Polyarc® - Quick Start Guide

Installation

1. Shut-Down GC completely. Turn off oven and detector temperatures and allow to cool. Unplug the power supply [see manual p6]
2. Install CO_2 trap on the air supply to your flow controller (do not purify the FID air supply) [p12]
3. Plumb 1/8" tubing lines from air and H_2 supplies to the Polyarc® flow controller
4. Place the Polyarc® onto the GC with the capillary lines extending into the oven [p7]
5. Connect the heater assembly from the Polyarc® to the GC motherboard or external PID controller [p8]
6. Connect the Polyarc® OUTLET to the FID [p9]

   Note: Trim at least 0.5" of protruding tubing after putting on the 0.8mm graphite ferrule to remove any debris from the ferrule. Consult the 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 the Agilent website for proper swaging instructions, and to ensure the correct ferrule is being used. Improper swaging can lead to leaky connections and bad chromatography
8. Connect the Polyarc® air and H_2 INLETS to their respective flow controller OUTLETS [p11]
9. Power on GC. Ensure carrier gas is flowing through the 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 [p11]
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 Mole connector. There will be an offset in the temperature readout – and you will see a negative readout at room temperature
13. Condition the Polyarc®

    a) PT-100 RTDs: 450°C setpoint for two (2) hours

    b) ARC RTDs: 350°C setpoint for one (1) hour
14. Set the Polyarc® operating temperature using the following settings:

    a) PT-100 RTDs: 450°C

    b) ARC RTDs: 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 [p14]
4. Configure GC methods:

   a) FID H_2 flow rate to 1.5 sccm

   b) Limit the on-column injection amount to 0.1 uL (i.e., 1 uL volume 10:1 split or lower)

   c) Aux Temperature for PT-100 RTDs: 450°C [p14]

   d) Aux Temperature for ARC RTDs: 293°C [p14]

   e) If using H_2 as a carrier gas – see an important Note in [Appendix]
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 Polyarc® to room temperature. Turn off the auxiliary temperature
3. Shut off the air and H_2 flows to the Polyarc®
4. Perform maintenance or shut down GC