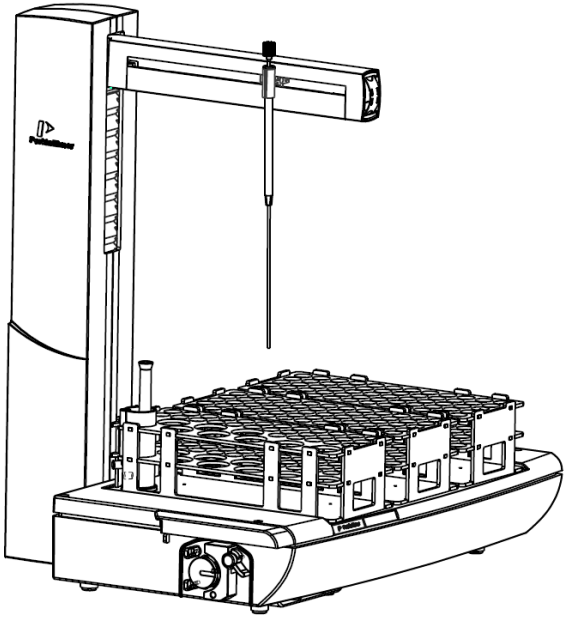
S10 Autosampler

For FL 6500-FL8500



User's and Service Guide

PerkinElmer®

Release History

Part Number	Release	Publication Date
09931536	A	January 2019

Any comments about the documentation for this product should be addressed to:

User Assistance
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Or emailed to: http://www.perkinelmer.com/contactus/

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Table of Contents

About This Guide

This manual contains the following sections:

- Introduction – a look at the conventions used in this guide, an overview of the S10 and the technical data for the accessory.

- Warnings and Safety Information – important information about the safe use of this Autosampler.

- Installation and Setup – how to get your S10 ready for use.

- Using Sample Racks and Trays – details of the different sample racks/trays available and how to use them.

- Maintenance – details of routine maintenance procedures that may be performed by the operator, and a list of spare parts available from PerkinElmer.

- Autosampler Utility – using a software routine that enables you to download new firmware for the S10.

Introduction

Conventions Used in this Manual

Normal text is used to provide information and instruction.

Bold text refers to text displayed on the PC screen.

UPPERCASE text, for example ENTER or ALT, refers to keys on the PC keyboard. '+' is used to show that you have to press two keys at the same time, for example, ALT + F.

All eight digit numbers are PerkinElmer part numbers unless stated otherwise.

Notes, cautions and warnings

Three terms, in the following standard formats, are also used to highlight special circumstances and warnings.

NOTE: *A note indicates additional, significant information that is provided with some procedures.*

CAUTION	*We use the term **CAUTION** to inform you about situations that could result in **serious damage to the instrument** or other equipment. Details about these circumstances are in a box like this one.*
D	***Caution (Achtung)*** *Bedeutet, daß die genannte Anleitung genau befolgt werden muß, um einen **Geräteschaden** zu vermeiden.*
DK	***Caution (Bemærk)*** *Dette betyder, at den nævnte vejledning skal overholdes nøje for at undgå en **beskadigelse af apparatet**.*
E	***Caution (Advertencia)*** *Utilizamos el término **CAUTION** (ADVERTENCIA) para advertir sobre situaciones que pueden provocar **averías graves en este equipo** o en otros. En recuadros éste se proporciona información sobre este tipo de circunstancias.*
F	***Caution (Attention)*** *Nous utilisons le terme **CAUTION** (ATTENTION) pour signaler les situations susceptibles de provoquer de **graves détériorations de l'instrument** ou d'autre matériel. Les détails sur ces circonstances figurent dans un encadré semblable à celui-ci.*
I	***Caution (Attenzione)*** *Con il termine **CAUTION** (ATTENZIONE) vengono segnalate situazioni che potrebbero arrecare **gravi danni allo strumento** o ad altra apparecchiatura. Troverete informazioni su tali circostanze in un riquadro come questo.*
NL	***Caution (Opgelet)*** *Betekent dat de genoemde handleiding nauwkeurig moet worden opgevolgd, om **beschadiging van het instrument** te voorkomen.*
P	***Caution (Atenção)*** *Significa que a instrução referida tem de ser respeitada para evitar a **danificação do aparelho***

WARNING

*We use the term WARNING to inform you about situations that could result in **personal injury** to yourself or other persons. Details about these circumstances are in a box like this one.*

D

Warning (Warnung)
*Bedeutet, daß es bei Nichtbeachten der genannten Anweisung zu einer **Verletzung** des Benutzers kommen kann.*

DK

Warning (Advarsel)
*Betyder, at brugeren kan blive **kvæstet**, hvis anvisningen ikke overholdes.*

E

Warning (Peligro)
*Utilizamos el término **WARNING** (PELIGRO) para informarle sobre situaciones que pueden provocar **daños personales** a usted o a otras personas. En los recuadros como éste se proporciona información sobre este tipo de circunstancias.*

F

Warning (Danger)
*Nous utilisons la formule **WARNING** (DANGER) pour avertir des situations pouvant occasionner des **dommages corporels** à l'utilisateur ou à d'autres personnes. Les détails sur ces circonstances sont données dans un encadré semblable à celui-ci.*

I

Warning (Pericolo)
*Con il termine **WARNING** (PERICOLO) vengono segnalate situazioni che potrebbero provocare **incidenti alle persone**. Troverete informazioni su tali circostanze in un riquadro come questo.*

NL

Warning (Waarschuwing)
*Betekent dat, wanneer de genoemde aanwijzing niet in acht wordt genomen, dit kan leiden tot **verwondingen** van de gebruiker.*

P

Warning (Aviso)
*Significa que a não observância da instrução referida poderá causar um **ferimento** ao usuário.*

 **WARNING**	*We use this WARNING to inform you about the risk of **electric shock** that could result in personal **injury** to yourself or other persons. Details about these circumstances are in a box like this one.*
D	*Dieses Symbol warnt vor Gefahr durch **elektrischen Stromschlag**, durch den Sie oder andere Personen **verletzt** werden können. Einzelheiten darüber sind in einem Rahmen wie diesem angegeben.*
DK	*Dette symbol gør Dem opmærksom på risikoen for **elektrisk stød,** som kan medføre **kvæstelser** af Dem selv eller andre personer. Detaljer vedrørende disse omstændigheder er indrammet på tilsvarende måde som denne henvisning.*
E	*Este símbolo le advierte del peligro de **descarga eléctrica** que puede provocar **lesions corporales** a usted o a otras personas. En los recuadros como éste se proporciona información sobre este tipo de circunstancias.*
F	*Ce symbole vous avertit d'un risque **d'électrocution** pouvant occasionner des **dommages corporels** à l'utilisateur ou à d'autres personnes. Les détails sur ces circonstances sont données dans un encadré semblable à celui-ci.*
I	*Questo simbolo vi mette in guardia da **folgorazione** che può causare **incidenti a voi stessi o ad altre persone**. Troverete informazioni su tali circostanze in un riquadro come questo.*
NL	*Dit symbool maakt U attent op het risico van **electrische schokken** die tot **verwondingen** voor Uzelf of anderen kan leiden. Bijzonderheden over deze omstandigheden staan in een kader zoals dit.*
P	*Este símbolo alerta para um risco de um **choque eléctrico** que poderá causar um **ferimento ao usuário**. Detalhes referentes a estas circunstâncias encontram-se referidos numa caixa como esta.*

Overview

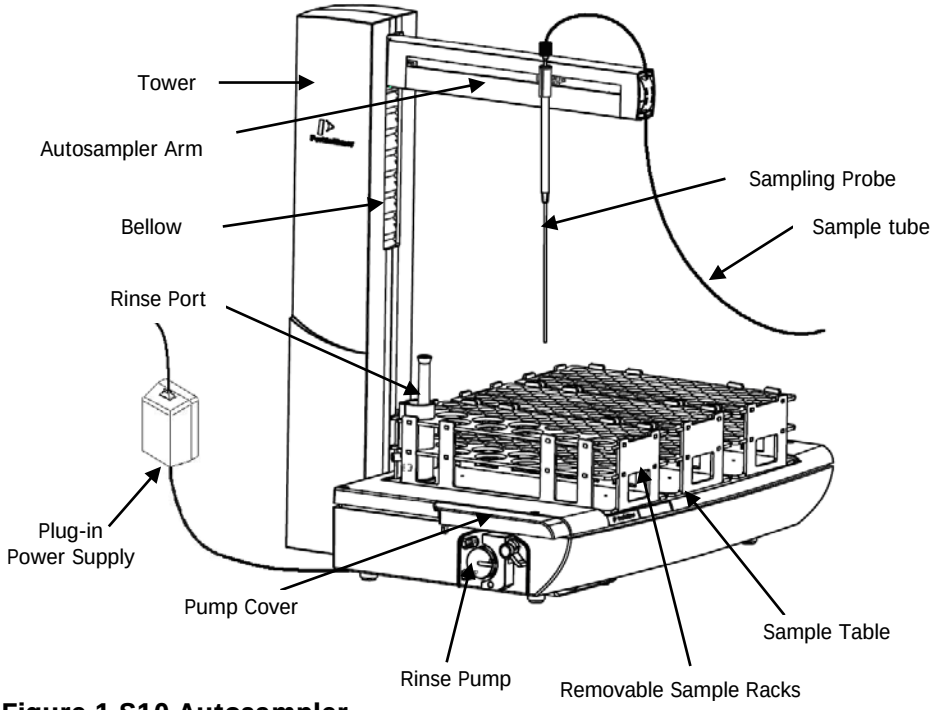


Figure 1 S10 Autosampler

The S10 is a multipurpose liquid sample handling system for spectrophotometric analysis techniques. The Autosampler is controlled using the Spectrum FL software. Unless specifically stated otherwise, the instructions in this guide are written for Spectrum FL 1.1 The Autosampler does not have its own operating controls.

The Autosampler has a pump for active sample aspiration and moves its sampling probe into the individual tubes containing the calibration and sample solutions. For solution aspiration the sampling probe must be connected via a sample tube to an active module (instrument).

Precise stepping motors move the Autosampler's sampling probe rapidly in the three spatial axes (left/right, front/back, up/down). Random access programming gives high flexibility in locating different sample and calibration solutions.

Technical Data

System design	Compact microprocessor-controlled system for automatic solution withdrawal for spectrophotometric applications.
System control	Control is via the same software that is used to control the spectrometer system.
Chemical resistance	The Autosampler surfaces are resistant to dilute acids and alkalis, and to a lesser extent to strong acids and alkalis and organic solvents.
Autosampler arm movement	Vertical: 145 mm Horizontal: X-axis (left–right) 302 mm Y-axis (front–back) 222 mm Resolution: 0.1 mm ± 4% Speed: typically 3 s from one location to the next.
Communication interfaces	RS232/Serial
Power requirements	12 VDC provided by the plug-in power supply.
Environmental requirements	Ambient temperature +10°C to +35°C, 20-80% relative humidity, non-condensing Safe operation: +5°C to +40°C. Storage: -20°C to +60°C.
Altitude	Operating: 0 m to 2 000 m Non-Operating: 0 m to 12 000 m
Dimensions	460 mm wide x 530 mm high x 378 mm deep
Mass (weight)	Approximately 5 kg

Specifications for the Power Supply

Intended use	Power supply is for information technology and similar equipment. The only power supply authorized for use with the S10 is one that is supplied by PerkinElmer.
Electrical requirements	100-240 VAC +/-10%, 50/60 Hz +/-1%, 1.5 A maximum
Plugs	The plug-in power supply is provided with 5 interchangeable 2-wire power cords that are compliant with European, UK, USA, Australian and Japanese standards.
Output	12 VDC, 5 A Max

Warnings and Safety Information

Safety Summary

The S10 Autosampler has been designed to comply with a wide variety of international standards governing the safety of laboratory equipment. In routine use, the Autosampler poses virtually no risk to you. If you take some simple, common sense precautions, you can maintain the continued safe operation of the Autosampler.

