9
Maintenance and Repair

This chapter describes the maintenance and the repair of the module.

Introduction to Maintenance

The module is designed for easy maintenance. Maintenance can be done from the front with module in place in the system stack.

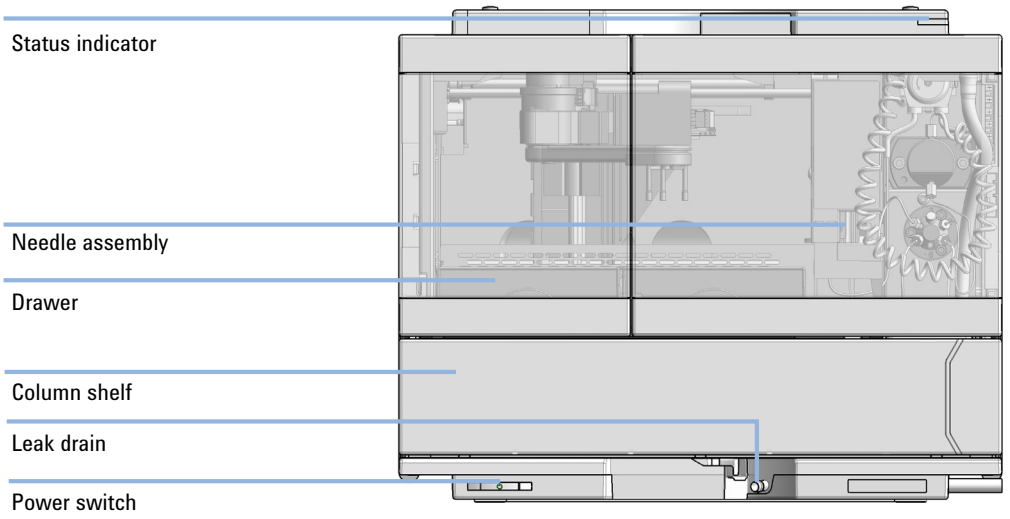


Figure 26 Overview of the Vialsampler

NOTE

There are no serviceable parts inside.

Do not open the module.

Warnings and Cautions

WARNING

Personal injury or damage to the product

Agilent is not responsible for any damages caused, in whole or in part, by improper use of the products, unauthorized alterations, adjustments or modifications to the products, failure to comply with procedures in Agilent product user guides, or use of the products in violation of applicable laws, rules or regulations.

➔ Use your Agilent products only in the manner described in the Agilent product user guides.

WARNING

Electrical shock

Repair work at the module can lead to personal injuries, e.g. shock hazard, when the cover is opened.

➔ Do not remove the cover of the module.

➔ Only certified persons are authorized to carry out repairs inside the module.

WARNING

Sharp metal edges

Sharp-edged parts of the equipment may cause injuries.

➔ To prevent personal injury, be careful when getting in contact with sharp metal areas.

WARNING

Toxic, flammable and hazardous solvents, samples and reagents

The handling of solvents, samples and reagents can hold health and safety risks.

➔ When working with these substances observe appropriate safety procedures (for example by wearing goggles, safety gloves and protective clothing) as described in the material handling and safety data sheet supplied by the vendor, and follow good laboratory practice.

➔ The volume of substances should be reduced to the minimum required for the analysis.

➔ Do not operate the instrument in an explosive atmosphere.

CAUTION

Safety standards for external equipment

➔ If you connect external equipment to the instrument, make sure that you only use accessory units tested and approved according to the safety standards appropriate for the type of external equipment.

Overview of Maintenance

It is necessary to perform periodic inspection of this instrument to ensure its safe use. It is possible to have these periodic inspections performed by Agilent service representatives on a contractual basis. For information regarding the maintenance inspection contract, contact your Agilent representative.

The following pages describe the maintenance (simple repairs) of the module that can be carried out without opening the main cover.

Table 16 Overview of maintenance

Procedure	Typical interval (minimum)	Notes
Change needle/needle seat	30000 needle into seat	
Change peristaltic pump cartridge	3000 min on time	
Change rotor seal	30000 injections	

Cleaning the Module

To keep the module case clean, use a soft cloth slightly dampened with water, or a solution of water and mild detergent.

WARNING **Liquid dripping into the electronic compartment of your module can cause shock hazard and damage the module**

➔ Do not use an excessively damp cloth during cleaning.

➔ Drain all solvent lines before opening any connections in the flow path.

Remove and Install Doors

When If the front door is defective or the hinge are damaged.

Tools required

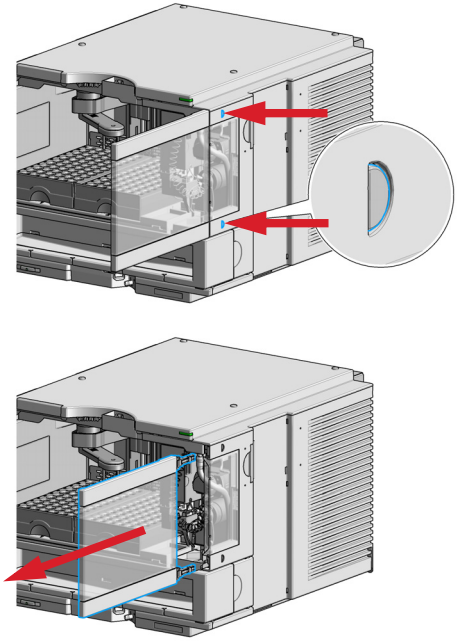
Description
Flat screwdriver

Parts required

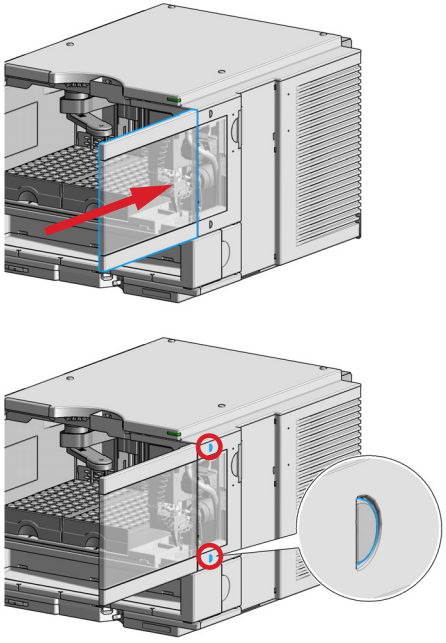
p/n	Description
G7129-68702	Door Assy

Preparations Finish any pending acquisition job and return any plate on the workspace back to the hotel.

1 Press the release buttons and pull the front door out.



2 For the Installation of the front door, insert the hinges into their guides and move the door in until the release buttons click into their final position.



Exchange the Needle Assembly

When

When the limit in the needle into seat counter in the EMF is exceeded or when needle shows indications of damage, blockage or leaks.

Tools required

p/n	Description
8710-1924	Wrench open 14 mm
8710-2140	Screwdriver Torx TX-10
	Pair of pliers

Parts required

	#	p/n	Description
	1	G7129-87200	Needle assembly 1260 Vialsampler for G7129-87017 needle seat
OR	1	G7129-87201	Needle assembly 1290 Vialsampler for G7129-87012 needle seat

Preparations

In order to avoid leaks, stop the pump running and remove the tubings from the solvent bottles. If available close the shutoff valves.

WARNING

Toxic, flammable and hazardous solvents, samples and reagents

The handling of solvents, samples and reagents can hold health and safety risks.

➔ When working with these substances observe appropriate safety procedures (for example by wearing goggles, safety gloves and protective clothing) as described in the material handling and safety data sheet supplied by the vendor, and follow good laboratory practice.

WARNING

Risk of injury by uncovered needle

An uncovered needle is a risk of harm to the operator.

➔ Do not open the safety cover of the needle station during normal operation.

➔ Wear safety goggles and safety gloves when removing the needle assembly.

NOTE It is recommended to always exchange the needle assembly and the needle seat at the same time to prevent premature leakage.

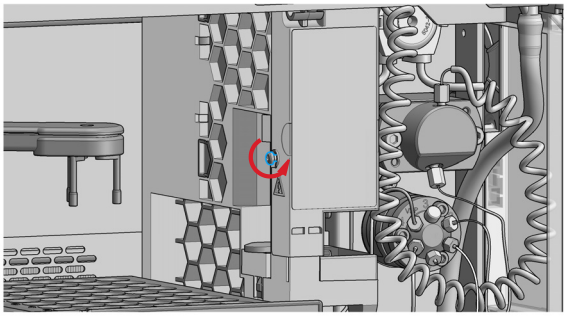
1 In the Local Controller start the maintenance mode and select **Change needle/seat** function.

OR

In the Agilent Lab Advisor software select **Service & Diagnostics** in the system screen (**Tools**) **Maintenance Positions > Change Needle/Loop**, click **Start** and wait until the needle assembly is in maintenance position.

2 Open the front door.

3 Unscrew the safety cover screw.

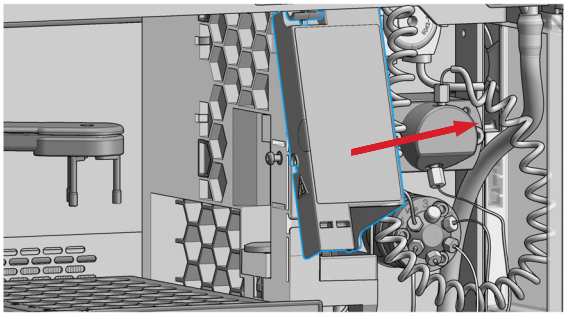


WARNING

Sharp needle
Uncovered needles may cause injuries

➔ **Do not touch the tip of the needle.**

4 Remove the safety cover.



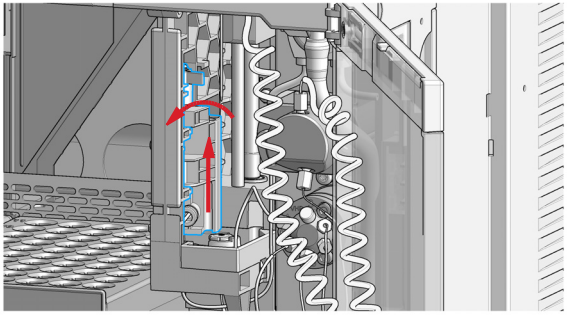
WARNING

Sharp needle
Uncovered needles may cause injuries.

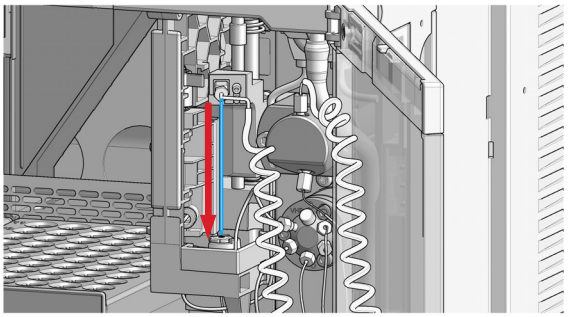
➔ **Do not change the needle seat at this point.**

➔ **Do not touch the tip of the needle.**

5 Turn or flap the wash port to the left.

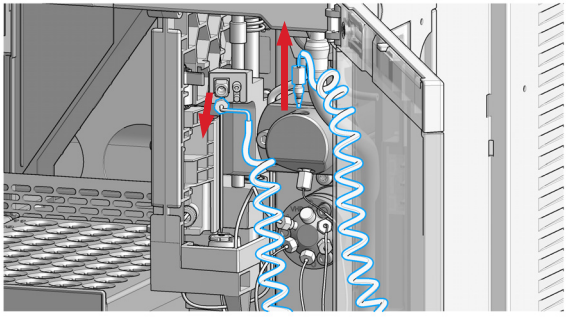


6 In Lab Advisor use **Next** to move the needle in the down position.

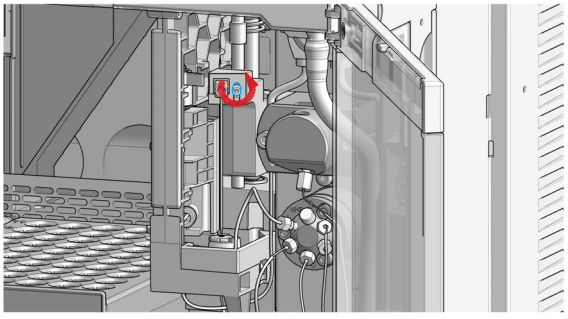


The needle will move slowly downwards and will stop approximately 2 mm above the seat.

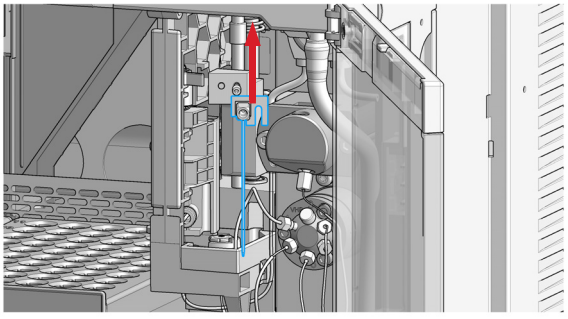
7 Disconnect the sample loop from the needle.



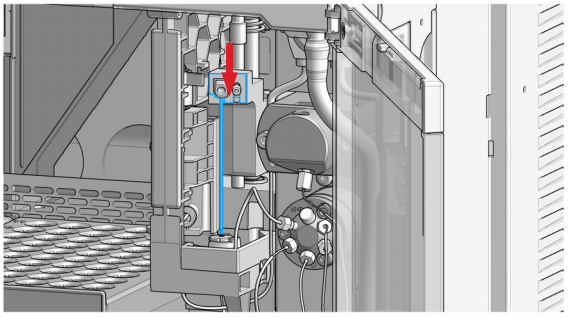
8 Loosen the fixing screw.



