

Column ID tag kit G4750A/B and G4751A Agilent InfinityLab LC Series

Technical Note

This Technical Note describes the installation of the Agilent InfinityLab LC Series Column Identification Tag Kit available for Agilent InfinityLab LC Series Column Compartments [Table 1](#) on page 2 and the use of the Agilent InfinityLab Column Identification Tag (column ID tag).

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Introduction

Table 1 Column ID kit and supported column compartment

Column ID Kit	Supported Column Compartment
G4750A (for up to 4 tracked columns)	1260 Infinity II Multicolumn Thermostat (MCT) (G7116A)
G4750B (for up to 8 tracked columns)	1290 Infinity II Multicolumn Thermostat (MCT) (G7116B)
G4751A ¹ (for up to 2 tracked columns)	InfinityLab Integrated Column Compartment (ICC) (G7130A) ²

¹ Compatible with both ICC types (G7130-60030 with 3 μ L heater and G7130-60060 with 6 μ L heater)

² Optional add-on for the 1260 Infinity II Vialsampler (G7129A/C) and 1290 Infinity II Vialsampler (G7129B)

The column ID tags are recognized automatically and facilitate trackable column management using Agilent OpenLab CDS ChemStation Edition. They also enable quick and easy column switching, with automated recognition of the installed columns.

NOTE

This Technical Note applies to the following software revisions:

- Agilent RC.Net Drivers rev. A.02.14 or higher
- Agilent OpenLab CDS ChemStation Edition C.01.07 SR2 or higher.

Workflows using earlier revisions of the software will vary in detail.

If you are using a CDS other than OpenLab CDS ChemStation, contact Agilent Technologies for details of column ID tag usage.

Correct documentation is an essential element of effective and productive laboratory workflows. With respect to columns, important information such as the number of injections or the performance is not available except by tracking such information in a logbook, either as a paper document or in digital form. This is a time-consuming exercise, prone to error, and dependent on the reliability of the users.

Agilent Technologies provides a convenient solution based on column identification tags that are attached to the columns, connected to a tag reader mounted on the side of the column compartment, or the hosting sampler in the case of the ICC, and controlled through Agilent instrument drivers. Column ID tags can be permanently attached to each column as required; they are not intended to be removed and transferred to another column. This prevents any confusion after a column is changed, and the column history can be tracked with 100% certainty.

The Agilent InfinityLab Column Identification Tag is available either as a pre-labeled tag, which can be purchased with Agilent columns, or as a custom tag, which enables the user to attach it to any column type and enter custom column information.

Delivery Checklist

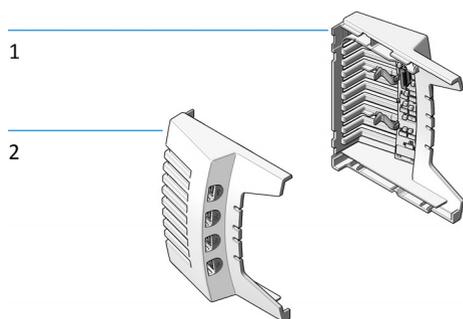
Ensure that all parts and materials have been delivered within the package of the respective upgrade kit. Any missing or damaged part should be reported to your local Agilent Technologies sales and service office.

G4750B Column ID Upgrade Kit for Agilent 1290 Infinity II Multicolumn Thermostat (G7116B)

Item #	p/n	Description	
1	1	5067-5915	Column ID Tag Reader, Left
2	1	5067-5916	Column ID Tag Reader, Right
3	4	5067-5917	InfinityLab Column Identification Tag

G4750A Column ID Upgrade Kit for Agilent 1260 Infinity II Multicolumn Thermostat (G7116A)

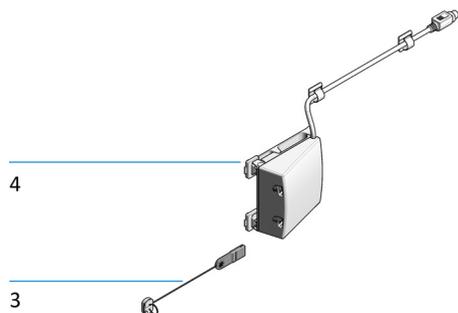
Item #	p/n	Description	
1	1	5067-5915	Column ID Tag Reader, Left
3	2	5067-5917	InfinityLab Column Identification Tag



Installing the Column ID Tag Reader(s) on an MCT

G4751A Column ID Upgrade Kit for the Integrated Column Compartment

Item #	p/n	Description
4	5067-6153	Column ID Tag Reader
3	5067-5917	InfinityLab Column Identification Tag



Installing the Column ID Tag Reader(s) on an MCT

Parts required	p/n	Description
	5067-5915	Column ID Kit Left
	5067-5916	Column ID Kit Right
	5067-5917	InfinityLab Column Identification Tag

Preparations Power off the instrument.

