

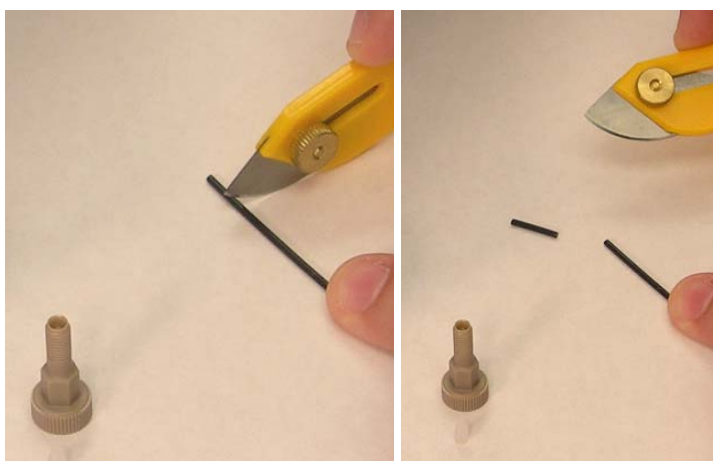
Technical Bulletin #G0180: Connecting FEP Tubing to CapNMR

This bulletin describes how to connect 100 micro inner diameter, 1/16 inch outer diameter, FEP (Teflon based) black tubing to the CapNMR probe. This connection is intended for OneMinuteNMR automation. Also, this is the recommended connection for 10 uL flow cell users. (The part numbers are listed below)

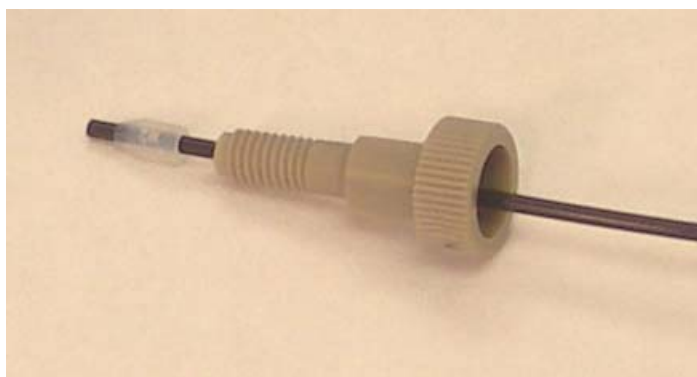
Make sure a filter is always used inline. Please see [Technical Bulletin G0540](#) on the Valco inline filter at the <http://www.microNMR.com/> knowledge base.

Step 1) Make sure the tubing has a clean tip. Make sure the blade is clean and that the cut is perpendicular to the tubing so the tubing tip has a clean 90° edge to it.

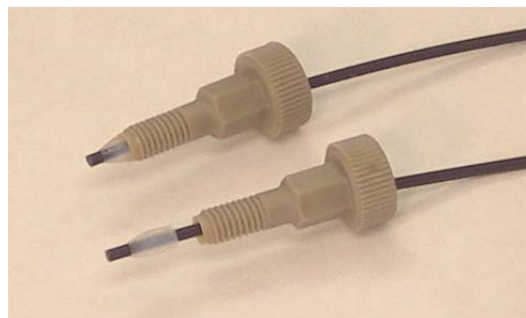
Also, squirt a little bit of acetone or methanol on the tubing tip to make it's clean of any dust or debris.



Step 2) Place an Upchurch F-334N nut and ferrule onto the tubing as shown. Make sure the square end of the ferrule is towards the nut and the tapered/angle side is towards the tip.



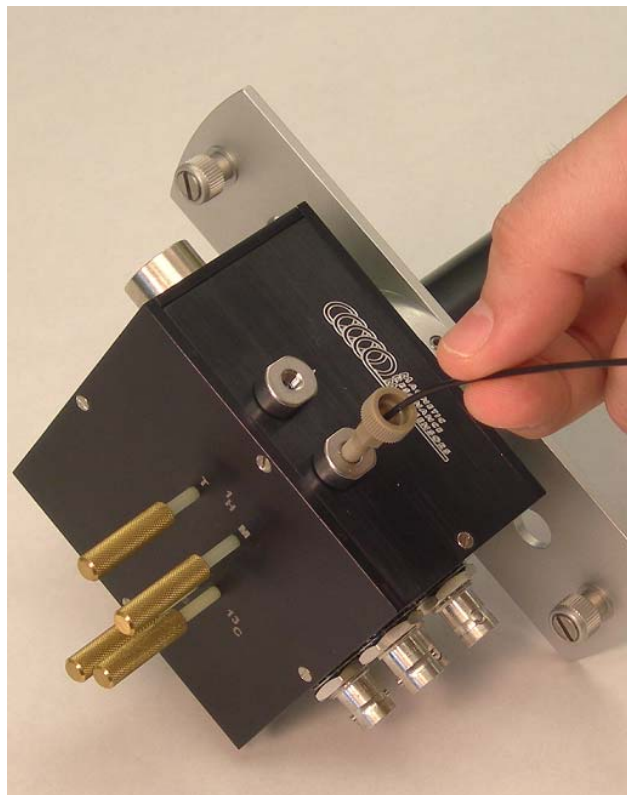
Note: When the fitting has been tightened, the ferrule and nut will be compressed together into one fitting. The top fitting is compressed and locked into place while the fitting on the bottom is still loose on the tubing.