9 Lift out the needle.

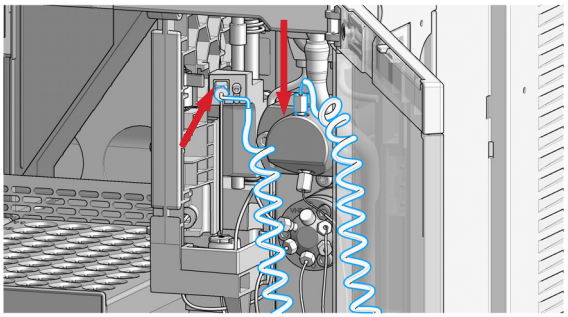


10 Insert the needle (1). Align the needle in the seat, then tighten the screw firmly (2).



11 Align the needle in the seat (needle may be bent slightly manually, if not aligned properly).

12 Reconnect the sample-loop to the needle.



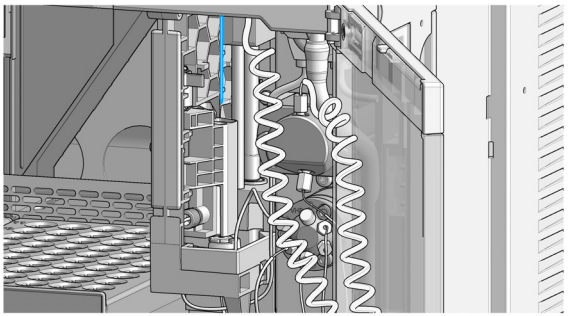
NOTE

Do not overtighten the fitting!

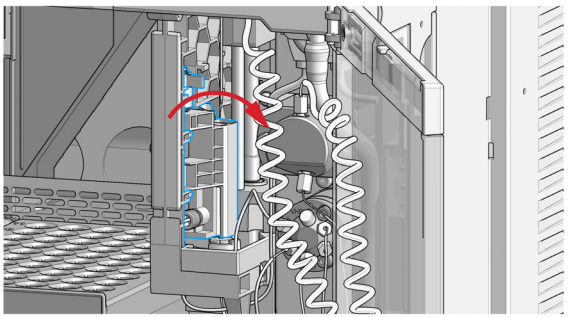
NOTE

Incorrect positioning and installation of the needle/loop connection can result in damaging and breaking the sample loop.

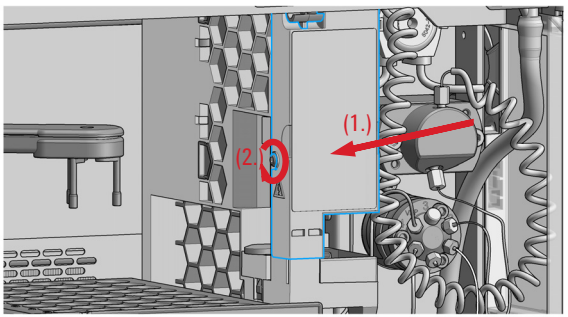
13 In Lab Advisor use **Next** to lift the needle slowly into the up position.



14 Turn or flap the wash port to the right.



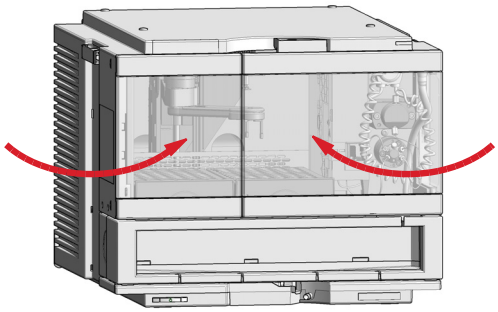
15 Install the safety cover (1.) and fix the screw (2.).



16 Select **Next** to move the needle into the needle seat.

17 Select **Back** to finish the procedure.

18 Close the doors.



19 Perform a pressure test.

Exchange the Needle Seat Assembly

When

When the seat is visibly damaged, blocked or leaks.

Tools required

p/n	Description
8710-1924	Wrench open 14 mm
8710-2140	Screwdriver Torx TX-10
	Flat screwdriver

Parts required

#	p/n	Description
1	G7129-87017	Seat assembly PEEK 0.17 mm OR
1	G7129-87012	Seat assembly PEEK 0.12 mm
1	G7129-87117	Needle Seat Assembly 0.17 mm Vespel (600 bar) OR
1	G7129-87112	Needle Seat Assembly 0.12 mm Vespel (600 bar)

Preparations

Finish any pending acquisition job and in order to avoid leaks, stop the pump running and remove the tubings from the solvent bottles. If available close the shutoff valves.

WARNING

Risk of injury by uncovered needle

An uncovered needle is a risk of harm to the operator.

➔ Do not open the safety cover of the needle station during normal operation.

➔ Wear safety goggles and safety gloves when removing the needle assembly.

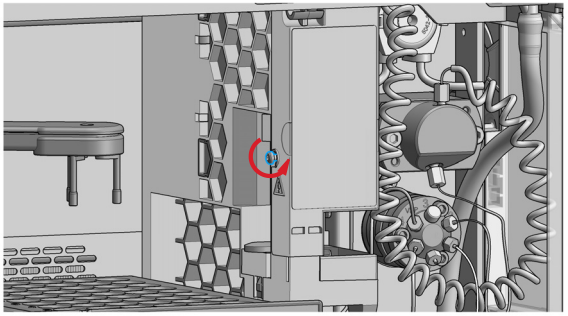
1 In the Local Controller start the maintenance mode and select **Change needle/seat** function.

OR

In the Agilent Lab Advisor software select **Service & Diagnostics** in the system screen (**Tools**) **Maintenance Positions > Change Needle/Loop**, click **Start** and wait until the needle assembly is in maintenance position.

2 Open the front door.

3 Unscrew the safety cover screw.

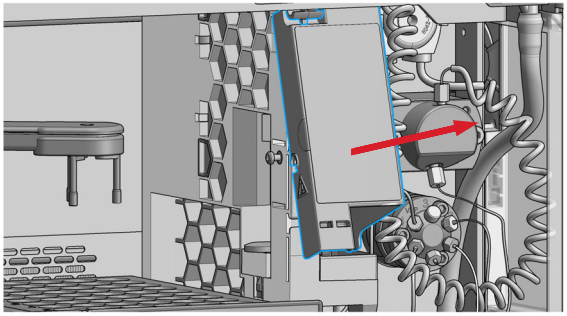


WARNING

Sharp needle
Uncovered needles may cause injuries

➔ **Do not touch the tip of the needle.**

4 Remove the safety cover.



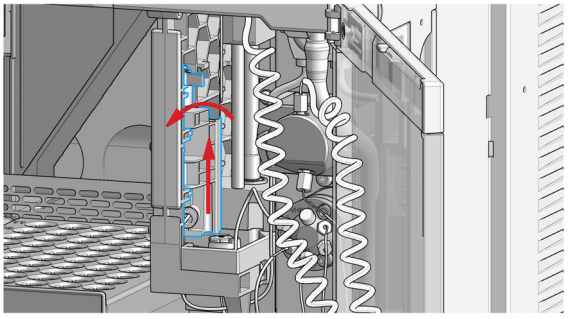
WARNING

Sharp needle
Uncovered needles may cause injuries.

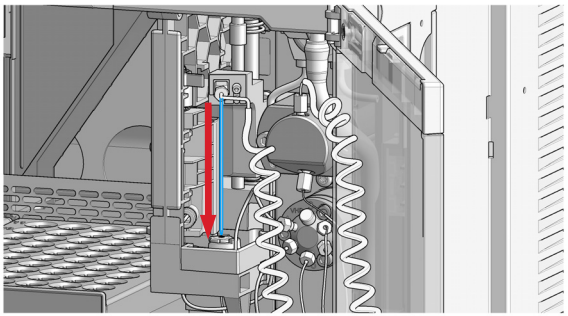
➔ **Do not change the needle seat at this point.**

➔ **Do not touch the tip of the needle.**

5 Turn or flap the wash port to the left.

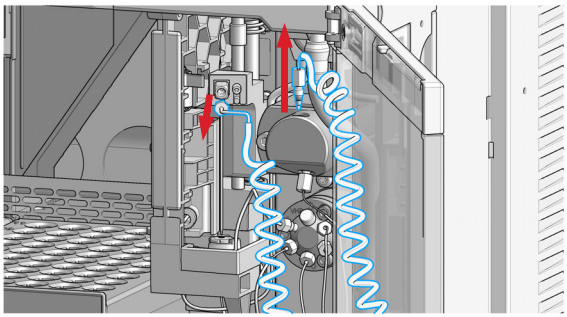


6 In Lab Advisor use **Next** to move the needle in the down position.

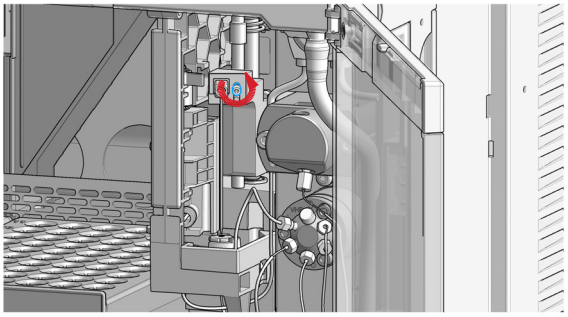


The needle will move slowly downwards and will stop approximately 2 mm above the seat.

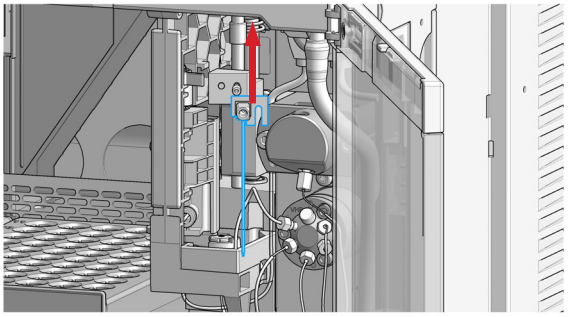
7 Disconnect the sample loop from the needle.



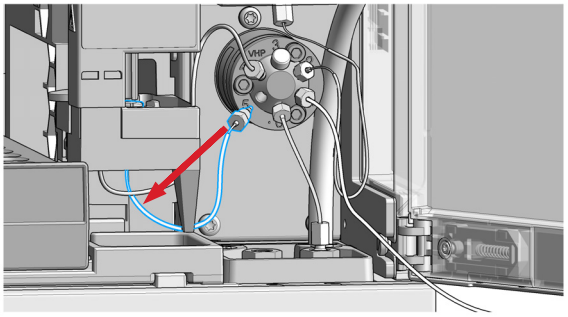
8 Loosen the fixing screw.



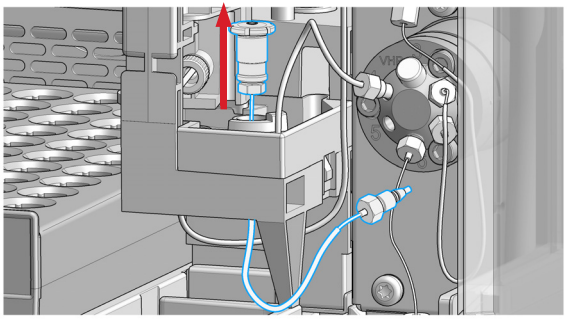
9 Lift out the needle.



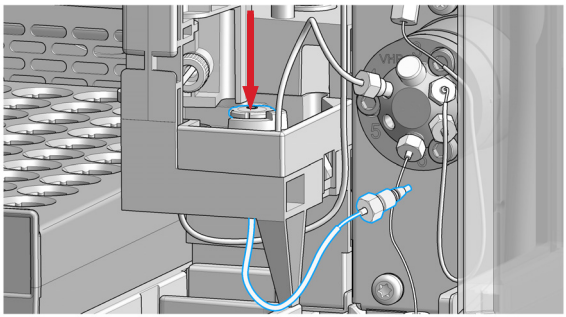
10 Disconnect the seat-capillary fitting from the injection valve (port 5).



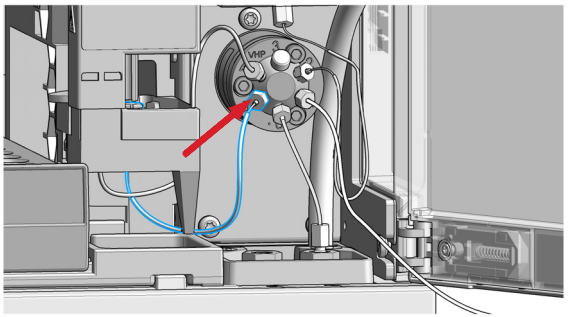
11 Use a small flat-head screwdriver to ease out the needle seat.



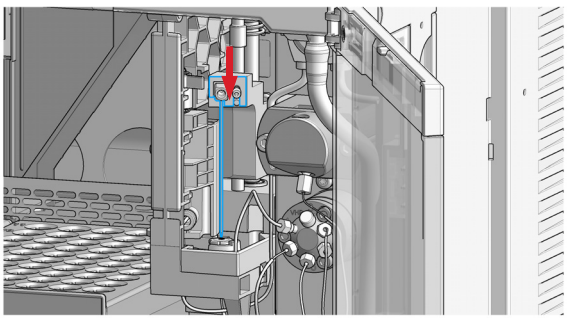
12 Insert the new needle-seat assembly. Press the seat firmly into position.



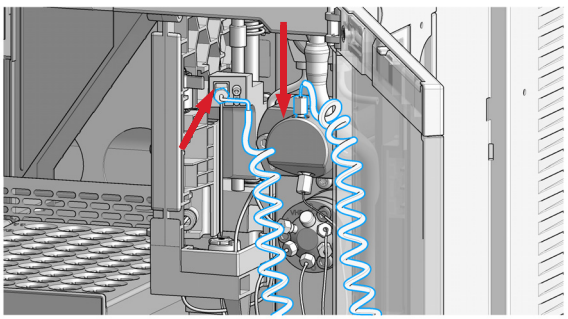
13 Connect the seat-capillary fitting to port 5 of the injection valve.



14 Insert the needle (1). Align the needle in the seat, then tighten the screw firmly (2).



15 Reconnect the sample-loop to the needle.



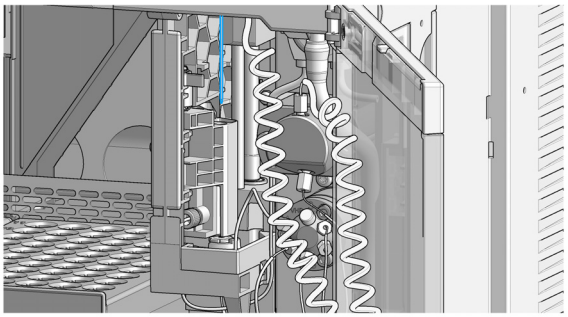
NOTE

Do not overtighten the fitting!

