

Peristaltic Pump P-1

Operating Instructions

Original instructions



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1 Introduction

About this chapter

This chapter contains important user information, descriptions of safety notices, regulatory information, intended use of the Peristaltic Pump P-1 instrument, and lists of associated documentation.

In this chapter

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1 Introduction

1.1 About this manual

1.1 About this manual

Purpose of this manual

The *Operating Instructions* provide you with the information needed to install, operate and maintain the product in a safe way.

Scope of this manual

The *Operating Instructions* cover the Peristaltic Pump P-1 instrument.

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 operate the product in any other way than described in the user documentation. If you do, you may be exposed to hazards that can lead to personal injury and you may cause damage to the equipment.

Intended use of the product

Peristaltic Pump P-1 is a single channel laboratory pump for use in liquid chromatography and other applications where accurately controlled liquid flows are required.

Peristaltic Pump P-1 is intended for research use only, and shall not be used in any clinical procedures, or for diagnostic purposes.

Prerequisites

In order to operate Peristaltic Pump P-1 in the way it is intended:

- The user must have a general understanding of how a PC and the Microsoft® Windows® operating system works (if a computer is used).
- The user must understand the concepts of liquid chromatography.
- The user must read and understand the *Safety instructions* chapter in the *Operating Instructions*.
- Peristaltic Pump P-1 and software must be installed, configured and calibrated according to the *Operating Instructions*.

Safety notices

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.

1 Introduction

1.2 Important user information



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.

System-specific documentation

In addition to the *Operating Instructions* manual, the documentation package supplied with Peristaltic Pump P-1 also includes one or more product documentation binders containing detailed specifications and traceability documents.

The most important documents in the documentation package, with regard to technical aspects of Peristaltic Pump P-1, are listed in the table below.

Documentation	Main contents
<i>Peristaltic Pump P-1 Operating Instructions</i>	Instructions needed to install, operate and maintain Peristaltic Pump P-1 in a safe way.
<i>Peristaltic Pump P-1 User Manual</i>	Detailed system description and comprehensive user instructions.
Declaration of Conformity	Declaration of Conformity for EU and/or other regions.

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/products .
2	Click Chromatography products .
3	Click Tools and accessories .
4	Click Pumps .
5	Click Peristaltic Pump P-1 .
6	Click RELATED DOCUMENTS .
7	Select to download the chosen literature.

2 Safety instructions

About this chapter

This chapter describes safety precautions, labels and symbols that are attached to the equipment. In addition, the chapter describes emergency and recovery procedures, and provides recycling information.

Important



WARNING

Before installing, operating or maintaining the product, all users must read and understand the entire contents of this chapter to become aware of the hazards involved.

In this chapter

Section	See page
2.1 Safety precautions	9
2.2 Labels	14
2.3 Emergency procedures	15

2.1 Safety precautions

Introduction

Peristaltic Pump P-1 is powered by mains voltage and handles materials that can be hazardous. Before installing, operating or maintaining the system, you must be aware of the hazards described in this manual.

Follow the instructions to avoid injury to the operator or other personnel, damage to samples or other substances handled by the equipment, to the product, or to other equipment in the area.

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

- General precautions
- Personal protection
- Installing and moving the product
- Power supply
- Maintenance

General precautions

**WARNING**

Do not operate the product in any other way than described in the user documentation.

**WARNING**

Only properly trained personnel may operate and maintain the product.

**WARNING**

Do not use any accessories not supplied or recommended by Cytiva.

2 Safety instructions

2.1 Safety precautions



WARNING

Do not use Peristaltic Pump P-1 if it is not working properly, or 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



CAUTION

Waste tubes and containers must be secured and sealed to prevent accidental spillage.



CAUTION

Make sure that the waste container is dimensioned for maximum possible volume when the equipment is left unattended.



NOTICE

Avoid condensation by letting the unit equilibrate to ambient temperature.



NOTICE

Organic solvents may not be used with Peristaltic Pump P-1.

Personal protection



WARNING

Always use appropriate Personal Protective Equipment (PPE) during operation and maintenance of this product.

