

<b>Work instruction Number 1222</b>	
<b>Page</b> 1 of 5	<b>Purpose:</b> Installing Tube manipulator assembly EHST040970
<b>Safety:</b> <i>Bio Hazard area</i>	
<b>Instrument:</b> Interrliner	<b>Revision:</b> 002, November 2019

### Preparation

1. Close the Starrsed Software
2. Install the new software
3. Start the software and check version 6.12.1 is operational.
4. Insert a rack with 2 sample tubes
5. Check the barcode reading

### Next phase

1. Close the Starrsed Software
2. Switch off the ESR Unit
3. Open the robot hood (It is possible to remove the robot hood for more working space)
4. Remove the plastic protection cover from the Indexer board.
5. Place the link on the indexer board Connector 517 (See picture)
6. As check, switch ON the ESR unit and check if the opposite LED is on.
7. If the LED is on the link is set correctly, for safety switch off the ESR unit.



Follow the next steps in this order!

1. Remove the top C- clip QWBM050040
2. Disconnect the two connect wires from the tube rotation motor
3. Loosen the 4 screws QWBM425030 which hold the bracket EHST040946 on the bearing vehicle, *do not* remove the screws
4. Use the crank rod EHST040944 as a brake by pushing the lever under the ball bearing vehicle, this will prevent that the ball bearing vehicle will fall off from the rail and lose the ball bearings.

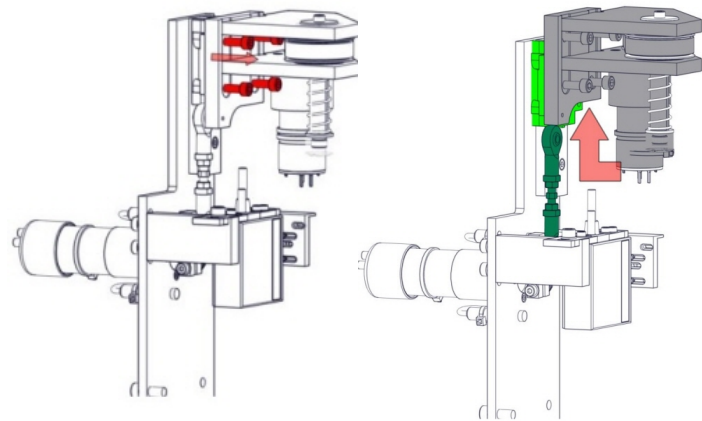
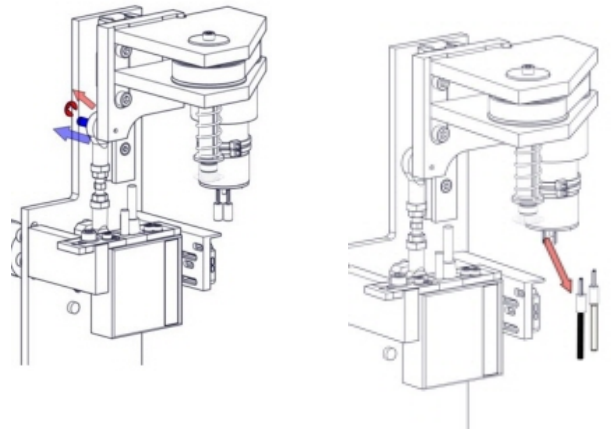
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When that happens your ball bearing vehicle will not work correct and needs to be replaced!!

