



## THE *Clifton* RANGE

**Blockheater, Digibloc  
BH-1/DIG**

## Contents

About this Manual	3
General Notes	3
Amendments	3
Symbols	3
Location	4
Unpacking	4
Safety	4
Assembly	4
Power Supply Lead and Connection to Electrical Supply	4
Operating Instructions	5
- Front and rear view	
- Switching On and Off	
Control Panel	6
- Key pad description	
- LED Indicators	
Temperature Control modes	7
Single Point Temperature Control	7
- Setting Temperature Set Point 1	
Process Control with Two Temperature Settings and Timer	8
- Setting Temperature Set Point 2	
- Setting Time	
- Process Control Operation	9
Explanation of Temperature control terms	10
Explanation of Clifton Optimization control	11
When to use Optimization control	12
How to operate Optimization function	13
Under and Over Temperature Alarm	13
Cleaning	14
- General cleaning	
- Cleaning anti-bacterial paint surfaces	
- Virucidal Disinfectant	15
- Disinfectant Sterilant	
Warranty	16
- 3 Year Warranty	
- Out of Warranty	
- End of Life	
- Portable Appliance Testing	
Accessories	17
Specification	18
Declaration of Conformity	19
Final Inspection and Electrical Safety Test Report	Enclosed Rear

## About this Manual

This user Manual contains instructions which must be followed in order that the product is operated correctly.

## General Notes

1. Always follow good laboratory practice by ensuring substances being heated offer no risk of a hazard (explosion, implosion or release of toxic or flammable gases) or that these have been addressed. When heating substances where liberation of gases occurs suitable extraction should be used.
2. If this product is not used in accordance with these instructions, then basic safety protection afforded by the BH range of DigiBlocs is affected.
3. The BH range are classified as Class 1 (IEC519 - Self resetting cut out) with regards to overtemperature protection.
4. The heating plate at the bottom of the well and the base of each aluminium accessory block must be kept clean and free from debris/dirt for good thermal contact and temperature control.
5. The accessory aluminium heating blocks should ALWAYS be regarded as being HOT! Do not touch or handle. ALWAYS use the Lifting tool provided to extract or insert blocks.
6. If liquids are spilled onto aluminium heating blocks or into heating well, switch the Blockheater OFF (I) and allow it to cool and get the unit checked by a qualified person.
7. The mains supply cord fitted to this product is a heat resistant type and should be replaced by an equivalent type.
8. It is recommended the units are connected to the mains supply with RCD protection.
9. Before using any cleaning or decontamination method except those recommended, check with your distributor that the proposed method will not damage the equipment.

## Amendments

Issue 1	March	1998	Initial issue instruction book.
Issue 2	Sept	2001	Update and layout changes.
Issue 3	Nov	2003	Product Update.
Issue 4	October	2006	OPT + Update disinfection/sterilisation + explanation temperature terms.
Issue 5	January	2007	Anti-bacterial paint finish.

## Symbols



### **HOT SURFACES**

Paragraphs marked by this symbol indicate that a potential hazard to your personal safety exists from heated surfaces or other appendages on the outside or inside of the equipment.



### **CAUTION**

This icon accompanies text and/or other international symbols dealing with potential damage to equipment. When present, it indicates that there is a potential danger of equipment damage may occur if information stated within the "CAUTION" paragraph is not adhered to or procedures are executed incorrectly.



### **PROTECTIVE EARTH OR GROUND TERMINAL**

Protective earth conductor terminal.

### Location

The product must be placed on a smooth, level and sturdy work surface in a ventilated room.

Suitable for use in a ventilated room with ambient temperature range 5 to 40°C. Maximum humidity 80% for temperature 31°C decreasing to 50% at 40°C. The product is designed for laboratory use.



For optimal temperature control:

- the unit must be sited away from draughts, if used in a fume cupboard then use the accessory Safety Cover/Lid BHL-1.
- the heating plate in well and base of each block must be clean and free from debris

Otherwise actual block temperatures will vary to set point.

### Unpacking

Remove the Digibloc from its packaging. Any damage please notify your dealer and retain the packaging over the warranty period.

### Assembly

Place the aluminium Block(s) (accessories) into the heating well (ensure both the heating and underside block surfaces are clean and smooth). Good temperature control relies on this feature. Fit the mains lead.

### Safety



Do not touch any electrical contacts or open any closure panels.  
**RISK OF ELECTRICAL SHOCK!**

The BH range are Class 0 (IEC519 - Part 2) - with reference to over temperature condition. These Digiblocs are designed that if the temperature control system fails in use the heating plate will not exceed its maximum temperature.