This guide contains information and warnings that must be followed by the user to ensure safe operation and to maintain the Autosampler in a safe condition. This advice is intended to supplement, not supersede, the normal safety code of behavior prevailing in the country of operation.

The information provided does not cover every safety procedure that should be practiced. Ultimately, maintenance of a safe laboratory environment is the responsibility of the user and the user's organization. Possible hazards that could harm the user or result in damage to the Autosampler are clearly stated at appropriate places throughout this guide.

General Safety

Before you install or use your Autosampler, and in order to get the best results, you should be familiar with all of the instruments in the system and know how to operate them. You should also be aware of the safety procedures enforce in your laboratory.

If the Autosampler is used in a manner not specified by the manufacturer, the protection provided by the instrument may be impaired.

This Autosampler requires no specified inspection or preventive maintenance to ensure the continuous functioning of its safety features.

If any adjustment, maintenance and repair of the opened, operating Autosampler is necessary, this must only be done by a skilled person who is aware of the hazard involved.

Whenever it is likely that the Autosampler is no longer electrically safe for use, make the instrument inoperative and secure it against any unauthorized or unintentional operation.

The Autosampler may be unsafe if it:

- Shows visible damage;
- Has been subjected to prolonged storage under unfavorable conditions;
- Has been subjected to severe transport stresses.

Electrical Safety

Do not attempt to make internal adjustments or replacements except as directed in the guide provided with the Autosampler.

Do not operate the Autosampler with any covers or parts removed.

Disconnect the Autosampler from all voltage sources before opening it for any adjustment, replacement, maintenance, or repair.

WARNING

Only a PerkinElmer service engineer or similarly trained and authorized person should be permitted to service the Autosampler.

Do not attempt to make adjustments, replacements, repairs or modifications to this Autosampler except as described in this User's Guide.

AVERTISSEMENT

Seul un ingénieur de service PerkinElmer ou une personne ayant une formation et une autorisation équivalente doit être autorisé à entretenir l'échantillonneur automatique.

Ne tentez pas d'apporter des modifications, des remplacements, des réparations ou des modifications à cet échantillonneur automatique, sauf de la manière décrite dans le présent Guide de l'utilisateur.

Electrical Protection

Insulation: Class II (double insulated)

Pollution degree: This instrument will operate safely in environments that contain nonconductive foreign matter and condensation up to Pollution Degree 2 as defined in EN/IEC 61010-1 and IEC 60664.

Safety and EMC Compliance

European Union

All information concerning the safety and EMC standards is in the Declaration of Conformity, these standards may change as the European Union adds new requirements.

United States (FCC)

This instrument has been tested and found to comply with the limits of a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction guide, may cause harmful interference to radio communications.

NOTE: *Changes or modifications not expressly approved by PerkinElmer could cause the instrument to violate FCC (U.S. Federal Communication Commission) emission regulations, and because of this violation could void the user's authority to operate this equipment.*

Environmental Conditions

Operating Conditions

WARNING

Explosive Atmosphere

This Autosampler is not designed for operation in an explosive atmosphere.

AVERTISSEMENT

Atmosphère explosive

Cet échantillonneur automatique n'est pas conçu pour fonctionner dans une atmosphère explosive.

The S10 will operate correctly under the following conditions:

- Indoor use;
- Ambient temperature +10˚C to +35˚C (+50˚F to +95˚F), with a maximum change not exceeding 2.8˚C (5˚F) per hour;
- Ambient relative humidity 20% to 80%, without condensation;
- Altitude in the range 0 m to 2000 m.

The S10 has been designed to be safe under the following environmental conditions:

- Indoor use;
- Ambient temperature of +5˚C to +40˚C (+41˚F to +104˚F);
- Ambient relative humidity 20% to 80%, without condensation;
- Altitude in the range 0 m to 2000 m (above mean sea level);
- Mains supply fluctuations not exceeding +/- 10% of the nominal voltage.

Storage Conditions

You can store the Autosampler safely under the following conditions:

- Ambient temperature –20°C to +60°C (–4°F to +140°F);
- Ambient relative humidity 20% to 80%, without condensation;
- Altitude in the range 0 m to 12 000 m.

When you remove the Autosampler from storage and before you put it into operation, allow it to stand for at least a day under the approved operating conditions. Condensation, due to a rapid increase in temperature, can damage the internal circuitry during operation.

Laboratory Hygiene

Keep the work area scrupulously clean to avoid contaminating your samples and to maintain a safe working environment. Clean up spilled chemicals immediately and dispose of them properly.

Do not allow smoking in the work area. Smoking is a source of significant contamination and also a potential route for ingesting harmful chemicals.

Do not store, handle, or consume food in the work area.

Safe Handling of Chemicals

Some chemicals used with the Autosampler may be hazardous or may become hazardous after completion of an analysis.

The responsible body must take the necessary precautions to ensure that the surrounding workplace is safe and that instrument operators are not exposed to hazardous levels of toxic substances (chemical or biological) as defined in the applicable national, state, and local health and safety regulations and laws.

Venting for fumes and disposal of wastes must be in accordance with all national, state, and local health and safety regulations and laws.

- Use, store, and dispose of chemicals in accordance with the manufacturer's recommendations and the applicable national, state, and/or local regulations;

- Wear appropriate eye protection at all times while handling chemicals. Depending on the types of chemicals you are handling, wear safety glasses with side shields, or goggles, or a full-face shield;

- Wear suitable protective clothing, including gloves if necessary, resistant to the chemicals you are handling;

- When preparing chemical solutions, always work in a fume hood that is suitable for the chemicals you are using;

- Perform sample preparation away from the Autosampler to minimize corrosion and contamination;

- Clean up spills immediately using the appropriate equipment and supplies, such as spill cleanup kits;

- Do not put open containers of solvent near the Autosampler;

- Store solvents in an approved cabinet (with the appropriate ventilation) away from the Autosampler.

WEEE Instructions for PerkinElmer Products

or

A label with a crossed-out wheeled bin symbol and a rectangular bar indicates that the product is covered by the Waste Electrical and Electronic Equipment (WEEE) Directive and is not to be disposed of as unsorted municipal waste. Any products marked with this symbol must be collected separately, according to the regulatory guidelines in your area.

The objectives of this program are to preserve, protect and improve the quality of the environment, protect human health, and utilize natural resources prudently and rationally. Specific treatment of WEEE is indispensable in order to avoid the dispersion of pollutants into the recycled material or waste stream. Such treatment is the most effective means of protecting the customer's environment.

Requirements for waste collection, reuse, recycling, and recovery programs vary by regulatory authority at your location. Contact your local responsible body (e.g., your laboratory manager) or authorized representative for information regarding applicable disposal regulations. Contact PerkinElmer at the web site listed below for information specific to PerkinElmer products.

Web address:
www.perkinelmer.com/WEEE

For Customer Care telephone numbers select "Contact us" on the web page.

Products from other manufacturers may also form a part of your PerkinElmer system. These other producers are directly responsible for the collection and processing of their own waste products under the terms of the WEEE Directive. Please contact these producers directly before discarding any of their products.

Consult the PerkinElmer web site (above) for producer names and web addresses.

Decontamination and Cleaning

Decontamination

Before using any cleaning or decontamination methods except those specified by PerkinElmer, users should check with PerkinElmer that the proposed method will not damage the equipment.

Customers wishing to return instrumentation and/or associated materials to PerkinElmer for repair, maintenance, warranty or trade-in purposes are advised that all returned goods must be certified as clean and free from contamination.

The customer's responsible body is required to follow the “Equipment Decontamination Procedure” and complete the “Certificate of Decontamination”. These documents are available on the PerkinElmer public website:

http://www.perkinelmer.com/Content/technicalinfo/dts_instrumentdeconprocedure.pdf

If you do not have access to the internet, contact Customer Care:

Customer Care USA:	**1-800-762-4000**	**(inside the USA)**
(8:30 a.m. – 7 p.m. EST)	**(+1) 203-925-4602**	**(outside the USA)**
Customer Care Canada:	**800-561-4646**	
Customer Care EU:	**0800 40 858**	**(Brussels)**
	0800 90 66 42	**(Monza)**

If you are located outside of these regions, please call your local PerkinElmer sales office for more information.

Cleaning the Instrument

Exterior surfaces may be cleaned with a soft cloth, dampened with a mild detergent and water solution. Do not use abrasive cleaners or solvents.

General Laboratory Safety

Your laboratory should have all equipment ordinarily required for the safety of individuals working with chemicals (fire extinguishers, first-aid equipment, safety shower and eye-wash fountain, spill cleanup equipment, etc.).

ElectroMagnetic Compatibility (EMC)

Europe

All information concerning EMC standards is in the Declaration of Conformity, and these standards may change as the European Union adds new requirements.

PerkinElmer instruments have been designed and manufactured, having regard to the state of the art, to ensure that:

- the electromagnetic disturbance generated does not exceed the level above which radio and telecommunications equipment or other equipment cannot operate as intended;
- it has a level of immunity to the electromagnetic disturbance to be expected in its intended use which allows it to operate without unacceptable degradation of its intended use.

South Korea

This device complies with MSIP (Ministry Of Science, ICT, and Future Planning) EMC Registration requirements. This instrument is registered as a Class B instrument for residential and/or business use.

B급 기기 (가정용 방송통신기자재)
이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

United States (FCC)

United States (FCC) This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a business/industrial/commercial environment is likely to cause harmful

interference in which the user will be required to correct the interference at their own expense. Changes or modifications not expressly approved by the manufacturer could void their authority to operate the equipment in compliance with FCC rules.

Note: *Changes or modifications not expressly approved by PerkinElmer could cause the instrument to violate FCC (U.S. Federal Communications Commission) emission regulations, and because of this violation could void the user's authority to operate this equipment.*

Installation and Setup

Unpacking and Inspection

CAUTION	*When you remove the Autosampler from storage and before you put it into operation, allow it to stand for at least a day under the approved operating conditions. Condensation, due to a rapid increase in temperature, can damage the internal circuitry during operation.*
ATTENTION	*Lorsque vous retirez l'échantillonneur automatique de son stockage et avant de le mettre en service, laissez-le reposer au moins une journée dans les conditions de fonctionnement approuvées. La condensation, due à une augmentation rapide de la température, peut endommager les circuits internes pendant le fonctionnement.*

1. Open the carton and remove the bags containing the sample containers.
2. Remove the top foam piece from the carton.
3. Take out the small parts and then remove the foam piece.
   The Autosampler is now accessible.

