



# **Agilent Online-SPE Direct Inject Kit G4744A**

## **Installation Guide**

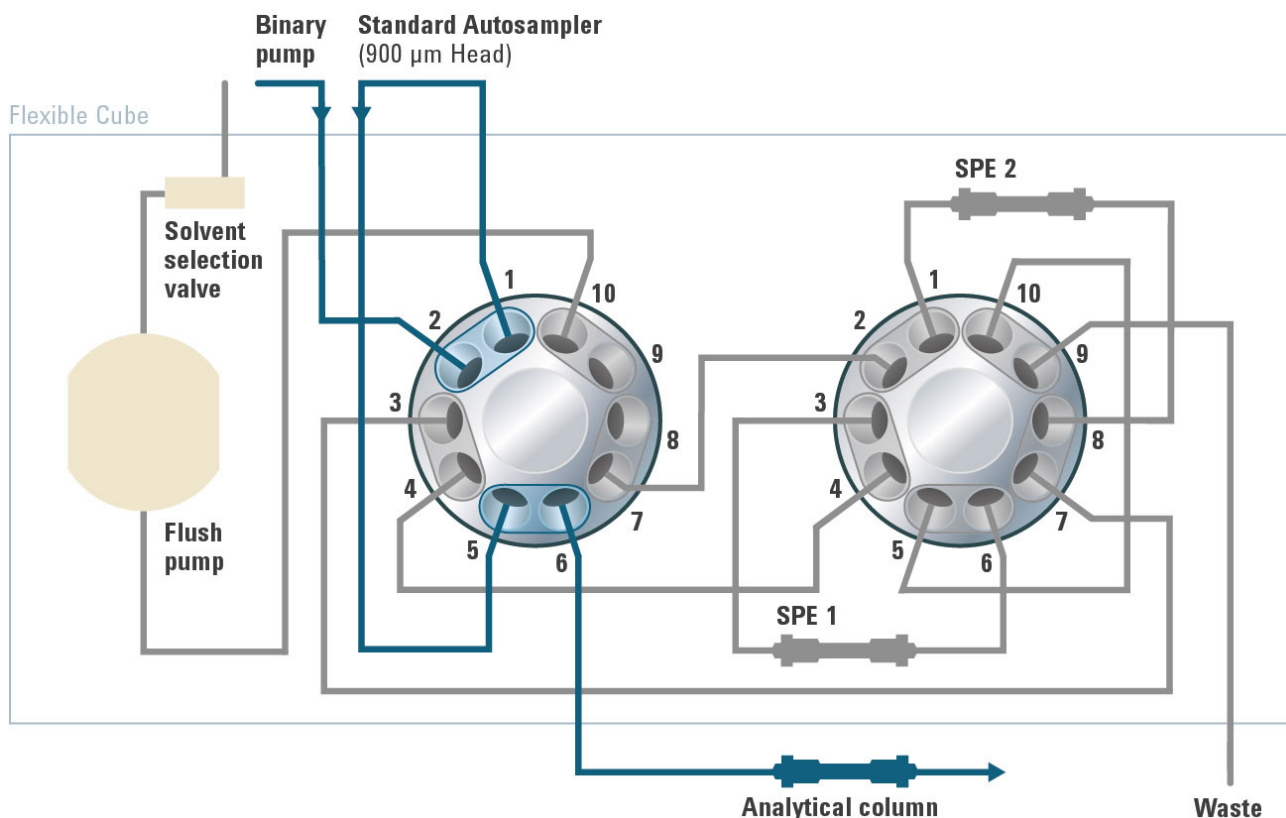
### **Contents**

<b>Application</b>	<b>2</b>
<b>Delivery Checklist</b>	<b>4</b>
<b>Online – SPE Direct Inject Kit Setup</b>	<b>5</b>
<b>Installing the Valve Heads</b>	<b>7</b>
Removing the transportation lock and the valve dummy	8
Installing the Valve Head and Connecting Capillaries	9
<b>Valve Head Parts Information</b>	<b>12</b>



