NEUATION

iTHERM D150-4

PRODUCT USER MANUAL

TABLE OF CONTENT

1. INTRODUCTION

This manual provides important safety information for this Dry Bath. It should be kept near the equipment for quick & easy reference. The Dry bath is equipped with better display for safe operations. This dry bath has range from ambient +5°C to 120°C making it useful for wide range of applications. Probe is provided for monitoring accurate temperature of samples.

2. INTENDED USE

The dry bath is intended to use for specific applications such as Enzymatic / kinetic reactions Denaturation of DNA/RNA and protein samples, Labeling of nucleic acids and proteins, quantification assays, Lysis reactions, Immuno precipitation etc.

NOTE: *Before using the instrument, please read this user manual carefully. This user manual is intended to assist with the operation and care of the unit only and not ts repair. For repair please contact the supplier.*

3. FEATURES

- Dry heating block with temperature control range from ambient +5°C to 120°C
- Aluminum made blocks, resistant to chemical spillage & temperature shocks.
- 4 heating blocks with long timer range from 1min- 99hr 59mins & infinite mode
- Large & clear display shows critical parameters. All set values are readily visible without toggle with no shared display.
- Programmable feature for User can set and save upto 99 user defined programs (protocols)
- Corrosive free SS instrument top & heating wells
- Comes with PT-1000 temperature probe & thermometer well for accurate measurement of 2 temperature
- Various type tube capacity with convenient lifting gear for cleaning & disinfecting.
- Rapid heating & constant temperature across the blocks throughout operation.
- Build in safe temperature protection

4. STANDARD ACCESSORIES

- Power Cord
- Product user manual & warranty card
- Aluminum block attachments

5. TECHNICAL SPECIFICATIONS

Temperature Range	Ambient +5 to 120°C
Temperature Uniformity within the Block	± 0.3°C @ 37°C ± 0.5°C @ 60°C
Temperature Stability within the Block	± 0.3°C @ 37°C ± 0.5°C @ 60°C
Set-up Block material	Aluminium alloy
Number of Blocks	4 Nos
Display	Digital
Programmable Mode	Yes
Run Time & Modes	1min - 99 hr 59mins & infinite
Dimension	393 x 270 x 153 mm
IP Rating	IP21
Ambient Temperature	5-40°C
Permissible Relative Humidity	≤80%
Power Supply	230VAC, 50 Hz
Power Consumption	400 W
Altitude	Use upto an altitude of 2000 m above MSL
Pollution Degree	2
Environment	For indoor use only

6. SAFETY PRECAUTIONS

Read all safety & usage information provided in this manual carefully before using the device.

- Never use the instrument in any manner not specified in this manual.
- Equipment used in any manner not specified in this manual or by the manufacturer might result in the laps of warranty.
- Repairs must only be performed by authorized service technician.
- Only use recommended original spare parts for best result & product safety.
- If liquids are spilled in blocks, the instrument must be cleaned carefully and properly before being used again.
- Prior to operation, the tubes should be visually inspected for material damage.
- Damaged tubes must not be used as this can result in sample loss and the

contamination of the product.

- This product must be used for specified applications only. It must not be operated in a hazardous or flammable environment and must not be used to mix explosive or highly reactive substances.
- Do not place the potential hazardous material within the clearance area/ envelope.
- Wear your personal protective equipment in accordance with the hazards category of the medium to be processed. There is risk of liquid splashing.
- Do not move the instrument while it is operating or connected to the main power supply.
- Do not touch the Block surface when temperature of dry bath is over 50°C, this could result in serious burns or injury. Pay attention to the residual heat after switching off.
- Properly lift the device with both hands while moving or installing. Also, the device should only be moved from its position once it attains the room temperature.
- Ensure that only closed tubes are used in thermal reactions.
- Do not lean on the equipment. It may damage the equipment or harm the operator.
- Do not fill tubes near the device. Liquid spillage may harm the device.
- In the event of contamination caused by aggressive agents, the device must be cleaned immediately using a natural cleaning liquid. If any damage is seen, contact the service technician.
- The power cord given with the unit is designed to be used for this particular unit. Do not use any other power cord.
- Only process media which will not react dangerously to the extra energy produce by mixing.
- Do not operate the appliance in explosive atmosphere with hazardous substance or under water.

7. INSTALLATION

Gently remove the upper packaging and take out the dry bath by holding it from the bottom. When this equipment is used for the first time, ensure that all the packaging accessories are removed from the product. Please keep all the packaging in safe storage for warranty purposes.

LOCATION & MOUNTING

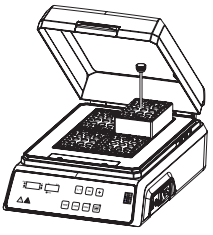
Place the device on a flat and leveled surface and ensure that all four feet stand on

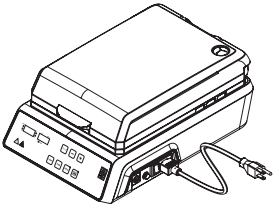
the surface firmly. Avoid installing on a slippery surface or surface prone to vibration.

