

# High-Pressure Inline Filter Installation Instructions

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# High-Pressure Inline Filter Installation Instructions

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The Thermo Fisher Scientific Dionex™ High-Pressure Inline Filter (P/N 044105) provides pre-column filtering to remove particulates down to 5 microns from eluent or 0.45 microns from samples.

Two filter disks (5-micron and 35-micron) are installed in the inline filter at the factory. To use the inline filter for *eluent* filtration, install the factory-assembled filter in the eluent line between the pump outlet and the injection valve inlet. For installation instructions, see [Section 1](#).

To use the inline filter for *sample* filtration, first remove the factory-installed filter disks. Then, install a 0.45-micron filter disk and new 5-micron and 35-micron disks. The assembled filter is typically installed in line between the injection valve outlet and the column inlet. Alternatively, if you want to filter the sample before it reaches the injection valve, install the assembled filter between the autosampler outlet and the injection valve inlet. This filter location is recommended if the sample has particulates that may damage the valve. For installation instructions for both locations, see [Section 2](#).

The inline filter is shipped with the following parts:

Part Number	Item	Quantity
032319	<i>High-Pressure Inline Filter Installation Instructions</i>	1
036521	35-micron filter disk kit (includes 10 disks)	1
036522	5-micron filter disk kit (includes 10 disks)	1
038930	Extractor tool	1
046801	High-pressure inline filter holder assembly	1
072632	0.45-micron filter disk kit (includes 10 disks)	1

**NOTE** The 5-micron and 35-micron filter disks are identical in appearance. Keep the disks in separate, clearly marked bags.

For instructions on how to replace used filter disks, see [Section 3](#).

### 1. Installing the Inline Filter for Eluent Filtration

To install the inline filter for eluent filtration, refer to [Figure 1](#).

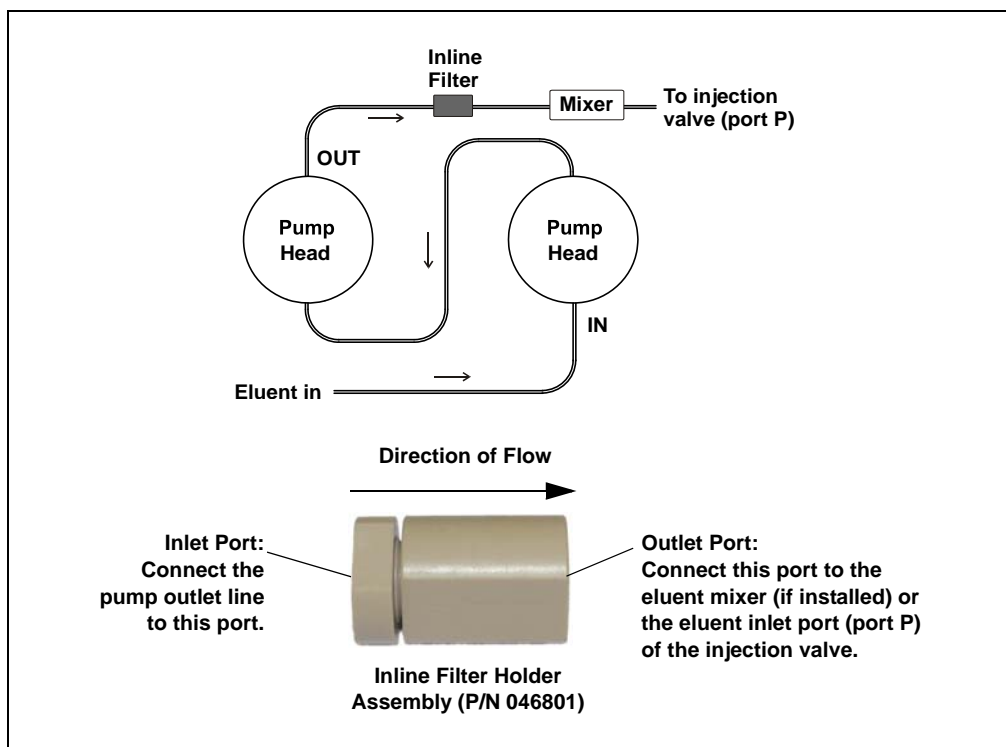


Figure 1. Inline Filter Connections for Eluent Filtration

**NOTE** Periodically, check the topmost filter disk for discoloration. Unscrew the filter cap from the filter holder (see [Figure 2](#)). If the disk is discolored, replace both filter disks (see [Section 3](#)).