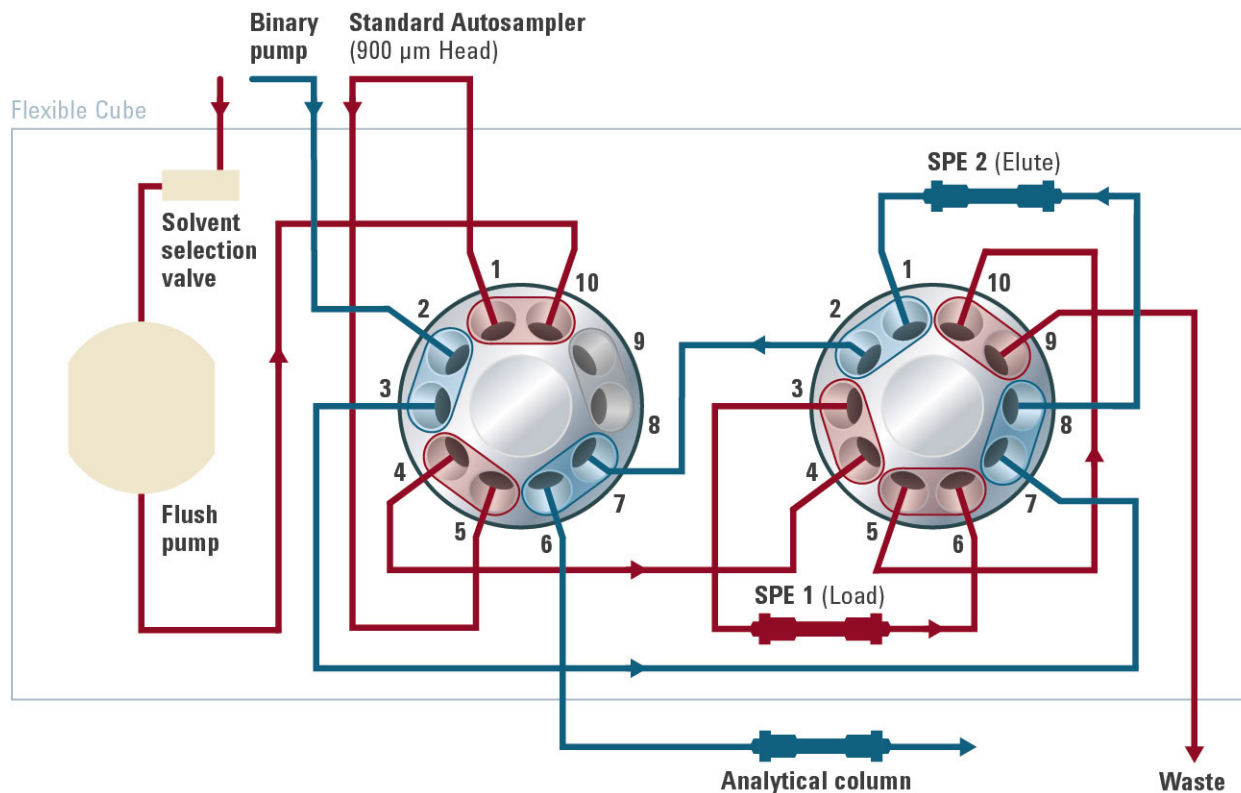
## Application

Mounted additionally to the Online SPE Starter set G4742A the online SPE direct injection kit G4744A allows also to bypass the SPE cartridges and instead inject directly onto the analytical column.

