**Purpose:**

This procedure outlines the steps involved in the calibration, cleaning, maintenance and operation of the Sorvall Cell washer 2.

**Procedure:**

|  |  |  |
| --- | --- | --- |
| **Step** | **Action:** | **Related Documents:** |
| **Quality Control:** |  |
| **1** | * Select a program that dispenses the desired saline volume of 54 mls.
* Open the lid and remove rotor/distributor assembly. On the control panel, press AUTO mode and CYCLE 2.
* Hold a 100ml graduated cylinder under the nozzle. Press PRIME button.
* Record amount on daily QC form.
 |  |
| **Procedure A: Operation:** |  |
| **1** | * Open the lid. Insert rotor, distributor, and balance up to 12 test tubes.
 |  |
| **2** | * Close lid.
 |  |
| **3** | * **To select spinning option:**
* Press either the HIGH mode (3500-3600 rpm) or LOW mode (1100-1200 rpm) button.
* TIME – enter desired spin time.
* Press START.
* **To select washing option.**
* Press AUTO mode
* CYCLE - enter desired number of wash cycles (1-4).
* For an audible signal at the end of the run, press ALARM ON.
* Press START.
* Once the LED is illuminated, press LID to open the LID.
 |  |
| **Step** | **Action** | **Related Documents** |
| **4** | * **Pausing and resuming a wash process**

By pressing the CHECK button, you can access the tubes during a process, and then continue with the process. When you pause a process, the process stops after the current step is completed (fill, spin, or decant), at which time you may open the lid. After you close the lid, resume the process where it left off by pressing the START button. If a process is paused, you cannot stop the process until you have resumed it. |  |
| **5** | * **Stopping a process**

By pressing the STOP button, the run in progress will stop immediately. When the LID light goes on, the lid may be opened. When the process is restarted by pressing START, it will begin the programmed cycle over again. |  |
| **Procedure B: Calibration of Saline Dispensed** |  |
|  **1** | * Calibration of Saline Dispensed is done daily as part of Bench QC and documented on the Daily Bench QC form.
* Determine if calibration of saline volume is necessary.
* Saline fill volume is set at 54mL. If volume is not correct, slowly move the flow control lever (located on top of the flow control valve) to allow for more or less saline flow.
 |  |
| **Procedure C: Cleaning** |  |
| **1****Step** | **Cleaning the exterior**Clean the exterior with soap or mild cleaning agent and water. Dry the exterior with a dry cloth or sponge.**Cleaning the interior*** To prevent blockages and maintain rotor balance, ensure the bowl is clean and free of debris, which may include salt crystals or broken glass.

To prevent condensation that may lead to corrosion, dry the interior* thoroughly after normal daily usage.
* Using a damp cloth or sponge, wipe the bowl, removing all debris. It is not necessary to remove or clean under the bowl.

Using a dry cloth or sponge, wipe the entire inside of the lid, including the drainage system and painted surfaces**Action** | **Related Documents** |
| **2** | **Flushing the system**The system is flushed to clean and disinfect the cell washer, as well as remove blockages due to salt crystallization. * You will need the following to complete this procedure:
* A container filled with approximately 500 ml of 10% fresh bleach solution.
* A container filled with approximately 1 liter of distilled water.
* Install the rotor in the cell washer and close the lid
* Disconnect the saline supply tubing and place in the container of bleach solution.
* Select AUTO mode, 4 CYCLEs, and press START.
* Place saline supply tubing in container of distilled water and follow with another 4 CYCLEs in AUTO mode and press START.
* Return saline supply tubing to saline block and follow with another 4 CYCLEs in AUTO mode and press START.
 |  |
|  | **Cleaning the Collecting Ring Assembly and Tubing*** From the back of the instrument, open the adjustable tubing clamp that secures the Y-Connector in place and remove the discharge tubing from the Y-Connector.
* Remove the four mounting screws and step washers securing the collecting ring assembly to the lid.
* Pull the collecting ring assembly away from the lid, and pull the discharge tubing up through the wet guard (molded black liner).
* Disconnect the flow tubing from the spray nozzle in the lid and pull it through the hole in the retainer ring.
* Separate the collecting ring assembly by pulling the collector ring off.
* Remove the discharge tubing and flow tubing, wash with warm water and mild detergent, and reinstall tubing.
* Wash the retainer ring, O-ring seal, and collector ring with warm water and mild detergent.
* To reassemble, place the retainer ring on a table so that it rests on the smaller opening and work the O-ring seal around the outside of the large opening until it is fully seated in the groove of the retainer ring. Then, place the collector ring so that it rests concentrically over the O-ring seal and press firmly into place. Make sure the nozzle for the discharge tubing on the collector ring aligns with the groove in the wet guard when the collecting ring assembly is reinstalled in the lid.
* Reinstall the collecting ring assembly in the lid of the Cell washer 2 by reversing step 1 through 4 of this procedure.
 |  |
| **Step** | **Action** | **Related Documents** |
| **Procedure D: Daily/Weekly Monthly Maintenance** |
| **1** | These are minimum requirements. * **Daily—Document on Cell Washer Maintenance form**
	+ Check saline volume dispensed.
	+ Inspect the tubing and drain and clear obstructions if necessary.
	+ Inspect the tubing connections and secure them if necessary.
	+ Clean and dry the interior after normal usage to prevent corrosion and contamination.
* **Weekly—Document on Cell Washer Maintenance form**
	+ Flush the system.
	+ Check the saline volume setting and calibrate it if necessary. Frequency varies by length of service.
* **Monthly—Document on Cell Washer Maintenance form**
	+ Clean the collecting ring assembly and tubing.
	+ Clean the exterior.
 | Cell Washer Maintenance Schedule |

**References**

SORVALL Cellwasher 2 Operator’s Manual

Standards for Blood Banks and Transfusion Services, Current Edition. American Association of Blood Banks, Bethesda, MD

