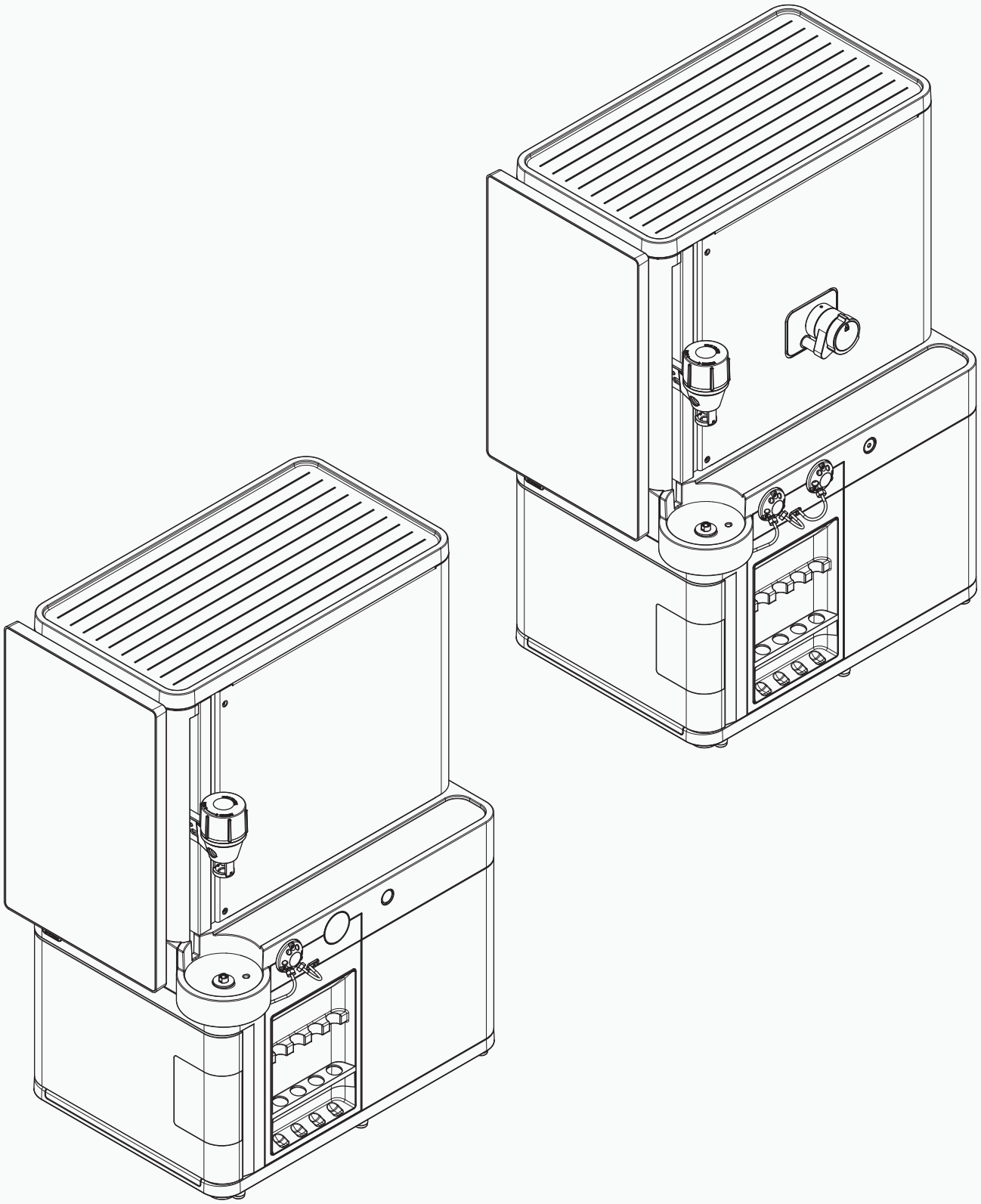

Operation Manual

Pure Excellence Chromatography Systems

BÜCHI

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1 About this document

This operation manual is applicable for all variants of the instrument.
Read this operation manual before operating the instrument and follow the instructions to ensure safe and trouble-free operation.
Keep this operation manual for later use and pass it on to any subsequent user or owner.
BÜCHI Labortechnik AG accepts no liability for damage, faults and malfunctions resulting from not following this operation manual.
If you have any questions after reading this operation manual:

▶ Contact BÜCHI Labortechnik AG Customer Service.

https://www.buchi.com/contact

1.1 Mark-ups and symbols

NOTE

This symbol draws attention to useful and important information.

☑ This character draws attention to a requirement that must be met before the instructions below are carried out.

▶ This character indicates an instruction that must be carried out by the user.

⇨ This character indicates the result of a correctly carried out instruction.

Mark-up	Explanation
Window	Software Windows are marked-up like this.
Tab	Tabs are marked-up like this.
Dialog	Dialogs are marked-up like this.
[Button]	Buttons are marked-up like this.
[Field names]	Field names are marked-up like this.
[Menu / Menu item]	Menus or menu items are marked-up like this.
Status	Status is marked-up like this.
Signal	Signals are marked-up like this.

1.2 Trademarks

Product names and registered or unregistered trademarks that are used in this document are used only for identification and remain the property of the owner in each case.

1.3 Connected instruments

In addition to this operation manual, follow the instructions and specifications in the documentation for the connected instruments.

2 Safety

2.1 Intended use

The instrument is designed and built for laboratories.
The instrument can be used to purify one or more compounds from a mixture.

2.2 Use other than intended

Use of any kind other than that described in the section Chapter 2.1 “Intended use”, page 8 and any application that does not comply with the technical specifications (see Chapter 3.5 “Technical data”, page 22) constitutes use other than that intended.
In particular, the following applications are not permissible:

- Use of the instrument with non-BUCHI instruments.
- Use of the instrument in overpressure situations.
- Use of the instrument with samples, which can explode or inflame (example: explosives, etc.) due to shock, friction, heat or spark formation.
- Use of the instrument with solvents containing peroxides.
- Use of the instrument in areas which require explosion-safe instruments.
- Use of the instrument without ventilation or fume hood.
- Use of the instrument for production purposes.
- Use of the instrument with non-clean solvent or solvent containing residues.
- Use of the instrument without solvent filter.
- Use of the instrument in an environment that does not correspond to the ambient conditions, especially when using DCM.
- Use of the instrument with toxic substances without appropriate safety measures.

2.3 Staff qualification

Unqualified persons are unable to identify risks and are therefore exposed to greater dangers.
The instrument may only be operated by suitably qualified laboratory staff.
These operating instructions are aimed at the following target groups:

Users

Users are persons that meet the following criteria:

- They have been instructed in the use of the instrument.
- They are familiar with the contents of these operating instructions and the applicable safety regulations and apply them.
- They are able on the basis of their training or professional experience to assess the risks associated with the use of the instrument.

Operator

The operator (generally the laboratory manager) is responsible for the following aspects:

- The instrument must be correctly installed, commissioned, operated and serviced.
- Only suitably qualified staff may be assigned the task of performing the operations described in these operating instructions.
- The staff must comply with the local applicable requirements and regulations for safe and hazard-conscious working practices.
- Safety-related incidents that occur while using the instrument should be reported to the manufacturer (quality@buchi.com).

BUCHI service technicians

Service technicians authorized by BUCHI have attended special training courses and are authorized by BÜCHI Labortechnik AG to carry out special servicing and repair measures.

2.4 Personal protective equipment

Depending on the application, hazards due to heat and/or corrosive chemicals may arise.

- ▶ Always wear appropriate personal protective equipment such as safety goggles, protective clothing and gloves.
- ▶ Make sure that the personal protective equipment meets the requirements of the safety data sheets for all chemicals used.

2.5 Warning notices in this document

Warning notices warn you of dangers that can occur when handling the instrument. There are four danger levels, each identifiable by the signal word used.

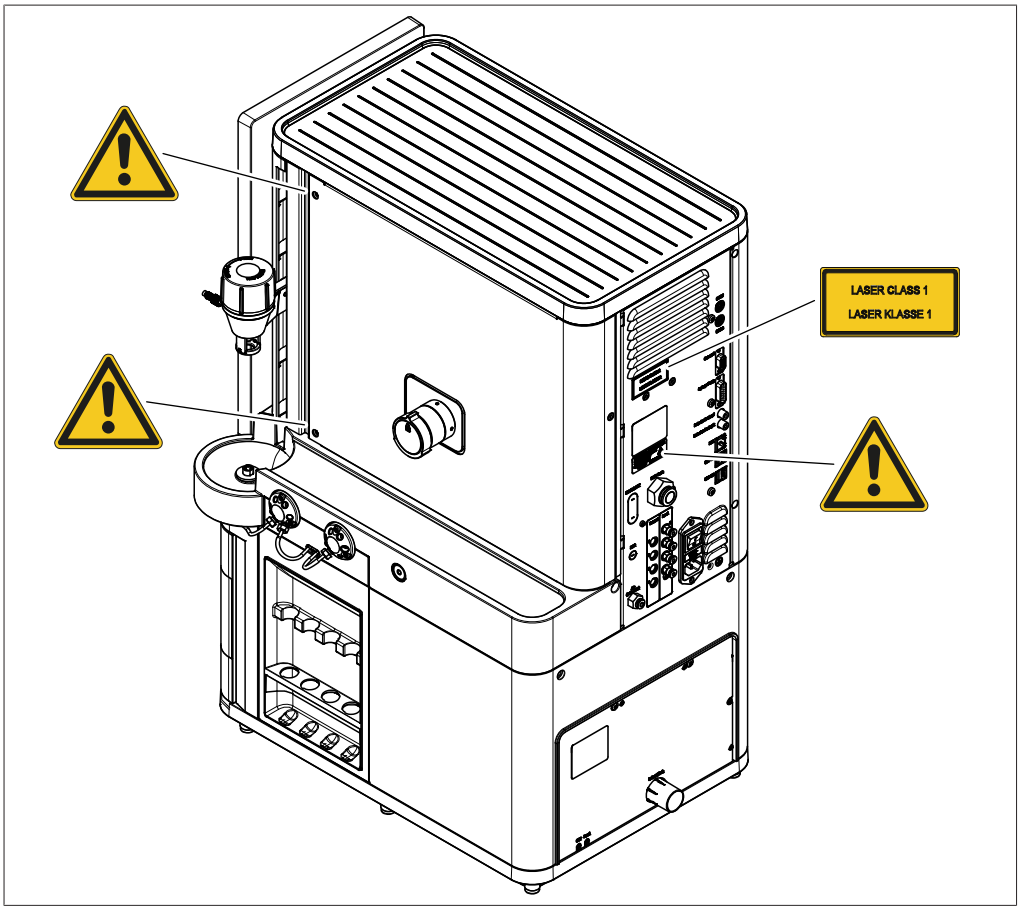
Signal word	Meaning
DANGER	Indicates a danger with a high level of risk which could result in death or serious injury if not prevented.
WARNING	Indicates a danger with a medium level of risk which could result in death or serious injury if not prevented.
CAUTION	Indicates a danger with a low level of risk which could result in minor or medium-severity injury if not prevented.
NOTICE	Indicates a danger that could result in damage to property.

2.6 Warning symbols

The following warning symbols are displayed in this operation manual or on the instrument.

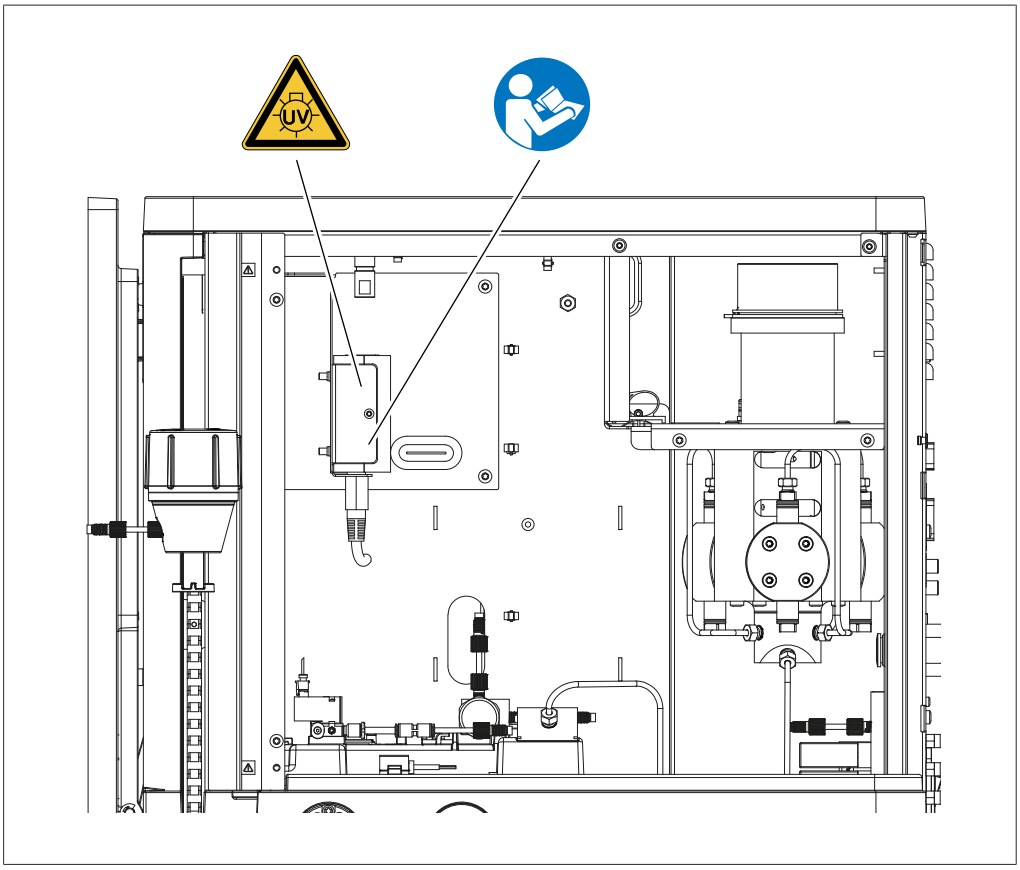
Symbol	Meaning
	Read manual
	General warning
	Dangerous electrical voltage
	Instrument damage
	UV radiation
	Laser beam
	Laser class 1

Location of the warning symbols on the outside of the instrument

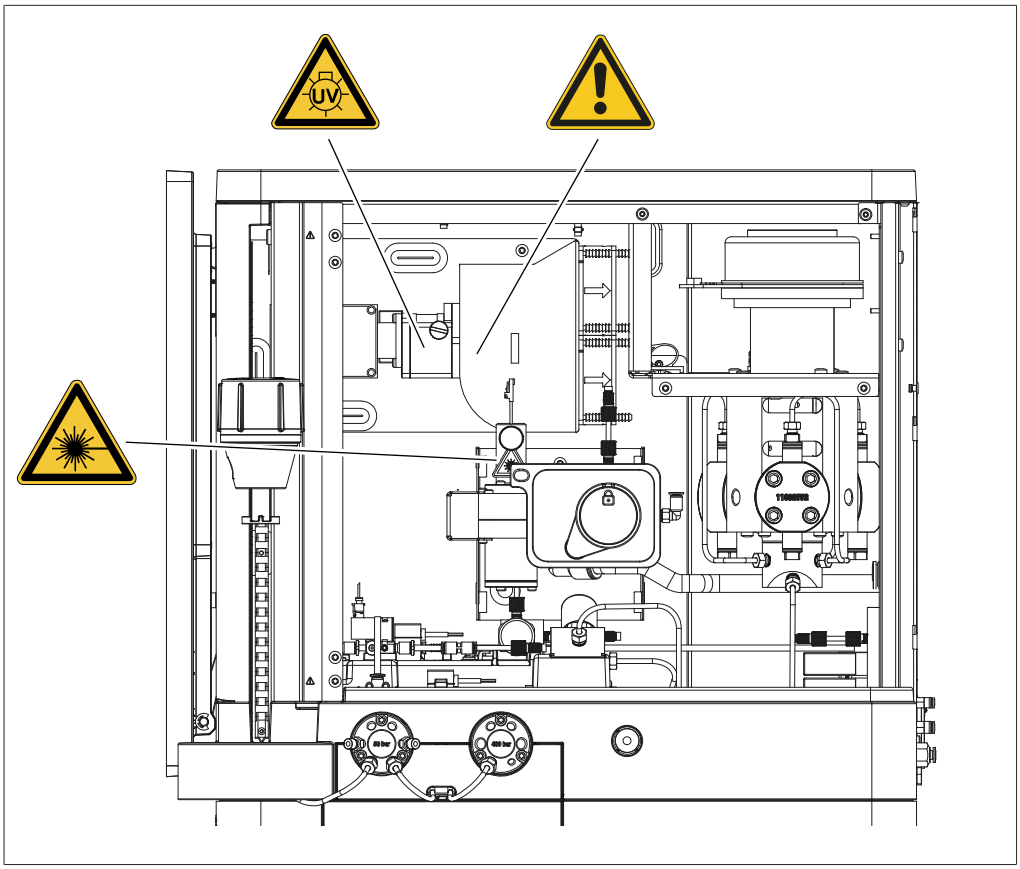


Location of the warning symbols on the inside of the instrument

NOTE
This only applies to Pure Excellence C-905.



NOTE
This only applies to Pure Excellence C-910, C-915 and C-950.



2.7 Residual risks

The instrument has been developed and manufactured using the latest technological advances. Nevertheless, risks to persons, property or the environment can arise if the instrument is used incorrectly.
Appropriate warnings in this manual serve to alert the user to these residual dangers.

2.7.1 Faults during operation

If an instrument is damaged, sharp edges, glass splinters, moving parts or exposed electrical wires can cause injuries.

- ▶ Regularly check instruments for visible damage.
- ▶ If faults occur, switch off the instrument immediately, unplug the power cord and inform the operator.
- ▶ Do not continue to use instruments that are damaged.

2.7.2 Dangerous vapors

The use of the instrument can produce dangerous vapors that are capable of causing life-threatening toxic effects.

- ▶ Do not inhale any vapors produced during processing.
- ▶ Ensure that vapors are removed by a suitable fume hood.
- ▶ Only use the instrument in well ventilated areas.
- ▶ If vapors escape from connections, check the seals concerned and replace them if necessary.
- ▶ Do not process any unknown fluids.
- ▶ Observe the safety data sheets for all substances used.

