

FL 6500/8500 Auto Sipper Installation Instructions

This instruction sheet describes the installation of this accessory which is used with the FL 6500/8500 Fluorescence Spectrometer.

NOTE: *Read these instructions before you install this accessory.*

Contacting PerkinElmer

Supplies, replacement parts, and accessories can be ordered directly from PerkinElmer, using the part numbers.

See our website:

<http://perkinelmer.com>

PerkinElmer's catalog service offers a full selection of high-quality supplies.

To place an order for supplies and many replacement parts, request a free catalog, or ask for information:

If you are located within the U.S., call toll free 1-800-762-4000, 8 a.m. to 8 p.m. EST. Your order will be shipped promptly, usually within 24 hours.

If you are located outside of the U.S., call your local PerkinElmer sales or service office.

Features

- Easy to install
- Easy to use
- Flow of the sample is controllable



Figure 1 Auto Sipper for FL 6500 and FL 8500 [P/N N4201031]



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Produced in the USA.

Dimensions and Specifications

Physical Characteristic	Specifications
Speed (RPM)	0.1 to 100
Flow rate	0.0002 - 35 ml/min/channel (tube dependent)
Motor type	Stepper motors
Channels	2
Pump rollers	8
Power	100 – 240 V AC, 50/60 Hz, 30W
Temperature operating (°C)	-5 to 40 °C
Humidity (%)	Up to 80%
Dimensions (mm)	170(H) X 125(W) X 193(D)
Weight (Kg)	2.7

Table of correlation between tube i.d. and ml per revolution

Tube i.d. (mm)	Flow Rate* (mL/min per channel)
	0.1 ~ 100 RPM
0.13	0.0002 to 0.11
0.51	0.0017 to 1.7
0.57	0.0021 to 2.1
0.64	0.0026 to 2.6
0.95	0.0056 to 5.6
1.02	0.0063 to 6.3
1.42	0.011 to 11
1.75	0.016 to 16
1.85	0.017 to 17
2.54	0.027 to 27
2.79	0.031 to 31
3.17	0.035 to 35






Configuration of the Auto Sipper



Figure 2 Auto Sipper Configuration

Description of the Auto Sipper

Auto Sipper connection components

<i>Flangeless Fittings (3ea)</i>		<i>Peristaltic pump tube (1ea)</i>	
<i>Outlet tube for flow cell (1ea)</i>		<i>Inlet tube for flow cell (1ea)</i>	
<i>Sample Inlet Tube (1ea)</i>		<i>Connection Tube (2ea)</i>	
<i>Flow cell (1ea) (P/N: N4202039)</i>		<i>Front cover plate for Auto Sipper (1ea)</i>	

Installation

1. Prepare the FL 6500/8500 Fluorescence Spectrometer to install this accessory.
2. Connect the power cord and the communication cable.
3. If a single cell holder is installed, loosen the accessory fixing bolt and take out the single cell holder.

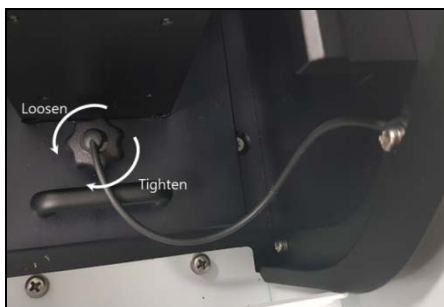


Figure 3 Loosening the Accessory Fixing Bolt

4. Remove the stopper fixing bolt and pull the stopper forward.



Figure 4 Remove the Stopper

NOTE: *When using a flow cell, the stopper in the single cell holder must be removed because it blocks the beam from passing through the flow cell window.*

5. After checking the pogo pin position in the sample compartment, place the single cell holder to be fit well into the pogo pin.
6. Tighten the accessory fixing bolt.



Figure 5 Tightening the Accessory Fixing Bolt

7. Prepare the tube connection components and the front cover plate for auto sipper accessory.
8. Connect three flangeless fittings to the tube.
 - a. Connection Tube 1: Cut the connection tube 1 into the proper length for the experiment environment and assemble the flangeless fitting.

