

Centuris™ Bed

Service Manual

Product No. P750



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Reference Documents

Centuris™ Bed User Manual (179643)

Centuris™ Bed Unpacking Instructions (182515)

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NOTES:

Chapter 1

Introduction

Purpose

This manual contains instructions for the operation and maintenance of the Centuris™ Bed. It also includes a parts lists (in chapter 5) to order replacement components.

Audience

This manual is intended for use by only facility-approved persons. Use by not approved persons can cause injury to people and damage to equipment.

Reference Documents

For more information (such as operating instructions, features, and product symbols), refer to the *Centuris™ Bed User Manual* (179643).

Document Symbols

This manual contains different typefaces and symbols designed to improve readability and increase your knowledge of its content:

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

Figure 1-1. Warning and Caution



- A WARNING identifies situations or actions that could affect patient or user safety. Disobeying a warning could cause patient or user injury.
- A CAUTION points out special procedures or precautions that a person must obey to avoid equipment damage.

Model Identification

Table 1-1. Model Identification

| Product Number | Description |
|----------------|---------------|
| P750 | Centuris™ Bed |

Safety Tips

To help prevent the risk of hospital bed fires, make sure facility personnel follow the safety tips in the *FDA Public Health Notification: Safety Tips for Preventing Hospital Bed Fires*.



WARNING:

Refer to facility protocol when you make an analysis of a patient for entrapment risk. Monitor the patient as applicable. Failure to do so could cause injury or death.



WARNING:

Refer to facility protocol when you make an analysis of a patient for entrapment risk. Monitor the patient as applicable. Make sure that all siderails are fully latched when in the raised position. Failure to do so could cause injury or death.

NOTE:

Siderails are intended to be a reminder to the patient of the unit's edges, not a patient-restraining device. When applicable, Hill-Rom recommends that medical persons determine the proper methods necessary to make sure a patient remains safely in bed.



WARNING:

Make sure the bed is in the low position when the patient is unattended. This may reduce the severity of any injuries caused from patient falls.



WARNING:

Always set the brakes when the unit is occupied, except when you transport a patient. Reconfirm before any patient transfer. Failure to do so may cause injury or equipment damage.



WARNING:

Use the lockout control to deactivate the bed functions. Movement of a patient or inadvertent activation of the bed functions by untrained persons could cause injury.



WARNING:

Do not work under an unsupported load. Install applicable temporary supports. Failure to do so could cause injury or equipment damage.

**WARNING:**

Put caster blocks behind the casters at the opposite end of the bed. Failure to do so could cause injury.

**WARNING:**

Only facility-approved persons should service the bed. Service by not approved persons could cause injury or equipment damage.

**WARNING:**

Obey the product manufacturer's instructions. Failure to do so could cause injury or equipment damage.

**WARNING:**

Attach the foot section to the head section. Failure to do so could cause injury.

**WARNING:**

Powered bed mechanisms can cause injury. Operate the bed only when persons are clear of the mechanisms. Failure to do so could cause injury or death.

**WARNING:**

Remove the patient from the bed before you do this procedure. Failure to do so could cause injury or equipment malfunction.

**WARNING:**

Wear eye protection. Failure to do so may cause eye injury.

**WARNING:**

If you use or handle the power cord improperly you may cause damage to the power cord. If damage has occurred to the power cord or any of its components, immediately remove the unit from service, and contact the applicable maintenance person. Failure to do so could cause electrical shock or other injury or equipment damage.



WARNING:

Fluid spills onto the bed electronics can cause a hazard. If such a spill occurs, unplug the bed, and remove it from service. Failure to do so could cause injury or equipment damage.



WARNING:

Follow applicable infection control policies and procedures. Failure to do so could cause the spread of infection.



WARNING:

Install the IV pole correctly. Failure to do so could cause injury or equipment damage.



WARNING:

Disconnect the bed from its power source. Failure to do so could cause injury or equipment damage.



WARNING:

Do not expose the unit to excessive moisture. Injury or equipment damage could occur.



WARNING:

The potential for electrical shock exists with electrical equipment. Failure to follow facility protocols may cause death or injury.



WARNING:

Mattresses that are undersized for the frame create a gap between the mattress and the siderails. The risk increases for patient entrapment or suffocation. Evaluate patients for vulnerability, and monitor patients appropriately. Failure to do so could result in patient injury or death.



CAUTION:

Make sure that a flat side of the hex rod faces upward when it is installed. Failure to do so may cause the central brake and steer to operate incorrectly.

**CAUTION:**

Use care when you remove the indicator caps. Failure to do so could cause damage to the indicator cap.

**CAUTION:**

Use caution when you cut the wire ties. Failure to do so could cause cable damage.

**CAUTION:**

Keep enough slack in the cables to allow the bed to move through its full range of motion. Make sure the bed cables do not bind and do not have any force applied to them. Failure to do so could cause equipment damage.

**CAUTION:**

Do not use harsh cleansers/disinfectants such as a scouring pad, heavy duty grease removers, solvents such as toluene, xylene, or acetone. Equipment damage could occur.

**CAUTION:**

Do not use silicone-based lubricants. Equipment damage could occur.

**CAUTION:**

Put the removed PC boards in antistatic protective bags to ship or store the PC boards. Equipment damage can occur.

**CAUTION:**

Make sure that your hands are clean, and **only** handle the PC boards by their edges to prevent component damage.

**CAUTION:**

Wear an antistatic strap when you handle electronic components. Failure to do so could cause component damage.



CAUTION:

Before you transport the unit, make sure that the power cord, hoses, and other equipment are properly stowed. Failure to do so could cause equipment damage.



CAUTION:

Do not push or pull the unit by IV poles, siderails, or other equipment. Use the transport handles, footboard, or other designated location. Failure to do so could cause equipment damage.



CAUTION:

Do not lower the bed frame while the trapeze support assembly is attached to the bed. Use the lockout on the foot end control panel to turn off the hilow function. Equipment damage could occur.



CAUTION:

Connect the cables to the correct socket. Failure to do so may cause the equipment to operate incorrectly.



CAUTION:

Dispose of batteries in accordance with your local regulations. Failure to dispose of batteries correctly may damage the environment.

Warning and Caution Labels



| | | | |
|---|--|---|----------------------|
| | <p>Hill-Rom Hill-Rom Services Pte Ltd. 1 Yishun Ave 7 Singapore 768923</p> | = 204 kg | <p>SN O320PP0001</p> |
| <p>MEDICAL EQUIPMENT WITH RESPECT TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH IEC/EN60601-1 AND IEC/EN60601-2-52</p> | | = 169kg | |
| <p>Hill-Rom CENTURIS™ Bed Model: P750 Duty Cycle: 2 Min. On \ 18 Min. Off</p> | | <p>Made In China REF P75011CEECP</p> | |
| <p>PATENT www.hill-rom.com/patents May be covered by one or more patents. See above site.</p> | | <p>120V~ 60 Hz Max. 2Amp</p> | |

NOTES:

Chapter 2

Troubleshooting Procedures

2

Getting Started



WARNING:

Only facility-approved personnel should service the bed. Service by not approved persons could cause injury or equipment damage.

Begin each procedure in this chapter with step 1. Follow the sequence outlined (each step assumes the previous step has been done). In each step, the normal operation of the product can be answered with a **Yes** or **No** to the statement. Your response will lead to another step in the procedure, a repair analysis procedure (RAP), or a component replacement. If more than one component is listed, replace them in the order given.

To begin gathering data about the problem, start with **Initial Actions**.

Do the **Function Checks** to isolate or identify a problem and to make sure the repair (replace or adjust a part, seat a connector, etc.) corrected the problem.

Do the **Final Actions** after the Function Checks to make sure the repair corrected the problem.

If troubleshooting procedures do not isolate the problem, contact your distributor or local Hill-Rom representative.

Initial Actions

Use Initial Actions to gather data from operators about problems with the bed. Note symptoms or other data about the problem that the operator describes. This data helps identify the most possible cause.

1. Someone who can explain the problem is available.
Yes **No**
↓ → Go to “Function Checks” on page 2-2.
2. Ask that person to demonstrate or explain the problem. The problem can be demonstrated.
Yes **No**
↓ → Go to “Function Checks” on page 2-2.
3. The problem is caused by incorrect operator action.
Yes **No**
↓ → Go to “Function Checks” on page 2-2.
4. Tell the operator to refer to the *Centuris™ Bed User Manual* (179643). To make sure the bed operates correctly, do the “Function Checks” on page 2-2.

Function Checks

1. Initial Actions have been done.
Yes **No**
↓ → Go to “Initial Actions” on page 2-2.
2. The bed is connected to the correct power source.
Yes **No**
↓ → Connect the bed to the correct power source. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 3.
3. Do a test of all of the bed functions for up and down operation. All of the up and down bed functions operate correctly.
Yes **No**
↓ → Make sure the lockouts for all of the bed functions are not locked out. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 4.

4. Press the **Head Up** switch. The head section rises.
Yes **No**
↓ → Go to page 2-6.
5. Press the **Head Down** switch. The head section lowers.
Yes **No**
↓ → Go to page 2-6.
6. Press the **Knee Up** switch. The knee section rises.
Yes **No**
↓ → Go to page 2-7.
7. Press the **Knee Down** switch. The knee section lowers.
Yes **No**
↓ → Go to page 2-8.
8. Press the **Hilow Up** switch. The bed rises.
Yes **No**
↓ → Go to page 2-8.
9. Press the **Hilow Down** switch. The bed lowers.
Yes **No**
↓ → Go to page 2-9.
10. Raise the bed to the low position. Press the *Trendelenburg* control. The bed goes into the Trendelenburg position.
Yes **No**
↓ → Go to page 2-11.
11. Raise the bed to the low position. Press the *Reverse Trendelenburg* control. The bed goes into the Reverse Trendelenburg position.
Yes **No**
↓ → Go to page 2-11.
12. Raise the head section, operate the CPR controls. The head section lowers fully.
Yes **No**
↓ → Go to page 2-12.

13. If the bed has central brake and steer, put the pedal into the steer position. The steer caster locks, and all of the other casters swivel freely.

Yes **No**

↓ → Replace the brake and steer caster (refer to procedure 4.5 on page 4-11).

14. If the bed has central brake and steer, put the pedal into the brake position. Try to move the bed out of its position. The bed does not move.

Yes **No**

↓ → Replace the brake caster (refer to procedure 4.5 on page 4-11).

15. If the bed has individual brake casters, press the brakes on each caster that has that function. Try to move the bed out of its position. The bed does not move.

Yes **No**

↓ → Replace the casters that do not operate correctly (refer to procedure 4.6 on page 4-14).

16. Contact your distributor or local Hill-Rom representative.

Final Actions

1. Do the necessary preventive maintenance procedures. See “Preventive Maintenance Checklist” on page 6-6.
2. Do all of the necessary administration tasks.

2.1 None of the Bed Functions Operate

1. A beep is heard, and the **Lockout** indicator flashes when a control is activated.
Yes **No**
↓ → Go to step 3.
2. Go to RAP 2.9.
3. All of the bed function lockouts are off. If the indicator for a bed function lockout is on, the function is locked out.
Yes **No**
↓ → Turn the bed function lockouts off. If this corrects the problem, go to “Final Actions” on page 2-4.
4. Disconnect the bed from its power source and allow the bed to cool for 20 minutes. Connect the bed to its power source. The bed functions do not operate.
Yes **No**
↓ → Go to “Final Actions” on page 2-4.
5. The power cord is tightly seated in the connector on the control box.
Yes **No**
↓ → Tightly seat the power cord into its connector on the control box. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 6.
6. All of the control connectors are tightly seated in the control box.
Yes **No**
↓ → Tightly seat the control connectors in the control box. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 7.
7. Replace the control box (refer to procedure 4.1 on page 4-2). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, contact your distributor or local Hill-Rom representative.

2.2 The Head Up/Down Function Does Not Operate

1. The head up/down function does not operate when the head up/down switch is pressed from either siderail or the pendant.
Yes **No**
↓ → Go to step 6.
2. Examine if the head function lockout is off. If the LED for a bed function lockout is on, the function is locked out.
Yes **No**
↓ → Turn the head function lockout off. If this corrects the problem, go to “Final Actions” on page 2-4.
3. Tightly seat the connector for the head motor into its socket on the control box. The head up function does not operate.
Yes **No**
↓ → Go to “Final Actions” on page 2-4.
4. Replace the head motor (refer to procedure 4.3 on page 4-6). The head up function does not operate.
Yes **No**
↓ → Go to “Final Actions” on page 2-4.
5. Contact your distributor or local Hill-Rom representative.
6. The head up function only operates from one of the siderails or pendant.
Yes **No**
↓ → Tightly seat both of the siderail connectors into T-cable on the control box. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, contact your distributor or local Hill-Rom representative.
7. Replace the controls on the siderail or pendant with the faulty function (refer to procedure 4.4 on page 4-9). The head up function operates from this siderail.
Yes **No**
↓ → Replace the control box (refer to procedure 4.1 on page 4-2). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, contact your distributor or local Hill-Rom representative.
8. Go to “Final Actions” on page 2-4.

