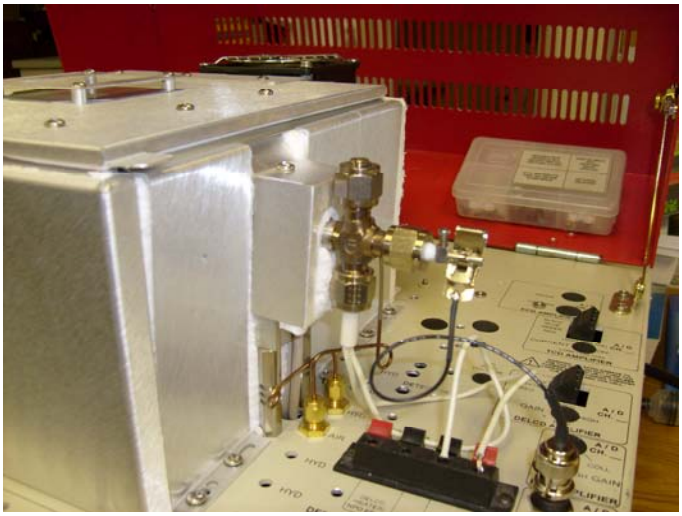
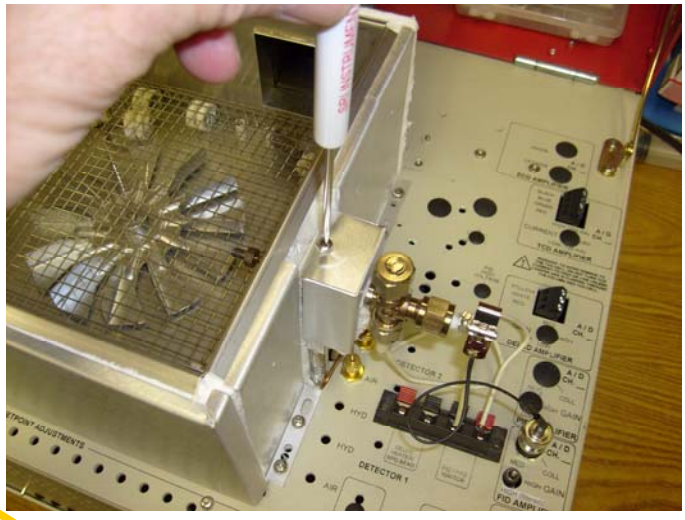
Re-packing the SRI FID/Methanizer tube 7-10-2008

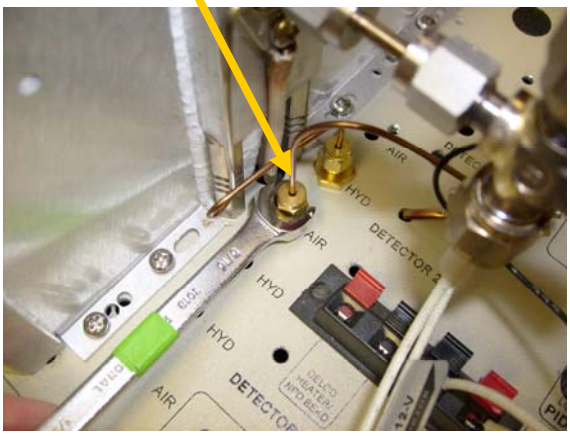
The SRI FID/Methanizer is located on the right side of the GC's column oven.

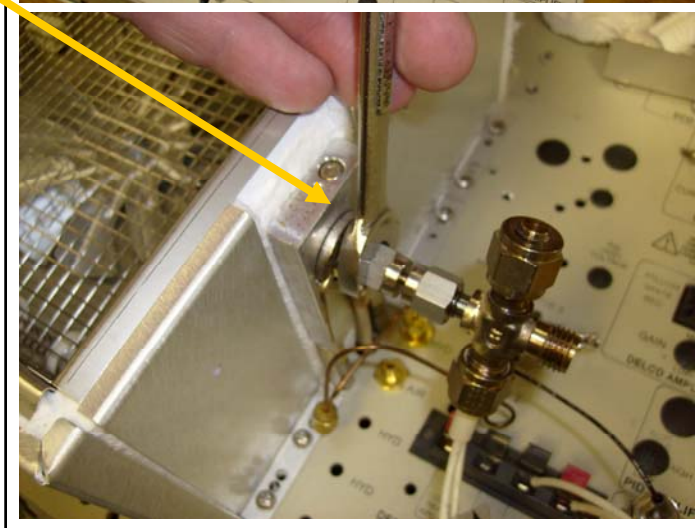


Remove the cover and insulation from the FID/Methanizer heater block using a screwdriver.