CAUTION	*Never lift the Autosampler by the Autosampler arm or tower.*
ATTENTION	*Ne soulevez jamais l'échantillonneur automatique par le bras ou la tour de l'échantillonneur automatique.*

4. Carefully lift out the Autosampler and place it on the bench.
   Do not lift it by the Autosampler arm or the tower.

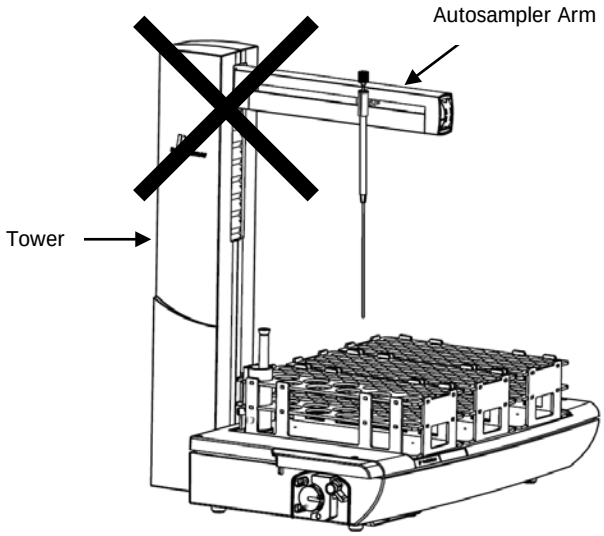


Figure 2 Do not lift the Autosampler by the Autosampler arm or tower

5. Remove packing material from the Autosampler.

6. Examine the components for any signs of damage during shipment.
   In the event of damage, file an immediate claim with the authorized carrier, and inform your local PerkinElmer office or representative.

7. Check that all the required parts have been supplied.
   The contents of the packing carton should be:

Quantity	Item	Part Number
1	S10 Autosampler for FL6500/FL8500	N2020010
1	User's Guide	09931536
1	Plug-in power supply	N2028004

Quantity	Item	Part Number
1	Cord for power supply	N2028005/6/7/8/9
1	RS232/Serial Communication cable	09290259
1	Sample rack 9 + 29 positions	B3001647
2	Sample rack 90 positions	B3140617
2	Sample rack 60 positions	B3140618
1	Sample rack 30 positions	B3140621
1	Sampling probe	B3001769
1	Sampling probe guide	B3000151
2	Sample tube (1 mm i.d) with screw fittings	B2500116
2	Adapter B	B0506716
1	Polyethylene bottle, 2 L	B0104344
1	Cleaning wire (40 cm)	B0505962
1	Pack of 50 sample containers, 15 mL, polypropylene with screw caps	B0500662
1	Pack of 50 sample containers, 50 mL, polypropylene with screw caps	B0501397
1	PVC tubing (1 m)	B0048139
1	Tygon® tubing for peristaltic pump (sample transport)	B0199034
2	Connectors, 4.5 mm to 4.5 mm	B3140715

Quantity	Item	Part Number
1	Rinse liquid feed tube with weight	B0191059
2	Adapter A	B0193342
2	Adapter C	B0196850
1	Adapter E	B0196857
2	Connector, reducing 3.2 mm to 1.7 mm	B0199233
2	Adapter M	B0197919
1	Tygon® drain tube	B0509650
1	Rinsing port	B3140622
1	Pump tube (pack of 6) violet/white	B3140721
1	Pump tube (pack of 6) red/red	B3140730
1	Silicone oil, 5 mL	B3140341

NOTE: *PerkinElmer reserves the right to alter the schedule of parts provided without prior notice.*

The empty shipping carton can be folded down for easy storage. You can store the carton for future use (to transport the Autosampler), recycle it by returning it to PerkinElmer, or break it down completely and give it to your local recycling center.

Connecting to a FL8500/6500F Spectrometer System

This section describes how to connect the Autosampler to your spectrometer system. The procedure for connecting the spectrometer and the computer are described in the spectrometer manual.

Electrical Hazard

To prevent potential injury to yourself and damage to the Autosampler, switch off all instruments in the system and disconnect them from the line power supply before you alter, or make any new electrical connections.

Danger électrique

Pour éviter tout risque de blessure et d'endommagement pour l'échantillonneur automatique, mettez tous les instruments du système hors tension, puis débranchez-les de la tension secteur avant de modifier ou de réaliser de nouvelles connexions électriques.

The Connectors

The electrical and communication connectors are located on the underside of the Autosampler.

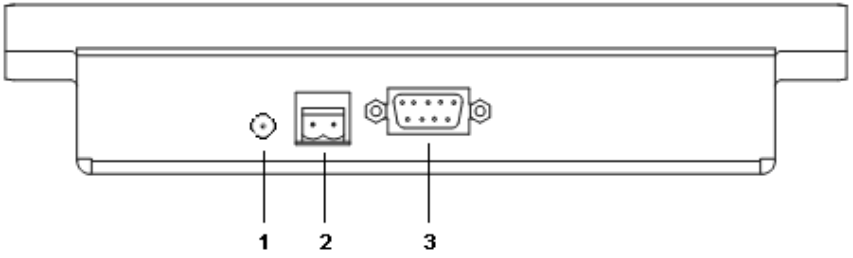


Figure 3 The Autosampler connector panel

Item	Designation	Function
1	Power	Power input socket; for 12 V supply from plug-in power supply.
2	Event	Potential-free relay contact to activate an external system.
3	COM	RS232/Serial communication port.

Safety Consideration

Electrical Hazard

If the electrical input to any of the connectors exceeds the stipulated rating, there is a risk of electrical components will become overheated. This is a potential fire hazard.

Danger électrique

Si l'entrée électrique de l'un des connecteurs dépasse la valeur spécifiée, il existe un risque de surchauffe des composants électriques. C'est un risque d'incendie potentiel.

To avoid the risk of fire or damage to the Autosampler, do not exceed the electrical rating stipulated in the table below

Connector	Precaution and stipulated ratings
Power	The current output of the plug-in power supply provided with the Autosampler is limited to 5 A maximum, even if a fault condition occurs. **Do not** use any other power supply with the Autosampler.
Event	The output from the external systems to the **Event** connector must not exceed 30 V DC and 2 A. For satisfactory operation, the output must be at least 10mV DC and 10 μA.
COM	The electrical connection for the instrument communication is operated at voltages between 0 V and 5 V DC, and currents in the milliampere range.

Connecting the Autosampler

1. Switch off the spectrometer and other components in the system and disconnect them from the line power supply.

2. Locate the connectors and switches on the underside of the Autosampler as shown in Figure 3.

3. Place the Autosampler either adjacent to the spectrometer or on top of the spectrometer.

4. Connect the communication cable provided.

   The connection should be between the COM port on the underside of the Autosampler and one of the COM ports on the PC.

5. Connect the Autosampler to the line power supply using the plug-in power supply provide.

   The plug-in power supply uses a wide-range input of 100-240 VAC, 50-60 Hz.

6. Connect the spectrometer and other components in the system to the line power supply.

NOTE: *To avoid problems of interference caused by earth loops, always connect the spectrometer, computer, printer and other components to the same phase of the line power supply. The most convenient method is to use a multisocket outlet.*

7. Route the cables to either the left or right side of the Autosampler and use the cable clip to secure the cables as shown in Figure 4.

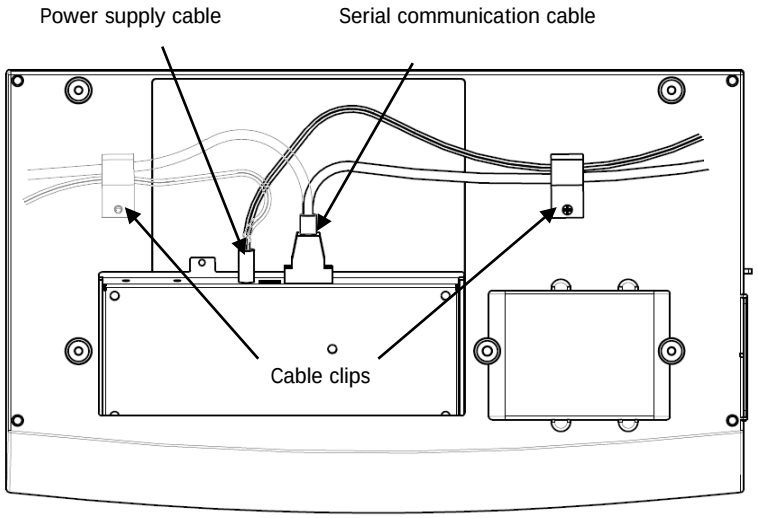


Figure 4 Routing the electrical cables

8. Switch on all components of the system, following the routine in the manual for the spectrometer.

Fitting the Sampling Probe

CAUTION	*When fitting the sampling probe, take care not to press heavily in any direction on the Autosampler arm as this will damage the arm.* *The sampling probe is a complete assembly. Do not attempt to take the probe apart as this will damage it, and reassembly is not possible.* *Never attempt to move the sampling probe holder along the Autosampler arm by hand. The Autosampler may be damaged if the tower is moved by hand when it is under system control.* *Disconnect the power supply to the Autosampler if you need to manually move the tower.*

ATTENTION	*Lors du montage de la sonde de prélèvement, veillez à ne pas appuyer trop fort sur le bras de l'échantillonneur automatique, car cela endommagerait le bras.* *La sonde d'échantillonnage est un ensemble complet. N'essayez pas de démonter la sonde car cela l'endommagerait et le remontage serait impossible.* *N'essayez jamais de déplacer manuellement le support de sonde d'échantillonnage le long du bras de l'échantillonneur automatique. L'échantillonneur automatique peut être endommagé si la tour est déplacée à la main lorsqu'elle est sous contrôle du système.* *Débranchez l'alimentation de l'échantillonneur automatique si vous devez déplacer manuellement la tour.*

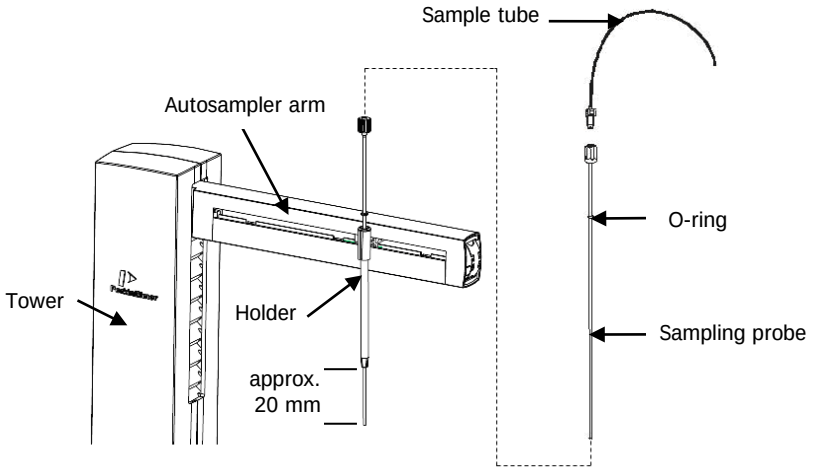


Figure 5 Fitting the sampling probe

1. If not already done, carefully insert the sampling probe guide from above into the sampling probe holder on the Autosampler arm and push it down fully, as shown in Figure 5.

2. Carefully insert the sampling probe from above into the probe guide.

3. Push the sampling probe down until about 20 mm protrudes from the bottom end of the probe guide, then position the O-ring on the probe to set this position, as shown in Figure 5.

   This is not the final position for the sampling probe. The probe can be adjusted when the rinsing port has been set up.

NOTE: *The standard sampling probe is a PTFE-lined epoxy polymer tube. This polymer is resistant to the acids, alkalis and organic solvents normally used in UV/Vis spectroscopy. If your samples contain an organic solvent that attacks this polymer, a PTFE-lined stainless-steel sampling probe is offered as an option (B3000152).*

Adjusting the Sampling Probe Height

1. Select a set of three sample racks and place in the correct sequence on the sample table, as shown in Figure 6.

   See *Assembling Sample Racks* starting on page 65 for more information.