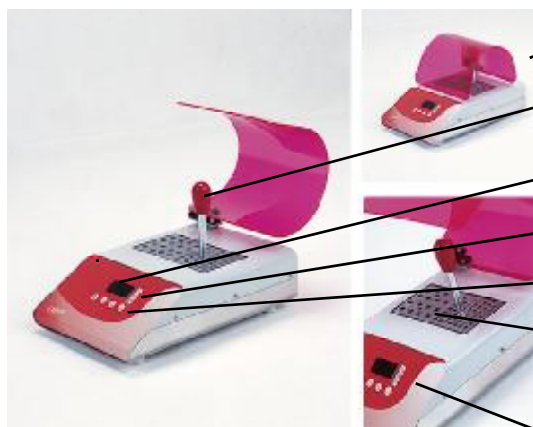
### Power Lead and Connection Electrical Supply

Before connecting the product to the electrical supply, check the information on the rating label is compatible. IF IN DOUBT CONSULT AN ELECTRICIAN. THE PRODUCT MUST BE EARTHED!

Where the mains supply or plug connection differs refer to local regulations or qualified electrician.

## BH-DIG Series

### Front View



Accessory Lid/Safety Cover BHL-1

Block Lifting Tool - always use for SAFETY.

Red LED display of actual or set bath liquid temperature or time - each tank.

Indicators: heating, temperature alarm, timer and set temperature - each tank.

Keyboard: function, up and down arrow adjustment, run buttons.

Choose appropriate aluminium block(s), see accessories, with holes suitable for tubes being heated. Carefully place block(s) into heating well using Block Lifting tool provided.

Splash proof controls, all over smooth wipe clean surfaces.

### Rear View



Mains power switch "I" ON, "O" OFF.

IEC connector, for power supply lead and plug. Fuse draw fitted underneath.

EP-2 Remote Probe - accessory - plug in point.

Serial number and electrical supply details.

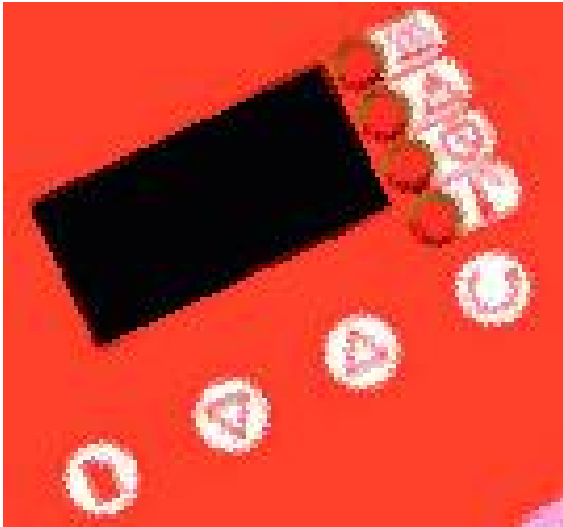
## Operating Instructions

### Switching ON and OFF

Switching ON - the unit may be turned ON (I) at the mains switch located at the rear. When ON (I) the switch is illuminated and unit performs a self test where all segments of the 3 digit LED display and indicators illuminate.

Switching OFF - the unit may be turned OFF (O) at the mains switch located at the rear. All temperature and time values remain in memory.

## Control Panel



## Key Pad Description



### FUNCTION

- Used to scroll through parameters.
- Used to set timer.



### DOWN ARROW

- Used to decrease a value. Hold continuously to scroll.
- When pressed for more than 1.5 seconds displays set point 1 value.



### UP ARROW

- Used to increase a value. Hold continuously to scroll.
- When pressed for more than 1.5 seconds displays set point 1 value.



### RUN

- When pressed for more than 1.5 seconds will activate/deactivate timer function.
- Used to turn off buzzer.

## LED Indicators



### HEATING INDICATOR

When LED is illuminated bath is being heated.



### OVER AND UNDER TEMPERATURE ALARM INDICATOR

LED is illuminated when bath temperature is either 4°C above or 4°C below set temperature.



### TIMER INDICATOR

- Continuous illumination indicates timer is set.
- Flashing illumination indicates timer is running back/counting down.



### SET TEMPERATURE INDICATOR

- Continuous illumination indicates Set Point 1 value is shown on display.
- Flashing illumination indicates Set Point 2 value is shown on display.

## Temperature Control Modes

The Clifton BH range feature an advanced PID temperature controller that can be used in either of the following ways:

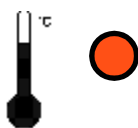
- simple and easy to use single point temperature control referred to as 'Set Point 1'.
- process control with two temperatures and a time setting, 'Set Point 1' and 'Set Point 2'.

