

PHCbi

Operating Instructions

Heated Incubator

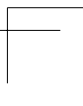
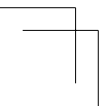
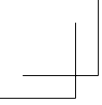
MIR-H163 MIR-H263 Series



MIR-H263

Please read the operating instructions carefully before using this product, and keep the operating instructions for future use.

See page 26 for all model numbers.



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INTRODUCTION

- Read the operating instructions carefully before using the Product and follow the instructions for safety operation.
- PHC Corporation disavows any responsibility for safety if the Product is used for other than the intended use or used with any procedures other than those given in the operating instructions.
- Keep the operating instructions in a suitable place so that it can be referred to as necessary.
- The contents of the operating instructions are subject to change without notice for improvement of performance or functions.
- Contact our sales representative or agent if any page of the operating instructions is lost or the page order is incorrect.
- Contact our sales representative or agent if any point in the operating instructions is unclear or if there are any inaccuracies.
- No part of the operating instructions may be reproduced in any form without the expressed written permission of PHC Corporation.

IMPORTANT NOTICE

PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents of the product.

PRECAUTIONS FOR SAFE OPERATION

It is imperative that the user complies with the operating instructions as it contains important safety advice.

Items and procedures are described so that you can use this unit correctly and safely. If the precautions advised are followed, this will prevent possible injury to the user and any other person.

Precautions are illustrated in the following way:




WARNING

Failure to observe WARNING signs could result in a hazard to personnel possibly resulting in serious injury or death.


CAUTION

Failure to observe CAUTION signs could result in injury to personnel and damage to the unit and associated property.

Symbol shows;















-  This symbol means caution.
-  This symbol means an action is prohibited.
-  This symbol means an instruction must be followed.

Be sure to keep the operating instructions in a place accessible to users of this unit.

< Label on the unit >
 This mark is labeled on the cover in which the electrical components of high voltage are enclosed to prevent the electric shock.
The cover should be removed by a qualified engineer or a service personnel only.















PRECAUTIONS FOR SAFE OPERATION

WARNING

-  **Do not use the unit outdoors.** Current leakage or electric shock may result if the unit is exposed to rain water.
-  **Only qualified engineers or service personnel should install the unit.** The installation by unqualified personnel may cause electric shock or fire.
-  **Install the unit on a sturdy floor and take an adequate precaution to prevent the unit from turning over.** If the floor is not strong enough or the installation site is not adequate, this may result in injury from the unit falling or tipping over.
-  **Never install the unit in a humid place or a place where it is likely to be splashed by water.** Deterioration of the insulation may result which could cause current leakage or electric shock.
-  **Never install the unit in a flammable or volatile location.** This may cause explosion or fire.
-  **Never install the unit where acid or corrosive gases are present** as current leakage or electric shock may result due to corrosion.
-  **Always ground (earth) the unit to prevent electric shock.** If the power supply outlet is not grounded, it will be necessary to install a ground by qualified engineers.
-  **Never ground the unit through a gas pipe, water main, telephone line or lightning rod.** Such grounding may cause electric shock in the case of an incomplete circuit.
-  **Connect the unit to a power source as indicated on the rating label attached to the unit.** Use of any other voltage or frequency other than that on the rating label may cause fire or electric shock.
-  **Never store volatile or flammable substances** in this unit if the container cannot be sealed. These may cause explosion or fire.
-  **Do not insert metal objects such as a pin or a wire into any vent, gap or any outlet on the unit.** This may cause electric shock or injury by accidental contact with moving parts.
-  **Use this unit in safe area when treating the poison, harmful or radiate articles.** Improper use may cause bad effect on your health or environment.
-  **Turn off the power switch (if provided) and disconnect the power supply to the unit prior to any repair or maintenance** of the unit in order to prevent electric shock or injury.
-  **Do not touch any electrical parts (such as power supply plug) or operate switches with a wet hand.** This may cause electric shock.








PRECAUTIONS FOR SAFE OPERATION

WARNING

-  **Ensure you do not inhale or consume medication or aerosols** from around the unit at the time of maintenance. These may be harmful to your health.
-  **Never splash water directly onto the unit** as this may cause electric shock or short circuit.
-  **Never put containers with liquid on the unit** as this may cause electric shock or short circuit when the liquid is spilled.
-  **Never bind, process, or step on the power supply cord, or never damage or break the power supply plug.** A broken supply cord or plug may cause fire or electric shock.
-  **Do not use the supply cord if its plug is loose.** Such supply cord may cause fire or electric shock.
-  **Never disassemble, repair, or modify the unit yourself.** Any such work carried out by an unauthorized person may result in fire, or electric shock or injury due to a malfunction.
-  **Disconnect the power supply plug if there is something wrong with the unit.** Continued abnormal operation may cause electric shock or fire.
-  **When removing the plug from the power supply outlet, grip the power supply plug, not the cord.** Pulling the cord may result in electric shock or fire by short circuit.
-  **Disconnect the power supply plug** before moving the unit. Take care not to damage the power cord. A damaged cord may cause electric shock or fire.
-  **Disconnect the power plug when the unit is not used for long periods.** Keeping the connection may cause electric shock, current leakage, or fire due to the deterioration of insulation.
-  **If the unit is to be stored unused in an unsupervised area for an extended period, ensure that children do not have access and that doors cannot be closed completely.**
-  **The disposal of the unit should be accomplished by appropriate personnel.** Remove doors to prevent accidents such as suffocation.
-  **Do not put the packing plastic bag within reach of children** as suffocation may result.
-  **Do not place this unit in a location where it is difficult to disconnect the power supply plug.** Failure to disconnect the power supply plug may cause fire in the event of a problem or malfunction.

