



Sutter Roseville Medical Center

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Effective: N/A

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Next Review: N/A

Owner: *Nadera Poirier: Spvr, Transfusion Services*

Policy Area: *Lab - Transfusion Service*

References:

Applicability: *Sutter Roseville Medical Center*

# Use and Maintenance of the Helmer UltraCW II Cell Washer


## PURPOSE

To provide instruction for the maintenance and use of the Helmer UltraCW II cell washer as a serological centrifuge or to wash red blood cells (RBCs).





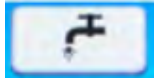
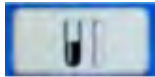
## POLICY

- Washing of red cells may be required to remove unbound proteins before testing or addition of anti-human globulin (AHG) for direct or indirect antiglobulin tests or phase of manual crossmatch.
- Loss or hemolysis of RBCs due to improper washing can affect results.
- False negatives can occur from:
  - Delayed/interrupted washing process
  - Neutralization of the AHG reagent by unbound globulins due to inadequate washing
- Saline open date expiration is 30 days after cube is opened.
- Daily, weekly, and monthly maintenance tasks must be documented and signed off on the appropriate maintenance log as they are completed.
- Steps 1 and 2 of the weekly maintenance can be used as a troubleshooting measure if ports are clogged, preventing saline from properly dispensing into tubes.
- RPM and timer checks will be performed semi-annually by eEquip.

# ICON KEY



Label	Name	Description
A	Start Program	Starts selected program
B	Stand-by	Reduce power and darken screen
C	Settings	View / change device settings
D	Login	Advanced User / Service Login
E	Menu	View / Select program options
F	Open	Release / Open lid

Exit current menu:	
Forward and reverse through current menu:	
OK/select:	
Tools:	
Fill/prime:	
Calibrate:	

# EQUIPMENT/SUPPLIES/REAGENTS

Reagents	Supplies	Equipment
<ul style="list-style-type: none"> <li>• 0.9% Buffered saline</li> <li>• 8.25% Bleach</li> <li>• Sani-Cloth germicidal disposable wipe</li> <li>• Deionized water</li> </ul>	<ul style="list-style-type: none"> <li>• Test tubes</li> <li>• Gauze</li> </ul>	<ul style="list-style-type: none"> <li>• Helmer UltraCW II</li> <li>• Graduated cylinder</li> <li>• Lid release tool</li> <li>• Timer</li> </ul>


# PROCEDURE

## Centrifuging and Washing for Testing

Step:	Action:
1.	Press the open lid icon and load tubes into balanced positions in the tube holder.
2.	Close lid firmly until it clicks ( <b>do not slam</b> ) and select the menu icon if desired program is not currently selected. <ul style="list-style-type: none"> <li>• Note: If desired program is already displayed, press the start program icon and disregard the following step.</li> </ul>
3.	Select desired program from the menu and proceed through all steps, then select OK icon and start the program. <ul style="list-style-type: none"> <li>• Note: Following the last wash on a wash cycle, the lid will open, allowing for addition of AHG. After adding AHG, close the lid, and the cell washer will complete the mixing and centrifugation steps automatically.</li> </ul>
4.	When program is finished running, press open lid icon.

5. Leave lid open when not in use to prevent mildew growth inside washer.

## Daily Maintenance

Step:	Action:
1.	Inspect tubing, tubing connections, and drain. Confirm that tubing is positioned so that draining will occur and that the drain is clear of obstructions.
2.	Load the rotor of the cell washer with tubes, leaving every other position on the rotor empty, then close the lid.
3.	Prepare a container of approximately 1L of deionized water. Note: Distilled water can also be used.
4.	Remove the saline tube from the saline cube and place it into the container with the deionized water.
5.	Select and run the "flush 1" program.
6.	Remove the saline tube from the deionized water container, dry the exterior of the tubing and place it back into the saline cube.
7.	Select and run the "flush 1" program.
8.	Open the lid of the cell washer and wipe the inside of the bowl with damp gauze, removing all debris. Using <i>dry</i> gauze, wipe the entire inside of the lid, including the drainage system and painted surfaces.
9.	Confirm that the drain hole of the splash guard in the bowl is directly above the drain in the bowl. With the labeled side up, place the splash guard cap into the bowl on top of the splash guard.
	