2.7.3 Dangerous particles

The use of the instrument can produce dangerous particles that can cause life-threatening toxic effects.

- ▶ Do not inhale any particles produced during processing.
- ▶ Ensure that particles are removed by a suitable fume hood.
- ▶ Only use the instrument in well ventilated areas.
- ▶ If particles escape from connections, check the seals concerned and replace them if necessary.
- ▶ Do not process any unknown fluids.
- ▶ Observe the safety data sheets for all substances used.

2.7.4 Dangerous solvents

The use of the instrument with solvents can produce dangerous vapors that are hazardous to health.
Direct contact with solvents and the inhalation of solvents can cause burns or eye injury.

- ▶ Only operate the instrument wearing safety goggles, protective gloves resistant to the solvent and protective clothing.
- ▶ Only operate the instrument in well ventilated areas.
- ▶ Do not inhale any vapors produced during processing.
- ▶ Do not process any unknown fluids.
- ▶ Observe the safety data sheets for all substances used.
- ▶ If solvents leak, check the connections and replace them if necessary.

2.7.5 Glass breakage

Broken glass can cause severe cuts.
Damaged glass components may implode if subjected to a vacuum.
Minor damage to the ground joints impairs the sealing effect and may therefore diminish performance.

- ▶ Handle the flask and other glass components carefully and do not drop them.
- ▶ Always visually inspect glass components for damage every time they are to be used.
- ▶ Do not continue to use glass components that are damaged.
- ▶ Always wear protective gloves when disposing of broken glass.

2.7.6 Leaking liquids

Solvent lines and fittings can break during operation.
Fittings that are not secured tightly can cause leakage.
Incorrectly installed solvent lines can cause leakage. Leaking water or moisture can lead to a short circuit.
The packaging for transport is designed to prevent condensation.

- ▶ Make sure that the fittings are tight during installation.
- ▶ Frequently check the solvent lines and fittings.
- ▶ Immediately replace broken solvent lines and fittings before continuing operation.

2.7.7 Aggressive solvents

When using aggressive solvents, increased maintenance is to be expected. Leaving solvents such as dichloromethane in the chromatography system can cause instrument damage.

- ▶ Perform the *[Cleaning]* procedure and clean the injection port after using aggressive solvents.
- ▶ Do not leave aggressive solvents inside the chromatography system.

2.7.8 Pump running dry

Faulty tubing can cause the pump to break down and run dry.

- ▶ Make sure that the solvent tubes are connected properly.
- ▶ Make sure that the pump does not run dry.

2.7.9 Live parts in the housing

Live parts are located in the housing.

- ▶ Ensure that the screws on the electronics side panel are always tightened properly.
- ▶ Do not operate the instrument while the electronics side panel is open.

2.8 Modifications

Unauthorized modifications can affect safety and lead to accidents.

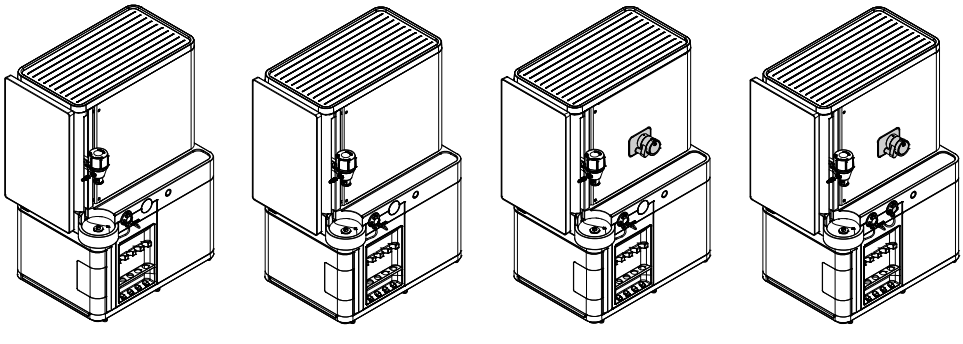
- ▶ Use only genuine BUCHI accessories, spare parts and consumables.
- ▶ Carry out technical changes only with prior written approval from BUCHI.
- ▶ Only allow changes to be made by BUCHI service technicians.

BUCHI accepts no liability for damage, faults and malfunctions resulting from unauthorized modifications.

3 Product description

3.1 Description of function

The Pure Excellence Chromatography systems are designed to purify complex samples.
The instruments cover the entire chromatography process, from injecting liquid or solid samples, separating samples on a cartridge or column to collecting the desired fractions.
The interface guides through the operating process while allowing to make adjustments and control the operation.



Pure Excellence C-905 Pure Excellence C-910 Pure Excellence C-915 Pure Excellence C-950

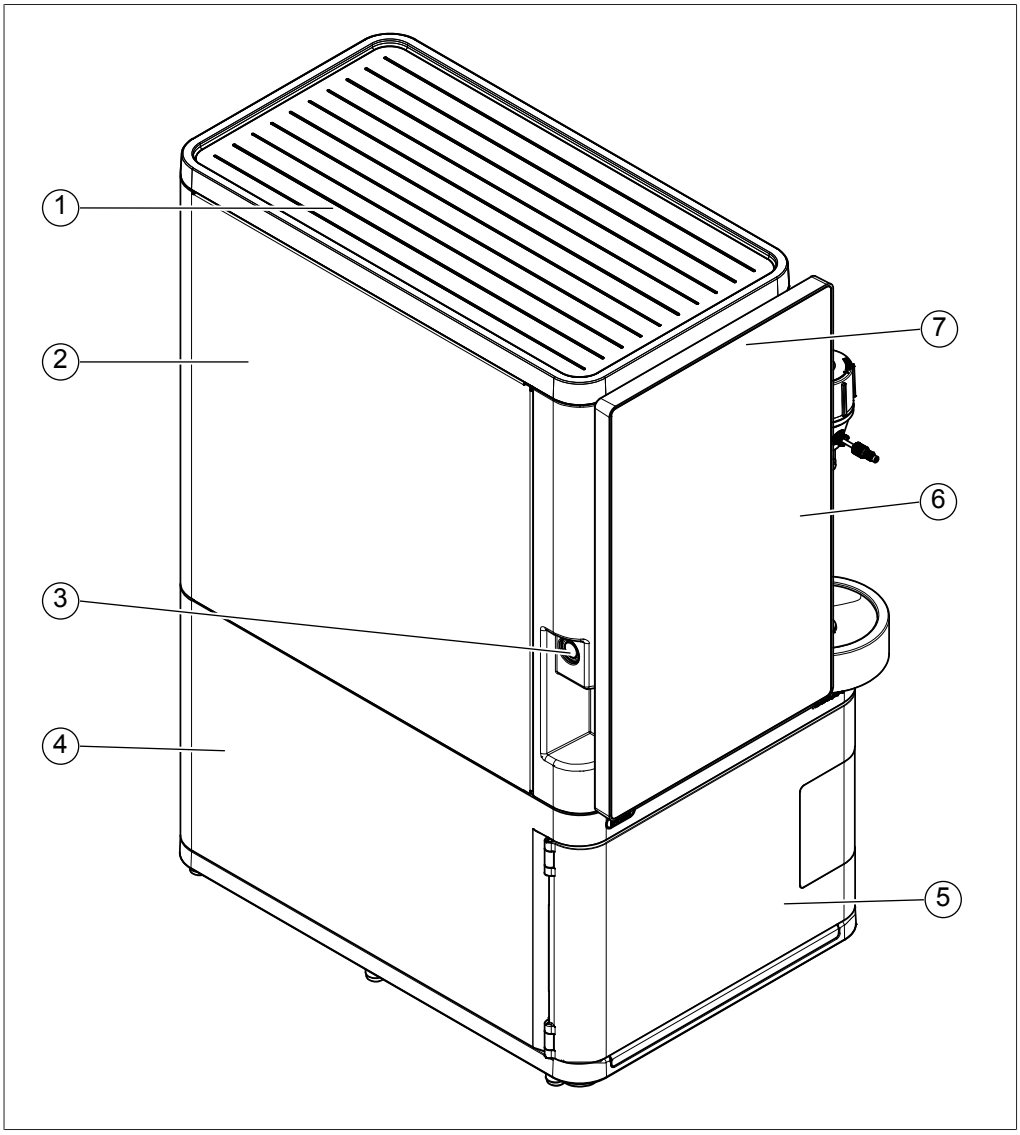
The instrument is available in four different variants, which differ in terms of their functionalities:

Function	C-905	C-910	C-915	C-950
Using four different solvents	X	X	X	X
Performing Flash chromatography	X	X	X	X
Performing Prep chromatography				X
Performing UV scanning		X	X	X
Identifying compounds by UV detection	X	X	X	X
Identifying compounds by ELS detection			X	X

NOTE
This operation manual is intended for all instrument variants. Figures and instructions apply to all instrument variants unless noted otherwise.

3.2 Configuration

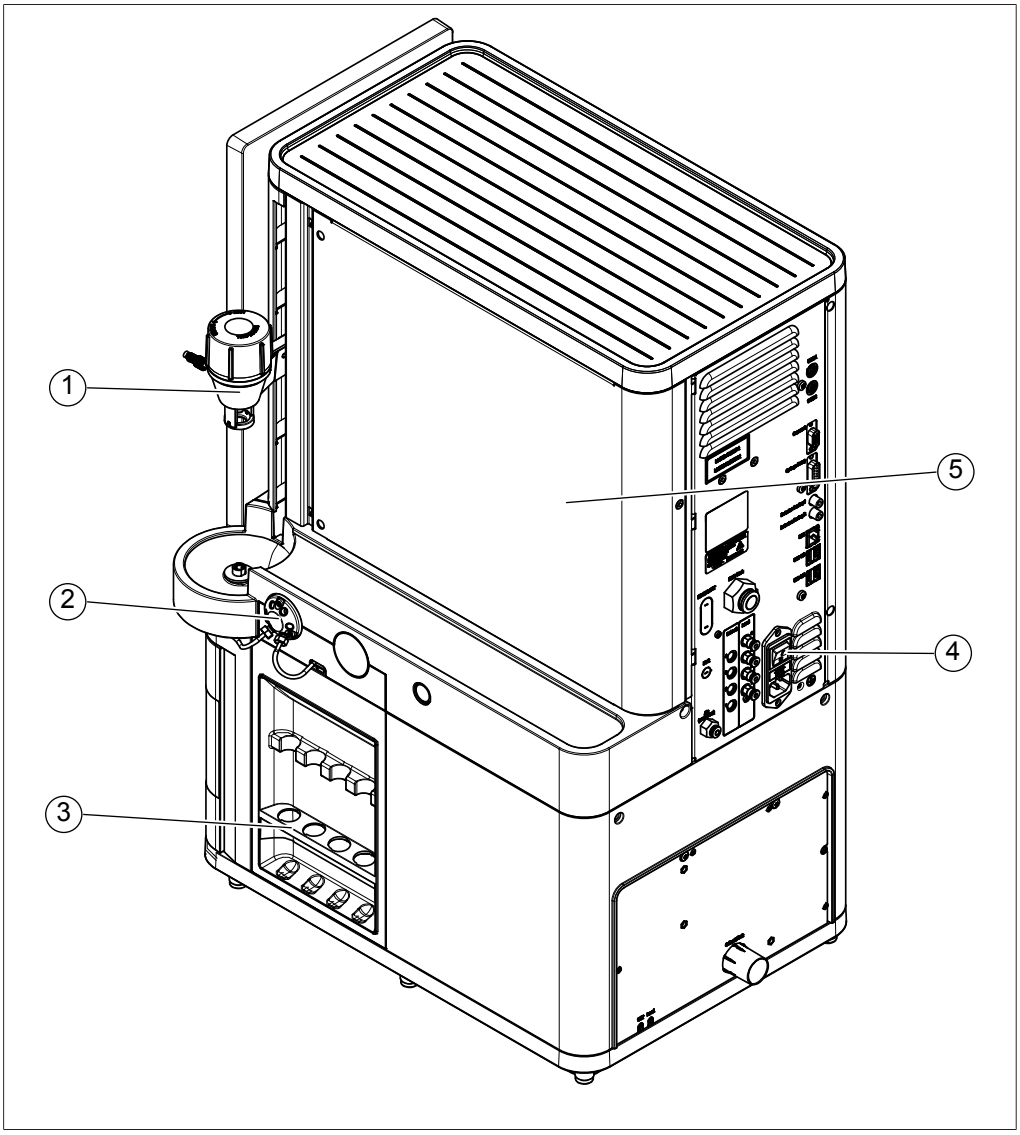
3.2.1 Front view



1	Top surface	2	Electronics door (magnetic)
3	On/Off button	4	Fraction collector
5	Protective door of the fraction collector	6	Interface
7	Camera		

3.2.2 Rear view

Pure Excellence C-905/C-910



1 Cartridge holder
with cartridge releaser and brake

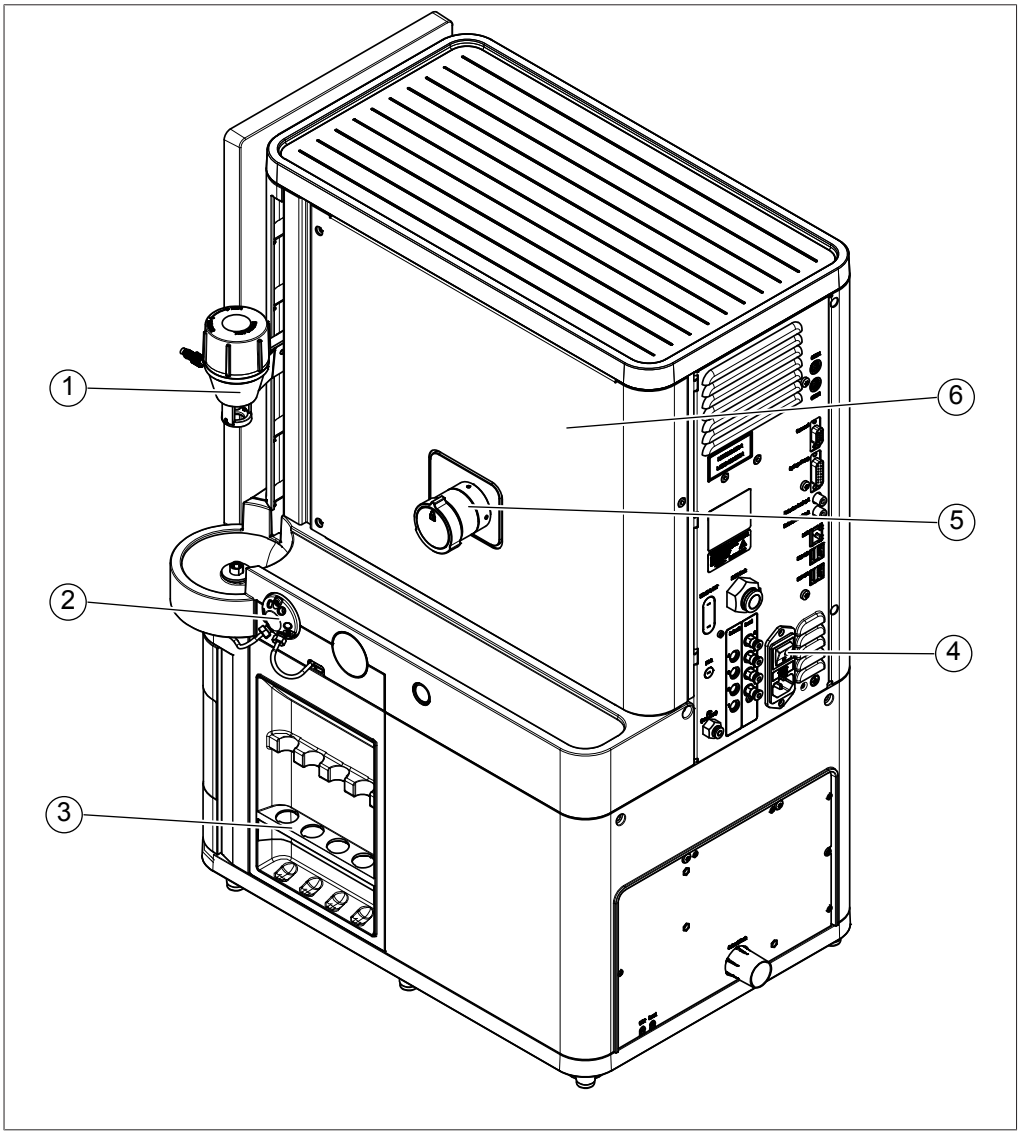
2 Sample injection valve (50 bar), overflow outlet, sample loop connections