**WARNING**

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

**WARNING**

Spread of biological agents. The operator must take all necessary actions to avoid spreading hazardous biological agents. The facility must comply with the national code of practice for biosafety.

Installing and moving the product

**WARNING**

Supply voltage. Before connecting the power cord, make sure that the supply voltage at the wall outlet corresponds to the marking on the instrument.

**WARNING**

Protective ground. The product must always be connected to a grounded power outlet.

**WARNING**

Power cord. Only use power cords with approved plugs delivered or approved by Cytiva.

**WARNING**

Access to power cord. Do not block access to the power cord. The power cord must always be easy to disconnect.

2 Safety instructions

2.1 Safety precautions



CAUTION

If the product is connected to laboratory scaffolding, make sure that the laboratory scaffolding is stable.



NOTICE

Always clean and drain the equipment completely before moving it.

Power supply



WARNING

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.



WARNING

Disconnect power. Always disconnect power from the instrument before replacing any component on the instrument, unless stated otherwise in the user documentation.



WARNING

Always disconnect the power supply when cleaning the pump.



WARNING

If liquid is spilled on the equipment, the electrical power supply must be disconnected immediately. The equipment must be completely dry on the inside and the outside before reconnecting the power supply.



WARNING

Disconnect power. Always disconnect power from the instrument before replacing fuses.

Maintenance



WARNING

Disconnect power. Always disconnect power from the instrument before performing any maintenance task.



WARNING

Use only approved parts. Only spare parts and accessories that are approved or supplied by Cytiva may be used for maintaining or servicing the product.



WARNING

Corrosive substance. NaOH is corrosive and therefore dangerous to health. When using hazardous chemicals, avoid spillage and wear protective glasses and other suitable Personal Protective Equipment (PPE).



WARNING

Decommissioning. Decontaminate the equipment before decommissioning to make sure that hazardous residues are removed.



NOTICE

Cleaning. Keep the instrument dry and clean. Wipe regularly with a soft damp tissue and, if necessary, a mild cleaning agent. Let the instrument dry completely before use.

2.2 Labels

Introduction


This section describes the system label and other safety or regulatory labels that are attached to the product.

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.

Description of symbols on the system label

The following symbols may be present on the system label.

Label	Meaning
	Warning! Read the user documentation before using the system. Do not open any covers or replace parts unless specifically stated in the user documentation.
Code no	Instrument assembly number
Serial no	Instrument serial number
Mfg Year	Year (YYYY) and month (MM) of manufacture
Voltage Frequency Max Power	Electrical requirements: <ul style="list-style-type: none"> • Voltage (VAC ~) • Frequency (Hz) • Max. power (VA)

2.3 Emergency procedures

Introduction

This section describes how to shut down Peristaltic Pump P-1 in an emergency situation. The section also describes the result in the event of power failure.

Emergency shutdown

In an emergency situation, follow the steps below to stop the run:

Step	Action
1	Press the run/stop switch to the stop position.
2	If required, disconnect the mains power cord. <i>Result:</i> The run is interrupted immediately.

Power failure

The following table describes the consequences of a power failure.

Power failure to...	will result in...
Peristaltic Pump P-1	<ul style="list-style-type: none">The run is interrupted immediately

3 Instrument description

About this chapter

This chapter gives an overview of the Peristaltic Pump P-1 instrument, and a brief description of its function.