2.3 The Knee Up/Down Function Does Not Operate

1. The knee up/down function does not operate when the knee up/down switch is pressed from either siderail or the pendant.
Yes **No**
↓ → Go to step 6.
2. Examine if the knee function lockout is off. If the LED for a bed function lockout is on, the function is locked out.
Yes **No**
↓ → Turn the knee function lockout off. If this corrects the problem, go to “Final Actions” on page 2-4.
3. Tightly seat the connector for the knee motor into its socket on the control box. The knee up function does not operate.
Yes **No**
↓ → Go to “Final Actions” on page 2-4.
4. Replace the knee motor (refer to procedure 4.3 on page 4-6). The knee up function does not operate.
Yes **No**
↓ → Go to “Final Actions” on page 2-4.
5. Contact your distributor or local Hill-Rom representative.
6. The knee up/down function only operates from one of the siderails or pendant.
Yes **No**
↓ → Tightly seat both of the siderail connectors into T-cable on the control box. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, contact your distributor or local Hill-Rom representative.
7. Replace the controls on the siderail or pendant with the faulty function (refer to procedure 4.4 on page 4-9). The knee up function operates from this siderail or pendant.
Yes **No**
↓ → Replace the control box (refer to procedure 4.1 on page 4-2). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, contact your distributor or local Hill-Rom representative.
8. Go to “Final Actions” on page 2-4.

2.4 The Bed Up/Down Function Does Not Operate

1. The bed up/down function does not operate when the switch is pressed from either siderail or the pendant.
Yes **No**
↓ → Go to step 6.
2. Examine if the bed up/down function lockout is off. If the LED for a bed function lockout is on, the function is locked out.
Yes **No**
↓ → Turn the hilow function lockout off. If this corrects the problem, go to “Final Actions” on page 2-4.
3. Tightly seat the connector for the hilow motor into its socket on the control box. The hilow up function does not operate.
Yes **No**
↓ → Go to “Final Actions” on page 2-4.
4. Replace the hilow motor (refer to procedure 4.3 on page 4-6). The hilow up function does not operate.
Yes **No**
↓ → Go to “Final Actions” on page 2-4.
5. Contact your distributor or local Hill-Rom representative.
6. The hilow up/down function only operates from one of the siderails or pendant.
Yes **No**
↓ → Tightly seat both of the siderail connectors into their sockets on the control box. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, contact your distributor or local Hill-Rom representative.
7. Replace the controls on the siderail or pendant with the faulty function (refer to procedure 4.4 on page 4-9). The hilow up function operates from this siderail.
Yes **No**
↓ → Replace the control box (refer to procedure 4.1 on page 4-2). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, contact your distributor or local Hill-Rom representative.
8. Go to “Final Actions” on page 2-4.

2.5 The Auto Contour™ Feature Up Function Does Not Operate

1. The head section does not rise when the control for the auto contour up is pressed.

Yes **No**
↓ → Go to step 4.

2. Examine if the head function lockout is off. If the LED for a bed function lockout is on, the function is locked out.

Yes **No**
↓ → Turn the head function lockout off. If this corrects the problem, go to “Final Actions” on page 2-4.

3. Do the procedure on page 2-6. The head section rises when the control for the auto contour up is pressed.

Yes **No**
↓ → Contact your distributor or local Hill-Rom representative.

4. The knee section does not rise when the automatic contour up switch is pressed on the siderail controls or pendant. Do the procedure on page 2-7. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, contact your distributor or local Hill-Rom representative.

2.6 The Auto Contour™ Feature Down Function Does Not Operate

1. The head section does not lower when the control for the auto contour down is pressed.

Yes **No**
↓ → Go to step 4.

2. Examine if the head function lockout is off. If the LED for a bed function lockout is on, the function is locked out.

Yes **No**
↓ → Turn the head function lockout off. If this corrects the problem, go to “Final Actions” on page 2-4.

3. The head section lowers when the control for the auto contour down is pressed.

Yes **No**
↓ → Contact your distributor or local Hill-Rom representative.

4. The knee section does not lower when the automatic contour down switch is pressed on the siderail controls or pendant. Do the procedure on page 2-8. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, contact your distributor or local Hill-Rom representative.

2.7 The Trendelenburg or Reverse Trendelenburg Function Does Not Operate

Refer to the “The Bed Up/Down Function Does Not Operate” on page 2-8.

2.8 The CPR Function Does Not Operate

1. The CPR cable is connected to the CPR handle.

Yes **No**

↓ → Connect the CPR cable to the CPR handle. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 2.

2. The CPR wire is held tightly in the bracket.

Yes **No**

↓ → Tighten the screw that attaches the CPR wire under the bracket. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 3.

3. The CPR cable and CPR wire are connected to the head motor.

Yes **No**

↓ → Attach the CPR cable and/or the CPR wire to the head motor. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 4.

4. Replace the head motor (refer to procedure 4.3 on page 4-6). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, contact your distributor or local Hill-Rom representative.

2.9 A beep is Heard and the Lockout Indicator Flashes when a Control is Activated

1. A beep is heard and the Lockout LED flashes when a control is activated.
Yes **No**
↓ → Go to step 2.1.
2. The battery is fully charged.
Yes **No**
↓ → Charge the battery for 24 hours.
3. At the same time, press the Hilow Up and Hilow Down controls for 5 seconds. An intermittent beep will be heard during the 5 seconds.
4. A beep is heard when a control is activated.
Yes **No**
↓ → Go to “Final Actions” on page 2-4.
5. Replace the Power Supply. If this does not fix the problem contact your distributor or local Hill-Rom representative.

2.9 A beep is Heard and the Lockout Indicator Flashes when a Control is Activated

Chapter 2: Troubleshooting Procedures

NOTES:

Chapter 3

Theory of Operation

Introduction

The main components and controls for the bed are discussed in this section.

Base

The base supports the entire bed. Included in this module are the casters, the optional brake and steer assembly, and the lift arms.

Intermediate Frame

The intermediate frame connects the base to the sleep deck, and provides attachment points for the drive motors that provide the motion of the different bed sections.

Articulating Sleep Deck

The articulating sleep deck contains the head, seat, knee, and foot sections. These sections, except for the seat section, articulate in a manner that changes the angular orientation of the section to the intermediate frame.

Siderails

There are two siderails on each side of the bed. The siderails raise and lower, but do not tuck below the sleep deck.

Motion Control

The motion control for the bed consists of linear actuators, siderail controls, or pendant controls, and electronics that provide the motion of the sleep deck and bed up/down.

NOTE:

The duty cycle of the actuators is 2 minutes ON/ 18 minutes OFF.

Battery Backup

When no mains power is supplied to the electric bed, the battery backup system can operate the functions such as: sleep deck articulation, bed up/down, Trendelenburg, and Reverse Trendelenburg. When battery low alarm activated, the battery can support the operation of at least one full cycle (including all functions), with any allowed loading conditions.

Controls

Patients or caregivers can use the low voltage controls, located on the head siderail, or pendant, to change the angle of the head and knee sections and the height of the bed.

The Centuris™ Bed uses the hilow motor to put the bed into Trendelenburg or Reverse Trendelenburg.

NOTE:

The lockout controls have the ability to make one or all four motors on the bed inoperable.

Power Supply Unit

The Power Supply Unit includes a Power Status LED that changes colors during operation:

- Green: connected to mains power
- Amber: operating on mains power
- Red: operating on battery power

NOTE:

LED will be amber when there is a control being activated but the motor isn't activated, no matter whether the motor has reached its end of travel limit switch or no motor connected or any error stage (e.g. Power request error).

Chapter 4

Removal, Replacement, and Adjustment Procedures

Tool and Supply Requirements

To service the bed, the tools and supplies that follow as applicable:

- 6mm and 12 mm E-ring application tool
- C-clip pliers
- Phillips head screwdriver
- Screwdriver
- Small screwdriver
- 12, 13, and 17 mm socket
- Ratchet
- 13 mm nut driver
- 13, 19, and 21 mm wrench
- 2.5 mm hex wrench
- 3 mm hex wrench
- 4 mm T-handle hex wrench
- 8 and 13 mm hex wrench
- Wire cutters
- Needle nose pliers
- Rubber mallet
- Bed supports
- Straps
- Bed frame jack
- Caster blocks

4.1 Control Box Assembly

Tools required: 5 mm hex wrench
Screwdriver

Removal

1. Remove the seat section panel.
2. Adjust the bed height to have access to the control box (A) (see figure 4-1 on page 4-3).



WARNING:

Failure to disconnect the bed from its power source could cause injury or equipment damage.

3. Disconnect the bed from its power source.
4. Disconnect all cables from the control box assembly (A) (see figure 4-1 on page 4-3).

NOTE:

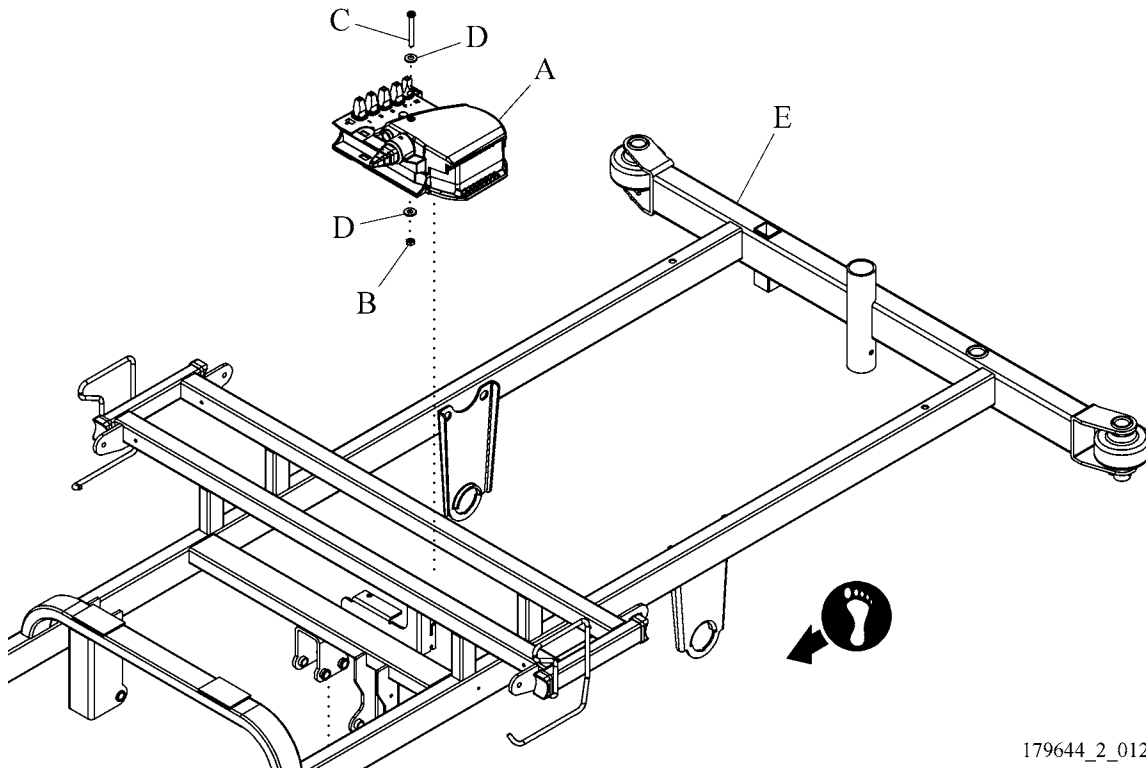
It may be necessary to use a screwdriver as leverage to disconnect the cables from their sockets.

NOTE:

There is a latch ring on all cable connectors that you must remove before you can disconnect the cable.

5. Remove the seat section of the sleep deck (refer to procedure 4.7 on page 4-16).
6. While you support the control box assembly (A), remove the nut (B) and bolt (C) and two washers (D) that attach the control box assembly (A) to the bed frame (E).
7. Remove the control box assembly (A) from the bed frame (E).

Figure 4-1. Control Box Assembly



179644_2_012

4

Replacement

1. Do the removal procedure in the reverse order.



CAUTION:

Connect the cables to the correct socket. Failure to do so may cause the equipment to operate incorrectly.

2. Make sure the cables match the locations on the control box (A).
3. Do the “Function Checks” on page 2-2.

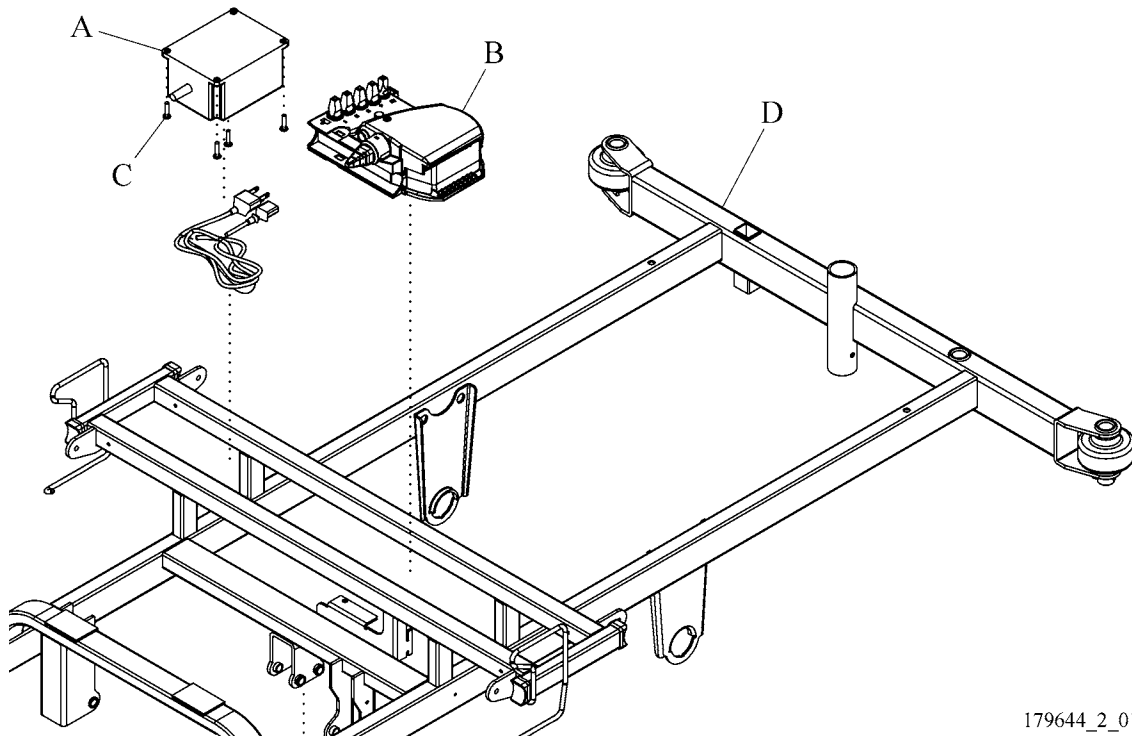
4.2 Battery Backup

Tools required: Phillips head screwdriver
Needle nose pliers

Removal

1. Raise the head section to the highest position.
2. Remove the seat section of the sleep deck (refer to procedure 4.7 on page 4-16).
3. Adjust the bed height to have access to the battery (A) (see figure 4-2 on page 4-4).

