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New maintenance procedures for 10 ml pump cylinders

INSTRUCTIONS

The pump piston seal and the rinsing seal for 10 ml cylinders have been redesigned for pumps with serial number 1460 or higher.

Note: The design of the 20 and 50 ml cylinder is unchanged and the instructions in the System Handbook are still valid.

The spare parts for the new 10 ml cylinders have the following Code Numbers:

Part	Code No.
Sealing ring, 10 mm	18-1037-54
Rinsing seal (2/pack)	18-1037-55
O-ring, 13.1 x 1.6 mm	18-1001-59
Rinsing tubing	18-1037-56

Replacing the pump piston seal and rinsing seal

The lifetimes of the rinsing seal and the piston seal are approximately the same and we recommend that you change the rinsing seal when you change the piston seal. The rinsing seal can also be changed separately.

Wear on the piston seal can be indicated either by the loss of system pressure or by the conductivity signal being different from the programmed gradient. If either of these faults occur, first check that all tubing connections are tight and not leaking. If no leakage is found in the connections, run the leakage test on cylinders A and B (see Section 6.3 in the System Handbook). If there are indications that the piston seal on one of the cylinders is worn and leaking, follow the instructions below to replace it.

Wear on the rinsing seal or a damaged O-ring is indicated by the appearance of liquid in the drip tray under the pump.

Before disassembling the faulty pump cylinder, ensure that you have the spare parts specified above available.

1. Remove the rinsing tubing and inlet tubing from the reservoirs.
2. Click on the CONTROL icon to activate the Run/Control window. Click on MANUAL, PUMP, EMPTY and select Cylinder A or Cylinder B, to empty the pump cylinder that is leaking.
3. Disconnect the titanium tubing from the port on the pump cylinder and from the connection on the inlet valve.

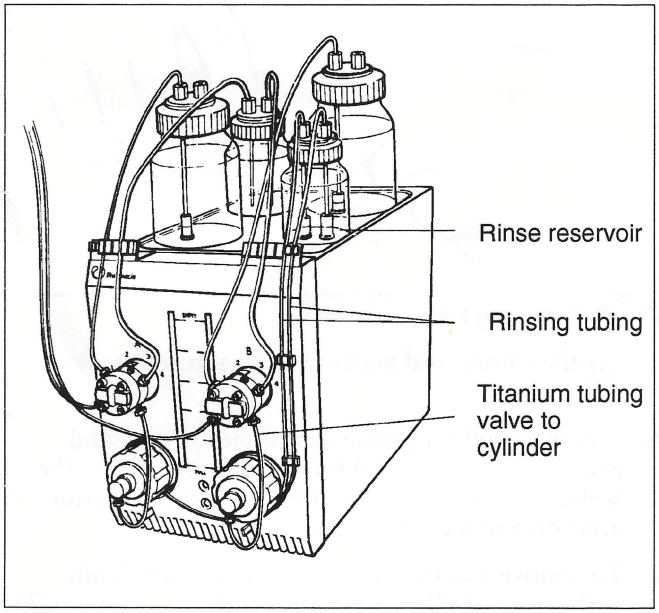


Fig. 1. µPrecision Pump.

4. Unscrew and completely remove the cylinder retaining nut. To release the cylinder, push the lever under the cylinder down and pull out the cylinder from the pump housing.

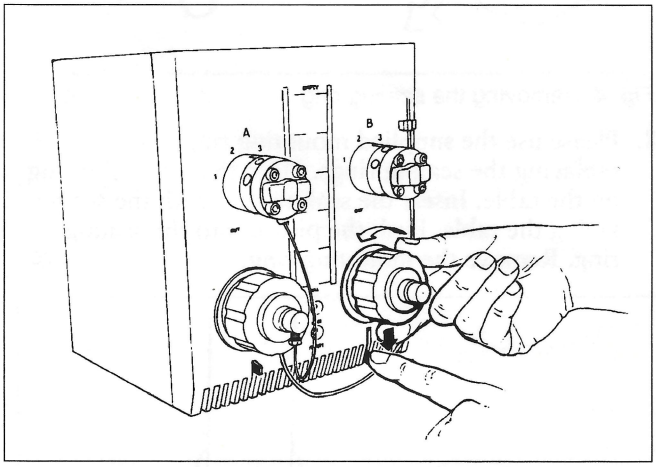


Fig. 2. Removing the cylinder retaining nut.

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5. To change the rinsing seal, pull it off from the back of the cylinder. It has a tight fit, you will have to pull it quite hard. Remove the rinsing tubing from the rinsing seal.

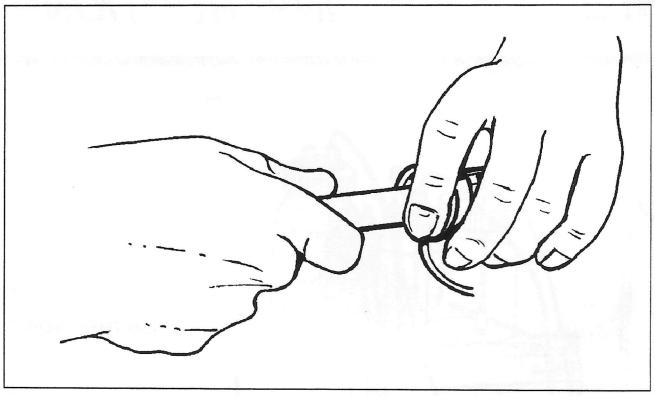


Fig. 3. Removing the rinsing seal.