PRECAUTIONS FOR SAFE OPERATION

CAUTION

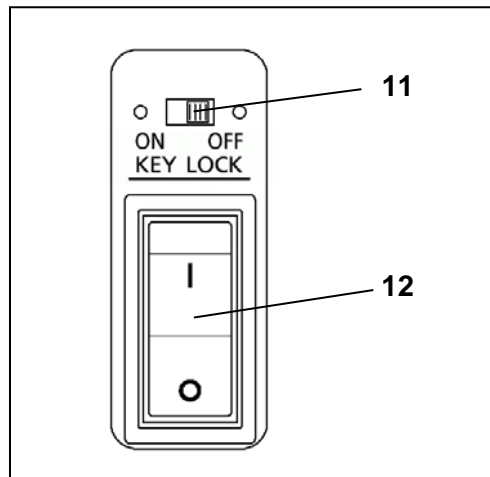
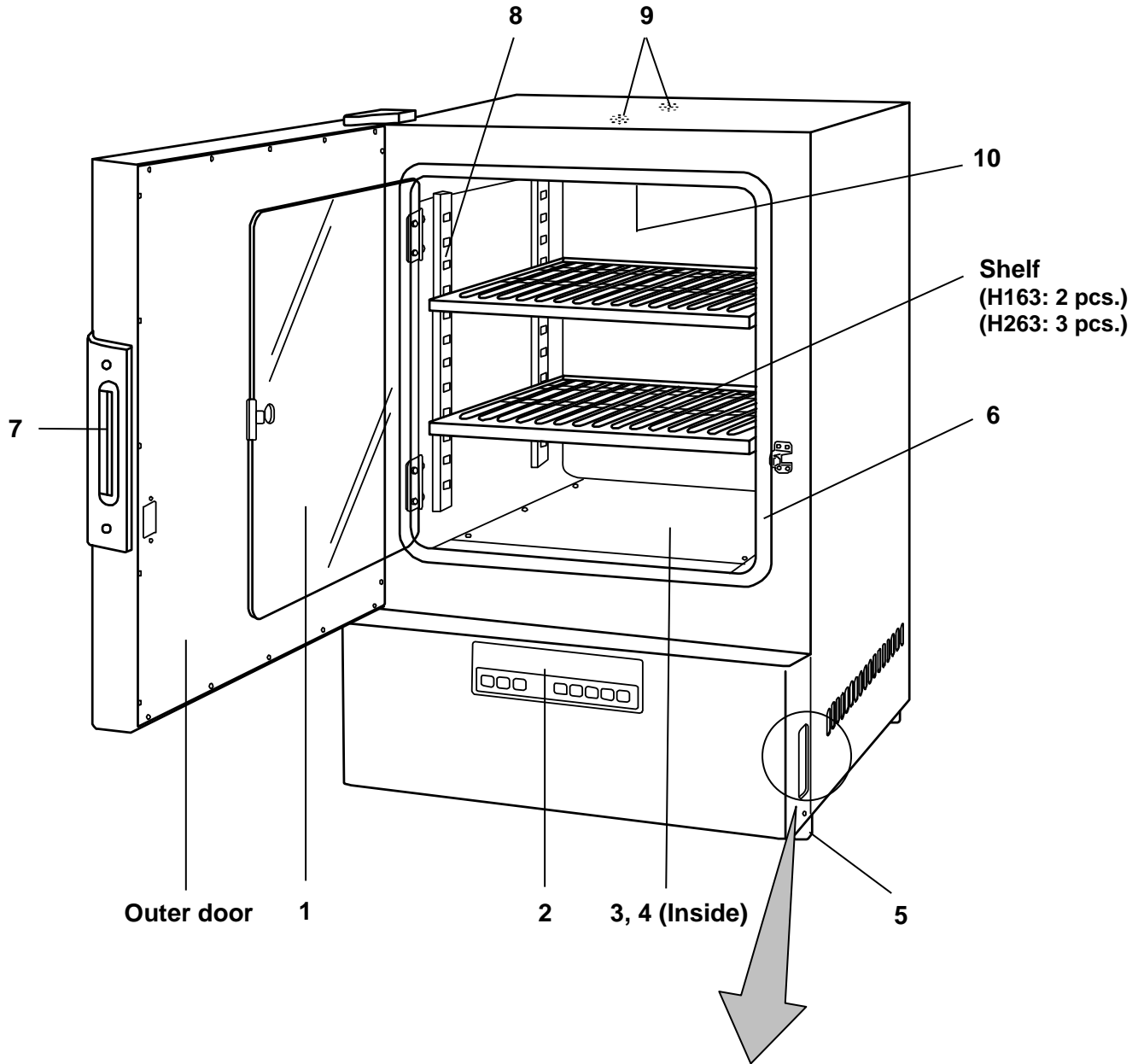
-  This unit must be plugged into a dedicated circuit protected by branch circuit breaker.
-  Use a dedicated power source as indicated on the rating label attached to the unit. A multiple-tap may cause fire resulting from abnormal heating.
-  **Never store corrosive substances such as acid or alkali** in this unit if the container cannot be sealed. These may cause corrosion of inner components or electric parts.
-  **Check the setting when starting up of operation after power failure or turning off of power switch.** The stored items may be damaged due to the change of setting.
-  **Be careful not to tip over the unit** during movement to prevent damage or injury.
-  **Prepare a safety check sheet** when you request any repair or maintenance for the safety of service personnel.
-  **Burn hazard.** Do not touch the hot surface.

ENVIRONMENTAL CONDITIONS

This equipment is designed to be safe at least under the following conditions (based on the IEC-61010-1):

- Indoor use;
- Altitude up to 2000 m;
- Temperature 5 °C to 40 °C
- Maximum relative humidity 80 % for temperature up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C;
- Mains supply voltage fluctuations up to $\pm 10\%$ of the nominal voltage;
- Transient overvoltages up to the levels of OVERVOLTAGE CATEGORY II;
- Temporary OVERVOLTAGES occurring on the mains supply;
- Applicable pollution degree of the intended environment (POLLUTION DEGREE 2 in most cases);

INCUBATOR COMPONENTS



INCUBATOR COMPONENTS

- 1. Inner door:** It is made of tempered glass. However, do not force the door.
- 2. Control panel:** Refer to page 10.
- 3. Separation plate:** Do not place objects directly on the plate. Culture containers made of resin may deform with heat.
- 4. Heater box (inside):** The heater is attached under separation plate.
- 5. Leveling foot:** Can be adjusted by screws. Turn the screw counterclockwise to shorten the length of the leveling foot.
- 6. Gasket:** Be careful not to scratch the gasket.
- 7. Handle:** Pull the knob of inside of the handle to open the door.
- 8. Shelf support:** This can be adjusted to change the height.
- 9. Exhaust air vent:** Do not put anything on this unit as an exhaust air vent may become hot during operation. Make sure that the exhaust air vent is not blocked so that a temperature is controlled correctly.
- 10. Temperature sensor (upper surface of the chamber):** Be careful not to allow objects to touch or scratch the sensor.
- 11. Key lock switch:** This switch is to prevent a set value from being changed by accidentally pressing a key on the control panel. Turn on this switch to set the key-lock so that the set value can not be changed.
Note: Turn off this switch when inputting the set value.
- 12. Main power switch with circuit breaker:** Main switch for all power. When the operation of the unit is stopped by this circuit breaker, contact our sales representative or agent after disconnected the power supply plug.