Loosen the nut holding the FID air supply tube to the 1/16" bulkhead fitting below the FID. Then loosen the 1/8" nut holding the FID/Methanizer jet to the bulkhead fitting in the heated aluminum block.





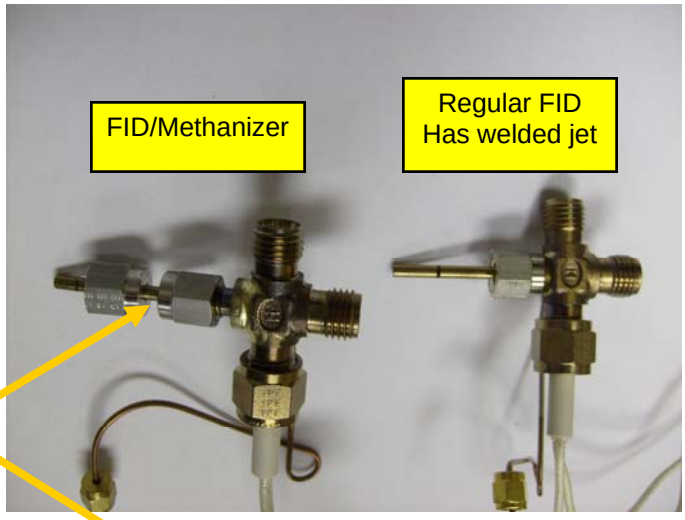
Re-packing the SRI FID/Methanizer tube

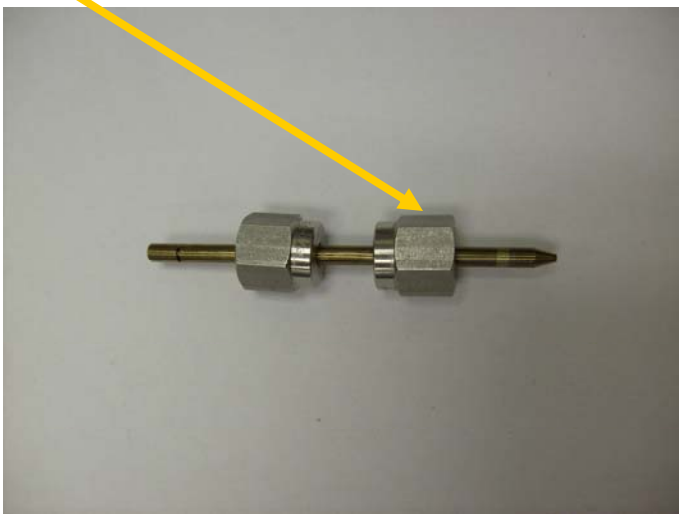
The FID/Methanizer body is different from the regular FID body because the jet is remove-able on the FID/Methanizer version.

The SRI part# for a blank methanizer tube is 8670-1083.
2008 price is US$ 100.

A new methanizer jet will need two sets of 1/8” Swagelok nuts and ferrules.

The column side of the jet should have a gash to allow hydrogen to flow through the jet even if the normal entrance hole is plugged.

