cytiva

Sample pumps S9 and S9H

Operating Instructions

Original instructions

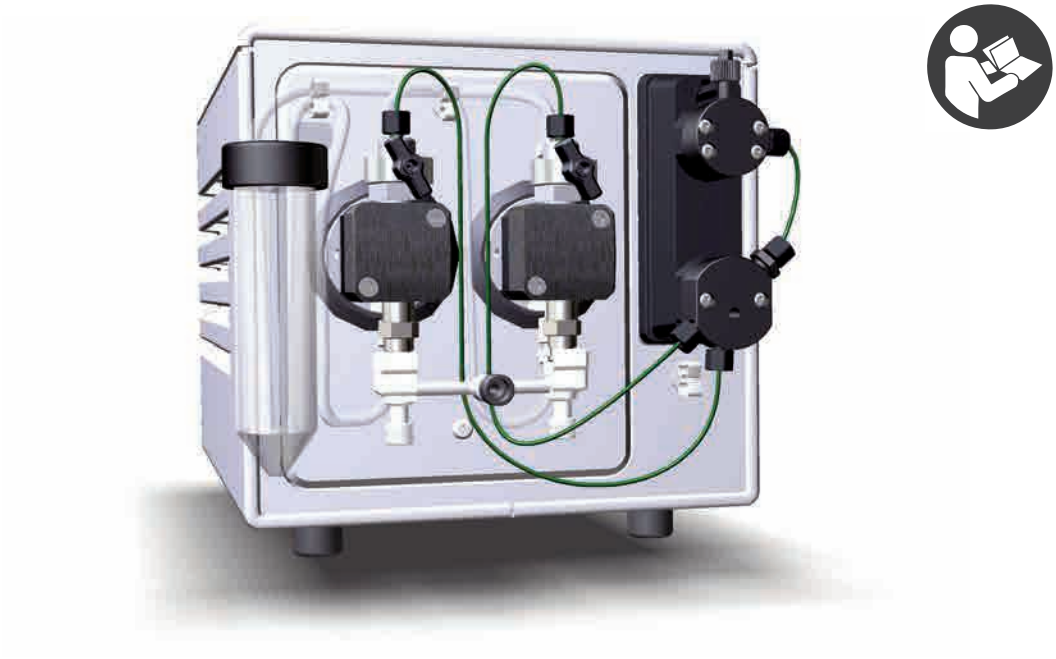

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Table of Contents

1 Introduction

About this chapter

This chapter contains important user information, description of safety notices and a general description of the intended use of Sample pump S9 and Sample pump S9H.

In this chapter

1.1 About this manual

Purpose of this document

The *Operating Instructions* provide you with the instructions needed to install, operate and maintain Sample pump S9 and Sample pump S9H in a safe way.

Instrument terminology

Sample pump S9 and Sample Pump S9H are referred to as Sample pump S9/S9H or the sample pump, for information common for both pumps. Information specific to one of the pumps will be specified by the individual pump name.

Typographical conventions

Software items are identified in the text by ***bold italic*** text.

Hardware items are identified in the text by **bold** text.

In electronic format, references in *italics* are clickable hyperlinks.

1.2 Important user information

Read this before operating the product

All users must read the entire *Operating Instructions* before installing, operating or maintaining the product.

Always keep the *Operating Instructions* at hand when operating the product.

Do not install, operate, or perform maintenance on the product in any other way than described in the user documentation. If you do, you may be exposed or expose others to hazards that can lead to personal injury and you may cause damage to the equipment.

Intended use of Sample pump S9/S9H

Sample pump S9/S9H is intended for automatic sample loading during ÄKTA™ pure purification runs. ÄKTA pure and included modules are intended for research use only, and shall not be used in clinical procedures, or for diagnostic purposes.

Prerequisites

In order to operate Sample pump S9/S9H safely and according to the intended purpose the following prerequisites must be met:

- You should understand the concepts of liquid chromatography.
- You should be familiar with the ÄKTA pure instrument and system and have read the *ÄKTA pure Operating Instructions*.
- You must read and understand the Safety chapter of these *Operating Instructions*.
- The sample pump must be installed according to the instructions in *Chapter 4 Installation, on page 20*.

Definitions

This user documentation contains safety notices (WARNING, CAUTION, and NOTICE) concerning the safe use of the product. See definitions below.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury. It is important not to proceed until all stated conditions are met and clearly understood.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. It is important not to proceed until all stated conditions are met and clearly understood.

NOTICE

NOTICE indicates instructions that must be followed to avoid damage to the product or other equipment.

Notes and tips

Note: *A note is used to indicate information that is important for trouble-free and optimal use of the product.*

Tip: *A tip contains useful information that can improve or optimize your procedures.*

1.3 Associated documentation

Introduction

This section describes the user documentation that is delivered with the product, and how to find related literature that can be downloaded or ordered from Cytiva.

Data files, application notes and user documentation on the web

To order or download data files, application notes or user documentation, see the instruction below.

Step	Action
1	Go to cytiva.com/akta.
2	Click ***ÄKTA Lab-Scale Systems***.
3	Select ***Sample pump S9/S9H*** from the list.
4	Click ***Related Documents***.
5	Select to download the chosen literature.

2 Safety instructions

About this chapter

This chapter describes safety precautions, emergency shutdown procedures and information regarding labels on the system for Sample pump S9/S9H.

In this chapter

2.1 Safety precautions

Introduction

The safety precautions in this section are grouped in the following categories:

General precautions

WARNING

Do not operate Sample pump S9/S9H in any other way than described in the Operating Instructions.

WARNING

Operation and user maintenance of Sample pump S9/S9H should be performed by properly trained personnel only.

WARNING

Accessories. Use only accessories supplied or recommended by Cytiva.