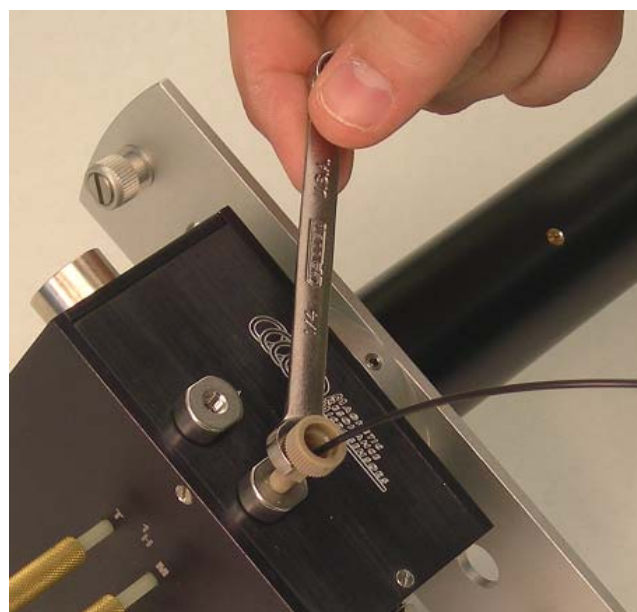
Step 3) Place the tubing, nut, and ferrule into the CapNMR port. (You can inject into either side, the probe is fluidically symmetric.)

Make sure the tubing is pushed into the fitting before tightening to make sure the tubing is through the ferrule and not caught behind it.

Tighten the fitting (clock-wise) while gently pushing on the tubing to ensure a zero-dead volume connection.



Helpful Hint: If you're not comfortable making the connection tight with your fingers, use a non-magnetic 1/4" (quarter inch) wrench to tighten the fitting. Be careful not to over-torque the wrench. There are slots machined into the tan nut that fit the 1/4" wrench.



Step 4) Repeat this same process for the other CapNMR port.

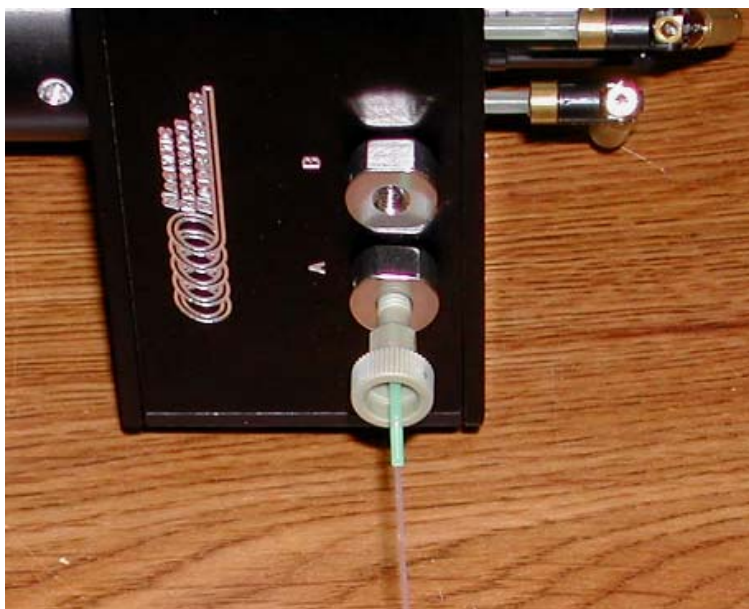
For Manual Injection (non-automation):

For manual injection users, the tubing should be a 75 micro inner diameter, 1/32 inch outer diameter, FEP (Teflon based) clear tubing instead of the tubing shown in this bulletin. This is different from automation in that the tubing is only half as big for the outer diameter so a sleeve is necessary. The Upchurch F-247 will ensure a proper fit between the 1/32" tubing and the 1/16" fitting.

Make sure the clear tubing goes completely through the sleeve and is flush with the end of the sleeve at the tip.



Follow the same steps as above: Make sure the tubing and sleeve are pushed all the way into the port so they are hitting the inside of the probe port, and then tighten the fitting while applying a slight pressure to the tubing and sleeve to make sure there is a zero dead volume connection.



Parts Summary:

Tan Nut & Ferrule	Upchurch F-334Nx	10-pk	
Sleeve (green)	Upchurch F-247x	10-pk	
Black Tubing	Upchurch 1474	10 feet	(for OneMinuteNMR automation)
Clear Tubing	Upchurch 1683	5 feet	(for Manual Injection)

To order Upchurch parts, contact them directly at (800) 426-0191 or www.upchurch.com.