

# MTP-TB "Tube Warmer"

## User Manual



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## 1. General information

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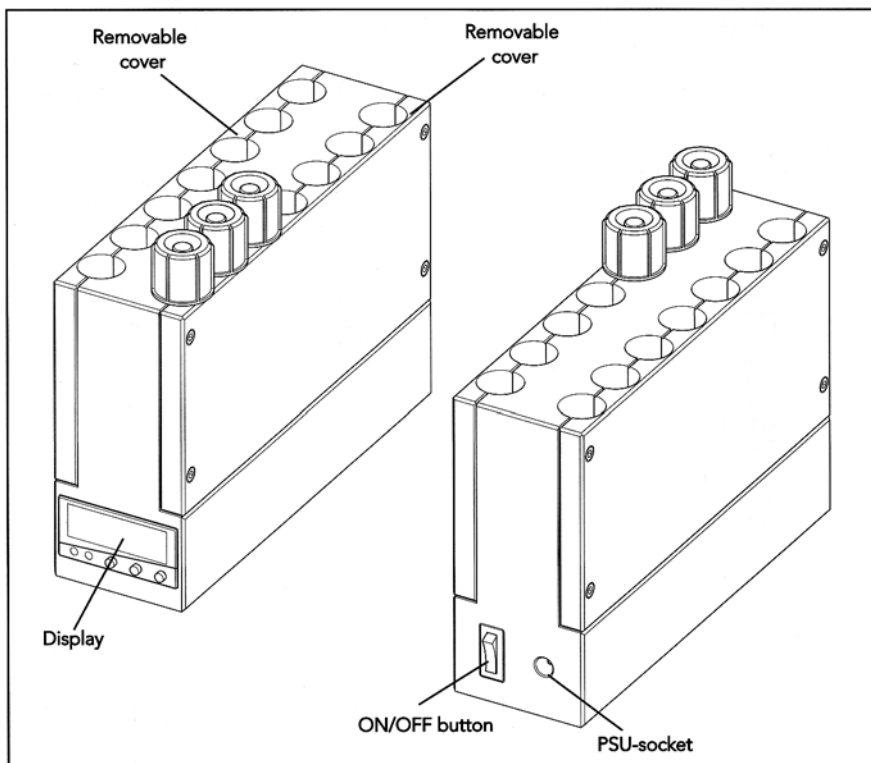
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This instrument is constructed to comply with IEC requirements.

## 2. Product Overview



### 3. Unpacking the Tube Warmer MTP-TB

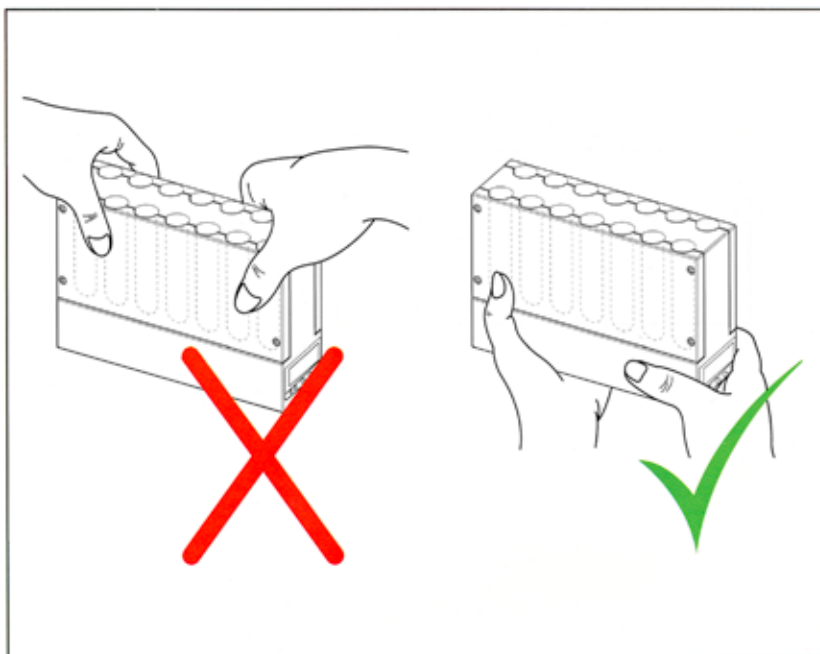
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- Unpack the equipment.
- Check the packing list to ensure all accessories are there.
- Examine the packing material carefully for separately packed items.
- Check the Tube Warmer MTP-TB for external surface damage.
- Check that the display is not broken or damaged.