3 Vial holder for sample overflow

4 Main switch

5 Mechanics door (magnetic)

Pure Excellence C-915



1 Cartridge holder
with cartridge releaser and brake

2 Sample injection valve (50 bar), overflow outlet, sample loop connections

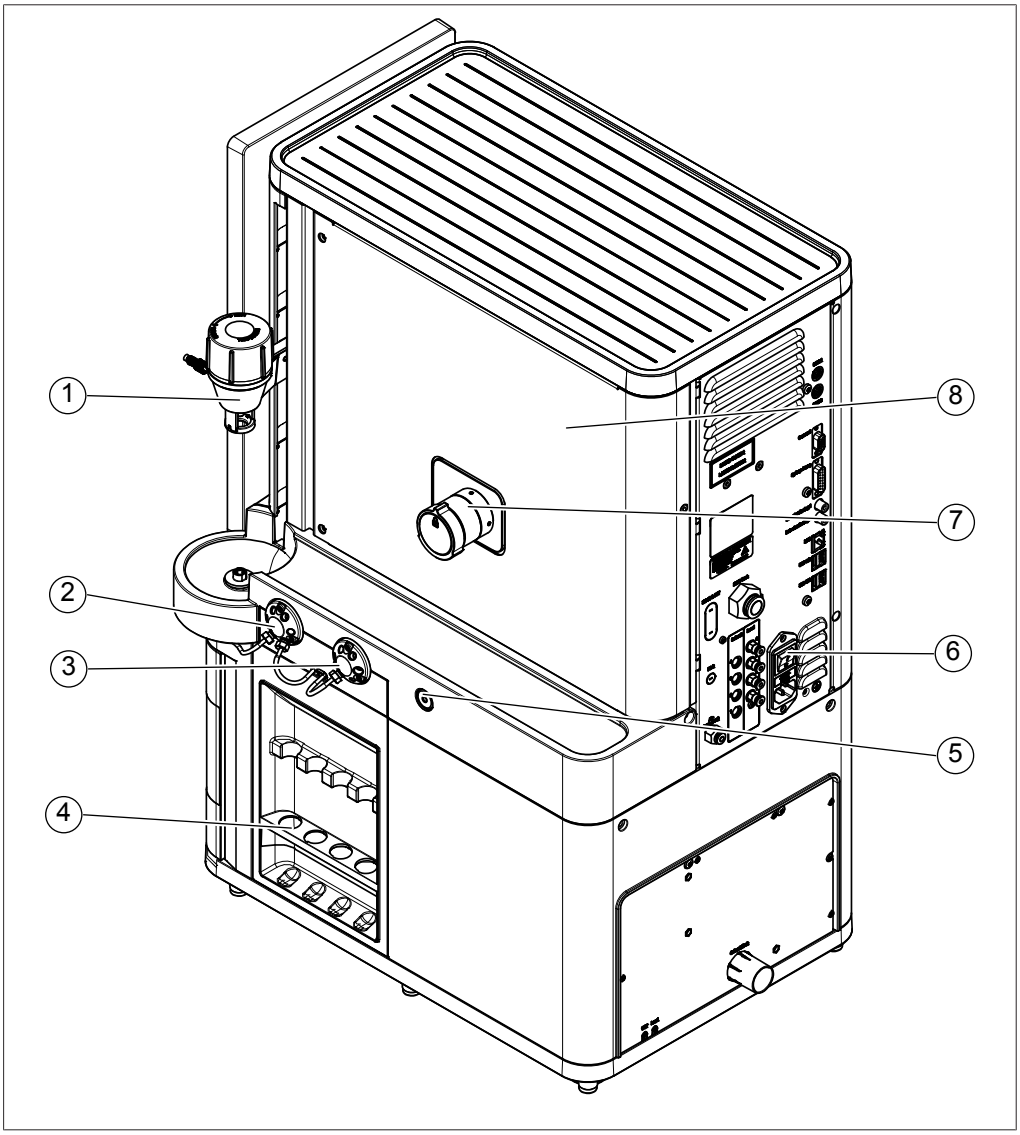
3 Vial holder for sample overflow

4 Main switch

5 ELSD valve head

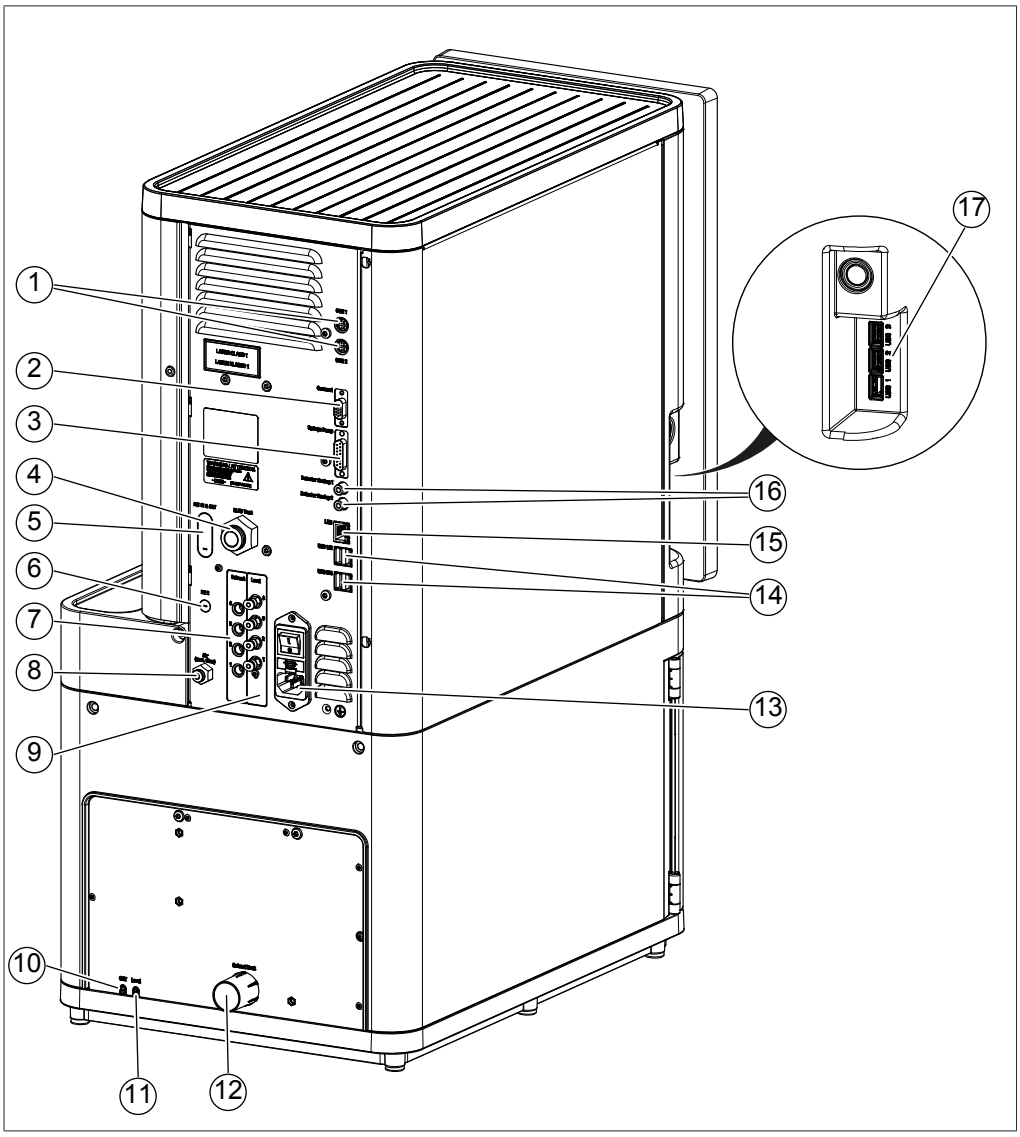
6 Mechanics door (magnetic)

Pure Excellence C-950



1	Cartridge holder with cartridge releaser and brake	2	Sample injection valve (50 bar), overflow outlet, sample loop connections
3	Sample injection valve (400 bar), overflow outlet, sample loop connections	4	Vial holder for sample overflow
5	Column connection to detectors	6	Main switch
7	ELSD valve head	8	Mechanics door (magnetic)

3.2.3 Connections



1	BUCHI BUS connections	2	Carousel connection
3	Syringe pump connection	4	ELSD exhaust (Pure Excellence C-915/C-950 only)
5	External detector IN/OUT	6	Second fraction collector OUT
7	Solvent line inlets	8	Pressurized air connection
9	Level sensor connections	10	Solvent line outlet (waste)
11	Waste level sensor outlet	12	Solvent vent connection
13	Power supply connection	14	USB ports 1/2 and 3/4
15	LAN port	16	Analog detector connections
17	USB ports 1, 2 and 3		

3.3 Scope of delivery

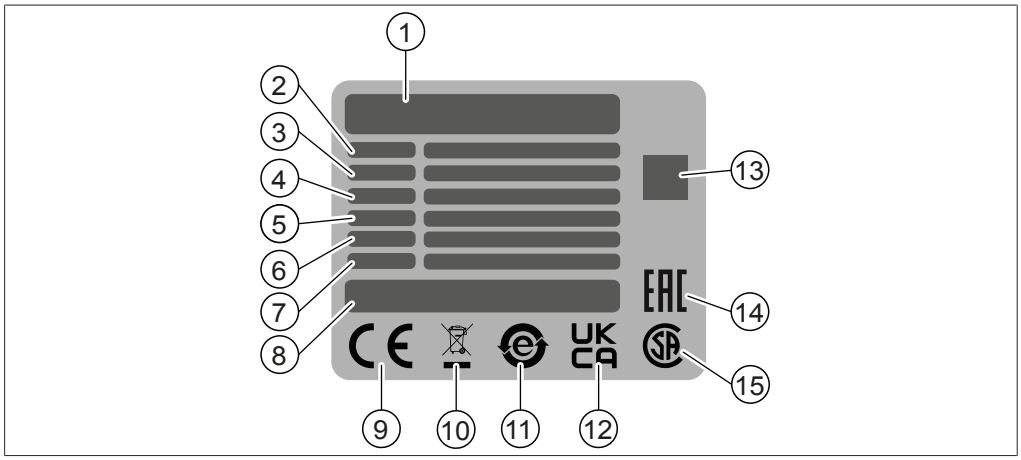
NOTE

The scope of delivery depends on the configuration of the purchase order.

Accessories are delivered as per the purchase order, order confirmation, and delivery note.

3.4 Type plate

The type plate identifies the instrument. The following type plate is an example. For more details refer to the type plate on the instrument.
The type plate is located at the rear of the instrument.



1	Company name and address	2	Instrument name
3	Serial number	4	Input voltage range
5	Frequency	6	Power consumption maximum
7	Year of manufacture	8	Product origin
9	Symbol for "CE conformity"	10	Symbol for "Do not dispose of as household waste"
11	Symbol for "electronics recycling"	12	Symbol for "UK Conformity Assessed"
13	QR-Code contains "Item number, Serial number"	14	Symbol for "Eurasian Conformity" (optional)
15	Symbol for "CSA certified" (optional)		

3.5 Technical data

3.5.1 Pure Excellence Chromatography Systems

Specification	C-905	C-910	C-915	C-950
Dimensions (W x D x H)	330 x 470 x 705 mm	330 x 470 x 705 mm	330 x 470 x 705 mm	330 x 470 x 705 mm
Weight	38 kg	40 kg	44 kg	48 kg
Power consumption	150 W	200 W	200 W	350 W
Connection voltage	100–240 VAC ± 10%	100–240 VAC ± 10%	100–240 VAC ± 10%	100–240 VAC ± 10%
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Fuse	T: 3.15 A H: 250 V	T: 4 A H: 250 V	T: 4 A H: 250 V	T: 6.3 A H: 250 V
Overvoltage category	II	II	II	II
Pollution degree	2	2	2	2
Min. clearance on all sides	200 mm	200 mm	200 mm	200 mm
User interface	15.6'' capacitive touch screen, solvent resistant	15.6'' capacitive touch screen, solvent resistant	15.6'' capacitive touch screen, solvent resistant	15.6'' capacitive touch screen, solvent resistant
Connections	2 x BUCHI BUS External devices connections (e.g. syringe pump) External detector IN/OUT 2nd fraction collector OUT Analog detector connection 5x USB ports 1x LAN port (RJ45)	2 x BUCHI BUS External devices connections (e.g. syringe pump) External detector IN/OUT 2nd fraction collector OUT Analog detector connection 5x USB ports 1x LAN port (RJ45)	2 x BUCHI BUS External devices connections (e.g. syringe pump) External detector IN/OUT 2nd fraction collector OUT Analog detector connection 5x USB ports 1x LAN port (RJ45)	2 x BUCHI BUS External devices connections (e.g. syringe pump) External detector IN/OUT 2nd fraction collector OUT Analog detector connection 5x USB ports 1x LAN port (RJ45)
Certification	CE, UL/CSA	CE, UL/CSA	CE, UL/CSA	CE, UL/CSA

3.5.2 Pump

Specification	C-905	C-910	C-915	C-950
Type	Flash, 3 pistons radially arranged	Flash, 3 pistons radially arranged	Flash, 3 pistons radially arranged	Flash/Prep, 3 pistons radially arranged
Pressure limit	50 bar	50 bar	50 bar	Flash: 50 bar Prep: 400 bar
Max. operational flow rate	300 mL/min	300 mL/min	300 mL/min	Flash: 300 mL/min Prep: 150 mL/min
Flow rate accuracy	±1 mL at < 50 mL/min ± 2% at > 50 mL/min	±1 mL at < 50 mL/min ± 2% at > 50 mL/min	±1 mL at < 50 mL/min ± 2% at > 50 mL/min	±1 mL at < 50 mL/min ± 2% at > 50 mL/min
Flow rate reproducibility	less than ±1% across entire flow rate range	less than ±1% across entire flow rate range	less than ±1% across entire flow rate range	less than ±1% across entire flow rate range
Gradient	Isocratic, linear, step, gradient (binary to quaternary)	Isocratic, linear, step, gradient (binary to quaternary)	Isocratic, linear, step, gradient (binary to quaternary)	Isocratic, linear, step, gradient (binary to quaternary)
Gradient accuracy	less than ±1% across entire flow rate range (binary gradient)	less than ±1% across entire flow rate range (binary gradient)	less than ±1% across entire flow rate range (binary gradient)	less than ±1% across entire flow rate range (binary gradient)
Solvent lines	4	4	4	4

3.5.3 UV detector

Specification	C-905	C-910	C-915	C-950
Technology	4 fixed wavelengths 254 nm, 275 nm 325 nm, 365 nm	DAD	DAD	DAD
UV Vis-range	-	200–800 nm	200–800 nm	200–800 nm
DAD scan	-	Entire range, 3D live	Entire range, 3D live	Entire range, 3D live
Light sources	LED	Halogen/ Deuterium	Halogen/ Deuterium	Halogen/ Deuterium
Lamp lifetime	min. 2,000 h	4,000/2,000 h	4,000/2,000 h	4,000/2,000 h
Flow cell path	0.3 mm	0.3 mm	0.3 mm	0.3 mm

3.5.4 ELSD detector

Specification	C-905	C-910	C-915	C-950
Integration	-	Upgradeable	Integrated	Integrated
Technology	-	-	Nano-pulse injection	Nano-pulse injection
Sample loss	-	-	30 µL/min	30 µL/min
Light output laser	-	-	1 mW	1 mW
Pressure spray air	-	-	3–3.5 bar	3–3.5 bar
Flow rate air	-	-	2.5–3 L/min	2.5–3 L/min
Max. air pressure (purge)	8 bar	8 bar	8 bar	8 bar
Air quality	Standard (dry, oil- and dust-free air)	Standard (dry, oil- and dust-free air)	Standard (dry, oil- and dust-free air)	Standard (dry, oil- and dust-free air)

3.5.5 Fraction collector

Specification	C-9XX
Illuminated fraction collector bay	Standard; on/off function
Unique RFID reader for racks	Standard
Rack capacity	max. 2
Rack types	All racks with dimensions: max. length 320 mm max. width 113 mm
Max. collection capacity	Unlimited with funnel rack; 3.75 L with 18 x 150 mm rack
Max. number of fractions	150 with no rack exchange (18 x 150 mm racks)

3.5.6 Injection mode

Specification	C-905	C-910	C-915	C-950
Available modes	Liquid or solid	Liquid or solid	Liquid or solid	Liquid or solid
Liquid injection	Automatic via the sample injection valve and loop	Automatic via the sample injection valve and loop	Automatic via the sample injection valve and loop	Flash: automatic via the sample injection valve and loop Prep: automatic via the sample injection valve and loop (high pressure solvent path)

Specification	C-905	C-910	C-915	C-950
Solid loading	Connected to the automatic injection valve	Connected to the automatic injection valve	Connected to the automatic injection valve	Connected to the automatic injection valve (Flash only)

3.5.7 Flash cartridge sizes

Specification	C-9XX
Integrated cartridge holder	up to 330 g
Optional external cartridge support	up to 5 kg

3.5.8 Prep-HPLC column sizes

Specification	C-905	C-910	C-915	C-950
On instrument	-	-	-	up to 30 mm ID
External column support	-	-	-	up to 70 mm ID

3.5.9 Safety

Specification	C-9XX
Pressure sensor	Standard
Internal vapor sensor	Standard
Active solvent and waste level monitoring	Standard
Cartridge holder with integrated drainage system	Standard
Cartridge holder with release mechanism and safety brake	Standard
Fume enclosure with active ventilation	Standard
Leakage control in fraction collector bay	Standard
Solvent bottle platform	Optional

3.5.10 Ambient conditions

For indoor use only.

Specification	Value
Max. altitude above sea level	2,000 m
Ambient and storage temperature	5−40 °C
Max. relative humidity	80% for temperatures up to 31 °C decreasing linearly to 50% relative humidity at 40 °C

3.5.11 Materials

Pump

Component	Material
Machined parts	Stainless steel 1.4305, 1.4404, aluminum
Metal lines	Stainless steel 1.4404
Plastic lines	FEP (Fluorinated ethylene propylene)

Component	Material
Pump pistons	Ceramic
Piston sealings	PTFE (Polytetrafluoroethylene)/ carbon blend
Piston guide	PEEK (Polyetheretherketone)/ carbon blend
Sealings, rubber parts	FFKM (Perfluoroelastomer)

Pure Excellence Chromatography Systems

Component	Material
Housing	PBT (Polybutylene terephthalate), PUR (Polyurethane) coated, Stainless steel coated
Touch screen	Aluminum coated, glass
Metal lines	Stainless steel 1.4404
Machined parts	Stainless steel 1.4305

3.5.12 Installation site

The installation site must meet the following requirements:

- The installation site has a firm, level and nonslip surface.
- The installation site has a fume hood.
- The installation site has an own mains outlet socket for the instrument.
- The installation site meets the specifications according to the technical data (e.g. weight, dimension, etc.). See Chapter 3.5 “Technical data”, page 22
- The installation site has enough space that cables / tubes can be routed safely.
- The installation site allows that the power supply can be disconnected at any time in case of an emergency.
- The installation site has no obstacles (e.g. water taps, drains, etc.).
- The installation site is not exposed to external thermal loads, such as direct solar radiation.
- The installation site meets the requirements of the safety data sheets for all solvents and samples used.
- The installation site meets the safety requirements. See Chapter 2 “Safety”, page 8
- The installation site meets the requirements for the connected devices. See related documentation.
- The installation site fits basic electromagnetic environment / Emission Class B.

4 Transport and storage

4.1 Transport

NOTICE

Risk of breakage due to incorrect transportation

- ▶ Make sure that the instrument is fully dismantled.
- ▶ Pack all instrument components properly to prevent breakage. Use the original packaging whenever possible.
- ▶ Avoid sharp movements during transit.

- ▶ After transporting, check the instrument and all glass components for damage.
- ▶ Damage that has occurred in transit should be reported to the carrier.
- ▶ Keep packaging for future transportation.

