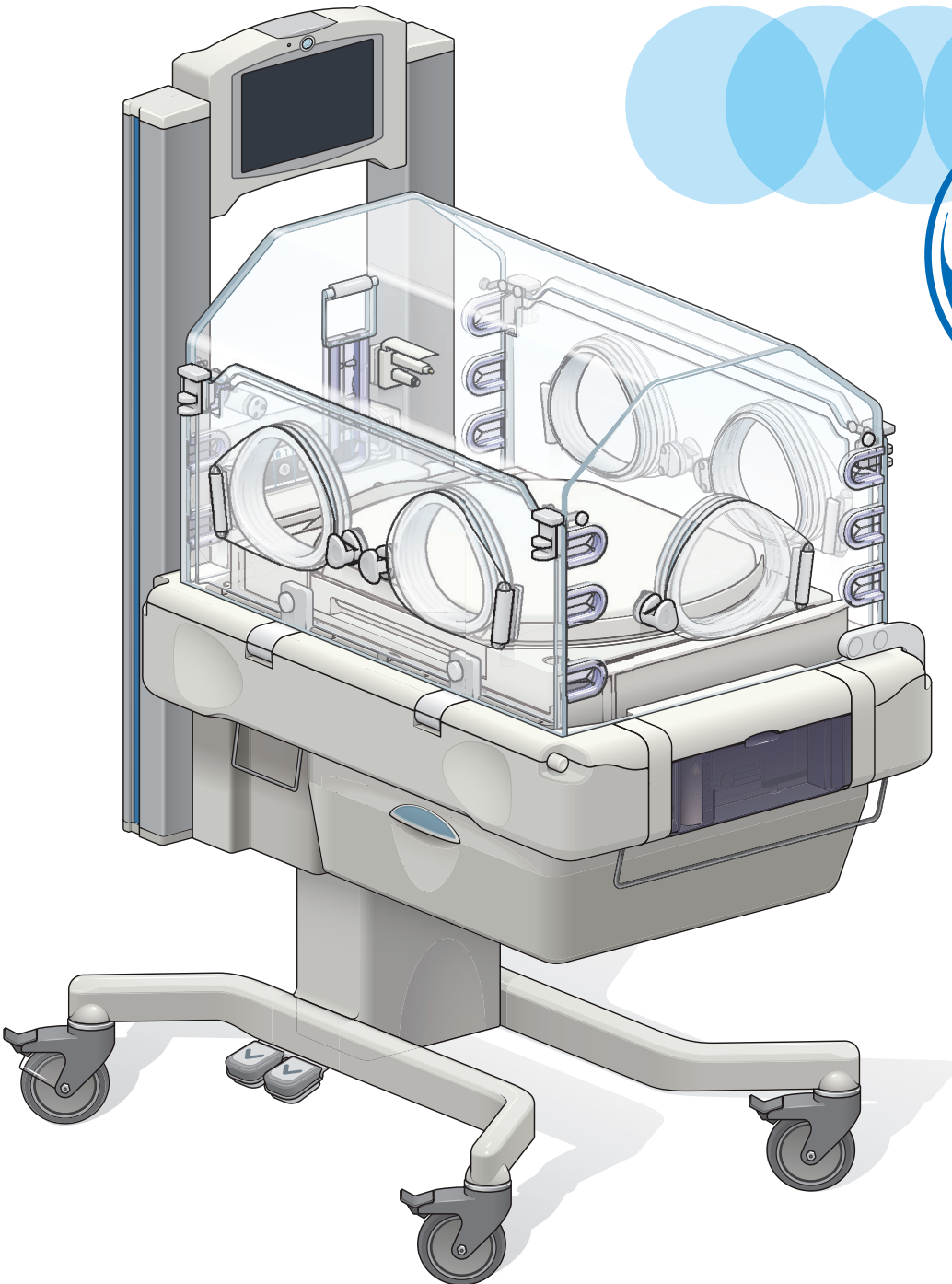


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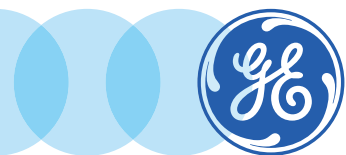
# Giraffe<sup>™</sup> Incubator<sup>™</sup> Carestation<sup>™</sup> CS1

## Participant Guide



Global Customer Education





# Giraffe™ Incubator™

Carestation™ CS1

Participant Guide

## Global Customer Education

### **Notice**

Configurations available for this product depend on local market and standards requirements. Illustrations in this material may not represent all configurations of the product. This material does not cover the operation of every accessory.

This material is intended for educational purposes only. This material does not establish specifications, operating procedures or maintenance methods for any of the products referenced. Always refer to the official written materials (labeling) provided with the product for specifications, operating procedures and maintenance requirements.





# Contents

<b>1 Welcome</b> .....	<b>1.1</b>	
Program Description .....	1.1	
Participant Learning Objectives .....	1.1	
<b>2 Overview</b> .....	<b>2.1</b>	
Overview Objectives .....	2.1	
System Description .....	2.1	
Front View .....	2.2	
Side View .....	2.3	
Rear View .....	2.4	
Probe Panel .....	2.5	
Optional Equipment Installation .....	2.6	
Installing the Scale .....	2.6	
Mounting Rail System Components .....	2.7	
Gas Cylinder Holder .....	2.8	
Tubing Management Arm .....	2.9	
Porthole Cover .....	2.9	
Silo Support Arm .....	2.10	
<b>3 Control Panel</b> .....	<b>3.1</b>	
Control Panel Objectives .....	3.1	
Control Panel Overview .....	3.2	
The Home Screen .....	3.3	
The Away Screen .....	3.4	
Using the Keyboard .....	3.5	
On-screen Help .....	3.5	
<b>4 Understanding Modes</b> .....	<b>4.1</b>	
Understanding Modes Objectives .....	4.1	
Overview .....	4.2	
Air Mode .....	4.2	
Setting the Neutral Thermal Environment .....	4.3	
Setting Air Set Temperature Manually .....	4.3	
Baby Mode .....	4.4	
<b>5 Setup Features</b> .....	<b>5.1</b>	
Setup Features Objectives .....	5.1	
Overview .....	5.2	
Navigating the Setup Screen .....	5.2	
Calibrating the Oxygen .....	5.3	
Selecting a Theme .....	5.4	
<b>6 Using the Incubator</b> .....	<b>6.1</b>	
Using the Incubator Objectives .....	6.1	
Powering the Device .....	6.2	
Setting up for Admission .....	6.3	
Admitting the Patient .....	6.4	
Attaching the Skin Temperature Probe .....	6.4	
Operating with Two Skin Temperature Probes .....	6.6	
Rotating the Mattress .....	6.6	
Filling the Humidifier Water Reservoir .....	6.7	
Weighing the Patient .....	6.8	
Using the Scale .....	6.8	
Showing Weight Trends .....	6.10	
Displaying Trends .....	6.11	
<b>7 Alarms</b> .....	<b>7.1</b>	
Using the Alarms Objectives .....	7.1	
Overview .....	7.2	
Alarm Priorities .....	7.3	
Alarm Priority Colors .....	7.3	
Alarm Audio Tones .....	7.3	
Silencing Alarms .....	7.4	
<b>8 Maintenance and Cleaning</b> .....	<b>8.1</b>	
Maintenance and Cleaning Objectives .....	8.1	
Cleaning and Disinfection Guidelines Overview .....	8.2	
User Maintenance, Cleaning, and Disinfection Frequency .....	8.3	
Cleaning and Disinfecting the Skin Temperature Probes .....	8.4	
<b>9 Resources</b> .....	<b>9.1</b>	
Troubleshooting .....	9.1	
Skills Overview .....	9.2	





# 1 Welcome

We would like to take a moment to thank you for choosing GE Healthcare for your patient care needs. Our goal now is to provide you with the best training available while continuing to support you as you use our products in your workplace.

## Program Description

This training material is designed to give participants an overview of the Giraffe Incubator Carestation from a clinical perspective. This will include an overview and description of the features and benefits, as well as the clinical use of the device. Note that some of the items listed in this participant guide are optional items and may not have been purchased for your device.

## Participant Learning Objectives

Specific learning objectives will be listed for each section at the beginning of the section. Overall learning objectives include:

- Provide a description of the device and how it is used clinically
- Identify the components on the front, back and sides of the device
- Utilize the Control Panel
- Activate the Air and Baby Modes and adjust the settings
- Navigate the Setup menu
- Admit a patient
- Attach skin temperature probe(s) and monitor patient temperature
- Weigh the patient and show weight trends
- Manage alarms
- Clean and disinfect the device





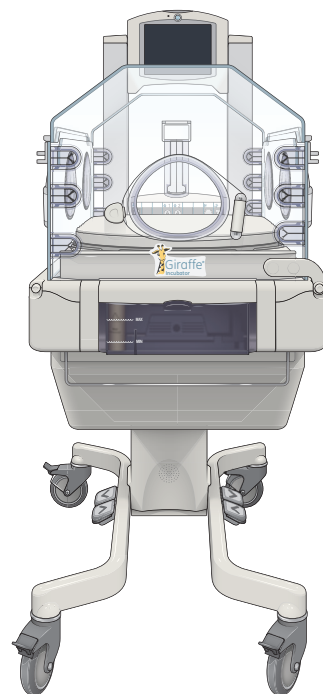
## 2 Overview

### Overview Objectives



**After completing this section, the participant will be able to:**

- Describe the main components on the front, side and rear of the device
- Describe the main components on the probe panel
- Install the scale
- Mount the Rail System Components
- Mount the Gas Cylinder Holder
- Mount the Tube Management Arm
- Install the Porthole Cover
- Install the Silo Support Arm



### System Description

The Giraffe Incubator combines state of the art microprocessor control with enhanced thermal performance. Unique features include bed panels that allow access from either side, highly visible displays, controls that can be accessed from both sides of the incubator, and a large bed surface with a rotating mattress.

## Front View

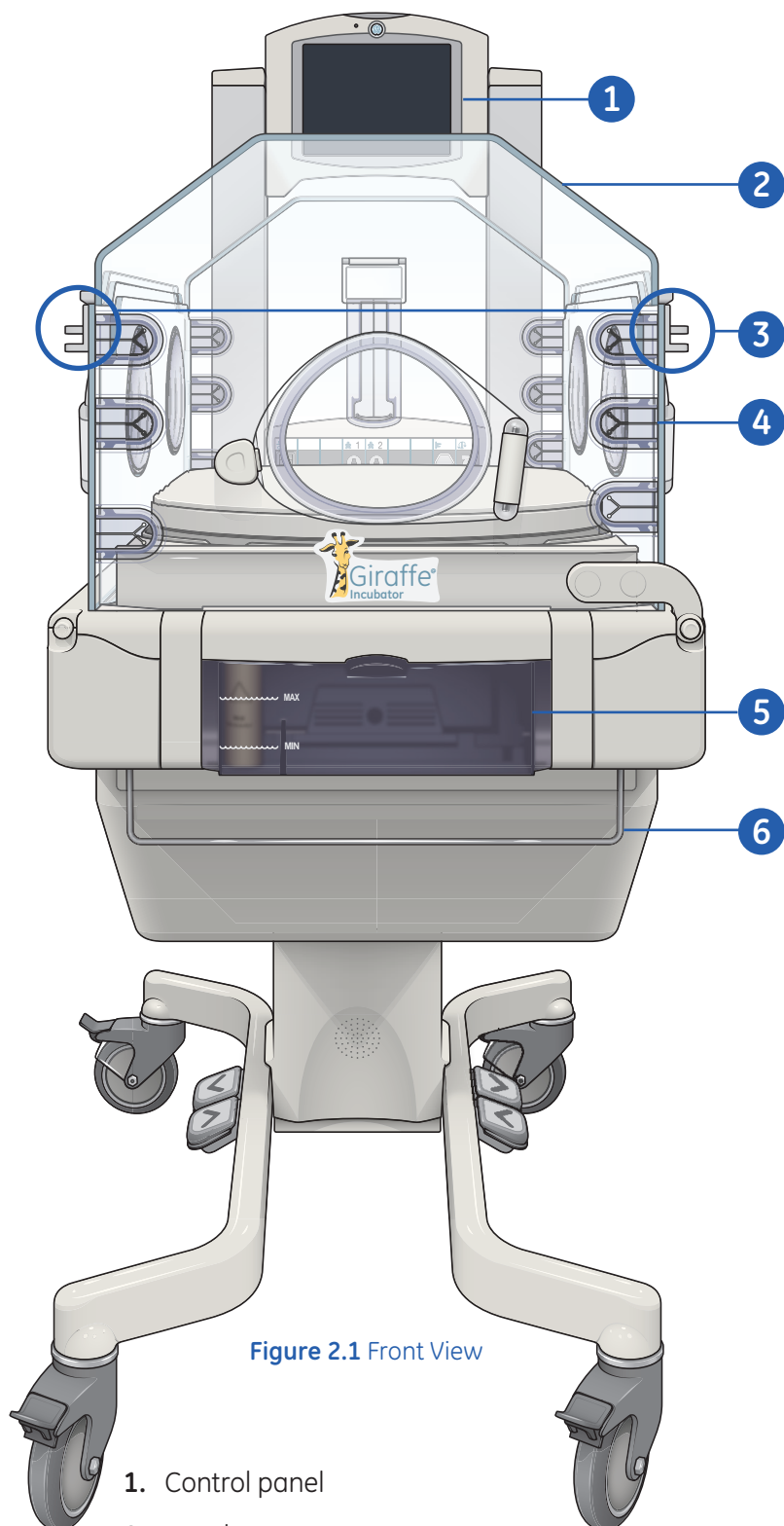
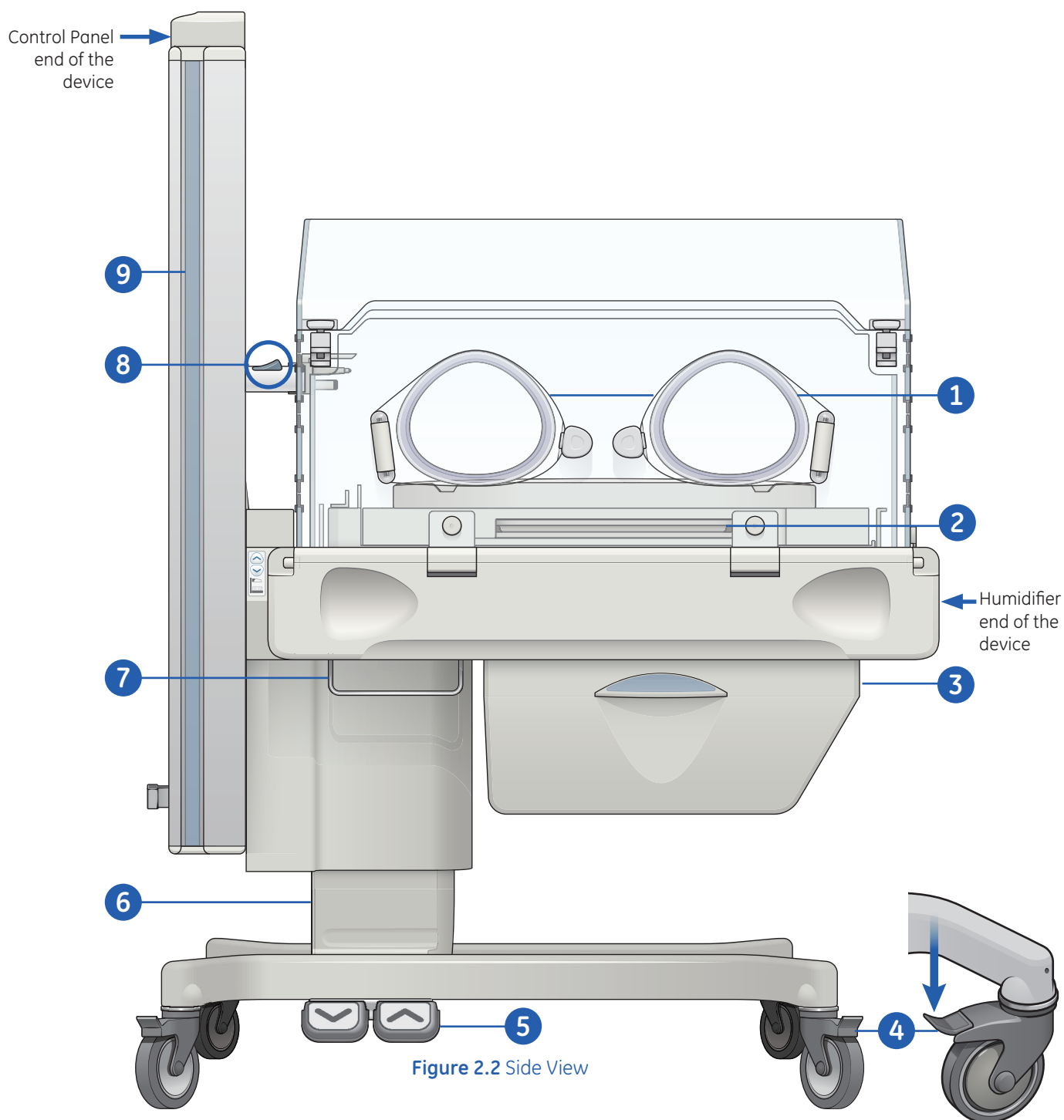