### Single Point Temperature Control

#### Setting Temperature - 'Set Point 1'



1. Press and hold up or down arrow for more than 1.5 seconds to display value at Set Point 1.



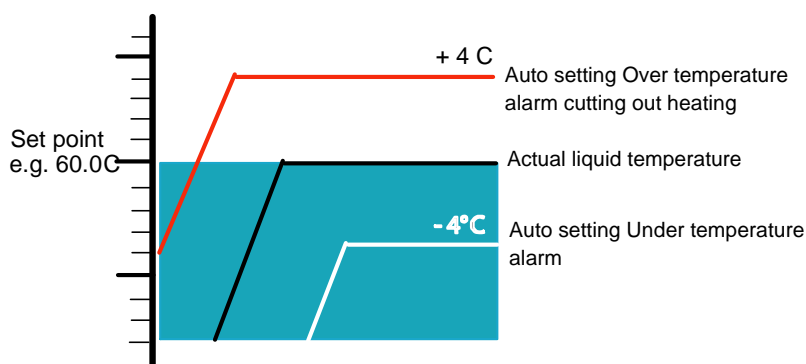
The 'set temperature' indicator will illuminate.



2. Use up and down arrow keys to select required temperature.



3. After 2 seconds the display will revert to show actual liquid temperature. Heater indicator will illuminate. The controller features an over or under temperature alarm which is automatically set 4°C above and 4°C below Set Point 1. If the actual temperature rises or falls beyond this value the alarm is activated. **Heating Mode** - The Clifton unstirred bath is now set and will heat and control the liquid to set temperature.



Single Point Temperature Control Operation

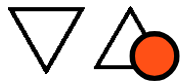
## Process Control with Two Temperature Settings and Timer

### Setting Temperature - 'Set Point 2'

1. Follow instructions for setting temperature at Set Point 1.
2. Press and hold RUN button for more than 1.5 seconds to show value at Set Point 2.



The timer indicator will illuminate.



3. Use up and down arrows to select required temperature for Set Point 2.



The 'set temperature' indicator will illuminate.

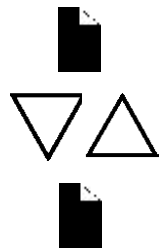


4. After a brief delay display will revert to show actual liquid temperature. Heater indicator will illuminate. The controller features an over or under temperature alarm which is set 4°C above and 4°C below Set Point 2. If the actual temperature rises or falls beyond this value the alarm is activated.



5. Press RUN button for 1.5 seconds to exit set point 2 mode.

### Setting Time



1. Press FUNCTION button until "t" appears on the display. It will then alternate between showing "t" and time in minutes.



2. Press either up or down arrow to select desired number of minutes. The maximum time setting is 999 minutes.



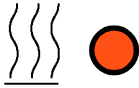
3. Press FUNCTION button to save setting.



## Process Control Operation



1. Operation can be started once bath temperature is at set point 1. To start process (using set point 1, set point 2 and run back timer) press and hold RUN button for more than 1.5 seconds.



Heating indicator will illuminate indicating heater and control activity raises the temperature of the liquid to 'set point 2'.



Timer indicator will illuminate.



2. On reaching 'set point 2' the timer indicator starts to flash showing the timer is running. The display will automatically switch back to show actual bath temperature.



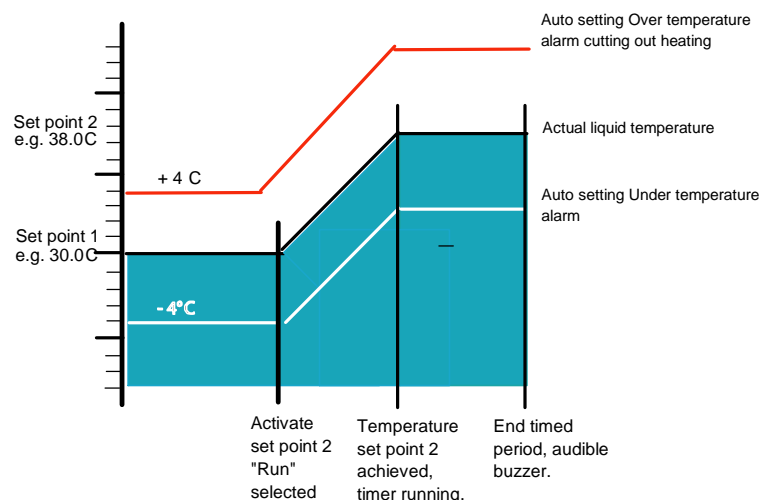
3. To view time remaining, press UP ARROW button, time remaining is displayed.

4. An audible beeping and "End" message indicates timed period has finished. Press RUN button to deactivate buzzer and clear "End" message.