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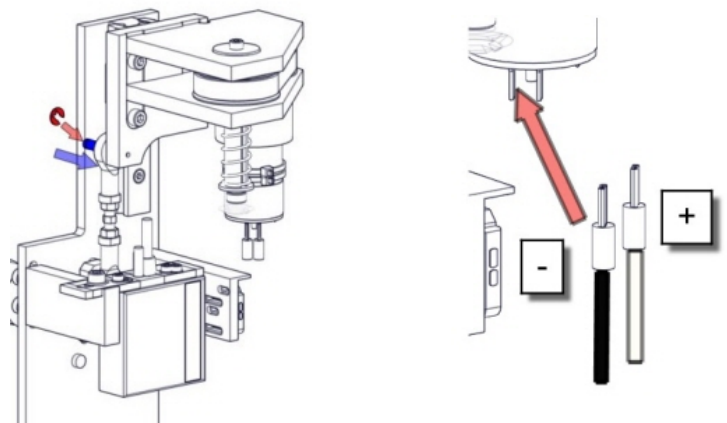
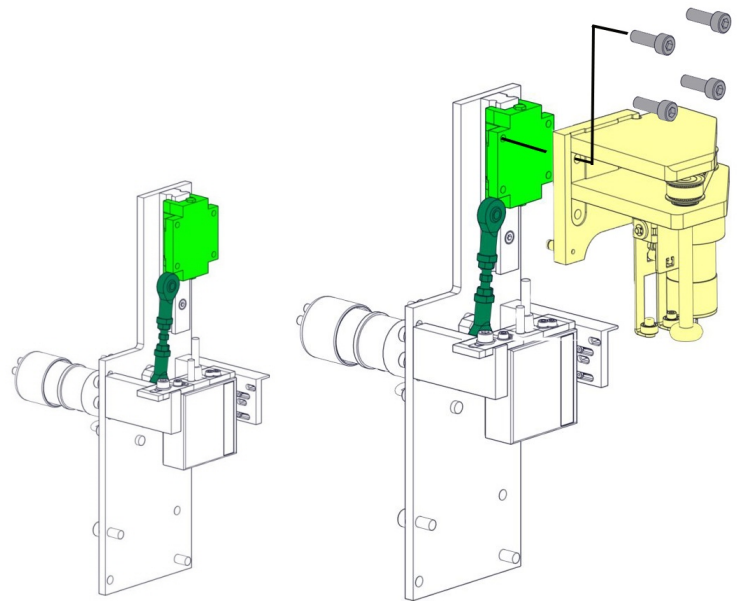
Carefully remove the screws and make sure the crank rod is still holding the ball bearing vehicle on its place.

During this process the assembly is getting loose and the weight is transferring onto your hand, pay attention to the crank rod.



### Next part

1. Carefully mount the shifted barcode reader assembly onto the ball bearing vehicle
2. Fasten the 4 screws QWBM425030  
Be careful and ensure the crank rod is still holding the ball bearing vehicle in place
3. Hold the shifted barcode reader assembly by hand and release the crank rod
4. Before mounting the crank rod, check if all the nuts are loose on the crank
5. Connect the 2 wires back on the motor connection of the motor.
6. Put the crank again onto the pin but place the c-clip back



### First test

1. Switch on the ESR unit
2. Start the Starrsed software
3. Place an *empty* Sysmex rack in the Input-pool
4. Start the aspiration.