Figure 2.1 Front View

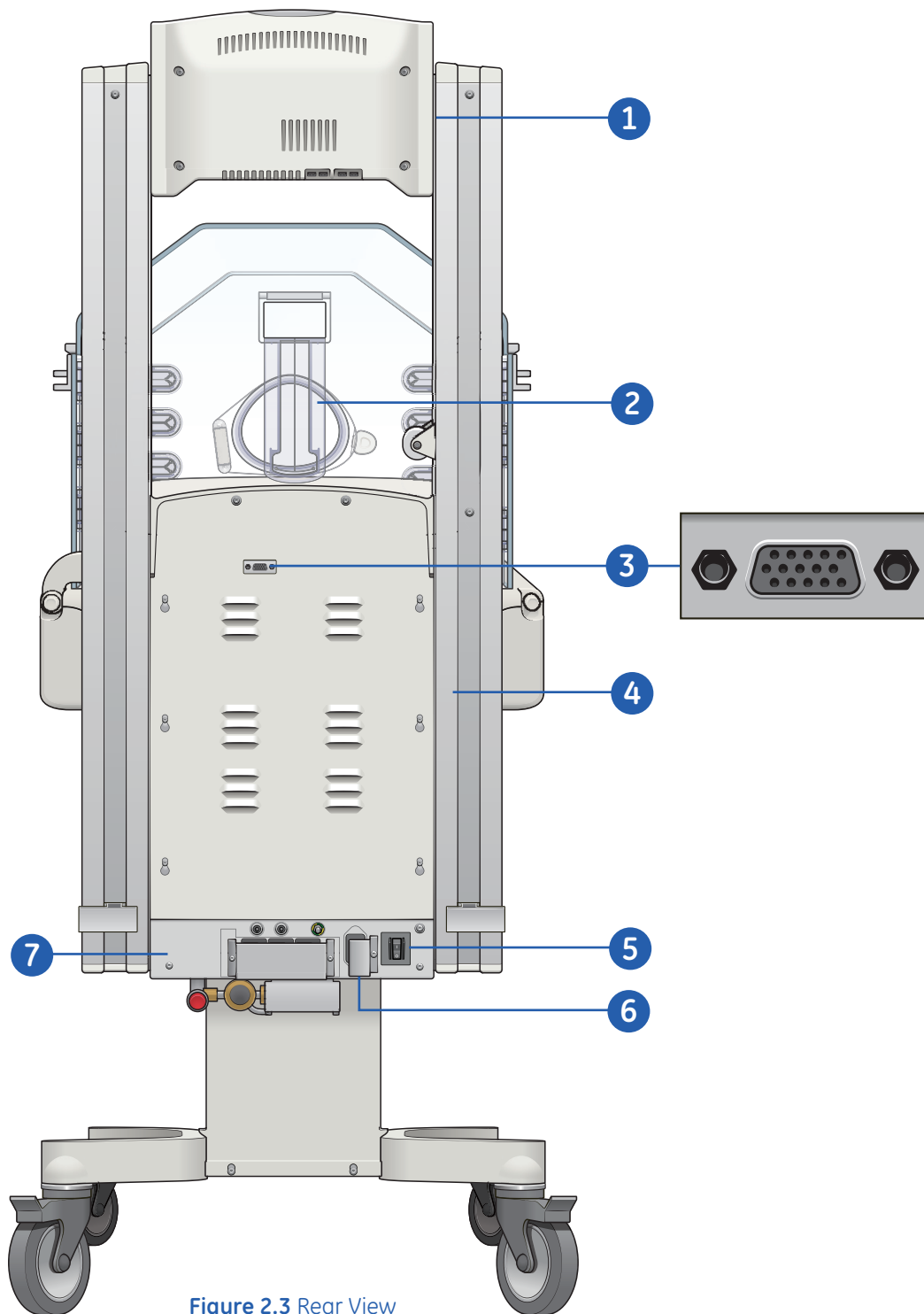
1. Control panel
2. Hood
3. Side bed panel latches
4. Tubing management grommet
5. Humidifier Water Reservoir (air filter located behind humidifier)
6. Pleural drainage hanger

## Side View



- |                     |                            |
|---------------------|----------------------------|
| 1. Portholes        | 6. Elevating base          |
| 2. X-ray Tray       | 7. Pleural drainage hanger |
| 3. Storage drawer   | 8. Hood tilt latch         |
| 4. Wheel brake      | 9. Mounting rail           |
| 5. Bed height pedal |                            |

## Rear View



**Figure 2.3** Rear View

- |   |                         |
|---|-------------------------|
| 1. Control Panel cover                  | 5. Mains Power Switch   |
| 2. Ventilator access                    | 6. Power cord connector |
| 3. RS-232 connector for DataLink option | 7. Serial number        |
| 4. Rear Panel cover                     |                         |



## Probe Panel

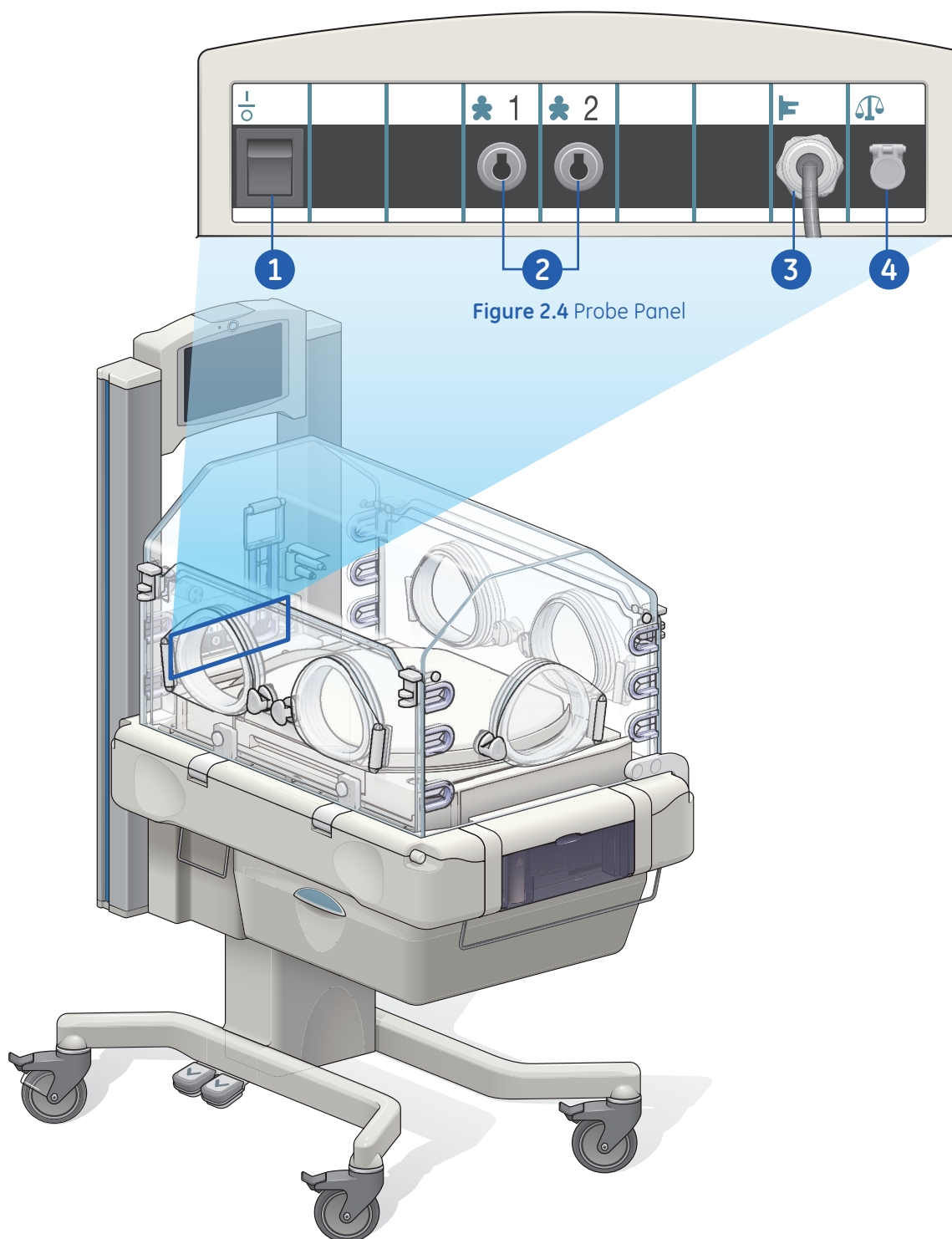


Figure 2.4 Probe Panel

1. Standby power switch (I/O)
2. Skin temperature probe connectors
3. Compartment air temperature sensor connector
4. Scale connector

## Optional Equipment Installation

### Installing the Scale

To install the scale:

1. Remove the mattress and clear plate from the bed.
2. Fit the scale weighing platform into the recesses in the bed.
3. Route the scale cable through a tubing access cover or the ventilator slot and plug the connector into the probe panel.
4. Place the mattress and clear plate on the weighing platform. Make sure they are properly seated on the platform.



**Note!** You may connect or disconnect the scale cable regardless of device power status.

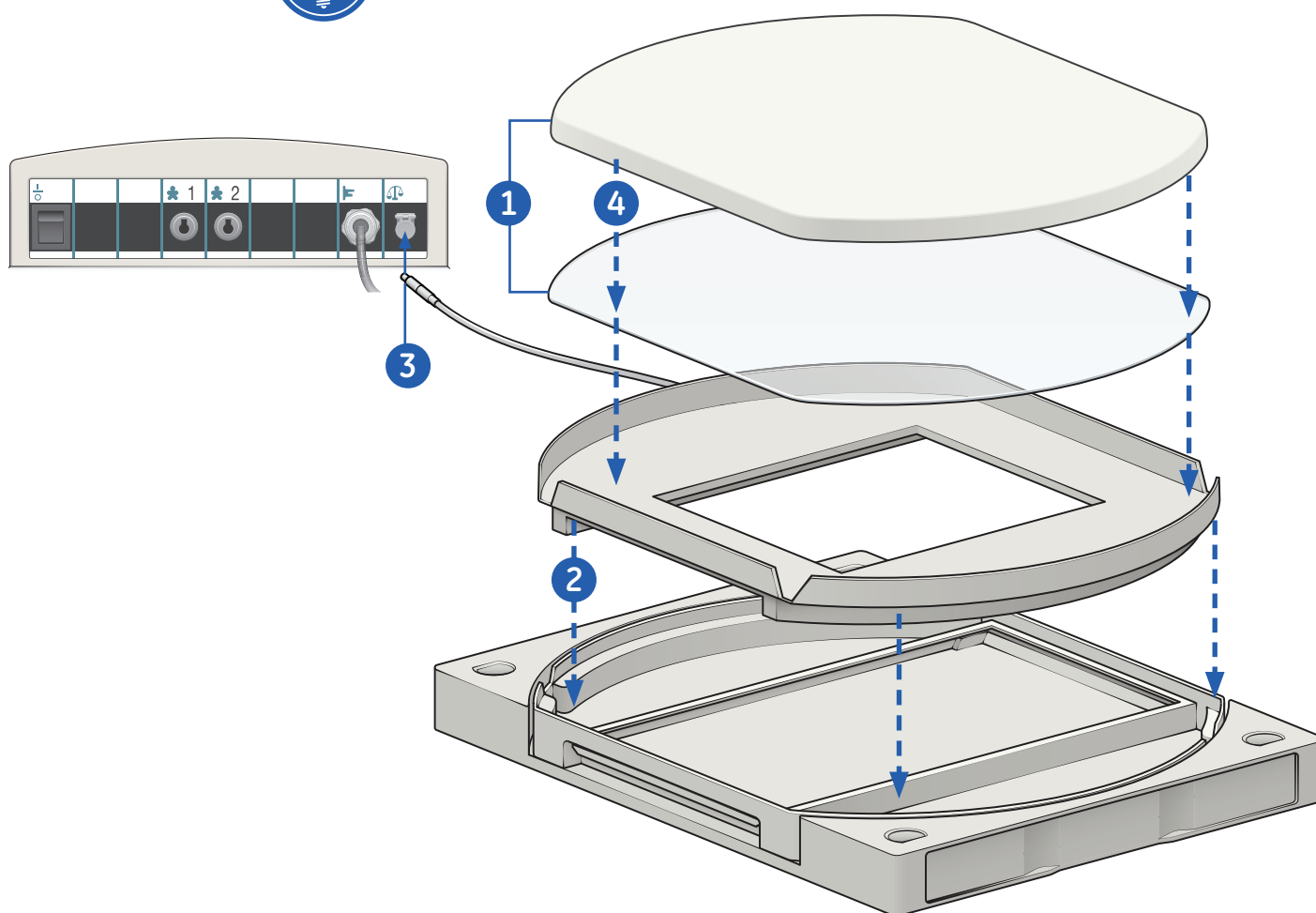


Figure 2.5 Installing the Scale

## Mounting Rail System Components

Rail system components mount to the mounting rails and provide access to commonly used equipment, such as regulators, flow meters, collection bottles, and instrument shelves. The mounting system consists of a mounting shaped aluminum extrusion and a positive locking mounting block. Mounting blocks attach various accessories to the mounting system.

### To mount the rail system components:

1. Loosen the mounting screw on the mounting block.
2. Place the mounting block in position on the rail.
3. Tighten the mounting screw.

To release the rail system component, loosen the mounting screw.

