



iSED® (Serial Numbers >5000) and iSED ELITE Automated Erythrocyte Sedimentation Rate (ESR) Analyzers

Pump Tube Replacement Procedure, 222-28-003 Rev. 1

Purpose

The purpose of this procedure is to guide the customer in performing the required preventative maintenance of replacing the Primary Pump Tube and Wash Pump Tube assembly for the iSED (serial numbers 05000 and higher) and iSED ELITE ESR Analyzers.

Scope

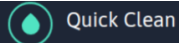
This applies to all iSED instruments with software version 1.0.0 or later with at least one of the following criteria since last maintenance event (The iSED will alert the user when this number has been reached):

- 200+ hours of pump operation
- 30,000 tests completed
- The instrument was powered off for longer than an hour without running a Wash cycle
- Pump tubing failure

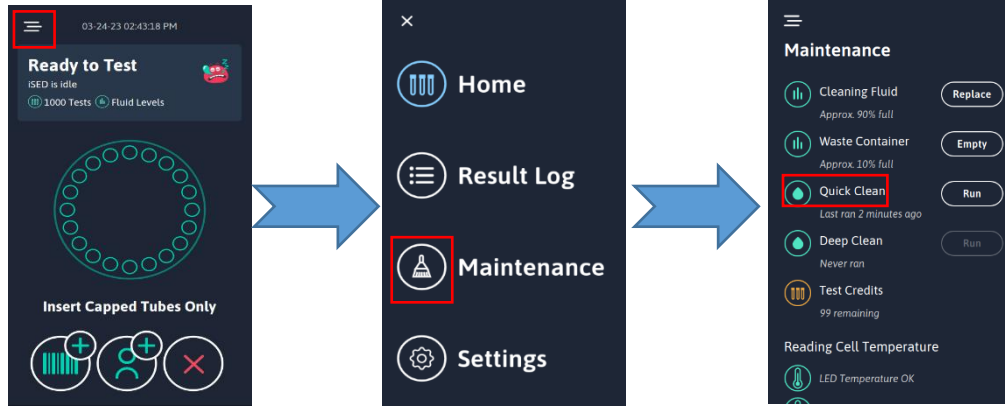
Required

1. All necessary Personal Protective Equipment including nitrile gloves and safety glasses (lab coat is recommended)
2. Biohazard disposal
3. Pump Tubing Maintenance Kit (222-13-003):
 - a. Primary Pump Tube (112-08-039)
 - b. Wash Pump Tube (112-08-089)
4. Wire cutting pliers or scissors

Preparation

1. Wear protective rubber gloves.
2. Power on the device.
3. Run a Wash Cycle by pressing the Wash Cycle Icon  on the Maintenance page.

NOTE: If there is a known clog in tubing or connectors, DO NOT run the wash cycle as it may cause leaks. Skip to Step 4.



NOTE:

If you are only changing Primary Pump Tube, follow steps 12 through 21. This can be accessed by the Pump/Needle door in the rear of the analyzer.

NOTE:

If you are changing only the Wash Pump Tube skip steps 12 through 21.

4. Power off instrument and disconnect the power supply from power input at the rear of the device. See Fig. 1A.
5. Disconnect the rapid connect tubing attached to the Waste and Wash containers and remove these containers from the Bottle Bay as shown in Figure 1B.

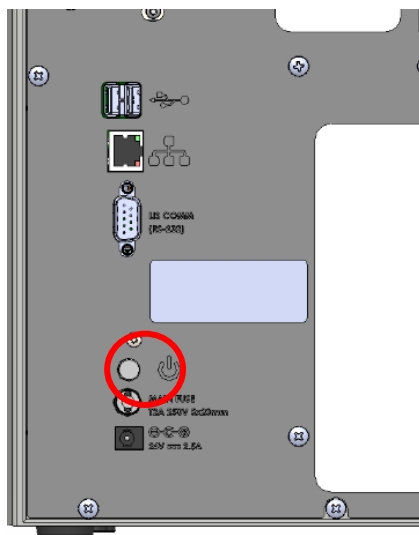


Figure 1A

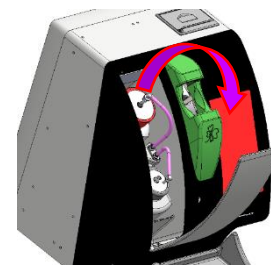


Figure 1B

Procedure – Replace Wash Pump Tubing

1. Remove the Wash Pump Access Door (located on back of instrument) by turning the Thumb Screw counterclockwise and pulling the door outwards and upwards. See Figure 2.

