



# Nyano Nani



## User Manual

Version 2.6



March, 2025



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**The user should carefully read these safety and usage instructions before the use of the device.**

This device is not suggested to be used in any areas where combustible and explosive gas mixtures are present.

Electrical connections to equipment which is not listed in these instructions for use should only be made following consultation with the respective manufacturers.

## WARNING

### Disclaimer



The design of the equipment, the accompanying literature, and the labeling on the equipment take into consideration that the purchase and use of the equipment are restricted to trained professionals, and that certain inherent characteristics of the equipment are known to the trained operator.

This publication excludes references to various hazards which are obvious to a medical professional and operator of this equipment, to the consequences of product misuse, and to potentially adverse effects in patients with abnormal conditions.

## Definitions



**WARNING:** A WARNING statement contains important information about a potentially hazardous condition which can result in death or a serious injury to the patient if not avoided.

**CAUTION:** A CAUTION statement contains important information about a potentially hazardous condition which can result in a minor or even severe injury to the patient if not avoided.

**DEVICE:** An infant radiant warmer with the name “Nyano Nani” designed and developed completely in Nepal.

**NIC:** National Innovation Center, Nepal. The manufacturer for this DEVICE.

### LIMITATION OF LIABILITY

ALTHOUGH THE DEVICE HAS BEEN DESIGNED AND TESTED WITH UTMOST PRIORITY GIVEN TO THE SAFETY OF THE PATIENT AND TO MINIMIZE ANY HAZARDS, THE MANUFACTURERS (NIC) OR THE FUTURE COMPANY ASSOCIATED WITH THE DEVICE, IN NO EVENT SHALL BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES TO THE PATIENT AND/OR THE DEVICE WHATSOEVER RESULTING FROM ANY (I) USE OF THE DEVICE, (II) FAILURE TO FOLLOW THE SAFETY AND USAGE INSTRUCTIONS, (III) INTERNAL ACCESS, MODIFICATION OR TAMPERING TO THE DEVICE, (IV) ERROR AND ANY INACCURACIES ON THE CONTENT PROVIDED BY THE MANUFACTURERS INCLUSIVE BUT NOT LIMITED TO THIS DOCUMENT.

## Maintenance



The device must be inspected and serviced regularly by trained and authorized personnel every 4 months. Any necessary repair and replacement of spare parts should be done by authorized personnel only. Failure to do so may compromise the correct functioning of the device.

## Caution



It is the responsibility of the appropriate clinical decision-maker to draw conclusions from the skin temperature measurements taken.

## Accessories



Do not use any spare accessories other than those provided by authorized service personnel. Product modification or misuse can be dangerous.

## Safety Instructions



- It is not advisable to leave an INFANT unattended under the INFANT WARMER.
- Radiant warming increases insensible water loss. Appropriate measures to maintain proper fluid balance should be considered.
- Permissible distance between the radiant heater and the bottom of the bassinet is 75cm. No changes to this distance should be made by any means since a larger distance between the two points may cause insufficient heat on the INFANT and a reduced distance may result in excessive heating.

## Safety Instructions (Contd...)



- The skin temperature sensing probe should be in direct contact with the skin to provide accurate monitoring of the infant's skin temperature. Failure to maintain direct skin contact can result in overheating and possible burning. Check the INFANT's condition at least every 15 minutes for correct Sensor attachment, reddened skin areas, and proper skin temperature.

**Note:** Rectal temperatures are not appropriate for controlling the heater output.

- Do not leave the infant unattended in the Cart/Bassinet when the side panels on the front panel are folded down.
- Inspect the side panels of the bassinet to prevent INFANT falling out.
- The bassinet withstands a maximum of 20 kg load. It is recommended to operate the INFANT warmer with 50% of the maximum load at all times.
- External heated mattress, use of phototherapy or sunlight can cause an increase in the temperature of INFANT abruptly.
- The INFANT WARMER should be positioned on its central axis and the bassinet should not be tilted to horizontal or vertical sides. This may affect the performance of the INFANT WARMER.
- INFANT WARMER is not suitable for use in presence of flammable anesthetic gases or other flammable materials, such as some cleaning fluids.
- Environmental conditions like AIR movement, Humidity can affect the thermal (temperature) balance of the INFANT and may take some time to be stable.
- The INFANT WARMER shall be used only by appropriately trained health personnel and under the direction of qualified medical personnel who are familiar with currently known RISKS and BENEFITS of warmer use.

