

## Smell Bell Operating Philosophy

The smell bell operating procedure is as follows: -

With power applied to the unit the supply on lamp should be lit. Press the stop button for a minimum of two seconds to clear any faults should the fault lamp be lit.

Press the start sample button to begin a sample test.

The pre-filter three port valve will now change position. The sample water normally diverted to waste pre unit will now flow into the unit through the water filter, pressure and flow monitoring facilities, the water heater and will then be returned to waste via the post heater three port valve. A 15 minute timer will also be initiated which will automatically switch the unit off if the stop sample button is not pressed within the timed period.

Sample water flow is now established through the unit and 20 seconds after the beginning of the 15 minute timing period the unit heater will be switched on and the 'heater on' lamp will be lit.

The sample water now begins to be heated to the set point value (usually 60 deg C) set in the temperature controller. When the sample water temperature reaches 58 deg C the 'up to temperature' lamp lights and the post heater three port valve changes position to divert the sample water into the smell bell jar. The sample water is now sprayed into the jar and the temperature controlled to 60 deg C.

This mode of operation continues until the 'stop sample' button is pressed, the 15 minutes sample timing period has expired or a fault has occurred. All three options will put the smell bell unit into shut down mode.

When one of the above actions occurs the unit heater switches off and the post heater three port valve changes position to divert the sample water flow back to waste.

With the sample water continuing to flow through the unit the sample water temperature starts to drop. Once the temperature has dropped below 58 deg C a 2 minute cooling period timer is initiated.

When the 2 minute cooling period timer expires the pre-filter three port valve changes position to divert the sample water flow back to waste (pre unit).

### **Note.**

The following faults will put the unit into shutdown mode.

Pre-Filter three port valve failed to move.

Post-Heater three port valve failed to move.

Sample water pressure above 2.5bar.

Low sample water flow.

High sample water temperature. The Temperature controller detects sample water temperature above the set point by an operator set level.

Heater thermostat over temperature.

All faults are displayed on the unit controller (located in the unit rear enclosure). To clear any faults on the controller the 'stop sample' button must be pressed for a minimum of 2 seconds.