WARNING

Do not use Sample pump S9/S9H if it is not working properly, nor if it has suffered any damage, for example:

- damage to the power cord or its plug
- damage caused by dropping the equipment
- damage caused by splashing liquid onto it

Flammable liquids

CAUTION

Fire Hazard. Before the system is turned on, make sure that there is no unintentional leakage of flammable liquids, or other buffers, in Sample pump S9/S9H or tubing.

Personal protection

CAUTION

Always use appropriate personal protective equipment during operation and maintenance of Sample pump S9/S9H.

CAUTION

Hazardous substances. When using hazardous chemical and biological agents, take all suitable protective measures, such as wearing protective glasses and gloves resistant to the substances used. Follow local and/or national regulations for safe operation, maintenance and decommissioning of the sample pump.

CAUTION

High pressure. Sample pump S9/S9H operates under high pressure. Wear protective glasses at all times.

Installing and moving

WARNING

UniNet cable. Only use UniNet cables delivered or approved by Cytiva.

NOTICE

Vents on Sample pump S9/S9H. To ensure adequate ventilation, keep papers and other objects away from the vents of Sample pump S9/S9H.

Operation

CAUTION

Electrical shock hazard after spillage. If there is a risk that large volumes of spilled liquid may penetrate the casing of Sample pump S9/S9H, immediately switch off the chromatography instrument that provides power to Sample pump S9/S9H, disconnect the power cord to the that instrument, and contact an authorized service engineer.

CAUTION

Disconnect power. Always switch off power to Sample pump S9/S9H, before cleaning any of its components, unless stated otherwise in the user documentation. This is done by switching off the chromatographic instrument that provides Sample pump S9/S9H with power.

Maintenance

CAUTION

Electrical shock hazard. All repairs should be done by service personnel authorized by Cytiva. Do not open any covers or replace parts unless specifically stated in the user documentation.

CAUTION

Disconnect power. Always switch off power to the Sample pump S9/S9H (by switching off the chromatographic instrument providing power) before replacing any of its components, unless stated otherwise in the user documentation.

CAUTION

Hazardous chemicals and biological agents. Before maintenance, service and decommissioning, wash Sample pump S9/S9H with a neutral solution to make sure that any hazardous solvents and biological agents have been flushed out from the sample pump.

CAUTION

Always use appropriate personal protective equipment when decommissioning the equipment.

CAUTION

Cleaning Sample pump S9/S9H before decommissioning.

- Wipe Sample pump S9/S9H with a damp tissue using a cleaning agent so that no hazardous solvents or biological agents remain on the surface.
- Perform a system CIP using a neutral solution. Make sure that any hazardous solvents or biological agents are flushed out from the sample pump.

NOTICE

Cleaning. Keep Sample pump S9/S9H dry and clean. Wipe regularly with a soft damp tissue and, if necessary, a mild cleaning agent. Let Sample pump S9/S9H dry completely before use.

2.2 Labels

Introduction

This section describes the safety labels that are attached to the Sample pump S9/S9H instrument.

System label

The system label is located on the back of the equipment. The system label identifies the equipment and shows electrical data, regulatory compliance, and warning symbols.

Safety symbols

The following safety symbols are used in the labels:

Label	Meaning
	Warning! Read the Operating Instruction before using the system. Do not open any covers or replace parts unless specifically stated in the *Operating Instructions*.
	The system complies with the applicable requirements for Australia and New Zealand.
	Eurasian Conformity mark: the single conformity mark indicates that the product is approved for circulation on the markets of the member states of the Eurasian Customs Union.
	The system complies with applicable European directives.
	This symbol indicates that electrical and electronic equipment must not be disposed of as unsorted municipal waste and must be collected separately. Please contact an authorized representative of the manufacturer for information concerning the decommissioning of equipment.
	This symbol indicates that the product contains hazardous materials in excess of the limits established by the Chinese standard *GB/T 26572 Requirements of concentration limits for certain hazardous substances in electrical and electronic products*.

Label	Meaning
CAN ICES-1/NMB-1	CAN ICES-1/NMB-1 indicates that this product complies with the Canadian standard ICES-001 concerning technical requirements relative to radiated noise emissions from Industrial, Scientific and Medical radio frequency generators.
Voltage Max. Power	Electrical requirements: • Mains voltage (V) • Max. power (VA)
Mfg. Year	Year (YYYY) and month (MM) of manufacture.

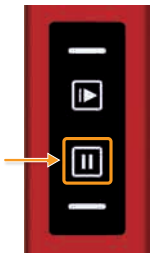
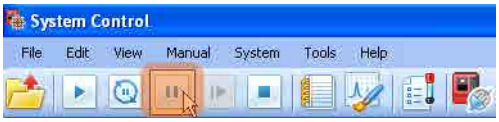
2.3 Emergency procedures

Introduction

The ÄKTA instrument supplies the Sample pump S9/S9H with power. This section describes how to perform an emergency shutdown of the Sample pump S9/S9H by shutting down the ÄKTA instrument.

Emergency shutdown

In an emergency situation, stop the run by either pausing the run or switching off the instrument as described below:

If you want to...	then...
pause the run	• press the **Pause** button on the Instrument control panel:  ***Note:*** *The buttons on the Instrument control panel may be locked. This is an option available in the **System settings**.* or • click the ***Pause*** icon in UNICORN™:  *Result:* All pumps in the instrument are stopped.
switch off the instrument	• press the **Power** switch to the **0** position, or • disconnect the power cord from the wall socket. *Result:* The run is interrupted immediately. ***Note:*** *The sample and data may be lost as a result of switching off the power.*

3 Sample pump overview

About this chapter

This chapter shows an overview of Sample pump S9/S9H. Technical details about the sample pump are found in *ÄKTA pure System Handbook*.

In this chapter

3.1 Function

ÄKTA pure is available with two core module configurations, one for flow rates up to 25 ml/min and one for flow rates up to 150 ml/min. In this manual they are referred to as ÄKTA pure 25 (25 ml/min) and ÄKTA pure 150 (150 ml/min). Sample pump S9 is used with ÄKTA pure 25 and Sample pump S9H with ÄKTA pure 150.

