

INFANT RADIANT WARMER

CCI-3000B

OPERATING MANUAL

Picture



1. Operator Safety

- 1.1 Before using this Infant Warmer, read this entire manual.
Attempting to use this device without a thorough understanding of its operation may result in patient or user injury. This device should only be operated by personnel trained in its operation and under the direction of qualified medical personnel familiar with the risks and benefits of this type of device.
- 1.2 Do not set up this device right below the sun and keep it at least 1.5m from the heating materials. To prevent heating loss, maintain room temperature as 25.0~28.0°C.
- 1.3 Limit the load placed on the x-ray cassette tray to 2.2 kg to avoid a tipping hazard.
- 1.4 Do not use the Warmer in the presence of flammable anesthetics; a possible explosion hazard exists under this condition.
- 1.5 Do not touch the protective grill under the radiant heater or the top of the heater assembly. These surfaces may be hot and a burn could result.
- 1.6 Disconnect power to the warmer and allow the heater rod to cool before cleaning to avoid the possibility of a burn.
- 1.7 Disconnect power the warmer and allow the unit to cool before replacing the alarm or observation light.
- 1.8 When using the warmer, keep your hand nearby infants in order to measure the body temperature at least 30min.
- 1.9 Bed-to-heating spacing which differs from the specified 75+5cm will result in correct operation and may affect the patient's condition.
- 1.10 Do not place any accessories or any other objects directly over the bed surface. This may block radiant heat and lead to cooling of the infant.
- 1.11 Do not place items on the top of the heater assembly. Items placed on top of the heater assembly can fall and injure the patient, prevent adequate ventilation of the heater assembly, and may pose a fire hazard.
- 1.12 Do not perform the checkout procedure while a patient occupies the warmer.
- 1.13 If the warmer falls any portion of the check out procedure it must be removed from use and repair.
- 1.14 Prolonged exposure to the light emitted by the observation lamp in this unit may harm the unprotected eyes of the infant's eyes.
- 1.15 Do not use the warmer if the system failure alarm is activated. Remove the unit from service and refer to qualified personnel for repair.
- 1.16 Radiant energy can adversely affect blood components. When using intravenous tubing systems for delivery of blood components to patients occupying a warmer, shield any tubing with aluminum foil.
- 1.17 When using a radiant warmer, change the patient's diapers frequently. Radiant energy causes more rapid urine evaporation, and may lead to inaccurate urine diagnostic test and inaccurate weight measurement.
- 1.18 Do not move the warmer by pushing/pulling on the bed side panels. This action may lead to the deterioration and breakage of the components which form a safety barrier around the infant.
- 1.19 Ensure that the side panels are locked in position when a patient occupies the bed. Blankets or other foreign objects may prevent the latches from fully engaging.
- 1.20 Do not leave the patient unattended when the side panels are lowered.
- 1.21 Never place an infant on the x-ray cassette tray.
- 1.22 Do not place any foreign objects on the warmer bed or in the under bed cavity while performing x-ray. This may adversely affect the quality of the x-ray image.
- 1.23 Use the servo mode unless the manual mode is specifically prescribed.
While both modes require patient monitoring, the manual mode requires constant attention. In the

manual mode, you must take the responsibility for detecting changes in the environment (drafts, direct sunlight, etc.) or the patient condition requiring heater adjustments in response to these changes. In the servo mode, the infant warmer automatically adjusts heater output to maintain the desired skin temperature, reducing (but not eliminating) the need to monitor the patient and make adjustment to equipment.

- 1.24 In using if manual mode, ensure that temp. prob. is in the right position (inside protection cap).if not, it will be harmful to the patients. You need to make sure that there are no accessories nearby the warmer and keep away from the sunlight. In case of servo mode, it is automatically setting the right temp. It is not required inspection times as much as manual mode.
- 1.25 Use of electrosurgical units or other electrical field radiation equipment can affect the operation of the warmer. Keep the patient probe lead as far away as possible form electrosurgical cables. Do not allow excess electrical cables to be laid on the bed platform. Use of electrosurgical units or other instruments which radiate electrical fields can cause indirect heating, by several tenths of degree of the skin temperature probe due to absorbed electrical energy. When using these devices near the radiant warmer, operate the infant warmer in manual mode for maximum safety.
- 1.26 Radiant warmers increase an infant's insensible water loss.
Take appropriate measure to maintain the patient's balance while caring for them in radiant warmer.
- 1.27 Manual Mode: check the probe attachment.
Servo Mode: check the position of probe or if radiant energy is blocked by any materials.
- 1.28 In the servo mode, verify that the patient temperature probe is securely attached to the patient at least once every half hour. A dislodged probe may not trigger an alarm. If the probe becomes dislodged, the warmer can over or under heat the infant.
- 1.29 Management of temp. probe.
 - 1.29.1 Do not disinfect the probe by steam.
 - 1.29.2 Do not clean by the chemical solutions.
 - 1.29.3 Hold the power plug when removing plug from the controller.
- 1.30 Do not disinfect the mattress by electrical and steam disinfection.
- 1.31 If you have any question, please contact us. For the repairmen, only authorized, trained people can work by appointments.

