

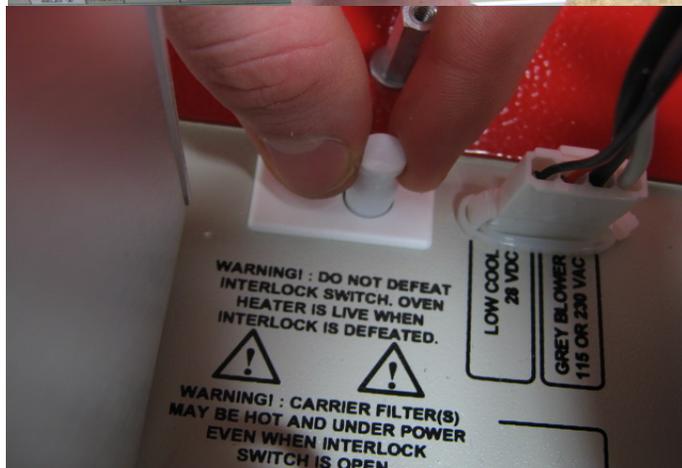
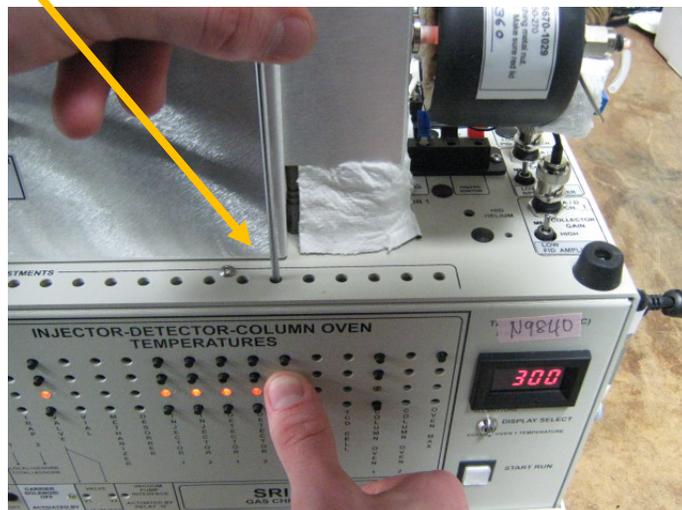
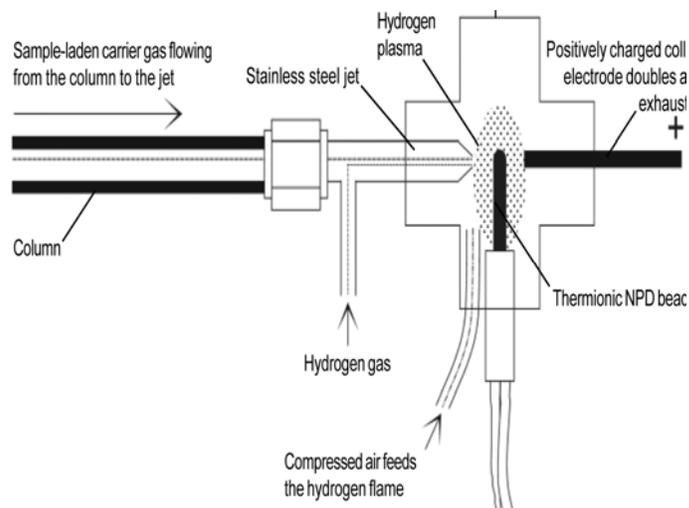
Adjusting the SRI NPD Detector

April 2014

This publication is only about adjusting the NPD detector. For an overview on the NPD detector, please see the documents page of the SRI website.

To adjust a setting on the GC, hold down the TOTAL SETPOINT button while turning the corresponding trimpot until you can read the desired pressure setting in the LED display (make sure the LED “DISPLAY SELECT” switch is on “ALL BUTTONS”).

1. Have the helium carrier gas turned on.
2. Set the hydrogen and air flow rates to the specifications on the right side of the GC. If no specifications are given on the machine, set the hydrogen to 3mL/min (10psi) and the air to 100mL/min (5psi).
3. Set the NPD detector base temperature to 300° C.
4. Set the NPD bead volts to -320
5. Set the NPD amplifier gain to HIGH (applications that call for lower amplifier gains should still be set to HIGH gain for NPD bead volt adjustment. The gain can be changed after adjustment).
6. Initialize the acquisition system; connecting the GC to the computer. Check that the NPD is responding by doing the “Wet finger test.”
7. With the red GC lid up, pull up on the interlock switch to let the GC components heat while the lid is open.
8. Let the components heat until the ACTUAL set-point of each one is approximately the same as the TOTAL setpoint.



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Once all the parameters stated above have been met, look at the NPD detector signal in the top right hand corner of the NPD channel (it is displayed in mV).

With the NPD gain set to HIGH, NPD hydrogen set to 10psi, NPD bead volts at -320, and detector temperature at 300°, the signal should be about 20mV.

While watching the NPD signal, slowly increase the NPD bead volts (e.g. -320 → -321 → -322, etc.). Somewhere between -340 to -400 on the bead volts display, the NPD signal will suddenly increase.

With the bead voltage set just at the point of inflection, the NPD detector will have the best sensitivity in relation to the longevity of the NPD bead life. (Higher bead volt settings increase sensitivity, but reduce the life and subsequent sensitivity of the bead.)

To change sensitivity of the NPD, while keeping the bead volts at the point of inflection, adjust the flow of the hydrogen going into the NPD detector. Reducing the hydrogen will reduce the sensitivity, but also increase the bead lifetime.

