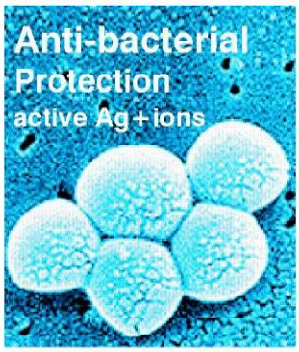


THE *Clifton* RANGE

Shaking Baths
NE5 Series

IMPORTANT: ALWAYS FILL the water bath before connecting to the power supply.

Contents

About this Manual

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

General Notes

Please observe the following safety precautions:

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 water bath may be affected.

3a. The NE5-28 is classified as Class 2 (IEC519) with regards to over temperature protection.

3b. The NE5-10D and NE5-28D is classified as Class I (IEC519) with regards to overtemperature protection.

4. Check the operation of the over temperature device regularly.
5. The mains supply cord fitted to this products is a heat resistant type and should be replaced by an equivalent type.
6. It is recommended the units are connected to the mains supply with RCD protection.
7. 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	January	1996	Initial issue instruction book
Issue 2	May	1996	Address change
Issue 3	August	1996	Multilingal version fof first issue book.
Issue 4	January	2001	Update to product range
Issue 5	September	2001	Layout changes
Issue 6	November	2004	Revised product and instruction manual design
Issue 7	March	2006	Service diag. update. OT amended NE5-28. WEEE.
Issue 8	July	2006	NE5-10D trolley update, NE5-28D adjustment stroke length.
Issue 9	December	2006	Anti-bacterial paint finish and WEE.
Issue 10	September	2008	Liquid Level.
Issue 11	November	2010	2011 models, Pro4.
Issue 12	March	2011	UpdatesJMD.

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, preferably near a sink or drain for emptying (NE5-28 versions are fitted with a drain outlet). 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). The product is designed for laboratory use.

Unpacking
Remove the product from its packaging. If there is any damage please notify your dealer immediately. Retain the packaging over the warranty period.

Assembly

28 Litre Baths:	Place the trolley into bath locating the drive arm into white bush and tighten the locking knob on the drive arm by hand. Clip trays - see accessories - can then be placed on the trolley.
10 Litre Bath:	Place the trolley into bath locating the drive arm into the bush and tighten the locking knob on the drive arm by hand. Fit the eyebolt handles, used for liting the perforated tray out of the bath, one on each side using one of the pair of outer holes.

Safety

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

NE5-10D and NE5-28D are Class 1 (IEC519 - Part 2) - reference to over temperature condition - provides product over temperature protection.

NE5-28 is a Class 2 (IEC519 - Part 2) - reference to over temperature condition - provides product over temperature protection and liquid over temperature protection (suitable for heating materials which could present a safety hazard at the operating temperature of the over temperature system).

Power Lead and Connection to 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.

Liquid Level
Minimum working liquid level - must cover the top of the trolley by 40mm
Maximum flask immersion - 120mm from top of trolley

Recommend fill to minimum liquid level first with trolley in position, place the perforated shelf with requried clips, racks etc and glassware, then adjust the water level to suit. [Optimal temperature performance liquid level needs to cover the top of the trolley 75 to 120mm].

Always ensure the product is disconnected from the electrical supply when emp tying and filling. The filling level depends on the size and number or vessels being placed into the bath.

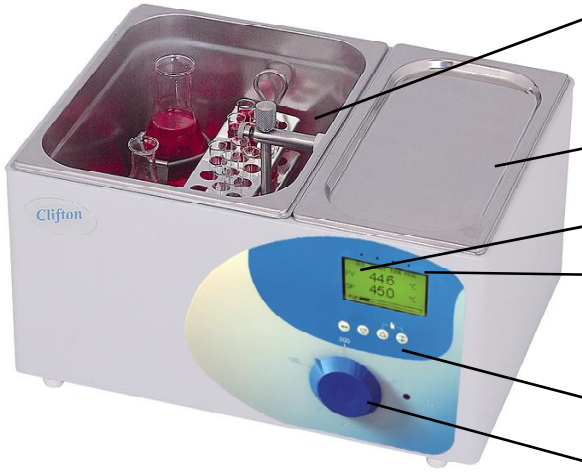
Suitable Liquids
Operating temperatures of ambient to 99°C, for general use we recommend:

Distilled water.
Heat transfer liquid. The LB range is formulated for temperatures from -15°C to 90°C and provides complete protection from freezing and algae growth and safe guards against corrosion. See accessories for the full range available.
VIRKON dissolved in distilled water has proven efficacy against bacteria (including mycobacteria), viruses, spores and fungi in a variety of independent tests using different protocols.

