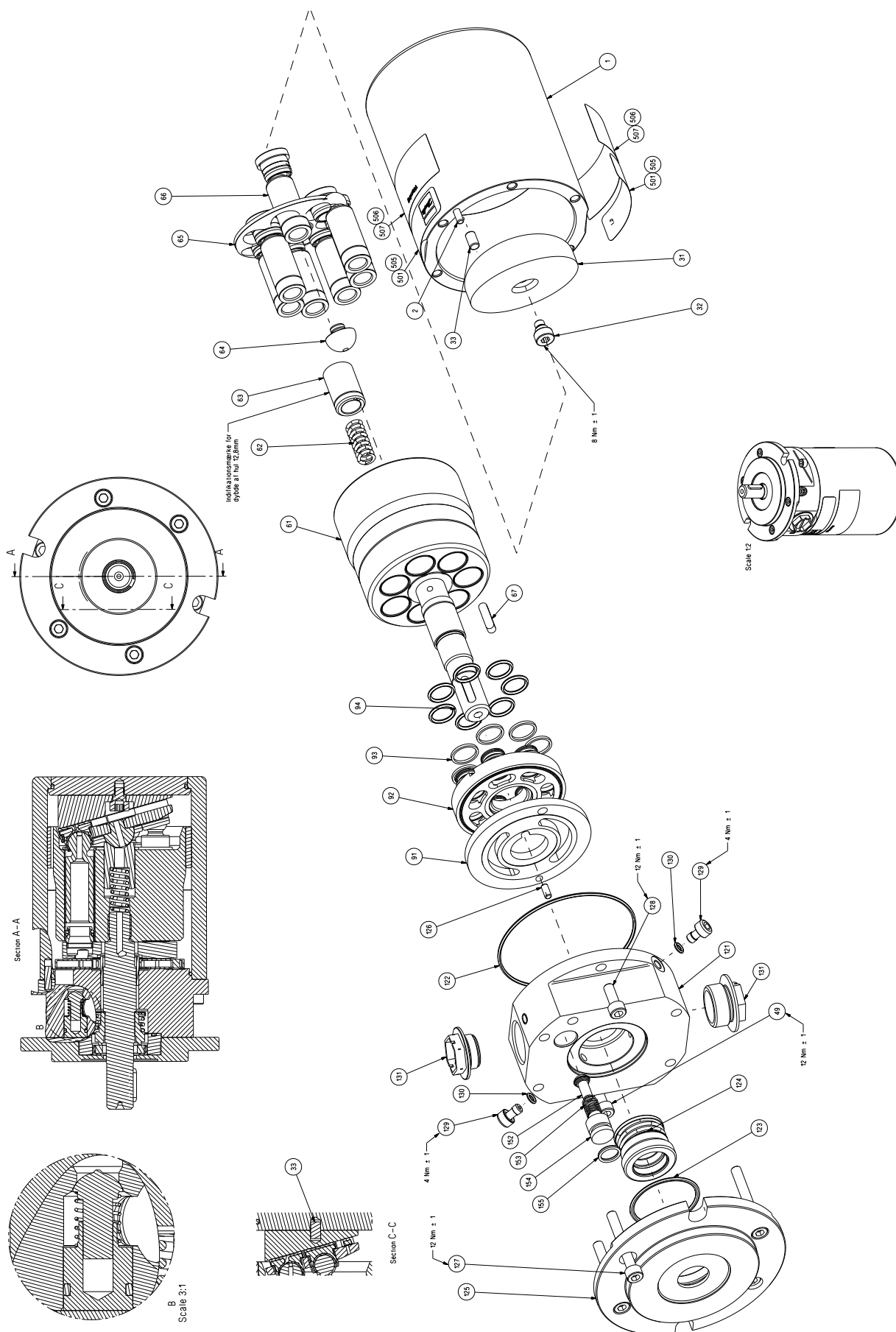


### 3. Exploded views

#### 3.1 APP 1.5-2.5



### 3.2 APP 3.0-3.5



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