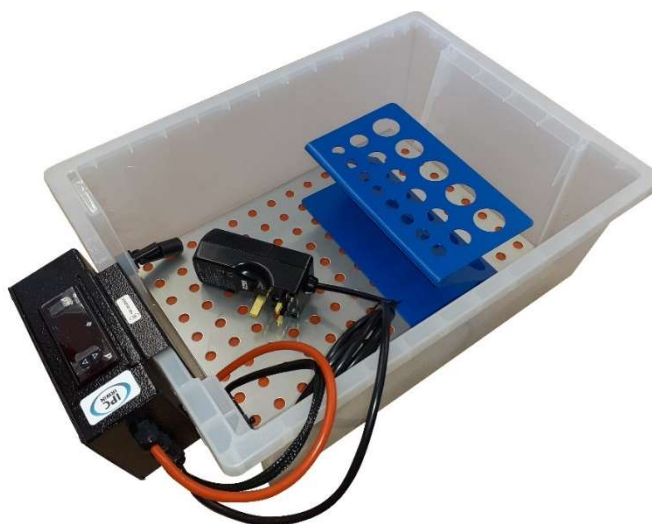




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## **IPC Irwin 100°C Water Bath** **Part Number IWB8100**

### **User Instructions**



#### **Product Features.**

Thank you for purchasing the IPC Irwin 100°C Water Bath, this water bath is specifically designed for School Science Departments. It is built around a standard GrateNells deep tray and so can be stored in a GrateNells trolley. The water capacity is from 4 to 8 litres and because of the shallow profile of the heating element 4 litres of water gives the equivalent depth to 8 litres in a normal Water Bath, thus it reaches temperature quicker.

The 500W silicone heating element combined with the digital temperature controller will maintain the water temperature to an accuracy of +/- 1°C, this design also provides an even temperature distribution throughout the bath and consequently requires no stirring. The design of the heating element also makes it particularly suitable for hard water areas as it can easily be removed and cleaned. Due to the reduced amount of water required the Water Bath is also lighter and easier to carry, plus its unique design gives additional bench space.

In addition to the above details the Water Bath is supplied with a number of safety features including: a water level detector switch to deactivate the unit should the water level drop too low, an Earth Leakage Circuit Breaker (ELCB) mains plug to disconnect the power in the event of an earth fault, earthed stainless steel trays for electrical safety and a fixed water temperature sensor to ensure the correct placement when operating.

#### **How to use the 100°C Water Bath.**

1. Before operating the Water Bath, please ensure that the following items are placed in the tray in the following order:-

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- i. First, fit the controller onto the end of the tray where the detector switch is located, making sure that the body of the controller hangs on the outside of the tray.
  - ii. Then place the heat protection mat (white) at the bottom of the tray.
  - iii. Next place the first perforated stainless steel tray (i.e. with the single cable attached) on top of the heat mat with the cable at the same end as the controller and on the opposite side to the detector switch.
  - iv. Then place the silicone (orange) heating element on top of the steel tray with the cable again at the same end as the controller and on the opposite side to the detector switch.
  - v. The second perforated stainless steel tray (i.e. with the cable harness attached) should then be placed on top of the heating element with the harness again at the same end as the controller and on the opposite side to the detector switch. **Important Note:** the cable harness contains the temperature sensor cable (the sensor itself is fixed to the inside rim of the steel tray) and the earthing cable. This cable harness must be periodically checked for damage and disconnection, if either fault is found the unit should not be used.
2. Now connect the plug on the detector switch cable to the corresponding socket on the side of the controller, this socket is located on the same side as the detector switch.
  3. Next connect the ELCB plug to the mains and press the 'orange' reset button on the front, the controller will then illuminate and display LL (low level), this indicates that there is insufficient water in the bath and the heating element will not operate.
  4. Finally add 4 to 8 litres of water to the tray bearing in mind that due to the low profile design of the heating element 4 litres is usually sufficient. This is the equivalent of a normal 8 to 12 litre water bath. The speed at which the water bath heats up depends on both the amount of water used and its set temperature, we therefore recommend not to use more water than is required and to use hot tap water if possible. **Important Note:** once the water has been added you must check that the water level detector switch is operating correctly, i.e. the Blue LED is illuminated and the low level (LL) on the controller display has switched off.