5. The bath temperature will fall to 'set point 1'.



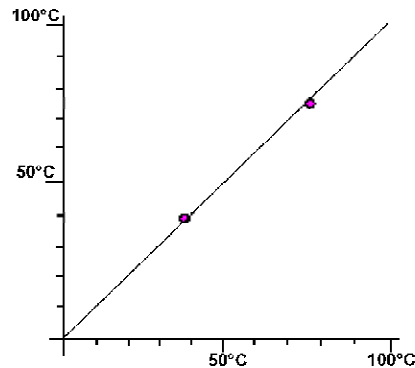
6. The process can be re-started at any time and values are retained in memory.



Process Control with Two Temperature Settings and Timer

## Explanation of Temperature Control Terms

### Temperature calibration



Verify the performance of the temperature control system digital display units undergo a factory calibration procedure which calculates the temperature values over the operating range of the equipment from 2 reference calibration points.

### Accuracy

We do not provide, claim or assure any form of accuracy. Accuracy is defined as "the ability of a measurement to match the actual value of the quantity being measured". For accuracy we recommend using a calibrated reference probe at the actual set point temperature and where necessary, adjust the set point accordingly.

### Sensitivity

For an explanation of sensitivity consider the blockheater, the PID temperature control system measures and displays the actual temperature of the accessory block(s) and then compares it with the 'set point' temperature. It automatically calculates and adjusts the required quantity of heat into the accessory block(s) to make the measured temperature equal to the set temperature. As with any process there is a time delay between measuring the temperature and the heat transfer which causes minor fluctuations in the temperature of the accessory block(s).

Heat is distributed in blockheater by conduction and there are heat losses from the surface of the block(s) and between the block(s) and heating plate which can cause temperature losses. These losses and heat distribution produce small fluctuations in temperature across the block(s).

These small temperature fluctuations at any one point are defined as "sensitivity" and vary between an upper and lower limit, however occasionally a larger variation can be observed. Sensitivity as stated in DIN 58966 is the temperature difference between the upper and lower temperature level over 100 cycles after removing the largest 25% of readings.

We determine sensitivity by recording the actual upper and lower temperatures of an accessory block using temperature loggers and is stated as plus or minus one half of the measured value.

### Uniformity

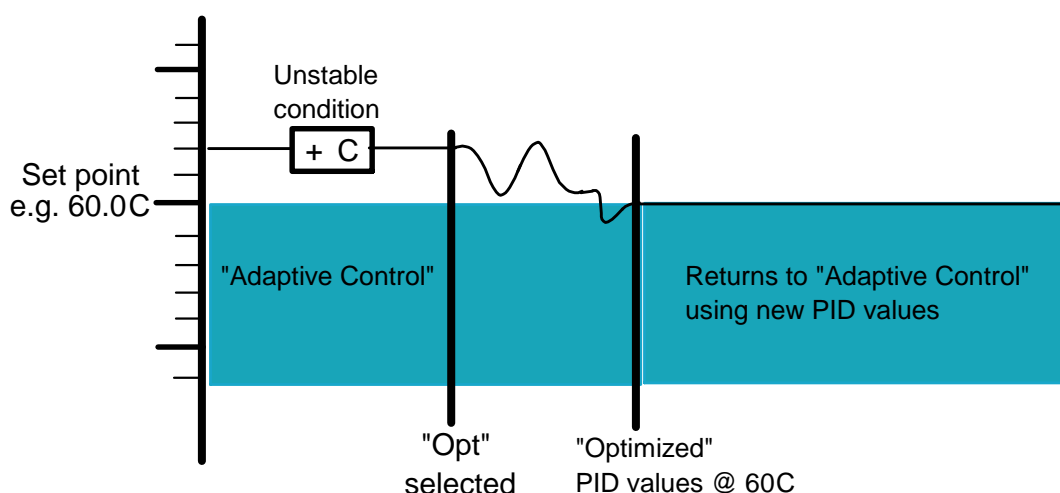
Uniformity is calculated by measuring the temperature in opposing ends of the accessory block and is the difference between the mean temperatures at these two points and stated as plus or minus half this value.

### Explanation of "Clifton Optimized Control"

"Adaptive tune" provides instant control from start up and automatically adjusts PID values with actual temperature readings until it achieves set temperature. These adjusting PID values determine heat-up rate, the load and mass being heated producing negligible overshoot. All this happens automatically and requires no setting giving you peace of mind.

"Clifton Optimization Control" is a new feature, which uses SMART temperature control technology to allow for mass variation, external environmental variables and including your work to refine control at set temperature, enhancing the range.