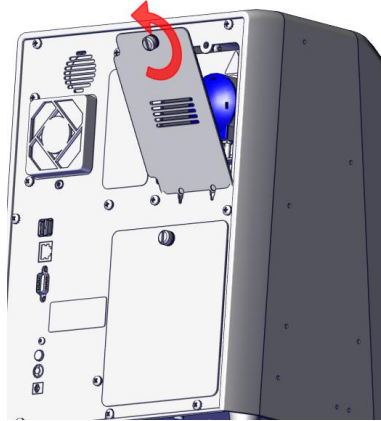


Figure 2

2. Remove the wash pump cap as shown. See Figure 3A and Figure 3B.

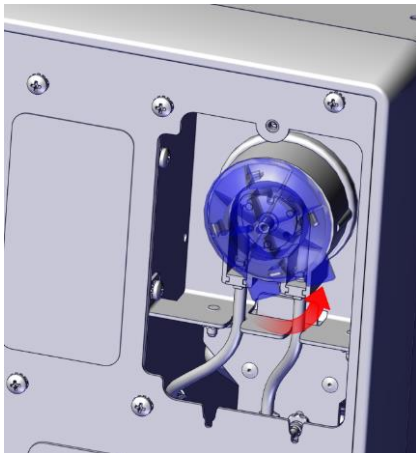


Figure 3A

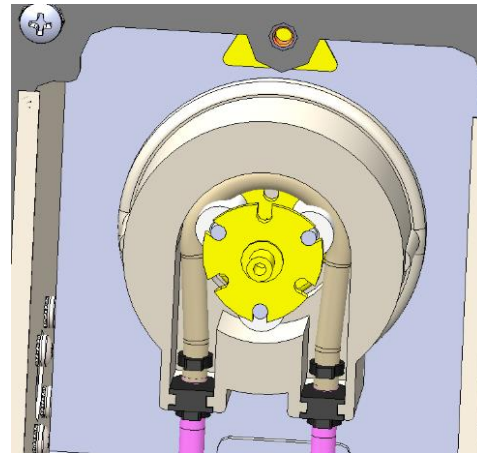


Figure 3B

3. Break the zip-ties at the bottom of the pump housing using wire cutting pliers and disconnect the tubing at the bottom. **NOTE:** Take caution not to cut the silicone tubing. See Figure 4.

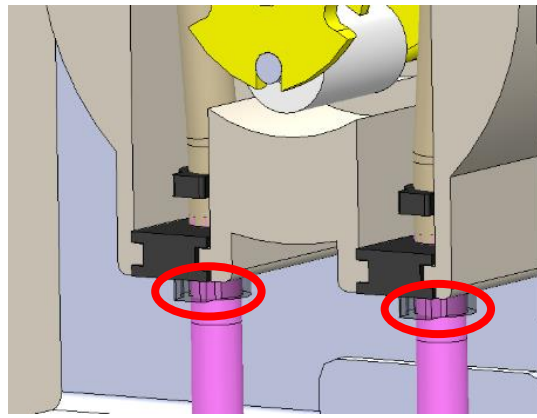


Figure 4

4. Remove the old Wash Pump Tube Assembly as shown in Figure 5.

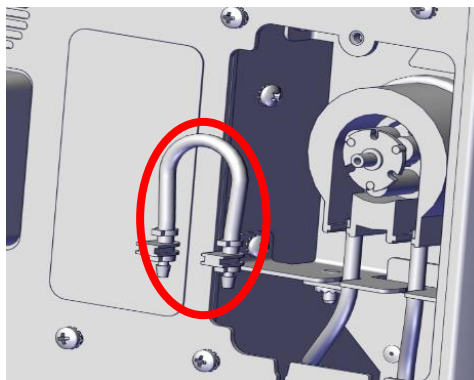


Figure 5

5. Take replacement Wash Pump Tube (222-13-004) out of packaging. Install into pump by pressing a section of tube down past the rollers and rotate the rotor until the entire tube is inserted and engaged by rollers. Ensure the tubing does not twist during installation. Alignment tabs within the pump housing must slide through the slot on the barb connectors. See Figure 6.

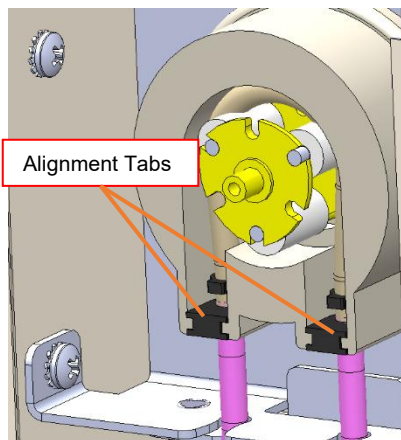


Figure 6

6. Reconnect the tubing underneath the Wash Pump. Install new zip-ties and tighten around barb connector (Provided in the Spare part pack, 222-13-004). Cut the extra zip-tie using wire cutting pliers. See Figure 7.

