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USER MANUAL

TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System

From Hill-Rom



P1830 and P1840

143434 REV 7

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Manufactured by:
HILL-ROM, INC.
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NOTE:
The back cover is a comprehensive list of Technical Support contact information for Hill-Rom. The product discussed in this manual may not be available in all of the countries listed.

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Document Symbols

This manual contains different typefaces and icons designed to improve readability and increase understanding of its content. Note the following examples:

- Standard text—used for regular information.
- **Boldface text**—emphasizes a word or phrase.
- **NOTE:**—sets apart special information or important instruction clarification.
- The symbol below highlights a WARNING or CAUTION:

Warning and Caution



  - A WARNING identifies situations or actions that may affect patient or user safety. Disregarding a warning could result in patient or user injury.
  - A CAUTION points out special procedures or precautions that personnel must follow to avoid equipment damage.
- The symbol below highlights a CAUGHT HAZARD WARNING:

Caught Hazard Warning



- The symbol below highlights a CHEMICAL HAZARD WARNING:

Chemical Hazard Warning



- The symbol below highlights an ELECTRICAL SHOCK HAZARD WARNING:

Electrical Shock Hazard Warning



Intended Use

The TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System are intended to provide a patient support ideally suited for use in healthcare environments. The TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System may be used in a variety of settings including, but not limited to, acute care, including critical care, step down/progressive care, medical/surgical, high acuity sub-acute care, post anesthesia care unit (PACU), and sections of the emergency department (ED). The TotalCare® Bariatric Bed is capable of being used with a broad patient population whose weight is between 200 and 460 lb (91 to 209 kg) and as determined appropriate by the caregiver or institution. TotalCare® Bariatric Plus Therapy System is capable of being used with a broad patient population whose weight is between 200 and 500 lb (91 to 227 kg) and as determined appropriate by the caregiver or institution.

The intended users of this product are healthcare employees, patients, and family members who have the physical strength and cognitive skills to operate and control the product. Follow facility safety protocols if an intended user does not have the physical strength or cognitive skills to operate and control the product safely.

Introduction

This manual provides the information required for normal operation of the TotalCare® Bariatric Bed (P1830) and TotalCare® Bariatric Plus Therapy System (P1840) from Hill-Rom. Before operating the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System, be sure that you have read and understood in detail the contents of this manual. It is important that you read and strictly adhere to the aspects of safety contained in this manual. Any reference to a side of the bed is from the patients' view lying in the bed on their back.

Some configurations of the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System may be equipped with an integral scale intended to weigh the patient in the bed.

In this manual, there are references to different bed models. To identify which model of bed you have, look at the serial number label. The label is located on the left side of the weigh frame, under the patient's shoulder. For example, P1840D identifies a D model bed.



Features



Item	Description	Item	Description
A	IntelliDrive® Transport System transport handles	F	Graphical Caregiver Interface (GCI)® Control
B	Foam surface or Pressure Redistribution Surface with Low Air Loss	G	Hydraulic manual foot pedal
C	Patient control panel	H	HandsFree® Emergency CPR/Trendelenburg Release Mechanism
D	Siderail extender	I	Patient Helper (trapeze) (TotalCare® Bariatric Plus Therapy System only)
E	Auxiliary power outlet (TotalCare® Bariatric Plus Therapy System only)		

Patient Characteristics

Patient Weight

- 200 lb (91 kg) minimum
- 500 lb (227 kg) maximum for the TotalCare® Bariatric Plus Therapy System
- 460 lb (209 kg) maximum for the TotalCare® Bariatric Bed

Safe Working Load (SWL)*

- 550 lb (250 kg) maximum for the TotalCare® Bariatric Plus Therapy System
- 500 lb (227 kg) maximum for the TotalCare® Bariatric Bed

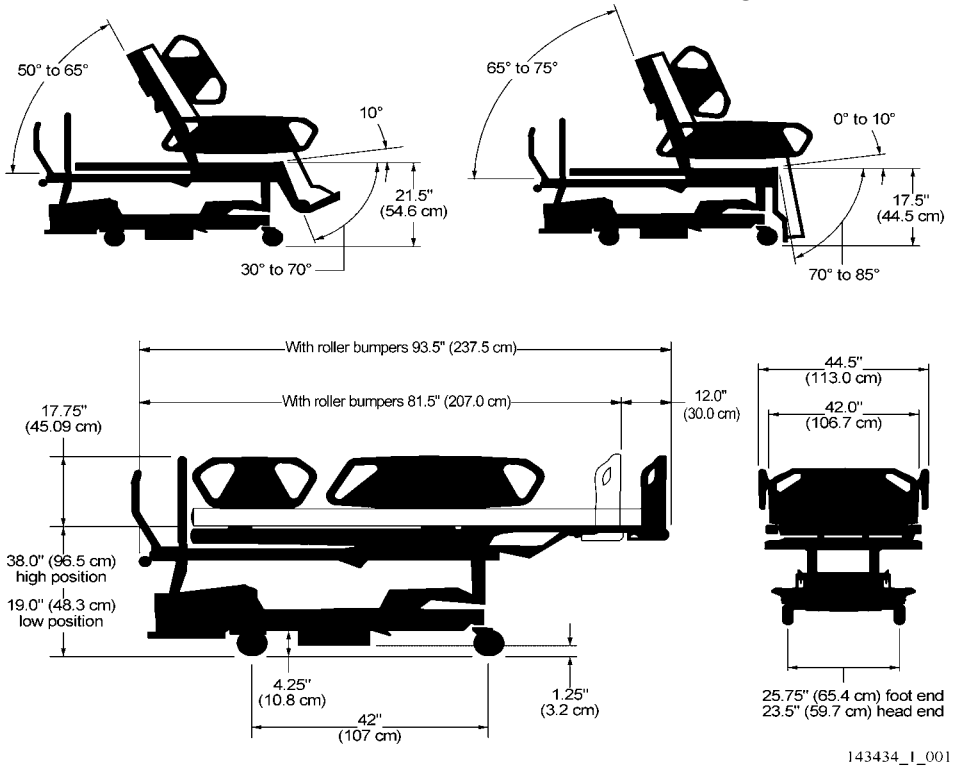
* Includes: patient weight, mattress, IV pumps, poles, bags, traction equipment, and such.

WARNING:
Do not use the product outside the recommended patient characteristics. Patient injury or equipment damage could occur.

WARNING:
Do not use the product outside the recommended Safe Working Load. Patient injury or equipment damage could occur.

Dimensions [1] [2]

Chair Position ***Chair Egress Position***



Mattress size:....39.5" (100.3 cm) head/seat; 32" (81.3 cm) foot x 85" (216 cm)

Foot Retraction:.....12" (30 cm)

Trendelenburg/Reverse Trendelenburg:.....15°/15°

Emergency Trendelenburg:.....20°

Head Section:.....75°

Articulating Deck:....36.5" (92.7 cm) head/seat; 32.5" foot (82.6 cm) x 84" (213 cm)

Patient Helper (trapeze) pull force (SWL).....250 lb (113 kg)

Patient Helper height.....80" (203 cm)

Automatic Knee Contour.....10°

Foot:.....85° Down

Preliminary Tilt Table:.....20°

Knee:.....20°

Weighing Capacity:.....500 lb (227 kg)

Maximum Safe Working Load (SWL)[a]:
550 lb (250 kg) TotalCare® Bariatric Plus Therapy System
500 lb (227 kg) TotalCare® Bariatric Bed

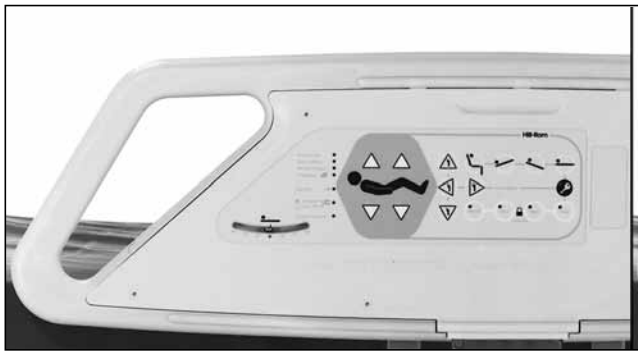
a. SWL includes patient weight, mattress, IV pumps, poles, bags, etc. The maximum patient weight for a K model or earlier bed is 460 lb (209 kg); for an L model bed, it is 500 lb (227 kg).

Scale accuracy may be diminished if patient weight exceeds 400 lb (181 kg). Mattress interface pressure and pulmonary therapy performance may be diminished if patient weight exceeds 500 lb (227 kg). IntelliDrive® Transport System power assist levels may be diminished if patient weight exceeds 300 lb (136 kg) (see “Scale Functions” on page 23).

1. Chair and Chair Egress Position dimensions shown with 5" (13 cm) casters and measured to top of articulating deck; add 1.5" (3.8 cm) for 6" casters.
2. High position and low position dimensions shown with 6" (15.4 cm) casters and measured to top of articulating deck.

Caregiver Point-of-Care® Siderail Controls

Caregiver Point-of-Care® Siderail controls are located on the outboard side of the intermediate siderails.



TotalCare® Bariatric Bed



TotalCare® Bariatric Plus Bed



TotalCare® Bariatric Plus Bed, B Model and newer

WARNING:
Instruct visitors not to use caregiver controls at any time. Visitors may assist patients in the use of patient controls. Unauthorized use of the caregiver controls may result in personal injury or equipment damage.

Enable Control (Model P1830A and Model P1840A)

The Enable control deters unauthorized operation of air system controls. The Enable control is located on the siderail opposite the Graphical Caregiver Interface (GCI)® control on beds that have an air system and one GCI. The Enable control must be pressed and the indicator light illuminated before the air system controls will operate. The Enable indicator stays on for 20 seconds. While this indicator light is on, the caregiver can activate any air system controls.



To Activate:

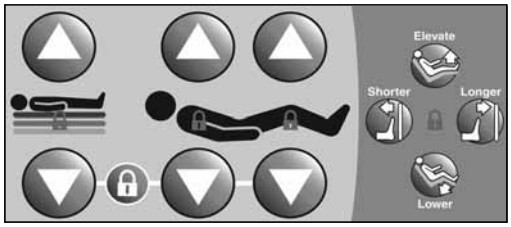
1. Press the Enable control. The Enable indicator light comes on for 20 seconds.
2. During the 20-second period, you may activate other air system controls without pressing the Enable control again.

Lockout Controls (Model P1840B)

The Lockout controls located on the caregiver siderail control panel disable the bed articulating functions.



To Activate:



- Simultaneously press the Lockout control and the function control. Both patient and caregiver controls are locked out. An audible alarm sounds when a lockout is activated and the applicable indicator will stay on. The knee lockout will lock out the foot control. The foot lockout will lock out the knee control
- Disable any lockout by simultaneously pressing the Lockout control and the respective function control. An alarm will sound when the lockout is deactivated.

Lockout Controls (Model P1830 and Model P1840A)

The Lockout controls located on the caregiver siderail control panel disable the bed articulating functions.

The Lockout controls are used to prevent bed articulation by either the caregiver or the patient.



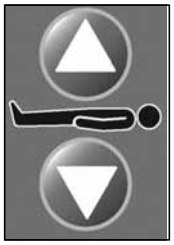
To Activate:

- Simultaneously press the Enable control and the specific lockout control desired. Both patient and caregiver controls are locked out. An audible alarm sounds when a lockout is activated.
- Disengage any lockout by simultaneously pressing the Enable control and the relevant lockout control.

NOTE:
The master lockout disables all articulation controls, scale, and bed exit. No movement of the system is allowed, except for emergency CPR and Trendelenburg functions.

Bed Up/Down (Hi-Lo) Control

The bed adjusts in height from a low position for patient egress to a high position for examination. Use the Bed Up/Down controls to raise or lower the bed.



To Activate:

- Press and hold the Bed Up control to raise the system. Press and hold the Bed Down control to lower the system. Release the control when the desired height is reached.
- Disable the Bed Hi-Lo–Activate the Hi-Lo lockout control.

Head Up/Down Control



The caregiver can raise or lower the head section by using the Head Up/Down Controls. Using the Line-of-Site® Angle Indicators, the caregiver can articulate the head section to a maximum of 75°.

To Activate:

Press and hold the Head Up Control to raise the head section. Press and hold the Head Down Control to lower the head section.

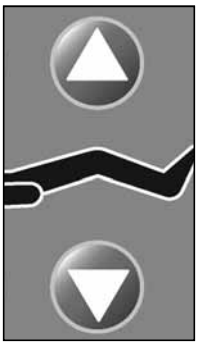
WARNING:
When you raise the head section above 50°, use care to prevent wedging of extremities between the siderails and the mattress. Failure to do so may cause patient injury.

NOTE:
Additionally, the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System are equipped with an automatic contour mode. When the Head Up Control is pressed, the automatic contour mode is enabled, and the knee section rises to a maximum of 10°.

- Automatic Contour Feature–Press and hold the Head Control. The head and knee sections rise together to reduce patient migration toward the foot end of the system.
- Disable Automatic Contour–Activate the Knee lockout control.

NOTE:
The automatic contour feature can also be disabled, press and hold the Knee Down Control while you raise the head section.

Knee Up/Down Control



The caregiver can raise or lower the knee section by using the Knee Up/Down Controls to a maximum of 20° up.

To Activate:

- Basic Knee Up/Down–Press and hold the Knee Up control to raise the knee section.
- Press and hold the Knee Down control to lower the knee section.

NOTE:
The automatic contour feature does not work when you use only the Knee Up/Down controls.

Foot Up/Down Controls





The foot section can be lowered and raised by using the Foot Up/Down Controls.

To Activate:

1. Press the Enable Control (A Model only).
2. Press and hold the Foot Down control to lower the foot section. Press and hold the Foot Up control to raise the foot section.

WARNING:
Do not use ankle restraints when you use this feature; injury to the patient may result.

CAUTION:
Before you activate the foot section controls, make sure the area around the foot section is clear of equipment, or equipment damage may occur.

Foot Elevation (Model P1840B)





The Foot Elevation feature raises the patient's feet while lowering the head position.

1. Press and hold the Foot Elevate control. The foot section will rise. Once the foot section is at the maximum elevation, the head section will recline.
2. Release the Foot Elevate control when the desired position is reached.

FlexAfoot™ Retractable Foot Control



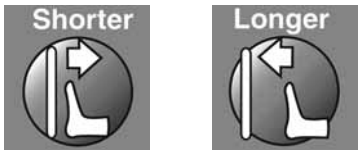
Model P1830 and Model P1840A

The foot section can be extended or retracted using the foot retraction In/Out controls. This feature allows the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System to customize the length of the sleep surface to the patient. The foot section can be retracted 12" (30 cm).

To Activate:

1. Press the Enable Control (A Model only).
2. Press and hold the Foot Out control to extend the foot section. Press and hold the Foot In control to retract the foot section.

Patient comfort can be affected by an improperly adjusted foot section.

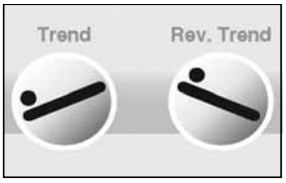


Model P1840B and Newer

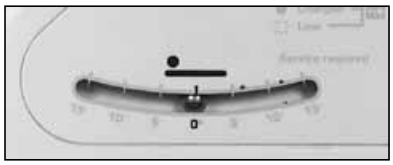
WARNING:
Do not use ankle restraints when you use this feature; injury to the patient may result.

WARNING:
The retractable foot section provides multiple patient benefits. These include facilitating the prevention of footdrop, allowing chair mode patient ingress/egress, and preventing transmission of shear forces from the mattress to the patient during chair mode articulations. However, for certain patients a retracted foot section may increase the risk of patient entanglement between the siderails and footboard. If a potential for entanglement exists, such as with patients who are agitated or disoriented, or who lack the physical strength to extract themselves should they become entangled, the foot section should be left fully extended when the patient is not under direct supervision.

Trendelenburg and Reverse Trendelenburg Controls



The TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System are capable of 15° Trendelenburg and 15° Reverse Trendelenburg. The powered Trendelenburg and Reverse Trendelenburg controls can be activated at any bed height.



The Trendelenburg feature includes Line-of-Site® Angle Indicators located in the intermediate siderails for determining Trendelenburg angles.

To Activate:

- Press the Enable control (A Model only).
- Trendelenburg–Press and hold the Trendelenburg control. The foot end of the bed system articulating frame raises relative to the head end.
- Reverse Trendelenburg–Press and hold the Reverse Trendelenburg control. The head end of the bed system articulating frame raises relative to the foot end.
- Return to flat position–Press the opposite control. (If in Trendelenburg, press Reverse Trendelenburg. If in Reverse Trendelenburg, press Trendelenburg.) When the level position is reached, the bed system will stop.

NOTE:
If the foot section is in the down position when Reverse Trendelenburg is activated, the foot section will automatically raise. This prevents the articulated foot section from interfering with the floor.

Features

Preliminary Tilt Table (Model P1840B)



The Preliminary Tilt table feature articulates the bed to a maximum of 20° Reverse Trendelenburg.

- Press and hold the Reverse Trendelenburg Control until the bed is in the Preliminary Tilt Table Position.

NOTE:
The bed will move to the full Reverse Trendelenburg position, pause, and then move to the Preliminary Tilt Table Position.

Bed Flat Control



Model P1830 and Model P1840A



Model P1840B and newer

The patient deck can be easily returned to the level position from any articulated position by using the Bed Flat control.

To Activate:

1. Press the Enable Control (A Model only).
2. Press and hold the Bed Flat control. The patient deck moves to the flat position in a two-step motion; first the articulating frame and then the individual sections. When all sections are flat, the system stops.

Boost® Position System (Model P1840B)

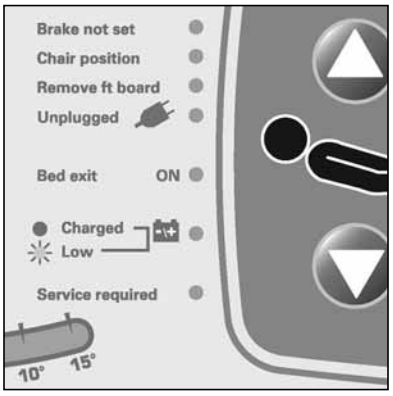
Boost® Position System allows for easier movement of the patient to the head end of the bed.



1. Press and hold the Boost control on the siderail. The bed will transition to a safe working height at the Trendelenburg position and if the bed has an air system, the mattress will go into Max-Inflate.
2. Release the Boost control when the desired position is reached.
3. Reposition the patient as necessary.

To return to the flat position, press the Bed Flat control and if the bed has an air system, press the Normal control for the surface.

Safety and Information Indicators (Model P1830A and Model P1840A)



Safety and Information Indicators provide the caregiver with visual and audio indications about brake status, chair position, remove footboard alarm, AC power, bed exit alarm, and battery status.

Brake Not Set

If the brake is not engaged, the Brake Not Set Indicator flashes.

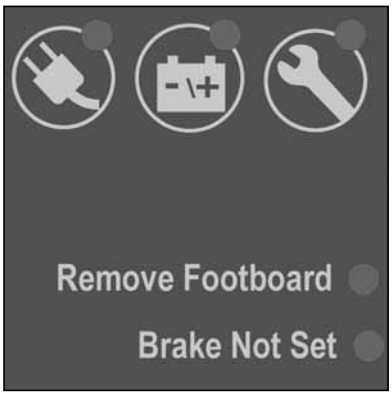
If the system is in the chair or chair egress position and the brake is not engaged, the Brake Not Set Indicator flashes and an alarm sounds.

Chair Position

The Chair Position Indicator comes on when the system is in the chair or chair egress position.

If the bed system is in the chair or chair egress position and the brake is not engaged, the Chair Position Indicator flashes and an alarm sounds. If the bed system is in the chair egress position and the footboard is installed, the Chair position indicator flashes and an alarm sounds.

Safety and Information Indicators (Model P1840B)



Safety and Information Indicators provide the caregiver with visual and audio indications about brake status, chair position, remove footboard alarm, AC power, bed exit alarm, and battery status.

Brake Not Set

If the brake is not engaged, the brake not set indicator flashes. An alarm will sound when the bed is plugged in and the brake is not set.

If the system is in the chair or chair egress positions and the brake is not engaged, the brake not set indicator flashes and an alarm sounds.

Remove Footboard

If the bed system is in the chair egress position and the footboard is installed, the Remove Footboard indicator flashes and an alarm sounds.

Unplugged AC

The Unplugged AC indicator flashes when the AC power cord is disconnected and a battery is present.

Battery Power (Manual Control Option)

Charged—The Charged indicator comes on when the battery is charged.

Low—The Low indicator flashes when the battery is low. An intermittent tone sounds every two minutes when the battery reaches the low condition and the power cord is disconnected.

Off—If indicators are off, the battery is too low to operate the bed.

CAUTION:
Although a fully-charged battery is preferred, transport may be done when the battery charge is low. The bed should be reconnected to AC power as soon as possible. Equipment damage can occur.

If the Battery Indicator changes from Charged to Low consistently within four hours of being disconnected from AC power, replace the battery.

Service Required

The Service required indicator flashes when the system detects a malfunction. Refer to the *TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System Service Manual* (143435).

Line-of-Site® Trendelenburg Angle Indicator



The Line-of-Site® Trendelenburg Angle Indicator mechanically indicates up to 15° of Trendelenburg and 15° of Reverse Trendelenburg in 5° increments. The degree number where the indicator ball rests is the correct Trendelenburg angle with respect to the floor.

Chair Positioning



Model P1830 and Model P1840A



Model P1840B and Newer

FullChair® Patient Position Mechanism

Using the FullChair® Patient Position Mechanism, the caregiver can place the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System in one of three basic chair positions: chair, chair egress, and recliner.

Chair positioning can only be accessed through the caregiver control panel.

Patient articulation controls are automatically locked out while the system is in the chair or chair egress positions. The chair indicator on the caregiver control panel illuminates when the chair position is entered.

Use facility protocol to assess a patient's ability to be safely articulated into the chair position.

Chair

The head section rises 65°, the knee section rises 10°, and the foot section lowers 70°.

The chair feature allows the caregiver to place the patient in a fully seated position without having to remove the patient from the bed. The chair feature also provides a means to support the patient's feet for comfort and security.

To Activate:



1. Set the brake.
2. Press the Enable control (A Model only).
3. Press the Chair control. The patient deck transitions to the chair position.

NOTE:
For the TotalCare® Bariatric Plus Therapy System, the patient deck slightly reclines backwards while the seat and lumbar sections on the mattress slightly deflate as the patient deck transitions to the chair position (Cradle Transition). If the Chair control is released, the seat section will re-inflate to normal pressures.

4. If the footboard is installed, when the articulation stops and a tone sounds, the system has reached the full chair position.

To Support Patient's Feet:

- Check for support in the full chair position. Many patients are adequately supported with no action required.
- Retract the foot section if necessary.
- For shorter patients, reverse the footboard so that the product label is up.
- Move the mattress foot section up to remain within the footboard.
- Adjust the foot section length using the Foot In control to position the legs correctly while maintaining foot support.

Many shorter patients may not require that the footboard be reversed. Use of pillows and blankets may provide adequate support. Extremely short patients may require use of pillows and blankets in addition to reversing the footboard for adequate foot support.

NOTE:
When the brake is not set and the bed system is in the chair or chair egress positions, the brake not set and chair indicators will flash and an audible alarm will sound.

NOTE:
If the footboard is installed with the bed in the maximum chair position and the chair control or foot down control is pressed, the Remove Footboard and Chair indicators will flash and an audible alarm will sound.

WARNING:
Check periodically to make sure the patient remains properly positioned. If necessary, use the optional seat belt to keep patients from sliding or falling forward while in a chair position. Use of pillows can maintain side-to-side positioning. Injury to the patient may result from improper positioning.

WARNING:
Do not articulate the head section with the patient buckled with the Seat Belt. Patient injury can occur.

WARNING:
Do not use the Seat Belt as a restraint device. The Seat Belt is only to maintain correct patient positioning in the chair position.

WARNING:
The patient's feet must be supported at all times while in the chair position. Extended periods of time without support can cause discomfort and reduced circulation. Refer to "FlexAfoot™ Retractable Foot Control" on page 8, and/or move the patient down in the bed until the patient's feet are supported. Injury to the patient may result from improper positioning.

