UNSTIRRED DIGITAL BATHS

| | |
|---|---|
| NE2-4D | NE2-22D |
| NE2-8D | NE2-28D |
| NE2-10D | NE2-56D |
| NE2-14D | |

DUOBATHS™

| | |
|---|---|
| NE2D-4/4 | NE2D-8/22 |
| NE2D-4/8 | |

SHALLOWBATHS™
NE2-2D and NE2-2DBA
NE2-5D
NE2-9D

*Clifton Range*®

Crafted with precision, made for excellence

Dear Customer

The Clifton Range® is part of Nickel-Electro Ltd a family firm based in Weston-Super-Mare which was incorporated as a limited company in 1941 but its roots can be traced back to 1935 when the business first started. Now in its 3rd generation of family members, the company prides itself on being a strongly established, independant British manufacturer.

Thank you for purchasing this piece of Clifton Range® temperature control equipment. To get the best performance from your equipment and for your own safety please read these instructions carefully before use.

## GENERAL NOTES

1. This product is designed for laboratory use only. Always follow good laboratory practice.
2. Fill the tank prior to connection to electrical supply.
3. Use caution when topping up/draining the tank. If this product is not used in accordance with these instructions then basic safety protection may be affected.
4. The mains supply cord fitted to this product is heat resistant and should be replaced with an equivalent type by a qualified electrician.
5. Ensure that the power supply has a safety earth (ground) terminal.
6. Ensure that the mains switch and power supply connector are accessible during use.
7. Before using any cleaning or decontamination method please refer to the Maintenance and Cleaning section to ensure the proposed method will not damage the unit.
8. Connect only to a power supply with the corresponding voltage to that specified on the rating label positioned on the rear of the unit.
9. Do not block ventilation slots during use and always follow installation instructions.
10. Ensure substances being heated present 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.
11. Use only liquids specified within this Instruction Manual within their specified temperature range.
12. Drain before moving the bath.
13. We recommend using a lid above 60˚C. Take care when lifting the lid as steam and hot vapours can cause scolding.
14. Use a thermometer to check the temperature - do not touch the liquid.

## LOCATION

The product must be placed on a smooth, level and sturdy work surface, preferably near a drain for emptying. Use in a ventilated room. Suitable for use in ambient temperatures 5°C to 40°C with a maximum humidity 80% (temperature 31°C) decreasing to 50% (temperature 40°C).

DO NOT block or restrict ventilation slots. DO NOT place directly next to hot heat surfaces. ENSURE that there is sufficient space around the product to allow it to provide optimum temperature control.

## UNPACKING

Remove the product from its packaging and retain over the warranty period. Contents consist of:

- Bath
- Stainless steel false base
- Power lead
- Instruction manual

Place the false base into the bath with the legs down. Fit the power lead into the socket at the rear.

## SAFETY

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

## POWER LEAD AND CONNECTION TO ELECTRICAL SUPPLY

Check the electrical supply is compatible with the rating label.
IF IN DOUBT CONSULT AN ELECTRICIAN. THE PRODUCT MUST BE EARTHED!
Where the mains supply or plug connection differs refer to local regulations or consult an electrician.

## LIQUID LEVEL AND SUITABLE LIQUIDS

Always ensure the product is disconnected from the electrical supply before filling and emptying.

Minimum liquid level - 55mm/shelf fitted working depth 40mm
Maximum liquid level - must not exceed the ridge in the tank
ShallowBaths™ (NE2-2D, NE2-5D and NE2-9D) Minimum liquid level - 20mm/shelf fitted working depth 6mm, maximum liquid level - 40mm/shelf fitted working depth 20mm
NE2-2DBA is supplied with the correct capacity of Bath Armor for use.