Introduction to Peristaltic Pump P-1

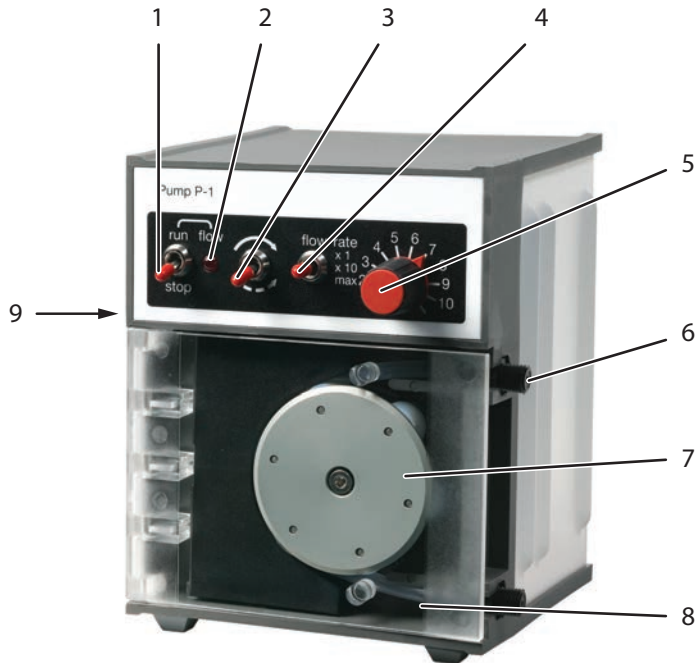
Peristaltic Pump P-1 is a single channel laboratory pump for use in liquid chromatography and other applications where accurately controlled liquid flows are required.

Pumping action is provided by a roller cage driven by a stepper motor controlled by a range selector and a continuously variable potentiometer. The motor speed is almost independent of temperature (0°C to 40°C) and load thus giving an accurate and reproducible flow rate under all conditions.

An asymmetric shape gives the pump a very low pulsation in the forward direction. The reverse direction has a pulsation which is more similar to traditional peristaltic pumps. Maximum flow function and a connector for remote control and pulse counting are provided.

Illustration of the instrument

The illustration below shows the main parts of the instrument.



Part	Function	Part	Function
1	run/stop switch	6	Tubing connector
2	flow LED	7	Roller cage
3	Flow direction switch	8	Pressure plate
4	flow rate switch	9	Side panel for electrical connections
5	flow rate potentiometer		

Indicators and controls on the front panel

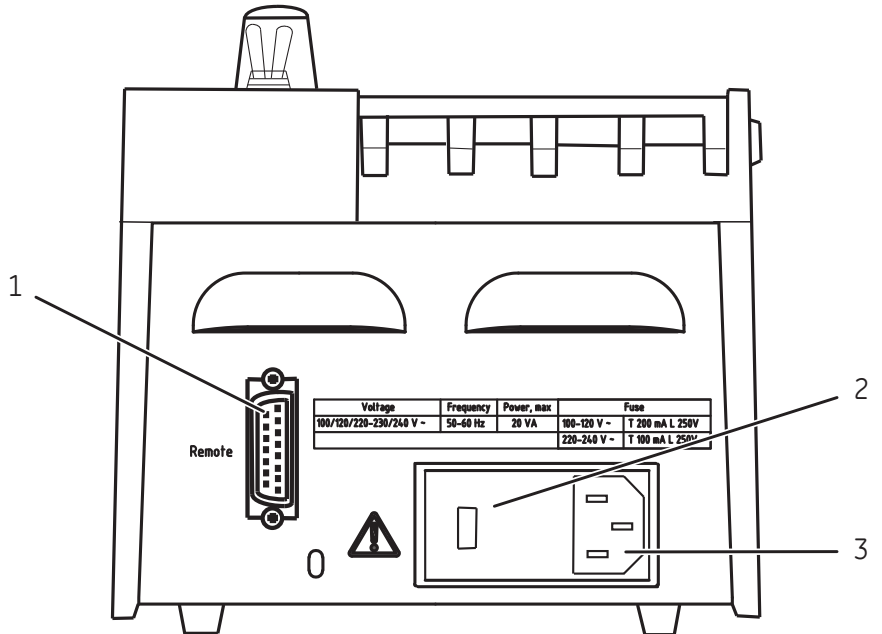
Indicator/Switch	Description
run/stop (switch)	Starts and stops the pump. Can be overridden by the remote control.

3 Instrument description

Indicator/Switch	Description
flow (indicator)	Indicates that the pump is turned on. The pump will now run if not overridden by the remote control.
Flow direction (switch)	A switch to reverse the flow. Note: <i>Because of the asymmetric design of the pressure plate, the forward direction (unbroken arrow on the switch) shows less pulsation than the reverse direction (broken arrow).</i>
flow rate (switch)	A range selector for the flow rate. The switch gives a ten-fold variation of the flow rate. Pressing the switch to the spring loaded bottom position gives maximum flow rate independent of the potentiometer setting.
flow rate (potentiometer)	A continuously variable potentiometer for the control of the flow rate. Gives a linear response in the range from 1 to 10.