The new "Clifton Optimization Control" is best used to fine-tune its PID values by optimizing any potential difference between set point and actual temperature readings:

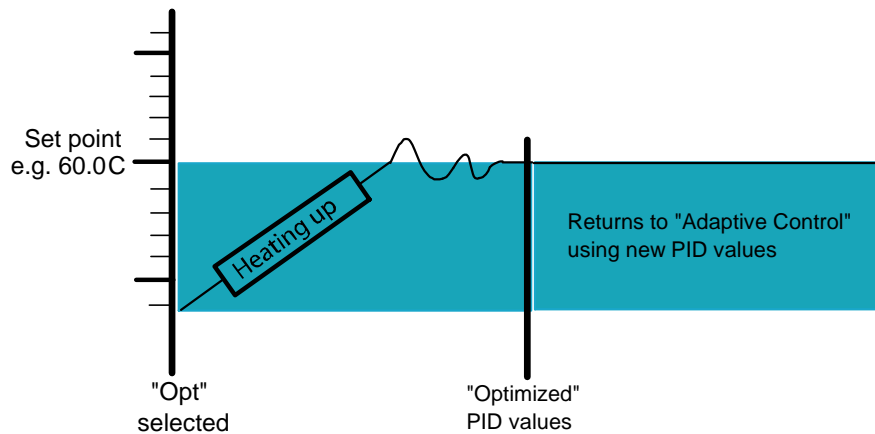


Examples of "unstable conditions" where optimisation is useful include:

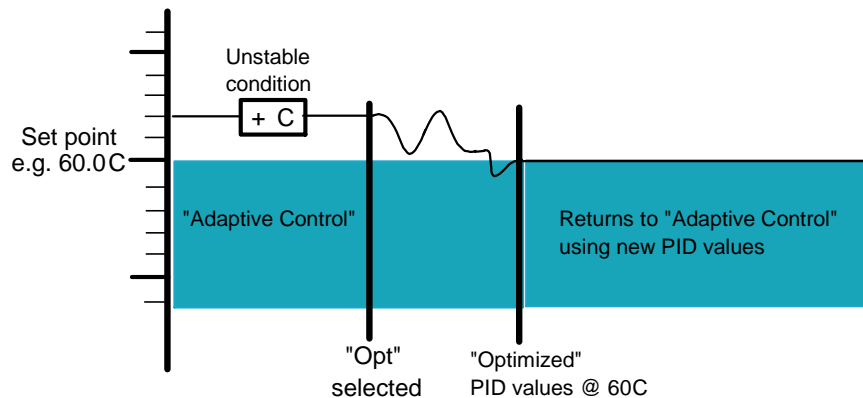
- Temperatures: low to high, smaller volumes of samples needing faster reacting control in comparison with larger tubes and liquids.
- Changing mass e.g. block types and or quantity of tubes being heated.
- External environmental conditions e.g draughts when used in fume, safety or extraction cupboards.

Clifton blockheaters can adjust to these "unstable conditions" updating the PID values, relearning how to control your process, at a specific temperature to give optimal control.

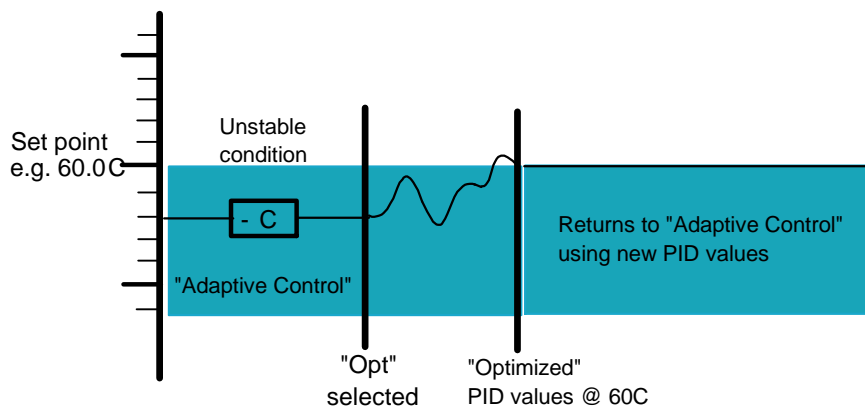
### When to use the "Optimization Control"?



Heating up, the blockheater measures the difference between the set point and actual temperature measurements, refining control until "Optimized" .



Unstable conditions with positive temperature variation, refining PID values until "Optimized" .



Unstable conditions with negative temperature variation, refining PID values until "Optimized" .

### How to operate the optimization function

Clifton 'Optimised Control' fine-tunes the PID values by optimising any potential difference between the set point and the actual block temperature. This can be activated when necessary and forces the controller to update the PID values allowing it to cope with changing conditions e.g. fume cupboard forced air movement.

