

Attune™ NxT Flow Cytometer

Pub. No. MAN0019366 Rev. B.0

This document includes checklists to help you prepare your Attune™ NxT Flow Cytometer and, if applicable, the optional Attune™ NxT Auto Sampler or CytKick™ / CytKick™ Max Autosampler, for use after an extended shut down. The checklists vary, depending on whether the **Decontaminate System** function was completed as part of the system shutdown. We encourage you to follow the checklist that applies to your situation, then retain the completed checklist with the Attune™ NxT Flow Cytometer service records.

- **Restart the system when Decontaminate System function was not performed:** Use this checklist if you did not perform the **Decontaminate System** function as part of the system shutdown.
- **Restart the system when Decontaminate System function was performed:** Use this checklist if you followed the instructions in the **Attune™ NxT Acoustic Focusing Cytometer Maintenance and Troubleshooting Guide** to perform the **Decontaminate System** function as part of the system shutdown.

Instrument serial number(s):

Instrument location:

Instrument owner:

Recommended materials and documents

Before you start, we recommend that you check to ensure that you have these materials and documents. Also, the **Attune™ NxT Flow Cytometer product page** includes a 3-minute video that demonstrates how to perform basic maintenance tasks. To watch the video, click the **Maintenance** tab. You may need to scroll down the page to see the tab.

Description	Cat. No. or Pub. No.
Attune™ NxT Focusing Fluid Filter (instrument requires 2 filters)	100022587
SIP tube	4490099
Attune™ NxT Flow Cell Cleaning Solution	A43635
Attune™ NxT Sample Syringe	100022591
Attune™ NxT Auto Sampler only. Attune™ NxT Auto Sampler syringe	4478686
CytKick™ / CytKick™ Max Autosampler only. CytKick™ autosamplers syringe If you need to order this syringe and it is not available on thermofisher.com , contact Support. See "Support resources" on page 5 for contact information.	100054593
Attune™ NxT Waste Bottle	100022156
Attune™ NxT Focusing Fluid Bottle	100022155
Attune™ NxT Auto Sampler only. Attune™ Auto Sampler Waste Bottle	4477850
Attune™ NxT Auto Sampler only. Attune™ Auto Sampler Focusing Fluid Bottle	4477847
Attune™ Focusing Fluid (1 x 1 L)	4488621
Attune™ Wash Solution	A24974
Attune™ Shutdown Solution	A24975

Description	Cat. No. or Pub. No.
Attune™ Debubble Solution	A10496
Freshly prepared 10% bleach solution Add 1 part 5.25% sodium hypochlorite to 9 parts deionized water.	N/A
Attune™ Performance Tracking Beads	4449754
Attune™ NxT Acoustic Focusing Cytometer Maintenance and Troubleshooting Guide	100024234
Attune™ NxT Acoustic Focusing Cytometer User Guide	100024235

Restart the system when Decontaminate System function was *not* performed

See the *Attune™ NxT Acoustic Focusing Cytometer User Guide* and the *Attune™ NxT Acoustic Focusing Cytometer Maintenance and Troubleshooting Guide* for detailed instructions, if needed. See “Recommended materials and documents” on page 1 for catalog numbers for all reagents and instrument consumables.

✓	Task
<input type="checkbox"/>	Rinse all bottles.
<input type="checkbox"/>	Power cycle the instrument(s), and reboot the instrument computer.
<input type="checkbox"/>	Run the Decontaminate System function.
<input type="checkbox"/>	Change the Attune™ NxT Focusing Fluid Filters.
<input type="checkbox"/>	Run the Startup function three times. During Startup , inspect the Attune™ NxT Sample Syringe and, if applicable, the Attune™ NxT Auto Sampler syringe or the CytKick™ autosamplers syringe. Look for dried salt or anything that looks like debris in the syringe barrel and on either side of the plunger. If there are signs of these issues, then we recommend that you replace the syringe on the cytometer and/or the autosampler.
<input type="checkbox"/>	Run the De-Bubble function two times using Attune™ Debubble Solution.
<input type="checkbox"/>	Run the Rinse function two times.
<input type="checkbox"/>	Run the Deep Clean function using Attune™ NxT Flow Cell Cleaning Solution or freshly prepared 10% bleach solution.
<input type="checkbox"/>	Prepare fresh Attune™ Performance Tracking Beads, then run the Performance Test. If the Performance Test passes, then continue to your experiment. The Performance Test results should be similar to the pre-shutdown Performance Test results. The Levey-Jennings Reports provide a visual indication of the cytometer performance over time. If the Performance Test does not pass, then: <ol style="list-style-type: none"> 1. Run the Startup function three times. 2. Run the De-Bubble function two times using Attune™ Debubble Solution. 3. Run the Rinse function two times. 4. Run the Deep Clean function using Attune™ NxT Flow Cell Cleaning Solution or freshly prepared 10% bleach solution. 5. Run the Performance Test again. 6. If the test passes, then continue to your experiment. If the test does not pass, then repeat steps 1 to 5. 7. If the test does not pass, see Performance Tracking troubleshooting in the <i>Attune™ NxT Acoustic Focusing Cytometer Maintenance and Troubleshooting Guide</i>, or contact Support, if needed. See “Support resources” on page 5.

