

Agilent InfinityLab LC Series Multiwash Upgrade Kit

Installation Note

General Information

The multiwash upgrade kit is designed for low carryover and can be installed in any Agilent InfinityLab LC Series Multisampler.

With the multiwash upgrade kit you can minimize carryover for critical samples with the following measures:

- Wash the outer needle surface with the choice of three different wash solvents, or
- Back flush the needle seat and the rotor seal with the appropriate solvents.

This integrated feature reduces the carryover to less than 9 ppm.

NOTE

The Multiwash Option is incompatible with multidraw.

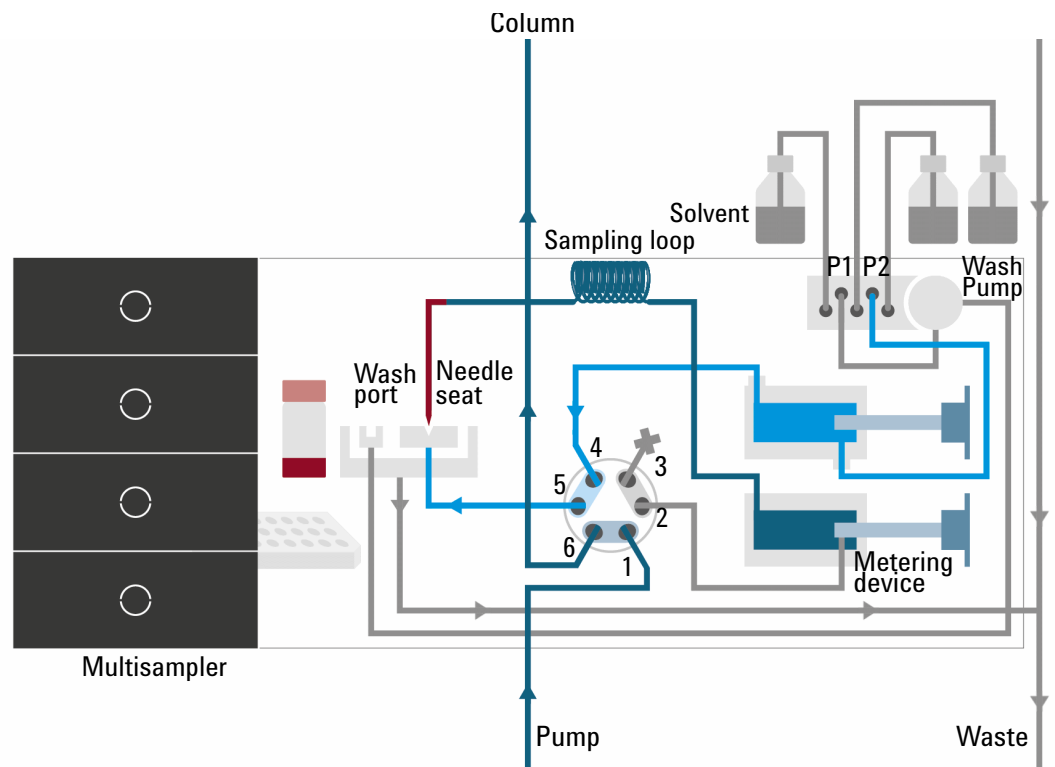


Figure 1 Valve in bypass, needle seat backflush (Multiwash)