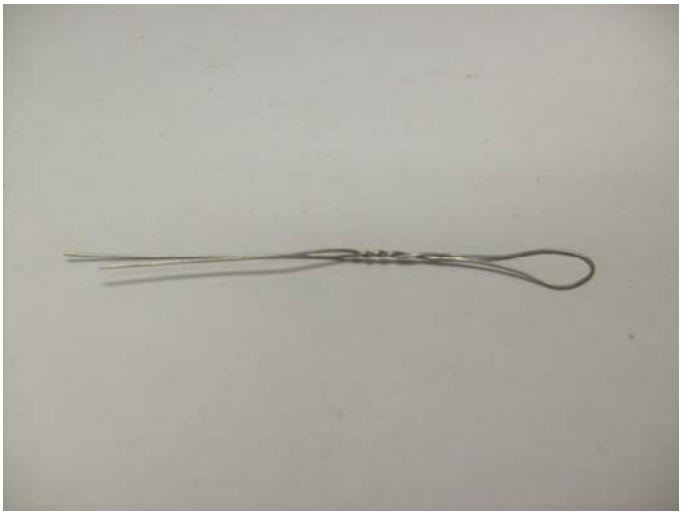




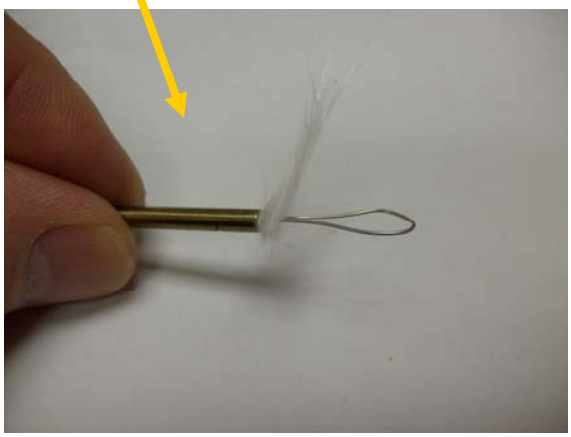
Re-packing the SRI FID/Methanizer tube

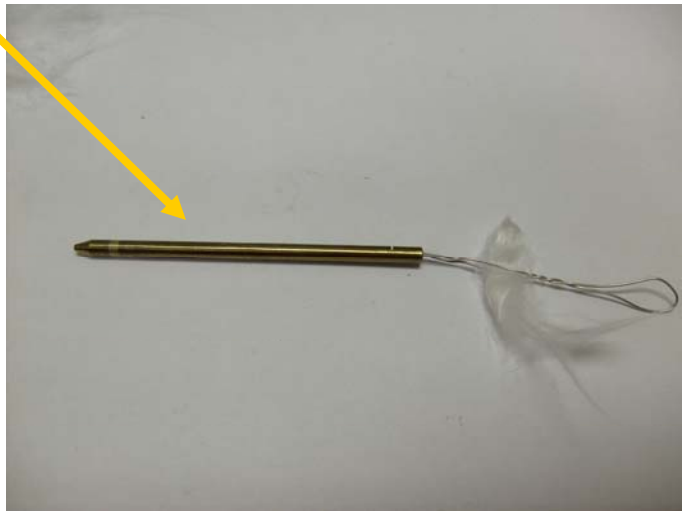
Find some soft wire with a diameter of about 0.020 inches (.5mm).

Bend the wire into a fork shape as shown.



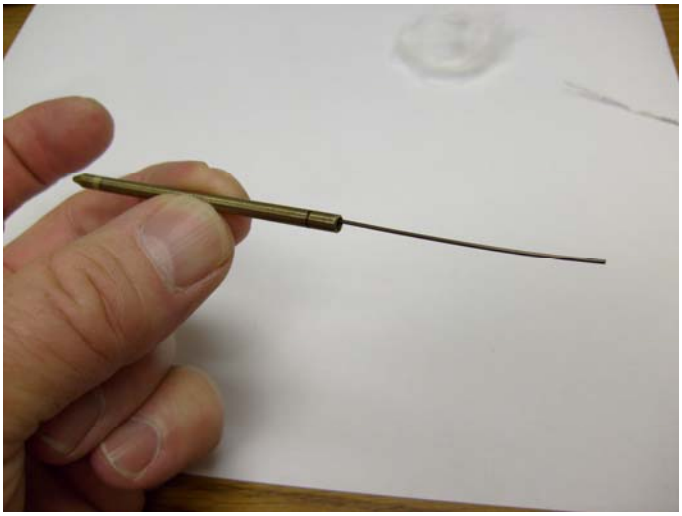
Use the fork to insert some glass wool into the Methanizer jet.





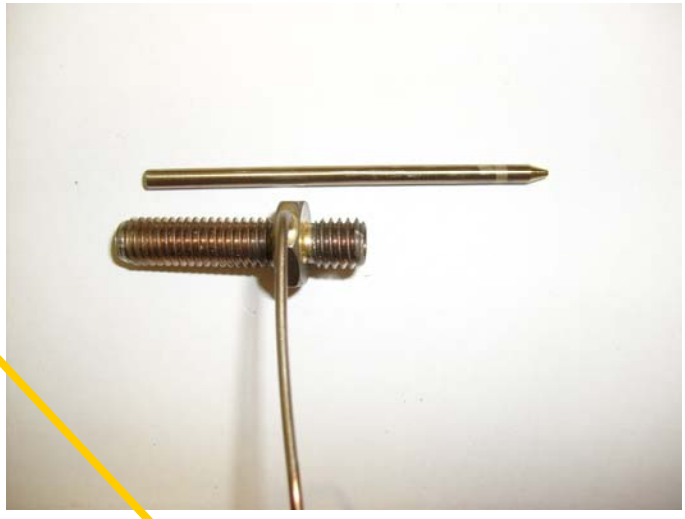
Re-packing the SRI FID/Methanizer tube

Use some thicker, stiffer wire (or a piece of metal wide bore capillary column) to position the glass wool plug halfway down the jet.