# Technical Specifications



<b>Power Requirements</b>	220-240V AC 50 Hz 700 Watt.
<b>Overload Protection</b>	5A Circuit Breaker
<b>Examination Light</b>	3 Watt. LED
<b>Heater</b>	650 Watt Ceramic
<b>Sensors</b>	PT100
<b>Coating</b>	MS Powder Coating
<b>Reflectors</b>	Parabolic Steel Reflectors
<b>Temperature Controller</b>	Auto-PID
<b>Bassinet</b>	Acrylic Bed /Adjustable Side Panels
<b>Electrical Safety</b>	Complies to IEC 60601-1 Electrical Safety and Leakage Requirements

# Theory of Operation



The radiant heat is directed by parabolic reflector onto the infant. The warmer is controlled by a single heater driver with automatic skin temperature control.

Examination (Observation) light in the warmer module provides added illumination of mattress area.

Air Sensor senses the bed temperature and prevents the over heating to the infant in case the Skin Sensor is detached from the infant.



# Operation Instructions

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1

Place the baby warmer on a levelled surface and make sure the wheels are locked.



2

Plug In the power supply to the wall and Turn On the switch on the side of the device.

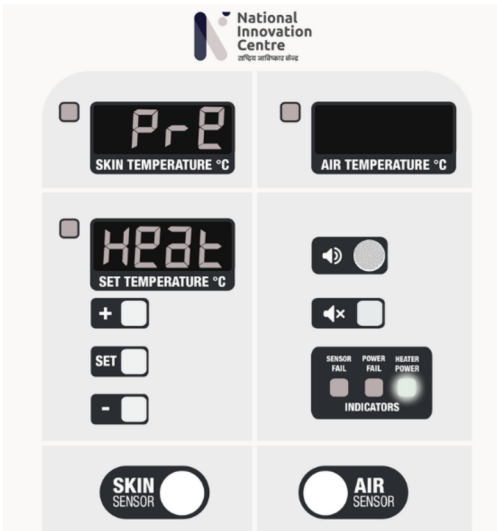
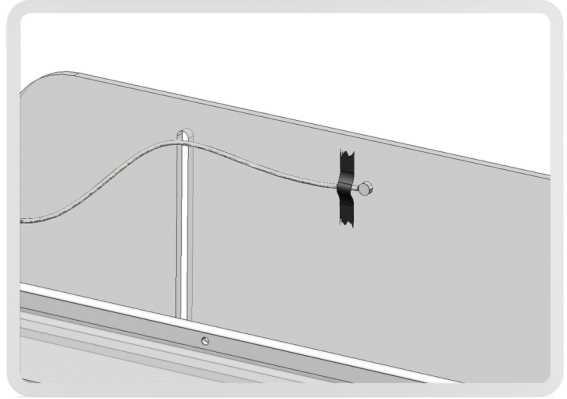


**Note:** Air temperature sensor must be placed on the side-panel free from obstructions, facing towards the bassinet.

Please make sure that the metallic face of the sensor is not covered by the blanket or has not come into contact with the metal or acrylic frame of the bassinet.

**3**

Attach the air sensor to the side panel. The silver part should be facing outside as shown in the image.



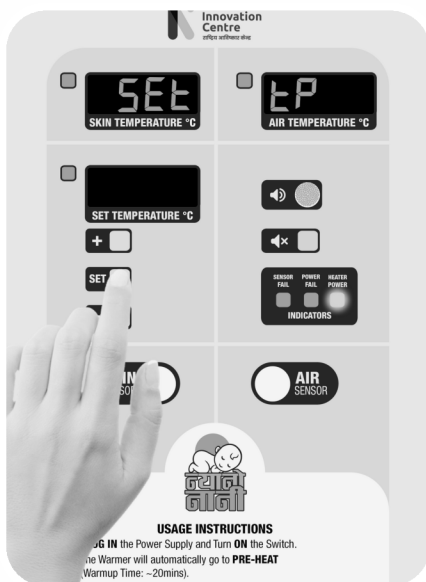
**4**

The warmer will automatically go into Pre-Heat state, as indicated by the display.