### 4. Attention

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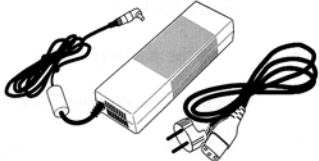
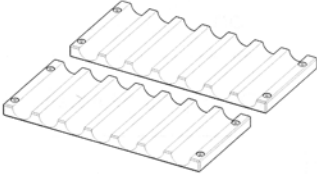
Do NOT carry the Tube Warmer MTP-TB by the polycarbonate side panels




## 5. Accessories

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### 5.1 Standard accessories

<p>24 volts main adapter (PSU) and mains cable</p> <p>Item number: 9001701802</p>	
<p>Side panels</p> <p>Item number: 9001701803 (2 off)</p>	

### 5.2 Optional equipment

<p>14 ml round bottom tube</p> <p>Nunc item number: 1050268</p> <p>Falcon item number: 2057</p>	
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## 6. User Manual

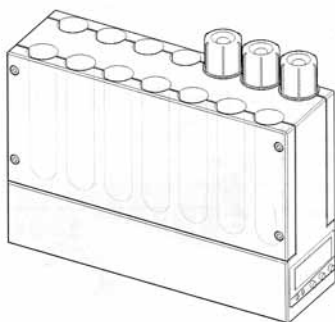
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### 6.1 Definition of use

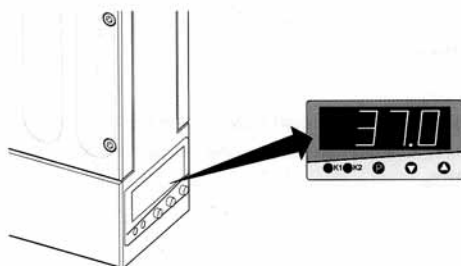
The Tube Warmer MTP-TB is designed to warm up and maintain test tubes at a constant temperature.

### 6.2 General description

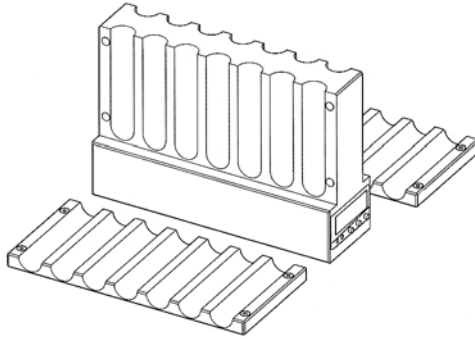
The unit is able to hold up to 14 test tubes, type 14 ml round bottom tubes, 7 on each side. Sterile test tubes are placed in one of the 14 slots on the unit to maintain a constant temperature or to warm up with the unit.



The 4 character green LED display will indicate the current temperature of the Tube Warmer MTP-TB. Adjustments to the temperature can be made using the up and down arrow keys.



The sides of the Tube Warmer MTP-TB can be removed for sterilising and general cleaning.



### 6.3 Construction of the Tube Warmer MTP-TB

The unit is constructed of an anodised Aluminium casing containing the internal control, power input and heating system for the tubes.

A removable polycarbonate front on either side of the unit ensures that the tube remain in place whilst in use. The unit must be connected to mains power, for normal operation mode.

The casing design is also made to retain and maintain the heat to an even level and avoid high fluctuations in temperature.

Two polycarbonate front panels are magnetically fixed to the front, for visual indication of filled tubes and removable for ease of cleaning.

### 6.4 Placing instruments

Place the Tube Warmer MTP-TB on a flat surface, away from heat and direct sunlight.

### 6.5 Power supply

Put the power supply in connector on the back of the Tube Warmer MTP-TB. Then connect the power supply to power mains.

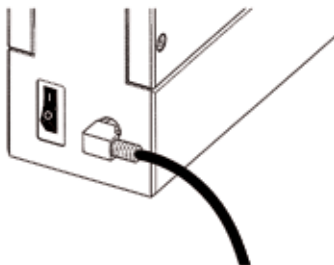
*Note*                      *Use only the power cord supplied with the Tube Warmer MTP-TB, un-approved power supplies may damage the unit and invalidate the warranty.*

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## 6.6 Start up

Press on/off button on the back of the Tube Warmer MTP-TB



The display and lights K1 (lec) and K2 (led) will start flashing, after 3 seconds the actual temperature will appear on the display. At this point the Tube Warmer MTP-TB will automatically begin to warm up to the set point temperature. This is indicated by the led K2 flashing.



The temperature will reach 36-37° degrees within 8 minutes, but true stabilisation of the temperature will take approximately 60 minutes. When the temperature is stabilised, the Tube Warmer MTP-TB is ready for use.

**Caution**      *It is important at this point that none of the settings should be changed.*

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**Note**            *After each use, remove the power supply from the connection at the rear side.*

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## 7. User maintenance

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### 7.1 Cleaning

Main body of Tube Warmer MTP-TB is to be cleaned with soft lint free cloth soaked with hot water. (add mildly acidic, neutral or mildly alkaline detergents, if necessary).