Figure 4-2. Control Box



179644_2_013



WARNING:

Failure to disconnect the bed from its power source could cause injury or equipment damage.

4. Disconnect the bed from its power source.
5. Disconnect the battery (A) from the control box (B).

NOTE:

There is a latch ring on all cable connectors that you must remove before you can disconnect the cable.

6. Remove the four screws (C) that attach the battery (A) to the bed frame (D).
7. Remove the battery (A) from the bed frame (D).

**CAUTION:**

Dispose of batteries in accordance with your local regulations. Failure to dispose of batteries correctly may damage the environment.

8. Dispose of the battery in accordance with your local regulations.

Replacement

1. Do the removal procedure in the reverse order.
2. Do the “Function Checks” on page 2-2.

4.3 Motors

Tools required: Needle nose pliers
Wire cutters
Bed frame jack
(2) Locking pliers

This procedure is for all motors on the bed.

Removal

1. Raise the bed to the highest position.
2. Make sure the sleep deck is flat and the siderails are lowered.



WARNING:

Failure to disconnect the bed from its power source could cause injury or equipment damage.

3. Disconnect the bed from its power source.
4. Remove the thigh section of the sleep deck for the head and knee section motors (refer to procedure 4.7 on page 4-16).
5. For the head motor, go to step 10; otherwise go to step 5.



WARNING:

Failure to install the jack stands when you replace a hi-lo motor could cause injury or equipment damage.

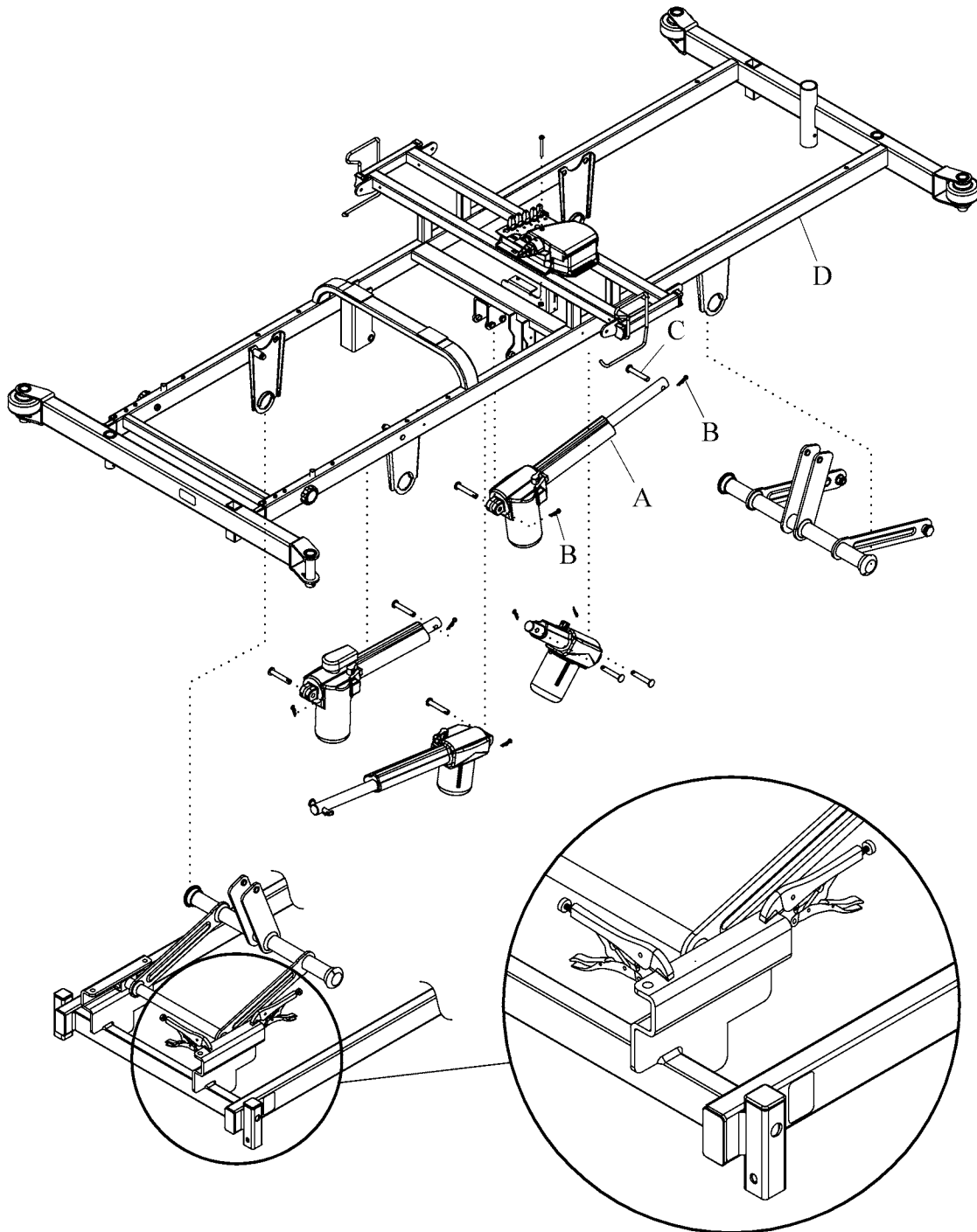
6. For the hilo motors, do as follows:
 - a. Put the jack under the intermediate frame.
 - b. Install the two locking pliers as show in figure 4-3.
7. Disconnect the applicable motor cable from the motor (A) (see figure 4-3 on page 4-7).

NOTE:

There is a latch ring on all cable connectors that you must remove before you can disconnect the cable.

8. Remove the retaining rings (B) and pins (C) that attach the motor (A) to the bed frame (D).
9. Remove the motor (A).

Figure 4-3. Motor

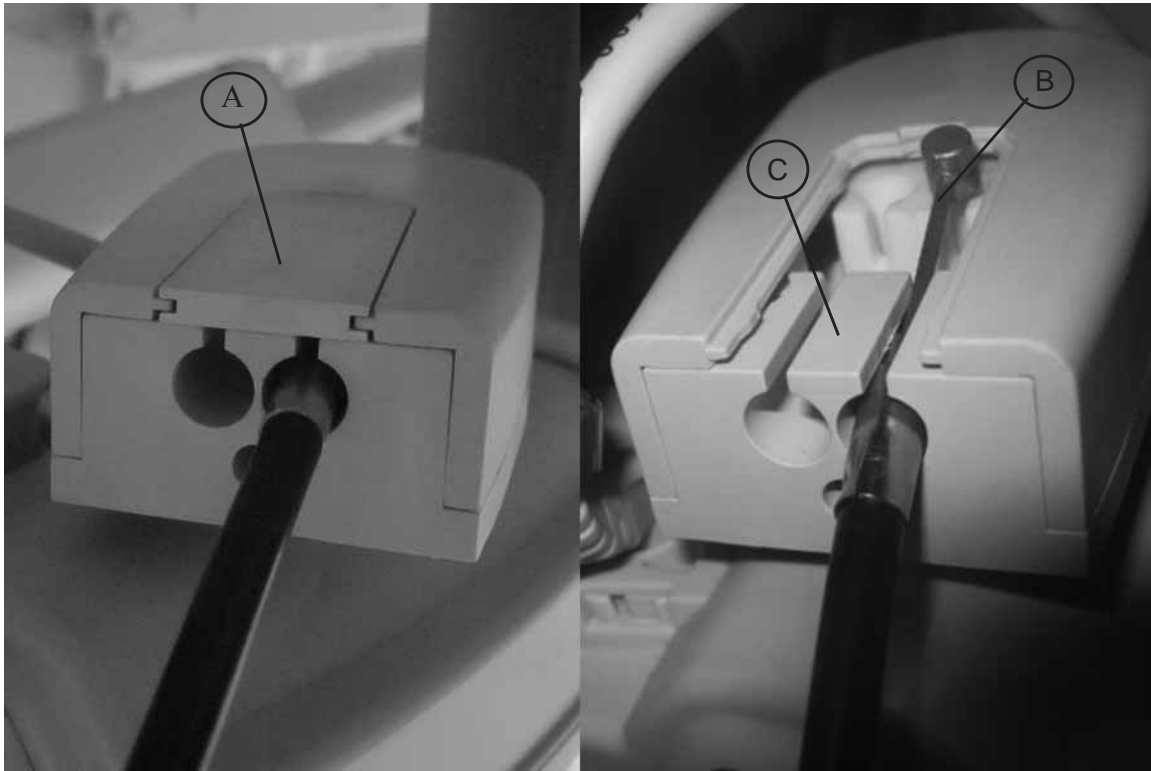


4

179644_1_011

10. For the head section motor, disconnect the CPR cable from the head motor as follows:
 - a. Remove the cover (A) (see figure 4-4 on page 4-8).
 - b. Remove the cable (B) from the retainer (C).

Figure 4-4. CPR Cable



Replacement

Do the removal procedure in the reverse order.

4.4 Siderail Controls

Tools required: Phillips head screwdriver

Removal

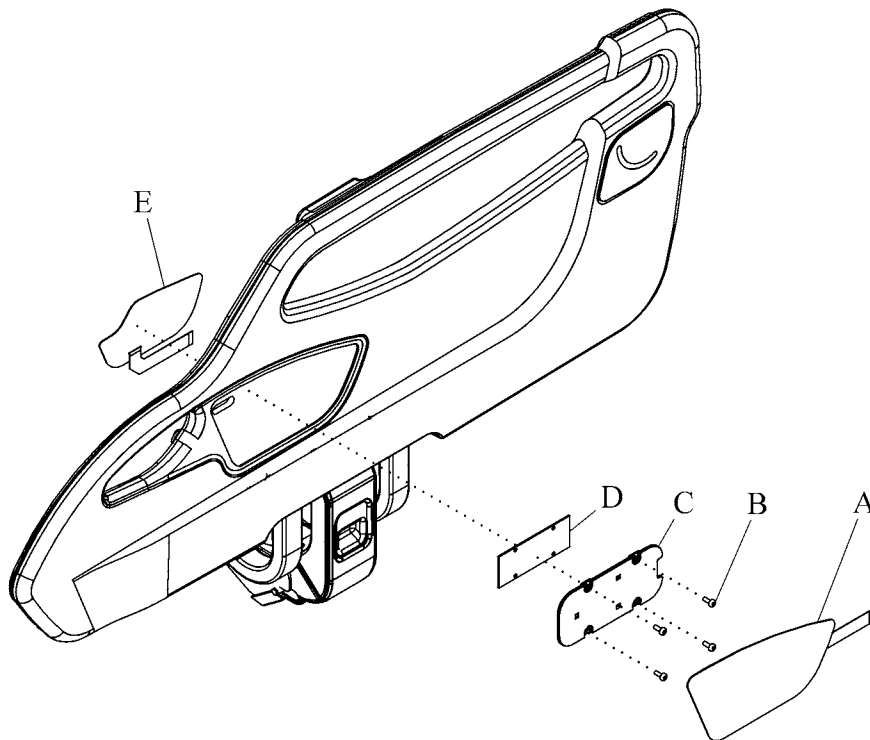


WARNING:

Failure to disconnect the bed from its power source could cause injury or equipment damage.

1. Disconnect the bed from its power source.
2. Disconnect the battery from the control box.
3. For caregiver controls, do as follows; otherwise go to step 4:
 - a. Remove the control label (A) from the outside of the siderail (see figure 4-5 on page 4-9).

Figure 4-5. Siderail Control Assembly



179644_1_010

- b. Remove the four screws (B) that attach the bracket (C) and control board (D) to the siderail.
 - c. Disconnect the label (A) from the control board (D).
 4. For the patient controls, do as follows:
 - a. Do step 3 above.
 - b. Remove the patient control label (E) from the siderail.
 - c. Disconnect the patient control label (E) from the control board (D).

Replacement

1. Do the removal procedure in reverse order.
2. Do the “Function Checks” on page 2-2.

4.5 Caster—Central Brake and Steer System

Tools required: 2.5 mm hex wrench
5 mm hex wrench
13 mm nut driver
Rubber mallet
Bed frame jack
Caster blocks

Removal

1. Disconnect the battery cable from the control board (refer to procedure 4.2 on page 4-4).



WARNING:

Failure to disconnect the bed from its power source could cause injury or equipment damage.