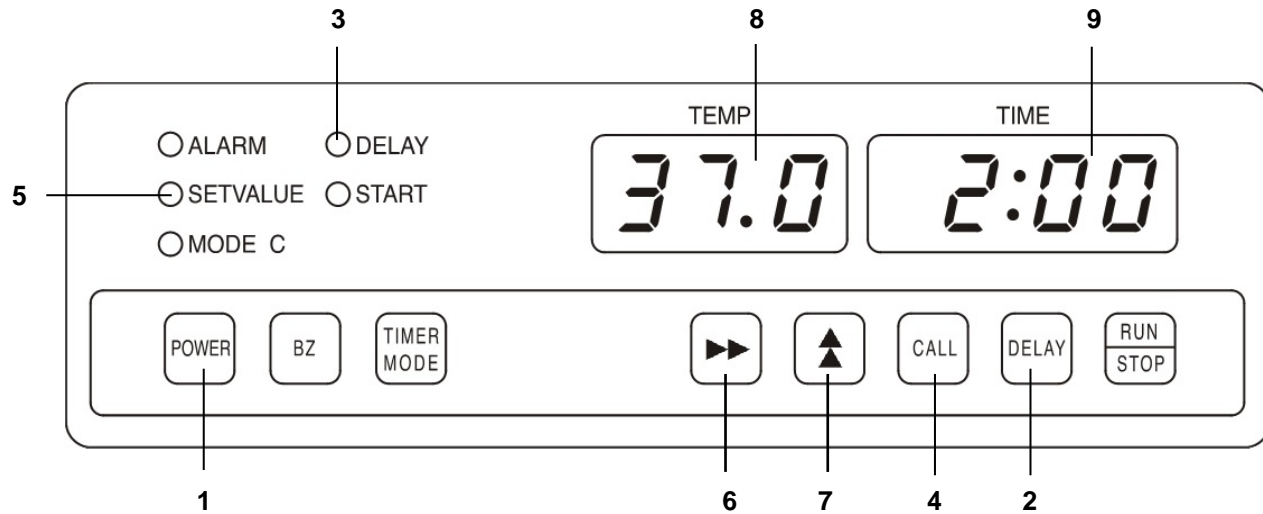


CAUTION

Do not touch an air vent during operation, as this may cause burn injury.

INCUBATOR COMPONENTS

Control panel and keypad



1. Power switch (POWER): Power switch of the control panel.

2. Delay timer key (DELAY): This key is to set a delay timer which controls the time from when the run/stop key (RUN/STOP) is pressed till when the unit starts an operation. Refer to page 14 to 17.

3. Delay timer lamp (DELAY): This lamp lights while a delay timer is being set.

4. Call key (CALL):

(During stop operation) A set value lamp (SETVALUE) lights and a setting mode is entered by pressing this key. A temperature and an operation timer can be set (Refer to page 14 to 17).

(During operation) A set value lamp (SETVALUE) lights and a set value display mode is entered by pressing this key. A setting temperature and a setting time of operation timer are displayed (Table 1 on next page). By re-pressing this key, the set value lamp goes out and the mode returns to normal. In a set value display mode, a set value cannot be changed.

5. Set value lamp (SETVALUE): In a setting mode or when a set value display mode is entered by pressing a call key during operation, this lamp lights.

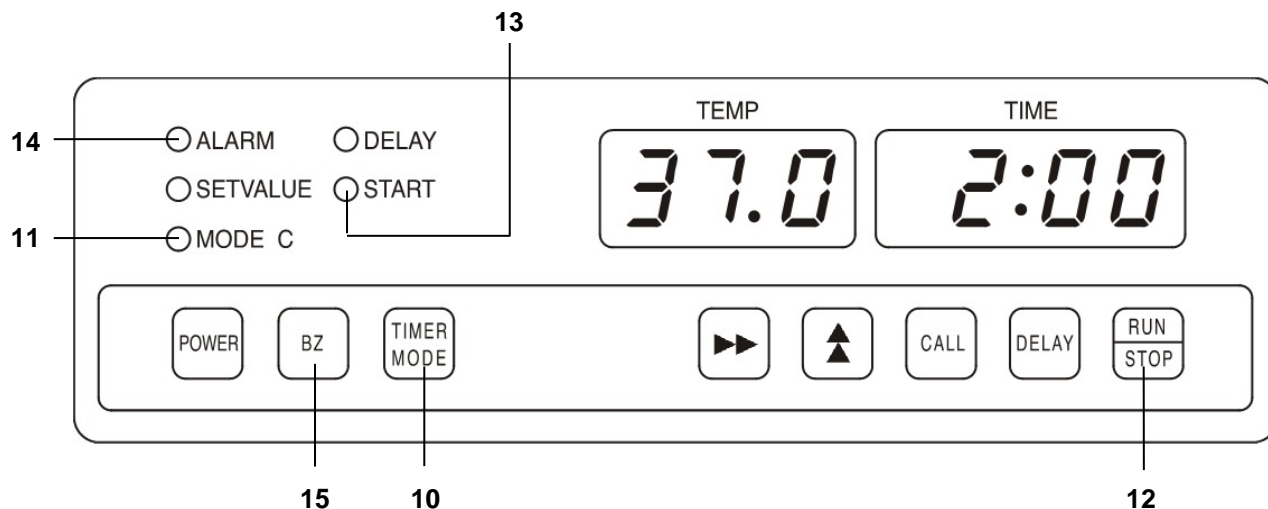
6. Digit shift key (▶▶): In setting mode, press this key to shift a digit to be set. Also, press this key to shift a digit to be set from the digital temperature indicator (TEMP) to the digital timer indicator (TIME).

7. Numerical value shift key (▲): Press this key to shift a numerical value in setting mode.

8. Digital temperature indicator (TEMP): Refer to Table 1 on next page.

9. Digital timer indicator (TIME): Refer to Table 1 on next page.

INCUBATOR COMPONENTS



10. Timer mode select key (TIMER MODE): This key is to switch a normal mode and a timer mode C.
 Normal mode: The operation is finished when a set time of operation timer is expired.
 Timer mode C: The operation continues with a set temperature even when a set time of operation timer is expired.
 Refer to page 15.

11. Timer mode C lamp (MODE C): This lamp lights when a timer mode C is active.

12. Run/Stop key (RUN/STOP): In a setting mode, press this key to start operation after setting. During operation, press this key to finish operation (Refer to page 14 to 17).

Note: Except for a setting mode, an operation cannot be started by pressing this key.

13. Start lamp (START): This lamp lights when the unit is operating.

Note: This lamp lights when a delay timer is being set or when a continuous operation is being set after an operation timer is finished.

14. Alarm lamp (ALARM): This lamp lights when the unit is in warning condition.

15. Alarm buzzer stop key (BZ): Press this key to silence the buzzer in the event that the alarm operates and the buzzer sounds. Press it once again to reactive the buzzer.

Table 1: Display in the digital temperature indicator and digital timer indicator.