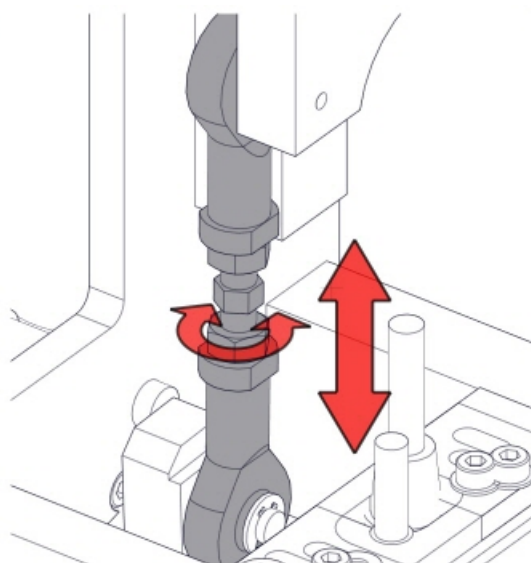
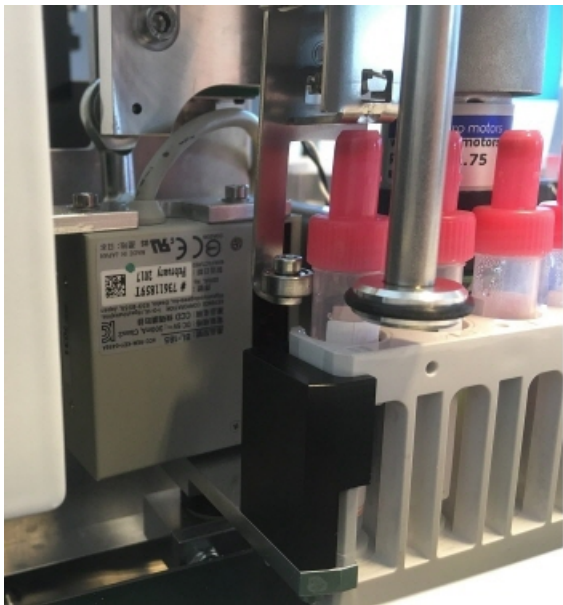
### Check if:

- The rack is transported to the indexer
- The Indexer takes the rack and moves to the home position
- The shifter barcode reader goes down
- The rack is pushed under the rotated wheel, the wheel starts to rotate
- When the rack is finished, the Indexer returns to the home position

- The shifted barcode reader goes up again.
- The indexer now moves the rack away from the barcode rotation wheel
- The Indexer return the the rack release position and the rack is pushed onto the track.

#### Setup the shifted barcode reader

1. Stop the Sample mode
2. Goto the menu Service
3. Goto the menu Elevator / Indexer
4. Goto the menu Indexer
5. Select Open clamp
6. Place a rack with a sample tube on position 1
7. Select close clamp
8. Select home
9. Goto the menu General / Barcode
10. Select Barcode down
11. Goto the menu Indexer
12. Select Barcode
13. Check if the sample tube is in centered in the shifted barcode reader, if not, adjust the numerical value next to 'Barcode'. A value change of 1000 is approx. 5mm of movement. Press the button 'Barcode' to move to the newly set value.
14. Check the height of the shifted barcode reader, the wheel should be just below the cap. If not, the height of the shifted barcode reader can be adjusted with the crank rod. If the setting is correct, lock the crank rod with the lock nuts.



15. Select Home
16. Goto the menu General / Barcode
17. Select Barcode up
18. Goto the menu Indexer
19. Select Rack in

20. Select Open clamp
21. Remove the rack
22. Select Close clamp

#### Check rack handling with Sarstedt tubes

- Take a rack with Sarstedt tubes and check if the tubes are turning and are read by the barcode reader.
- Pay special attention that the rotation of the tube goes smoothly and the rotation wheel is positioned under the plastic edge of the cap.
- Check that the wheel first turn is clockwise

After troubleshooting check again till the tubes are turned smoothly.

#### Check if another rack can pass the first rack from which the barcodes are read

1. Start the Starrsed software
2. Place a Sysmex rack with 10 samples with barcode in the Input-pool
3. Start the aspiration.

#### Troubleshooting

- If not make a better adjustment on the crank rod so the rotation wheel positioned under the plastic edge of the cap.
- If a Sarstedt tube with a small diameter is used, it is possible that the Sarstedt tube have too much play between the rotation wheel and the bracket with the 2 ball bearings, then make a small adjustment to the bracket by bring the bracket closer to the rotation wheel
- If the first turn of the wheel is not clockwise reverse the 2 motor connections on the motor it self

- While the aspiration is in progress enable the bypass function on the input pool.
- Put an other filled Sysmex rack in the input pool
- The rack will now transported along the indexer and barcode manipulator.
- Check the rack can pass freely along the processed rack

When both tests were successful the Shifted barcode reader assembly is ready for use.