

SERVICE MANUAL

**Hill-Rom® Basic Care™ Bed,
Hill-Rom® 305 Manual Bed,
Hill-Rom® 405 Electric Bed
From Hill-Rom**



Product No. P1440/P1441

© 2008 by Hill-Rom Services, Inc. ALL RIGHTS RESERVED.

Manufactured for Hill-Rom by: Optima Healthcare Inc.

Distributed by:

HILL-ROM COMPANY, INC.
1069 STATE ROUTE 46 E
BATESVILLE, IN 47006-9167

No part of this text shall be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information or retrieval system without written permission from Hill-Rom Services, Inc. (Hill-Rom).

The information in this manual is confidential and may not be disclosed to third parties without the prior written consent of Hill-Rom.

Second Edition

First Printing 2004

Printed in the USA

Basic Care™ is a trademark of Hill-Rom Services, Inc.

CSA® is a registered trademark of Canadian Standards Association.

Hill-Rom® is a registered trademark of Hill-Rom Services, Inc.

Oilite® is a registered trademark of Beemer Precision, Incorporated.

Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.

The information contained in this manual is subject to change without notice. Hill-Rom makes no commitment to update or keep current, the information contained in this manual.

Hill-Rom reserves the right to make changes without notice in design, specifications, and models. The only warranty Hill-Rom makes is the express written warranty extended on the sale or rental of its products.

To order additional copies of this manual (MAN336), refer to the back cover for contact information. For countries not listed on the back cover, contact your distributor.

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.

Revision Letter	Pages Affected	Date
Original Issue		May 2004
2	All	March 2008

Table of Contents

Chapter 1: Introduction

Purpose	1-1
Audience	1-1
Reference Documents	1-1
Document Symbols	1-2
Specifications	1-3
Physical Description	1-3
Electrical Description	1-5
Regulations, Standards, and Codes	1-6
Model Identification	1-7
Safety Tips	1-8
Warning and Caution Labels	1-13

Chapter 2: Troubleshooting Procedures

Getting Started	2-1
Initial Actions	2-2
Function Checks	2-2
Final Actions	2-4
None of the Bed Functions Operate	2-5
The Head Up Function Does Not Operate	2-6
The Head Down Function Does Not Operate	2-8
The Head Function Does Not Operate	2-10
The Knee Up Function Does Not Operate	2-11
The Knee Down Function Does Not Operate	2-13
The Knee Function Does Not Operate	2-15
The Hilow Up Function Does Not Operate	2-16
The Hilow Down Function Does Not Operate	2-18
The Hilow Function Does Not Operate	2-20

The Automatic Contour Up Function Does Not Operate	2-21
The Automatic Contour Down Function Does Not Operate	2-22
The Trendelenburg or Reverse Trendelenburg Function Does Not Operate	2-23
The CPR Function Does Not Operate.	2-25

Chapter 3: Theory of Operation

Introduction.	3-1
Base.	3-1
Intermediate Frame	3-1
Articulating Sleep Deck	3-1
Siderails	3-1
Motion Control	3-1
Transformer Configurations	3-2
Motor Assemblies.	3-3
Battery Backup	3-3
Controls.	3-3

Chapter 4: Removal, Replacement, and Adjustment Procedures

Tool and Supply Requirements.	4-1
Control Box Assembly	4-3
Control Panel, Foot End	4-5
Trendelenburg Control Box	4-7
Trendelenburg or Reverse Trendelenburg Assembly	4-9
Trendelenburg and Reverse Trendelenburg Indicators.	4-12
Fuses	4-14
Battery Backup	4-16
Head Motor.	4-18
CPR Cable.	4-20
Knee Motor.	4-23
Hilow Motor	4-25
Manual Crank Handle Assembly	4-27
Head or Knee Crank Rod and Drive Screw Assembly (Manual Model Only).	4-29

Hilow Crank Rod and Drive Screw Assembly Including Gas Springs (Manual Model Only)	4-32
CPR Handle Assembly	4-35
Siderails	4-37
Siderail Slide Bracket	4-40
Siderail Retraction Assembly	4-42
Siderail Guard Assembly (Foot End)	4-44
Siderail Guard Assembly (Head End)	4-45
Siderail Control Assembly	4-46
Siderail Control Cable	4-49
Siderail Top Cane	4-52
Siderail Wire Cover	4-53
Central Brake and Steer—Caster Assemblies	4-54
Central Brake and Steer—Pedal Assemblies	4-59
Casters for Individual Brake and Steer	4-61
4-Corner Brake and Steer—Caster Assembly	4-63
Bumper	4-65
Sleep Surface Panels	4-66

Chapter 5: Parts List

Service Parts Ordering	5-1
Exchange Policy	5-3
In-Warranty Exchanges	5-3
Out-of-Warranty Exchanges	5-3
Warranty	5-5
Recommended Spare Parts	5-7
Base Frame—Model A	5-12
Upper Frame—P1440—Model A	5-14
Upper Frame—P1441—Model A	5-18
Siderails—Model A	5-20
Power Cord	5-22
Sleep Surface	5-24

Base Frame—Model B	5-26
Upper Frame—P1440—Model B	5-28
Siderails—Model B	5-32

Chapter 6: General Procedures

Cleaning and Care	6-1
General Cleaning	6-1
Steam Cleaning	6-2
Hard to Clean Spots	6-2
Disinfecting	6-2
Component Handling	6-2
PC Board	6-2
Lubrication Requirements	6-3
Preventive Maintenance	6-5
Preventive Maintenance Schedule	6-6
Preventive Maintenance Checklist	6-8
Sleep Mode	6-9
CPR Cable Adjustment	6-11

Chapter 7: Accessories

Accessories	7-1
IV Pole—P1445	7-2
Installation	7-2
Removal	7-3
Adjustment	7-3
Trapeze Support—P846F	7-4
Installation	7-4
Removal	7-5
Fracture Frame Adapter—P847B and P847C	7-6
Installation	7-6
Removal	7-6

Chapter 1

Introduction

Purpose

This manual contains instructions for the operation and maintenance of the Basic Care™ 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 *Hill-Rom® Basic Care™ Bed*, *Hill-Rom® 305 Manual Bed*, *Hill-Rom® 405 Electric Bed* (USR124).

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.
- The symbol below identifies a CAUGHT HAZARD WARNING:

Figure 1-2. Caught Hazard Warning



- The symbol below identifies a CHEMICAL HAZARD WARNING:

Figure 1-3. Chemical Hazard Warning



- The symbol below identifies an ELECTRICAL SHOCK HAZARD WARNING:

Figure 1-4. Electrical Shock Hazard Warning



Specifications

Physical Description

Table 1-1. Physical Description

Feature	Dimension
Head section slope (maximum)	72.5° ±1°
Knee section slope (maximum)	25° ±1°
Sleep deck height range	18.3" to 30.1" ± 1" (46.5 cm to 76.5 cm ± 2.5 cm)
Trendelenburg position (maximum)	12° (+2°, -0°)
Reverse Trendelenburg position (maximum)	12° (+2°, -0°)
Bed lift capacity (maximum safe working load)	450 lb (204 kg)
Foot section lift capacity (maximum)	200 lb (91 kg)
Head section lift capacity (maximum)	200 lb (91 kg)
Maximum height of seat section (in Trendelenburg position)	23.5" (59.7 cm)
Siderail opening size	3.875" (9.843 cm)
Distance between siderails	11.375" (28.893 cm)
Length—with standard sleep deck	89" to 91" (226 cm to 231 cm)
Length—with short sleep deck	86" to 88" (218 cm to 224 cm)
Sleep deck length—standard model	79" to 81" (201 cm to 206 cm)
Sleep deck length—short model	76" to 78" (193 cm to 198 cm)
Maximum width—with siderails raised	43.7" ± 0.8" (110.9 cm ± 2.0 cm)
Minimum width—with siderail stored	36.6" ± 0.8" (93.0 cm ± 2.0 cm)
Sleep deck width	36.25" ± 0.5 (92.08 cm ± 1.3 cm)
Maximum headboard height	44" (112 cm)
Minimum underbed clearance	5.5" (13.9 cm)
Wheel base	61" (155 cm) Model A bed 58.75" (149 cm) Model B (4-corner brake and steer) 61.5" (156 cm) Model B (individual casters)

Feature	Dimension
Caster size	5" (13 cm)
Total weight	310 lb (141 kg)

Table 1-2. Recommended Mattress Dimensions

Feature	Dimension
Mattress width	36" to 37" (91 cm to 94 cm)
Mattress length—standard model	80" to 81" (203 cm to 206 cm)
Mattress length—short model	76" to 77" (193 cm to 196 cm)
Mattress thickness	6" to 7" (15 cm to 18 cm)

Table 1-3. Environmental Conditions for Transport and Storage

Condition	Range
Temperature	-40°F to 158°F (-40°C to 70°C)
Relative humidity (RH)	10% to 95%
Atmospheric pressure	500 hPa to 1060 hPa

Table 1-4. Environmental Conditions for Use

Condition	Range
Temperature	50°F to 104°F (10°C to 40°C) ambient temperature
Relative humidity (RH)	30% to 95%, non-condensing
Atmospheric pressure	700 hPa to 1060 hPa

Electrical Description

Table 1-5. Electrical Description (Model A beds)

Condition	Range
Rated voltage	100 V AC 110 V AC to 115 V AC 120 V AC to 127 V AC 220 V AC to 230 V AC 240 V AC
Power/Input	100 V AC to 127 V AC—1.0 A 220 V AC to 240 V AC—0.5 A
Frequency	50/60 Hz

Table 1-6. Electrical Description (Model B beds)

Condition	Range
Rated voltage	100 V 110 V to 115 V 120 V to 127 V 220 V to 230 V 240 V
Power/Input	1.6 A
Frequency	50/60 Hz

Table 1-7. Battery Specifications

Condition	Range
Maximum battery life, with no functions operated and with the bed disconnected from its power source	24 hours
Time necessary to recharge a fully discharged battery	8 hours
Battery fuse	15A
Maximum hilow cycles with fully charged battery:	
With 0 lb (0 kg) on bed	21
With 250 lb (113 kg) on bed	15
With 450 lb (204 kg) on bed	11

Regulations, Standards, and Codes

Table 1-8. Regulations, Standards, and Codes

Classification	Standard
Technical and Quality Assurance Standards	UL 60601-1 CAN/CSA® ^a C22.2 No. 601.1 EN 60601-2-38, including amendment 1 EN 60601-1 IEC 60601-1-2 EN ISO 9001 EN ISO 13485 IEC 60601-1 IEC 60601-2-38
Equipment classification per EN 60601-1	Class I equipment, internally powered equipment
Degree of protection against electric shock	Type B
Classification in accordance with Directive 93/42/EEC	Class I
Degree of protection against the presence of flammable anaesthetic mixtures	Not for use with flammable anaesthetics.
IPX classification	IPX 4—In accordance with IEC 60529, rating for protection against fluid ingress and identified as equipment that is protected against unpressurized spraying and splashing water.

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

Model Identification

Table 1-9. Model Identification

Product Number	Description
P1440A	<i>Hill-Rom® Basic Care™ Bed, Hill-Rom® 305 Manual Bed, Hill-Rom® 405 Electric Bed — electric model</i>
P1441A	<i>Hill-Rom® Basic Care™ Bed, Hill-Rom® 305 Manual Bed, Hill-Rom® 405 Electric Bed — manual model</i>
P1440B	<i>Hill-Rom® Basic Care™ Bed, Hill-Rom® 305 Manual Bed, Hill-Rom® 405 Electric Bed — electric model, new siderails and power supply</i>
P1441B	<i>Hill-Rom® Basic Care™ Bed, Hill-Rom® 305 Manual Bed, Hill-Rom® 405 Electric Bed — manual model, new siderails</i>

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 patients 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 patients 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.



SHOCK HAZARD:

Disconnect the bed 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.



SHOCK HAZARD:

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



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 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

Figure 1-5. Warning and Caution Labels

			
○	100V~	50/60Hz	1.0A~
○	110-115V~	50/60Hz	
○	120-127V~	50/60Hz	
○	220-230V~	50/60Hz	0.5A~
○	240V~	50/60Hz	

Hill-Rom.
A HILLENBRAND INDUSTRY

BASIC CARE
MODEL:
DUTY CYCLE: 3 MIN. ON \ 17 MIN. OFF
IPX4

= 204kg

CE D

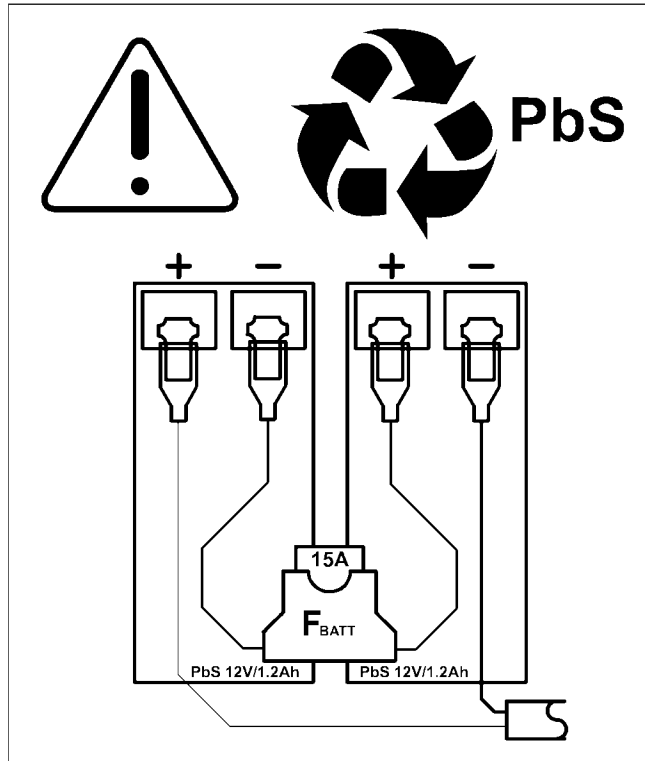
CLASSIFIED
C UL US
XXXX

WITH RESPECT TO ELECTRIC SHOCK, FIRE, AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH UL 60601-1, CAN/CSA C22.2 No. 601.1, IEC 60601-1, IEC 60601-2-38, and IEC 60601-1-2



m336_2_040

Figure 1-6. Battery Backup Wiring Diagram



m336_041

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, call Hill-Rom Technical Support at 800-445-3720 (USA).

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 caused by incorrect operator action.
Yes **No**
↓ → Go to “Function Checks” on page 2-2.
4. Tell the operator to refer to the *Basic Care™ Bed, Hill-Rom® 305 Manual Bed, Hill-Rom® 405 Electric Bed User Manual* (USR124). 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 2-8.
6. Press the **Knee Up** switch. The knee section rises.
Yes **No**
↓ → Go to page 2-11.
7. Press the **Knee Down** switch. The knee section lowers.
Yes **No**
↓ → Go to page 2-13.
8. Press the **Hilow Up** switch. The bed rises.
Yes **No**
↓ → Go to page 2-16.
9. Press the **Hilow Down** switch. The bed lowers.
Yes **No**
↓ → Go to page 2-18.
10. Raise the bed to the high position. Pull the *Trendelenburg* handle, and press the **Hilow Down** switch. The bed goes into the Trendelenburg position.
Yes **No**
↓ → Go to page 2-23.
11. When the bed is in the high position, operate the *Reverse Trendelenburg* handle, and press the **Hilow Down** switch. The bed goes into the Reverse Trendelenburg position.
Yes **No**
↓ → Go to page 2-23.
12. Raise the head section, operate the CPR controls. The head section lowers fully.
Yes **No**
↓ → Go to page 2-25.

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 4.25 on page 4-54).

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 4.25 on page 4-54).

15. If the bed has individual brake and steer 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 4.27 on page 4-61).

16. If the bed has individual brake and steer casters, press the steer on the caster that has function. The steer caster locks and all other casters swivel freely.

Yes **No**

↓ → Replace the steer caster (refer to procedure 4.27 on page 4-61).

17. Call Hill-Rom Technical Support at 800-445-3720 (USA).

Final Actions

1. Do the necessary preventive maintenance procedures. See “Preventive Maintenance Checklist” on page 6-8.
2. Do all of the necessary administration tasks.

2.1 None of the Bed Functions Operate

1. All of the bed function lockouts are off.

NOTE:

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.

2. 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.

3. 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 4.

4. 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 5.

5. Check the fuses in the control box at the head end of the bed. The fuses are good.

Yes	No
↓	→ Replace the fuses (refer to procedure 4.6 on page 4-14). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 6.

6. Replace the control box (refer to procedure 4.1 on page 4-3). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.2 The Head Up Function Does Not Operate

1. The head up function does not operate when the head up switch is pressed from either the left siderail or the right siderail or from the foot end control panel.

Yes **No**
↓ → Go to step 6.

2. The head function lockout is off.

NOTE:

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 4.8 on page 4-18). The head up function does not operate.

Yes **No**
↓ → Go to “Final Actions” on page 2-4.

5. Call Hill-Rom Technical Support at 800-445-3720 (USA).

6. The head up function operates from the foot end control panel.

Yes **No**
↓ → Replace the foot end control panel (refer to procedure 4.2 on page 4-5). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

7. The head up function only operates from one of the siderails.

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, call Hill-Rom Technical Support at 800-445-3720 (USA).

8. Replace the controls on the siderail with the faulty function (refer to procedure 4.21 on page 4-46). The head up function operates from this siderail.

Yes **No**

↓ → Replace the siderail with the faulty function (refer to procedure 4.16 on page 4-37). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

9. Replace the control box (refer to procedure 4.1 on page 4-3). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.3 The Head Down Function Does Not Operate

1. The head down function does not operate when the head down switch is pressed from either the left siderail or the right siderail or from the foot end control panel.