WARNING:
Do not transport a patient with the bed in a chair position. Injury to the patient may occur.

CAUTION:
Do not stand or sit on the footboard. Damage to equipment may occur.

Chair Egress



The head section rises 75°, the knee section lowers to 0°, the foot section lowers to 85° and fully retracts, and the Hi-Lo lowers to its lowest height. For the TotalCare® Bariatric Plus Therapy System, the seat section partially deflates. The chair egress feature allows the caregiver to easily position a patient to egress from the foot end of the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System.

NOTE:
The FullChair® Patient Egress Position Mechanism is intended to facilitate patient egress and not long-term sitting.

To Activate:

1. Make sure the casters are in the trailing position.
2. Set the brake.
3. Remove the footboard.
4. Press the Enable control (A Model only).

5. Press the Chair control. The patient deck transitions to the chair egress position. Monitor the patient as the system moves to the egress position.

6. Assist the patient with egress.

NOTE:
When the brake is not set while the bed system is in the chair egress position, the Brake Not Set and Chair indicators flash, and an alarm sounds.

NOTE:
The TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System will not move to the maximum position for the FullChair® Egress Position Mechanism until the footboard is removed. When the footboard is removed the Remove Footboard indicator light goes out.

WARNING:
Do not transport a patient with the bed in a chair position. Injury to the patient may occur.

WARNING:
If the patient is left sitting in the chair egress position, a thigh angle of 10° should be maintained, except during actual patient egress. The patient's feet must be supported by the floor at all times while in the egress chair position. Injury to the patient may result from improper positioning.

WARNING:
Do not use ankle restraints when activating this feature. Injury to the patient may occur.

WARNING:
If bed sheets contact the floor during chair egress use, follow standard infection control procedures.

CAUTION:
Do not install the footboard in the chair egress position. The Remove Footboard and Chair indicators flash and an alarm sounds.

When moving the bed out of the chair egress position, a beep sounds to remind the caregiver to install the footboard.

Recliner



The head section rises 50°, the knee section rises 10°, and the foot section lowers 30°.

The recliner feature allows the patient to be placed in a customized semi-seated position.

To Activate:

1. Set the brake.

2. Press the Enable control (A Model only).

3. Press the Chair control. The patient deck transitions to the reclined position.

NOTE:
For the TotalCare® Bariatric Plus Therapy System the patient deck slightly reclines backwards and the seat and lumbar sections on the mattress deflate and then the patient deck transitions to the chair position (Cradle Transition).

4. When the system has reached the approximate desired position, release the Chair control. If desired, use the Head, Knee, Foot, or Foot Retract Controls to make custom recliner position adjustments.

WARNING:
Do not transport a patient with the bed in a recliner position. Injury to the patient may occur.

WARNING:
Do not use ankle restraints when using this feature. Injury to the patient may occur.

WARNING:
The patient's feet must be supported at all times while in the recliner position. Extended periods of time without support can cause discomfort and reduced circulation. Injury to the patient may result from improper positioning.

Nurse Call



On TotalCare® Bed Systems equipped with the Nurse Call option, use a NURSE control to activate the Nurse Call feature. The controls are located on both the inboard and outboard sides of the intermediate siderails.

To Activate:

- Press a NURSE control.
- When the nurse's station acknowledges the nurse call, the indicator light on the NURSE control will flash.
- When the nurse's station communication line is open, the indicator stops flashing and illuminates continuously.
- Speak into the speaker/microphone located on the inboard side of the head end siderails.

You do not need to press the Enable control prior to pressing a NURSE control. The NURSE controls are always active. The NURSE controls cannot be locked out by the Master lockout control.

NOTE:
A nurse call is placed automatically one minute after the loss of AC power (only on beds built prior to January 2000).

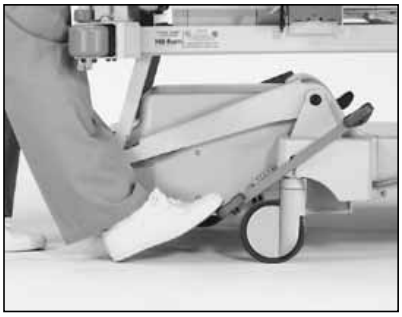
Point-of-Care® Brake and Steer System

The Point-of-Care® Brake and Steer System pedal control is located above the casters at the head end of the system. Use the steer mode to move the bed. Engaging the Brake feature keeps the bed from moving. The neutral position allows the system to be moved sideways in a room or small enclosed area.

To Activate:



•Brakes-Step down on the orange Brake Pedal. The *Brake not Set* indicator goes out, indicating the four casters are locked. Push and pull on the system to make sure that the brake function is fully engaged.



•To Steer-Step down on the green Steer Pedal. The *Brake not Set* indicator comes on.

If the bed is unplugged, the IntelliDrive® Transport System will deploy.



•Neutral Position-Move the Brake/Steer pedal to the level position. The *Brake not Set* indicator comes on. The system can now be moved in any direction.

When the brake and steer pedal is placed in steer, the front casters are **not** locked into steer mode. All four casters on the bed are put into the neutral position. This allows the bed to pivot on the IntelliDrive® Transport System drive wheel. Pivoting on the drive wheel allows for tighter turns, and enhanced ease of steering.

NOTE:
Use the transport handles at the head end of the bed to push the TotalCare® Bed System.

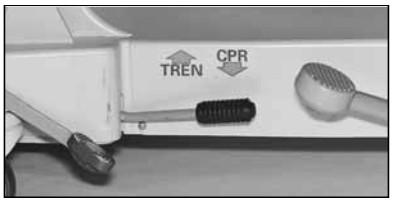
For beds with the IntelliDrive® Transport System installed, the brake and steer system operates differently. When the brake and steer pedal is placed in steer, the front casters are **not** locked into steer mode. All four casters on the bed are put into the neutral position. This allows the bed to pivot on the IntelliDrive® Transport System drive wheel. Pivoting on the drive wheel allows for tighter turns, and enhanced ease of steering.

When the bed is connected to AC power and the brakes are **not** set, an alarm sounds. When AC power is removed, the alarm will stop.

WARNING:
Unless transporting the patient, always set the brakes. Reconfirm that the brakes are set before any patient transfer. Failure to do so may cause personal injury or equipment damage.

Emergency Caregiver Foot Controls

An Emergency CPR and an Emergency Trendelenburg control pedal is located on each side of the base frame between the head end and foot end casters.



HandsFree® Emergency Trendelenburg Release Mechanism



When connected to AC power and the bed is in a mid-height position, the bed is capable of 15° Trendelenburg and 15° Reverse Trendelenburg. The emergency Trendelenburg feature is capable of achieving up to a 20° angle if the bed is in the full height position.

To Activate:

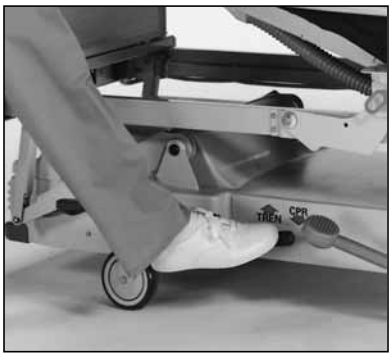
- The head section must be flat for the Emergency Trendelenburg feature to achieve the desired position.
- With your foot, lift and hold the TREN pedal. When the articulating frame has reached the full or desired Trendelenburg position, release the TREN pedal.
- If movement of the articulating frame stops before 15° is achieved, raise the articulating frame higher by using the Bed Up control.
- For transport, put the bed in a mid-height position before you disconnect the AC power. Then during transport, you will be able to achieve a 15° Trendelenburg position if necessary.

NOTE:
The Bed Up/Down controls can be used when the CPR function is activated.

WARNING:
The overall angle of emergency Trendelenburg is related to the height of the bed. To make sure that 15° can be achieved, the bed system should always be transported in a mid-height position. If the bed is in low position and AC power is not available, use pillows to elevate the patient's feet until Trendelenburg can be achieved.

WARNING:
When the AC power is lost, only the head section will lower.

HandsFree® Emergency CPR Release Mechanism



When connected to AC power, the CPR release lowers the head and knee sections, and raises the foot section. The head section moves to a flat position within 10 seconds. Emergency CPR is also functional in the chair egress and recliner positions. When the pedal is held down for 4 seconds, a tone sounds and the foot section rises. The foot section moves to a flat position within a maximum of 25 seconds if fully articulated.

If the power cord is unplugged, only the head section lowers. To stop the automatic foot up articulation, press any control except for Bed Up/Down, and the foot section will stop.

If the bed has a pressure redistribution surface, when the CPR function is activated, the surface will go into Max-inflate mode (see "Pressure Redistribution Surface CPR Function" on page 56).

NOTE:
The headboard can be used as a CPR board in emergency situations.

To Activate:

- If the master lockout is enabled, it must be deactivated to allow other controls to stop the foot section.
- Hold the CPR pedal down with your foot until the head section reaches the flat or desired position and you hear the audible tone. Release the CPR pedal to stop head section movement. The foot and knee sections will automatically move to a flat position.
- A cardiac arrest board is required. The headboard can be used in place of the cardiac arrest board.
- To stop foot section movement, simply press any other siderail control.

SideCom® Communication System

The SideCom® Communication System provides the following controls: Nurse Call, Entertainment, and Lighting.

The SideCom® Communication System connector is located at the head end of the bed under the SideCom® Communication System cover.

Head and Intermediate Siderails

TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System siderails have been designed for one-step operation.

Siderails in the raised position are intended to make the patient aware of the proximity of the edge of the sleep surface.

Siderails in the down position, below the patient surface, facilitates a patient's entry or exit from the bed. This design feature also facilitates unobstructed access to the patient.

WARNING:
Applying more than 100 lb (45.5 kg) of additional outward force on a siderail while a patient is laying against it may create an unstable bed situation. Care should be taken when the patient is against the siderail and outward force is used to move the patient. Failure to do so can cause personal injury.

To Activate:

- Raise a siderail by pulling the siderail up until it latches into the locked position.
- While raising the siderails, a **click** will be heard when it latches into the locked position.
- Lower a siderail by grasping the release handle and pulling out. The siderail automatically lowers and tucks under the sleep surface perimeter.



Siderails Raised



Siderails Lowered



OneStep® Siderail Release Mechanism

WARNING:
Siderails are not intended to be used as restraint devices. The appropriate medical personnel should determine the level of restraint necessary to make sure a patient will remain safely in the bed system.

WARNING:
Although the siderails have been designed to reduce the risk of patient entanglement, the potential exists particularly for patients who are agitated or disoriented, as well as patients who lack the physical strength to extract themselves if they become entangled. Caregivers should carefully evaluate the need for siderails and periodically check patients in accordance with facility protocols for safe positioning.

CAUTION:
When placing the bed into a chair position, make sure the siderails are raised. Failure to do so can cause damage to the siderail extenders when the foot section retracts.

Headboard



The headboard is located at the head end of the bed. It attaches to the head end of the frame, and it articulates with the frame.

The headboard can be removed for increased access to the patient's head. It also can be used as a back board during emergency CPR procedures.

A caregiver can quickly remove or attach the headboard in a single step without the use of tools.

To Remove/Install:

- To remove, grasp the headboard and lift straight up.
- To Install, position the headboard sockets over the pins on the frame. Then, lower the headboard onto the pins. Push the headboard down until the bottom rests on the frame.

Footboard



The footboard is located at the foot end of the bed. It attaches to the articulating foot section, and it remains perpendicular to the surface of the foot section at all times. The footboard protects the patient during transport and room docking.

A caregiver can quickly remove or attach the footboard in a single step without the use of tools.

To Remove/Install:

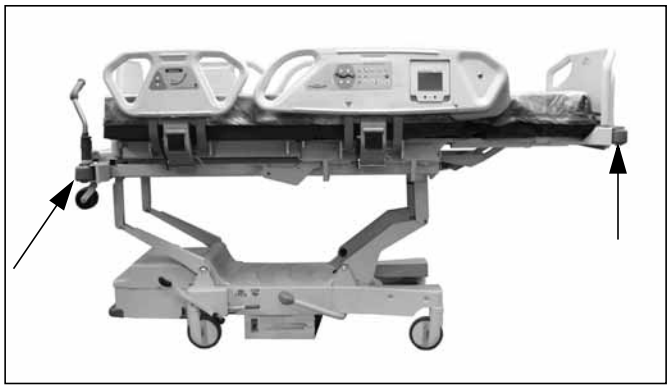
- To remove, grasp the handles on the footboard and lift straight up.
- To install, insert the pins of the footboard into the **blue** sockets in the articulating frame. Push the footboard down until it rests on the deck.

Standard Casters

If the bed has the IntelliDrive® Transport System installed, the bed comes equipped with 6" (15 cm) casters. If the bed does not have the IntelliDrive® Transport System installed, the bed comes equipped with 5" (13 cm) casters. The casters are integral components of the brake and steer system.

Equipment Sockets

Equipment sockets are provided at each corner of the deck for equipment such as IV poles and infusion support.



CAUTION:
The equipment sockets are not to be used for overhead fracture frame equipment. Equipment damage can occur.

CAUTION:
Before moving the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System into any of the chair positions, remove all equipment from the sockets at the foot end of the articulating deck. Equipment damage can occur.

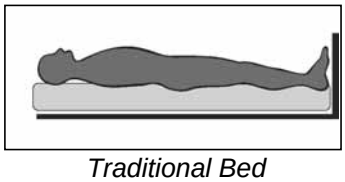
CAUTION:
While articulating into a Trendelenburg position, make sure of adequate headwall clearance. Equipment damage can occur.

Hip Position Locator

The hip position label indicates the correct position of the patient's hips while on the bed. The labels are on the inside of the intermediate siderail just below the Head Up/Down controls on the patient control panel.

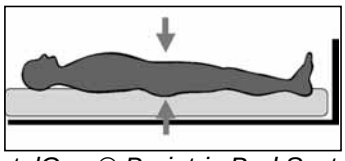


Proper placement of the patient increases the effectiveness of the Shearless Pivot® Patient Position Mechanism frame and minimizes gravitation of the patient to the foot end of the bed when raising the head section.



Traditional Bed

Patient placement toward the head end of the bed

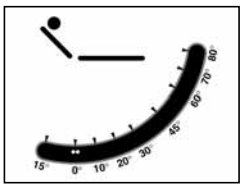


TotalCare® Bariatric Bed System

Hip position locator indicates correct position of patient's hips

Line-of-Site® Head Angle Indicator

The Line-of-Site® Angle Indicators mechanically indicate the angle of the head section from –15° to +80° with respect to the floor. The head siderails contain head Line-of-Site® Angle Indicators on their outboard sides. The degree where the indicator ball rests is the correct angle.



Model 1830A and Model 1840A



Model 1840B and Newer

WallGuard® Bumper System

The WallGuard® Bumper System protects the perimeter of the bed when it is being moved or transported.

Roller bumpers protect the headwall system when the system is docked in the patient room.

Line Manager

A line manager is on each side of the head end of the bed. The Line Manager helps to keep lines (such as IV fusion lines, suction lines, oxygen lines, etc.) together and away from the articulating frame. The flexibility of the Line Manager lets you bend it in any direction.



WARNING:
Make sure the lines are not pinched or kinked and there is sufficient slack in the lines for bed articulations and patient movement. Failure to do so could cause injury or equipment damage.

IV Sockets

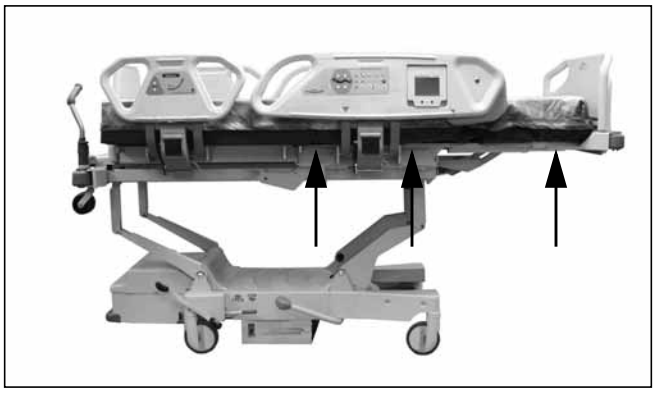
The TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System come with six standard IV sockets. Four are located at the head end and two are located at the foot end of the bed.

Drainage Bag Holders

The TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System are equipped with six drainage bag holders, four centrally located at the side of the bed and two at the foot. Drainage bags should be placed on these holders.

The holders accommodate any combination of the following drainage devices:

- Fecal incontinence bag
- 250/2000 ml Foley collection bag
- Pleur-evac®[1] devices on foot-end holders (during transport only)



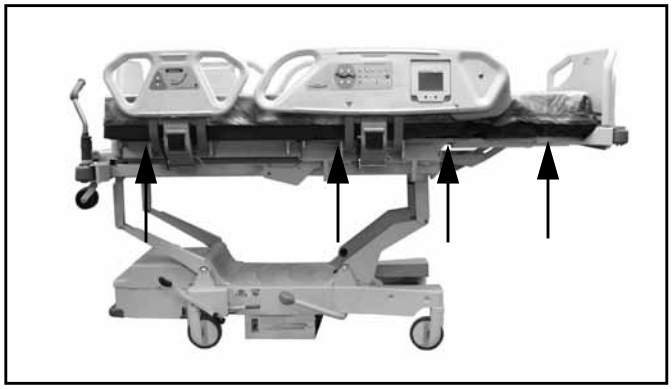
1. Pleur-evac® is a registered trademark of Deknatel, Inc.

When the bed system is docked, place the Pleur-evac® or other chest drainage devices on the floor clear of the bed system to allow space for articulation.

The primary drainage bag holders *are not* located on the weigh frame. Secondary drainage bag holders, located on the sides of the foot section, *are* located on the weigh frame.

WARNING:
Do not tie restraints to the primary drainage bag holders.

Patient Restraint Interface



The bed facilitates the use of vest, wrist, waist, and ankle restraints. Hill-Rom makes no recommendation regarding the use of physical restraints. Users should refer to legal restrictions and appropriate facility protocols before physical restraints are used.

WARNING:
Patient restraints are not intended as substitutes for good nursing practices. Physical restraints, even properly installed, can result in entanglement, physical injury, and death, particularly with agitated and disoriented patients. Monitor patients when using physical restraints in accordance with legal requirements and facility protocol.

WARNING:
Restraints must be attached to the articulating sections of the system at the proper attachment points to prevent injury to the patient.

WARNING:
Never use ankle restraints in a chair position or when the foot section is retracted. Patient injury can occur.

Graphical Caregiver Interface (GCI)® Control (Model P1840B and Newer)



The GCI is located on the intermediate siderail next to the caregiver control panel.

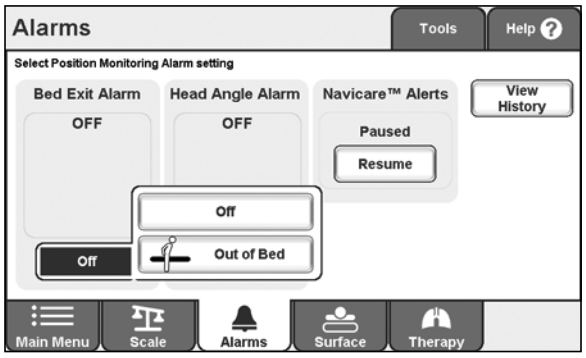
Features that are present on the TotalCare® Bed System appear on the screen menus.

To Activate:

1. Touch the screen.

NOTE:
After a menu selection has been made, and the system receives no further input, the control will return to the Main Screen and the screen will turn off.

Bed Exit Alarm



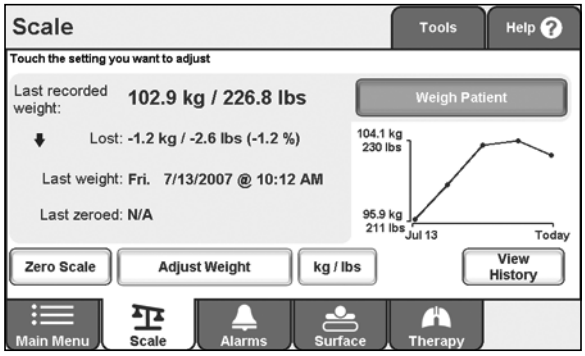
To Activate:

1. Press the Alarms tab on the GCI.
2. Press Modify under the Bed Exit Alarm section.
3. Press Out of Bed. This turns on the Bed Exit Alarm.

To Deactivate:

1. Press the Alarms tab on the GCI.
2. Press Modify under the Bed Exit Alarm section.
3. Press Off. This turns off the Bed Exit Alarm.

Scale Functions



If the bed is equipped with a treatment or pulmonary therapy surface, the patient **must** be weighed when placed on the bed.

The **Scale** tab on the GCI allows you to weigh the patient, zero the scale, adjust the weight, change from pounds (lbs) to kilograms (kg), and view weight history.

To Zero the Scale:

1. Make sure the patient is not on the bed.
2. Press the Scale tab on the GCI.
3. Press Zero Scale. Follow the on-screen instructions.

To Weigh the Patient:



1. Make sure the patient is centered on the bed.
2. Press the Scale tab on the GCI.
3. Press Weigh Patient. Follow the on-screen instructions.

To Add or Remove items:

1. Press the Scale tab on the GCI.
2. Press Adjust Weight.
3. Press Add/Remove Items. Follow the on-screen instructions.

NOTE:
Scale accuracy: 1% of patient weight
Scale repeatability: ±.3% 75 to 175 lb (34.0 to 79.4 kg); ±.1% 200 to 500 lb (91 to 227 kg)
Patient weight should not be taken while the optional percussion or vibration pulmonary therapy is active.

NOTE:
If the bed is equipped with the pulmonary therapy surface, the bed scale system will automatically recalculate the zero weight when adding or removing the pulmonary modules. There is no need to re-zero the scale.

Scale Operation (European Version Scale Only)

Scale Functions



The scale on the bed constantly reads the patient's weight.

The Scale tab on the GCI has these controls: Save Weight, Weight History, Zero/Tare, and Auto Comp.

The Current Weight reading only shows on the Scale tab.

The Current Weight section of the screen shows the patient weight in kilograms in .5 kg increments. This reading changes if the patient moves or gains or loses weight, or if visitors lean on the bed or siderails. The caregiver **can not** change this reading.

If the Current Weight reading shows as all dashes, the scale is unable to weigh the patient. This may occur if the bed weight limit has been exceeded, or there is an internal error. Remove the weight from the bed. If this does not fix the problem, contact facility maintenance for further troubleshooting.

To get the most accurate weight reading, the bed must be in the highest position and the mattress flat.

Bed not verified position

"Bed not in verified position" means the bed is not in the position that the scale was certified in during manufacturing. This may affect accuracy, but not the scale operation or function.

Unstable equilibrium

Unstable equilibrium means the equilibrium between internal readings for the scale is not stable. If the Unstable equilibrium indicator is on, scale accuracy will be diminished. This function is automatic and **can not** be selected by the caregiver.

Save Weight

The Save Weight function lets the caregiver keep the patient's weight in the scale memory for reference at a later time.

On the **Scale** tab, press **Save Weight**. Follow the on-screen instructions.

Weight History

The Weight History function lets the caregiver view and delete saved weights.

On the **Scale** tab, press **Weight History**. Follow the on-screen instructions.

Zero/Tare

The Zero/Tare function lets the caregiver reset the scale system **before** a new patient uses the bed.

1. Remove equipment and accessories from the bed.
2. On the **Scale** tab, press **Zero/Tare**. Follow the on-screen instructions.

Auto Comp

Auto Comp lets the caregiver change items on the bed and correct the weight reading while the patient is on the bed.

NOTE:
If the patient is **not** on the bed, use the Zero/Tare function after you change the items on the bed.

The Auto Comp function keeps the patient's weight in memory as you change items on the bed. Before you add or remove items, use the Auto Comp option to keep the weight reading for the items being changed.

On the **Scale** tab, press the **Auto Comp**. Follow the on-screen instructions.

Scale specifications:

Class IIII

Conforms to the European Medical Device Directive 93/42/EEC for a device that has a measuring function.