		Set value lamp	Digital temperature Indicator (TEMP)	Digital timer indicator (TIME)
During stop operation		OFF	Present temperature	—
During operation	When a delay timer is being set.	OFF	Present temperature	Remaining time of delay timer
		ON	Set temperature	Set time of operation timer*
	When an operation time is being set.	OFF	Present temperature	Remaining time of operation timer*
		ON	Set temperature	Set time of operation timer*
	(In case of Timer mode C) When a continuous operation is being set after a operation timer is finished.	OFF	Present temperature	“--:--“
		ON	Set temperature	Set time of operation timer*

*: When a continuous operation is being set in a operation timer, “--:--“ is displayed.

INSTALLATION SITE

To operate this unit properly and to obtain maximum performance, install the unit in a location with the following conditions:

■ **A location not subjected to direct sunlight**

Do not install the unit under direct sunlight. Installation in a place with direct sunlight cannot obtain the intended performance.

■ **A location with adequate ventilation**

Leave at least 30 cm around the unit (at least 20 cm above the unit) for ventilation. Poor ventilation will result in a reduction of the performance.

■ **A location away from heat generating sources**

Avoid installing the unit near heat-emitting appliances such as a heater or a boiler, etc. Heat can decrease the intended performance of the unit.

■ **A location with a sturdy and level floor**

Always install the unit on a sturdy and level floor. The uneven floor or tilted installation may cause failure or injury. Install the unit in stable condition to avoid the vibration or noise. Unstable condition may cause vibration or noise.

 **WARNING**

Install the unit on a sturdy floor. If the floor is not strong enough or the installation site is not adequate, this may result in injury from the unit falling or tipping over.

Select a level and sturdy floor for installation. This precaution will prevent the unit from tipping. Improper installation may result in water spillage or injury from the unit tipping over.

■ **A location not prone to high humidity**

Install the unit in the ambient of 80% R.H. or less humidity. Installation under high humidity may cause current leakage or electric shock.

 **WARNING**

Do not use the unit outdoors. Current leakage or electric shock may result if the unit is exposed to rain water.

Never install the unit in a humid place or a place where it is likely to be splashed by water. Deterioration of the insulation may result which could cause current leakage or electric shock.

■ **A location without flammable or corrosive gas**

Never install the unit in a flammable or volatile location. This may cause explosion or fire or may result in the current leakage or electric shock by the corrosion of the electrical components.

INSTALLATION

1. Remove the packaging materials and tapes

Remove all transportation packaging materials and tapes. Open the doors and ventilate the unit. If the outside panels are dirty, clean them with a neutral detergent and wipe it up with a wet cloth.

Note:

Remove the cable tie banding the power supply cord. Prolonged banding may cause the corrosion of the cord coating.

2. Adjust the leveling feet

Extend the leveling feet by rotating them counterclockwise so that they contact with a floor or a bench. Ensure the unit is level.

3. Ground (earth)

WARNING

Use a power supply outlet with ground (earth) to prevent electric shock. If the power supply outlet is not grounded, it is necessary to install a ground by qualified engineers.

Never ground the unit through a gas pipe, water main, telephone line or lightning rod. Such grounding may cause electric shock in the case of an incomplete circuit.

PRELIMINARY RUN

When using the unit for the first time after purchasing, operate the unit without any object inside it.

1. Install the racks in the chamber.
2. Set the temperature at 80 °C and operate the unit for 20 minutes.
3. Leave the unit until the chamber temperature is cool enough.
4. Ventilate the room when opening the chamber door as the smoke with a strong odor is exhausted.
5. Keep the chamber door open for a while until the odor is eliminated.

Note:

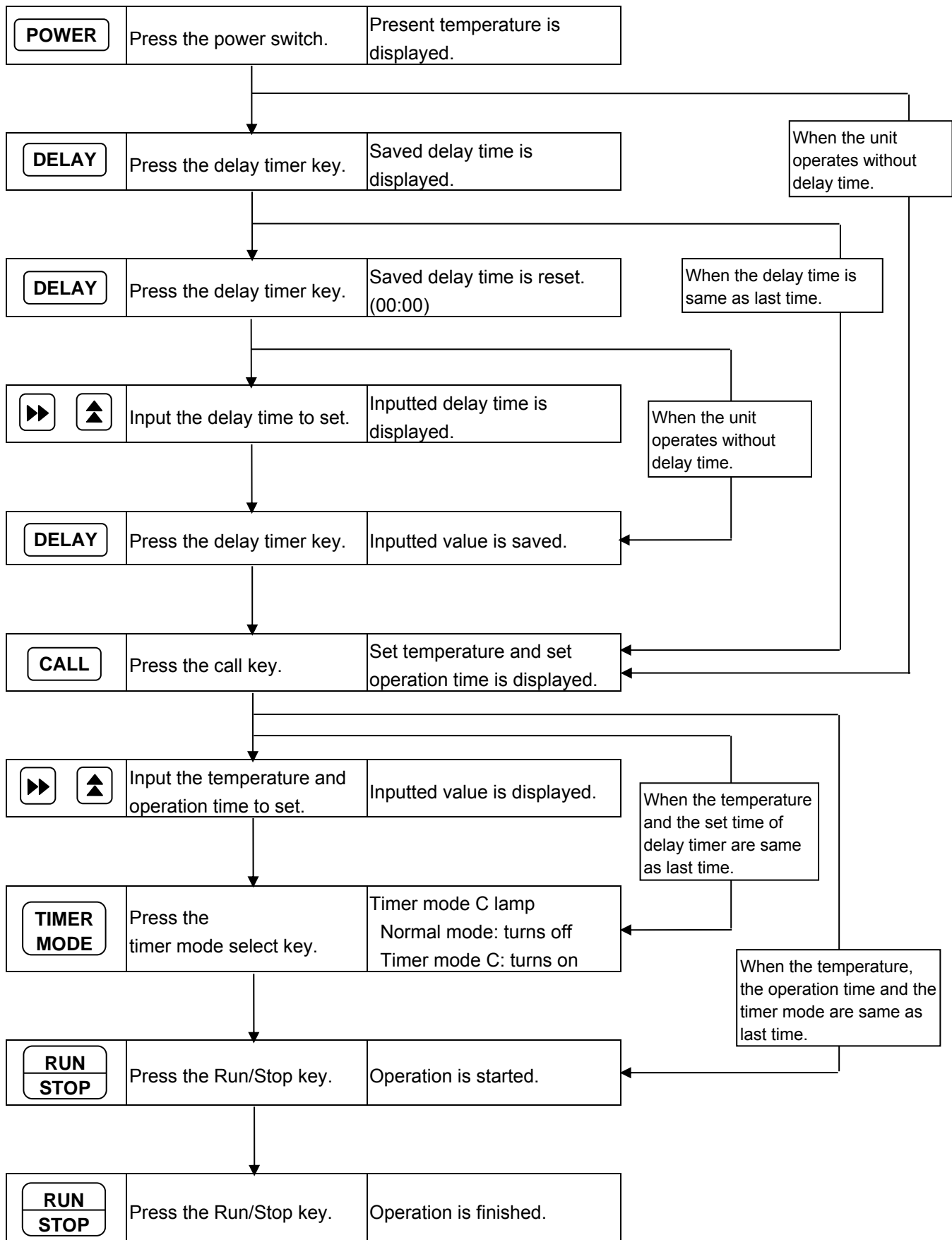
Some odors may be remained after the preliminary run. Such residue is eliminated gradually during usage.