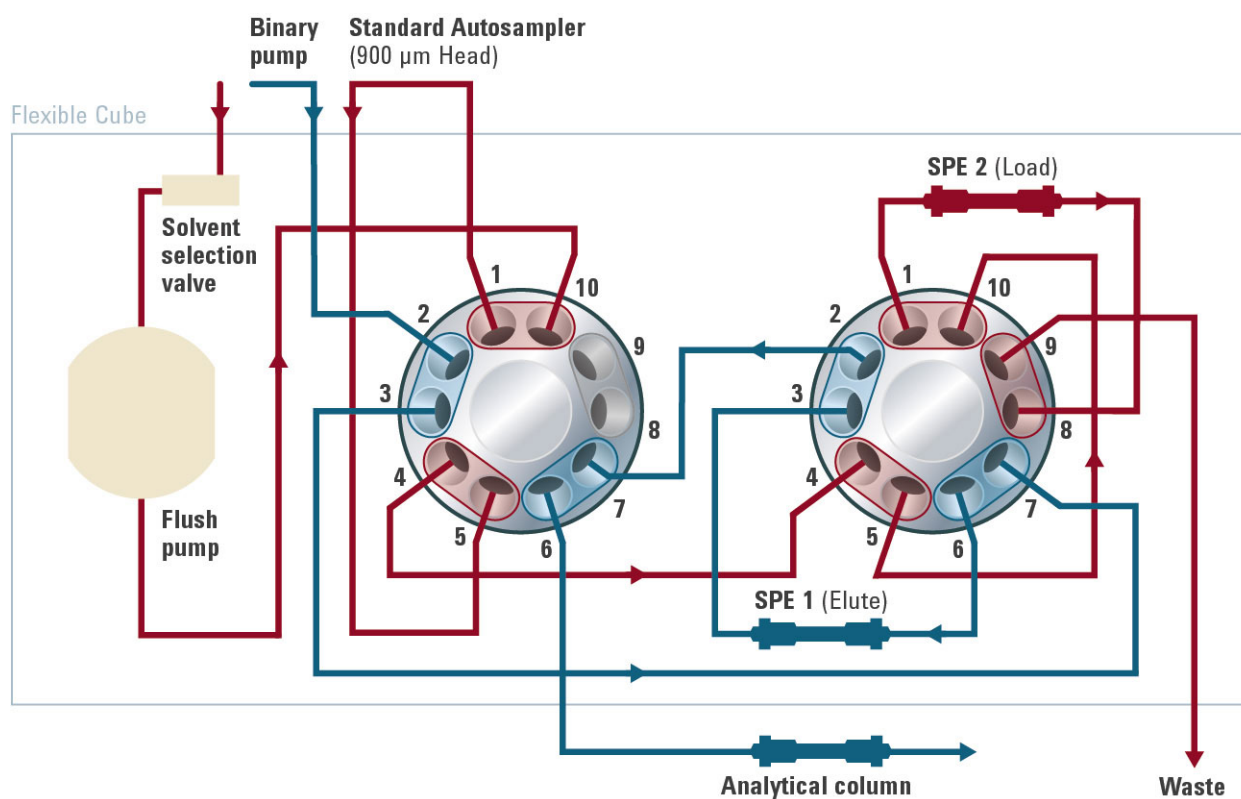


**Figure 1** Direct Injection (Valve A in Position 1)

Valve A (left) in position 2 connects the flow path to valve B (right). From valve B, SPE cartridges can be chosen for either loading or elution.



**Figure 2** Valve B in Position 1



**Figure 3** Valve B in Position 2

## Delivery Checklist

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

p/n	Description
5067-4145	2pos/10port valve head 600 bar
5067-5710	Online-SPE Direct Inject Kit

### Online-SPE Direct Inject Kit (5067-5710)

p/n	Description
5067-4687 (3x)	Capillary ST 0.12 mm x 280 mm SX/SX
5067-5709	Capillary ST 0.25 mm x 250 mm S/S
5043-0277 (2x)	Plug Black Long 10-32
	Online -SPE Starter Kit Installation Guide
G4742-60000	CD with online SPE method