Electrical connections on the side panel

The following illustration shows the side panel viewed when the pump is on its back.



No.	Connection	No.	Connection
1	Remote: connector for remote control and pulse counting	3	Mains power inlet
2	Fuse holder and voltage selector		

4 Installation

About this chapter

This chapter provides required information to enable users and service personnel to unpack, install, move and transport the Peristaltic Pump P-1 instrument.

In this chapter

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4.2	Transport	22
4.3	Unpack the product	23
4.4	Assemble the product	24
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4.1 Site requirements

Environmental requirements

Parameter	Requirement
Allowed location	Indoor use only
Placement	Laboratory bench
Ambient temperature	4°C to 40°C
Humidity	20% to 95%, non-condensing
Altitude, operation	Up to 2000 m
Pollution degree of the intended environment	Pollution degree 2

Electrical power requirements

Parameter	Requirement
Supply voltage	100-240 V AC
Frequency	50-60 Hz
Transient overvoltages	Overvoltage category II

4.2 Transport

Introduction

This section gives instructions for moving the Peristaltic Pump P-1 instrument within the laboratory.

Moving the instrument

Before moving the instrument, disconnect all cables and tubing connected to peripheral components and liquid containers.

4.3 Unpack the product

Unpacking procedure

Follow the steps below to unpack the product.

Step	Action
1	Remove straps and packing material.
2	Set the equipment upright before you start to assemble the product.

Visual inspection

Inspect all visible parts for damage or missing pieces. If any damage is observed, record this on the receiving documents and inform your Cytiva representative.

4.4 Assemble the product

Safety precautions



WARNING

Supply voltage. Before connecting the power cord, make sure that the supply voltage at the wall outlet corresponds to the marking on the instrument.



WARNING

Protective ground. The product must always be connected to a grounded power outlet.



WARNING

Power cord. Only use power cords with approved plugs delivered or approved by Cytiva.



WARNING

Access to power cord. Do not block access to the power cord. The power cord must always be easy to disconnect.

Required assembly

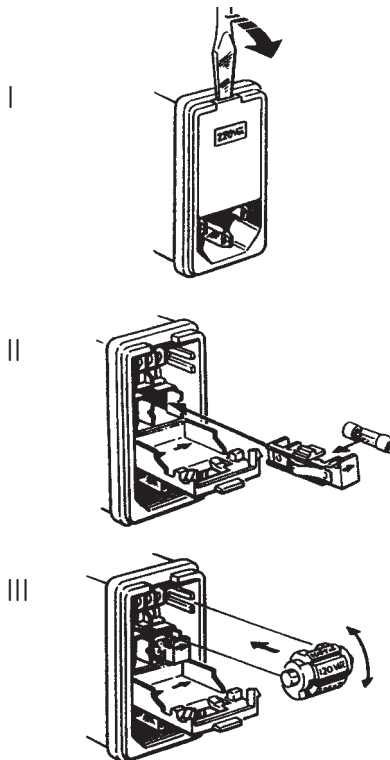
The following parts must be added to the Peristaltic Pump P-1 instrument before it can be used:

- Tubing
- Waste bottle
- Bottles containing buffer or sample
- Electrical Power Supply kit

Install the Electrical Power Supply kit

Before connecting Peristaltic Pump P-1 to the electrical power supply, read the following instructions carefully:

- | Step | Action |
|------|---|
| 1 | Two Electrical Power Supply Kits are supplied with Peristaltic Pump P-1, one for 100–120 V and one for 220–240 V. Choose the kit appropriate to your mains supply voltage, and discard the other kit. |
| 2 | Remove the yellow warning label covering the fuse/voltage selector on the rear panel, see Electrical connections on the side panel, on page 19 . |
| 3 | Open the fuse/voltage selector with the key provided or with a thin screwdriver (step I in the illustration). |