4.2 Storage

Precondition:

☑ The instrument is purged with a mild solvent, such as Isopropanol (see Chapter 8.2 “Removing solvent from a cartridge”, page 57).

- ▶ Make sure that the ambient conditions are complied with (see Chapter 3.5 “Technical data”, page 22).
- ▶ Wherever possible, store the instrument in its original packaging.
- ▶ Make sure that Isopropanol is inside the pump. Never store the instrument with an empty pump.
- ▶ After storage, check the instrument, all glass components, seals and tubing for damage and replace if necessary.

4.3 Lifting the instrument

⚠ WARNING

Danger due to incorrect transportation

The possible consequences are crushing injuries, cuts and breakages.

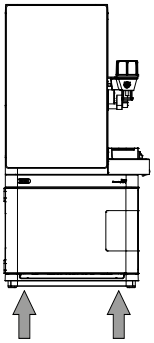
- ▶ The instrument should be transported by two persons at the same time.
- ▶ Lift the instrument at the points indicated.

NOTICE

Dragging the instrument can damage the feet of the instrument.

- ▶ Lift the instrument when positioning or re-locating.

▶ Lift the instrument at the points indicated.



5 Installation

5.1 Before installation

NOTICE

Risk of instrument damage from switching it on too early

Switching on the instrument too early after transportation can cause damage. Moisture can lead to a short circuit and damage the instrument.

- ▶ Climatize the instrument after transportation.
- ▶ Switch on the air conditioning before installing the instrument.

5.2 Establishing electrical connections

NOTICE

Risk of instrument damage because of not suitable power supply cables.

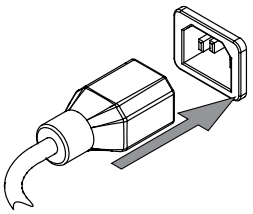
Not suitable power supply cables can cause bad performance or an instrument damage

- ▶ Use only BUCHI power supply cables.

Precondition:

- ☑ The electrical installation is as specified on the type plate.
- ☑ The electrical installation is equipped with a proper grounding system.
- ☑ The electrical installation is equipped with suitable fuses and electrical safety features.
- ☑ The installation site is as specified in the technical date. See Chapter 3.5 “Technical data”, page 22.

▶ Connect the power supply cable to the connection on the instrument. See Chapter 3.2 “Configuration”, page 16.

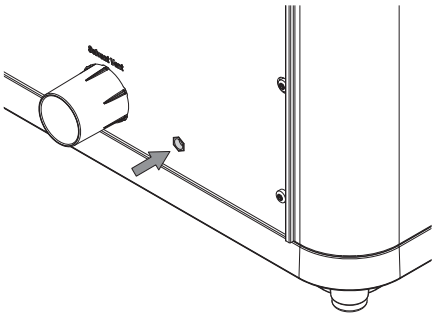


▶ Connect the mains plug to an own mains outlet socket.

5.3 Securing against earthquakes

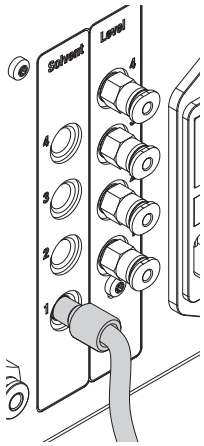
The instrument has an earthquake fixing point to protect the device against falling.

▶ Tie a lashing mount to the fixing point using strong chord or a wire.



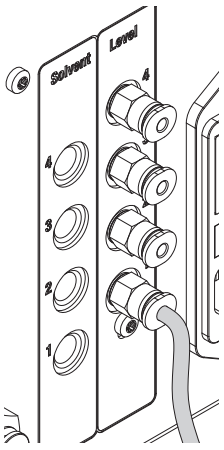
5.4 Installing the solvent line

▶ Attach the solvent line to the instrument.
▶ Place the other end of the solvent line into the solvent bottle.
▶ If required, repeat the previous steps on the other three solvent line inlets.



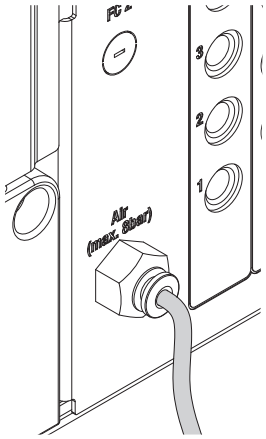
5.5 Installing the level sensor

▶ Attach the level sensor to the instrument.
▶ Place the other end of the solvent line into the solvent bottle.
▶ If required, repeat the previous steps on the other three level sensor connections.



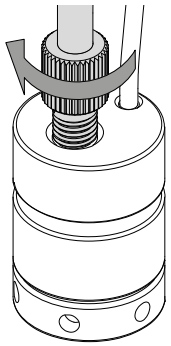
5.6 Installing the pressurized air

▶ Attach the compressed air connection to the instrument.

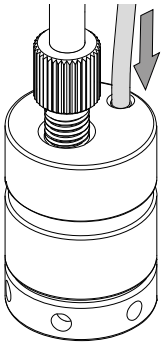


5.7 Installing the solvent filter

▶ Screw in the solvent line.

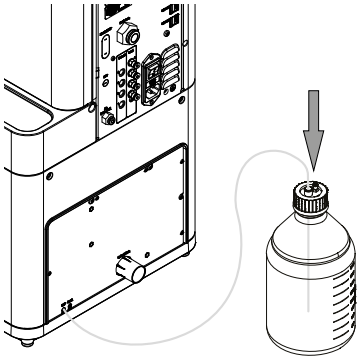


▶ Attach the level sensor.
▶ Repeat the previous steps for each solvent line and level sensor.



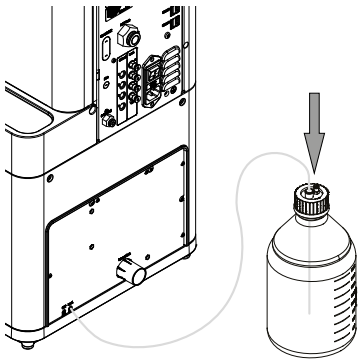
5.8 Installing the waste line

▶ Place the waste line from the solvent line outlet into the waste bottle.
▶ Ensure that the waste line is positioned above the max. fill level of the waste bottle.



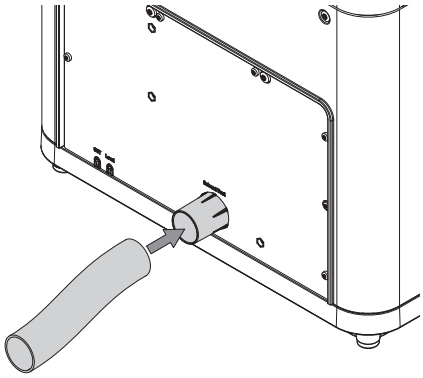
5.9 Installing the waste level sensor

- ▶ Place the waste level sensor line into the waste bottle.
- ▶ Ensure that the waste level sensor line is positioned at the max. fill level of the waste bottle.



5.10 Installing the solvent vent

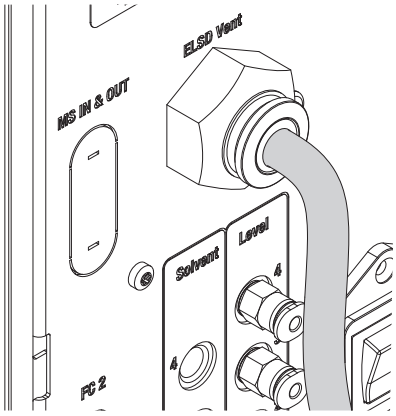
- ▶ Attach the hose to the solvent vent connection.



5.11 Installing the ELSD exhaust

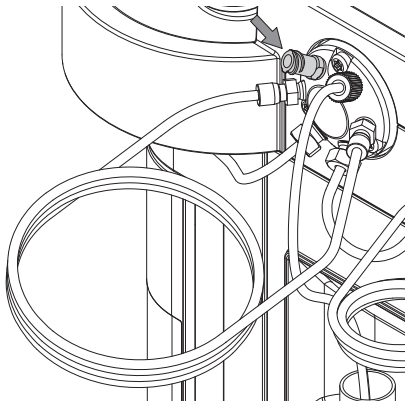
NOTE
This procedure only applies to Pure Excellence C-915 and C-950.

- ▶ Attach the ELSD exhaust hose to the instrument.



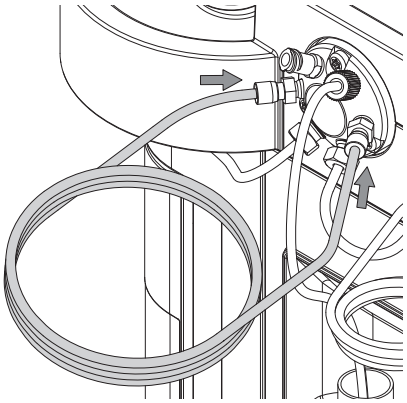
5.12 Installing the solvent injection port

► Screw in the solvent injection port on the instrument.



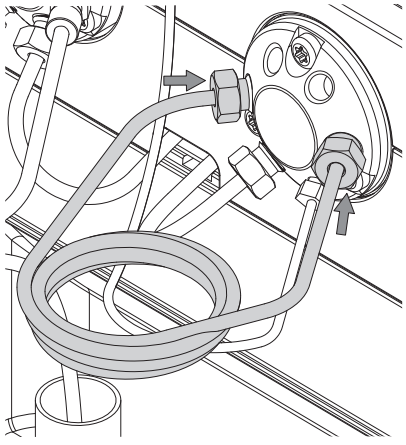
5.13 Installing the sample loop

► Attach the Flash sample loop at the two sample loop connections.



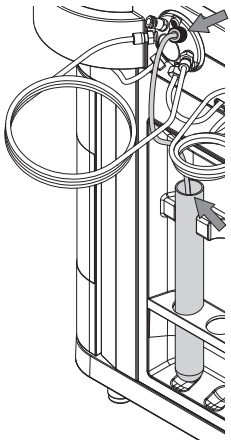
For Pure Excellence C-950

► Screw in the Prep sample loop at the two sample loop connections.
► Use a 3/8 inch wrench to carefully fasten the nuts 1/4 turn beyond finger-tight.



5.14 Installing the overflow outlet

- ▶ Attach the overflow outlet to the instrument.
- ▶ Place the overflow line into the vial.



NOTE
Vials sized from 16x100 mm to 18x160 mm can be placed into the vial holder.

5.15 Installing the column connection lines

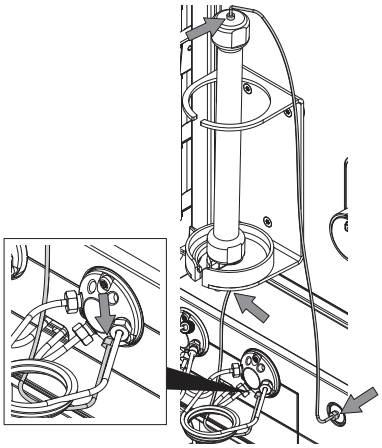
NOTE
This procedure only applies to Pure Excellence C-950.

NOTICE

Earth the column before installation.

- ▶ Before installation, make sure that the column is earthed to prevent problems with electrostatic discharge.

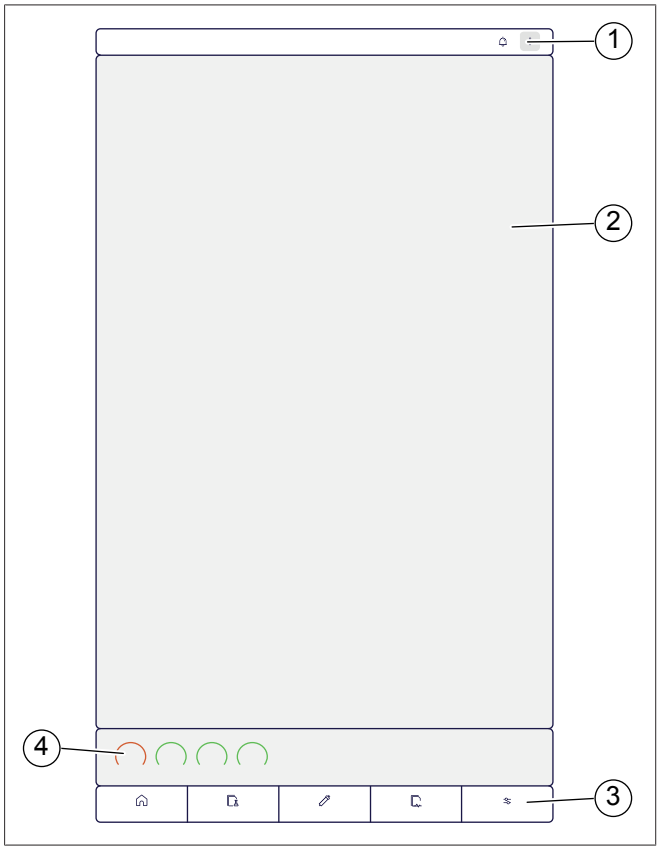
- ▶ Screw in the column connection line at the four indicated connections.



6 Interface

NOTE
The available functions depend on the instrument type. Some features described may not be visible on your instrument.

6.1 Layout



No.	Description	Function
1	Top bar	View system messages. See Chapter 6.6 “System messages”, page 38.
2	Content area	Displays the currently selected content.
3	Navigation bar	Access the main menus. See Chapter 6.2 “Navigation bar”, page 36.
4	Widgets	Display real-time pressure parameters of the instrument.

6.2 Navigation bar

The navigation bar consists of the following menus:

Icon	Description	Function
	*Home* menu	Access menus via shortcuts. Contact BUCHI support.
	*Methods* menu	Search the method library. Load and duplicate methods. See Chapter 7.4 “Performing a separation using a method”, page 46, Chapter 7.9 “Creating and editing methods”, page 52.
	*Chromatography* menu	Adjust separation parameters. Start and monitor a separation. See Chapter 7.5 “Performing a separation manually”, page 47.
	*Runs* menu	View carried out runs. Export run data.
	*Instrument* menu	Perform cleaning and servicing. Configure the instrument. Adjust the system settings. See Chapter 6.5 “Instrument menu”, page 37 and Chapter 8 “Cleaning and servicing”, page 56.

6.3 Function buttons

Icon	Description	Function
	*[Start]*	Start a separation.
	*[Pause]*	Pause a separation.
	*[Skip]*	Skip equilibration.
	[Options]	Open the options menu.
	*[Activate/Deactivate]*	Activate/deactivate a function.
	*[Back]*	Go back to the previous menu.
	*[Full screen]*	View a panel in full screen mode.
	*[Add]*	Add a new item.
	*[Close]*	Close a dialog.
	*[Reset]*	Reset parameters.
	*[Sort]*	Sort data (ascending/descending).
	*[Load]*	Load data.

Icon	Description	Function
	*[Favorite]*	Add an item to the favorites list. Favorites appear at the top of a selection list.
	[Confirm]	Confirm an input.
	*[Edit]*	Edit settings.
	*[Delete]*	Delete an item.
	*[Configure]*	Adjust the configuration of an item.
	*[Comment]*	Add or read a comment regarding an item.

6.4 Entering values

Numbers and text can be entered directly on the interface.

- ▶ Tap an entry field.

⇨ An input dialog appears.

- ▶ Enter the value.
- ▶ Confirm the value.

6.5 Instrument menu

6.5.1 Daily routine

Description	Function
[Set lines]	Assign solvents to the solvent lines and set the levels.
[Cleaning]	Clean the instrument after use.
[Priming]	Prime the instrument before use. See Chapter 7.2.2 “Priming the solvent lines”, page 42.
[Flushing]	Clean the instrument and cartridge after use. Flush reusable cartridges to store them.
[Air purging]	Air purge the instrument and cartridge. See Chapter 8.2 “Removing solvent from a cartridge”, page 57.
[NP/RP]	Flush the lines with isopropanol to switch from normal-phase to reverse-phase chromatography.

6.5.2 Adjusting the chromatography settings

Navigation path
➔  ➔ *Chromatography settings*

- ▶ Navigate to the *Chromatography settings* according to the navigation path.
- ▶ Adjust the settings as desired.

6.5.3 Adjusting the instrument settings

Navigation path
➔  ➔ *Instrument settings*

- ▶ Navigate to the *Instrument settings* according to the navigation path.
- ▶ Adjust the settings as desired.
- ▶ Tap *[Done]*.

The following settings are available:

Description	Option	Function
[Fraction collector lamp]	On/Off	Switch the lamp inside the fraction collector on/off. See Chapter 7.2.4 “Switching the fraction collector lamp on/off”, page 42.
[Clean loop]	On/Off	Switch loop cleaning before each separation on/off.
[Window mode]	On/Off	Switch access to the Windows surface on/off. The Pure App is minimized.
[Pressure units]	bar/psi	Set the pressure unit.
[Vapor sensor sensitivity]	Low/High	Set how sensitive the sensor is to detecting vapors.
[Time units]	CV/min	Set the time unit.
[Language]	Select language	Set the system language on the interface.
[Date]	Enter value	Set the date.
[Time]	Enter value	Set the time. Switch 24-hour time format on/off.

NOTE
The column volume (CV) describes the time required for the liquid to pass through the cartridge.

6.5.4 Adjusting the configuration

The *Configuration* menu displays information about the instrument and its connected accessories, such as the serial number and software version. It also allows connecting or disconnecting accessories (e.g., fraction collector, autosampler or carousel).

NOTE
Accessories connected via BUCHI cable are detected automatically; others must be activated manually in the *Configuration* menu.

Navigation path

➔ ➔ *Configuration*

- ▶ Navigate to the *Configuration* menu according to the navigation path.
- ▶ To activate or deactivate an accessory, toggle the *[On/Off]* button next to it.

6.6 System messages

Navigation path

➔

- ▶ Navigate to the *System messages* menu according to the navigation path.
- ▶ Read the message text.
- ▶ If given, follow the instructions.
- ▶ To clear the message, tap *[Yes understood]*.

The following message types can be distinguished:

Description	Function
Info message	Provides general information or updates.
Warning message	Alerts to a potential problem that may affect operation.
Error message	Indicates a problem that requires action. See Chapter 9.1.1 “Error codes”, page 75.

7 Operation

NOTICE

Instrument damage from aggressive solvents.

Perform cleaning procedures after using aggressive solvents to prevent premature wear and damage.