General Information

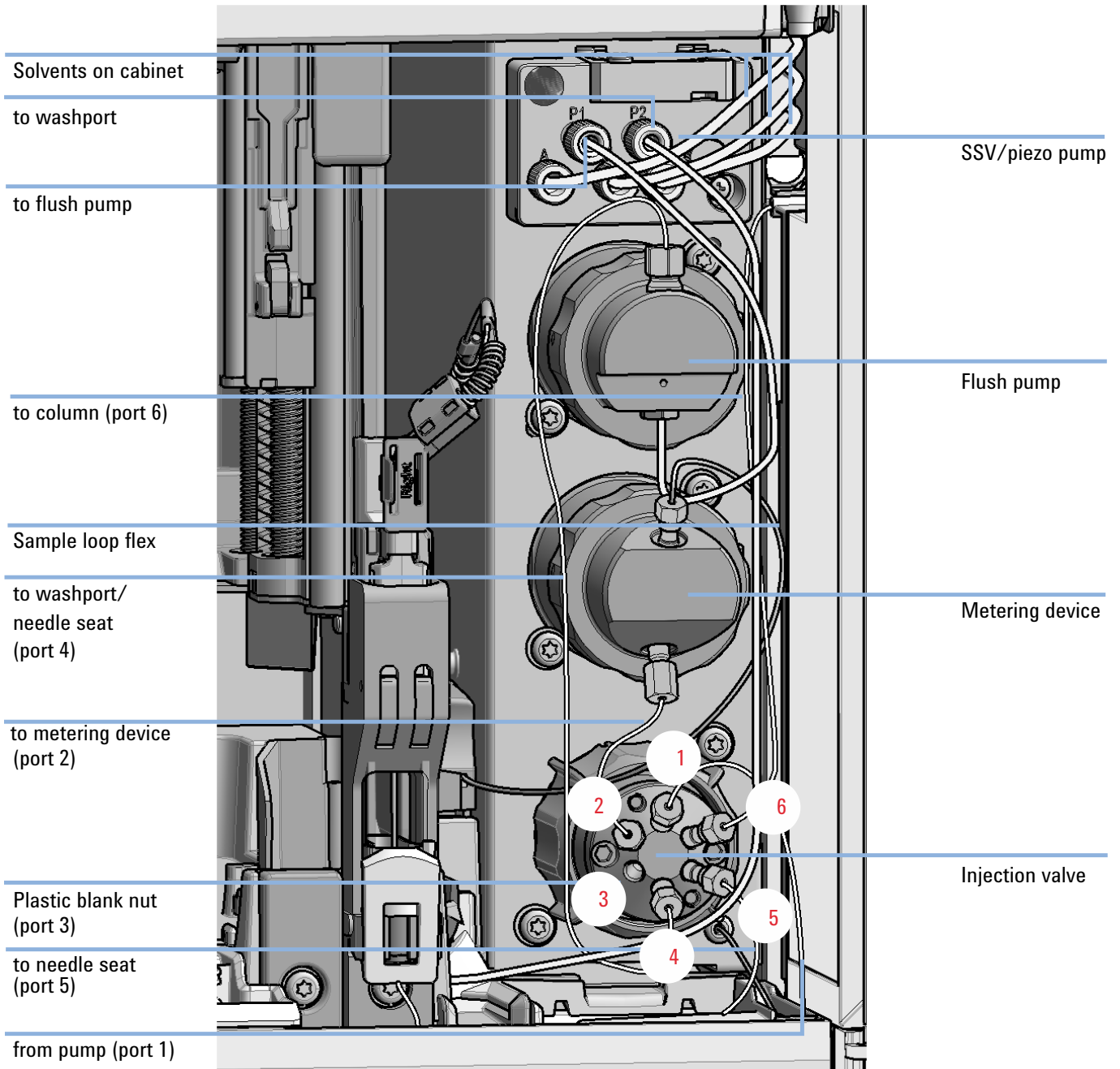
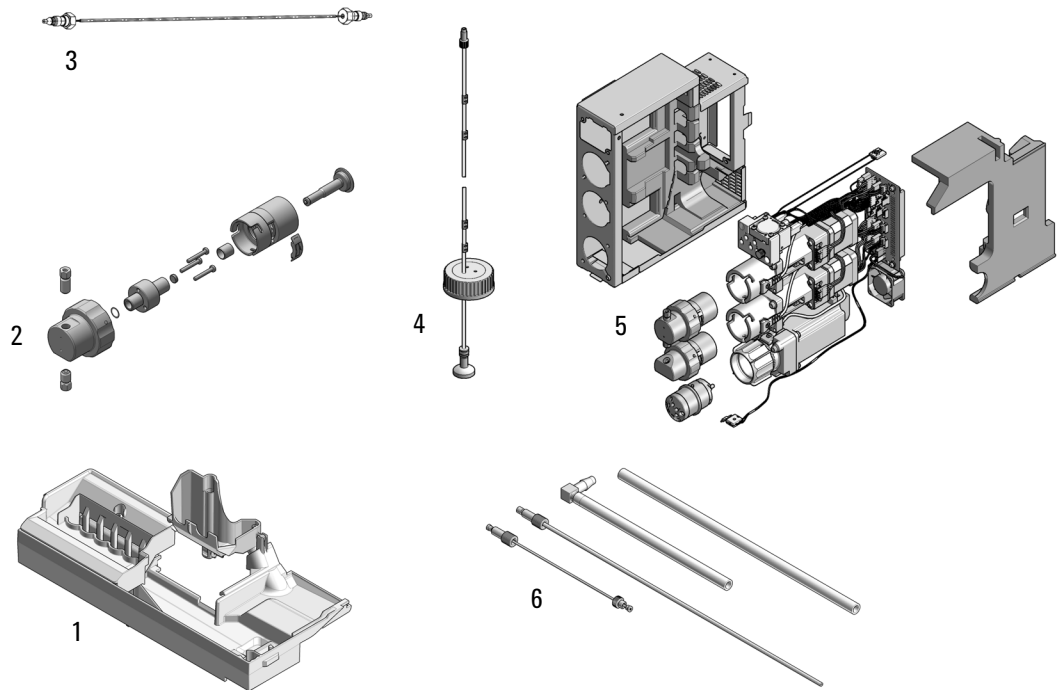


