

Pumping the Vacuum Insulation Space of the Oxford 700 Series Cryostream Cooler

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- No crystal should be running at this point
- Exit out of Apex2 and BIS and then open CryoPad
- Turn off Cryostream (allow it to warm to room temperature) by selecting "End"
- Allow system to warm and stay at room temperature for 24 hours
- Now we are ready to move the Cryosystem in the diffractometer
- There are 4 connections to the Coldhead in the diffractometer. Disconnect the "Coldhead Suct" "Coldhead Flow" and "power supply" (which is the thick black wire). Do not remove the metal vacuum line that supplies the nitrogen flow. Those 3 connections can be placed in towards the back of the machine



- The bars that support the Coldhead have 3 hex screws where the two bars meet.
- Loosen bolt (with black circle around it) so that the arm bar can swing directly away from you if you are standing directly in front of machine



- Take out the nitrogen leg to dewar to allow slack when moving the Coldhead
- Loosen bolt to move bar up and then rotate Coldhead towards front of machine
 - MAKE SURE BAR IS HIGH ENOUGH SO THAT COLDHEAD DOES NOT HIT APEX2
- Screw on Pumping Adaptor to the Pump-out Port (Do not pull out plunger) Do this by rotating the silver piece on the screw.
- Connect a rotary pump to the Pumping Adaptor and secure with clamp
- WHILE PLUMGER IS STILL COMPRESSED INSIDE PUMPOUT ADAPTER, start the rotary pump. This is going to evacuate only the Pumpout Adapter and the tubing connecting the pump to the adapter
- Allow gauge to go to about 0.1 mbar
- Once this pressure has been reached, the Actuator Knob should be pulled out very slowly (this withdraws the Sealing Plug and you will now be pumping on the entire Vacuum Insulation Space
- Again, allow pressure to reach about 0.1 mbar

- Once this pressure has been reached, connect the CRH25 Reactivation Heater to the end of the nitrogen leg and turn on heater. (Make sure heater is isolated so nothing else gets hot)
- Pump for about 12 hours to make sure best vacuum is made
- Once pumping is finished, push back in the Actuator Knob which should close the Sealing Plug (This should be done while the heater is still on)
- Immediately switch off heater after Actuator Knob is closed
- Unscrew the Actuator Knob and remove the Pumping Port Adapter and replace the Pumping Port Cover
- The Vacuum Insulation Space should now be pumped down as much as can be
- Reposition the Coldhead back to its original position
- This can be calibrated using the calibration pin (the tip of the pin should be in the center of the x-ray beam)