

## Steelco Lab 610 Laboratory Washer

### Purpose:

To perform thorough professional cleaning, thermal disinfection and drying of laboratory glassware. Replaces manual washing with standardized programmed wash cycles that ensure the removal of chemical and biological residues that prevents damage of fragile items.

### Instructions

Operating instructions:

- 1) PPE requirements are to wear gloves when handling chemicals or contaminated glassware.
- 2) Pre-wash prep: Glassware should be pre-rinsed before loading. Ensure that detergents are at sufficient levels before running the cycle. To check chemical levels, visually inspect chemical containers, checking that the dosing wands are submerged in liquid, and that the LCD display is clear of a yellow warning message indicating low levels.










**CAUTION:** All tape, labels, and stickers with adhesive residue must be removed from glassware prior to loading to prevent clogging and damage to the washer equipment.

- 3) Start up power to the washer by turning the main red knob located on the front bottom right area of the machine. This will activate the control panel.
- 4) Pull the hinge door down until it lays flat. This serves as the loading platform for the lower wash racks. The trolley can also be attached at this point for assistance in loading (see trolley instructions section).
- 5) **Note:** never place glassware face up when loading, this will starve the water pump and trigger an alarm.
- 6) Visually inspect the chamber and filter for any debris, remove if any is present.
- 7) Load glassware onto the appropriate racks. For more guidance on rack selection refer to the Rack selection and configuration section.  
**Note:** Always keep at least two racks in place (even if one is empty) to alleviate water pressure from the back injection ports and keep the system balanced.
- 8) Load racks into the chamber, firmly pressing them towards the back to properly align them with the water/air connection.
- 9) Spin the upper and lower spray arms to ensure they can rotate 360° without hitting glassware to prevent damage.
- 10) Close the washer door.
- 11) Use the P+ button on the LCD touch panel to scroll and select your desired program. For a general wash use the short wash program by pressing P1. To include the drying portion in the selected cycle press the dry button and confirm it

is highlighted orange on the control panel. Refer to Figure 2 for button visuals and function.

- 12) Press the start button to begin the cycle.
- 13) The cycle is complete when the machine continuously beeps and a green message reads "Cycle complete". To stop this beeping, open the washer door.
- 14) When unloading, visually inspect glassware confirming it is dry and free of foggy residue or white spotting.
- 15) If glassware is still damp, a stand alone drying cycle can be run by selecting program B20.

## **Control Panel Buttons Guide**

<b>BUTTON</b>		<b>DESCRIPTION</b>
<b>P1</b>		Select " <b>SHORT</b> " cycle.
<b>P2</b>		Select " <b>STANDARD</b> " cycle.
<b>P3</b>		Select " <b>INTENSIVE</b> " cycle.
<b>PRG</b>		Keep pressed for five seconds during Wait or Shutdown to display the Menu.
<b>P+</b>		By pushing this button you select other programmes. Each pressure corresponds to a new programme.
<b>START</b>		After having selected the programme to be run pressing this button the cycle is started.
<b>STOP</b>		This switch interrupts the cycle in progress, the card interrupts the process, displays a message indicating that disinfection did not take place, keeps the door locked and if necessary indicates a high temperature inside the chamber. Pressing START the machine resumes the cycle from where it was stopped, while pressing STOP again, the machine returns in a stand-by mode and the door is unlocked.
<b>DRYING</b>		Pressing this button after having selected a programme and before starting it, it is possible to disable the forced air drying step.
<b>USB</b>		On the control panel board there is an USB port that allows the machine programming and data saving.

*Figure 2. Visuals and description of function for control panel buttons.*

Replacing Chemical Detergents:

- 1) Wear gloves and proper PPE when handling chemicals.

- 2) The machine will display a "No Chemical (1 or 2)" warning message when chemical levels are too low or it can be triggered when the float switch at the bottom of the wand is in the "down" position. Confirm if the chemical needs to be replaced by visually inspecting the chemical levels of the containers.
- 3) Have the new product container ready and uncapped.
- 4) Switch the machine off.
- 5) Remove chemical product container from the designated storage shelf near the machine.
- 6) Remove the wand out of the depleted container and place it into the new one. Ensure the plug topper on the wand is secured in the bottle.
- 7) Place the chemical container back in the designated storage area.
- 8) Reset the machine to clear the alarm message:
  - a. Switch the machine back on
  - b. Hold the Start and Stop buttons simultaneously for 5 seconds until the beeping stops
  - c. Press P2 once
  - d. Press P1 once
  - e. The message will be cleared after reset and the machine will be ready for use.