To start:-

1. Press **FUNCTION** button until "OPT" appears on the display alternating with "ON.A".
2. Press either up or down arrow to select "OFF".
3. Press **FUNCTION** button to confirm.
4. Press **FUNCTION** button until OPT appears on the screen.
5. Press up arrow to select "ON".
6. Press **FUNCTION** button to confirm.
7. When the "opt" and temperature value is alternately displayed the unit is self-adjusting. When only the temperature is displayed optimisation is complete. Occasionally during the "optimization" process the audible over/under temperature alarm sounds and indicator illuminates, this is quite normal; ignore this warning and allow the bath to continue to desired temperature.
8. When only the set temperature is displayed, the optimisation process is complete.

To cancel this process at any time press **FUNCTION** button until "OPT" is displayed. Press up or down arrow to select "OFF". Press **FUNCTION** button to confirm.

### Under Temperature Alarm - Automatically Set

The under temperature alarm is automatically set 4°C below either 'Set Point 1' or 'Set Point 2'. When in alarm condition the 'over and under temperature' alarm indicator illuminates and actual block temperature is shown. Once block temperature has risen above alarm setting then indicator clears and actual block temperature is displayed.



Always investigate the cause of the Under Temperature Alarm.

### Over Temperature Alarm - Automatically Set

The over temperature alarm is automatically set 4°C above either 'Set Point 1' or 'Set Point 2'. When in alarm condition the 'over and under temperature' alarm indicator illuminates and actual block temperature is shown. All heating is switched off. Once block temperature has fallen below alarm setting then indicator clears and actual bath temperature is displayed.



Always investigate the cause of the Over Temperature Alarm.

## Cleaning

### General



Important - please follow these instructions to avoid possible damage to the unit, otherwise affecting its performance and warranty. Always disconnect the product from the electrical supply before cleaning.

The blockheater must be cleaned at regular intervals wiping casework with a cloth or sponge soaked in warm soapy water. The stainless steel heating well should provide years of valuable service clean with a cloth or sponge soaked in warm soapy water.

Wring out excess water and soap, DO NOT over wet the heating well.



The heating plate at the bottom of the well and the base of each aluminium accessory block must be kept clean and free from debris/dirt for good thermal contact and temperature control.

If liquids are spilled onto aluminium heating blocks or into heating well, get the unit checked by a qualified person before re-use.

### Cleaning External Painted Surfaces featuring "Anti-bacterial Paint Finish"

The blockheater should be cleaned at regular intervals wiping external surfaces with a cloth or sponge soaked in warm soapy water with a mild detergent. All surfaces should be cleaned using a soft cloth or sponge.



Do not under any circumstances use strong solvents or solutions containing Chlorinated Hydrocarbons, Esters, Ketones or abrasive cleaners or polish on the paint finish otherwise it damages the built in anti-bacterial properties.

All painted surfaces on Clifton range products features an "Anti-bacterial paint finish" identified with this authenticating logo on the unit.

This "Anti-bacterial paint finish" inhibits the growth of bacteria. It has been tested by independent specialist test houses such as the Law Laboratories (in the UK) using internationally recognized test methods and proven to be effective versus a wide range of bacteria species including Escherichia coli and Staphylococcus aureus (MRSA).



We recognise hygienic coatings are part of a controlled approach to a cleaner working environment. Within its formulation an active ingredient with proven anti-bacterial properties is bound into the paint finish. The efficacy of the paint finish applied to the Clifton range is maintained over its life-time, as the anti-bacterial agent is integral within the paint.

In a laboratory environment it makes this one less source of contamination, contributing to essential clean working practices. A benefit of such a paint finish can lead to a reduction in cleaning schedules because surfaces are more protected and improves protection between cleaning. Unlike detergents "Anti-bacterial paint finish" does not offer an instantaneous action, but is intended for long-term general protection against bacterial growth.

Moisture on the painted surface is necessary for the bacterium to absorb the agent and be affected by it. The coating is therefore less active in very dry conditions, but dependent upon relative humidity, moisture in the atmosphere maintains activity. Areas where moisture is trapped are also areas that normally are difficult to clean and where bacteria proliferate but these areas are most active for the anti-bacterial coating improving the defence against bacterial growth.

### Disinfectant/Sterilant

We recommend PeraSafe a powder product for the safe and rapid chemical sterilant of equipment in a wide variety of situations available from your distributor or contact Day-Impex Ltd for more details. Telephone: 44+(0)1787 223232 or <http://www.day-impex.co.uk>

PeraSafe has a proven safety profile for end-users with none of the undesirable properties of skin sensitisation, toxic fumes or unpleasant odours that are associated with aldehyde solutions.