- | | |
|---|---|
| 4 | Place the fuse appropriate to your mains supply voltage in the fuse holder and insert it into the right-hand position (step II in the illustration). The left hand position is a holder for a spare fuse (included in the Mains Kit). |
|---|---|

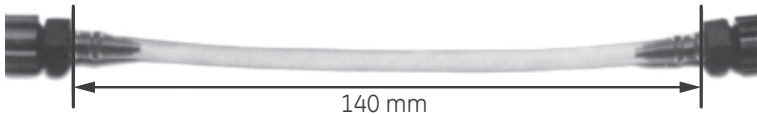
4 Installation

4.4 Assemble the product

Step	Action
5	Remove the voltage selector switch, select the correct voltage, and replace the switch with the correct voltage showing (step III in the illustration). Note: <i>Select the 230 V position when using 220 V mains power.</i>
6	Close the fuse/voltage selector cover and make sure the chosen voltage is shown in the window.

Assemble the tubing

Assemble the pump tubing by inserting one connector in each end of the tubing. The distance between the nuts of the two connectors must be 140 mm. This length ensures firm positioning of the tubing.



Insert the tubing

Follow the steps below to insert the tubing.

Step	Action
1	Open the lid.
2	Push back the pressure plate.
3	Insert the tubing. Make sure the nuts of the connectors fit correctly into their housings.
4	Close the lid. The correct tubing pressure is set automatically.

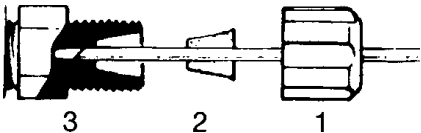
Note: *When the pump is not in use, leave the lid open to prolong the life time of the pump tubing.*

4.5 Connections

Flow path

Peristaltic Pump P-1 may be connected either before or after a chromatography column. Air bubbles may appear in the bed if the pump is connected after the column and the eluent has not been degassed. However, the advantage of this set-up is that the flow can be controlled by the pump during sample application as well as during elution.

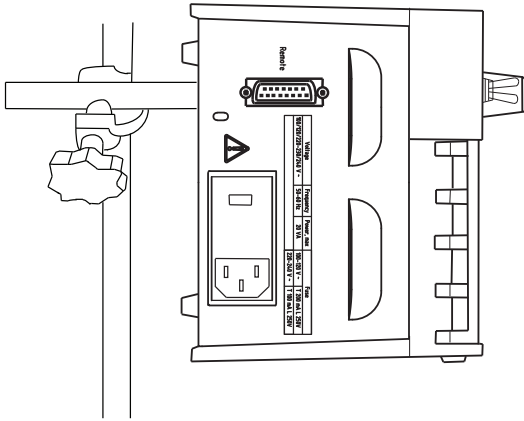
Connect the pump with the two connectors on the pump tubing according to the instructions below. To minimize the pulsation, use the pump in the forward direction.

Step	Action
1	Cut the tubing cleanly at a 45° angle.
2	Remove the connector nut (part 1 in the illustration) and slip it over the tubing.
	
3	Remove the sealing plug (part 2 in the illustration).
4	Push the tubing through the sealing plug until it projects about 1 cm.
5	Seat the tubing in the nipple (part 3 in the illustration). Slide the sealing plug along the tubing into the nipple.
6	Finger-tighten the connector nut.

Position

The pump can be used in a vertical or horizontal position and can be connected to laboratory scaffolding by fitting the support rod to the rear panel.

4 Installation
4.5 Connections



CAUTION

If the product is connected to laboratory scaffolding, make sure that the laboratory scaffolding is stable.

Electrical power

Connect the power cord to a grounded power outlet as specified in [Section 4.1 Site requirements, on page 21](#).

5 Operation

About this chapter

This chapter gives instructions on how to operate the product in a safe way.