Sample pump S9/S9H is dedicated to direct loading of sample onto a column, or for filling of sample loops. When Sample pump S9 or Sample pump S9H is used in combination with sample inlet valve **V9-IS** or **V9H-IS**, respectively, the sample pumps can be used to automatically and consecutively load up to seven different samples.

Sample pump S9/S9H comprises a pump and a pressure meter. The pump consists of two pump heads. The individual heads are identical but actuated in opposite phase to each other by individual stepper motors, controlled by a microprocessor. The two pistons and pump heads work alternately to give a continuous, low pulsation delivery of liquid.

The table below contains the operating limits and labels of the sample pumps for the configurations.

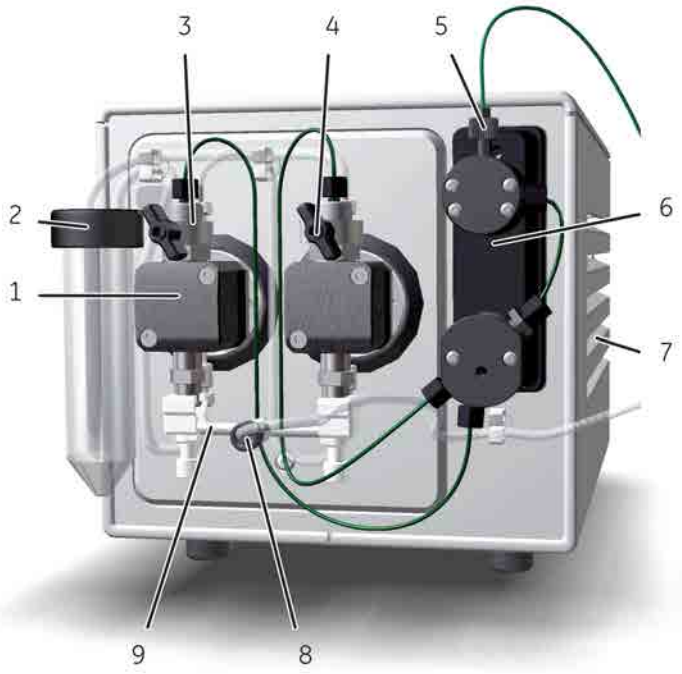
Configuration	Pump label	Pump type	Flow rate	Max. pressure
Sample pump **S9**, low flow system	**P9-S**	P9-S	0.001 to 50 ml/min	10 MPa
Sample pump **S9H**, high flow system	**P9H S**	P9H	0.01 to 150 ml/min	5 MPa

3.2 Illustrations

Introduction

This section provides illustrations of Sample pump S9/S9H. The main features and components are indicated. For details on the pump piston rinsing system, see *Illustrations of the sample pump piston rinsing system, on page 32*.

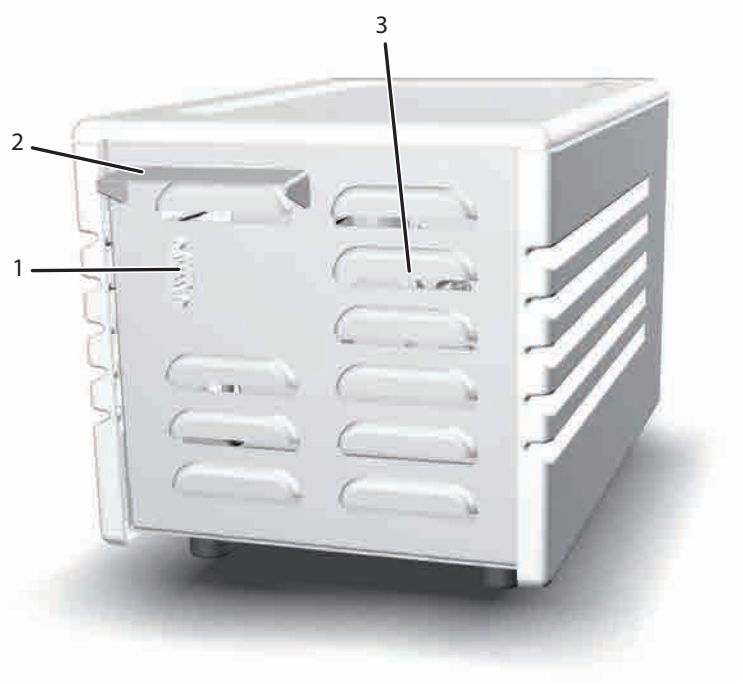
Front view



Part	Function
1	Pump head: Encapsulates the inner parts of the pump
2	Pump rinsing liquid tube holder
3	Outlet port with check valves
4	Purge valve: Used to remove air from the pump
5	Sample pump outlet port
6	Sample pressure monitor
7	Vents

Part	Function
8	Sample pump inlet port
9	Inlet manifold

Rear view



Part	Function
1	UniNet-9 type D port
2	IP cover: Protects pump electronics from liquid spill
3	Vents

4 Installation

About this chapter

This chapter provides the necessary instructions to enable users and service personnel to install Sample pump S9/S9H.

In this chapter

4.1 Room and site requirements

Introduction

This section describes the site planning and the preparations necessary for the installation of Sample pump S9/S9H. The purpose is to provide planners and technical staff with the data needed to prepare the laboratory for the installation.

In this section

4.1.1 Delivery and storage

Introduction

This section describes the requirements for receiving the delivery box and storing Sample pump S9/S9H before installation.

When you receive the delivery

- Record on the receiving documents if there is any apparent damage on the delivery box. Inform your Cytiva representative of such damage.
- Move the delivery box to a protected location indoors.

Storage requirements

The delivery box should be stored in a protected place indoors. The following storage requirements must be fulfilled for the unopened box:

Parameter	Allowed range
Ambient temperature, storage	-25°C to +60°C
Relative humidity	up to 90% atmospheric humidity at 40°C for 48 hrs

4.1.2 Placement and space requirements

Introduction

This section describes different options of where to place Sample pump S9/S9H and the space required.