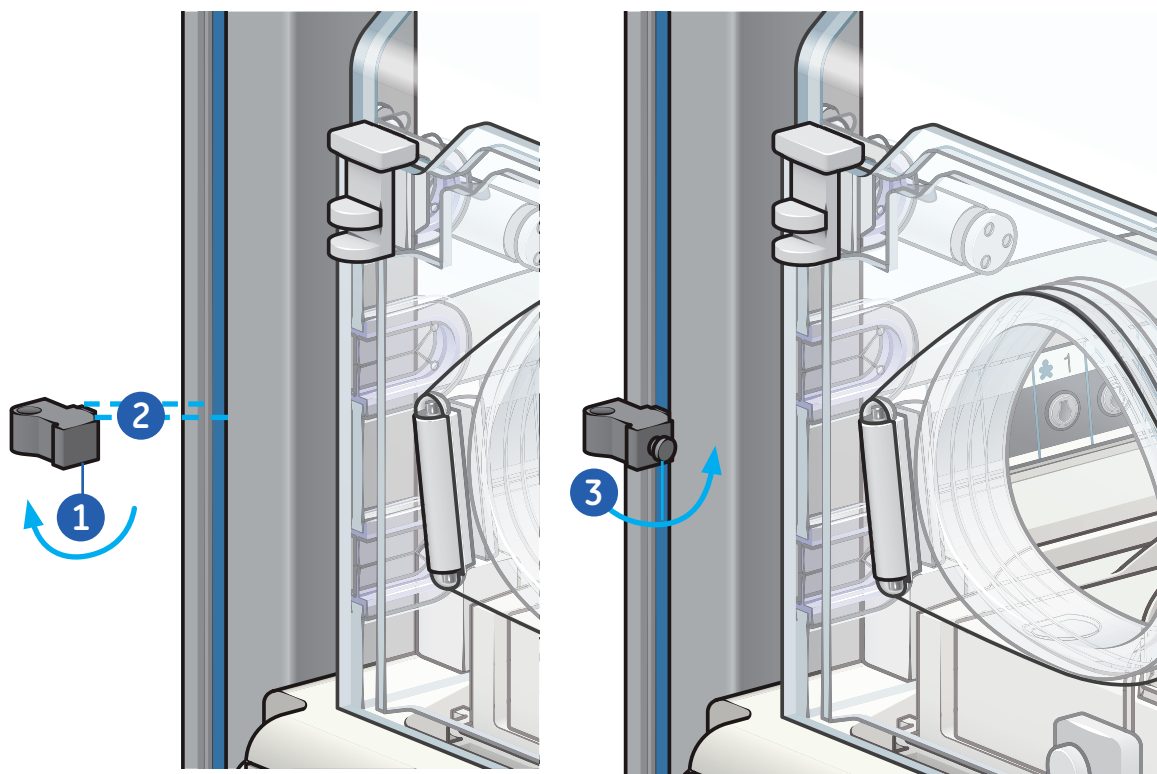


Figure 2.6 Mounting the Rail System Components

## Gas Cylinder Holder

The gas cylinder holder may be mounted on the outside or the back of the mounting rails.

### To mount the gas cylinder holder:

1. Slide the holder down from the top of the mounting rail and secure it by tightening the mounting nuts.
2. Always lower the bed to its lowest position before mounting the holder to ensure adequate clearance with the wheel legs and the floor.
3. Carefully place the cylinder in the holder and secure it with the nylon straps.

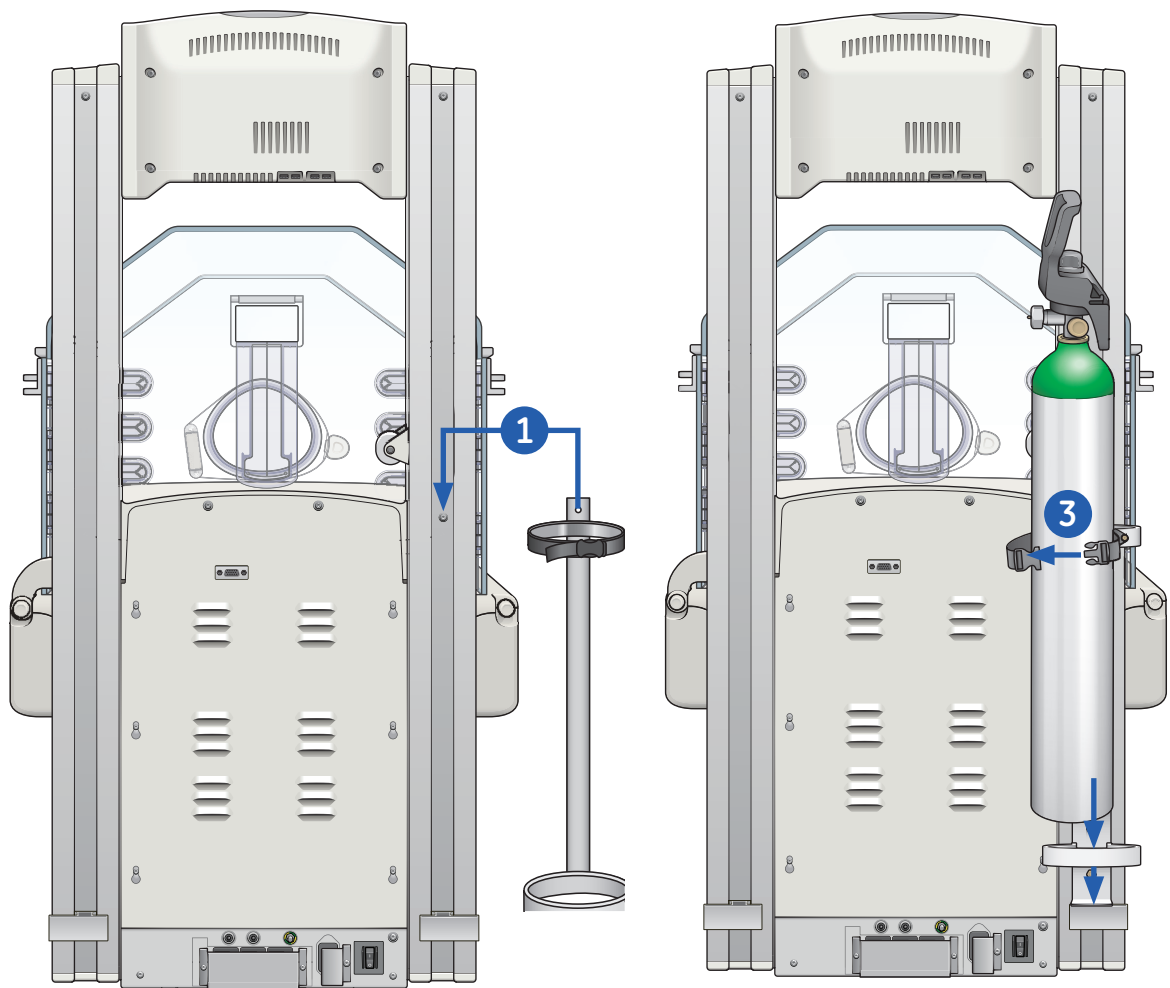


Figure 2.7 Mounting the gas cylinder holder

## Tubing Management Arm

The flexible tubing management arm aids in routing tubing to the patient. The slots and holes in the tubing holder at the end of the arm accommodate tubing of various sizes.

To mount the tubing management arm, insert it in any of the 4 “D” shaped holes located at each of the bed corners.



**WARNING!** Carefully route patient cabling to reduce the possibility of patient entanglement or strangulation. The tubing management arm is designed for tubing only and will not support loads greater than 200g.

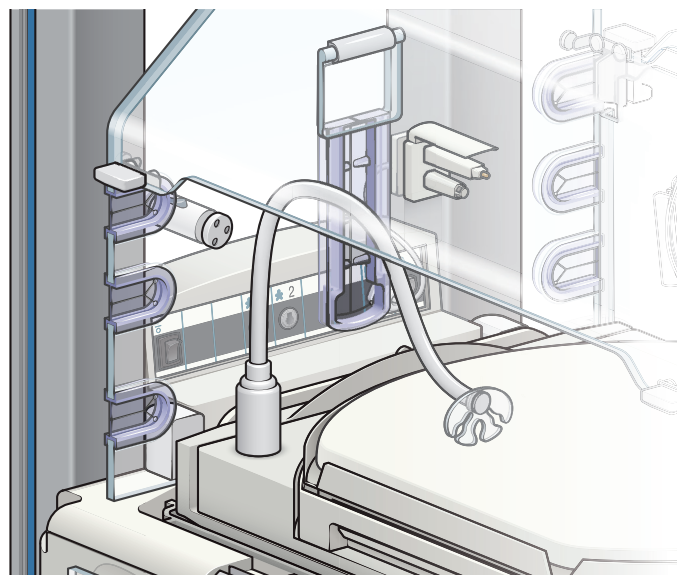


Figure 2.8 Mounting the tubing management arm

## Porthole Cover

The porthole cover is used to close a port when large tubing is routed through it.

**To hold the cover in position:**

1. Fit the rim at the top of the cover into the outer lip of the porthole gasket.
2. Fit the tabs on either side of the tubing slot under the seal lip.



**WARNING!** Carefully route patient cabling to reduce the possibility of patient entanglement or strangulation.



**Note!** The porthole cover is designed for routing oscillator or ventilator tubing. If no tubing is routed through the slot, the porthole cover should be removed and the porthole should be closed.

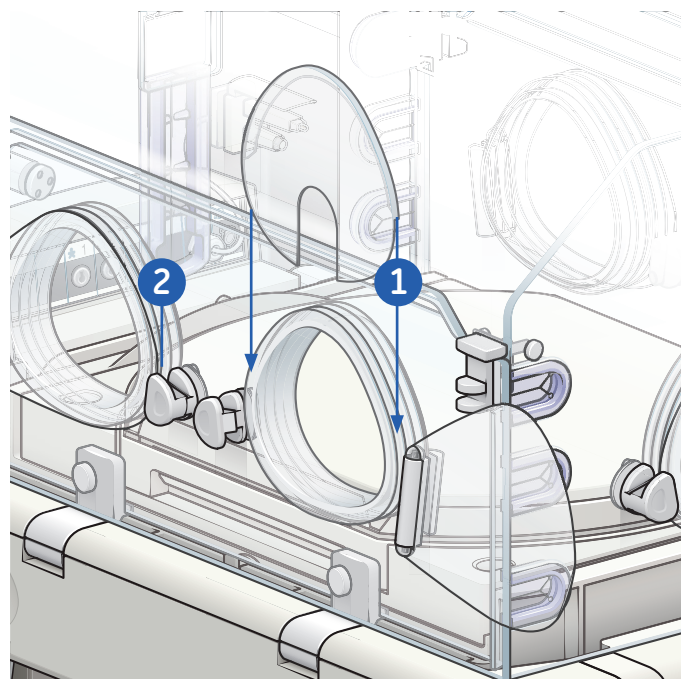


Figure 2.9 Porthole cover

## Silo Support Arm

The silo support arm is used to suspend gastroschisis silos over the patient.

### To install the silo support arm:

1. Insert the ends of the arm into any two “D” shaped holes in the bed corners.
2. Bend the arm into the desired position.
3. Secure the care item to the arm as desired.



**Note!** The canopy can be up or down. The mattress tray should not be slid out while the silo support arm is installed.

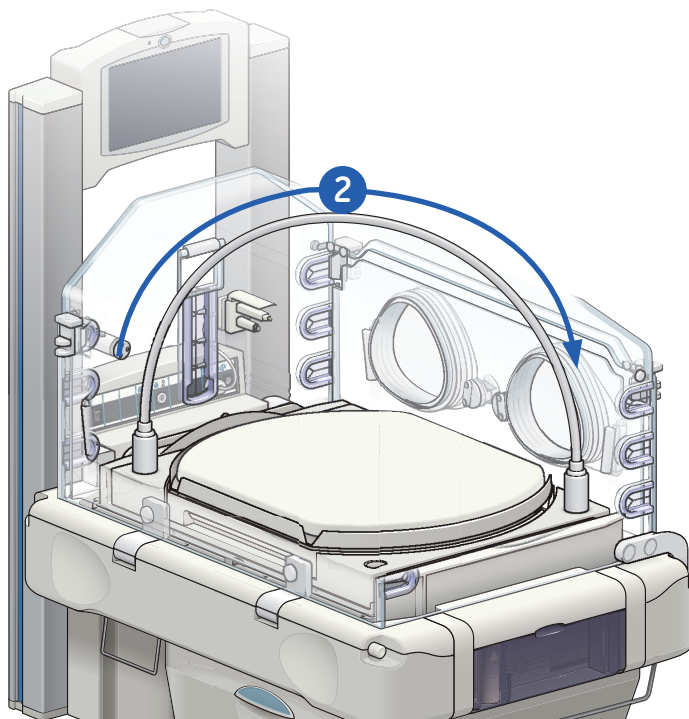
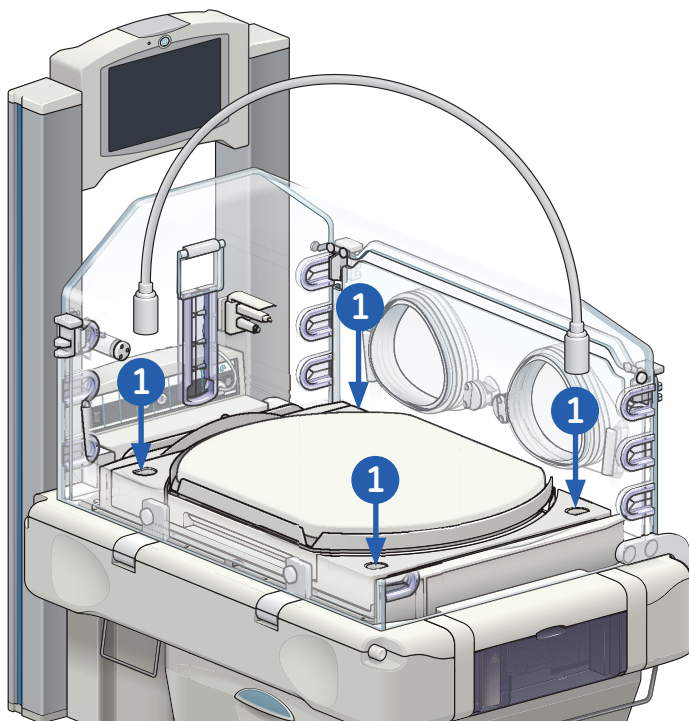


Figure 2.10 Silo Support Arm



# 3 Control Panel

## Control Panel Objectives



**After completing this section, the participant will be able to:**

- Identify all of the areas on the Home Screen
- Activate and deactivate the Away Screen
- Enter data using the Keyboard
- Access on-screen help





## Control Panel Overview

The Control Panel is the main feature used to operate the device. It provides the interface by which you can use the device to accomplish a variety of care giving activities, such as thermoregulation and managing alarms. The Control Panel provides a touch screen interface on which you use your fingers to activate functions. You can access the Control Panel from either side of the bed.



**Note!** *The functions available depend on the selected operational mode and purchased options.*



**Figure 3.1** The Control Panel



## The Home Screen

The Home screen provides access to many device features. Some of the features shown are optional and will not appear on your display if the device is not equipped with that option.

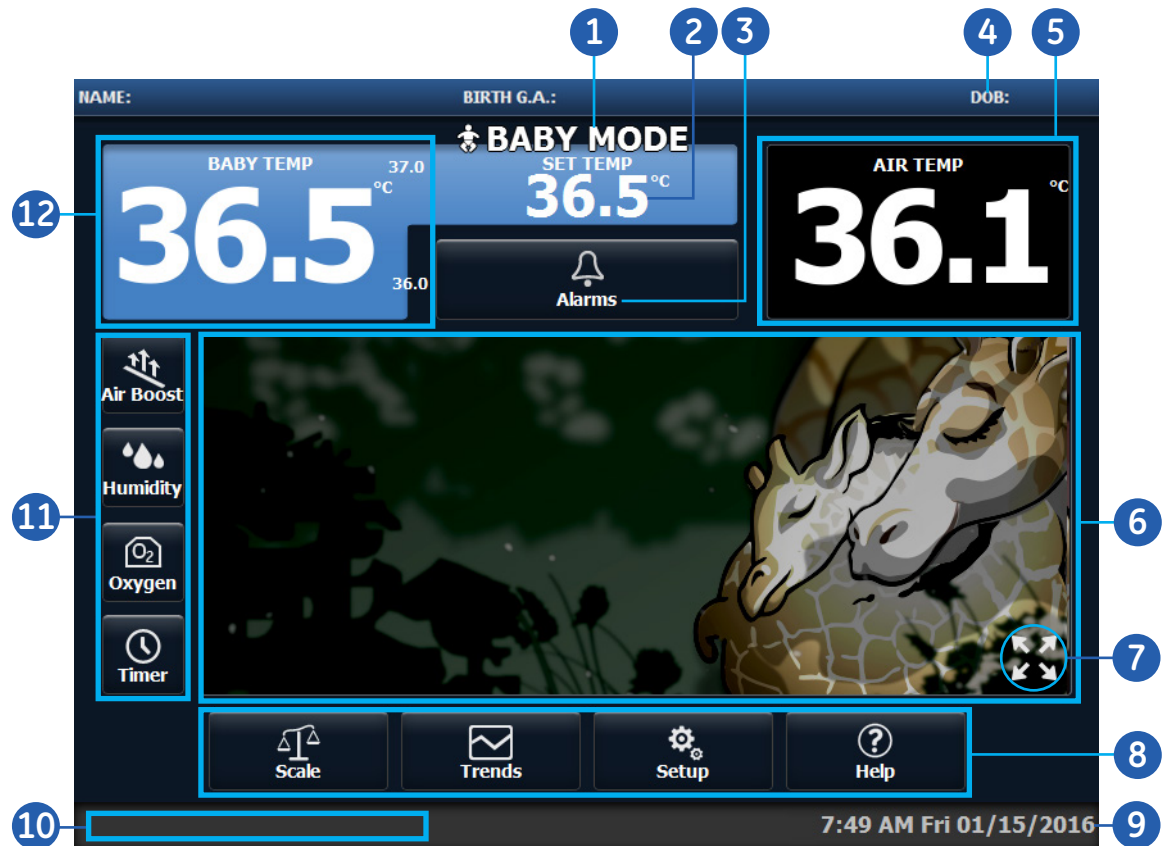



Figure 3.2 The Home Screen

- |                              |                      |                       |
|------------------------------|----------------------|-----------------------|
| 1. Current Mode              | 5. AIR TEMP Area     | 9. Current Date/Time  |
| 2. SET TEMP Area             | 6. Display Area      | 10. Message area      |
| 3. Alarm Silence Button      | 7. Away Screen Arrow | 11. Quick Touch icons |
| 4. Basic Patient Information | 8. New Screen icons  | 12. BABY TEMP Area    |

## The Away Screen

The Away screen appears when no actions have been touched for a specified time or when you activate it. To activate the Away screen, touch  in the display area. The Away screen appears and will display the current status.

