Agilent InfinityLab Quick Change Valve G5639A Instructions

Contents

Agilent Technologies

Typical Applications

Multi Column Selection

Advantages:

- Increase productivity
- Higher instrument up-time

Quickly change between up to four different stationary phases for different applications, or use identical stationary phases in columns with different dimensions for either faster run-times (short columns) or higher resolution (long columns) or for loading studies with different internal diameters.

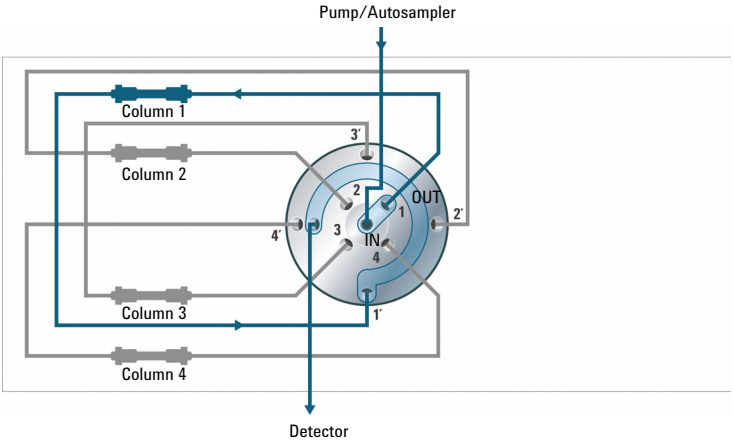


Figure 1 Multiple column selection

Method Development

Advantages:

- Faster method development
- Automated method development possible

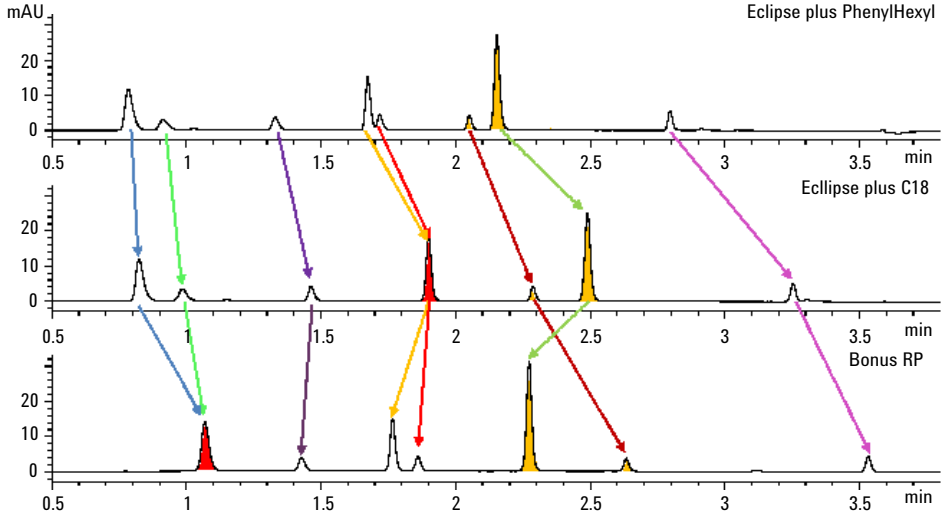


Figure 2 Totally different chromatographic results by using the same sample but three different stationary phases

Specifications

Table 1 G5639A (5067-4134), Bio-inert 4ps/10pt, 4-column selector Valve Head, 600 bar

Type	Specification
Maximum pressure	600 bar
Typical application	4 column selection
Port size	Accepts 10-32 male threaded fittings
Liquid contacts	PEEK, Ceramic
pH range	0 – 14*

* incompatible with some mineral acids. For more information see Solvent Information.

Delivery Checklist

Check the content of the delivery. You should have received the following:

Table 2 G5639A Bio-inert 4 Column Selector Valve Kit

Description	Amount	Unit	Comment
4-column selector valve head, 600 bar, bio-inert (5067-4134)	1	ea	
Bio-inert Capillary kit for 4 Column Selector (5067-4769)	1	ea	

Bio-inert Capillary kit for 4 Column Selector (5067-4769) contains the following parts:

