BATCH WASHING MACHINE

Operating instructions

REV No.	DATE	DESCRIPTION	EDITED	CHD.	APPD.
1.0	20.1.2021	Initial version	SRa		

Batch Washing Machine

There are two separate washing machines located in A!Bio (Room 259). These instructions are about the batch washing machine (See Image 1) which is used for example washing staple fibres.
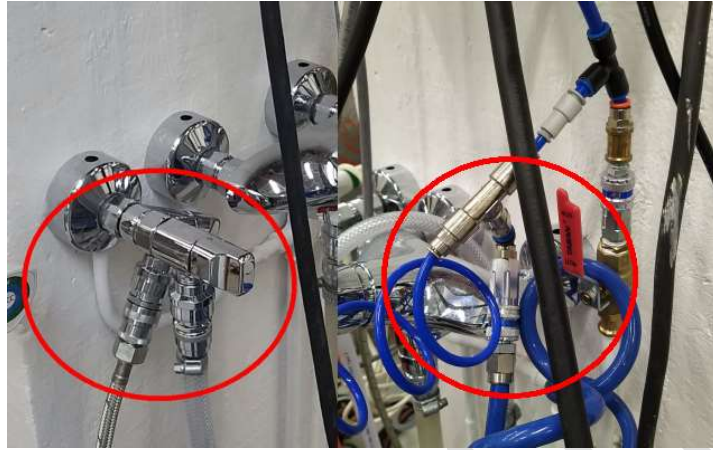
Image 1 – Batch washing machine

Preparations

Image 2- Water and air connections

Make sure the two water feed hoses and pressured air tube are connected and open (see Image 2). The metallic hose feeds the washing water heater, the plastic one is for the cylinder heating jacket connected to the smaller heating unit. Pressured air operates the valves.

Image 3

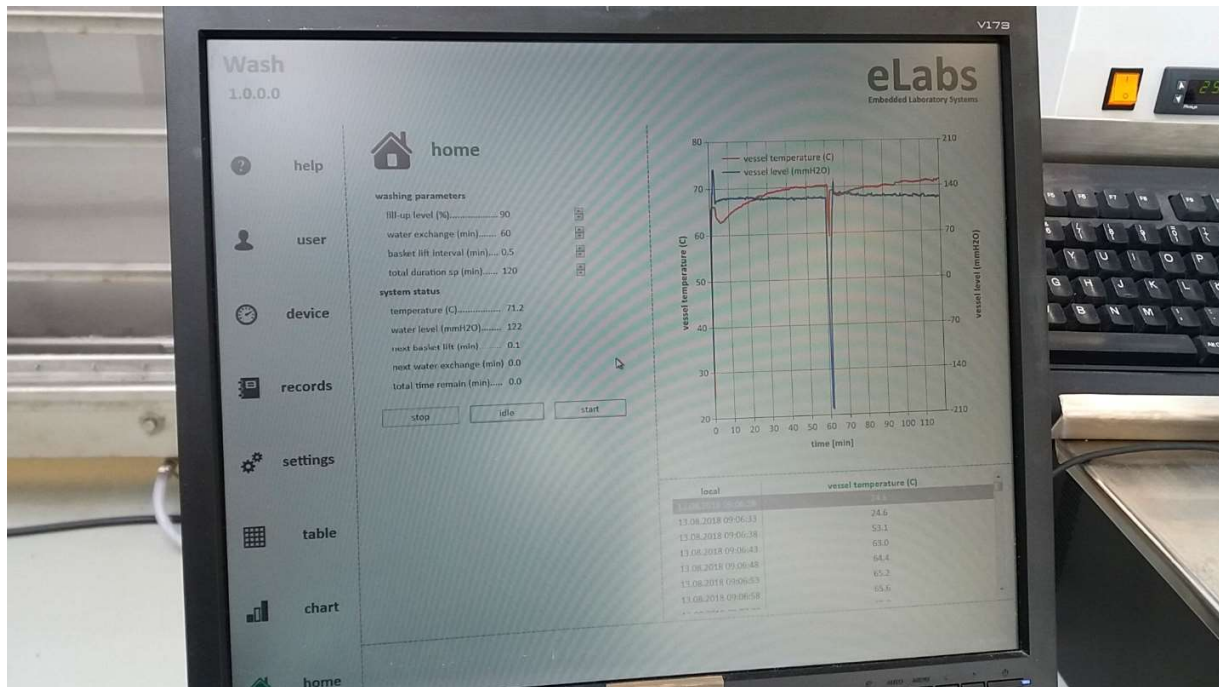Ensure the outlet hoses are in the wastewater drain.

Image 4- Heating and sensor unit

Power on the heating unit located below the computer by turning the mains switch. Turn the heating on by pushing the green button. Temperature should be at 90 degrees. Turn the sensor unit above the computer from the yellow switch. (See Image 4)

Image 5- eLabs Wash software

Login username is MittakoneP1 - no password is set. The washing machine is controlled with eLabs Wash software (See Image 5). If it's not running, click on the icon on the desktop to start it.

Image 6 – Basket lid

Make sure there are no left-over fibres before inserting your samples in the basket. Use the basket lid (See Image 6) to ensure filaments are properly submerged in the washing water during the washing cycles.

When washing chemical residues from the fibres, you can squeeze the extra water away manually. From the *settings* tab (see Image 5) in the Wash software, you can click the *empty vessel* button to remove the residual water before starting the washing. It takes a while (1-2 minutes) before the system closes the outlet valve.

Before running the washing program, ensure the set temperatures have been reached. If you click on the *Idle* button on the *home* tab, it will show the current measurement live status. It needs to be stopped using the *Stop* button before continuing to actual washing.

Running the wash program

Check the values in *settings* screen and for washing parameters on the *home* screen (see Table 1). Click on the *start* button on the home screen and the washing program will start.

Table 1- Default values for standard washing

Default values for Settings

- Basket lifting
    - duty cycle (%)   75
- Water exchange
    - fill-up time (sec)   170
    - empty time (sec)   90
    - empty at the end   yes
- level monitoring
    - apply level monitoring   no
    - empty limit (mmH20)   100
    - full limit (mmH20)   450

Washing parameters

- Washing parameters
    - fill-up level (%)   90
    - water exchange (min)   60
    - basket lift interval (min)   0.5
    - total duration sp (min)   120

After washing program has ended

Turn off the heating from the red button on the heating unit. Collect your samples from the basket. If there is residual water, you can empty the vessel as previously explained.

Switch off the heating unit and sensor unit. Lock the computer. Close the water taps.

In room 261 (spinlab) there is a wire mesh rack that can be used to air-dry filaments. Label as any sample per Aalto University instructions.

Common problems

Problem: **The heating unit gives an error FuE.**

Solution: Make sure unit water feed hose is connected to the water outlet and the tap is open.

Problem: **Software cannot start the washing**

Solution: Ensure all the units are switched on and the pressured air supply is on. Go the *device* tab and ensure listed system hardware items are listed as *working* / have a green ok-symbol. If not, click on the i-symbol and then on the "recycle" symbol to re-check the device.

Ultimately restart the computer and software.

Problem: **Basket is not moving up/down**

Solution: Ensure the metallic wire travels in the roller grooves and pressured air supply is on.