**Caution**      *Do not use any abrasive cleaning agents or high pressure cleaners and DO NOT autoclave.*

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**Note**            *The Tube Warmer MTP-TB has limited resistance to organic solvents (eg. Sprits, benzol, etc.)*

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The Polycarbonate removable side panels are to be cleaned with approved (for IVF) cleaning and decontamination material, but not abrasive cleaning material.

**Caution**      *The Polycarbonate side panels can NOT be Autoclaved*

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### 7.2 Technical support and guarantee

In case of malfunction contact LAB SERVICE SRL customer support for service support.

**Caution**      *Do not open the Tube Warmer MTP-TB or remove the identification label, this will invalidate the guarantee.*


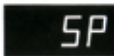




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**Note**            *The Tube Warmer MTP-TB is guaranteed for 24 month from the date of purchase.*

## 8. Changing the Set point

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Ensure the unit is switched on and the current temperature is indicated on the display.

Action	Button	Display
Press		
Programmed temperature ie. 36.5		
To change Values press	 	Changes to value required
To save exit press buttons	 	Current temperature ie 37.0

*Note* When in the settings menu if a button is not pressed within 5 sec. the menu will jump back to the normal operational display (with temp. 37.0)

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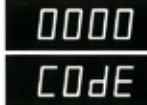




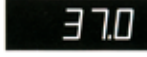
## 9. Calibration

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To Calibrate the Tube Warmer MTP-TB it is important to put in the password to enable critical data change.




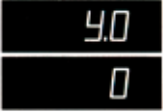

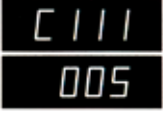

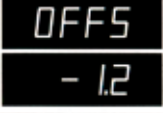


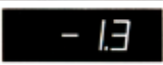


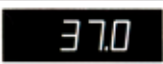
### 9.1 Password Entry

In the normal operational mode (Display temp. 37.0)









Action	Button	Display
Press and hold for 5 seconds (Display will flash between)	 	
By using arrow up and down type in 0000	 	
Exit by pressing for a few seconds (Back to normal display mode ie. 37.0)		
The unit is now ready for accessing the Calibration menu		

## 9.2 Temperature calibration

The following steps are followed for temperature calibration.

Action	Button	Display
Press and hold for 5 seconds (Display will flash between)		
Press Slowly 6 times (Display will flash between)		
Press and hold for 5 seconds (Display will flash between)		
Press slowly 11 times (Display will flash between)		
By using arrow up and down type in new off set value	 	
Press (Back to normal display mode ie. 37.0)	 	



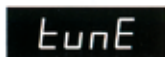



### 9.3 Re-Enter Password protection

Action	Button	Display
Press and hold for 5 seconds (Display will flash between)	 	
By using arrow up and down type in new off set value	 	
Confirm by pressing (Back to normal display mode ie. 37.0)		
The unit is now return to the normal display		

### 9.4 Auto Tune procedure

This procedure is only used when the Tube Warmer MTP-TB is first powered up from cold.



Externally (with another thermometer) measure the temperature of the unit and follow the Auto tune procedure below.

Action	Button	Display
Press and hold for 5 seconds	 	
To exit press (Back to normal display mode ie. 37.0)	 	
The unit is now return to the normal display		

## 10. Standard settings Value Parameters

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This information is only for setting up the controller should it have to be reset due to failure, the data is not for general user setting.

Display Text	Value Number
Pb	0.3
DT	4
RT	19
CY.1	4.0
HIS	1.0
Y.0	0
Y1	100
Y2	-100
DF	1.4
C111	005
C112	1
C113	10
C114	7
C115	0
C116	0
C117	0
C118	3
C120	0
SPL	0
SPH	50
OFF.S	-2.5
AL	999.9
HIST	1
TUNE	<div>   2 seconds </div>

## 11. Technical data

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### 11.1 Dimensions

Tube Warmer MTP-TB - External dimensions	Height 119 mm - Width 52 mm - Length 174 mm
Tube Warmer MTP-TB - Weight	1.5 kg
Tubes	Height 95 mm - Diameter 18 mm
Power Supply cable lenght - to Tube Warmer MTP-TB	1600 mm approximate
Power Supply cable lenght - to External	1900 mm approximate

### 11.2 Power Supply

The unit is supplied with a Switch mode regulated power supply

AC input:	100-240 V AC 50/60 Hz
DC output: 7 output selections:	15/16 V DC 8.5 A 18/19 V DC 8 A 20 V DC 7.5 A 22 V DC 6.5 A 24 V DC 6 A

CE CLASSIFICATION: I class non-sterile without measure functions

CND CLASSIFICATION: Accessories for clinical use not otherwise classified

INTENDED USE: temperature control on accessories

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