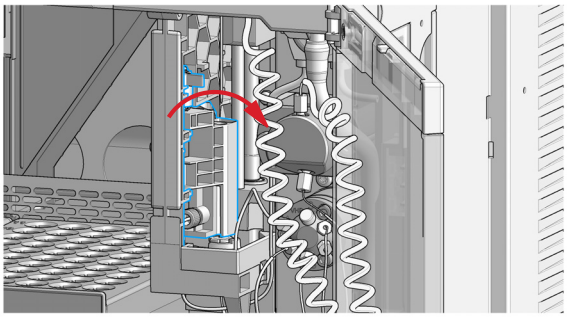
NOTE

Incorrect positioning and installation of the needle/loop connection can result in damaging and breaking the sample loop.

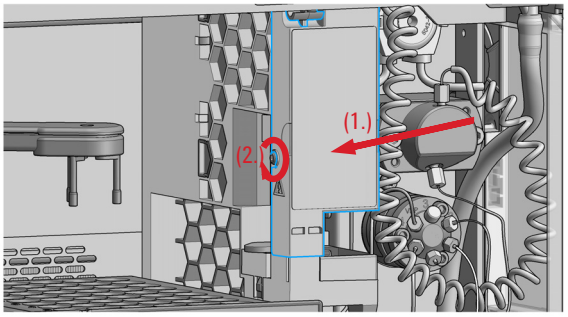
16 In Lab Advisor use **Next** to lift the needle slowly into the up position.



17 Turn or flap the wash port to the right.



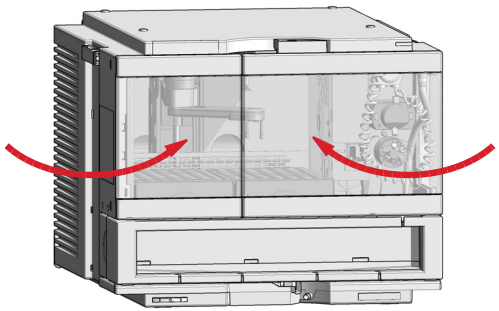
18 Install the safety cover (1.) and fix the screw (2.).



19 Select **Next** to move the needle into the needle seat.

20 Select **Back** to finish the procedure.

21 Close the doors.



22 Perform a pressure test.

Exchange the Sample Loop Assembly

When When sample loop is visibly damaged, blocked or leaks.

Tools required

p/n	Description
8710-1924	Wrench open 14 mm

Parts required

p/n	Description
G7129-60500	Sample Loop 100 µL
G7129-60400	Sample Loop 40 µL
G7129-60300	Sample Loop 20 µL

Preparations Finish any pending acquisition job and in order to avoid leaks, stop the pump running and remove the tubings from the solvent bottles. If available close the shutoff valves.

WARNING

Risk of injury by uncovered needle

An uncovered needle is a risk of harm to the operator.

➔ Do not open the safety cover of the needle station during normal operation.

➔ Wear safety goggles and safety gloves when removing the needle assembly.

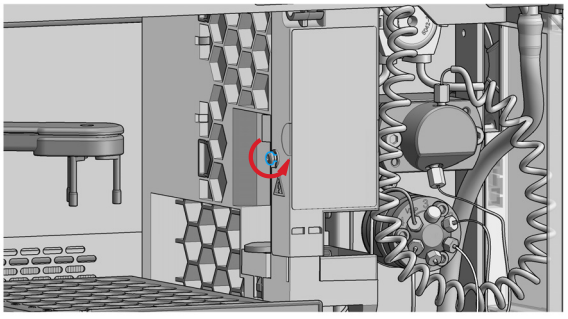
1 In the Local Controller start the maintenance mode and select **Change loop** function.

OR

In the Agilent Lab Advisor software select **Service & Diagnostics** in the system screen **Maintenance Positions > Change loop**, click **Start** and wait until the needle assembly is in maintenance position.

2 Open the front door.

3 Unscrew the safety cover screw.

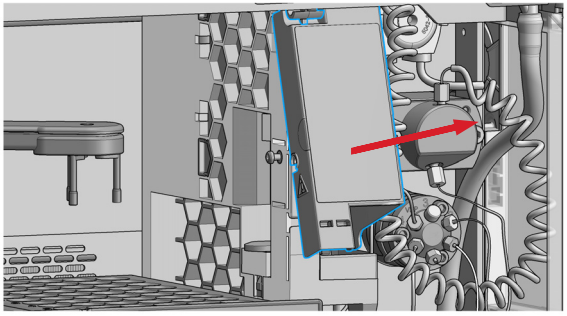


WARNING

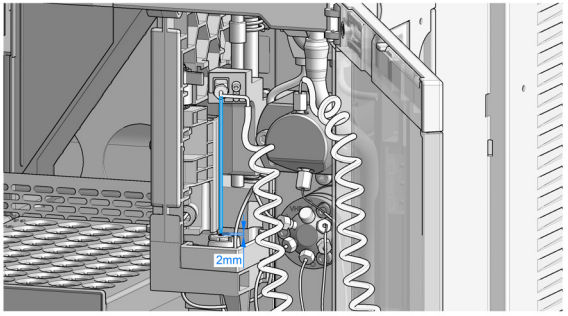
Sharp needle
Uncovered needles may cause injuries

➔ **Do not touch the tip of the needle.**

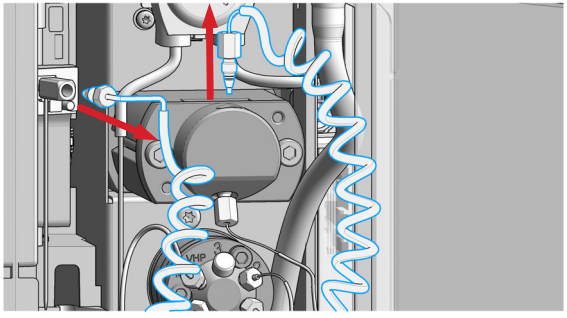
4 Remove the safety cover.



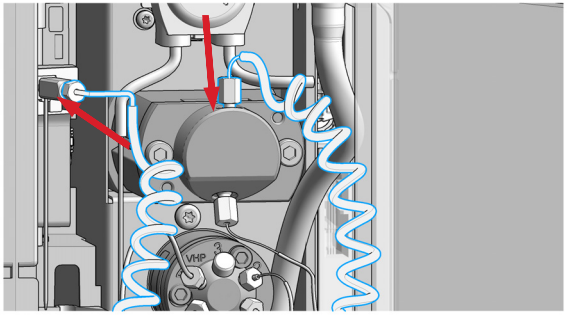
5 Check if the needle is in maintenance position.



6 Disconnect the loop capillary from the metering device and from the needle.



7 Install the new sample loop.

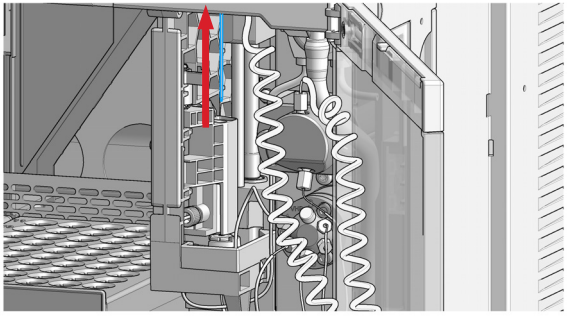


NOTE

Incorrect positioning and installation of the needle/loop connection can result in damaging and breaking the sample loop.

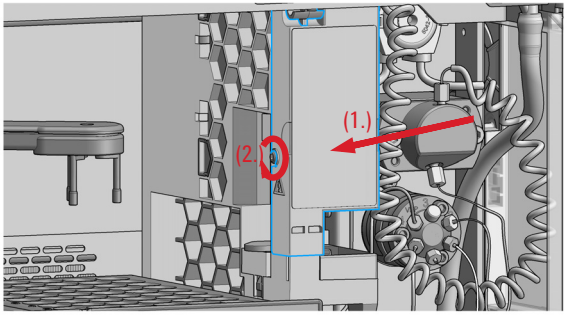
8 After installing the new sample loop, check the needle tip position by using the **Needle Control** function in Lab Advisor.

9 Click on **Next** in the LabAdvisor Needle lift up again.



10 Turn or flap the wash port to the right.

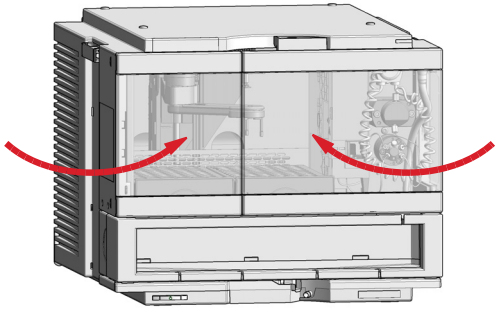
11 Install the safety cover (1.) and fix the screw (2.).



12 Click **Next** until the needle assembly is moved to the needle seat.

13 Select **Back** to finish the procedure.

14 Close the doors.



15 Perform a pressure test.

Exchange the Rotor Seal

When When poor injection volume reproducibility or when injection valve is leaking.

Tools required

p/n	Description
8710-0510	Wrench open 1/4 — 5/16 inch
8710-2394	Hex key 9/64 inch 15 cm long T-handle
	Cleaning tissue and appropriate solvent like isopropanol or methanol

Parts required

	#	p/n	Description
	1	5068-0007	Rotor seal (Vespel), 1300 bar for 1290 Infinity II Injection Valve
OR	1	0101-1416	Rotor seal (PEEK) for 1260 Infinity Injection Valve

Preparations Finish any pending acquisition job and in order to avoid leaks, stop the pump running.

CAUTION

Reduced life time of the injection valve

Component cleanliness is crucial for the life time of the injection valve.

➔ Replace the rotor seal in a clean environment.

CAUTION

Removing the stator head

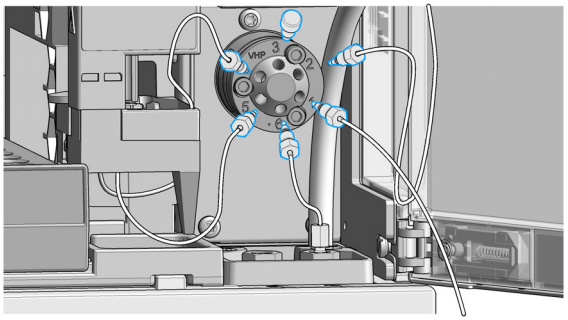
The stator face is held in place by the stator head. When you remove the stator head, the stator face can fall out of the valve.

➔ Carefully handle the valve to prevent damage to the stator face.

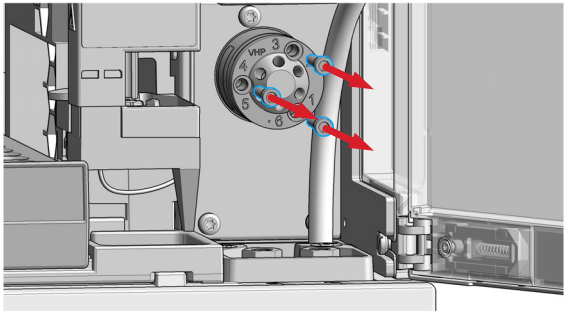
➔ Carefully handle the stator face during sonication.

1 Open the front door.

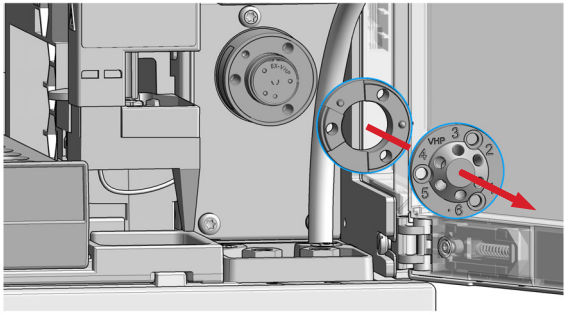
2 Remove all capillaries from the injection valve with a 1/4 inch wrench.



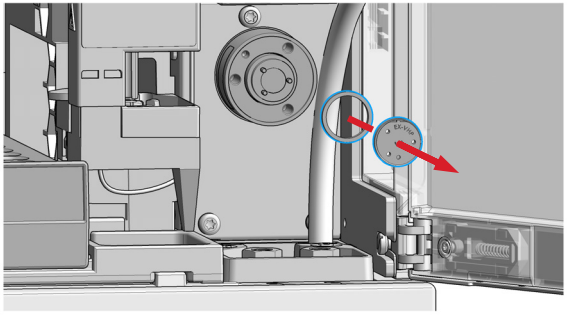
3 Loosen each fixing bolt two turns at a time. Remove the bolts from the head.



4 Remove the stator head and stator ring.



5 Remove the rotor seal and isolation seal.



CAUTION

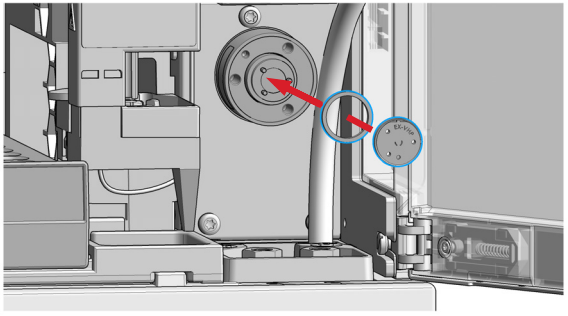
Damage to the rotor seal and cross-port leaks

➔ **Before you replace the rotor seal, clean the stator.**

➔ **Inspect the stator head and swab it with the appropriate solvent. If more stringent cleaning is required, use a sonicator. Inspect the remaining valve components for contamination. Clean them as necessary.**

➔ **If the stator head is scratched, replace the valve.**

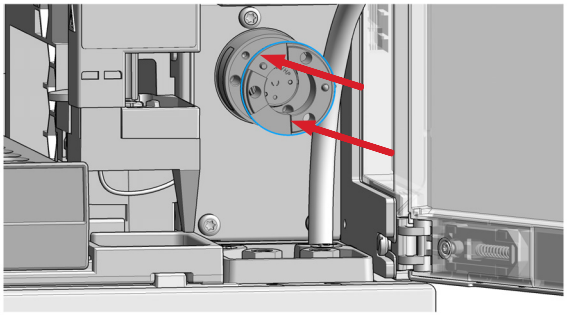
6 Install the new rotor seal and isolation seal. Ensure the metal spring inside the isolation seal faces towards the valve body.



