Cooling/Warming the Spectrometer

1. Hook up medium pressure liquid nitrogen tank to regulator.
2. Attach regulator to vinyl tubing hanging by the wall (you will hear it snap into place).
3. Turn on tank (main valve and regulator valve). Turn on pressure builder.
4. Once logged onto vnmr, type temp and turn the temperature controller off.
5. On the back wall, turn off the yellow air valve (turn from up/down to sideways). Turn on the black nitrogen valve (turn from sideways to up/down).
6. Hook up the coldfinger metal/black tubing to the probe. Also connect the plastic tubing on the coldfinger to the appropriate valve (this will also click into place).
7. Turn the temperature control on.
8. Let the coldfinger/probe purge with nitrogen for 15-20 minutes.
9. Submerge the coldfinger in liquid nitrogen dewar.
10. Start cooling by typing temp and moving the temperature down by 10 degrees/5 minutes.
11. Check the cooling gas and air pressures. May have to increase to about 15 while cooling.
12. Once your experiments are complete, begin warming the probe at the same rate that you cooled it. You should also decrease the cooling gas and air pressures if you did increase them to 15 while cooling (they are normally around 10)
13. Once you reach RT (20-22 °C), remove coldfinger from the liquid nitrogen dewar.
14. Let the coldfinger purge for 15-20 minutes.
15. Type temp and turn off the temperature controller.
16. On the back wall, turn off the black nitrogen valve (turn from up/down to sideways). Turn on the yellow air valve (turn from sideways to up/down).
17. Disconnect the cold finger and hook up regular tubing.
18. Turn on temperature controller.
19. Turn off liquid nitrogen tank and remove plastic tubing and regulator.