## Online – SPE Direct Inject Kit Setup

### NOTE

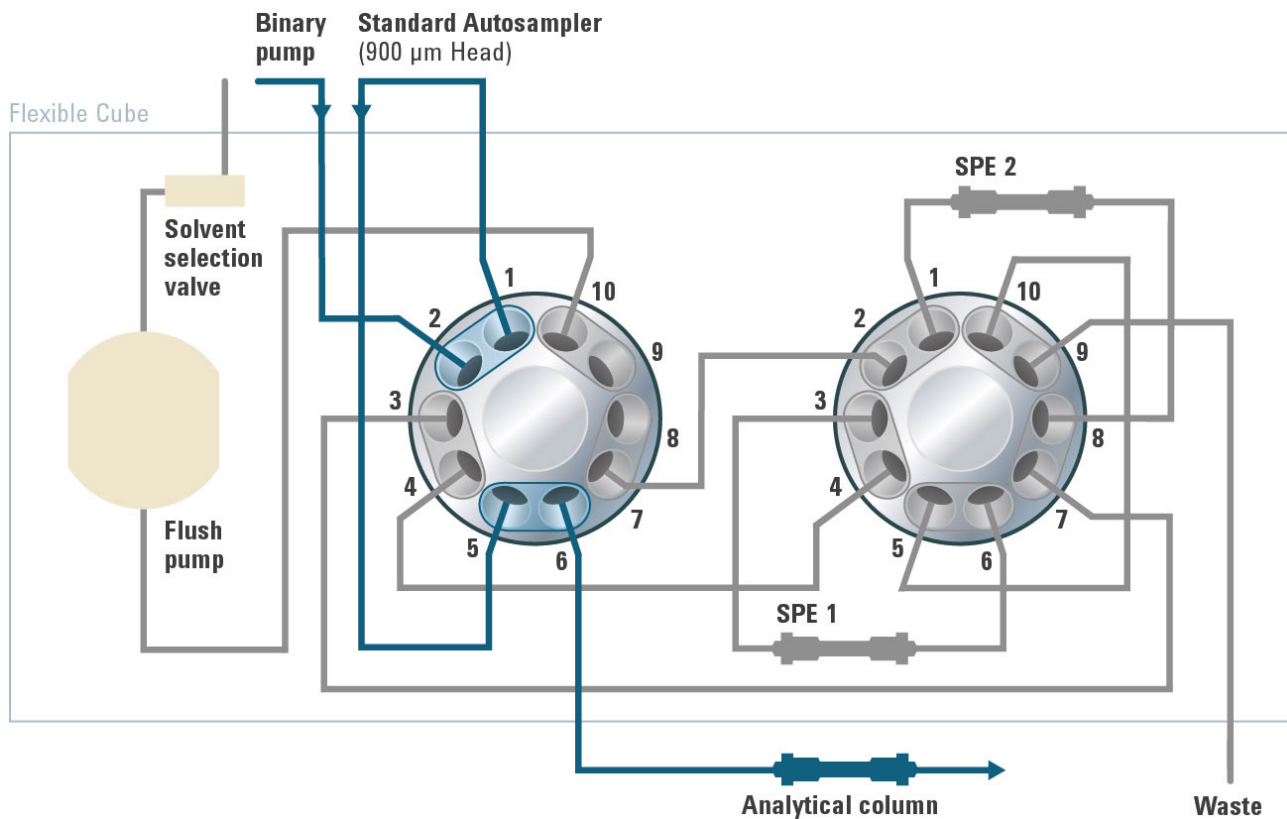
The Direct Inject Kit can only be used in combination with the G4742A Online SPE Starter Kit.

**1** Use the capillaries and parts as described in [Table 1](#) on page 5.

**Table 1** Connecting the Online-SPE Direct Inject Solution by using capillaries from both kits, the Online - SPE Capillary Kit (p/n 5067-5708) and Online - SPE Direct Inject Kit (p/n 5067-5710)

Part Description	Kit	Amount	Connection
Capillary ST 0.12 mm x 280 mm SX/SX (5067-4687)	5067-5710	3	Valve A / Port 4 – Valve B / Port 4 Valve A / Port 3 - Valve B / Port 7 Valve A / Port 7 - Valve B / Port 2
Capillary ST 0.25 mm x 250 mm S/S (5067-5709)	5067-5710	1	Flush Pump – Valve A / Port 10
Plug Black Long 10-32 (5043-0277)	5067-5710	2	Valve A Port 8 Valve A Port 9
Capillary ST 0.12 mm x 120 mm SX/SX (5067-4652)	5067-5708	5	Valve B / Port 1 – SPE 2 SPE 2 – Valve B / Port 8 Valve B / Port 3 – SPE 1 SPE 1 - Valve B / Port 6 Valve B / Port 5 – Valve B / Port 10
Capillary ST 0.12 mm x 340 mm S/SX (5067-4647)	5067-5708	2	Valve A / Port 6 – Column Autosampler – Valve A / Port 5
Capillary ST 0.17 mm x 700 mm S/SX (5067-4648)	5067-5708	1	LC Pump – Valve A / Port 2
Capillary ST 0.25 mm x 500 mm S/S (5067-5713)	5067-5708	1	Valve A / Port 1 - Autosampler
Waste tubing (0890-1713)	5067-5708	1	Valve B Port 9 - Waste