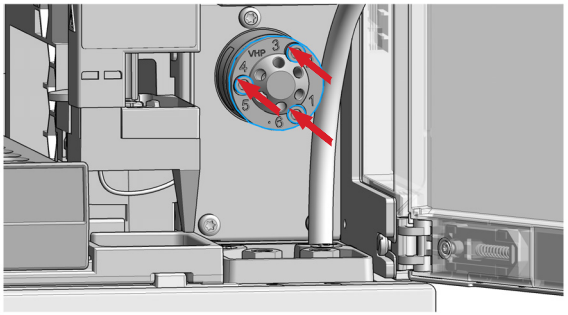
NOTE

Make sure that the rotor sealing surface with its engraved flow passages is facing out. The pattern is asymmetrical to prevent improper placement.

7 Install the stator ring with the short of the two pins facing towards you at the 12 o'clock position. Ensure the ring sits flat on the valve body.



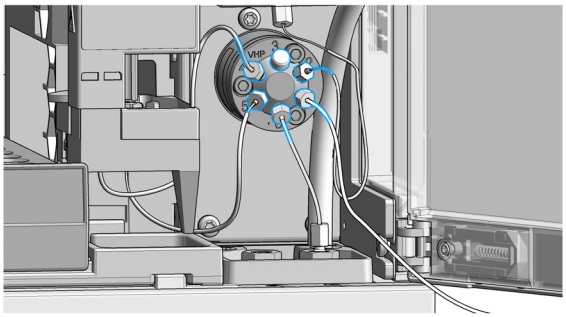
8 Install the stator head. Tighten the bolts alternately two turns at a time until the stator head is secure.



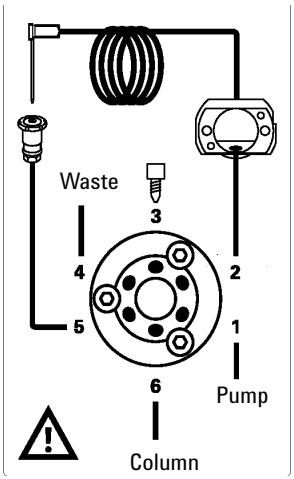
NOTE

Do not over-tighten the screws. The screws hold the assembly together and do not affect the sealing force. The sealing force is automatically set as the screws close the stator head against the valve body.

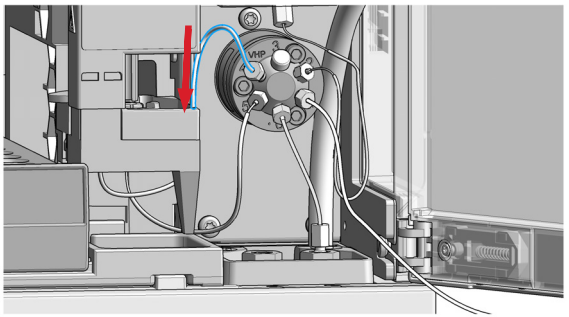
9 Reconnect the capillaries and tubes to the valve ports.



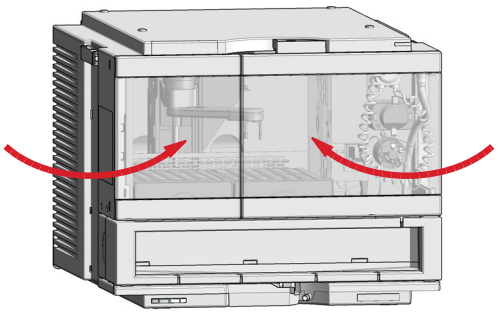
The correct plumbing is shown below and on the safety cover of the module.



10 Slide the waste tube into the waste holder in the leak tray.



11 Close the doors.



12 Perform a pressure test.

Exchange the Metering Seal and Piston

When	Poor injection-volume reproducibility	
	Leaking metering device	
Tools required	**p/n**	**Description**
	8710-0510	Wrench open 1/4 — 5/16 inch
	8710-2392	4 mm Hex key
	8710-2411	Hex key 3 mm12 cm long
	01018-23702	Insert tool
		Cleaning tissue and appropriate solvent like isopropanol or methanol
Parts required	**p/n**	**Description**
	0905-1503	Metering seal 100 µL
	5067-5678	Piston ceramic 100 µL 100 µL
	0905-1717	Metering seal 40 µL 40 µL
	5067-5920	Piston ceramic 40 µL

Preparations Finish any pending acquisition job and in order to avoid leaks, stop the pump running.

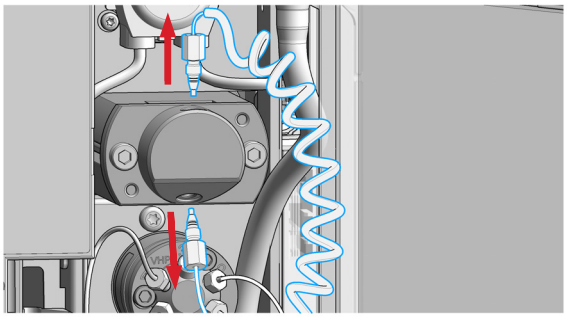
1 In the Local Controller start the maintenance mode and select **Change metering device** function.

OR

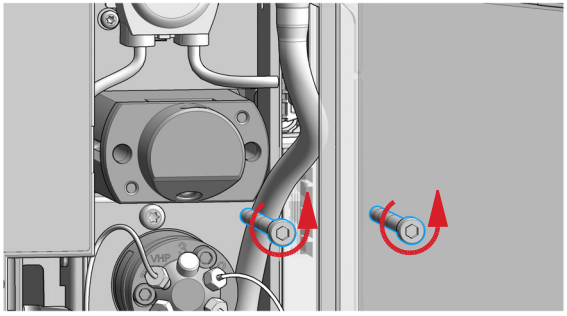
In the **Tools** section of the Agilent Lab Advisor software select **Service & Diagnostics > Maintenance Positions > Change Metering Device**, click **Start** and wait until the metering device is in maintenance position.

2 Open the front door.

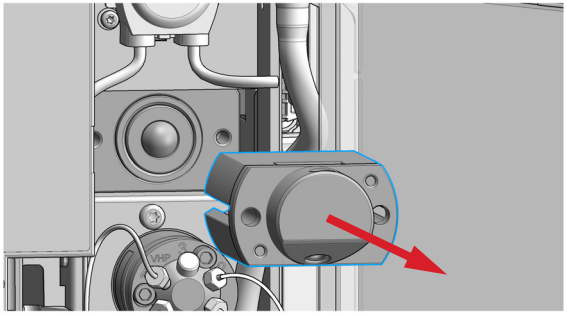
3 Disconnect the two capillaries from the metering device.



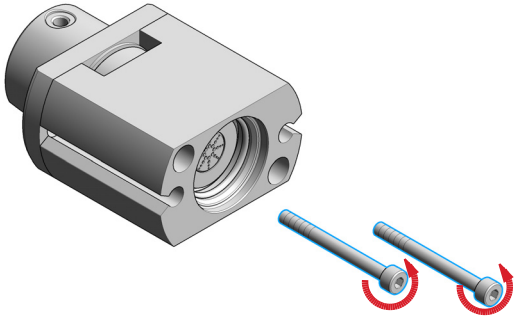
4 Remove the two fixing bolts.



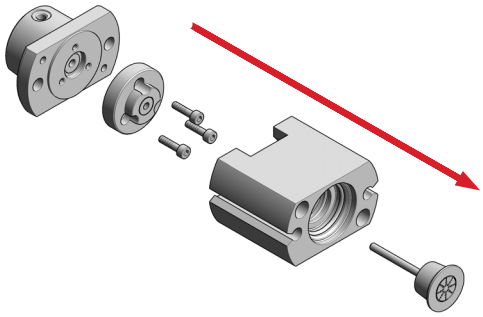
5 Pull the metering head assembly away from the sampler.



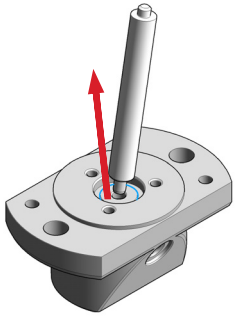
6 Remove the two fixing bolts from the base of the metering head assembly.



7 Disassemble the metering head assembly.

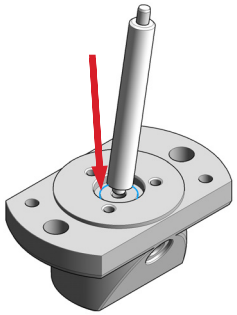


8 Use a seal insert tool to carefully remove the seal.

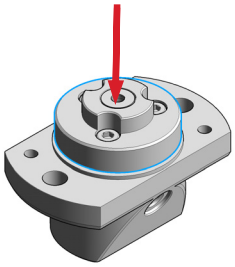


9 Clean the chamber with lint-free cloth and an appropriate solvent. Ensure all particulate matter is removed.

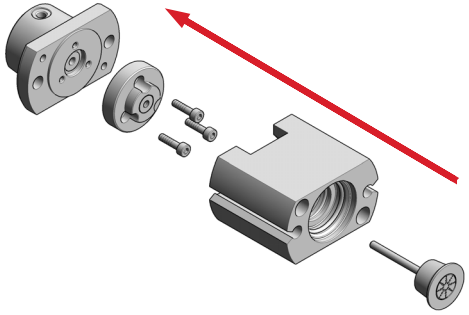
10 Use the plastic side of the insert tool to install the new seal. Press the seal firmly into position.



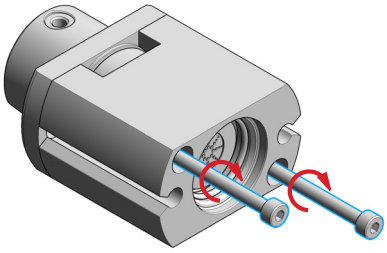
11 Place the piston guide on top of the seal.



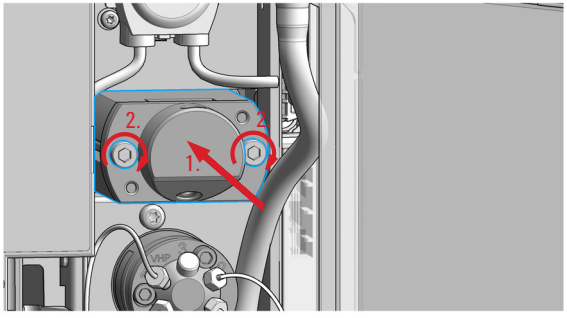
12 Reassemble the metering head assembly. Carefully insert the piston into the base. The closed side of the metering head must be on the same side as the lower one of the two capillary drillings.



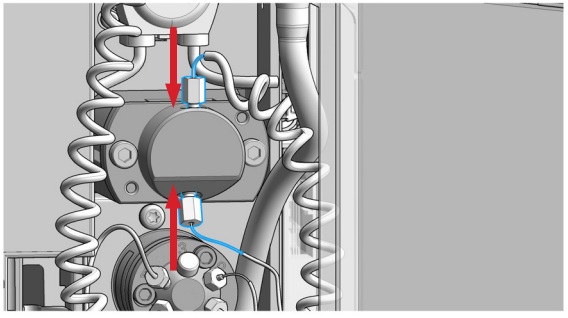
13 Install the fixing bolts. Tighten the bolts securely. Tighten the bolts alternately two turns at a time until the stator head is secure. The housing must flush with the metering head.



14 Install the metering head assembly in the autosampler. Ensure the large hole in the metering head is facing downwards. Tighten the bolts alternately two turns at a time until the metering device is secure.



15 Reinstall the capillaries.



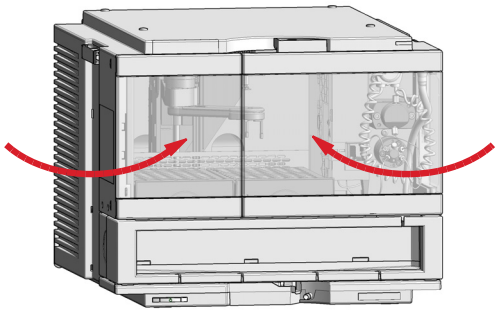
16 In the Local Controller exit the maintenance mode and select **Change metering device** function.

OR

In the **Tools** section of the Agilent Lab Advisor software system screen exit **Service & Diagnostics > Maintenance Positions > Change Metering Device**: click **Next** and wait until the metering device is in Home position.

17 Select **Back** to finish the procedure.

18 Close the doors.



19 Perform a pressure test.

Exchange the Gripper Arm

When	Defective gripper arm	
Tools required	**Description**	
	Straightened paper clip.	
Parts required	**p/n**	**Description**
	G1313-60010	Gripper assembly
Preparations	Finish any pending acquisition job	

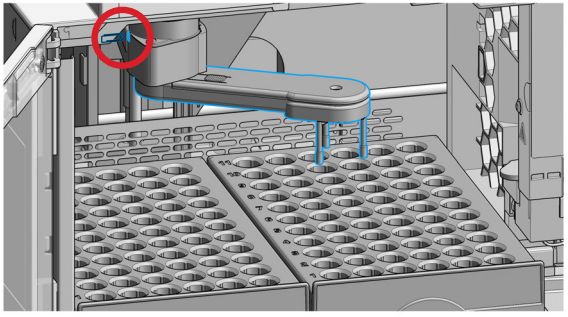
1 In the Local Controller start the maintenance mode and select **Change Gripper** function.

OR

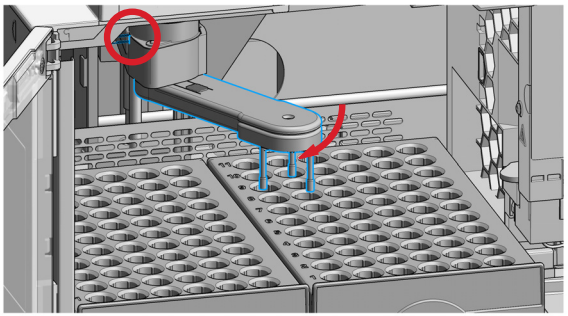
In the **Tools** section of the Agilent Lab Advisor software select **Service & Diagnostics > Maintenance Positions > Change Gripper**, click **Start** and wait until the gripper is in maintenance position.

2 Open the front door.

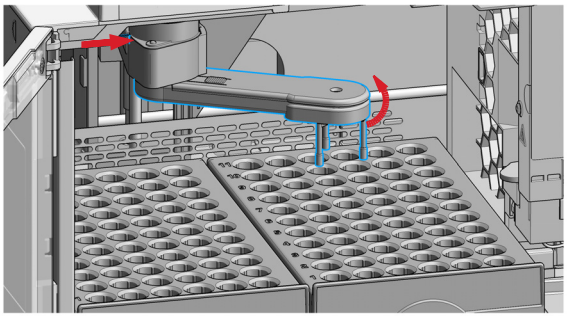
3 Identify the slit below the gripper motor and the gripper arm release button.