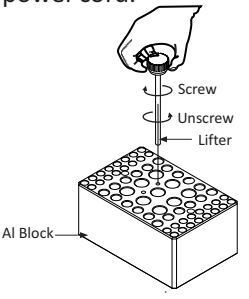
1. Ideal ambient temperature is 20°C ± 5°C; avoid placing the device in direct sunlight.
2. Keep clearance of at least at least 30 cm from all sides to guarantee cooling efficiency.
3. Keep this away from heat or water to avoid sample temperature issues.
4. Do not place the device in such a place that it becomes difficult to operate.

CONNECTING POWER CORD

1. Connect one side of the power cord to the left side of device and other to the power supply as shown in the figure below.
2. Ensure the power switch is OFF while connecting the power cord.







8. REMOVING & INSTALLING BLOCKS

REMOVING BLOCKS

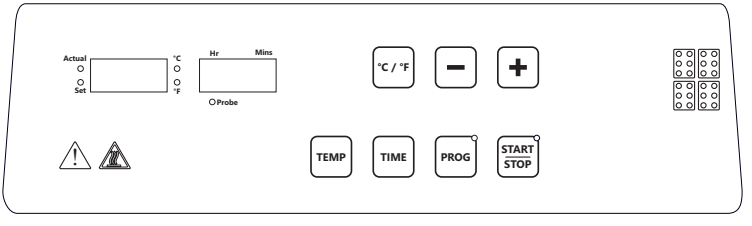
Device blocks can be removed / changed by a simple screwing device in to the blocks for lifting/removing/changing the blocks .

Above image shows the process to remove blocks.

INSTALLING BLOCK

Follow the exact reverse process to insert the blocks back to dry bath. Above image shows the step by step procedure to replace the blocks back in the unit.

9. USER INTERFACE & DISPLAY



CONTROL PANEL OPERATION

Buttons	Function
START/STOP	Start /stop button for operation start and stop.
PROG	Prog button is there to use presaved programs with certain values.
TIME	Time button is there to set Temperature
TEMP	Temperature button is there to set Temperature
°C / °F	C/F button is there to set Temperature unit.
+ −	(+) and (-) button will increase and decrease the value of TEMPERATURE/TIME and Prog command.

All LED will blink as per status of command.

10. OPERATION

SWITCH ON THE DEVICE

After connecting the power cord to left side of the device, switch ON the main power supply & then switch ON the device from the left side. Make sure that tubes are placed properly in the wells.

START / STOP OPERATION

Once all the pre-requisites procedures are done, start the operation by pressing the “start” button after setting all the parameters (Timer & Temperature) which will be indicated by LED. And to stop the operation at any time press “stop” button.

PROGRAM MODE

- User can save 99 pre-defined program for quick access & save time.
- To select the mode press the PROG key longer until the P01 appears on screen. In every program (from P01 to P99) each parameters (temperature & timer) can be changed following above instructions & saved for later usage.
- The different programs can be selected by using +/- keys for incremental or decrement of the program number.
- All program contains some default value which can be change by pressing

TEMPERATURE/TIME button and then (+) and (-) button. Then it will blink thrice and changed value will be saved in that program and we can recall it again any time.

TIME FUNCTION

- To set Time, press TIME key. The timer screen will blink
- To increase the value press "+" key & to reduce values press "-" key. The temperature can be set from rom 1 to 99Hr 59Minutes with Infinity mode - "][".
- Time value will increase by 1 minute by single press and timer will start after reaching the set value. For rapid increment & decrement of the values keep the + & - key pressed until the desired values set on the timer screen. The value will set & saved automatically after blinking of the screen stops.
- Default (factory) setting of Time -][(Infinite) mins.
- During continue operation, to change Time value, press TIME button once and press again for TEMPERATURE, then press + and - key for set desire value.
- On restart, the instrument will start with last set values and mode.

TEMPERATURE FUNCTION

- To set Temperature, press TEMP key. The temperature screen will blink,
- To increase the value press "+" key & to reduce values press "-" key. The temperature can be set from ambient +5 to 120°C.
- Temperature value will increase/decrease by 0.1°C by single press.
- For rapid increment & decrement of the values keep the + & - key pressed until the desired values set on the temperature screen. The value will set & saved automatically after blinking of the screen stops.
- Default (factory) setting of temperature120°C.
- On restart it will start from last set value & mode

Note: Heating function works only when the set temperature is above room temperature

CELSIUS / FAHRENHEIT FUNCTION

The temperature values can be set in either units of CELSIUS or FAHRENHEIT.