You can change the default Away screen timeout by selecting **Setup** on the Home screen and then select a new setting **for Away Screen Timeout (Off, 5 min, 15 min or 30 min)**.

1. Current Mode
2. Current Data and Settings

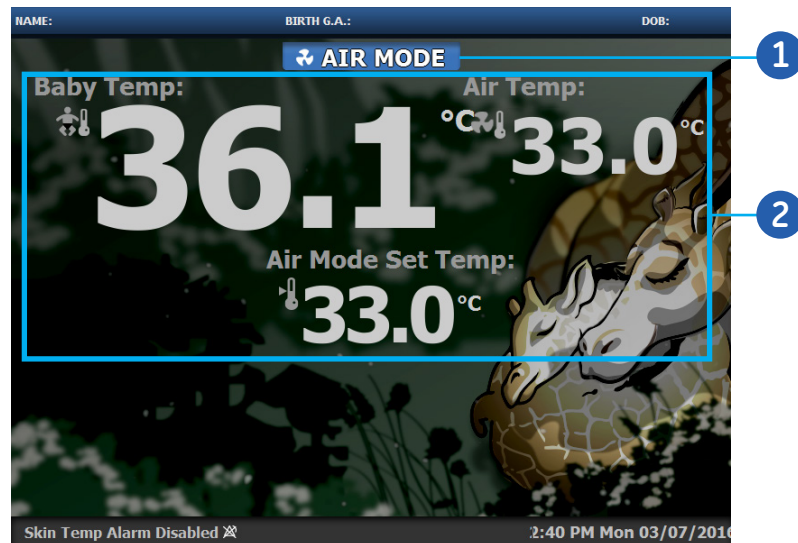


Figure 3.3 The Away Screen

If the screen is touched before five seconds idle time, you are returned to the Home screen. After five seconds, a lock appears.

**To deactivate the Away screen:**

1. Touch anywhere on the Away screen.
2. Touch and hold the lock until you are returned to the home screen.



**Note!** The Away screen should be activated and locked prior to wiping the Touch Screen.

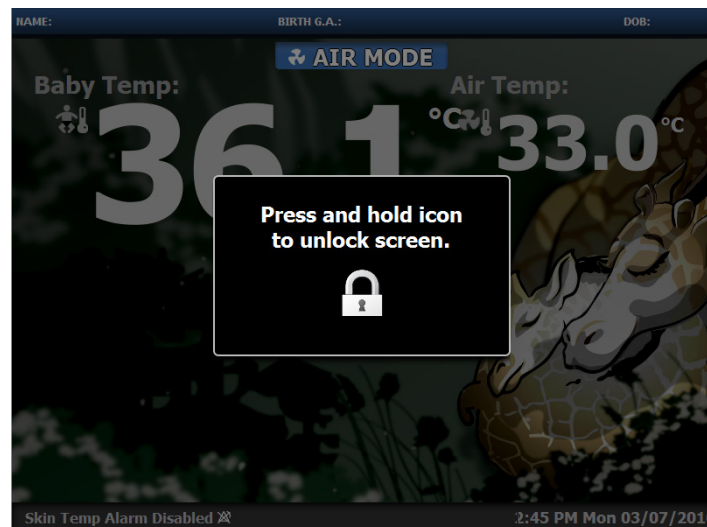


Figure 3.4 Locked Screen

## Using the Keyboard

When a field requires that you enter text or numbers, a keyboard appears for data entry.

To use the keyboard:



Figure 3.5 Keyboard

1. Touch a data entry field
2. When the keyboard appears, touch the keys on the keyboard to enter the data in the field.
3. Touch the **Enter** key and the keyboard disappears and the data is entered in the field.

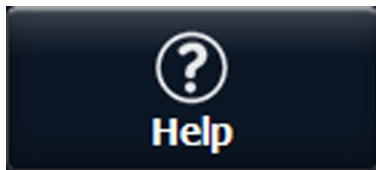
## On-screen Help

Descriptions of certain features and alarm actions are available by using the on-screen help system on the device.

When alarms appear on-screen, touch the alarm to bring up additional information about the alarm. Detailed alarms descriptions are also available in the on-screen help.

To access the on-screen help:

1. Touch **Help** on the Home screen



2. Touch the desired help items
3. Navigate to desired subtopics, as desired.
4. Touch **X** to return to the Home screen.

### Low Air Temperature

#### Activation Criteria:

The Low Air Temperature alarm triggers when the temperature measured by the compartment sensor falls more than 3.0°C below the air set temperature.

#### Possible Cause:

- Bed panels are open without using Air Boost.
- Both side bed panels are open at the same time.

#### Action:

Monitor the device closely to ensure the air temperature increases.

Figure 3.6 On-screen Help Example





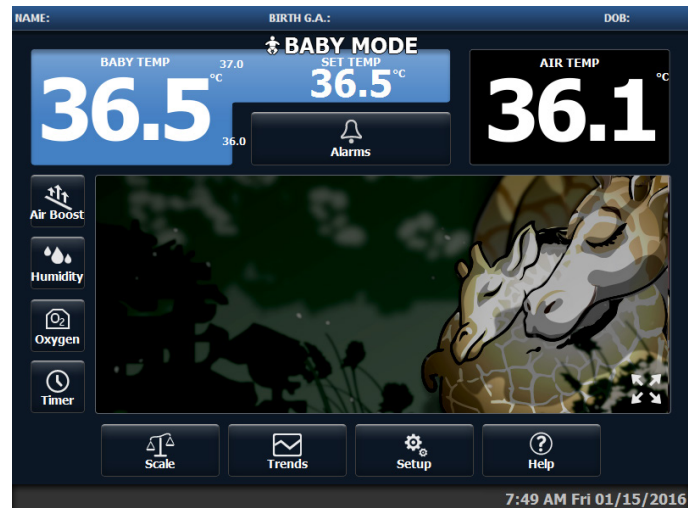
# 4 Understanding Modes

## Understanding Modes Objectives



After completing this section, the participant will be able to:

- Enter Air Mode and set the Comfort Zone
- Enter Air Mode and manually apply the Set temperature
- Enter Baby Mode and set skin temperature
- Define Desired Environment Temperature (DET)



## Overview

The Giraffe Incubator Carestation has two environmental control modes. You can choose to control the environment using Air Mode or Baby Mode.

## Air Mode

Air Mode controls the temperature inside the closed compartment by comparing air temperature reading from the compartment air sensor to a set temperature. The set temperature can be set using the Comfort Zone feature or applied manually (both are described below).

### To Enter Air Mode:

1. Touch the **AIR TEMP** area.
2. Touch **Air Mode**.
3. Set the Comfort Zone or manually apply the Set temperature (as described on the next page).

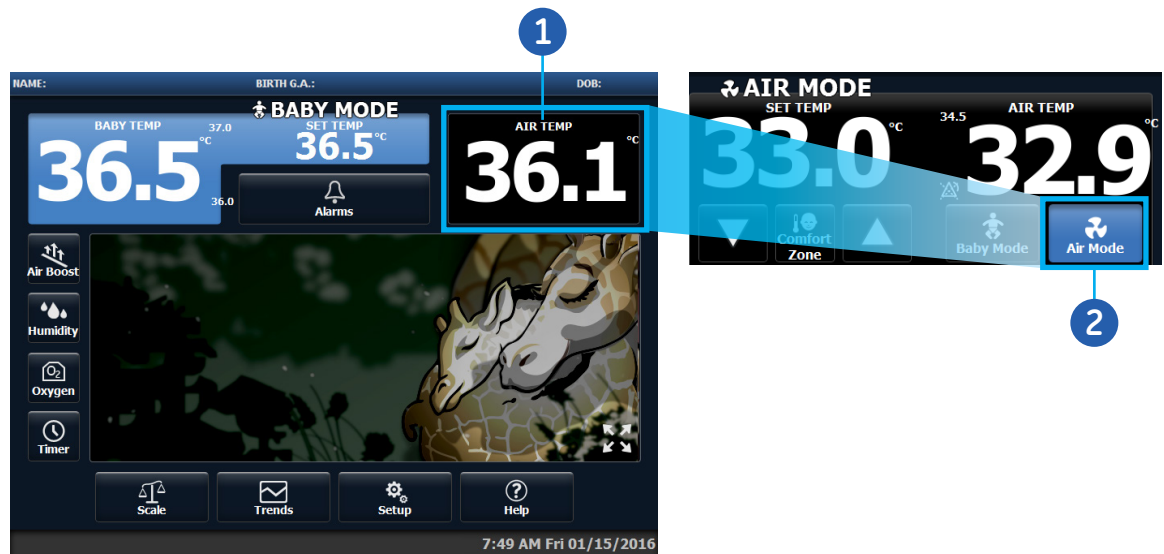


Figure 4.1 Entering Air Mode

## Setting the Neutral Thermal Environment

The Comfort Zone feature is used to calculate suggested air temperature range based on gestational age, post-natal age, and weight

To set the air temperature using Comfort Zone:

1. After entering the Air Mode as described previously, touch **Comfort Zone**.
2. The Comfort Zone menu will now appear. Using the arrows, enter Gestational Age, Post-Natal Age, and Weight to see a recommended air temperature.
3. If you wish to modify the temperature within the recommended range, use the arrows above and below the Apply button to change the setting.
4. Touch **Apply**.
5. Once Apply is touched, the temperature is placed in the **SET TEMP** area.
6. Touch **X** to exit and return to the prior screen.



**Note!** Comfort Zone is also available by selecting Setup on the Home screen and then selecting Show for the Comfort Zone selection.



Figure 4.2 Comfort Zone

## Setting Air Set Temperature Manually

To set the desired air temperature:

1. After entering Air Mode as described previously, use the arrows under **SET TEMP** to enter the desired air temperature.
2. Temperature settings from 20° to 39°C can be entered in 0.1°C. When selecting temperatures between 37° and 39°C, a message will appear that states **Override the 37° Limit?** You must select **Yes** to confirm the setting.

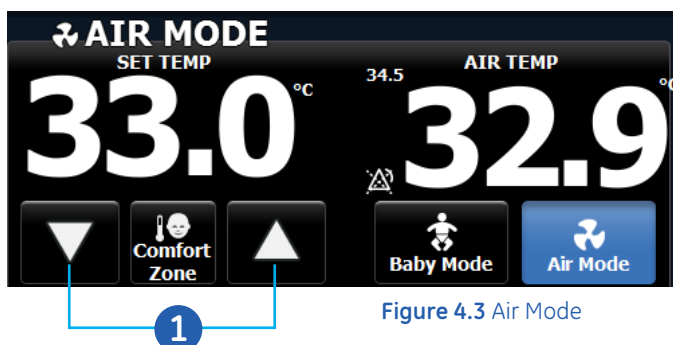


Figure 4.3 Air Mode

# Baby Mode

Baby Mode controls the inside temperature based on skin temperature probe readings.

When operating in Baby Mode, the temperature detected by the skin temperature probe is shown in the BABY TEMP area. If the patient’s temperature is below 30°C, the display will show **-L-**. If the patient’s temperature is above 42°C, the display will show **-H-**.

**To Enter Baby Mode:**

- 1. Touch the **BABY TEMP** area.
- 2. Touch **Baby Mode**.
- 3. Use the arrows to set skin temperature to the desired control set point per clinical protocol.

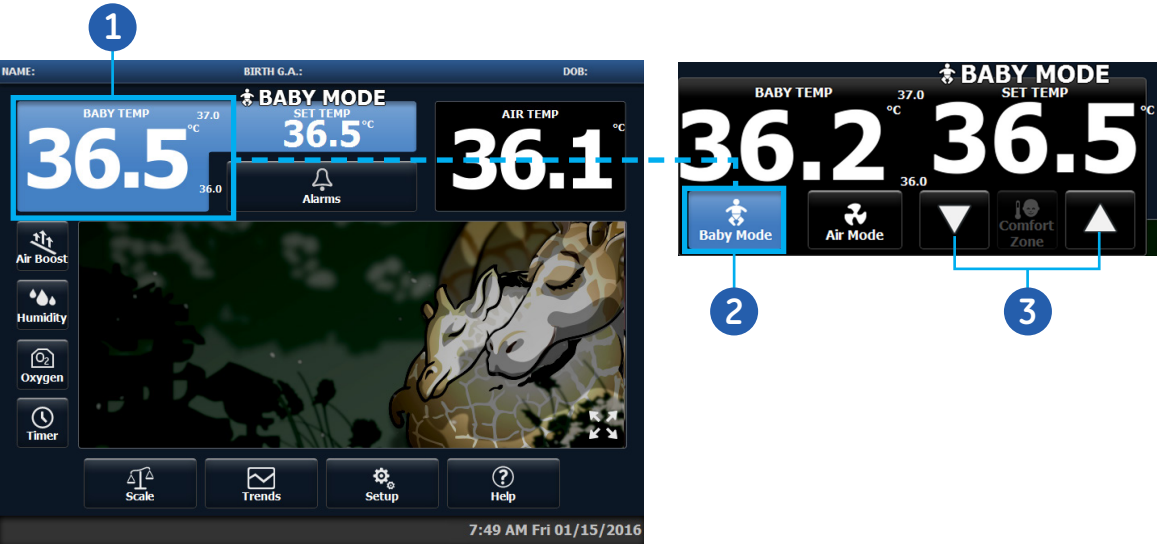


Figure 4.4 Entering Baby Mode

The desired environmental temperature (DET) is defined as the incubator air temperature required to maintain the patient within the desired set temperature.

In the following table, the Patient Condition column indicates the difference between the patient skin temperature and the patient set temperature. The system performs the following adjustment every 10 minutes.

Patient Condition	DET Adjustment
Warm by 0.4°C or more	Decrease by 0.3°C
Warm by 0.3°C to 0.39°C	Decrease by 0.2°C
Warm by 0.2°C to 0.29°C	Decrease by 0.1°C
Warm by less than 0.2°C	No adjustment
Cold by less than 0.2°C	No adjustment
Cold by 0.2°C to 0.29°C	Increase by 0.1°C
Cold by 0.3°C to 0.39°C	Increase by 0.2°C
Cold by 0.4°C or more	Increase by 0.3°C

Table 4.1 DET Adjustments Every 10 minutes





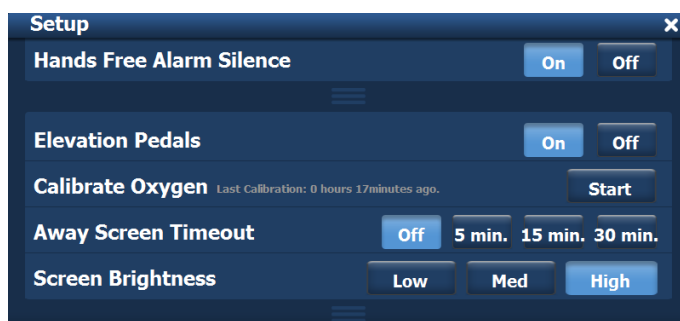
# 5 Setup Features

## Setup Features Objectives



After completing this section, the participant will be able to:

- Navigate the Setup Screen
- Calibrate the Oxygen
- Select a Theme



## Overview

Set up features are available for basic patient setup, alarms, and pedals. Authorized service personnel have access to a service screen that can set defaults for preheat % power, alarm criteria, and other default settings. The service mode setting may affect the availability of features in this section.