Maximum weight: 230 kg (as identified by a label on the GCI)

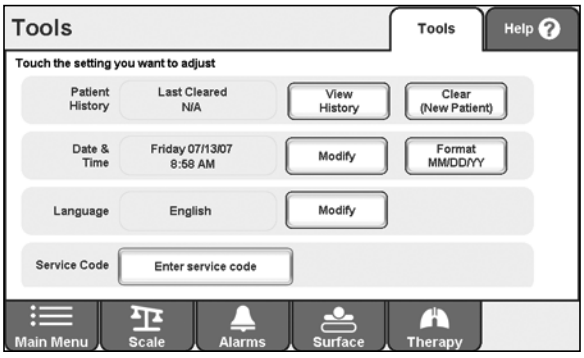
Minimum weight: 5 kg

Display interval: .5 kg

Combined zero and tare range: 0 kg to 230 kg

For the TotalCare® Bariatric Plus Bed, the bed scale system will automatically calculate the tare weight when you add or remove the pulmonary or low air loss modules. It is not necessary to Zero/Tare the scale.

Bed Setup/Reset

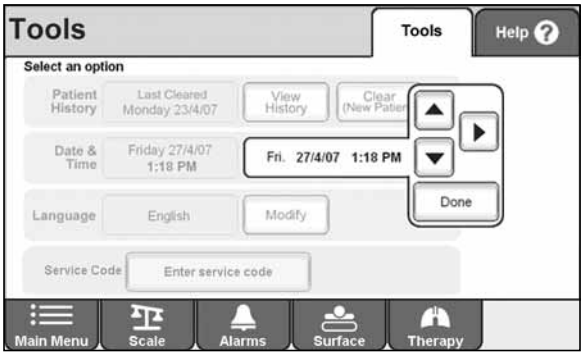


The **Bed Setup/Reset** control clears the weight history.

To Reset the Bed:

1. Press the Tools tab on the GCI.
2. Press the Clear (New Patient) button next to the View History button. Follow the on screen instructions.

NOTE:
If the bed is equipped with a pulmonary therapy surface, the Therapy Statistics will be cleared when the Patient History is cleared.



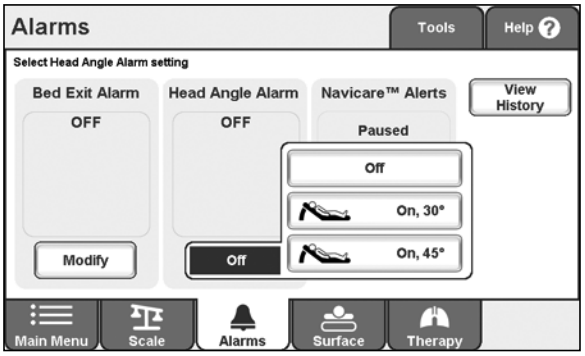
To Change the Date and Time:

1. Press the Tools tab on the GCI.
2. Press the Modify button. Follow the on screen instructions.
3. Press Done when the time and date are correct.

To Change the Date Format:

1. Press the Tools tab on the GCI.
2. Press the Format button. The format can be either DD/MM/YY or MM/DD/YY.

Head Angle Alarm



The head angle alarm assists the caregiver in maintaining the head elevation of 30° or 45°.

The head angle alarm lets the caregiver set an alarm to sound if the head section goes below 30° or 45°.

To Activate:

1. Raise the head section to the applicable position above 30° or 45°.
2. Press the Alarms tab on the GCI.
3. Press Modify under the Head Angle Alarm section.
4. Press the desired angle.

If the head section gets below the selected 30° or 45°, an alarm sounds and a message shows on the GCI.

To Clear the Alarm:

- Raise the head section above 30° or 45° to clear the alarm.
  or
- Follow the on screen instructions to cancel the alarm.
  or
- Silence the alarm by pressing the Alarm Pause control on the siderail opposite the GCI.

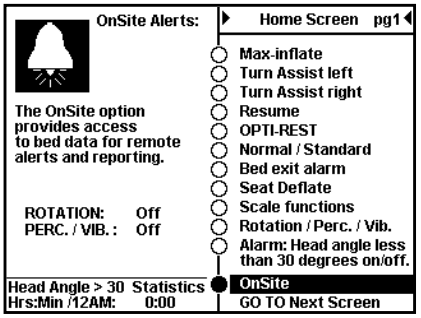
NaviCare® System

The NaviCare® System is an enterprise system that connects and monitors Hill-Rom® beds and surfaces. The system sends bed and surface data to network applications for caregivers to view and receive alerts. For complete operational instructions for the NaviCare® System, refer to the *NaviCare® System User Manual* (P0004447).

The system's Alerts feature is configured from the NaviCare® System application. The application is turned on or off at the nurses station; however, the Alerts feature can be paused from the bed.

An indicator next to the NaviCare menu item on the GCI shows the status of the Alerts feature.

To Pause the Alerts Feature at the Bed:



1. Press the Alarms tab on the GCI.
2. Press the Pause Alarms button under the NaviCare® Alerts section.

NOTE:
When the Alerts feature is deactivated from the bed, an indicator will show on the NaviCare® System application at the nurse's station.

To Reactivate the Alerts Feature at the Bed:

1. Repeat the above steps.

Graphical Caregiver Interface (GCI)® Control—TotalCare® Bariatric Plus Therapy System (Model P1830A and Model P1840A)



The Graphical Caregiver Interface (GCI)® Control is located on the intermediate siderail next to the caregiver control panel.

Menu choices appear on the right side of the screen. The left side of the screen provides unique information or instructions for the menu item highlighted on the right side of the screen.

Features that are present on the TotalCare® Bariatric Plus Therapy System appear on the screen menus.

The caregiver interacts with the control by using three controls: scroll Up arrow, ENTER, and scroll Down arrow.

To operate system functions, selections are made through the Home screen. From the Home screen the caregiver can also quickly access standard system functions (i.e., Bed exit alarm and Weigh patient). Specific system setup or configuration functions are selected through the Main Menu.

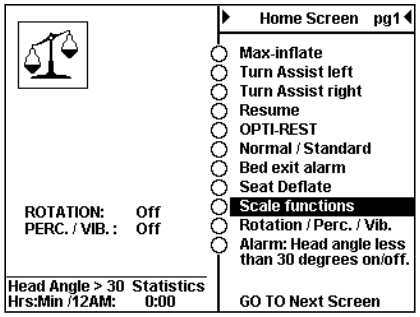
To Activate:

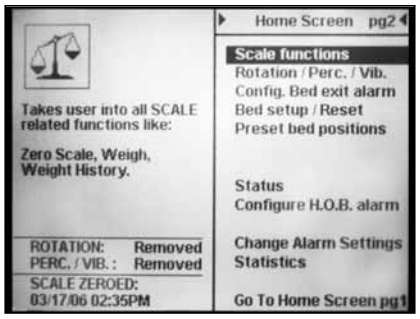
1. Press the Up/Down control or the ENTER control.

NOTE:
After a menu selection has been made, and the system receives no further input, the control will return to the Home Screen and the screen will turn off.

Home Screen

Weigh Patient





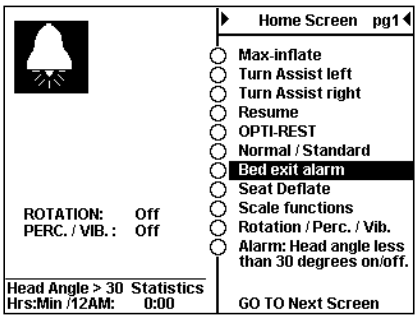
1. Center the patient on the surface. The head and foot sections must be flat to a maximum 30° articulation and the bed must be level.
2. Raise the siderails.
3. Make sure the bed is clear of all obstructions: lines, tubing, walls, etc.
4. From the Home screen, scroll to Weigh patient. Press ENTER.

   or

   From the Home screen, scroll to GO TO Next Screen. Press ENTER.
5. Scroll to Scale functions. Press ENTER.
6. Follow the on-screen instructions.

CAUTION:
Failure to place the bed within these limits will affect scale accuracy.

Bed Exit System Alarm



To Activate:

1. Make sure the patient is on the bed.
2. At the Home Screen, scroll to Bed exit alarm. Press ENTER. This activates the Bed Exit detection feature.
3. The Bed Exit ON indicator comes on to show that the Bed Exit detection feature is activated.
4. For additional Bed exit alarm functions, from the Home Screen scroll to GO TO Next Screen. Press ENTER.
5. Scroll to Config. Bed exit alarm. Press ENTER.
6. Follow the on-screen instructions.

When 50% of the weight (recorded at the time the Bed Exit alarm is armed) is removed from the bed, the Bed Exit alarm activates, and sends a nurse call signal (if the bed is equipped with the Nurse Call feature) and turns on an audible alarm.

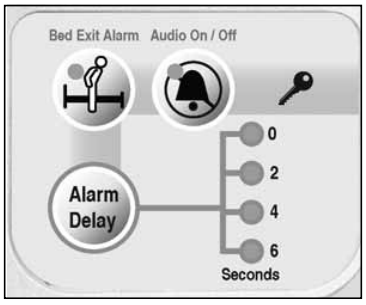
To Deactivate:

At the Home Screen, scroll to Bed exit alarm. Press ENTER. The Bed Exit ON indicator goes off. The Bed Exit detection feature is deactivated.

WARNING:
The Bed Exit System is not intended as a substitute for good nursing practices. The Bed Exit system must be used in conjunction with a sound risk assessment and protocol.

WARNING:
The addition of a significant weight to the bed (such as a visitor sitting on the bed) may allow the patient to exit without activation of the Bed Exit System alarm.

The Bed exit alarm can also be activated through the Bed exit alarm panel located on the siderail opposite the Graphical Caregiver Interface (GCI)® Control.



To Activate:

1. Press the Enable control.
2. Press the Alarm ON•OFF control.

Audible Alarm

To Activate:

1. Press the Enable control.
2. Press the Sound control.

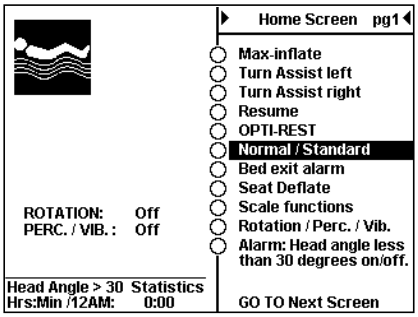
Alarm Delay

To Activate:

1. Press the Enable control.
2. Press the Alarm Delay Control.
3. Continue to press the Alarm Delay Control until the LED indicates the desired station (0, 2, 4, 6 seconds).

Normal Mattress Mode

From the Home Screen, scroll to Normal/Standard. Press ENTER. Follow the on-screen instructions.



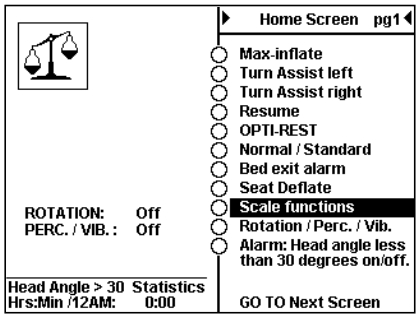
Max-Inflate

From the Home Screen, scroll to Max-inflate. Press ENTER.

Home Screen

At the Home Screen, scroll to GO TO Next Screen. Press ENTER. The Graphical Caregiver Interface (GCI)® Control displays the Home Screen.

Scale Functions



If the bed is equipped with the pressure redistribution surface, the patient **must** be weighed when placed on the bed.

1. From the Home Screen, scroll to Scale functions. Press ENTER.
2. Scroll to the desired function. Press ENTER. Scale menu functions include Weigh Patient, Zero Scale, Delayed Weigh, Tare List, Change LBS/KGS, Access Weight History, Add/Remove Items, and Set Weight.

Example: *Weigh Patient*

1. At the Scale menu, scroll to Weigh patient. Press ENTER. The left side of the display screen becomes active.
2. Follow the on-screen instructions.
3. To return to the Scale Menu for another selection, press the Cancel/Exit function.
4. On the Scale Menu, scroll to the applicable function. Press ENTER.
5. Follow the on-screen instructions for each selection.

Prior to adding or removing items from the bed, the Add/Remove Items option **must** be used. Using the Add/Remove Items option will hold the patient's weight in memory while items are being added or removed. Follow the on-screen instructions for using the Add/Remove Items option.

NOTE:
Scale accuracy: 1% of patient weight
Scale repeatability: ±.1% 200 to 500 lb (91 to 227 kg)
Patient weight should not be taken while the optional percussion or vibration pulmonary therapy is active.

Config. Bed Exit Alarm

1. From the Main menu, scroll to Config. Bed exit alarm. Press ENTER.

Bed Exit Alarm Delay

1. Scroll to Change delay. Press ENTER.
2. On the left side of the screen, scroll to either a 0, 2, 4, or 6-second alarm delay. Press ENTER. The filled circle indicates the selected delay duration.

Bed Exit

1. Scroll to Bed exit: On/Off. Press ENTER.
2. Select either On to activate the Bed Exit detection feature or Off to cancel the Bed Exit functions.

Sound On/Off

1. Scroll to Sound On/Off. Press ENTER.
2. Select either On for an active audible indication or Off to cancel the audible indication. This only affects the audible alarm on the bed. A nurse call is still placed.

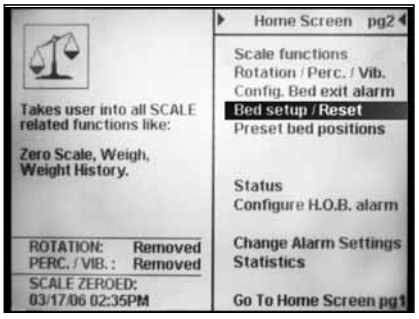
NOTE:
If the bed does not have nurse call capabilities, the audible alarm is always active.

WARNING:
The Bed Exit System is not intended as a substitute for good nursing practices. The Bed Exit System must be used in conjunction with a sound risk assessment and protocol.

WARNING:
The activation of 2, 4, or 6-second delay of the Bed Exit alarm feature may reduce the effectiveness of the Bed Exit System.

NOTE:
If the bed is equipped with the pressure redistribution surface, the bed scale system will automatically re-calculate the zero weight when adding or removing the pulmonary modules. There is no need to re-zero the scale.

Bed Setup/Reset



The Bed setup/Reset control clears the weight history and re-zeroes the scale.

Bed RESET

1. From the Home Screen, scroll to GO TO Next Screen. Press ENTER.
2. Scroll to Bed setup/Reset. Press ENTER.
3. Scroll to Bed RESET. Press ENTER.

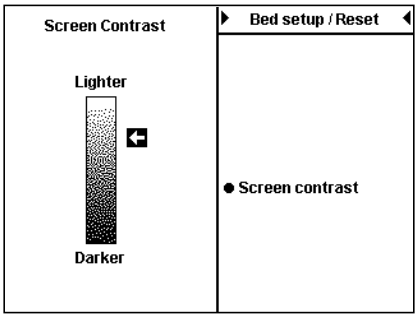
NOTE:
If the bed is equipped with a pressure redistribution surface, the Therapy Statistics will be cleared with Bed RESET.

Set Time and Date

1. Scroll to Set Time and Date. Press ENTER.
2. Move the up and down arrows to change the time and date. Press ENTER.

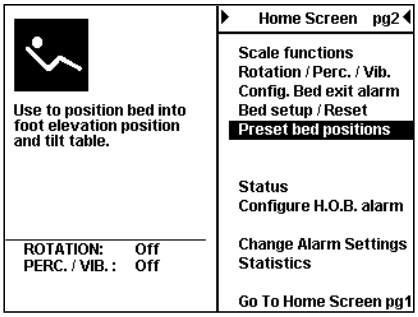
Screen Contrast

1. Scroll to Screen contrast. Press ENTER. An arrow is highlighted on the left side of the screen.
2. Move the arrow up and down for lighter or darker settings. Press ENTER.



Preset Bed Options

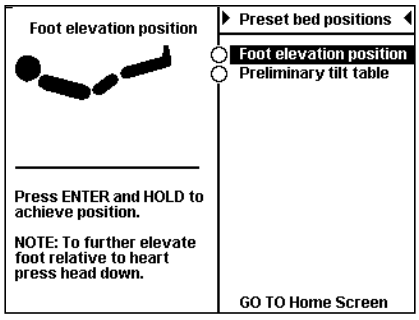
The Graphical Caregiver Interface (GCI)® Control is equipped with two preset system positions: Foot elevation and Preliminary tilt table.



Foot Elevation

The preset Foot elevation feature raises the patient's feet while lowering the head position.

1. From the Home Screen, scroll to GO TO Next Screen. Press ENTER.
2. Scroll to Preset bed positions. Press ENTER.



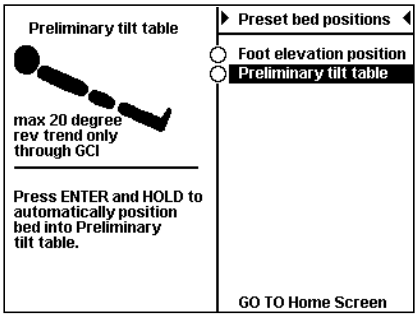


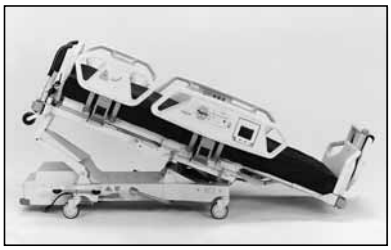
3. Select Foot elevation position, and then press and hold ENTER until the patient is in the desired position.

Preliminary Tilt Table

The preset Preliminary tilt table feature articulates the system to a maximum 20° Reverse Trendelenburg position.

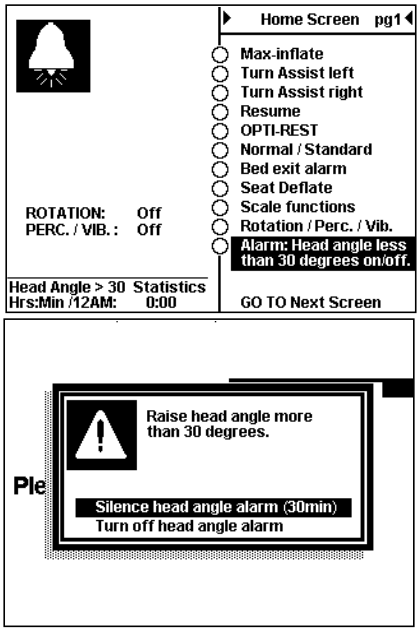
1. From the Home Screen, scroll to GO TO Next Screen. Press ENTER.
2. Scroll to Preset bed positions. Press ENTER.





3. Select Preliminary tilt table, and then press and hold ENTER until the patient is in the desired position.

Head Angle Alarm



The head angle alarm assists the caregiver in maintaining the head elevation of 30°.

The head angle alarm lets the caregiver set an alarm to sound if the head section goes below 30°.

1. Raise the head section to the applicable position above 30°.
2. From the Home Screen, scroll to Alarm: Head angle > 30 degrees on/off. Press ENTER.

When the head section is lower than 30° an alarm sounds and a message shows on the Graphical Caregiver Interface (GCI)® Control.

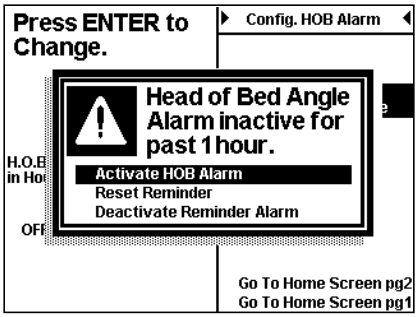
1. Raise the head section above 30° to clear the alarm,

or

follow the on-screen instructions to cancel the alarm.

If the bed is equipped with a pressure redistribution surface, the alarm can be silenced by pressing the Alarm Silence control on the siderail opposite the Graphical Caregiver Interface (GCI)® Control.

Head of Bed Reminder Alarm



The head of bed (HOB) reminder alarm shows on the Graphical Caregiver Interface (GCI)® Control when a patient's weight is greater than 70 lb (32 kg) and the head angle is less than 30° and the Head of Bed alarm is not activated. To activate the head angle alarm, reset the reminder or deactivate the reminder alarm, follow the on-screen instructions.

To configure the Reminder Alarm, do as follows:

1. On the Home Screen, scroll to GO TO Next Screen. Press ENTER.
2. Scroll to Config. HOB Alarm. Press ENTER.
3. Scroll to the desired reminder alarm time or Off. Press ENTER.

NaviCare® System

The NaviCare® System is an enterprise system that connects and monitors Hill-Rom® beds and surfaces. The system sends bed and surface data to network applications for caregivers to view and receive alerts. For complete operational instructions for the NaviCare® System, refer to the NaviCare® *System User Manual* (P004447).

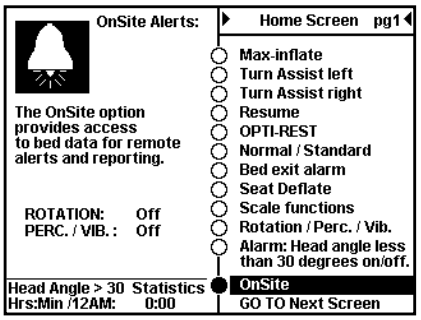
The system's Alerts feature is configured from the NaviCare® System application. The application is turned on or off at the nurses station; however, the Alerts feature can be deactivated and reactivated from the bed.

An indicator at the upper left corner of the Graphical Caregiver Interface (GCI)® Control shows the status of the bed connection to the NaviCare® System.

An indicator next to the NaviCare® menu item on the Graphical Caregiver Interface (GCI)® Control shows the status of the Alerts feature:

- Inactive—indicator is off
- Active—indicator is on

To Deactivate the Alerts Feature at the Bed:



1. At the Home Screen, select OnSite. Press ENTER.
2. Select OnSite Alerts Status. Press ENTER.

NOTE:
When the Alerts feature is deactivated from the bed, an indicator will show on the NaviCare® System application.

To Reactivate the Alerts Feature at the Bed:

1. Repeat steps 1 and 2 above.

Graphical Caregiver Interface (GCI)® Control—TotalCare® Bariatric Bed



The Graphical Caregiver Interface (GCI)® Control feature is located on an intermediate siderail on the caregiver control panel.

The Graphical Caregiver Interface (GCI)® Control uses a graphic display to provide for full caregiver interaction. Menu choices appear on the right side of the screen. The left side of the screen provides unique information or instructions for the menu item highlighted on the right side of the screen.

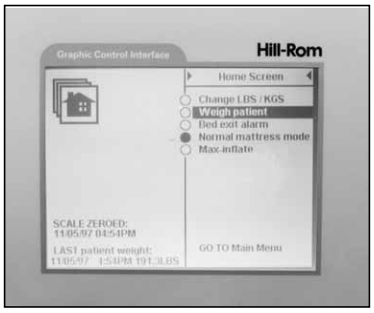
Features that are present on the TotalCare® Bariatric Bed appear on the screen menus.

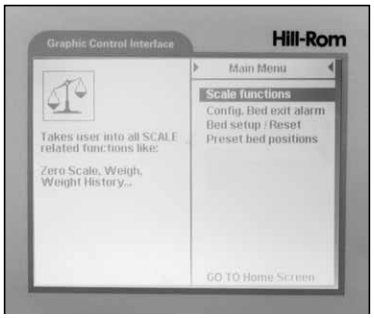
The caregiver interacts with the control by using three controls located at the bottom of the control screen: scroll Up arrow, ENTER, and scroll Down arrow.

Generally, to operate system functions, selections are made through the Home Screen. From the Home Screen, the caregiver can also quickly access standard system functions (such as Bed Exit alarm, Weigh patient, and Change LBS/KGS). Specific system setup or configuration functions are selected through the Main Menu.

To Activate:

1. Using the Up /Down controls, select the desired menu function, and then press the ENTER control. Begin selection at either the Home Screen or the Main Menu.

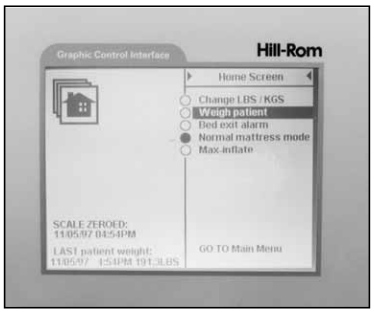




NOTE:
After a menu selection has been made, and the system receives no further input, the control will eventually return to the Home Screen and the screen will turn off. To reactivate the Graphical Caregiver Interface (GCI)® Control, press the ENTER button or either the Up or Down arrow.