Yes **No**
↓ → Go to step 6.

2. The head function lockout is off.

NOTE:

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 down function does not operate.

Yes **No**
↓ → Go to “Final Actions” on page 2-4.

4. Replace the head motor (refer to procedure 4.8 on page 4-18). The head down function does not operate.

Yes **No**
↓ → Go to “Final Actions” on page 2-4.

5. Call Hill-Rom Technical Support at 800-445-3720 (USA).

6. The head down function operates from the foot end control panel.

Yes **No**
↓ → Replace the foot end control panel (refer to procedure 4.2 on page 4-5). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

7. The head down function only operates from one of the siderails.

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, call Hill-Rom Technical Support at 800-445-3720 (USA).

8. Replace the controls that has the head down function that does not operate (refer to procedure 4.21 on page 4-46). The head down function operates from this siderail.

Yes **No**

↓ → Replace the siderail with the faulty function (refer to procedure 4.21 on page 4-46). If this corrects the problem, go to “Final Actions” on page 2-4.

9. Replace the control box (refer to procedure 4.1 on page 4-3). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.4 The Head Function Does Not Operate

1. The head function lockout is off.

NOTE:

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.

2. Disconnect the bed from its power source and allow the bed to cool for 20 minutes. Connect the bed to its power source. The head function does not operate.

Yes No

↓

→ Go to “Final Actions” on page 2-4.

3. Replace the control box (refer to procedure 4.1 on page 4-3). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.5 The Knee Up Function Does Not Operate

1. The knee up function does not operate when the knee up switch is pressed from either the left siderail or the right siderail or from the foot end control panel.

Yes **No**
 ↓ → Go to step 6.

2. The knee function lockout is off.

NOTE:

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 4.10 on page 4-23). The knee up function does not operate.

Yes **No**
 ↓ → Go to “Final Actions” on page 2-4.

5. Call Hill-Rom Technical Support at 800-445-3720 (USA).

6. The knee up function operates from the foot end control panel.

Yes **No**
 ↓ → Replace the foot end control panel (refer to procedure 4.2 on page 4-5). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

7. The knee up function only operates from one of the siderails.

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, call Hill-Rom Technical Support at 800-445-3720 (USA).

8. Replace the controls on the siderail that has the knee up function that does not operate (refer to procedure 4.21 on page 4-46). The knee up function operates from this siderail.

Yes No

↓ → Replace the siderail that has the knee up function that does not operate (refer to procedure 4.21 on page 4-46). If this corrects the problem, go to “Final Actions” on page 2-4.

9. Replace the control box (refer to procedure 4.1 on page 4-3). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.6 The Knee Down Function Does Not Operate

1. The knee down function does not operate when the knee down switch is pressed from either the left siderail or the right siderail or from the foot end control panel.

Yes **No**
 ↓ → Go to step 6.

2. The knee function lockout is off.

NOTE:

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 down function does not operate.

Yes **No**
 ↓ → Go to “Final Actions” on page 2-4.

4. Replace the knee motor (refer to procedure 4.10 on page 4-23). The knee down function does not operate.

Yes **No**
 ↓ → Go to “Final Actions” on page 2-4.

5. Call Hill-Rom Technical Support at 800-445-3720 (USA).

6. The knee down function operates from the foot end control panel.

Yes **No**
 ↓ → Replace the foot end control panel (refer to procedure 4.2 on page 4-5). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

7. The knee down function only operates from one of the siderails.

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, call Hill-Rom Technical Support at 800-445-3720 (USA).

8. Replace the controls on the siderail that has the knee down function that does not operate (refer to procedure 4.21 on page 4-46). The knee down function operates from this siderail.

Yes No

↓ → Replace the siderail that has the knee down function that does not operate (refer to procedure 4.21 on page 4-46). If this corrects the problem, go to “Final Actions” on page 2-4.

9. Replace the control box (refer to procedure 4.1 on page 4-3). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.7 The Knee Function Does Not Operate

1. The knee function lockout is off.

NOTE:

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.

2. Disconnect the bed from its power source and allow the bed to cool for 20 minutes. Connect the bed to its power source. The knee function does not operate.

Yes **No**

↓

→ Go to “Final Actions” on page 2-4.

3. Replace the control box (refer to procedure 4.1 on page 4-3). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.8 The Hilow Up Function Does Not Operate

1. The hilow up function does not operate when the hilow switch is pressed from either the left siderail or the right siderail or from the foot end control panel.

Yes **No**
↓ → Go to step 6.

2. The hilow function lockout is off.

NOTE:

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 4.11 on page 4-25). The hilow up function does not operate.

Yes **No**
↓ → Go to “Final Actions” on page 2-4.

5. Call Hill-Rom Technical Support at 800-445-3720 (USA).

6. The hilow up function operates from the foot end control panel.

Yes **No**
↓ → Replace the foot end control panel (refer to procedure 4.2 on page 4-5). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

7. The hilow up function only operates from one of the siderails.

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, call Hill-Rom Technical Support at 800-445-3720 (USA).

8. Replace the controls on the siderail that has the hilow up function that does not operate (refer to procedure 4.21 on page 4-46). The hilow up function operates from this siderail.

Yes **No**

↓ → Replace the siderail that has the hilow up function that does not operate (refer to procedure 4.21 on page 4-46). If this corrects the problem, go to “Final Actions” on page 2-4.

9. Replace the control box (refer to procedure 4.1 on page 4-3). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.9 The Hilow Down Function Does Not Operate

1. The hilow down function does not operate when the hilow down switch is pressed from either the left siderail or the right siderail or from the foot end control panel.

Yes **No**
↓ → Go to step 6.

2. The hilow function lockout is off.

NOTE:

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 down function does not operate.

Yes **No**
↓ → Go to “Final Actions” on page 2-4.

4. Replace the hilow motor (refer to procedure 4.11 on page 4-25). The hilow down function does not operate.

Yes **No**
↓ → Go to “Final Actions” on page 2-4.

5. Call Hill-Rom Technical Support at 800-445-3720 (USA).

6. The hilow down function operates from the foot end control panel.

Yes **No**
↓ → Replace the foot end control panel (refer to procedure 4.2 on page 4-5). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

7. The hilow down function only operates from one of the siderails.

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, call Hill-Rom Technical Support at 800-445-3720 (USA).

8. Replace the controls on the siderail that has the hilow down function that does not operate (refer to procedure 4.21 on page 4-46). The hilow down function operates from this siderail.

Yes **No**

↓

→ Replace the siderail that has the hilow down function that does not operate (refer to procedure 4.21 on page 4-46). If this corrects the problem, go to “Final Actions” on page 2-4.

9. Replace the control box (refer to procedure 4.1 on page 4-3). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.10 The Hilow Function Does Not Operate

1. The hilow function lockout is off.

NOTE:

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.

2. Disconnect the bed from its power source and allow the bed to cool for 20 minutes. Connect the bed to its power source. The hilow function does not operate.

Yes **No**

↓

→ Go to “Final Actions” on page 2-4.

3. Replace the control box (refer to procedure 4.1 on page 4-3). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.11 The Automatic Contour 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. The head function lockout is off.

NOTE:

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**
↓ → Call Hill-Rom Technical Support at 800-445-3720 (USA).

4. The knee section does not rise when the automatic contour up switch is pressed.

Yes **No**
↓ → Turn the knee function lockout off. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise go to step 5.

NOTE:

If the LED for a bed function lockout is on, the function is locked out.

5. Do the procedure on page 2-11. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.12 The Automatic Contour 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. The head function lockout is off.

NOTE:

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 2-8. The head section lowers when the control for the auto contour down is pressed.

Yes **No**
↓ → Call Hill-Rom Technical Support at 800-445-3720 (USA).

4. The knee section does not lower when the automatic contour down switch is pressed.

Yes **No**
↓ → Turn the knee function lockout off. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise go to step 5.

NOTE:

If the LED for a bed function lockout is on, the function is locked out.

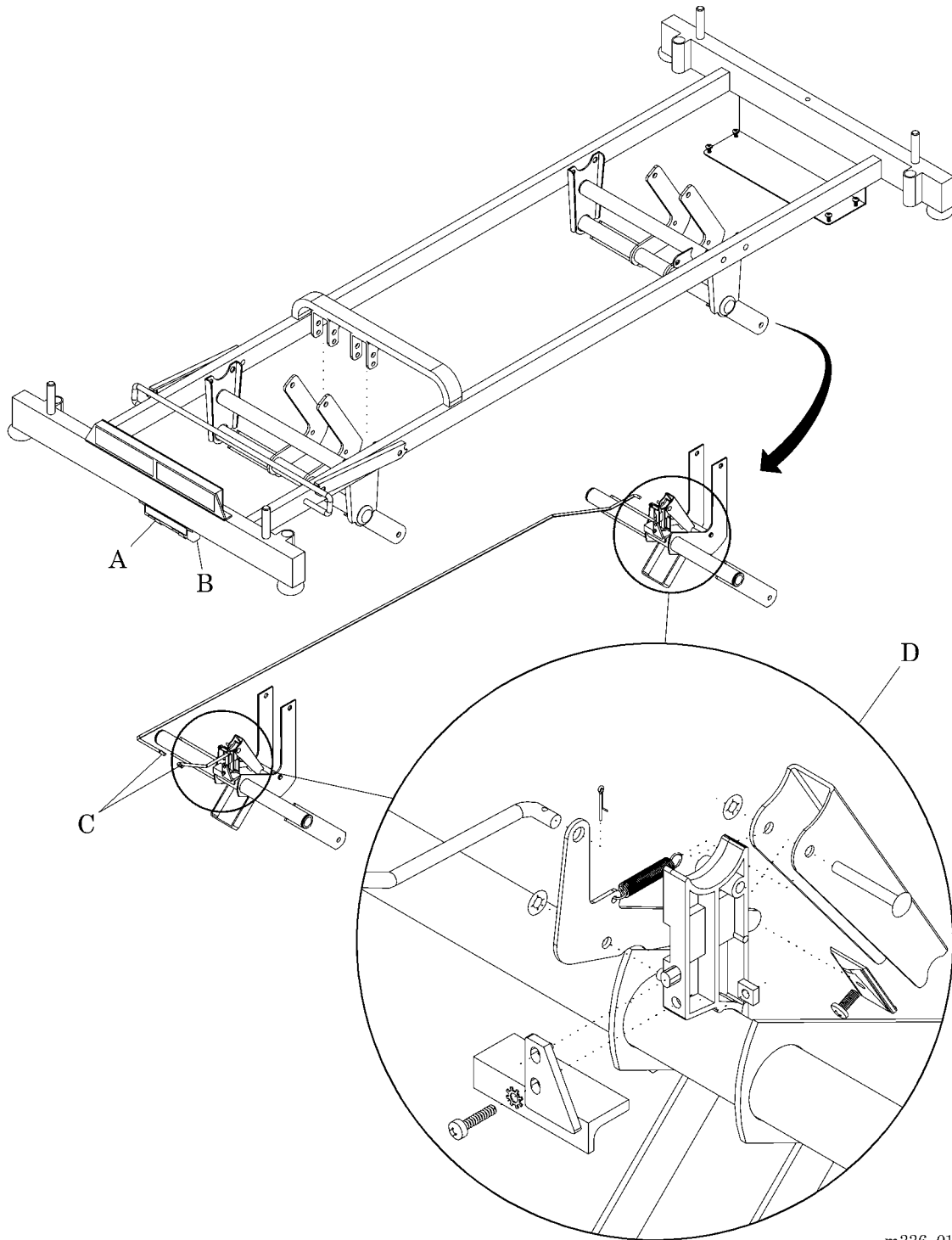
5. Do the procedure on page 2-13. If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

2.13 The Trendelenburg or Reverse Trendelenburg Function Does Not Operate

When you put the bed into Trendelenburg or Reverse Trendelenburg, the bed lowers fully but does not go into Trendelenburg or Reverse Trendelenburg.

1. Visually examine the Trendelenburg or Reverse Trendelenburg handles (A) (see figure 2-1 on page 2-24). The Trendelenburg or Reverse Trendelenburg handles (A) are connected and not broken.
Yes **No**
↓ → Replace the Trendelenburg box assembly (B) (refer to procedure 4.3 on page 4-7). If this corrects the problem go to “Final Actions” on page 2-4.
2. Visually examine the Trendelenburg or Reverse Trendelenburg rods (C). The Trendelenburg or Reverse Trendelenburg rods (C) are not bent.
Yes **No**
↓ → Straighten or replace the Trendelenburg or Reverse Trendelenburg rods (C) as necessary (refer to procedure 4.4 on page 4-9). If this corrects the problem go to “Final Actions” on page 2-4.
3. Visually examine the Trendelenburg or Reverse Trendelenburg mechanisms (D). The Trendelenburg or Reverse Trendelenburg mechanisms (D) are connected and not broken.
Yes **No**
↓ → Connect or replace the Trendelenburg or Reverse Trendelenburg mechanisms (D) as necessary (refer to procedure 4.4 on page 4-9). If this corrects the problem go to “Final Actions” on page 2-4.
4. Call Hill-Rom Technical Support at 800-445-3720 (USA).

Figure 2-1. Trendelenburg and Reverse Trendelenburg Assemblies



m336_014

2.14 The CPR Function Does Not Operate

1. The CPR cable (A) is connected to the CPR handle (B) (see figure 2-2 on page 2-26)

Yes **No**

↓

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

2. The CPR wire (C) is held tightly in the bracket (D).

Yes **No**

↓

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

3. The CPR cable (A) and CPR wire (C) are connected to the head motor (F).

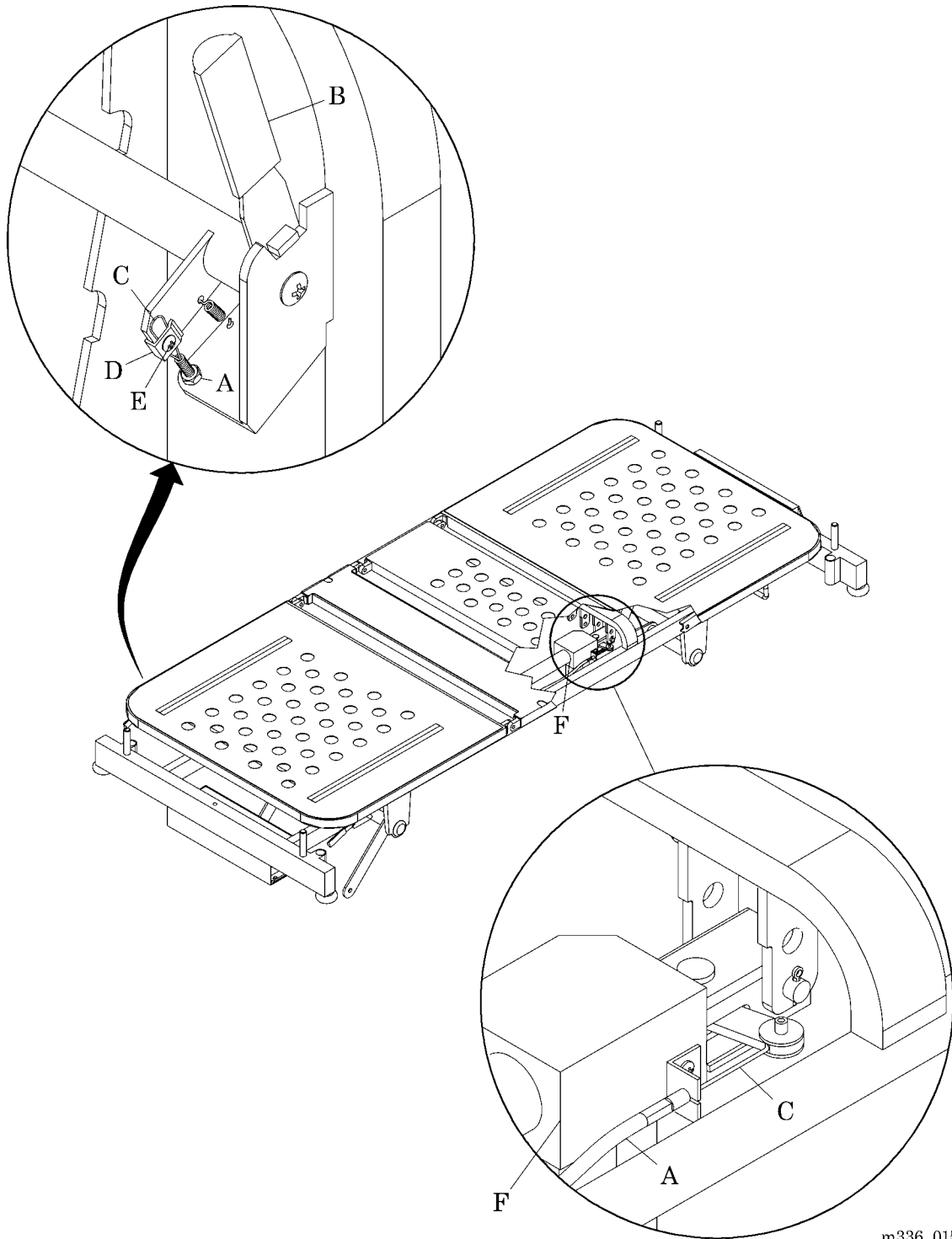
Yes **No**

↓

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

4. Replace the head motor (F) (refer to procedure 4.8 on page 4-18). If this corrects the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at 800-445-3720 (USA).

Figure 2-2. CPR Control Assembly



m336_015

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. When lowered, the siderails tuck below the sleep deck.

Motion Control

The motion control for the electric bed consists of linear actuators, siderail controls, foot end controls, and electronics that provide the motion of the sleep deck. For the manual bed, the motion control is made up of cranks and other mechanisms.