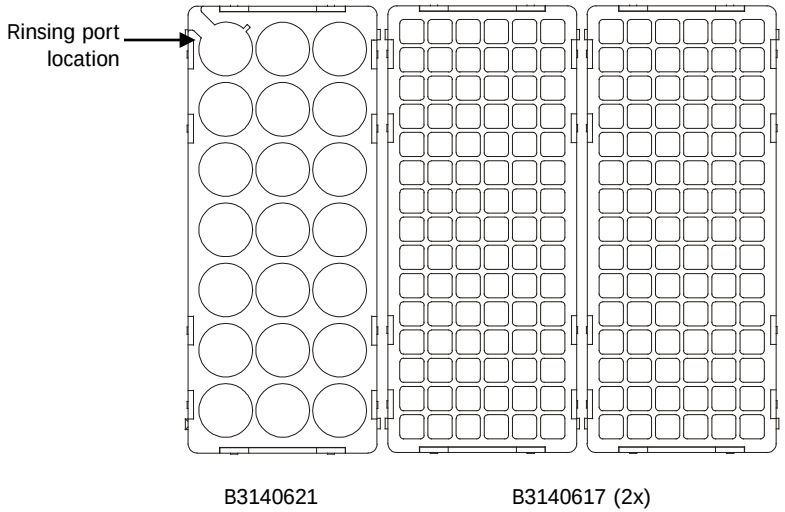


Figure 6 Sample racks with rinse port in correct location

2. Orientate the rinsing port such that the tubing connectors are aligned with the apertures in the rack.

3. Lower the rinsing port into the rack and guide the lug on the side of the rinsing port into the slot in the rack, as shown in Figure 7.

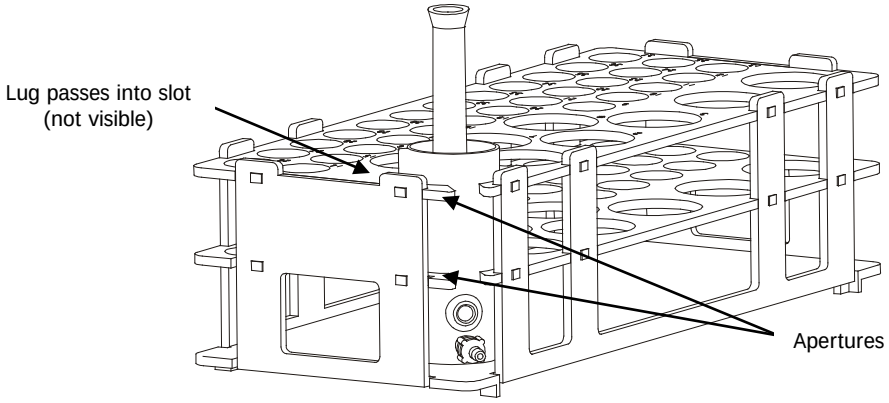
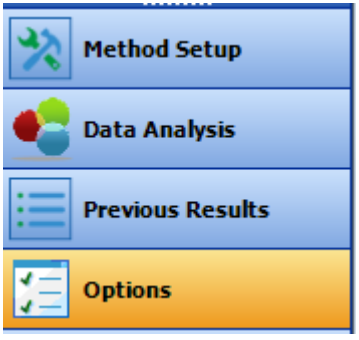


Figure 7 Rinsing port installed in the rack

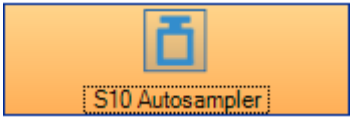
4. Start the Spectrum FL software.

   If you are not familiar with Spectrum FL, see the onscreen Help in the software.

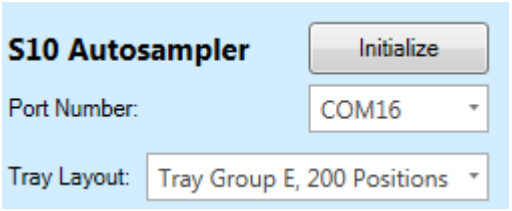
5. Click Options to start the Option mode.



6. Click on S10 Autosampler in navigation view.



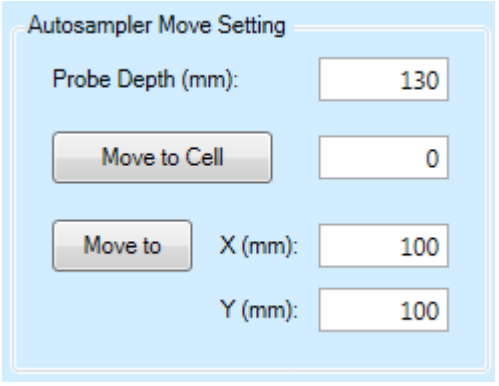
7. Select correct Com port, and then click Initialize button



8. Select the correct **Tray Layout** from the drop-down list.

   The one shown above is a Type E tray group. For further information see *Using Sample Racks and Trays* on page 65.

9. In the Autosampler Move Setting section at the bottom of the page, set the Probe Depth, and specify the position to move.



10. Set the depth that the sampling probe descends into the sample tubes and the rinsing port.

The depth representing a fully withdrawn probe is 0 mm. The depth to the bottom of the tubes is 145 mm. The default entry of 130 mm means that the probe is positioned 15 mm above the tube bottom as shown below.

If necessary use the O-ring on the probe to adjust the final position.

This completes installation of the sampling probe.

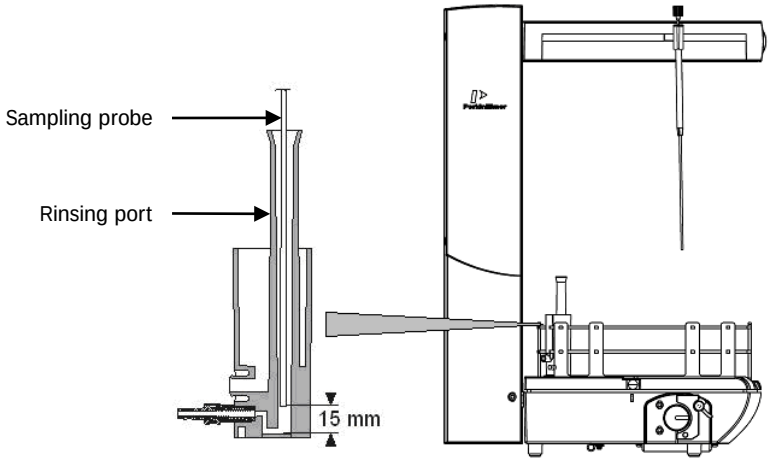
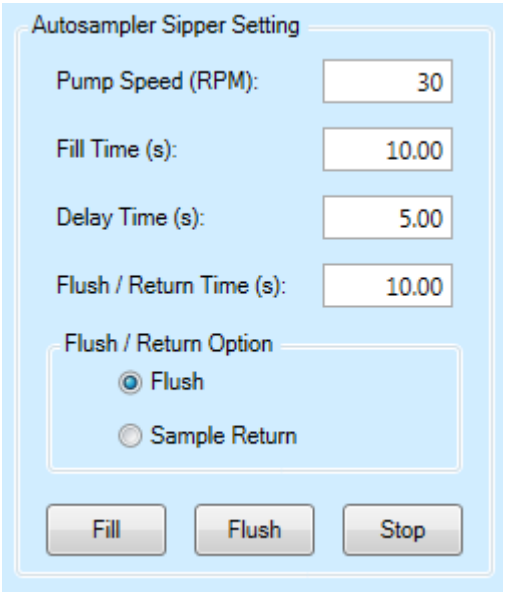


Figure 8 Adjusting the sampling probe height

In the Autosampler Sipper Setting section at the bottom of the page, set the Sipper speed and manual control the fill and flush action. This allows you to check the proper orientation of the peristaltic pump and ensure that all tubing and the flowcell is filled with liquid (and no air bubbles) before starting your analysis.



11. To remove the sample racks and the rinse port, you must raise the sampling probe.

    To raise the probe use Option mode. Select the S10 Autosampler page, set probe depth to 0 and move cell to 0.

    Remove the sample racks and the rinse port.

Connecting the Sample Tubes

Connecting to the Sampling Probe

Two sample tubes are provided with the Autosampler. One tube is for connection between the sampling probe and flowcell; the other is for connection from the flowcell to the integrated pump.

Each sample tube has a screw connector on one end for connection to the sampling probe (or outlet tube, respectively) and a screw connector on the other end for connection to the flowcell.

You use the sample tube with 1 mm internal diameter (Part No. B2500116) for routine samples.

1. A spring clip with two slots is provided to hold the sample tube; the narrower slot holds the 0.6 mm tube, while the wider slot holds the 1 mm tube, as shown in Figure 9.

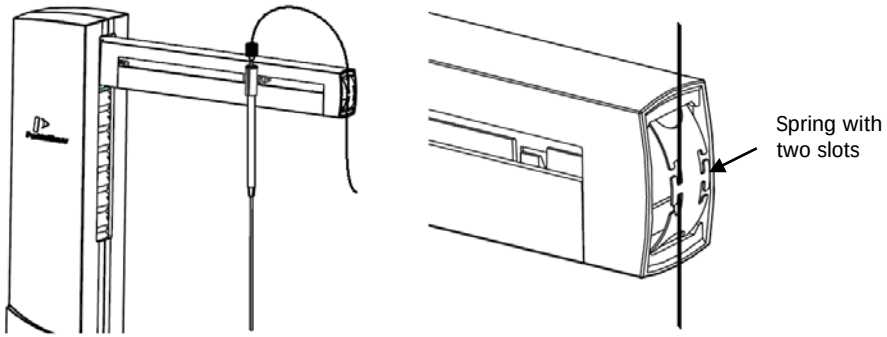


Figure 9 Connecting the sample tube to the sampling probe

2. Screw the connector on the sample tube finger-tight into the fitting on the sampling probe.

3. Make a smooth loop in the sample tube and then attach it to the front of the Autosampler arm by insert the spring clip into the appropriate socket and then thread the sample tube gently around the hook in the correct slot.

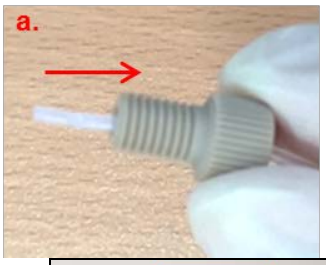
NOTE: *Do **not** kink or pinch the sample tube.*

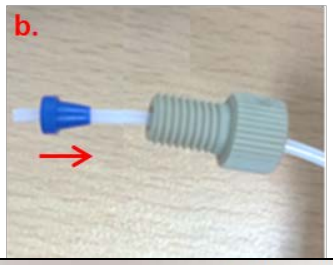
NOTE: *The loop must be large enough so that the sampling probe holder can move unhindered backward and forward along the Autosampler arm.*

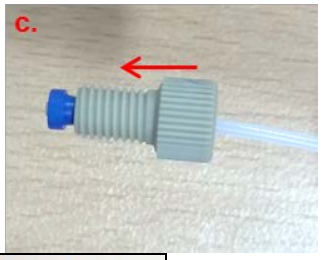
Connecting the Sample Tube to the Flowcell

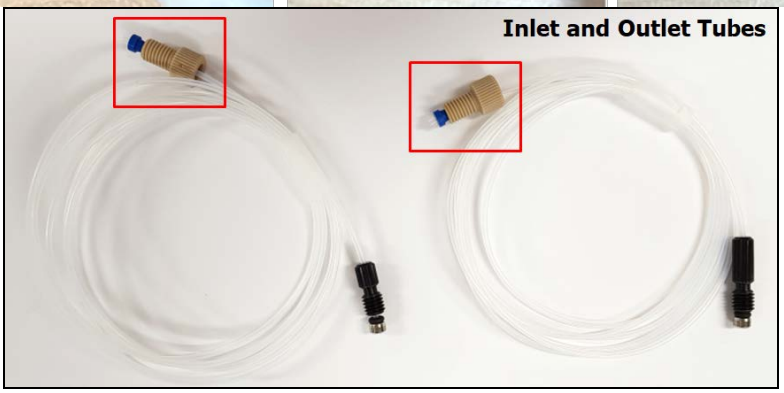
1. Prepare the connection kit (Part No. N4202040) and the flow cell (Part No. N4202039).

