

Work instruction Number 224

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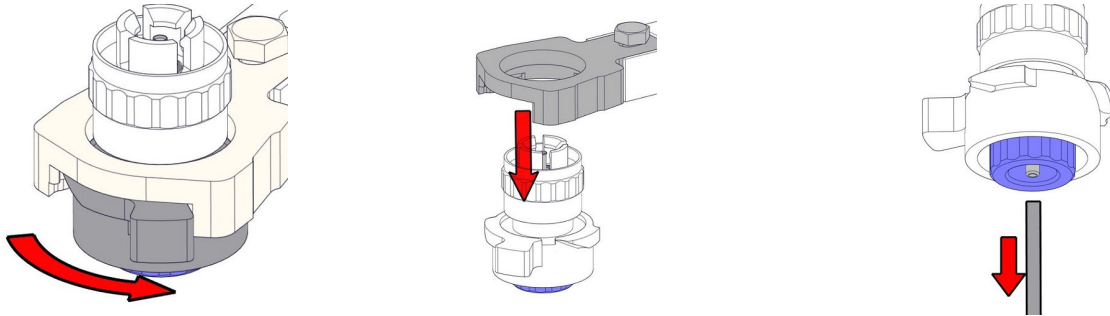
Purpose: Maintenance level 3

Safety: Bio Hazard area

Instrument: Interrliner

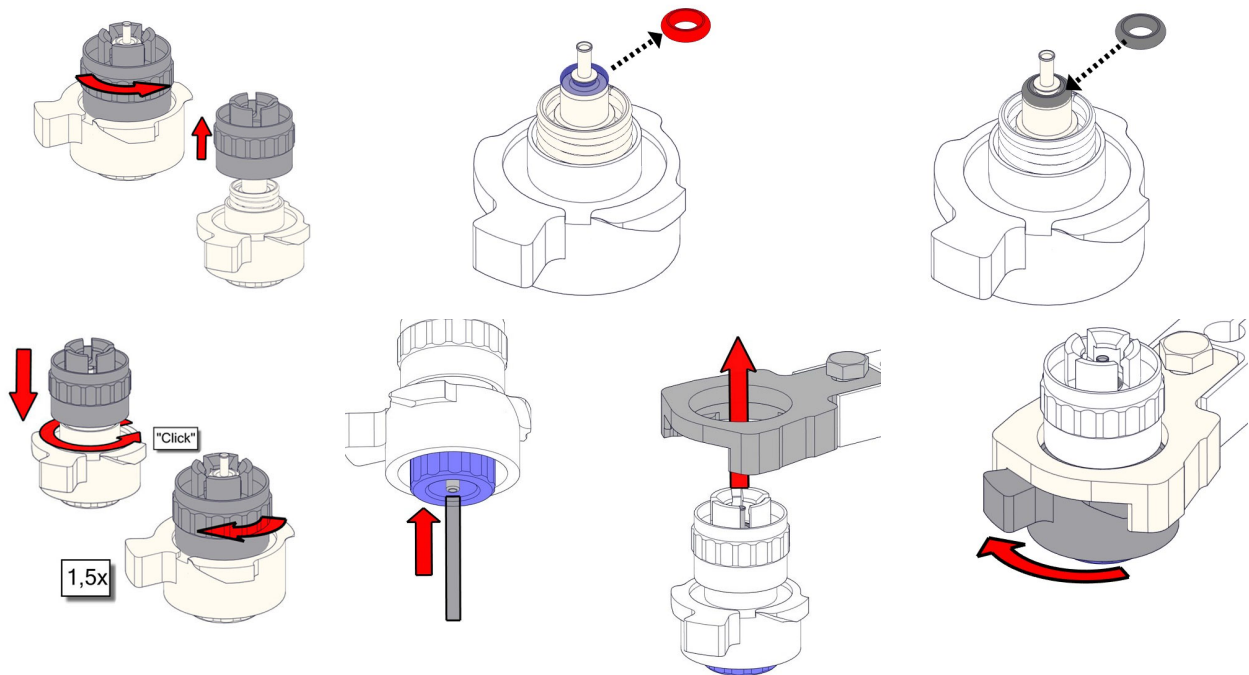
Revision: 004, 2019

1. Clean Fill nozzle and exchange O-ring Fill Nozzle



The use of a toothbrush and detergent is recommended.

1. Carefully scrub the fill nozzle inner part.
2. Use a tissue to dry the fill nozzle.



2. Exchange bacterial filter

On waste bottle (If used):

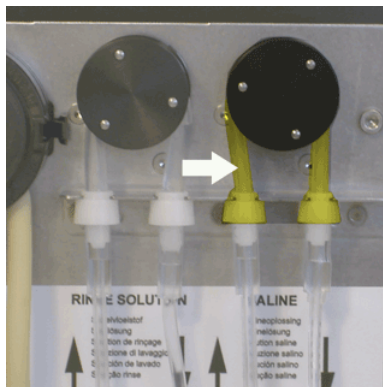
Exchange bacterial filter **QWLV040001** on the waste bottle assembly.