CAUTION

Electronic boards and components are sensitive to electrostatic discharge (ESD).

ESD can damage electronic boards and components.

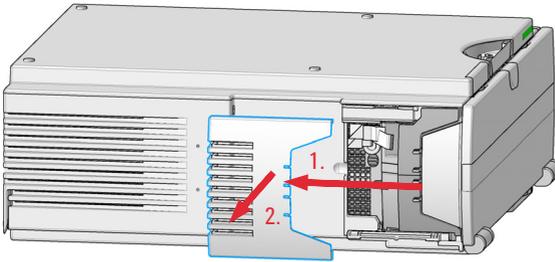
- ✓ **Be sure to hold the column ID modules by the plastic parts, and do not touch the electrical components. Do not touch the pins of the flex-board connector.**

NOTE

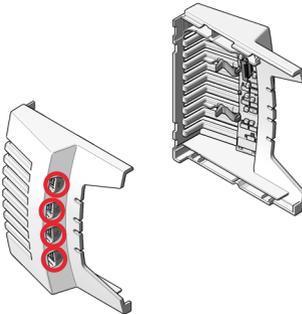
In the Agilent 1260 Infinity II Multicolumn Thermostat (G7116A), the column ID module is installed on the left side of the MCT only.

Installing the Column ID Tag Reader(s) on an MCT

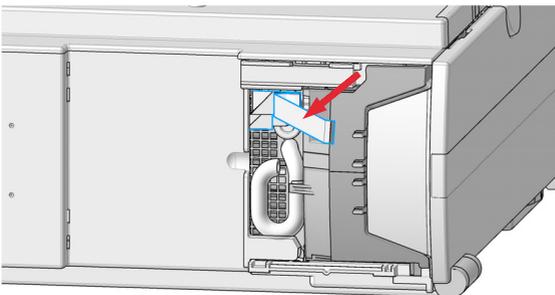
- 1 Remove any tube guides and tube clip holders that may already be installed on the sides of the MCT cover.
- 2 Unlock the left and right (G7116B only) side cover inserts by pushing them to the rear and put them aside.



- 3 Identify the left and right (G7116B only) column ID module. The ID sockets 1 to 4 are numbered from top to bottom.

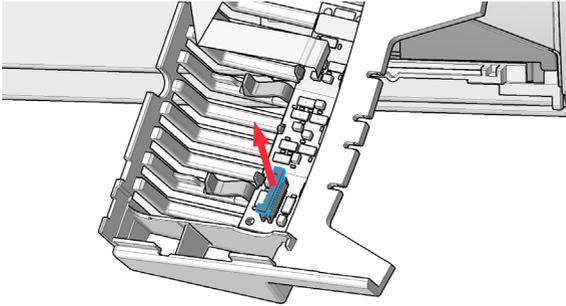


- 4 Take the end of the preinstalled flex-board connector out of the holder.

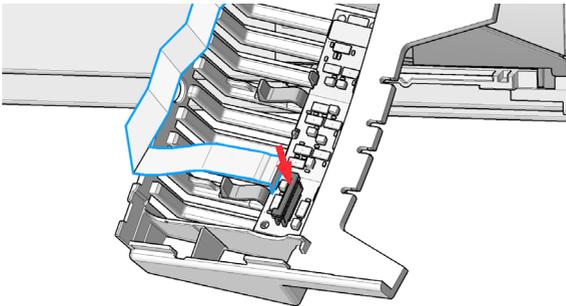


Installing the Column ID Tag Reader(s) on an MCT

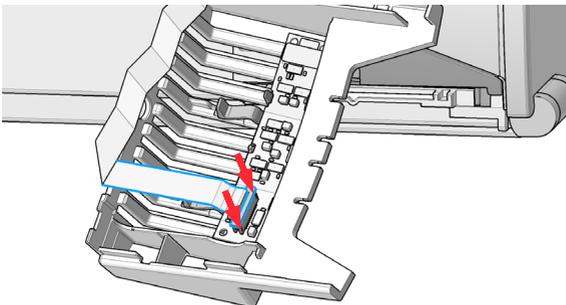
- 5 Connect the flex cable to the column ID module.
 - a Open the locking mechanism of the connector by lifting up the frame.



- b Push in the cable with the contacts facing to the rear.