If only the rinsing seal needs replacing, continue with step 10.

6. Carefully pull the piston out of the cylinder and examine the piston seal for damage and dirt. If the seal is only dirty, wipe it clean and refit the piston according to steps 9-17 below.

7. To remove a damaged sealing ring, grip it firmly with a pair of pliers and twist it off.

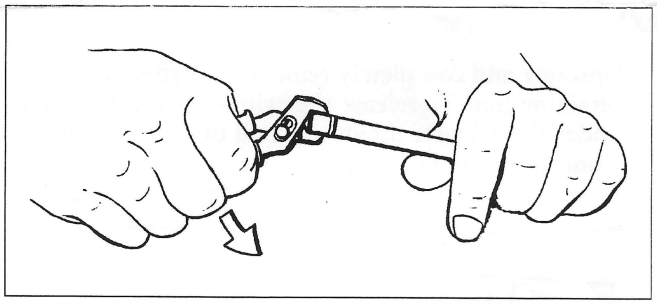


Fig. 4. Removing the sealing ring.

8. Please use the supplied mounting ring when replacing the sealing rings. Place the mounting ring on the table. Insert the sealing ring with the spring facing the table. Push the piston into the sealing ring. Remove the mounting ring.

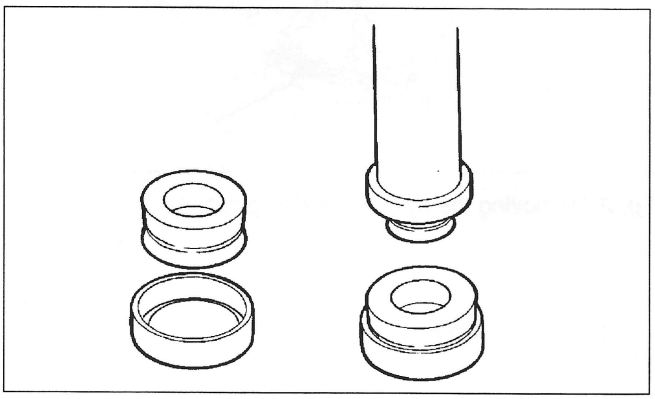


Fig. 5. Replacing the sealing ring.

9. Check that the piston, piston seal and cylinder are clean. Carefully insert the piston into the cylinder.

10. Check the O-ring on the piston for damage before refitting the rinsing seal. Replace the O-ring if required.

11. Put the rinsing tubing onto the tube sticking up from the rinsing seal. Thread the tubing through the hole in the rinsing seal.

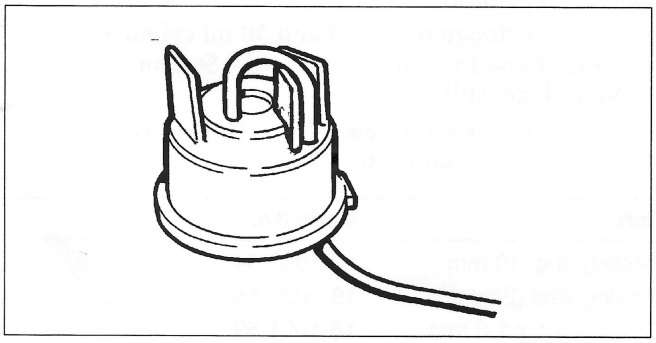


Fig. 6. Fitting the rinsing tubing.

12. Refit the rinsing seal. Wet the O-ring and push the rinsing seal onto the piston. As it has a tight fit you will have to push it hard.

13. Refit the cylinder into the pump. Make sure that the raised edge on the rinsing seal fits into the slot in the pump housing.

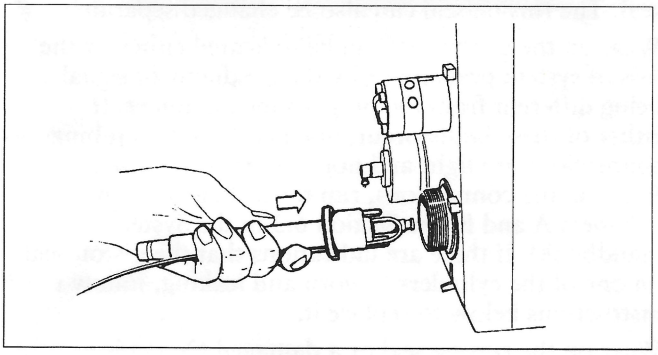


Fig. 7. Refitting the cylinder.

14. Push the cylinder assembly into position in the pump housing.

15. Refit the cylinder retaining nut and tighten it firmly.

16. Reconnect the titanium tubing between the inlet valve and the port on the pump cylinder. Replace the rinse and inlet tubing into the reservoirs.

17. Click on the CONTROL icon to activate the Run/Control window. Click on MANUAL, PUMP, WASH to wash out the pump. Perform the leakage test again to check that the fault has been corrected.

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