Features

Home Screen

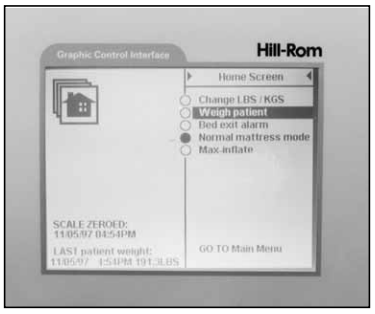


Change LBS/KGS

1. From the Home Screen, scroll to Change LBS/KGS. Press ENTER.
2. For additional scale functions, scroll to Main Menu. Press ENTER.
3. Scroll to Scale functions. Press ENTER.
4. Follow the on-screen instructions.

Weigh Patient

1. Center the patient on the surface.
2. Raise the siderails.
3. Make sure the bed is clear of all obstructions such as lines, tubing, walls, etc.
4. Make sure the head and foot sections are flat to a maximum 30° articulation and the bed is level.
5. From the Home screen, scroll to Weigh patient. Press ENTER.
6. For additional Scale functions, scroll to Main menu. Press ENTER.
7. Scroll to Scale functions. Press ENTER.
8. Follow the on-screen instructions.



CAUTION:
Failure to place the bed within the stated limits will affect scale accuracy.

Bed Exit System Alarm

To Activate:

1. At the Home Screen, scroll to Bed exit alarm. Press ENTER. This activates the Bed Exit detection feature.
2. The Bed Exit ON indicator comes on to show that the Bed Exit detection feature is activated.
3. For additional Bed Exit alarm functions, scroll to Main Menu. Press ENTER.
4. Scroll to Config. Bed exit alarm. Press ENTER.
5. Follow the on-screen instructions.

When 50% of the weight (recorded at the time the Bed Exit alarm is armed) is removed from the bed, the Bed Exit alarm activates, sends a nurse call signal, and turns on an audible alarm.

NOTE:
The Bed Exit Alarm does not activate if the patient is not on the bed.

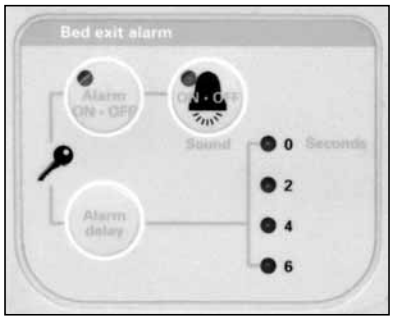
To Deactivate:

1. At the Home Screen, scroll to Bed exit alarm. Press ENTER.
2. The Bed Exit ON indicator goes off to show that the Bed Exit detection feature has been deactivated.

WARNING:
The Bed Exit System is not intended as a substitute for good nursing practices. The Bed Exit system must be used in conjunction with a sound risk assessment and protocol.

WARNING:
The addition of a significant weight to the bed (such as a visitor sitting on the bed) may allow the patient to exit without the Bed Exit System alarming.

NOTE:
The Bed exit alarm can also be activated through the Bed exit alarm panel located on the siderail opposite the Graphical Caregiver Interface (GCI)® Control.



To Activate:

1. Press the Enable control.
2. Press the Alarm ON•OFF control.

Audible Alarm

To Activate:

1. Press the Enable control.
2. Press the Sound control.

Alarm Delay

To Activate:

1. Press the Enable control.
2. Press Alarm Delay Control.
3. Continue to press Alarm Delay Control until the LED indicates the desired station (0, 2, 4, 6 seconds).

Scale Functions

1. From the Main Menu, scroll to Scale functions. Press ENTER. The screen displays the scale menu.
2. Scroll to the desired function. Press ENTER.

Example:

1. At the Scale menu, scroll to Weigh patient. Press ENTER. The left side of the display screen becomes active.
2. Follow the on-screen instructions.
3. To return to the Scale menu for another selection, press the Cancel/Exit function.
4. At the scale menu, scroll to the applicable function. Press ENTER. Scale menu functions include Zero, Delayed Weigh, Tare List, Change LBS/KGS, Access Weight History, Add/Remove Items, or Set Weight.
5. Follow the on-screen instructions for each selection.

Prior to adding or removing items from the bed, the Add/Remove Items option **must** be used. Using the Add/Remove Items option will hold the patient's weight in memory while items are being added or removed. Follow the on-screen instructions for using the Add/Remove Items option.

NOTE:
Scale accuracy: 1% of patient weight
Scale repeatability: ±.1% 200 to 500 lb (91 to 227 kg)

Config. Bed Exit Alarm

1. From the Main menu, scroll to Config. Bed exit alarm. Press ENTER.

Bed Exit Alarm Delay

1. Scroll to Change delay. Press ENTER.
2. On the left side of the screen, scroll to either a 0-, 2-, 4-, or 6-second alarm delay. Press ENTER. The filled circle shows the selected delay duration.

Bed Exit

1. Scroll to Bed exit: On/Off. Press ENTER.
2. Select either On to activate the Bed Exit detection feature or Off to cancel the Bed Exit functions.

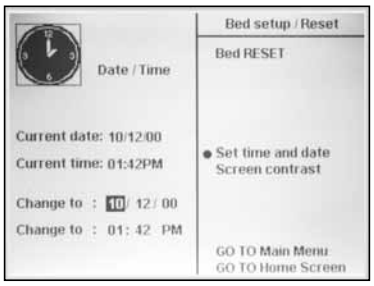
Sound On/Off

1. Scroll to Sound On/Off. Press ENTER.
2. Select either On for active audible indication or Off to cancel audible indication.

WARNING:
The Bed Exit System is not intended as a substitute for good nursing practices. The Bed Exit System must be used in conjunction with a sound risk assessment and protocol.

WARNING:
The activation of 2-, 4-, or 6-second delay of the Bed Exit alarm feature will reduce the effectiveness of the Bed Exit System.

Bed Setup/Reset



The Bed setup/reset control clears the weight history.

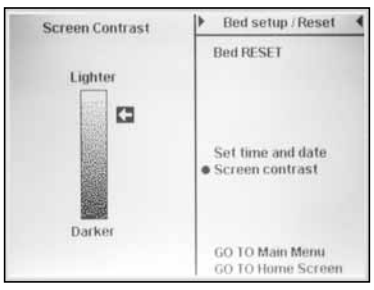
Bed RESET

1. From the Main menu, scroll to Bed setup/Reset. Press ENTER.

Set Time and Date

1. Scroll to Set time and date. Press ENTER.
2. Move the up and down arrows to change the time and date. Press ENTER.

Screen Contrast



1. Scroll to Screen contrast. Press ENTER. An arrow is highlighted on the left side of the screen.
2. Move the arrow up and down for lighter or darker settings. Press ENTER.

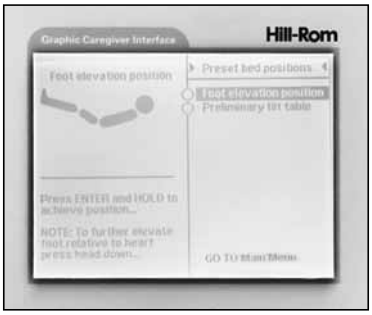
Preset Bed Options



The Graphical Caregiver Interface (GCI)® Control is equipped with two preset system positions: Foot elevation and Preliminary tilt table. Both positions can be activated through the control.

To remove the bed from the preset positions, activate the bed level function.

Foot Elevation





The preset Foot elevation feature raises the patient's feet while lowering the head position.

1. From the Main Menu, scroll to Preset bed positions. Press ENTER.
2. Select Foot elevation, and then press and hold ENTER until the patient is in the desired position.

Preliminary Tilt Table





The preset Preliminary tilt table feature articulates the system to a maximum 20° Reverse Trendelenburg position.

1. From the Main Menu, scroll to Preset bed positions. Press ENTER.
2. Select Preliminary tilt table, and then press and hold ENTER until the patient is in the desired position.

Manual Weight Input

1. From the Home screen, scroll to Scale Functions. Press ENTER.
2. Scroll to Set Weight. Press ENTER.
3. Scroll to ERASE/change weight. Press ENTER.
4. Use the Up/Down arrows to change the number. Press ENTER to move to the next number.
5. After last number is input, press ENTER.
6. Scroll to DONE/accept weight. Press ENTER.
7. Follow the on-screen instructions.
8. After the bed recalculates the weight, a tone is sounded.
9. After the tone sounds, press ENTER to return to the Home screen.

NaviCare® System

The NaviCare® System is an enterprise system that connects and monitors Hill-Rom® beds and surfaces. The system sends bed and surface data to network applications for caregivers to view and receive alerts. For complete operational instructions for the NaviCare® System, refer to the NaviCare® *System User Manual* (P004447).

The system's Alerts feature is configured from the NaviCare® System application. The application is turned on or off at the nurses station; however, the Alerts feature can be deactivated and reactivated from the bed.

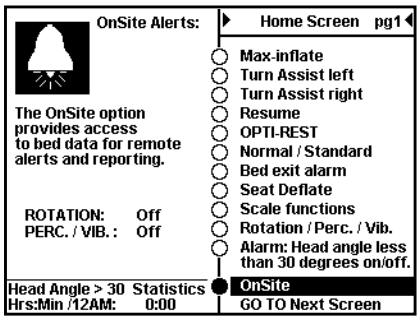
An indicator at the upper left corner of the Graphical Caregiver Interface (GCI)® Control shows the status of the bed connection to the NaviCare® System.

An indicator next to the NaviCare® menu item on the Graphical Caregiver Interface (GCI)® Control shows the status of the Alerts feature:

- Inactive—indicator is off
- Active—indicator is on

To deactivate the Alerts feature at the bed, do as follows:

1. At the Home Screen, select OnSite. Press ENTER.
2. Select OnSite Alerts Status. Press ENTER.



NOTE:
When the Alerts feature is deactivated from the bed, an indicator will show on the NaviCare® System application.

To reactivate the Alerts feature at the bed, repeat steps 1 and 2 above.

Manual Controls



In the absence of AC power, the manual control can be used to operate all bed system articulation functions.

To Activate:

- Press and hold the appropriate caregiver control and step down on the blue manual foot pedal repeatedly.
- Continue until the desired position is achieved.
- To activate the following controls, press the Enable control first: Foot Retraction, Foot Up/Down, Chair, Trendelenburg, and Reverse Trendelenburg controls.
- To operate the Foot Down control, use the hydraulic foot pump.
- To operate the other down functions, press the appropriate caregiver control.

Pressure Redistribution Surface with Low Air Loss Therapy (Model P1840B)

WARNING:
Relative Contraindication—Unstabilized spinal cord injuries. Under normal circumstances, correct alignment on an air bladder system is easy to maintain. However, user error (such as the activation of Turn Assist, Rotation, Opti-Rest, or Percussion/Vibration functions, when available) or equipment malfunction (such as cushion deflation) could put correct alignment at risk. The choice of a therapeutic support for such conditions as an unstabilized spinal cord injury is based on the medical judgment of professionals. Each case should be evaluated individually.

WARNING:
Use care when you transfer a patient from the TotalCare Bariatric® Bed to another surface. Injury could occur.

The Pressure redistribution surface with low air loss offers Therapy-on-Demand® System Modules, CLRT, Percussion and Vibration, and low air loss (LAL) therapies through the use of a “pulmonary-ready” surface, LAL topper, and modules that enable caregivers to easily initiate therapies as desired. LAL therapy is active at all times.



The recommended therapeutic weight range for pressure relief and turning capabilities is 200 to 500 lb (91 to 227 kg).

The surface uses input from the bed scale system to adjust the cushion pressures based on the patient’s weight. **Manual input of patient weight is not possible through the Scale screens.**

WARNING:
Sleep surface impermeability and pressure relieving capabilities of the sleep surface could be affected by needle sticks or other bladder punctures. Caregivers should be instructed to AVOID bladder punctures caused by **needle sticks.**

Surface Requirements

1. Before the patient is put on the bed, make sure to **zero the bed scale.**
2. Put the patient on the bed.

WARNING:
Failure to weigh the patients, or manually input the patient's weight, can cause patient injury due to improper interface pressures.

3. Weigh the patient, and accept the weight (see "Scale Functions" on page 23).

After the patient is discharged, the bed **must** be reset, (see "Bed Setup/Reset" on page 30).

Patient Weight Alarm

If a patient is put on the bed, and not weighed, after a predetermined time period a message will show on the GCI. Follow the on-screen instructions to clear the message.



To Install the Rotation and Percussion and Vibration Modules:

SHOCK HAZARD:
Electric shock to the patient may occur if LIVE terminals in the pulmonary module compartments and the patient are touched simultaneously.

1. Remove the headboard.
2. Raise the head section to a minimum of 15°.
3. Open the manifold door at the head end of the bed under the sleep surface.
4. Locate the appropriate slot for the necessary module (Rotation or Percussion and Vibration).
5. Grasp the module by the handle, and slide it into the manifold.
6. Gently push on the module until it **snaps** into place. The handle will not fold into the box if the module is not completely engaged into the manifold. Therapy will not start if the module is not fully engaged in position.



7. Close the manifold door. The door will not close unless the module handle is folded into the module.
8. Install the headboard.
9. Once the module is installed, the GCI and the siderail will show that the module is installed.



To Remove the Rotation and Percussion and Vibration Modules:

1. Turn off all pulmonary therapies and surface functions.
2. Raise the head section to a minimum of 15°.

3. Remove the headboard.
4. Open the manifold door at the head end of the bed under the sleep surface.
5. Grasp the handle on the module, and pull downward. This will release the module from the locked position.
6. Remove the module from the manifold.
7. Close the manifold door.
8. Install the headboard.
9. Once the module is removed, the GCI screen and the siderail will show that the module is removed.

NOTE:
Any active therapy will cease when any module is removed.

NOTE:
It is normal for the Graphical Caregiver Interface (GCI)® Control screen to go blank for approximately 11 seconds immediately after adding or removing a module.

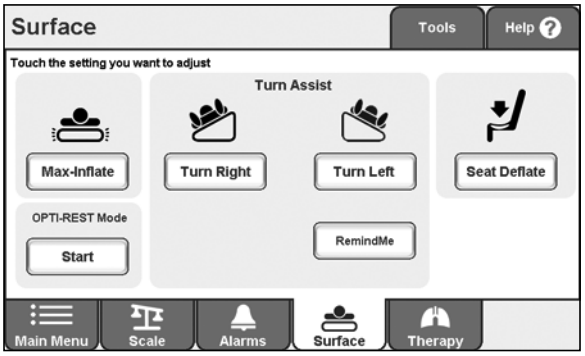
Normal/Standard

The pressure redistribution surface provides interface pressure relief during all modes of operation (normal/standard, rotation, Perc/Vib, Low Air Loss, turn assist, and OPTI-REST) except Max-inflate.

WARNING:
In consideration of a possible patient transport, an alarm will sound if optimal interface pressure relief is not present at the time of power loss. Patient injury may occur after a prolonged time.

Seat Deflate

The Seat Deflate feature allows for easier side ingress and egress.



To Activate:

1. Press the Surface tab on the GCI.
2. Press the Seat Deflate control.

NOTE:
While in Seat Deflate, no other mattress functions are available except Max-inflate, Normal/Standard, and CPR.

To return the mattress to normal operation:

1. Press the Surface tab on the GCI.
2. Press the Seat Deflate control
   or
   on the siderail, press the Normal control.

Rotational Therapy

The rotation mode provides gentle, side-to-side, continuous lateral rotation therapy (CLRT) to aid in the prevention and treatment of pulmonary complications related to immobility. Patients can be positioned laterally on the right or left side with varying amounts of turn and pause times to match each individual patient's condition. Pressure relief is provided when the rotation mode is active.

Rotation Reminders

- Rotation therapy will be suspended when:
  - Any siderail is lowered. To restart rotation, raise siderail to the upright position.
  - Head of Bed (HOB) is raised higher than 40°. To restart rotation, lower the HOB.
  - Foot of Bed (FOB) is lowered more than 30°. To restart rotation, raise the FOB.
  - Chair position is attempted. To restart rotation, exit the chair position.
  - Percussion/Vibration, Max-inflate, or Turn Assist is active.
- The Therapy Suspended indicator on the siderail will blink when therapy has been suspended for any of the above conditions.
- If CPR is activated, rotation therapy automatically stops and Max-inflate is activated.
- Use Alarm Pause on the opposite siderail panel to turn off any audible alarms.
- Check the GCI screen if you are uncertain why the bed is alarming; the reason will be displayed on the GCI screen.

Prior to activating the rotation mode, do the following:



1. Make sure the Rotation module is installed (see "To Install the Rotation and Percussion and Vibration Modules:" on page 40).
2. Align the patient's shoulders with the label on the inside, upper siderail. This will make sure the patient is in the correct position on the surface to receive maximum benefits.
3. Weigh the patient. This automatically adjusts the cushion pressures for the patient's rotation setup.

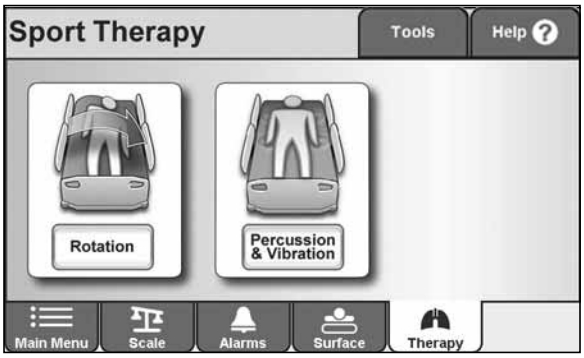
NOTE:
The top cushion is designed to support the head for pressure relief and comfort. No pillow is necessary.

WARNING:
Observe lines closely during rotations. Always use good line management techniques to prevent lines and hoses from becoming dislodged during rotation. Patient injury can occur.

To Use Rotation Therapy:

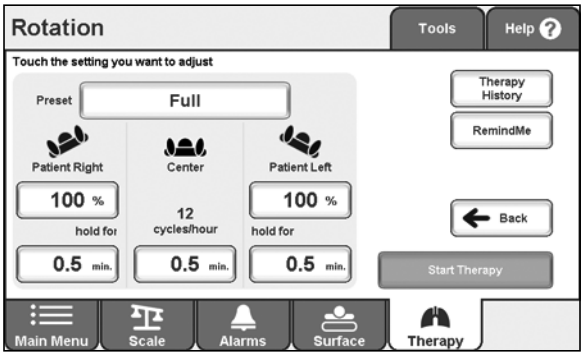
1. Press the Therapy tab on the GCI.
2. Select Rotation.
3. Press Start Therapy to start rotation,
   or
   you can change the rotation settings.

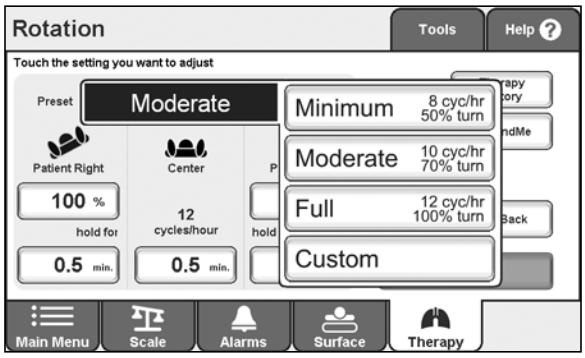
There are three pre-set Rotation values set as default settings. To use customized settings, press the button next to Preset.



The following settings can be changed:

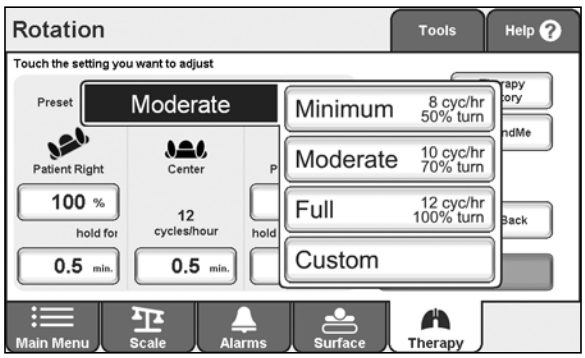
- Cycles per hour: Depends on pause times (automatically calculated)
- Right turn%: Customize the amount of turn to the right
- Right pause: Amount of time in side-lying position
- Center pause: Amount of time centered in middle
- Left turn%: Customize the amount of turn to the left side
- Left pause: Amount of time in side-lying position
- Training: Yes/No (Starts rotation at 50% of maximum programmed turn and increases 10% each hour for patient acclimation). The training option shows when Start is pressed.





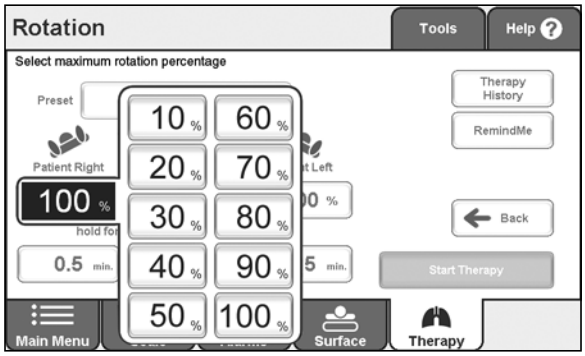
To Change Settings (when Custom Rot. Setting is selected):

1. Press the button next to Preset.
2. Press Custom**.**
3. Change the value for the applicable setting.



RemindMe™ Alarm

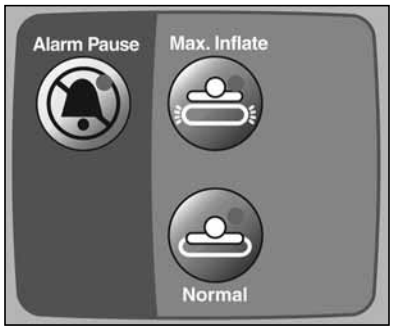
The RemindMe™ Alarm can be turned on to alert the caregiver that rotation has been stopped for a set period of time.



To Activate or Deactivate:

1. Press the Therapy tab on the GCI.
2. Select Rotation.
3. Press RemindMe on the GCI.
4. Select the desired time or turn it off.

To Stop Rotational Therapy:



1. Press the Therapy tab on the GCI.
2. Select Rotation.
3. Press Stop Therapy or on the siderail press the Normal control.

Percussion and/or Vibration Therapies

WARNING:

Relative Contraindication—Unstabilized spinal cord injuries. Under normal circumstances, correct alignment on an air bladder system is easy to maintain. However, user error (such as the activation of Turn Assist, Rotation, Opti-Rest, or Percussion/Vibration functions, when available) or equipment malfunction (such as cushion deflation) could put correct alignment at risk. The choice of a therapeutic support for such conditions as an unstabilized spinal cord injury is based on the medical judgment of professionals. Each case should be evaluated individually.

Percussion is the clapping of the posterioral chest wall to loosen secretions in the lungs.

Vibration, or shaking, of the posterioral chest wall helps move lung secretions for easier removal.

The percussion and vibration therapies can be done separately or together as a sequential treatment (see “To Install the Rotation and Percussion and Vibration Modules:” on page 40).

Treatments can be done with the patient in the supine or the right or left side lying positions to facilitate postural drainage or in conjunction with CLRT.

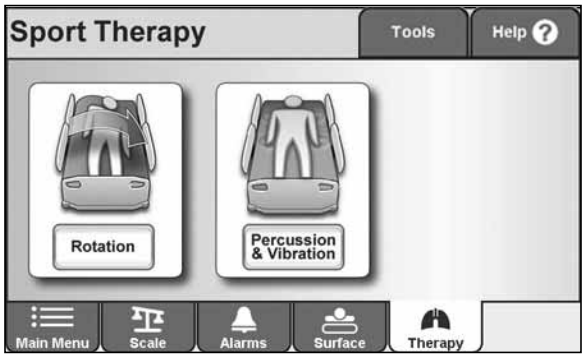


Use the same treatment parameters as for manual percussion/vibration regarding frequency and duration, as directed by physicians’ orders.