4 Rotate the arm approximately 2.5 cm (1 inch) to the left and insert the straightened paper clip into the slit.

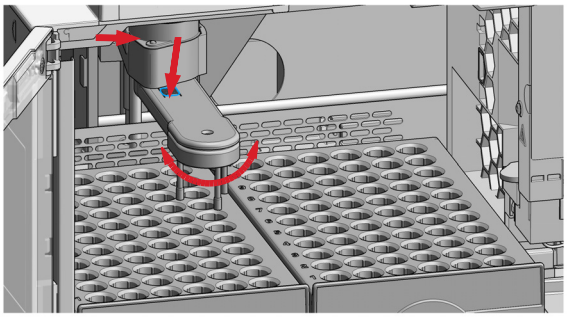


5 Rotate the gripper arm slowly from left to right and apply a gentle pressure to the paper clip.

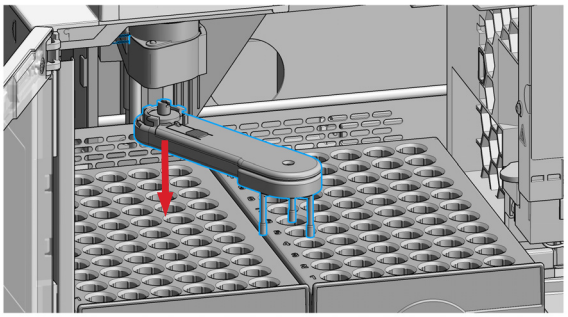


The clip will engage on an internal catch and the rotation of the arm will be blocked.

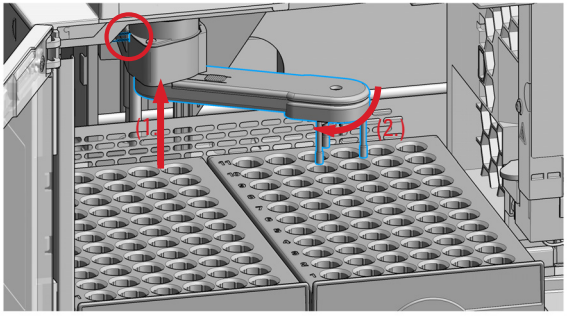
6 Hold the paper clip in place, press the gripper release button and rotate the gripper arm to the right.



7 The gripper arm will come off.



8 Replace the gripper arm by holding the paper clip in place, pushing the gripper arm into the holder and rotating the gripper arm to the left.

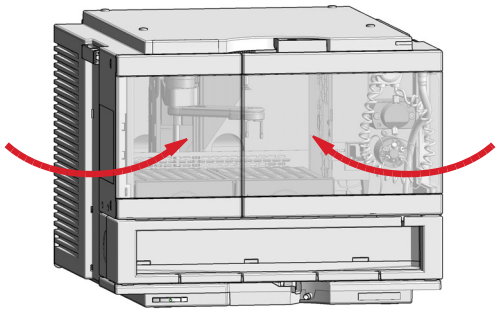


9 In the Local Controller close **Change gripper**.

OR

In the Agilent Lab Advisor software select **Change gripper > Next**, click **Next** and wait until the gripper is in the default position.

10 Select **Back** to finish the procedure.

11 Close the doors. 	

Replace the Peristaltic Pump Cartridge

When	Tubing blocked or broken	
Tools required	**Description**	
Parts required	**p/n**	**Description**
	5065-4445	Peristaltic pump with Pharmed tubing
Preparations	Remove the inlet filter of the solvent bottle which guides the solvent to the peristaltic pump to avoid syphoning effects.	

WARNING

When opening capillary or tube fittings solvents may leak out.

The handling of toxic and hazardous solvents and reagents can hold health risks.

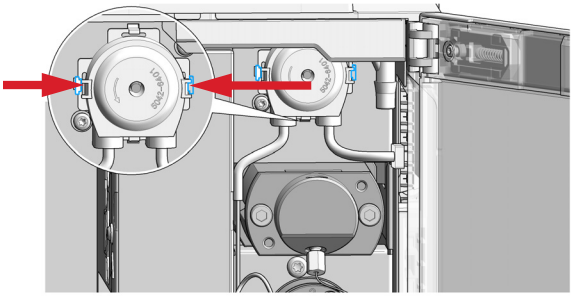
➔ Please observe appropriate safety procedures (for example, goggles, safety gloves and protective clothing) as described in the material handling and safety data sheet supplied by the solvent vendor, especially when toxic or hazardous solvents are used.

NOTE

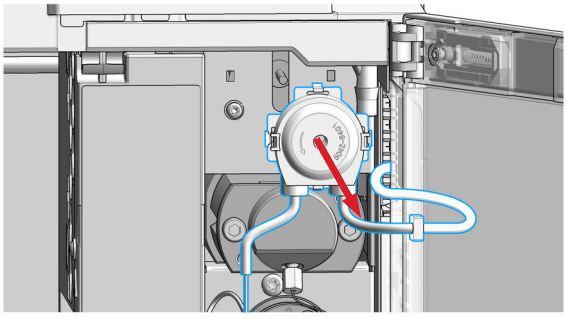
The peristaltic pump cartridge is a replaceable unit. The tubing inside the pump is not replaceable.

1 Open the front door.

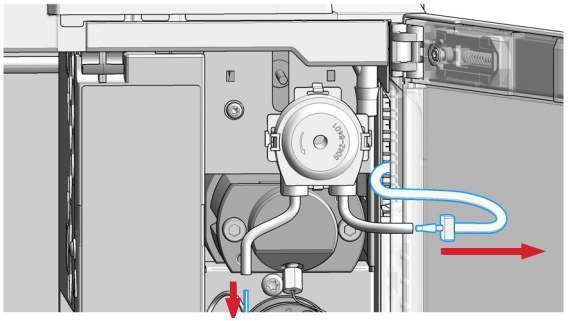
2 Press the two clips on the front of the peristaltic pump cartridge.



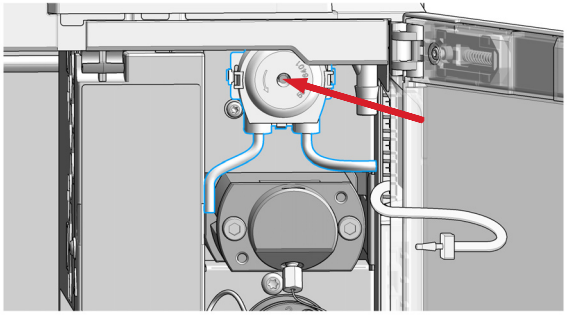
3 Pull the cartridge forward off the motor shaft.



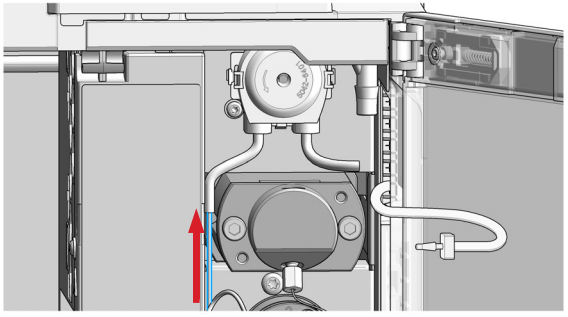
4 Disconnect the tubing coupler leading to the wash port and the tubing coupler coming from the solvent bottle.



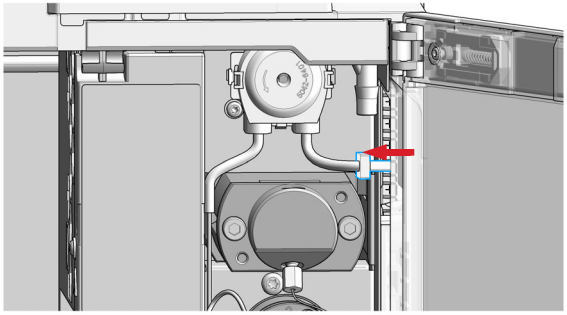
5 Push the new cartridge onto the motor shaft until the clips click into place.



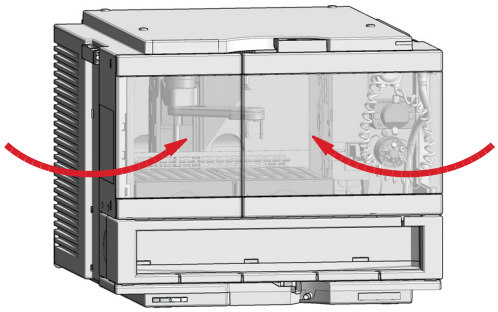
6 Connect the wash port tubing to the upper tubing of the new cartridge (use sand paper to get a good grip on the tubing).



7 Connect the inlet filter of the solvent bottle. Use the syringe to draw enough solvent for completely filling of the peristaltic pump tubing before continuing to prime the peristaltic pump.



8 Close the doors.



Exchange the Wash Port Assembly

When	Defective flapper	
Parts required	**p/n**	**Description**
	G7129-60033	Saftey wash port (needle station)
Preparations	Finish any pending acquisition job and in order to avoid leaks, stop the pump running and remove the tubings from the solvent bottles. If available close the shutoff valves.	

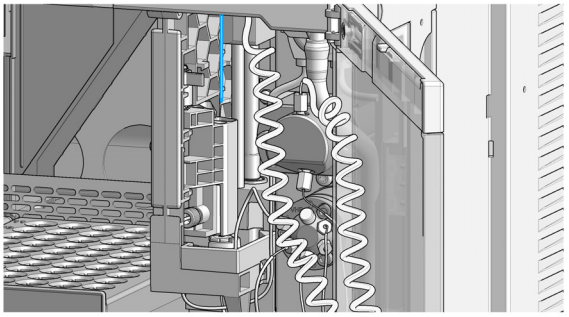
1 In the Local Controller start the maintenance mode and select **Change needle/seat** function.

OR

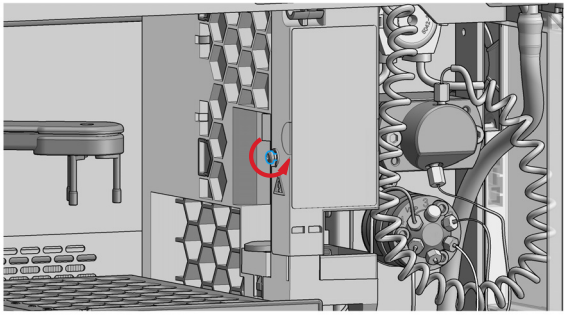
In the Agilent Lab Advisor software select **Service & Diagnostics** in the system screen (**Tools**) **Maintenance Positions > Change Needle/Loop**, click **Start** and wait until the needle assembly is in maintenance position.

2 Open the front door.

3 Check if the needle is lifted up.



4 Unscrew the safety cover screw.



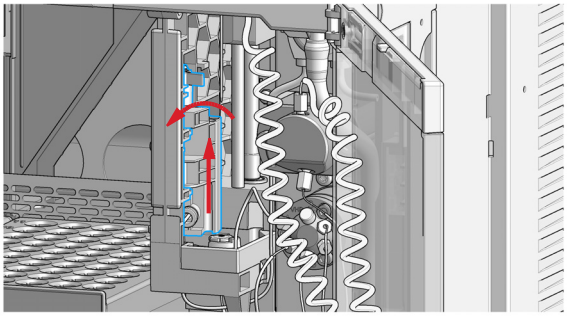
WARNING

Sharp needle
Uncovered needles may cause injuries.

➔ **Do not change the needle seat at this point.**

➔ **Do not touch the tip of the needle.**

6 Turn or flap the wash port to the left.

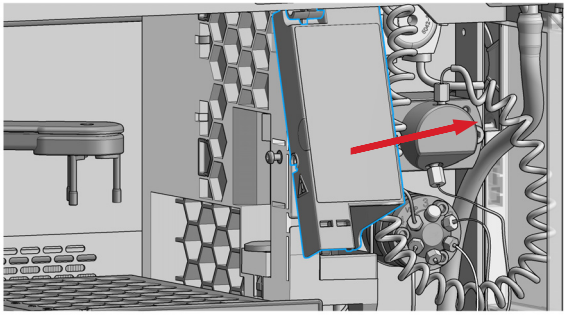


WARNING

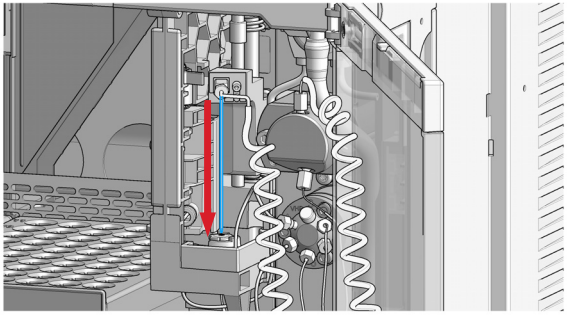
Sharp needle
Uncovered needles may cause injuries

➔ **Do not touch the tip of the needle.**

5 Remove the safety cover.

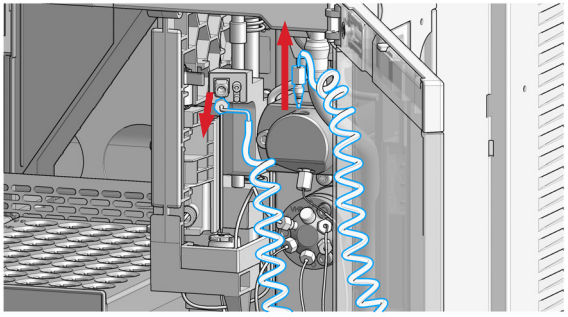


7 In Lab Advisor use **Next** to move the needle in the down position.

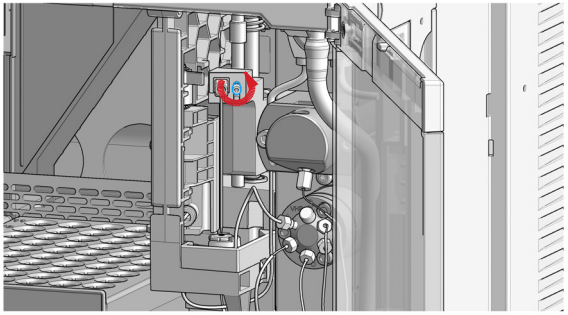


The needle will move slowly downwards and will stop approximately 2 mm above the seat.