Figure 2 Capillary connections (Multiwash)

Delivery Checklist

Multiwash upgrade kit (G7167-68712) contains:

Item	#	p/n	Description
1	1	G4267-68708	Drain Management Kit
2	1	G4267-60049	Flush head, 500 µL
3	1	5500-1167	Capillary ST 0.17 mm x 250 mm SL-SL
4	2	G4220-60007	Bottle Head Assembly
5	1	G4267-60008	Hydraulic Multi Wash this is an internal partnumber and not orderable
6	1	G4267-60081	Tubing-Kit-Sampler-Multi-Wash



Installing the Multiwash Infinity II Upgrade Kit

The installation of the upgrade kit requires the following procedures:

- “Remove the Hydraulic Box” on page 4,
- “Install the Hydraulic Box” on page 8, and
- “Configuration of the Multiwash Option” on page 12.

Remove the Hydraulic Box

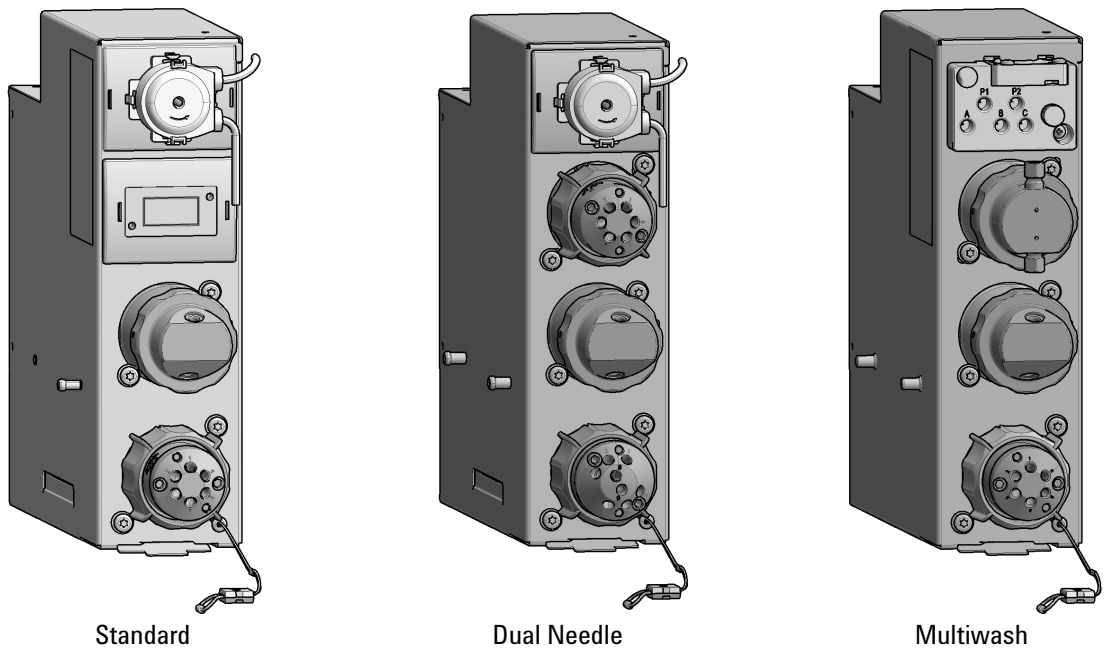


Figure 3 Variants of the hydraulic box