## Navigating the Setup Screen

To access setup features:

1. Touch **Setup** on the Home screen.
2. The Setup screen will now appear. Touch the Setup screen and drag your finger upwards or downwards to scroll to the desired feature. Similar features are grouped together.
3. Release your finger and then select the desired setup feature. For instance, to change the Temperature Units from Centigrade to Fahrenheit, you would simply scroll to **Temperature Units** and touch the **°F** selection.



Figure 5.1 setup screen

## Calibrating the Oxygen

To calibrate oxygen:

1. Touch **Setup** on the **Home** screen.
2. The Setup screen will now appear. Scroll to **Calibrate Oxygen**.
3. Touch **Start**. Once Start is touched, calibration is automatic and takes less than five minutes.

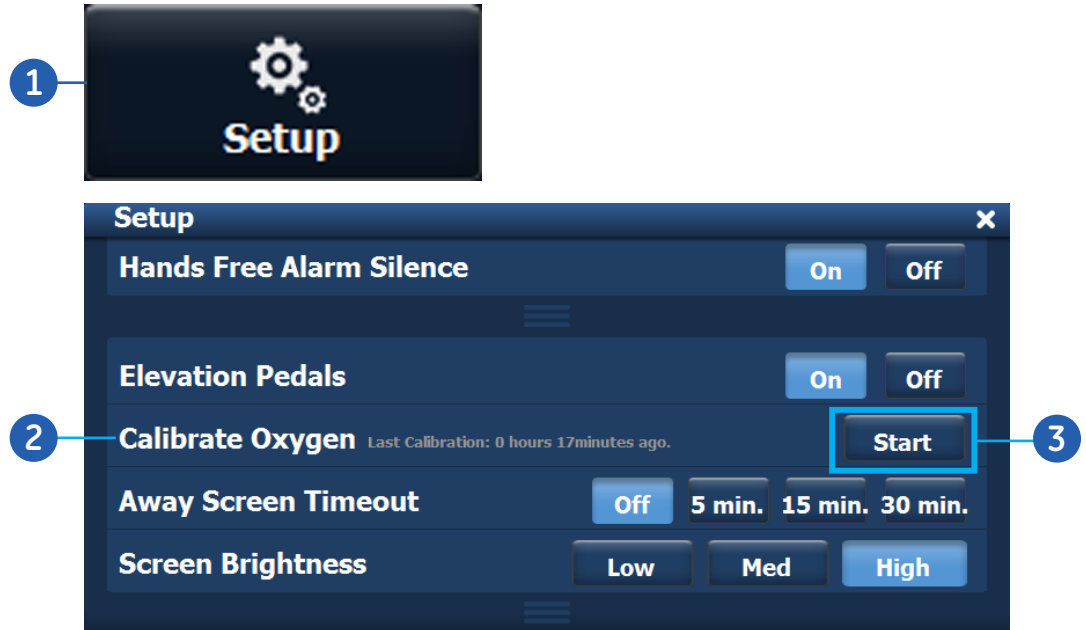


Figure 5.2 Calibrate Oxygen and Start

4. A bar graph indicates progress toward completing calibration.
5. If you wish to discontinue calibration before it is completed, touch **Cancel**.

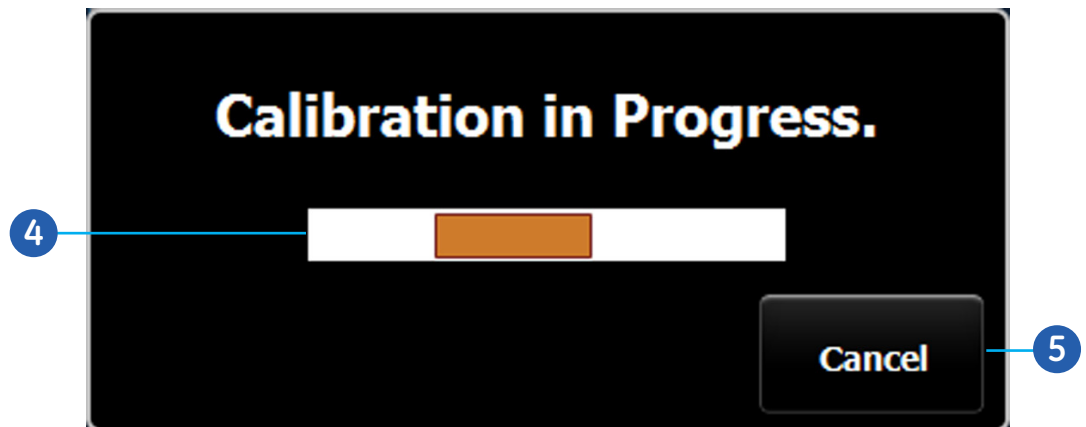


Figure 5.3 Calibrate Screen

## Selecting a Theme

You can choose background themes. Themes change the pictures displayed on the Home, Away, and I Weigh screens.

### To choose themes:

1. Touch **Setup** on the **Home** screen.
2. The Setup screen will now appear. Scroll to **Current Theme**.
3. Use the arrows to select the desired theme.
4. The name of the screen shown in the preview box is listed under **Preview Theme** on the left.
5. Touch **Apply** to select the screen shown in the preview.
6. The selected theme shows under **Current Theme**.

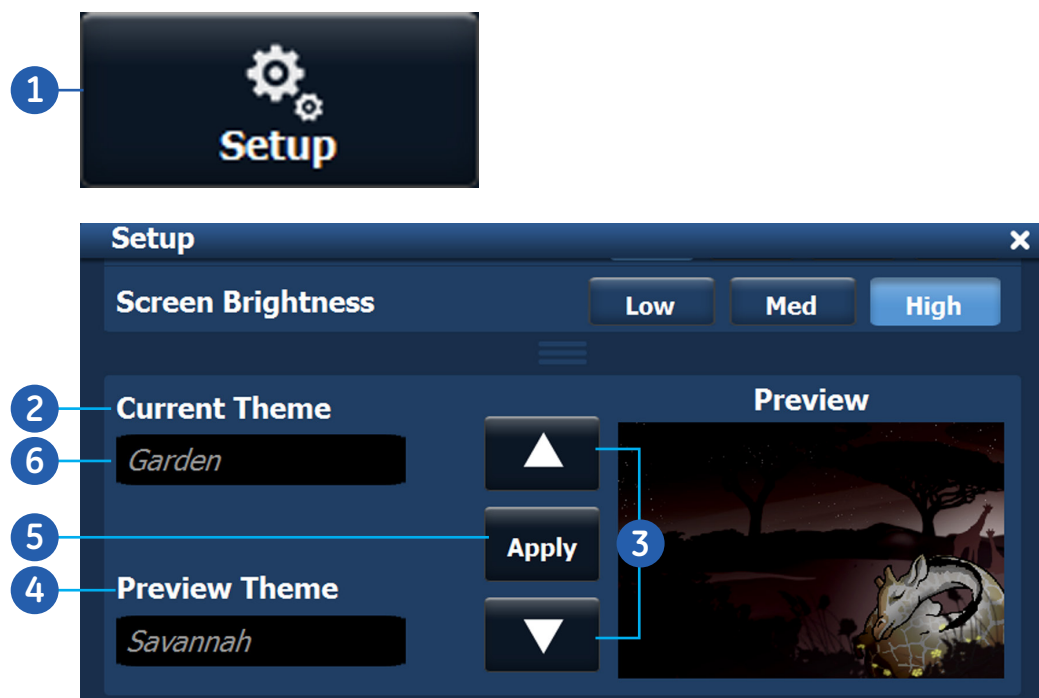


Figure 5.4 Current Theme



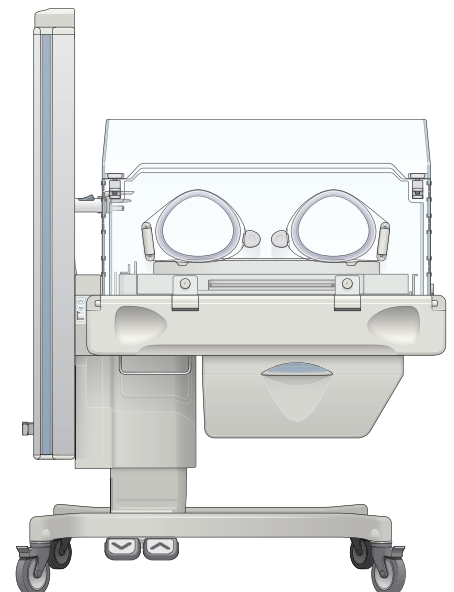
# 6 Using the Incubator

## Using the Incubator Objectives



**After completing this section, the participant will be able to:**

- Turn the device on and off
- Setup for admission
- Admit a patient
- Attach skin temperature probe(s)
- Rotate the mattress
- Fill the water reservoir
- Weigh the patient
- Show weight trends
- Display trends



## Powering the Device

### To turn the device On:

1. Lock all wheel brakes.
2. Plug the power cord into a grounded outlet or a hospital grade outlet.
3. Turn on power at the Mains power switch on the back of the device.
4. Turn on the power at the Standby switch on the probe panel.

A series of informational screens are displayed. The device is ready for use when the Home screen appears.

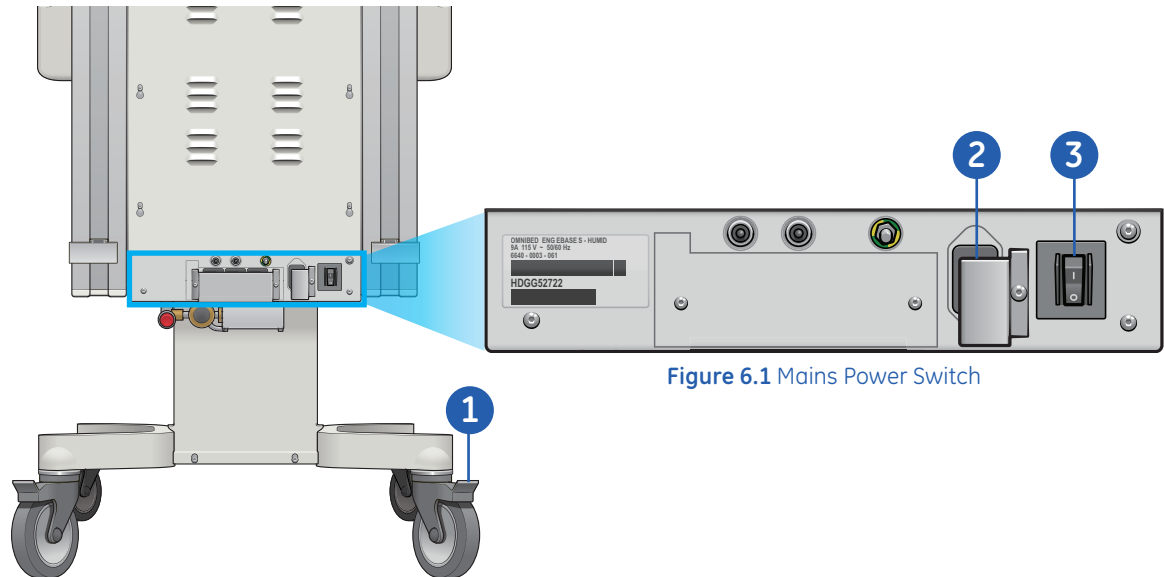


Figure 6.1 Mains Power Switch

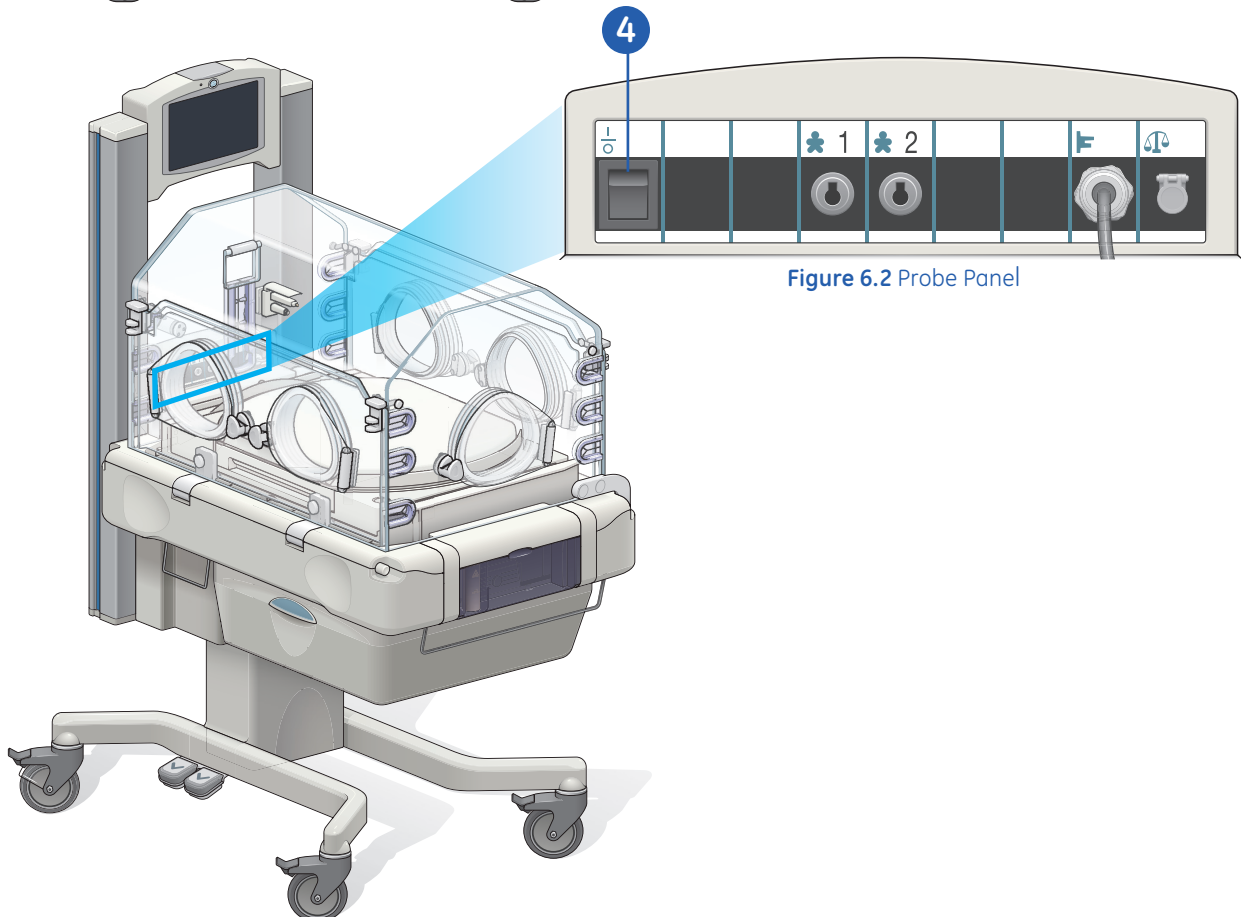


Figure 6.2 Probe Panel

## Setting up for Admission

To setup the device for admission:

1. Lock all wheel brakes.
2. Execute all pre-use checkout procedures prior to setting up for admission.
3. Power on the Device.
4. If the system has been used in the last 2 hours, the **Clear Patient History?** window will appear. You are prompted to either clear patient history by selecting **Yes** or to retain the settings you used previously by selecting **No**.