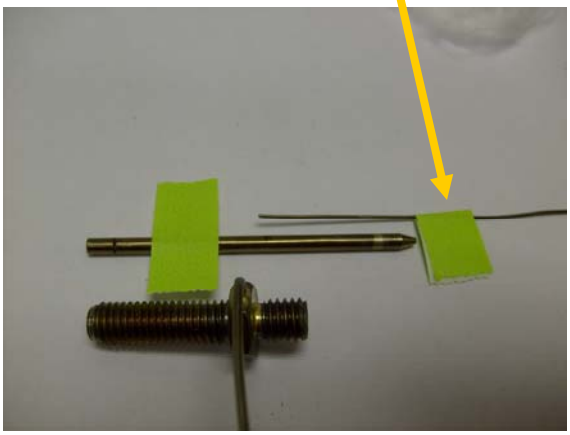


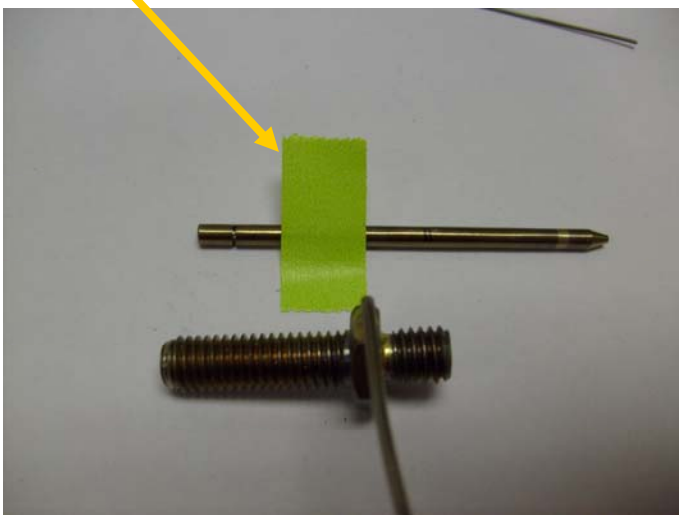
Once installed, the jet will be inserted into the bulkhead fitting attached to the heater block. So, only the part of the jet which is in the bulkhead will be heated.

The colored tape shows the part of the jet into which the methanizer catalyst must be placed. If the catalyst is not positioned in this area, the catalyst will be cooler than the heater block temperature.



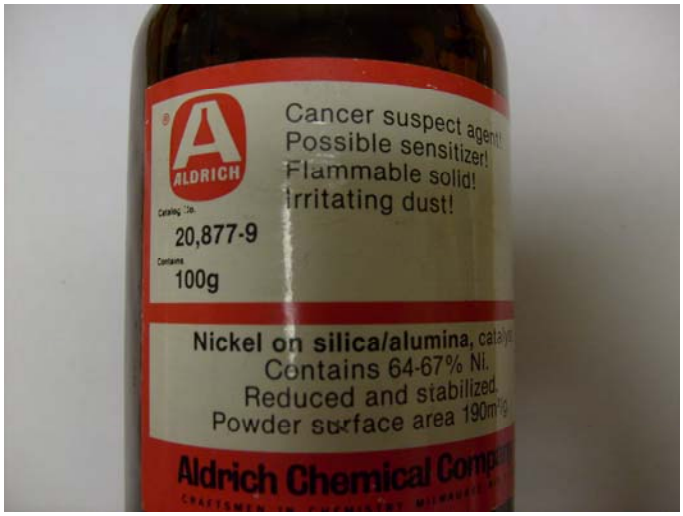
Use some tape on the pusher wire so you know how far into the jet you have positioned the glass wool.





Re-packing the SRI FID/Methanizer tube

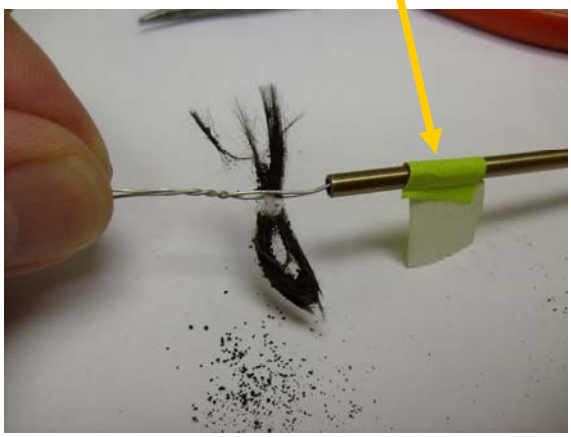
The catalyst is available from Aldrich part# 20,877-9. www.sigma-aldrich.com



Make a “worm” shape with some glass wool.