The percussion and vibration therapy options will not work unless the percussion and vibration module is installed.

Prior to activating the Percussion and Vibration Modes, align the patient’s shoulders with the label on the inside, upper siderail. This will make sure the patient is in the correct position on the surface to receive maximum benefits. The top cushion is designed to support the head for pressure relief and comfort. No pillow is necessary.

To Use Percussion and/or Vibration Therapy:

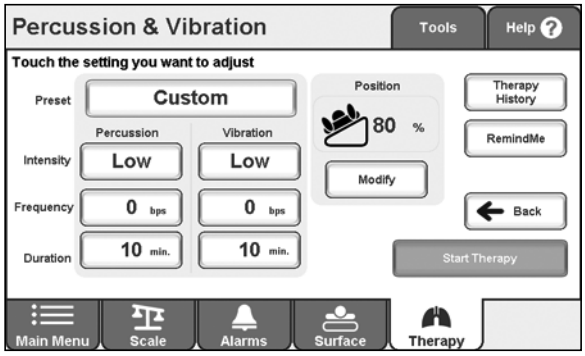


1. Press the Therapy tab on the GCI.
2. Select Percussion & Vibration.
3. Press Start to start Percussion and/or Vibration, or you can change the settings.

There are pre-set Percussion and Vibration values set as default settings. To use customized settings, press the button next to Preset.

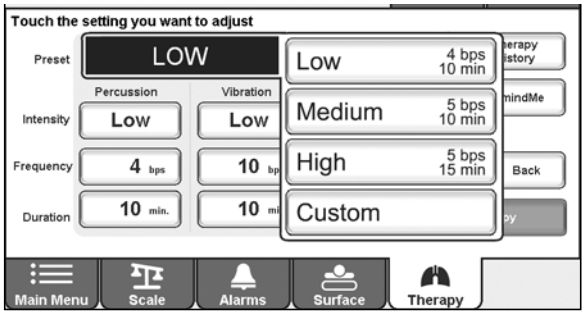
NOTE:
A treatment must be at least 3 minutes in duration to be captured as a treatment in the Statistic Summary.

The following settings can be changed:

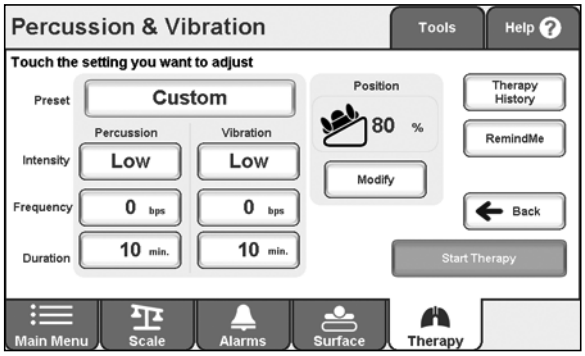


- Position: Right/Left/Center or CLRT
- Turn%: For right and left position only
- Percussion/Vibration: Right/Left/Center or CLRT
- Percussion frequency: 1 to 5 Beats per Sec (BPS)
- Intensity: Low-Med-High
- Duration: 1 to 30 minutes (Therapy must be more than 3 minutes to be captured in the statistics.)
- Vibration frequency: 5 to 25 Beats per Sec (BPS)

To Change Settings (when Custom Percussion and Vibration Settings is selected):



1. Press the button next to Preset.
2. Press Custom**.**
3. Change the value for the applicable setting.



RemindMe™ Alarm

The RemindMe™ Alarm can be turned on to alert the caregiver that Percussion and Vibration has been stopped for a set period of time.

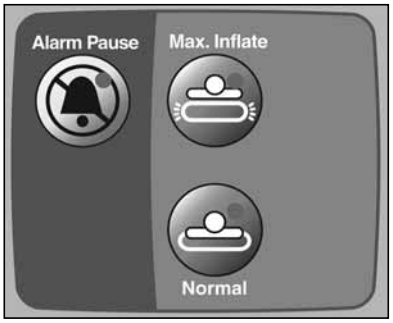


To Activate or Deactivate:

1. Press the Therapy tab on the GCI.
2. Select Percussion & Vibration.
3. Press RemindMe on the GCI.
4. Select the desired time or turn it off.

To Stop Percussion and Vibration Therapy:

1. Press the Therapy tab on the GCI.
2. Select Percussion & Vibration,
   or
   on the siderail, press Normal control.



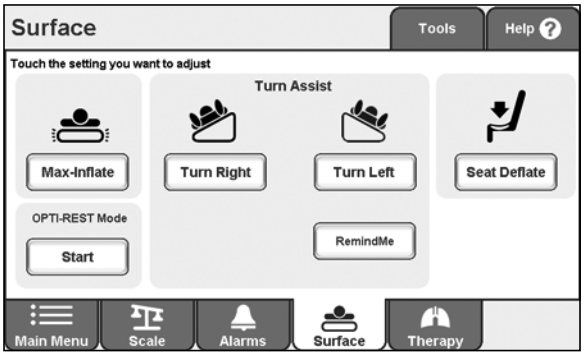
CPR Function

When the CPR function is activated, the surface will go into Max-inflate mode. A cardiac arrest board is recommended. After 30 minutes of Max-inflate, the mattress will automatically go into Normal mode. This change in pressures will not change the effectiveness of CPR if a cardiac arrest board is in place.

NOTE:
The headboard can be used as a cardiac arrest board.

To Stop Max-inflate:

1. Press the Surface tab on the GCI.
2. Press the Max-Inflate button to turn off Max-Inflate,
   or
   on the siderail, press Normal control.



OPTI-REST

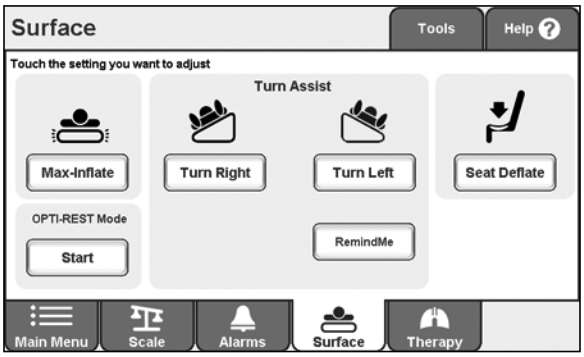
The OPTI-REST mode offers increased comfort to the patient while maintaining pressure relief. It vents the chest, seat, and thigh zones producing a massaging wave-like action.

To Activate:

1. Press the Surface tab on the GCI.
2. Press the Start under OPTI-REST.

To Deactivate:

1. Press the Surface tab on the GCI.
2. Press Stop under OPTI-REST,
   or
   on the siderail, press Normal control.

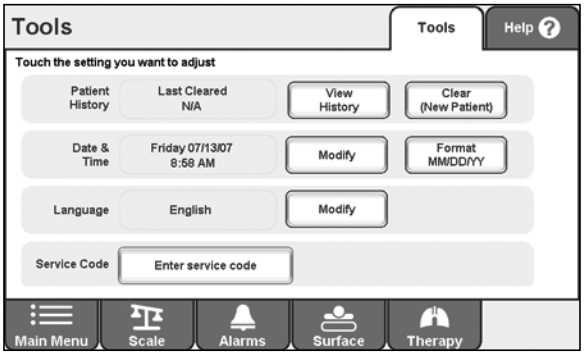


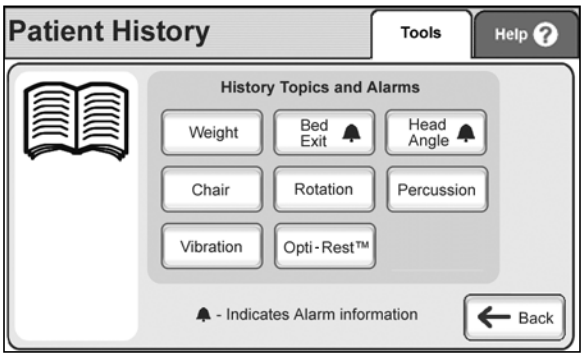
Patient History

To View:

1. Press the Tools tab on the GCI.
2. Press **View History.**
3. Select the desired history to be viewed.

- **Rotation:** Displays the maximum number of cycles/hour the patient has rotated and Hours, Minutes in rotation, in 24 hours.
- **Percussion:** Displays the number of treatments provided per 24-hour period.
- **Vibration:** Displays the number of treatments provided per 24-hour period.
- **OPTI-REST:** Time spent in OPTI-REST mode since 12 AM.
- **Head Angle:** Time spent with the head of bed more than 30° or 45° since 12:00 AM.
- **Weight:** Displays the weight increase or decrease in 24-hour periods.
- **Chair:** Time spent in Chair position since 12:00 AM.
- **Bed Exit:** Displays the time spent with the Bed Exit alarm on.





To Clear History:

1. Press the Tools tab on the GCI.
2. Press Clear (New Patient) next to Patient History.

It is recommended to clear all statistics between patients.

NOTE:
Clear History will clear all Therapy Statistics.

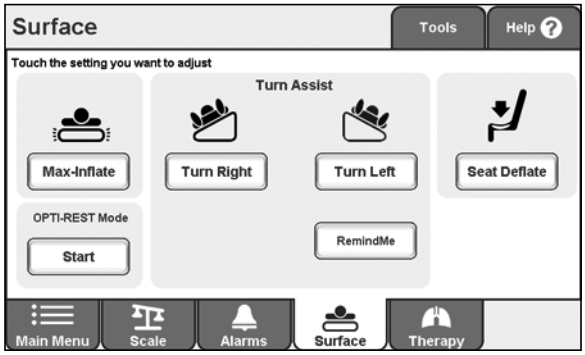
Turn Assist

The Turn Assist mode assists the caregiver in turning the patient for linen changes, dressing changes, bedpanning, back care, and other nursing procedures.

NOTE:
For enhanced posterior patient access, Max-Inflate may be used once the patient has been turned to the desired side.

The siderails MUST be in the up position to activate turn assist. Once the patient has started to turn, the siderails can be lowered for easier patient access. The alarm will beep twice, as a safety alert, when the siderail is lowered.

To Activate:



1. Press the Surface tab on the GCI.
2. Press the desired turn direction
   or
   on the siderail opposite the GCI, press the Enable control and the desired Turn Assist setting. Turn assist will override all therapy modes.

To Deactivate:

1. Press the Turn Assist control,
   or
   on the siderail, press the Normal control.

NOTE:
The surface provides limited turn assist without the rotation module installed.

Additional Siderail Controls available with the Pressure Redistribution Surface



To Activate:

Press the Enable control and then the applicable control:

- **Max-inflate** for easier patient repositioning. To discontinue Max-inflate, press Resume to return to previous therapy mode (Rotation, Percussion or Vibration, Opti-Rest, or Normal/Standard).
- **Resume Therapy** to return to prior therapy (Rotation, Percussion or Vibration, or Normal/Standard).

NOTE:
If a pulmonary therapy was suspended, Resume must be pressed before Normal/Standard can be activated.

- **Normal** to place the patient on a pressure relief surface, without Rotation/Percussion/Vibration.
- **Turn Assist** for easier patient repositioning (such as for back care, linen changes, wound/dressing care).
- **Alarm Pause** for silencing alarms on the bed, including the Head Angle alarm.
- **Seat Deflate** to deflate the seat section (allows for easier side ingress and egress).

Alarm Pause Control



WARNING:
Excessive mattress pressure changes or air system failures could impact the pressure-relieving ability of the TotalCare® Bariatric Bed surface or Treatment surface. The Alarm Pause feature is not a substitute for good caregiving practice and the patient should be constantly monitored and, if necessary, removed from the bed.

CAUTION:
Hospital service persons should be contacted immediately to assess and, if necessary, correct a failure mode.

In the event of Max-inflate or Turn Assist timing out, excessive air loss, pressure changes, or air system failure, the surface or initiates a continuous audible alarm. If the Head of Bed alarm is active, the alarm will sound when the head of the bed goes below 30° or 45°.

To Silence an Alarm:

1. Press Alarm Off on the GCI message,
   or
   on the siderail, press the Alarm Pause control.

NOTE:
The Service Required indicator located on the caregiver control panel illuminates to provide the caregiver with both a visual and audible indication of a potentially hazardous condition. Once activated, the Alarm Pause Control will silence the service required alarm for 8 hours. Continuous patient assessment and protocol is necessary to determine if the patient should be removed from the bed. The Service Required Indicator remains illuminated until the failure has been corrected. The audible alarm reactivates after eight hours until the failure has been corrected.

Pressure Redistribution Surface with Low Air Loss Therapy (Model 1840A)



WARNING:
Relative Contraindication—Unstabilized spinal cord injuries. Under normal circumstances, correct alignment on an air bladder system is easy to maintain. However, user error (such as the activation of Turn Assist, Rotation, Opti-Rest, or Percussion/Vibration functions, when available) or equipment malfunction (such as cushion deflation) could put correct alignment at risk. The choice of a therapeutic support for such conditions as an unstabilized spinal cord injury is based upon the medical judgment of professionals. Each case should be evaluated individually.

The pressure redistribution surface offers Therapy-on-Demand® System Modules, CLRT, Percussion and Vibration, and low air loss (LAL) therapies through the use of a “pulmonary-ready” surface, LAL topper, and modules that enable caregivers to easily initiate therapies as desired. LAL therapy is active at all times.

The recommended therapeutic weight range for pressure relief and turning capabilities is 200 to 500 lb (91 to 227 kg).

The pressure redistribution surface uses input from the bed scale system to adjust the cushion pressures based on the patient’s weight. **Manual input of patient weight is not possible through the pulmonary therapy screens.**

WARNING:
Sleep surface impermeability and pressure relieving capabilities of the sleep surface could be affected by needle sticks or other bladder punctures. Caregivers should be instructed to AVOID bladder punctures caused by needle sticks.

Surface Requirements

1. Before the patient is put on the bed, make sure to **zero the bed scale**.
2. Put the patient on the bed.

WARNING:
Failure to weigh the patient, or manual input of patient weight, can cause patient injury due to improper interface pressures.

3. Weigh the patient, and accept the weight. See “Weigh Patient” on page 27.

After the patient is discharged, the bed **must** be reset as follows:

1. From the Home Screen, scroll to GO TO Next Screen. Press ENTER.
2. Scroll to Bed Setup, and press ENTER.
3. Scroll to Reset, and press ENTER. Follow the on-screen instructions.

Patient Weight Alarm

If a patient is put on the bed, and not weighed, after a predetermined time period an alarm will sound and an error message will show on the Graphical Caregiver Interface (GCI)® Control. Follow the on-screen instructions to clear the message.



To Install and Remove the Rotation and/or Percussion and Vibration Modules
(see “To Install the Rotation and Percussion and Vibration Modules:” on page 40)
(see “To Remove the Rotation and Percussion and Vibration Modules:” on page 40):

SHOCK HAZARD:
Electric shock to the patient may occur if LIVE terminals in the pulmonary module compartments and the patient are touched simultaneously.

1. Remove the headboard.
2. Raise the head section to a minimum of 15°.
3. Open the manifold door at the head end of the bed under the sleep surface.
4. Locate the appropriate slot for the required module (Rotation or Percussion and Vibration).
5. Grasp the module by the handle, and slide it into the manifold.

6. Gently push on the module until it **snaps** into place. The handle will not fold into the box if the module is not completely engaged into the manifold. Therapy will not start if the module is not fully engaged in position.



7. Close the manifold door. The door will not close unless the module handle is folded into the module.

8. Install the headboard.



9. Once the module is installed, the Graphical Caregiver Interface (GCI)® Control and the siderail will show that the module is installed.

10. Activate therapy by accessing the Pulmonary Menu in the Graphical Caregiver Interface (GCI)® Control.

To Remove the Rotation and/or Percussion and Vibration Modules:

1. Use the Graphical Caregiver Interface (GCI)® Control, and go to Normal mode to turn off the pulmonary therapy.
2. Raise the head section to a minimum of 15°.
3. Remove the headboard.
4. Open the manifold door at the head end of the bed under the sleep surface.
5. Grasp the handle on the module, and pull downward. This will release the module from the locked position.
6. Remove the module from the manifold.
7. Close the manifold door.
8. Install the headboard.
9. Once the module is removed, the Graphical Caregiver Interface (GCI)® Control screen and the siderail will show that the module is removed.

NOTE:
Any active therapy will cease when any module is removed.

NOTE:
It is normal for the Graphical Caregiver Interface (GCI)® Control screen to go blank for approximately 11 seconds immediately after adding or removing a module.

Normal/Standard

The pressure redistribution surface provides interface pressure relief during all modes of operation (normal/standard, rotation, Perc/Vib, turn assist, and OPTI-REST) except during Max-inflate.

WARNING:
In consideration of a possible patient transport, an alarm will sound if optimal interface pressure relief is not present at the time of power loss. Patient injury may occur after a prolonged time.

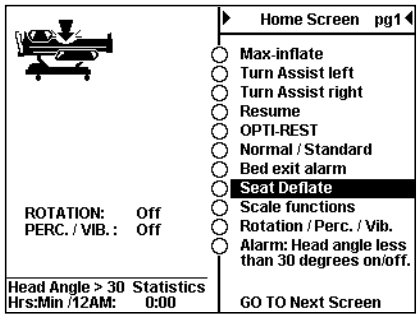
Seat Deflate

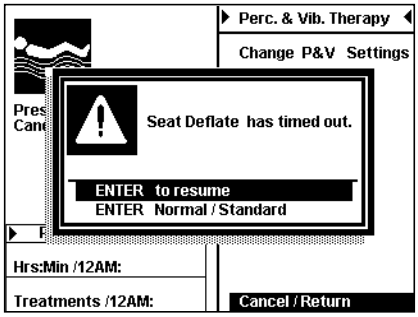
The pressure redistribution surface has a seat deflate feature. This feature allows for easier side ingress and egress.

1. From the Home Screen, scroll to Seat Deflate. Press Enter. The seat section deflates.
2. After 30 minutes an alarm will sound and an error message will show on the display. Follow the on screen instructions to continue with *Seat Deflate* or return the surface to normal operation.

NOTE:
While in Seat Deflate, no other mattress functions are available except Max-Inflate, Normal/Standard and CPR.

3. To return the mattress to normal operation, from the Home screen, scroll to Normal/Standard. Press ENTER.





Rotational Therapy

The rotation mode provides gentle, side-to-side, continuous lateral rotation therapy (CLRT) to aid in the prevention and treatment of pulmonary complications related to immobility. Patients can be positioned laterally on the right or left side with varying amounts of turn and pause times to match each individual patient's condition. Pressure relief is provided when the rotation mode is active.

Prior to activating the rotation mode, perform the following:

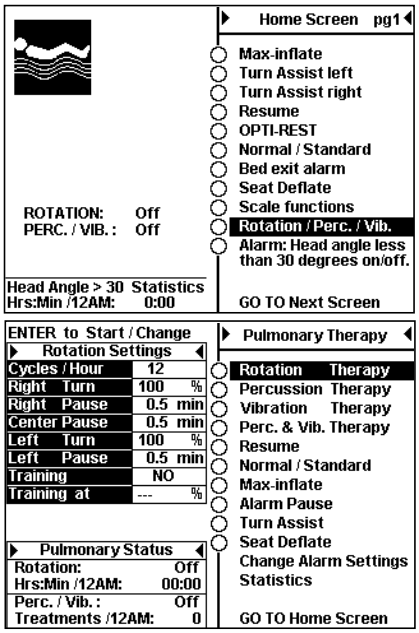


- Install the Rotation module.
- Align the patient's shoulders with the label on the inside, upper siderail. This will assure proper placement of the patient on the surface to receive maximum benefits.
- Weigh the patient. This automatically adjusts the cushion pressures for the patient's rotation set-up.
- The top cushion is designed to support the head for pressure relief and comfort. No pillow is necessary.

WARNING:
Observe lines closely during rotations. Always use good line management techniques to prevent lines and tubing from becoming dislodged during rotation. Patient injury can occur.

To Initiate Rotation Therapy:

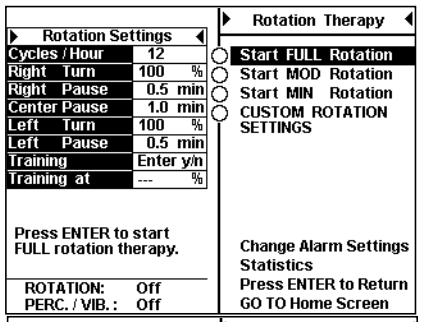
1. From the Home Screen scroll to Rotation/Perc./Vib. Press ENTER. The Pulmonary Therapy Screen is now displayed.
2. Scroll to Rotation Therapy. Press ENTER.
3. Select one of the three pre-set therapy settings or select Custom Rot. Settings. Press ENTER.

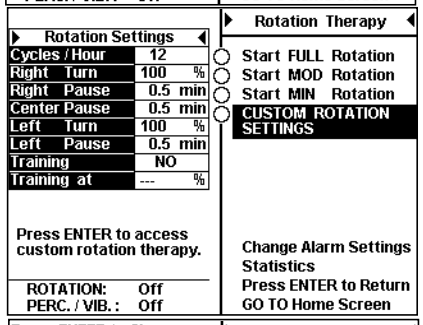


NOTE:
There are three pre-set Rotation values set as default settings. To use customized settings, select Custom Rot. Settings.

The Following Values Can Be Customized

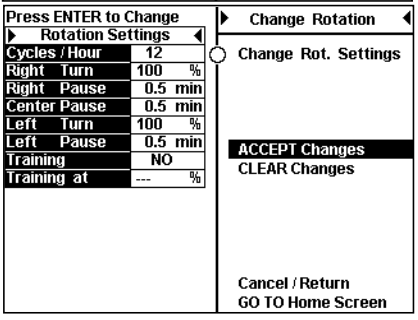
- Cycles per hour: Depends on pause times (automatically calculated)
- Right turn%: Customize the amount of turn to the right
- Right pause: Amount of time in side-lying position
- Center pause: Amount of time centered in middle
- Left turn%: Customize the amount of turn to the left side
- Left pause: Amount of time in side-lying position
- Training: Yes/No (Starts rotation at 50% of maximum programmed turn and increases 10% each hour for patient acclimation)
- Set up weight: Manually enter patient weight for rotation therapy or weigh the patient using the scale to automatically update setup weight





To Change Settings (when Custom Rot. Settings is selected)

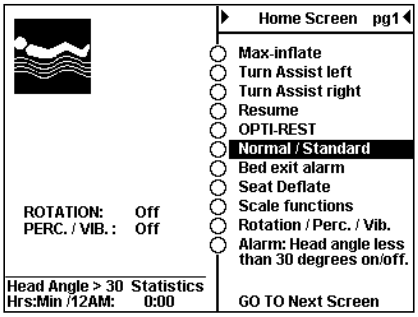
1. Scroll to Change Rot. Settings. Press ENTER. Press ENTER again. This confirms the desire to change the settings.
2. The icon moves to Rotation Settings on the upper left screen. Use the Up/Down arrows to adjust values. Press ENTER to go to the next setting.
3. Continue making changes by using the Up/Down arrows and the ENTER key until all changes are made.
4. Icon moves to Accept Changes. Press ENTER if acceptable. Press ENTER to start rotation.



5. If the rotation therapy is not going to be used at the time of setting, press ENTER. Then release the Graphical Caregiver Interface (GCI)® Control or select GO TO Home Screen for other options.

6. If not acceptable, scroll to Change Settings, Clear Changes, Cancel/Return, or go to Home Screen, press ENTER.

To Stop Rotational Therapy:



Graphical Caregiver Interface (GCI)® Control method:

1. On the Home Screen, scroll to Normal/Standard. Press ENTER.

Siderail Method:

1. On the siderail opposite the Graphical Caregiver Interface (GCI)® Control, press the Enable control and the Normal/Standard control.