Tools required

p/n	Description
	Hexagonal key, 2.5 mm
	Hexagonal key, 4 mm
8710-0510	Open-end wrench 1/4 — 5/16 inch

NOTE

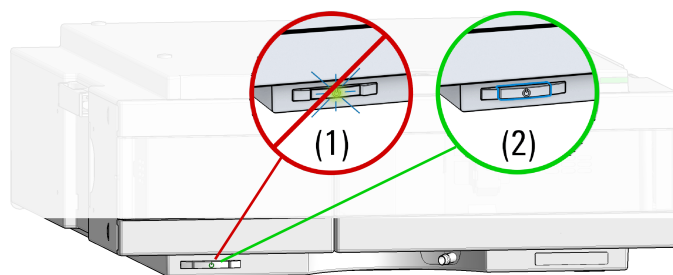
For changing the metering devices in the hydraulic boxes of the multisampler, the sampler must be in the service position.

- 1 In the Instant Pilot start the maintenance mode and select **Change Piston / Change Seal**. Wait until the metering drive is in the rear position.

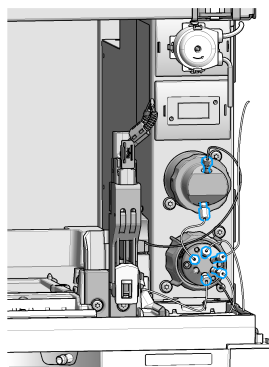
OR

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

- 2 Switch off the module.



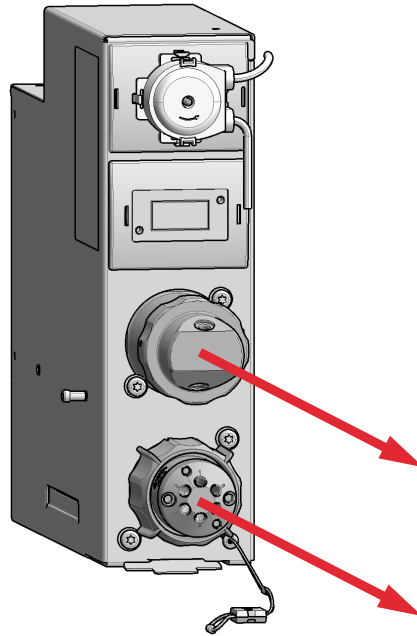
- 3 Remove the capillaries, the tubings, and the leak sensor which are connected to the hydraulic box.



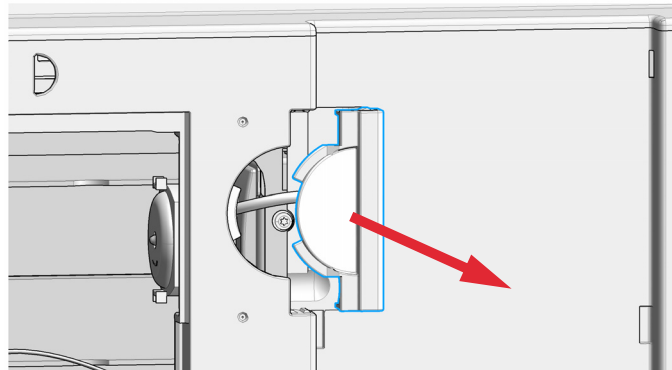
Installing the Multiwash Infinity II Upgrade Kit

