

# Agilent InfinityLab

## Quick Change Valve G4235A Instructions

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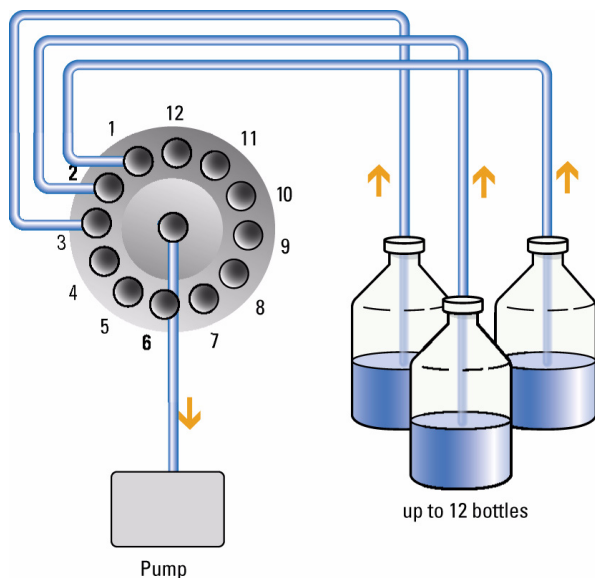


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## Typical Application

This valve head kit contains a 12 position/13 port selector valve, allowing switching from 12 different inlet ports to one outlet port (Figure 1 on page 2). This is typically used for solvent selection but also for postcolumn fractionation into vessels. The wetted parts are made completely out of PEEK, hence this valve is bio-inert. This valve is typically used with the 1290 Infinity Valve Drive G1170A. The G1170A 1290 Infinity Valve Drive with G4235A installed can be clustered with a pump to have the solvent-selection included in the pump user interface. This is typically used in method development systems.

An optional tubing kit (5067-4601) for selection of up to four solvents is available. This tubing kit contains bottle-head assemblies and a 5 m roll of tubing to be adjusted to the required set-up. Adjusting the tubing can be done with the Plastic tubing cutter (8710-1930). To have a possibility to use more than four solvents, more optional kits need to be ordered.



**Figure 1** Schematic of the 12-Position Selector Valve Head (G4235A)

# Delivery Checklist

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

**Table 1** Delivery Checklist

Description	Amount	Unit	Comment
12 position/13 port selector valve head, 210 bar, bio-inert (5067-4159)	1	ea	
Solvent selection tubing kit, 4 solvents (5067-4601)	1	ea	optional

Solvent selection tubing kit, 4 solvents (5067-4601) contains the following parts:

**Table 2** Tubing Kit

Description	Amount	Unit	Connection
Tube PTFE 1.5 mm x 5 m, 3 mm od (0890-1760)	1	ea	
Adapter, PEEK int. 1/4-28 to ext. 10-32 (0100-2298)	5	ea	
Bottle Head Assembly (G7120-60007)	4	ea	
Tefzel ferrules and SSL lock rings, 1/ 8 inch, 10/pck (5063-6598)	1	pk	
PPS nuts, 1/8 inch, 1/4-28 thread, 10/pck (5063-6599)	1	pk	
Tubing clip (5042-9954)	4	ea	

# Specifications

**Table 3** G4235A (5067-4159), Solvent Selection valve head (bio-inert), 210 bar

Type	Specification
Maximum pressure	210 bar
Typical application	Solvent selection or fractionation
Port size	Accepts 10-32 male threaded fittings
Liquid contacts	PEEK
pH range	0 – 14*

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

# Installing the Valve Heads

## Installing the Valve Heads

The valve drives are factory-installed in the Thermostatted Column Compartments, in the 1290 Infinity Flexible Cube, and in the 1290 Infinity Universal Valve Drive. The valve heads are interchangeable and can be easily mounted.

At the first installation, the transportation lock (TCC only) and the dummy valve have to be removed, see [“Removing the Transportation Lock and the Valve Dummy”](#) on page 6. The valve heads can be installed by mounting the valve heads onto the valve drives 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

#### TCC only:

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.

If all capillaries are installed, push the valve back into its housing, see [“Installing the Valve Head and Connecting Capillaries”](#) on page 7.

