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| Standard Maintenance of BD FACSCanto II  |
| **Purpose** | Standard daily, weekly and monthly maintenance for the FACSCanto II Flow Cytometer as recommended by the manufacturer. |
| **Policy Statements** | Applies to Becton Dickinson FACSCanto II Flow Cytometer and technologist analyzing flow cytometry specimens. |
| **Materials** |

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| Reagents | Supplies | Equipment |
| Bleach (Clorox Reagent-Grade)Distilled/DI waterBD FACSFlow, FACSClean, Shutdown SolutionContrad 70 | 12 x 75mm polystyrene Falcon tubes | FACSCanto II Flow Cytometer |

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| **Safety Precautions** | All cytometer surfaces that come into contact with biological specimens can transmit disease. Use universal precautions when handling cytometer surfaces. |
| **Daily Start Up** | **Step** | Action | **Related Document** |
|  | 1 | Turn on power to the cytometer and fluidics cart using the green system power button on the left side of the FACSCanto II.  |  |
|  | 2 | Turn on the Canto computer, log in and start up the software (either Canto or Diva.) The software will automatically connect to the cytometer. If connection fails, retry by clicking Cytometer > Connect.  |  |
|  | 3 | Check fluid levels and replace as needed.  |  |
|  | 4 | Select Cytometer > Fluidics Startup. This may be done in either software program. Ensure there is no tube on the SIT. |  |
|  | 5 | When fluidics startup is complete, check the flow cell for bubbles. If bubbles are present, click Cytometer > Cleaning Modes > De-gas Flow Cell. |  |
|  | 6 | Confirm that the lasers are warmed up. The software will indicate remaining warm up time or that the system is ready. |  |
|  | 7 | Run daily setup beads.  | [flo-2.9-analyzing-the-performance-setup-on-bd-facscanto-ii.pdf](https://starnet.childrenshc.org/References/labsop/flow/flow/flo-2.9-analyzing-the-performance-setup-on-bd-facscanto-ii.pdf) |
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| **Daily Shut Down** | 1 | The SIT is decontaminated at the end of each day of testing. A 10% bleach (or FACSClean) solution is run for 5 minutes followed by distilled water run for 5 minutes. Cleaning tubes should contain <3 mls of fluid and may be run in either software program. * In Canto, program a sample on the worklist as "Clean" using the 4 color TBNK panel. Acquisition for each tube will time out after 5 minutes.
* In Diva, select Carousel > Clean. Select "Cleaning" and "Rinse 1" tubes and set run time for 5 minutes.
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|  | 2 | When the cleaning tubes are complete, select Cytometer > Fluidics Shutdown. Ensure there is no tube on the SIT. Alternatively, close the software and select "Exit application after fluidics shutdown." |  |
|  | 3 | When fluidics shutdown is complete, exit software and turn off cytometer power. |  |
|  | 4 | Shut down the computer. |  |
|  | 5 | Empty any water collected in the condensation trap (located on left side of fluidics cart underneath power panel). |  |
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| **Weekly Maintenance** | 1 | Purge fluidics filters: Fluidics cart must be pressurized to perform this procedure (cytometer on, fluidics startup done)* Place a towel under the filter to be purged.
* Loosen the bleeder valve on top of the filter (do not completely remove it.) Fluid should begin to seep from the open valve within 30 seconds.
* Close the bleeder valve.
* Repeat on the other two filters.
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|  | 2 | Clean flow cell: * In a Falcon tube, prepare about 2 ml of 15-50% Contrad 70 solution diluted with DI water.
* Select Cytometer > Cleaning Modes > Clean Flow Cell.
* Manually install the tube with cleaning solution on the SIT and click OK.
* When the tube is finished running, a dialog box will appear. Remove the tube from the SIT.
* Wait 5 minutes to allow the solution to dissolve any deposits.
* Run a fluidics startup to clear the solution from the line and flow cell.
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|  | 3 | Empty and prepare waste tank (weekly or as prompted):* Detach the waste container sensor line from the fluidics cart.
* Remove the waste cap and attached trap from the waste container and place on the counter label side up. The cap must be kept dry to prevent pressurization.
* Empty the waste tank. Bleach exposed waste may be disposed of down the drain.
* Add approximately 1 liter of bleach to the waste tank.
* Reattach the sensor line.
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|  | 4 | Clean sample handling surfaces:* Wet a soft lint free cloth with DI water and wipe down the SIT, aspirator arm and tube/carousel sensors to remove any salt buildup.
* Sample spills may be cleaned using 10% bleach followed by DI water.
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| **Monthly Maintenance** | 1 | Long Clean: This procedure takes approximately 70 minutes.* Check fluid levels; ensure waste is empty and cubitainers full
* Select Cytometer > Cleaning Modes > Long Clean
* Click OK to continue. The process cannot be stopped once started. A completion message will appear when it is complete.
* To continue running, perform a fluidics startup. Otherwise, cytometer may be powered off.
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|  | 2 | Replace the waste tank cap. |  |
|  | 3 | Back up the Diva database.  | Diva Data Backup |
| **Procedure Notes** | Refer to BD FACSCanto II Instructions for Use for troubleshooting information and unscheduled maintenance.  |
| **References** | BD FACSCanto II Flow Cytometer Training Manual 23-105300-00 Rev. ABD FACSCanto II Instructions for Use |
| **Historical Record** |  |  |  |  |
|  | **Version** | **Written/Revised by:** | **Effective Date:** | **Summary of Revisions** |
| 1 | Jim Berger | 09/29/2010 | Initial Version |
| 2 | Al Quigley | 07/08/2013 | Reformatted for CMS Web |
| 3 | Amanda McCaustland | 08/28/20 | Combined startup/shutdown procedure documents, added weekly and monthly maintenance instructions, safety precautions |