2 Setup the hydraulic path of the Online – SPE Direct Inject Kit.



**Figure 4** Direct Injection (Valve A in Position 1)

## Installing the Valve Heads

The valve drives are factory-installed in the 1290 Infinity Thermostatted Column Compartment , 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 8. 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 9.

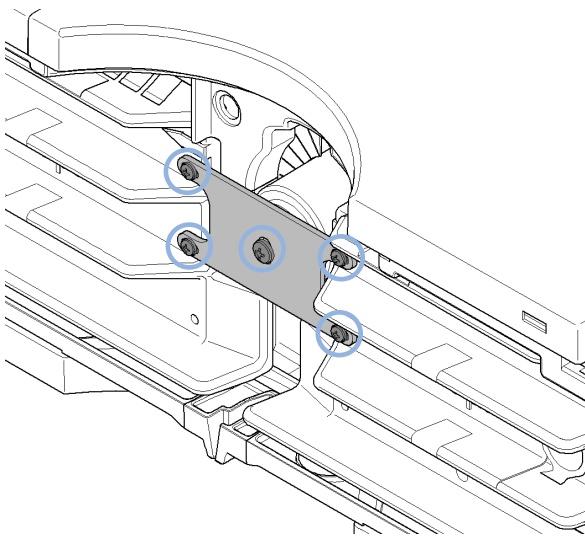
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## Removing the transportation lock and the valve dummy

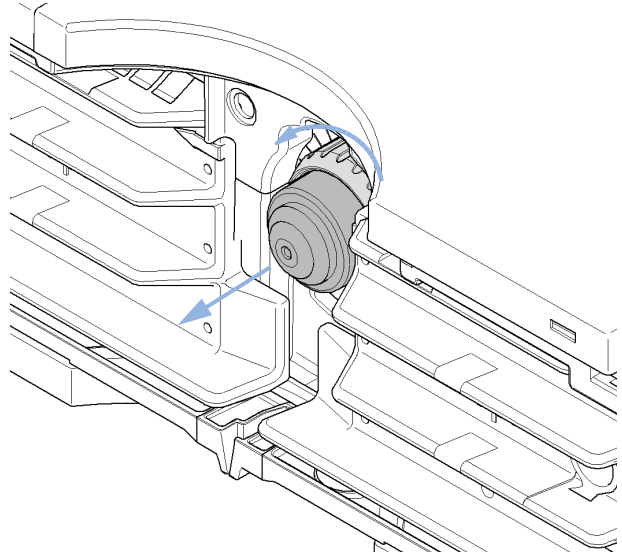
The following procedure demonstrates the necessary steps for installing the valve head to the valve drive of a TCC.

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 pollutions. 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.

### 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.

### NOTE

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

## Installing the Valve Heads

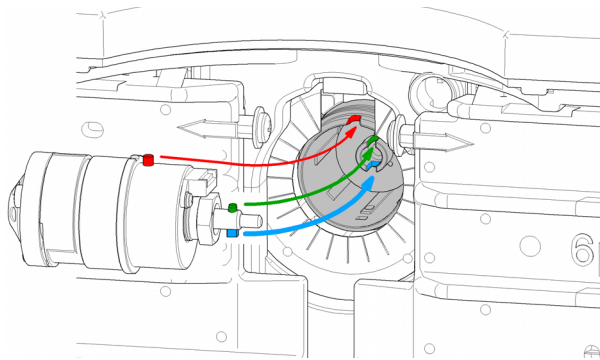
### Installing the Valve Head and Connecting Capillaries