- ▶ Perform the cleaning procedure. See Chapter 6.5.1 “Daily routine”, page 37.
- ▶ Clean the solvent injection port. See Chapter 8.12 “Cleaning the solvent injection port”, page 61.

NOTICE

Solvent free of air bubbles.

- ▶ Ensure that the solvent is free of air bubbles or gas.
- ▶ If any are present, degas the solvent before use.

NOTICE

Flow cell damage from exceeding max. pressure.

The UV detector's flow cell inside Pure Excellence C-905 will be damaged if the pressure rises above the allowed limit.

- ▶ Ensure that the pressure does not exceed 3 bar during operation.

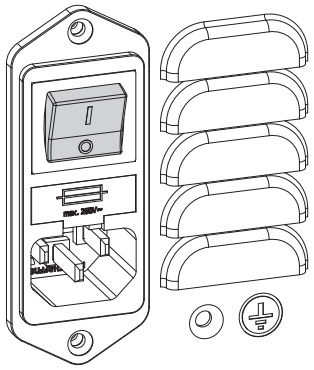
NOTE
The available functions depend on the instrument type. Some features described may not be visible on your instrument.

7.1 Switching the instrument on/off

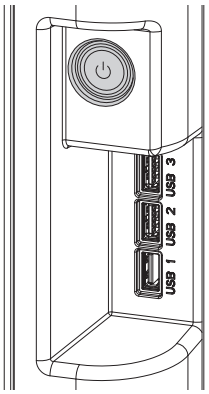
Switching on

Precondition:
☑ The instrument is connected properly.

▶ Switch on the ***Main switch***.

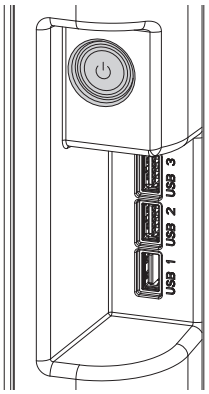


▶ Press the ***On/Off button*** to start up the interface.
⇨ The instrument is ready for operation.

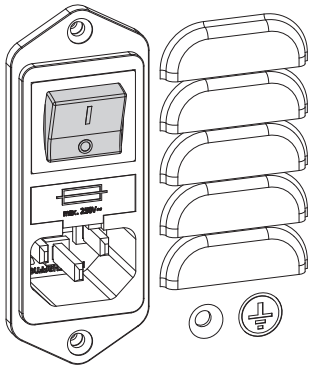


Switching off

▶ Press the ***On/Off button*** to switch off the interface.



▶ Switch off the ***Main switch***.
⇨ The instrument is switched off.



7.2 Preparing the instrument

7.2.1 Assigning solvents to solvent lines

Navigation path

→ →

▶ Navigate to the *Solvent* panel according to the navigation path.
▶ Select next to *[Set Lines]*.
▶ Select a solvent line.
▶ Choose the desired solvent from the list to assign it to the selected solvent line.

NOTE
Alternatively, set the solvent lines by navigating to the *Instrument* menu and *Set lines*.

7.2.2 Priming the solvent lines

Prime the solvent lines with the solvents that will be used during separation.

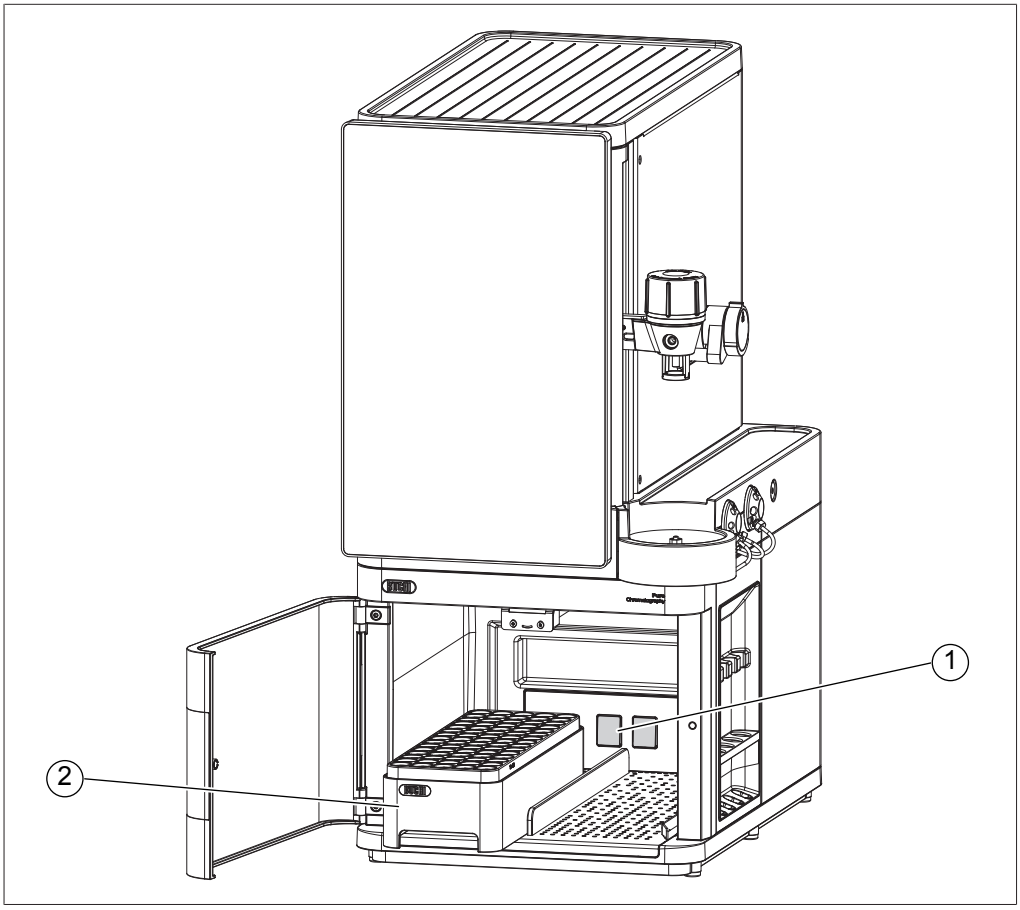
Navigation path

➔ ➔ *Priming*

- ▶ Navigate to the *Priming* dialog according to the navigation path.
- ▶ Select or deselect the desired solvents.
- ▶ Tap *[Run priming]*.

⇨ The priming process is performed.

7.2.3 Installing the racks



1 Switch 2 Rack

- ▶ Place the tubes in the rack.
- ▶ Open the protective door.
- ▶ Insert the rack into the fraction collector.
- ▶ Make sure that the rack pushes against the switch at the back.

⇨ The detected rack type appears on the interface.

- ▶ Tap *[Load]*.
- ▶ Optional: To install a second rack, repeat all previous steps.
- ▶ Close the protective door.

7.2.4 Switching the fraction collector lamp on/off

When working with light-sensitive substances, the lamp inside the fraction collector can be switched off.

Navigation path

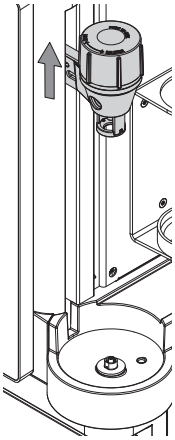
➔ ➔ *Instrument settings* ➔*[Fraction collector lamp]*

- ▶ Navigate to the *[Fraction collector lamp]* menu according to the navigation path.
- ▶ Switch the lamp on/off.

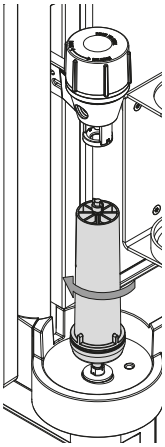
7.3 Tasks during a separation

7.3.1 Installing a cartridge

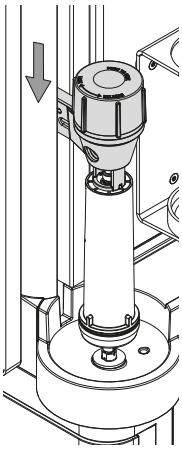
▶ Slide up the cartridge holder.



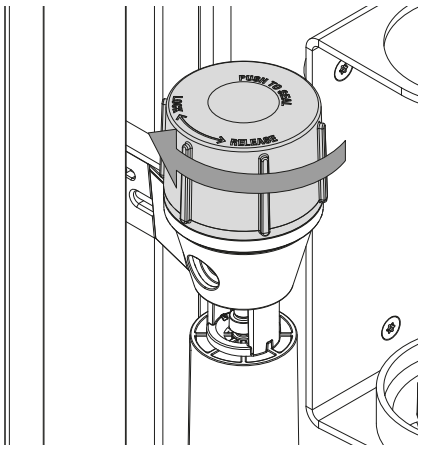
▶ Insert the cartridge.
▶ Turn the cartridge to secure it.



▶ Slide down the cartridge holder.
▶ Push the cartridge holder onto the cartridge.



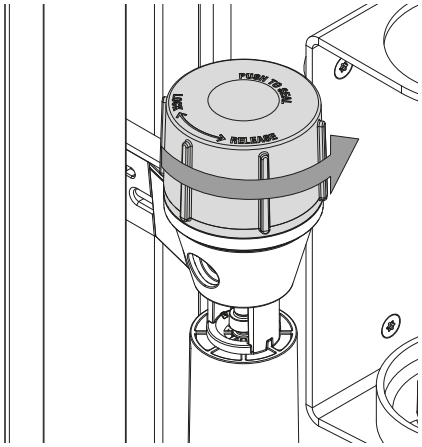
▶ Turn the cartridge holder to lock it.



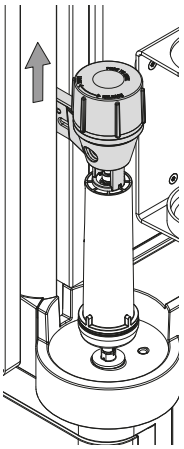
NOTE
It is recommended to lock the cartridge holder to prevent unintended reopening.

7.3.2 Removing a cartridge

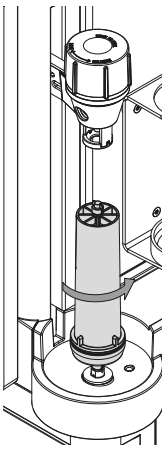
▶ Turn the cartridge holder to unlock it.



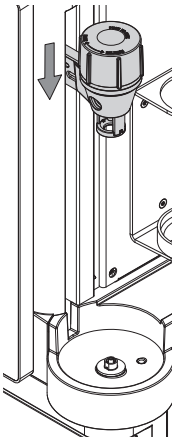
▶ Slide up the cartridge holder.



▶ Turn the cartridge to release it.
▶ Remove the cartridge.



▶ Slide down the cartridge holder.



7.3.3 Loading a sample

⚠ CAUTION

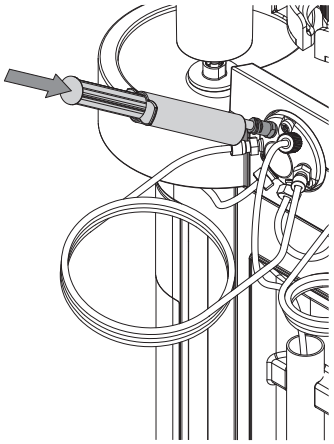
Sample leakage hazard from removed syringe.

Removing the syringe directly after sample loading can cause the sample to flow into the overflow vial.

▶ Leave the syringe inside the sample injection port after injecting the sample.

A sample can be loaded either before or after equilibration. Select the preferred option in the *[Sample loading]* dialog during a separation. Follow the interface instructions and confirm each step upon completion.

Precondition:
☑ An interface dialog instructs to load the sample.
☑ The syringe with the sample is prepared.
▶ Place the syringe into the sample injection port.
▶ Press the plunger slowly to inject the sample.
▶ Leave the syringe inside the sample injection port.
▶ Confirm that the sample is loaded on the interface.



7.4 Performing a separation using a method

Navigation path

→

A method is a set of defined separation parameters applied during a run. In the *Methods* menu, existing methods can be selected and loaded.

Description	Function
[Search]	Search a method by name or tag.
[Load]	Load a method for a separation.
[Duplicate]	Duplicate a method. See Chapter 7.9.2 “Duplicating a method”, page 52.
[Delete]	Delete a method.
[Import]	Import a method. See Chapter 7.11.1 “Importing a method”, page 53.
[Export]	Export a method. See Chapter 7.11.2 “Exporting a method”, page 54.

This procedure describes a separation where the sample is loaded before equilibration. However, it can also be loaded after equilibration. Select the preferred option in the *[Sample loading]* dialog.

Precondition:
☑ The instrument is prepared. See Chapter 7.2 “Preparing the instrument”, page 41.
☑ The sample is prepared.
☑ The cartridge is prepared.
☑ The waste bottle is empty.
☑ The solvent bottles are filled sufficiently.
▶ Navigate to the *Methods* menu according to the navigation path.
▶ Select the desired method.
⇨ The graph displays a preview of the gradient(s).
▶ Tap *[Load method]* next to the selected method.
▶ Tap *[Start]*.
⇨ A *[Sample loading]* dialog appears.
▶ Adjust the settings as desired.
▶ Tap *[Proceed]*.
⇨ A dialog appears to install the cartridge.

▶ Install the cartridge. See Chapter 7.3.1 “Installing a cartridge”, page 43.
▶ Tap *[Proceed]*.
⇨ A dialog appears to load the sample.
▶ Inject the sample. See Chapter 7.3.3 “Loading a sample”, page 45.
▶ Tap *[Proceed]*.
⇨ The equilibration is carried out.
⇨ The separation is carried out.
⇨ A dialog appears once the separation is finished.

Skipping the equilibration

NOTE
It is recommended to perform the equilibration for each run.

A run starts with an equilibration. If the equilibration was already performed beforehand, it can be skipped during a run.

Precondition:
☑ A separation is started.
☑ The equilibration is running.
▶ Tap *[Skip]*.
⇨ The separation starts.

7.5 Performing a separation manually

Navigation path

➔ 

Precondition:
☑ The instrument is prepared. See Chapter 7.2 “Preparing the instrument”, page 41.
☑ The sample is prepared.
☑ The cartridge is prepared.
☑ The waste bottle is empty.
☑ The solvent bottles are filled sufficiently.
▶ Navigate to the *[Chromatography]* menu according to the navigation bar.
▶ Adjust the separation parameters as described in the following chapters.

NOTE
To reset all adjusted parameters to their default values, tap ⋮ and select *[Reset]*.

7.5.1 Scanning the cartridge QR code

Navigation path

➔  ➔ 

Precondition:
☑ The camera is activated.
▶ Navigate to the *Cartridge* panel according to the navigation path.
▶ Tap *[Select]* next to *[Type/Size]*.
▶ Hold the cartridge QR code in front of the camera.

⇨ The cartridge type and size are filled in.

NOTE
When the cartridge type is set, the default parameters are configured as recommended by BUCHI. However, these parameters can be adjusted.

7.5.2 Adjusting the cartridge parameters

Navigation path

▶ Navigate to the *Cartridge* panel according to the navigation path.
▶ Adjust the settings as desired.

Description	Function
[Type/Size]	Define the cartridge type and size: • by scanning the QR code, or • by selecting the type and size according to the cartridge label
[Max. pressure]	Set the max. pressure applicable for the cartridge. This information is on the cartridge label.
[Flow rate]	Set the flow rate.
[Time]	Set the equilibration time.

NOTE
When the cartridge type is set, the default parameters are configured as recommended by BUCHI. However, these parameters can be adjusted.

7.5.3 Adjusting the solvent parameters

Navigation path

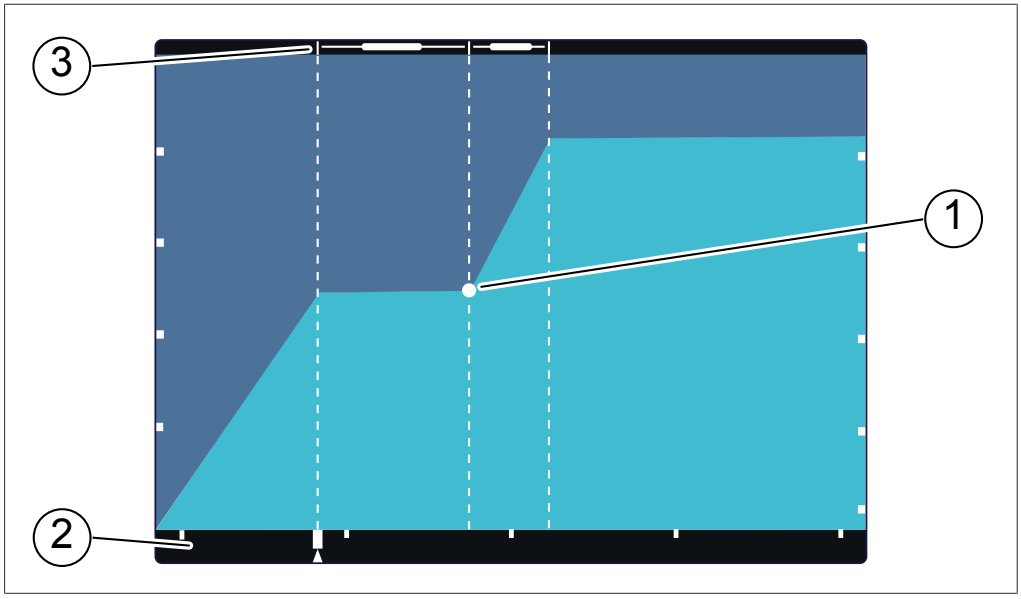
▶ Navigate to the *Solvent* panel according to the navigation path.
▶ Adjust the parameters and steps.

⇨ The solvent graph displays the solvent percentages throughout the duration of the separation.

Description	Function
[Steps]	Set the gradient steps.
[Duration]	Set the duration of a step. During this time the set solvent percentages are reached.
[Solvents]	Set the composition of the solvent mix.
[Start]	Start a separation.
[Add step]	Add a step below the existing ones.
[Set solvents]	Assign solvents to the solvent lines.
[Set lines]	Prime the solvent lines, monitor their fill level and reset to zero.
[Edit]	Edit an existing step. Alternatively, tap a value to modify it directly.

Description	Function
[Add above]	Add a step above an existing step. This is only available after the *[Start]*.
[Add below]	Add a step below an existing step.
[Delete]	Delete a step. This is only available after the *[Start]*.