Suitable Liquids

Operating temperatures from ambient +5˚C to 99˚C, for general use we recommend:

- Distilled Water
- Heat Transfer Liquid (the LB range is formulated for temperatures from -45˚C to 90˚C and provides complete protection from freezing and algae growth and safeguards against corrosion)
- Silicon Oils - upto 10 centistokes, please note 11 to 50 centistokes bath will operate outside temperature control specifications.
- Virkon dissolved in distilled water has proven efficacy against bacteria (incl mycrobacteria), viruses, spores and fungi in a variety of independent tests using different protocols.
- Bath Armor - high thermal conductivity allows this material to replace heating/cooling fluids in water baths (see accessories for full range).

PLEASE NOTE: ABOVE 60˚ or below room temperature the bath should be covered by a lid or layer of polypropylene spheres to achieve optimum performance.

## PORTABLE APPLIANCE TESTING

These tests should be conducted by a qualified person.

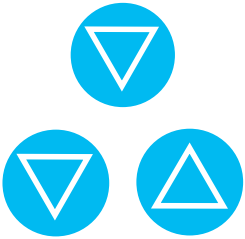
DO NOT PAT test the waterbath unless it contains water.

DO NOT Flash Test!!

## OPERATING INSTRUCTIONS: NE2D AND NE2D SHALLOWBATHS™

Switch the bath ON using the mains switch located at the rear of the bath. The switch will illuminate and a self test will be performed. When the bath is switched OFF all temperature and time values remain in the memory.

### SETTING TEMPERATURE



Press and hold the down arrow to display temperature.

Use up and down arrows to select required temperature. Display flashes between set and actual temperature values, then reverts to actual water temperature.

The water bath is now set and will heat and control the water (NE2-2DBA: Bath Armor) at the set temperature.

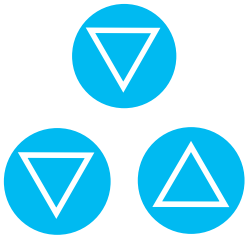
### OVER TEMPERATURE ALARM

The over temperature alarm is automatically set 4˚C above set temperature. The alarm indicator illuminates and actual bath temperature is shown. Once water temperature is within range once again the alarm will clear.

## OPERATING INSTRUCTIONS

Switch the bath ON using the mains switch located at the rear of the bath. The switch will illuminate and a self test will be performed. When the bath is switched OFF all temperature and time values remain in the memory.

### SETTING TEMPERATURE



Press and hold the down arrow to display temperature.

Use up and down arrows to select required temperature. Display flashes between set and actual temperature values, then reverts to actual water temperature.

The water bath is now set and will heat and control the water at the set temperature.

## DUOBATHS™

We recommend that both chambers have water in them to protect the concealed heaters if the bath is switched on when dry. However, if desired it is possible to immobilise one of the chambers:

To Immobilise One Chamber:

Press and hold both keys simultaneously.

"Stby" will be displayed. All heating and control in this tank will be immobilised. To reinstate control in the tank repeat the above.

## CONTROLLER DISPLAY CODES

| | | |
|---|---|---|
| oooo | Out of Range - OVER | Decrease temperature and/or time setting to within range |
| uuuu | Out of Range - UNDER | Increase temperature and/or time setting to within range |
| - - - - | Sensor break | Contact NE Service Engineer |
| ErAt | Fast auto tune unable to start | Measured value is too close to set point, press PAGE key to clear |
| NoAt | Auto tune not finished within 12 hours | Restart |
| ErEp | Possible problem with memory | Contact NE Service Engineer if error persists |
| OFFL | Display off line | Contact NE Service Engineer |
| oFFL | Signal break in controls caused by excessive moisture or steam | Contact NE Service Engineer |
| oFFL | Ribbon or Connection Break | Contact NE Service Engineer |

## CARE AND MAINTENANCE

Please ensure that the washing agent and sanitizing agent are BSI accredited and approved by the H&S department for use on laboratory equipment and stainless steel within your laboratory.