2. General

This infant warmer system provides a controlled source of radiant heat for infants and pediatric patients. The control system uses a microprocessor and provides both manual and servo mode of operation. The skin temperature, air temperature, set temperature are digital for ease of viewing with alarm system and timer up to 99 hours.

3. Feature

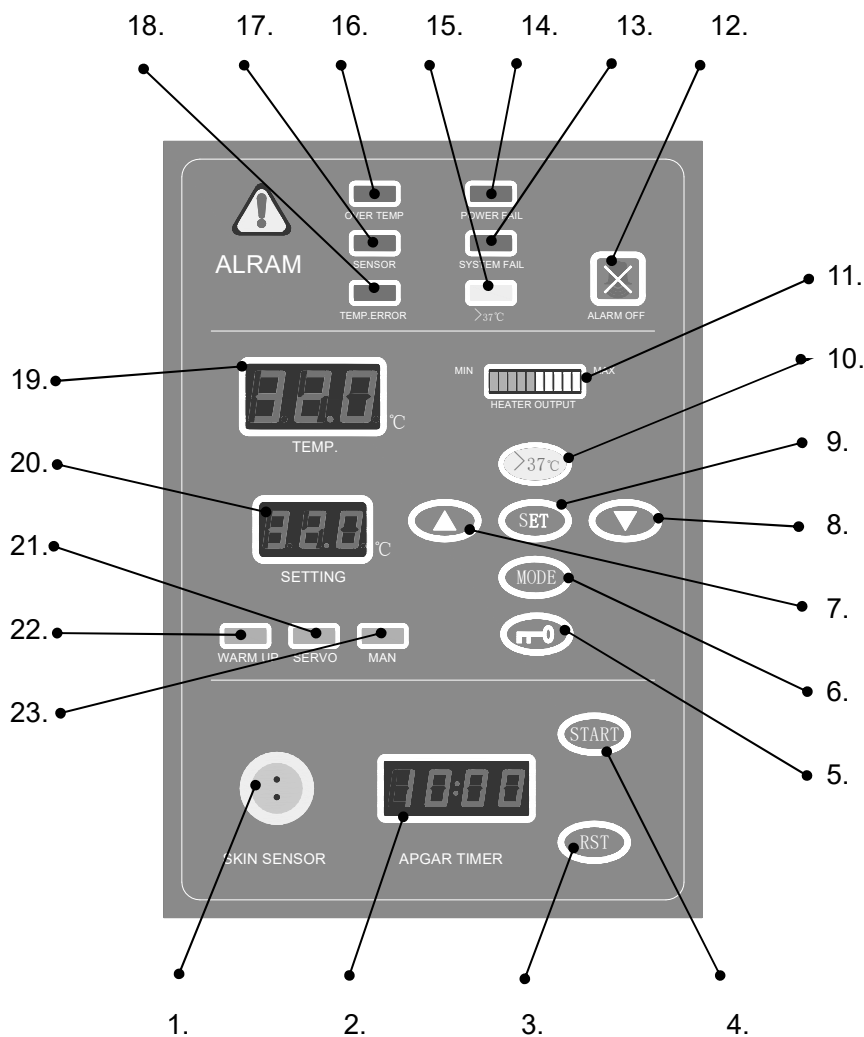
- 3.1 It is equipped the microprocessor in order to reduce stress from cold air.
- 3.2 Servo control mode is the best condition for infants incase of air temp. and skin temp.
- 3.3 It has comfortable mattress.
- 3.4 There is alarm system for safety.
- 3.5 There is electrical timer for APGAR.