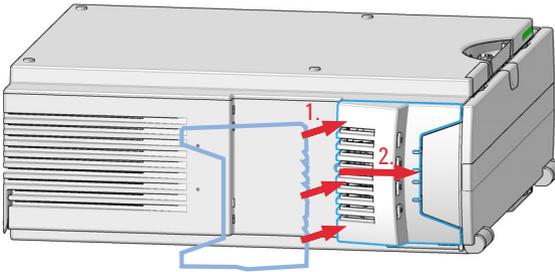
- c Close the locking mechanism.



- d Verify that the cable is properly attached to the connector without visible offset.

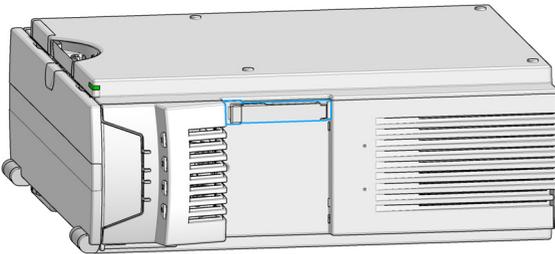
Installing the Column ID Tag Reader(s) on an MCT

6 Attach the column ID module to the MCT cover.



7 Repeat steps 4 to 9 for the column ID module on the other side (for G7116B, on the right).

8 Install the waste tube clip holder (example shows a G7116B).



Install the Column ID Upgrade Kit on an ICC

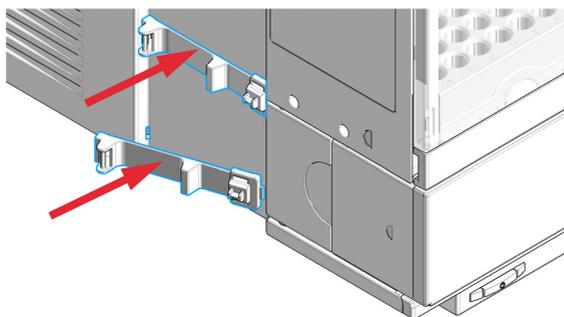
Parts required	#	p/n	Description
	1	G4751A	Column ID Upgrade Kit for the Integrated Column Compartment (includes the tag reader, 2 column identification tags and a technical note)
OR	1	5067-6153	Column ID Tag Reader
	1	5067-5917	InfinityLab Column Identification Tag

- Preparations**
- Power off the instrument.
 - Install the Integrated Column Compartment, see *Vialsamplers Agilent InfinityLab LC Series User Manual (SD-29000242)*.

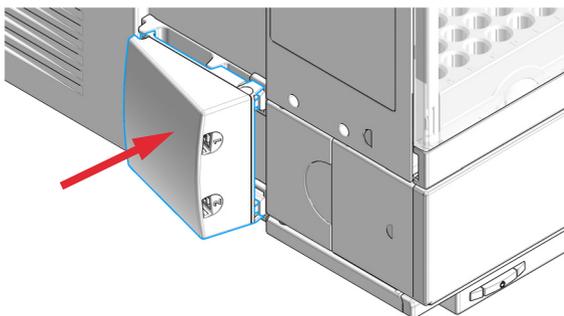
NOTE

To use the G4751A Column ID Upgrade Kit, the Agilent Integrated Column Compartment must be installed in the Vialsampler.

- 1 Place the two mounting clips onto the left side of the Vialsampler. Make sure of the correct orientation.

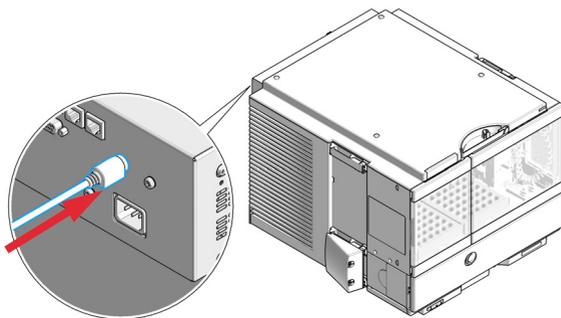


- 2 Mount the tag reader to the mounting clips.

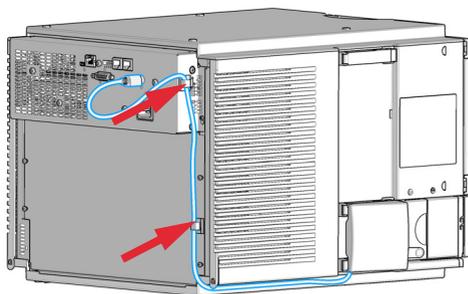


Install the Column ID Upgrade Kit on an ICC

- 3 Connect the cable of the tag reader to the respective socket on the back of the Vialsampler.