2. Disconnect the bed from its power source.

Foot End Caster

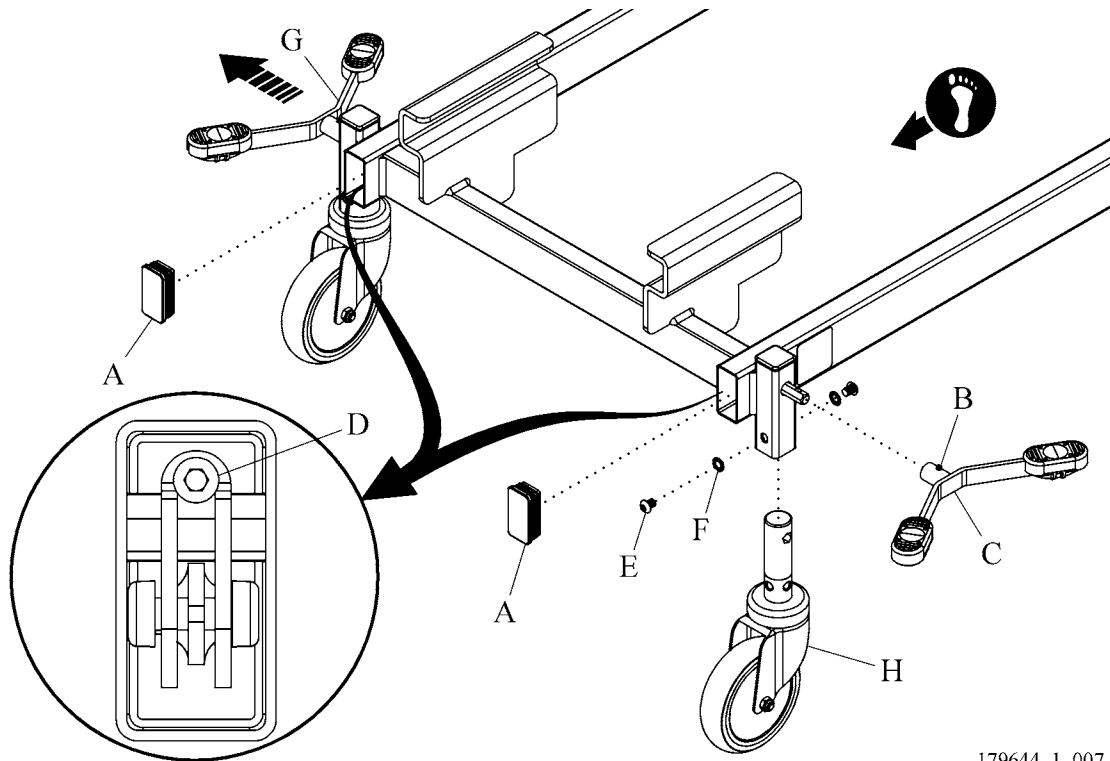


WARNING:

Put caster blocks behind the casters at the opposite end of the bed. Failure to do so could cause injury.

1. Put caster blocks behind the casters at the head end.
2. Put the central brake and steer pedal in the neutral position.
3. Use a jack to lift the foot end of the bed off the floor.
4. Remove the cover (A) (see figure 4-6 on page 4-12).
5. Loosen, do not remove, the setscrew (B) on the brake pedal (C).
6. Remove the brake pedal (C).
7. Loosen, do not remove, the bolt (D) on the brake link.
8. Remove the two screws (E) and washers (F).
9. Slide the hex rod/pedal (G) to the opposite side of the bed as the caster being removed to disconnect the hex rod (G) from the caster (H).

Figure 4-6. Foot-End Caster



179644_1_007

NOTE:

As the hex rod is pushed through the caster, the caster will fall out of the bed frame.

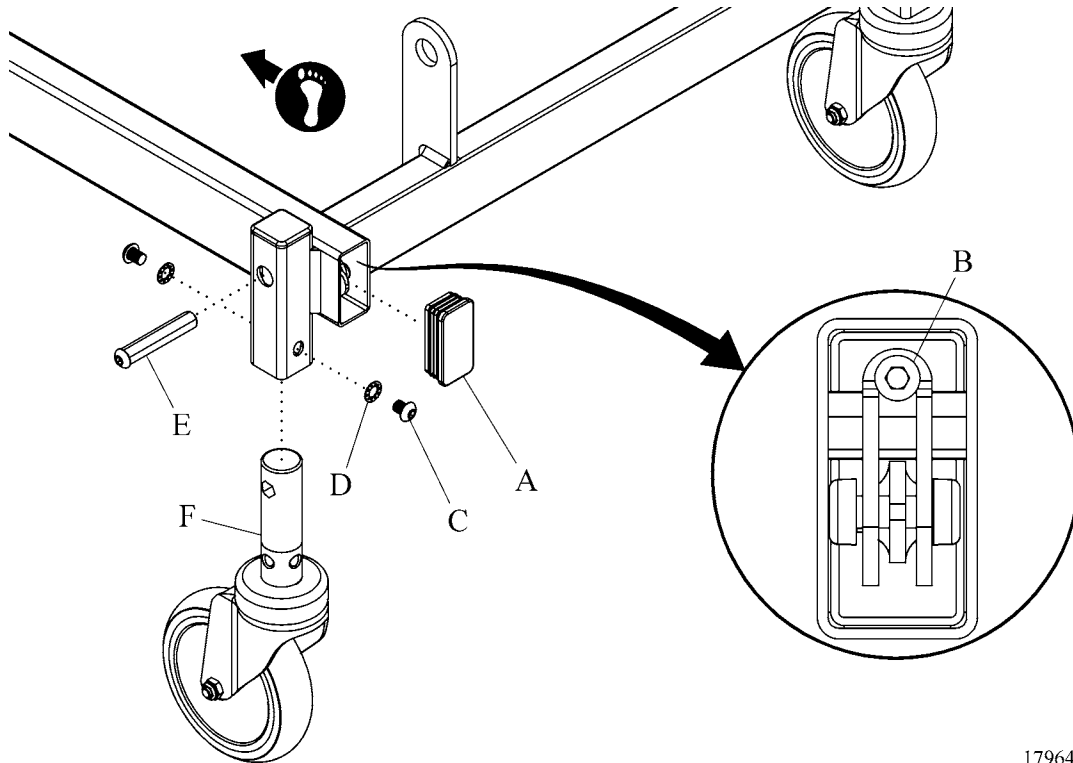
10. Remove the caster (H) from the bed.

Head End Caster**WARNING:**

Put caster blocks behind the casters at the opposite end of the bed. Failure to do so could cause injury.

1. Put caster blocks behind the casters at the foot end of the bed.
2. Put the central brake and steer pedal in the neutral position.
3. Use a jack to lift the head end of the bed off of the floor.
4. Remove the cover (A) (see figure 4-7 on page 4-13).

Figure 4-7. Head-End Casters



179644_1_008

5. Loosen, do not remove, the bolt (B) on the brake link.
6. Remove the two screws (C) and washers (D).
7. Remove the hex rod (E).
8. Remove the caster (F) from the bed.

Replacement

1. Do the removal procedures in reverse order.
2. Do the “Function Checks” on page 2-2.

4.6 Caster—Individual Brake System

Tools required: Phillips head screwdriver
 Caster blocks
 Bed frame jack

Removal

1. Disconnect the battery cable from the control board (refer to procedure 4.2 on page 4-4).



WARNING:

Failure to disconnect the bed from its power source could cause injury or equipment damage.

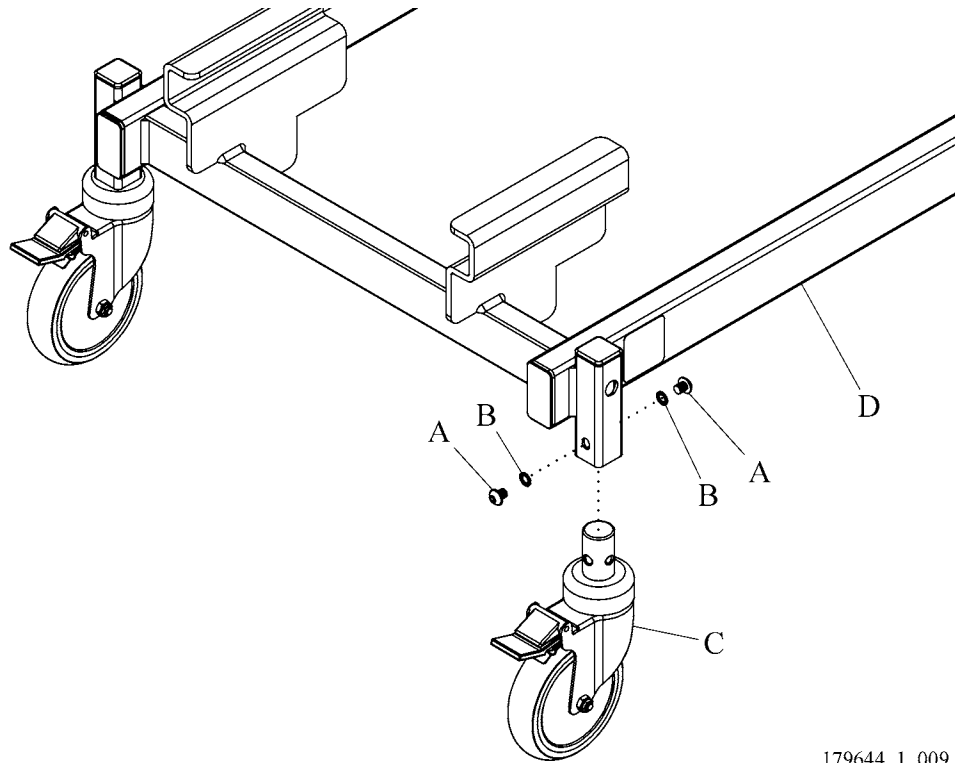
2. Disconnect the bed from its power source.



WARNING:

Put caster blocks behind the casters at the opposite end of the bed. Failure to do so could cause injury.

3. Put caster blocks behind the casters at the opposite end of the bed that you are to work on.
4. Use a jack to lift the end of the bed you are to work on off the floor.
5. Remove the two screws (A) and washers (B) that attach the caster (C) to the bed frame (D) (see figure 4-8 on page 4-15).
6. Remove the caster (C) from the bed frame (D).

Figure 4-8. Casters for Individual Brake System

179644_1_009

4

Replacement

1. Do the removal procedure in the reverse order.
2. Do the “Function Checks” on page 2-2.

4.7 Sleep Surface Panels

Tools required: Screwdriver

Removal

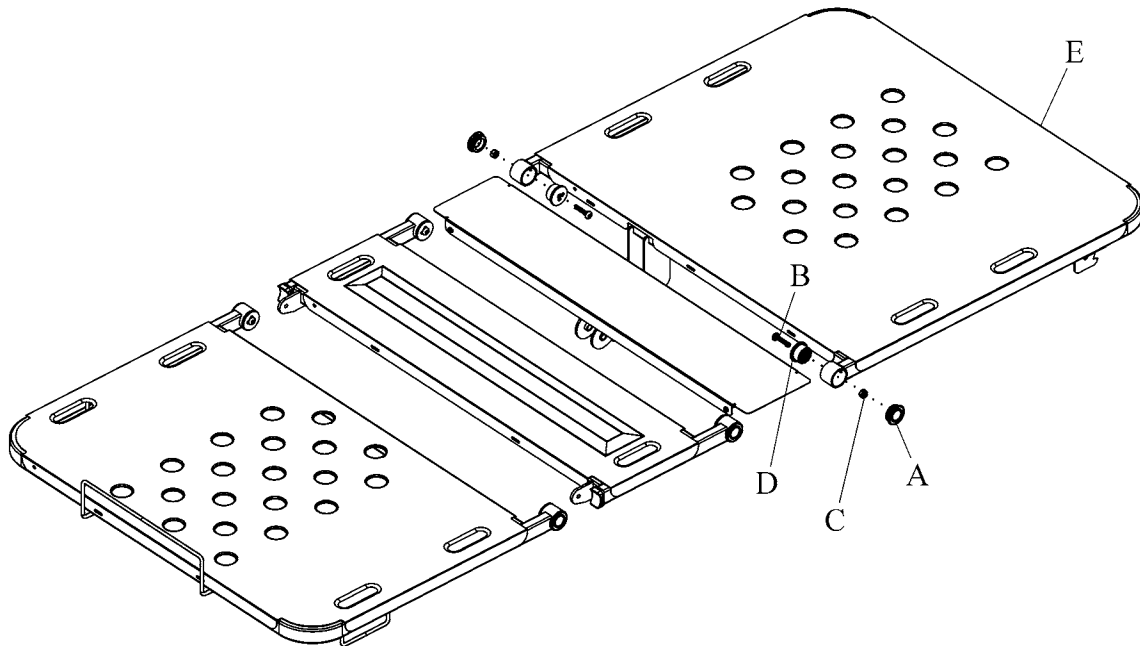
1. Raise the bed to the highest position.
2. Lower the head and knee sections to their lowest positions.

NOTE:

If you remove a head-end siderail or siderail cable, the head section will need to be removed.

3. Do as follows on each side of the sleep deck at the hinge:
 - a. Remove the outer cap (A) (see figure 4-9 on page 4-16).

Figure 4-9. Sleep Panels



179644_1_015

- b. Remove the bolt (B) and nut (C).
- c. Remove the inner cap (D).
- d. Disconnect the motor from the sleep deck panel being removed.
- e. Remove the sleep deck panel (E).

