

# Gas Chromatography (GC) Column Installation - Injector Installation

## Pre-Installation Checklist

- Replace oxygen, moisture and hydrocarbon traps as necessary.
- Check gas cylinder pressures to ensure that an adequate supply of carrier, make-up and fuel gases are available. Carrier gases should be of the highest purity.
- Ensure that the injection port is clean and free of sample residues, septum, or capillary debris.
- Check and replace as necessary critical injector components such as seals, liners, and septa.
- Check and replace detector seals as necessary.
- Carefully inspect your column for damage or breakage.

Note: It is critical that oxygen and water be removed from the carrier gas by the appropriate use of filters and adsorbents

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## Injector Installation

Note: GC columns do not have a specific directional flow when received from the manufacturer. Upon initial use of your new GC column, it is recommended to dedicate one specific end of the column for injector installation only. This is particularly important when dealing with active/caustic or contaminating compounds. If these compounds are routinely injected onto the column, degradation of the phase will occur—leading to higher bleed. A typical first step to remedying (removing) this bleed would be to trim 10 cm from the front (injector) end of the column and keep trimming this inlet end of the column as necessary. Trying to remedy any bleed issues by trimming the column may not work if both ends have been interchangeably installed into the inlet.

1. Place a capillary nut and ferrule on the injector end of the GC column, allowing a section of column to protrude. Trim one to two centimeters from the protruding end to remove ferrule contamination that may have entered the column. Inspect the cut with a magnifier to ensure that a smooth, clean, square-cut edge has been made - recut if necessary.
2. Carefully hang the column in the GC oven, being cautious not to scratch or damage the polyimide coating on the capillary tubing. Rotate the column to avoid sharp bends of the capillary column and any contact of the column with oven surfaces.
3. Insert the column into the injector exactly the correct distance specified in the instrument manual. Tighten the ferrule nut finger-tight then 1/2 turn with a wrench. If the column can still be moved, tighten another 1/4 turn until the column is secure.
4. Adjust the carrier gas to obtain the flow rate listed on the test chromatogram.