Setting up the steps



No.	Description	Function
1	*[Step marker]*	Adjust a step by dragging it to the desired position on the solvent graph. To add a new step, tap on the graph at the desired location. Double-tap to delete a step.
2	*[Time axis]*	Drag to the right/ left to increase/decrease the duration of a step.
3	*[Duration]*	Displays the duration of the step.

7.5.4 Adjusting the detection parameters

Navigation path

→  → 

For Pure Excellence C-905

UV detection for four wavelengths is available:

- 254 nm
- 275 nm
- 325 nm
- 365 nm

▶ Navigate to the *Detection* panel according to the navigation path.
▶ Switch the desired wavelengths on/off.

For Pure Excellence C-910, C-915 and C-950

- ▶ Navigate to the *Detection* panel according to the navigation path.
- ▶ Adjust the detector settings.

Description	Option	Function
[UV1]–[UV4]	*[Collect]*	Collect fractions based on the defined wavelength.
	[Monitor]	Record detection data at the defined wavelength without collecting fractions.
	[OFF]	No UV monitoring or fraction collection is made.
[Scan]	*[Collect]*	Collect fractions based on the detected signal during scanning.
	[Monitor]	Record scanning data without collecting fractions.
	[OFF]	No scanning or fraction collection is made.
[ELSD]	*[Collect]*	Collect fractions based on the ELSD signal.
	[Monitor]	Record ELSD data without collecting fractions.
	[OFF]	No ELSD monitoring or fraction collection is made.

NOTE
The ELSD detector cannot be activated anymore (switched to *[Collect]* or *[Monitor]*) if it was *[OFF]* at the run start.

7.5.5 Adjusting the collection parameters

Navigation path

→  → 

- ▶ Navigate to the *Collection* panel according to the navigation path.
- ▶ Adjust the collection settings.

Description	Option	Function
[Mode]	*[Peak]*	Collect fractions during peaks.
	[All]	Collect all fractions during and in between peaks.
	[None]	Collect no fractions.
[Threshold UV]	-	Collect fractions only above this defined UV threshold.
[Threshold ELSD]	-	Collect fractions only above this defined ELSD threshold.
[Collection volume]	-	Collection volume per vial.

7.5.6 Starting a run

This procedure describes a separation where the sample is loaded before equilibration. However, it can also be loaded after equilibration. Select the preferred option in the *[Sample loading]* dialog.

Precondition:
☑ All separation parameters are set up as desired.

▶ Tap *[Start]*.

⇨ A *[Sample loading]* dialog appears.

▶ Adjust the settings as desired.

▶ Tap *[Proceed]*.

⇨ A dialog appears to install the cartridge.

▶ Install the cartridge. See Chapter 7.3.1 “Installing a cartridge”, page 43.

▶ Tap *[Proceed]*.

⇨ A dialog appears to load the sample.

▶ Inject the sample. See Chapter 7.3.3 “Loading a sample”, page 45.

▶ Tap *[Proceed]*.

⇨ The equilibration is carried out.

⇨ The separation is carried out.

⇨ A dialog appears once the separation is finished.

7.5.7 Skipping the equilibration

NOTE
It is recommended to perform the equilibration for each run.

A run starts with an equilibration. If the equilibration was already performed beforehand, it can be skipped during a run.

Precondition:
☑ A separation is started.
☑ The equilibration is running.

▶ Tap the *[Skip]* button.

⇨ The separation starts.

7.6 Pausing separations

When a separation is paused, it can be restarted later.

Precondition:
☑ A separation is in progress.

▶ Tap the *[Pause]* button.

7.7 Stopping separations

When stopping a separation, it cannot be restarted later.

Precondition:
☑ A separation is paused.

▶ Tap the *[Stop]* button.

7.8 Identifying fractions

NOTE
The first available vial is reserved for waste.

NOTE
Identifying fractions is described here after a completed run. Alternatively, fractions can already be identified on the graph during a run.

7.8.1 Identifying fractions by peak

Navigation path

→ 

Precondition:
☑ A separation is finished.

- ▶ Navigate to the *Runs* menu according to the navigation path.
- ▶ Select the desired run.
- ▶ Tap *[Report]*.
- ▶ Tap *[Process data]*.
- ▶ Tap and hold the peak on the graph for approx. 3 sec.

⇨ The corresponding vial number is displayed.

⇨ The corresponding vial is highlighted in green.

7.8.2 Identifying fractions by vial

Navigation path

→ 

Precondition:
☑ A separation is finished.

- ▶ Navigate to the *Runs* menu according to the navigation path.
- ▶ Select the desired run.
- ▶ Tap *[Report]*.
- ▶ Tap *[Process data]*.
- ▶ Tap and hold the target vial below the graph for approx. 3 sec.

⇨ The corresponding peak is highlighted in the graph.

7.9 Creating and editing methods

7.9.1 Creating a new method

Navigation path

→ 

- ▶ Navigate to the *Chromatography* menu according to the navigation path.
- ▶ Set up the parameters as desired, Chapter 7.5 “Performing a separation manually”, page 47 .
- ▶ Tap the *[Options]* button in the top bar.
- ▶ Tap *[Save as]*.
- ▶ Tap *[Save method]*.

⇨ The new method is created.

7.9.2 Duplicating a method

Duplicating methods allows adapting existing methods for different applications while keeping the original unchanged.

Navigation path

→ 

- ▶ Navigate to the *Methods* menu according to the navigation path.

- ▶ Select the method to be duplicated.
- ▶ Tap the *[Options]* button.
- ▶ Tap *[Duplicate]*.

⇨ The duplicate is created.

7.10 Analyzing and deleting runs

7.10.1 Viewing a run report

Navigation path

→ 

- ▶ Navigate to the *Runs* menu according to the navigation path.
- ▶ Select the run to be analyzed.
- ▶ Tap *[Report]*.

⇨ The run report is displayed.

Description	Function
Run name	Displays the name of the run. This usually includes the date and time it was performed.
Notes	Displays notes taken related to the run.
Process data	Displays a chart of the run and the rack(s). ▶ Slide across the chart or tap a vial of the rack to identify peaks. See Chapter 7.8 “Identifying fractions”, page 51.
Sample	Displays the used sample type and amount.
Method	Displays the used method and separation parameters.
Run history	Displays information on the time-stamped changes made to the run.
Settings	Displays the used instrument settings.
System messages	Displays system messages that occurred during the run.
Configuration	Displays the used instrument configuration.

7.10.2 Deleting runs

Navigation path

→ 

- ▶ Navigate to the *Runs* menu according to the navigation path.
- ▶ Select the run to be deleted.
- ▶ Tap the *[Options]* button on the same line.
- ▶ Tap *[Delete]*.

⇨ The run is deleted.

7.11 Importing and exporting data

7.11.1 Importing a method

Navigation path

→ 

The following file format is accepted:

- .bdsf

Precondition:
☑ A USB stick with a method is connected to the instrument.

▶ Navigate to the *Methods* menu according to the navigation path.
▶ Tap the *[Options]* button.
▶ Tap *[Import]*.
▶ Select the method to be imported.

⇨ A dialog confirms the import.

7.11.2 Exporting a method

Navigation path

Precondition:
☑ A USB stick is connected to the instrument.

▶ Navigate to the *Methods* menu according to the navigation path.
▶ Select the method to be exported.
▶ Tap the *[Options]* button.
▶ Tap *[Export]*.
▶ Select the export location.

⇨ A dialog confirms the export.

NOTE
To select multiple items from the list at once, press and hold on an item until checkboxes appear on the left. Then, use the checkboxes to select all desired items.

7.11.3 Importing a run report

Navigation path

The following file format is accepted:

- .bdsf

Precondition:
☑ A USB stick is connected to the instrument.

▶ Navigate to the *Runs* menu according to the navigation path.
▶ Tap the *[Options]* button.
▶ Tap *[Import BDSF]*.
▶ Select the run to be imported.

⇨ A dialog confirms the import.

7.11.4 Exporting a run report

Navigation path

The following file formats can be exported:

- .csv
- .pdf
- IP address

Precondition:
☑ A USB stick is connected to the instrument.

▶ Navigate to the *Runs* menu according to the navigation path.
▶ Select the run(s) to be exported.
▶ Tap the *[Options]* button.
▶ Select the export in the desired format.
▶ Optional: When exporting multiple files, switch on *[Create single PDF]* to merge all files into one.
▶ Tap *[Export]*.

⇨ A dialog confirms the export.

NOTE
To select multiple items from the list at once, press and hold on an item until checkboxes appear on the left. Then, use the checkboxes to select all desired items.

8 Cleaning and servicing

NOTE

- Carry out only the service and cleaning operations described in this section.
- Do not carry out any servicing and cleaning operations that involve opening the housing.
- Use only genuine BUCHI spare parts in order to ensure correct operation and preserve the warranty.
- Carry out the service and cleaning operations described in this section to extend the lifetime of the instrument.

8.1 Maintenance work

Action		Daily	Weekly	Monthly	Twice a year	Yearly	Additional information
8.2	Removing solvent from a cartridge	1					
8.3	Cleaning the housing		1				
8.4	Cleaning and servicing the warning and directive symbols		1				
8.5	Cleaning underneath the drip tray		1				
8.6	Cleaning the guide rods		1				
8.7	Cleaning the nozzle		1				
8.8	Cleaning the ELSD nebulizer		1				Pure Excellence C-915/ C-950 only
8.9	Cleaning the loop		1				
8.10	Cleaning the solvent filter		1				
8.11	Checking and replacing the Pure air filter			1			
8.12	Cleaning the solvent injection port			1			
8.13	Cleaning the flow cell				1		
8.14	Cleaning the ELSD O-rings				1		Pure Excellence C-915/ C-950 only
8.15	Replacing the nozzle					1	
8.16	Replacing the ELSD nebulizer					1	Pure Excellence C-915/ C-950 only
8.17	Replacing the flow cell					1	
8.18	Replacing the drain line hose					1	

1 - Operator

8.2 Removing solvent from a cartridge

⚠ CAUTION

Risk of liquid spraying during air purge.

During air purge, pressure can cause the exhaust line to move inside the waste bottle, potentially spraying liquid.

- ▶ Monitor the exhaust line throughout the procedure.

Navigation path

➔ ➔ *[Daily routine]* ➔*[Air purging]*

Precondition:
☑ The cartridge to be purged is installed.

- ▶ Navigate to *[Air purging]* according to the navigation path.
- ▶ Enter the purging time.
- ▶ Tap *[Start]*.

⇨ The cartridge is purged.

8.3 Cleaning the housing

- ▶ Wipe down the housing with a damp cloth.
- ▶ If heavily soiled, use ethanol or a mild detergent.
- ▶ Wipe down the display with a damp cloth.

8.4 Cleaning and servicing the warning and directive symbols

- ▶ Check that the warning symbols on the instrument are legible.
- ▶ If they are dirty, clean them with a damp cloth.

8.5 Cleaning underneath the drip tray

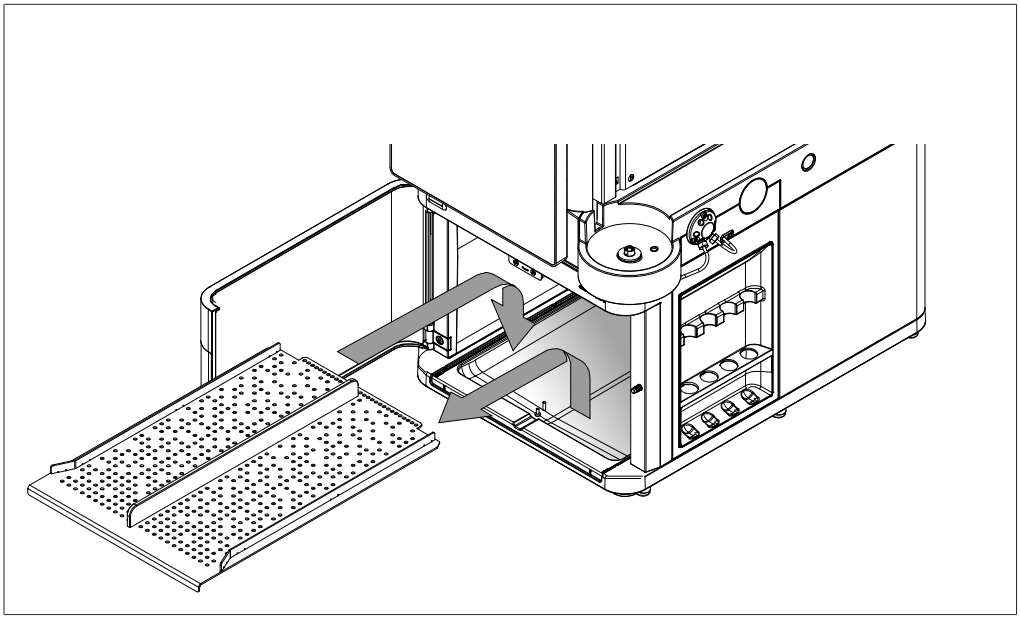
⚠ CAUTION

Risk of skin burns from solvents

Contact with solvents may cause skin burns.

- ▶ Wear protective gloves.

Liquids that spill from the cartridge or inside the fraction collector are collected underneath the drip tray in the fraction collector.



- ▶ Open the protective door.
- ▶ If present, remove the racks.
- ▶ Slide out the drip tray.
- ▶ Use dry paper towels to soak up any liquid collected beneath the drip tray.
- ▶ Reinstall the drip tray.
- ▶ Close the protective door.
- ▶ Place the used paper towels under a fume hood to get rid of the spilled solvent.
- ▶ Dispose of the paper towels properly.

8.6 Cleaning the guide rods

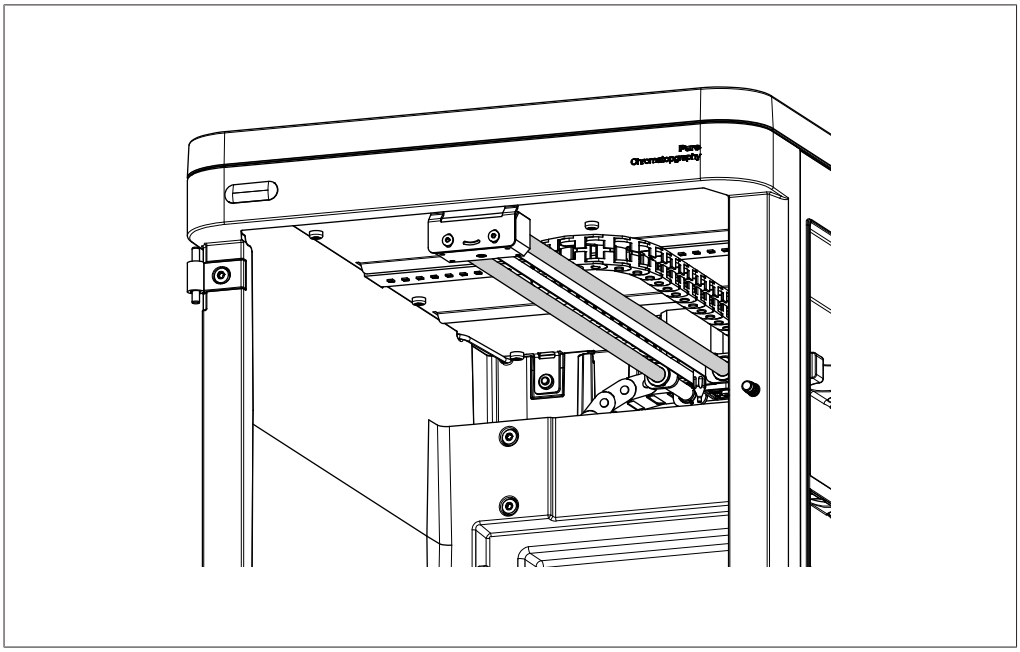


Fig. 1: Guide rods

- ▶ Wipe the guide rods with a lint-free dry cloth and acetone.

8.7 Cleaning the nozzle

- ▶ To remove and reinsert the nozzle for cleaning, follow the instructions for the replacement. See Chapter 8.15 “Replacing the nozzle”, page 64.

- ▶ Clean the nozzle in an ultrasonic bath.
- ▶ Dry the nozzle with a soft cloth.

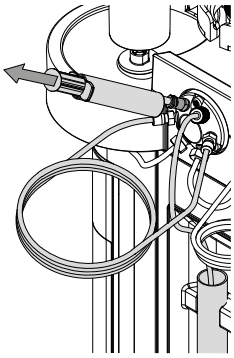
8.8 Cleaning the ELSD nebulizer

NOTE
This procedure only applies to Pure Excellence C-915 and C-950.

- ▶ To remove and reinsert the nebulizer for cleaning, follow the instructions for the replacement. See Chapter 8.16 “Replacing the ELSD nebulizer”, page 65.
- ▶ Clean the nebulizer with appropriate cleaning agents.
- ▶ It is recommended to clean the nebulizer in a ultrasonic bath.

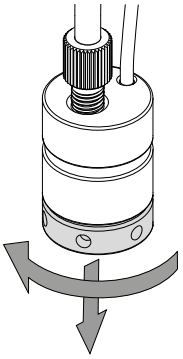
8.9 Cleaning the loop

- ▶ Place a vial filled with cleaning solution into the vial holder.
- ▶ Attach an empty syringe to the solvent injection port.
- ▶ Pull the syringe to flush the loop with the cleaning solution.
- ▶ Remove the syringe.

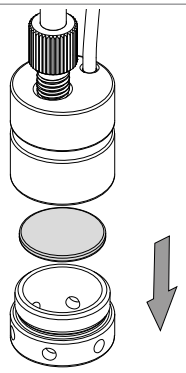


8.10 Cleaning the solvent filter

- ▶ Unscrew the ring.

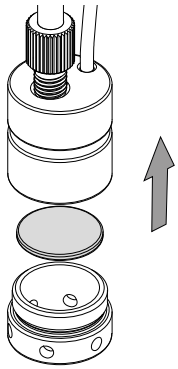


- ▶ Remove the solvent filter.

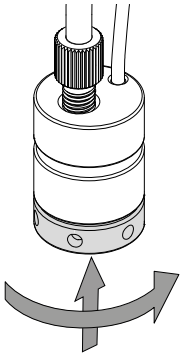


- ▶ Sonicate the solvent filter in acetone.
- ▶ Dry the solvent filter with a soft cloth.