Sample pump location

Place Sample pump S9/S9H on a clean, flat and stable surface that is able to support the weight of the sample pump. Place liquids used by the pump on the same level as the pump or higher, preferably on the buffer tray on top of the ÄKTA pure instrument.

The following locations are recommended for Sample pump S9/S9H:

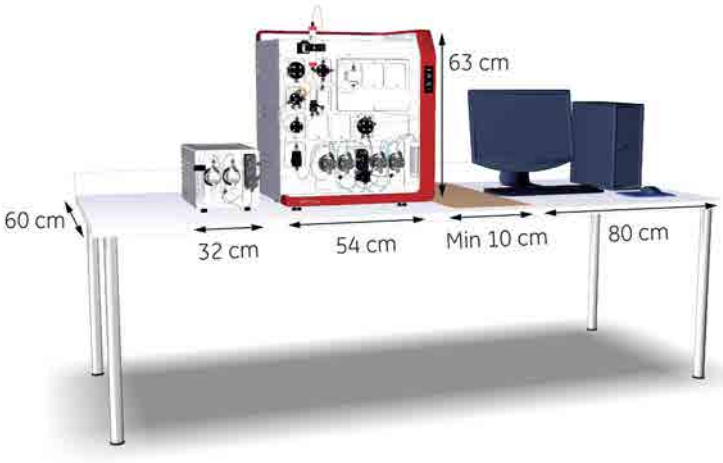
- on the bench to the left of the ÄKTA pure instrument
- on top of Fraction collector F9-C

Note: *Longer tubing length increases back pressure and band broadening in the chromatographic process. Place the sample pump so that the total tubing length is minimized.*

The weight and dimensions of Sample pump S9/S9H are shown below.

Space requirements

The illustration below shows the space recommended for the system including Sample pump S9/S9H.

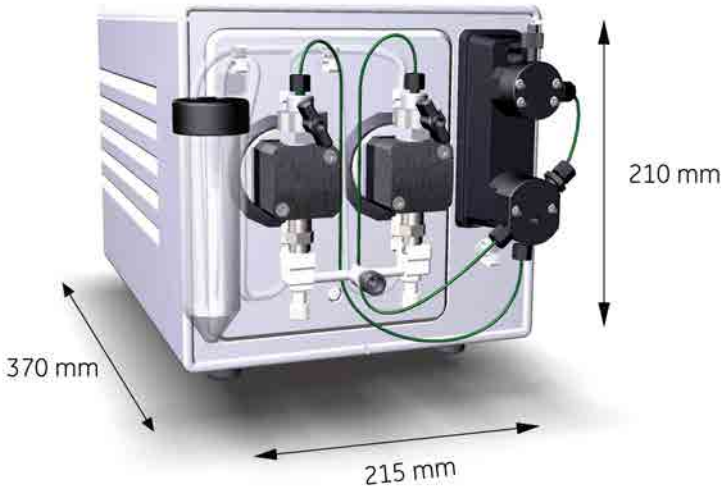


Sample pump weight

Item	Weight
Sample pump S9/S9H	11 kg

Sample pump dimensions

The outer dimensions of the sample pump are shown in the illustration below.



4.1.3 Site requirements

Introduction

This section describes the site requirements for installation of Sample pump S9/S9H.

Operating conditions

The following requirements must be fulfilled:

- The instrument is intended for indoor use only.
- The room must have exhaust ventilation.
- The instrument should not be exposed to direct sunlight.
- Dust in the atmosphere should be kept to a minimum.

Allowed operating conditions are specified in the table below.

Parameter	Allowed range
Ambient temperature, operating	4°C to 35°C
Ambient temperature, storage	-25°C to +60°C
Relative humidity, operating	20% to 95%, non condensing
Altitude	Maximum 2000 m
Pollution degree	2

Note: *Do not use buffers with a freezing point close to or below the temperature in the room or in the cold room cabinet.*

4.2 Connect to ÄKTA pure

Introduction

This section contains information on how to set up power, communication and tubing between Sample pump S9/S9H and ÄKTA pure.

In this section

4.2.1 Power and communication

Introduction

Sample pump S9/S9H is powered by ÄKTA pure.

Connect sample pump

Use a UniNet-9 D-type cable and follow the instructions below to connect the sample pump to the ÄKTA pure instrument.

WARNING

UniNet cable. Only use UniNet cables delivered or approved by Cytiva.

Step	Action
1	Switch off the power to the ÄKTA instrument.
2	Remove the jumper from the UniNet-9 port to be used on the rear of the ÄKTA pure instrument (port 7 or 8).

Step	Action
3	Connect the UniNet-9 cable between the UniNet-9 ports on the back of the sample pump, see below, and on the back of the ÄKTA pure instrument.

NOTICE

Do not use the **Test** port on the ÄKTA pure instrument.

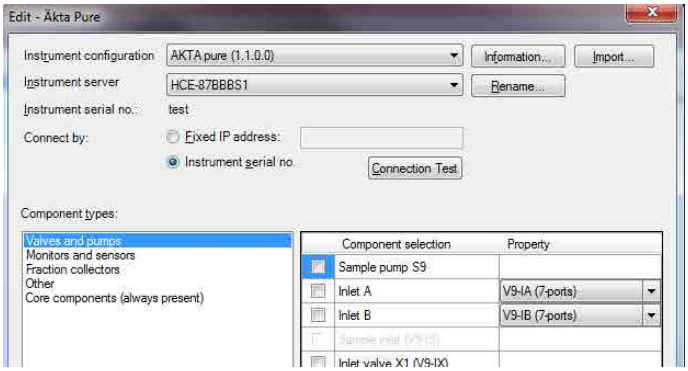
4	Make sure that all unused UniNet-9 ports on the ÄKTA pure instrument are plugged with jumpers.