Minimum Pre-Heat Temperature : 25°C

5

Place the baby in the Bassinet after the Buzzer and attach the Skin Sensor on the suitable location of the baby.



6

To change the pre-set temperature of 36.5 °C,

Press SET to program the desired temperature and use the + and - buttons to adjust SET TEMPERATURE.

Press SET again to apply.

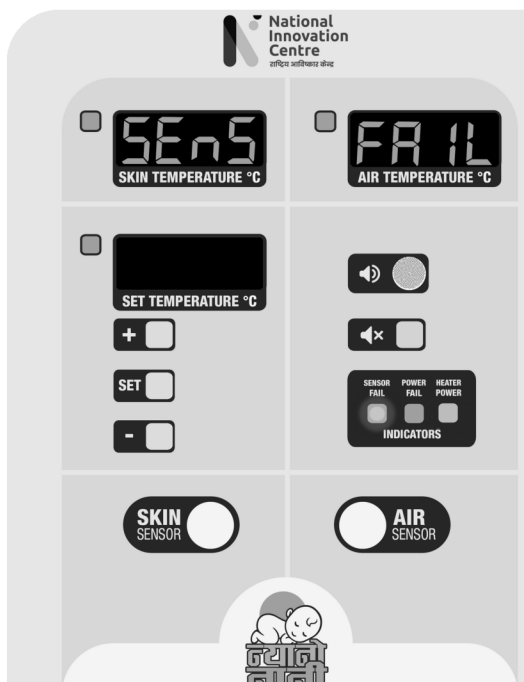
# Warnings, Alarms & Troubleshooting

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**Note:** The sensors are attached to the front panel with fasteners, please ensure that the connector is tightly secured.

## Sensor Fail

<b>Cause</b>	Temperature sensors are unplugged
<b>Indication</b>	Display shows the <b>SEnS FAIL</b> message with continuous buzzer.
<b>Measures</b>	Check if the sensor connectors are loose. After they are adjusted, the system will resume its operation.



## High Air Temperature

<b>Cause</b>	Air temperature is higher than 38.5°C.
<b>Indication</b>	Display shows the HIGH Air message with continuous buzzer.
<b>Measures</b>	Make sure the air sensor is not attached to the baby. Heater power indicator should be OFF.





## Low Skin Temperature

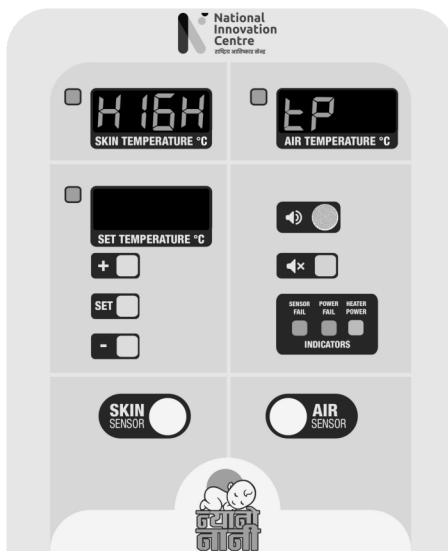
**Cause** Baby's temperature is one degree lower than set temperature.  
**Alarm condition:**  
 every 8 minutes if set temperature has not been achieved even once.  
 every 4 minutes, if set temperature has been achieved at least once

**Measures** Check for the heater indicator, it should be ON.  
 Adopt other means to warm the baby if alarm continues.

## High Skin Temperature

**Cause** Skin temperature is one degree higher than set temperature.  
**Display shows the HIGH tP message with continuous buzzer every 4 minutes.**

**Measures** Check for the heater indicator, it should be OFF.



# Preventive Maintenance



## ✓ Cleaning the Equipment

The equipment must be thoroughly cleaned and disinfected once every week and every time the infant is removed from the bassinet.