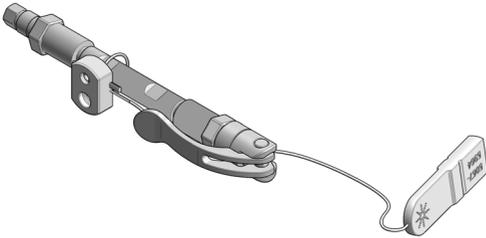
- 4 Fix the cable to the back of the sampler with the cable clips provided with the tag reader.



- 5 Power on the instrument.
- 6 Place a column with an identification tag in the ICC and plug the tag into the tag reader, see *Vialsamplers Agilent InfinityLab LC Series User Manual (SD-29000242)*.

Connecting the Column ID Tags

- 1 If the column has no Column ID Tag, fit a tag by slipping the loop over one end of the column and pulling it tight through the plastic holder.



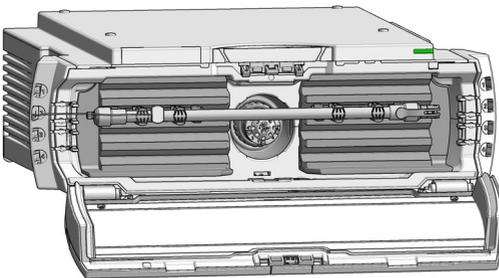
NOTE

Once the loop has been pulled tight, the tag can no longer be removed from the column.

- 2 Install the column in the module. Please refer to the respective Agilent InfinityLab User Manual for more information.
- 3 Plug the free end of the Column ID Tag into the adjacent socket in the column tag reader unit.

NOTE

It is important that the Column ID Tag is plugged into the adjacent socket in a logical order (that is, first column from the top into "1", second column from the top into "2", and so on). Otherwise, it is easy to confuse the columns and their locations during column assignment in a CDS.



NOTE

If you have a full-length column, we recommend that you use the adjacent socket on the left column tag reader (applicable for the MCT only).

Using Column ID Tags

The Agilent InfinityLab Column Identification Tag is designed to enable the automatic detection of the columns installed in the column thermostat and help the user to track the usage of the columns in the laboratory. The column identification tag contains information about not only the physical properties of the column but also about its usage. Two types of information are stored:

- *Static* fields contain information on the physical characteristics of the column such as the length, internal diameter and particle size. Typically, this information stays the same for the lifetime of the column.
- *Dynamic* fields contain information on the usage of the column, such as the number of injections and maximum measured temperature. The information stored in the dynamic fields will be automatically updated each time a new analysis is performed with the column. These fields are read-only from the perspective of the user, meaning that their content cannot be manually edited or erased.

NOTE

The information in the dynamic fields cannot be erased by any means.

For *pre-labeled* Agilent columns, the static fields are pre-populated with information and set to read-only for compliance reasons, except for the **Void Volume** and **Comment** fields. The *dynamic* fields are blank by default and will be automatically edited by the system upon using the column.

On the contrary, *custom* column identification tags enable the user to edit the content for all *static* fields, as long as the tag is not sealed. This can be beneficial when using non-Agilent columns. After entering all the necessary information, the custom tag can be sealed to prevent any further modification of the content in the static fields. The content of the *dynamic* fields cannot be manually edited or erased, not even for the *custom* tags.

NOTE

When the column identification tag is sealed, the static fields will become write-protected and only the dynamic fields will remain available for updating. The only exceptions from this are the *static* fields **Void Volume** and **Comment**.

There are two ways to edit the content of custom column identification tags:

- One way is to type in all the necessary information manually, using the Column Assignment tab of the control interface, see section *Column Assignment* in the *Vialsamplers Agilent InfinityLab LC Series User Manual (SD-29000242)*.
- The other one is to import the data from a database (an existing catalog or inventory, or the Agilent columns guide). This option is available only for the OpenLab CDS ChemStation (C.01.07 SR2 or higher).

NOTE

It may take up to several seconds for the column tag to be read and the tables to be updated.

Using Column ID Tags with ChemStation

- In the **Method and Run Control** view of the Agilent OpenLAB CDS ChemStation Edition, select **Columns** from the **Instrument** menu.

The **Edit Columns** dialog box is displayed.

If the **Edit Columns** table is empty, go straight to Step 3.