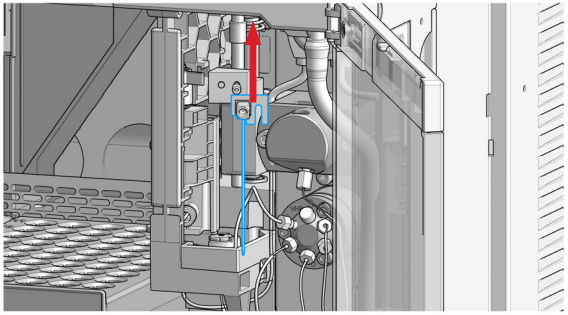
8 Disconnect the sample loop from the needle.



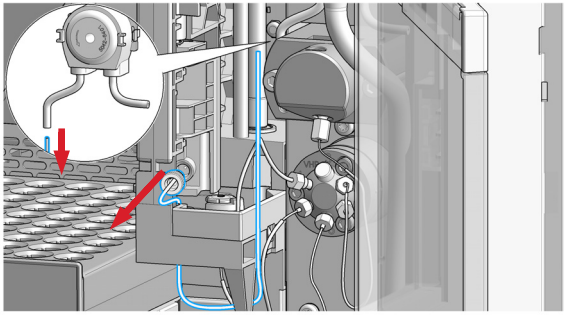
9 Loosen the fixing screw.



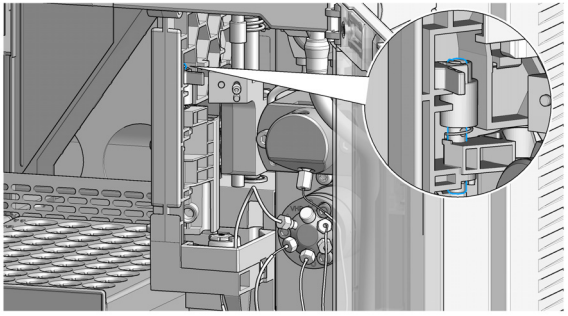
10 Lift out the needle.



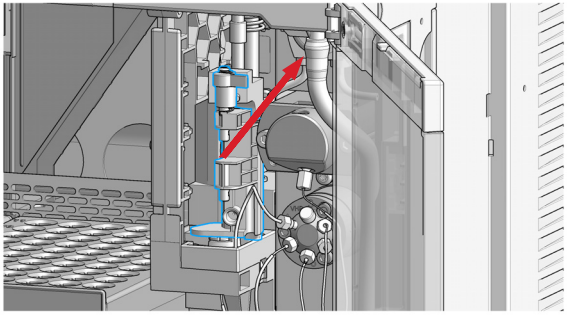
11 Disconnect the wash tubing from the peristaltic pump.



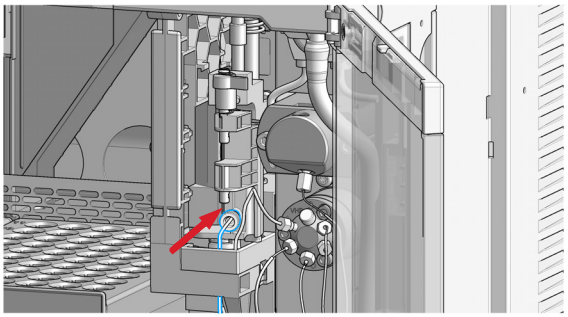
12 Release the spring loaded pin.



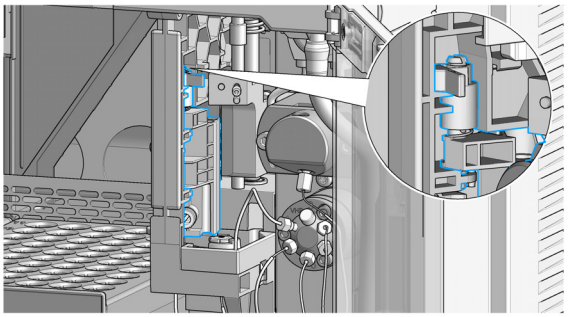
13 Lift the flapper out of the bracket. Be careful not to squeeze the wash tubing.



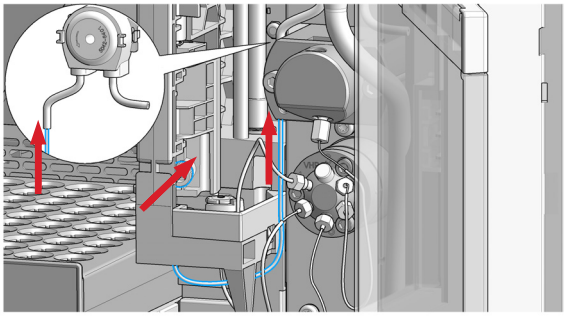
14 Reconnect the wash tubing fitting to the new wash port assembly.



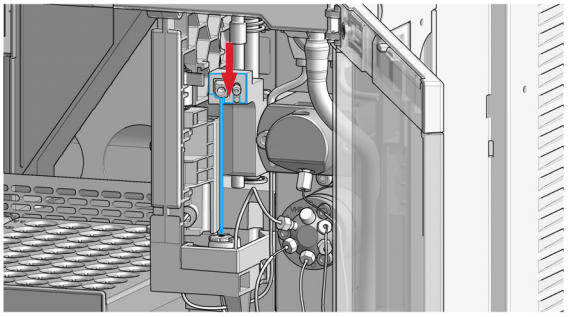
15 Reinstall the new wash port assembly by mounting the flapper into the housing of the needle station. The pin must be latched into the housing. Check the movement of the flapper.



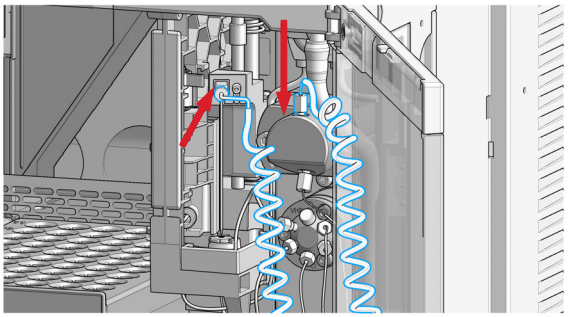
16 Install and reconnect the wash tubing to the peristaltic pump.



17 Insert the needle (1). Align the needle in the seat, then tighten the screw firmly (2).



18 Reconnect the sample-loop to the needle.



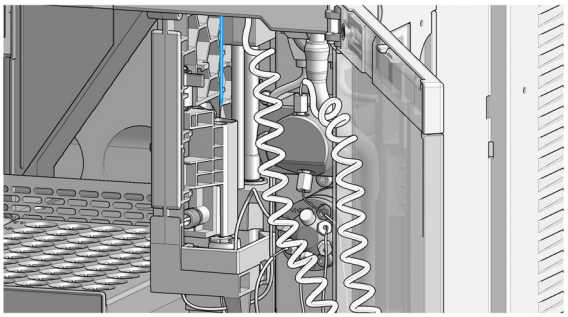
NOTE

Do not overtighten the fitting!

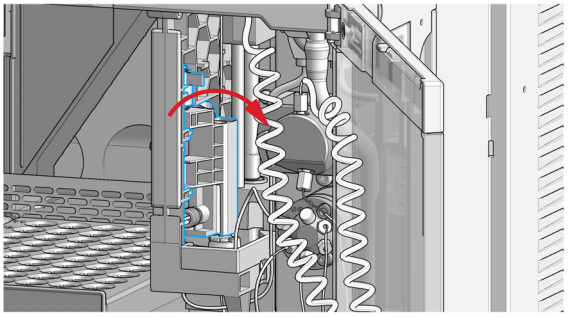
NOTE

Incorrect positioning and installation of the needle/loop connection can result in damaging and breaking the sample loop.

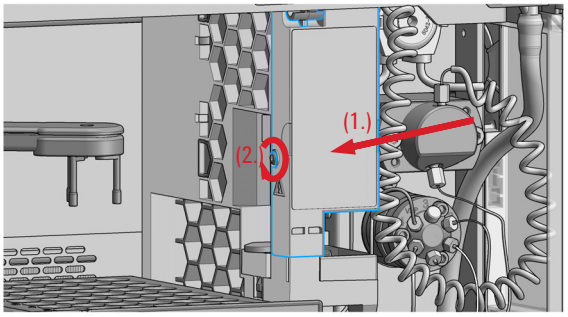
19 In Lab Advisor use **Next** to lift the needle slowly into the up position.

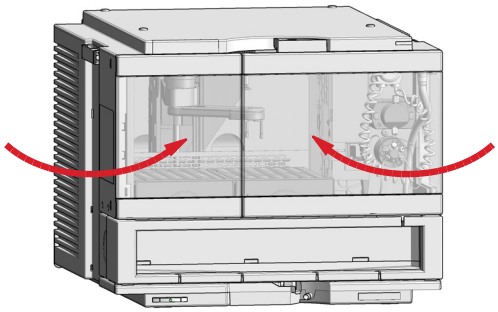


20 Turn or flap the wash port to the right.



21 Install the safety cover (1.) and fix the screw (2.).



22 Select **Next** to move the needle into the needle seat. **23** Select **Back** to finish the procedure.	**24** Close the doors. 
25 Purge the wash port. Check if solvent will be delivered from the peristaltic pump.	

Replace the Module Firmware

When

The installation of newer firmware might be necessary
- if a newer version solves problems of older versions or
- to keep all systems on the same (validated) revision.

The installation of older firmware might be necessary
- to keep all systems on the same (validated) revision or
- if a new module with newer firmware is added to a system or
- if third party control software requires a special version.

Tools required

Description
Agilent Lab Advisor software

Parts required

#	Description
1	Firmware, tools and documentation from Agilent web site

Preparations

Read update documentation provided with the Firmware Update Tool.

To upgrade/downgrade the module's firmware carry out the following steps:

1 Download the required module firmware, the latest FW Update Tool and the documentation from the Agilent web.
http://www.agilent.com/en-us/firmwareDownload?whid=69761

2 For loading the firmware into the module follow the instructions in the documentation.

Module Specific Information

There is no specific information for this module.

10
Parts and Materials for Maintenance

This chapter provides information on parts for maintenance and repair.

Main Assemblies

Item		p/n	Description
	1	G7129-60010	Drawer for 66 x 2 mL Vials
OR	1	G7129-60110	Drawer for 18 x 6 mL Vials
OR	1	G7129-68210	Drawer-Kit 100 x 2 mL Vials Classic
		G7129-60210	Drawer for 50 x 2 mL Vials Classic Left
		G7129-60220	Drawer for 50 x 2 mL Vials Classic Right
	2	G7129-60084	Analytical Head Assembly 40 µL
OR	2	G7129-60082	Analytical Head Assembly 100 µL
	3	G1313-60010	Gripper assembly
	4	5067-4238	2pos/6port Injection Valve 1300 bar
OR	4	5067-4245	2pos/6port Injection Valve 600 bar
OR		5067-6689	2ps-6pt RC Injection Valve
	5	5065-4445	Peristaltic pump with Pharmed tubing
		G1312-87303	Capillary ST 0.17 mm x 400 mm S/S

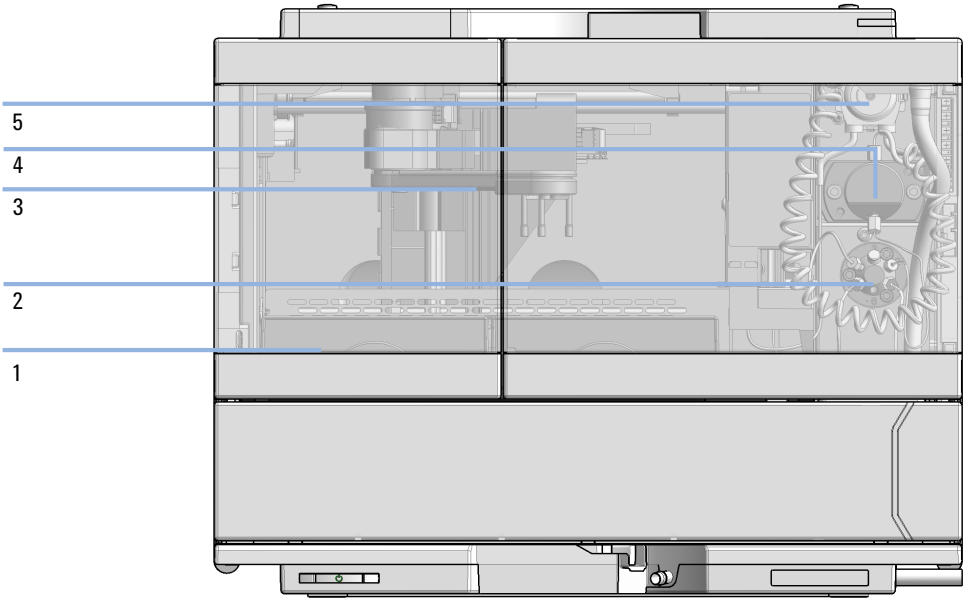


Figure 27 Main assemblies

Standard Parts

p/n	Description
G7129-87200	Needle assembly 1260 Vialsampler for G7129-87017 needle seat
G7129-87201	Needle assembly 1290 Vialsampler for G7129-87012 needle seat
G7129-87202	Needle Assembly (slotted) for high injection volumes
G7129-87012	Seat assembly PEEK 0.12 mm
G7129-87017	Seat assembly PEEK 0.17 mm
5068-0007	Rotor seal (Vespel), 1300 bar for 1290 Infinity II Injection Valve
0101-1416	Rotor seal (PEEK) for 1260 Infinity Injection Valve
G7129-60300	Sample Loop 20 µL (red coded)
G7129-60400	Sample Loop 40 µL (green coded)
G7129-60500	Sample Loop 100 µL (white coded)
5065-4445	Peristaltic pump with Pharmed tubing
5063-6506	Finger caps (x3)[1]