DISCONNECT THE BATH FROM THE POWER SUPPLY PRIOR TO CLEANING

## BASIC CLEANING

The stainless steel crevice free tank should provide years of valuable service and is resistant to chloride containing solutions but it is important to avoid high concentrations of halogens- particularly chloride. Halogen deposits may show as rust which can be cleaned off with nitric acid (10%) on a cloth. WEAR PROTECTIVE EQUIPMENT!

The Clifton Range® bath should be emptied at the end of each day, then for interior surfaces:

• WASH • RINSE • DRY •

Drain Outlet: Please ensure that the above cleaning process includes the outlet on the base of the tank, paying particular attention to flushing the outlet and tap thoroughly.

Scale Build Up: In hard water areas limescale can build up and reduce the efficiency of the water bath. Cleaning at the end of each day can prevent this but periodically it may be necessary to descale the bath. Add 1 litre of vinegar to the normal capacity of water and heat for 1 hour to 50˚C.

Bar Keepers Friend® can be used as a stainless steel cleanser to remove unsightly mineral deposits.

## EXTERIOR ANTI BACTERIAL PAINTED SURFACES

The water bath should be cleaned at regular intervals by wiping external surfaces with a cloth or sponge soaked in warm water with a mild detergent. DO NOT USE STRONG SOLVENTS OR SOLUTIONS CONTAINING CHLORINATED HYDROCARBONS, ESTERS, KETONES OR ABRASIVE CLEANERS AS THIS MAY DAMAGE THE BUILT IN ANTI BACTERIAL PROPERTIES.

The “anti-bacterial” paint finish inhibits the growth of bacteria. It has been tested by independant specialist houses using internationally recognised test methods and proven to be effective against a wide range if bacteria including Escherichia Coli and Staphylococcus Aureus (MRSA).

We recognise hygenic coatings are part of a controlled approach to a cleaner working environment. Within the paint formulation is an active ingredient with proven anti-bacterial properties which is maintained throughout its life span. In a laboratory environment this is one less source of contamination. Unlike detergents the 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 neccessary for the bacterium to absorb the agent and be affected by it. The coating is therefore less active in very dry conditions although moisture in the atmosphere will maintain some activity. Areas where moisture is trapped are difficult to clean and allow bacteria to proliferate but these areas are most active for the anti-bacterial coating improving defence against bacterial growth.

## DECONTAMINATION OF EQUIPMENT

Clifton laboratory equipment can be decontaminated after spillage or contact with HIV or hepatitus infected blood samples by using rapid disinfectants. We recommend VIRKON tablets for the safe and rapid disinfection of equipment. Please follow the User Instructions carefully. Virkon solution only requires 10 minutes contact time to be effective. Care should be taken with stainless steel tanks and it is important that virkon solution is not left in contact with metal surfaces "for longer than is neccessary". We recommend PERASAFE powder for the safe and rapid chemical sterilant of equipment. Please follow the User Instructions carefully. Please contact your distributor or Day-Impex Ltd for further information relating to these products.

## WARRANTY TERMS AND CONDITIONS

1. Nickel Electro Ltd warrants to the Customer that the product purchased is free from defects in materials and workmanship.
2. Provided the terms of payment are duly complied with, Nickel Electro Ltd undertakes to remedy any original defects arising from faulty materials or workmanship, in any goods manufactured/supplied by Nickel Electro Ltd, which under proper and normal conditions of use, may develop within a period of three years from the date of delivery.
3. In the case of components which by their nature of application have an unpredictable life, this guarantee shall only be to the extend of the guarantee given by the manufacturers of these articles.
4. Nickel Electro Ltd will accept no liability, where in the opinion of the company the defect has been caused by damage due to the Customers failure to follow operating instructions, correct installation, wear and tear, or damage due to the use of spare parts other than those spare parts of Nickel Electro Ltd or which are recommended by Nickel Electro Ltd, the defect has been caused by alterations or repairs being undertaken by a person(s) other than an authorised representative of Nickel Electro Ltd.
5. Any damage claim must be in writing, and give the serial number and description of the goods, order number and date of delivery, and will not apply where any names or serial numbers or other information which may be attached to or inscribed upon the goods have been removed, covered up or defaced in any way.

