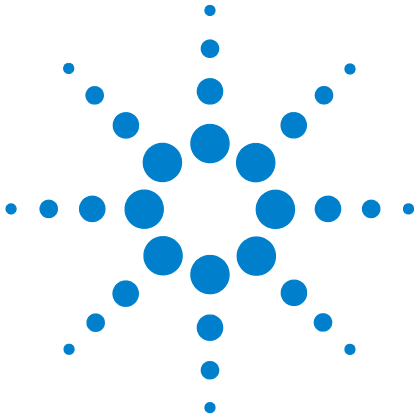

1090 High Performance Liquid Chromatograph
Technical Note

Wide-Bore Heat Exchanger Installation Kit (01090-68707)

This note describes how to install the wide-bore heat exchanger using the parts supplied in this kit. You can install the wide-bore heat exchanger in the flow path, between the column and flow cell, in either the Filter-Photometric Detector (FPD) or Diode Array Detector (DAD) in your 1090 High Performance Liquid Chromatograph .

General Information

The heat exchanger assembly comprises a large, bar-shaped, heat exchanger, see Figure 1, with capillary connection to the column, attached by a length of capillary to a small, T-shaped, heat exchanger. This small heat exchanger is connected directly to the DAD flow cell by the ZDV fitting, whereas an extra flow cell inlet capillary is required for connecting the ZDV fitting to the FPD flow cell. The internal diameter of this capillary is 0.17 mm. The small part of the heat exchanger is mounted onto the flow cell assembly with a clamp, and the large heat part of the exchanger is mounted on the left side of the detector compartment with eight screws.

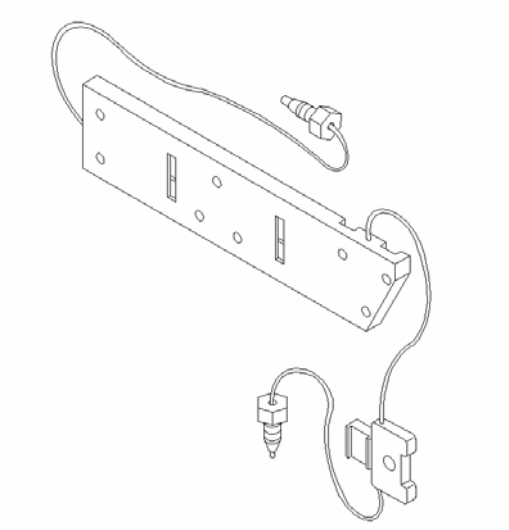

Figure 1 1090 Heat Exchanger

What You Will Need

Make sure you have the parts shown in Table 1.

Table 1 Wide-Bore Heat Exchanger Installation Kit

Description	Part number	Qty
Capillary guide	79880-43101	2
Mounting clamp	79880-00502	1
Screw M2.5, 6 mm long	0515-0894	1
Screw M2.5, 10 mm long (*)	0515-1415	1
Nut (*)	0535-0008	1
Washer (*)	2190-0583	1
Screw M3x0.5, 10 mm long	0515-1105	8

(*) These parts only necessary for the FPD flow cell.

You will also need:

- ✔ Wide-bore heat exchanger (part number 01090-87307);
- ✔ ZDV fitting (0100-0900);
- ✔ Connecting capillary (part number 79881-87301), only necessary for FPD flow cell.

You will need these tools:

- ✔ 4 mm wrench (included in FPD spare parts kit);
- ✔ Pozidriv screwdriver #1 (included in standard accessory kit shipped with the HP 1090).

Installing

To begin, you will have to remove the flow cell from the cell compartment. Proceed as follows:

1 Turn off the SDS (see operating instructions).

2 Open the column compartment cover.

3 Disconnect the color-coded column outlet capillary from the ZDV fitting to the cell, inside the column compartment, see Figure 2.