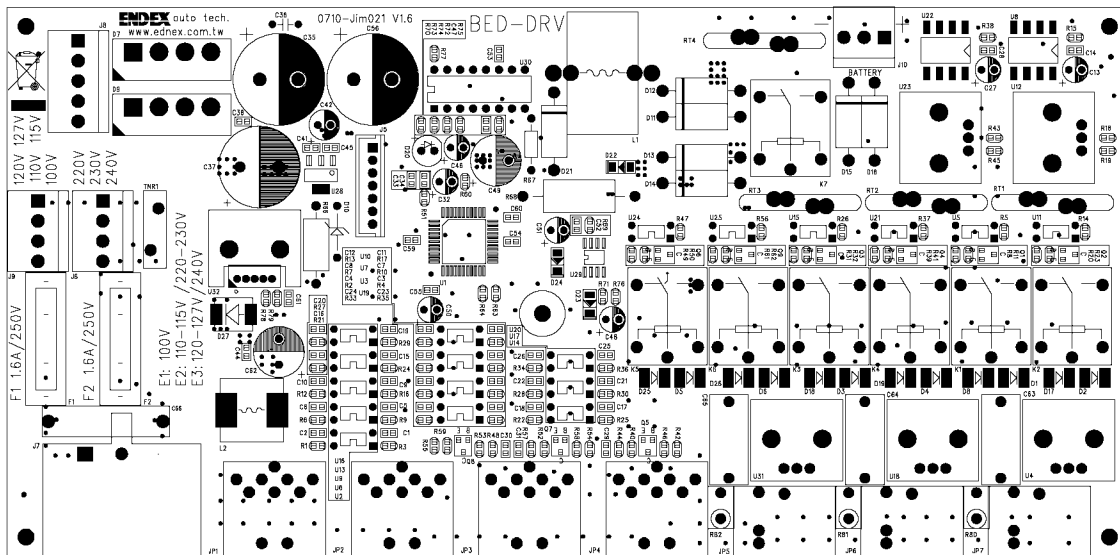
Transformer Configurations

The electric Basic Care™ Bed permits eight different input source voltages with two transformers and various connector positions on the control board (see figure 3-1 on page 3-2).

NOTE:

The control board is configured for either E1, E2, or E3 transformers.

Figure 3-1. Transformer Configurations



m336 2 046

For the correct transformer configuration, refer to table 3-1 on page 3-2.

Table 3-1. Transformer Configurations

Input Source Voltage	Transformer	Primary Connection	Secondary Connection
100 V	E1	J9	J8
110 V	E2	J9	J8
115 V	E2	J9	J8
127 V	E3	J9	J8
200 V	E3	J6	J8
220 V	E2	J6	J8
230 V	E2	J6	J8
240 V	E3	J6	J8

Motor Assemblies

Thermal regulators are an integrated part of the motors, that protect them in the event that an overload condition occurs. Thermals will stop the motor automatically if it heats up to a certain temperature. The motors will not run again until the automatic thermal resets.

Battery Backup

When no mains power is supplied to the electric bed, the battery backup system can operate the functions such as: CPR, Trendelenburg, and Reverse Trendelenburg. The operation is for one cycle with the safe working load (SWL) of 450 lb (204 kg) on the bed. For the battery backup wiring diagram, see figure 1-6 on page 1-14.

Controls

On the electric bed, patients or caregivers can push the low voltage controls, located on the head siderail, to change the angle of the head and knee sections and the height of the bed. Use the foot rack located beneath the sleep surface, to manually adjust the angle between the foot and knee sections. The manual Basic Care™ Bed uses cranks located at the foot end to operate the same functions.

Both the manual and electric versions of the bed have manually operated Trendelenburg and Reverse Trendelenburg functions. The electric Basic Care™ Bed uses the hilow motor to put the bed into Trendelenburg or Reverse Trendelenburg after it is operated.

NOTE:

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

NOTES:

Chapter 4

Removal, Replacement, and Adjustment Procedures

Tool and Supply Requirements

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

- Phillips head screwdriver
- Screwdriver
- Small screwdriver
- 13 mm socket
- 17 mm socket
- Ratchet
- 8 mm nut driver, deep well
- 13 mm nut driver
- 6 mm wrench
- 8 mm wrench
- 17 mm wrench
- 2.5 mm hex wrench
- 3 mm hex wrench
- 4 mm hex wrench
- 4 mm T-handle hex wrench
- 5 mm hex wrench
- 8 mm hex wrench
- 10 mm hex wrench
- 13mm 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

NOTE:

The control box for the Model A bed and Model B bed are not interchangeable. A control box upgrade kit (see table 5-4 on page 2-15) is available to upgrade the model A bed to the model B bed.

1. Raise the head section to its highest position.
2. Adjust the bed height to have access to the cables (A) (see figure 4-1 on page 4-4).



SHOCK HAZARD:

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

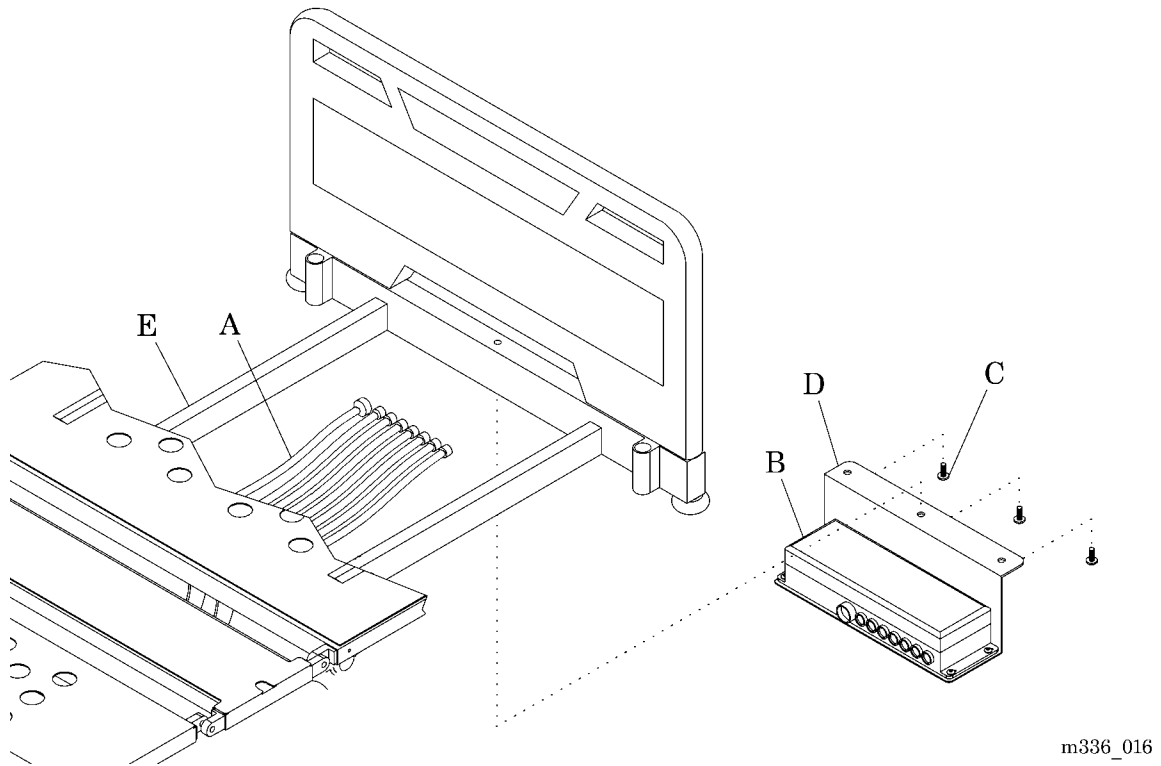
3. Disconnect the bed from its power source.
4. Disconnect the cables (A) from the control box assembly (B) (see figure 4-1 on page 4-4).

NOTE:

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

5. While you support the control box assembly (B), remove the three screws (C) that attach the mount bracket (D) to the bed frame (E).
6. Remove the control box assembly (B) and the mount bracket (D) from the bed frame (E).

Figure 4-1. Control Box Assembly



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 numbers marked on the cables (A) match the numbers marked on the control box assembly (B).
3. Do the “Function Checks” on page 2-2.

4.2 Control Panel, Foot End

Tools required: Phillips head screwdriver
Wire cutters

Removal

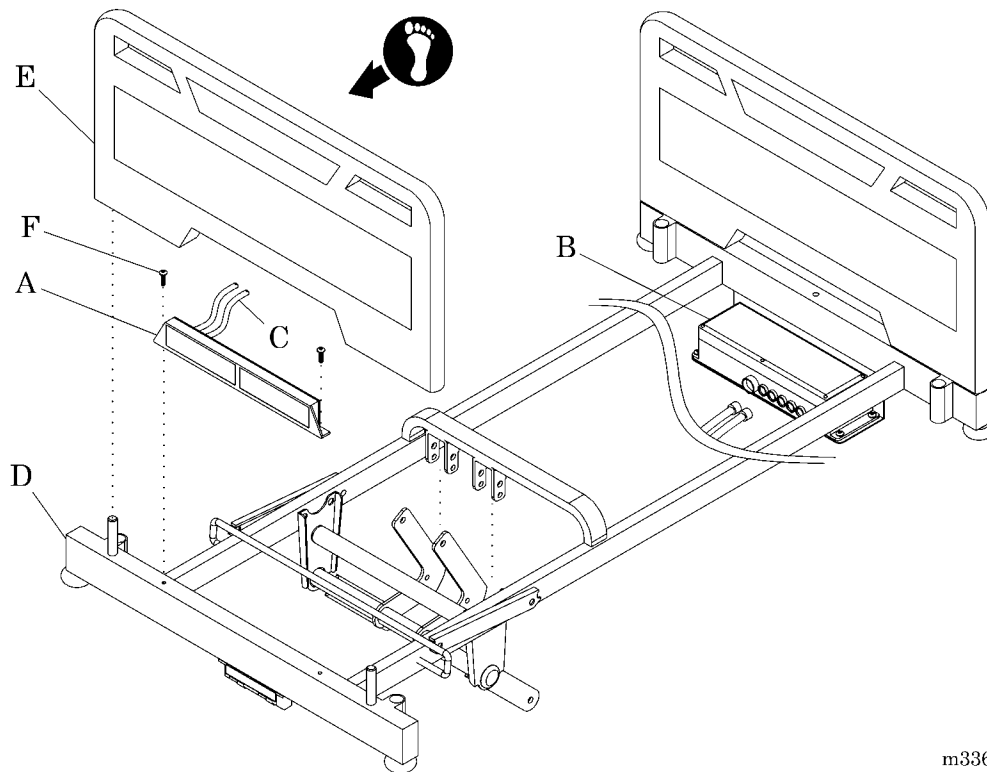


SHOCK HAZARD:

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

1. Disconnect the bed from its power source.
2. Make a note to show how the cable routes from the foot end control panel (A) to the control box assembly (B) (see figure 4-2 on page 4-5).

Figure 4-2. Foot End Control Panel Assembly



m336_017



CAUTION:

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

3. Carefully cut all of the wires ties on the two cables (C) from the foot end control panel (A) to the bed frame (D).
4. Disconnect the two cables (C) from the control box assembly (B).
5. Remove the footboard (E) from the bed frame (D).
6. Remove the two screws (F) that attach the foot end control panel (A) to the bed frame (D).
7. Remove the foot end control panel (A) from the bed frame (D).

Replacement

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

4.3 Trendelenburg Control Box

Tools required: 3 mm hex wrench
Needle nose pliers

Removal

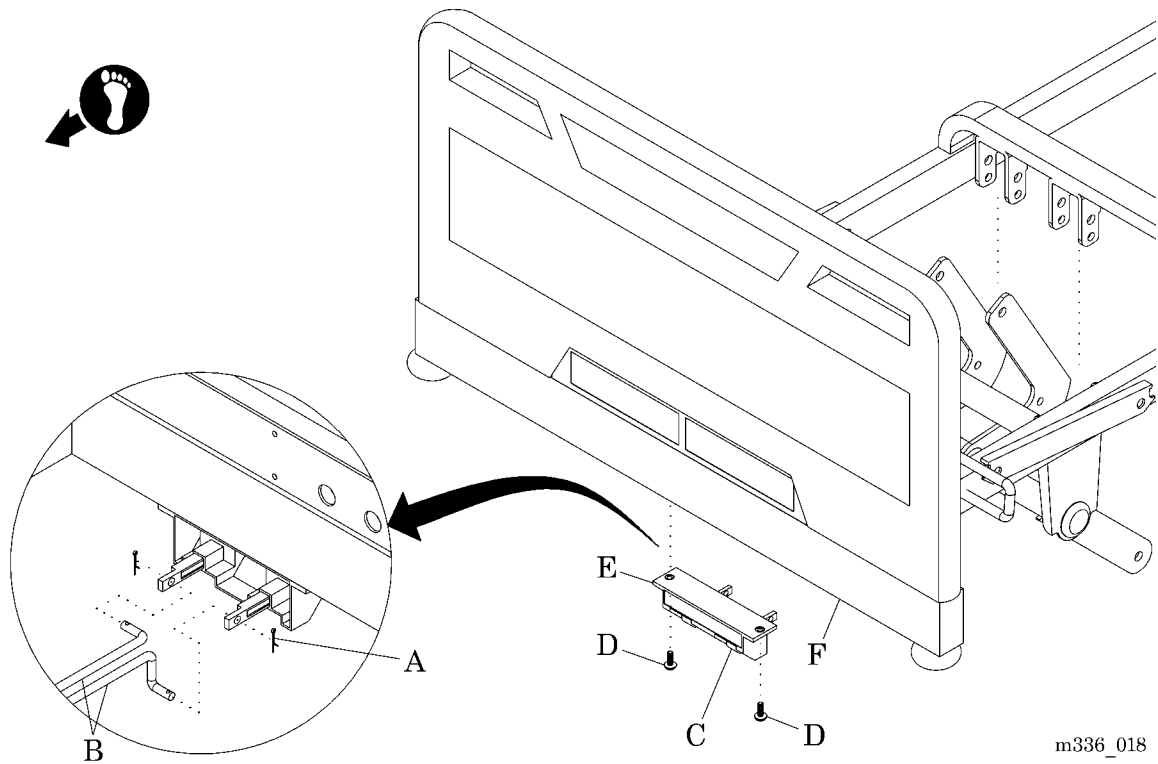


SHOCK HAZARD:

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

1. Disconnect the bed from its power source.
2. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
3. Remove the two retaining rings (A) that attach the Trendelenburg and Reverse Trendelenburg rods (B) to the switches (C) (see figure 4-3 on page 4-8).
4. Remove the two screws (D) that attach the Trendelenburg control box (E) to the bed frame (F).
5. Remove the Trendelenburg control box (E) from the bed frame (F).

Figure 4-3. Trendelenburg Control Box



m336_018

Replacement

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

4.4 Trendelenburg or Reverse Trendelenburg Assembly

Tools required: Needle nose pliers
Phillips head screwdriver
Bed supports

Removal

1. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
2. Raise the bed to the highest position.



WARNING:

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

3. Put bed supports under the upper bed frame (A) (see figure 4-4 on page 4-10).



SHOCK HAZARD:

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

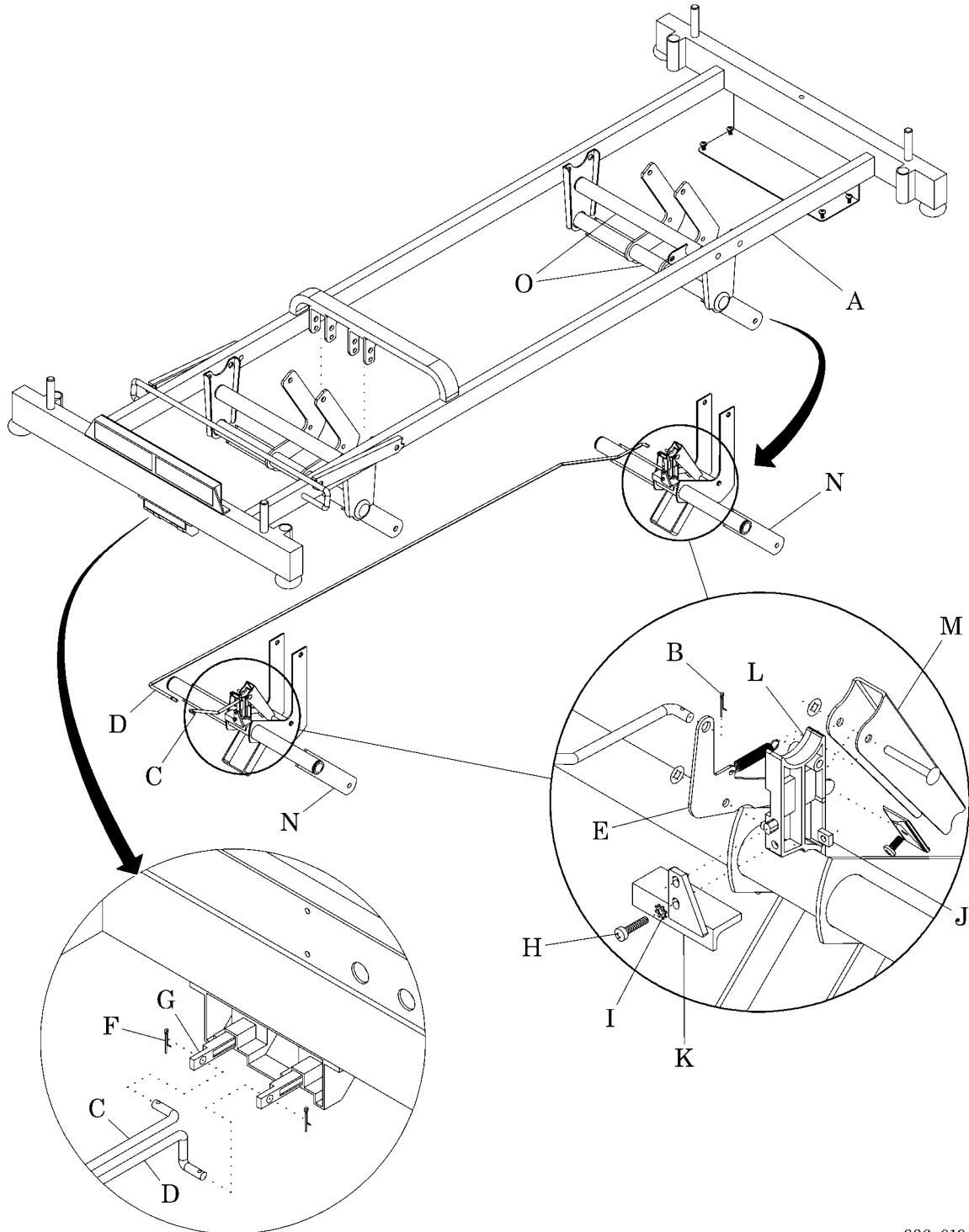
4. Disconnect the bed from its power source.
5. Remove the retaining ring (B) that attach the Trendelenburg rod (C) or Reverse Trendelenburg rod (D) to the trip lever (E).