Leading UK and USA microbiologists have proven PeraSafe to be active against viruses, mycobacteria and fungi. It is microbiologically superior to glutaraldehyde, destroying sporing bacteria in one minute. It has also been independently proven that PeraSafe sterilises in just 10 minutes.



For more detailed information relating to how PeraSafe should be used with access to test reports [www.relyon.dupont.co.uk](http://www.relyon.dupont.co.uk)

### Virucidal Disinfectant

We recommend Virkon tablets for the safe and rapid disinfection of equipment in a wide variety of situations available from your distributor or contact Day-Impex Ltd. for more details. Telephone: 44+(0)1787 223232 or <http://www.day-impex.co.uk>

The ultimate high level surface disinfectant, dissolve VIRKON in water, providing a safe working solution with a faint lemon odor. It has proven efficacy against bacteria (including mycobacteria), viruses, spores and fungi in a variety of independent tests using different protocols. Presents no serious long term health risks to staff - obviating the need for costly ventilation equipment and health monitoring. Also provides high level disinfection of laboratory equipment and instruments where autoclaving is neither practical nor necessary. For more detailed information relating to how Virkon should be used with access to test reports [www.relyon.dupont.co.uk](http://www.relyon.dupont.co.uk)



*Is Virkon solution corrosive? Virkon solution requires only 10 minutes contact time to be effective so long-term exposure is not necessary and therefore will not corrode most materials. Care should be taken with Stainless steel water bath tanks, these surfaces should not be affected however, it is important that generally you do not leave Virkon solution in contact with metal surfaces "FOR LONGER THAN IS NECESSARY".*

Virkon is Registered in accordance with the requirements of the Medical Devices Directive, (93/42/EEC) as a Medical Device.

### 3 Year Warranty

Our service engineers are fully trained in the assembly, calibration and servicing of all Clifton instrumentation. Products can be returned to our comprehensively equipped service centre where a fast and efficient turnaround is guaranteed:

Service Department, Nickel Electro Limited, Oldmixon Crescent, Weston-super-Mare, North Somerset BS24 9BL, UK. Tel +44 (0)1934 626691 Fax +44 (0)1934 630300.

### Out of Warranty

Our Service Department has comprehensive stock of chargeable spare parts maintaining working life of equipment or units can be returned for quotation before repairs are undertaken.

### End of Life



This symbol indicates that this product should not be disposed of with your waste. Instead, dispose waste electrical equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

For more information about where you can drop off your waste equipment for recycling, in UK please contact Service Department, rest Europe contact your Distributor.

Health & Safety, unless in receipt of a Decontamination Notice or Report the unit cannot be returned or accepted for disposal.

Clifton electrical and electronic equipment has been designed for recycling and takes into account the dismantling and recovery its components and materials. Clifton products are easily recycled with majority of the product constructed from stainless or mild steels, which can readily be re-used or recycled.

In excess of 75% of this product range can be easily re-cycled economically.

### Portable Appliance Testing

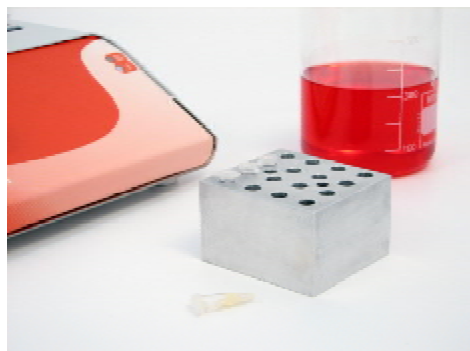
When conducting testing, ensure it is conducted by a qualified person.



THIS EQUIPMENT MUST NOT BE FLASH TESTED!



## Accessories for BH-1/DIG Block Heater



DBK-0.2, 0.5, 1.5, 2.0 [2 BLOCKS CAN BE FITTED]



DBK-0, 10, 12, 13, 16, 19, 25, 50

## Aluminium Blocks

DBK-0.2	0.2ml micro tube x 54 hole Bloc or 6 x 8 PCR strips (two blocs can fitted in heating well)
DBK-0.5	0.5ml micro tube x 16 hole Bloc (two blocs can fitted in heating well)
DBK-1.5	1.5ml micro tube x 12 hole Bloc (two blocs can fitted in heating well)
DBK-2.0	2.0ml micro tube x 16 hole Bloc (two blocs can fitted in heating well)
DBK-0	Plain Bloc
DBK-10	10mm x 32 Hole Bloc
DBK-12	12mm x 32 Hole Bloc
DBK-13	13mm x 32 Hole Bloc
DBK-16	16mm x 18 Hole Bloc
DBK-19	19mm x 10 Hole Bloc
DBK-25	25mm x 10 Hole Bloc
DBK-50	50mm x 8 Hole Bloc

## Lid/Safety Cover

BHL-1 Lid



## Remote Probe

EP-2 External probe

For more information on Accessories [www.nickel-electro.co.uk](http://www.nickel-electro.co.uk)

# BLOCKHEATERS

## BH-DIG series, Digibloc

Digibloc provides a safe, dry and consistent method of heating using accessory aluminium heating blocks with excellent thermal conductivity.