10.	Clean exterior surfaces with a Sani-Cloth germicidal disposable wipe and dry the exterior with gauze.

## Weekly Maintenance

Step:	Action:
1.	Remove the rotor from the cell washer and soak in clean warm water or run warm water directly into the top of the rotor for several minutes. <ul style="list-style-type: none"> <li>• Note: Ensure water is flowing freely through all ports.</li> </ul>

2.	<p>If a port is blocked, gently slide the lid release tool in and out of the fill port several times from the outside toward the center of the rotor.</p> <ul style="list-style-type: none"> <li>Note: If rotor will be used immediately for testing, run "flush 1" program with saline before use.</li> </ul>
3.	<p>Load the rotor of the cell washer with tubes, leaving every other position on the rotor empty, then close the lid.</p>
4.	<p>Prepare: (1) a container with 376mL of deionized water and 24mL of 8.25% bleach and (2) a container of approximately 1L of deionized water. Note: Distilled water can also be used.</p>
5.	<p>Remove the saline tube from the saline cube and place it into the container with the bleach solution.</p>
6.	<p>Select and run the "flush 1" program and wait 5 minutes.</p>
7.	<p>Remove the saline tube from the bleach container and place it into the container with deionized water.</p>
8.	<p>Select and run the "flush 1" program twice in succession.</p>
9.	<p>Open the lid and dry the interior with gauze.</p>
10.	<p>Remove the saline tube from the deionized water container, dry the exterior of the tubing, and place it into the saline cube.</p>
11.	<p>Select and run the "flush 1" program twice in succession.</p>

## Monthly Maintenance

Note: Cell washer must be primed and saline fill volume checked whenever saline supply or tubing is changed, or at a minimum of once per month as part of preventative maintenance.

Step:	Action:
1.	<p>Replace saline cube as needed, writing revised expiration date on container.</p> <ul style="list-style-type: none"> <li>Note: Saline open date expiration is 30 days after cube is opened.</li> </ul>
2.	<p>To prime and check the saline volume:</p> <ul style="list-style-type: none"> <li>From the start screen, touch the login icon and select "<b>Service user</b>"</li> <li>Enter password <b>46060</b> and select OK icon to confirm</li> <li>Select the settings icon, then the tools icon on following menu</li> <li>On the service menu, select the calibration icon</li> <li>Holding a graduated cylinder under the saline dispenser in the lid, repeatedly press the fill/prime icon until no bubbles appear</li> <li>Empty graduated cylinder</li> <li>Holding the graduated cylinder under the saline dispenser in the lid, press the start icon <ul style="list-style-type: none"> <li>Note: Target calibration volume of 36mL should be highlighted in green</li> </ul> </li> </ul>

3.	Once the liquid has stopped flowing from the spout, verify the volume of liquid collected in the graduated cylinder by the bottom of the meniscus								
	<table border="1"> <thead> <tr> <th>If:</th> <th>Then:</th> </tr> </thead> <tbody> <tr> <td>Total volume is within 34.2-37.8 ml</td> <td>Cell washer is acceptable for use</td> </tr> <tr> <td>Total volume is not within 34.2-37.8 ml</td> <td>Repeat volume check steps above</td> </tr> <tr> <td>Total volume is not within 34.2-37.8 ml on repeat volume check</td> <td> <ul style="list-style-type: none"> <li>• Use the "+", "++", "-" and "- -" on the right side of screen to adjust the number as needed</li> <li>• Select the OK icon to finish calibration</li> </ul> </td> </tr> </tbody> </table>	If:	Then:	Total volume is within 34.2-37.8 ml	Cell washer is acceptable for use	Total volume is not within 34.2-37.8 ml	Repeat volume check steps above	Total volume is not within 34.2-37.8 ml on repeat volume check	<ul style="list-style-type: none"> <li>• Use the "+", "++", "-" and "- -" on the right side of screen to adjust the number as needed</li> <li>• Select the OK icon to finish calibration</li> </ul>
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4.	Exit menus until start screen appears, then select the login icon followed by OK to log out.								

## Annual Maintenance

Step:	Action:
1.	Replace supply and drain tubing.
2.	Replace tube holder inserts for 10 x 75 mm tube, if used.

## Splash Guard Maintenance (as needed)

Step:	Action:
1.	Remove the splash guard cap by pulling upward.
2.	Remove the splash guard by folding back the seal to expose the edge of the splash guard, then gently lift the splash guard. Do this a section at a time until the entire guard is clear of the gasket, then lift from the bowl.
3.	To reinstall the splash guard, place the splash guard in the bowl so that the drain hole in the guard is directly above the drain in the bowl.
4.	Working one section at a time around the bowl, fold back the gasket and press the splash guard downward so the edge of the guard rests on the lip of the bowl. Note: The edge of the guard should slightly overlap the lip of the bowl.
5.	With the labeled side up, place the splash guard cap into the bowl on top of the splash guard.

All revision dates:

## Attachments

[Cell Washer Maintenance Log.pdf](#)