2. Inlet and Outlet tubes for the flow cell: Cut the length of Inlet and Outlet tubes for the flow cell properly and connect the Flangeless Fittings.

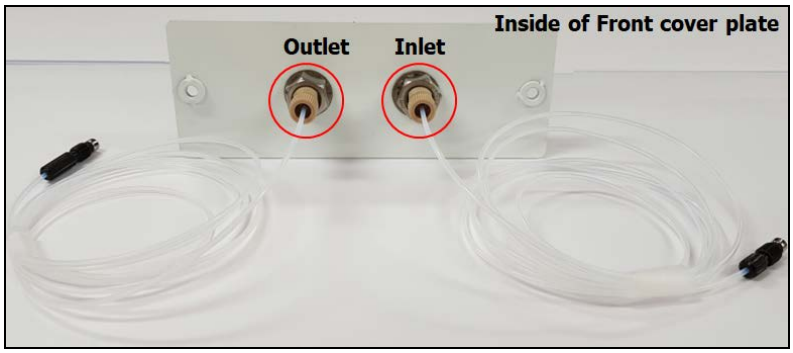






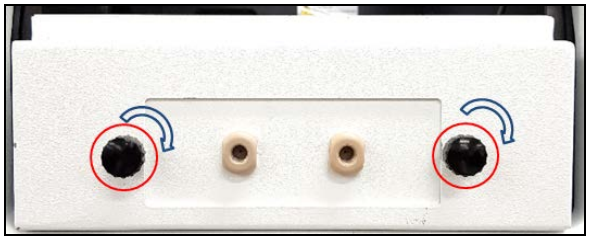


3. Connect Flangeless Fittings of Inlet and Outlet tubes to the inside of the front cover plate.



4. Remove the existing front cover plate.

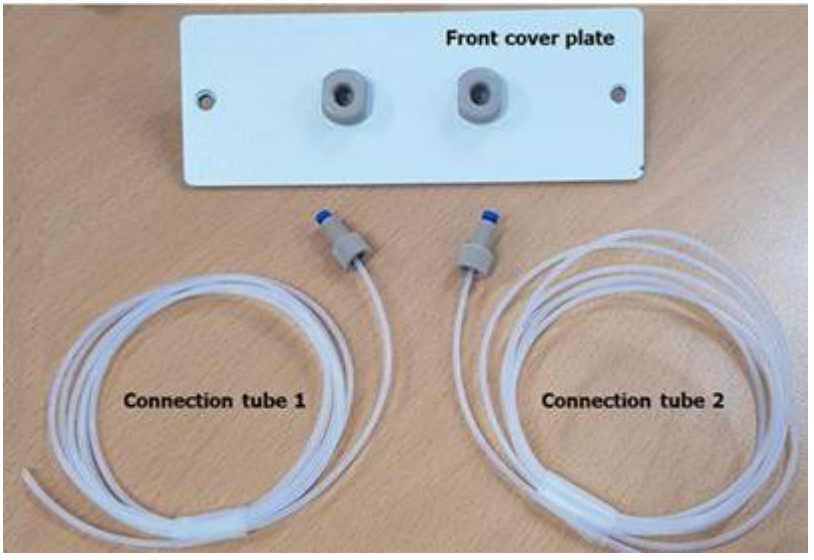
5. Fix the front cover for S10 Autosampler and tighten the bolts.



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

Connecting the Connecton Tube 1 and 2 to the Front Cover Plate

1. Connect one of connection tube to the Inlet port and the other connection tube to the Outlet port.



2. Connecting the connection tube which is fitted with the Inlet port to the outlet tubing (Yellow) of peristaltic pump from S10 Autosampler using the suitable tubing as shown below

Flowcell Alignment

After installation, you must align the flowcell carefully in the radiation beam.

- Carefully align the flowcell in the radiation beam, following the directions given in the spectrometer User's Guide.

Connecting the Sample Tubes

Two sample tubes of 1 mm internal diameter (Part No. B2500116) are provided with the Autosampler. Both sample tubes have two screw fittings. These two sample tubes allow the Autosampler to be connected to the spectrometer's sample input system in two different ways:

- S10 using the integrated peristaltic pump
- S10 with sipper

NOTE: *Do **not** kink or pinch the sample tube. If necessary, use a scalpel to cut the sample tube. Do not use scissors.*

Connection 1 (S10 with integrated peristaltic pump)

1. Screw the blue connector on the sample tube finger-tight into the fitting on the sampling probe.
2. Make a smooth loop in the sample tube and then thread it in an 'S' shape through the hooks at the end of the sampling arm.

   The loop must be large enough so that the sampling probe holder can move unhindered backward and forward along the sampling arm.
3. Take the sample tube to the spectrometer and insert it from underneath through one of the tube ports in the sample compartment.
4. Screw the fitting into the Inflow connector on the flowcell.

   Ensure that the sampling probe can move freely to all locations in the sample tray.
5. Take the outflow tube to the spectrometer and insert it from underneath through one of the tube ports in the sample compartment.
6. Screw the fitting into the Outflow connector on the flowcell.

7. Connect Adapter C (or Adapter B, depending on the pump tubing diameter) to the pump tubing and then connect the adapter to the outflow tubing (see Figure 10).

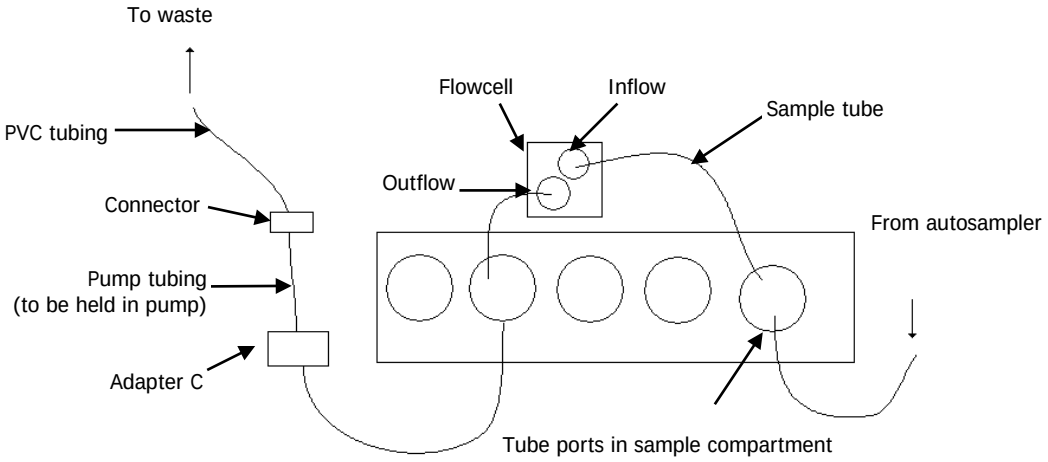


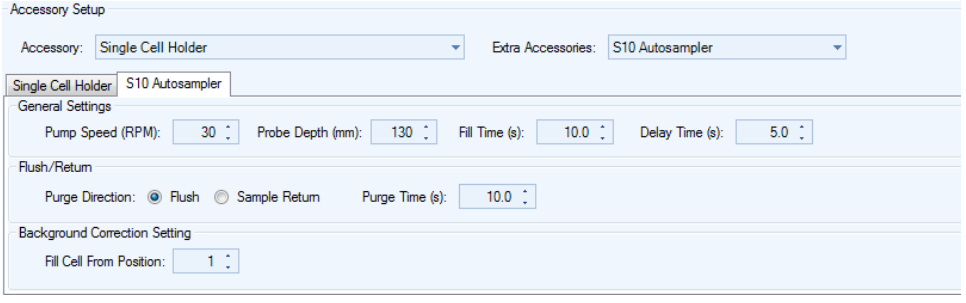
Figure 10 Tubing connections

8. Attach the pump tubing to the peristaltic pump.

9. Use the connector (B3140715) to connect a waste tube to the output side of the pump.

   A waste collection container will be required.

10. In the Spectrum FL software, create or open a method and then in the Extra Accessory list select S10 AutosamplerA page showing the Autosampler details is displayed.



Fitting and Connecting the Rinse Pump Tubes

Connecting the Pump Tubes

The pump on the S10 is able to accommodate two flow channels. The second channel allows a rinse liquid to be available.

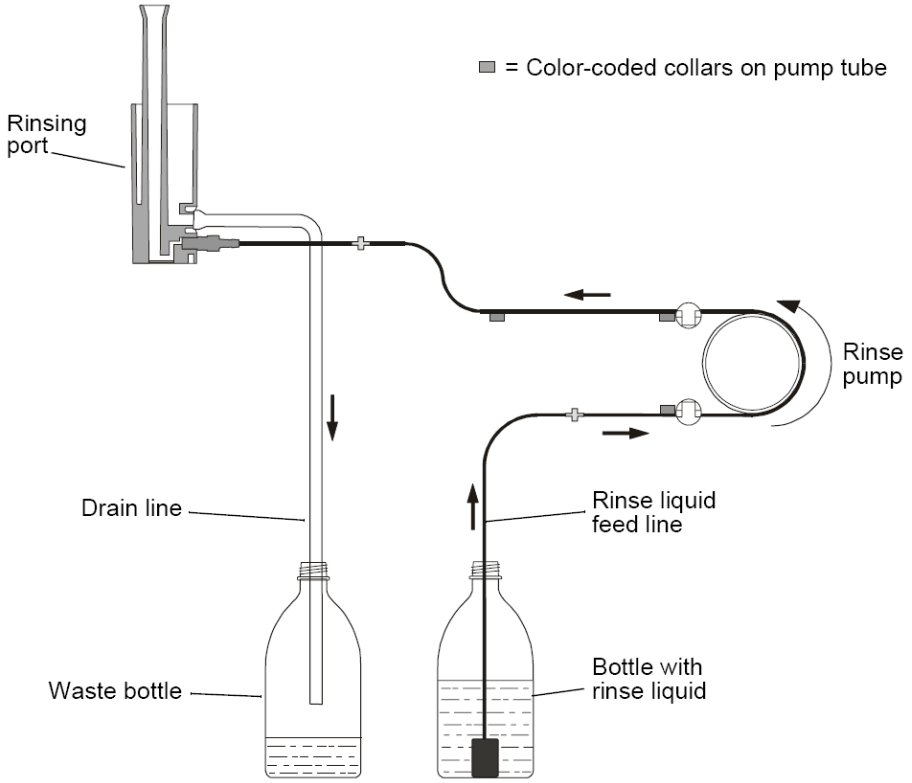


Figure 11 Schematic of tubing connections to the rinsing port

Fitting Pump Tubes to the Integrated Pump

Pump Tubes and Retaining Hooks

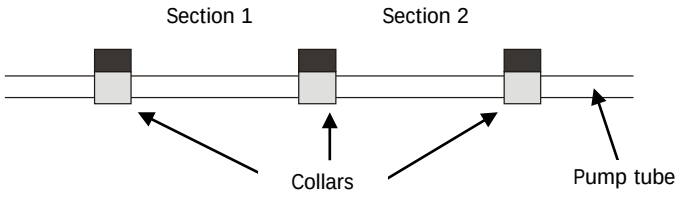


Figure 12 Pump tube with three collars

The pump tubes have three collars, giving two sections that can be tensioned around the pump rotor. If one section of a tube becomes deformed, and there is no other damage, you can use the other section.