- With the use of a unit, the inner surfaces, shelves and the separation plate may be discolored by smoke generated inside a unit. This is a natural discoloration.

- This unit has been tested at the factory before shipping. Therefore, light lines and/or discoloration may be detected even though the unit is a new one.

KEY OPERATION FLOW

This flow chart shows the key operation from control panel.



NORMAL MODE AND TIMER MODE C

The operation flow of this unit in the normal mode and the timer mode C is shown in Table 2 and Table 3.

Table 2 Operation flow in normal mode (Timer mode C lamp: OFF) ● : Lamp ON ○ : Lamp OFF

Key operation Behavior of unit		RUN STOP	Automatic termination*1 Buzzer	
Chamber temperature graph (Image)				
		When a delay timer being set	When an operation timer being set.	During stop operation
Start lamp		●	●	○
Delay timer lamp		●	○	○
Digital temperature indicator	○SETVALUE	Present temperature	Present temperature	Present temperature
	●SETVALUE	Set temperature	Set temperature	—
Digital timer indicator	○SETVALUE	Remaining time of delay time	Remaining time of operation timer*2	—
	●SETVALUE	Set time of operation time*2	Set time of operation timer*2	—

Table 3 Operation flow in timer mode C (Timer mode C lamp: ON) ● : Lamp ON ○ : Lamp OFF

Key operation Behavior of unit		RUN STOP	Buzzer*3		RUN STOP
Chamber temperature graph (Image)					
		When a delay timer being set	When an operation timer being set.	During continuous operation	During stop operation
Start lamp		●	●	●	○
Delay timer lamp		●	○	○	○
Digital temperature indicator	○SETVALUE	Present temperature	Present temperature	Present temperature	Present temperature
	●SETVALUE	Set temperature	Set temperature	Set temperature	—
Digital timer indicator	○SETVALUE	Remaining time of delay time	Remaining time of operation timer*2	“--:--”	—
	●SETVALUE	Set time of operation time*2	Set time of operation timer*2	Set time of operation timer*2	—

*1: Since an operation timer is not be finished when a continuous operation (--:--) is being set in the operation timer, press the run/stop key (RUN/STOP) to stop operation.

*2: When a continuous operation (--:--) is being set in an operation timer, “--:--” is displayed.

*3: Since an operation timer is not finished when a continuous operation (--:--) is being set in the operation timer, the buzzer will not be sounded.

STABLE RUNNING

Table 4 shows the basic procedure for setting the chamber temperature. Perform key operations in the sequence indicated in the table. The example in the table is based on the assumption that the desired temperature is 37 °C and the operation status is a continuous running.

Note: The initial setting, which are set at factory, are that the delay timer is OFF, the chamber temperature is 0 °C, the running time is ever ON, the timer mode is the normal mode.

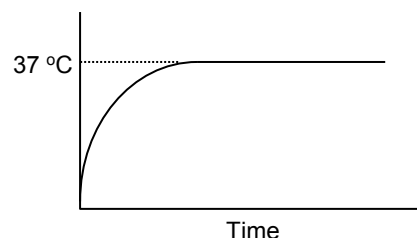


Table 4: Basic operation sequence (Example: Chamber temperature; 37 °C, Continuous running)

	Description of operation	Key operated	Indication after operation
1	Press the power key.		The current chamber temperature is displayed. 20.0 :
2	Press the delay timer key.		The current delay time is displayed. : :
3	Press the delay timer key to reset the delay time.		Reset the delay time. : :
4	Press the delay timer key		The current chamber temperature is displayed. 20.0 :
5	Press the call key.		The left digit of the temperature indicator flashes. 00.0 - - : - -
6	Set the temp. to 37.0 with the digit shift key and the numeric value shift key.		37.0 - - : - -
7	Press the run/stop key.		The setting mode is completed and the unit runs.

Note: Always leave space for ventilation between culture containers or samples. Inadequate spacing may result in uneven temperature distribution.

STABLE RUNNING WITH DELAY TIME

Table 5 shows one of applications. Perform key operations in the sequence indicated in the table. The example in the table is the delay time that is 30 minutes, the chamber temperature is 50 °C, the running time is 1 hour and the timer mode is Timer Mode C.

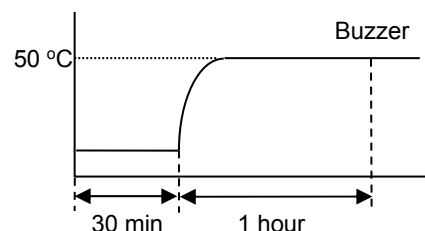


Table 5: Basic operation sequence (Example: Chamber temperature; 50 °C, Delay time; 30 minutes, Running time; 1 hour, Timer mode; C)

	Description of operation	Key operated	Indication after operation
1	Press the power key.	POWER	The current chamber temperature is displayed. 20.0 --:--
2	Press the delay timer key.	DELAY	The current delay time is displayed. --.0 00:00
3	Press the delay timer key to reset the delay time.	DELAY	Reset the delay time. --.0 00:00
4	Set the delay time to 00:30 with the digit shift key and the numeric value shift key.	▶▶ ▲	--.0 00:30
5	Press the delay timer key.	DELAY	The current chamber temperature is displayed. 20.0 --:--
6	Press the call key.	CALL	The left digit of the temperature indicator flashes. 00.0 --:--
7	Set the temp. to 50.0 and the running time to 01:00 with the digit shift key and numeric value shift key.	▶▶ ▲	50.0 01:00
8	Press the timer mode key to select the time mode C.	TIMER MODE	By pressing the key, the timer mode C lamp lights.
9	Press the run/stop key.	RUN STOP	The setting mode is completed and the unit runs. --.0 00:30

Note:

If there is no need to change the set value in each setting mode, press the call key (CALL) to activate the next mode.

When setting a continues operation, set "--:--" in the leftmost digit of distal timer indicator (TIME) with numerical value shift key on the procedure 7 in Table 5.

Press the Run/Stop key (RUN/STOP) when the setting mode needs to be canceled while running of the unit.

When the delay timer doesn't need to be activated, set the delay time to 00:00.

