Quick Start Guide

Installation

1. Shut down GC completely: Turn off oven and detector temperatures and allow to cool; unplug power supply. (page 6)
2. Install CO_2 trap on the air supply to your flow controller (do not purify FID air supply). (page 12)
3. Plumb 1/8" tubing lines from air and H_2 supplies to Polyarc flow controller.
4. Place the Polyarc onto the GC with the capillary lines extending into the oven. (page 7)
5. Connect the heater assembly from the Polyarc system to the GC motherboard or external PID controller. (page 8)
6. Connect the Polyarc outlet to the FID. (page 9)
   NOTE: Trim at least 0.5 inch of protruding tubing after putting on the 0.8mm graphite ferrule to remove any debris from the graphite ferrule (consult Agilent website tube cutting guide for information on how to properly cut tubing).
7. Connect the Polyarc inlet to the capillary column using a zero-dead volume union.
   NOTE: Consult Agilent website for proper swaging instructions and to ensure the right ferrule is being used. Improper swaging can lead to leaky connections and bad chromatography.
8. Connect Polyarc air and H_2 inlets to their respective flow controller outlets. (page 11)
9. Power on GC; ensure carrier gas is flowing through column.
10. Turn on Polyarc air and H_2 flows and measure the flows independently out of the FID to confirm 2.5 sccm and 35 sccm, respectively; adjust if necessary. (page 11)
11. Configure the Polyarc heater
12. Identify the heater type. This will be indicated on the packaging and packing list, but the following can be used as a reference.
    a. PT-100 RTDs will have a blue heater cable and/or a black Molex connector. They will display the actual temperature at room temperature.
    b. ARC RTDs will have a tan heater cable and a white Molex connector. There will be an offset in the temperature readout, and you will see a negative readout at room temperature.
13. Condition the Polyarc depending at 350°C setpoint for one hour with an ARC RTD and at a 450 °C for two hours with a PT-100 RTD
14. Set the Polyarc temperature to the operating temperature using the following settings depending on heater cable:
    a. PT-100: 450 °C
    b. ARC RTD: 293 °C

Operation

1. Always turn the column carrier gas and air & hydrogen supplies on before heating the Polyarc.
2. Double check and leak test all connections.
3. Ensure the Polyarc is operating with gas flow rates of 2.5 sccm air and 35 sccm H_2. (pg 14)
4. Configure GC methods with aux temperature (293 °C for ARC RTD, 450 °C for PT-100 RTD) and FID H_2 flow rate to 1.5sccm. (page 14)
   a. **NOTE: if using hydrogen as a carrier gas, see important note in the Appendix.**
   b. Limit the on column injection amount to 0.1uL (i.e., 1 uL volume 10:1 split or lower).
5. Run your method. Avoid injecting more than 1,000 ppm sulfur and large amounts of silicon containing compounds such as BSTFA or TMS.

Shut Down or GC Maintenance

1. Shut off the FID.
2. Cool the reactor to room temperature (turn off the auxiliary temperature).
3. Shut off the air and H_2 flows to the reactor.
4. Perform maintenance or shut down GC.