Software configuration

When Sample pump S9/S9H has been installed, the ***System properties*** for the system has to be updated in UNICORN. The system will restart automatically when the configuration has been changed and the system can be reconnected.

From here on, UNICORN refers to UNICORN 6.3 or other compatible versions of the software. The examples given in these *Operating Instructions* refer to UNICORN 6.3.

Follow the instructions below to update the system in UNICORN.

Step	Action
1	• In the ***Administration*** module, choose ***Tools*** →***System Properties*** or click the ***System Properties*** icon to open the dialog. *Result:* The ***System Properties*** dialog is displayed. • Select a system in the ***System Properties*** dialog. ***Note:*** *Only active systems can be edited.* • Click the ***Edit*** button. *Result:* The ***Edit*** dialog is displayed.  •
2	Select ***Sample pump*** from the ***Component types*** list. ***Note:*** *ÄKTA pure instrument modules are referred to as* ***Components*** *in UNICORN.* ***Note:*** *Sample pump S9/S9H can not be used in the same system configuration as the Mixer valve* **V9-M**.
3	Click the ***OK*** button to apply the changes.

4.2.2 Connect tubing from ÄKTA pure

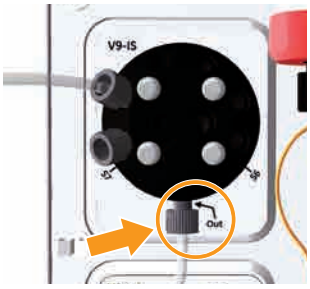
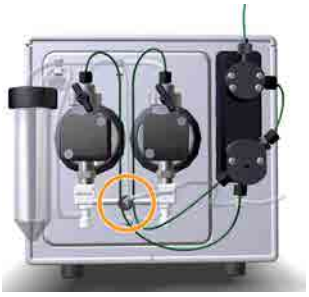
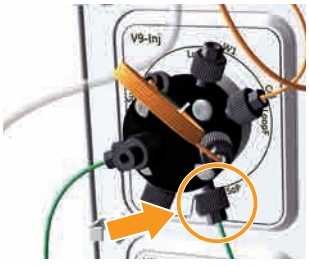
Introduction

Sample pump S9/S9H is delivered with all internal tubing installed. The tubing between the sample pump and the ÄKTA pure instrument needs to be installed.

Sample pump S9/S9H

Connect tubing from the ÄKTA pure 25 instrument to Sample pump S9 as described in the table below.

ÄKTA pure 25

Step	Tubing label and inner diameter	Tubing from...	to...
1	**InS** i.d. 1.6 mm	• Sample container, or • sample inlet valve **V9-IS**, port **Out** 	Sample pump S9 inlet manifold 
2	**3S** i.d. 0.75 mm	Inlet valve **V9-Inj** port **SaP** 	Sample pump S9 pressure monitor 

Connect tubing from the ÄKTA pure 150 instrument to Sample pump S9H as described in the following table.

Step	Tubing label and inner diameter	Tubing from...	to...
1	**InS** i.d. 2.9 mm	• Sample container, or • sample inlet valve **V9H-IS**, port **Out**	Sample pump S9H inlet manifold
2	**3S** i.d. 1.0 mm	Inlet valve **V9H-Inj** port **SaP**	Sample pump S9H pressure monitor

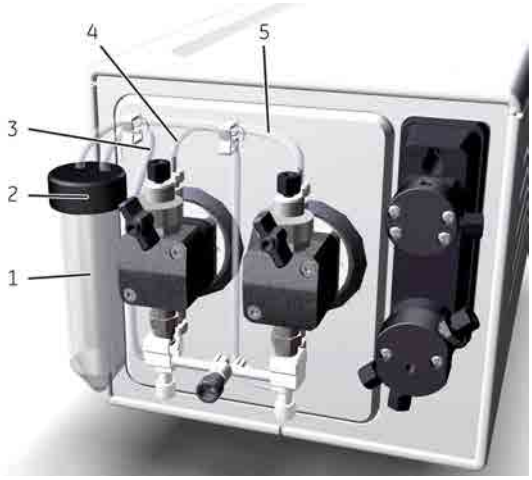
4.3 Prepare the pump piston rinsing system

Introduction

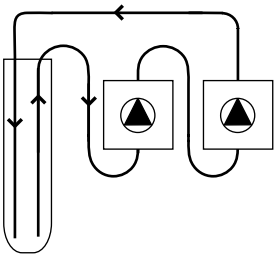
The pump piston rinsing system protects the seal that prevents leakage between the pump chamber and the drive mechanism of the pump. This section describes the system and how to prime it.

Illustrations of the sample pump piston rinsing system

The illustrations below show the parts, tubing and flow path of the sample pump piston rinsing system.



Parts and tubing



Rinsing system flow path

Part	Function
1	Pump rinsing liquid tube
2	Pump rinsing liquid tube holder
3	Inlet tubing, from the rinsing liquid tube to the left pump head (lower rinsing system connection) .
4	Tubing between the left pump head (upper rinsing system connection) and the right pump head (lower rinsing system connection).
5	Outlet tubing, from the right pump head (upper rinsing system connection) to the rinsing liquid tube.

Prime the sample pump piston rinsing system

Follow the instructions below to fill the pump piston rinsing system with rinsing solution. For the tubing configuration of the rinsing system, see *Illustrations of the sample pump piston rinsing system, on page 32*.

Step	Action
1	Unscrew and remove the rinsing liquid tube from the holder.

2	Fill the rinsing liquid tube with 50 ml of 20% ethanol.
3	Put the rinsing liquid tube back in the holder and fasten it by screwing it into place.
4	Insert the inlet tubing to the piston rinsing system into the fluid in the rinsing liquid tube. ***Note:*** *Make sure that the inlet tubing reaches close to the bottom of the rinsing liquid tube.*

Step	Action
5	Connect a 25 to 30 ml syringe to the outlet tubing of the System pump piston rinsing system. Draw liquid slowly into the syringe.