In this chapter

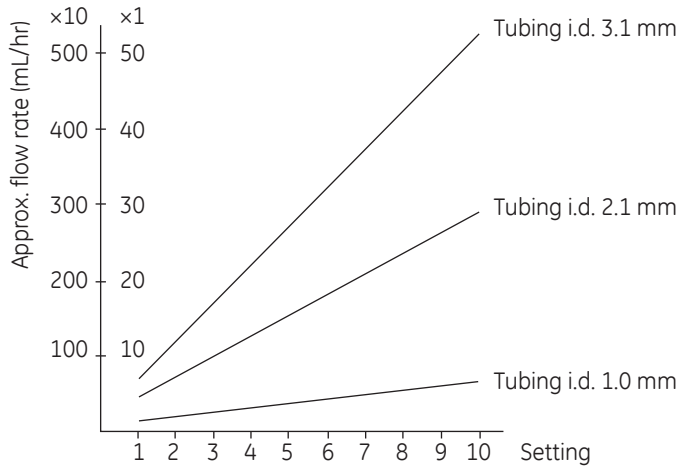
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5 Operation

5.1 Set the flow rate

5.1 Set the flow rate

Peristaltic Pump P-1 has two flow rate ranges for each tubing diameter. The appropriate range is chosen by setting the **flow rate** switch to **×1** or **×10** giving a ten-fold variation of the flow rate. The desired flow rate is then set with the **flow rate** potentiometer. To estimate the appropriate setting, see the illustration below.



5.2 Start and stop the pump

Follow the steps below to start and stop the pump.

Step	Action
1	<p>Press the run/stop switch to the run position to start the pump. The flow LED is lit.</p> <p>During the run it is possible to:</p> <ul style="list-style-type: none">• Adjust the flow rate with the flow rate potentiometer.• Reverse the flow with the flow direction switch.
2	<p>Press the run/stop switch to the stop position to stop the pump.</p>

5.3 Connections to the remote control socket

Introduction

Information such as motor speed and direction of rotation can be received from, and sent to, other instruments. This feature can be used in a variety of situations, two of which are described below.

Volume information to a fraction collector

The stepper motor in the pump gives a pulse for every 0.4° of rotation. This angle corresponds to a certain volume and the information can be used to determine fraction size in a fraction collector. One pulse corresponds to approximately 1 mL when using tubing with i.d. 3.1 mm in the pump.

For further details, see [Section 5.4 Calibration of volume information, on page 33](#).

Connection to a controller

For use in completely automated systems, Peristaltic Pump P-1 can be controlled for example from ÄKTA™ systems using I/O-signals.

For further information refer to the relevant controller's Instruction Manual.

5.4 Calibration of volume information

Below is a step by step procedure for the calibration of the volume information transmitted from the Peristaltic Pump P-1 instrument to the fraction collector when connected to the remote control.

Step	Action
1	Set up the chromatography system as desired.
2	Connect Peristaltic Pump P-1 into the fraction collector with a communication cable.
3	Set a flow rate approximately equal to that desired (see Section 5.1 Set the flow rate, on page 30).
4	For further information refer to the instruction manuals for preferred fraction collector, e.g. Frac 920.

Note: *The calibration remains valid whenever the Peristaltic Pump P-1 instrument and the same fraction collector are connected via the remote outlet. If a different i.d. tubing is used, the volume information should be recalibrated.*

Note: *The calibration of the volume information is not valid after long term use of the tube. Calibrate frequently to get high precision.*

6 Maintenance

About this chapter

This chapter provides information to enable users and service personnel to clean and maintain the product.

Safety precautions



WARNING

Disconnect power. Always disconnect power from the instrument before performing any maintenance task.



WARNING

If liquid is spilled on the equipment, the electrical power supply must be disconnected immediately. The equipment must be completely dry on the inside and the outside before reconnecting the power supply.



WARNING

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



NOTICE

Always clean and drain the equipment completely before moving it.

Maintenance schedule

Peristaltic Pump P-1 does not need any regular servicing or maintenance other than the replacement of worn out tubing. It is advisable to replace the tubing after 200 hours to minimize the risk of tubing breakage during operation. If a breakage occurs, clean the pump according to the instructions below.

Note: *The calibration of the volume information is not valid after long term use of the tube. Calibrate frequently to get high precision.*

For more information, see [Section 5.4 Calibration of volume information, on page 33](#).

Clean the outer surfaces of the pump

Follow the steps below to clean the outer surfaces of the pump.