When the set value needs to be changed, operate a key after the unit stops.

When no key is pressed for 45 seconds, displayed number is memorized, setting is over and indicator displays the current value.

ALARMS AND SAFETY FUNCTIONS

The incubator supports the following alarms, safety functions, and self-diagnostic functions.

Alarms and safety functions

Alarm & Safety	Situation	Indication	Buzzer	Safety operation
Automatic set temperature alarm	The internal temperature is over ± 2.5 °C from the set temp..	Alarm lamp lights. All digits on the temp. indicator flash.	Intermittent tone	----
Key lock switch	When the key lock switch is turned ON.	----	----	Key input is disabled.
Temperature sensor abnormality	The temperature sensor is disconnected.	Alarm lamp lights. E01 is displayed on the temp. indicator.	Intermittent tone	Heater OFF
Triac abnormality	The triac is disconnected.	Alarm lamp lights. E02 is displayed on the temp. indicator.	Intermittent tone	Heater OFF
	The triac is short-circuited.	Alarm lamp lights. E03 is displayed on the temp. indicator.	Intermittent tone	Heater OFF
Relay abnormality	The relay is short-circuited.	Alarm lamp lights. E04 is displayed on the temp. indicator.	Intermittent tone	Heater OFF
	The relay is disconnected or the heater is short-circuited.	Alarm lamp lights. E05 is displayed on the temp. indicator.	Intermittent tone	Heater OFF
Independent over-heat protection	(When the unit is not running) The safety circuit is activated by independent temp. sensor if the chamber is being overheated abnormally.	Without display change.	Continuous tone	Heater OFF forcedly by external circuit.
	(When the unit is running) The safety circuit is activated by independent temp. sensor if the chamber is being overheated abnormally.	Alarm lamp lights. E05 is displayed on the temp. indicator.	Continuous tone (When the temp. is decreased, intermittent tone)	Heater OFF forcedly by external circuit.

* The buzzer tone resulting from the independent over-heat protection cannot be stopped with the alarm buzzer stop key (BZ). Turn off the main switch.

Operation after power failure

The set value is memorized by nonvolatile memory. Accordingly, the heated incubator resumes the operation with setting before power failure.

ROUTINE MAINTENANCE

WARNING

Always disconnect the power supply to the unit prior to any repair or maintenance of the unit in order to prevent electric shock or injury.

Ensure you do not inhale or consume medication or aerosols from around the unit at the time of maintenance. These may be harmful to your health.

CAUTION

Always put on dry gloves to protect hands at the time of maintenance. Failure to use gloves may result in cuts or abrasions from any sharp edges or corners.

Note:

Never attempt to directly spray water on the heater box or the inside of the oven as it is very dangerous. In addition, never use volatile or combustible chemicals to clean the inside.

Cleaning of unit

Cleaning the inside

- Remove all shelves from the inside.
- Clean the inside using a soft cloth damped with neutral detergent. Afterwards, wipe off with a cloth washed in clean water.

Cleaning the frame

- Clean the frame using a soft cloth damped with neutral detergent. Afterwards, wipe it up the detergent with a wet cloth.

Cleaning the shelf

- To clean the shelf, place it in a tub of warm water mixed with neutral detergent and wipe with a sponge or a soft cloth. Shelves used at high temperature may be discolored naturally.

CAUTION

When cleaning, do not use brushes, acids, benzine, thinner, soap, cleaner or hot water. These will cause discoloring or damage to coated surfaces. On plastic or rubber parts, they will cause transformation, discoloration or degeneration. Never apply volatile chemicals (like benzine etc.) on plastic or rubber parts. When neutral detergent is used, be sure to wipe it up thoroughly with a wet cloth afterwards.

TROUBLE SHOOTING

If the unit malfunctions, check out the following before calling for service.

Malfunction	Check/Remedy
The unit does not operate at all.	<ul style="list-style-type: none"> • The unit is not plugged correctly into a power outlet. • The circuit breaker at the power source is active. • A power failure has occurred. • A fuse has blown.
The key operation is disable	<ul style="list-style-type: none"> • The key lock function is set in ON mode.
If the alarm function and the buzzer operate	<p>[At the beginning of operation]</p> <ul style="list-style-type: none"> • The chamber temperature does not match the set value. <p>[During operation]</p> <ul style="list-style-type: none"> • Has the set temperature value been changed? Has the door been left open for a long time? • Has a low-temperature object been placed in the unit? In this case, the alarm will be automatically cleared in a while.
If the chamber temperature does not match the set value.	<ul style="list-style-type: none"> • Is the temperature in the vicinity too high? The ambient temperature must always be at least 5 °C less than the set temperature. If the ambient temperature rises by the value above, consider the air conditioning in the room. • Is the unit installed tilted? Install the unit horizontally.

Note:

If the malfunction is not eliminated after checking the above items, or the malfunction is not shown in the above table, contact our sales representative or agent.

DISPOSAL OF UNIT

⚠ WARNING

If the unit is to be stored unused in an unsupervised area for an extended period **ensure that children do not have access and doors cannot be closed completely.**

The disposal of the unit should be undertaken by appropriate personnel. Always remove doors to prevent accidents such as suffocation.

DISPOSAL OF UNIT

(English)

Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)



This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.

Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.

If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

(German)

Benutzerinformationen zur Entsorgung von elektrischen und elektronischen Geräten (private Haushalte)



Dieses Symbol auf Produkten und/oder begleitenden Dokumenten bedeutet, dass verbrauchte elektrische und elektronische Produkte nicht mit gewöhnlichem Haushaltsabfall vermischt werden sollen.

Bringen Sie zur ordnungsgemäßen Behandlung, Rückgewinnung und Recycling diese Produkte zu den entsprechenden Sammelstellen, wo sie ohne Gebühren entgegengenommen werden. In einigen Ländern kann es auch möglich sein, diese Produkte beim Kauf eines entsprechenden neuen Produkts bei Ihrem örtlichen Einzelhändler abzugeben.

Die ordnungsgemäße Entsorgung dieses Produkts dient dem Umweltschutz und verhindert mögliche schädliche Auswirkungen auf Mensch und Umgebung, die aus einer unsachgemäßen Handhabung von Abfall entstehen können. Genauere Informationen zur nächstgelegenen Sammelstelle erhalten Sie bei Ihrer Gemeindeverwaltung.

In Übereinstimmung mit der Landesgesetzgebung können für die unsachgemäße Entsorgung dieser Art von Abfall Strafgeldern erhoben werden.

Für Geschäftskunden in der Europäischen Union

Bitte treten Sie mit Ihrem Händler oder Lieferanten in Kontakt, wenn Sie elektrische und elektronische Geräte entsorgen möchten. Er hält weitere Informationen für sie bereit.