3. Exchange Rinse and Saline tube assembly

New rinse pump tube assembly
ESRI090902.



New saline pump tube assembly
ESRI090903



New tube replacement:

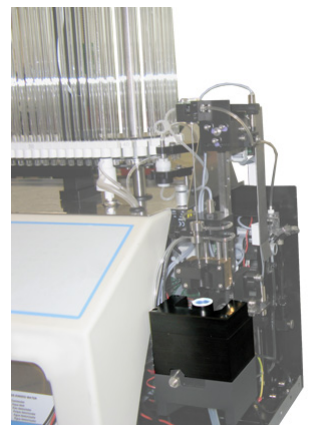
1. Open left cover.
2. Pull pump tube slightly downwards and at the same time towards the front of the unit to release the tube out of the pump plate holder.
3. Remove the old tube from the peristaltic pump rotor.
4. Disconnect the tubing at both ends of the tube connectors.
5. Connect new tubing to both ends of the connectors.
6. Place one end of the tube in the pump plate holder.
7. Pull the new tube over the peristaltic pump rotor.
8. Pull pump tube slightly downwards and at the same time towards the back of the Starrsed Inversa.

4. Fill and clean

Starrsed Cleaning Agent preparation ESR analyser unit: Fill and clean:

This cycle takes about 90 minutes.

1. Fill the clean adapter EHST110907 with hot de-ionized water. (+/- 150 ml, 80 °C)
2. Add 15 ml Starrsed Cleaning Agent (QRR 010905) to the hot water in the adapter.
3. Place the cap on the adapter and mix well.
4. Put the adapter with cleaning solution on the lower tube holder.
5. Select MAINTENANCE tab, PRIME/CLEAN, button FILL AND CLEAN.



Start Fill and clean procedure:

1. Select button **OK**.
2. The needle goes down and the process is started.
3. When all the pipettes are filled, the needle goes back to the home position.
4. After the Fill & clean process is finished :remove the adapter.

5. Sensor check

Vacuum pressure check

- Go to tab MAINTENANCE -> CHECK SENSOR. Select CHECK FLOW SENSOR box.
Flow: **0980** ± 60 Abs: **0320** ±10
If the flow is not in range there might be a blockage in the vacuum flow line to the flow sensor.

Fill Stop sensor check

- Go to tab MAINTENANCE -> CHECK SENSOR. Select CHECK FILL STOP SENSOR box.
Fill stop sensor FS 90..**140**..165

Diluter Start sensor check

- Go to tab MAINTENANCE -> CHECK SENSOR. Select DILUTER START SENSOR box.
Diluter start sensor 400-700

Measure sensor check

- Go to tab MAINTENANCE -> CHECK SENSOR. Select CHECK MEASURE SENSOR box.
Measure sensor MS 40..**50**..60

Temperature sensor check

- Go to tab MAINTENANCE -> CHECK SENSOR. Select CHECK TEMPERATURE SENSOR box.
Temperature sensor TS [Room temperature]

Diluent flow sensor check

- Go to tab MAINTENANCE -> CHECK SENSOR. Select CHECK DILUENT FLOW SENSOR box.
Press test. When test is finished, signal Down and signal Up must be green.

Separator check

- Go to tab MAINTENANCE -> CHECK SENSOR. Select CHECK SEPARATOR SENSOR box.
Separator sensor <200 **600** >700

6. Clean separator and exchange Waste cassette assembly

Be careful, as there may be blood in the cassette. First, make up some disinfectant and put this in the liquid separator. Press PRIME DISINFECTANT to pump disinfectant through the pump cassette.

Clean Separator

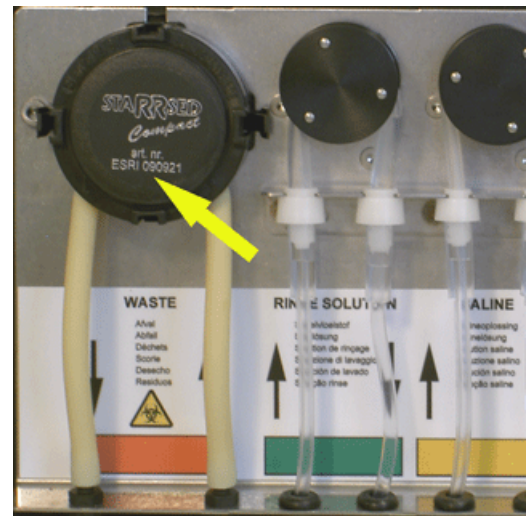
The waste system must be cleaned before replacing the waste pump cassette.