Table 3 Bio-inert Capillary Kit for 4 Column Selector

Description	Amount	Unit	Connection
PEEK tubing 0.18 mm x 1500 mm (0890-1763)	1	ea	From the columns to the valve and from valve to detector
Capillary PK/ST 0.17 mm x 400 mm RLO/RLO (bio-inert) (G5667-81004)	1	ea	Sampler to valve
Capillary PK/ST 0.17 mm x 300 mm RLO/RLO (bio-inert) (G5667-81003)	4	ea	Valve to column
Column clip set, 8 colors (5042-9918)	1	ea	
Plastic fitting (0100-1259)	4	ea	
Fingertight fitting long, 10/pk (5062-8541)	1	ea	
Column Holder Clips (2/Pk) (G7116-68003)	4	ea	

NOTE The PEEK tubing 0.18 mm x 1500 mm (0890-1763) is to use for the low pressure area connections. From the column outlet to the valve and from the valve to the detector. It is delivered in one piece of 1.5 m and needs to be cut individually.

Install the Valve Heads

The valve drives are factory-installed in the Agilent 1290 Infinity Thermostatted Column Compartment (G1316C), the Agilent InfinityLab LC Multicolumn Thermostat (G7116A/B) and in the Agilent 1290 Infinity Valve Drive. The valve heads are interchangeable and can be easily mounted.

At the first installation, the dummy valve has to be removed from the valve drive. To make this possible, the transportation lock (G1316C) or transportation protection (G7116A/B) have to be removed by unscrewing them from the front. The valve head can be installed by mounting it onto the valve drive and fastening the nut manually (do not use any tools).

Be sure that the guide pin snaps into the groove of the valve drive thread.

NOTE

The valves are mounted on pull-out rails to allow easy installation of capillaries. Push the valve gently into its housing until it snaps into the inner position, push it again and it slides out.

When all capillaries are installed, push the valve back into its housing, see "Install the Valve Head and Connect Capillaries" on page 7.

Install the Valve Head and Connect Capillaries

For bio-inert modules use bio-inert parts only!

CAUTION

The valve actuator contains sensitive optical parts, which need to be protected from dust and other pollution. Pollution of these parts can impair the accurate selection of valve ports and therefore bias measurement results.

➔ Always install a valve head for operation and storage. For protecting the actuator, a dummy valve head can be used instead of a functional valve. Do not touch parts inside the actuator.

CAUTION

Column Damage or Bias Measurement Results

Switching the valve to a wrong position can damage the column or bias measurement results.

➔ Fit the lobe to the groove to make sure the valve is switched to the correct position.

CAUTION

Valve Damage

Using a low pressure valve on the high pressure side can damage the valve.

➔ When using multiple column compartments as part of a method development solution, make sure that the high pressure valve head is connected to the autosampler and the low pressure valve head is connected to the detector.

CAUTION

Sample degradation and contamination of the instrument

Metal parts in the flow path can interact with the bio-molecules in the sample leading to sample degradation and contamination.

➔ For bio-inert applications, always use dedicated bio-inert parts, which can be identified by the bio-inert symbol or other markers described in this manual.

➔ Do not mix bio-inert and non-inert modules or parts in a bio-inert system.

CAUTION

Wrong combination of fitting with valve

The InfinityLab Quick Turn fitting (5067-5966) is not compatible with the G5639A Bio-inert 4-Column Selector Valve. Misuse can lead to extra dead volume and leaks.

➔ As fitting, use UHP fitting (5067-5403) instead.

NOTE

For information about the compatibility mode of 800 bar valve heads see Information on RFID Tag Technical Note (01200-90134).

NOTE

For a correct installation of the valve head, the outside pin (red) must completely fit into the outside groove on the valve drive's shaft (red). A correct installation is only possible if the two pins (green and blue) on the valve head fit into their corresponding grooves on the valve drive's actuator axis. Their match depends on the diameter of the pin and groove.

NOTE

The tag reader reads the valve head properties from the valve head RFID tag during initialization of the module. Valve properties will not be updated, if the valve head is replaced while the module is on. Selection of valve port positions can fail, if the instrument does not know the properties of the installed valve.

NOTE

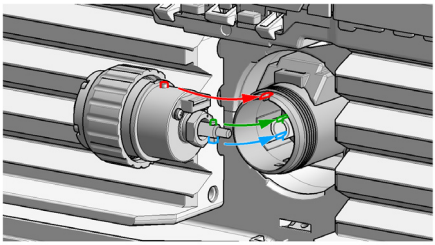
To allow correct valve identification, power off the valve drive for at least 10 s.

NOTE

For firmware requirements see Information on new RFID Tag Assembly Version Technical Note (01200-90133) which is included to each valve head.