Informationen zur Entsorgung in anderen Ländern außerhalb der Europäischen Union

Dieses Symbol ist nur in der Europäischen Union gültig.

Bitte treten Sie mit Ihrer Gemeindeverwaltung oder Ihrem Händler in Kontakt, wenn Sie dieses Produkt entsorgen möchten, und fragen Sie nach einer Entsorgungsmöglichkeit.

DISPOSAL OF UNIT

(French)

Informations relatives à l'évacuation des déchets, destinées aux utilisateurs d'appareils électriques et électroniques (appareils ménagers domestiques)



Lorsque ce symbole figure sur les produits et/ou les documents qui les accompagnent, cela signifie que les appareils électriques et électroniques ne doivent pas être jetés avec les ordures ménagères.

Pour que ces produits subissent un traitement, une récupération et un recyclage appropriés, envoyez-les dans les points de collecte désignés, où ils peuvent être déposés gratuitement. Dans certains pays, il est possible de renvoyer les produits au revendeur local en cas d'achat d'un produit équivalent.

En éliminant correctement ce produit, vous contribuerez à la conservation des ressources vitales et à la prévention des éventuels effets négatifs sur l'environnement et la santé humaine qui pourraient survenir dans le cas contraire.

Afin de connaître le point de collecte le plus proche, veuillez contacter vos autorités locales.

Des sanctions peuvent être appliquées en cas d'élimination incorrecte de ces déchets, conformément à la législation nationale.

Utilisateurs professionnels de l'Union européenne

Pour en savoir plus sur l'élimination des appareils électriques et électroniques, contactez votre revendeur ou fournisseur.

Informations sur l'évacuation des déchets dans les pays ne faisant pas partie de l'Union européenne

Ce symbole n'est reconnu que dans l'Union européenne.

Pour vous débarrasser de ce produit, veuillez contacter les autorités locales ou votre revendeur afin de connaître la procédure d'élimination à suivre.

(Spanish)

Información sobre la eliminación para los usuarios de equipos eléctricos y electrónicos usados (particulares)



La aparición de este símbolo en un producto y/o en la documentación adjunta indica que los productos eléctricos y electrónicos usados no deben mezclarse con la basura doméstica general.

Para que estos productos se sometan a un proceso adecuado de tratamiento, recuperación y reciclaje, llévelos a los puntos de recogida designados, donde los admitirán sin coste alguno. En algunos países existe también la posibilidad de devolver los productos a su minorista local al comprar un producto nuevo equivalente.

Si desecha el producto correctamente, estará contribuyendo a preservar valiosos recursos y a evitar cualquier posible efecto negativo en la salud de las personas y en el medio ambiente que pudiera producirse debido al tratamiento inadecuado de desechos. Póngase en contacto con su autoridad local para que le informen detalladamente sobre el punto de recogida designado más cercano.

De acuerdo con la legislación nacional, podrían aplicarse multas por la eliminación incorrecta de estos desechos.

Para empresas de la Unión Europea

Si desea desechar equipos eléctricos y electrónicos, póngase en contacto con su distribuidor o proveedor para que le informe detalladamente.

Información sobre la eliminación en otros países no pertenecientes a la Unión Europea

Este símbolo sólo es válido en la Unión Europea.

Si desea desechar este producto, póngase en contacto con las autoridades locales o con su distribuidor para que le informen sobre el método correcto de eliminación.

DISPOSAL OF UNIT

(Portuguese)

Informações sobre a eliminação de resíduos para utilizadores de equipamentos eléctricos e electrónicos (utilizadores particulares)



Este símbolo nos produtos e/ou documentos anexos significa que os produtos eléctricos e electrónicos usados não devem ser misturados com os resíduos urbanos indiferenciados.

Para efectuar um tratamento, recuperação e reciclagem correctos, leve estes produtos para pontos de recolha próprios para o efeito, onde serão aceites gratuitamente. Em alternativa, em alguns países, poderá devolver os produtos ao seu revendedor local, aquando da compra de um produto novo equivalente.

A eliminação correcta deste produto ajudará a poupar recursos valiosos e evitar quaisquer potenciais efeitos negativos na saúde humana e no ambiente, que poderiam resultar de um tratamento incorrecto de resíduos. Contacte as autoridades locais para obter mais informações sobre o ponto de recolha mais perto de si.

Poderão ser aplicadas multas pela eliminação incorrecta deste resíduo, de acordo com as leis locais.

Para utilizadores não particulares na União Europeia

Se pretender eliminar equipamento eléctrico e electrónico, contacte o seu revendedor ou fornecedor para obter mais informações.

Informações sobre a eliminação noutros países fora da União Europeia

Este símbolo apenas é válido na União Europeia.

Se pretender eliminar este produto, contacte as suas autoridades locais ou revendedor e peça informações sobre o método de eliminação correcto.

(Italian)

Informazioni per gli utenti sullo smaltimento di apparecchiature elettriche ed elettroniche obsolete (per i nuclei familiari privati)



Questo simbolo sui prodotti e/o sulla documentazione di accompagnamento significa che i prodotti elettrici ed elettronici usati non devono essere mescolati con i rifiuti domestici generici.

Per un corretto trattamento, recupero e riciclaggio, portare questi prodotti ai punti di raccolta designati, dove verranno accettati gratuitamente. In alternativa, in alcune nazioni potrebbe essere possibile restituire i prodotti al rivenditore locale, al momento dell'acquisto di un nuovo prodotto equivalente.

Uno smaltimento corretto di questo prodotto contribuirà a far risparmiare preziose risorse ed evitare potenziali effetti negativi sulla salute umana e sull'ambiente, che potrebbero derivare, altrimenti, da uno smaltimento inappropriato. Per ulteriori dettagli, contattare la propria autorità locale o il punto di raccolta designato più vicino.

In caso di smaltimento errato di questo materiale di scarto, potrebbero venire applicate delle penali, in base alle leggi nazionali.

Per gli utenti aziendali nell'Unione Europea

Qualora si desideri smaltire apparecchiature elettriche ed elettroniche, contattare il rivenditore o il fornitore per ulteriori informazioni.

Informazioni sullo smaltimento in nazioni al di fuori dell'Unione Europea

Questo simbolo è valido solo nell'Unione Europea.

Qualora si desideri smaltire questo prodotto, contattare le autorità locali o il rivenditore e chiedere informazioni sul metodo corretto di smaltimento.

DISPOSAL OF UNIT

(Dutch)

Informatie over het weggooien van elektrische en elektronische apparatuur (particulieren)



Dit symbool betekent in Europa dat gebruikte elektrische en elektronische producten niet bij het normale huishoudelijke afval mogen.