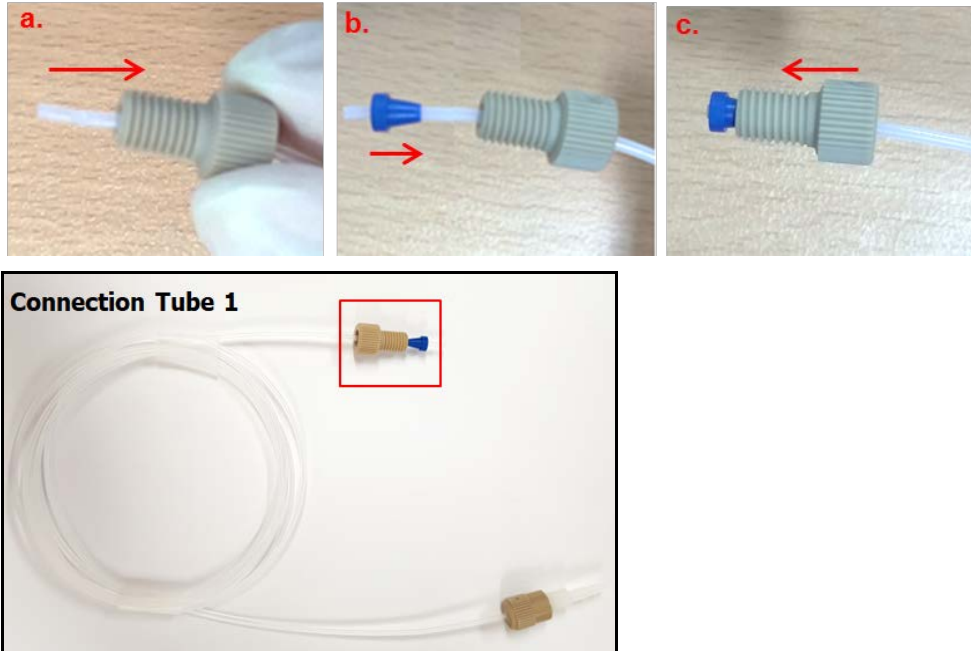


Figure 6 Assemble the Flangeless Fitting to the Connection Tube

- b. Inlet and outlet tubes for flow cell: Cut the inlet and outlet tubes into the proper length for the flow cell and connect the flangeless fittings.

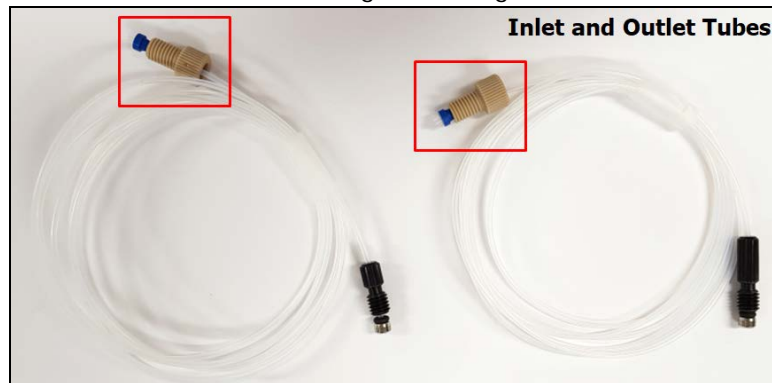


Figure 7 Assemble the Flangeless Fitting to Inlet and Outlet Tubes

9. Connect Flangeless Fittings of the Inlet and Outlet tubes to the ports inside of the front cover plate for Auto Sipper Accessory.

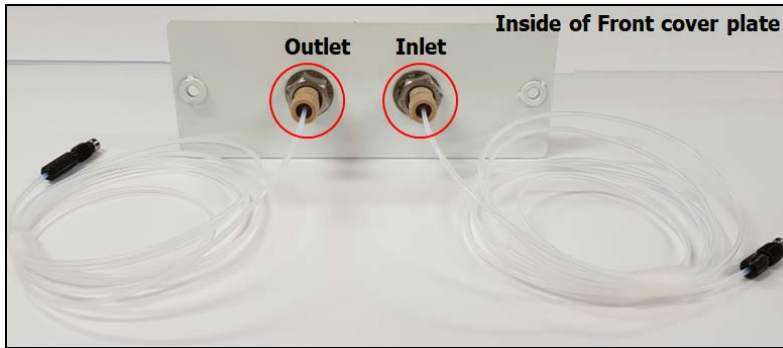


Figure 8 Connect Flow Cell Tubes to the Inside of the Front Cover Plate

10. Remove the current front cover plate.

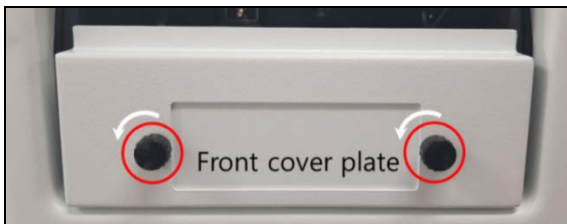


Figure 9 Front Cover Plate

11. Fix the front cover plate for Auto Sipper with the bolts.



Figure 10 Front Cover Plate for Auto Sipper

12. Connect the inlet tube for flow cell to the inlet port of the flow cell with the arrow mark and the Outlet tube to the outlet port of the flow cell.