4. Specification

1 .Power Supply:	220-240V 50-60Hz
2 .Power Consumption:	1000W
3 .Temperature Control Range:	25~37°C
4 .High Air Temp Control Range:	37.1~38°C
5 .Temperature display Range:	20.0~40.0°C
7 .Temperature Resolution:	0.1°C
8 .Temperature Precision:	±0.3°C

5. Control Operation

Outlook of Control Panel



Skin Sensor Socket: Connect the skin Temp. sensor with the controller.

1. Timer LED: Display the time when timer start. Max time up to 99 hours and 59 minutes.
2. Timer Reset switch: Clear the time on the timer LED.
3. Timer start/pause switch: Start the timer and pause it.
4. Unlock switch: Unlock the mode switch, up switch, down switch, set switch, and >37°C switch.
5. Mode switch: Select the operation mode: manual mode, servo mode and warm up mode.

6. Up switch: Set the control temperature UP during control of setting temperature.
7. Down switch: Set the control temperature Down during control of setting temperature.
8. Set switch: Push the switch to confirm after selecting the operation mode or setting the temperature.
9. >37°C switch: Push the switch to set the skin temperature up to 38°C when the skin temperature is set at 37°C.
10. Heater Display: This window is indicated by equal 10 divisions from minimum heater output to maximum heater output.
11. Alarm Off Switch:
The sound of Sensor Alarm and Temperature Error Alarm can be removed by the use of Alarm Off Switch, but the indication lamp is still lighting up. And the sound will be activated again after 3 minutes.
12. System Alarm indication: display an alarm when system has some problem
13. Power Failure Alarm indication: This alarm activated when electricity is cut off.
14. >37°C indication: Indicate that setting skin temperature is >37°C at servo mode.
15. Over Temp Alarm indication: display an alarm when temperature is over.
16. Sensor Alarm indication: display an alarm when the skin Temp. sensor is not connected or short-circuited.
17. Temp. Error Alarm indication: display an alarm when the temperature is abnormal. in case that difference between temperature and control temperature is higher or lower than 1°C
18. Skin Temp. Display: The temperature measured by Skin Temp Sensor is indicated on Skin Temp Display Window.
19. Setting skin Temp. display: Setting Temp. Display: Users can adjust temperature to be suitable for infants by the use of Up/Down Switch according to a warmer operation mode. The setting Temp. will be displayed on this window.
20. Servo mode indication: Indicate that warmer is operated at servo mode.
21. Warm up mode indication: Indicate that warmer is operated at warmer up mode.
22. Manual mode indication: Indicate that warmer is operated at manual mode.

6. Operation

1. How to power on

Turn the switch on the head of warmer to “ON”.

- There is a suggestive sound like “bi”.
- It goes into self-check system. All indication lamp and display windows flash except power failure alarm and system fail alarm.
- It goes into setting controller mode if passing the self-check.
If not, system fail alarm indication lamp and buzzer are activated.

Control Mode

- There are three modes: Warm-up mode, Servo Mode and Manual Mode.
- It goes into Warm-up Mode automatically every time when you power on the warmer.
It heats up on 30% heater output for 3 minutes, then 50% heater output for 2 minutes, and 100% heater output for half minute.
- It goes into Servo Mode automatically after warm-up.

Note: Push “Mode switch” to change to Warm-up Mode when it is operated at other mode, it will keep to heat up on 30% heater output.

Note: Operated at warm-up Mode every time when you power on the warmer can effectively avoid the infrared quartz breaking caused by the heating suddenly changing.



- ✧ In Automatic mode (not enter a state of constant temperature), if the temperature sensor not in specifying the location, maybe resulting overheating at risk.
- ✧ When standby and heat up, pls put the sensor in specifying the location

1.2.1 Mode Selection

1.2.1.1 Servo mode

a. The controller will turn to Servo Mode automatically after warm up Mode.



➤ Push “Mode switch” until servo mode indication flashes

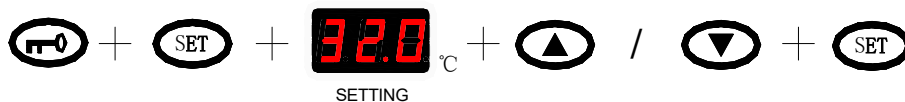
1.2.1.2 Manual Mode



➤ Push “Mode switch” until Manual Mode indication flashes

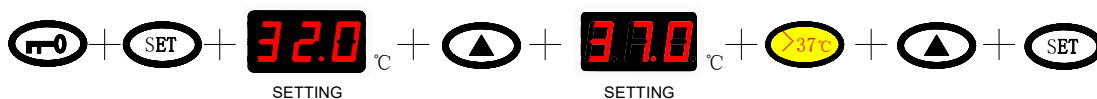
2 Temperature setting

2.2 At Servo Mode



- Setting temperature windows flashes during setting temperature.
- Push “set switch” when temperature is set to the required value.