Above 60°C or below room temperature it is recommended that to achieve optimum performance the bath should be covered with SL1 lid or polypropylene spheres.

NE5-10D

Front View



Shaker Drive Arm, connects to Trolley.

Recessed Tray for flasks to stand on.

Display interface: temperature, settings, temperature profile, temeprature log.

Indicators: heating, alarm, tune and program.

Keyboard: menu navigation, up and down, function, acknowledge buttons.

Speed control dial

Top View

Eyebolt handles for easy removal of perforated shelf.

Perforated shelf for accessory clips, trays, test tube racks can be fitted.

Rear View

Mains power switch “I” ON, “O” OFF.

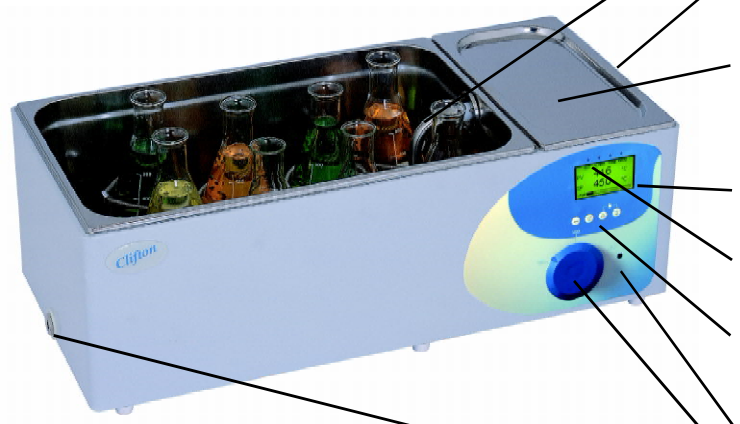
Accessory RS232 communication No longer available. Chart logging featured on Display interface.

Serial number and electrical supply details.

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

NE5-28D

Front View



Shaker Drive Arm, connects to Trolley.

Access door, side view, stroke adjustment

Recessed Tray for flasks to stand on.

Display interface: temperature, settings, temperature profile, temeprature log.

Indicators: heating, alarm, tune and program.

Keyboard: menu navigation, up and down, function, acknowledge buttons.

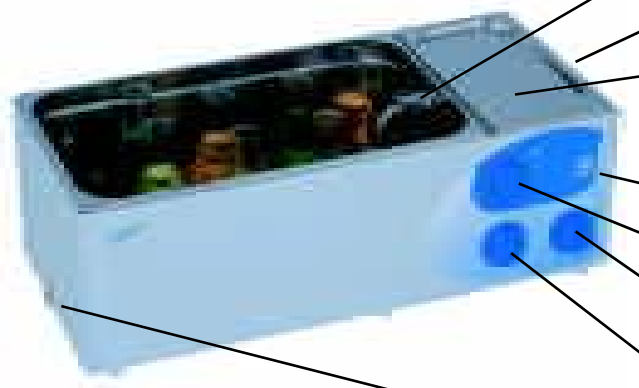
Access door open - warning indicator

Speed control dial

Drain outlet for accessory tap

NE5-28

Front View



Shaker Drive Arm, connects to Trolley.

Access door, side view, stroke adjustment

Recessed Tray for flasks to stand on.

Indicators

Temperature control dial

Adjustable Over temperature safety device

Speed control dial

Drain outlet for accessory tap

NE5-28D and NE5-28

Rear View

Mains power switch “I” ON, “O” OFF.

Accessory RS232 communication No longer available. Chart logging featured on Display interface.

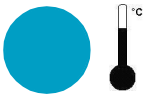
Serial number and electrical supply details.

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

Operating Instructions

NE5-28 Analogue Shaking Bath

1. Ensure the bath has the required liquid level, then switch the unit ON "I" using the mains switch located on the front of the unit.