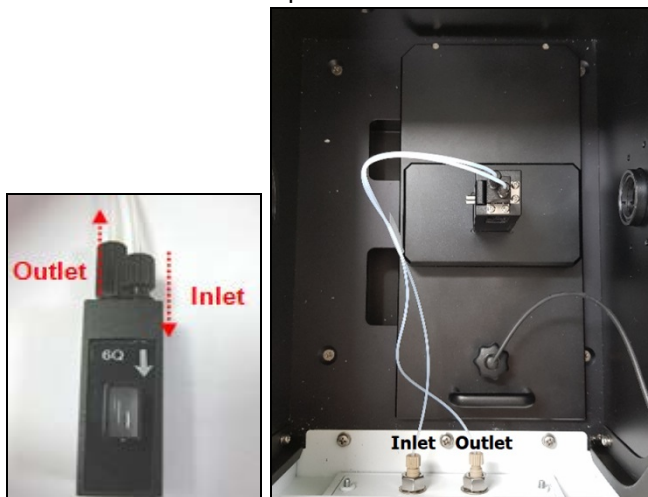


Figure 11 Connect the Tube to the Flow Cell

13. Cut the Sample Inlet tube and the connection tube 2 into the proper length for the experiment environment and connect each component one by one.

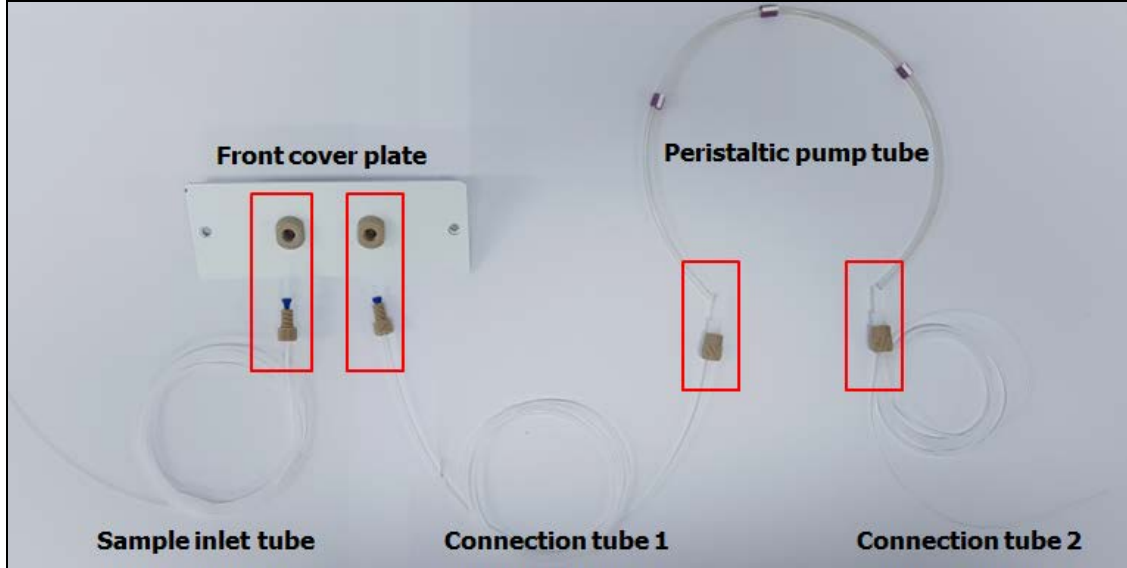


Figure 12 Connect Each Component

14. Insert the peristaltic pump tube into the cassette by placing the fixing collars of the tube in the holes on each side of the cassette.