Rotation Reminders:

- Rotation therapy will be suspended when:
- Any siderail is lowered. To restart rotation, raise siderail to the upright position.
- Head of Bed (HOB) is raised higher than 40 degrees. To restart rotation, lower HOB.
- Foot of Bed (FOB) is lowered more than 30 degrees. To restart rotation, raise FOB.
- Chair position is attempted. To restart rotation, exit chair position.
- Percussion/Vibration, Max-inflate, or Turn Assist is active.
- The Therapy Suspended light on the siderail will blink when therapy has been suspended for any of the above conditions.
- If CPR is activated, rotation therapy automatically stops and Max-inflate is activated. To resume rotation, see “Rotational Therapy” on page 52.
- Use Alarm Silence (on the Graphical Caregiver Interface (GCI)® Control screen or the opposite siderail panel) to turn off any audible alarms.
- Pulmonary Status is shown in the lower left corner. This shows: hrs/mins. rotated since 12 AM, active, off, suspended, or removed.
- Check the Graphical Caregiver Interface (GCI)® Control screen if you are uncertain why the bed is alarming. The reason will be displayed on the Graphical Caregiver Interface (GCI)® Control screen.

Percussion and/or Vibration Therapies

WARNING:

Relative Contraindication—Unstabilized spinal cord injuries. Under normal circumstances, correct alignment on an air bladder system is easy to maintain. However, user error (such as the activation of Turn Assist, Rotation, Opti-Rest, or Percussion/Vibration functions, when available) or equipment malfunction (such as cushion deflation) could put correct alignment at risk. The choice of a therapeutic support for such conditions as an unstabilized spinal cord injury is based upon the medical judgment of professionals. Each case should be evaluated individually.

Percussion is the clapping of the posterioral chest wall to loosen secretions in the lungs.

Vibration, or shaking, of the posterioral chest wall helps move lung secretions for easier removal.

The percussion and vibration therapies can be done separately or together as a sequential treatment.



Treatments can be done with the patient in the supine or the right or left side lying positions to facilitate postural drainage or in conjunction with CLRT.

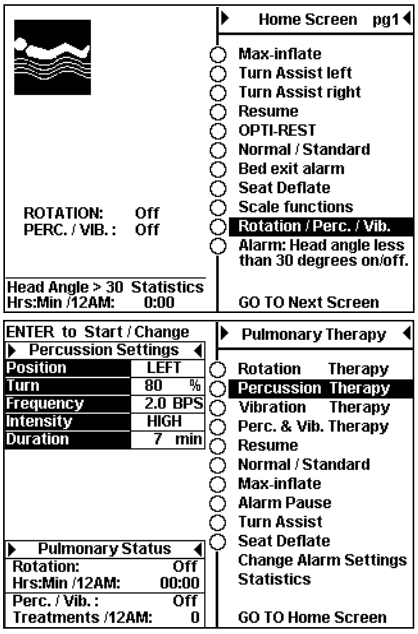
Use the same treatment parameters as for manual percussion/vibration regarding frequency and duration, as directed by physicians orders.

The percussion and vibration therapy options will not work unless the percussion and vibration module is installed.

Prior to activating the Percussion and Vibration Modes, align the patient's shoulders with the label on the inside upper siderail. This ensures proper placement of the patient on the surface to receive maximum benefits. The top cushion is designed to support the head for pressure relief and comfort. No pillow is necessary.

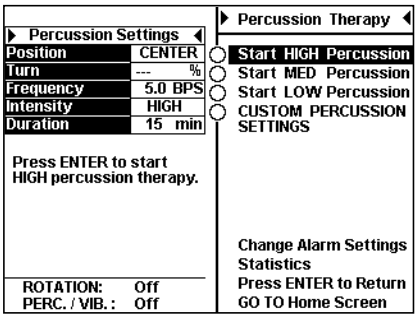
To Activate:

1. From the Home Screen scroll to Rotation/Perc./Vib. Press ENTER.
2. The Pulmonary Therapy Screen is now displayed.
3. Scroll to Percussion, Vibration or Perc/Vib Therapy. Press ENTER.
4. Select one of the three pre-set therapy settings or select Custom Vib. Settings or Custom Perc. Settings. Press ENTER.



NOTE:
A treatment must be at least 3 minutes in duration to be captured as a treatment in the Statistic Summary.

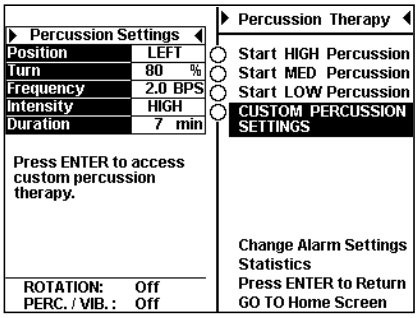
There are pre-set Percussion and Vibration values set as default settings. To use customized settings, select Custom Rot. Settings.



The following settings can be changed:

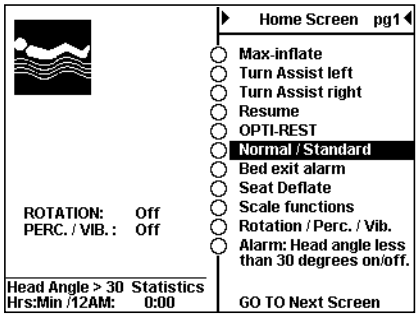
- Position: Right/Left/Center or CLRT
- Turn%: For right and left position only
- Percussion/Vibration: Right/Left/Center or CLRT
- Percussion frequency: 1 to 5 Beats per Sec
- Intensity: Low-Med-High
- Duration: 1 to 30 minutes (Therapy must be more than 3 minutes to be captured in the statistics.)
- Vibration frequency: 5 - 25 Beats per Sec (BPS)

To Change Settings:



1. Scroll to Percussion, Vibration or Perc/Vib. Press ENTER.
2. Scroll to Change Settings. Press ENTER again. This confirms the desire to change the settings.
3. The icon moves to Percussion, Vibration or Perc/Vib Settings on upper left screen. Use the Up/Down arrows to make setting changes. Press ENTER to advance to next setting.
4. Continue making changes, scrolling or using the Up/Down arrows and the ENTER control until all changes are made.
5. When the icon moves to Accept Changes. Press ENTER if acceptable. Press ENTER again to start therapy.
6. If percussion/vibration therapy is not going to be used at the time of setting, scroll to ACCEPT Changes, press ENTER. Release the Graphical Caregiver Interface (GCI)® Control or select GO TO Home Screen for other options.
7. If not acceptable, scroll to Change P and V setting, Clear Changes, Cancel/Return, or GO TO Home screen, press ENTER.

To Stop Percussion and/or Vibration Therapy:



Graphical Caregiver Interface (GCI)® Control method:

1. On the Graphical Caregiver Interface (GCI)® Control in the siderail, touch the ENTER control or the UP or DOWN button to activate the screen.
2. Scroll to Rotation or Normal/Standard. Press ENTER.

Siderail method:

1. On the siderail opposite the Graphical Caregiver Interface (GCI)® Control, press the ENABLE control, and then the Normal/Standard control or the Resume control, if another therapy was suspended during Percussion and Vibration.

Pressure Redistribution Surface CPR Function

When the CPR function is activated, the surface will go into Max-inflate mode. A cardiac arrest board is recommended. After 30 minutes of Max-inflate, the mattress will automatically go into Normal mode. This change in pressures will not change the effectiveness of CPR if a cardiac arrest board is in place.

To Stop Max-inflate:

Graphical Caregiver Interface (GCI)® Control method:

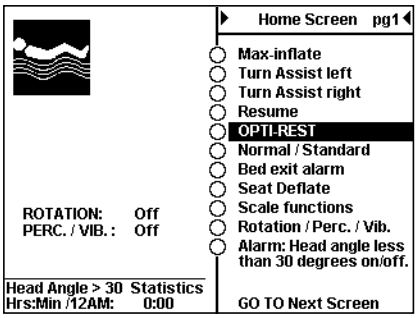
1. From the Home Screen, scroll to Normal/Standard or other desired mode. Press ENTER.

Siderail method:

1. On the siderail opposite the Graphical Caregiver Interface (GCI)® Control, press the ENABLE control and Normal/Standard control.

OPTI·REST

The OPTI·REST mode offers increased comfort to the patient while maintaining pressure relief. It vents the chest, seat, and thigh zones producing a massaging wave-like action.



To Activate:

1. From the Home screen, scroll to OPTI·REST. Press ENTER.

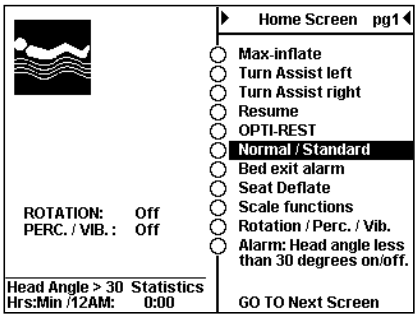
To Stop Opti·Rest:

Graphical Caregiver Interface (GCI)® Control method:

1. From the Home Screen, scroll to Normal/Standard or other desired mode. Press ENTER.

Siderail method:

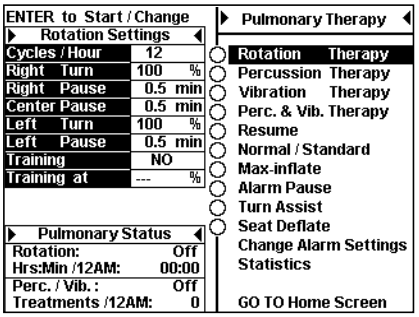
1. On the siderail opposite the Graphical Caregiver Interface (GCI)® Control, press the ENABLE control and Normal/Standard control.



Therapy Statistics

To Access the Therapy Statistics:

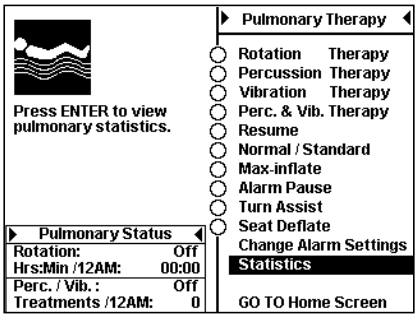
1. Scroll to the Statistics on the Pulmonary Therapy screen. Press ENTER.
2. Therapy Statistics for all therapy modes can be located from the Pulmonary Menu. Select the desired therapy statistic, and press ENTER. All readings will be documented at 12 AM for each 24-hour period.



Rotation Summary: Displays the maximum number of cycles/hour the patient has rotated and Hrs: Mins in rotation, in a 24-hour period. For positive pulmonary outcomes, rotate the patient at least 18 hours per day and as frequently per hour as patient will tolerate.

Percussion and Vibration Summaries: Displays the number of treatments provided per 24-hour period. Duration of therapy must be at least 3 minutes to be counted as a treatment.

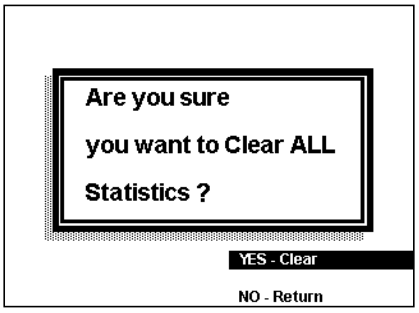
Opti·Rest Summary: Time spent in Opti·Rest mode since 12 AM.



To Clear Statistics:

1. Scroll to Clear ALL Pulmonary Statistics. Press Enter. All statistics will be cleared.

It is recommended to clear all statistics between patients.



NOTE:
Bed Setup/Reset will clear all Therapy Statistics.

Turn Assist

The Turn Assist mode helps the caregiver in turn the patient for linen changes, dressing changes, bedpanning, back care, and other nursing procedures.

NOTE:
For enhanced posterior patient access, Max-inflate may be used once the patient has been turned to the desired side. The siderails MUST be in the up position to activate Turn Assist. Once the patient has started to turn, the siderails can be lowered for easier patient access. The alarm will beep twice, as a safety alert, when the siderail is lowered.

Graphical Caregiver Interface (GCI)® Control method:

1. From the Home Screen, or Pulmonary Therapy screen, scroll to Turn Assist right, Turn Assist left, or Turn Assist center. Press ENTER.

Siderail Method:

1. On the siderail opposite the Graphical Caregiver Interface (GCI)® Control, press the ENABLE control and the desired Turn Assist setting. Turn assist will override all therapy modes.

To Deactivate:

1. From the Home Screen scroll to Normal/Standard. Press ENTER,

or

on the siderail opposite the Graphical Caregiver Interface (GCI)® Control, press the ENABLE control and the Normal control.

NOTE:
The surface still provides limited turn assist without the rotation module being installed.

Additional Siderail Controls available with the Pressure Redistribution Surface

To Activate:



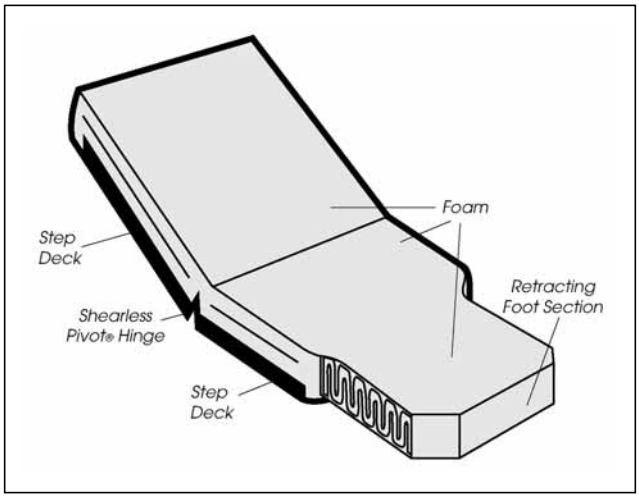
Press the Enable control and then the applicable control:

- **Max-Inflate** for easier patient repositioning. To discontinue Max-Inflate, press Resume to return to previous therapy mode (Rotation, Percussion or Vibration, Opti·Rest, or Normal/Standard).
- **Resume** to return to prior therapy (Rotation, Percussion or Vibration or Normal/Standard).
- **Normal** to place the patient on a pressure relief surface, without Rotation/Percussion/Vibration.
- **Turn Assist** for easier patient repositioning (such as, for back care, linen changes, wound/dressing care).
- **Alarm Pause** to silence alarms on the bed.
- **Seat Deflate** to deflate the seat section (allows for easier side ingress and egress).

Siderail indicator indicates:

- Rotation/Percussion/Vibration Therapy is on.
- Rotation/Percussion/Vibration Therapy is Suspended.
- Rotation Module and/or Percussion/Vibration Modules are Installed.

Foam Surface



The foam surface is an all-foam, modular, three-layered foam system with a viscoelastic core. The foam surface reduces patient pressure.

The foam surface is for use with patients weighing between 200 and 500 lb (91 and 227 kg) who need a pressure reducing foam surface.

The foam surface is designed to work with the following system features:

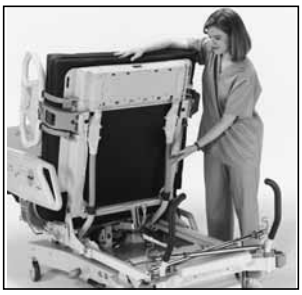
- Step deck
- Shearless Pivot® Patient Position Mechanism
- FlexAfoot™ Retractable Foot Mechanism
- FullChair® Patient Position Mechanism
- FullChair® Patient Egress Position Mechanism

Loose fitting sheets (preferably knitted) must be used for correct operation of the sleep surface.

WARNING:
Use extreme care when transferring a patient from one surface to another. Use facility protocol for patient transfer. Failure to do so can result in personal injury.

WARNING:
Care should be used while raising the head section above 50° to prevent the wedging of extremities between the siderails and the mattress. Failure to do so can result in personal injury.

Fluoroscopy



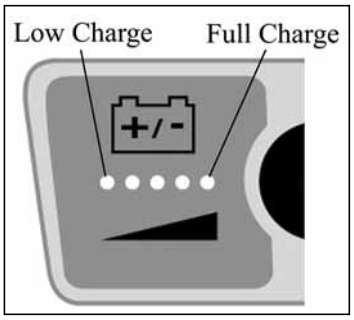
The fluoroscopy provides a radiolucent head section that measures 23" L x 22" W (58 cm x 56 cm).

The radiolucent head section allows a caregiver to perform fluoroscopy of patients from head to waist when the patient is lying flat. Fluoroscopy of the patient's head and chest cavity is possible when the head section angle is at 75°.

IntelliDrive® Transport System

The IntelliDrive® Transport System is a permanently attached powered drive mechanism built into the bed. This mechanism deploys or stows based on the position of the brake/steer pedal and AC power availability. It is activated by applying pressure to the transport handles located at the head end of the bed. This allows the caregiver to propel the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System during patient transport with minimal applied force.

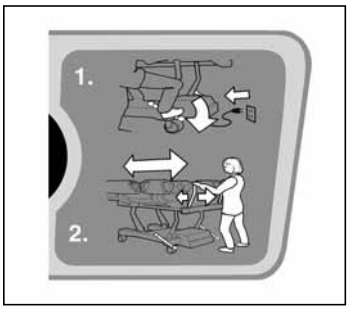
To prepare the bed for transport:



- Make sure the battery for the IntelliDrive® Transport System has sufficient power for the transport. The battery indicator should have at least two lights on.
- Raise all four siderails to the up and locked position.
- Adjust the bed height to a comfortable height.
- Adjust the bed position to ensure an unobstructed view from the head end of the bed.
- If installed, unplug the power cord for the accessory receptacle, and store the power cord correctly.
- Secure all equipment being transported with the bed, such as monitors, oxygen tanks, IV poles, and patient helper.
- Ensure the transport handles are up and locked in position.

To activate the IntelliDrive® Transport System for transport:

- Unplug the bed from its power source, and store the cord correctly.
- Set the brake/steer pedal to *steer*.



NOTE:
Unplugging the bed, and putting the bed in steer mode will automatically deploy the drive wheel, but will **not** power the IntelliDrive® Transport System.

To power the IntelliDrive® Transport System:

- Grip one or both of the transport handles located at the head end of the bed.
- Depress at least one of the enable switches on the inside of the transport handles.
- Depressing an enable switch engages the drive wheel on the bed so it can move when pressure is applied to the handles.
- The bed will not start moving unless there is pressure applied to the handles.
- Push the transport handles forward to start forward movement or pull them toward you to start reverse movement.
- Pressure sensors located in the transport handles sense the applied pressure, activate the motor, and propel the bed in the direction of applied pressure.
- The amount of applied pressure to the handles will regulate the speed of the bed.



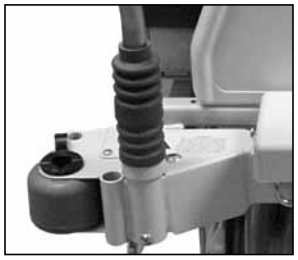
  - Increasing the forward applied pressure, will move the bed forward faster. Maximum forward speed is between 2.5 and 3.5 mph on level flooring.
  - Increasing the reverse applied pressure, will move the bed in reverse faster. Maximum reverse speed is between 1.0 and 2.0 mph on level flooring.
- Decreasing pressure on the transport handles will slow the bed down.

To deactivate the IntelliDrive® Transport System:

- Releasing the enable switch(es) on the transport handles will cause the bed to stop.
- Set the brake/steer system to neutral or brake, or
- Plug the bed into an appropriate power source.

To store the transport handles:

- Grasp the handles, and lift upwards to unlock the handles.
- Swing the handles inward toward the center of the bed into the stowed position.





WARNING:
In case of battery or motor power loss, press the electronic brake switch to **OFF** to permit forward and reverse bed movement with a deployed, unpowered, IntelliDrive® Transport System.



WARNING:
If the bed propels forward or reverse when depressing one of the enable switches and not applying any pressure on either of the handles, contact your local service personnel for repair. Failure to do so can result in personal injury or equipment damage.

WARNING:
If the bed propels forward or reverse while applying pressure on either of the transport handles and not pressing either of the enable switches, contact your local service personnel for repair. Failure to do so can result in personal injury or equipment damage.

WARNING:
If the bed is stopped on a ramp, or a patient is left unattended, set the brake to avoid unwanted bed movement. Failure to do so can result in personal injury or equipment damage.

WARNING:
Significantly reduce the speed of travel when powering the IntelliDrive® Transport System when using freestanding patient attached equipment or traveling through doorways. Failure to do so can result in personal injury or equipment damage.

CAUTION:
The IntelliDrive® Transport System is intended for indoor use only. Outdoor use may cause temporary or permanent damage to the powered drive mechanism and/or drive belt.

Siderail Pads and Extenders



The siderail pads are placed over the siderail for protection against patient injury. The pads are not to be used as restraining devices.

CAUTION:
When placing the bed into a chair position, ensure the siderails are raised. Failure to do so can result in damage to the siderail extenders when the foot section retracts.



WARNING:
Although siderail pads have been designed to reduce the risk of patient injury, the potential exists for patient entanglement, particularly in agitated or disoriented patients, as well as patients who lack the physical strength to extract themselves if they become entangled. Caregivers should carefully evaluate the need for siderail pads and periodically check patients in accordance with facility protocols for safe positioning.

WARNING:
Ensure the patient uses the siderails, and not the pads, for support when exiting the bed. Failure to do so may result in patient injury if the pads gives way.

NOTE:
The siderail pad for the TotalCare® Bariatric Plus Therapy System is dark blue, similar to the Low Air Loss topper.

The siderail pads are placed over the siderail for protection against patient injury. The pads are not to be used as restraining devices.

The extenders are installed to fill the gap between the siderail and the footboard.

WARNING:
Remove the foot extender when using the Chair Egress position. Failure to do so could cause injury.



Foot Extender

To Install the foot extenders:

1. Fully extend the foot section.
2. Insert the foot extender into the IV socket.
3. Rotate the foot extender toward the mattress.
4. Make sure the metal tab on the foot extender goes inside the drainage bag holder.

WARNING:
When the siderail pads are installed, a caregiver's line of sight is greatly impaired. Caregivers should periodically check patients in accordance with facility protocols.

WARNING:
Adding siderail pads reduces the space between the mattress and the siderail, thereby creating the potential for certain high risk patients to accidentally suffocate if improperly monitored.

WARNING:
Although siderail pads have been designed to reduce the risk of patient injury, the potential exists for patient entanglement, particularly in agitated or disoriented patients, as well as patients who lack the physical strength to extract themselves if they become entangled. Caregivers should carefully evaluate the need for siderail pads and periodically check patients in accordance with facility protocols for safe positioning.

WARNING:
Siderail pad and extender surface impermeability could be affected by needle sticks. Caregivers should be instructed to **avoid** punctures caused by needle sticks. Failure to do so could cause patient injury by cross infection.

The siderail pads and extenders should be regularly inspected for such damage.

After the siderail pads or extenders are installed, the bed scale **must** be re-zeroed.

Patient Controls

The patient controls are located on the inboard side of the intermediate siderails. Operation of this feature is the same as that for the caregiver control previously described in this manual except head elevation is restricted to 55°.



Head Up/Down Control



The patient can raise or lower the head section by using the Head Up/Down controls.

NOTE:
When in chair mode, as indicated by an illuminated chair position indicator, the patient positioning controls are disabled.

Knee Up/Down Control



The patient can raise or lower the knee section using the Knee Up/Down controls. Operation of this feature is the same as that for the caregiver control previously described in this manual.

NOTE:
When in chair mode, as indicated by an illuminated chair position indicator, the patient positioning controls are disabled.

Bed Pendant





There are two configurations of the pendant: 4-button and 11-button. The Head Up/Down functions are locked out when the caregiver controls have the head section above 50°. The pendant is not for use inside of an oxygen tent.

The 4-button pendant controls only the Head Up/Down and Knee Up/Down functions.

The 11-button pendant controls the following functions: Head Up/Down, Knee Up/Down, Radio On/Off, Television On/Off, Channel/Station Up/Down, Room Light On/Off, Reading Light On/Off, and Nurse Call.

Room Light



The Room Light control is found on systems equipped with the Patient Lighting/Entertainment option.

To Activate:

- Press the Room control.
- To turn off the Room Light, press the Room control again.

Read Light



The Read Light control is found on systems equipped with the Patient Lighting/Entertainment option.

To Activate:

- Press the Read control.
- To turn off the Read Light, press the Read control again.

Television



The Television control is found on systems equipped with the Patient Lighting/Entertainment option.

To Activate:

- Press the Television control.
- To reach the desired channel, continue to press the control.
- To turn off the television, press the Television control until the television turns off.

Music/Select



The Music/Select control is found on systems equipped with the Patient Lighting/Entertainment option.

To Activate:

- Press the Music/Select control.
- To turn off the music, press the Music/Select control again.