Before and after each use, clean the sensor tip with alcohol swab.

## ✓ Sensor Maintenance

Ensure the sensors are properly fastened in the sensor slots.

Do not twist or jerk the sensor wires.

## ✓ Heater Maintenance

The technician should remove the heater hood from the top section and inspect the heater wires routinely every two months.







# Nyano Nani

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प्रयोग निर्देशिका

संस्करण २.६



National  
Innovation  
Centre

राष्ट्रिय आविष्कार केन्द्र

फाल्गुन, २०८१

# विषय-सूची

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# न्यानो नानी चलने तरिका

• • •

न्यानो नानीले नवजात शिशुका लागि आवश्यक पर्ने न्यानोपन प्याराबोलिक परावर्तकद्वारा प्रधान गर्छ। न्यानो नानी स्वचालित छाला तापक्रम नियन्त्रण सहितको एक हीटर ड्राइभरद्वारा सन्चालित गरिएको छ। यस उपकरणमा जडित जाँच (परीक्षण) प्रकाशले डसनामा थप सहजता प्रदान गर्दछ।

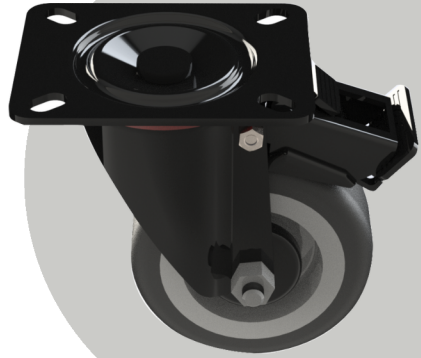


# संचालन गर्ने तरिका

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१

न्यानो नानीलाई समतल सतहमा राख्नुहोस् र यसमा जडित चक्काहरु लक छन् कि छैनन् सुनिश्चित गर्नुहोस्।



२

न्यानो नानीलाई उर्जाको स्रोतसँग जोड्नुहोस् र यसको साइडमा रहेको स्विचलाई अन गर्नुहोस्।

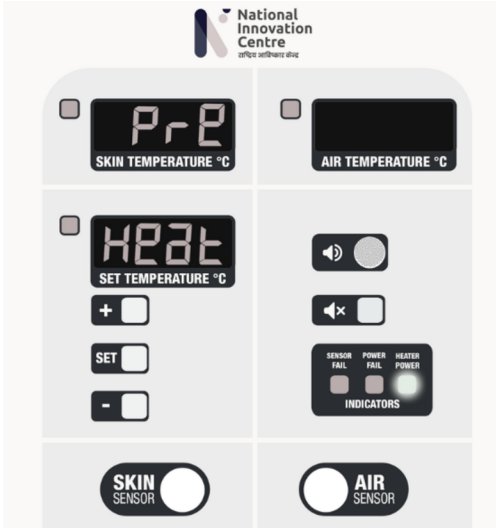
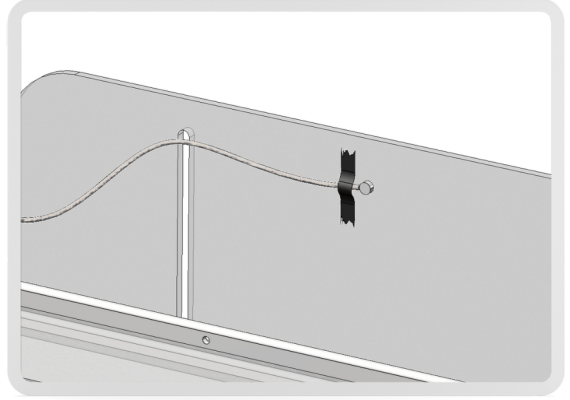