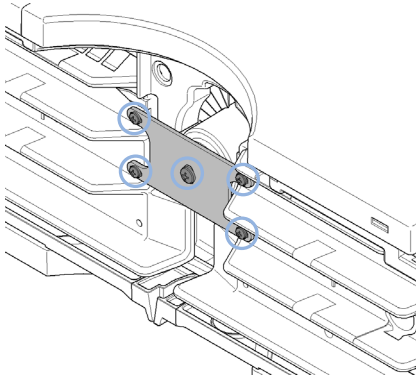
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# Removing the Transportation Lock and the Valve Dummy

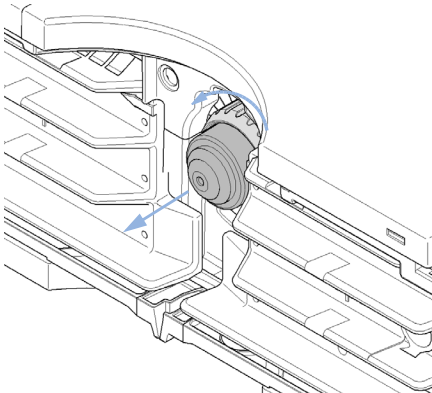
The following procedure demonstrates the necessary steps for installing the valve head to the valve drive of a TCC.

For the installation of a valve head to a G1170A 1290 Infinity Valve Drive or G4227A 1290 Infinity Flexible Cube you can ignore the steps that describe the TCC features of the transportation lock and spring loaded valve drive.

- 1 When unscrewing the transportation lock (TCC only), push it back until the last screw is removed - the valve rail is spring-loaded



- 2 To remove the valve dummy, loosen the nut manually.



# Installing the Valve Head and Connecting 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.
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## NOTE

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

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## NOTE

The tag reader reads the valve head properties from the valve head RFID tag during the initialization of the module. The 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.

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## NOTE

The Agilent 1290 Infinity Valve Drive recognizes the valve correctly, only if the valve drive was powered off for at least 10 s.

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## NOTE

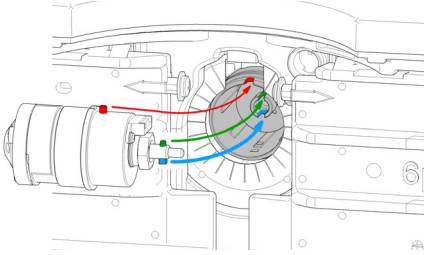
For a correct installation of the valve head, the outside pin (red) must completely fit into the outside groove on the valve drive's shaft (red). A correct installation is only possible if the two pins (green and blue) on the valve head fit into their corresponding grooves on the valve drive's actuator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

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**The following procedure demonstrates the necessary steps for installing the valve head to the valve drive of a TCC. For the installation of a valve head to a 1290 Infinity Valve Drive or 1290 Infinity Flexible Cube, you can ignore the steps that describe the TCC features of the spring loaded valve drive.**

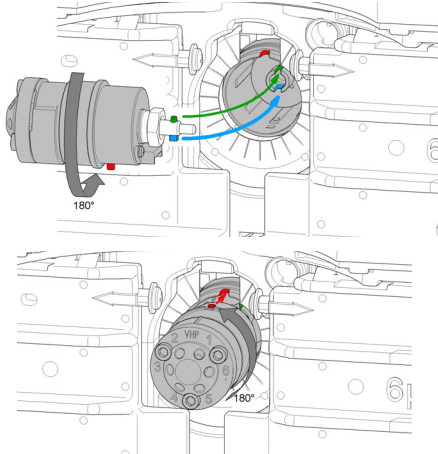


**1** Insert the valve head into the valve shaft.

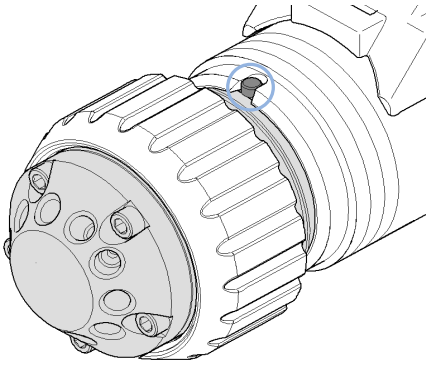


**OR**

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 continue turning the valve head until the pin fits into the groove.



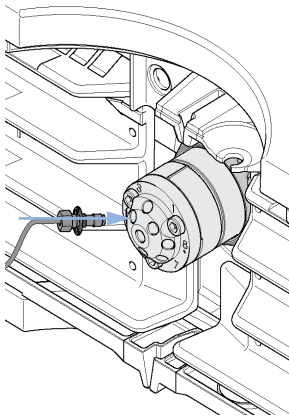
**2** When the outer pin is locked into the groove, manually screw the nut onto the valve head.



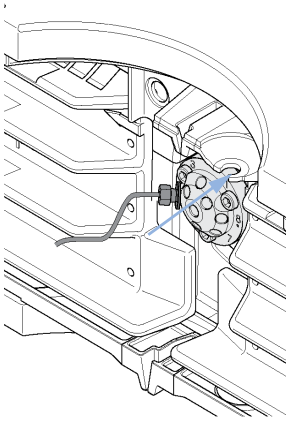
**NOTE**

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. (TCC only)



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

**NOTE**

Power Off the Infinity valve drive for at least 10 s.



G4235-90000

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