

D3606 Application Column

cat.# 83606A (2 column set)

Note:
If you are using a column set purchased before July 2021, (cat.# 83606) and need instructions, contact Restek Technical Service at www.restek.com/contact-us

Before starting:

1. It is critical that the columns are oriented correctly. Verify the correct orientation prior to installation using the small metal tag marked "inlet" located at the inlet end of each column. The inlet of Column 1 (backflush column) must be connected to the injector. The inlet of Column 2 (analytical column) must be connected to the switching valve.
2. To obtain optimal oxygenate peak symmetry, a deactivated glass liner must be used in the injector. Also, use a deactivated transfer line between the injector and Column 1. This is critical for accurate quantitation of benzene and toluene.

Restek recommends:

- A 2 mm ID deactivated splitless glass liner, such as cat.# 23313 for an Agilent split/splitless injection port.
 - A 0.76 mm ID deactivated transfer line, such as cat.# 29226. Short lengths should be used to minimize peak broadening.
3. If using an auxiliary column oven, verify that the temperature of your GC oven is 135 °C by using an accurate thermometer or digital thermocouple thermometer. Do not simply rely on the instrument temperature display.

Maximum column temperature: 140 °C
(Exceeding this temperature will cause irreversible damage.)

Installation (Figure 1):

1. Connect the inlet of Column 1 (backflush column) to the transfer line connected to valve position #2 using Vespel/Graphite or metal ferrules. If applicable, connect directly to valve position #2 using Valco metal ferrules.

Note: Point the column end downward when sliding the ferrule onto the column to help prevent shards of the ferrule entering the column.

2. Connect the inlet of Column 2 (analytical column) to the transfer line connected to valve position #5 using Vespel/Graphite or metal ferrules and tighten per manufacturer specifications. If applicable, connect the inlet of column #2 directly to valve position #5 using Valco metal ferrules and tighten per manufacturer specifications.
3. Connect the exit end of Column 2 to the detector.
4. Turn on the carrier gas and set the pressure to 40 psig of helium. Allow the column to purge for 10 minutes at ambient temperature. Starting with the oxygen/moisture scrubbers, check all connections—including column connections—for leaks using an electronic leak detector. Oxygen and/or moisture in the system will drastically shorten the lifetime of the column set.
5. Adjust oven the temperature to 135 °C (do not exceed max temperature of 140 °C), adjust pressure to 57 psig, and allow the system to stabilize for 30 minutes. Using an electronic flow meter, measure and adjust column flow to 25 mL/min. Measure the backflush vent flow and adjust to 25 mL/min. The column is now ready for use.
6. Review the included Quality Assurance test chromatogram for the specific column set that you received. Using this chromatogram as a guideline, set the backflush time, inject a sample, and compare the results to the supplied Quality Assurance test chromatogram. If needed, optimize the backflush time by carefully following the instructions in ASTM D3606 for your particular instrument (approximately 4.3 minutes). Alternatively, after running the backflush standard, follow the instructions and determine the backflush time using the designated algorithm.

Simple tips to help your D3606 column set last longer.

1. Ultra-high purity carrier gas (helium or nitrogen) is essential. Not only should the highest quality gas be purchased from your supplier, but high-quality indicating gas traps should be located as close to your GC as possible. It is imperative that you prevent moisture and oxygen from entering the columns and our Super Clean gas filter baseplate traps (cat.# 22019) are ideal for this purpose. Note: If using nitrogen as the carrier gas, be aware that there is no ASTM precision statement at this time.
2. Properly set the backflush time. It is important to prevent C9 and heavier components from entering Column #2.
3. Never exceed the maximum temperature of 140 °C. Damage to this column set will be irreversible.

Questions about this or any other Restek product?
Contact us or your local Restek representative (www.restek.com/contact-us).

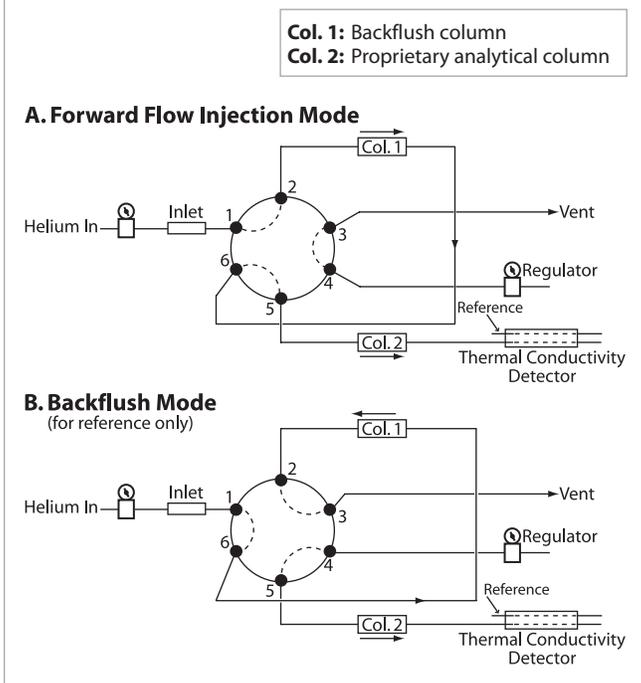
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Figure 1: 6-port switching valve flow diagram



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