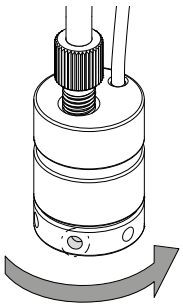
▶ Reinsert the solvent filter.



▶ Tighten the ring by hand.



▶ Insert a small screwdriver into a hole in the ring.
▶ Tighten the ring again using the small screwdriver to ensure the solvent filter sits firmly inside.



8.11 Checking and replacing the Pure air filter

⚠ WARNING

Electric shock hazard from opening the instrument

Opening the instrument housing when it is still energized can cause injury from electric shock

▶ Unplug the main plug before opening the instrument.

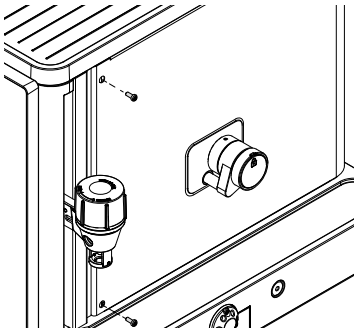
⚠ CAUTION

Risk of eye damage from laser radiation.

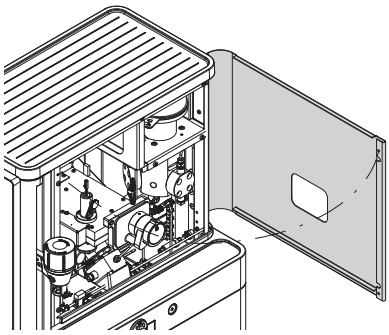
When the instrument is still energized, laser radiation inside the housing can damage the eyes.

▶ Unplug the main plug before opening the instrument.

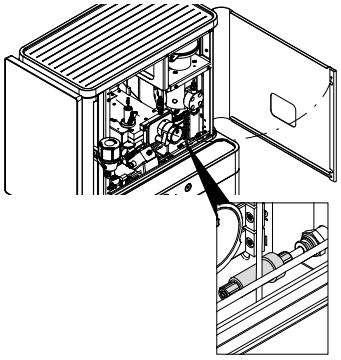
▶ Loosen the two screws.



▶ Open the housing.



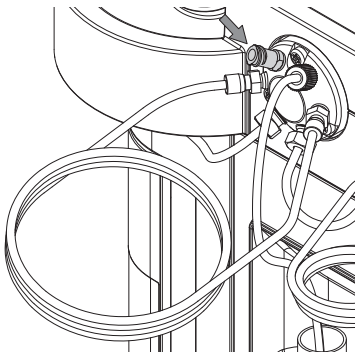
▶ Visually check the Pure air filter for damage.
▶ If there is any damage, replace the Pure air filter.
▶ Ensure that the new Pure air filter is properly connected.



▶ Close the housing again.
▶ Retighten the two screws on the housing.

8.12 Cleaning the solvent injection port

▶ Unscrew the solvent injection port.
▶ Clean the solvent injection port in an ultrasonic bath.
▶ Dry the solvent injection port with a soft cloth.
▶ Reinstall the cleaned solvent injection port.



8.13 Cleaning the flow cell

⚠ WARNING

Electric shock hazard from opening the instrument

Opening the instrument housing when it is still energized can cause injury from electric shock

▶ Unplug the main plug before opening the instrument.

⚠ WARNING

Injury hazard from broken glass

Direct contact with broken glass can cause cuts.

▶ Wear protective gloves.

⚠ CAUTION

Risk of eye damage from laser radiation.

When the instrument is still energized, laser radiation inside the housing can damage the eyes.

▶ Unplug the main plug before opening the instrument.

▶ To remove and reinsert the flow cell for cleaning, follow the instructions for the flow cell replacement. See Chapter 8.17 “Replacing the flow cell”, page 66.
▶ Clean the flow cell according to the instructions below.

NOTE

Use of ethanol and acetone when removing protein residues.

It is not recommended to use ethanol or acetone at the beginning of a cleaning procedure when cleaning flow cells stained with protein.

▶ Thoroughly rinse the flow cell with deionized water first.
▶ Rinse the flow cell with ethanol or acetone.

A contaminated flow cell has decreased transmissivity. This causes increased noise levels, decreased response, and difficulties setting UV to zero.

Cleaning agents

- Dilute acid: Dilute hydrochloric acid, nitric acid
- Copious water: Deionized water, distilled water, RO water
- Solvent: The same solvent which was used to solvate the sample
- Tissue: Lens cleaning tissue, fine wiper cloth

Cleaning procedure

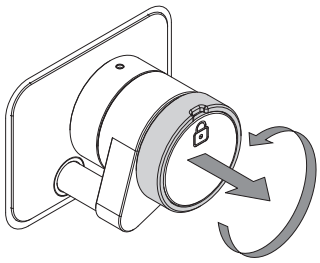
Depending on the residual material to be removed, a different cleaning procedure is recommended.

Solution	Sample type	Cleaning procedure
Aqueous	Protein, DNA, RNA, biologics	▶ Empty the flow cell. ▶ Rinse the flow cell with dilute acid. ▶ Rinse the flow cell with water. ▶ Repeat the previous steps 2 - 3 times. If the protein is still not completely removed from the flow cell: ▶ Incubate the flow cell in trypsin over night at room temperature. ▶ Rinse the flow cell with water. ▶ Rinse the flow cell with ethanol.
Aqueous	Salt solutions	▶ Rinse the flow cell with warm water. ▶ Rinse the flow cell with copious water. ▶ Repeat the previous steps 2 - 3 times.
Organic	Alcohol solutions	▶ Place the flow cell underneath a fume hood. ▶ Rinse the flow cell with solvent used during operation. ▶ Rinse the flow cell with copious water. ▶ Repeat the previous steps 2 - 3 times.
	Soluble samples	▶ Rinse the flow cell with distilled water. ▶ To prevent water spots, rinse the flow cell with ethanol. ▶ To accelerate the drying, rinse the flow cell with acetone. ▶ Dry and carefully tap the flow cell on a lint-free paper towel.

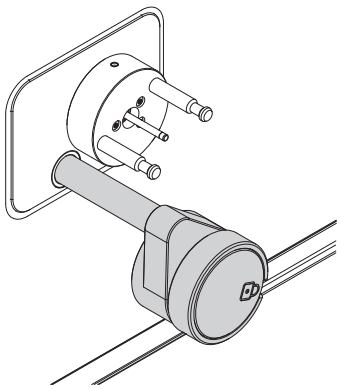
8.14 Cleaning the ELSD O-rings

NOTE
This procedure only applies to Pure Excellence C-915 and C-950.

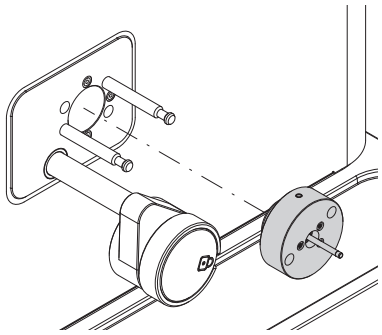
▶ Turn the knob to unlock it.
▶ Pull out the knob.



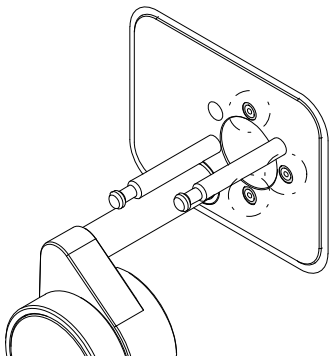
▶ Leave the released knob pulled out.



▶ Remove the nebulizer.



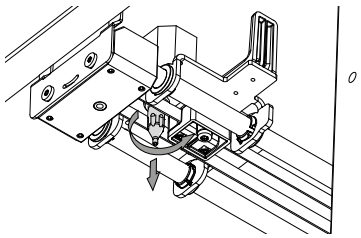
▶ Wipe the three O-rings with a damp cloth.
▶ Reinsert the nebulizer.
▶ Push the knob back in.
▶ Lock the knob.



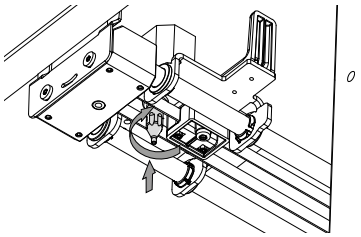
8.15 Replacing the nozzle

▶ Open the protective door of the fraction collector.

▶ Unscrew the nozzle to replace it.



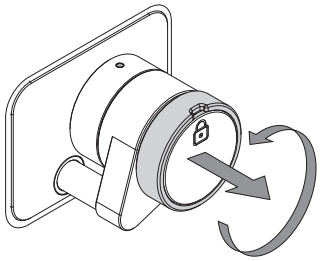
▶ Reinsert the new nozzle.
▶ Close the protective door.



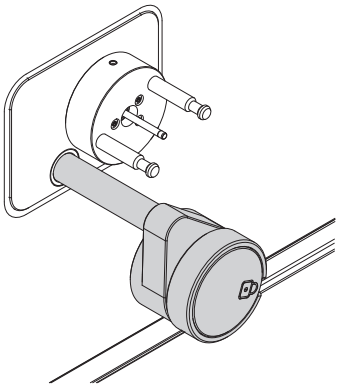
8.16 Replacing the ELSD nebulizer

NOTE
This procedure only applies to Pure Excellence C-915 and C-950.

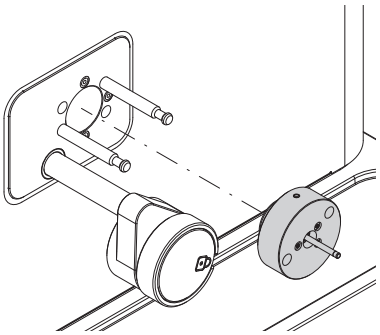
▶ Turn the knob to unlock it.
▶ Pull out the knob.



▶ Leave the released knob pulled out.



▶ Remove the nebulizer.



▶ Insert the new nebulizer.
▶ Push the knob back in.
▶ Lock the knob.

8.17 Replacing the flow cell

⚠ WARNING

Electric shock hazard from opening the instrument

Opening the instrument housing when it is still energized can cause injury from electric shock

▶ Unplug the main plug before opening the instrument.

⚠ WARNING

Injury hazard from broken glass

Direct contact with broken glass can cause cuts.

▶ Wear protective gloves.

⚠ CAUTION

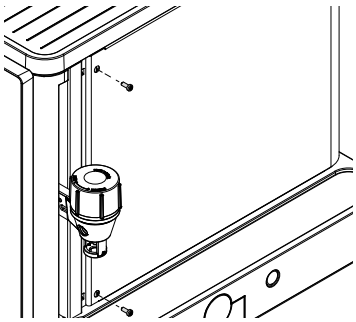
Risk of eye damage from laser radiation.

When the instrument is still energized, laser radiation inside the housing can damage the eyes.

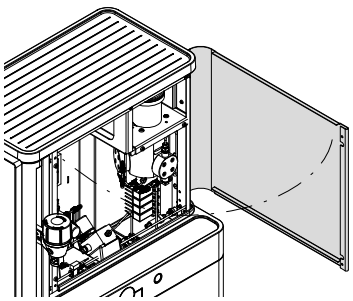
▶ Unplug the main plug before opening the instrument.

For Pure Excellence C-905

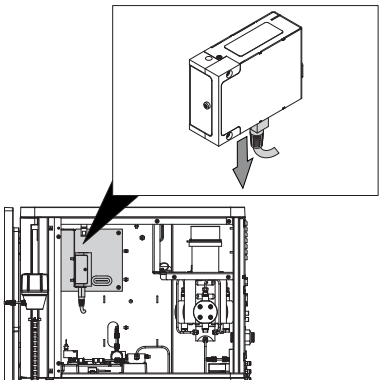
▶ Loosen the two screws.



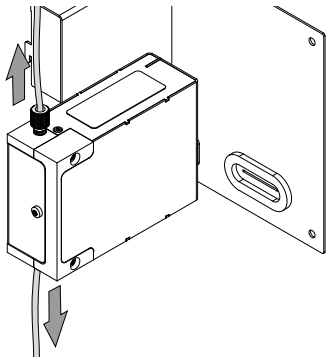
▶ Open the housing.



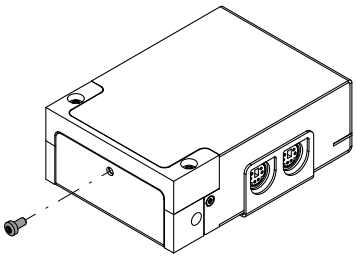
► Remove the cable.



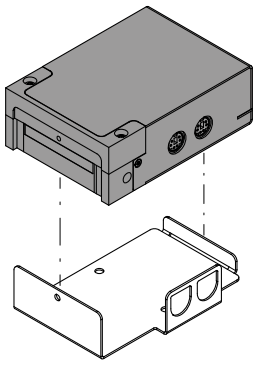
► Unscrew the two tubes to remove them.



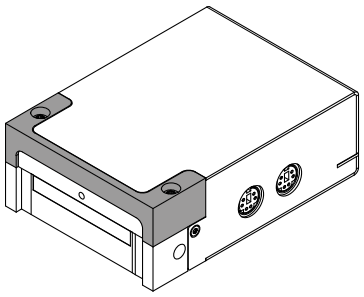
► Remove the screw.



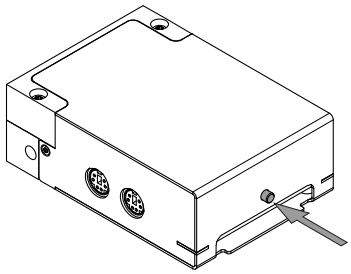
► Remove the UV detector from the bottom cover.



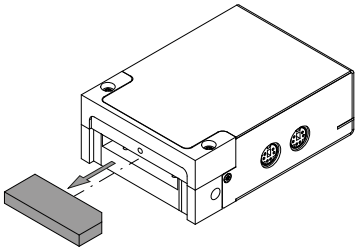
- ▶ Loosen the two screws securing the top cover.
- ▶ Lift up the top cover to release the flow cell.



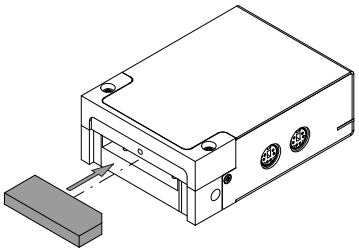
- ▶ Push in the push rod.



- ▶ Remove the flow cell.



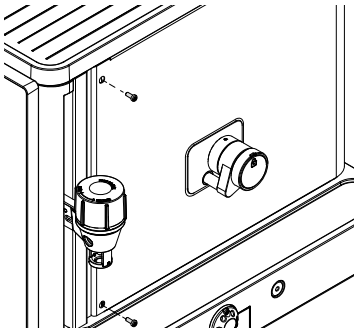
- ▶ Insert the new flow cell paying attention to the chamfer orientation.
- ▶ Tighten the two screws on the top cover again.
- ▶ Refit the UV detector to the bottom cover.



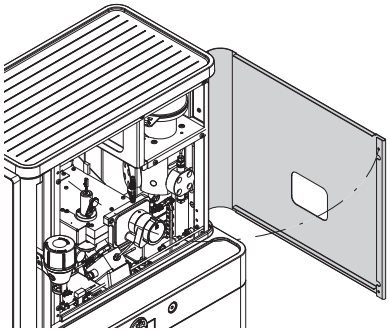
- ▶ Refit the two tubes again.
- ▶ Refit the cable.
- ▶ Close the housing.
- ▶ Retighten the two screws on the housing.

For Pure Excellence C-910/C-915/C-950

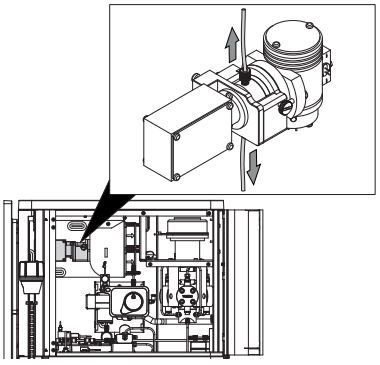
► Loosen the two screws.



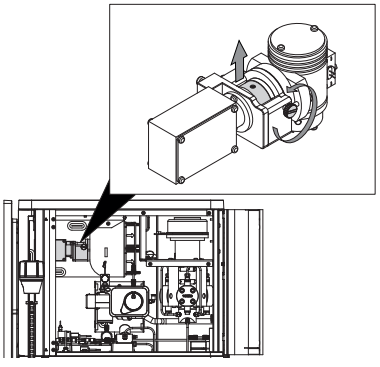
► Open the housing.



► Unscrew the two tubes to remove them.



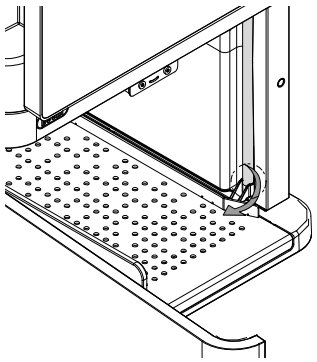
► Loosen the front screw.
► Remove the old flow cell.



► Insert the new flow cell.
► Fasten the front screw again.
► Refit the two tubes.
► Close the housing.
► Retighten the two screws on the housing.

8.18 Replacing the drain line hose

- ▶ Open the protective door of the fraction collector.
- ▶ Bend the hose slightly at the bottom and unhook it.
- ▶ Pull the hose out at the bottom.



- ▶ Reinsert the new hose.
- ▶ Close the protective door.

9 Help with faults

9.1 Troubleshooting

NOTE
In case of software crashing or malfunction, restart the instrument.

Instrument

Problem	Possible cause	Solution
Does not power up	Power is not being supplied to the instrument	▶ Verify that the power cord is plugged in. ▶ Make sure that the voltage, amperage and frequency meet the instrument specifications. ▶ Make sure that the main switch and on/off button are switched on. ▶ Verify that the fuses are correctly installed.
	Fuse is blown	▶ Check the fuse and replace it if necessary, using only the exact same type.
Shuts down automatically	Major fluctuations in line power are present	▶ Connect the instrument to an Uninterrupted Power Supply line.
Drip line does not drain off liquid	Drain line is blocked	▶ Insert a thin rod into the upper part of the drain line to clear the blockage. ▶ Replace the drain line hose. See Chapter 8.18 “Replacing the drain line hose”, page 70.