#	Installed	Location	Tag	Description	Col. Serial#	Batch#	Product#	# Injections	Max. P [bar]	Max. T [°C]	Max. pH	Min. pH	Length	Diameter	Size	Void	Unit	Comment	
1	YES	Left 1		Eclipse Plus C18	autoID-12		959941-902	0	600	60.0	9.0	2.0	50.0	4.6	1.8		0.499	ml	
2	YES	Left 2		SB-C18	autoID-11		827700-902	0	600	90.0	8.0	1.0	50.0	2.1	1.8		0.104	ml	
3	YES	Left 3		SB-C18	autoID-7		827975-902	0	600	90.0	8.0	1.0	50.0	3.0	1.8		0.212	ml	
4	YES	Left 4		Eclipse C18	autoID-9		993981-902	0	900	60.0	9.0	2.0	150.0	4.6	3.0		1.496	ml	
5	YES			SB-C18	autoID-8		827975-902	0	600	90.0	8.0	1.0	50.0	4.6	1.8		60.000	%	
6	YES			Poroshell 120 C8	124578	tr4533	895975-902	21	600	60.0	8.0	2.0	100.0	4.6	2.7		0.997	ml	
7	no			Eclipse XDB-C18up	autoID-10		927975-902	0	600	60.0	9.0	2.0	50.0	4.6	1.8		60.000	%	

Figure 1 The ChemStation Edit Columns table

- Select a line in the table that contains column information as close as possible to the column you are adding. The selected line acts as a template for the new column.

NOTE

Column catalogs are available only in OpenLab CDS ChemStation Edition C.01.07 SR2 and above with drivers A.02.14 and above. Click the **Catalog** button to display a dialog box that allows you to choose how to load the catalog into the table.

- Click the **Insert** button to insert a line above the currently selected line, or the **Append** button to add a line to the end of the table.
The new line contains a copy of the information in the template line.
- Click the **Edit** button to display a dialog box that allows you to edit the column-specific information such as **Serial Number**, **Batch Number** and **Description**.
- Add or edit the other column-specific information (for example, maximum pressure, maximum temperature, length, diameter, particle size) in the **Edit Columns** table.
- If the column is installed and will be used in the Multicolumn Thermostat, select **YES** in the **Installed** column.

7 Click the **Plumbing** button.

The **Column Assignment** dialog box is displayed.