NOTE:

The procedure for the Trendelenburg and Reverse Trendelenburg assemblies are the same, except for the rods. Only Trendelenburg will be called out for the rest of this procedure.

6. Remove the retaining ring (F) that attach the Trendelenburg rod (C) to the switch (G).
7. Remove the screw (H), lockwasher (I), and nut (J) that attach the retainer (K) to the mount (L).
8. Remove the retainer (K), mount (L), and stop (M) from the lower lift arm (N).

Figure 4-4. Trendelenburg or Reverse Trendelenburg Assembly



m336_019

Replacement

1. Install the screw (H), lockwasher (I), and nut (J) to attach the retainer (K) to the mount (L).
2. Install the stop (M) between the torque tubes (O).

NOTE:

Look at the opposite assembly (Trendelenburg or Reverse Trendelenburg) to see how it is attached to the bed.

3. Insert the Trendelenburg rod (C) into the trip lever (E).
4. Install the retaining ring (B) to attach the Trendelenburg rod (C) to the trip lever (E).
5. Install the retaining ring (F) to attach the Trendelenburg rod (C) to the switch (G).
6. Make sure the mechanical linkage engages correctly.
7. Make sure the stop (M) is wedged in between the two torque tubes (O) when either the Trendelenburg or Reverse Trendelenburg handle (G) is engaged.
8. Remove the bed supports.
9. Connect the battery cable to the control board (refer to procedure 4.7 on page 4-16).
10. Connect the bed to the correct power source.
11. Do the “Function Checks” on page 2-2.

4.5 Trendelenburg and Reverse Trendelenburg Indicators

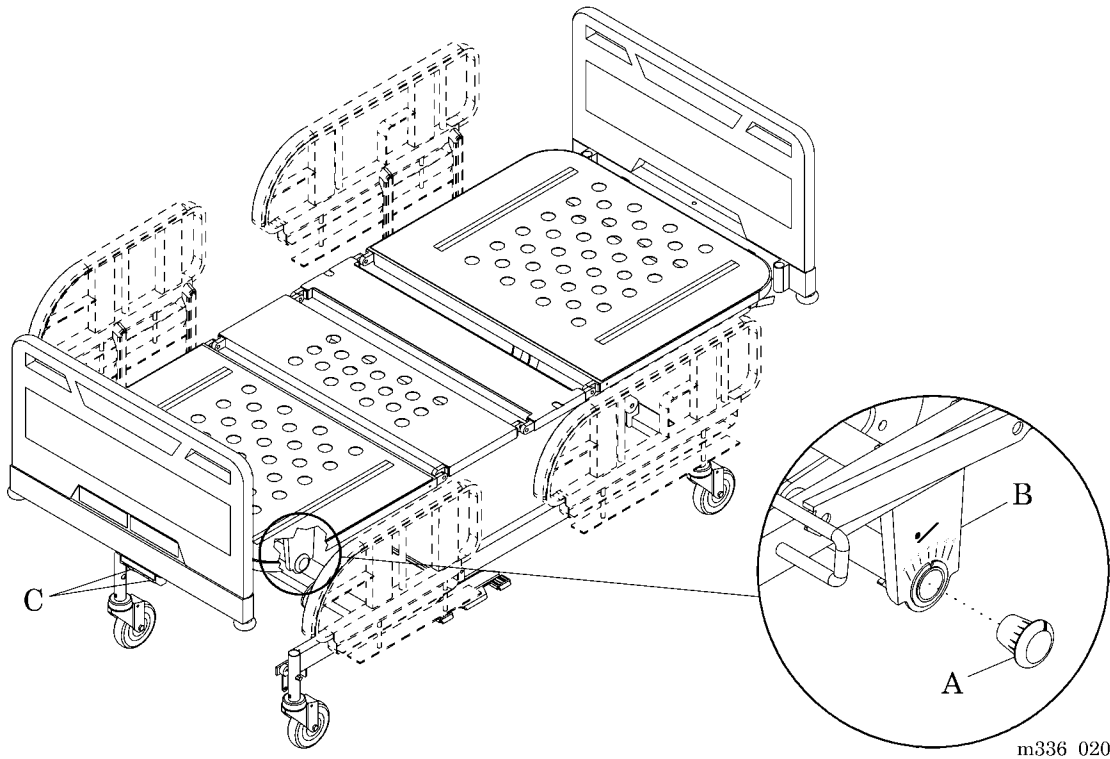
Tools required: Screwdriver
Rubber mallet

Whenever one of the **Trendelenburg** indicators needs replaced or reset, adjust the indicator caps.

Removal

Carefully pry the indicator cap (A) from the lift arm (B) (see figure 4-5 on page 4-12).

Figure 4-5. Trendelenburg and Reverse Trendelenburg Indicator



Replacement and Adjustment

1. Raise the bed to the highest position.
2. Pull out both the Trendelenburg and the Reverse Trendelenburg handles (C).

3. Lower the bed until it stops moving. The bed is now at 0° Trendelenburg and Reverse Trendelenburg.



CAUTION:

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

4. If the indicator cap (A) is installed, carefully remove it.
5. Align the mark on the indicator cap (A) with the 0° marks on the angle indicator label (B).
6. Put the indicator cap (A) in the lift arms (B).
7. To disengage the Trendelenburg, raise the bed to the highest position.
8. Do the “Function Checks” on page 2-2.

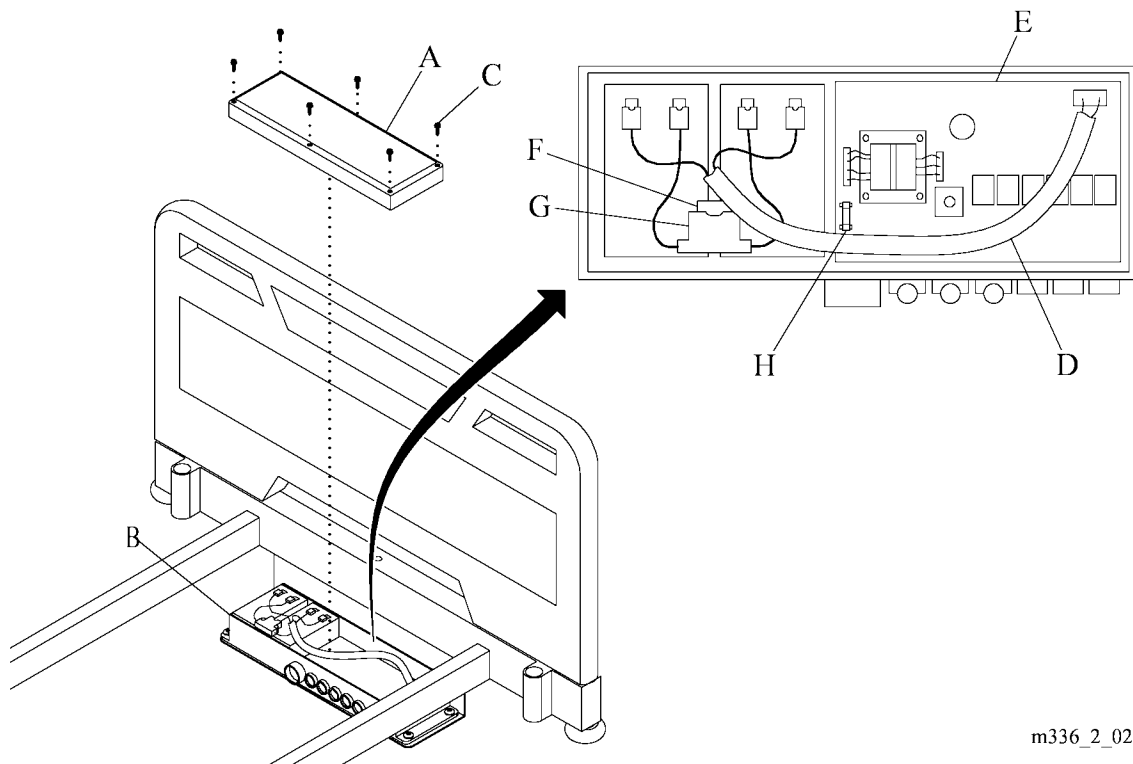
4.6 Fuses

Tools required: Phillips head screwdriver
Needle nose pliers

Removal

1. Raise the head section to the highest position.
2. Adjust the bed height to have access to the cover (A) (see figure 4-6 on page 4-14).

Figure 4-6. Control Box Assembly



m336_2_021



SHOCK HAZARD:

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

3. Disconnect the bed from its power source.
4. Remove the six screws (C) that attach the cover (A) to the control box assembly (B).

5. Disconnect the battery cable (D) from the control board (E).
6. Remove the fuse (F) from the fuse assembly (G).
7. Remove the fuse (H) from the control board (E).

Replacement

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

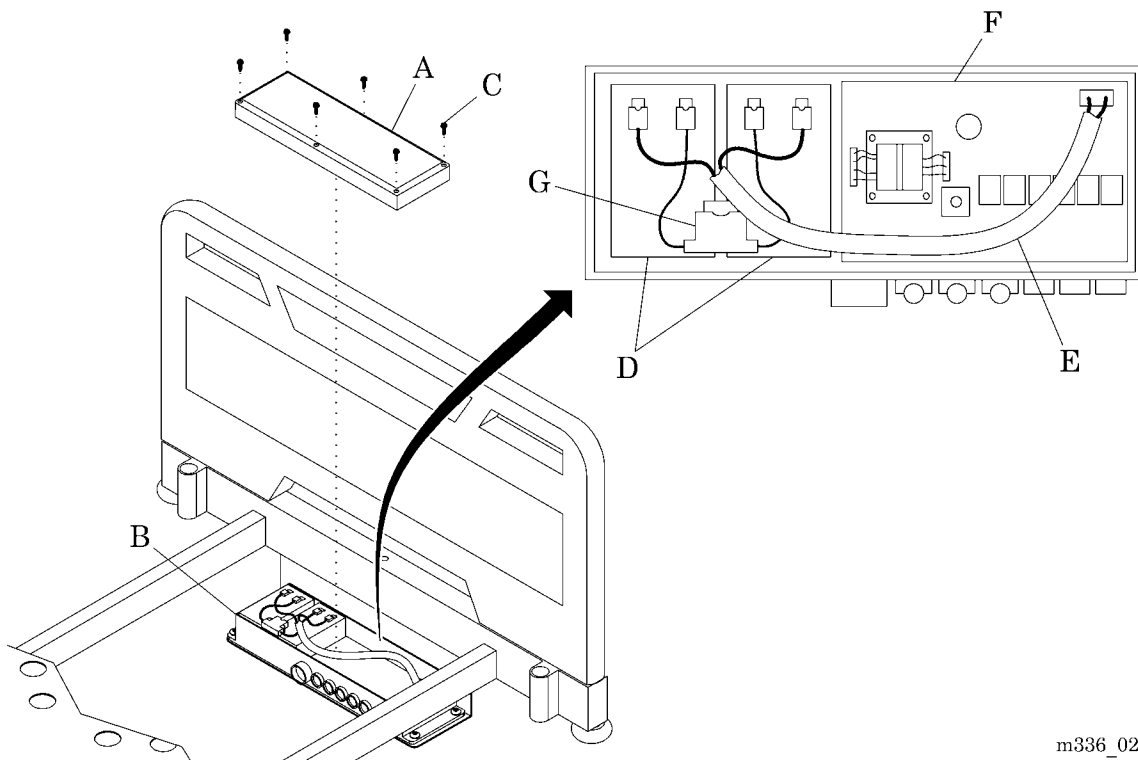
4.7 Battery Backup

Tools required: Phillips head screwdriver
Needle nose pliers

Removal

1. Raise the head section to the highest position.
2. Adjust the bed height to have access to the cover (A) (see figure 4-7 on page 4-16).

Figure 4-7. Control Box Assembly



m336_022



SHOCK HAZARD:

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

3. Disconnect the bed from its power source.
4. Remove the six screws (C) that attach the cover (A) to the control box assembly (B).

5. Make a note of the position of the two batteries (D).
6. Disconnect the battery cable (E) from the control board (F).
7. Disconnect the battery cable (E) and the fuse assembly (G) from the two batteries (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 two batteries (D) 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.

4.8 Head Motor

Tools required: Needle nose pliers
Wire cutters

Removal

1. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
2. Raise the bed to the highest position.



SHOCK HAZARD:

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

3. Disconnect the bed from its power source.
4. Use the CPR handle (A), to lower the head section (B) to the lowest position (see figure 4-8 on page 4-19).
5. Make a note to show how the cable routes from the head motor (C) to the control box assembly (D).

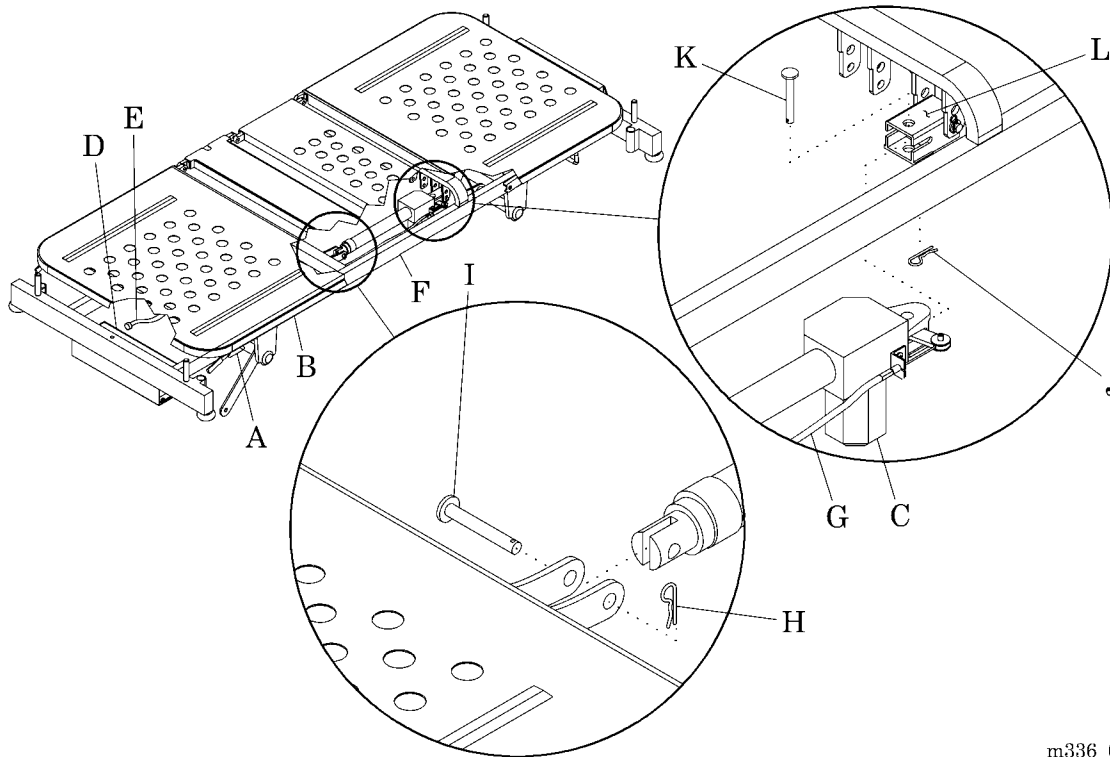


CAUTION:

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

6. Carefully cut all of the wires ties that attach the head motor cable (E) to the bed frame (F).
7. Remove the CPR cable (G) from the head motor (C) (refer to procedure 4.9 on page 4-20).
8. Disconnect the head motor cable (E) from the control box assembly (D).
9. Remove the retaining ring (H) and pin (I) that attach the head motor (C) to the bed frame (F).
10. Remove the retaining ring (J) and pin (K) that attach the head motor (C) to the mounting bracket (L).
11. Remove the head motor (C).

Figure 4-8. Head Motor



m336_024

4

Replacement



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.

1. When you route the cables, make sure they have enough slack for the bed to move through its full range of motion.
2. Do the removal procedure in the reverse order.

Adjustment

Adjust the tension on the CPR cable (G) (refer to procedure 6.2 on page 6-11).

4.9 CPR Cable

Tools required: Phillips head screwdriver
4 mm hex wrench
6 mm wrench
8 mm wrench
Needle nose pliers
Wire cutters

Removal

1. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
2. Raise the bed to the highest position.
3. Raise the head section to the highest position.



