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Digital Water Bath

Electromagnetic Compatibility

The use of this apparatus outside the classroom, laboratory, study area or similar such place invalidates the conformity with the protection requirements of the Electromagnetic Conformity Directive (89/336/EEC) and could lead to prosecution.

The PSU Base Water Bath is a digitally controlled, 8 litre water bath with a rugged plastic case and digital temperature controller. The heating element is a sealed silicone unit with a maximum power of 500W. It comes supplied with a metal test tube rack and a lid. It contains a digital temperature lock, with which the user can set the maximum temperature. It is particularly suitable for use in hard water areas as any calcification can be wiped off the silicone heating element.

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Using the Water Bath

1. Unpack the unit and remove all the packaging, place on a flat, level surface.
2. Ensure that the controller unit is hanging outside the tray.
3. Make sure the "Level Sensor" with the purple plastic end is sandwiched between the upper side of the heating mat and the perforated tray.
4. Add 2-8 litres of tap water to the bath. **Do not exceed 8 litres.** Due to the low profile of the heater, usually 3-4 litres is sufficient. This is the equivalent of a normal 8-12 litre water bath. The speed at which the bath heats up will depend on the amount of water used. Place the temperature sensor in the water (on top of the perforated tray).
   Caution. Do not plug in the water bath without first adding the water and ensuring the temperature sensor is submerged. The sensor may be placed in an individual container for more precise sensing.
5. Plug in to the mains. The controller should illuminate and display the water temperature.
6. **Briefly press the SET button and then use the up down arrows to set the required temperature. Press SET again to load the temperature into the memory.**

The water bath will now heat up to the required temperature and maintain it within 1^{o}C. **Note.** When the unit is heating up a small wavy line image illuminates at bottom left of the display.

Water loss by evaporation may be minimised by using the supplied lid. We recommend that the lid be used when temperatures above 60^{o}C are employed. Should you need to heat unusually tall glassware and need to employ the lid, then transfer the unit to a Jumbo Gratnells tray.

The unit contains an electronic water level sensor. This is a black wire with a purple end which is sandwiched between the top of heat mat and the perforated metal tray. When the water falls below the level of the mat the heater switches off and LL (Low Level) appears on the display. Simply add more water until the unit resumes normal operation.
The level sensor relies on the conductivity of tap water. In soft water areas, add a pinch of table salt to the water if the water level is sufficient but the display shows "LL"

It is possible the unit will buzz when the water level drops below minimum level until it finally goes to "LL"

The unit may be stored in a Gratnell's trolley when not in use.

Setting the Maximum Temperature Limit

1. Press and hold the SET button for about 6 seconds until E1 is displayed
2. Briefly press SET again to display E2
3. Use the up/down buttons to select the maximum temperature (factory default is 100°C).
4. Briefly press SET – E3 is displayed. Wait for 8 seconds until the unit reverts to normal operation.
5. **WARNING! Do not set the maximum temperature above 100°C. Doing so will invalidate the warranty.**

Parameter Unlocking

As supplied, the parameters unlocking is set to OFF (i.e. locked).
In normal operation, press the down button and hold for 8 seconds to lock/unlock the parameters. If OFF is displayed the only thing that can be altered is the temperature setting (E2).
It is recommended that you set to OFF; this reduces the risk of pupil tampering.

Using the Hidden Menu

The hidden menu may be accessed by pressing and holding the SET button for 8 seconds. The display will show E1. Briefly press SET to toggle through the menu options and then use the up/down keys to alter. Once you have finished, briefly press the SET button and it will exit the menu and resume normal operation.

Menu	Function	Set range	Default
E1	Lower setpoint limit	-20° set temp	**0°C**
E2	Maximum temperature limit	set temp 280°C	**100°C**
E3	Temperature Hysteresis	1 – 100°C	**1°C**
E4	Comp start delay time	0 – 10 min	**0 min**
E5	Cold room sensor correction	-50 – 50°C	**0°C**

The default column shows the settings as set by our factory. The only one that you should alter in normal use is E2, which sets the maximum available temperature.

Don't Panic!

If you cannot alter any of the hidden menu parameters, and setting the parameters unlocking does not work, then perform a manufacturer's reset (this is different from a factory reset). Proceed as follows:

1. Press the down arrow for 1 second
2. Whilst continuing to hold down the down arrow, press the up arrow for 8 seconds - the display will flash.
3. Let go of the buttons and wait for 8 seconds to come out of the menu.
4. Set the defaults for E1 – E5 as above.

Specification

Class 1
Voltage 230/240V ac
Current 2.2A
Power 500W

In case of any problems please telephone 0044 7415718453 and we can talk you through the reset procedure.