## 2. Installing the Inline Filter for Sample Filtration

The procedure for installing the inline filter for sample filtration consists of the following main steps:

- Removing the two factory-installed filter disks (5-micron and 35-micron)
- Installing three new filter disks (0.45-micron, 5-micron, and 35-micron)
- Preparing the inline filter
- Installing the inline filter in the system

### To remove the filter disks:

1. Unscrew the filter cap from the filter holder (see [Figure 2](#)).

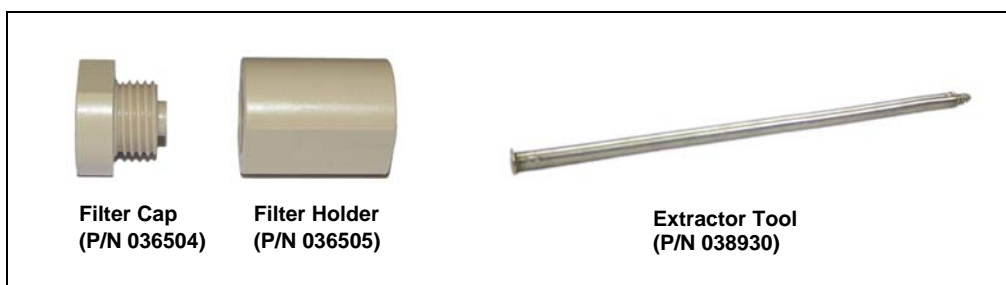


Figure 2. Filter Cap, Filter Holder, and Extractor Tool

2. Insert the flat end of the extractor tool into the filter holder (see [Figure 3](#)).
3. Carefully slide the end of the tool under the O-ring (P/N 018241), lift the O-ring out of the filter holder, and place it on a clean surface. **Do not scratch the O-ring.**

### IMPORTANT

Do not use a sharp tool (such as tweezers) to remove the O-ring. This will scratch the O-ring. These scratches will prevent a proper seal and cause leakage.

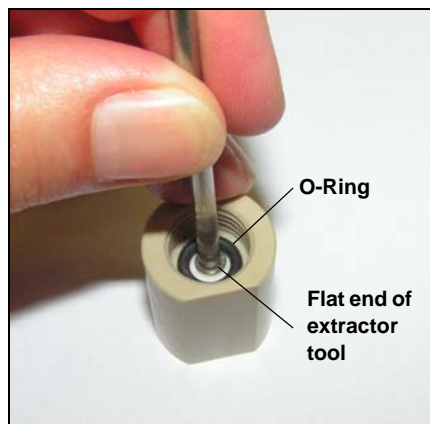


Figure 3. Removing the O-Ring

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4. Insert the pointed end of the extractor tool into the topmost filter disk in the filter holder. Screw the extractor tool into the filter disk and pull the disk out of the filter holder (see [Figure 4](#)).  
**Discard the filter disk; it cannot be reused.**
5. Repeat [Step 4](#) to remove the other filter disk.

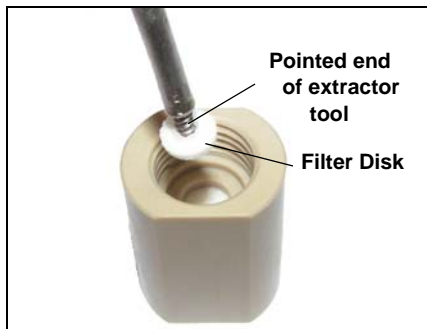


Figure 4. Removing a Filter Disk

### To install new filter disks:

1. To prevent contamination of the new filter disks, put on clean room gloves before proceeding.
2. Drop the 0.45-micron filter disk into the filter holder. Using the flat end of the extractor tool, gently press on the disk to seat it in the filter holder.
3. Repeat [Step 2](#) to install the 5-micron filter disk and then the 35-micron filter disk.

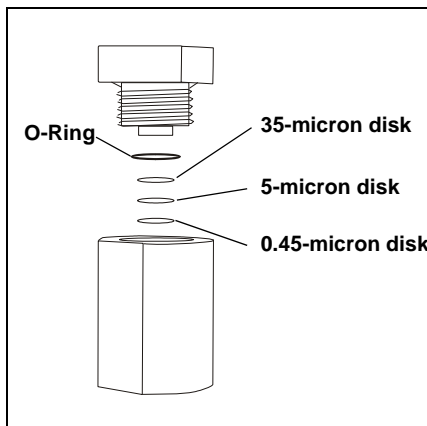


Figure 5. Order of Installation for Filter Disks

**NOTE** Always install the 0.45-micron filter disk first. This order of assembly optimizes sample filtration.

**NOTE** Never install the 0.45-micron filter disk by itself. The two other disks are required to adequately support the 0.45-micron filter disk inside the filter holder.