NOTE:
When the system is equipped with the enhanced entertainment control option, the Music/Select control also functions as a TV select control.

Optional Enhanced Entertainment Control Option



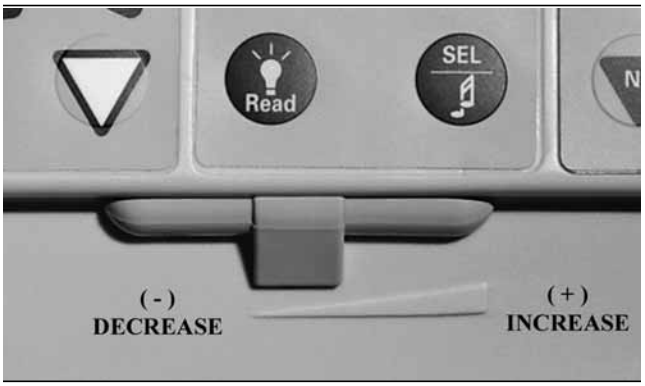
Yes Up Arrow/No Down Arrow

These controls are found on systems equipped with the Enhanced Patient Lighting/Entertainment option. Control functions vary depending upon the type of hospital entertainment available.

NOTE:

When the system is equipped with the Patient Lighting/Entertainment control option, the music/select control functions as a TV or music control.

Volume Control



Speaker volume is controlled by using the volume slide bar located below the entertainment controls on the inside of the intermediate siderails.

To Activate:

1. Slide the volume control bar in the desired direction to either increase or decrease speaker volume.

Options

Accessory AC Receptacle Option (120 V Version Only)



SHOCK HAZARD:
Electrical Shock Hazard. Servicing by qualified personnel only. This bed is provided with two power cords. Unplug all power cords before servicing Bed Electrical Enclosure or Auxiliary Receptacle Enclosure.

WARNING:
No battery back-up. For non-life support medical equipment only. Auxiliary receptacle ground separated from bed ground.

WARNING:
Do not use oxygen enriched sources near auxiliary outlet. Failure to do could cause personal injury or equipment damage.

WARNING:
Do not plug both power cords into the same wall receptacle. Plug the power cords into different receptacles on separate circuits. Failure to do so can result in equipment damage or tripping of facility power breakers.

WARNING:
Before you move the bed, make sure both power cords are unplugged and stored correctly. Do not wrap the cords between the intermediate and upper frames. Failure to do so could cause personal injury or equipment damage.

CAUTION:
Failure to store the accessory power cord when not in use, could cause damage from bed articulation.

The accessory receptacle option is a convenient source of AC power for accessory devices. **The accessory receptacle is not intended for life support equipment.** It is located at the foot end of the base frame.

The accessory receptacle provides up to 12A of AC current. TotalCare® Bariatric Plus Therapy System beds that have this option are equipped with two power cords, one for the accessory receptacle and one for the TotalCare® Bariatric Plus Therapy System. The receptacle is insulated from the bed system's AC supply.

The bed power cable is gray, and the accessory receptacle power cable is black.

Patient Helper

WARNING:
Do not remove or install the Patient Helper arm assembly when a patient is in the bed. Patient injury or equipment damage could occur.

WARNING:
Use the Patient Helper (trapeze) in the center locked position only. Personal injury could occur.

WARNING:
Failure to use the correct headboard on a bed with the Patient Helper option could cause personal injury.

WARNING:
Failure to correctly attach the Patient Helper arm assembly could cause it to fall. Personal injury or equipment damage could occur.

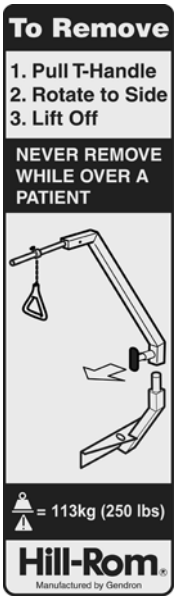
WARNING:
Do not exceed the SWL of the Patient Helper. Personal injury or equipment damage could occur.

The Patient Helper arm assembly attaches to the trapeze support at the head end of the bed. The patient may use the Patient Helper to help raise his or her upper body. The SWL of the Patient Helper is 250 lb (113 kg).

To Install:

1. At the head end of the bed, install the upright arm on the trapeze support
2. Pull the T-handle at the bottom of the upright arm, and turn the arm so it is toward the side of the bed
3. Install the horizontal arm on the upright arm.
4. Install the release pin to attach the horizontal arm to the upright arm.
5. Install the clamp of the trapeze handle assembly on the horizontal arm, and tighten the clamp to attach the trapeze handle assembly to the horizontal arm.
6. Pull the T-handle at the bottom of the upright arm, and turn the arm until it locks into the center position and the trapeze handle is over the center of the bed.
7. Make sure all parts of the Patient Helper arm assembly are correctly attached.

To Remove:



1. Pull the T-handle at the bottom of the upright arm, and turn the arm so the trapeze handle is at the side of the bed.
2. Loosen the clamp that attaches the trapeze handle assembly to the horizontal arm, and remove the trapeze handle assembly from the horizontal arm.
3. Remove the release pin and horizontal arm from the upright arm.
4. Lift the upright arm off the trapeze support.

Accessories

Accessories may be added or removed at the point of patient care by a caregiver without the use of tools. Accessories are interchangeable within a product configuration.

Part Number	Description
P27601	Oxygen tank holder
P1926B	Seat belt
P2217	IV Pole
P1969A	Foot and extender kit
P1968A01	Side extender kit, short
P1968A02	Side extender kit, tall
P1968A03	Side extender kit, bariatric short
P1968A04	Side extender kit, bariatric tall
P3670A01	Medical articulated arm, tube holder configuration
P3670A05	Medical articulated arm, transducer configuration

Oxygen Tank Holder—P27601



The oxygen tank holder attaches to the head end of the articulating frame in a vertical position. The oxygen tank holder accommodates one **E** size oxygen tank with a regulator. The mounting points are located to allow the affixed oxygen tank holders to pivot.

CAUTION:
Vertical Oxygen tank holder SWL is 30 lb (13.6 kg). Exceeding the SWL can result in equipment damage.

To Install:

1. Install the mounting bar vertically into a mounting socket at the head end of the articulating frame.
2. Place the tank in the holder, and tighten the holder thumbscrew. The thumbscrew keeps the oxygen tank from rotating in the holder.

To Remove:

1. Loosen the thumbscrew that holds the tank secure in the holder.
2. Lift the tank out of the holder.
3. Lift up on the tank holder, and remove it from the mounting sockets.

Seat Belt—P1926B

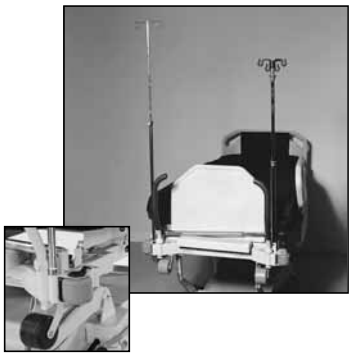


The Seat Belt is adjustable, which allows the caregiver to adjust the Seat Belt to the size of the patient. Holes, located on both sides of the bed near the center, accommodate installation of the Seat Belt.

WARNING:
Do not articulate the head section with the patient buckled with the Seat Belt. Patient injury can occur.

WARNING:
Do not use the Seat Belt as a restraint device. The Seat Belt is only to maintain correct patient positioning in the chair position.

Removable IV Pole—P2217



The IV pole is a removable, telescopic pole that installs at any of the four corners of the bed in the holes provided. The IV pole can hold 25 lb (11kg).

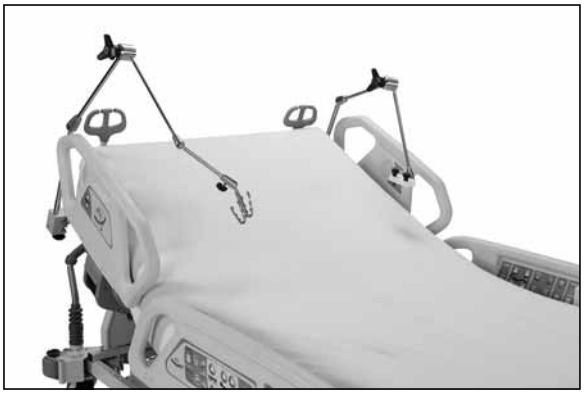
To install the standard IV pole, insert and rotate a quarter-turn clockwise. Removal is opposite of installation.

CAUTION:
Removable IV Pole SWL is 25 lb (11.3 kg). Exceeding the SWL can result in equipment damage.

CAUTION:
When lowering the upper section of an IV pole, always grasp and hold the upper section of the pole before pulling the release knob.

NOTE:
Added height recommended for gravity drain applications.

Medical Articulated Arm (P3670A01 and P3670A05)



The medical articulated arm is used to hold breathing circuits and pressure transducers and keep them in position. The P3670A01 is the tube holder configuration, and the P3670A05 is the transducer configuration. Both configurations require the P3636 bracket assembly for installation on the bed. The arms can be mounted on either or both corners of the head section. Refer to the manufacturer's instructions for operation.

Accessories

CAUTION:
Each medical articulated arm safe working load is 2.2 lbs. (1 kg). Exceeding the safe working load can cause equipment damage.

CAUTION:
Do not use the medical articulated arm to move the bed. Equipment damage could occur.

WARNING:
After you raise or lower the head section, make sure the medical arm is in the correct position.

WARNING:
When the medical articulated arm is installed, use caution when you move around the bed, move the bed, or transfer a patient in or out of the bed. Injury could occur.

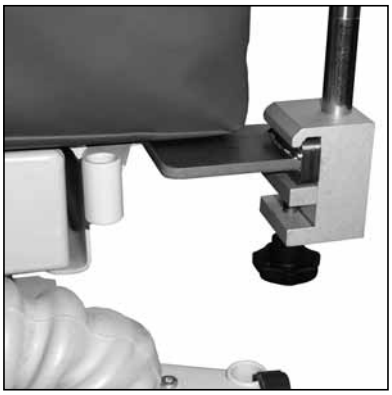
WARNING:
Use the medical articulated arm for medical equipment only. Failure to do so could cause injury or equipment damage.

WARNING:
Observe lines closely during rotations and/or patient positioning. Always use good line management techniques to prevent lines and tubing from becoming dislodged during rotation and/or patient positioning. Patient injury can occur.

WARNING:
Do not attach height sensitive devices or transducers with drainage capacity. Injury to patient may occur.

Install the Arm

1. Loosen the knob on the bottom of the arm bracket.
2. Slide the arm bracket on to the bed mount bracket until it stops.
3. Tighten the knob.
4. Put the arm in the applicable position.
5. Zero the scale.



Safety Tips

Bed Positions

WARNING:
Make sure the bed is in the low position when the patient is unattended. This can reduce the possibility of patient falls and the severity of any resultant injuries.

Brakes

WARNING:
Always set the brakes when the bed is occupied, except during patient transport. To ensure that the bed will not move, push and pull on the bed to check it after the brakes are engaged.

Brakes should always be set when the bed is occupied and especially when moving a patient from one surface to another. Patients often use the bed for support when getting out of bed and could be injured if the bed unexpectedly moves. After setting the brakes, push and pull the bed to ensure stability.

Fluids

WARNING:
Significant fluid spills onto the bed electronics can result in a hazard. If such a spill occurs, unplug the bed (both power cords), and remove it from service. Failure to do so could result in personal injury or equipment damage.

When significant fluid spills occur, outside that seen in normal use, immediately do the following:

- Unplug the bed (both power cords) from its power source.
- Remove the patient from the bed.
- Clean the fluid spill from the bed system.
- Have maintenance inspect the system completely.

Do not put the bed back into service until it is completely dry, tested, and determined to be safe to operate.

Siderails/Restraints/Patient Monitoring

Siderails may serve several beneficial uses including providing an edge reminder, bed exit assist, and access to caregiver interface and patient controls. The use of siderails also may provide a sense of security. Siderails should always be in the upright and latched position when the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System is in the chair position. The use of siderails in the bed position should be determined according to patient need after assessing any risk factors according to the facility protocols for safe positioning. When raising the siderails, a click indicates that the siderails are completely raised and locked in place.

Siderails are intended to be a reminder, not a patient restraining device. Hill-Rom recommends that the appropriate medical personnel determine the level of restraint necessary to ensure a patient will remain safely in bed.

For restraining devices, consult the restraint manufacturer’s instructions for use to verify the correct application of each restraining device.

Safety Tips

WARNING:
Although the siderails have been designed to reduce the risk of patient entanglement, the potential exists, particularly with patients who are agitated or disoriented as well as patients who lack the physical strength to extract themselves if they become entangled. Caregivers should carefully evaluate the need for siderails and periodically check patients in accordance with facility protocols for safe positioning.

WARNING:
When a patient's condition (such as disorientation due to medication or clinical condition) could lead to patient entrapment, the mattress support platform should be left in the flat position when unattended (except when otherwise required by medical staff for special or particular circumstances).

WARNING:
If siderails are used with patients at risk for entrapment, install side extenders and extend the foot section.

WARNING:
Patient restraints are not intended as substitutes for good nursing practices. Physical restraints, even properly installed, can result in entanglement, physical injury, and death, particularly with agitated and disoriented patients. Monitor patients when using physical restraints in accordance with legal requirements and facility protocol.

1. Develop guidelines for all patients that indicate the following:
   - Which patients may need to be restrained and the appropriate restraint to utilize.
   - The proper method to monitor a patient, whether restrained or not, including time interval, visual check of restraint, etc.
2. Develop training programs for all caregivers concerning the proper use and application of restraints.
3. Maintain the bed at its lowest position whenever a caregiver is not in the room.
4. Clarify the need for restraint devices with families or guardians.

<u>Electricity</u>

WARNING:
Establish policies and procedures to train and educate your staff on the risks associated with electrical equipment. Failure to do so could result in personal injury or equipment damage.

WARNING:
Significant fluid spills onto the bed electronics can result in a hazard. If such a spill occurs, unplug all power cords, and remove it from service. Thoroughly clean the bed and allow it to dry; then have the bed checked by service personnel. Failure to do so could result in personal injury or equipment damage.

CAUTION:
Before transporting the bed, ensure that the power cord is properly stored. Failure to do so could result in equipment damage.

WARNING:
Improper use or handling of the power cords may result in damage to the power cord. If damage has occurred to the power cord, immediately remove the bed from service, and contact the appropriate maintenance personnel. Failure to do so could result in personal injury or equipment damage.

WARNING:
If the integrity of the external protective earth conductor is in doubt, operate the bed from its internal electrical power source. Failure to do so could result in personal injury.

CAUTION:
This device meets all requirements for electromagnetic compatibility per EN 60601-1-2. It is unlikely that the user will encounter problems with this device because of inadequate electromagnetic immunity. However, electromagnetic immunity is always relative, and standards are based on anticipated environments of usage. If the user notes unusual device behavior, particularly if such behavior is intermittent and associated with nearby usage of radio or TV transmitters, cell phones, or electro-surgical equipment, this could be an indication of electromagnetic-interference. If such behavior occurs, the user should try moving the interfering equipment further from this device.

Policies and procedures must be established to train and educate your staff on the risks associated with electric equipment. It is never prudent or necessary for personnel to place any part of their body under or between moving parts of the bed. Whenever a bed is being cleaned or serviced, it should be unplugged from its power sources, and the lockouts should be activated to keep the bed from accidentally operating due to the battery backup. Refer to the *TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System Service Manual* (143435).

Parts and Accessories

Do not modify the bed system without authorization from Hill-Rom.

Operating Bed/Surface Precautions

WARNING:
Do not operate the bed in the presence of flammable gas or vapors. Doing so could result in personal injury or equipment damage.

WARNING:
Use oxygen administering equipment of the nasal, mask, or ventilator type only. Do not use the bed with oxygen tents. Doing so could result in personal injury or equipment damage.

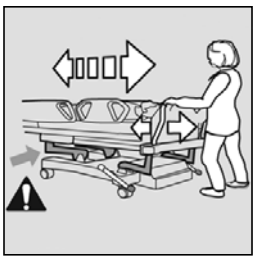
Safety Tips

WARNING:
Deactivate the bed functions by using the lockout control. Movement of a patient or inadvertent activation of the bed functions by anyone else could result in personal injury.

CAUTION:
When placing the bed into a chair position, ensure the siderails are raised. Failure to do so can result in damage to the siderail extenders when the foot section retracts.

Transport Mode





CAUTION:
Use Caution when you move bed through doorways. Damage to equipment may occur.

WARNING:
Do not transport a patient with the bed in a chair, chair egress, or recliner position. Injury to the patient may occur.

The TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System is intended to be used to transport patients with the foot end of the system forward. Prior to transport, properly store both power cords to prevent tripping. Take care to prevent damage to AC power cord and accessory outlet power cord. An electrical shock hazard exists. Use only transport handles or the footboard to move the bed.

Transport the bed with the lift arms parallel to the ground or lower.

Make sure that the patient, equipment, and all lines are securely placed within the perimeter of the bed for intra-hospital transport. The TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System is not intended to be used to transport a patient in the chair, recline chair, or chair egress positions.

Fully extended IV poles could impact doorways or ceiling fixtures. Lower poles prior to patient transport.

Make sure that the Nurse Call system cables are properly connected after transport.

WARNING:
Hill-Rom recommends the use of two caregivers to move the bed when the IntelliDrive® Transport System is not installed. Failure to use two caregivers could cause injury.

WARNING:
During transport, use caution so the bed does not tip or overbalance. Failure to do so may cause injury or equipment damage.

Generally, as the load increases, the risk of instability goes up.

Lower the foot section and head section to increase stability.

Lower the bed height to increase stability.

Use and position of accessories may affect stability. Do not overextend IV poles or similar accessories and do not overload accessories. If multiple accessories are in use, distribute them evenly from side to side or head to foot.

For inclines or thresholds, approach them as you move forward or backwards, rather than sideways.

To help prevent overbalance or collision with hidden objects or people, do not make sharp corners and do not turn the bed at high speeds.

Sleep Surface/Mattress

WARNING:
Relative Contraindication—Unstabilized spinal cord injuries. Under normal circumstances, correct alignment on an air bladder system is easy to maintain. However, user error (such as the activation of Turn Assist, Rotation, Opti-Rest, or Percussion/Vibration functions, when available) or equipment malfunction (such as cushion deflation) could put correct alignment at risk. The choice of a therapeutic support for such conditions as an unstabilized spinal cord injury is based upon the medical judgment of professionals. Each case should be evaluated individually.

WARNING:
Do not use mattresses, mattress overlays, mattress replacements, or speciality mattress products that have not been designed by Hill-Rom for the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System. Use of surface products other than those designed for the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System could substantially reduce the effectiveness of the safety features incorporated into the system.

The sleep surface should be regularly inspected for damage.

Flammability

To help prevent the risk of hospital bed fires, make sure facility personnel follow fire prevention rules and regulations. In the US, facility personnel should follow the safety tips in the *FDA Public Health Notification: Safety Tips for Preventing Hospital Bed Fires.* (US only)

WARNING:
Patients should not be allowed to smoke in bed. Sheets and pillows generally do not have flame retardance properties.

Bed Articulations

Do not operate system controls until all persons and equipment are clear of mechanisms. To stop a function, release the control, and/or activate the opposite function, and/or immediately unplug the power cord.

Observe lines closely during articulations. Always use good line management techniques, particularly as the head section rises.

Chair Positioning

Always set the brakes before placing the system in a chair position. Observe lines closely during head up/down and chair articulation.

Safety Tips

Patient Helper (Trapeze)

WARNING:
Do not remove or install the Patient Helper arm assembly when a patient is in the bed. Patient injury or equipment damage could occur.

WARNING:
Use the Patient Helper (trapeze) in the center locked position only. Personal injury could occur.

Visitor Notification

Instruct visitors not to attempt operation of caregiver controls. They may assist the patient with patient controls.

Patient Positioning

Make sure that the patient's hips are aligned with the applicable label.

For all mattress types, it is recommended a patient lift be used to assist in turning the patient from side-to-side.

NOTE:
For beds with air mattresses, the Turn Assist feature may be used in conjunction with a patient lift to provide additional assistance in turning patient from side-to-side.

Preventive Maintenance

WARNING:
Only facility-authorized personnel should perform preventive maintenance on the TotalCare® Bed System. Preventive maintenance performed by unauthorized personnel could result in personal injury or equipment damage.

The TotalCare® Bed System requires an effective maintenance program. We recommend that you perform bi-annual preventive maintenance (PM) and testing for Joint Commission certification. PM and testing not only meet Joint Commission requirements but can help ensure a long, operative life for the TotalCare® Bed System. PM will minimize downtime due to excessive wear. For the preventive maintenance schedule, refer to the *TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System Service Manual* (143435).

Perform annual preventive maintenance procedures to make sure all TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System components are functioning as originally designed. Pay particular attention to safety features, including but not limited to:

- Siderail latching mechanisms
- Caster braking systems
- Electrical system components
- Electrical power cords for fraying, damage, and proper grounding
- Current leakage at the Nurse Call system communication connections
- All controls return to off or neutral position when released
- Controls or cabling entanglement in system mechanisms or siderails
- Proper operation of the lockout controls
- Integrity of sleep surface ticking
- Operation and accuracy of the optional scale system

WARNING:
Only facility-authorized personnel should troubleshoot the TotalCare® Bed System. Troubleshooting by unauthorized personnel could cause injury or equipment damage

Main Battery

Replace the battery if any of the following conditions exist (refer to the *TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System Service Manual* (143435):

- The battery indicator does not light within 3 minutes of bed connection to AC mains
- The battery indicator does not stop flashing (low condition) within 12 hours of bed connection to AC mains
- Successive transports of 4 hours or less cause the battery to discharge to low condition as indicated by a flashing battery indicator.

IntelliDrive® Transport System Batteries

Replace the batteries if the IntelliDrive® Transport System automatically shuts down power before the final battery charge indication LED flashes (refer to the *TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System Service Manual* (143435).

After replacing the batteries, charge the batteries a minimum of 20 hours before use.

Follow the instructions on the batteries for proper disposal or recycling.

General Cleaning/Disinfecting

WARNING:
Follow the cleaning product manufacturer's instructions. Failure to do so could result in personal injury or equipment damage.

WARNING:
Unplug all power cords from all power sources. Failure to do so could result in personal injury or equipment damage.

WARNING:
Do not expose the unit to excessive moisture that would allow for liquid pooling. Personal injury or equipment damage could occur.

CAUTION:
Do not use harsh cleansers/detergents, such as scouring pads and heavy duty grease removers, or solvents, such as toluene, xylene, and acetone. Equipment damage could occur.

CAUTION:
Ensure that the metal platform is dry before placing the mattress back onto the bed. Failure to do so could result in equipment damage.

If there is no visible soilage with possible body fluids, we recommend that you clean the unit with a mild detergent and warm water. If disinfection is desired, you may use a combination cleanser/disinfectant as explained in "Disinfecting" on page 81.

In either case, ensure that the metal platform is dry before placing the mattress back onto the bed.

General Cleaning

CAUTION:
Ensure that the metal platform is dry before placing the mattress back onto the bed. Failure to so could result in equipment damage.

Clean the unit with a lightly dampened cloth and ordinary disinfectants. Do not use excessive liquid. Allow the metal platform to dry before placing the mattress back onto the bed.

Steam Cleaning

Do not use any steam cleaning device on the TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System. Excessive moisture can damage mechanisms in this unit.

Cleaning Hard to Clean Spots

To remove difficult spots or stains, use standard household cleaners and a soft bristle brush. To loosen heavy, dried-on soil or excreta, you may first need to saturate the spot.

Disinfecting

When there is visible soilage and between patients, we recommend that you disinfect the unit with a tuberculocidal disinfectant. (For customers in the US, the disinfectant should be registered with the Environmental Protection Agency.)

Dilute the disinfectant according to the manufacturer's instructions.

Cleaning Medical Fluid Spills

Fluid spills should be wiped up as soon as possible. Always unplug the unit from all power sources before cleaning up major fluid spills. Some fluids used in the hospital environment, such as iodophor and zinc oxide creams, can cause permanent stains.

Temporary stains can be removed by wiping vigorously with a lightly-dampened sponge or rag and an approved cleaner/disinfectant solution.

