

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 to avoid hot / cold burns.
4. Venting the OVC – Only vent the OVC when the system is at room temperature. Only vent with dry gas (e.g. nitrogen or air).
5. This guide assumes an ITC502/503 is being used. If using an alternative controller, see the manual for control information.

1 Getting Started

- a) Check the parts you have received for damage.
- b) Check you have available all the necessary components you may need for your experiment.

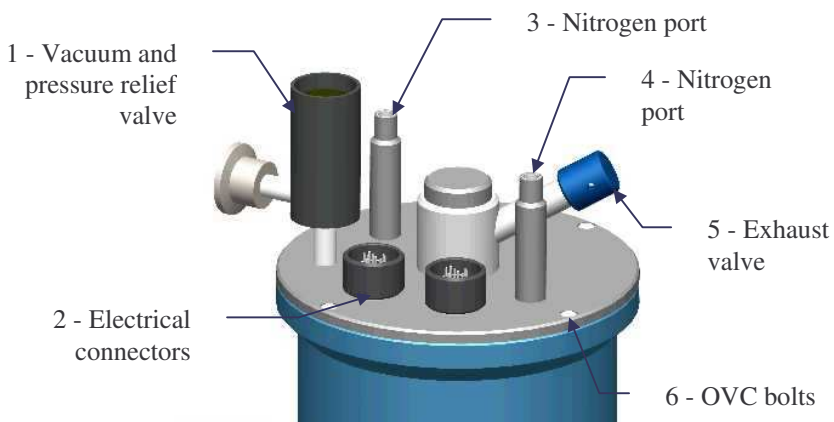
2 Fit sample

- a) Remove four bolts (6) securing OVC to top plate then remove OVC.
- b) Mount sample on sample holder and connect wiring, if appropriate.
- c) Replace OVC and bolt it to the top plate.

3 Pump OVC and activate sorb

- a) Connect turbo or diffusion pump to vacuum port (1) and evacuate OVC to less than 10^{-4} mbar.
- b) Connect the temperature controller to the grey or black cryostat cable and attach adapter cable from this to the 10 pin seal (2).
- c) Press and hold the heater **MAN** button and use the **RAISE** and **LOWER** buttons to set heater voltage to 12V
- d) Leave for at least 4 hours (overnight if possible).
- e) Allow to cool for 2 hrs then close valve to pump (1).

NB: Do not reactivate the sorb when the system is cold.



4 Preparing the System

- a) Remove adapter cable from ten pin seal (2)
- b) Connect cryostat cable directly from ITC to 10 pin seal (2)
- c) Check / turn off heater by holding **MAN** and pressing **LOWER**
- d) Open gas exhaust needle valve (5) 3 or 4 turns
- e) Set temperature below 77 K by holding **SET** and pressing **RAISE** or **LOWER**

5 Cooling the System to Base

- a) Connect funnel to LN₂ vent port (3) using rubber tube where necessary. Use a filter in the funnel, e.g. paper towel to remove ice. Fit 20 cm of suitable polythene tube to the other vent (4)
- b) Fill reservoir through (3) until liquid comes out of other vent (4).
- c) When temperature settles to 77 K, close exhaust valve (5) slightly.
- d) Refill nitrogen reservoir.



6 Controlling at Set Temperatures

- a) Close exhaust valve (5) fully and open $\frac{1}{4}$ to $\frac{1}{2}$ turn.
- b) Set desired temperature by holding **SET** and pressing **RAISE** and **LOWER** to desired temperature.
- c) Press **AUTO** once.

- ✓ When the nitrogen level falls you may need to adjust the exhaust valve (5) to achieve the required temperature.
- ✓ For optimum performance, use the flow and PID values provided in the test results.

7 Operation Above Room Temperature

- a) Set temperature as described in section 5.
- b) Pump OVC continuously.

8 Changing Samples

- ✓ It is good practice to warm the sample space to room temperature before opening.
- ✓ Remember, your sample may be subjected to thermal shock if it is warmed or cooled too quickly.
- ✓ When sample space is open, purge with dry gas (e.g. nitrogen or air).

9 Warming Up

Either:

- a) Leave it to warm naturally or
- b) Set temperature to 300 K and allow to stabilise.

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OptistatDN-V Quick Start Guide

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