6. Any goods or parts thereof, which may require repair or replacement, shall be repaired or replaced (at the discretion of Nickel Electro Ltd) at the works of Nickel Electro Ltd. The product to be repaired shall be delivered carriage paid back to Nickel Electro Ltd by the customer at the Customer's risk and expense. Any such goods or parts will be delivered by Nickel Electro Ltd to the Customer free within the United Kingdom but if required to be borne by the Customer. All faulty parts removed from the equipment will become Nickel Electro Ltd's property. Any other repairs or work by Nickel Electro Ltd will be carried out under the terms and conditions for specialist engineers currently in force.
7. In the event of replacement with a new or reconditioned model, the replacement unit will continue the warranty period of the original equipment.
8. If any goods or parts thereof are returned unnecessarily all cost involved, including a charge for inspection, handling and the return carriage must be paid by the sender. In no circumstances shall any of the goods be returned to Nickel Electro Ltd without its prior written consent.
9. Please retain the original packaging over the warranty period.

NON WARRANTY INFORMATION

Spare parts shall be made available for a period of 3 years after a piece of equipment is discontinued.

Common Spare Parts

| Description | Part Number | Qty | Where Used: |
|---|---|---|---|
| Temperature Controller Only | EX1300 | 1 | NE2D Series - All Sizes |
| Cables Controller Connection | EX1301 | 1 | NE2D Series - All Sizes |
| Controller Display K30 Red | EX1117 | 1 | NE2D Series - All Sizes |
| Controller Display K30 Blue | EX1164 | 1 | NE2D Series - All Sizes |
| Power Entry Module | EX0854 | 1 | NE2D Series - All Sizes |
| K Type Thermocouple | ET0835 | 1 | NE2D Series - All Sizes |
| Solid State Relay | EX1035 | 1 | NE2D Series - All Sizes |
| 800W Matt Element | EE0859 | 1 | NE2-5D, NE2-8D and NE2-9D |
| 1000W Matt Element | EE0825 | 1 | NE2-14D |
| 1500W Matt Element | EE0826 | 1 | NE2-22D and NE2-28D |
| 200W Matt Element | EE0718 | 1 | NE2-2D |
| 400W Matt Element | EE0562 | 1 | NE2-4D |

| DECLARATION OF CONFORMITY | |
|---|---|
| We herewith confirm the following product:<br>NE2D Series Unstirred Digital Water Baths<br>NE2D Series DuoBaths™<br>NE2D Series ShallowBaths™ | |
| Conforms with the requirements outlined by the following European Directives: | Conforms with the requirements outlined in the following United Kingdom Directives: |
| Low Voltage Directive 2014/35/EU | Electromagnetic Compatibility Regulations 2016 |
| EMC Directive 2014/30/EU | Electrical Equipment (Safety) Regulations 2016 |
| RoHS Directive 2011/65/EU | RoHS Directive 2011/65/EU |

| Conforms with the requirements of the following standards: | |
|---|---|
| BS EN 61010-1: 2010 | Safety requirements for electrical equipment for measurement, control and laboratory use |
| BS EN 61010-2-010: 2020 | |
| BS EN 61326-1: 2013 | Electrical equipment for measurement, control and laboratory use - EMC requirements |

| Designed and manufactured in the United Kingdom by:<br>Design Registration No: 002515296-002 |
|---|
| MADE IN BRITAIN<br>Nickel Electro Limited<br>Oldmixon Crescent<br>Weston super Mare<br>North Somerset BS24 9BL<br>United Kingdom<br>t 01934 626691 f 01934 630300<br>e info@nickel-electro.co.uk |

FINAL INSPECTION AND ELECTRICAL SAFETY TEST REPORT

BX0835 Issue 18: June 2024

NICKEL - ELECTRO LTD.

Manufacturers of the Clifton Range