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INSTALLATION GUIDE FOR FUSED SILICA CAPILLARY CONNECTORS

The end of the fused silica capillary column or deactivated fused silica tubing should be cut square using a diamond scoring tool or sapphire scribe. A good square cut minimizes the silica tubing ends being crushed and reduces the amount of torn polyimide and silica particles in the sample pathway. These fragments generally lead to absorption and resolution problems.

Remove finger oils from the clean and square cut by wiping the column ends with a tissue wetted with methanol. Moistening the tissue with methanol helps lubricate the tubing allowing it to slide farther into the connector, creating a better seal.

Insert the column into the connector until the end is firmly gripped by the radial restriction. Be careful not to crush the column when pushing it into the restriction.

Visual Inspection: A proper connection shows a discolored ring around the column end since polyimide is stripped off the outer circumference. This polyimide ring forms the seal and indicates compression of the polyimide coating around the entire column. *This polyimide ring must be present for a proper seal.* Use a magnifying glass to inspect the presence of the ring and ascertain that the ring is continuous all around. The seal will be made permanent when the column is heated to over 200°C whereby the polyimide ring will bond to the inside of the connector.

Establish the appropriate flow rate and leak check of the seal with a leak detector (Gow Mac) or Leak Hunter (Airco). Do not use a soap solution like Snoop or any other leak detectors. The Gow Mac or Airco leak detector works on the principle of difference in the thermoconductivity between room air (standard) and room air + carrier gas (at the leak). They are very sensitive and will not contaminate your GC system.

You can also check to see if you have leaks by injecting a sample containing alkanes. The hydrocarbon peaks should be very perfectly symmetrical at the correct temperatures and flow.

The Ohio Valley connector can be made stronger by applying a curable polyimide resin (Cat. No: ML-300) at the ends of the connector. This resin should not go down inside the connector since solvents evaporate during the curing process creating the possibility of pushing the connector apart. Allow the resin to air dry and cure slowly: GC oven program from 50°C to 150°C at 5°/min, hold for 30 minutes. Then from 150°C to 220°C at 2°/min with a final hold of 30 minutes.