Remove the Hydraulic Box

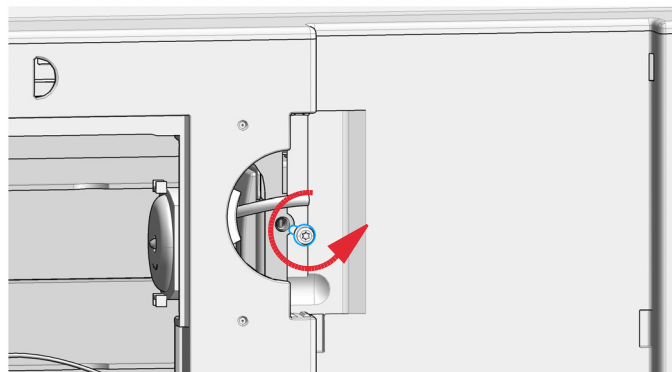
- 4 Remove the injection valve and the analytical head from the standard hydraulic box. For further info check the service manual.



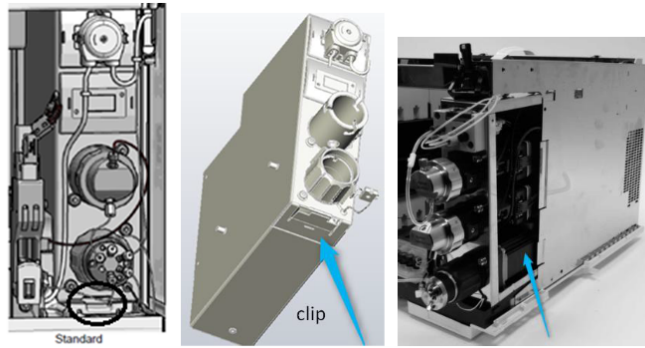
- 5 Remove the tubing holder insert at the right side of the multisampler.



- 6 Remove the transport protection screw.



- 7 Lift the clip and pull the standard hydraulic box out of the mainframe.



Install the Hydraulic Box

- 1 Check which version of the drain management kit is currently installed in the sampler, especially the wash port (see figure below).
 - If the old version with metal connector is installed, upgrade the complete drain management kit. For further information, check the service manual.
 - If the new one is installed, no further change is necessary, proceed to the next step.

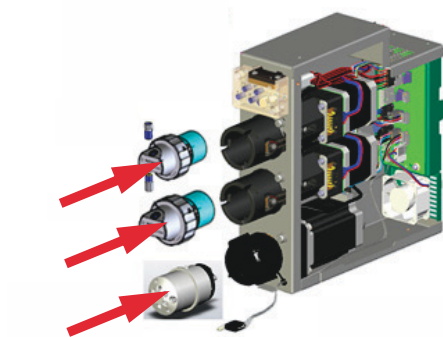


old

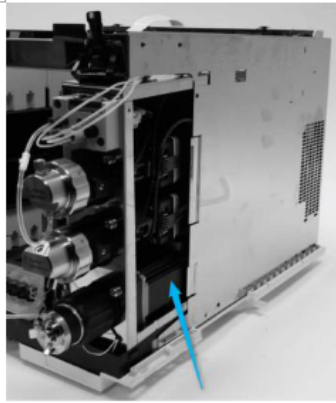


new

- 2 Install the flush head.
- 3 Install the injection valve and the analytical head from the standard hydraulic box into the multiwash hydraulic box.



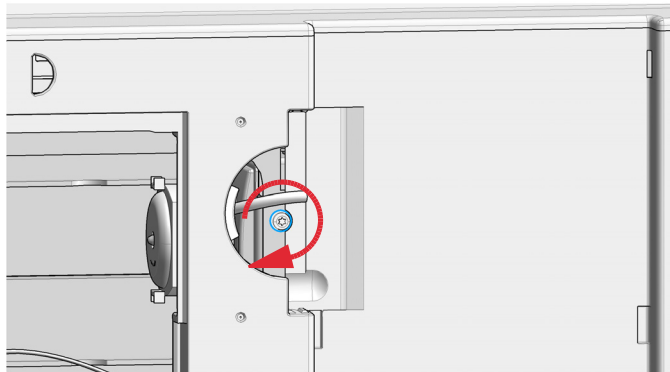
- 4 Slide in the whole new multiwash hydraulic box.