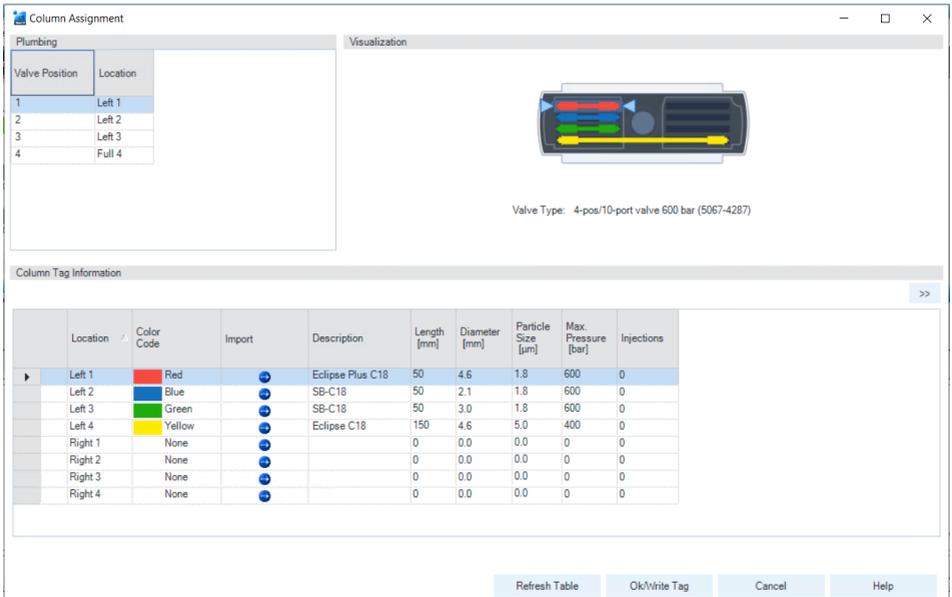


Figure 2 Column Assignment dialog box

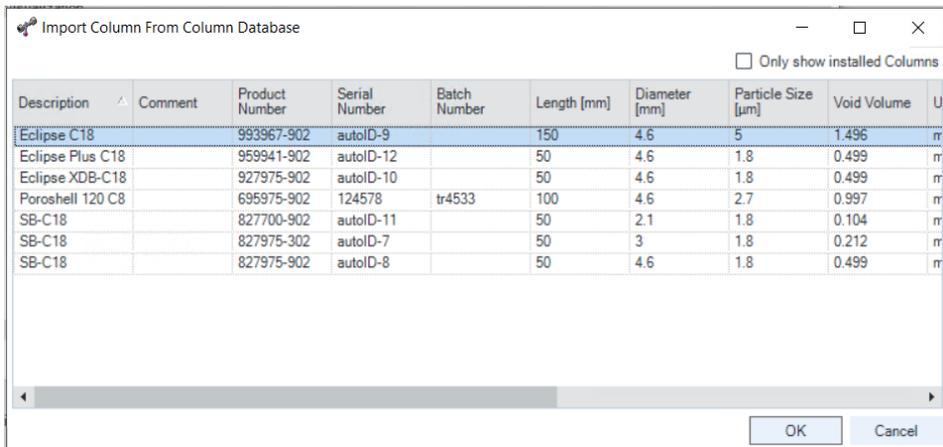
The **Column Assignment** dialog box allows you to specify and review detailed information about the columns attached to each position in the column compartment. The information in the **Column Assignment** dialog box is in three sections:

- 1 The **Plumbing** section contains a table where you can specify the plumbing assignment for each valve position.
- 2 The **Visualization** section gives a visual representation of the Multicolumn Thermostat configuration.
- 3 The **Column Tag Information** table shows the information stored on the column tag(s) of the installed column(s). For more details, see “The Column Tag Information Table” on page 22.

Using Column ID Tags

- Click  in the **Import** column of an empty line in the **Column Tag Information** table.

The list of columns from the ChemStation's **Edit Columns** table is displayed.



Description	Comment	Product Number	Serial Number	Batch Number	Length [mm]	Diameter [mm]	Particle Size [µm]	Void Volume	U
Eclipse C18		993967-902	autoID-9		150	4.6	5	1.496	nr
Eclipse Plus C18		959941-902	autoID-12		50	4.6	1.8	0.499	nr
Eclipse XDB-C18		927975-902	autoID-10		50	4.6	1.8	0.499	nr
Poroshell 120 C8		695975-902	124578	tr4533	100	4.6	2.7	0.997	nr
SB-C18		827700-902	autoID-11		50	2.1	1.8	0.104	nr
SB-C18		827975-302	autoID-7		50	3	1.8	0.212	nr
SB-C18		827975-902	autoID-8		50	4.6	1.8	0.499	nr

Figure 3 The list of columns from the ChemStation's Edit Columns table

To reduce the list to only those columns that are marked as **Installed**, mark the **Only show installed Columns** check box.

- 9 Select the column information to import from the list of columns and click **OK**.

The column information is imported into the **Column Tag Information** table.

NOTE

It may take several seconds before the information appears in the **Column Tag Information** table.

NOTE

The characters semicolon (;), single quote (') and double quote (") are invalid for the **Column Tag Information** table. If these characters are used in any field of the table, an error is displayed, and **OK/Write Tag** button is disabled. You must delete all invalid characters before you can write the data to the tag.

The **Description** and **Comment** fields are limited to 32 characters in the **Column Tag Information** table.

NOTE

At this stage, you can assign a color to the column using the drop-down list in the **Color Code** column; this information is displayed in the **Visualization** panel, but is not written to the tag.

- 10 Click the >> button at the top right of the **Column Tag Information** table to show the hidden table columns. Use the horizontal scroll bar to access the columns at the right of the table.
- 11 If all the information for the column is correct, click the **Ok/Write Tag** button to write the information to the column ID tag.
- The information in the ChemStation's **Edit Columns** table is also updated.
- 12 You can edit the information on the column ID tag using the ChemStation **Edit Columns** table. When you have finished editing the information, repeat steps 7 to 9 to update the information in the tag.

Using Column ID Tags

- 13 When you are sure that you will not make any more changes to the information in the tag, you can irrevocably seal the tag to set all static fields to read-only. Right-click in the appropriate line in the **Column Tag Information** table and select **Seal Column Tag** from the context menu.