1. Open the left cover and remove the waste container. The liquid separator is now visible.
2. Lift the stainless steel vacuum tube with use of the lever.
3. Pull the liquid separator towards the front of the ESR analyser unit. (Note: The separator has two sensor connectors at the rear)
4. Remove bacterial HEPA filter.
5. Fill waste separator with 100ml disinfectant or 100 ml water with 2% bleach.
6. Replace bacterial HEPA filter.
7. Lift left cover.
8. Lift stainless steel vacuum tube up.
9. Insert the liquid separator sliding it over the support shelf.
10. Push the liquid separator towards the rear, with the sensor connectors in the holes.
11. Release the stainless steel vacuum tube.
12. Replace the waste container.
13. Close left cover.



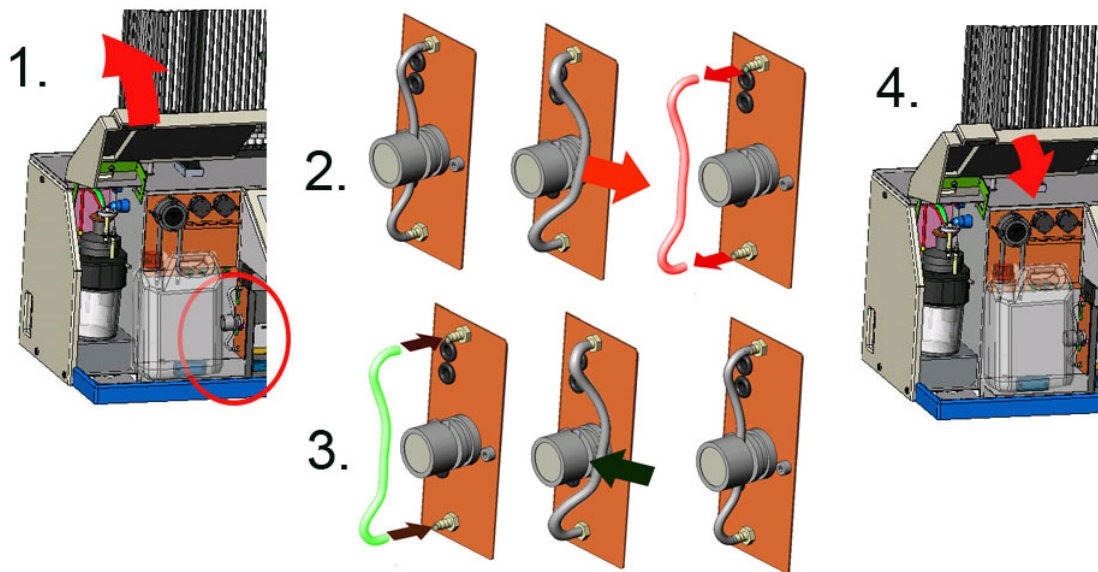
Exchange Waste Cassette and blotting washer

1. Disconnect the two tubes from the waste pump cassette.
2. Press levers (at three o'clock and nine o'clock positions) and pull at the same time.
3. Clean peristaltic pump motor shaft using a tissue soaked in alcohol.
4. Remove the old blotting washer **ESRI090026** around the motor shaft.
5. Place the new blotting washer **ESRI090026**.
6. Insert new waste pump cassette **ESRI090921** until it clicks into place.
7. Remove the protection caps on from the tubes.
8. Connect the two tubes to new waste pump cassette.



7. Exchange Pinch valve tube

Replace the pinch valve tube **ESRI010246**



8. Inspect or replace sample probe or outer needle

A faulty or broken needle can cause a fill time-out error or a dilution error. If necessary replace the sample probe or outer needle.

9. Check and clean instrument

Prepare disinfectant: (if not already prepared).

This disinfectant is for cleaning of all external parts that are exposed to blood.

1. Check system for leakage.
 - Inspect the peristaltic pump tubes and connections for leaks.
 - Check that liquid does not run back into the supply bottles after the pumps have stopped.
2. Clean the outer needle with disinfectant
3. Check tubing from the syringe for trapped air bubbles.
4. Check Diluent syringe for trapped air bubbles.
5. If trapped air bubbles are found, go to tab [MAINTENANCE], click button [PRIME / CLEAN] and perform the [PRIME DILUENT/DILUTER] function.
6. Wipe outer surface and stainless steel plate below the pipettes with disinfectant.

10. Exchange air filter

Air filter replacement QWLV040003

1. Pull both tube connectors out of the blue filter.
2. Place new blue filter
3. Reconnect the tube connectors on the filter