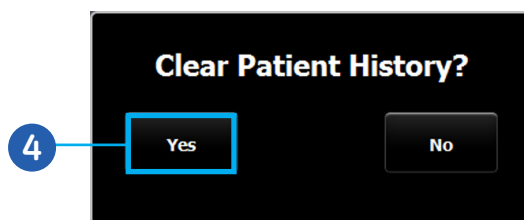


Figure 6.3 Clear Patient History

6. Touch the **AIR TEMP** area in the upper right area of the display so that the Comfort Zone button is visible.
7. Touch **Comfort Zone**.
8. The **Comfort Zone** menu will now appear. Using the arrows, enter **Gestational Age**, **Post-Natal Age**, and **Weight** to see a recommended air temperature range.

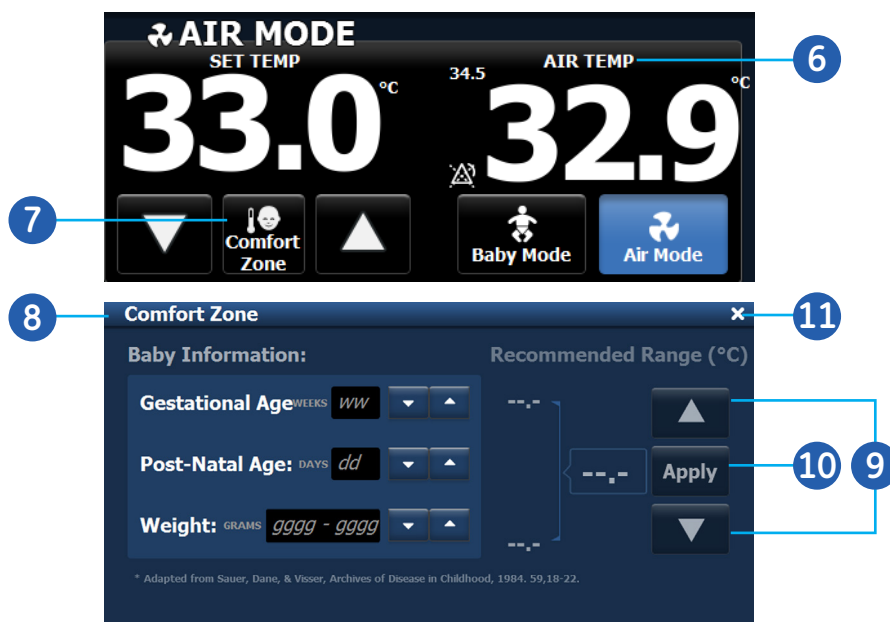


Figure 6.4 Comfort Zone

9. If you wish to modify the recommended the temperature range, use the arrows above and below the Apply button to change the setting.
10. Touch **Apply**. Once Apply is touched, the temperature is placed in the **SET TEMP** area in the upper middle area of the display.
11. Touch **X** to exit the screen.
12. Set-up the bed with the necessary equipment for admission.

## Admitting the Patient

Always preheat the device, as described in **Setting up for Admission** section on the previous pages before placing the patient in the bed. You can use Comfort Zone for recommended settings when operating in Air Mode.

### To admit the patient:

1. Place the patient in the center of the bed.
2. Optionally, place the skin temperature probe on the patient and plug it into the probe panel connector 1.
3. Change the mode per clinical protocol.

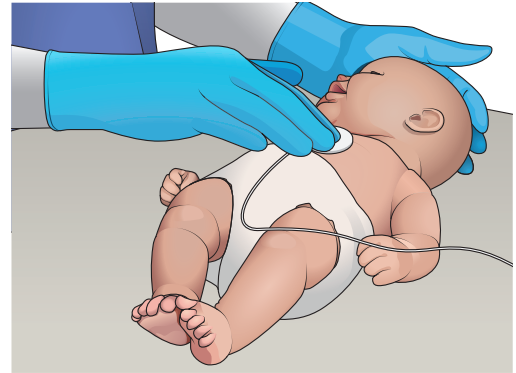


Figure 6.5 Admitting the Patient

## Attaching the Skin Temperature Probe

When the skin temperature probe is attached, the detected temperature is displayed on Control Panel in the BABY TEMP area. The skin temperature probe is required for Baby Mode.

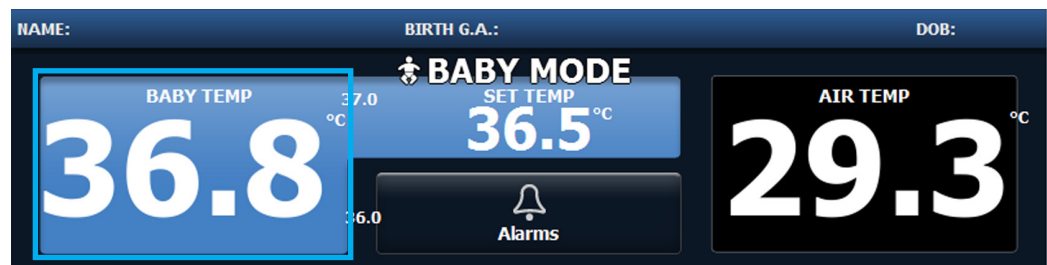


Figure 6.6 Baby Temp Area



**Note!** The system cannot differentiate between an increase in core temperature with cold skin (fever), and low core and skin temperatures (hypothermia). Patient temperature should be verified with an auxiliary thermometer.

### To attach the skin temperature probe:

1. Ensure that the patient's skin is clean and dry.
2. Make sure the skin temperature probe tip is clean and free from foreign matter, particularly adhesives.



**CAUTION!** Avoid placing excessive strain on the skin temperature probe wire. When cleaning, be careful not to pull on or bend the lead at the probe tip.



**CAUTION!** Always remove the probe from the device by grasping the plug at the probe panel. Do not pull on the skin temperature probe wire. Do not immerse the skin temperature probe in liquid cleaner.



3. Prepare the skin temperature probe for placement.

- **Single-use disposable skin temperature probe:** Peel the paper backing from the adhesive side of the heat reflecting patch and prepare to apply with the reflective foil away from the patient's skin.
- **Reusable skin temperature probe:** Place the metal side of the skin temperature probe against the patient's skin (see subsequent steps for placement) and then peel the paper backing from the adhesive side of the heat reflecting patch. Place the heat reflecting patch over the skin temperature probe with the reflective foil away from the patient's skin.

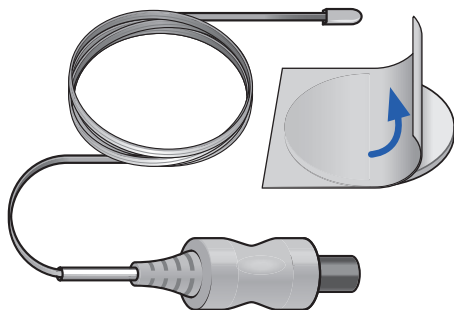


Figure 6.7 Disposable skin temperature probe

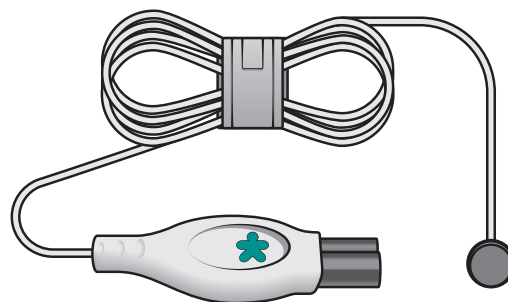


Figure 6.8 Reusable skin temperature probe

4. Place the skin temperature probe in the center of the heat reflecting patch.
5. Place the skin temperature probe on the patient's skin.



Figure 6.9 Probe on heat reflecting patch

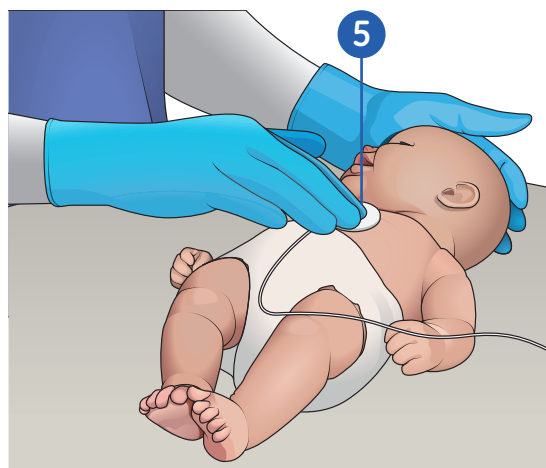


Figure 6.10 Probe on patient

6. Plug the skin temperature probe into probe panel connector 1.

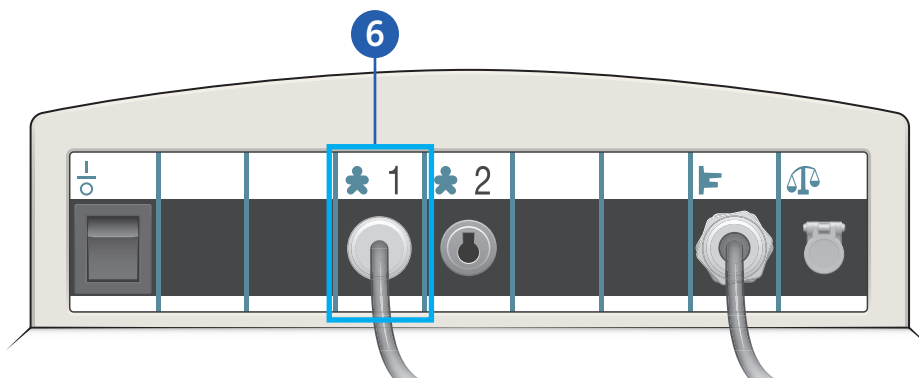


Figure 6.11 Probe Panel Connector 1

## Operating with Two Skin Temperature Probes

The device is equipped with two patient skin temperature probe connectors (1 and 2) on the probe panel). You can monitor a single patient's temperature from two anatomical sites.

1. When both probes are connected, temperature reading for probe panel connector **1** are displayed in larger numerals on the Control Panel.
2. Temperature readings from probe panel connector **2** are displayed in smaller numbers.



**Note!** Two probes can be used in Air Mode only.

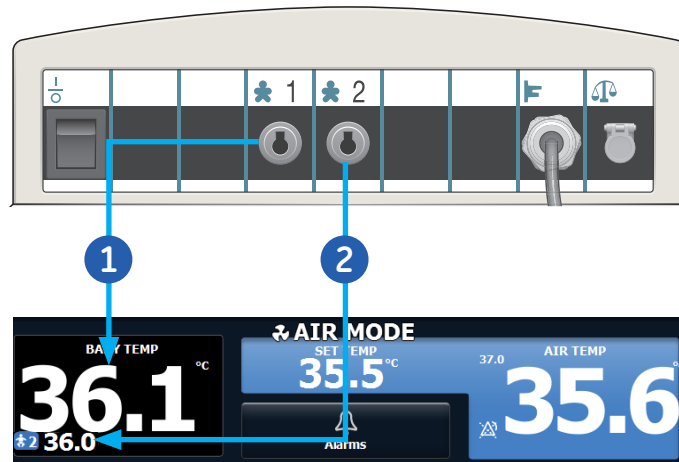
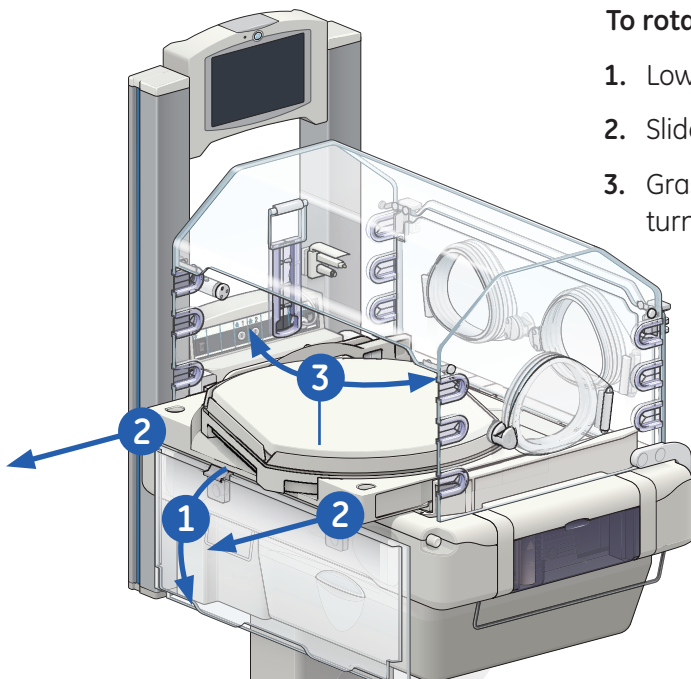


Figure 6.12 Two Probes in Use

## Rotating the Mattress



**WARNING!** When opening or closing bed panels or portholes, make sure that the patient, clothing, monitoring leads, tubing, and similar items are completely within the confines of the bed. Inspect all patient connected tubes or leads before and after sliding out, rotating, tilting, or raising and lowering the bed. Moving the bed can pull on leads and tubing, restrict gas or liquid flow, or move probes out of position.



**To rotate the mattress in either direction:**

1. Lower the desired side bed panel.
2. Slide out the mattress tray.
3. Grasp the edges of the internal mattress tray and turn it as desired.

Figure 6.13 Rotating the Mattress

## Filling the Humidifier Water Reservoir

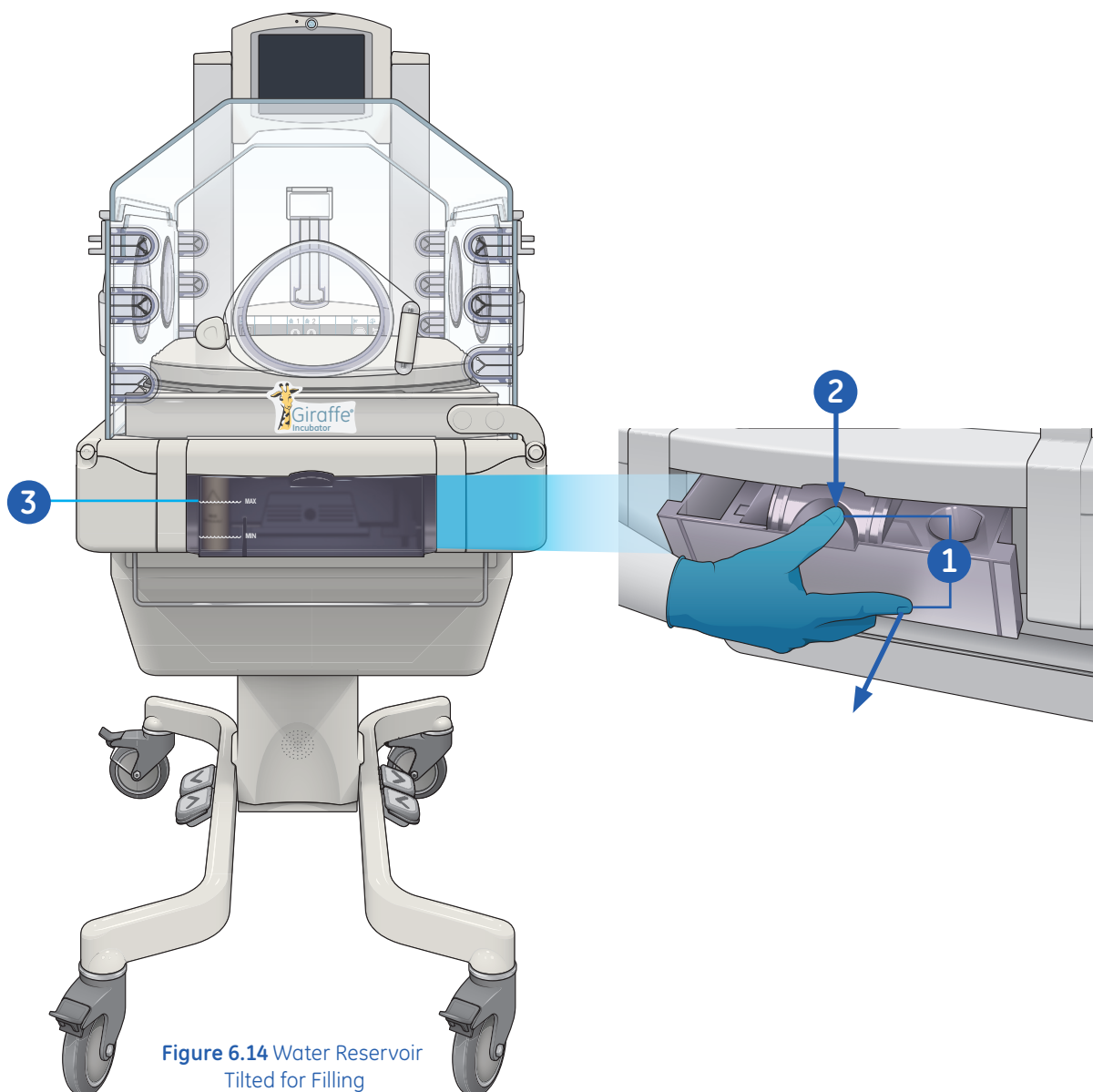
The Humidifier maintains a selected humidity percentage relative to readings from a humidity sensor in the compartment. The water reservoir should always be in place when you use the device. The water reservoir holds a little more than a liter of water. Drain the water reservoir when not in use. Always use sterile distilled or distilled water to fill the water reservoir. Other types of water can cause damage to the humidifier.