The microprocessor controller has the facility to retain a user adjustable, independent time and temperature combination making it ideally suited for a variety of purposes including heating tubes, micro tubes or vials, which demand repeatability.

The unit consists of a low profile durable corrosion resistant stainless steel case with chemical resistant wipe clean sloping control panel with touch buttons to enter temperature and time values. Indicators show heating, alarm, time and set point modes in use. Supplied with Bloc extraction tool. The accessory probe overrides the internal sensor allowing direct measurement and control of Bloc.



## Features include:

- Sensitivity:  $\pm 0.1^{\circ}\text{C}$  @  $60^{\circ}\text{C}$
- Uniformity:  $\pm 0.1^{\circ}\text{C}$  @  $60^{\circ}\text{C}$
- Temperature range: ambient  $+5^{\circ}\text{C}$  -  $150^{\circ}\text{C}$
- Clearly visible LED display suiting all lighting conditions
- *time or temperature display*
- *digital PID control*
- *menu driven data entry*



- *temperature display to  $0.1^{\circ}$  resolution up to  $99^{\circ}\text{C}$*
- *indicators heating, alarm, time and set point*
- Chemical resistant control panel
- *splash proof, wipe clean*
- Two temperature set points
- Control options
- *temperature control only*
- Process control with two temperatures and a time setting
- Wide choice of accessory Blocs suiting
- *micro tubes, tubes and vials.*
- Accepts external accessory probe
- *in bloc temperature control*

### Cat No.

### Temperature

Display/resolution

Range ambient

Sensitivity

Uniformity well to well

Over temp. alarm

### Timer

Display/resolution

Settings variable

Time cycle

Cycle end

### General

Heater, Watts

Well dims

Well capacity

Overall, dims

Voltage

### BH-1/DIG

$0.1^{\circ}\text{C}$

$+5^{\circ}\text{C}$  -  $150^{\circ}\text{C}$

$\pm 0.1^{\circ}\text{C}$  @  $60^{\circ}\text{C}$

$\pm 0.1^{\circ}\text{C}$  @  $60^{\circ}\text{C}$

$+4^{\circ}\text{C}$  with heater cut-off, indication

1 minute

0 - 999 minutes

activated @ set point 2

audible buzzer and "end" message

250W

140w x 50d x 72h mm

1 or 2

200w x 295d x 85h mm

100 - 230V



## EC Declaration of Conformity

We herewith confirm the following product

### BH Blockheater Range

Conforms with the requirements outlined by following European Directives.

Low Voltage Directive (73/23/EEC)  
EMC Directive (89/336/EEC)

We confirm the declaration



#### NICKEL-ELECTRO LIMITED

Manufacturers of laboratory, medical and clinical equipment.  
Oldmixon Crescent, Weston-super-Mare,  
North Somerset, BS24 9BL, United Kingdom.  
Tel: +44 (0)1934 626691  
Fax: +44 (0)1934 630300  
Email: [clifton@nickel-electro.co.uk](mailto:clifton@nickel-electro.co.uk)  
[www.nickel-electro.co.uk](http://www.nickel-electro.co.uk)

Nickel-Electro Ltd is also registered ISO9001  
reference No. Q09820

Conforms with the requirements of following Standards

BS EN 61010:1

BS EN 61010:2.010

Safety requirements for electrical equipment for measurement, control and laboratory use.

BS EN 61326

Electrical equipment for measurement control and laboratory use - EMC requirements.

Nickel-Electro Ltd is also registered ISO9001 reference No. Q09820



## Final Inspection and Electrical Safety Test Report



### **NICKEL-ELECTRO Ltd.**

**Manufacturers of laboratory, medical and clinical equipment.**

Oldmixon Crescent, Weston-super-Mare,  
North Somerset, BS24 9BL, United Kingdom.

Tel: +44 (0)1934 626691  
Fax: +44 (0)1934 630300

**Email: [clifton@nickel-electro.co.uk](mailto:clifton@nickel-electro.co.uk)**  
**[www.nickel-electro.co.uk](http://www.nickel-electro.co.uk)**