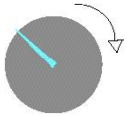


2. Adjust the temperature control to the desired setting using the blue knob. Temperature can be be set between ambient +5°C to 99°C.

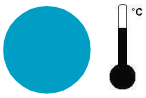
Heater neon will illuminate indicating heater activity.

3. Allow the water temperature to stabilise taking an actual reading in the middle of the bath.

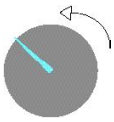
4. Adjust the shaker speed by rotating the dial. Speed can be set between 0-380 strokes per minute.



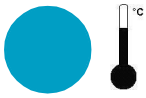
5. Optional - Setting 'Adjustable Overtemperature Safety Device'
a. Ensure the adjustable overtemperature safety device dial is turned fully clockwise.



b. Set the temperature on the controller at which you require the device to operate at using previous instructions for set point 1. Allow the liquid to reach this temperature and settle.



c. Slowly turn the dial back anticlockwise until it clicks.



d. Now adjust the temperature on the controller to the actual required operating temperature. Allow the bath to cool down to this temperature and it will control at this set point and the adjustable overtemperature safety device is now set. During a fault condition where the safety device operates, heating is cut off.

6. The stroke length can be adjusted by opening the access door and rotating the adjustment screw. Stroke length is variable between 0-40mm.
a. Open the access door on the side. A warning neon will illuminate indicating it is safe to adjust the stroke. Switch the bath off.
b. Turn the drive block by hand until a knurled adjuster screw is visible.
c. Rotate this screw using a flat screwdriver clockwise to reduce stroke length or anticlockwise to increase stroke length. On the drive arm there are a number of graduation lines indicating stroke length, the first line indicates 10mm further lines are then positioned at 10mm intervals. The factory setting is 20mm.
d. Increasing stroke length decreases quoted speed and likewise decreasing stroke length increases quoted speed.
e. Close the door and switch the bath back on.
If the access door warning neon DOES NOT illuminate when the door is opened, switch the bath OFF at the mains switch and disconnect from main electrical supply.
The Shaker bath must be serviced by a qualified electrician.

Operating Instructions

NE5-10D and NE5-28D: 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, “Clifton” logo appears and then actual and set water temperature is displayed - ready to use.

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.

Heating Control Modes
The Clifton NE5D range feature an advanced PID temperature controller that can be used in either of the following ways:
- temperature control
- process control with delay, ramp and soak at set temperature.

Controls

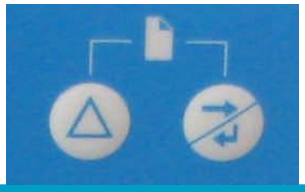
Keyboard Description

MOVE BACK IN MENU
- Accept value.
- Or use to move back through screens.

NEXT ITEM/DECREASE
- Used to decrease a value.
- Or next item in menu.

NEXT ITEM/INCREASE
- Used to increase a value.
- Or next item in menu.

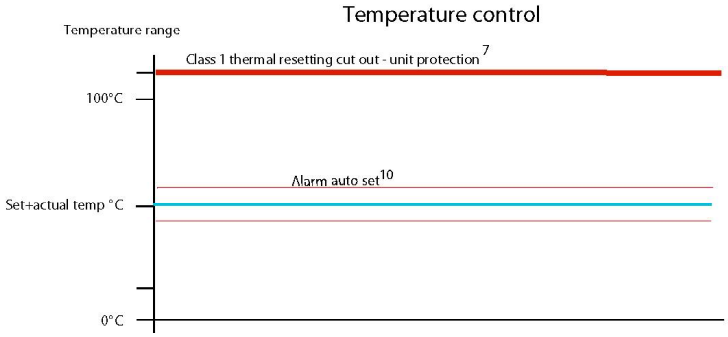
MOVE FORWARD IN MENU/ACKNOWLEDGE
- Accept value.
- Or use to move forward through screens.



MOVE DOWN ONE MENU LEVEL
- Press and hold simultaneously
- Move down one menu level.