### To fill the water reservoir:

1. Place your thumb at the top center of the water reservoir, grasping the bottom with the rest of your hand.
2. Use your thumb to push down while pulling the water reservoir out.
3. Fill to the MAX line on the heater cylinder, not the line on the water reservoir.
4. Tilt the water reservoir back into place.



**Note!** While the water reservoir is tilted open, the Max fill line on the water reservoir and cylinder are at approximately the same level. When closed, they do not match. For proper operation, do not fill the water reservoir past the MAX fill level.



**Figure 6.14** Water Reservoir  
Tilted for Filling

# Weighing the Patient

## Using the Scale



**Note!** The scale function is only available if the in-bed scale is installed. If the scale is not installed, the Scale button is not shown on the Home screen.

### To weigh the patient:

1. Make sure the bed tilt platform is completely level. A tilted bed effects weighing accuracy.
2. Prepare the bed for weighing. Do not leave stuffed animals and other objects against side bed panels. Secure all leads, I.V. tubes, and ventilator tubes. Tuck blankets under the mattress, but not under the weighing platform. Remove all items from the mattress.
3. Place the patient in the center of the bed. It is recommended to increase the air flow in the compartment, by touching Air Boost, while weighing the patient if the bed panels will be open.
4. Touch **Air Boost** on the Home screen. Air boost will also be selectable from the scale screen in the next step.
5. Touch **Scale** on the Home screen. The **Scale** screen will now appear.
6. Touch **Weigh Baby**.
7. Follow the on-screen instructions: You are prompted by the display and a tone to “zero” the scale by lifting the patient.

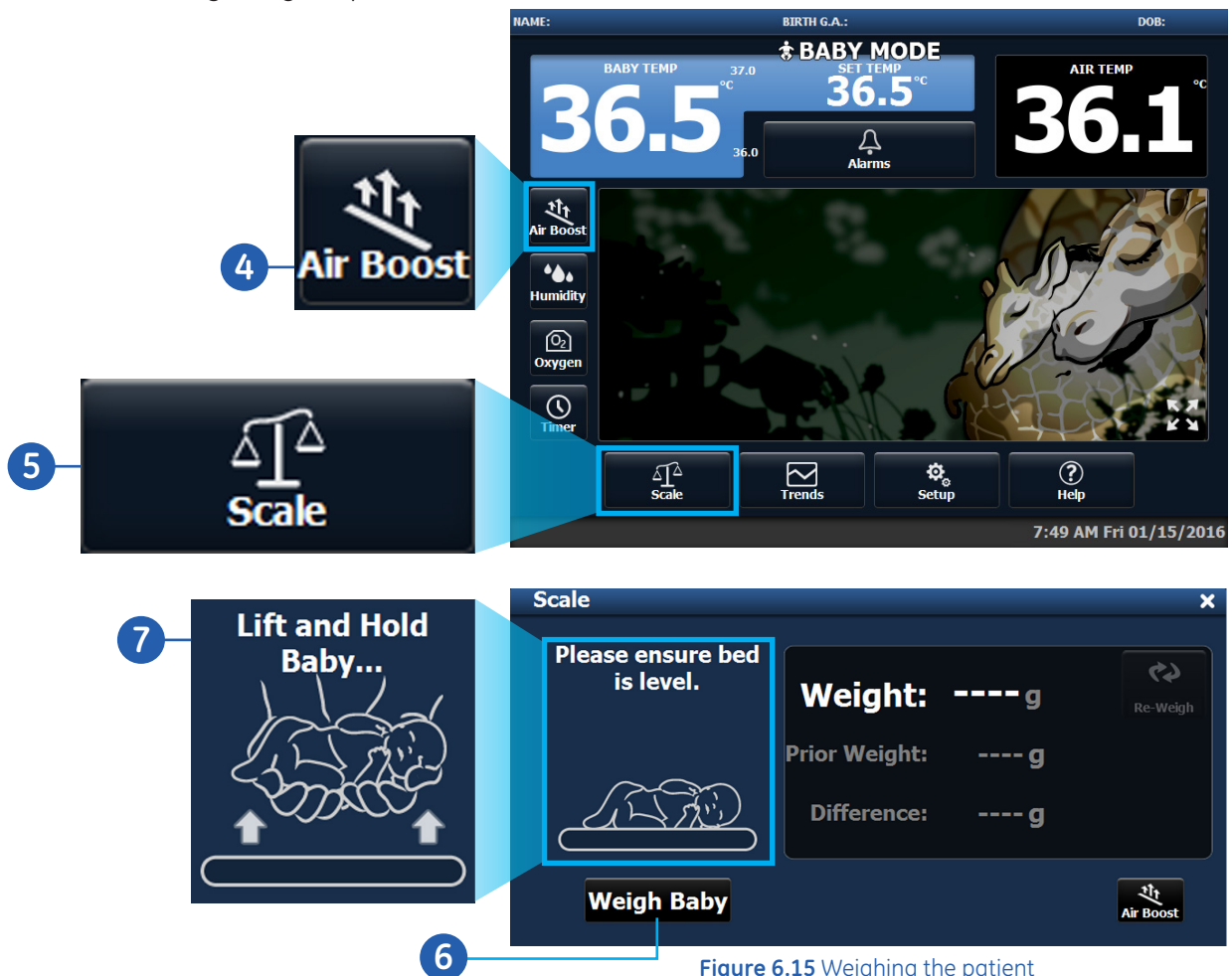


Figure 6.15 Weighing the patient

- a. Lift the patient and any tubing or leads attached to the patient. Make sure that arms, legs, blankets, and clothing are clear of the mattress.
  - b. Hold the patient until the tone and prompt indicate you should replace the patient.
  - c. Place the patient back down on the mattress while holding up any leads or tubes attached to the patient. The scale weighs any object on the platform, so if you replace the patient without holding up lead and tubes, the weight of the leads and tubes will be included with the patient's weight.
  - d. The scale calculates the patient's weight and displays it.
8. Push the **Re-Weigh** button within five minutes of the last weighing sequence if the last weight is in doubt. The most likely cause for using Re-Weigh is failure to keep leads and tubes clear of the mattress when placing the patient back on the mattress.
  9. If desired, touch **I Weigh** to show the weight in a parent friendly display.
  10. Touch the **X** to exit the display and return to the scale screen.
  11. Touch the **X** to return to the Home screen.

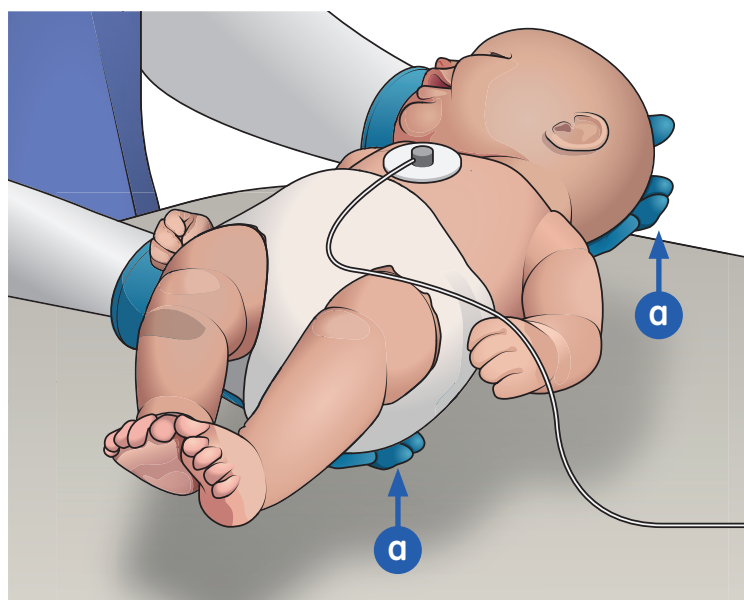


Figure 6.16 Hold Patient

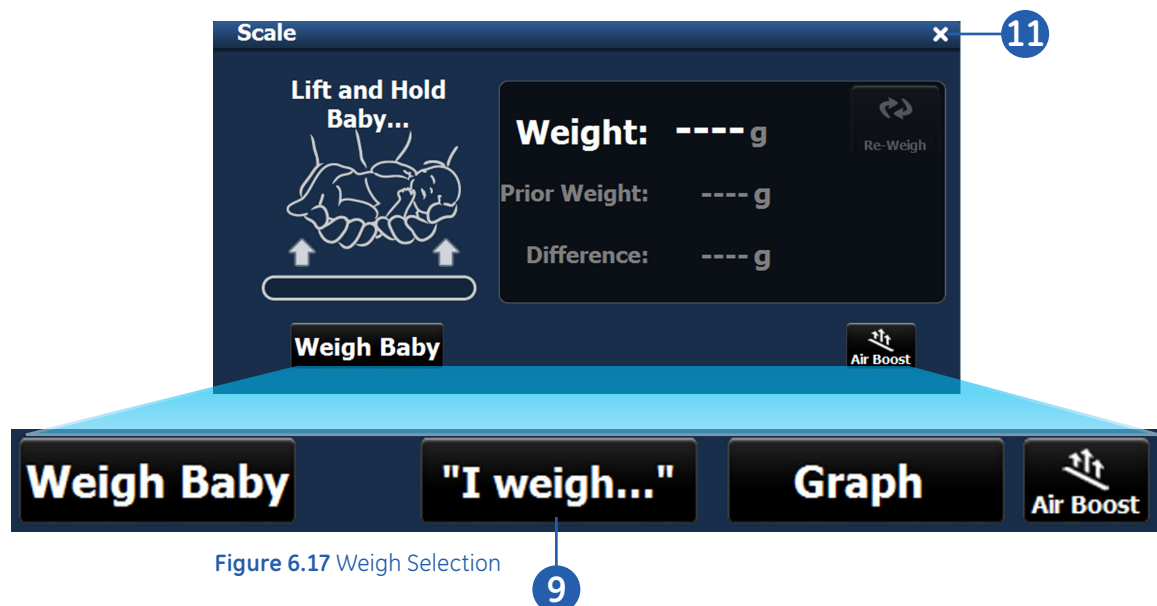


Figure 6.17 Weigh Selection

## Showing Weight Trends

Weights can be shown over a period of time. A total of 14 weights can be stored.

To show weight trends:

1. After an initial weight has been taken, touch **Scale** on the Home screen.



Figure 6.18 Weight Trends - Scale Button

2. Select **Graph** to plot a series of weights on a graph. The axis automatically adjusts to the nearest 10 gram threshold base.
3. Touch the data point for a desired weight to see the exact data.
4. Touch **Previous** or **Next** to move through the data points.

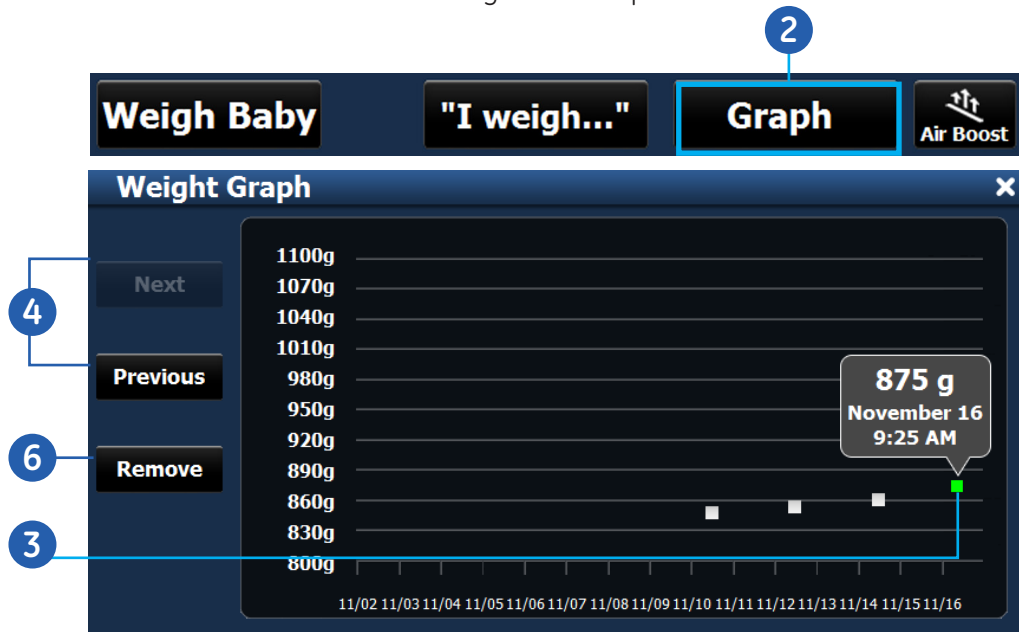


Figure 6.19 Weight Graph

To remove a weight from the graph:



**Note!** Weights can only be deleted for one hour after the weight is taken.

5. Touch the data point for a desired weight to see the exact data.
6. Touch **Remove**.



## Displaying Trends

The Trends graph shows temperatures from up to two patient skin temperature probes, the air temperature read at the compartment sensor, the set temperature entered during the time period, as well as humidity and oxygen data. Data is shown over a 2, 8, 24, or 96 hour selectable time span. The data displayed at the bottom of the screen shows what control modes the device was in during the trended period.

### To display Trends:

1. Touch **Trends** on the Home screen.



Figure 6.20 Displaying Trends

2. The **Trends** screen appears with **Baby Temp 1** within a **2 hour** time span.
3. Touch the desired data sets on the left to display that data set. Multiple data sets may be selected. Touching the data set button again deselects it.
4. Touch the desired **2, 8, 24, or 96** hour time span for which to trend the data point.
5. Touch the **X** to return to the Home screen.



**Note!** The trending screen displays only the most recent set of data. For example, if you have selected the two-hour setting, then only the most recent two hours of data is displayed.