Note:

The outlet tubing is colored orange for clarity in the above illustration.

6	Disconnect the syringe and discard its contents.
7	Insert the outlet tubing into the fluid in the rinsing liquid tube.
8	Fill the rinsing liquid tube so that the tube contains 50 ml of 20% ethanol.

4.4 Prime sample inlet and purge the sample pump

Overview

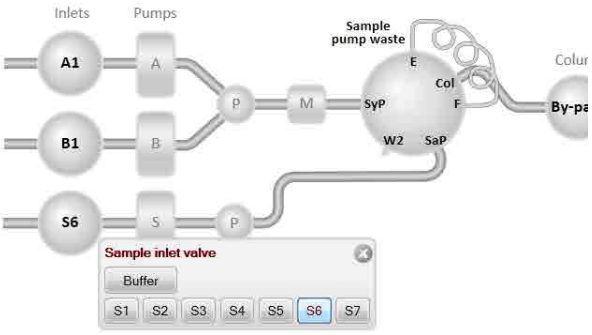
The procedure consists of the following steps:

1. Prime all sample inlet tubing to be used during the run
2. Purge the Sample pump
3. Validate purge
4. End the run

Prime sample inlets

Follow the instructions below to fill all sample inlet tubing, to be used in the run, with appropriate buffer or solution. Skip steps three and four if no sample inlet valve is used.

Step	Action
1	Make sure that all sample inlet tubing that is to be used during the method run is immersed in the correct buffers.
2	Make sure that the waste tubing connected to Injection valve port W2 is immersed in a waste vessel.
3	Open the ***System Control*** module.
4	In the ***Process Picture*** : • Click on ***Sample inlet valve***. • Select the position of the inlet to be filled. Start at the inlet position with the highest number and end at the position with the lowest number.



Result:

The sample inlet valve switches to the selected port.

Step	Action
5	Connect a 25 to 30 ml syringe to one of the purge valves of the pump heads of the Sample pump. Make sure that the syringe fits tightly into the purge connector.

6	Open the purge valve by turning it counter-clockwise about three-quarters of a turn. Draw liquid slowly into the syringe until the liquid reaches the sample pump.
7	Close the purge valve by turning it clockwise. Disconnect the syringe and discard its contents.
8	Repeat steps 2-5 for each sample inlet that is to be used in the method run.

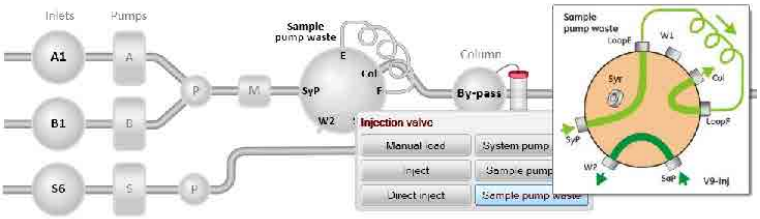
Purge the Sample pump

Follow the instruction below to purge both the pump heads of the Sample pump.

Step	Action
1	Make sure that all sample inlet tubing that is to be used during the method run is immersed in the correct buffers.
2	Make sure that the waste tubing connected to Injection valve port **W2** is immersed in a waste vessel.
3	Open the ***System Control*** module.

Step	Action
4	In the ***Process Picture*** :

- Click on ***Injection valve*** and select ***Sample pump waste*** .



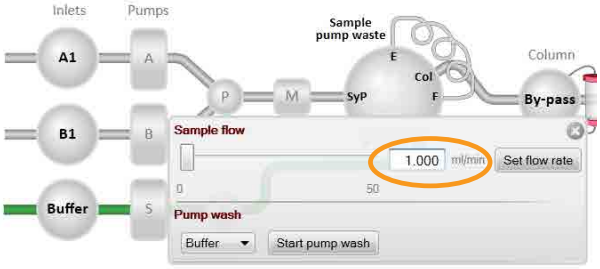
Result:

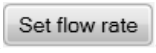
The injection valve switches to waste position. This is necessary to achieve a low back pressure during the purge procedure.

5	In the ***Process Picture:*** Click on ***Sample pump***.

- If Sample inlet valve **V9-IS** or **V9H-IS** is used: Click on the ***Sample inlet valve*** icon (if the valve is not used, the icon will not be present):

  Select the ***Buffer*** inlet.
- Click on the ***Sample pump*** icon: Set the ***Sample flow*** to 1.0 ml/min for ÄKTA pure 25 or 10.0 ml/min for ÄKTA pure 150.

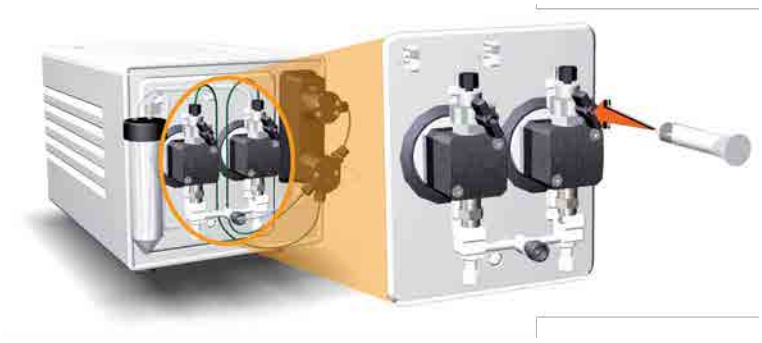


- Click 

and close the pop-up window.

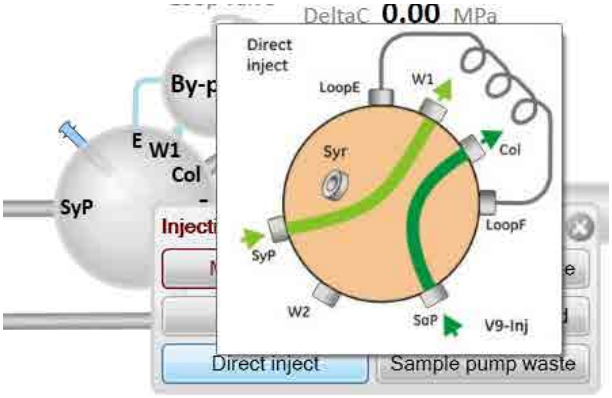
  Result:

  A sample pump flow starts.