Normal operation screen
Following power up self test and Clifton logo screen, the next screen below will appear.
Most screens will revert back to this screen after couple of minutes without activity

Temperature Control only



Press twice

Press either button to change set temperature

Press to confirm set temperature

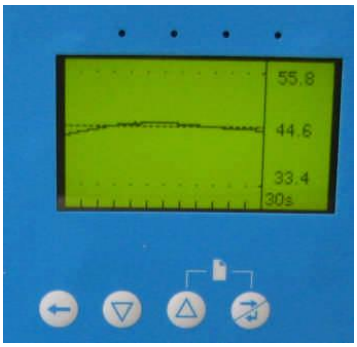
Press to return to Normal operation screen

Alarm events and status
If the actual temperature is 4˚C above or below set temperature, the temperature value is replaced with the word “HIGH” or “LOW” and screen changes from GREEN to RED.

If “OPEN” or “ERROR” appears seek advice from our Service department, do not use!

Trend view
Trend view, graphs actual water temperature data with set temperature on screen.

Press twice



To review data, pressing either down or up moves the cursor through the last 240 temperature readings.

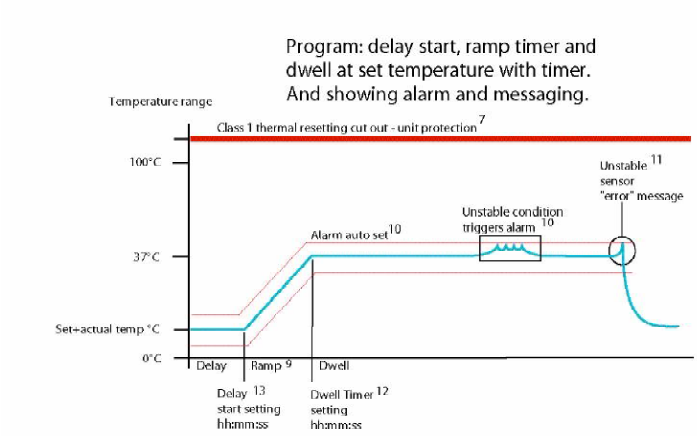
Trend view, graphs actual water temperature data - *solid line* - with set temperature - *dotted line* - every 30 seconds.

Trend scale adjusts automatically to actual water temperature data.

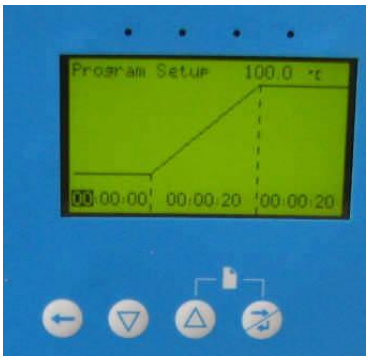
Data is not retained when unit is turned OFF or if sample interval is changed.

Press to return to Normal operation screen

Program setup
The Shaker bath can be programmed by choosing program options: Delay start, Ramp timer and Dwell at set temprature.

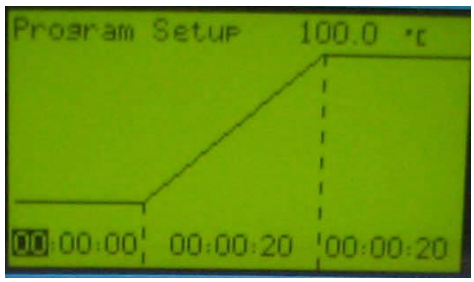


Press 5 times to access program setup



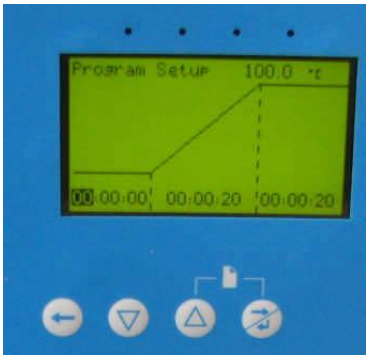
Press to move cursor between each time value hh:mm:ss for delay, ramp and dwell. Also navigates to set temperature for dwell.

Press either button to change values.



Delay time hh:mm:ss | Ramp time hh:mm:ss | Dwell time hh:mm:ss

Delay timer - upto 99h:99m:99s. Setting of 00h:00m:00s provides no delay, program starts.
Ramp timer - controls rate and rise in temperature with time upto 99h:99m:99s. A setting of 00:00:00 provides immediate rise to set temperature.
Dwell timer - set temperature held upto 99h:99m:99s. Setting of 00:00:00 produces an infinate time.