Pump tubes of different internal diameter are available so that you can vary the flow rate of the rinse liquid through the rinsing port. The pump tubes have colored collars for easy identification.

Pump tube	Colour (collars)	i.d. (mm)	Nominal flow rate (mL/min)
B3140730	red-red	1.14	3.5 - 5
B3140721	violet-white	2.79	11 - 14

The retaining hooks on the rinse pump have an inside channel for the rinse feed pump tube and an outside channel for the drain pump tube (see Figure 13). There are slots for the pump tubes on the top and bottom of each retaining hook; the slots on the top are for tubes with wider diameter, while the slots on the bottom are for tubes with narrower diameter.

WARNING

To prevent crushing or pinching of fingers, avoid inserting fingers between the retaining hooks and pump rotor or installing pump tubes when the pump is running.

AVERTISSEMENT

Pour éviter tout écrasement ou pincement des doigts, évitez de placer vos doigts entre les crochets de retenue et le rotor de la pompe ou d'installer des tubes de pompe lorsque la pompe est en marche.

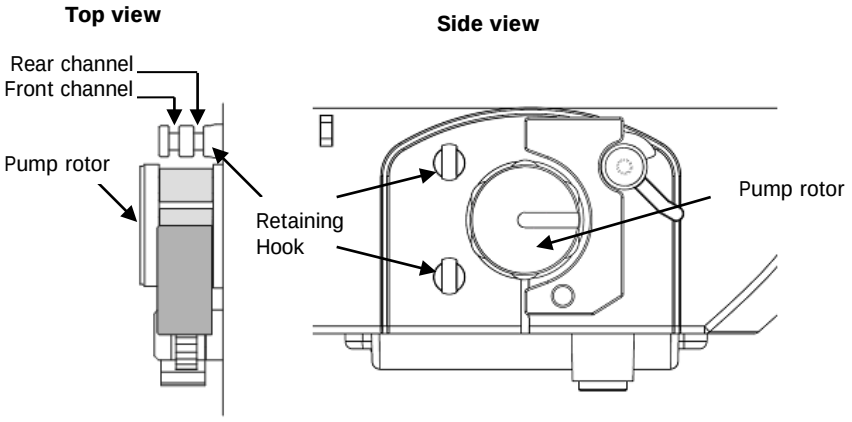


Figure 13 Rinse pump

1. Swing the cam lever fully clockwise to release the pressure block, see Figure 14.
2. Pull the pressure block off the pivot.
3. Hook a collar into the inside channel of a retaining hook, using the correct slot for the diameter of the tube.
4. Gently tension the pump tube around the pump rotor and hook the second collar into the inside channel of the other retaining hook.
5. Do not twist or kink the pump tube.
6. Fit the drain pump tube to the outside channel of the retaining hooks by repeating steps 3 and 4.

7. Place a drop of silicone oil on the pump tubes in contact with the pump rollers to reduce wear.

8. Slide the pressure block back onto the pivot.

9. Swing the cam lever anti-clockwise to press the pressure block against the pump tubes.

10. The final position of the cam lever depends on the pressure that is required on the pump tubes for satisfactory operation (the “3 o’clock” position is usually about right). Check the flow of liquid through the rinsing port when the pump is operating. If the flow is intermittent or inadequate, increase the pressure on the pump tubes with the cam lever. The lifetime of the pump tubes will be shortened if the pressure is too high.

NOTE: *Release the pressure on the pump tubes during longer pauses in operation (for example, overnight) to prolong the lifetime of the pump tubes. Make sure that the inner diameter of the drain pump tube is the same as, or larger than, the rinse feed pump tube. If the drain pump tube has a smaller inner diameter, rinse liquid will back up in the rinsing port and ultimately overflow into the Autosampler, possibly causing damage.*

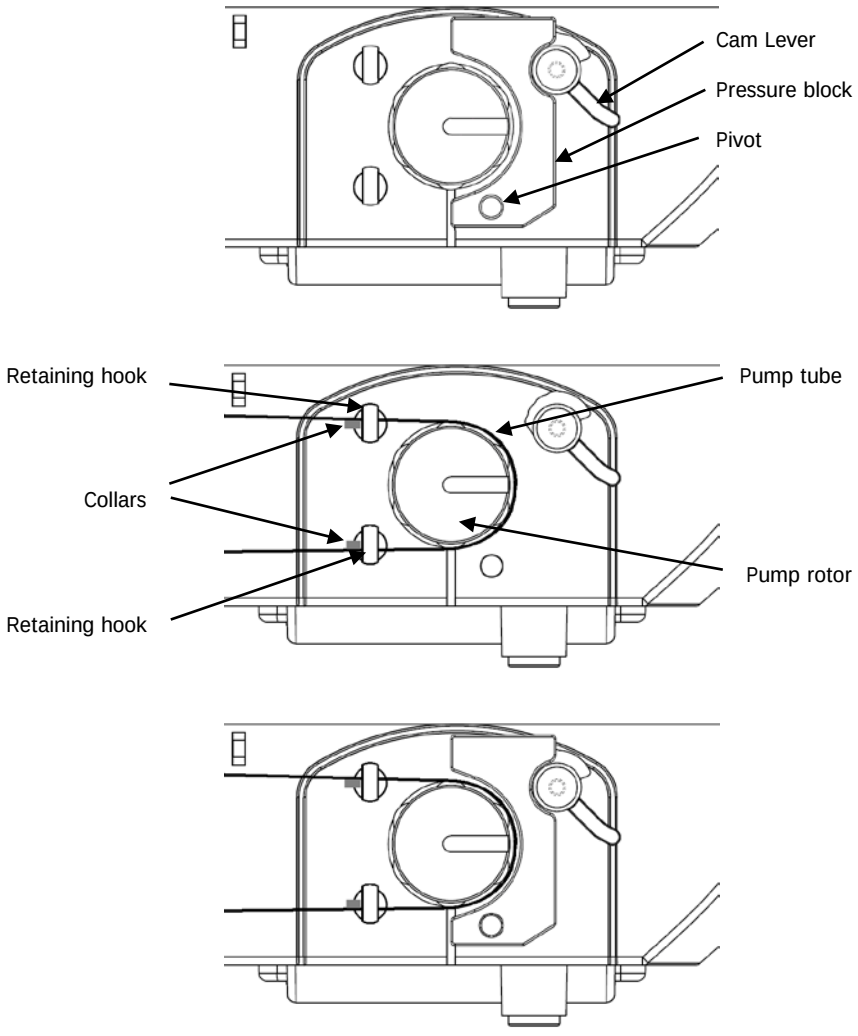


Figure 14 Fitting pump tubes to the pump

Installing the Rinsing Port to the rack

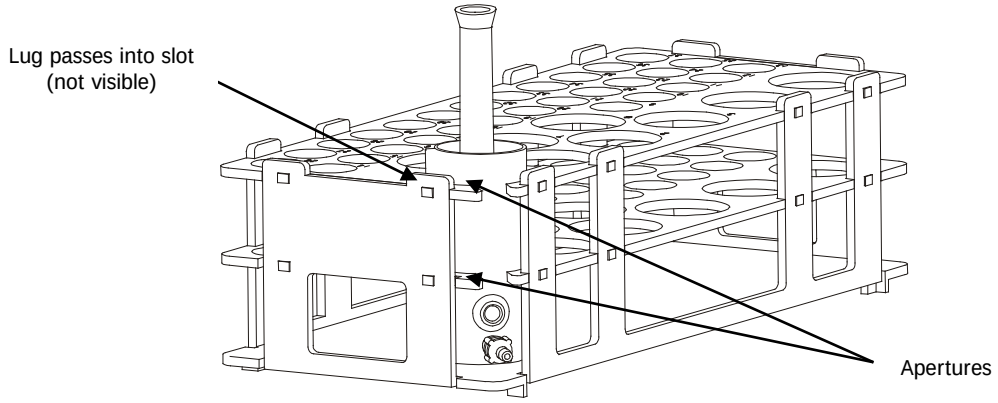


Figure 15 Rinsing port installed in the rack (tubes not shown)

1. Orientate the rinsing port such that the tubes will pass through the apertures in the rack.

2. Lower the rinsing port into the rack and guide the lug on the side of the rinsing port into the slot in the rack.

3. Install the sample rack on the Autosampler and position the Autosampler close to the edge of the bench so that the drain tube hangs straight down.

4. Place the waste bottle on a shelf or on the floor underneath the Autosampler in a position where it will not be kicked or knocked over.

   Make sure that the waste bottle is lower than the rinsing port. Place the free end of the drain tube into the waste bottle. If necessary, shorten the drain tube; to ensure smooth draining it must hang straight down without loops into the waste bottle and the end of the tube must never be immersed in liquid in the waste bottle. Make sure that the drain tube cannot slip out of the bottle.

5. Place the rinse liquid bottle in a convenient position adjacent to the Autosampler where it cannot be knocked over. The bottle should be lower than the rinsing port to prevent siphoning.

6. Place the free end of the rinse liquid feed tube (with the weight) into the rinse liquid bottle. Make sure that the tube cannot slip out of the bottle.

NOTE: *You can install and remove the rinsing port without having to disconnect the tubes. When you remove the rinsing port from the rack, empty the liquid in the port into a beaker to prevent possible spillages in the laboratory.*

7. Place the other two sample racks in the correct sequence on the sample table.

NOTE: *Sample racks can be placed on the sample table in two directions. Make certain that you place each sample rack in the proper direction so that the solutions are worked down in the correct sequence.*

Connecting the Rinse Liquid Feed Tube

1. Push the connector into the end of the pump tube coming from the bottom retaining hook.

2. Push one end of the PVC rinse liquid feed tube onto the connector.

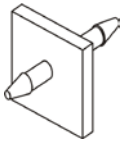


Figure 16 Connector

Connecting the Tubes to the Rinsing Port

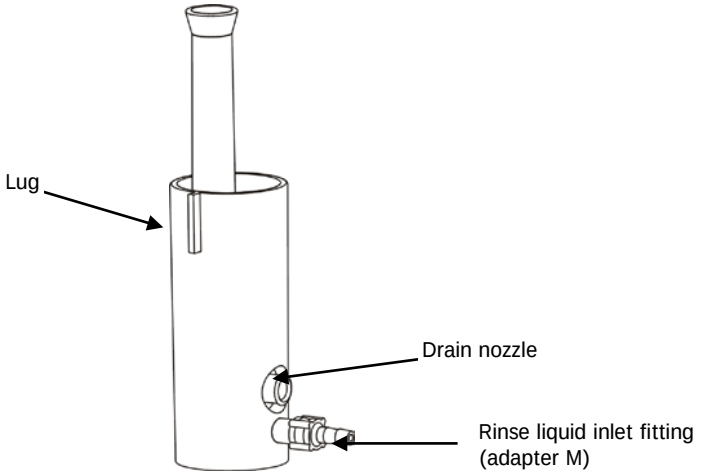


Figure 17 Rinsing port

1. If not already in place, screw adapter M into the lower threaded port in the rinsing port.

2. Push the end of the pump tube coming from the bottom retaining hook onto the adapter on the rinsing port.

3. Push one end of the Tygon ® drain tube onto the drain nozzle on the rinsing port.

Using Sample Racks and Trays

Assembling Sample Racks

For easy shipment, sample racks are often folded flat. Follow the procedure below to assemble a sample rack.