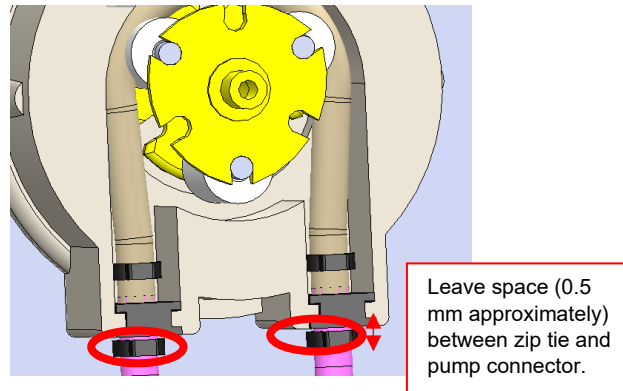


Figure 7

7. Re-install the wash-pump cap back to the pump housing. See Figure 8.

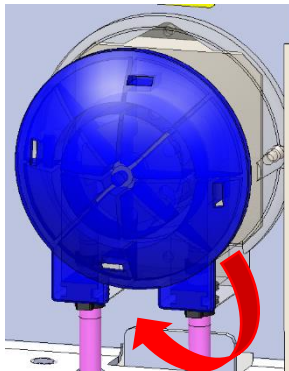



Figure 8

8. Reconnect wash and waste bottles and close the bottle bay door.
9. Connect power cord and switch ON the device.
10. Perform 3 wash cycles  Quick Clean from the Maintenance page and check for leaks. If leaks are observed, ensure tightening of the connector and tubing.
11. Reinstall the Wash Pump Access Door in the cavities highlighted (keyed slots inside for tabs) and turning thumb screw clockwise. See Figure 9.

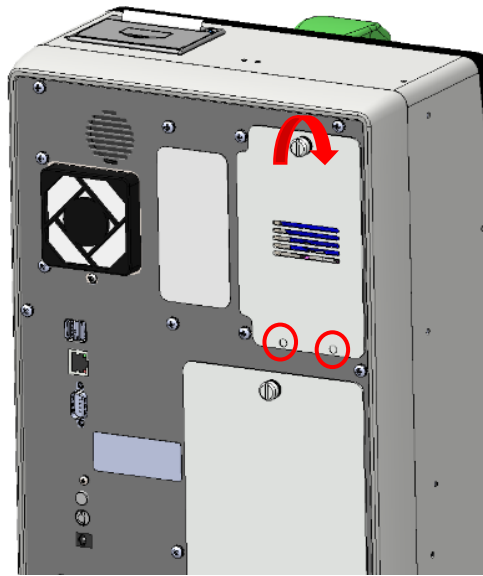


Figure 9

Procedure – Replace Primary Pump Tubing

12. Open the Pump and needle access door as shown. See Figure 10.

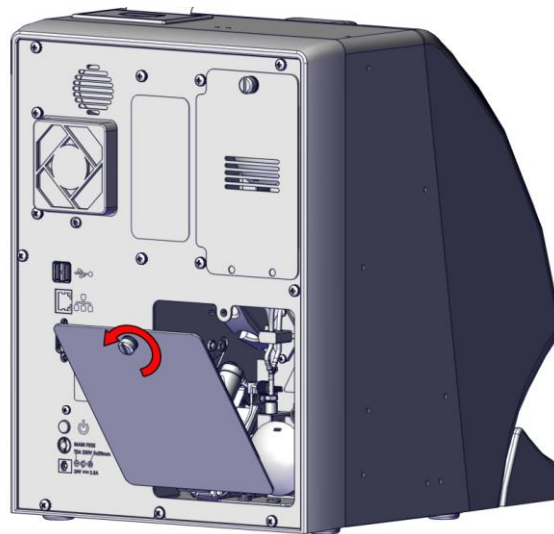
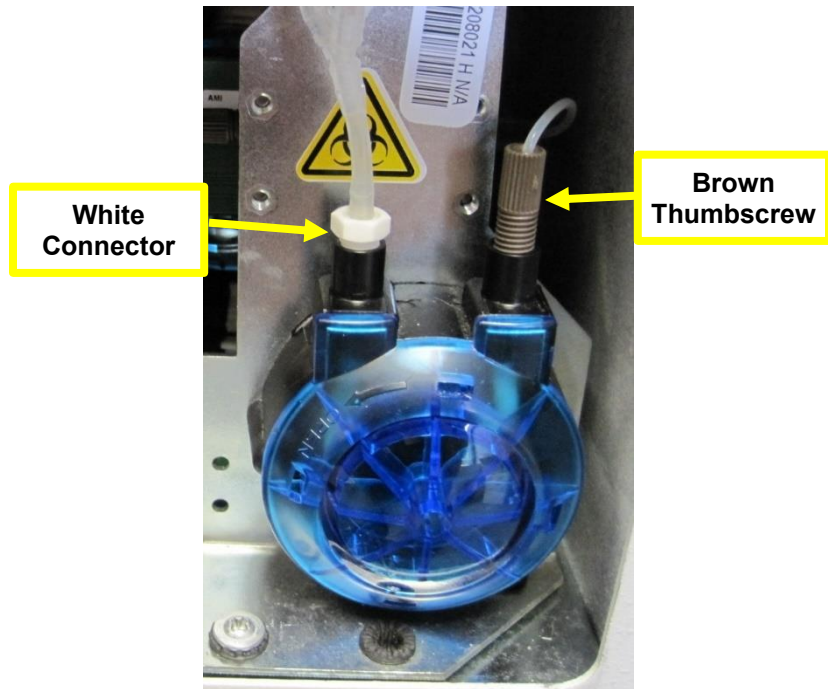