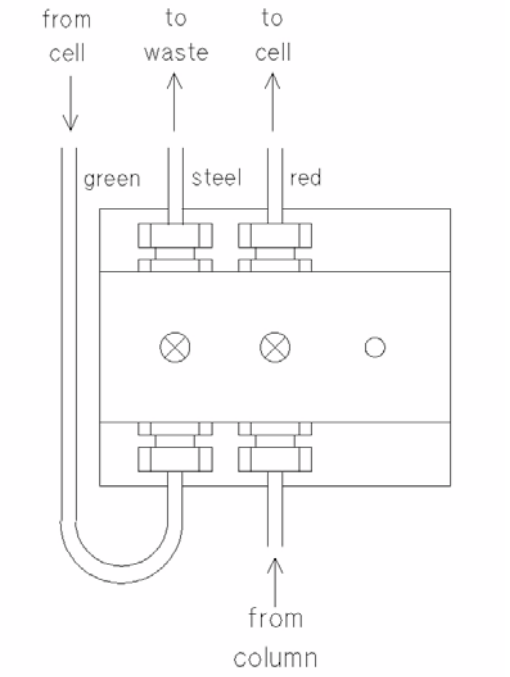

Figure 2 Column Connections

4 Open the detector compartment cover.

5 Lift the flow cell out of the cell compartment (see your Maintenance Guide).

Preparing the FPD Flow Cell

Your FPD flow cell has its own small round heat exchanger, which you must first remove before you can install the capillary from the new heat exchanger.

1 Using the 4 mm wrench, unscrew the lower capillary on the flow cell, see Figure 3.

1. Inlet capillary
2. Screw
3. Heat exchanger

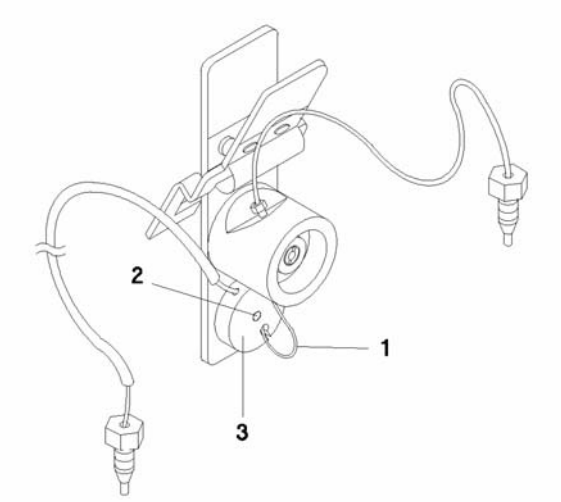

Figure 3 FPD Flow Cell with Small Heat Exchanger

Preparing the DAD Flow Cell

You must first disconnect your DAD flow cell from the normal flow path, before you can install the capillary from the new heat exchanger.

Disconnect the inlet capillary from the ZDV fitting, see Figure 4.

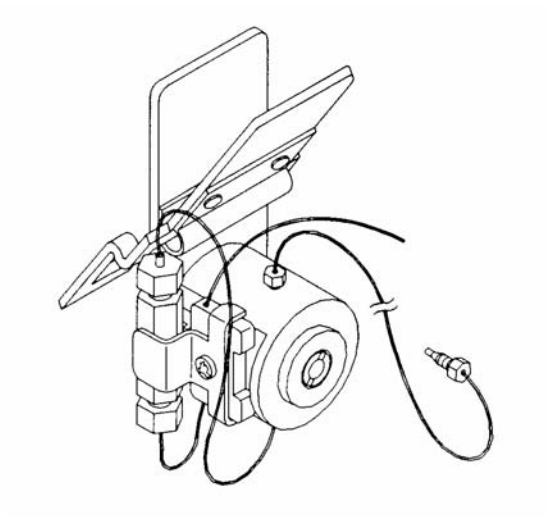

Figure 4 DAD Flow Cell with HP 1090 Heat Exchanger

Attaching the Small Heat Exchanger

The capillary on the small heat exchanger is connected to the flow-cell inlet capillary via the ZDV fitting. The heat exchanger is held in place with a clamp screwed onto the flow cell assembly.

1 Connect the short capillary on the small heat exchanger to the ZDV fitting.

2 Connect the free end of the ZDV fitting to the flow-cell inlet capillary.

FPD flow cell: Using the 4 mm wrench, attach the flow-cell inlet capillary to the underside of the flow cell, see Figure 5.