Keep pressing until “Program Control” screen shown below appears.

Press to navigate to highlight “start”.

Press.

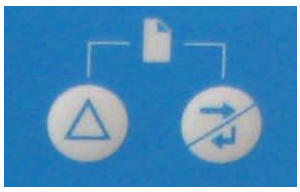
Then press to highlight “yes”

Press, to start program.

To re-run the program , press to navigate to “Program” screen.

Navigate to highlight “start”.

Main Menu



Press both buttons together.

Main menu screen will appear

Automatic Tuning
Select this option, enter code “10” using the increase/decrese buttons and then acknowledge. Select YES and autotune will start.

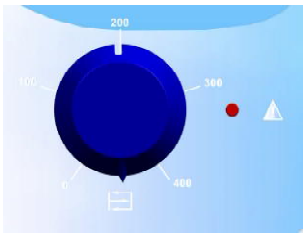
Useful function allows the bath to learn about your applications, its environment and temperatures.

Configuration Menu/Product information
Our service engineers may guide you through these menus if required.

Service information
Provides contact details for product servicing and support.

Setting Speed Control

Adjust the shaker speed by rotating the dial. Speed is variable between 0-380 strokes per minute.



Stroke adjustment - NE5-28 and NE5-28D

Stroke length is variable between 0-40mm.

1. Open the access door on the side.

2. Power is isolated from controls and drive system, a warning indicator will illuminate, safe to adjust the stroke.

3. Turn the drive block by hand until a knurled adjuster screw is visible.

4. Rotate this screw using a flat screwdriver clockwise to reduce stroke length or anticlockwise to increase stroke length. On the drive arm there are a number of graduation lines indicating stroke length, the first line indicates 10mm further lines are then positioned at 10mm intervals. The factory setting is 20mm. Increasing stroke length decreases quoted speed and likewise decreasing stroke length increases quoted speed. Close the door and switch the bath back on.

Cleaning

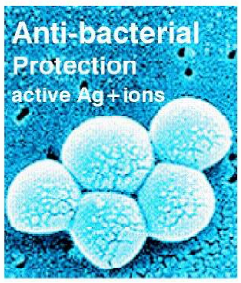
General

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.

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

The water bath 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 containi ng Chlorinated Hydocarbons, 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 lifetime, 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.

Cleaning the Stainless Steel Tank

The stainless steel crevice free tank with smooth corners should provide years of valuable service and is resistant to chloride containing solutions it is however important to avoid high concentrations of halogens - especially chloride. With such a high quality and resistant tank it may show symptoms of these halogens as rust, which are deposits from external sources in the water supply.

We recommend always empty the bath of liquid after use and wipe out the internal faces of the tank with a non-abrasive cloth and allow to dry. Any deposits can be removed with nitric acid (10%) on a cloth. *WEAR PROTECTIVE EQUIPMENT!*

It is also recommended to use an accessory lid to prevent contaminates landing in bath liquids.

Descaling the Stainless Steel Tank

Descale the stainless steel tank regularly to maintain it in as new condition ensuring the corrosion resistance and normal operating conditions are maintained throughout its working life. Descale by adding 1 litre of vinegar to water and gently heating to 50°C for an hour, empty and brush the lime away.

Rinse thoroughly afterwards.

Decontamination of Equipment

Clifton laboratory equipment can be decontaminated after spillage or contact with potentially HIV and Hepatitis infected blood samples during analysis using following recommended rapid disinfectants.

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.com

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 contactwith 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.

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.com

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 charegeable 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 78% of this product range can be easily re-cycled economically.

Portable Appliance Testing

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

DO NOT PAT TEST THE BATH UNLESS IT CONTAINS WATER.

THIS EQUIPMENT MUST NOT BE FLASH TESTED!

Service Diagram for NE5-28

Service Diagram for NE5-10D and NE5-28D

EC Declaration of Conformity

We herewith confirm the following product

NE5 Shaking Waterbath Range

Conforms with the requirements outlined by following European Directives.

Low Voltage Directive (2006/95/EC)
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
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,
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