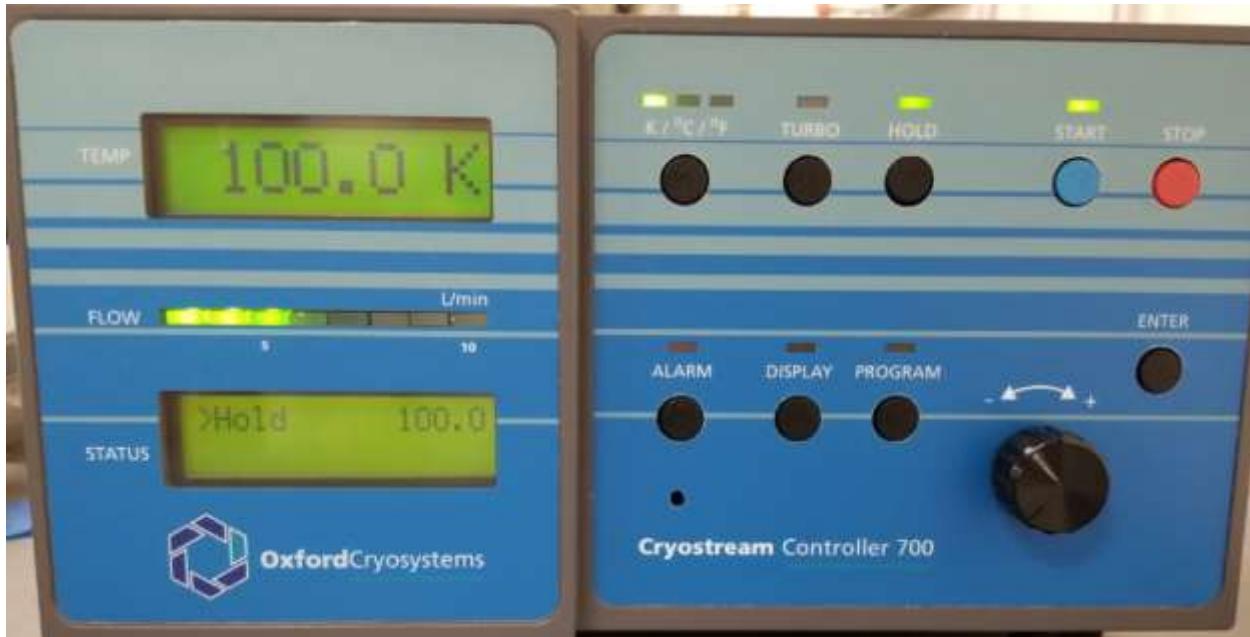


## Restarting the Oxford Cryostream after a Shutdown on the Nonius.

If the Oxford Cryostream shuts down, the cause of the shutdown is displayed on the STATUS LED.



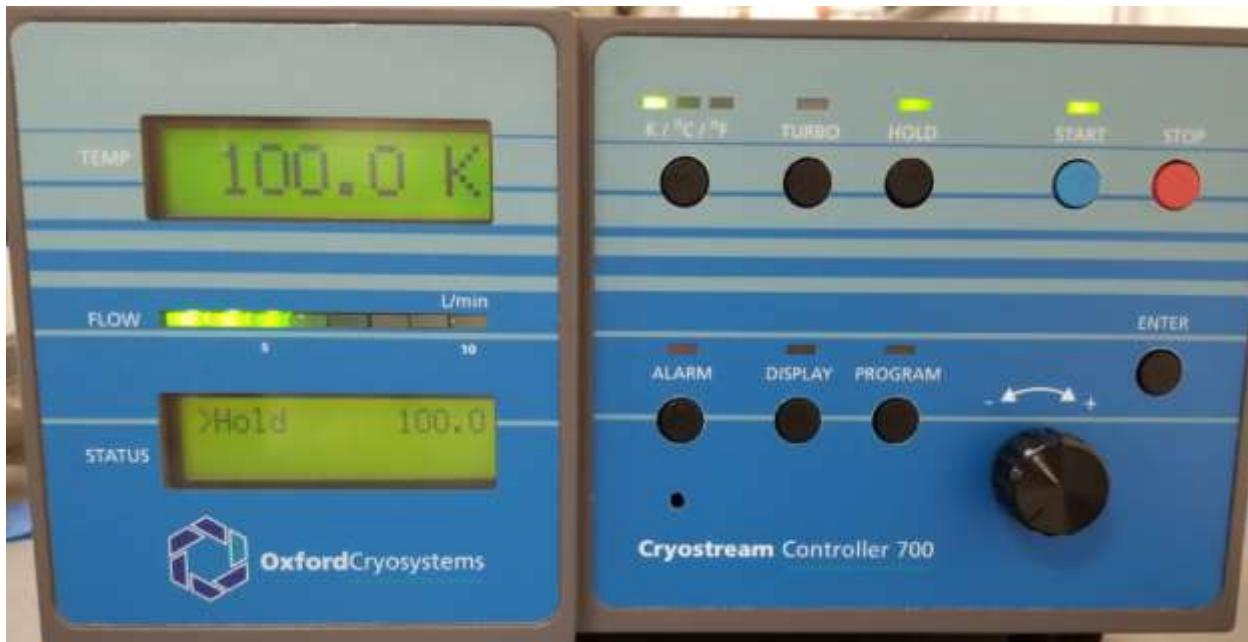
Two errors can occur that will cause a shutdown that don't require changing parts. If the Dewar is empty, you will see a FLOW error. But filling the Dewar will sometimes cause some ice particles to be forced into the transfer line. If that happens, the Cryostream will shutdown in short order due to a low flow error. The flow is indicated on the front panel as shown above next to FLOW. Three green LEDs will be lit for normal operation. When there is an ice blockage, often only one LED will come on and the instrument will shut down.

If a flow error occurs, you have to remove the transfer line from the Dewar and allow the system to warm up. Usually, this will mean an overnight shutdown.

Fill the Dewar with liquid nitrogen using the 160 L tank in the X-ray lab. Pull the transfer line out of the Dewar only so far as is takes to fit the liquid nitrogen transfer hose into the Dewar. When full, there is approximately 50 cm of liquid nitrogen in the Dewar. Typically, I fill the tank until it overflows.

To restart the Cryostream, turn off the controller using the on/off button in the back of the controller. The controller will go through a checklist that will take about a minute. When ready, the temperature will be displayed on the LED (~295 K).

The second error is a FLOW TEMP ERROR. This is caused by a problem in the controller. Turn the controller off and then on again to reset the controller. You should be able to reset the cool down procedure without any other intervention.



After the controller goes through the startup procedure, press the Program button. In the STATUS window, you should see Cool to 100.0. If not, rotate the dial button and toggle through the selections. One of them should be Cool to 100.0.

Occasionally, you will have to select the program manually. Push Program, hit enter until RAMP appears. Use the black rotary dial to select the temperature you need. Press enter to set the target temperature. Press the blue Start button. You should hear the diaphragm pump turn on and the LED lights on the FLOW display come on. Initially, you may see all the LEDs light up. After the temperature begins cooling, three lights should remain on for normal usage.