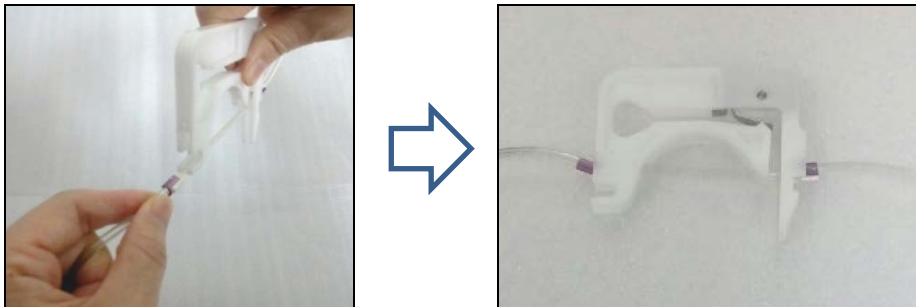


Figure 13 Insert the Peristaltic Pump Tube into the Cassette

15. Press the cassette down to lock the right side snap lever on the locking bar.



Figure 14 Install the Cassette into the Peristaltic Pump

16. Connect the peristaltic pump controller with the PC via the USB cable.
17. Connect the power cord to the peristaltic pump controller.

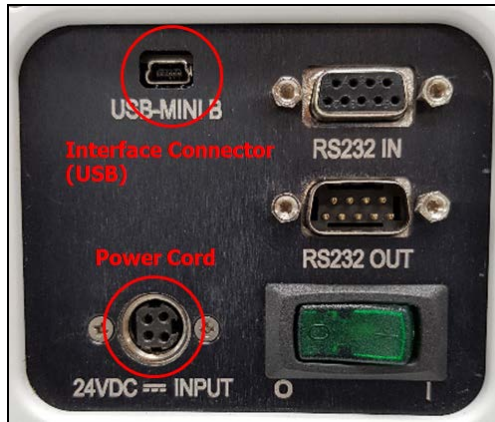
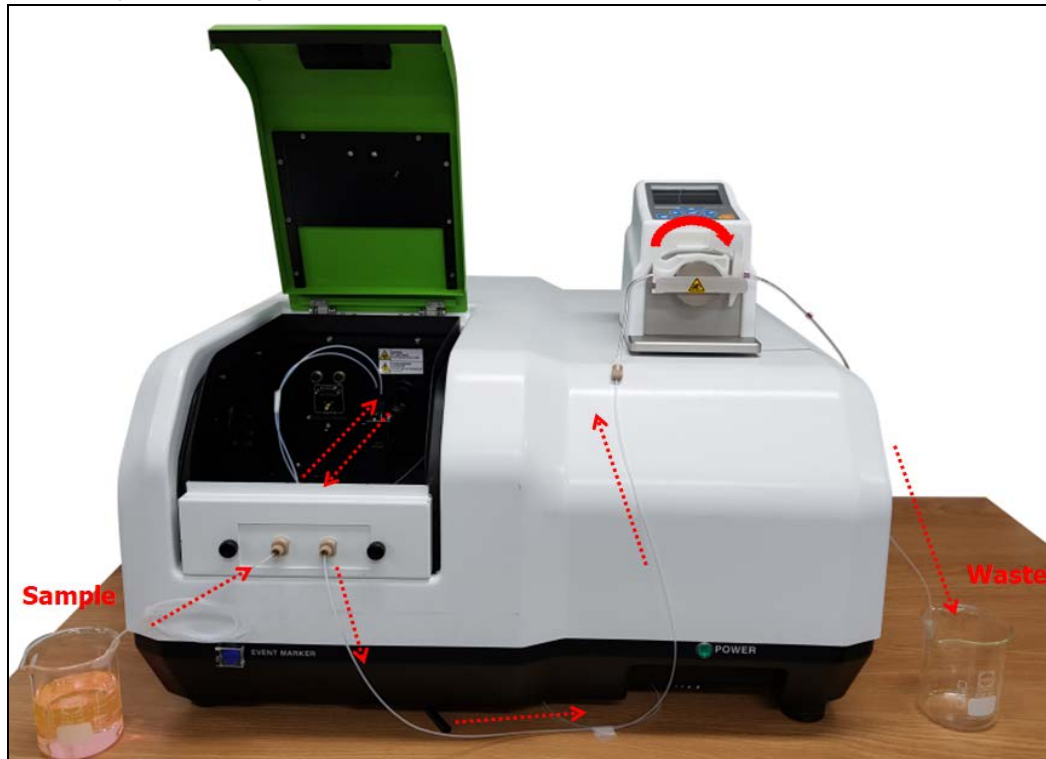


Figure 15 Connect the Power Cord and Interface Connector

18. Make the system configuration complete as shown in the picture below.



19. Turn on the power of the FL 6500/8500 and peristaltic pump controller.

Installing the USB Driver

When using the USB cable, you should download the Pump Control Software on the IDEX website.