Dunk the glass wool into the catalyst so it adheres.

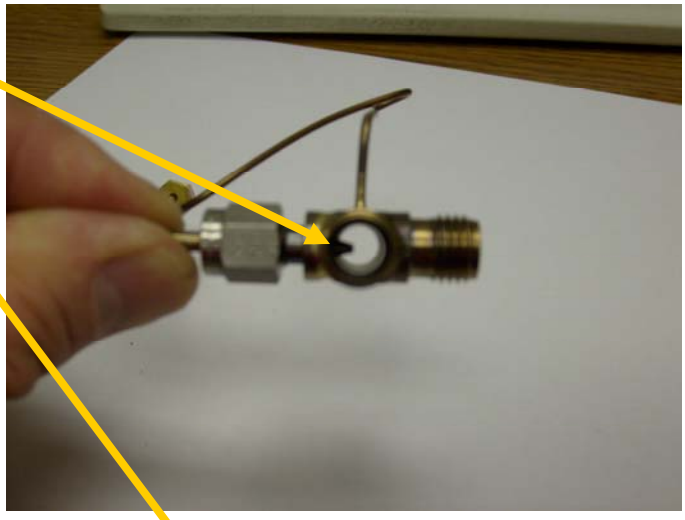
Then insert the catalyst impregnated glass wool into the methanizer jet. Position the catalyst plug in the part of the jet which will be the hottest.



Re-packing the SRI FID/Methanizer tube

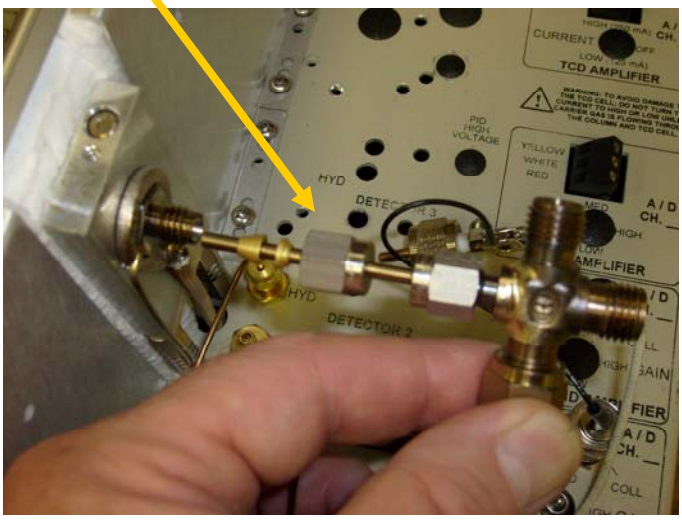
Place a nut and brass ferrules on the jet.

Position the jet so the tip of the jet is centered in the FID body, then tighten the nut. Be sure the jet does not change position as you tighten the nut.



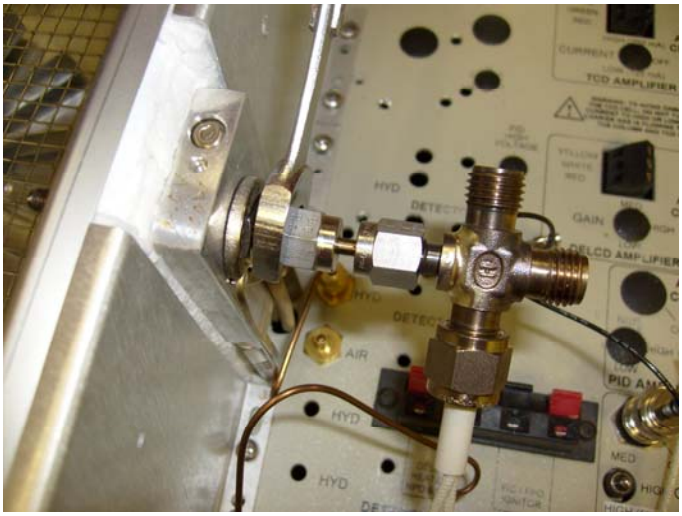
Put another nut and brass ferrule set on the jet and slide it into the bulkhead fitting.