SHOCK HAZARD:

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

4. Disconnect the bed from its power source.
5. Make a note to show how the cable routes from the CPR handle assembly (A) to the head motor (B).

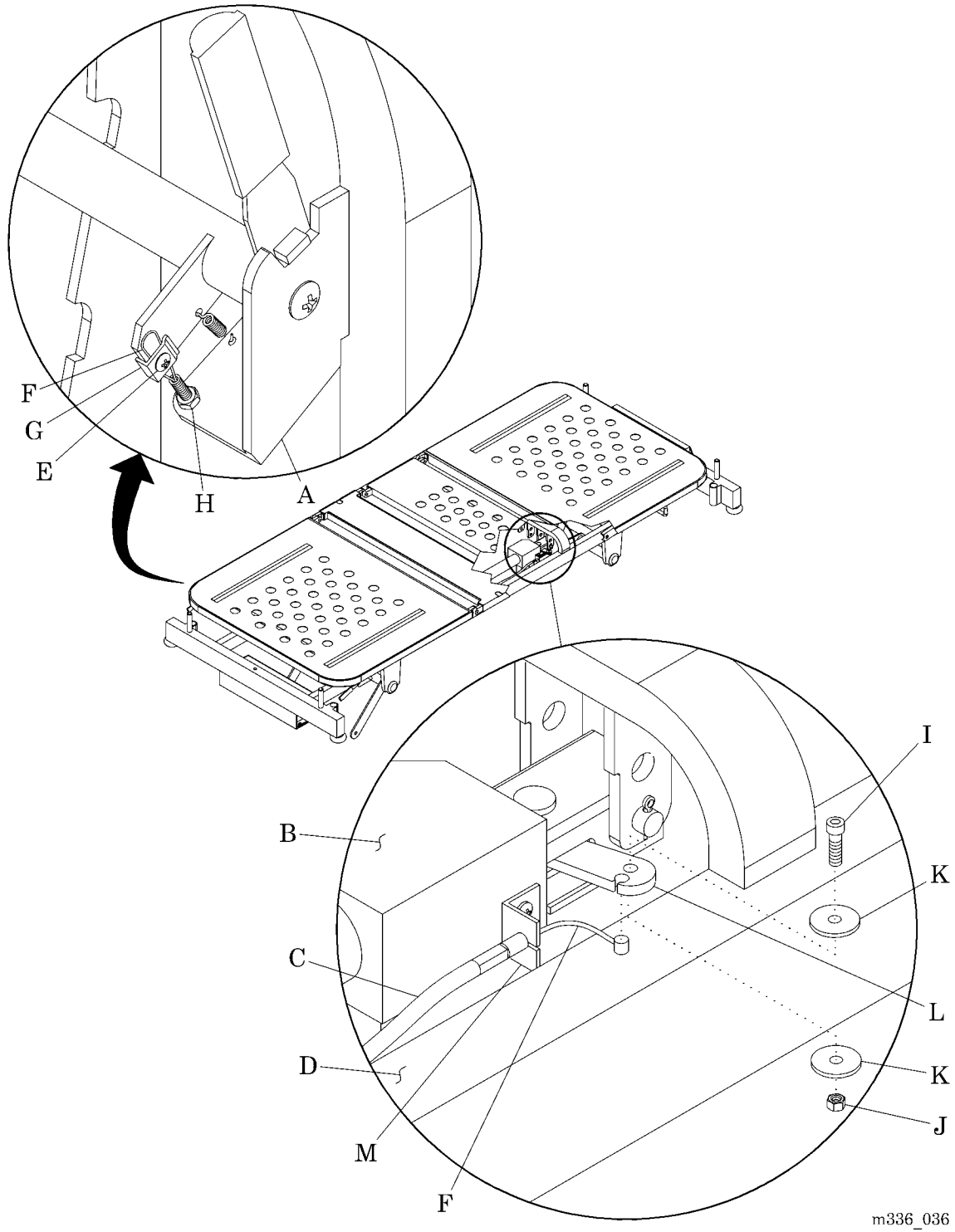


CAUTION:

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

6. Carefully cut all of the wires ties that attach the CPR cable (C) to the bed frame (D).
7. Loosen the screw (E) that attaches the CPR wire (F) to the bracket (G).
8. Remove the nut (H) that attaches the CPR cable (C) to the CPR handle assembly (A).
9. Remove the CPR cable (C) from the CPR handle assembly (A).
10. Remove the screw (I), nut (J), and two washers (K) that attaches the CPR wire (F) to the lever (L).

Figure 4-9. CPR Cable Assembly



4

m336_036

11. Lift the CPR wire (F) up and out of the lever (L).
12. Pull the CPR cable (C) out of the mount bracket (M).

Replacement



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.

1. When you route the cables, make sure they have enough slack for the bed to move through its full range of motion.
2. Do the removal procedure in the reverse order.

Adjustment

Adjust the tension on the CPR cable (C) (refer to procedure 6.2 on page 6-11).

4.10 Knee Motor

Tools required: Needle nose pliers
Wire cutters
Straps

Removal

1. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
2. Raise the bed to the highest position.
3. Raise the head section (A) to the highest position (see figure 4-10 on page 4-24).
4. Lift the foot section (B) of the sleep surface, and fold it back toward the head section (A).

**WARNING:**

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

5. Use straps to attach the foot section (B) to the head section (A).

**SHOCK HAZARD:**

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

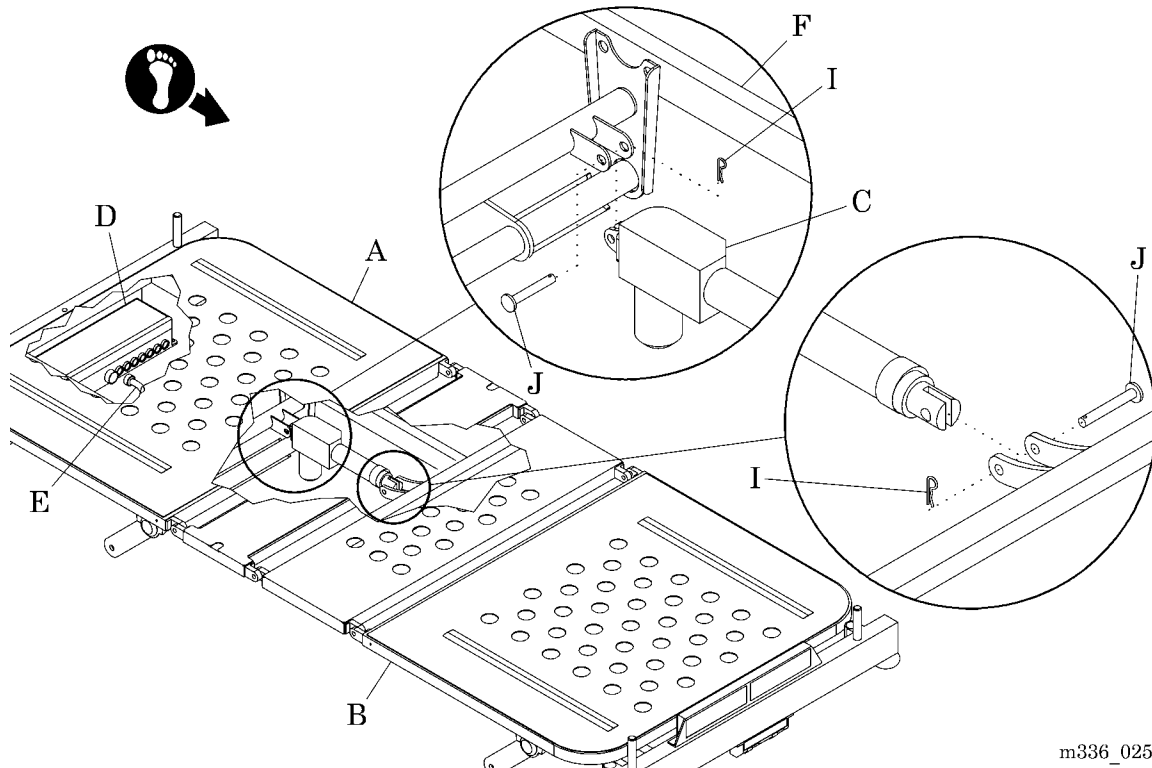
6. Disconnect the bed from its power source.
7. Make a note that shows how the cable routes from the knee motor (C) to the control box assembly (D).

**CAUTION:**

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

8. Carefully cut all of the wires ties that attaches the knee motor cable (E) to the bed frame (F).
9. Disconnect the knee motor cable (E) from the control box assembly (D).

Figure 4-10. Knee Motor



m336_025

10. Remove the two retaining rings (I) and two pins (J) that attaches the knee motor (D) to the bed frame (F).
11. Remove the knee motor (D).

Replacement



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.

1. When you route the cables, make sure they have enough slack for the bed to move through its full range of motion.
2. Do the removal procedure in the reverse order.
3. Do the “Function Checks” on page 2-2.

4.11 Hilow Motor

Tools required: 10 mm hex wrench
13 mm socket
Needle nose pliers
Wire cutters
Bed supports

Removal

**WARNING:**

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

1. Put bed supports under the upper bed frame.
2. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
3. Raise the head section (A) to its highest position (see figure 4-11 on page 4-26).

**SHOCK HAZARD:**

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

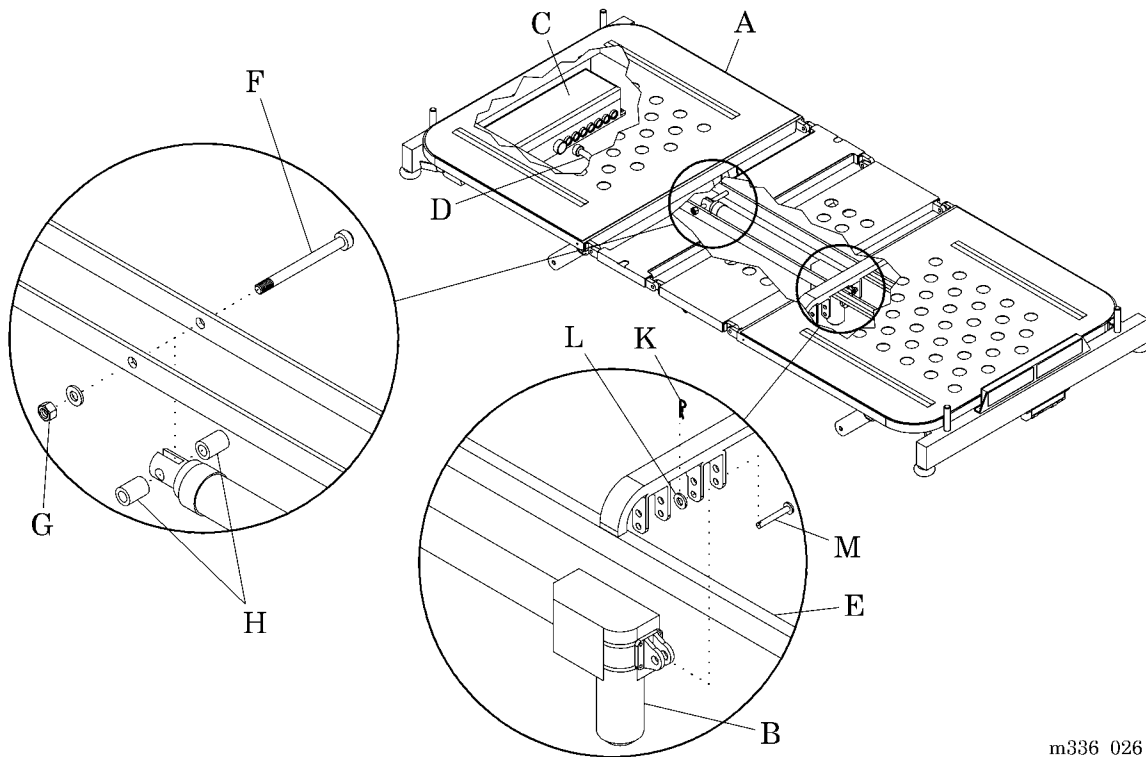
4. Disconnect the bed from its power source.
5. Make a note that shows how the cable routes from the hilow motor (B) to the control box assembly (C).

**CAUTION:**

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

6. Carefully cut all of the wires ties that attach the hilow motor cable (D) to the bed frame (E).
7. Disconnect the hilow motor cable (D) from the control box assembly (C).

Figure 4-11. Hilow Motor



m336_026

8. Remove the bolt (F), nut (G), and two spacers (H) that attach half of the hilow motor (B) to the bed frame (E).
9. Remove the retaining ring (K), washer (L), and pin (M) that attach the other half of the hilow motor (B) to the bed frame (E).

Replacement



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.

1. When you route the cables, make sure they have enough slack for the bed to move through its full range of motion.
2. Do the removal procedure in the reverse order.
3. Do the “Function Checks” on page 2-2.

4.12 Manual Crank Handle Assembly

Tools required: Small screwdriver
Straps

Removal

1. Raise the knee section and head section to their highest positions.
2. Lift the foot section of the sleep surface, and fold it back toward the head section.

NOTE:

If either of these sections cannot be raised, this procedure can be done from underneath the foot end.

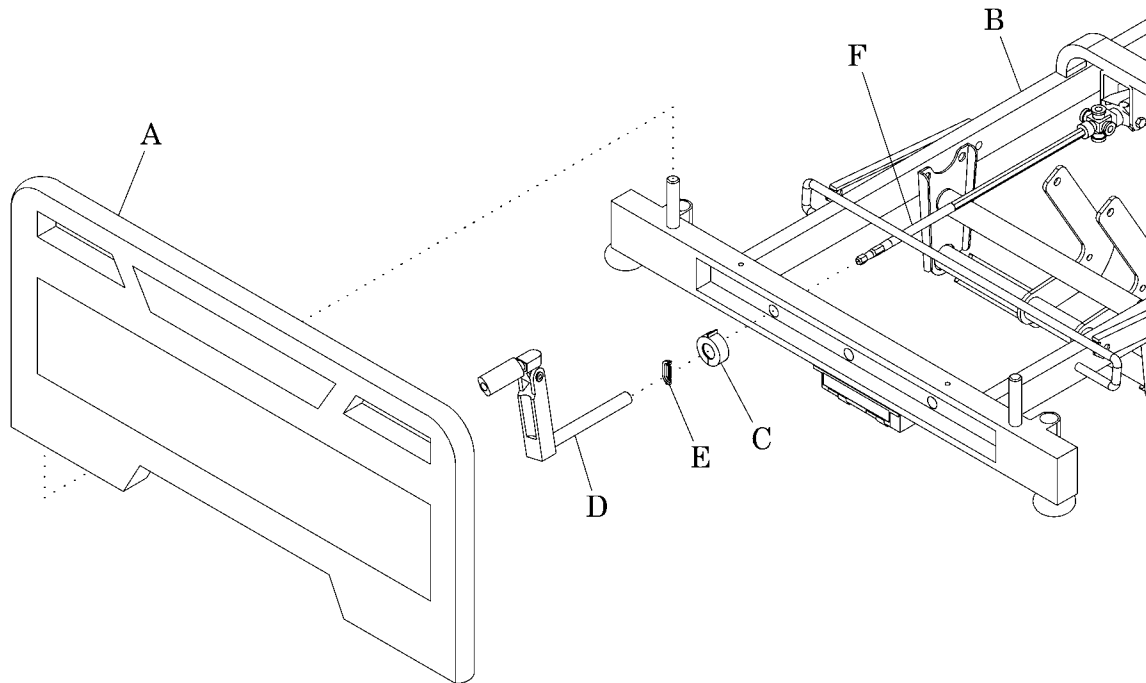


WARNING:

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

3. Use straps to attach the foot section to the head section.
4. Remove the footboard (A) from the bed frame (B) (see figure 4-12 on page 4-28).
5. Remove the plastic housing (C) from the crank handle assembly (D).
6. Lift the spring assembly (E) from the groove in the crank handle assembly (D), and push the spring assembly (E) up the shaft of the crank handle assembly (D).
7. Pull the crank handle assembly (D) out of the crank rod (F).

Figure 4-12. Manual Crank Handle Assembly



m336_043

Replacement

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

4.13 Head or Knee Crank Rod and Drive Screw Assembly (Manual Model Only)

Tools required: Small screwdriver
17 mm wrench
17 mm socket
Ratchet

Removal

1. Raise the knee section and head section to their highest positions.
2. Lift the foot section of the sleep surface, and fold it back toward the head section.

NOTE:

If either of these sections cannot be raised, this procedure can be done from underneath the foot end.



WARNING:

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

3. Use straps to attach the foot section to the head section.
4. Remove the footboard (A) from the bed frame (B) (see figure 4-13 on page 4-30).
5. Remove the plastic housing (C) from the crank handle assembly (D).
6. Lift the spring assembly (E) from the groove in the crank handle assembly (D), and push the spring assembly (E) up the shaft of the crank handle assembly (D).
7. Pull the crank handle assembly (D) out of the bed frame (B) until the crank rod (F) releases from crank handle assembly (D).
8. Gently pry up on one side of the u-joint connection (G).
9. Gently pry up on the opposite side of the u-joint connection (G).
10. Remove the crank rod (F) from the drive screw assembly (H).
11. Remove the retaining ring (I), washer (L), and pin (K) that attach the drive screw assembly (H) to the bed frame (B).

12. Remove the two bolts (L) that attach the drive screw assembly (H) to the bed frame (B).

Replacement

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

4.14 Hilow Crank Rod and Drive Screw Assembly Including Gas Springs (Manual Model Only)

Tools required: Small screwdriver
 17 mm wrench
 17 mm socket
 Ratchet
 10 mm hex wrench
 13 mm socket

Removal



WARNING:

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

1. Put bed supports under the upper bed frame.
2. Raise the knee section and the head section to their highest positions.
3. Lift the foot section of the sleep surface, and fold it back toward the head section.