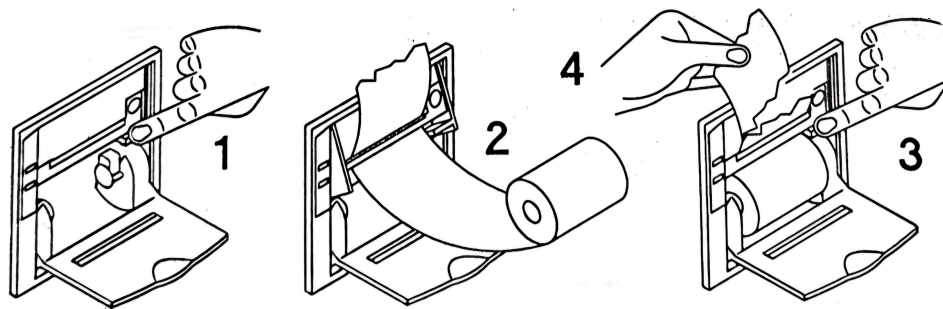
#### 16) Trolley instructions

- a. The trolley can be used for off-site loading, when immediately removing hot racks, and for full loads or those including heavy or bulky items.
- b. Lay the washer door down until flat.
- c. Align the rails of the trolley with the front of the washer door rail for docking.
- d. Pull the trolley lever to engage the latch and bridge the trolley with the washer.
- e. Engage trolley wheel locks to secure it in place.
- f. For loading, slide the rack from the trolley to the glass door and into the chamber. For unloading, use the same method in the reverse order.
- g. When finished with the trolley, switch the lever to lock any rack in place on the trolley, disengage wheel locks, and remove the trolley from the washer.

#### 18) Printer Paper Replacement

- a. Acquire and prepare a new thermal paper roll.
- b. Locate the printer panel on the front of the machine just below the door.
- c. Access the internal printer compartment by popping open the black hinged cover.
- d. Remove the empty roll's plastic core.

- e. Refer to Figure 1 for guidance on the following steps.
- f. Actuate the release lever to allow the hinged printer head assembly to pivot forward.
- g. With the new roll orient it so that the paper unravels from underneath the roll pulling it out towards the printer. This ensures that the thermal side makes contact with the printer.
- h. Use the feed button to feed 1-2 inches of paper through and pass the tear bar.
- i. Click roll into place within the paper cradle and close the hinged cover.
- j. Tear away access paper and perform a print test by pressing the print button to confirm the roll was installed correctly.



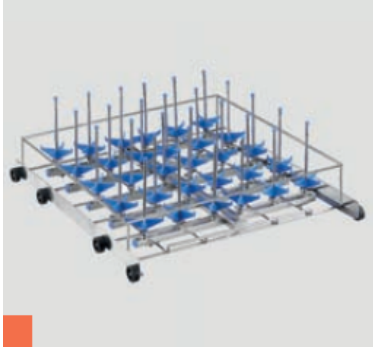


*Fig. 1 receipt paper replacement process*



19) Rack selection and configuration:

- a. Lower level racks are identified by the black wheels and can only be placed on the first lowest level of the washer.
- b. Upper level racks are identified by white wheels and can be placed on levels 2, 3, and 4 of the washer.
- c. Always load glassware face-down to prevent water collection and to ensure proper drainage and washing.
- d. Rack selection recommendations based on glassware types are listed in table 1.

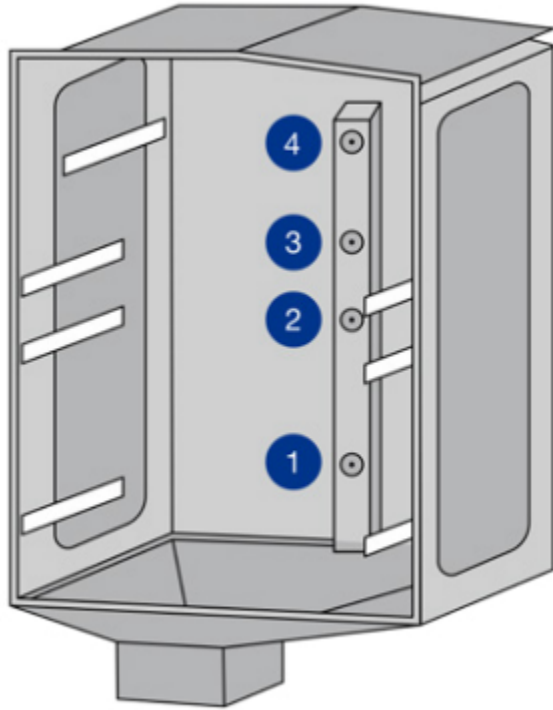
**Table 1***Recommended Racks for Glassware Types*

Recommended Racks for Glassware Types		
Reference Photo	Glassware	Rack
	Pipettes and graduated cylinders	<b>C733</b> <ul style="list-style-type: none"><li>• Lower level rack</li><li>• Specialized pipette cart</li></ul>
	Large or heavier glassware: beakers, erlenmeyers, and bottles that do not fit on the spindles.  Mesh and wire baskets specifically for holding miscellaneous components.	<b>C736</b> <ul style="list-style-type: none"><li>• Lower level rack</li><li>• Open basket</li></ul>
	Large-volume and wide-neck narrow glassware.  Erlenmeyer and volumetric flasks, graduated cylinders, bottles, and media storage bottles. (500 mL, 1 L, or larger).	<b>C730E</b> <ul style="list-style-type: none"><li>• Lower level rack</li><li>• Large injector nozzles with spindles</li><li>• 20 jets</li></ul>