Replacement

1. Do the removal procedure in the reverse order.
2. Do the “Function Checks” on page 2-2.

4.7 Sleep Surface Panels

Chapter 4: Removal, Replacement, and Adjustment Procedures

NOTES:

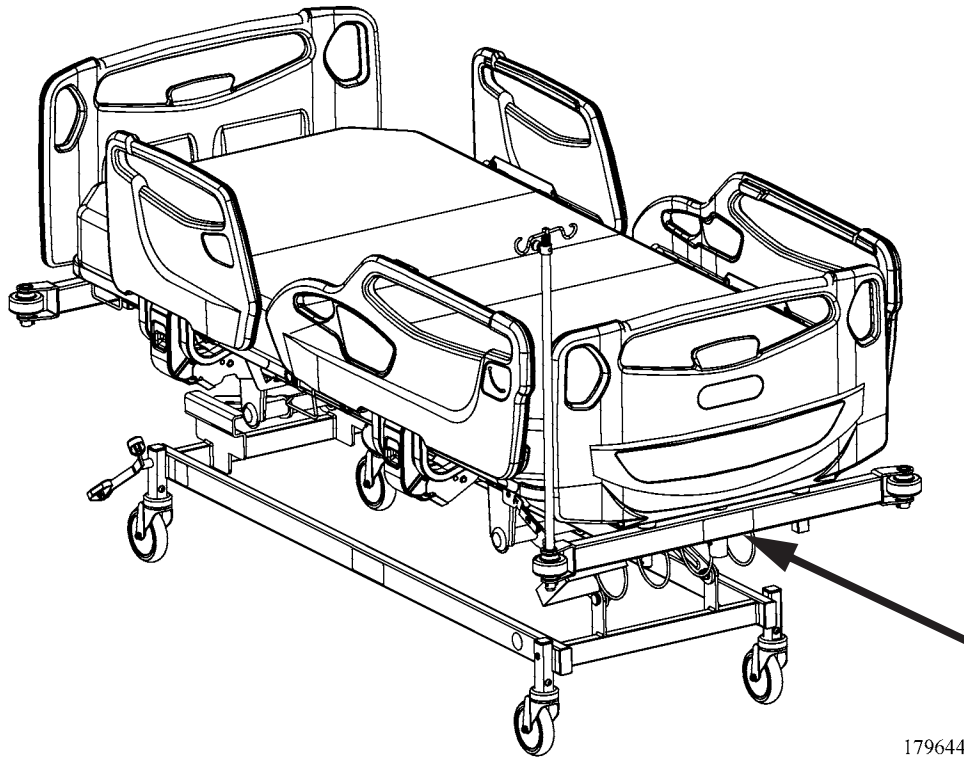
Chapter 5

Parts List

Service Parts Ordering

Use the parts lists in this manual, to identify the necessary part number(s). Find the product number and serial number on the product identification label (A) (see figure 5-1 on page 5-1).

Figure 5-1. Product Identification Label Location



179644_1_019

5

Call the after-sales service of your national Hill-Rom representative. To help expedite the

processing of your spare parts order, please have the following elements ready when you call:

- Customer account number
- Purchase order number (if available)
- Product code
- Serial number of the bed
- Part reference number(s)

For your convenience, a fax number is available for ordering spare parts, requesting prices or chasing up an order. Please address all orders to your national Hill-Rom representative to the attention of the spare parts department.

Above a certain amount, the shipment charges are included in the price of the parts. Contact your Hill-Rom country representative for details of this amount.

NOTE:

All the kits contain their respective fastening systems as well any applicable adhesive labels.

Exchange Policy

The policies that follow are for in-warranty and out-of-warranty exchanges from Hill-Rom. These policies apply to those cases where Hill-Rom requests that parts / products be returned for inspection.

In-Warranty Exchanges

In some cases, Hill-Rom will request that parts/products be returned for inspection. When this occurs, you are expected to return parts/products within 30 days of receipt of the exchange part. If you fail to return the inoperative parts/products within the 30 day period, Hill-Rom will invoice your facility for the full selling price of the parts/products.

NOTE:

The preceding billing procedure pertains **only** to parts/products that Hill-Rom requests to be returned.

In some cases, the invoice accompanying the parts will show the full selling price (only for internal use at Hill-Rom). Do not confuse this price with your price.

Do not return any parts without an RMA number. When parts/products have been requested to be returned, Hill-Rom will include an RMA packet with the parts/products shipment. If an RMA number is not available, contact Hill-Rom Technical Support.

The exchange price is determined by Hill-Rom.

Out-of-Warranty Exchanges

You are expected to return the inoperative parts/products within 30 days of receipt of the exchange part. Hill-Rom will include an RMA packet with the parts/products shipment. If an RMA number is not available, contact Hill-Rom Technical Support. Hill-Rom will invoice your facility for the full selling price of the parts/products. Upon return of the inoperative parts/products, Hill-Rom will issue a credit to your facility for **the difference between the exchange price and the full selling price of the parts/products**.

NOTES:

Warranty

HILL-ROM COMPANY, INC. LIMITED WARRANTY

Hill-Rom Company, Inc. (Hill-Rom) has a long tradition of providing superior products and service to our customers. Our goal is "Total Customer Satisfaction". In that spirit, Hill-Rom is proud to offer the following warranty.

GENERAL WARRANTY (APPLICABLE UNLESS A SPECIFIC WARRANTY IS LISTED)

Hill-Rom warrants to the original purchaser that its products and replacement parts shall be free from defects in material and workmanship for a period of one (1) year from date of delivery. Hill-Rom's obligation under this warranty is expressly limited to supplying replacement parts and/or service for, or replacing, at its option, any product which is, in the sole discretion of Hill-Rom, found to be defective. In addition to the foregoing one year warranty, Hill-Rom warrants to the original purchaser that the frame and welds on its products will be free from structural defects for the life of the product. Any product upgrade or modification initiated by Hill-Rom does not affect the original product warranty.

SPECIFIC WARRANTIES

MATTRESS WARRANTIES

Hill-Rom warrants to the original purchaser that its mattress product shall be free from defects in material and workmanship for a period of two (2) years from date of delivery. However, electro mechanical mattress components (compressors, valves, printed circuit boards, hoses, and couplers) are covered by the general one (1) year warranty.

EXPENDABLES WARRANTIES

A sixty (60) day limited warranty from date of delivery applies to expendable parts such as cushions, coverlets, software diskettes, locator badge batteries, dome light incandescent bulbs, overhead fluorescent tubes, heating elements, temperature probes, filter sheets, and microspheres. This warranty is limited to replacement of the parts covered.

TO OBTAIN PARTS AND SERVICE

In the United States, call Hill-Rom Technical Support Department at (800) 445-3720, Monday through Friday. In Canada, call Hill-Rom Technical Support Department at (800) 267-2337, Monday through Friday. Outside the United States and Canada, call your authorized Hill-Rom Distributor. In order to expedite service, we request you furnish the following information: customer identification number, product model number, serial number, and description of problem. A qualified specialist will provide, via telephone (United States and Canada), or FAX (Outside the United States and Canada), troubleshooting assistance for facility personnel and provide necessary parts to make repairs. If troubleshooting determines the need for on-site technical service, a qualified service representative will be dispatched. Replacement of non-technical items will be the responsibility of the customer. If requested by Hill-Rom, products or parts for which a warranty claim is made shall be returned prepaid to Hill-Rom's factory.

OUT OF WARRANTY EXCHANGE POLICY

After the expiration of the original warranty, upon request, Hill-Rom will ship as a replacement, components such as selected: motors and printed circuit boards, for like units returned to Hill-Rom by the original purchaser at a substantial savings. Please call Hill-Rom Technical Support Department for current pricing.

PARTS AVAILABILITY POLICY

Hill-Rom will offer parts for new and remanufactured products for ten (10) years from date of sale; for communications products for five (5) years from date of sale.

Note: Some original component parts and assemblies may not be available; functional equivalents may be substituted.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OF PURPOSE. HILL-ROM'S OBLIGATION UNDER THESE WARRANTIES SHALL NOT INCLUDE ANY LIABILITY FOR LOSS OF PROFITS, DIRECT, INDIRECT OR CONSEQUENTIAL DAMAGES OR DELAYS.

Some states, provinces, or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply. Any improper or negligent use, any alterations or repairs not in accordance with Hill-Rom's manuals or performed by others in such manner as in Hill-Rom's sole judgment affects the product materially and adversely, shall void these warranties. These warranties do not cover failures due to misuse, abuse, neglect, or lack of routine maintenance. No employee or representative of Hill-Rom is authorized to change these warranties in any way or grant any other warranty unless in writing and signed by a Hill-Rom officer. These warranties provide specific legal rights; but, there may be other available rights, which vary from state to state, province to province, or country to country.

Revised July 6, 2001

Hill-Rom Company, Inc., 1069 State Route 46 E, Batesville, IN 47006-9167

NOTES:

Recommended Spare Parts

See table 5-1 on page 5-7 for a recommended spare parts list to service five units or more.

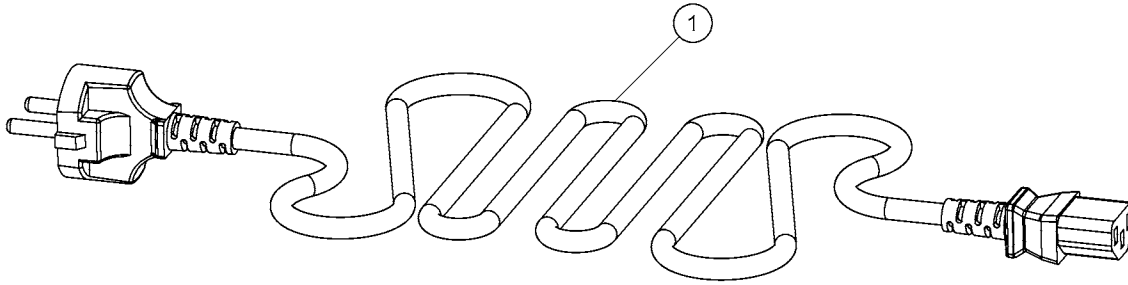
Table 5-1. Recommended Spare Parts Base Frame - Model A

| Part Number | Description | Quantity |
|-------------|---|----------|
| 178407 | head motor assembly | 2 |
| 178408 | knee motor assembly | 2 |
| 178406 | hi-low motor assembly | 2 |
| 178444 | control box assembly ^a , 120 v | 2 |
| 178409 | control box assembly ^a , 230 v | 2 |
| 178278 | steer caster (central brake and steer) | 2 |
| 178277 | brake caster (central brake and steer) | 4 |
| 178262 | individual brake caster | 2 |
| 178439 | lockout box | 1 |
| 178440 | pendant, w/trend | 1 |
| 178442 | pendant, w/o trend | 1 |

a. Order control box assemblies in accordance with your facility's specifications.

NOTES:

Power Cord



179644_1_017

Table 5-2. Power Cord

| ITEM | PART NO. | DESCRIPTION | QTY. |
|-----------|----------|--|------|
| 1 | M06539 | power cord, GB 2099.1, 3 prong | 1 |
| | M06540 | power cord, IRAM 2073 | 1 |
| | M06541 | power cord, BS 1363/A | 1 |
| | M06542 | power cord, CEE 7/7 | 1 |
| | M06544 | power cord, BS 546 | 1 |
| | M06545 | power cord, CEI 23-16-VII | 1 |
| | M06546 | power cord, NEMA (UL) | 1 |
| | M06568 | power cord, NEMA (BSMI) | 1 |
| | M06569 | power cord, NBR 14136 | 1 |
| | M06570 | power cord, SI-32 | 1 |
| not shown | 178429 | cable tie (attaches the power cord to the frame) | 2 |