NOTE:

If either of these sections cannot be raised, this procedure can be done from underneath the foot end.

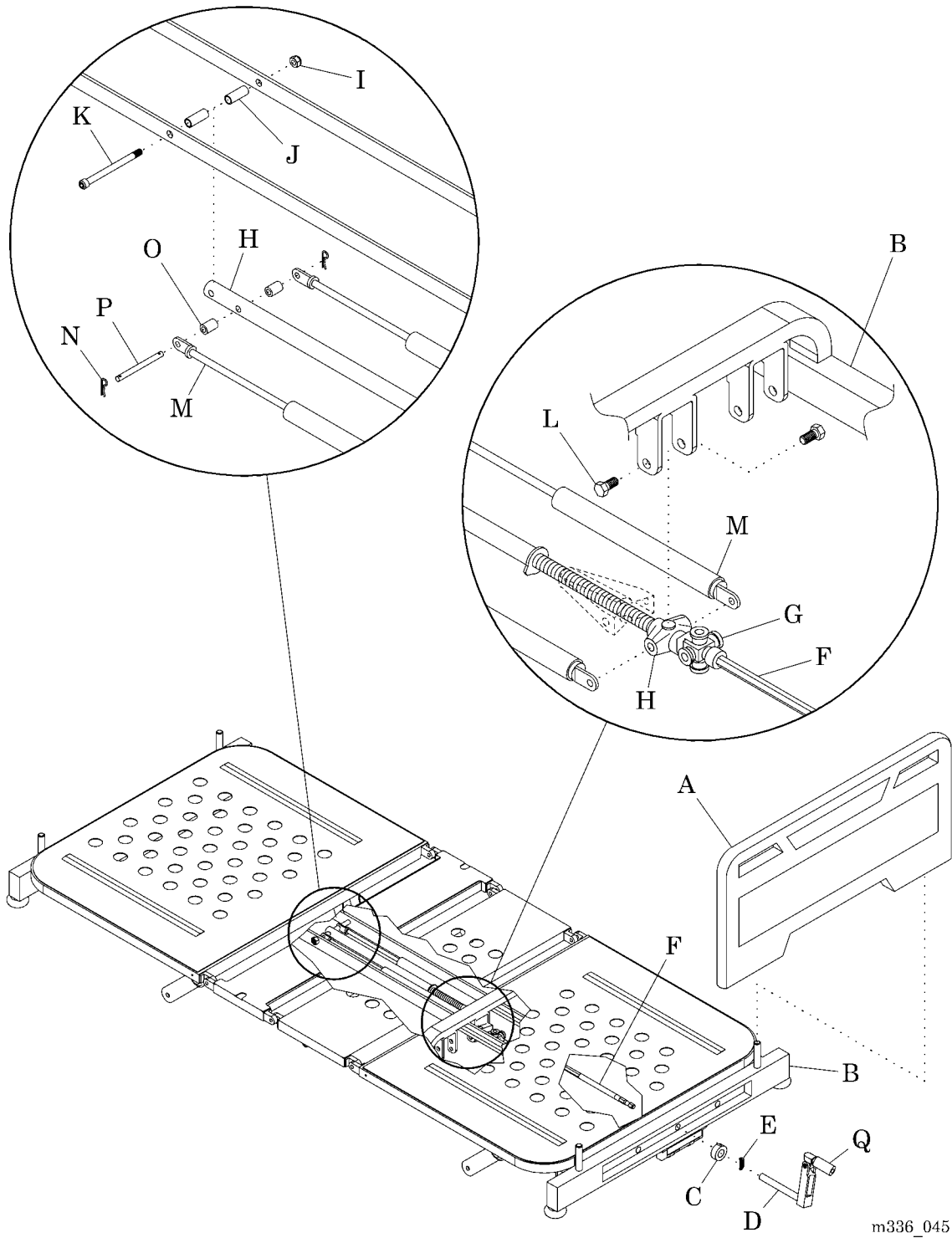


WARNING:

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

4. Use straps to attach the foot section to the head section.
5. Remove the footboard (A) from the bed frame (B) (see figure 4-14 on page 4-33).
6. Remove the plastic housing (C) from the crank handle assembly (D).

Figure 4-14. Hilow Crank Rod and Drive Screw Assembly Including Gas Springs



7. Lift the spring assembly (E) from the groove in the crank handle assembly (D), and push the spring assembly (E) up the shaft of the crank handle assembly (D).
8. Pull the crank handle assembly (D) out of the bed frame (B) until the crank rod (F) releases from crank handle assembly (D).
9. Gently pry up on one side of the u-joint connection (G) that attaches the crank rod (F) to the drive screw assembly (H).
10. Gently pry up on the opposite side of the u-joint connection (G), and remove the crank rod (F) from the drive screw assembly (H).
11. Remove the nut (I), two spacers (J), and bolt (K) that attach the drive screw assembly (H) to the bed frame (B).
12. Remove the two bolts (L) that attach the drive screw assembly (H) and the two gas springs (M) to the bed frame (B).
13. Remove the two retaining rings (N), two spacers (O), and pin (P) that attach the two gas springs (M) to the drive screw assembly (H).

Replacement

1. Install the two bolts (L) to attach the drive screw assembly (H) and the two gas springs (M) to the bed frame (B).
2. Connect the u-joint on the crank rod (F) to the drive screw assembly (H).
3. Connect the crank handle assembly (D) to the crank rod (F).
4. Install the spring assembly (E) and the plastic housing (C) to attach the crank rod (F) to the crank handle assembly (D).
5. Turn the handle (Q) clockwise until the drive screw assembly (H) stops.
6. Install the pin (P), two spacers (O) and two retaining rings (N) to attach the two gas springs (M) to the drive screw assembly (H).
7. Install the bolt (K), two spacers (J), and nut (L) to attach the drive screw assembly (H) to the bed frame (B).
8. Install the footboard (A) on the bed frame (B).
9. Do the “Function Checks” on page 2-2.

4.15 CPR Handle Assembly

Tools required: Phillips head screwdriver
8 mm hex wrench
Needle nose pliers

Removal

1. Raise the head section to the highest position.
2. Adjust the bed to a comfortable height in which to work.

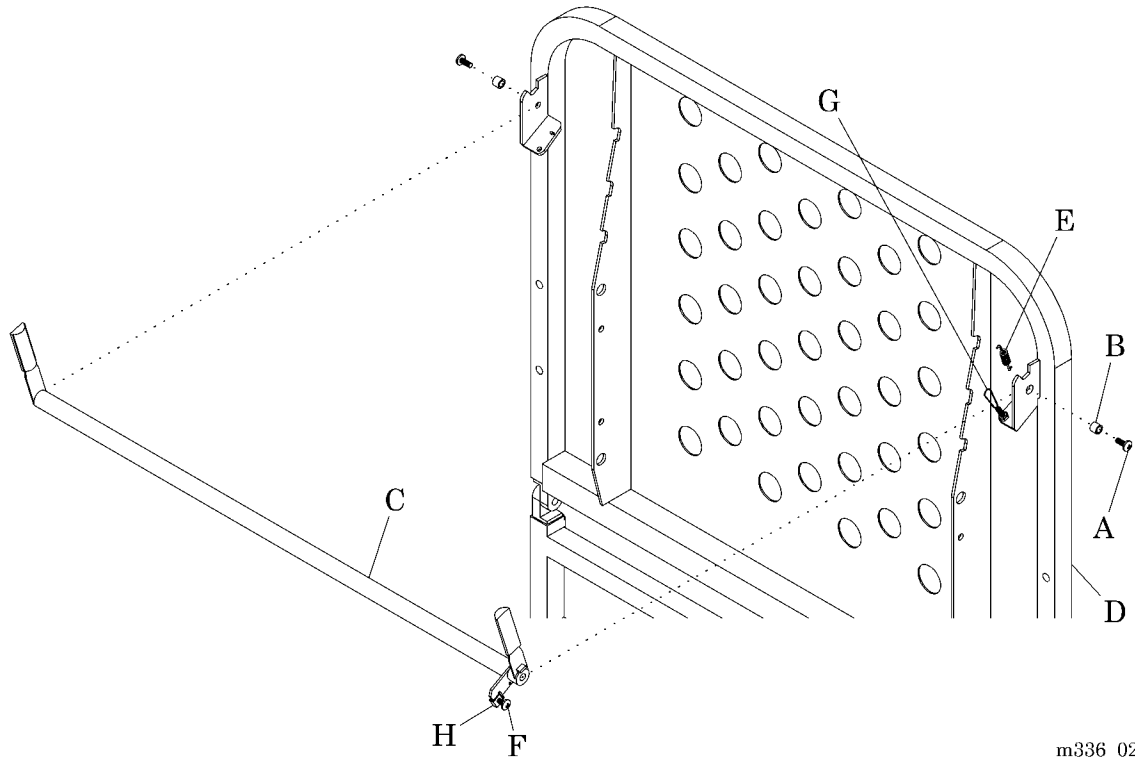


SHOCK HAZARD:

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

3. Disconnect the bed from its power source.
4. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
5. Remove the two screws (A) and two bushings (B) that attach the CPR handle assembly (C) to the bed frame (D) (see figure 4-15 on page 4-36).
6. Remove the spring (E) from the CPR handle assembly (C).
7. Loosen the screw (F) that attaches the CPR wire (G) to the bracket (H).
8. Remove the CPR wire (G) from the bracket (H).
9. Remove the CPR handle assembly (C) from the bed frame (D).

Figure 4-15. CPR Handle Assembly



m336_027

Replacement

Do the removal procedure in the reverse order.

Adjustment

Adjust the tension on the CPR wire (G) (refer to procedure 6.2 on page 6-11).

4.16 Siderails

Tools required: 5 mm hex wrench
Wire cutters

Removal

Prepare the Bed

1. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
2. Raise the bed to the highest position.
3. If you replace a headrail (A), raise the head section (B) to the highest position (see figure 4-16 on page 4-38).
4. If you replace a footrail (C), do as follows:
 - a. Raise the head section (B) and the knee section (D) to their highest positions.
 - b. Lift the foot section (E) of the sleep surface, and fold it back toward the head section (B).



WARNING:

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

- c. Use straps to attach the foot section (E) to the head section (B).



SHOCK HAZARD:

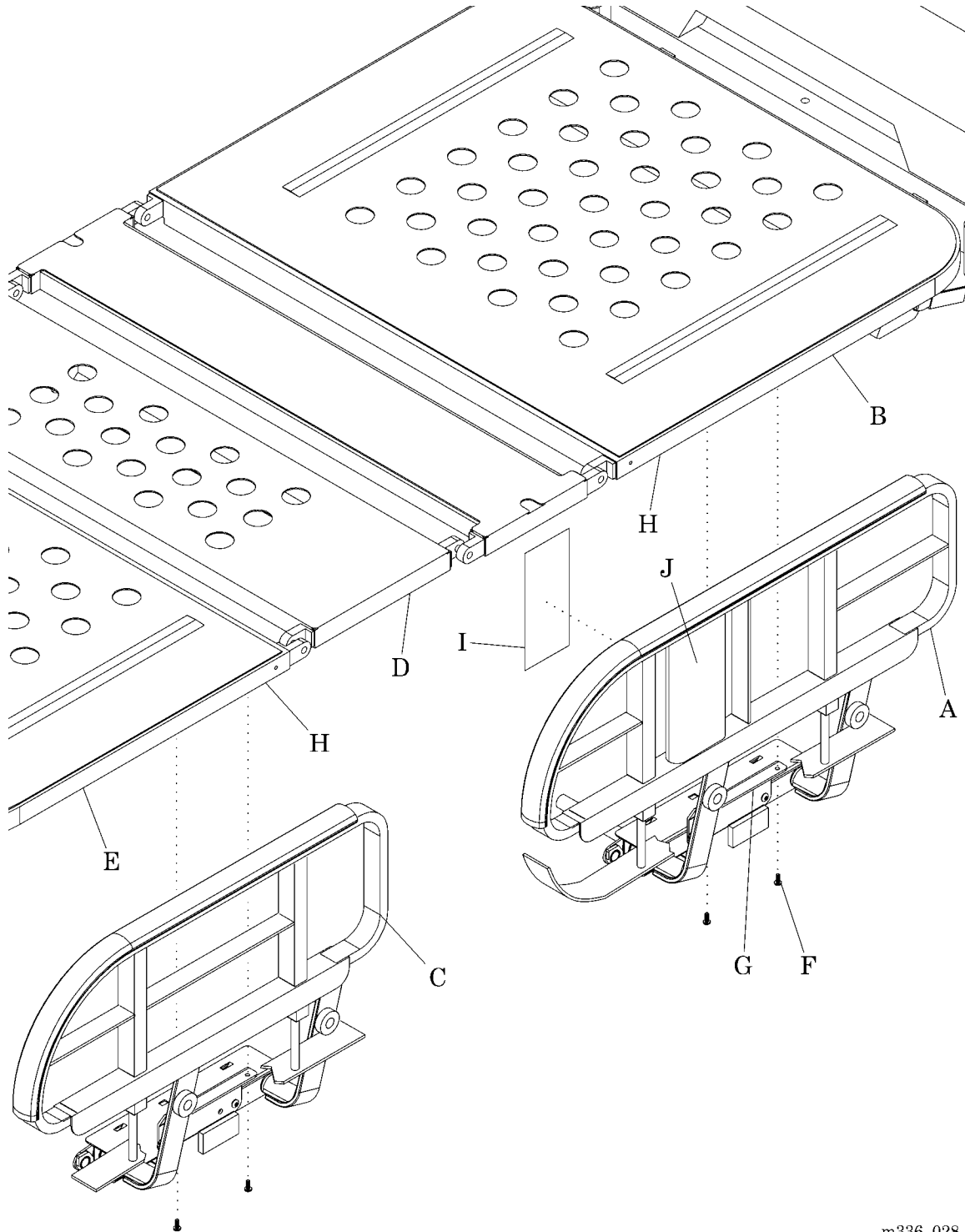
Disconnect the bed from its power source. Failure to do so could cause injury or equipment damage.

5. Disconnect the bed from its power source.

Remove the Siderails

1. If the siderail is a footrail (C) or if the bed is a manual bed, do as follows:
 - a. Remove the two screws (F) and the slide bracket (G) that attaches the siderail to the bed frame (H).

Figure 4-16. Siderails



m336_028

- b. Remove the siderail (C) from of the bed frame (H).
 - c. Go to “Replacement” on page 4-39.
2. If the siderail is a headrail (A) on an electric bed, do as follows:
 - a. Remove and discard the label (I) on the inside of the siderail control assembly (J).

NOTE:

The new headrail comes with a new label for the inside of the siderail control assembly.

- b. Remove the siderail control assembly (J) (refer to procedure 4.21 on page 4-46).
- c. Remove the two screws (F) and the slide bracket (G) that attaches the headrail (A) to the bed frame (H).
- d. Remove the headrail (A) from of the bed frame (H).

Replacement

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

4.17 Siderail Slide Bracket

Tools required: 5 mm hex wrench
Wire cutters

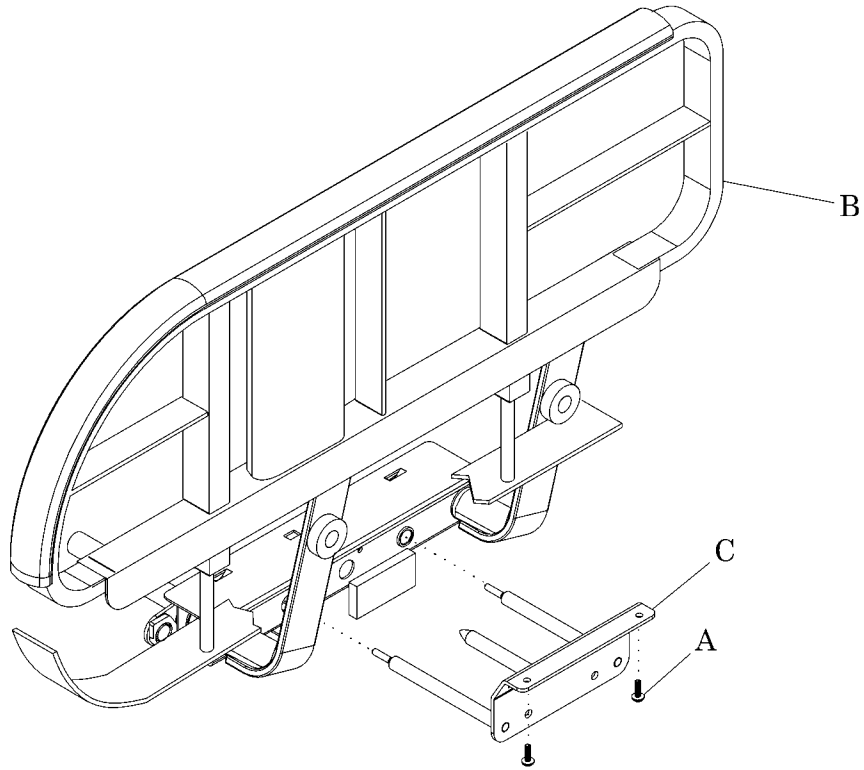
Removal



SHOCK HAZARD:

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

1. Disconnect the bed from its power source.
2. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
3. Remove the two screws (A) that attach the siderail (B) to the bed (see figure 4-17 on page 4-41).
4. Pull the slide bracket (C) out of the siderail (B) (see figure 4-17 on page 4-41).