Step	Action
1	Wipe the surface regularly with a damp cloth. Do not allow spilt liquid to dry on the pump.
2	Remove dirt from the surface using a cloth and a mild cleaning agent.
3	Let the system dry completely before using it.

Clean the roller cage

Follow the steps below to clean the roller cage.

Note: *The O-ring on the roller cage should be replaced if it has come into contact with the solvent.*

Step	Action
1	Open the lid and remove the tubing.
2	Dismantle the roller cage by undoing the hex screw and lifting the cage straight up. Take care not to lose the two metal washers.
3	Slide the pressure plate forwards and take it out of the pump.
4	Clean the roller cage and the roller cage housing with soapy water.
5	Fit a new O-ring on the roller cage.
6	Reassemble the pump by reversing the procedure described above.

Cleaning before planned maintenance/service

To ensure the protection and safety of service personnel, all equipment and work areas must be clean and free of any hazardous contaminants before a Service Engineer starts maintenance work.

Please complete the checklist in the *On Site Service Health and Safety Declaration Form* or the *Health and Safety Declaration Form for Product Return or Servicing*, depending on whether the instrument is going to be serviced on site or returned for service, respectively.

Health and safety declaration forms

Health and safety declaration forms are available for copying or printing in the *Reference information* chapter of this manual, or on digital media supplied with the user documentation.

7 Reference information

About this chapter

This chapter lists the technical specifications of Peristaltic Pump P-1. The chapter also includes ordering information and Health and Safety Declaration forms for service.

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7.1 Specifications

Technical specifications

Parameter	Specification
Supply voltage	100/120/220-230/240 V~
Maximum voltage fluctuation	± 10% from the nominal voltage
Frequency	50-60 Hz
Maximum power	20 VA
Fuse specification	for 100-120 V~ T200 mA L, 250 V for 220-240 V~ T100 mA L, 250 V
Dimensions (H × W × D)	145 × 112 × 115 mm
Weight	1.7 kg
Acoustic noise level	< 80 dBA
Enclosure protective class	IP 20

Environmental requirements

Parameter	Requirement
Allowed location	Indoor use only
Ambient temperature	4°C to 40°C
Relative humidity tolerance (non-condensing)	20% to 95%
Atmospheric pressure	84 to 106 kPa (840 to 1060 mbar)

7.2 Ordering information

Contact details

For ordering information visit cytiva.com/products.

Spare parts and accessories

For correct up to date information on spare parts and accessories visit: cytiva.com/products

7.3 Recycling information

Introduction

This section contains information about the decommissioning of the product.



CAUTION

Always use appropriate personal protective equipment when decommissioning the equipment.

Decontamination

The product must be decontaminated before decommissioning. All local regulations must be followed with regard to scrapping of the equipment.

Disposal of the product

When taking the product out of service, the different materials must be separated and recycled according to national and local environmental regulations.

Recycling of hazardous substances

The product contains hazardous substances. Detailed information is available from your Cytiva representative.

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.

Instructions for disposal

Follow the instructions below for disposal of the product:

Step	Action
1	Separate all electronic components (terminal strips, power supplies, transmitters, pumps, probes / sensors, etc.) from the Electrical Cabinet.

Step	Action
2	Decontaminate the Peristaltic Pump P-1 Cabinet and Electrical Cabinet following appropriate procedures depending on what type of environment the unit was located in. Follow local and/or national/federal requirements for disposal of the Peristaltic Pump P-1 Cabinet and the Electrical Cabinet.
3	Dispose of electronic components as specified by local regulations depending on material used in the construction of the components. Follow local and/or national/federal requirements for disposal of the electronic components.

7.4 Regulatory information

Introduction

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

In this section

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7.4.1 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 Reference information

7.4 Regulatory information

7.4.2 European Union and European Economic Area

7.4.2 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.

7.4.3 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 <i>Manufacturing information</i>
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. <i>Информацию об изготовлении</i>

7 Reference information

7.4 Regulatory information

7.4.3 Eurasian Economic Union

Евразийский экономический союз

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

7.4.4 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 B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

7.4.5 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.

South Korea

Regulatory information to comply with the Korean technical regulations.



NOTICE

Class A equipment (equipment for business use).