5

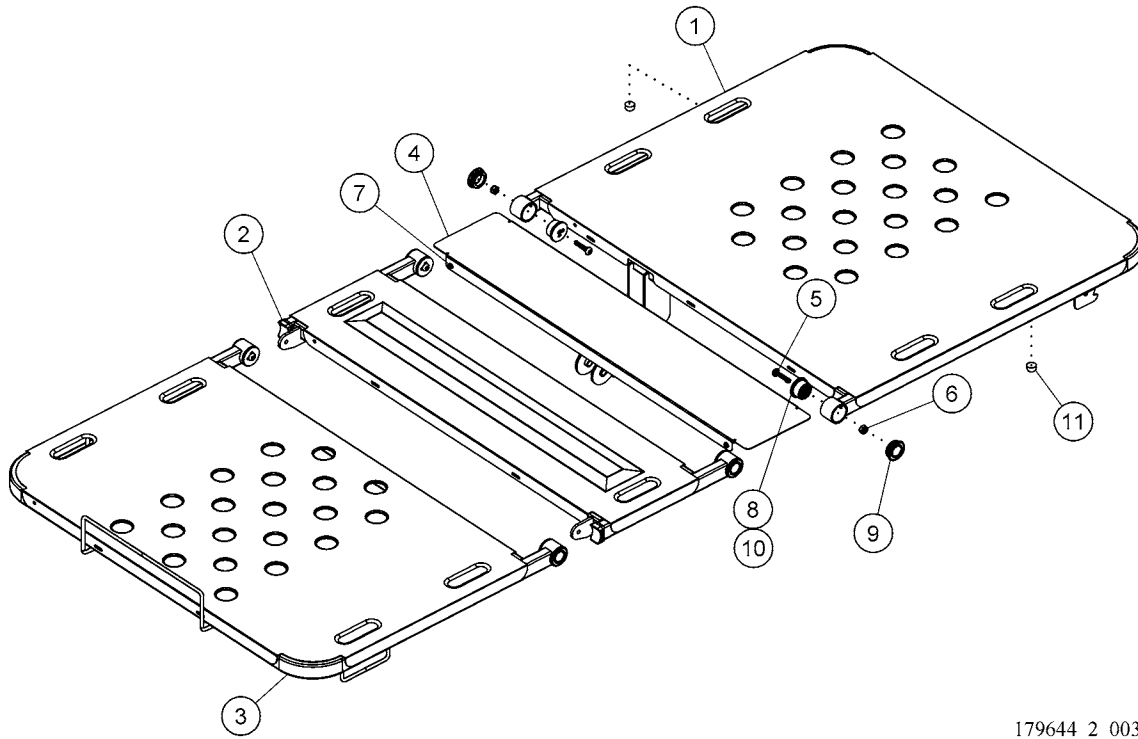
Country List

| Country | Plug Type |
|-----------------------|--------------------|
| Argentina | IRAM 2073 |
| Bahrain | BS 1363/A |
| Bangladesh | BS 546 |
| Brazil | NBR 14136 |
| Brunei | BS 1363/A |
| Chile | CEI 23-16/VII |
| China | GB 2099.1, 3 PRONG |
| Colombia | NEMA 5-15P |
| Dominican Republic | NEMA 5-15P |
| Ecuador | NEMA 5-15P |
| Egypt | CEE 7/7 |
| Eritrea | CEE 7/7 |
| Honduras | NEMA 5-15P |
| India | BS 546 |
| Indonesia | CEE 7/7 |
| Jordan | BS 1363/A |
| Kenya | BS 1363/A |
| Kuwait | BS 1363/A |
| Lebanon | BS 1363/A |
| Lebanon | CEE 7/7 |
| Lebanon | BS 546 |
| Lebanon | NEMA 5-15P |
| Malaysia | BS 1363/A |
| Mexico | NEMA 5-15P |
| Morocco | CEE 7/7 |
| Oman | BS 1363/A |
| Pakistan | CEE 7/7 |
| Palestine (West Bank) | SI32 |
| Panama | NEMA 5-15P |
| Paraguay | CEE 7/7 |
| Peru | CEE 7/7 |
| Philippines | NEMA 5-15P (220 V) |
| Poland | CEE 7/7 |
| Puerto Rico | NEMA 5-15P |
| Qatar | BS 1363/A |
| Russia | CEE 7/7 |

| | |
|----------------------------|---------------------------|
| Saudi Arabia | NEMA 5-15P (127 V) |
| Saudi Arabia | BS 1363/A (220 V) |
| South Africa | BS 546 |
| | BS 1363/A |
| | CEE 7/7 |
| Sri Lanka | BS 546 |
| Taiwan | NEMA 5-15P |
| Thailand | CEE 7/7 |
| | BS 1363/A |
| Turkey | CEE 7/7 |
| United Arab Emirates (UAE) | BS 1363/A |
| Uruguay | CEE 7/7 |
| Venezuela | NEMA 5-15P |
| Vietnam | CEE 7/7 |
| BULGARIA | CEE 7/7 |
| CROATIA | CEE 7/7 |
| CZECH REPUBLIC | CEE 7/7 |
| HUNGARY | CEE 7/7 |
| SLOVAKIA | CEE 7/7 |
| SLOVENIA | CEE 7/7 |
| ROMANIA | CEE 7/7 |
| GREECE | CEE 7/7 |
| LITHUANIA | CEE 7/7 |
| UKRAINE | CEE 7/7 |
| ESTONIA | CEE 7/7 |
| ALBANIA | CEE 7/7 |
| LATVIA | CEE 7/7 |
| ARMENIA | CEE 7/7 |
| BOLIVIA | CEE 7/7 (220/230 V 50 Hz) |
| SERBIA AND MONTENEGRO | CEE 7/7 |
| COLOMBIA | NEMA 5-15P |
| PANAMA | NEMA 5-15P |
| COSTA RICA | NEMA 5-15P |
| BAHAMAS | NEMA 5-15P |
| BERMUDA | NEMA 5-15P |
| CAYMAN ISLANDS | NEMA 5-15P |
| EL SALVADOR | NEMA 5-15P |
| GUATEMALA | NEMA 5-15P |
| HAITI | NEMA 5-15P |
| NICARAGUA | NEMA 5-15P |
| TURKS AND CAICOS ISLANDS | NEMA 5-15P |

| | |
|---------------------|------------|
| ARUBA | NEMA 5-15P |
| BELIZE | NEMA 5-15P |
| TRINIDAD AND TOBAGO | NEMA 5-15P |
| DOMINICA | BS 1363/A |
| ANGUILLA | BS 1363/A |
| ANTIGUA AND BARBUDA | BS 1363/A |
| GUYANA | BS 1363/A |
| | BS 546 |
| | NEMA 5-15P |
| CYPRUS | BS 1363/A |
| SOUTH KOREA | NEMA 5-15P |

Sleep Surface



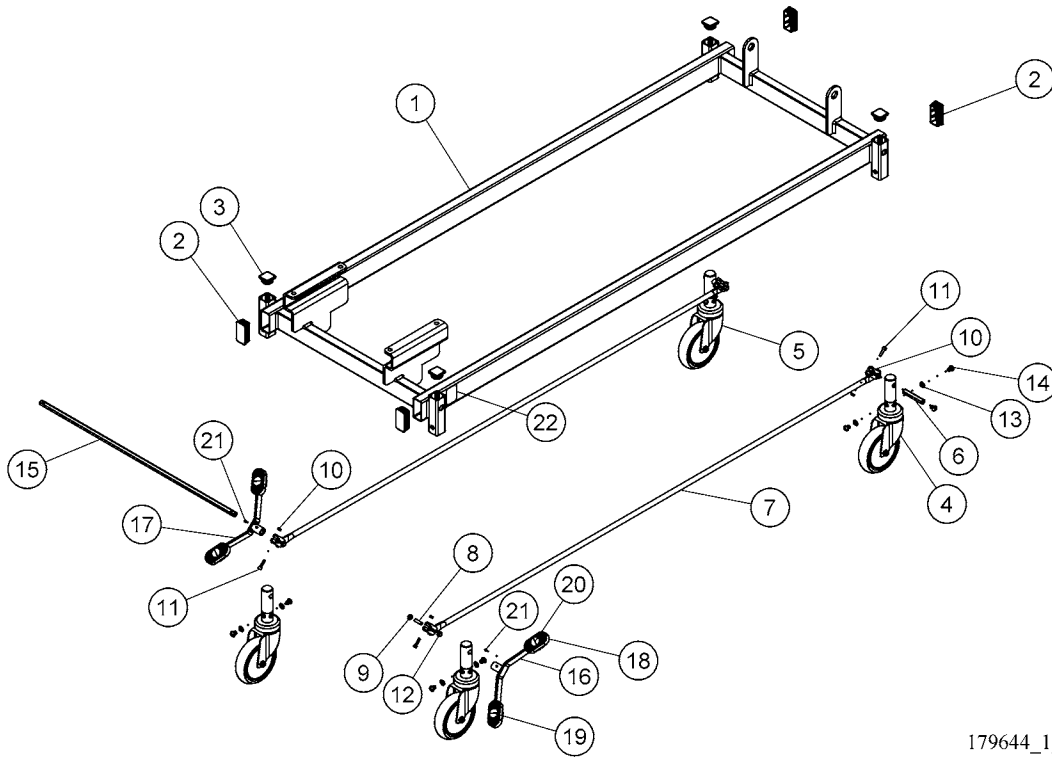
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| ITEM | PART NO. | DESCRIPTION | QTY. |
|------|----------|------------------------|------|
| 1 | 178353 | rmv backrest assembly | 1 |
| 2 | 178373 | thigh section assembly | 1 |
| 3 | 178379 | foot section assembly | 1 |
| 4 | 178390 | seat panel | 1 |
| 5 | 182272 | screw, cap | 6 |
| 6 | 178484 | nut, hexflg, m8, 6 | 6 |
| 7 | 180001 | screw, form, ph, m5x20 | 4 |
| 8 | 179964 | bushing | 6 |
| 9 | 178370 | cover | 6 |
| 10 | 178368 | spacer | 4 |
| 11 | 178366 | rubber stopper | 2 |

5

NOTES:

Base Frame

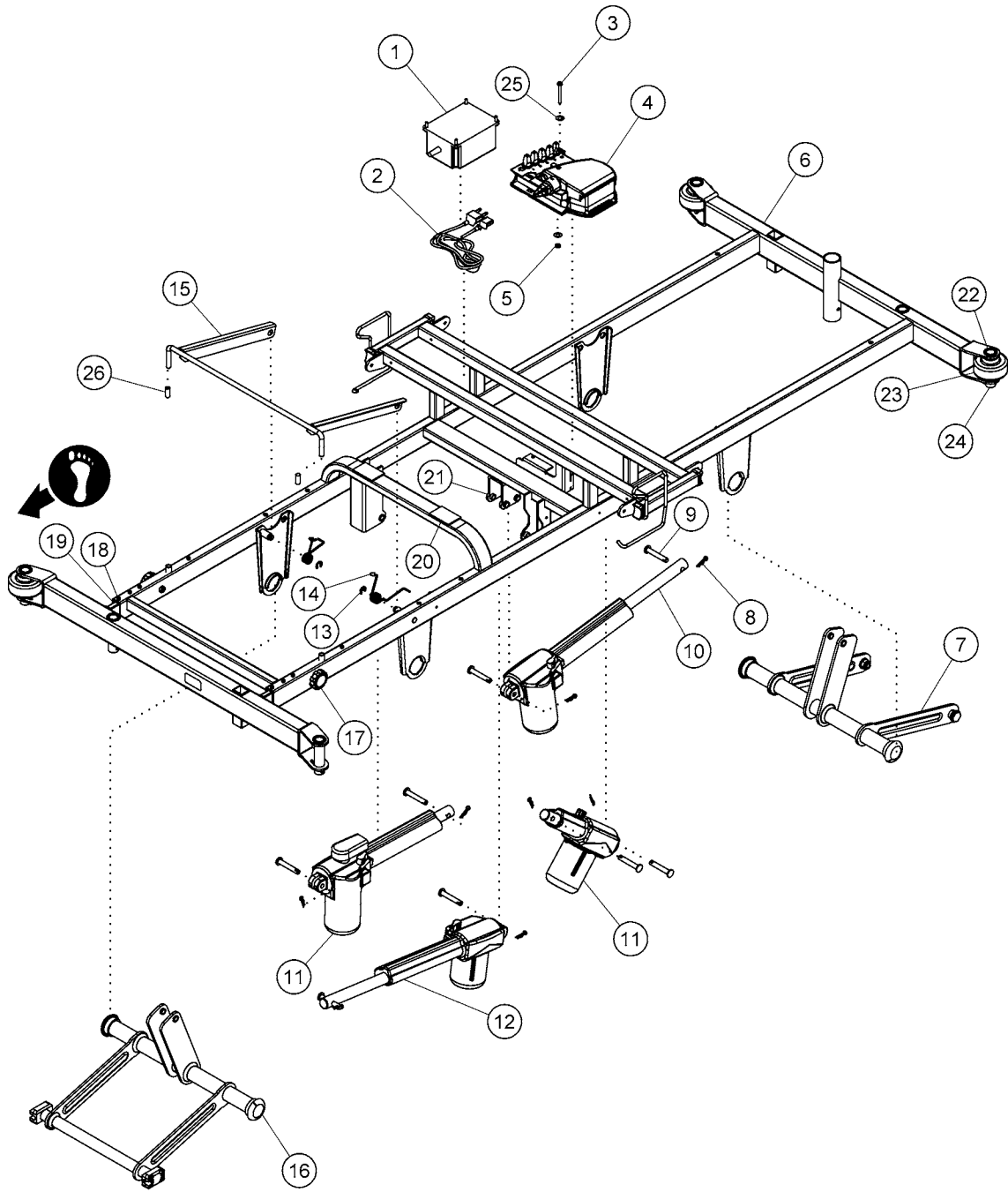


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| ITEM | PART NO. | DESCRIPTION | QTY. |
|------|----------|--|------|
| 1 | 178251 | weldment, base frame pro | 1 |
| 2 | 178258 | long tube cover, base | 4 |
| 3 | 178259 | caster tube cover, base | 4 |
| 4 | 178277 | caster, 125mm, cen precision, tks | 3 |
| | 178262 | caster, brake, individual brake system | 4 |
| 5 | 178278 | caster, steer, 125mm, cen pr, tks | 1 |
| 6 | 178267 | hex rod short, c-brake | 2 |
| 7 | 178269 | ctl brake link | 2 |
| 8 | 178270 | pivot pin, brake | 4 |
| 9 | 178271 | pivot cap, brake | 8 |
| 10 | 178273 | clamp, brake lever | 4 |
| 11 | 178274 | screw, cap, hex, m5x20, zn | 4 |
| 12 | 178275 | nut, hex, m5,4, zn | 4 |
| 13 | 178265 | washer, lk int, 8.5id | 8 |
| 14 | 179955 | screw, cap, hex, m8 x 10, zn | 10 |
| 15 | 179960 | hex rod long, pedal | 1 |
| 16 | 180644 | weldment, pedal right | 1 |
| 17 | 180647 | weldment, pedal left | 1 |
| 18 | 180648 | cover, pedal tip | 4 |
| 19 | 180649 | cap, pedal orange | 2 |
| 20 | 180650 | cap, pedal green | 2 |
| 21 | 181207 | hexagon socket screw m5 | 2 |
| 22 | 178567 | label, brake, neutral, steer | 2 |