#### 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.

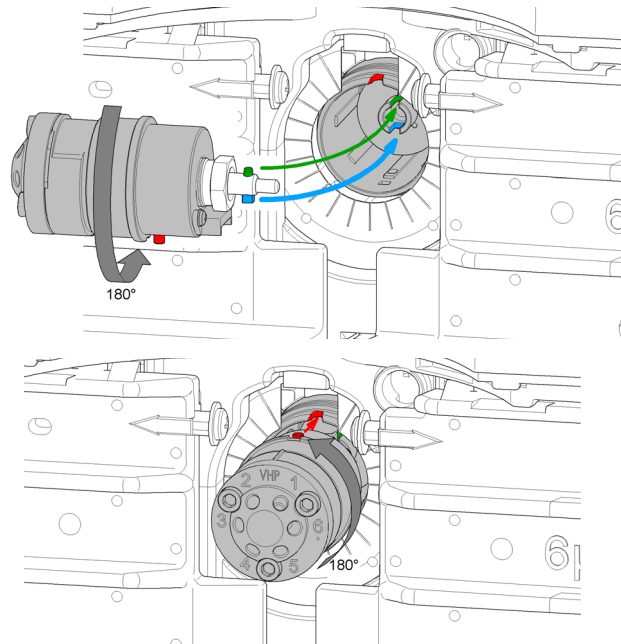
The following procedure demonstrates the necessary steps for installing the valve head to the valve drive of a TCC. For the installation of a valve head to a 1290 Infinity Valve Drive or 1290 Infinity Flexible Cube, you can ignore the steps that describe the TCC features of the spring loaded valve drive.

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

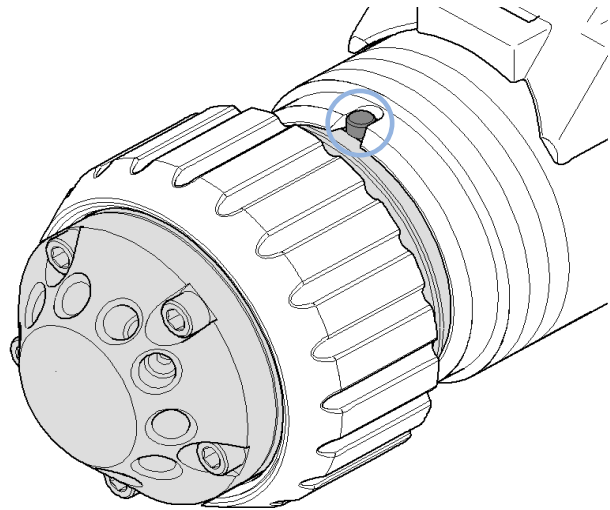


OR

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.



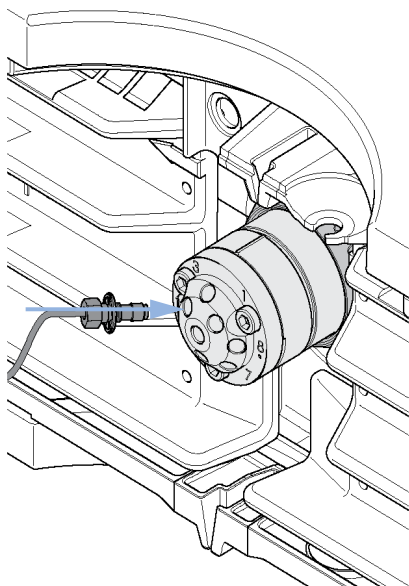
- 2** When the outer pin is locked into the groove, manually screw the nut onto the valve head.



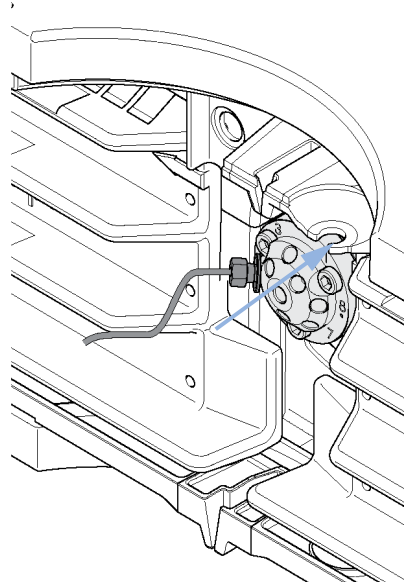
#### NOTE

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.