Step	Action
6	Connect a 25 to 30 ml syringe to the left purge valve of the Sample pump. Make sure that the syringe fits tightly into the purge connector.
	
7	Open the purge valve by turning it counter-clockwise about three-quarters of a turn. Draw 5-10 ml of liquid slowly into the syringe with a rate of about 1 ml/s.
8	Close the purge valve by turning it clockwise. Disconnect the syringe and discard its contents.
9	Connect the syringe to the right purge valve on the Sample pump, and repeat step 6 to step 8.
	

Validate purge

Follow the instructions below to check that there is no air left in the pump after performing a purge.

Step	Action
1	In the ***Process Picture***: • Click on the ***Injection valve*** and select ***Direct inject***. *Result:* The Injection valve switches to direct inject position. 
2	Make sure that the pump flow is on.
3	In the ***Chromatogram*** pane: Check the ***PreC pressure*** curve. If the PreC pressure does not stabilize within a few minutes there may be air left in the pump. Refer to pump troubleshooting in *ÄKTA pure System Handbook*.

End the run

Click the ***End*** button in the ***System Control*** toolbar to end the run.

4.5 Performance test

Before taking the Sample pump S9/S9H instrument into use, run a performance test to check the function of the equipment. See *ÄKTA pure System Handbook* for further instructions.

5 Prepare Sample pump S9/S9H for a run

About this chapter

This chapter describes the preparations necessary to prepare the sample pump before starting a run.

Note: *Sample pump S9/S9H can not be used in the same system configuration as Mixer valve* **V9-M** *.*

Prime inlets and purge pump heads

Before a run it is important to fill the buffer inlets with liquid and to remove air from the pump heads. For instructions on how to do this, see *Section 4.4 Prime sample inlet and purge the sample pump, on page 35*.

Prepare for run at cold room temperature

When using the sample pump in a cold room or cold cabinet, make sure to follow the precautions listed below. Especially note that the pressure monitor needs to be calibrated after reaching ambient temperature.

NOTICE

Avoid condensation. If Sample pump S9/S9H is kept in a cold room, cold cabinet or similar, keep Sample pump S9/S9H switched on in order to avoid condensation.

NOTICE

Avoid overheating. If Sample pump S9/S9H is kept in a cold cabinet and the cold cabinet is switched off, make sure to switch off Sample pump S9/S9H (by switching off the chromatographic instrument that provides Sample pump S9/S9H with power) and keep the cold cabinet open to avoid overheating.

Note: *Make sure that Sample pump S9/S9H, buffers and sample have had time to reach the ambient temperature. When Sample pump S9/S9H has reached the ambient temperature, calibrate all pressure monitors.*

Note: *When Sample pump S9/S9H is kept in a cold room, it is important to tighten all tubing connectors, also the inlet manifold connectors. Otherwise air might get into the flow path.*

6 Maintenance

About this chapter

This chapter lists the periodic maintenance activities and the maintenance activities that should be performed when required.

Regular maintenance is essential for reliable function and results. Refer to *ÄKTA pure System Handbook* for detailed instructions.

CAUTION

Always use appropriate personal protective equipment during operation and maintenance of Sample pump S9/S9H.

Maintenance program

Perform the following maintenance of the sample pump in the stated intervals:

Interval	Maintenance action
Weekly	Change pump rinsing solution
Weekly	Calibrate pressure monitor
When required	Clean pump head check valves
When required	Replace pump head check valves
When required	Replace pump piston seals
When required	Replace pump pistons
When required	Replace pump rinsing system tubing

7 Reference information

See *ÄKTA pure Product Information* and ÄKTA pure System Handbook for information on the following:

- Technical specifications
- Chemical resistance and environment

For information on operating conditions, see *Operating conditions, on page 25*.

In this chapter

Environmental ranges

Parameter	Data
Storage and transport temperature range	-25°C to +60°C
Chemical environment	See *ÄKTA pure System Handbook*.

Equipment noise level

Equipment	Acoustic noise level
Sample pump S9/S9H	< 60 dB A

Heat output

Equipment	Heat output
Sample pump S9/S9H	Typically 70 W Maximum 110 W

7.1 Recycling information

Introduction

This section contains information about the decommissioning of the product.

CAUTION

Always use appropriate personal protective equipment when decommissioning the equipment.

Decommissioning and disposal of the equipment

When taking the Sample pump S9/S9H instrument out of service:

- The equipment must be decontaminated.
- The components must be separated and recycled according to national and local environmental regulations

CAUTION

Always use appropriate personal protective equipment when decommissioning the equipment.

Disposal of electrical components

Waste electrical and electronic equipment must not be disposed of as unsorted municipal waste and must be collected separately. Please contact an authorized representative of the manufacturer for information concerning the decommissioning of the equipment.

7.2 Regulatory information

Introduction

This section lists the regulations and standards that apply to the product.

In this section

7.2.1 Contact information

Contact information for support

To find local contact information for support and sending troubleshooting reports, visit *cytiva.com/contact*.

Manufacturing information

The table below summarizes the required manufacturing information.

Requirement	Information
Name and address of manufacturer	Cytiva Sweden AB Björkgatan 30 SE 751 84 Uppsala Sweden
Telephone number of manufacturer	+ 46 771 400 600

7.2.2 European Union and European Economic Area

Introduction

This section describes regulatory information for the European Union and European Economic Area that applies to the equipment.

Conformity with EU Directives

See the EU Declaration of Conformity for the directives and regulations that apply for the CE marking.

If not included with the product, a copy of the EU Declaration of Conformity is available on request.