[1] Reorder gives pack of 15

Drawer Assembly

Item	p/n	Description
	G7129-60010	Drawer for 66 x 2 mL Vials
	G7129-60110	Drawer for 18 x 6 mL Vials
	G7129-68210	Drawer-Kit 100 x 2 mL Vials Classic
1	G7129-60210	Drawer for 50 x 2 mL Vials Classic Left
2	G7129-60220	Drawer for 50 x 2 mL Vials Classic Right
	G7129-68210	Drawer-Kit 100 x 2 mL Vials Classic

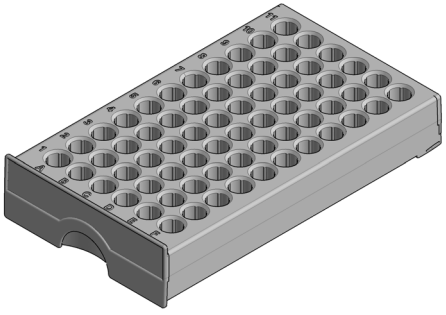


Figure 28 Drawer for 66 x 2.0 mL Vials

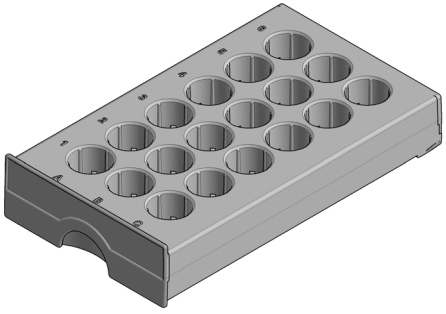


Figure 29 Drawer for 18 x 6 mL Vials

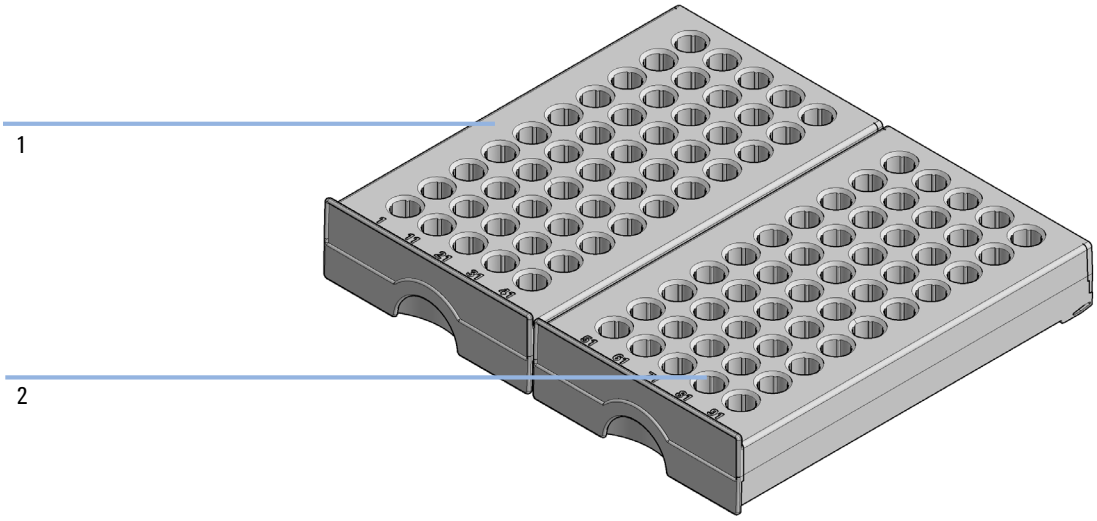


Figure 30 Drawer-Kit 100 x 2 mL Vials Classic

1	Drawer for 50 x 2 mL Vials Classic Left
2	Drawer for 50 x 2 mL Vials Classic Right

NOTE It is required that all drawers are put into correct positions, that is, classical drawer 1-50 must be on the left side and classical drawer 51-100 on the right side.

External Tray

p/n	Description
G7129-60000	External Tray for 5 x 2 mL Vials
G1313-27302	Disposal tube

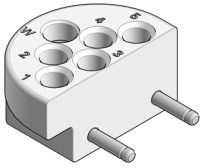


Figure 31 External tray

Analytical Head Assembly (40 µL)

Item	p/n	Description
	G7129-60084	Analytical Head Assembly 40 µL
1	G7129-27704	Analytical-Head 40 µL
2	0905-1717	Metering seal 40 µL
3	G7129-60184	Seal Support Assembly 40 µL
4	0515-1052	Screw 2.5 mm hex
5	G7129-60006	Adapter-Assembly Analytical-Head
6	0515-0850	Screws
7	5067-5920	Piston ceramic

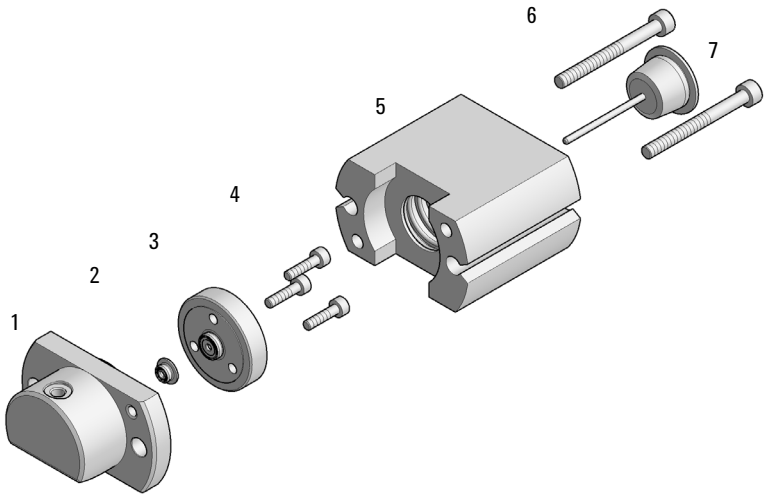


Figure 32 Analytical head assembly (40 µL)

Analytical Head Assembly (100 µL)

Item	p/n	Description
	G7129-60082	Analytical Head Assembly 100 µL
1	G7129-27710	Analytical-Head 100 µL
2	0905-1503	Metering seal
3	G7129-60182	Seal Support Assembly 100 µL
4	0515-1052	Screw 2.5 mm hex
5	G7129-60006	Adapter-Assembly Analytical-Head
6	0515-0850	Screws
7	5067-5678	Piston ceramic 100 µL

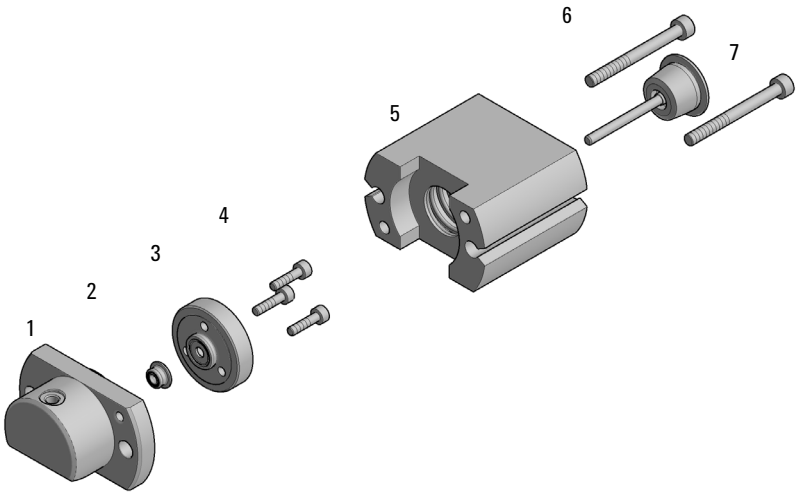


Figure 33 Analytical head assembly, 100 µL

Analytical-Head Assembly (900 µL)

Item	p/n	Description
	G7129-60083	Analytical Head Assembly 900 µL
1	G7129-27790	Analytical-Head 900 µL
2	0905-1294	Metering seal, 900 µL
3	5001-3764	Support seal assembly, 900 µL
4	G7129-60006	Adapter-Assembly Analytical-Head
5	0515-0850	Screws
6	G4267-60462	Piston Assembly, 900 µL

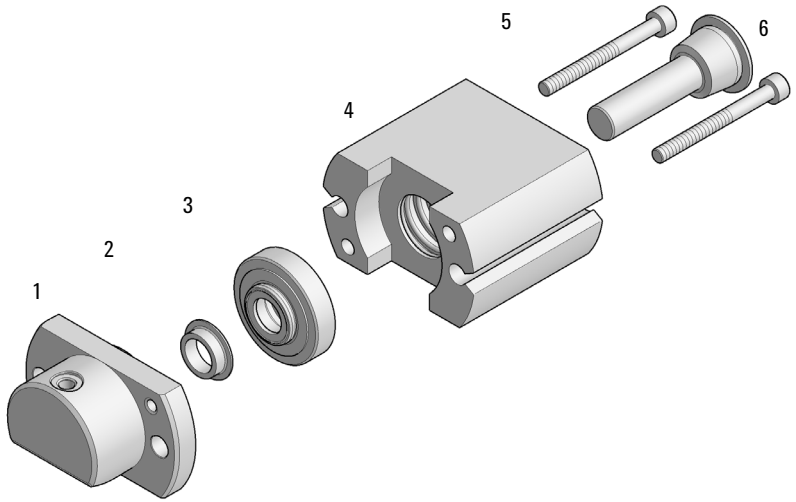


Figure 34 Analytical head assembly (900 µL)

2ps 6pt Injection Valve 1300 bar

Item	p/n	Description
	5067-4238	2pos/6port Injection Valve 1300 bar
1	5068-0018	Stator screws
2	5068-0216	Stator, Injection Valve, 1300 bar
3	5068-0118	Stator ring
4	5068-0007	Rotor seal (Vespel), 1300 bar
5	1535-4045	Bearing ring

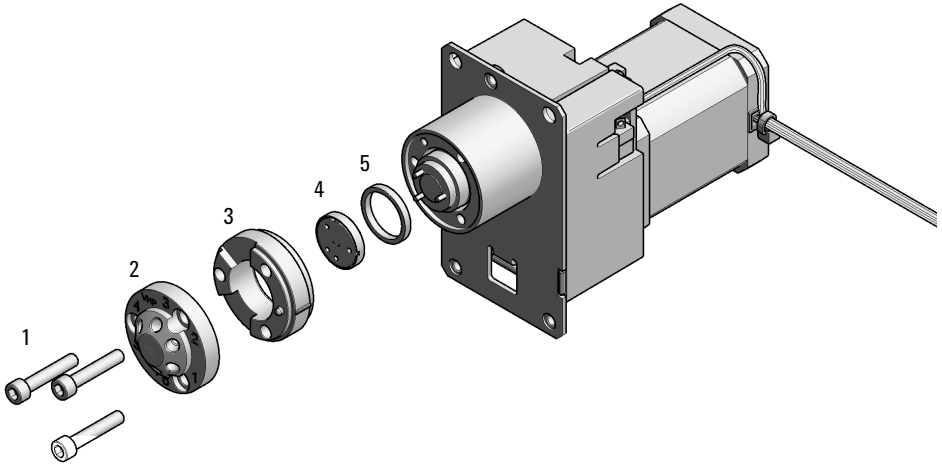


Figure 35 2ps 6pt Injection Valve 1300 bar

2ps 6pt Injection Valve 800 bar

Item	p/n	Description
	5067-6689	2ps-6pt RC Injection Valve
1	5068-0018	Stator screws
2	5068-0215	Stator, Injection Valve, 600 bar
3	5068-0118	Stator ring
4	0101-1416	Rotor seal (PEEK)
5	1535-4045	Bearing ring

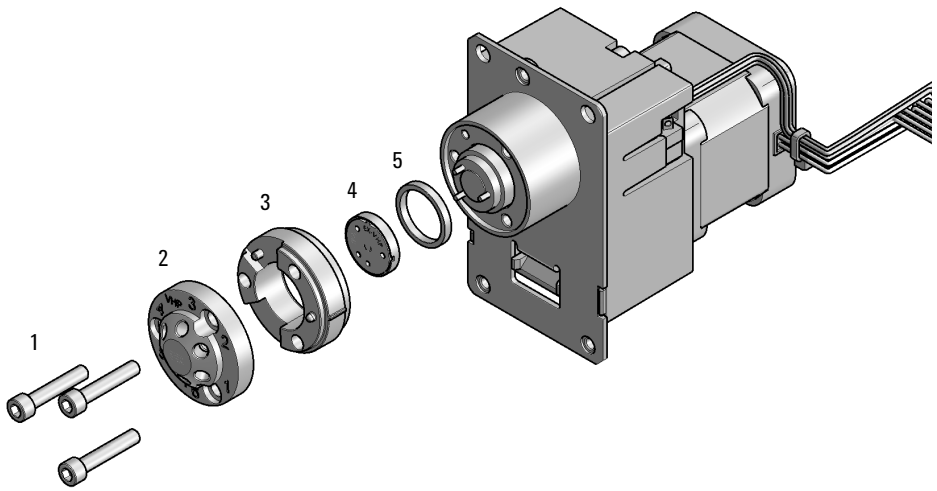


Figure 36 2ps 6pt Injection Valve 600 bar

2ps 6pt Injection Valve 600 bar

Item	p/n	Description
	5067-4245	2pos/6port Injection Valve 600 bar
1	5068-0018	Stator screws
2	5068-0215	Stator, Injection Valve, 600 bar
3	5068-0118	Stator ring
4	0101-1416	Rotor seal (PEEK)
5	1535-4045	Bearing ring

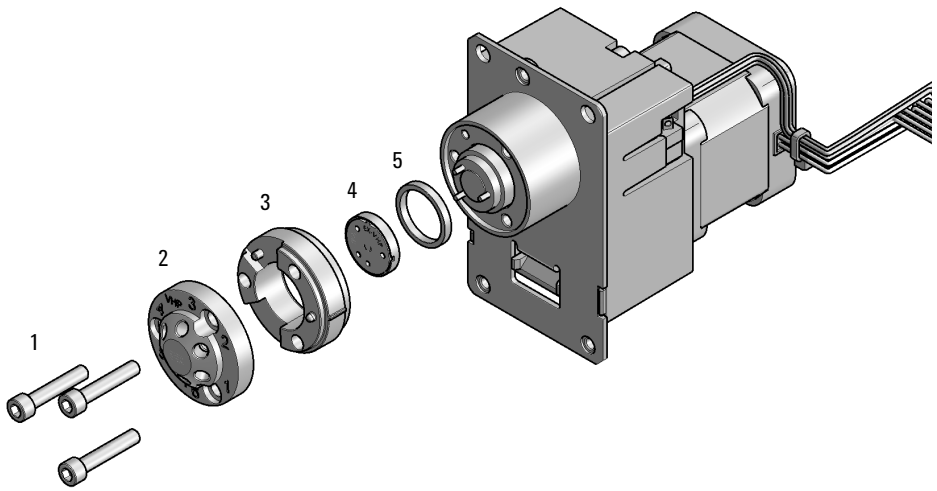


Figure 37 2ps 6pt Injection Valve 600 bar

Integrated Column Compartment

p/n	Description
G7130-60030	ICC Column Heater 3 µL volume
G7130-60060	ICC Column Heater 6 µL volume
5043-1356	Colum Holder Lamella
G7129-60057	Shelf Assembly (not shown)