# Valve Head Parts Information

## Replacement Parts

Table 2    Partslist 2 Pos/10 Port Valve Head, 600 bar

Valve	Rotor Seal	Stator Head	Stator Screws(Pack of 10)	Stator Ring
5067-4145 2 Pos/10 Port valve head, 600 bar	0101-1415 (PEEK)	5068-0165	5068-0019	n.a.

## Valve Head Parts

NOTE

The figure below illustrates replacement parts for the valve heads, with the 12Pos/13Port Selector valve as an example. The valves can vary in their appearance and do not necessarily include all of the illustrated parts. Neither, every spare part is available for each flavor of the valve.

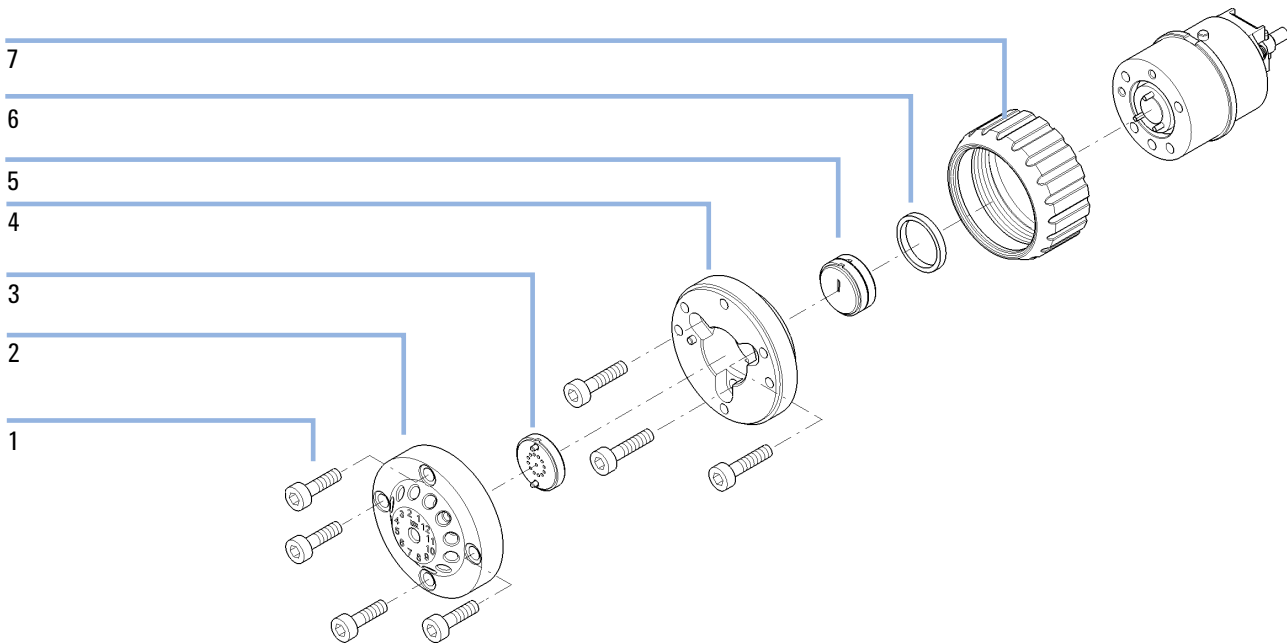


Figure 5    Valve Head Parts (example shows a 5067-4159 valve head)

1	Stator screws
2	Stator head assembly
3	Stator face assembly
4	Stator ring (available for service only)
5	Rotor seal
6	Bearing ring (P/N 1534-4045)
7	Spanner nut (P/N 5068-0106, available for service only)



G4744-90000

Part Number: G4744-90000

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