Restart the system when Decontaminate System function was performed

See the *Attune™ NxT Acoustic Focusing Cytometer User Guide* and the *Attune™ NxT Acoustic Focusing Cytometer Maintenance and Troubleshooting Guide* for detailed instructions, if needed. See “Recommended materials and documents” on page 1 for catalog numbers for all reagents and instrument consumables.

✓	Task
<input type="checkbox"/>	Rinse all bottles, then fill with fresh reagents: <ul style="list-style-type: none"> • Attune™ Focusing Fluid • Attune™ Wash Solution • Attune™ Shutdown Solution
<input type="checkbox"/>	If you did not change the Attune™ NxT Focusing Fluid Filters when you performed the system decontamination during shutdown, then change the filters. If you are not sure that the filters were changed, then it is best to replace them. Leaving filters installed after decontamination causes severe performance issues.
<input type="checkbox"/>	Power cycle the instrument(s), and reboot the instrument computer.
<input type="checkbox"/>	Run the Startup function three times. During Startup , inspect the Attune™ NxT Sample Syringe and, if applicable, the Attune™ NxT Auto Sampler syringe or the CytKick™ autosamplers syringe. Look for dried salt or anything that looks like debris in the syringe barrel and on either side of the plunger. If there are signs of these issues, then we recommend that you replace the syringe on the cytometer and/or the autosampler.
<input type="checkbox"/>	Run the De-Bubble function two times using Attune™ Debubble Solution.
<input type="checkbox"/>	Run the Rinse function two times.
<input type="checkbox"/>	Run the Deep Clean function using Attune™ NxT Flow Cell Cleaning Solution or freshly prepared 10% bleach solution.
<input type="checkbox"/>	Prepare fresh Attune™ Performance Tracking Beads, then run the Performance Test. If the Performance Test passes, then continue to your experiment. The Performance Test results should be similar to the pre-shutdown Performance Test results. The Levey-Jennings Reports provide a visual indication of the cytometer performance over time. If the Performance Test does not pass, then: <ol style="list-style-type: none"> 1. Run the Startup function three times. 2. Run the De-Bubble function two times using Attune™ Debubble Solution. 3. Run the Rinse function two times. 4. Run the Deep Clean function using Attune™ NxT Flow Cell Cleaning Solution or freshly prepared 10% bleach solution. 5. Run the Performance Test again. 6. If the test passes, then continue to your experiment. If the test does not pass, then repeat steps 1 to 5. 7. If the test does not pass, see Performance Tracking troubleshooting in the <i>Attune™ NxT Acoustic Focusing Cytometer Maintenance and Troubleshooting Guide</i>, or contact Support, if needed. See “Support resources” on page 5.

Troubleshooting

See the **Attune™ NxT Acoustic Focusing Cytometer Maintenance and Troubleshooting Guide** (Pub. No. 100024234) for additional troubleshooting information.