Interface

Problem	Possible cause	Solution
Does not power up	Failed boot process	▶ Restart the instrument.
The touch screen is not responsive	The touch screen is out of calibration	▶ Contact BUCHI Customer Service.
The touch screen is not responsive when using a pen	The touch screen does not respond to a standard pen	▶ Use a capacitive stylus pen to operate the touch screen.

Run and Equilibration

Problem	Possible cause	Solution
Does not start	No rack is inserted or recognized	▶ Check that the rack is inserted properly and recognized. See Chapter 7.2.3 “Installing the racks”, page 42.
	Solvent names are not set correctly	▶ Verify that the solvent lines are configured correctly and correspond to the method.
	No cartridge is selected	▶ Verify that a cartridge is selected.
	The set value is not correct	▶ Check for tabs marked with a red dot to identify any issues. ▶ Correct any values with issues.

ELSD

Problem	Possible cause	Solution
Does not work	No air supply is available	▶ Verify that the air supply is on before starting the run.
	Air pressure is below limit	▶ Verify that the air inlet pressure is between 4–8 bar.
	ELSD air pressure settings are incorrect	▶ Verify that the ELSD air pressure is set between 2.5–3.5 bar.
Noisy and low signal	Nebulizer is heavily contaminated	▶ Clean the nebulizer in an ultrasonic bath. See Chapter 8.8 “Cleaning the ELSD nebulizer”, page 59.
	Backpressure is too low	▶ Make sure that the backpressure is above 0.5 bar. ▶ Clean the backpressure valve in an ultrasonic bath.
	ELSD valve block is not closed	▶ Verify that the ELSD valve block is properly installed. ▶ Verify that the knob is in lock position.

Pump

Problem	Possible cause	Solution
Heavy pulsation, flow stops and starts repeatedly Flow rate is too low	Check valves are dirty	▶ Run the pump at a high flow rate of 250–300 mL/min with hot water in the cycle. ▶ Flush the pump with isopropyl alcohol afterwards.
	Piston is stuck Chloride solvents were left in the pump for an extended period	▶ Clean the pump with isopropyl alcohol and wait for at least one day before restarting operation.
	Pump sucks air	▶ Check all connections to the pump, starting with the solvent lines outside, solvent valves, and the lines leading to the pump.
	Solvent filter is blocked	▶ Check the solvent filter for debris and dust. ▶ Clean the solvent filter. See Chapter 8.10 “Cleaning the solvent filter”, page 59.
System cannot be flushed	Backpressure is too high	▶ Use Flash mode at 10 mL/min with the cartridge holder not bypassed. ▶ Wipe the solvent coming from the outlet with a towel.
	Motor coupling is loose	▶ Verify that the motor is turning and that the coupling is securely tightened to both the motor and eccentric shaft.
	Tube connectors are loose	▶ Tighten all connectors between the solvent bottle and the pump.

Sample injection valve

Problem	Possible cause	Solution
Does not work	Valve does not switch into position	▶ Restart the instrument, checking if the instrument performs the reference process. ▶ Listen for the valve operation and feel for movement by touching the valve head.
Shows leakage	Lines or valve head are not secured tightly	▶ Ensure all lines are tight and check if the valve head is loose (verify the three screws).

UV Detector on Pure Excellence C-905

Problem	Possible cause	Solution
Weak signal Low transmissivity Noise during operation	Flow cell is dirty	▶ Inspect the flow cell for dirt and clean it in an ultrasonic bath. See Chapter 8.13 “Cleaning the flow cell”, page 62.
UV zeroing not working properly	Flow cell is broken	▶ Inspect the flow cell for damage and replace it if broken. See Chapter 8.17 “Replacing the flow cell”, page 66.
No signal	Lines are disconnected	▶ Ensure all lines are properly connected and check for any leaks.
	Flow cell is broken	▶ Inspect the flow cell for damage and replace it if broken. See Chapter 8.17 “Replacing the flow cell”, page 66.
Noisy signal	Air in the line	▶ Ensure all lines are tightened and free of leaks.
UV detector loss of function	Housing is damaged	▶ Contact BUCHI Customer Service.
UV detector leakage UV detector signal distortion	O-ring is brittle	▶ Contact BUCHI Customer Service.
Not possible/difficult to remove the flow cell	Push rod is damaged or soiled	▶ Contact BUCHI Customer Service.

UV Detector on Pure Excellence C-910, C-915 and C-950

Problem	Possible cause	Solution
Weak signal	Flow cell is dirty	▶ Inspect the flow cell for dirt. ▶ Clean the flow cell. See Chapter 8.13 “Cleaning the flow cell”, page 62.
	Light source is degenerated	▶ Perform a light check. ▶ Contact BUCHI Customer Service.
No signal	Lines are disconnected	▶ Ensure all lines are properly connected and check for any leaks.
	Flow cell is clogged	▶ Inspect the flow cell for dirt. ▶ Clean the flow cell. See Chapter 8.13 “Cleaning the flow cell”, page 62.

Problem	Possible cause	Solution
Noisy signal	Air in the line	▶ Ensure all lines are tightened and free of leaks.

Fraction collector

Problem	Possible cause	Solution
Collection position does not match with the rack	Incorrect RFID tag data	▶ Verify that the selected rack corresponds to the one inserted in the bay.
	Incorrect rack type selected	
	Fraction collector arm collides with the rack	▶ Ensure that the vials are not too high; maintain at least 5 mm clearance between the glassware and the PEEK nozzle.
Weak or no flow when collection is on	Leak in the line to the fraction collector	▶ Verify that the line is securely connected and not leaking at the backpressure regulator.
Leaking at the fraction collector bottom	Fraction collector bay beneath drip tray is full	▶ Empty the fraction collector bay. See Chapter 8.5 “Cleaning underneath the drip tray”, page 57.
No flow from fraction collector nozzle	Nozzle is clogged	▶ Remove and clean the nozzle. See Chapter 8.7 “Cleaning the nozzle”, page 58. ▶ Replace the nozzle. See Chapter 8.15 “Replacing the nozzle”, page 64.
Fraction collector does not recognize a rack in position	Rack is not contacting the switch at the back of the bay	▶ Push the rack fully to the back of the bay, ensuring the rack touches the switch.
	Switch does not work	▶ Manually press the switch to check if the rack table pops up. ▶ Verify if the switch moves as intended.
	RFID reader does not work	▶ Verify that the rack has a compatible, undamaged RFID tag suitable for the system.
Leaking at the fraction collector valve	In/out fitting is loose	▶ Inspect the fittings and if necessary, retighten them.

9.1.1 Error codes

If an error occurs, the instrument displays an error message. This includes the error code and a recommended first-aid action to resolve the issue.

9.1.2 Customer service

Only authorized service personnel are allowed to perform repair work on the instrument which is not described in this manual. Authorization requires a comprehensive technical training and knowledge of possible dangers which might arise when working at the instrument. Such training and knowledge can only be provided by BUCHI.
The customer service and support offers the following support:

- Spare part delivery
- Repairs
- Technical advice

Addresses of official BUCHI customer service offices can be found on the BUCHI website.
www.buchi.com

9.2 Sending a log file to BUCHI customer service

In case of a problem, a log file can be saved to a USB stick and sent to BUCHI customer service.

Navigation path

→  →

Precondition:
☑ A USB stick is connected to the instrument.

▶ Navigate to the *Support* panel according to the navigation path.
▶ Tap *[Start]*.
▶ Follow the instructions on the screen to save the log file.
▶ Tap *[Finish]*.
▶ Upload the log file via the provided details.

10 Taking out of service and disposal

10.1 Taking out of service

- ▶ Switch off the instrument and disconnect it from the mains power supply.
- ▶ Remove all tubing and communication cables from the instrument.

10.2 Disposal and recycling

The operator is responsible for the proper disposal and recycling of the product, equipment, and packaging in accordance with local waste disposal and recycling regulations.

- ▶ Comply with local regulations and statutory requirements for waste disposal, when disposing or recycling the instrument, equipment or packaging. https://www.buchi.com/sustainable-disposal
- ▶ Observe the disposal or recycling regulations for the materials used. For the used materials see Chapter 3.5 “Technical data”, page 22 or the material labeling on the parts.
- ▶ Packaging materials must be separated and disposed of according to local recycling guidelines.

10.3 Returning the instrument

Before returning the instrument, contact the BÜCHI Labortechnik AG Service Department.
https://www.buchi.com/support/contact

11 Appendix

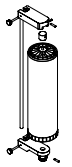
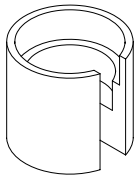
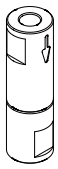
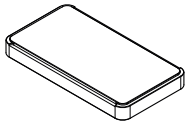
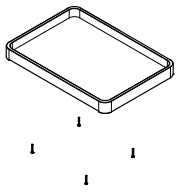
11.1 Spare parts and accessories

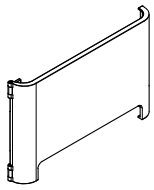
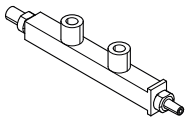
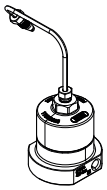
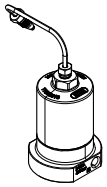
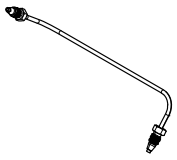
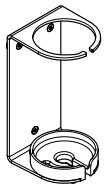
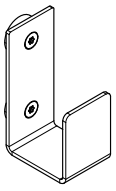
Use only genuine BUCHI consumables and spare parts in order to ensure correct, safe and reliable operation of the system.

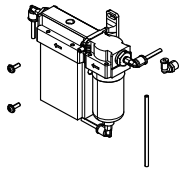
NOTE

Any modifications of spare parts or assemblies are only allowed with the prior written permission of BUCHI.

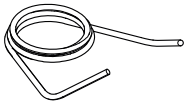
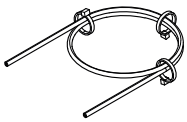
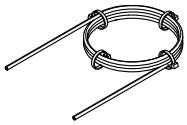
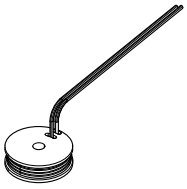
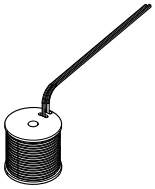
11.1.1 Accessories

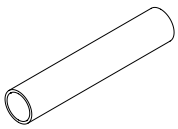
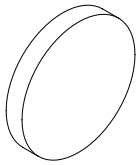
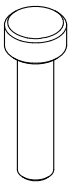
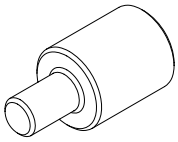
	Order no.	Image
Cartridge holder Supports Flash cartridges up to 5 kg	11065862	
V-Stand with rod Connects and supports cartridge holders for large Flash cartridges	11069158	
Large Prep-HPLC column holder Supports large Prep-HPLC columns up to 50 mm ID	11068467	
Inline solvent filter Prevents potential contaminants from entering the sensitive parts of the system	11059070	
Flow cell for UV-Vis detector 1.3 mm	11064149	
Flow cell for UV-Vis detector 2.3 mm	11064150	
Solvent bottle platform for two bottles (4 L each)	11080911	
Solvent bottle platform for four bottles (4 L each)	11082687	

	Order no.	Image
Fraction collector door for funnel rack Special door to allow easy routing of lines outside the fraction collector bay	11075388	
Bypass for external cartridge/glass column setup	11080910	
Internal mixing chamber, 13 mL	11080871	
Internal mixing chamber, 22 mL	11080872	
Direct flow path in case no mixing chamber	11074907	
Dishwasher basket	11080916	
Magnetic holder Securely holds Prep-HPLC columns, solid loaders and sample coils	11076346	
Magnetic tubing hook Organizes tubing	11079798	
Solvent line kit	11080880	
Solvent bottle cap set (5 pcs.)	11084168	

	Order no.	Image
Drying unit for external gas sources Purify supplied air by removing oil, moisture and dust	11082688	
Dry air supply unit Integrated air supply for purging and sample transport in ELSD	11084381	

11.1.2 Sample introduction accessories

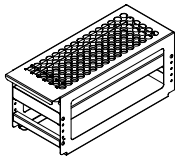
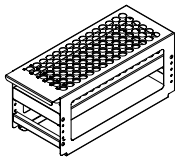
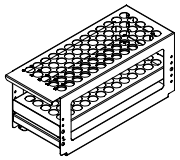
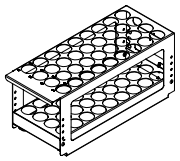
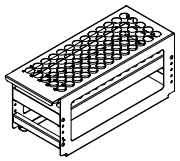
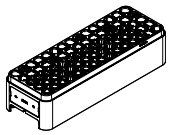
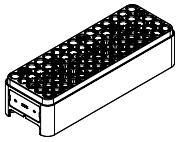
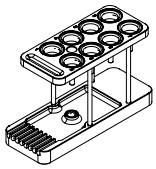
	Order no.	Image
Stainless steel sample loop for Prep 2 mL	11068476	
Stainless steel sample loop for Prep 5 mL	11068205	
Stainless steel sample loop for Prep 10 mL	11068206	
Stainless steel sample loop for Prep 20 mL	11069768	
Sample loop for Flash 1 mL	11080867	
Sample loop for Flash 2 mL	11080868	
Sample coil for Flash 5 mL	11081812	
Sample coil for Flash 10 mL	11081816	
Sample coil for Flash 20 mL	11081815	

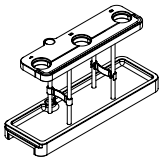
	Order no.	Image
Solid loader S	11068975	
Solid loader M	11070505	
Solid loader tubes S	11068971	
Solid loader tubes M	11068972	
Solid loader frits S	11068969	
Solid loader frits M	11068970	
Insertion rod S	11068973	
Insertion rod M	11068974	
Inject-T-piece For direct injection on the cartridge	11080874	
Injection set for SIV Flash No need to keep the syringe in the injection port	11080875	

11.1.3 Tubing

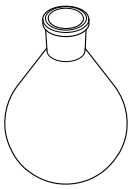
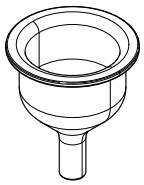
	Order no.
Tubing FEP oØ 3.2 mm, iØ 1.6 mm (length on demand)	042908
Tubing FEP oØ 3.2 mm, iØ 1.6 mm, L = 1,800 mm	11068176
Tubing FEP oØ 3.2 mm, iØ 1.6 mm, L = 1,100 mm	11081851
Tubing FEP oØ 4.78 mm, iØ 3.18 mm (length on demand)	11081362

11.1.4 Racks

	Order no.	Image
Stainless steel rack, for 96 tubes (12 x 75 mm, 5 mL)	11066672	
Stainless steel rack, for 90 tubes (13 x 100 mm, 8.5 mL)	11066673	
Stainless steel rack, for 65 tubes (16 x 125 mm, 15 mL)	11066674	
Stainless steel rack, for 36 tubes (25 x 150 mm, 50 mL)	11066677	
Stainless steel rack, for 65 tubes (16 x 100 mm, 14 mL)	11069242	
Rack for 75 tubes (18 x 150 mm, 25 mL)	11074055	
Rack for 75 tubes (16 x 150 mm, 20 mL)	11074056	
Funnel rack Incl. eight funnels, one waste vial and eight silicone tubings (2 m long)	11074402	
Jar rack For four square bottles of 480 mL (not included)	11074894	

	Order no.	Image
Rack for evaporation flasks Three evaporation flasks, max. 29.2/32, 500 mL	11074484	

11.1.5 Tubes and bottles

	Order no.	Image
Square bottles 480 mL (24 pcs.)	148623412	
Evaporating flask Glass, SJ 29.2/32, 500 mL	000434	
Replacement glass funnel set (8 pcs.)	11074939	
Glass tubes 13 x 100 mm (1,000 pcs.)	148623414	
Glass tubes 16 x 150 mm (1,000 pcs.)	148623416	
Glass tubes 18 x 150 mm (500 pcs.)	148623410	
Glass tubes 25 x 150 mm (500 pcs.)	148623411	

11.1.6 Adapter kits

	Order no.
Luer lock connection set	11068242
One-piece fitting 1/8" (2 pcs.)	11074308
Adapter 1/4-28 UNF female to 5/16-24 male To install the ISCO RediSep Rf solid loader	11073952
Prep column connectors (2 pcs.)	11080873

11.1.7 IQ/OQ and test kits

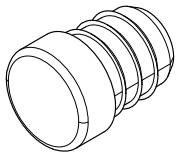
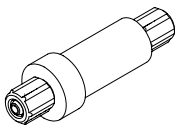
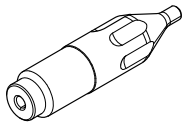
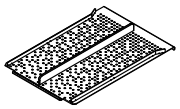
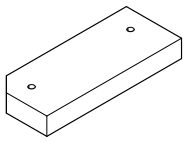
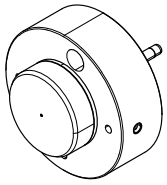
	Order no.
IQ/OQ	11080870
Repeating OQ set C-905 en	11084291
IQ/OQ set C-910 en	11084292
Repeating OQ set C-910 en	11084293
IQ/OQ set C-915 en	11084294
Repeating OQ set C-915 en	11084295
IQ/OQ set C-950 en	11084296
Repeating OQ set C-950 en	11084297
OQ Prep test mix	11068907
Solid loader test tubes	11069686

11.1.8 Instrument upgrade kits

Can only be performed by a service technician.

	Order no.
UV-Upgrade kit (C-905 to C-910)	11081943
ELSD-Upgrade kit (C-910 to C-915)	11081944

11.1.9 Spare parts

	Order no.	Image
Rubber foot replacement	11058379	
Pure air filter	11066049	
Fraction collector nozzle	11071980	
Fraction collector baseplate replacement	11072085	
Flow cell for UV-Vis detector 0.3 mm	11057949	
Flow cell for UV detector fixed wavelengths, 0.3 mm	11073975	
ELSD nebulizer replacement	11076660	
Solvent filter set (2 pcs.)	11080175	
Injection kit Incl. luer adapter, fitting and overflow tubing	11080883	
Stainless steel tubing kit for Prep-HPLC columns	11080884	
Back pressure regulator (2 bar)	11083898	

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