Lever deze producten in bij de aangewezen inzamelingspunten, waar ze gratis worden geaccepteerd en op de juiste manier worden verwerkt, teruggewonnen en hergebruikt. In Nederland kunt u uw producten bij uw winkelier inleveren bij de aanschaf van een vergelijkbaar nieuw product.

Wanneer u dit product op de juiste manier als afval inlevert, spaart u waardevolle hulpbronnen en voorkomt u potentiële negatieve gevolgen voor de volksgezondheid en het milieu, die anders kunnen ontstaan door een onjuiste verwerking van afval. Neem contact op met uw gemeente voor meer informatie over het dichtstbijzijnde inzamelingspunt of raadpleeg www.nvmp.nl, www.ictoffice.nl of www.stibat.nl.

Voor zakelijke gebruikers in de Europese Unie

Neem voor het weggooien van elektrische en elektronische apparatuur contact op met uw leverancier voor verdere informatie.

Informatie over verwijdering van afval in landen buiten de Europese Unie

Dit symbool is alleen geldig in de Europese Unie.

Neem wanneer u dit product wilt weggooien, contact op met de lokale overheid of uw leverancier en vraag wat de juiste verwijderingsmethode is.

(Swedish)

Information om kassering för användare av elektrisk & elektronisk utrustning (privata konsumenter)



Om denna symbol finns på produkterna och/eller medföljande dokumentation, betyder det att förbrukade elektriska och elektroniska produkter inte ska blandas med vanliga hushållssopor.

För korrekt hantering, inhämtning och återvinning, ska dessa produkter lämnas på återvinningscentraler, där de tas emot utan kostnad. I vissa länder kan du som ett alternativ lämna in dina produkter hos återförsäljaren, när du köper en motsvarande, ny produkt.

Om denna produkt avyttras korrekt sparas värdefulla resurser och eventuellt negativa effekter på den mänskliga hälsan och miljön förhindras, vilket kan bli fallet vid felaktig avyttring. Kontakta din lokala myndighet för mer information om var din närmsta återvinningsstation finns. Böter kan tillämpas vid felaktig avyttring av dessa sopor, i enlighet med lagstiftningen i landet.

För företagsanvändare inom den Europeiska gemenskapen

Om ni vill kassera elektrisk eller elektronisk utrustning, vänligen kontakta er återförsäljare eller leverantör för mer information.

Information om kassering i övriga länder utanför den Europeiska gemenskapen

Denna symbol gäller bara inom den Europeiska gemenskapen.

Om du vill kassera denna produkt ska du kontakta de lokala myndigheterna eller din återförsäljare, och fråga om korrekt avyttringsmetod.

SPECIFICATIONS

Product name	Heated Incubator MIR-H163	Heated Incubator MIR-H263
External dimensions	W580 mm x D595 mm x H820 mm	W730 mm x D645 mm x H870 mm
Internal dimensions	W450 mm x D460 mm x H450 mm	W600 mm x D510 mm x H500 mm
Effective capacity	93 L	153 L
Exterior	Painted steel	
Interior	Stainless steel plate (SUS 304)	
Outer door	Painted steel	
Inner door	Tempered glass	
Insulation	Glass wool	
Shelf	Stainless steel wire (SUS 304), 2 pcs.	Stainless steel wire (SUS 304), 3 pcs.
Temperature controller	Sensor K, PID control	
Temperature display	Digital display	
Timer	Electronic timer with delay timer	
Circuit breaker	10 A	
Overheat prevention mechanism	Built-in thermister (electric circuit), Thermal guard	
Heater	200 W	300 W
Weight	50 kg	67 kg

Note: Design or specifications will be subject to change without notice.

PERFORMANCE

Product name	Heated Incubator MIR-H163			
Model number	MIR-H163-PT	MIR-H163-PA	MIR-H163-PK	MIR-H163-PE
Temperature control range	Ambient temp.+5 °C to 60 °C (ambient temp.: 0 °C to less than 20 °C, no load) Ambient temp.+5 °C to 80 °C (ambient temp.: 20 °C to 35 °C, no load)			
Temperature fluctuation	±0.2 °C (set temp.: less than 60 °C, ambient temp.: 20 °C, no load) ±0.5 °C (set temp.:60 °C to 80 °C, ambient temp.: 20 °C, no load)			
Temperature variation	±1 °C (at 37 °C)			
Rated voltage	AC 110 V	AC 115 V	AC 220 V	AC 230 V/240 V
Rated frequency	60 Hz	60 Hz	50 Hz/60 Hz	50 Hz
Rated power consumption	200 W	200 W	200 W	200 W
Applicable environment condition	Temperature: 0 °C to 35 °C, Humidity: 80 %R.H. max.			

Product name	Heated Incubator MIR-H263				
Model number	MIR-H263-PT	MIR-H263-PA	MIR-H263-PK	MIR-H263-PR	MIR-H263-PE
Temperature control range	Ambient temp.+5 °C to 60 °C (ambient temp.: 0 °C to less than 20 °C, no load) Ambient temp.+5 °C to 80 °C (ambient temp.: 20 °C to 35 °C, no load)				
Temperature fluctuation	±0.2 °C (set temp.: less than 60 °C, ambient temp.: 20 °C, no load) ±0.5 °C (set temp.:60 °C to 80 °C, ambient temp.: 20 °C, no load)				
Temperature variation	±1 °C (at 37 °C)				
Rated voltage	AC 110 V	AC 115 V	AC 220 V		AC 230 V/240 V
Rated frequency	60 Hz	60 Hz	50 Hz/60 Hz	60 Hz	50 Hz
Rated power consumption	300 W	300 W	300 W		300 W
Applicable environment condition	Temperature: 0 °C to 35 °C, Humidity: 80 %R.H. max.				

Note: The unit with CE mark complies with EU directives.

 **CAUTION**

**Please fill in this form before servicing.
Hand over this form to the service engineer to keep for his and your safety.**

Safety check sheet

1. Unit contents:

Risk of infection: Yes No

Risk of toxicity: Yes No

Risk from radioactive sources: Yes No

(List all potentially hazardous materials that have been stored in this unit.)

Notes:

2. Contamination of the unit:

Unit interior:

No contamination: Yes No

Decontaminated: Yes No

Contaminated: Yes No

Others:

3. Instructions for safe repair/maintenance/disposal of the unit

a) The unit is safe to work on Yes No

b) There is some danger (see below) Yes No

Procedure to be adhered to in order to reduce safety risk indicated in b) below.

Date :

Signature :

Address, Division :

Telephone :

Product name :

Heated Incubator

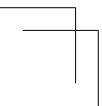
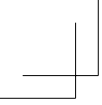
Model No.

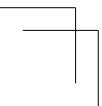
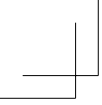
MIR-

Serial number :

Date of Installation :

Please decontaminate the unit yourself before calling the service engineer.





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