**नोट:** ऐर (Air) सेन्सरलाई हावा आवतजावत हुने तथा कुनै अवरोध नहुने हिसाबले माथि फर्काएर ब्यासिनेटमा राख्नुपर्दछ।

सेन्सरको टल्किने (metallic) भाग कम्बलले ढाकिएको हुनु हुँदैन र ब्यासिनेटको मेटालिक र एक्रिलिक फ्रेमसँग सम्पर्कमा आएको हुनु हुँदैन।

३

एयर सेन्सरलाई ब्यासिनेटको साइड प्यानलमा टल्किने भागलाई नछोपिने हिसाबले टाँस्नुहोस्।



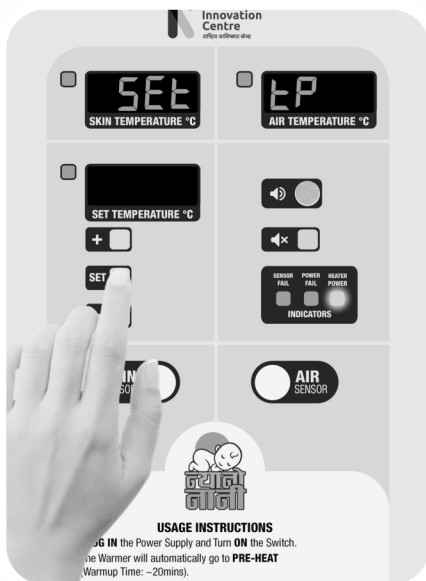
४

न्यानो नानी स्वतः तस्विरमा देखाए अनुसार प्रि-हीट मोडमा पुग्नेछ। शिशुलाई एक्कासी चिसो ब्यासिनेटमा राख्नु हुँदैन। शिशुलाई बेबी वार्मेरमा राख्नु अगाडी, अनिवार्य रुपमा प्रि-हीट गर्नु पर्छ।



बजर बजेपछि शिशुलाई  
ब्यासिनेटमा राख्नुहोस् र Skin  
सेन्सरलाई शिशुको abdomen  
मा जोड्नुहोस्।

Skin सेन्सरको टल्किने भागले  
शिशुको abdomenमा छुनु पर्छ।



शिशु को तापक्रम ३६.५ भन्दा बढी वा घटी सेट  
गर्नु परे मा, डिस्प्लेमा रहेको "SET" बटन  
थिच्नुहोस्।

डिस्प्लेमा "Set tP" ब्लिंक गर्छ।

"+" र "-" बटनको प्रयोग गरि, आवश्यकता  
अनुसार तापक्रम बढाउनु वा घटाउनुहोस्।

चाहेको तापक्रम डिस्प्ले भए पछि, "SET"  
बटन फेरी एक चोटी थिच्नुहोस्।

"Set tP" ब्लिंक गर्न बन्द गर्छ, र नया  
निर्धारित तापक्रम अनुसार न्यानो नानीले स्वतः  
आफ्नो तापक्रम मिलाउछ।

# चेतावनी, संचालन तथा समस्याहरूको निवारण

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**नोट:** सेन्सरहरू अगाडि रहेको प्यानलमा जोडिएको हुन्छ, कृपया कनेक्टर सही र सुरक्षित रूपमा जडित छ वा छैन सुनिश्चित गर्नुहोस्।

## सेन्सर फेलियर

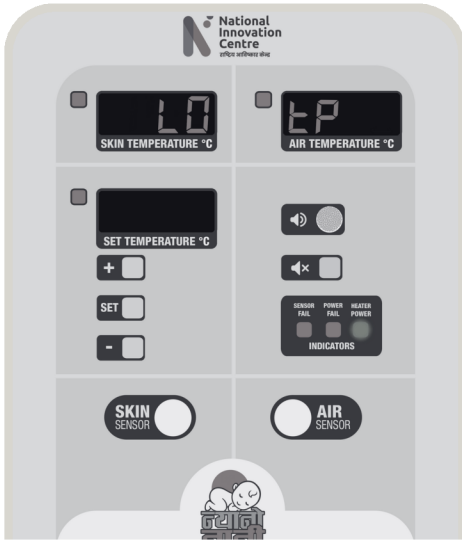
कारण	Sensor हरू connectorबाट छुटेमा, वा sensor बिग्रिएमा।
संकेत	लगातार बजरको साथ डिस्प्लेमा SEnS FAIL सन्देश देखिनेछ।
उपायहरू	सेन्सर connectorहरू खुकुलो छन् कि छैनन् जाँच गर्नुहोस्। Sensorहरू बिग्रेको छ/छैन, प्राविधिकलाई देखाउनुहोस।