## Recommended Racks for Glassware Types

	<p>Small to medium-sized, narrow-necked glassware:</p> <p>Small flasks and volumetric flasks (50 mL, 100 mL, 250 mL), reagent bottles, vials, and test tubes.</p>	<p><b>C724E</b></p> <ul style="list-style-type: none"><li>• Upper level rack</li><li>• Small nozzles with spindles</li><li>• 42 jets</li></ul>
	<p>wide-mouth glassware that does not require direct injection:</p> <p>Beakers, petri and culture dishes.</p> <p>Mesh and wire baskets holding funnels, caps, lids, and other small accessories.</p>	<p><b>C728</b></p> <ul style="list-style-type: none"><li>• Upper level rack</li><li>• Open basket with washing arm</li></ul>

- e. There are 4 levels for racks that can be configured for each wash or dry as needed (figure 3.).



*Figure 3. Chamber displaying four levels for washing cart configuration.*

- f. When using the C733 pipette rack, all 4 levels of space will be utilized so it must run in the chamber alone.
- g. For the C733 pipette rack: pipettes must be secured firmly into the gray rubber sockets with the tips facing downwards to prevent it from shooting out during the wash cycle.
- h. For racks with injection nozzles: the blue spindles are adjustable for proper sitting of glassware on injector jets. Adjust according to the height of glassware so that it sits on the spindle and does not hang from the nozzle tip of the jet to prevent water and air flow from being blocked.

## **Troubleshooting**

Some error messages may need to be resolved by a SteelCo service technician.  
Clear alarms only after the issue has been resolved.

- 1) Alarm Reset
  - a. The machine must be on when resetting or clearing an alarm.
  - b. Hold the start and stop buttons simultaneously for 5 seconds until the alarm stops beeping (figure 4.).
  - c. Press the P2 button once.
  - d. Press the P1 button once.



Figure 4. SoftTouch Control Panel and Buttons.

## 2) Emergency Cycle Stop or Interruption

- a. In the event of a lightning storm or potential power surge, turn the machine to the OFF position even if it is in standby mode to protect its electronic components
- b. Press the stop button located on the control panel at any time to immediately interrupt the cycle in progress and put the washer in stand-by mode.
- c. The machine will display a message warning that disinfection has not taken place and a potential temperature warning depending on when the cycle is stopped.
- d. To cancel the cycle and unlock the door press the stop button a second time.
- e. If wash was not canceled and is still in stand-by mode, press the start button to resume the cycle.

## 3) Manual door override for power failure

- a. If a power failure occurs or the machine cannot be reset while glassware is trapped inside, but the door can be opened manually.
- b. Switch the red power knob located on the washer to the off position.
- c. Find the small unlock port/hole, located near the door latching mechanism between the door and cover panel.
- d. Insert manual override tool into the port
- e. While keeping tool pushed in, pull door open
- f. **IMPORTANT:** To close the door again use the same tool and method to manually latch the door shut. Do not force the door shut without using the tool, **failure to do so will result in the striker plate bending and will require a service technician for repairs.**  
(Diagram here of port location)

## 4) Emergency Water Shutoff

- a. During a significant leak occurrence, use a step stool to reach the Deionized (DI) loop valves located above the unit.

- b. Push the valves in before turning them to shut off the water supply to the washer.

## **Cleaning**

### **Maintenance Note**

- 1) If the washer will be inactive for three weeks or more the system requires a flush. Chemicals cannot stay in the lines for long periods of time. Run a standard cycle with the wands placed in a bucket of water to prevent the alkaline and acid detergents from crystallizing in the tubes and the seizing of the peristaltic pump.
- 2) cleaning protocol
  - a. A self clean cycle should run once a week, this can be done by running program B19 found in programs using the PRG button.
- 3) Cleaning the filter system

**CAUTION:** If cleaning immediately after a cycle allows time for heating elements to cool due to the filter being located directly beneath.

- a. Clean filters as needed depending on frequency of usage. It is necessary to do a thorough cleaning if a piece of glassware is shattered within the machine.
- b. Always wear proper PPE
- c. The filter system consists of three separate parts, the catch plate, the mesh filter, and the cylindrical pump filter which are located at the base of the washer chamber (figure 5.).
- d. Open the washer door to access the chamber
- e. Loosen and remove the bolt that secures the 3 filters located in the center of the top level filter.
- f. Lift out the first catch filter plate, this will have most of the significant debris
- g. Next remove the fine mesh filter that sits directly beneath the top plate filter
- h. Lastly extract the final cylindrical pump filter that sits deepest in the sump.
- i. Inspect the three piece filter and remove any visible debris
- j. Rinse thoroughly under DI faucet to remove any chemical accumulation and debris.
- k. Reinstall filters into the washer the pump filter, fine mesh, and top filter respectively in that order.
- l. Secure them in place by tightening the bolt



*Figure 5. Three-piece filtering system*

## **References**

Steelco Laboratory Glassware Small and Medium Washing Systems Catalog

Steelco Laboratory Washer LAB 610 G2 Brochure

ST LAB 610 EN rev.06 SPECIFICATIONS

Laboratory Glassware Washing System Steelco

LAB 610 Laboratory training Videos