

	<b>TITLE:</b>		<b>DEPT OF LAB MEDICINE</b>
	<b>Facsanto II Instrument Maintenance</b>		<b>– Flow Cytometry Policy and Procedure Manual</b>
			<b>DOCUMENT # FLW-18</b>
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**Principle:**

In order to ensure optimal flow cytometer functioning, it is important to perform Maintenance activities according to the recommended schedule. A series of Daily, Weekly and Monthly maintenance activities should be performed according to Manufacturer recommendations. Every 6 months a service engineer should perform Scheduled preventive maintenances.

**Daily Maintenance Activities:**

1. Fluidics Startup: Replaces BD Facs Shutdown solution with BD Facsflow Solution.
2. Fluidics Shutdown: Replaces BD Facsflow Solution with BD Facs shutdown Solution.
3. Empty the Waste Container: Daily or as needed.
4. Wipe down the SIT and aspirator arm: Prevents saline deposit buildups
5. Empty Condensation trap on fluidics cart: Prevents overflow in trap.

**Weekly Maintenance Activities:**

1. Purge Fluidic Filters: Removes air from fluid filters, ensuring they won't dry out.

**Monthly Maintenance Activities:**

1. Change the Waste Container Cap: Date Cap
2. Decontaminate fluidics with a Long Clean: Decontaminates the internal sheath path with Facslean Solution, then rinses with FACS Shutdown Solution.

**Every 6 Months:**

1. Replace air filter. Ensures proper cytometer performance.
2. Replace fluid filters: Keeps fluids free of particulates.
3. Preventive Maintenance Procedures performed by Service Engineer.

**Emptying the Waste Container:**

1. Ensure that the cytometer is not running and collecting events.
2. Detach the waste container's sensor line and fluid lines from the fluidics cart waste port.
3. Pull the sensor straight out. Press the metal tab on the fluid line.
4. Always disconnect the container from the fluidics cart first because the waste container can become pressurized. Wait 30 seconds before removing the cap.
5. Remove the disposable waste cap and attached trap from the container. Place label side up on the bench.
6. Do not wet the cap. If you see liquid inside of the trap, remove the drain plug and fully drain. Rinse wet cap with 10% bleach and DI water before replacing the cap.
7. Empty the waste carefully with copious amounts of water.
8. Add 1 liter of bleach to the empty container. Add 0.5 ml Anti-Foam.
9. Do not over-tighten the waste trap or cap.
10. Reattach the sensor line and fluid line.

**Other Facscanto minor troubleshooting activities may include the following:**

**Purging the Fluidics Filters:**

1. Prime the fluidics lines. Select Cytometer-Cleaning Modes >Prime after Tank Refill. Select all the checkboxes for the cubitainers. When complete, click OK.
2. Place a few paper towels beneath the filter (s) to be purged.
3. Loosen the bleeder valve near the top of the filter by turning it counterclockwise.
4. Do Not completely unscrew the valve and do not loosen the bottom bleeder valve.
5. Allow fluid to seep out for 30 seconds.
6. If no fluid appears, the container could be empty or there may be an air lock.
7. Close the bleeder valve by turning clockwise.

**Removing an Air Lock:**

1. Place a few paper towels beneath an air locked filter.
2. Remove the filter by pressing the metal tabs.
3. Install bypass tubing in place of the filter.
4. Select Cytometer>Cleaning Modes>Prime after Tank Refill
5. Select the checkbox that corresponds to the filter you have bypassed.
6. Click OK
7. Ensure that fluid is moving through the bypass tubing.
8. When the prime has finished, remove the bypass tubing.
9. Reattach the filter to the fluidics cart.
10. Repeat the priming fluidics lines procedure
11. Open the bleeder valve and wait for fluid to seep out. Close the valve.

**Other Cleaning Procedures:**

1. Remove bubbles from the Flow Cell, Select Cytometer>Cleaning Modes> Degas

Flow Cell. Check OK when done. Check flow cell for bubbles.

2. **Cleaning the Flow Cell:** Select Cytometer>Cleaning Modes> Clean Flow Cell  
Place a tube with 2 ml of cleaning solution on SIT and click OK. Wait 5 minutes  
After completion to allow solution to dissolve deposits in flow cell. Click OK  
Remove from SIT. Run Startup to clear flow cell and lines.
3. **Purging the Bubble Filter.** Select Cytometer>Cleaning Modes> Bubble filter  
Purge (bubble filter purge and degas flow cell. ) Wait till the purge finishes.  
Click OK when completed Repeat if needed.

### **Changing Cubitainers:**

1. Ensure the cytometer is not acquiring events or running.
2. Detach the sensor and fluid line from the cart.
3. Pull the sensor straight out. Press the metal clip on the fluid line.
4. Do Not leave the sensor line connected while changing the cubitainer.
5. Unscrew the cap on the cubitainer. Remove the cap and sensor assembly.
6. Put a new cubitainer on cart (Match the label on the container to the port)
7. Replace cap assembly and hand-tighten.
8. Reattach sensor line and fluid line to cart (gently)
9. Prime fluidics. Select Cytometry>Cleaning Modes>Prime after Tank Refill.
10. Select the checkboxes for the cubitainers you changed. Click OK

### **Refer to Facscanto User's Manual for the Following Instructions:**

1. Replacing the Bal Seal
2. Decontaminating Fluidic System for Storage
3. Replacing Fluidics Filters
4. Troubleshooting Guide

### **Documentation of Daily, Weekly, and Monthly Maintenance :**

1. Enter results of Maintenance Checks on Facscanto 1,2,3 Log for all Daily, Weekly , and Monthly Performance Checks. (FLW-18-A)
2. Refer to Instrument Problem Log for Performance malfunctions and/or corrective actions. (FLW-18-B)
3. Maintenance/Instrument Performance Logs will be reviewed **Monthly** by the Supervisor.
4. **Refer to Problem Log for Corrective Action Documentation.**

### **References:**

BD Facscanto II Instruction Manual  
BD Biosciences, San Jose CA  
July 2007

BD Facscanto II Training Manual  
BD Biosciences, San Jose CA  
January 2009

**Attached Procedural Documents:**

<b>Document #</b>	<b>Document Description</b>
<b>FLW-18-A</b>	<b>FacsCanto II Maintenance</b>
<b>FLW-18-B</b>	<b>FacsCanto II Problem Log</b>

**FACSCANTO II MAINTENANCE**

**FLW-18-A**

MONTH                      CANTO #                     

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
<b>START-UP</b>																																
CHECK FLUID LEVELS																																
PERFORM FLUIDIC STARTUP																																
CHECK FLOW CELL																																
RUN 7-COLOR BEADS																																
RUN CS&T BEADS																																
TECH																																
<b>SHUTDOWN</b>																																
PERFORM CAROUSEL CLEAN																																
PERFORM FLUIDIC SHUTDOWN																																
CHECK FLUID LEVELS																																
CHECK/EMPTY WASTE																																
EMPTY CONDENS. TRAP																																
TECH																																

**WEEKLY MAINTENANCE**

	WEEK 1	WEEK 2	WEEK 3	WEEK 4
<b>CHECK FLUIDS</b>				
<b>EMPTY WASTE</b>				
<b>PURGE FILTERS</b>				
<b>TECH</b>				

**MONTHLY MAINTENANCE**

<b>CHANGE WASTE CAP</b>	
<b>PERFORM LONG CLEAN FLUIDIC SHUTDOWN</b>	
<b>TECH</b>	

**REVIEWED BY:** \_\_\_\_\_