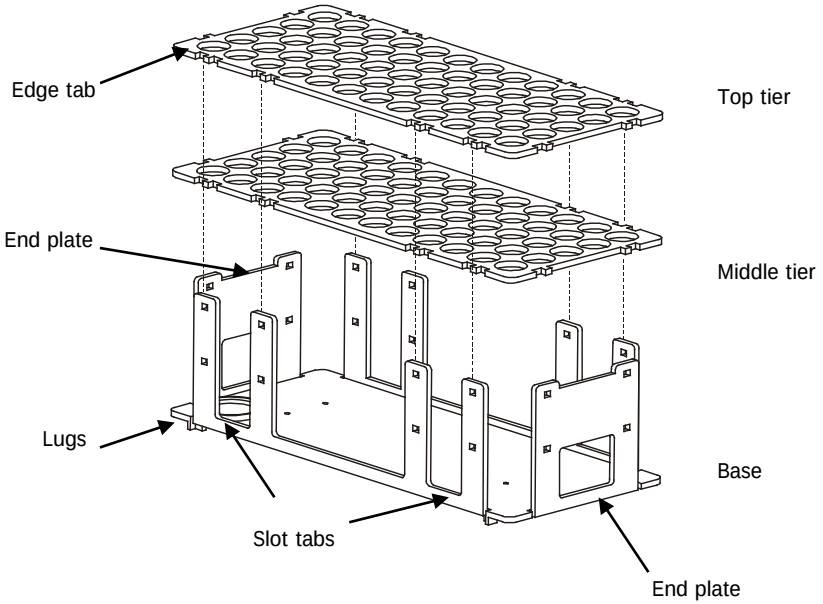


Figure 18 Assembling a sample rack

1. Place the base on the bench so that the lugs are underneath.

2. Bend up the two end plates.

3. Take the middle tier and snap the edge tabs into the lower set of slots in the end plates.

4. Bend up the slot tabs on the sides of the base and snap the edge tabs of the middle tier into the slots.

5. Assemble the top tier into the respective slots in the same manner.

NOTE: *Certain sample racks have numbered tiers (see Sample Tray Group E, Sample Tray Group F and Sample Tray Group G on pages 72, 73 and 74 respectively). When you assemble a rack, make sure that the set of numbers that you require faces upward on the top tier.*

Sample Trays

Within the Spectrum FL software a sample tray is defined as a group of three racks. The following sample tray groups can be selected:

Tray Group E

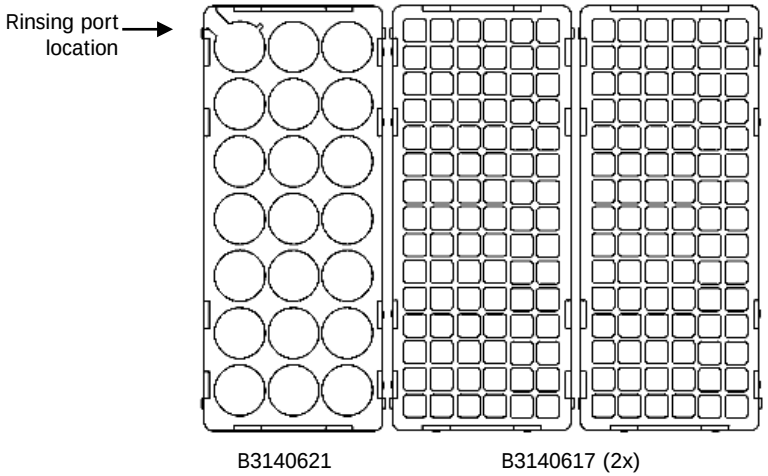


Figure 19 Tray group E

This group (option) comprises the following sample racks:

- Rack B3140621 (rinsing-port rack) with rinsing port location (location 0) and 20 locations for 50 mL solution containers (calibration and/or test sample solutions).
- Rack B3140617 (2x) each with 90 locations for 6 mL and 8 mL solution containers (test sample solutions).

Tray Group F

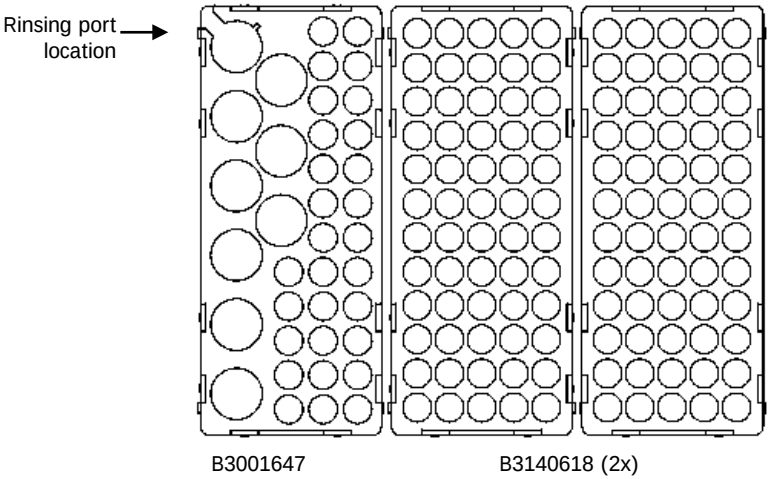


Figure 20 Tray group F

This group (provided as standard) comprises the following sample racks:

- Rack B3001647 (rinsing-port rack) with rinsing port location (location 0), 8 locations for 50 mL solution containers (calibration and/or test sample solutions), and 29 locations for 15 mL solution containers (test sample solutions).

- Rack B3140618 (2x) each with 60 locations for 15 mL solution containers (test sample solutions).

Tray Group G

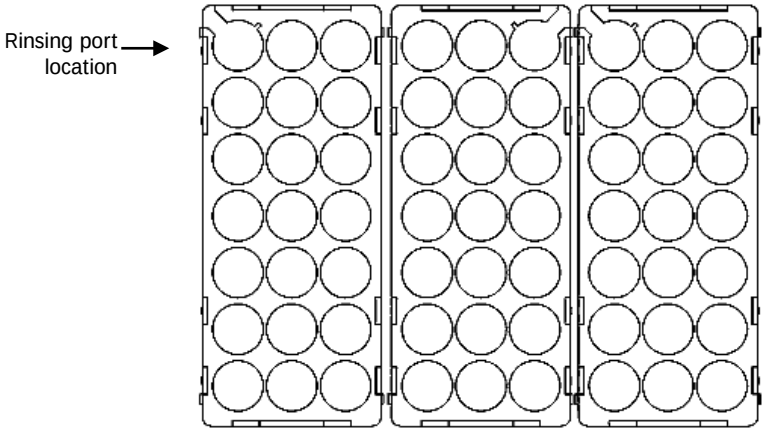


Figure 21 Tray group G

This group (option) comprises the following sample racks:

- Rack B3140621 (3x) with 21 locations each for 50 mL solution containers (calibration and/or test sample solutions). Location 0 in the first rack is for the rinsing port.

Installing PerkinElmer Sample Racks

CAUTION	*If the sample racks installed on the Autosampler are not the correct ones for the sample tray selected in Spectrum FL software, the sampling probe may strike against a rack rather than enter a sample location. Always ensure that the correct racks are installed.*
ATTENTION	*Si les racks d'échantillons installés sur l'échantillonneur automatique ne correspondent pas au bac d'échantillons sélectionné dans le logiciel Spectrum FL, la sonde d'échantillonnage risque de heurter un rack au lieu de saisir l'emplacement de l'échantillon. Assurez-vous toujours que les bons racks sont installés.*

1. Select the sample racks that make up the sample tray group you intend to use.

2. In Spectrum FL software create or open a method that will use the Autosampler.

3. Select Extra **Accessory** and then S10**Autosampler** A page showing the Autosampler details is displayed.

4. Select the correct group of sample racks from the Tray Layout drop-down list.

   See page 66 for further information.

NOTE: *Only tray types E, F and G are compatible with the S10 Autosampler. Other tray types produced by PerkinElmer are for other Autosampler models.*

5. Load the sample racks with the calibration and sample solutions.

   Carefully note the location of each solution in the racks. See *Sample Rack Locations for the Sample Tray Groups* on page 72.

6. If the arm is hindering the insertion of the racks, enter Option mode to move its position.

7. Place the rinsing-port rack on the left-hand side of the sample table such that the rinsing port is at the rear left (as seen from the front of the Autosampler). Make sure that the lugs on the bottom of the sample rack fit into the slots in the sample table.

8. Place the other two sample racks in the correct sequence on the sample table.

NOTE: *Sample racks can be placed on the sample table in two directions. Make certain that you place each sample rack so that the direction of the numbered locations follows the correct sequence. See Sample Rack Locations for the Sample Tray Groups on page 72.*

Tray Definition Files

A tray definition file provides the system with information about the group of sample racks installed on the Autosampler. The system requires this information to move the sampling probe to the correct location for each container in the rack.

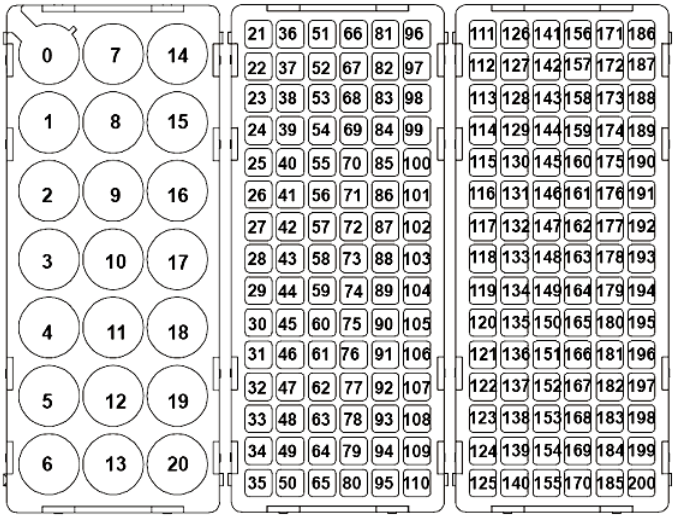
You select the required sample tray group in the Spectrum FL software when you set up the Autosampler.

The spectrometer operating software, Spectrum FL, contains tray definition files for the PerkinElmer sample tray groups E, F, and G.

Sample Rack Locations for the Sample Tray Groups

The rack locations for the various sample tray groups are depicted on the following pages. The Autosampler works down the sample locations in numerical sequence.

Sample Tray Group E



Rack B3140621 Rack B3140617 (2x)

Figure 22 Sample tray group E

- Rack B3140621: 21 locations (30 mm diameter) for 50 mL containers, one location (0) can be used for the rinsing port.
- Rack B3140617: 90 locations (13 mm square) for 6 mL or 8 mL sample containers.