#### How to set the Operating Temperature.

Using the controller first press the 'SET' button and then press either the 'UP' arrow or the 'DOWN' arrow to display the required operating temperature. Once the required operating temperature is shown press the 'SET' button again to enter it into the controller's memory. The Water Bath will now heat up (or cool down) to the required temperature and maintain it to an accuracy of  $\pm 1^{\circ}\text{C}$ , please be aware that you will not be able to set the operating temperature above  $100^{\circ}\text{C}$ .

**Note:** when the Water Bath requires heat, i.e. when the set temperature is higher than the actual water temperature the controller will display a steady (🌀) symbol indicating that the heating

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element is on, once the set temperature is reached the (☞) symbol and heating element will switch off.

**Important Note:** the sensor used to measure the water temperature is fixed to the inside rim of the steel tray and must never be removed from the water during operation.

For additional controller setting options please contact IPC Irwin.

#### How the Water Level Detector Switch Operates.

The detector switch is a safety device which stops the heating element working if the water level drops too low (ie. due to evaporation), we recommend a minimum of 4 litres of water when operating the bath. When the water level drops too low the detector switch will operate, this is indicated by the Blue LED going out and the controller display showing LL (low level). When this happens simply top up the level of water until the display reverts to the temperature reading and the Blue LED on the detector switch illuminates, please add sufficient water to allow for further evaporation. **Note:** once the water level has been topped up the (☞) symbol on the display may 'flash' for approx. 2 minutes (during this the element is off) while the controller performs a reset, once the (☞) symbol is steady the unit will operate normally.

#### Additional Information.

To reduce evaporation and to speed up the heating of the water, especially for temperatures above 40°C, we recommend you fit the supplied Gratnells lid. Should you need to heat unusually tall glassware the lid may be cut to accommodate this, **note:** spare lids are available from IPC Irwin upon request.

Also supplied with the Water Bath is a 'Test Tube Rack' which can be used to support various glassware in the water while operating the bath, **note:** additional racks are also available from IPC Irwin upon request.

For storage, first thoroughly dry the bath, then disconnect the detector switch connector from the controller before lifting it from the tray, turning it 180°, and then placing it back on the tray. This will help protect the controller and cables while also allowing the unit to be easily located within the storage trolley.

#### 100°C Water Bath Specifications.

Supply voltage:	230/240VAC (50/60Hz).
Supply current:	2.2Amps (use 3A fuse in ELCB plug).
Heating Element wattage:	500W.
Minimum operating water capacity:	4 litres
Maximum operating water capacity:	8 litres
Temperature range:	Ambient temperature to 100°C (+/-3°C)
Temperature accuracy:	+/- 1°C

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**Important Safety Information.**

Never operate the Water Bath without the stainless steel tray (incorporating the temperature sensor) correctly placed in the tray.

Do not operate the Water Bath without the correct amount of water and never leave the Water Bath unattended while operating.

The water level Detector Switch should never be removed or repositioned, this is a major safety device and should never be tampered with. If the Blue LED does not illuminate when there is sufficient water in the bath (4 litres) - DO NOT operate the bath.

Always connect the Water Bath to the mains electricity using the ELCB plug fitted to the unit, the ELCB must also be periodically tested for correct operation by pressing the red 'Test' button and confirming the power to the unit turns off.

Periodically inspect all components of the Water Bath, paying special attention to the Silicone Heating Element and the Cable Harness from the controller to the steel tray.

**IMPORTANT - ELECTRICAL SAFETY NOTICE**

Only connect the product to single phase mains electrical supply (with neutral nominally at each potential), also check that supply voltage and frequency are within the products stated range. Before connecting to the mains electrical supply, examine the information on the products rating label (the value of the fuse fitted to the product is also stated), ensure that the mains plug or outlet circuit is fitted with an appropriate fuse of higher value.

**WARNING: THIS PRODUCT MUST BE EARTHED**

**This product is designed for Electrical Safety Class 1.**

**Note:** Only replace the ELCB mains plug with the same (or equivalent ELCB mains plug) and fitted with a 3A fuse.

Green/Yellow wire to the terminal marked: E (Earth) or coloured Green or Green/Yellow.

Brown wire to terminal marked: L (Live) or coloured Brown.

Blue wire to terminal marked: N (Neutral) or coloured Blue.