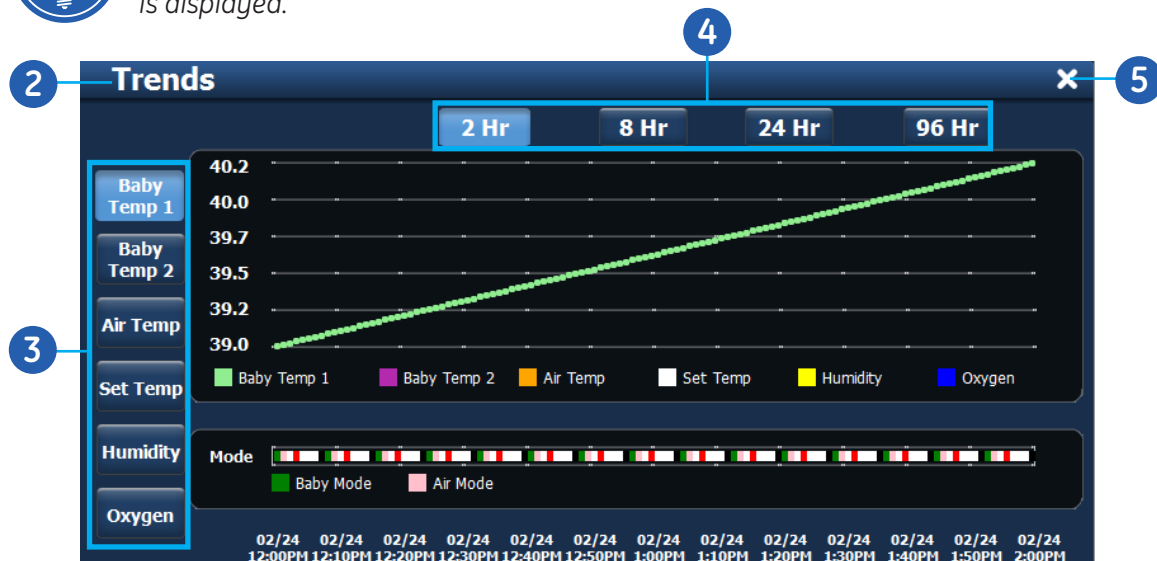


Figure 6.21 Trend Screen







# 7 Alarms

## Alarms Objectives



**After completing this section, the participant will be able to:**

- Identify the following components/areas on the control panel:
  - Indicator light
  - Hands Free Alarm Silence Sensor
  - Alarm Silence Button
  - Displayed Alarm Area
  - Alarm Limit/Disabled Area
- Identify the three alarm priorities and their associated color and tone
- Acknowledge or pause an alarm



## Overview

When an alarm is triggered, alarm messages appear on the Control Panel, the Indicator light at the top of the control panel housing is illuminated and audio tones sound.

The alarm system offers a variety of methods to communicate and silence the alarms. Alarm signals are generated and transmitted to distributed alarm systems (remote alarms) within five seconds of the alarm signal condition.



**Note!** Select alarms are temporarily disabled while the device warms up.



**Figure 7.1** Alarms Components and Areas

1. Alarms Displayed on Control Panel Screen
2. Alarm Limits or Alarm Disabled
3. Hands Free Alarm Silence Sensor
4. Indicator Light
5. Alarm Silence Button

## Alarm Priorities

Alarms are given one of three priorities. The priority of the alarm is indicated by display color and flash, and audio tones sounded.

### Alarm Priority Colors

When triggered, alarms are displayed on the Control panel. The notification of an alarm on the Control panel indicates its priority. The indicator light is illuminated upon alarm. The Indicator light notifies you of activities that require your attention. The indicator light remains on, if power is available, for system failure alarms.

Priority	Control Panel Color/Flash	Description
High	Red/Flash	Needs immediate attention.
Medium	Yellow/Flash	Alert, but not requiring immediate attention.
Low	Yellow/no Flash	Not requiring immediate attention.

Table 7.1 Alarm Priority Colors

### Alarm Audio Tones

Audio tones vary with the alarm's priority. The following table explains audio signals for the different priority alarms.

Priority	Control Panel Color/Flash	Description
High	10 pulses with sound	Needs immediate attention.
Medium	3 pulses with different sound and slower pace than High	Alert, but not requiring immediate attention.
Low	None	Not requiring immediate attention.

Table 7.2 Alarm Audio Tones

## Silencing Alarms

Alarms can be acknowledged or paused in one of two ways. Press the Alarm Silence button at the top of the Control Panel or, if enabled, wave your hands 2-6 inches (5-15cm) directly in front of the Hands Free Alarm Silence sensor located inside the GE Logo on the Control Panel. The Hands Free Alarm Silence sensor allows you to acknowledge or pause the alarm without touching a surface.

Alarms are displayed on-screen. When you silence an alarm, the text message on-screen stops flashing and the indicator light turns off.

For alarms that can be acknowledged, the Alarm Acknowledge Indicator displays on the Silence button. The alarm can be acknowledged by either touching the Silence button or waving a hand in front of the Hands Free Alarm Silence sensor. When an alarm is acknowledged, the audio tone is silenced and alarm tone will not be restored.

For alarms that can be paused, the Alarm Pause Indicator displays on the Silence button. The alarm can be paused by either touching the Silence button or waving a hand in front of the Hands Free Alarm Silence sensor. When the alarm is paused, the audio tone is silenced. If the alarm condition is not resolved, the audio tone will resume after the alarm's silence period.

When an alarm is silenced, close monitoring of the patient is required.



Figure 7.2 Hands Free Alarm Silence Sensor



# 8 Maintenance and Cleaning

## Maintenance and Cleaning Objectives



**After completing this section, the participant will be able to:**

- Give an overview of the cleaning and disinfection guidelines
- Utilize the User Maintenance, Cleaning and Disinfection Frequency chart
- Clean and disinfect the skin temperature probes

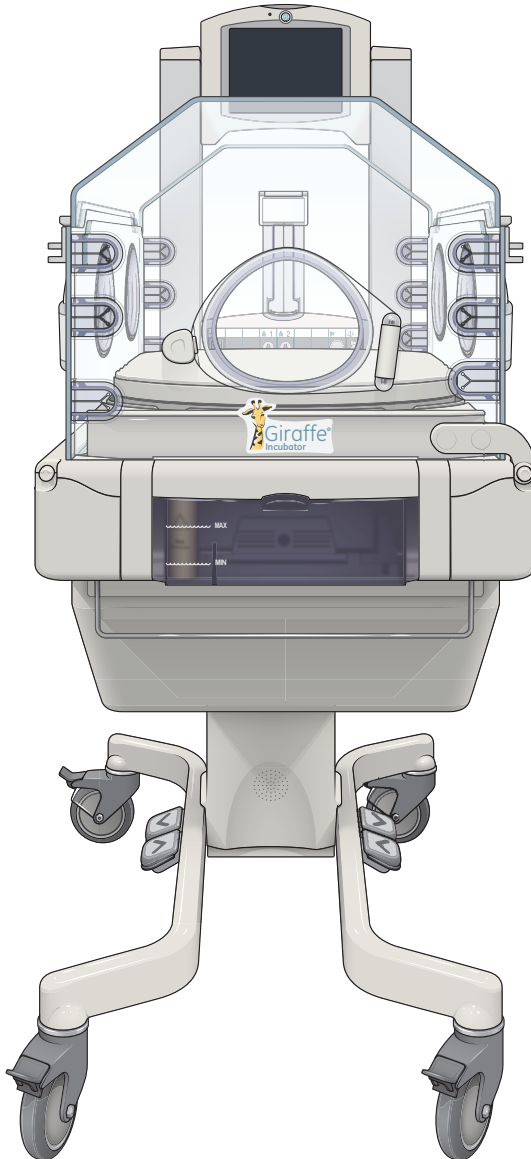
## Cleaning and Disinfection Guidelines Overview

Remove visible debris by wiping. Wipe down the surfaces of the device with a soft cloth dampened with a cleaning and disinfecting solution. Always follow the solution manufacturer's direction for use. Dry all surfaces with a soft cloth to remove any cleaner residue.

If using spray cleaners or disinfectants, do not spray the solution directly onto the device. Spray the solution onto a soft cloth and then apply it to the device. After application is complete, wipe any remaining cleaning solution off with a clean, dry cloth so that no pooling or accumulation of cleaning/disinfecting agent remains.

### Important notes for consideration prior to cleaning or disinfecting:

- Do not clean or disinfect the device while in patient use.
- Ensure that the bed is turned off. Allow 30 minutes for cooling.
- Follow recommendations for cleaning and disinfecting solutions.
- AAMI TIR30: 2003 guidelines suggest that a reusable medical device should be visibly clean. If visible cleanliness has not been achieved, repeat cleaning or contact authorized service personnel for further disassembly. Return the device to service only after visible cleanliness has been confirmed.



## User Maintenance, Cleaning, and Disinfection Frequency

The following schedule lists the minimum frequencies for cleaning and disinfection. Always follow hospital and local regulations for required frequencies. Cleaning and disinfection frequency is impacted by several use factors. The following table offers suggested cycles for the device based on various use scenarios:

Device or Component	Use Condition	Minimum Frequency	Notes
Giraffe Incubator Carestation	0-75% noncondensing humidity	Every 2 weeks	Cleaning and disinfecting the device is required between each patient use.  Clean and disinfect the device and check the air filter. Clean and disinfect the incubator if required or after use with infectious patients.
	> 75% humidity, or visible condensation	Every 1 week	In the presence of high humidity (> 75% RH), it is possible for condensation to develop on the inside panels of the system microenvironment. The condensate is likely to accumulate in the pan under the mattress deck.
Water Reservoir	In use	Every 1 week	The humidity water reservoir should be cleaned and disinfected weekly, and when humidity use is discontinued.
Air Filter	In use	Quarterly	Changing the air filter quarterly is a minimum requirement. The air filter should also be changed when visibly dirty or following bed use with infectious patient. When you replace the filter, mark the date on the label supplied with the filter and affix it above the air filter cover panel.
Skin Temperature Probe	Disposable	Discard between patients	NA
	Reusable	Between patients or per clinical protocol	NA
Oxygen	Calibrate oxygen	Once every 24 hours during use and before each patient	NA

**Table 8.1** User Maintenance, Cleaning, and Disinfection Frequency

## Cleaning and Disinfecting the Skin Temperature Probes

Reusable or Disposable skin temperature probes can be used with the device. Only Reusable skin temperature probes are cleaned and disinfected.

### To clean and disinfect the reusable probe:

1. Identify the type of probe you have:

Reusable skin temperature probes use a separate heat reflecting patch, are gray, and have a round metal disk at the patient end.

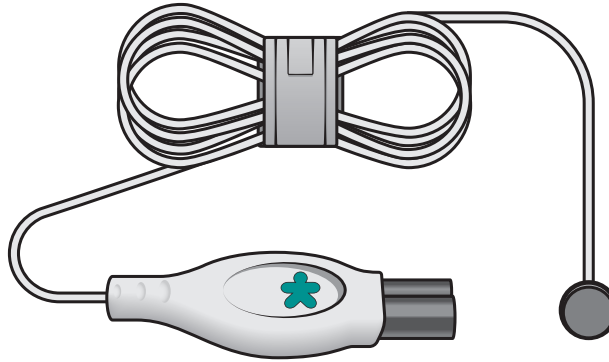


Figure 8.1 Reusable probe

Disposable skin temperature probes come with a smaller heat reflecting patch already attached, are white, and have no metal disk at the patient end. Disposable skin temperature probes cannot be cleaned or disinfected and are intended for single patient use.

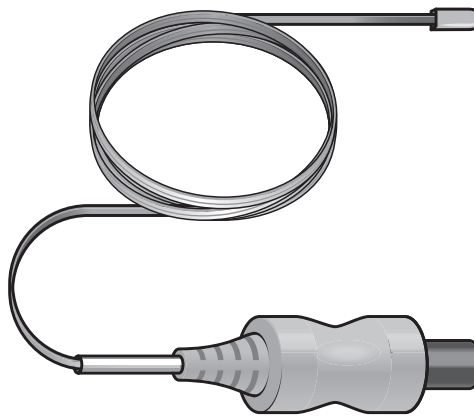


Figure 8.2 Disposable probe

The disposable skin temperature probe is a single patient use device. A single patient use device is a medical device that may be used for more than one episode of use on only one patient. This is not a single use device (SUD). A SUD is a medical device that is intended to be used on an individual patient during a single procedure and then discarded.

2. Gently wipe the reusable patient skin temperature probe with a soft damp cloth containing a recommended solution. Always be sure to wipe dry all cleaning agents after cleaning. Never submerge skin temperature probes or coil the wire tightly for storage.



**CAUTION!** When cleaning, be careful not to pull on or bend the lead at the probe tip.

3. Remove all cleaning agents and disinfectants thoroughly with a dampened cloth. Failure to do this may result in the accumulation of reagent that could damage or negate the biocompatibility of the probe.





# 9 Resources

## Troubleshooting

Symptom	Possible Cause	Action
Hands free silence alarm does not silence.	Excessive ambient light.	Silence alarm using the touchscreen or move device away from windows.
Elevating base will not go up or down.	Pedals are disabled on setup screen or service screen.	Check Setup screen to see if pedals are disabled. Contact the authorized service personnel to change the setting on the service screen.
Device does not power up, alarm sounds.	Unit is unplugged.	Plug in the device.
	Breaker has tripped.	Reset breaker.
Bed will not lock in tilt position.	Tilt ball not engaged in finger pocket latch.	Tilt the head of the bed platform all the way down while holding the latch open, then let the latch close to capture the tilt ball. (Refer to <b>Disassembling the Device</b> on page 9-8 of the <b>User Manual</b> .)
Humidifier Water Reservoir is crazed (has hairline cracks).	Sterilization	Replace Humidifier Water Reservoir.
Humidifier Water Reservoir has scaling.	Use of tap water instead of sterile distilled or distilled water.	Replace Humidifier Water Reservoir. Use only sterile distilled or distilled water.

## Skills Overview

<b>Clinicians Name:</b>		<b>Clinicians Functional Role:</b>	
<b>Hospital/Facility:</b>			
<b>City:</b>		<b>State:</b>	
<b>Trainer:</b>		<b>Date:</b>	

System Description	Discussed	Demonstrated	Comments
Front View			
Rear View			
Understanding the Control Panel	Discussed	Demonstrated	Comments
Home Screen			
Away Screen			
Using the Keyboard			
On-screen Help			
Understanding Modes	Discussed	Demonstrated	Comments
Air Mode			
Baby Mode			

Setup Features	Discussed	Demonstrated	Comments
Navigating the Setup Screen			
Patient Setup			
Current Time			
Baby Name			
Date of Birth			
Gestational Age			
Comfort Zone			
Alarms Setup			
Temperature Units			
Skin Temp Alarm (Baby Mode)			
Skin Temp Alarm (Air/Manual Mode)			
Alarm Volume			
Hands Free Alarm Silence			
System Setup			

Setup Features (continued)	Discussed	Demonstrated	Comments
Away Screen Timeout			
Screen Brightness			
Calibrate Oxygen			
Themes			
System Defaults for Setup			

Pre-use Checkout	Discussed	Demonstrated	Comments
Mechanical Checks			
Options Checks			
Control Panel Checks			
Humidifier Checks			
Oxygen Checks			

Using the Incubator	Discussed	Demonstrated	Comments
Powering the Device			
Setting up for Admission			
Attaching the Skin Temperature Probe			
Operating with Two Skin Temperature Probes			
Manipulating Portholes and Bed Panels			
Opening and Closing Portholes			
Opening and Closing Bed Panels			
Using the Mattress			
Sliding out the Mattress			
Rotating the Mattress			
Tilting the Mattress			
Raising and Lowering the Bed			
Using the X-ray Tray			
Administering Oxygen			
Connecting Oxygen			
Calibrating Oxygen			
Using the Humidifier			

Using the OmniBed <i>(continued)</i>	Discussed	Demonstrated	Comments
Administering Humidity			
Using the Scale			
Trending Weights			
Using Air Boost			
Setting the Timer			
Displaying Trends			
Setting the Air Temp in Air Mode			
Setting Air Set Temperature Manually			
Setting the Comfort Zone			
Nurse Call System and Remote Monitoring			
Using the Remote Monitoring Interface			
Using the Nurse Call System Interface			
Optional Equipment Installation			
Installing the Scale			
Mounting Rail System Components			
Gas Cylinder Holder			
Tubing Management Arm			
Porthole Cover			
Silo Support Arm			

Understanding Alarms	Discussed	Demonstrated	Comments
Alarm Priorities			
Understanding The Control Panel Display			
Understanding Audio Tones			
Silencing Alarms			
Multiple Alarms			

Maintenance and Cleaning	Discussed	Demonstrated	Comments
Repair Guidelines			
Maintenance Schedule			
User Maintenance and Cleaning Frequency			
Service Maintenance Frequency			
Cleaning Guidelines			
Cleaning Solutions			
Cleaning Method Recommendations			
Preparing to Clean the Device			
Wiping the Touch Screen			
Disassembling the Device for a Complete Cleaning			
Cleaning Individual Components			
Cleaning the Humidifier Water Reservoir			
Cleaning the Skin Temperature Probe			
Cleaning the Mattress			
Reassembling the Device			







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