1. Connect to the website: http://www.ismatec.com/int_e/downloads/software/download.htm and download the proper version of the Pump Control Software.

The screenshot shows the ISMATEC website's 'Downloads' page. The header includes the ISMATEC logo and navigation links for Home, Contact, and Feedback. A left-hand navigation menu lists categories: Pumps, Tubing, Accessories, Downloads, Operating manuals, Software, Documents, Information, About ISMATEC, Technology, Tradeshow, and What's New. The main content area is titled 'Download Pump Control Software for the Reglo ICC' and lists various software options: Download LabVIEW Drivers, Download ProgEdit Software, and Download Ismatec RS-232 Terminal Emulation Software. The footer contains contact information for Cole-Parmer GmbH in Germany.

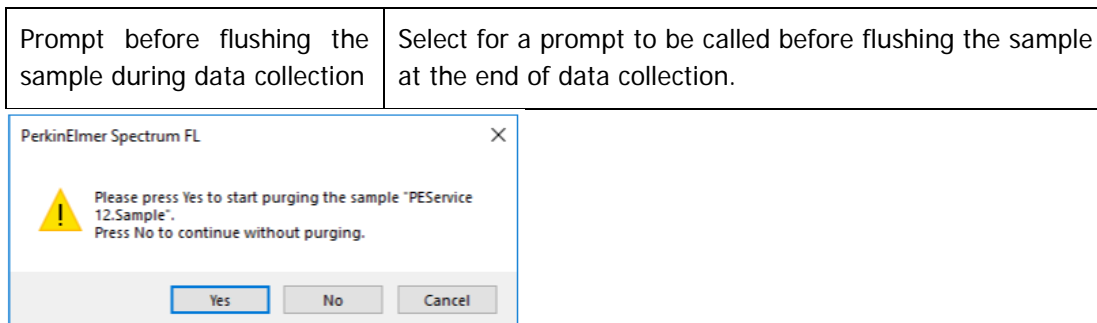
Measurement

1. Double click on the Spectrum FL software and select a measurement mode.
2. There are two accessory icons showing the status; one is for the current accessory which is installed in the sample compartment, the other is for Auto Sipper.
3. Click the arrow button for sipper to open the dialog pop-up window. Set each parameter according to the experiment conditions.

Sample Time (s)	Enter the amount of time (in seconds) that the pump pulls sample through for.
Purge Time (s)	Allow you to set the time for flushing or returning the sample using the sipper.
Delay Time (s)	Enter the delay time (in seconds) between the end of filling and the start of data collection. This is to allow for bubbles, turbulence, etc.
Speed (RPM)	Enter rotate speed in RPM.
Purge Direction	Select Flush for a forward flush which pull sample into waste, select Return for a backwards flush which return sample to the original reservoir. Flush occurs after data collection;
Save	Save current setting which will be displayed next time. And moreover, it will be the default setting for the sipper when create a new method.
Default	Restore to default setting.
Fill	Allows you to control the sipper directly. Starts to fill the flow cell as set by the Sample time.
Flush/Return	Allows you to control the sipper directly. Starts to flush the flow cell as set by the selection of Flush or Return and the Purge Time.
Stop	Allow you to stop Fill or Flush/Return.

4. The Auto Sipper can be selected in the **Method Accessory** setting as **Extra Accessory**. User can edit the sipper parameters under the **Sipper** tab.

The definition for Setting is the same as in the Manual Control Panel. Additionally, there is an optional function to allow the user to select whether the following message pops up after data collection.



NOTE: For the methods that select Auto Sipper as an extra accessory, there are three additional columns added. The default setting will be the value which set in the method, and the user can also customize it when running the experiment.

Fill Time(secs)	Flush/Return Time(secs)	Delay Time(secs)
20.0	5.0	10.0

5. Click **Save** to save the method after setting up the parameters.
6. Dip a Sample Inlet Tube into the sample solution.
7. Close the lid and select the **Run** icon.
8. Input the Experiment name and select **OK**.
9. Check the spectrum and results. Save or print the data

Maintenance

The tube for the transportation of the solution to the peristaltic pump is flexible and prone to tear, so this tube needs to be replaced periodically. The replacement period depends on the tubing shape, material, diameter and used time.

Great care should be taken that contaminants do not flow in the tube. These contaminants would cause damage to the tube.