## उच्च वायु तापक्रम

कारण	वायु तापमान $32.5^{\circ}\text{C}$ डिग्री सेल्सियस भन्दा बढि भएमा।
संकेत	लगातार बजरको साथ डिस्प्लेमा <b>HIGH Air</b> सन्देश देखिनेछ।
उपायहरू	वायु सेन्सर शिशुसंग जोडिएको छ भने त्यसलाई हटाउनुहोस्। हीटर पावर इन्डिकेटर बन्द भएको हुनुपर्दछ।





## शिशुको तापक्रम कम भएमा

**कारण**

शिशुको तापक्रम सेट पोइन्ट भन्दा कम भएमा। यो चेतावनी हरेक चार मिनेटमा बज्छ।

**संकेत**

लगातार बजरको साथ डिस्प्लेमा

**LO tP**

सन्देश देखिनेछ।

**उपायहरू**

हीटर सूचक हरियो बलेको छ वा छैन जाँच गर्नुहोस् र हीटर बाट राप आइरहेको छ वा छैन हेर्नुहोस्। यदि छैन भने, प्राविधिकको मदत लिई, बच्चा लाई अरु कुनै उपाय ले न्यानो राख्नुहोस्

## शिशुको तापक्रम बढी भएमा

**कारण**

शिशुको को तापक्रम सेट पोइन्ट भन्दा बढी भएमा।

**संकेत**

लगातार बजरको साथ डिस्प्लेमा

**HIGH tP**

सन्देश देखिनेछ।

**उपायहरू**

शिशुको तापक्रम नापी, आवश्यक जाँच गर्नुहोस्।



# उपकरणको हेरचाह

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## ✓ उपकरण को सरसफाई

उपकरणलाई हप्तामा एक पटक डिसइन्फेक्ट गर्नु पर्दछ ।

शिशुलाई ब्यासिनेटबाट हटाइसके पछि पनि उपकरणलाई सफा गर्न अत्यन्त आवश्यक हुन्छ।

प्रयोग गर्नु अगाडी र पछाडि, सेन्सरको माथिल्लो भागलाई अल्कोहल स्वाब प्रयोग गरि सफा गर्नुहोस्।

## ✓ सेन्सर अनुरक्षण

सेन्सर स्लटमा सेन्सरहरू ठीकसँग जोडिएको छ कि छैन सुनिश्चित गर्नुहोस्।

सेन्सर तारहरू घुमाउने वा झटका पुग्ने कुनै प्रकारको क्रियाकलापहरू नगर्नुहोस्।

## ✓ हीटरको हेरचाह

कम्तिमा पनि प्रत्येक दुई महिनामा प्राविधिक सहयोग लिइ हीटर हुड हटाइ तारहरूको नियमित जाँच गर्नुहोस्।



**Scan to download the digital User Manual**

डिजिटल कपि डाउनलोड गर्न स्क्र्यान गर्नुहोस्



**Note: The product conforms to the guidelines provided by IEC 60601-2-21 to ensure maximum safety to the child.**

**Designed & Developed @ National Innovation Center Nepal**

नोट: शिशुको अधिकतम सुरक्षा सुनिश्चित गर्न IEC 60601-2-21 द्वारा जारी सम्पूर्ण निर्देशहरूको पालना गरी यो उपकरण निर्माण गरिएको छ।

राष्ट्रिय आविष्कार केन्द्रमा निर्मित

📍 त्रिभुवन विश्वविद्यालय, रिकास्ट रोड, कीर्तिपुर  
TU, RECAST Road, Kirtipur

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9841592361, 9810307452