

NEUATION

TECHNOLOGIES



iTHERM D150-2

PRODUCT USER MANUAL

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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 reactions/kinetics, 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 its 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.
- 2 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 Adaptor- Input Voltage:
Output Voltage: 230V $\overline{\sim}$ 1.08 A
- Product user manual & warranty card

- Aluminum blocks attachments

5. TECHNICAL SPECIFICATIONS

Temperature Range	Ambient +5 to 120°C
Temperature Uniformity	± 0.4°C
Temperature Stability	± 0.5°C
Set-up Block material	Aluminium
Number of Blocks	2 Nos
Display	Digital
Programmable Mode	Yes
Timer	1min - 99 hr 59mins & infinite
Dimension	325 x 202 x 115 mm
Input Voltage	230V $\overline{\sim}$ 1.08 A
Power Consumption	250 W

6. SAFETY PRECAUTIONS

- 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.
- Never move the instrument while the equipment is under operation.
- 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 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 adapter given with the unit is designed to be used for this particular unit. Do not use any other power adapter.
- 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 at least 2 years for warranty purposes.

LOCATION & MOUNTING

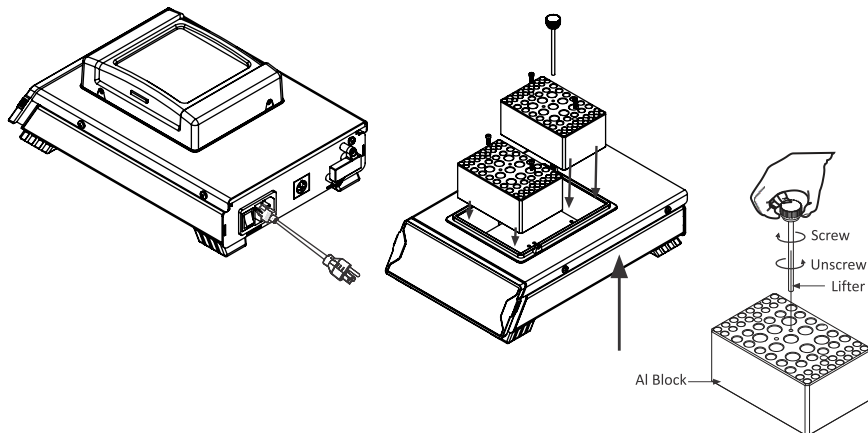
Place the device on a flat and leveled surface and ensure that all four feet stand on the surface firmly. Avoid installing on a slippery surface or surface prone to vibration.

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 ADAPTOR

1. Connect one side of the power adaptor to the rear 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 adaptor.



8. REMOVING & INSTALLING BLOCKS

REMOVING BLOCKS

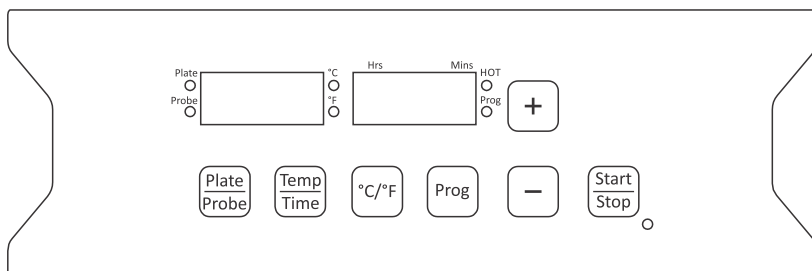
Device blocks can be removed / changed by a simple screwing device in to the blocks for lifting/removing/changing the blocks.

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
	Plate/Probe button is there to get Temperature value from Plate/Block and for calibration of temperature.
	Temperature/Time button is there to set Temperature/Time, first display is for Temperature and second display is for Time.
	C/F button is there to set Temperature unit.
	Prog button is there to use presaved programs with certain values.
 	(+) and (-) button will increase and decrease the value of TEMPERATURE/TIME and Prog command.
	Start /stop button for operation start and stop.

All LED will blink as per status of command.

10. OPERATION

SWITCH ON THE DEVICE

After connecting the power adapter to rear side of the device, switch ON the main power supply & then switch ON the device from the rear 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.

TIME/TEMPERATURE FUNCTION

To set parameters in Temperature & timer, press the key:

- To set Temperature, press the 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 temperature 120°C.

- To set Timer, press the key again. The timer screen will blink, to increase the value press “+” key & to reduce values press “-” key. The temperature can be set from 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.

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 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.

EXTERNAL TEMPERATURE SENSOR

The instrument can be set either in plate mode or probe mode which is an external temperature sensor (PT 1000 probe). To select either of the heat detection mode press PLATE/PROBE key which will be indicated by LED on the control panel. Plate mode will display temperature of Heating Plate&Probe mode will display temperature of Heating Blocks through external sensor probe.

Hot Indication LED will on when Plate temp. reaches 50°C (Yellow LED)

PROG 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.

11. CALIBRATION MODE

- There are 3 modes 2 for calibration and last one is for reset.
- **Cal 1** is for single point calibration which is for plate. For calibrating, switch off

the unit, press Plate/Probe button simultaneous switch on the unit and release button when it shows Cal. for selection CAL1, use +/- button. select Cal 1 then press start it shows PLT on display one and blank on second display. After that enter the set temperature on display one then press start button and it will automatically shift to second display then enter the reference temperature value on second display. Use +/-button for adjust temperature value.

Ex. Set value 60.0 c , reference value 61.2 then press enter it will shows same value on both display. ex. display 1= 61.2 and display 2 = 61.2 then is shows CAL dONE. after the whole process restart unit.

- **Cal 2** is for single point calibration which is for probe. For calibrating, switch off the unit, press Plate/Probe button simultaneous switch on the unit and release button when it shows Cal. for selection CAL2, use +/- button. Select Cal 2 then press start it shows Prob on display one and blank on second display. After that enter the set temperature on display one then press start button and it will automatically shift to second display then enter the reference temperature value on second display. Use +/-button for adjust temperature value.

Ex. Set value 60.0 c , reference value 61.2 then press enter it will shows same value on both display. ex. display 1= 61.2 and display 2 = 61.2 then is shows CAL dONE. after the whole process restart unit.

- We can change the value by using (+) and (-) buttons.
- After setting the value press start button to save as original value.
- Reset Mode is there for clearing values to zero from all calibration mode.

12. TROUBLESHOOTING

Error code	Cause	Effect	Solution
No Display	No main power connection	No Heating	Check power connection properly plug-in of mains cable at both ends
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-1000 or PT 1000 sensor fail	Heating off	Switch off device / change PT-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

No Display	PT-1000 not connected properly to the unit	No Heating	Check PT-1000 connection properly plug-in at connectors end
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13. WARRANTY STATEMENT

This product is warranted to be free from defects in material and workmanship for a period of two (2) years from the date of purchase. 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.

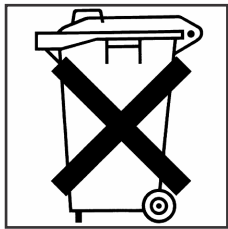
Note: *This warranty is valid only if the warranty is registered with the supplier within 30 days from the date of purchase.*

14. 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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