Cleaning Blood And Excreta

If possible, wipe up excess blood and excreta when wet since the cleaning process is more difficult after these substances dry on the surface. In the presence of visible blood or other body fluids, the use of an intermediate-level (tuberculocidal) detergent/disinfectant would be recommended.

Cleaning the Sleep Surface

Follow these instructions for cleaning the Short Stay, Treatment Surfaces or Pulmonary Therapy Mattress.

- Press Max-Inflate prior to cleaning.
- Unplug the system from its power source.
- To clean directly beneath the sleeping surface at the head end, lift the head end of the mattress.
- To clean directly beneath the sleeping surface at the foot end, lift the foot end of the mattress.

To remove the sleep surface mattress:

- Make sure that the seat belt is unlatched.
- Raise the head section for easier access to the air hose connectors on the manifold assembly.
- Disconnect the quick-disconnect air hose(s). Air hoses are color-coded for proper installation.
- To remove the sleep surface, lift up on the foot and head ends of the sleep surface until the magnets inside the ticking release the frame. Slide the sleep surface off the articulating deck.

To replace the sleep surface mattress:

- Return the patient deck to the level position, and fully extend the foot section.
- Position the sleep surface on the system frame with air hoses pointing towards the head of the system.
- Connect applicable quick-disconnect connectors at the head end to the manifold assembly. Match the color of an air hose with the same-colored connector.
- Ensure that the foot section of the sleep surface is extended completely to the foot board.

Cleaning the Low Air Loss Coverlet

Heavy Soil

When there are signs of **heavy** soil such as visible signs of body fluids and/or substances, do as follows to completely clean and disinfect the coverlet:

1. Machine-wash the coverlet with chlorine bleach (50 ppm to 150 ppm) or detergent and an effective intermediate level disinfectant, such as CSI disinfectant spray. (For customers in the US, the disinfectant should be registered with the Environmental Protection Agency.)

NOTE:
2.5 oz of bleach per 10 gal of water is approximately 100 ppm of available chlorine.

a. Use the bleach or disinfectant as instructed in the manufacturer's instructions.
b. To determine the amount of bleach or disinfectant to use, determine the amount of water in the washer, and follow the manufacturer's dilution instructions.
c. During the wash cycle, soak the coverlet in the disinfectant or bleach.
d. Let the coverlet rinse thoroughly in clean water.

CAUTION:
Do **not** use high temperatures to dry the coverlet. Air dry or select a low or non-heat dry cycle such as air fluff. High temperatures could destroy the coating that makes the coverlet waterproof yet breathable.

2. Use the **lowest** temperature setting of the dryer to dry the coverlet. Do **not** use high temperatures.

Light Soil

When there are **no** visible signs of body fluids or substances, do as follows to sanitize the coverlet:

1. Wipe down the coverlet with chlorine bleach (50 ppm to 150 ppm) or mild detergent and warm water followed by an approved intermediate level disinfectant, such as CSI disinfectant spray:
2. Let the bleach or disinfectant remain in contact with the surface as instructed in the manufacturer's instructions.
3. Remove the bleach or disinfectant, and rinse with warm water.
4. Let the coverlet completely air dry.

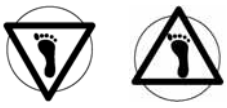
Product Symbols

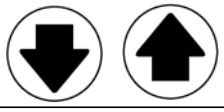
These symbols are used on the TotalCare® Bariatric Bed and the TotalCare® Bariatric Plus Therapy System:

NOTE:
Where two versions of a symbol are shown, one or the other will be used on your bed.

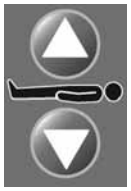
Symbol	Description
	Type B applied part according to EN 60601-1
IPX0	According to IEC 60529, Rating for protection against fluid ingress.
[a] 	Medical Electrical Equipment Classified By Underwriters Laboratories Inc. with respect to Electric Shock, Fire, and Mechanical and other Specified Hazards only in accordance with UL60601-1, IEC 60601-2-38, IEC 60601-1-2, IEC 60601-1-4
	Conforms to the European Medical Device Directive 93/42/EEC.
	Conforms to the European Non-Automatic Weighing Instrument Directive 90/384/EEC. xx is the year the bed was manufactured.
	Conforms to the European Medical Device Directive 93/42/EEC for a device that has a measuring function (for beds that have a scale), or a Treatment surface, or a SpO_2RT® Pulmonary Surface. Beds made after May 1, 2008.
	CAUTION: Consult accompanying documents.
	CPR function—identifies the release lever, and direction of travel, manually drops the inclined head section in order that cardiopulmonary resuscitation can be performed without delay

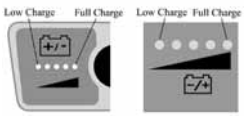
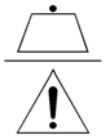
Product Symbols

Symbol	Description
	Battery charge status—steady indicator light means fully charged battery; flashing indicator means battery charging; no indicator light means battery charge is too low to operate the bed
	Identifies mains fuse
	Alternating current
	Electric shock hazard
	Safe Working Load symbol for the bed and accessories.
	Trendelenburg control
	Reverse Trendelenburg control
	Bed Flat control—puts the bed in a flat position
	Chair position control
	Foot Up/Down controls

Symbol	Description
	Foot In/Out controls
	Enable control (for caregiver controls only, not intended for patient use)
	Master/All Motors Lockout control status—when the lockout control status light is on, the lockout function is activated.
	Hi-Lo Lockout control status—when the lockout control status light is on, the lockout function is activated.
	Head Lockout control status—when the lockout control status light is on, the lockout function is activated.
	Knee/Foot Lockout control status—when the lockout control status light is on, the lockout function is activated.
	Up/Down arrows (used with Bed Up/Down, Head Up/Down, and Knee Up/Down)
	Bed Exit Alarm—turns the Bed Exit Alarm system off
	Alarm Silence—silences the bed alarm after it is activated
	Alarm Delay—changes the alarm delay time
	Up/Down arrows (used with the Graphical Caregiver Interface (GCI)® Control)

Product Symbols

Symbol	Description
	Hi-lo control—raises and lowers the bed
	Hip Locator—used to position the patient's hips for optimum pressure relief with mattress
	Emergency Trend label—identifies the release lever and direction of travel for placing the patient in the Trendelenburg position.
	Nurse Call control
	Do Not Use with Oxygen Tents—indicates the use of oxygen administering equipment of the nasal, mask, or ventilator type only or oxygen tents that can be contained inside the siderails.
	Music control—used to select the music function
	Reading Light control—used to select the optional reading light
	Room Light control—used to select the room lighting
	Television control—used to select the TV for patient control

Symbol	Description
	IntelliDrive® Transport System—Battery Charge indicator
	IntelliDrive® Transport System—activation sequence (located on the SideCom® Communication System cover on the head end of the bed). For transport, unplug the bed and release the brakes.
	Transport Sequence (located on the SideCom® Communication System cover on the head end of the bed). Transport the patient with the lift arms parallel to the ground or lower. Transport the patient with the foot end of the bed forward. Use only the footboard or transport handles to move the bed
	IntelliDrive® Transport System—activation sequence (located on the SideCom® Communication System cover on the head end of the bed). On arrival, set the brakes and plug in the bed. (TotalCare® Bariatric Plus Therapy System only)
	IntelliDrive® Transport System—activation sequence (located on the SideCom® Communication System cover on the head end of the bed). On arrival, stow the handles. (TotalCare® Bariatric Plus Therapy System only)
	Safe Working Load symbol for the bed and accessories.

a. The UL logo is a registered trademark of Underwriters Laboratories, Inc.

Product Symbols—TotalCare® Bariatric Plus Therapy System

These symbols are used on the TotalCare® Bariatric Plus Therapy System only:

Symbol	Description
	Seat Deflate—activates the seat deflate feature on the air surface
	Max-Inflate mode—activates the Max-inflate mode on the air surface
	Normal mode—activates the normal mode on the air surface
	Resume mode—returns the air surface to the previous surface setting
	Alarm Pause—pauses the alarm when it is activated
	Turn Assist Left—rotates the patient to the left side
	Turn Assist Center—returns the patient to the center position
	Turn Assist Right—rotates the patient to the right side

Product Symbols—TotalCare® Bariatric Plus Therapy System (Model P1840B and Newer)

	Chair Position control—used to transition the patient to the chair position
	Foot Elevate control—raises the foot section, and when the foot section is at maximum elevation, lowers the head section
	Foot Lower control—lowers the foot section
	Foot In/Out control—lengthens the foot section
	Foot In/Out control—shortens the foot section
	Boost control—transitions the bed to Trendelenburg position and engages Max-Inflate (if the bed is equipped with an air system)
	The Lockout controls (Model 11830B and Model 1840B) re located on the caregiver siderail control panel disable the bed articulating functions
	The patient deck can be easily returned to the level position from any articulated position by using the Bed Flat control
	Nurse Call control—alert the nurse

Product Symbols

	**Black** M on **green** background—Signifies the scale (European only) is certified to weigh in certain positions)
	Scale class identifier—Identified the European scale as Class IIII.
	Manufacturer or distributor complies with the Waste Electric and Electronic Equipment Directive 2002/96/EC.
	Refer to the user manual for patient positioning.

Technical Specifications

Product Identification

Product Number	Description
P1830A	TotalCare® Bariatric Bed
P1830B	TotalCare® Bariatric Bed, international
P1840A	TotalCare® Bariatric Plus Therapy System
P1840B	TotalCare® Bariatric Plus Therapy System with new GCI
P1840C	TotalCare® Bariatric Plus Therapy System with new GCI, and European scale

Dimensions

Feature	Dimension
Total Length (transport handles stored)	93.5" (237.5 cm)
Maximum Width (siderails stored)	42.0" (106.7 cm)
Maximum Width (siderails up)	44.5" (113.0 cm)
Maximum Headboard Height	55.75" (141.6 cm)
Maximum Siderail Height (without mattress)	14.75" (37.47 cm)
Minimum Under-Bed Clearance	4.25" (10.80 cm) 1.25" (3.17 cm) IntelliDrive® Transport System
Wheel Base	42" (106.7 cm) x 25.75" (65.4 cm) foot end; 23.5" (59.7 cm) head end
Caster Size	6" (15 cm) or 5" (13 cm)
Bed weight	675 lb (306 kg)
Pressure Redistribution Surface Dimensions:	
Mattress Width	39.5" (100.3 cm)
Mattress Length	84" (213.4 cm)
Maximum Mattress Thickness	11" (28.0 cm)
Mattress Weight	37.5 lb (17.0 kg)

Technical Specifications

Specifications

Feature	Dimension
Head Section Inclination (maximum)	75°
Seat Section Inclination (maximum)	15°
Bed Height Range (normal, measured to the top of the articulating deck and the stepped sides)	15" to 34" (38 cm to 86 cm) for 5" (13 cm) single casters 15.5" to 34.5" (39.0 cm to 88.0 cm) for 5" (13 cm) dual casters 16.5" to 35.5" (42.0 cm to 90.0 cm) for 6" (15.4 cm) single casters
Bed Height Range (with pulmonary mattress and 6" (15.4 cm) casters)	30" (76 cm) to 49" (124 cm)
Trendelenburg/Reverse Trendelenburg position	15°
Preliminary Tilt Table	20°
Bed Lift capacity (maximum SWL)	550 lb (250 kg) TotalCare® Bariatric Plus Therapy System (P1840) 500 lb (227 kg) TotalCare® Bariatric Bed (P1830)
Patient Helper (trapeze) pull force (SWL)	250 lb (113 kg)
Patient Helper height	80" (203 cm)

Environmental Conditions for Use

Condition	Range
Temperature	50°F to 104°F (10°C to 40°C) ambient temperature 50° F to 94°F (10°C to 35°C) ambient temperature (pulmonary)
Relative humidity range	30% to 75% non-condensing
Atmospheric Pressure	700 hPa to 1060 hPa

Environmental Conditions for Transport and Storage

Condition	Range
Temperature	-40°F(-40°C) to 158°F (70°C)
Relative Humidity	10 to 95%
Pressure	500 hPa to 1060 hPa

Mains Power Requirements

Condition	Range
Rated Voltage	100V/110V/120V/127V/220V/230V/240V AC
Power/Input	5.5 A (220V, 230V, and 240V beds) 9.9 A (100V and 120V beds) 11.5 A (110V beds) 11.9 A (127V beds)
Frequency	60/50 Hz (all beds)

Fuse Specifications

Condition	Range
Air System Fuse (air system optional)	2 A, 250 V~, 5 x 20 mm, UL 198G Fast Acting
Battery Fuse	10 A, 32 V~, ATO
Mains Fuse (100V, 110V, 120V, and 127V bed model)	2 each 15 A, 250 V~, ¼" x 1¼", UL 198G Slo-Blo®[a] or equivalent
Mains Fuse (220V, 230V, and 240V bed model)	6.3 A, 250 V~, 5 x 20 mm, IEC127 Sheet III, Time Delay

a. Slo-Blo® is a registered trademark of Littelfuse, Inc.

Auxiliary Outlet Power Specifications (120V Beds Only)

Condition	Range
Auxiliary Receptacle	120V AC, 60 Hz, 12A outlet, electrically isolated from the bed's mains power. Equipped with an 12A, single-pole, resetable circuit breaker.

Nurse Call Connection Requirements

For information about the Nurse Call connection requirements, refer to the *SideCom® Communication System Design and Application Manual* (ds059).

Mattress Flammability Codes

Condition	Range
United States	
P1831EA	CAL TB-117, *Requirements, Test Procedure and Apparatus for Testing the Flame Retardance of Resilient Filling Materials Used in Upholstered Furniture* CAL TB-129, *Flammability Test Procedure for Mattresses for Use in Public Buildings* CAL TB-603, *Requirements and Test Procedure for Resistance of a Residential Mattress/Box Spring set to a Large Open Flame* BFD IX-11, *Boston Fire Department Mattress Fire Test* 16 CFR 1632, *Standard for the Flammability of Mattresses and Mattress Pads* 16 CFR 1633, *Standard for the Flammability of Mattresses and Mattress Pads*
P1841EA	CAL TB-117, *Requirements, Test Procedure and Apparatus for Testing the Flame Retardance of Resilient Filling Materials Used in Upholstered Furniture* CAL TB-129, *Flammability Test Procedure for Mattresses for Use in Public Buildings* CAL TB-603, *Requirements and Test Procedure for Resistance of a Residential Mattress/Box Spring set to a Large Open Flame* BFD IX-11, *Boston Fire Department Mattress Fire Test* NFPA 101: 2000—*Life Safety Code*. 16 CFR 1632, *Standard for the Flammability of Mattresses and Mattress Pads* 16 CFR 1633, *Standard for the Flammability of Mattresses and Mattress Pads*

Classification and Standards

The TotalCare® Bariatric Bed and TotalCare® Bariatric Plus Therapy System are designed and manufactured according to the following equipment classifications and standards:

Technical and Quality Assurance Standards	UL 60601-1 CSA®[a] C22.2 No. 601.1 IEC 60601-2-38 EN 60601-1 IEC 60601-1-2 IEC 60601-1-4 ISO 13485
Equipment Classification per EN 60601-1	Class I equipment, internally powered equipment
Degree of Protection Against Electric Shock	Type B
Degree of Protection Against Ingress of Water	Ordinary Equipment-IPX0
Degree of Protection Against the Presence of Flammable Anaesthetic Mixtures	Not for use with flammable anaesthetics.
Mode of Operation (120V)	Continuous operation with intermittent loading, 3 minutes ON/30 minutes OFF
Mode of Operation (100V, 110V, 127V, 220V, 230V, and 240V)	Continuous operation with intermittent loading, 3 minutes ON/45 minutes OFF
Sound level (measured 1 meter from patient's ear)	< 65 dBA for normal operation, does not include IntelliDrive® Transport System, therapy, or transients < 70 dBA maximum (IntelliDrive® Transport System active) < 74 dBA with percussion and vibration therapy active < 78 dBA transients (brake/steer activation, siderail latch and unlatch)

a. CSA® is a registered trademark of Canadian Standards Association, Inc.

Electromagnetic Emissions Guidance

Guidance and Manufacturer's Declaration—Electromagnetic Emissions		
The P1840 is intended for use in the electromagnetic environment specified below. The customer or the user of the P1840 should make sure it is used in such an environment.		
Emissions Test	**Compliance**	**Electromagnetic Environment—Guidance**
RF Emissions CISPR 11	Group 1	The P1840 uses RF energy only for its internal functions. Therefore, its RF emissions are low and are not likely to cause any interference in nearby electronic equipment. (see Note 1)
RF Emissions CISPR 11	Class A	The P1840 is suitable for use in all establishments, other than domestic establishments, and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage Fluctuations/ Flicker Emissions IEC 61000-3-3	Complies	
Note 1: For P1840 with Wireless Interface Unit, see “Wireless Interface Unit” on page 99.		

Electromagnetic Immunity Guidance

Guidance and Manufacturer's Declaration-Electromagnetic Immunity			
The P1840 is intended for use in the electromagnetic environment specified below. The customer or the user of the P1840 should make sure it is used in such an environment.			
Immunity Test	**IEC 60601 Test Level**	**Compliance Level**	**Electromagnetic Environment—Guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV Contact ± 8 kV Air	± 6 kV Contact ± 8 kV Air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for Power Supply Lines ± 1 kV for Input/ Output Lines	± 2 kV for Power Supply Lines ± 1 kV for Input/ Output Lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV Line(s) to Line(s) ± 2 kV Line(s) to Earth	± 1 kV Line(s) to Line(s) ± 2 kV Line(s) to Earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions, and variations on power supply lines IEC 61000-4-11	< 5% U_T (> 95% dip in U_T) for 0.5 cycles 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (> 95% dip in U_T) for 5 seconds (See Note 1)	< 5% U_T (> 95% dip in U_T) for 0.5 cycles 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (> 95% dip in U_T) for 5 seconds	Mains power quality should be of a typical commercial or hospital environment. If the user of the P1840 requires continued operation during power mains interruption, it is recommended that the P1840 be powered from an uninterruptible power supply or a battery.
Power frequency (50/60hz) magnetic fields IEC 61000-4-8 (see Note 1)	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Note 1: U_T is the AC mains voltage prior to application of the test level.			

<table>
<tr><th colspan="4">Guidance and Manufacturer's Declaration-Electromagnetic Immunity</th></tr>
<tr><th colspan="4">The P1840 is intended for use in the electromagnetic environment specified below. The customer or the user of the P1840 should make sure it is used in such an environment.</th></tr>
<tr><th>Immunity Test</th><th>IEC 60601 Test Level</th><th>Compliance Level</th><th>Electromagnetic Environment—Guidance</th></tr>
<tr><td>Conducted RF IEC 61000-4-6</td><td>3 Vrms
150 kHz to 80 MHz</td><td>3 V</td><td rowspan="2">Portable and mobile RF communications equipment should be used no closer to any part of the P1840, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

Recommended separation distance

$d = 1.2\ \sqrt{P}$

$d = 1.2\ \sqrt{P}$ 80 MHz to 800 MHz

$d = 2.33\ \sqrt{P}$ 800 MHz to 2.5 GHz

Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation in metres (m).

Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey[a], should be less than the compliance level in each frequency range[b].
Interference may occur in the vicinity of equipment marked with the following symbol.
  </td></tr>
<tr><td>Radiated RF IEC 61000-4-3</td><td>3 V/m
80 MHz to 2.5 GHz</td><td>3 V/m</td></tr>
<tr><td colspan="4">Note 1: At 80 MHZ and 800 MHz, the higher the frequency range applies.
Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</td></tr>
</table>

a. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the P1840 is used exceeds the applicable RF compliance level above, the P1840 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the P1840.

b. Over the frequency range of 150 kHz to 80 MHz, field strength should be less than *3* V/m.

Recommended separation distances between portable and mobile RF communications equipment and the P1840 Model			
The P1840 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the P1840 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the P1840 as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter, W	**Separation distance according to frequency of transmitter, m**		
	150 kHz to 80 MHz $d = 1.2\ \sqrt{P}$	80 MHz to 800 MHz $d = 1.2\ \sqrt{P}$	800 MHz to 2.5 GHz $d = 2.33\ \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23
For transmitters rated at a maximum output power not listed above, the recommended separation distance ***d*** in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer. NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies. NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

Wireless Interface Unit

The WIU supports the following security protocols:

- WEP (64 and 128 bit)
- WPA - PSK with TKIP
- WPA2 - PSK w/AES
- WPA - 802.1x PEAP MSCHAPv2 w/TKIP
- WPA2 - 802.1x PEAP MSCHAPv2 w/AES

REGULATORY INFORMATION:

Changes and/or modifications not expressly approved by Hill-Rom Co., Inc. could void the user's authority to operate the equipment.

The WIU must be installed and used in accordance with the Hill-Rom user and installation instructions. Hill-Rom is not responsible for any radio or television interference caused by unauthorized modification of the devices included with the Hill-Rom WIU, or the substitution or attachment of connection cables and equipment other than that specified by Hill-Rom Co., Inc. The correction of interference caused by such unauthorized modification, substitution, or attachment is the responsibility of the user. Hill-Rom is not liable for any damage or violation of government regulations that may arise from the user failing to comply with these requirements.

USA—Federal Communications Commission (FCC) Radiation Exposure Statement

CAUTION:
The radiated output power of the WIU is far below the FCC radio frequency exposure limits. Nevertheless, the Hill-Rom WIU must be used in such a manner that the potential for human contact during normal operation is minimized. To avoid the possibility to exceed the FCC radio frequency exposure limits, you should keep a distance of at least 8" (20 cm) between you (or any other person in the vicinity) and the antenna that is built into the WIU.

Interference Statement for FCC-ID: QDS-BRCM1017

These devices comply with Part 15 of the FCC Rules. Operation of the devices is subject to these two conditions: (1) the devices may not cause harmful interference, and (2) the devices must accept any interference that may cause unwanted operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to supply reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If the equipment is not installed and used in accordance with the instructions, the equipment may cause harmful interference to radio communications. There is no guarantee, however, that such interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment off and on), the user is encouraged to take one of these measures to try to correct the interference:

- Move this device.
- Increase the separation between the device and the receiver.
- Connect the device to an outlet on a circuit different from that of other electronics.
- Consult the dealer or an experienced radio technician for help.

NOTE:
The Hill-Rom Wireless Interface Unit (WIU) must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. Any other installation or use will violate FCC Part 15 regulations. Modifications not expressly approved by Hill-Rom could void your authority to operate the equipment.

The Hill-Rom WIU device must not be co-located or operated in conjunction with any other antenna or transmitter.

Canada—Industry Canada (IC)

This device complies with RSS210 of Industry Canada.

Cet appareil est conforme a la norme RSS210 du Canada.

Operation is subject to these two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, which include interference that may cause unwanted operation of this device.

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes: (1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit étre prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

The term "IC" before the equipment certification number only signifies that the Industry Canada technical specifications were met.

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

Pour empecher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit etre utilze a l'interieur et devrait etre place lin des fenetres afin de Fournier un ecram de blindage maximal. Si le matriel (ou son antenne d'emission) est installe a l'exterieur, il doit faire l'objet d'une licence.

CAUTION:
Exposure to Radio Frequency Radiation. The installer of this radio equipment must make sure the antenna is located or pointed such that it does not emit an RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website http://www.hc-sc.gc.ca/rpb.

WIU Characteristics

Characteristic	Description
Frequency Band	IEEE 802.11b: 2.4 GHz (2400–2500 MHz) IEEE 802.11g: 2.4 GHz (2400–2500 MHz)
Modulation Technique	IEEE 802.11b: Direct sequence spread spectrum (DSSS) • CCK for high and medium transmit rate • DQPSK for standard transmit rate • DBPSK for low transmit rate IEEE 802.11g: Orthogonal frequency division multiplexing (OFDM) • 52 subcarriers with BPSK, QPSK, 16-QAM or 64-QAM • Forward error correction convolutional coding rate: 1/2, 2/3, 3/4
Spreading	IEEE 802.11b: 11-chip Barker sequence
Bit Error Rate (BER)	Better than 10^{-5}
Nominal Output Power	IEEE 802.11b: 19 dBm IEEE 802.11g: 15 dBm



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