CE marking

The CE marking and the corresponding EU Declaration of Conformity is valid for the instrument when it is:

- used according to the *Operating Instructions* or user manuals, and
- used in the same state as it was delivered, except for alterations described in the *Operating Instructions* or user manuals.

7.2.3 Eurasian Economic Union
Евразийский экономический союз

This section describes the information that applies to the product in the Eurasian Economic Union (the Russian Federation, the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, and the Kyrgyz Republic).

Introduction

This section provides information in accordance with the requirements of the Technical Regulations of the Customs Union and (or) the Eurasian Economic Union.

Введение

В данном разделе приведена информация согласно требованиям Технических регламентов Таможенного союза и (или) Евразийского экономического союза.

Manufacturer and importer information

The following table provides summary information about the manufacturer and importer, in accordance with the requirements of the Technical Regulations of the Customs Union and (or) the Eurasian Economic Union.

Requirement	Information
Name, address and telephone number of manufacturer	See *Manufacturing information*
Importer and/or company for obtaining information about importer	LLC Global Life Sciences Solutions Rus Russian Federation, 123112 Presnenskaya nab., 10, fl. 12, pr. III, room 6 Telephone: + 7 495 739 6931 Fax nr: + 7 495 739 6932 E-mail: *rucis@cytiva.com*

Информация о производителе и импортере

В следующей таблице приводится сводная информация о производителе и импортере, согласно требованиям Технических регламентов Таможенного союза и (или) Евразийского экономического союза.

Требование	Информация
Наименование, адрес и номер телефона производителя	См. *Информацию об изготовлении*

Требование	Информация
Импортер и/или лицо для получения информации об импортере	ООО "Глобал Лайф Сайэнсиз Солюшнз Рус" Российская Федерация, 123112 Пресненская наб., д. 10, эт. 12, пом. III, ком. 6 Телефон: + 7 495 739 6931 Факс: + 7 495 739 6932 Адрес электронной почты: *rucis@cytiva.com*

Description of symbol on the system label
Описание обозначения на этикетке системы

This Eurasian compliance mark indicates that the product is approved for use on the markets of the Member States of the Customs Union of the Eurasian Economic Union

Данный знак о Евразийском соответствии указывает, что изделие одобрено для использования на рынках государств-членов Таможенного союза Евразийского экономического союза

7.2.4 Regulations for North America

Introduction

This section describes the information that applies to the product in the USA and Canada.

FCC compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: *The user is cautioned that any changes or modifications not expressly approved by Cytiva could void the user's authority to operate the equipment.*

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 residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

7.2.5 Regulatory statements

Introduction

This section shows regulatory statements that apply to regional requirements.

EMC emission, CISPR 11: Group 1, Class A statement

NOTICE

This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

7.2.6 Declaration of Hazardous Substances (DoHS)

根据 SJ/T11364-2014《电子电气产品有害物质限制使用标识要求》特提供如下有关污染控制方面的信息。

The following product pollution control information is provided according to SJ/T11364-2014 Marking for Restriction of Hazardous Substances caused by electrical and electronic products.

电子信息产品污染控制标志说明
Explanation of Pollution Control Label

该标志表明本产品含有超过中国标准 GB/T 26572《电子电气产品中限用物质的限量要求》中限量的有害物质。标志中的数字为本产品的环保使用期，表明本产品在正常使用的条件下，有毒有害物质不会发生外泄或突变，用户使用本产品不会对环境造成严重污染或对其人身、财产造成严重损害的期限。单位为年。

为保证所申明的环保使用期限，应按产品手册中所规定的环境条件和方法进行正常使用，并严格遵守产品维修手册中规定的定期维修和保养要求。

产品中的消耗件和某些零部件可能有其单独的环保使用期限标志，并且其环保使用期限有可能比整个产品本身的环保使用期限短。应到期按产品维修程序更换那些消耗件和零部件，以保证所申明的整个产品的环保使用期限。

本产品在使用寿命结束时不可作为普通生活垃圾处理，应被单独收集妥善处理。

This symbol indicates the product contains hazardous materials in excess of the limits established by the Chinese standard GB/T 26572 Requirements of concentration limits for certain restricted substances in electrical and electronic products. The number in the symbol is the Environment-friendly Use Period (EFUP), which indicates the period during which the hazardous substances contained in electrical and electronic products will not leak or mutate under normal operating conditions so that the use of such electrical and electronic products will not result in any severe environmental pollution, any bodily injury or damage to any assets. The unit of the period is “Year”.

In order to maintain the declared EFUP, the product shall be operated normally according to the instructions and environmental conditions as defined in the product manual, and periodic maintenance schedules specified in Product Maintenance Procedures shall be followed strictly.

Consumables or certain parts may have their own label with an EFUP value less than the product. Periodic replacement of those consumables or parts to maintain the declared EFUP shall be done in accordance with the Product Maintenance Procedures.

This product must not be disposed of as unsorted municipal waste, and must be collected separately and handled properly after decommissioning.

有害物质的名称及含量
Name and Concentration of Hazardous Substances

产品中有害物质的名称及含量
Table of Hazardous Substances' Name and Concentration

部件名称 Compo-nent name	有害物质 Hazardous substance					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
29027745[1]	X	0	0	0	0	0
29050593[1]	X	0	0	0	0	0

[1] The product has not been tested as per the Chinese standard *GB/T 26572-2011 Requirements of concentration limits for certain restricted substances in electrical and electronic products.*

0: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

- 此表所列数据为发布时所能获得的最佳信息.

0: Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.

X: Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572

- Data listed in the table represents best information available at the time of publication.

7.2.7 Other regulations and standards

Introduction

This section describes the standards that apply to the product.

Regulatory compliance of connected equipment

Any equipment connected to Sample pump S9/S9H should meet the safety requirements of IEC/EN/UL 61010-1, or other relevant standards. Within EU, connected equipment must be CE marked.

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For local office contact information, visit cytiva.com/contact

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