2.3 >37°C at Servo Mode



- Setting temperature windows flashes during setting temperature.
- Push “>37°C switch” when the setting temperature is arrive at 37°C.
- Push “set switch” when temperature is set to the required value.



- ✧ In the servo mode, verify that the patient temperature probe is securely attached to the patient at least once every half hour. A dislodged probe may not trigger an alarm. If the probe becomes dislodged, the warmer can over or under heat the infant.
- ✧ At >37°C Mode, the max. setting temperature is 38°C

2.4 At Manual Mode



- Observe the “heater indication” to set the suitable temperature as clinical requirement.

Note: The heater indication flashes with buzzer every 10 minutes. If you don't push the “set switch” within 2 minutes, heater output will be constant around 30%.



- ✧ At manual mode, you must take the responsibility for detecting changes in the environment (drafts, direct sunlight, etc.) or the patient condition requiring heater adjustments in response to these changes.
- ✧ Don't leave the patient unattended to avoid any damage.
- ✧ At manual mode, ensure that temp. prob. is in the right position. If not, it will be harmful to the patients.

3 APGAR Timer

3.2 Buzzer of timer

The buzzer is activated once every second since 50 sec, 4 min 50sec and 9 min 50sec. There are ten times every period.

3.3 Original state of timer



3.4 Operation

- Push “Start switch” to start timing at the original state.
- Push “Start switch” again if you want to pause timing.
- Push “Start switch” once more to restart timing.
- Push” RST switch” to clear the time on the timer LED.

4 Alarm Off

4.1 Two kinds of buzzer

- Intermittent buzzer is for sensor alarm, temperature error alarm, power failure and over temp. alarm (over first point 37°C).
- Constant buzzer is for system alarm and over temp. alarm (over second point 38°C)

Note: The sound of Sensor Alarm and Temperature Error Alarm can be removed by the use of Alarm Off Switch, but the indication lamp is still lighting up. And the sound will be activated again after 3 minutes.

4.2 Alarm off Operation



7. Cleaning and Disinfecting

1. Cleaning

Clean the warmer at least once a week or after each patient.

The following lists recommended cleaning solutions that may be used safely.

Max. Concentration Level	Generic Formulation
0.2% ~ 0.5%	Benzalkonium Chloride
0.02%~0.05%	Chlorhexidine

2. Disinfecting

Use the gas disinfecting method instead of steam.

Warning: Do not touch probe.

3. The checking period of the Consumption goods.

1 year: Heater, Temperature Probe

※ Exchange period of the consumption is different according to using method.

8. Maintenance and Troubleshooting

Causes	Solutions
No power supplied.	<ol style="list-style-type: none"> 1) Disconnect power resource and device. 2) Ensure the connection of power plug. 3) Check Fuse.
Temp. not increased	<ol style="list-style-type: none"> 1) Setting temp. is too low. 2) Wrong position of temp. probe. 3) Unmatched room temp. 4) There is other device nearby Warmer. 5) Check the input voltage.
Too high temp.	<ol style="list-style-type: none"> 1) Setting temp. is too low. 2) Wrong position of temp. probe. 3) Any accessories nearby the temp sensor. 4) Away from the sunlight or other device.
No lighting Lamp.	<ol style="list-style-type: none"> 1) Time to replace the lamp. 2) Check the connection of switch.

Packing List

Serial No.	Title	Unit	Quantity	Remarks
1	Operational instructions	Copy	1	
2	Packing List	Copy	1	
3	Fuse	Pcs	2	5A
4	Power line	Pcs	1	
5	IV stand	Pcs	1	
6	Tray	Pcs	1	
7	Castor	Pcs	4	
8	Organic baffle	Pcs	4	
9	Inner hexagon spanner	Pcs	3	M4、M5、M6
10	Spanner	Pcs	1	M17/M19
11	Inner hexagon Screw	Pcs	4	M5