Upper Frame



5

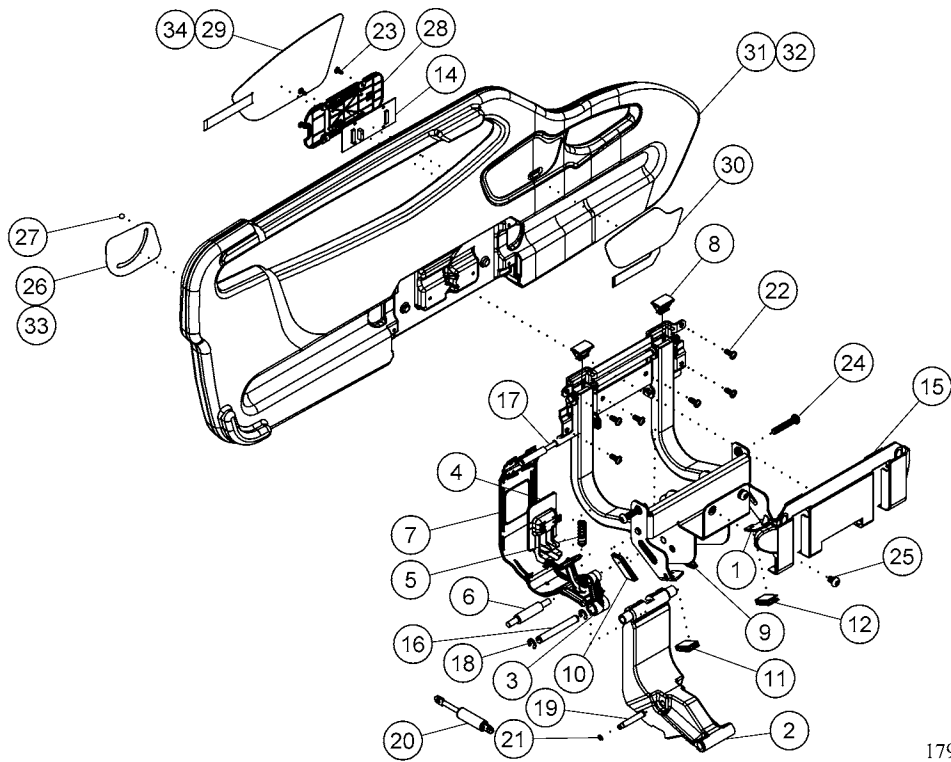
179644_2_006

| ITEM | PART NO. | DESCRIPTION | QTY. |
|-----------|----------------|---|-------------------------------|
| 1 | 178411 | battery | 1 |
| 2 | reference only | power cord | See "Power Cord" on page 5-9. |
| 3 | 178415 | screw, tap, pan | 1 |
| 4 | 178444 | control box assembly ^a , 120 v | 1 |
| | 178409 | control box assembly ^a , 230 v | 1 |
| 5 | 178416 | nut | 1 |
| 6 | | frame | 1 |
| 7 | reference only | weldment, liftarm | Go to page 5-26. |
| 8 | 178425 | retainer pin | 8 |
| 9 | 178424 | pin, head, 10,65 | 8 |
| 10 | 178407 | motor, head section | 1 |
| 11 | 178406 | motor, hilow | 2 |
| 12 | 178408 | motor, knee section | 1 |
| 13 | 178322 | torsion spring, lh | 1 |
| | 178323 | torsion spring, rh | 1 |
| 14 | 178324 | clamp slip | 2 |
| 15 | 178318 | weldment, foot section support | 1 |
| 16 | reference only | weldment, front, liftarm | Go to page 5-26. |
| 17 | 179988 | extender knob | 2 |
| 18 | 178351 | screw | 2 |
| 19 | 178347 | bushing, bed extend | 2 |
| 20 | 178331 | foam | 2 |
| 21 | 179964 | bushing, pivot, lift arm | 8 |
| 22 | 179975 | iv pole holder | 2 |
| 23 | 179979 | bumper | 2 |
| 24 | 178326 | role pin | 2 |
| 25 | 185808 | washer | 2 |
| 26 | 178325 | stopper, rubber foot support | 2 |
| not shown | 178420 | cable, actuator, 600 mm | 3 |

| ITEM | PART NO. | DESCRIPTION | QTY. |
|-------------|-----------------|--------------------------|-------------|
| not shown | 178422 | cable, actuator, 1100 mm | 1 |

- a. Order control box assemblies in accordance with your facility's specifications.

Head Siderail

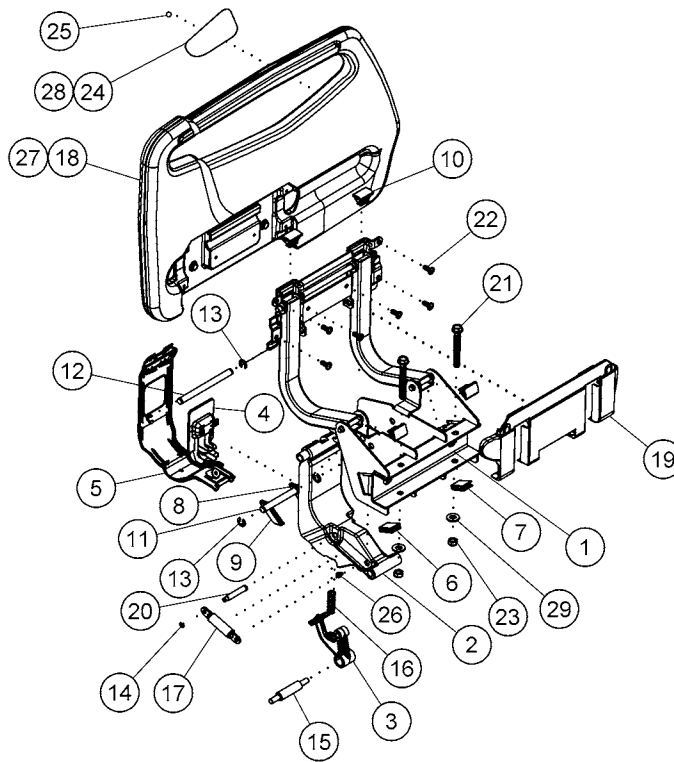


179644_2_005

| ITEM | PART NO. | DESCRIPTION | QTY. |
|------|----------|------------------------------|------|
| 1 | 178450 | weldment head, s/rl mtg | 1 |
| 2 | 178456 | central arm 252, s/rl | 1 |
| 3 | 178458 | siderail latch | 1 |
| 4 | 178459 | latch handle, s/rl | 1 |
| 5 | 178468 | coil spring, s/rl | 1 |
| 6 | 178465 | pin, grve, 8, 85 | 1 |
| 7 | 178460 | arm cover, s/rl | 1 |
| 8 | 178464 | end cap | 4 |
| 9 | 178466 | slide, rlr lch | 1 |
| 10 | 180054 | slide, rlr lch | 1 |
| 11 | 178467 | lower ssr bumper | 1 |
| 12 | 180055 | lower ssr bumper | 1 |
| 13 | 180053 | panel,s/rl,252 hd left | 1 |
| 14 | 178431 | bic interface pcb | 1 |
| 15 | 178463 | ssr interface cover | 1 |
| 16 | 178473 | short shaft, s/rl | 1 |
| 17 | 180056 | shaft central arm 1 | 1 |
| 18 | 180057 | clamp, clip, 8 | 4 |
| 19 | 178475 | latch pivot shaft, s/rl | 1 |
| 20 | 180060 | damper assembly 73mm 98mm | 1 |
| 21 | 180059 | clamp, clip, 4 | 2 |
| 22 | 180062 | screw, form, ph, 6-16 | 6 |
| 23 | 180063 | screw, form, ph, 4-10 | 5 |
| 24 | 180652 | screw, cap, hex, m8 x 45, zn | 2 |
| 25 | 180651 | screw, cap, hex, m8 x 12, zn | 2 |
| 26 | 181742 | emb head angle indicator lh | 1 |
| 27 | 180903 | ball, angle, indicator | 1 |
| 28 | 178505 | bic int board cover | 1 |
| 29 | 178434 | membrane cg lh, s/rl | 1 |
| 30 | 178435 | membrane patient lh, s/rl | 1 |
| 31 | 180052 | panel, hd right, with bic | 1 |
| | 181083 | panel, hd right, without bic | 1 |
| 32 | 181265 | panel, hd left, without bic | 1 |
| 33 | 180064 | emb head angle indicator rh | 1 |
| 34 | 178432 | membrane, cg, rh | 1 |
| | 178433 | membrane, pt, rh | 1 |

| | | | |
|-----------|--------|------------------|---|
| not shown | 178436 | cable, extension | 2 |
| not shown | 178437 | cable, t-cable | 1 |

Foot Siderail

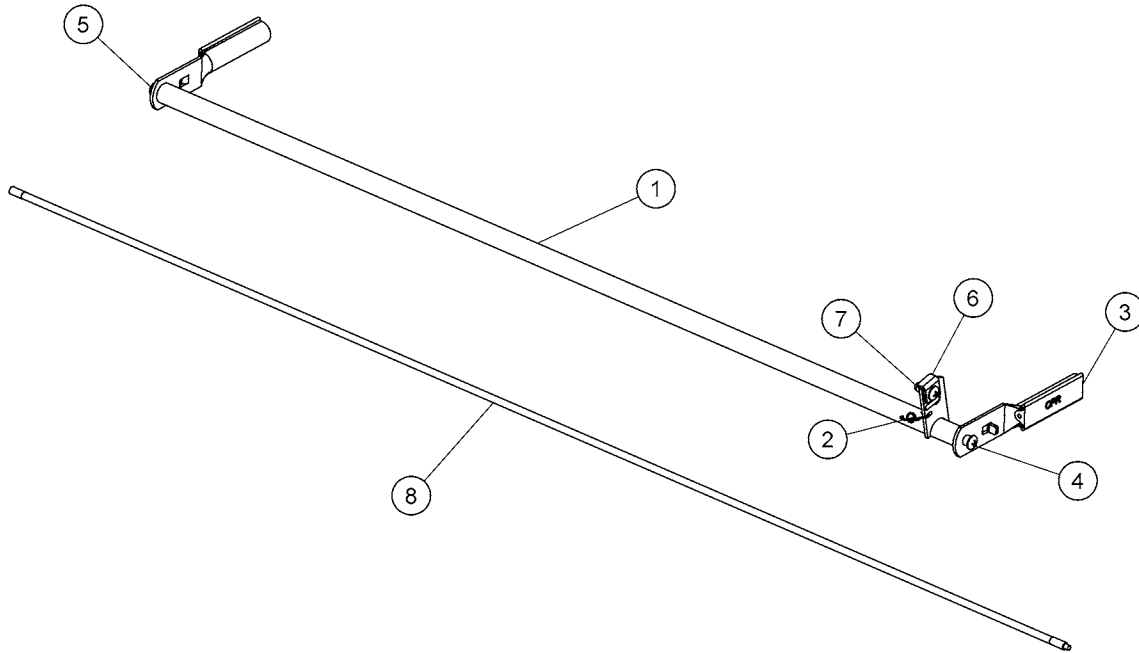


179644_2_018



| ITEM | PART NO. | DESCRIPTION | QTY. |
|------|----------|----------------------------|------|
| 1 | 178486 | foot weldment, s/rl mtg | 1 |
| 2 | 178456 | central arm 252, s/rl | 1 |
| 3 | 178458 | siderail latch | 1 |
| 4 | 178459 | latch handle, s/rl | 1 |
| 5 | 178460 | arm cover, s/rl | 1 |
| 6 | 178467 | lower ssr bumper | 1 |
| 7 | 180055 | lower ssr bumper | 1 |
| 8 | 178466 | slide, rlr lch | 1 |
| 9 | 180054 | slide, rlr lch | 1 |
| 10 | 178464 | end cap | 4 |
| 11 | 178473 | short shaft, s/rl | 1 |
| 12 | 180161 | long shaft, s/rl | 1 |
| 13 | 180057 | clamp, clip, 8 | 4 |
| 14 | 180059 | clamp, clip, 4 | 2 |
| 15 | 178465 | pin, grve, 8, 85 | 1 |
| 16 | 178468 | coil spring, s/rl | 1 |
| 17 | 180060 | damper assembly 73mm 98mm | 1 |
| 18 | 180162 | panel, s/rl, foot right | 1 |
| 19 | 178463 | ssr interface cover | 1 |
| 20 | 178475 | latch pivot shaft, s/rl | 1 |
| 21 | 178495 | bolt, tap, hexwash, m8, 70 | 2 |
| 22 | 180062 | screw, form, ph, 6-16 | 6 |
| 23 | 178484 | nut, hexflg, m8, 6 | 2 |
| 24 | 180163 | bed angle indicator rh | 1 |
| 25 | 180903 | ball, angle, indicator | 1 |
| 26 | 180063 | screw, form, ph, 4-10 | 1 |
| 27 | 178500 | panel, s/rl, foot left | 1 |
| 28 | 180330 | bed angle indicator, lh | 1 |
| 29 | 185333 | washer | 4 |