Figure 4-17. Slide Bracket

m336_029

4

Replacement

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

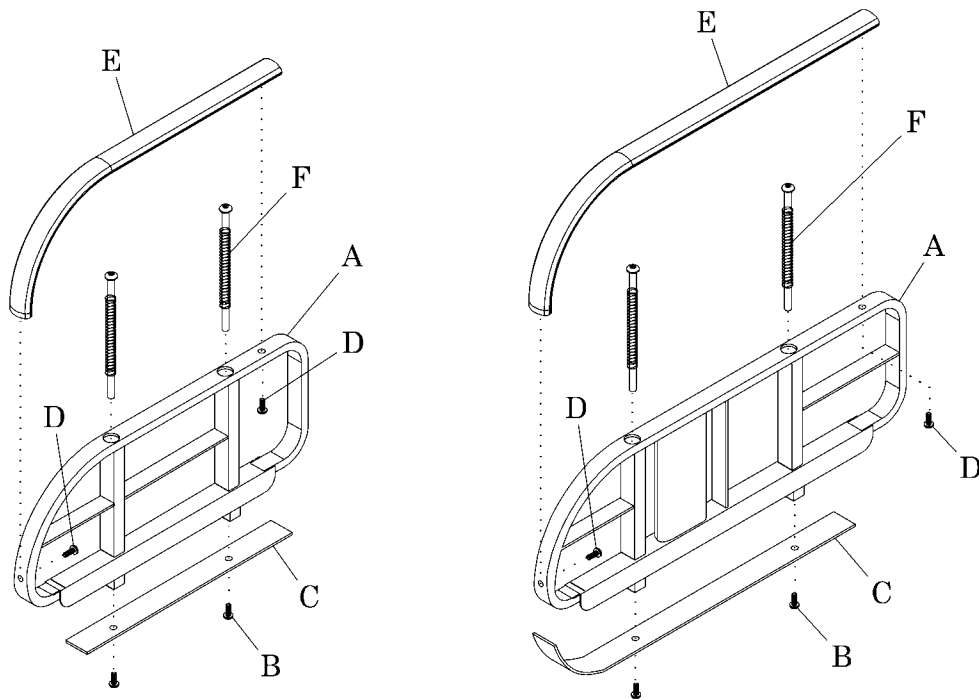
4.18 Siderail Retraction Assembly

Tools required: 4 mm hex wrench
4 mm T-handle hex wrench
Phillips head screwdriver
Screwdriver

Removal

1. Raise the bed to the highest position.
2. Lower the siderail (A) to the down position (see figure 4-18 on page 4-42).

Figure 4-18. Siderail Retraction Assembly



m336_030

3. Remove the two screws (B) that attach the lower bar (C) to the siderail (A).

NOTE:

The spring assemblies will move up suddenly, and hit the top cane.



WARNING:

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

4. Put on eye protection.
5. Remove the two screws (D) that attach the top cane (E) to the siderail (A).
6. Remove the two spring assemblies (F) from the siderail (A).

Replacement

1. Do the removal procedure in the reverse order.

NOTE:

There are both left-hand and right-hand siderail retraction assemblies.

2. Do the “Function Checks” on page 2-2.

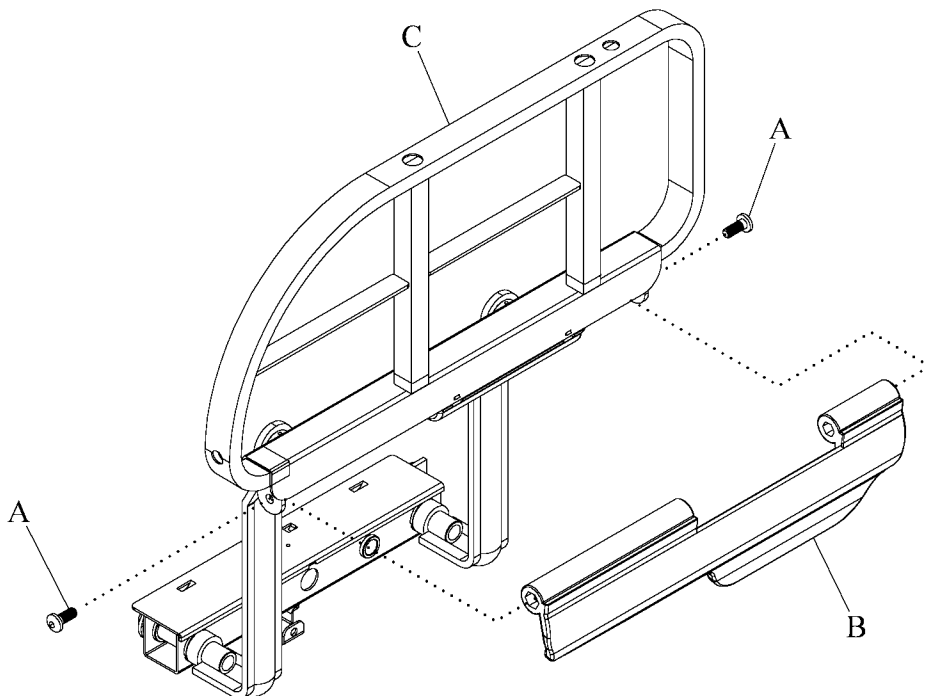
4.19 Siderail Guard Assembly (Foot End)

Tools required: 13mm hex wrench

Removal

1. Raise the bed to the highest position.
2. Remove the two screws (A) that attach the siderail guard (B) to the siderail (C).
3. Remove the siderail guard (B) from the siderail (C).

Figure 4-19. Siderail Guard Assembly (Foot End)



m336_2_050

Replacement

1. Raise the bed to the highest position.
2. Put the siderail cover (B) on the siderail (C).
3. Install the siderail cover (B) with the two screws (A).

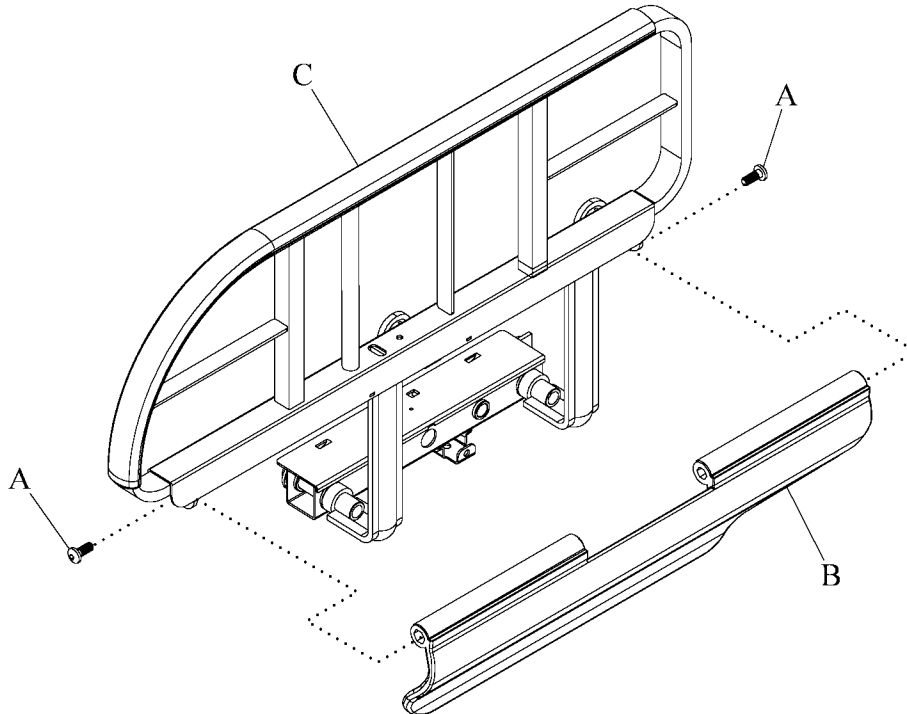
4.20 Siderail Guard Assembly (Head End)

Tools required: 13mm hex wrench

Removal

1. Raise the bed to the highest position.
2. Remove the two screws (A) that attach the siderail guard (B) to the siderail (C).
3. Remove the siderail guard (B) from the siderail (C).

Figure 4-20. Siderail Guard Assembly (Head End)



m336_2_051

Replacement

1. Raise the bed to the highest position.
2. Put the siderail cover (B) on the siderail (C).
3. Install the siderail cover (B) with the two screws (A).

4.21 Siderail Control Assembly

Tools required: Phillips head screwdriver
Wire cutters
8 mm nut driver, deep well

Removal

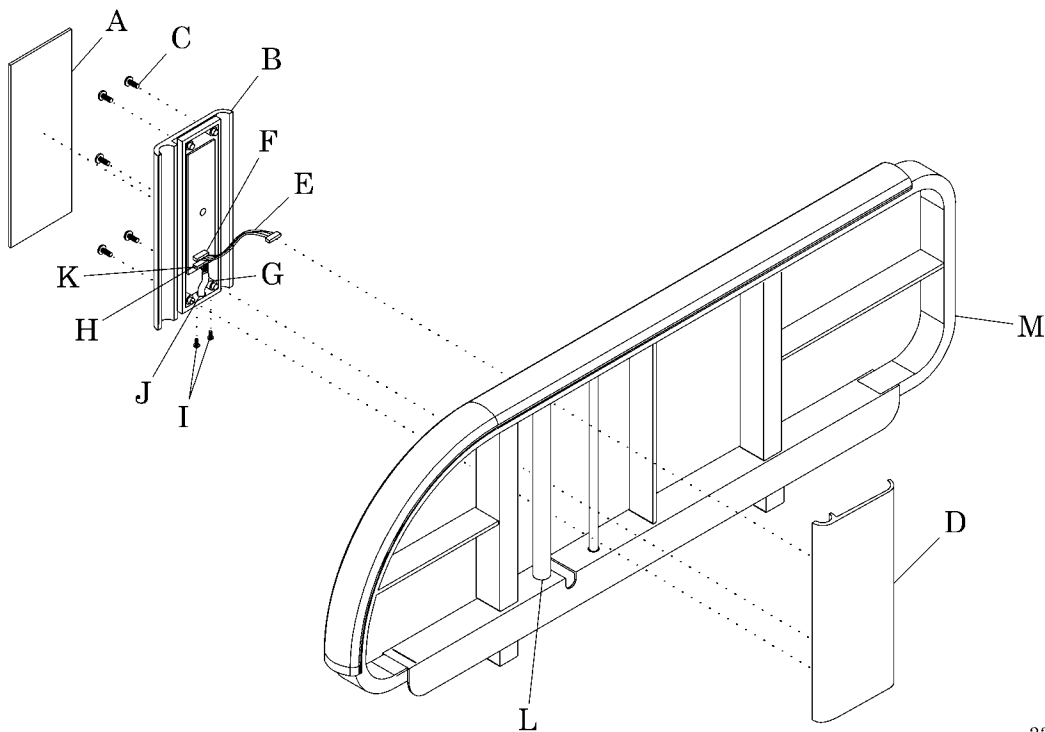


SHOCK HAZARD:

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

1. Disconnect the bed from its power source.
2. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
3. Remove the patient label (A) from the inner half of the siderail control assembly (B) (see figure 4.21 on page 4-46).

Figure 4-21. Siderail Control Assembly



m336_031

4. Remove the five screws (C) that attach the two halves of the siderail control assembly (D) and (B).
5. Disconnect the cable (E) from the top socket (F) on the outer half of the siderail control assembly (D).
6. Disconnect the siderail cable (G) from the bottom socket (H) on the outer half of the siderail control assembly (D).
7. Remove the two screws (I) that attach the strain relief (J) to the outer half of the siderail control assembly (F).
8. Gently bend the connector (K) down against the siderail cable (G).
9. Push the connector (K) and the siderail cable (G) out of the outer half of the siderail control assembly (D).
10. Remove and discard the two halves of the siderail control assembly (D) and (B).

Replacement

1. Remove and save the center screw (C) from the new outer half of the siderail control assembly (D).
2. Insert the connector (K) and the siderail cable (G) into the outer half of the siderail control assembly (D).
3. Connect the connector (K) to the bottom socket (H) on the outer half of the siderail control assembly (D).
4. Connect the cable (E) into the top socket (F) of the outer half of the siderail control assembly (D).
5. Install the two halves of the siderail control assembly (D) and (B) around the post (L) on the siderail (M).
6. Install the five screws (C) to attach the two halves of the siderail control assembly (D) and (B) to the post (L).
7. Install the inner label (A) to the inner half of the siderail control assembly (B).
8. Connect the battery cable to the control board (refer to procedure 4.7 on page 4-16).

9. Connect the bed to the correct power source.
10. Do the “Function Checks” on page 2-2.

4.22 Siderail Control Cable

Tools required: Phillips head screwdriver
Wire cutters
8 mm nut driver, deep well

Removal

1. Raise the head section to its highest position.

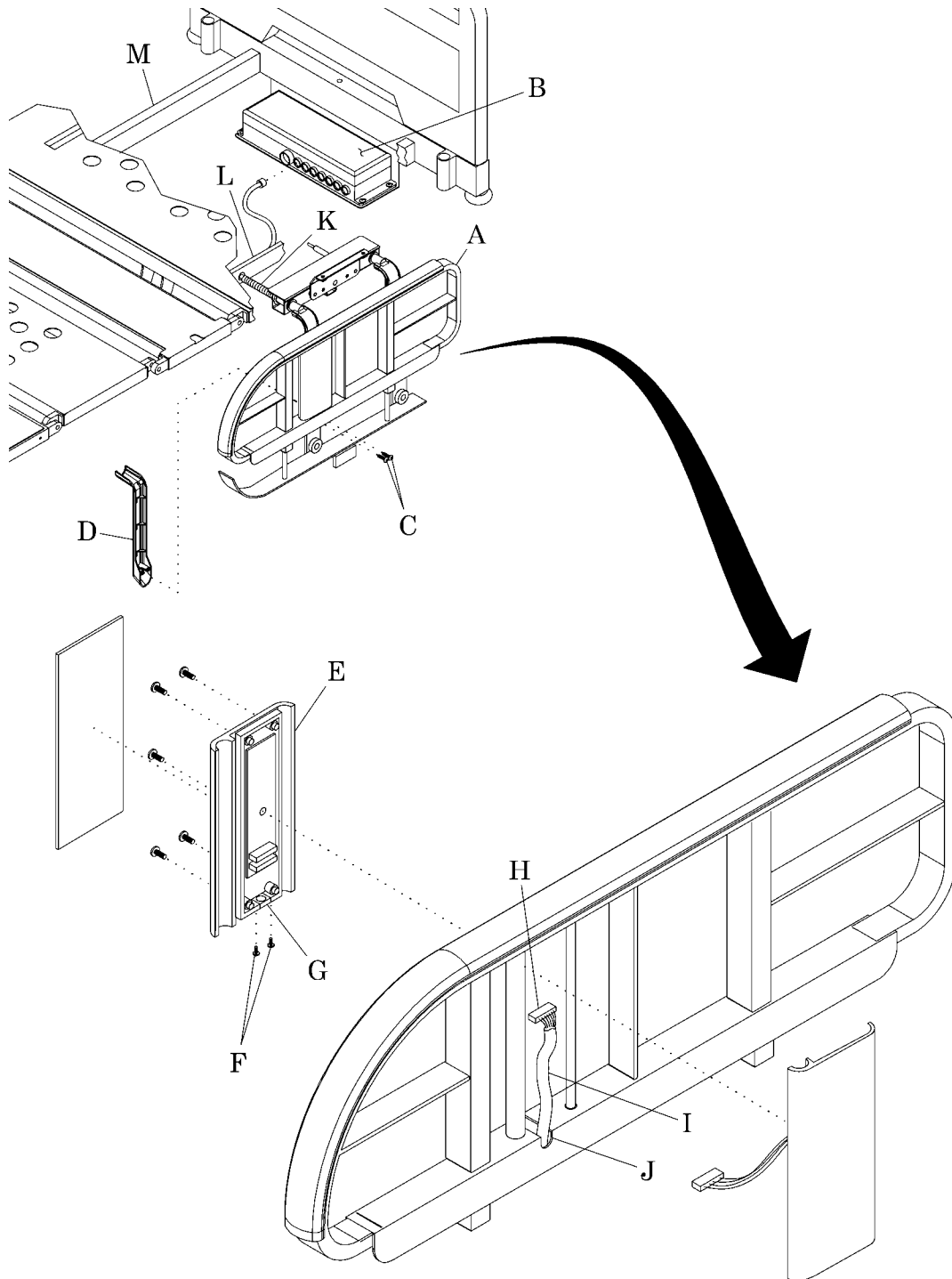


SHOCK HAZARD:

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

2. Disconnect the bed from its power source.
3. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).
4. Make a note that shows how the cable routes from the siderail (A) to the control box assembly (B) (see figure 4-22 on page 4-50).
5. Remove the two screws (C) that attach the wire cover (D) to the siderail (A).
6. Remove the siderail control assembly (E) (refer to procedure 4.21 on page 4-46).
7. Remove the two screws (F) that attach the strain relief (G) to the siderail control assembly (E) (see figure 4-22 on page 4-50).
8. Disconnect the connector (H) and carefully bend it down against the siderail cable (I).
9. Push the connector (H) and the siderail cable (I) through the strain relief (G) and out of the siderail control assembly (E).
10. Pull the siderail cable (I) through the notch (J) in the siderail (A).
11. Pull the spring strain relief (K) out of the bracket (L).

Figure 4-22. Siderail Control Cable



m336_042

**CAUTION:**

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

12. Carefully cut all of the wires ties that attach the siderail cable (I) to the bed frame (M).
13. Disconnect the siderail cable (I) from the control box assembly (B).

Replacement**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.

1. When you route the siderail cable (I), make sure it has enough slack for the bed to move through its full range of motion.
2. Route the siderail cable (I) from the control box assembly (B) to the siderail (A).