Place another standard swagelok fitting on the inside of the bulkhead to prevent the jet from going in too far.

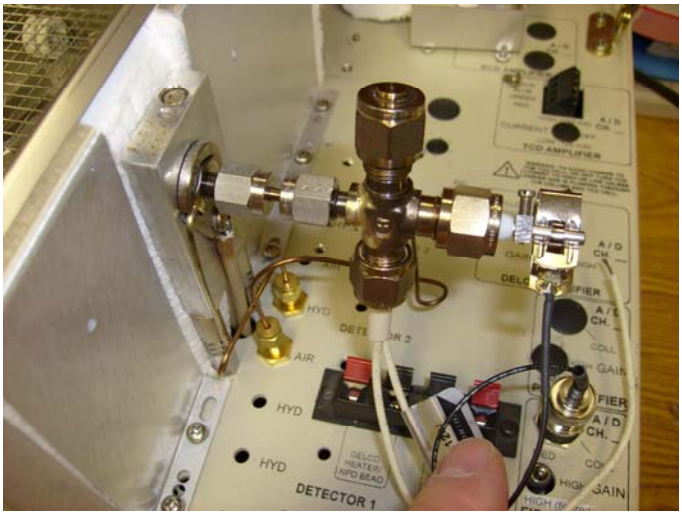


Re-packing the SRI FID/Methanizer tube

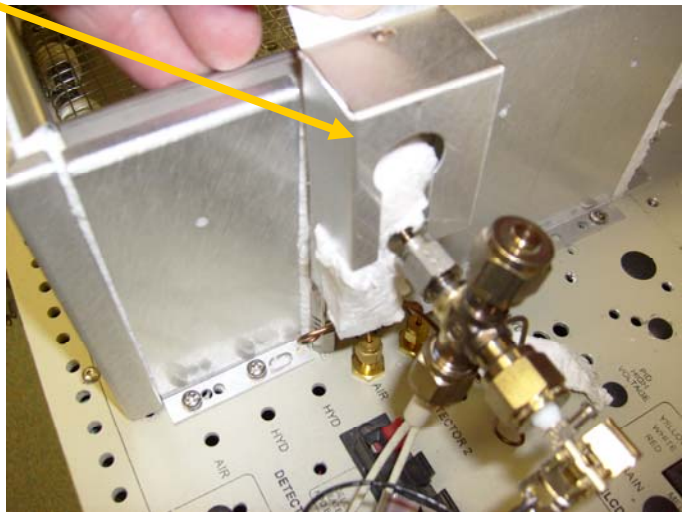
Tighten the jet in the bulkhead fitting using a 7/16” wrench.



Re-connect the ignitor, collector electrode and cap to the detector body.



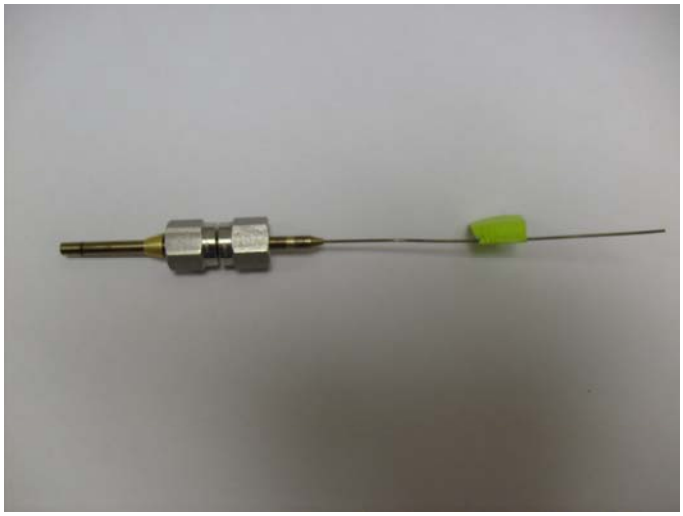
Replace the insulation and cover over the heater block.



Set the methanizer (detector block) temperature between 300 and 380C depending on the sensitivity required.

Re-packing the SRI FID/Methanizer tube

The methanizer jet may be repacked many times. Use a stiff wire to poke the old catalyst/glass wool out of the jet.



If the catalyst needs frequent replacement, it may be because it is being poisoned by sulfur. Some users attached a foot or two of copper tubing between the column and the detector to scrub the sulfur out of the gas stream to to the methanizer. Sulfur reacts with copper to make copper sulfide.