Issue	Recommended actions
<p>Data stream on time plot looks choppy, or no events are displayed</p>	<p>Test for sample syringe movement:</p> <ol style="list-style-type: none"> 1. Open the syringe pump door located on the left side of the Attune™ NxT Flow Cytometer. 2. While observing the sample syringe, click Rinse on the Instrument tab, then follow the prompts to start the Rinse function. <ul style="list-style-type: none"> • If the syringe is not moving at all, then: <ol style="list-style-type: none"> a. Ensure that the USB cable connection between the back of the cytometer and the computer is firmly connected, then power cycle the instrument: <ul style="list-style-type: none"> – Close the Attune™ NxT Software, then power off the cytometer and, if applicable, the autosampler. – Power on the autosampler, then the cytometer, then open the Attune™ NxT Software. b. Sign in, then perform the Startup procedure. While the Startup function is running, observe the sample syringe. c. If the syringe is still not moving or appears to be sticking (non-fluid motion), then consider changing the syringe before contacting our technical support team. • If sample syringe movement is okay, then the system may have a clog. Consider changing the syringe.
<p>Loose connections errors</p> <p>The system displays an error message (flashing blue backlights) that a fluidics sensor connection is loose (e.g., Attune™ Wash Solution bottle or Attune™ NxT Waste Bottle).</p>	<ol style="list-style-type: none"> 1. Ensure that the bottle is full (Attune™ Focusing Fluid, Attune™ Wash Solution, Attune™ Shutdown Solution) or empty (Attune™ NxT Waste Bottle). Fill up all bottles, and empty the waste. 2. Check all fluid lines and sensor connections. Ensure that they are firmly seated and plugged in. 3. Check the connections for both the cytometer and the autosampler. 4. If the connections appear to be firm and the error message still displays, a new replacement bottle can be ordered, or a connection may be needed. Contact our technical support team. See “Support resources” on page 5.
<p>Leak detection errors</p>	<p>The cytometer and the autosampler have a leak detector in their bottle bay basins that are designed to pick up large leaks (~5 mL).</p> <ol style="list-style-type: none"> 1. Ensure that the fluid bottles are completely removed and/or reseated properly when refilled. 2. If either leak detector is triggered, inspect to confirm that there is a leak, then clean if needed. Look for any signs of the source, such as a loose fitting or damaged bottle connections. Tighten or replace as necessary. 3. If there is a sign of an intermittent leak, confirm the leak sensor is operational by placing your finger over the leak sensor face in the bottle bay. It should trigger the leak sensor. The sensor may need sensitivity adjustment. Contact our technical support team for assistance. See “Support resources” on page 5. The sensitivity adjustment can be performed while technical support provides instructions.

Support resources

I need ...	Resource
To access more Attune™ NxT Flow Cytometer tools, documentation, or troubleshooting content	<p>Visit the Flow Cytometry Support Center.</p> <p>Also, the Attune™ NxT Flow Cytometer computer desktop includes these folders:</p> <ul style="list-style-type: none"> • Attune™ NxT User Guides: Contains Attune™ NxT user guide and maintenance and troubleshooting guide. • Helpful Attune information: Contains a training slide deck, fluorophore selection guide, consumables list, and a quick reference guide.
Immediate assistance	<p>In the United States:</p> <ul style="list-style-type: none"> • Telephone: 1-800-955-6288 (9:00 a.m.–8:00 p.m. ET). Choose option 3, then option 1 for instrument service and hardware support. • Email: instrumentservices@thermofisher.com for the Technical Assistance Center (TAC) and instrument services <p>In Europe:</p> <ul style="list-style-type: none"> • Telephone: 00-800-5345-5345 • Email: Eurotech@thermofisher.com <p>All other regions: Visit thermofisher.com/support to obtain support contact information for your location.</p> <p>Note: Ensure that you have your instrument serial number when you contact the technical support team.</p> <p>If Performance Tests are failing, please take a screen shot of the Performance Test results table, and download the log files before calling for assistance. To download log files, select the Instrument tab, then click Export Logs for Service (available in Attune™ NxT Software v3.1 or later).</p> 
General product support	Visit thermofisher.com/support .
To request technical support or a service call	Visit thermofisher.com/contactus .



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For descriptions of symbols on product labels or product documents, go to thermofisher.com/symbols-definition.

The information in this guide is subject to change without notice.

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Revision history: Pub. No. MAN0019366

Revision	Date	Description
A.0	27 May 2020	New document.
B.0	11 June 2020	Minor correction to the first task in "Restart the system when Decontaminate System function was not performed" on page 2.

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