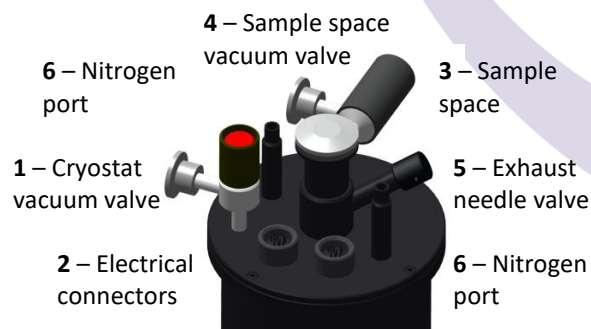


Safety

1. Read the supplied booklet 'Safety Matters' before using the system.
2. If in doubt about the system operation, refer to the system manual.
3. Use appropriate personal protective equipment.
4. This guide assumes a Mercury iTC is being used. If using an alternative controller, refer to the manual for control information.
5. Do not set the heater voltage above 12V for sorb activation. If using your own controller, do not exceed the voltage limit stated in the test results.
6. Only vent the OVC when the system is at room temperature and only use dry gas (e.g. nitrogen).
7. Ensure the sample rod is secured to the cryostat before cooling.

Preparing the system

- a) Connect a pump to the cryostat vacuum valve (1) and evacuate the OVC to below 10^{-4} mbar.
- b) To activate the sorb:
 - Continually pump on the OVC.
 - Plug the adapter cable between the controller cable and the cryostat.
 - On the Mercury iTC home screen, tap **Heater**. Change the heater resistance to 150Ω and heater voltage to 12V.
 - Bake the sorb at 308K for 10 hours, then leave to cool for 2 hours.
 - Close the vacuum valve (1) following activation. Remove the adapter cable and reset the **Heater** resistance (20Ω) and voltage (40V).
- c) Insert the sample holder (3) and pump out the sample space (4).
- d) Fit a bladder of dry ^4He to (4) and fill the sample space.



Cooling the system

- a) Connect the funnel to one of the nitrogen vent ports (6) using the adapter supplied. Fit a length of suitable polythene tube to the other port.
- b) Fill reservoir through the funnel until liquid comes out of other vent.
- c) Tap **Control** and ensure the set point is below 77K.
- d) Fully open the exhaust needle valve (5).
- e) When temperature settles at 77K, refill nitrogen reservoir.

Controlling at set temperature

- a) Close the exhaust needle valve (5) fully, then open by a quarter-turn.
- b) Set the desired temperature by tapping **Control** and changing the set point.
- c) Select **Auto** in the heater control configuration.
- d) As the nitrogen level falls you may need to adjust the needle valve to help maintain the required temperature.
- e) For optimum performance, use the flow and PID values in the test results.

Changing samples

- a) Warm the sample space to room temperature before opening the sample space. This will protect your sample from thermal shock.
- b) When the sample space is open, purge with dry Nitrogen gas.
- c) Seal the sample space as soon as possible, using either a sample rod or the blank supplied with the cryostat.

For technical support, spares and accessories, contact your local regional support team. See the product manual for full details.

Warming up

- a) Pour the liquid nitrogen away and vent the OVC with a small volume of nitrogen gas.
- b) Setting the **Control** temperature to 300K will accelerate the warm up.