Location	Color Code	Import	Description	Length [mm]	Diameter [mm]	Particle Size [µm]	Max. Pressure [bar]	Injections
Left 1	Red		Eclipse Plus C18	50	4.6	1.8	600	0
			Poroshell 120 EC-C18, 1000 bar	100	3.0	2.7	1000	0
			SB-C18	50	3.0	1.8	600	0
			Eclipse C18	150	4.6	5.0	400	0
				0	0.0	0.0	0	0
				0	0.0	0.0	0	0
Right 3	None			0	0.0	0.0	0	0
Right 4	None			0	0.0	0.0	0	0

Buttons: Refresh Table, Ok/Write Tag, Cancel, Help

Figure 4 The Column Tag Information table context menu

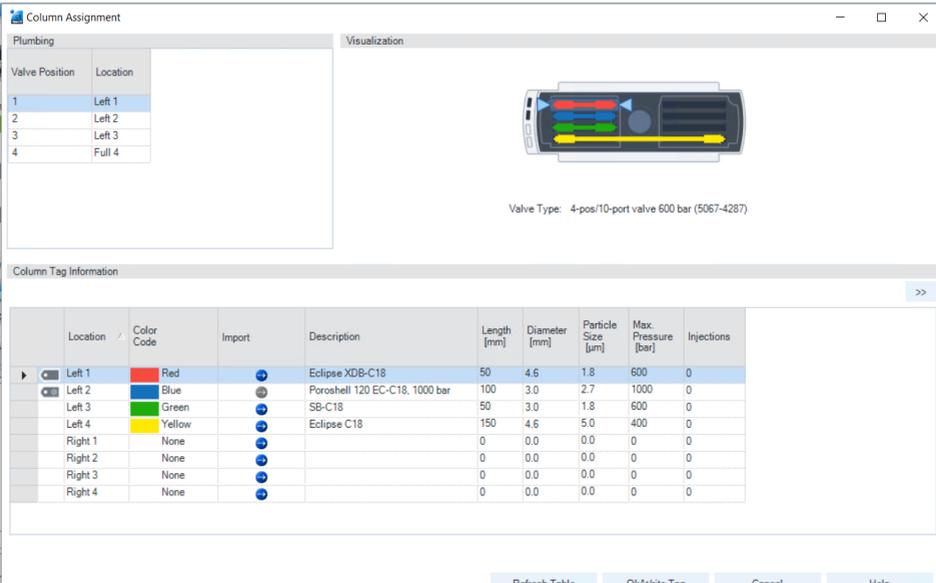
NOTE

Once a column ID tag has been sealed, the static fields cannot be edited.

Until the column ID tag has been sealed, you can delete all information in static fields on the tag using the **Clear Column Tag Information** command from the context menu.

The sealed column is shown in the **Column Tag Information** table with the  icon at the beginning of the row. In the **Edit Columns** table of the ChemStation, it is shown with **Sealed** in the **Tag** column.

The **Plumbing** button of the ChemStation **Edit Columns** table displays the **Column Assignment** dialog box. It can also be displayed by selecting **Column Assignment** from the context menu of the column compartment Dashboard panel in the ChemStation's **Method and Control** view.



Column Assignment

Plumbing

Valve Position	Location
1	Left 1
2	Left 2
3	Left 3
4	Full 4

Visualization

Valve Type: 4-pos/10-port valve 600 bar (5067-4287)

Column Tag Information

	Location	Color Code	Import	Description	Length [mm]	Diameter [mm]	Particle Size [µm]	Max. Pressure [bar]	Injections
▶	Left 1	Red	⬇	Eclipse XDB-C18	50	4.6	1.8	600	0
▶	Left 2	Blue	⬇	Poroshell 120 EC-C18, 1000 bar	100	3.0	2.7	1000	0
	Left 3	Green	⬇	SB-C18	50	3.0	1.8	600	0
	Left 4	Yellow	⬇	Eclipse C18	150	4.6	5.0	400	0
	Right 1	None	⬇		0	0.0	0.0	0	0
	Right 2	None	⬇		0	0.0	0.0	0	0
	Right 3	None	⬇		0	0.0	0.0	0	0
	Right 4	None	⬇		0	0.0	0.0	0	0

Refresh Table Ok/Write Tag Cancel Help

Figure 5 Column Assignment dialog box overview

Using Column ID Tags

The **Column Assignment** dialog box has three sections that give you information about the column:

- The **Plumbing** section shows the valve connections to the positions in the column compartment.

NOTE

Make the connections to give the shortest distances between the valve ports and the columns, and use a logical order (left column 1 to port 1-1', left column 2 to port 2-2' and so on). Avoid leaving unused ports between used ones.

- The **Visualization** section gives a visual representation of the configuration of the columns in the column compartment; the columns are color coded.
 - Place the mouse cursor over a column to display a tooltip of the column information from the column ID tag.
 - Click a column to highlight the column information in the **Column Tag Information** table.
- The **Column Tag Information** shows the information in the column ID tags for all columns in the configuration, including their location in the column compartment and their color codes.

The column compartment panel of the Dashboard in the ChemStation's **Method and Control** view also allows you a quick view of the column ID tag information.