This equipment has been evaluated for its suitability for use in a business environment.

When used in a residential environment, there is a concern of radio interference.



주의사항

A급 기기(업무용 방송통신기자재)

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기

로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

7.4.6 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。

为保证所声明的环保使用期限，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，以保证所声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.

7 Reference information

7.4 Regulatory information

7.4.6 Declaration of Hazardous Substances (DoHS)

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 Component 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)
18111091	X	O	O	O	O	O

- O:** 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。
- O:** 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.

7.5 Health and Safety Declaration Form

On site service



On Site Service Health & Safety Declaration Form

Service Ticket #:	
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To make the mutual protection and safety of Cytiva service personnel and our customers, all equipment and work areas must be clean and free of any hazardous contaminants before a Service Engineer starts a repair. To avoid delays in the servicing of your equipment, complete this checklist and present it to the Service Engineer upon arrival. Equipment and/or work areas not sufficiently cleaned, accessible and safe for an engineer may lead to delays in servicing the equipment and could be subject to additional charges.

Yes	No	Review the actions below and answer "Yes" or "No". Provide explanation for any "No" answers in box below.
<input type="radio"/>	<input type="radio"/>	Instrument has been cleaned of hazardous substances. Rinse tubing or piping, wipe down scanner surfaces, or otherwise make sure removal of any dangerous residue. Make sure the area around the instrument is clean. If radioactivity has been used, perform a wipe test or other suitable survey.
<input type="radio"/>	<input type="radio"/>	Adequate space and clearance is provided to allow safe access for instrument service, repair or installation. In some cases this may require customer to move equipment from normal operating location prior to Cytiva arrival.
<input type="radio"/>	<input type="radio"/>	Consumables, such as columns or gels, have been removed or isolated from the instrument and from any area that may impede access to the instrument.
<input type="radio"/>	<input type="radio"/>	All buffer / waste vessels are labeled. Excess containers have been removed from the area to provide access.
Provide explanation for any "No" answers here:		
Equipment type / Product No:		Serial No:
I hereby confirm that the equipment specified above has been cleaned to remove any hazardous substances and that the area has been made safe and accessible.		
Name:		Company or institution:
Position or job title:		Date (YYYY/MM/DD):
Signed:		

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For local office contact information, visit cytiva.com/contact.
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Product return or servicing



Health & Safety Declaration Form for Product Return or Servicing

Return authorization number:		<i>and/or</i> Service Ticket/Request:	
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To make sure the mutual protection and safety of Cytiva personnel, our customers, transportation personnel and our environment, all equipment must be clean and free of any hazardous contaminants before shipping to Cytiva. To avoid delays in the processing of your equipment, complete this checklist and include it with your return.

- Note that items will NOT be accepted for servicing or return without this form
- Equipment which is not sufficiently cleaned prior to return to Cytiva may lead to delays in servicing the equipment and could be subject to additional charges
- Visible contamination will be assumed hazardous and additional cleaning and decontamination charges will be applied

Yes	No	Specify if the equipment has been in contact with any of the following:	
<input type="radio"/>	<input type="radio"/>	Radioactivity (specify)	
<input type="radio"/>	<input type="radio"/>	Infectious or hazardous biological substances (specify)	
<input type="radio"/>	<input type="radio"/>	Other Hazardous Chemicals (specify)	

Equipment must be decontaminated prior to service / return. Provide a telephone number where Cytiva can contact you for additional information concerning the system / equipment.

Telephone No:			
Liquid and/or gas in equipment is:	<input type="checkbox"/>	Water	
	<input type="checkbox"/>	Ethanol	
	<input type="checkbox"/>	None, empty	
	<input type="checkbox"/>	Argon, Helium, Nitrogen	
	<input type="checkbox"/>	Liquid Nitrogen	
		Other, specify	
Equipment type / Product No:		Serial No:	

I hereby confirm that the equipment specified above has been cleaned to remove any hazardous substances and that the area has been made safe and accessible.

Name:		Company or institution:	
Position or job title:		Date (YYYY/MM/DD)	
Signed:			

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To receive a return authorization number or service number, call local technical support or customer service.

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