1. Flow-cell inlet capillary
2. ZDV fitting
3. Heat exchanger
4. Clamp
5. Screw

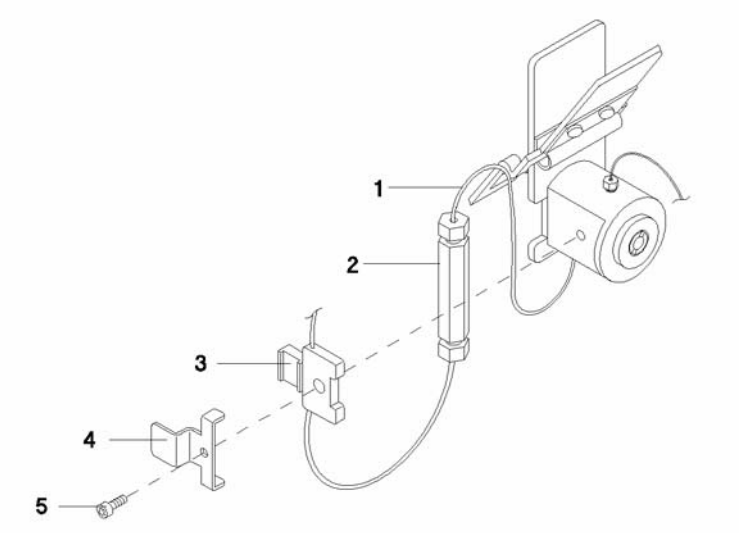

Figure 5 Installing Heat Exchanger on DAD Flow Cell

3 Place the small heat exchanger and clamp onto the flow cell.

FPD flow cell: Push the 2.5x10 mm screw through the holes in the clamp, the small heat exchanger and the flow cell assembly. Position the nut and washer on the other side of the flow cell assembly, see Figure 6.

1. Flow-cell inlet capillary
2. ZDV fitting
3. Heat exchanger
4. Clamp
5. Screw

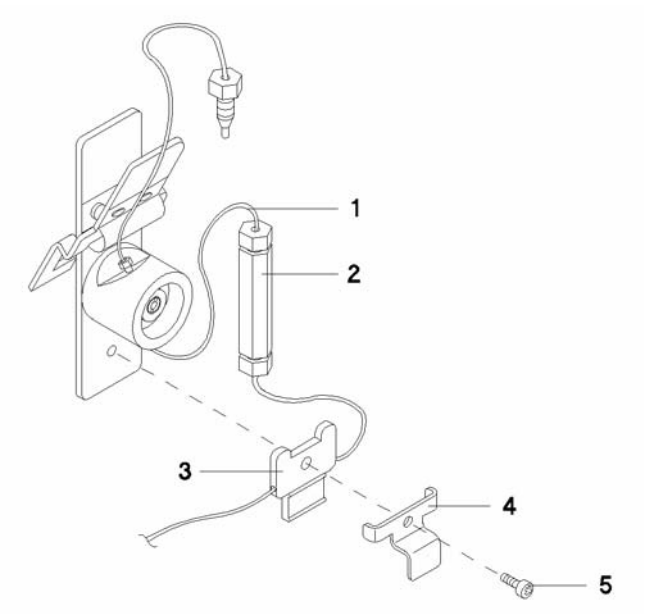

Figure 6 Installing Heat Exchanger on FPD Flow Cell

NOTE Use the short screw (0515-0533) only for the DAD flow cell. If you use the longer screw, the flow cell assembly will be damaged.

DAD flow cell: Push the 2.5x6 mm screw through the holes in the clamp and small heat exchanger and then directly into the side of the flow cell, see Figure 4 on page 5.

4 Place the ZDV fitting (2) between the clamp (4) and the small heat exchanger (3). Bend the capillaries into place. Using the Pozidriv screwdriver #1, tighten the screw (5) to secure the ZDV fitting in the clamp.

See Figure 7 on page 8 and Figure 4 on page 5 for flow cells with the heat exchanger installed.

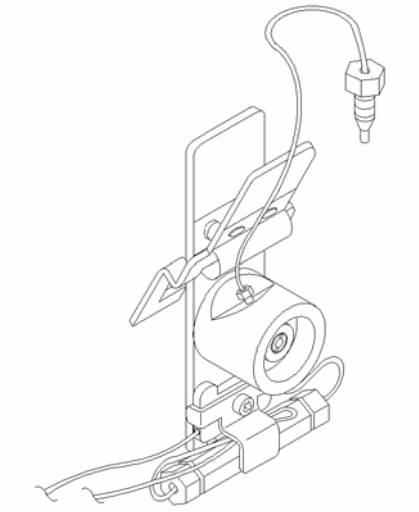

Figure 7 Heat Exchanger on FPD Flow Cell

Mounting the Large Heat Exchanger

1 Place the two plastic capillary guides into the recesses on the rear of the large part of the heat exchanger, to protect the capillaries against bending.

Mount the large heat exchanger onto the left side of

2 the detector compartment with the eight 3.0x10 mm screws. Using the Pozidriv screwdriver #1, tighten the screws.

3 Push the capillary through the left side of the detector compartment, into the column compartment.

4 Open the column compartment cover. Connect this capillary to the ZDV fitting on the column outlet capillary, see Figure 2 on page 4.

5 Close the detector compartment and column compartment covers.

Your heat exchanger assembly is now connected in the flow path between the column and the flow cell.

6 Turn on the SDS, and purge as described in your operating instructions, to ensure that the flow cell and new capillaries in the heat exchanger are free of air bubbles.

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