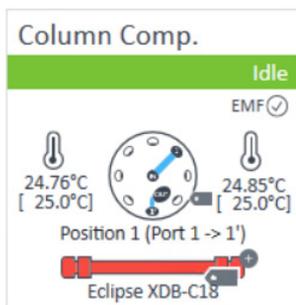


Figure 6 The dashboard panel of the column compartment

Place the mouse cursor over the column ID tag icon (); the tooltip shows the information currently stored on the column ID tag.

The column ID tag icon changes according to its state as described in "The Column Tag Information Table" on page 22.

Availability of Column Information

The ChemStation Columns Table

The **Edit Columns** dialog box, which you access using the **Columns** command of the **Instrument** menu in **Method and Run Control** view, shows the detailed information about the columns attached to each position in the device. The table contains all the column-specific information stored in the column ID tags (see “[Column Tag Information](#)” on page 23) plus the following possible additional columns:

Installed	YES when the column is installed in a device. no when the column is not installed in a device.
Location	Shows the location in the device to which the plumbing of the valve position leads.
Dev. Serial#	Present only for a valve thermostat cluster. Shows the serial number of the device that contains the column.
Tag	Shows if the column has column ID tag (Used), if it sealed (Sealed) or the column has no tag (empty).

The table includes not only the columns that are installed in the column thermostat device(s), but also the inventory of other available columns, for example, columns that have been used in the past. The ChemStation also provides a catalog of column types, which you can load into the **Edit Columns** table to act as templates for other columns.

The Column Tag Information Table

The **Column Assignment** dialog box, which you access using the **Column Assignment** command of the dashboard context menu, shows the detailed information about the columns attached to each position in the device. The dialog box includes the **Column Tag Information** table, which contains all the column-specific information stored on the column ID tags (see “[Column Tag Information](#)” on page 23) plus the following possible additional columns:

Tag Status	Shows the status of the column ID tag: <ul style="list-style-type: none">• Empty: The position is empty or has a column without a column ID tag.• : A column with a column ID tag is installed at this position.• : A column with a sealed column ID tag is installed at this position.• : A column with a prelabeled column ID tag supplied by Agilent Technologies is installed at this position.
Location	Shows the location in the device to which the plumbing of the valve position leads. For a valve thermostat cluster, the Column Host (the device where the column is installed) is also shown.
Color Code	Shows the color representing the column currently occupying the valve position.
Import	Present only when the CDS is an Agilent OpenLab CDS ChemStation Edition. Click the  icon to display a dialog box listing all the columns entered in the ChemStation's Edit Columns table, from which you can select appropriate information to import.

By default, only the **Column Tag Information** table columns up to and including the **Injection** column are displayed. Click the >> button at the top right of the table to show the full table.

Column Tag Information

The column ID tag contains the following information:

Field	Description	Type	Read/Write permission pre-labeled tag	Read/Write permission custom tag
Description	A description of the column.	Static	Read	Write
Length	The length of the column in mm.	Static	Read	Write
Diameter	The internal diameter of the column in mm.	Static	Read	Write
Particle Size	The particle size of the column packing material in μm .	Static	Read	Write
Maximum Pressure	The maximum pressure supported by the column.	Static	Read	Write
Number of Injections	The number of injections that have been made on the column.	Dynamic	Read	Read
Product Number	The product number of the column.	Static	Read	Write
Maximum Measured Temperature	The highest temperature (in $^{\circ}\text{C}$) experienced by the column to date.	Dynamic	Read	Read
Maximum Temperature	The safe maximum operating temperature of the column (in $^{\circ}\text{C}$).	Static	Read	Write
Minimum pH	The minimum pH supported by the column.	Static	Read	Write
Maximum pH	The maximum pH supported by the column.	Static	Read	Write
Void Volume (mL)	The void volume of the column and fittings.	Static	Write	Write
First Injection	The date and time of the first injection onto the column.	Dynamic	Read	Read
Recent Injection	The date and time of the most recent injection onto the column.	Dynamic	Read	Read
Manufacturing Date	The date of manufacture of the column.	Static	Read	Write
Agilent Column	Whether or not the column was supplied by Agilent Technologies.	Static	Read	Write
Serial Number	The serial number of the column.	Static	Read	Write

Field	Description	Type	Read/Write permission pre-labeled tag	Read/Write permission custom tag
Batch Number	The batch number of the column.	Static	Read	Write
Tag Sealed	Whether or not all static fields except Comment and Void Volume are set irrevocably to read-only.	Static	Read	Write
Comment	A user-generated comment about the column.	Static	Write	Write

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