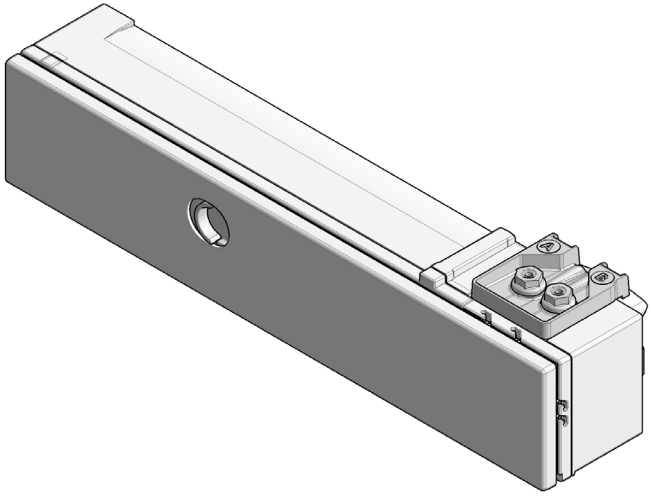


Figure 38 Integrated column compartment

Cabinet Kit

Item	p/n	Description
1	G7129-60202	Side cover right
2	5043-0286	Base Cover
3	G7129-60201	Side cover left
4	5067-5908	Top Cover
	G7129-40008	Rail left (not shown)
	G7129-40009	Rail right (not shown)
	G1313-22406	SCREW-FIX (not shown)

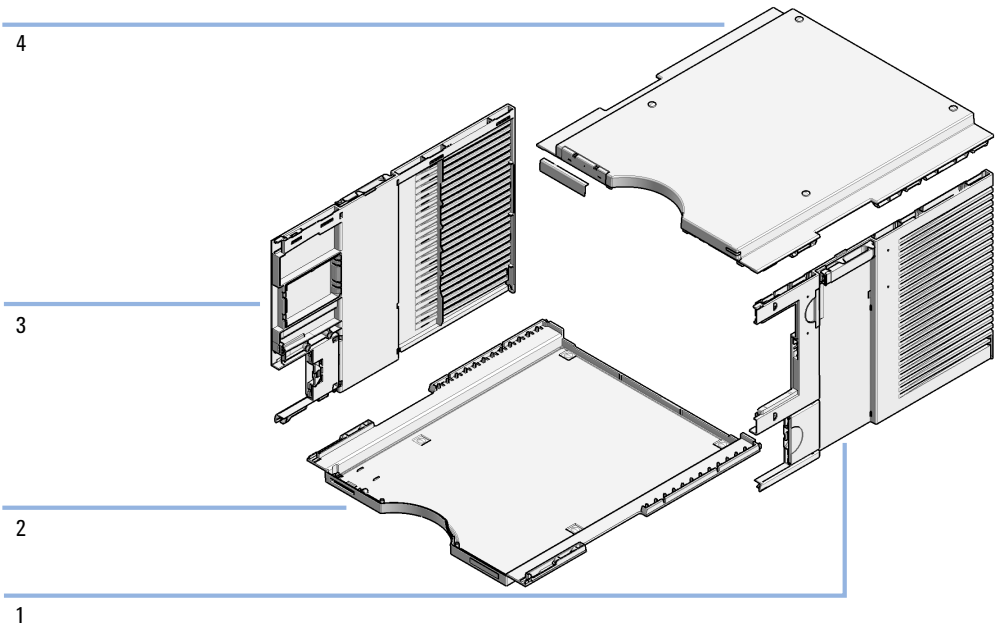


Figure 39 Cabinet kit

Standard Vialsampler Accessory Kit

Standard Vialsampler Accessory Kit (G7129-68705) contains the following parts:

#	p/n	Description
1	5063-6527	Tubing assembly, i.d. 6 mm, o.d. 9 mm, 1.2 m (to waste)
1	5181-1519	CAN cable, Agilent module to module, 1 m
3	G1313-44101	Finger Cap
1	5500-1155	Tube Connector, 90 degree, ID 6.4
1	5500-1254	Tube connector 180 °
1	5500-1251	Capillary ST 0.12 mmX 400 mm SL/SL
1	5043-1013	Tubing Clip

Multi-Draw Kit

The Multidraw kit (G7167-68711) extends Injection volumes up to 500 µL or to 1500 µL. The Kit contains the following items:

p/n	Description
G1313-87307	Seat capillary, 500 µL, 0.5 mm id
G1313-87308	Seat capillary, 1500 µL, 0.9 mm id
5022-6515	Union ZDV

NOTE The internal volume of the seat capillary is 400 µL or 1400 µL. With the sample loop the maximum draw volume of 500 µL or 1500 µL can be reached.

11
Identifying Cables

This chapter provides information on cables used with the Agilent 1200 Infinity Series modules.

Cable Overview

NOTE Never use cables other than the ones supplied by Agilent Technologies to ensure proper functionality and compliance with safety or EMC regulations.

Analog cables

p/n	Description
35900-60750	Agilent 35900A A/D converter
01046-60105	Analog cable (BNC to general purpose, spade lugs)

Remote cables

p/n	Description
5188-8029	ERI to general purpose
5188-8044	Remote Cable ERI – ERI
5188-8045	Remote Cable APG – ERI
5188-8059	ERI-Extension-Cable 1.2 m
5061-3378	Remote Cable to 35900 A/D converter
01046-60201	Agilent module to general purpose
5188-8057	Fraction Collection ERI remote Y-cable

CAN cables

p/n	Description
5181-1516	CAN cable, Agilent module to module, 0.5 m
5181-1519	CAN cable, Agilent module to module, 1 m

LAN cables

p/n	Description
5023-0203	Cross-over network cable, shielded, 3 m (for point to point connection)
5023-0202	Twisted pair network cable, shielded, 7 m (for point to point connection)

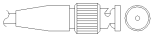
RS-232 cables (not for FUSION board)

p/n	Description
RS232-61601	RS-232 cable, 2.5 m Instrument to PC, 9-to-9 pin (female). This cable has special pin-out, and is not compatible with connecting printers and plotters. It's also called "Null Modem Cable" with full handshaking where the wiring is made between pins 1-1, 2-3, 3-2, 4-6, 5-5, 6-4, 7-8, 8-7, 9-9.
5181-1561	RS-232 cable, 8 m

USB cables

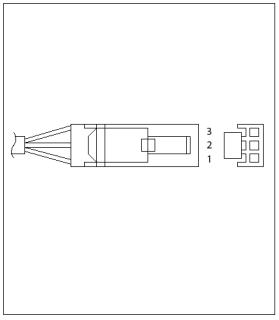
p/n	Description
5188-8050	USB A M-USB Mini B 3 m (PC-Module)
5188-8049	USB A F-USB Mini B M OTG (Module to Flash Drive)

Analog Cables

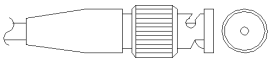


One end of these cables provides a BNC connector to be connected to Agilent modules. The other end depends on the instrument to which connection is being made.

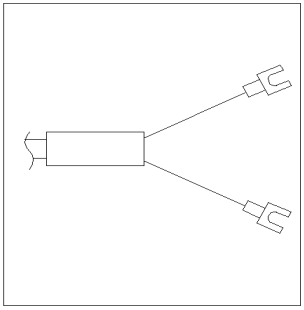
Agilent Module to 35900 A/D converters

p/n 35900-60750	35900	Pin Agilent module	Signal Name
	1		Not connected
	2	Shield	Analog -
	3	Center	Analog +

Agilent Module to BNC Connector

p/n 8120-1840	Pin BNC	Pin Agilent module	Signal Name
	Shield	Shield	Analog -
	Center	Center	Analog +

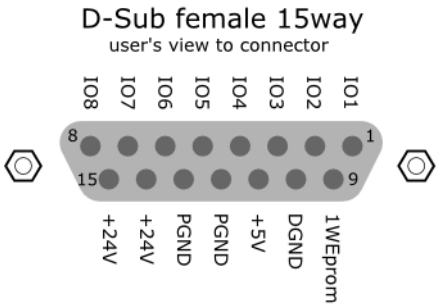
Agilent Module to General Purpose

p/n 01046-60105	Pin	Pin Agilent module	Signal Name
	1		Not connected
	2	Black	Analog -
	3	Red	Analog +

Remote Cables

ERI (Enhanced Remote Interface)

- 5188-8029 ERI to general purpose (D-Sub 15 pin male - open end)
- 5188-8044 ERI to ERI (D_Sub 15 pin male - male)
- 5188-8059 ERI-Extension-Cable 1.2 m (D-Sub15 pin male / female)

p/n 5188-8029	pin	Color code	Enhanced Remote	Classic Remote	Active (TTL)
	1	white	IO1	START REQUEST	Low
	2	brown	IO2	STOP	Low
	3	green	IO3	READY	High
	4	yellow	IO4	POWER ON	High
	5	grey	IO5	NOT USED	
	6	pink	IO6	SHUT DOWN	Low
	7	blue	IO7	START	Low
	8	red	IO8	PREPARE	Low
	9	black	1wire DATA		
	10	violet	DGND		
	11	grey-pink	+5V ERI out		
	12	red-blue	PGND		
	13	white-green	PGND		
	14	brown-green	+24V ERI out		
	15	white-yellow	+24V ERI out		
	NC	yellow-brown			

- 5188-8045 ERI to APG (Connector D_Subminiature 15 pin (ERI), Connector D_Subminiature 9 pin (APG))

p/n 5188-8045	Pin (ERI)	Signal	Pin (APG)	Active (TTL)
	10	GND	1	
	1	Start Request	9	Low
	2	Stop	8	Low
	3	Ready	7	High
	5	Power on	6	High
	4	Future	5	
	6	Shut Down	4	Low
	7	Start	3	Low
	8	Prepare	2	Low
	Ground	Cable Shielding	NC	

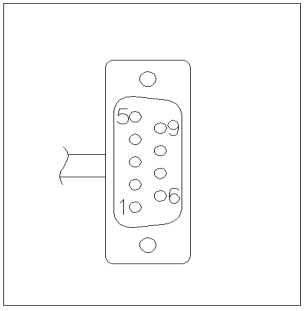
- 5188-8057 ERI to APG and RJ45 (Connector D_Subminiature 15 pin (ERI), Connector D_Subminiature 9 pin (APG), Connector plug Cat5e (RJ45))

Table 17 5188-8057 ERI to APG and RJ45

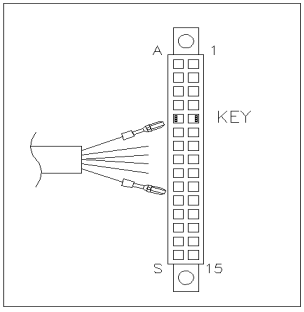
p/n 5188-8057	Pin (ERI)	Signal	Pin (APG)	Active (TTL)	Pin (RJ45)
					
	10	GND	1		5
	1	Start Request	9	High	
	2	Stop	8	High	
	3	Ready	7	High	
	4	Fraction Trigger	5	High	4
	5	Power on	6	High	
	6	Shut Down	4	High	
	7	Start	3	High	
	8	Prepare	2	High	
	Ground	Cable Shielding	NC		

One end of these cables provides a Agilent Technologies APG (Analytical Products Group) remote connector to be connected to Agilent modules. The other end depends on the instrument to be connected to.

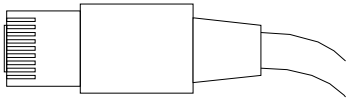
Agilent Module to Agilent 35900 A/D Converters

p/n 5061-3378	Pin 35900 A/D	Pin Agilent module	Signal Name	Active (TTL)
	1 - White	1 - White	Digital ground	
	2 - Brown	2 - Brown	Prepare run	Low
	3 - Gray	3 - Gray	Start	Low
	4 - Blue	4 - Blue	Shut down	Low
	5 - Pink	5 - Pink	Not connected	
	6 - Yellow	6 - Yellow	Power on	High
	7 - Red	7 - Red	Ready	High
	8 - Green	8 - Green	Stop	Low
	9 - Black	9 - Black	Start request	Low

Agilent Module to General Purpose

p/n 01046-60201	Wire Color	Pin Agilent module	Signal Name	Active (TTL)
	White	1	Digital ground	
	Brown	2	Prepare run	Low
	Gray	3	Start	Low
	Blue	4	Shut down	Low
	Pink	5	Not connected	
	Yellow	6	Power on	High
	Red	7	Ready	High
	Green	8	Stop	Low
	Black	9	Start request	Low

CAN/LAN Cables



Both ends of this cable provide a modular plug to be connected to Agilent modules CAN or LAN connectors.

CAN Cables

p/n	Description
5181-1516	CAN cable, Agilent module to module, 0.5 m
5181-1519	CAN cable, Agilent module to module, 1 m

LAN Cables

p/n	Description
5023-0203	Cross-over network cable, shielded, 3 m (for point to point connection)
5023-0202	Twisted pair network cable, shielded, 7 m (for point to point connection)

RS-232 Cables

p/n	Description
RS232-61601	RS-232 cable, 2.5 m Instrument to PC, 9-to-9 pin (female). This cable has special pin-out, and is not compatible with connecting printers and plotters. It's also called "Null Modem Cable" with full handshaking where the wiring is made between pins 1-1, 2-3, 3-2, 4-6, 5-5, 6-4, 7-8, 8-7, 9-9.
5181-1561	RS-232 cable, 8 m

USB

To connect a USB Flash Drive use a USB OTG cable with Mini-B plug and A socket.

p/n	Description
5188-8050	USB A M-USB Mini B 3 m (PC-Module)
5188-8049	USB A F-USB Mini B M OTG (Module to Flash Drive)