Figure 10

13. Remove the tubing from the white connector on the left side of the peristaltic pump and unscrew the



brown thumbscrew on the right. See Figure 11.

Figure 11

- 14. Loosen and remove the blue cap on the peristaltic pump in the same manner as the wash pump cover.
- 15. Remove the old tubing from the primary pump by gently pulling on the tubing through the alignment tabs within the pump housing. Rotate rotor to assist in removal. Clean inside of black compartment (if necessary). Dispose of old tubing in Biohazard Waste containers. See Figure 12.

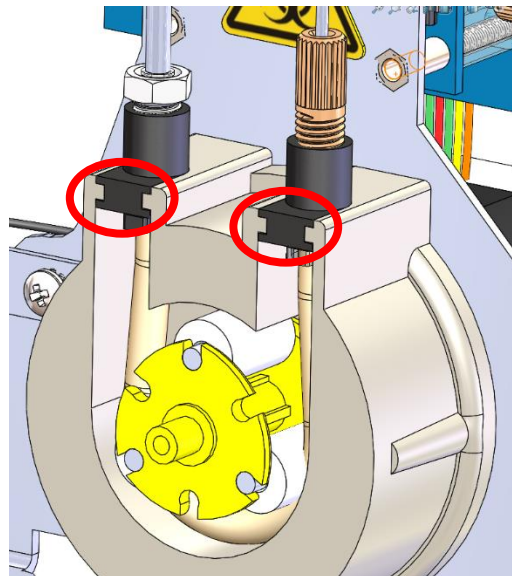


Figure 12

16. Take replacement Primary Pump Tube (112-13-002) out of packaging. Install into pump by pressing a section of tube down past the rollers and rotate the rotor until the entire tube is inserted and engaged by rollers. Ensure the tubing does not twist during installation. Alignment tabs within the pump housing must slide through the slot on the barb connectors. See Figure 13 for correct placement.



Figure 13

17. Once completed, return the blue cap as removed turning clockwise to lock in place. Reconnect the tubing to the white connector on the left and re-attach the brown thumbscrew to the right of the peristaltic pump. See Figure 14.



Figure 14


18. Reconnect wash and waste bottles and close the bottle bay door.
19. Connect power cord and switch ON the device.
20. Perform 3 wash cycles  Quick Clean from the Maintenance page and check for leaks. If leaks are observed, ensure tightening of the connectors and tubing.
21. Close the Pump/Needle Access Door by turning the thumbscrew clockwise and placing the Needle door bottom lip inside the device. See Figure 15.



Figure 15

Procedure – Reset the Maintenance Counter

22. On the Maintenance page, press the “Reset” Button under Tubing Maintenance as highlighted. This is going to reset the Tubing cycle to 0 hours. See Figure 16.

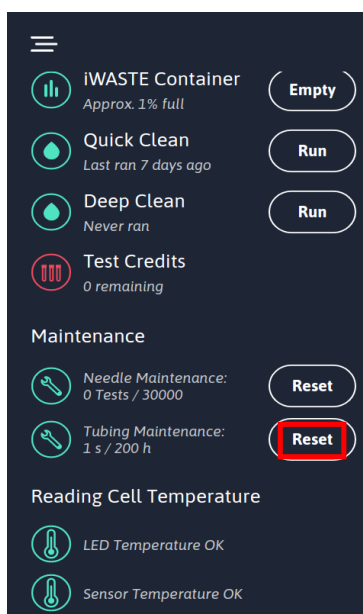


Figure 16

23. Press “Burger”  button in Figure 16 followed by  button to return to the Main screen.

Contact ALCOR® Scientific Technical Support at (800)-495-5270 (US only) or +1 (401) 737-3774 for additional assistance.