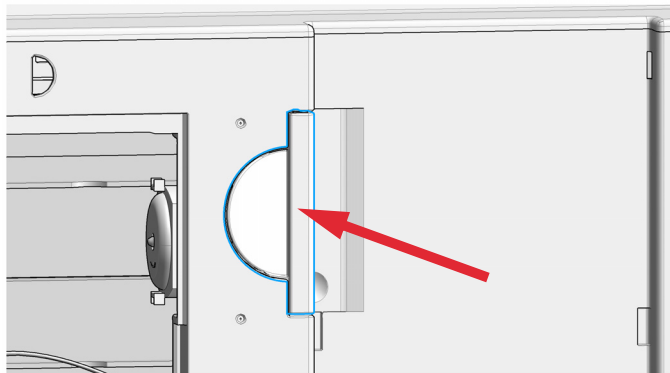
NOTE

The hydraulic box must be installed correctly. Push from the front against the hydraulic box and check if the lever is locked in place.

- 5 Install the transport protection screw.



- 6 Install the tubing holder insert.



Installing the Multiwash Infinity II Upgrade Kit
Install the Hydraulic Box

- 7 Reinstall the capillaries, the tubing and the leak sensor which are connected to the hydraulic box.

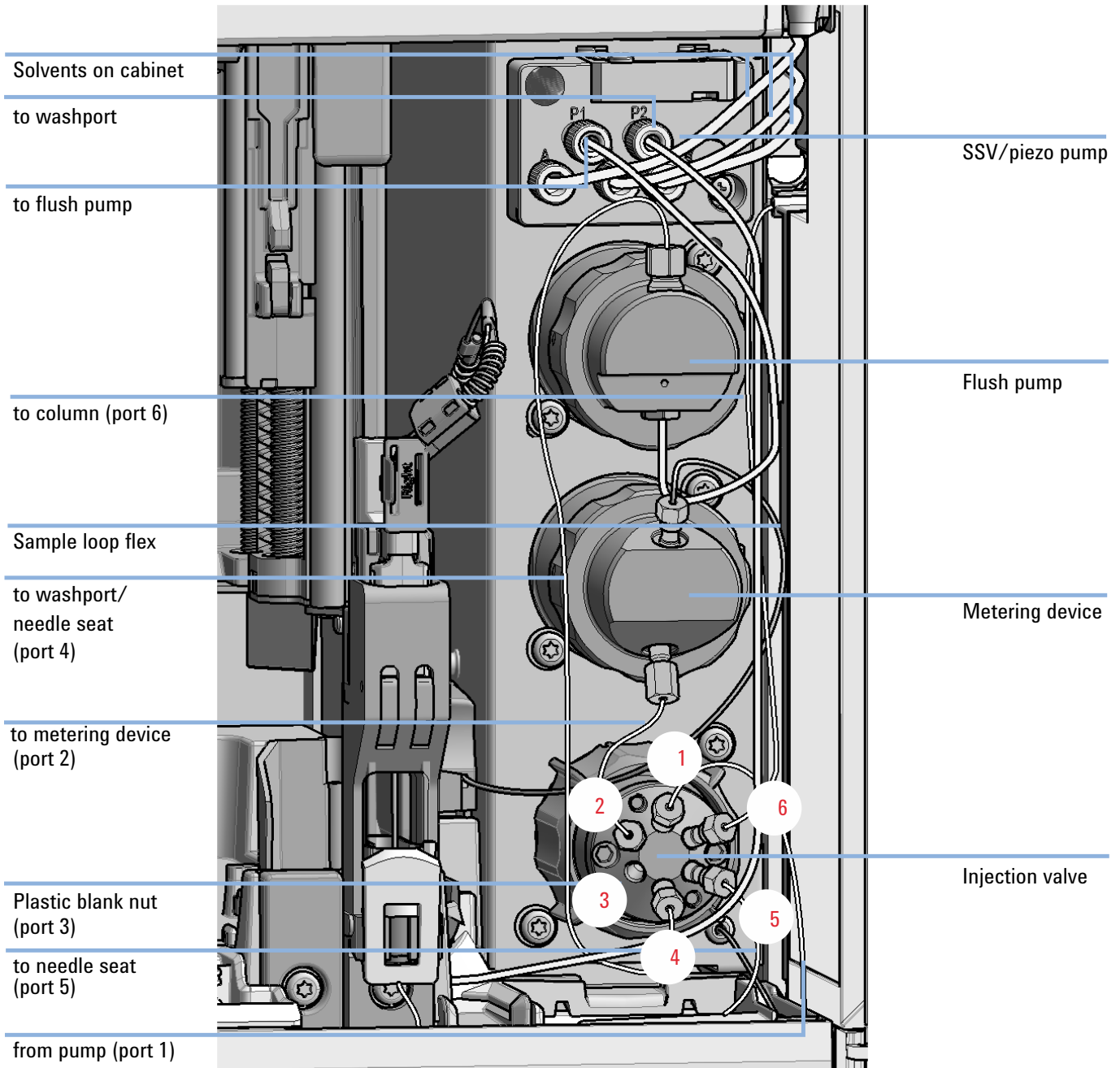
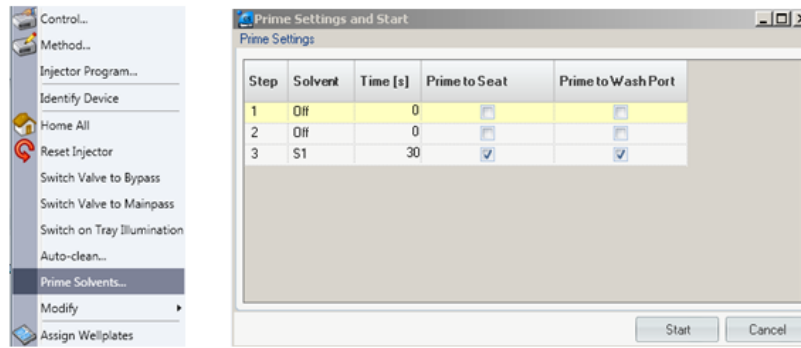


Figure 4 Capillary connections (Multiwash)

- 8 Switch on the instrument.
- 9 Prime the tubing with appropriate wash solvent and run **Prime to Seat** and **prime to Wash port** for at least 30 s.



- 10 Perform a **pressure test** in LabAdvisor.

Configuration of the Multiwash Option

The following options for the configuration of the Multiwash Option are available:

- “Configure Multiwash in OpenLab CDS C.01.06 and above” on page 12
- “Configure Multi-wash in Control Module (G4208A)” on page 16

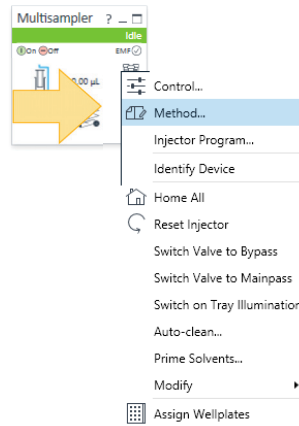
Configure Multiwash in OpenLab CDS C.01.06 and above

The multiwash mode is automatically enabled and the multiwash icon is shown in the graphical user interface.

Prerequisites

For the OpenLab CDS LC driver A.02.11 or higher is required.

- 1 Right click on the dashboard and select **Method**.