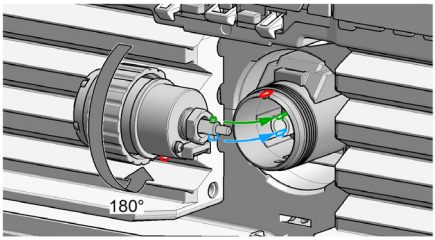
The following procedure shows the valve head installation with an G7116A/B (MCT) module as an example. For other modules it is similar.

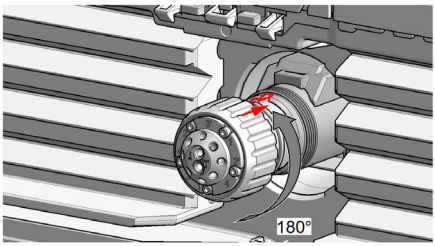
1 Insert the valve head into the valve shaft.



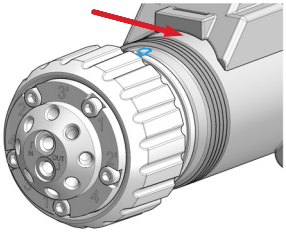
OR

If the outside pin does not fit into the outside groove, you have to turn the valve head until you feel that the two pins snap into the grooves. Now you should feel additional resistance from the valve drive while continuously turning the valve head until the pin fits into the groove.





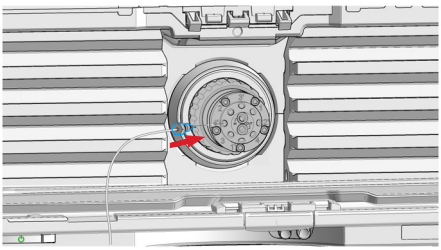
2 When the outer pin is locked into the groove, manually screw the nut onto the valve head.



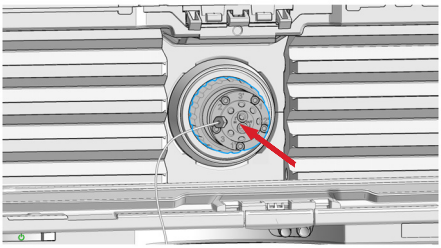
NOTE

Fasten the nut manually. Do not use any tools.

3 Install all required capillary connections to the valve.



4 Push the valve head until it snaps in and stays in the rear position.



5 Power on or power-cycle your module, so the valve head gets recognized during module initialization.

Connecting the Bio-inert 4 Column Selector Valve Head

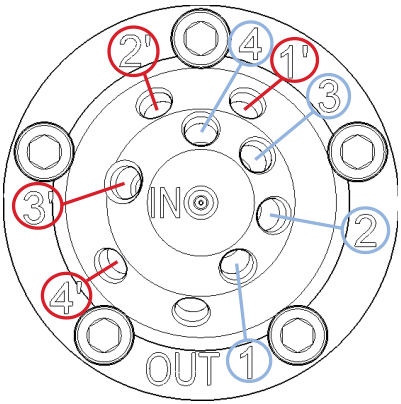


Figure 3 Connection ports of the bio-inert 4 column selection valve head

Table 4 Connection ports of the bio-inert 4 column selector

Port	Connection ports bio-inert 4 column selector
IN	From autosampler
OUT	To detector
1-4	Valve to column
1'-4'	Column to valve

Installation of Stainless Steel Cladded PEEK Capillaries

The Agilent 1260 Infinity Bio-inert LC System uses PEEK capillaries, which are cladded with stainless steel. These capillaries combine the high pressure stability of steel with the inertness of PEEK. They are used in the high pressure flow path after sample introduction (needle seat capillary) through the column compartment/heat exchangers to the column. Such capillaries need to be installed carefully in order to keep them tight without damaging them by overtightening.

CAUTION

Strong force/torque will damage SST cladded PEEK capillaries

➔ Be careful when installing stainless steel cladded PEEK capillaries.

➔ For correct installation see Agilent 1260 Infinity Bio-inert Quaternary LC System Manual.

Replacement Parts

p/n	Description
5067-4134	4-column selector valve head, 600 bar, bio-inert
1535-4045	Bearing ring
5068-0044	Bio-inert stator head
5068-0045	Bio-inert rotor seal, PEEK
5068-0059	Stator screws
5068-0093	Stator face assy

G5639-90001

Part Number:
G5639-90001 Rev. D

Edition: 10/2018
Printed in Germany

Agilent Technologies, Inc
Hewlett-Packard-Strasse 8
76337 Waldbronn, Germany