



Chromatography

Acclaim guard holder and coupler system

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Introduction

Guard columns have a great effect on your analytical HPLC column lifetime. A guard column functions as a particular and chemical filter for the main analytical column. It prevents particulates and sticky contaminants from ever reaching your analytical column, but it may also help in relieving the pressures typically created at the head of the column, crushing the first material and creating a voiding column bed. See Figure 1 for a visual of a guard column before and after use.

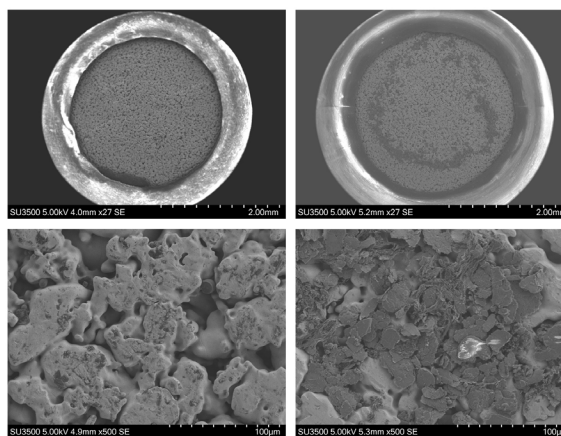


Figure 1. Electron microscope imagery of an unused and a used guard cartridge. Top left: unused guard cartridge; bottom left: zoomed image of the unused guard cartridge to show granular media. Top right: used guard cartridge; bottom right: zoomed image of the used guard cartridge to show granular media deterioration.

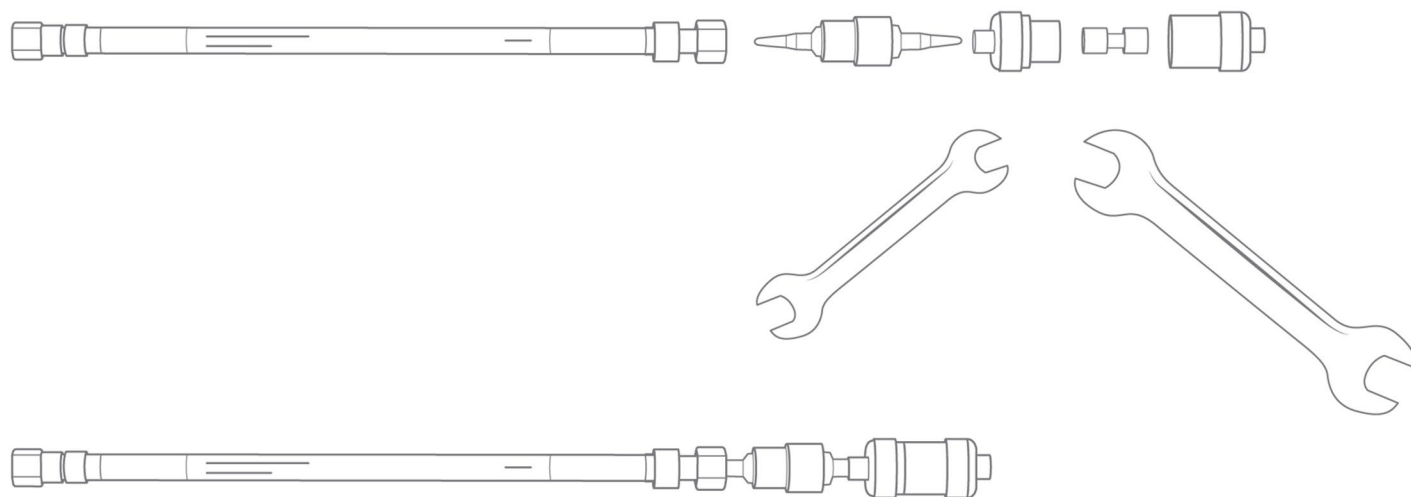


Figure 2. Holder and cartridge installation. Top: All disassembled parts of the Acclaim guard holder and cartridge. Bottom: Fully assembled guard holder, cartridge, and analytical column.

Historically, a guard column was an approximately 50 mm long column placed in front of the analytical column. Compared to the standard-length analytical column, which was in the range of 150 mm or longer, the guard column was relatively short, as it was meant to have as little impact on the chromatography as possible. With the increasing improvements of instrumentation and the modernization of methods onto shorter columns, the guard column is now a factor for increased dead volume. This can affect the overall chromatography, widening peaks, and shifting retention times.

Thermo Scientific™ Acclaim™ guard cartridge holders directly connect, through a union, with the column reducing the dead volume of the connection. The union reduces the dispersion of the sample, and the guard cartridge reduces the length of the guard column, providing our customers with highly effective protection of their HPLC columns.

Acclaim guard holder and coupler installation instructions

The guard cartridge and holder may be used in any direction. Insert a cartridge into the holder, assemble the holder, and tighten it gently with wrenches (no more than 1/10 of a turn beyond hand tight).

Use the red fitting with a light brown ferrule. Attach the tubing to one end of the holder and tighten it firmly by hand. Then attach the tubing with the other red fitting and light brown ferrule to the inlet end of the analytical column. Now your holder is connected to your analytical column.

Connect the injector to the front of your guard holder using standard HPLC tubing and fittings. Then connect the outlet end of the analytical column to the detector using standard HPLC tubing and fittings. With the Thermo Scientific Acclaim guard cartridge holders, it is possible to change the guard cartridge without disturbing any of the other connections.

Insert the cartridge into the holder by disassembling the holder. Insert the cartridge and reassemble the holder and tighten it gently with wrenches (no more than 1/10 of a turn beyond hand tight). Figure 2 shows the holder and cartridge installation.

Conclusion

Thermo Scientific Acclaim guard cartridge holders allow for protection of your analytical column at lower dead volume. The cartridges are easily exchanged and ensure longer lifetimes of your LC column. The effects of using a guard holder and cartridge system can clearly be seen in Figure 1.

Learn more at thermofisher.com/guardcolumns