### To prepare the inline filter

1. Drop the O-ring into the filter holder.
2. Screw the filter cap into the filter holder and tighten the cap fingertight. Tighten further **only** if leaks appear during operation.

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### To install the inline filter:

Install the inline filter either between the injection valve outlet and the column inlet (see [Figure 6](#)) or between the autosampler outlet and the injection valve inlet (see [Figure 7](#)) (to filter the sample before it enters the injection valve).

Installing the filter before the injection valve is recommended if the sample has particulates that may damage the valve.

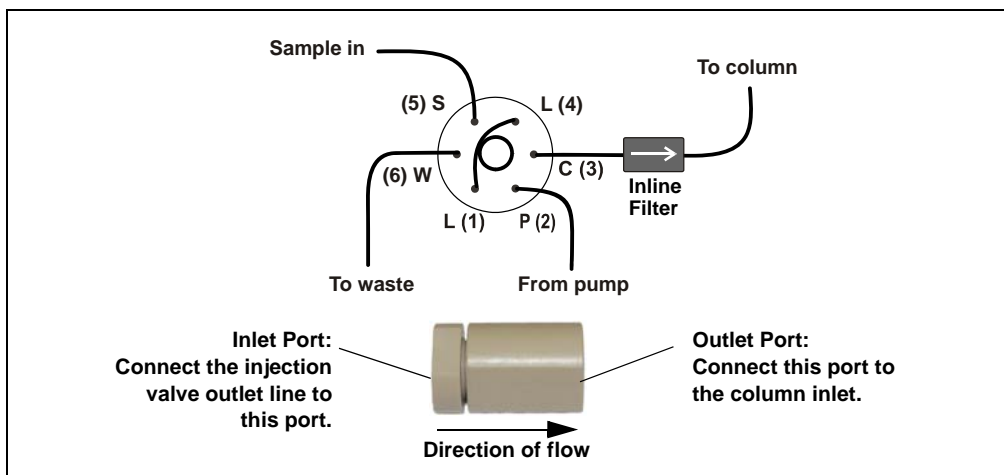


Figure 6. Inline Filter Connections for Pre-Column Sample Filtration

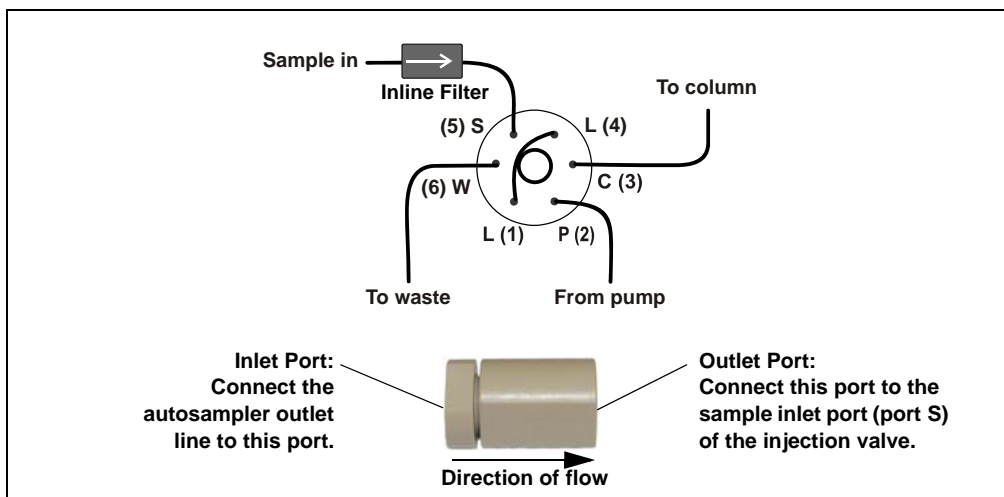


Figure 7. Inline Filter Connections for Pre-Injection Valve Sample Filtration

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This completes the inline filter installation procedure for sample filtration.

**NOTE** Periodically, check the topmost filter disk for discoloration. Unscrew the filter cap from the filter holder (see [Figure 2](#)). If the disk is discolored, replace all filter disks (see [Section 3](#)).

### 3. Replacing Filter Disks

Replace filter disks at the following times:

- If the topmost filter disk in the inline filter becomes discolored. (When new, the filter disks are white.)

**NOTE** Always replace all filter disks, even if only one disk is discolored.

- If the pressure through the inline filter increases by 0.21 MPa (30 psi) or more.

**To obtain new filter disks:**

The inline filter is shipped with 10 filter disks of each size. If you need more filter disks, please order a Filter Replacement Kit (P/N 035332).

**To install new filter disks:**

1. Turn off the pump flow.
2. Disconnect all tubing connections to the inline filter.
3. Unscrew the filter cap from the filter holder (see [Figure 8](#)).