**LIVE PARTS SHOULD NEVER BE EXPOSED UNLESS THE PRODUCT HAS BEEN SWITCHED OFF AND ISOLATED FROM THE MAINS ELECTRICITY SUPPLY.**

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**Declaration of Conformity** (In Accordance with EN ISO 17050-1:2010).

Manufacturer: **IPC Irwin, Holker School, Cark-in-Cartmel, Grange-over-Sands, Cumbria, LA11 7PQ, United Kingdom.**

Product/Part No: **100°C Water Bath (230V AC, 50Hz main voltage)/IWB8100**

This conformity certificate approves the compliance of the product with the essential safety requirements of the following UK Standards and Regulations:

- |                           |   |
|---------------------------|---|
| <b>SI 2005 No.1803</b>    | <b>General Product Safety Regulation (implements Directive 2001/95/EC).</b>   |
|                           | <b>SI 2016/1101 Electrical Equipment (Safety) Regulation (implements Directive 2014/35/EU.</b>  |
| <b>EN 61010-1: 2010</b>   | <b>Electrical Requirements for Laboratory Test &amp; Measurement Equipment.</b>   |
| <b>EN 61000-6-1: 2019</b> | <b>EMC, Generic Standards, Immunity for Residential, Commercial and Light Industrial Environments.</b>                                  |
| <b>EN 61000-6-3: 2019</b> | <b>EMC, Generic Standards, Emission for Residential, Commercial and Light Industrial Environments.</b>                                  |
| <b>SI 2012 No. 3032</b>   | <b>Restriction on Hazardous Substances (RoHS) in Electrical and Electronic Equipment Regulation, (implements Directive 2011/65/EU).</b> |



Mark can be used only in the case of conformity assessment according to all relevant UK Standards and Regulations.

**EU Declaration of Conformity** (In accordance with European Parliament and Council Decision No: 768/2008/EC Annex III).

This conformity certificate approves the compliance of the product with the essential safety requirements of the following EC/EU Directives (Manufacturer, Product/Part No: as above).

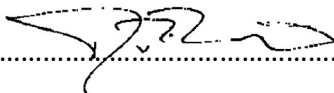
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|-------------------|--|
| <b>2001/95/EU</b> | <b>General Product Safety Directive.</b>                     |
| <b>2014/35/EU</b> | <b>Low Voltage Directive (LVD).</b>                          |
| <b>2014/30/EU</b> | <b>Electromagnetic Compatibility (EMC) Directive.</b>        |
| <b>2011/65/EU</b> | <b>Restriction on Hazardous Substances Directive (RoHS).</b> |

European harmonised Standards used for conformity assessment and declaration:

- |                         |   |
|-------------------------|---|
| <b>EN 61010-1: 2010</b> | <b>Electrical Requirements for Laboratory Test &amp; Measurement Equipment.</b> |
|-------------------------|---|



Mark can be used only in the case of conformity assessment according to all relevant EC/EU Directives.

**Dickon Knight** (Director): .....  ..... Date of Issue: 24<sup>th</sup> May 2023

In the event of any correspondence concerning this product, please contact your supplying agent quoting the catalogue number and serial number shown on the apparatus rating label, together with the voltage and frequency of the mains electrical supply. This will help us to process your enquiry quickly. Any spare parts which may be required are supplied on the understanding that the replacement of those requiring the exposure of live electrical connections **will** be undertaken by an electrically qualified person.

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Thank you for choosing the IPC Irwin 100°C Water Bath. This has been specifically designed for education and we know it will bring you good service long into the future. This is just one product of a wide range of UK designed and manufactured products to enhance a STEM education, please see [www.ipcirwin.com](http://www.ipcirwin.com) website for more details on the products and service we provide to support teaching and learning in science and technology.

The Water Bath is a Class 1, Earth Safety Appliance and requires an annual Class 1, Portable Appliance Test (PAT) to be performed, both the controller housing and the steel tray MUST be included in this test, along with the function of the ELCB mains plug.

All the IPC Irwin range are subject to rigorous Quality Assurance checks before despatch, part of which is the Portable Appliance Test.

IPC Irwin also provide Portable Appliance Testers and a Calibration service, for more details please go to [www.ipcirwin.com](http://www.ipcirwin.com) or call our sales and technical support line on 015395 58555.

IPC Irwin Range of products can be found at <https://www.ipcirwin.com>



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