NOTE: *The proprietary sample racks are not marked. We suggest that you mark the racks to denote the first location in the rack for easy orientation when installing the racks on the Autosampler.*

Sample Tray Group F

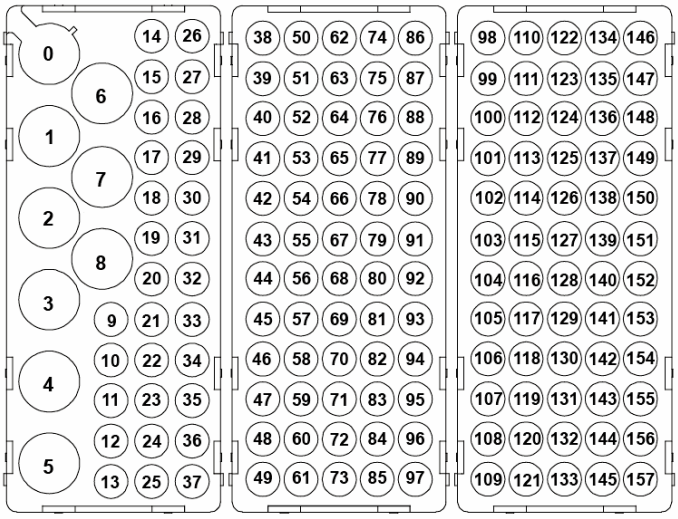


Figure 23 Sample tray group F

- Rack B3001647: 9 locations (30 mm diameter) for 50 mL containers, one location (0) can be used for the rinsing port; 29 locations (16 mm diameter) for 15 mL sample containers.

- Rack B3140618: 60 locations (16 mm diameter) for 15 mL sample containers.

NOTE: *The top tier of rack B3140618 is numbered on both sides; one side is numbered 38–97 and the other side is numbered 98–157. When you assemble a rack you can turn the tier over to obtain the set of numbers that you require.*

Sample Tray Group G

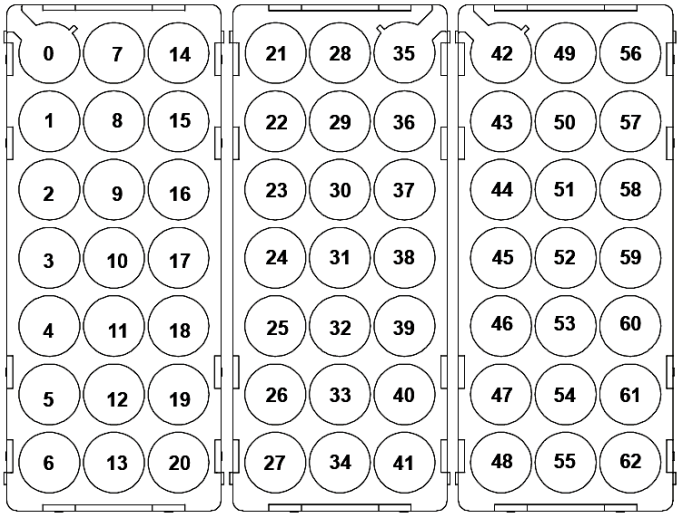


Figure 24 Sample tray group G

- Rack B3140621: 21 locations (30 mm diameter) for 50 mL containers, one location (0) can be used for the rinsing port.

NOTE: *The tiers of rack B3140621 are numbered. When you assemble a rack you can put the tier with the required set of numbers at the top. One tier is numbered 0–20; use this as the top tier in the rinsing-port rack. Make sure that you assemble the rack with the rinsing-port location (0) above the socket for the rinsing port in the base. The second tier is numbered on both sides; one side is numbered 21–41 and the other side is numbered 42–62. You can turn the tier over to obtain the set of numbers that you require.*

Maintenance

PerkinElmer Service

WARNING

Only a PerkinElmer service engineer or similarly trained and authorized person should be permitted to service the Autosampler. Do not attempt to make adjustments, replacements, repairs, or modifications to this Autosampler except as described in the documentation supplied with the instrument.

AVERTISSEMENT

Seul un ingénieur de service PerkinElmer ou une personne ayant une formation et une autorisation équivalente doit être autorisé à entretenir l'échantillonneur automatique. Ne tentez pas d'apporter des ajustements, des remplacements, des réparations ou des modifications à cet échantillonneur automatique, sauf si cela est décrit dans la documentation fournie avec l'instrument.

If the Autosampler does not function correctly

- Disconnect the Autosampler from the electrical supply and make sure that it cannot be operated.
- Contact your local PerkinElmer office.

You should only perform the maintenance procedures described in this guide.

For any other maintenance or service contact your local PerkinElmer office to arrange for a service engineer to visit.

In particular you must only allow a PerkinElmer service engineer or PerkinElmer trained person to perform any work on the electrical components inside the Autosampler.

Before the service engineer arrives

1. Make sure that the Autosampler and the work area is clean.
2. Remove sample racks from the Autosampler.
3. Make certain that there are no corrosive solutions present in any of the tubes.

Routine Maintenance

The Autosampler is a precision instrument constructed from high quality components. To maintain the high level of performance, you must treat the Autosampler with due care. The Autosampler requires little regular maintenance except for cleaning.

Cleaning the External Surfaces

Regularly wipe over the surfaces with a lint-free cloth moistened with a dilute solution of laboratory detergent.

The Autosampler surfaces are resistant to dilute acids and alkalis, and to some strong acids and alkalis and organic solvents.

Immediately clean all spilled materials from the affected area. Wear protective gloves if the materials are toxic or corrosive.

Before using any cleaning or decontamination methods except those specified by PerkinElmer, users should check with PerkinElmer that the proposed method will not damage the Autosampler.

Sampling Probe

If the sampling probe becomes blocked, clear it by inserting the cleaning wire provided.

Sample Tube

Check the condition of the sample tube regularly. If it shows signs of contamination or deterioration, or if it is kinked, replace it as described in *Connecting the Sample Tubes* on page 47.

Pump Tubes on Rinse Pump

Check the condition of the pump tubes regularly. If a tube shows signs of deterioration, or if it is kinked, replace it as described in *Fitting and Connecting the Rinse Pump Tubes* on page 54.

NOTE: *When you replace a pump tube, make sure that the inner diameter of the drain pump tube is the same as, or larger than, the rinse feed pump tube. If the drain pump tube has a smaller inner diameter, rinse liquid will back up in the rinsing port and ultimately overflow into the Autosampler, possibly causing damage.*

Waste Bottle

Empty the rinse liquid waste bottle regularly. Never allow it to overflow.

If the bottle contains hazardous substances, dispose of the waste properly, according to local safety regulations.

Rinse Bottle

Make sure that the rinse bottle is always filled with clean, particle-free rinsing liquid.

Replacement Parts

Every day you can count on PerkinElmer to provide you with solutions that deliver reliable performance, control operating costs and maximize operational time. Our complete portfolio of consumables, parts, supplies, training and service helps you meet both routine and demanding measurement challenges. We invest heavily in testing and validating our products to ensure you receive guaranteed compatibility and performance-on-time, every time, for every instrument in your laboratory.

Supplies, replacement parts, and accessories can be ordered directly from PerkinElmer, using the part numbers quoted in the guides provided with the instrument.

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.

Supplies

Item	**Part Number**
Sample container, 6 mL, polypropylene with screw cap, pack of 500	B0193235
Sample container, 8 mL, polypropylene; pack of 1000	B0508901
Caps for 8 mL sample containers (must be ordered separately); pack of 1000	B0508902
Sample container, 15 mL, polypropylene with screw cap; pack of 500	B0193233
Sample container, 50 mL, polypropylene with screw cap; pack of 500	B0193234

Replacement Parts

Item	Part Number
Sampling probe 1 mm I.D. (epoxy polymer)	B3001769
Sampling probe 1 mm I.D. (stainless steel)	B3000152
Sampling probe guide	B3000151
Sample tube with one screw fitting for sampling probe and one screw fitting to flowcell	B2500116
Pump tube (pack of 6), 2.79 mm I.D., collars violet-white	B3140721
Pump tube (pack of 6) 1.14 mm I.D., collars red-red	B3140730
PVC drain tube*	B0048139
Tygon drain tube*	B0509650
Tygon tubing for peristaltic pump (sample transport)	B0199034
Rinse liquid feed tube with weight	B0191059

* State length required in meters

Accessories

Item	Part Number
Sample rack, a component of tray group F, 29 locations (16 mm diameter) for 15 mL sample containers, 9 locations (30 mm diameter) for 50 mL calibration solution containers, one location can be used for the rinsing port	B3001647
Sample rack, a component of tray group E, 90 locations (13 mm) for 6 mL or 8 mL sample containers	B3140617
Sample rack, a component of tray group F, 60 locations (16 mm diameter) for 15 mL sample containers	B3140618
Sample rack, a component of tray groups E and G, 21 locations (30 mm diameter) for 50 mL sample containers, one location can be used for the rinsing port	B3140621

Autosampler Utility

Autosampler Utility

The Autosampler utility enables you to change certain operating parameters for the Autosampler. These parameters are described in the following section. When you download a utility file, you overwrite the corresponding operating parameters in the spectrometer's operating software.

Installing the Autosampler Utility

The Autosampler Utility must be installed on the computer that controls your spectrometer system.

1. Insert the Autosampler utility CD into your CD-ROM drive.

   Installation of the Utility program should start automatically. If it does not start, from the Windows Start menu select **Run** and then on the dialog displayed, click **Browse** and select **Setup.exe** from the CD-ROM drive. Then click **Open** followed by **OK**.

2. Follow the instructions on the screen to install the Autosampler utility program.

Starting the Autosampler Utility

1. Exit the Spectrum FL software.

2. Power off the instrument connected to the Autosampler.

NOTE: *The Autosampler must remain connected to the electrical supply.*

3. Start the Autosampler utility.

Firmware

This utility enables you to check the current version of the firmware and download new firmware for the Autosampler. At shipment, the Autosampler utility disk provided with the Autosampler contains the same firmware as installed in the Autosampler.

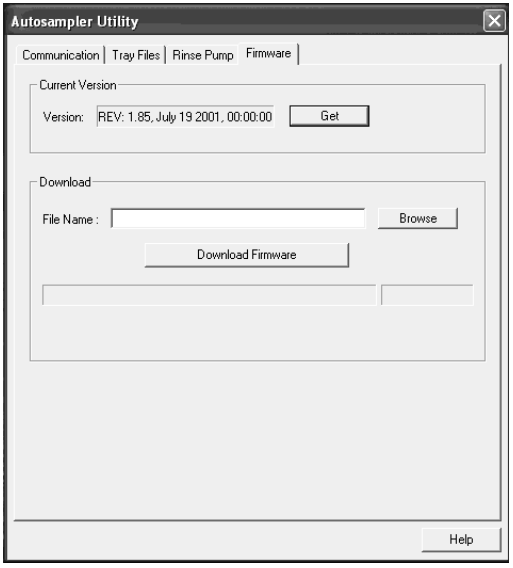
If PerkinElmer changes the firmware at any time, for example, to allow the Autosampler to be operated with a different spectrometer, new utilities will be made available for download. In this way, existing users can upgrade their Autosamplers. Your local PerkinElmer office will be pleased to provide you with information on the availability of new utilities.

1. Make sure the Autosampler is connected to the electrical supply.

2. Start the Autosampler utility.

3. Make sure that the communication parameters have been set correctly.

4. Select the **Firmware** tab.
   The Firmware page is displayed.



5. Click on **Get** to display the current version of the firmware.

6. Click **Browse**.

7. In the **Look in** section of the Open dialog, select the directory containing the firmware files.

8. Select the file then click **Open**.

9. On the Firmware page, click **Download** to install the new firmware in your Autosampler.

Closing the Autosampler Utility

1. Close the Autosampler Utility window.

2. Start the Spectrum FL software.
   The system will now operate with the modified parameters.

Index