CPR Release

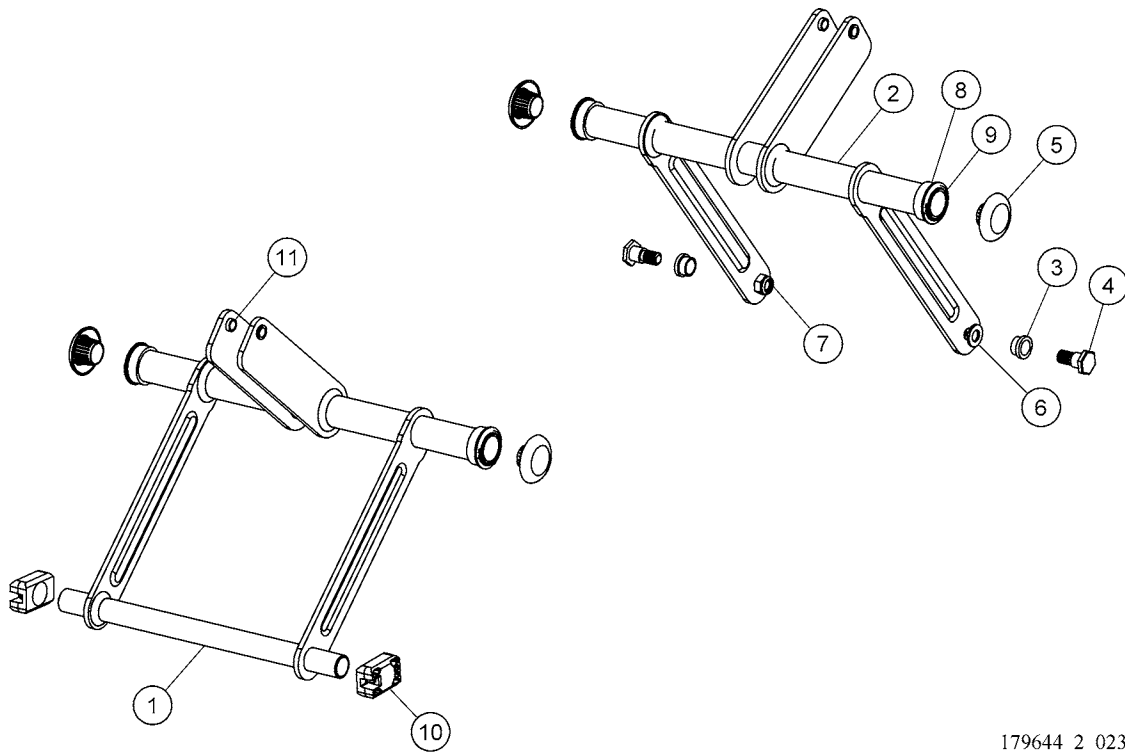


179644_1_016

| ITEM | PART NO | DESCRIPTION | QTY. |
|------|---------|------------------------------|------|
| 1 | 178393 | weldment, cpr handle | 1 |
| 2 | 178402 | spring cpr handle | 1 |
| 3 | 178401 | rubber grip, cpr hdl | 2 |
| 4 | 178399 | bushing, cpr hdl | 2 |
| 5 | 178400 | screw,mach,trus,ph#10,5/8,zn | 3 |
| 6 | 178398 | clamp plate, cpr cbl | 1 |
| 7 | 178404 | cpr screw cover | 1 |
| 8 | 178403 | cpr cable | 1 |



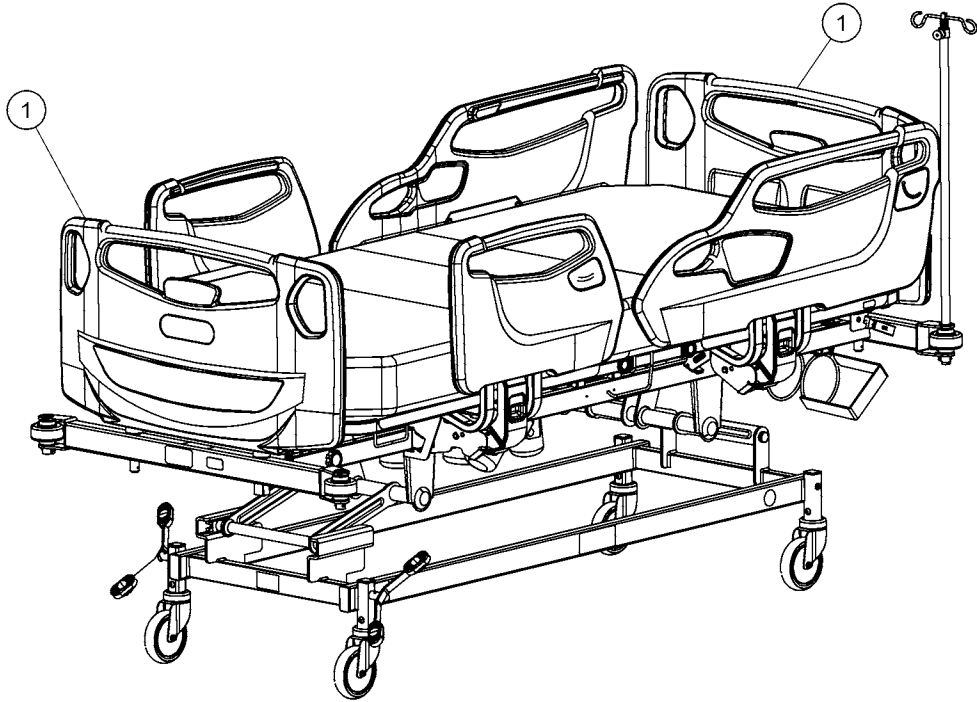
Lift Arms



179644_2_023

| ITEM | PART NO. | DESCRIPTION | QTY. |
|------|----------|------------------------------|------|
| 1 | 178284 | weldment front, lft arm | 1 |
| 2 | 178280 | weldment, lift arm | 1 |
| 3 | 178287 | bushing, lft bolt | 2 |
| 4 | 178288 | bolt, tap, hex, m12, 33, zn | 2 |
| 5 | 178289 | hilo tube cover | 4 |
| 6 | 178290 | washer, lk, spr, 12id | 2 |
| 7 | 178291 | nut, hex lk , m12 x 1.25, zn | 2 |
| 8 | 180726 | bushing, lift tube | 4 |
| 9 | 178292 | retain, ring, int, 31.5, 1.5 | 4 |
| 10 | 178294 | hilo slider | 2 |
| 11 | 179964 | bushing, pivot, lft actuator | 4 |

End Panel



179644_2_022

| ITEM | PART NO. | DESCRIPTION | QTY |
|------|----------|-------------|-----|
| 1 | 178517 | end panel | 2 |

Chapter 6

General Procedures

Cleaning and Care



WARNING:

Obey the product manufacturer's instructions. Failure to do so could cause injury or equipment damage.



SHOCK HAZARD:

The potential for electrical shock exists with electrical equipment. Failure to follow facility protocols may cause death or injury.



SHOCK HAZARD:

Disconnect the unit from its power source. Failure to do so could cause injury or equipment damage.



SHOCK HAZARD:

Do not expose the unit to excessive moisture. Injury or equipment damage could occur.



CAUTION:

Do not use harsh cleansers/disinfectants such as a scouring pad, heavy duty grease removers, solvents such as toluene, xylene, or acetone. Equipment damage could occur.

General Cleaning

Clean the unit with a lightly dampened cloth and ordinary disinfectants. Do not use excessive liquid.

Steam Cleaning

Do not steam clean the bed. Excessive moisture can damage mechanisms and components in this unit.

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, it may be necessary to first saturate the spot.

Disinfecting

Dilute disinfectants and germicides as specified on the manufacturer's label.

Component Handling



CAUTION:

Make sure that your hands are clean, and **only** handle the PC boards by their edges to prevent component damage.



CAUTION:

Wear an antistatic strap when you handle electronic components. Failure to do so could cause component damage.



CAUTION:

Put the removed PC boards in antistatic protective bags to ship or store the PC boards. Equipment damage can occur.

PC Board

Be careful with the PC board when you service it. Damage or malfunctions may occur:

- PC board damage
- Shortened PC board life
- Unit malfunctions

When you service the PC board, do as follows:

- Make sure hands are clean and free of moisture, oily liquids, etc.
- **Only** handle the PC board by its outer edges.
- Do not touch the PC board components. Finger contact with the board surface and/or with its components can leave a deposit that will cause board (and component) deterioration.
- When you work with electronics, wear an appropriate antistatic strap, and make sure it is correctly grounded.
- Service the removed PC board at a static-free workstation that is correctly grounded.
- To ship and store, place the removed PC board in an antistatic protective bag.

Preventive Maintenance



WARNING:

Only facility-approved persons should service the bed. Service by not approved persons could cause injury or equipment damage.

It is necessary for the bed to have an effective maintenance program. We recommend that you do annual preventive maintenance (PM) and testing for the Joint Commission. PM and testing not only meet Joint Commission requirements but will help make sure of a long, operative life for the bed. PM will minimize downtime due to excessive wear.

The following PM schedule guides you through a normal PM procedure on the bed. During this PM process, check each item on the schedule, and make the necessary adjustments.

Follow the PM schedule with the corresponding PM checklist. This checklist is designed to keep a running maintenance history and subsequent repair costs for one bed. However, your facility can change this checklist or design another if necessary. Keep close records and maintain the bed to reduce downtime and make sure the patient remains comfortable.

Preventive Maintenance Schedule

Table 6-1. Preventive Maintenance Schedule

| Function | Procedure |
|--------------------------|--|
| Trendelenburg | Make sure Trendelenburg and Reverse Trendelenburg operate correctly. |
| Lockout controls | Make sure each lockout operates correctly. |
| Central brake and steer | Make sure the brake and steer functions operate correctly. Replace the caster if necessary. |
| Individual brake caster | Make sure the brake operates correctly. Replace the caster if necessary. |
| Caster tires | Examine the caster tires for cuts and wear. Replace the caster if necessary. |
| Siderail controls | Make sure the switches in the siderails operate correctly. |
| Siderail | Examine the siderail, and make sure it latches correctly and is not loose. Adjust if necessary. |
| Power cord and connector | Examine the plug for damage. Make sure the plug is a one-piece molded plug assembly. If it is not, replace the plug cord assembly. Replace any plug cord assembly that exhibits any of these: <ul style="list-style-type: none"> • Discoloration of the plug molding around the plug blades, which is a possible indication of overheating or arcing of the plug blades. • Any signs of cracking; this is an indication that the plug has been bent and straightened to a point past its useful life. • Loose fit of the plug blade; if the plug blade moves in the molding, this is an indication that the molding may have overheated or blades have been bent and straightened to a point past its useful life. • Replace the power cord, if damaged. |
| Headboard and footboard | Examine the headboard and footboard for looseness and general appearance. |
| CPR release | Make sure the CPR release operates correctly. |
| Battery | Replace the batteries every three years. Batteries are lead-acid type. Dispose in accordance with your local regulations. |
| Electrical | Do an electrical leakage test on the bed. |
| General appearance | Repair the paint where necessary. Examine the labels, and replace them if necessary. |
| Electrical Checks | Do the “Electrical Checks” on page 6-7. |



Preventive Maintenance Checklist

Table 6-2. Preventive Maintenance Checklist

| Date | | | | | | | | | | | | | | | | Function | |
|--------------------------|---------------|--|--|--|--|--|--|--|--|--|--|--|--|--|---|-------------------------|--------------------------|
| Hill-Rom | Manufacturer | | | | | | | | | | | | | | | | Trendelenburg |
| | | | | | | | | | | | | | | | | | Lockout controls |
| | | | | | | | | | | | | | | | | | Brake and steer |
| | | | | | | | | | | | | | | | | | Individual brake caster |
| | | | | | | | | | | | | | | | | | Caster tires |
| | | | | | | | | | | | | | | | | | Siderail controls |
| | | | | | | | | | | | | | | | | | Siderail |
| | | | | | | | | | | | | | | | | | Power cord and connector |
| | Model Number | | | | | | | | | | | | | | | Headboard and footboard | |
| | | | | | | | | | | | | | | | | CPR release | |
| | | | | | | | | | | | | | | | | Battery | |
| | | | | | | | | | | | | | | | | Electrical | |
| | | | | | | | | | | | | | | | | General appearance | |
| | | | | | | | | | | | | | | | | Electrical Checks | |
| | | | | | | | | | | | | | | | | | |
| | Serial Number | | | | | | | | | | | | | | | | |
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| Total Cost for this Page | | | | | | | | | | | | | | | | Labor Time: | |
| | | | | | | | | | | | | | | | | Repair Cost: | |
| | | | | | | | | | | | | | | | | Inspected By: | |
| | | | | | | | | | | | | | | | Legend L=Lube C=Clean A=Adjust R=Repair or Replace O=Okay N=Not Applicable Remarks: | | |

Electrical Checks

Refer to figure 6-1 for ground locations.

Leakage current

1. Disconnect the bed from the mains power supply.
2. Connect the bed mains connector to the tester and then connect the tester to the mains power supply.
3. Check that the bed is correctly powered by the test device (unlock the functions if necessary).
4. Measure the leakage current measures without operating any function.
5. The value must be less than 500 μA .
6. Check the power cable and power supply unit if the value is outside of the specifications.
7. Replace the cable or the power supply unit if necessary.
8. At the end of the test, reconnect the mains power.

Grounding resistance

Check the condition of the bed's grounding braids.

Measure the ground resistance across the ground connector of the mains power supply connector and the following points (bare metal):

- Point 1: equipotential terminal
- Point 2: CUFA attaching nut
- Point 3: Left-hand accessory support rail attaching screw
- Point 4: Right-hand accessory support rail attaching screw
- Point 5: Central metal panel
- Point 6: AFS control screw
- Point 7: Fixed extension ground screw
- Point 8: Chassis, mobile head

This check must be made using a portable tester or a digital multimeter. The value must be less than 0.2 ohm.

Figure 6-1. Ground Locations



Hill-Rom.