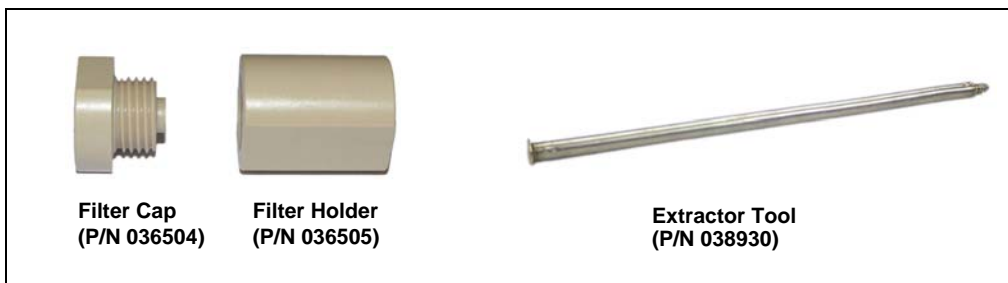


Figure 8. Filter Cap, Filter Holder, and Extractor Tool



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4. Insert the flat end of the extractor tool into the filter holder (see [Figure 9](#)).
5. Carefully slide the end of the tool under the O-ring (P/N 018241), lift the O-ring out of the filter holder, and place it on a clean surface. **Do not scratch the O-ring.**

**IMPORTANT**

Do not use a sharp tool (such as tweezers) to remove the O-ring. This will scratch the O-ring. These scratches will prevent a proper seal and cause leakage.

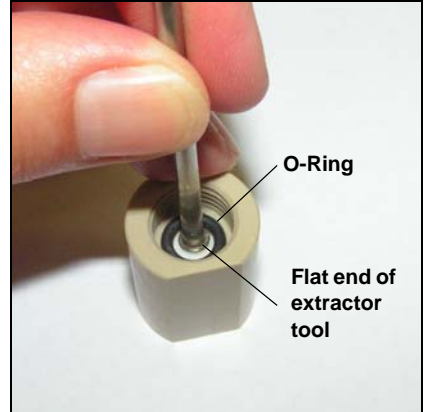


Figure 9. Removing the O-Ring

6. Insert the pointed end of the extractor tool into the topmost filter disk in the filter holder. Screw the extractor tool into the filter disk and pull the disk out of the filter holder (see [Figure 10](#)). **Discard the filter disk; it cannot be reused.**
7. Repeat [Step 6](#) to remove the other filter disk.

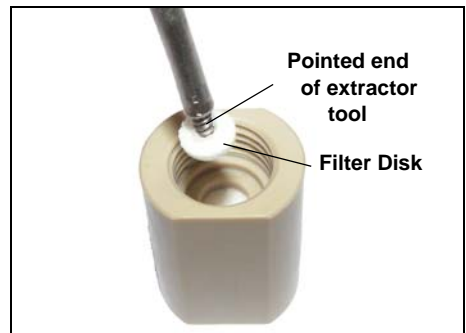


Figure 10. Removing a Filter Disk

8. To prevent contamination of the new filter disks, put on clean room gloves before proceeding.

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9. Drop the 0.45-micron filter disk into the filter holder. Using the flat end of the extractor tool, gently press on the disk to seat it in the filter holder.
10. Repeat [Step 2](#) to install the 5-micron filter disk and then the 35-micron filter disk.

**NOTE** Always install the 0.45-micron filter disk first. This order of assembly optimizes sample filtration.

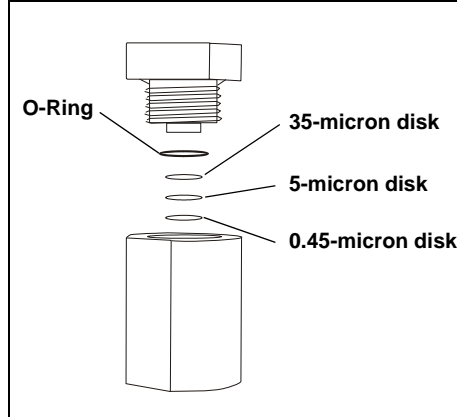


Figure 11. Order of Installation for Filter Disks

**NOTE** Never install the 0.45-micron filter disk by itself. The two other disks are required to adequately support the 0.45-micron filter disk inside the filter holder. It is okay to install two other disks of the same type (either two 5-micron or two 35-micron disks).

11. Drop the O-ring into the filter holder.
12. Screw the filter cap into the filter holder and tighten the cap fingertight. Tighten further **only** if leaks appear during operation.
13. Reconnect all tubing connections to the inline filter and resume operation.