- To set the temperature input units press C/F key. Press once to set the unit into Celsius or press again the same key to set the units in Fahrenheit. Which will be indicated by LED depending up on the units selected.
- The Temperature can be set in celsius from ambient +5°C to 120°C & in Fahrenheit from ambient +41F to 248F. Upon restart of the instrument the last selected unit function will be set.

11. CALIBRATION MODE

- The calibration mode comprises of 2 main mode. Firstly, the Plate mode which is to be set in the factory itself. Secondly, the Probe mode is to be set by the user.
- The PLATE CALIBRATION is for calibrating the plate's temperature at a single point. For this firstly set the temperature to 119°C & start the operation at the required time then wait for about 40 minutes. Afterwards, note the temperature of the plate in centre of the plate. To enter the plate mode calibration long press the "Time" button while the operation is on. The Temperature display will start blinking showing the set value. Press the Start button to toggle to the time display. The noted temperature is entered in the time display. Then again press Start to come out of the calibration mode. The operation will resume with the offset value. The time will get reset to the set time. To reset the value, enter the plate calibration mode & long press "°C/°F" button. Calibration value saved after the restart unit.
- The PROBE CALIBRATION is for calibrating the block's temperature at a single point. For this firstly connect the probe to the device & start the operation at the required temperature then wait for about 60 minutes. Afterwards, note the temperature of the block where the prob has been set. To enter the probe mode calibration long press the " Temp" button while the operation is on. The Temperature display will start blinking showing the set value. Press the Start button to toggle to the time display. The noted temperature is entered in the time display. Then again press Start to come out of the calibration mode. The operation will resume with the offset value. The time will get reset to the set time. To reset the value, enter the plate calibration mode & long press "°C/°F" button. Calibration value saved after the restart unit.

Note: In Probe calibration for perfect result it is suggested to calibrate twice.

12. CLEANING & MAINTENANCE

As the dry bath has no mechanical moving part, it requires very little maintenance and cleaning

- Cleaning should be done with mild detergent and water
- Unplug the unit from its power source before any cleanup process
- In case of any spillage allow the device to cool before any cleanup or removal of blocks.
- The holes of the blocks should be regularly cleaned with the damp cloth to ensure the tube be well contacted with the wall to have good heat conduction.

- Use a slight Damp cloth for cleaning process.
- Wipe the exterior of the machine with a Damp cloth.
- Cover the samples with the device lid over the block, this cover provides thermal insulation and reduces the water condensation.

Note: Do not service or repair the device without manufacturer consultation under or after warranty, user is solely responsible for decontamination of the unit in case of spillage of hazardous material.

13. TROUBLESHOOTING

Error code	Cause	Effect	Solution
ER04	Heating control fail	Heating off with heater connection cut off	Plug in PT 1000 contact thermometer/ temperature sensor replace faulty connecting cable, plug or contact thermometer
ER05	PT-100 or PT 1000 sensor fail	Heating off	Switch off device / change PT-100 or 1000 only to be carried out by authorized service personal
ER06	Heating not progress	Heating off	switch off device check whether PT -1000 is not in block only to be carried out by authorized service personal

14. WARRANTY STATEMENT

This product is warranted to be free from defects in material and workmanship. Your product will be duly repaired upon prompt notification in compliance with the following conditions:

This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in this instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This warranty does not cover any incidental or consequential damages, commercial loss or any other damages from the use of this product.

The warranty is invalidated by any non-factory modification, which will immediately terminate all liabilities on us for the products or damages caused by its use. The customer shall be responsible for the product or use of products as well as any supervision required for safety. If requested the products must be returned to the distributor in well packed and insured manner and all shipping charges must be paid.

Note: *Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. This warranty is given expressly in lieu of all other warranties, expressed or implied.*

The purchaser agrees that there is no warranty of merchantability or of fitness for any intended purpose and there are no other remedies or warranties, implied, which extend beyond the description on the face of the agreement. This warranty is only applicable to the original purchaser.

Products received without proper authorization will not be processed for warranty or service. All items returned for service should be sent with postage prepaid in the original packaging or another suitable packaging, padded to avoid damage. We will not be responsible for damage incurred by improper packaging.

Note*: This warranty is valid only if the warranty is registered with the supplier within 30 days from the date of purchase.*

For details regarding the warranty period, please refer to the warranty card provided with the product.

15. PRODUCT DISPOSAL

In case the product is to be disposed of, the relevant legal regulations are to be observed.

Information on the disposal of electrical and electronic devices in the European Community.

The disposal of electrical devices is regulated within the European Community by national regulations based on EU Directive 2012/19/EU on waste electrical and electronics equipment (WEEE). According to these regulations, any devices supplied after 13.06.05 in the business to a business sphere, to which this product is assigned, may no longer be disposed of in municipal or domestic waste. They are marked with the following symbol to indicate this.

As disposal regulations within the EU may vary from country to country please contact your supplier if necessary.

For your reference, make a note of the serial number, date of purchase and supplier here.	
Serial No.	Purchase Date
Supplier	

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