2 Select Multi-wash.

Method of G7167B (this.is.mt.Serial.Number)

Multisampler (G7167B)

Injection
Injection volume: 5.00 µL

Needle Wash
Multi Wash
Off
Standard Wash
Multi Wash

Stoptime
 As Pump/No Limit
 1.00 min
 Off
 1.00 min

Advanced
Injection Path Cleaning
Standard Wash
Mode: Flush Port
Time: 3 s
Location:
Repeat: 3

Multi-wash

Step	Solvent	Time [s]	Seat Back Flush	Needle Wash	Comment
1	Off		<input type="checkbox"/>	<input type="checkbox"/>	
2	S2	30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2-Propanol
3	S3	18	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ACN
Start Cond.	S1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Ok Apply Cancel

Installing the Multiwash Infinity II Upgrade Kit

Configuration of the Multiwash Option

3 Specify the duration of your solvent S1, S2, and S3 in the **Multi-wash** table.

The screenshot shows the 'Multisampler (G7167B)' software interface. The 'Advanced' tab is selected, and the 'Injection Path Cleaning' section is expanded. The 'Multi-wash' table is visible, showing the following configuration:

Step	Solvent	Time [s]	Seat Back Flush	Needle Wash	Comment
1	Off		<input type="checkbox"/>	<input type="checkbox"/>	
2	S2	30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2-Propanol
3	S3	18	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ACN
Start Cond.	S1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

A yellow arrow points from the 'Multi Wash' dropdown menu in the 'Needle Wash' section to the 'Multi-wash' table.

NOTE

It takes approximately 30 s to fully exchange one solvent for another in the flush port, and 18 s in the seat. Also, it is recommended to use the autoclean function (right-click the dashboard and select **Auto-clean**) to flush the multisampler regularly with all installed solvents.

NOTE

If **Seat Back Flush** and **Needle Wash** are both activated at the same time, they must use the same solvent.

NOTE

It is recommended to always activate **Start Cond.** as the last step of the washing procedure. The flow path is then filled with the appropriate starting solvent conditions for the next sample.

NOTE

It is not recommended to use buffers and solvents with high salt content as the last step of the washing procedure. This might cause formation of salt crystals on the needle seat.

NOTE

Due to the flow path of the Multiwash hydraulic box (see [Figure 1](#) on page 1), when the metering device moves to home position before an injection, a droplet of clean mobile phase will come out from the needle tip and might fall into the seat. This is an expected behavior, independent of the **Injection Path Cleaning** settings, and does not indicate leakage.

To avoid salt build-up on the needle and the seat when using buffers and solvents with high salt content as mobile phase, follow these recommendations:

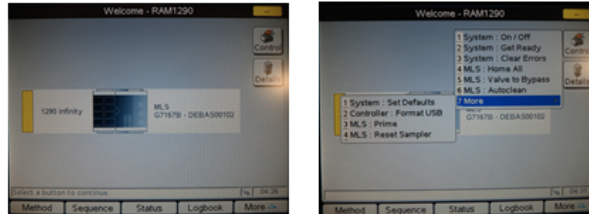
- Purge the Multisampler daily with water for 15 min.
 - Visually inspect the needle and seat.
-

Configure Multi-wash in Control Module (G4208A)

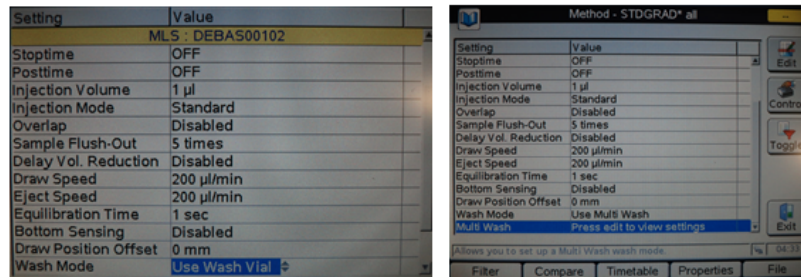
Prerequisites

For the Instant Pilot G4208A Firmware B.02.19 or higher is required.

- 1 Press **Control** and select **Prime/Auto clean** the tubing with appropriate wash solvent.



- 2 Press **Method** and select the **Multi Wash** and configure your wash method.



- 3 Configure your wash method by selecting the appropriate wash solvents.