NOTE:

The connector will not fit through the bracket.

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

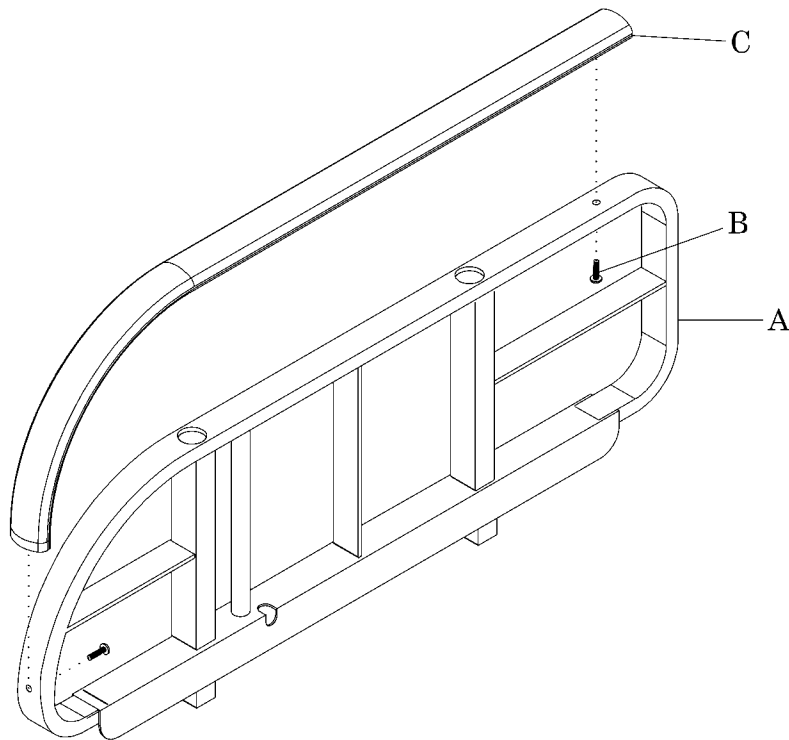
4.23 Siderail Top Cane

Tools required: Phillips head screwdriver

Removal

1. Raise the siderail (A) to its up and locked position (see figure 4-23 on page 4-52).
2. Remove the two screws (B) that attach the top cane (C) to the siderail (A).
3. Remove and discard the top cane (C).

Figure 4-23. Siderail Top Cane



m336_032

Replacement

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

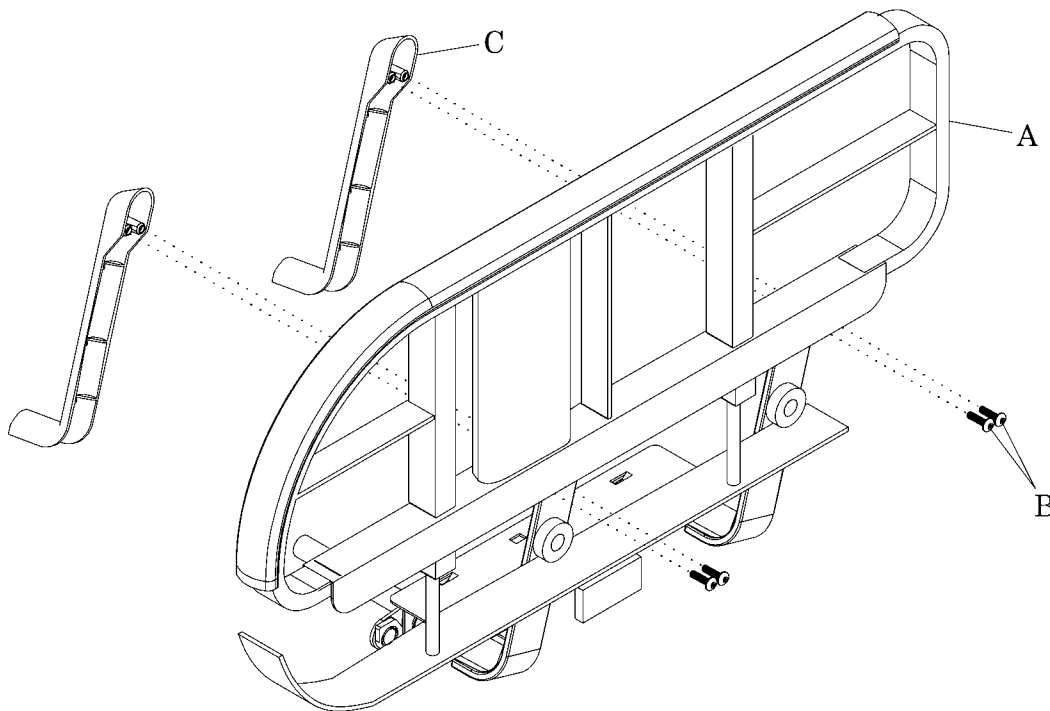
4.24 Siderail Wire Cover

Tools required: Phillips head screwdriver

Removal

1. Raise the siderail (A) to its up and locked position.
2. Remove the two screws (B) that attach the siderail wire cover (C) to the siderail (A).
3. Remove and discard the siderail wire cover (C) (see figure 4-24 on page 4-53).

Figure 4-24. Siderail Wire Cover



m336_033

Replacement

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

4.25 Central Brake and Steer—Caster Assemblies

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 4.7 on page 4-16).



SHOCK HAZARD:

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

2. Disconnect the bed from its power source.

Remove the Foot End

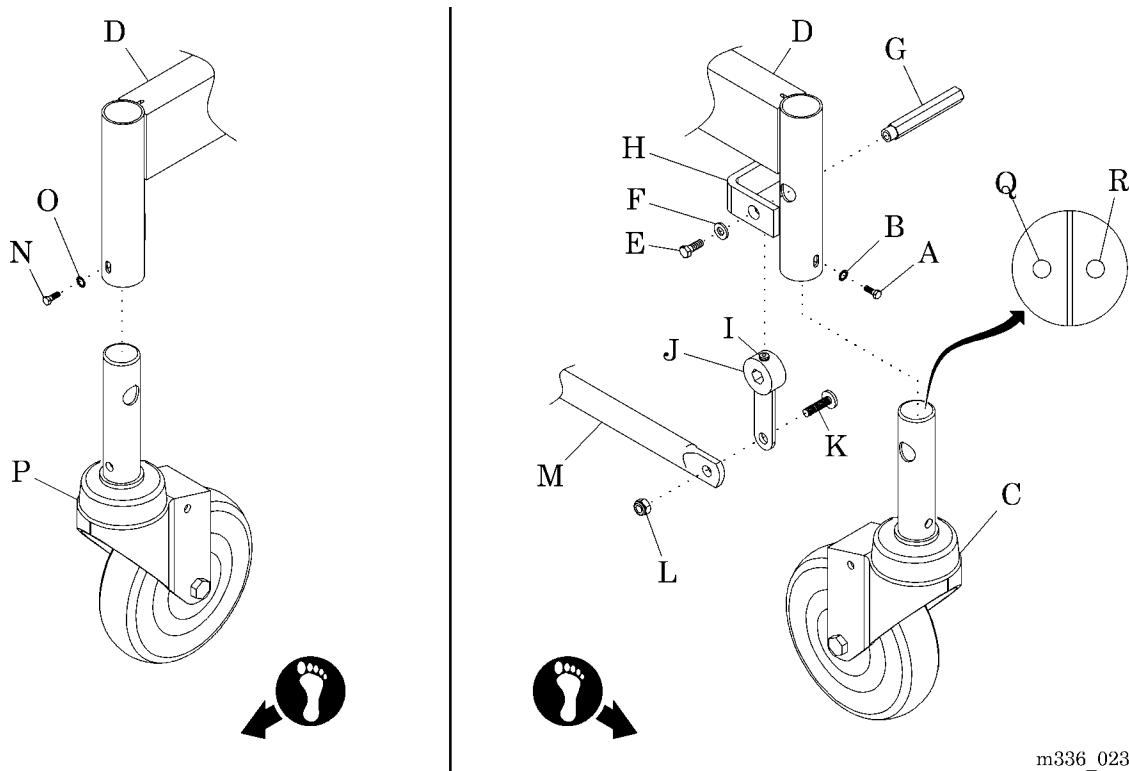


WARNING:

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 of the floor.
4. Remove the bolt (A) and washer (B) that attach the brake and steer caster (C) to the bed frame (D) (see figure 4-25 on page 4-55).
5. Remove the bolt (E) and washer (F) that attach the hex rod (G) to the bracket (H).
6. Loosen the setscrew (I) on the rocker arm (J).
7. Remove the hex rod (G) from the rocker arm (J).

Figure 4-25. Central Brake and Steer—Brake and Steer and Swivel Caster Assemblies



m336_023

NOTE:

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

8. If necessary, remove the bolt (K) and nut (L) that attach the linkage (M) to the rocker arm (J).
9. Remove the bolt (N) and washer (O) that attach the swivel caster (P) to the bed frame (D).
10. Go to “Replace the Foot End” on page 4-57.

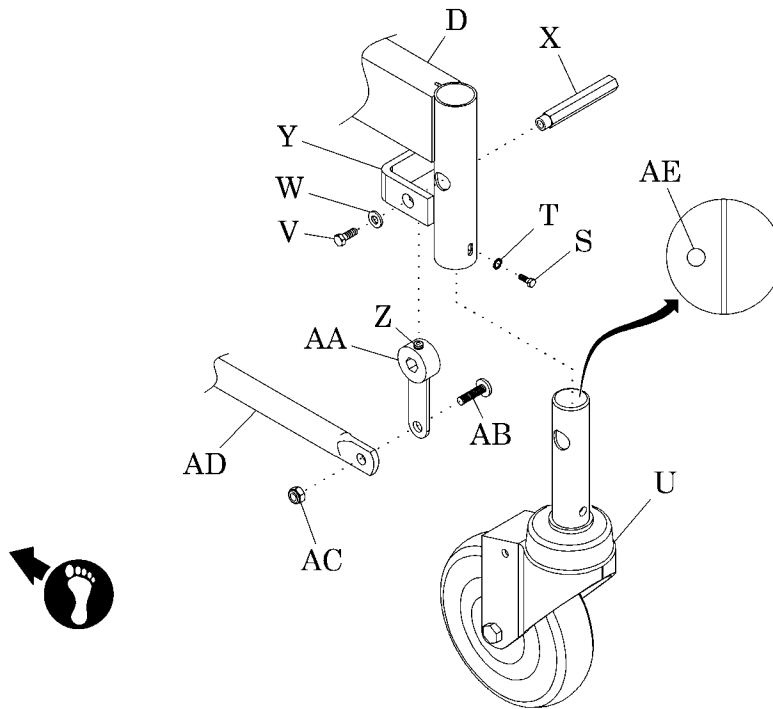
Remove the Head End**WARNING:**

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 bolt (S) and washer (T) that attach the brake caster (U) to the bed frame (D) (see figure 4-26 on page 4-56).

Figure 4-26. Central Brake and Steer—Brake Caster Assemblies



m336_038

5. Remove the bolt (V) and washer (W) that attach the hex rod (X) to the bracket (Y).
6. Loosen the setscrew (Z) on the rocker arm (AA).

NOTE:

It is not necessary to remove the setscrews.

7. Remove the hex rod (X) from the rocker arm (AA).
8. If necessary, remove the bolt (AB) and nut (AC) that attach the linkage (AD) to the rocker arm (AA).

NOTE:

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

9. Do step 4 through step 8 for the opposite caster assembly.
10. Go to “Replace the Head End” on page 4-58.

Replacement

Replace the Foot End

1. Make sure the caster is in the neutral or center position.
2. Install the brake and steer caster (C) in the bed frame (D) with the red dot (Q) on the left-hand side and the green dot (R) on the right-hand side (see figure 4-25 on page 4-55).

NOTE:

When left-hand and right-hand sides of the bed are identified, they are from the patient’s point of view.

**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 not operate correctly.

3. Push the hex rod (G) through the opening in the bed frame (D) and through the brake and steer caster (C).
4. Push the hex rod (G) through the rocker arm (I).
5. Push the hex rod (G) into the bracket (H) on the bed frame (D).
6. Install the bolt (A) and washer (B) to attach the brake and steer caster (C) to the bed frame (D).
7. Install the bolt (E) and washer (F) to attach the hex rod (G) to the bracket (H).
8. Install the bolt (K) and nut (L) to attach the linkage (M) to the rocker arm (J).
9. Tighten the setscrew (I) on the rocker arm (J).

10. Install the bolt (N) and washer (O) to attach the swivel caster (P) to the bed frame (D).

Replace the Head End

1. Make sure the caster is in the neutral or center position.
2. Install a brake caster (U) in the bed frame (D) with the red dot (AE) on the left-hand side (see figure 4-26 on page 4-56).

NOTE:

When left-hand and right-hand sides of the bed are identified, they are from the patient's point of view.



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 not operate correctly.

3. Push the hex rod (X) through the opening in the bed frame (D) and through the brake caster (U).
4. Push the hex rod (X) through the rocker arm (AA).
5. Push the hex rod (X) into the bracket (Y) on the bed frame (D).
6. Install the bolt (S) and washer (T) to attach the brake caster (U) to the bed frame (D).
7. Install the bolt (V) and washer (W) to attach the hex rod (X) to the bracket (Y).
8. Install the bolt (AB) and the nut (AC) to attach the linkage (AD) to the rocker arm (AA).
9. Tighten the setscrew (Z) on the rocker arm (AA).
10. Do step 1 through step 9 for the opposite caster assembly.
11. Lower the bed to the floor.
12. Remove the caster blocks.
13. Do the “Function Checks” on page 2-2.

4.26 Central Brake and Steer—Pedal Assemblies

Tools required: 2.5 mm hex wrench
5 mm hex wrench
13 mm nut driver
Rubber mallet

Removal

1. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).



SHOCK HAZARD:

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

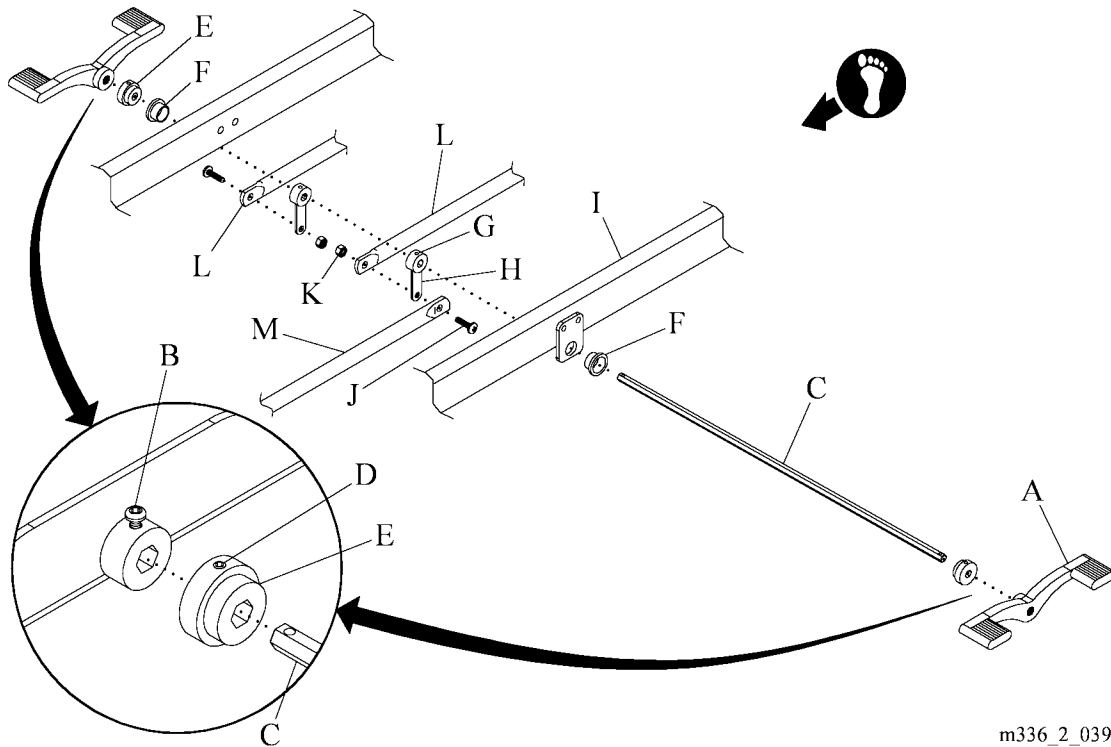
2. Disconnect the bed from its power source.
3. Put the central brake and steer pedals (A) in the neutral position (see figure 4-27 on page 4-60).
4. Remove the two screws (B) that attach the two pedals (A) to the hex rod (C).
5. Remove the two pedals (A) from the hex rod (C).
6. Loosen the two setscrews (D) that attach the two metal bushings (E) to the hex rod (C).

NOTE:

It is not necessary to remove the setscrews.

7. Remove the two metal bushings (E) and the two plastic bushings (F) from the hex rod (C).
8. Loosen the setscrews (G) in the two rocker arms (H).
9. Push the hex rod (C) fully out of the bed frame (I).
10. Remove the bolts (J) and nuts (K) that attach the two head linkages (L) and one foot linkage (M) to the two rocker arms (H).

Figure 4-27. Central Brake and Steer—Pedal Assemblies



Replacement



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 not operate correctly.

1. Make sure that a flat side of the hex rod faces upward before it is installed.
2. Do the removal procedure in the reverse order.
3. Do the “Function Checks” on page 2-2.

4.27 Casters for Individual Brake and Steer

Tools required: Phillips head screwdriver
Caster blocks
Bed frame jack

Removal

1. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).



SHOCK HAZARD:

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

2. Disconnect the bed from its power source.

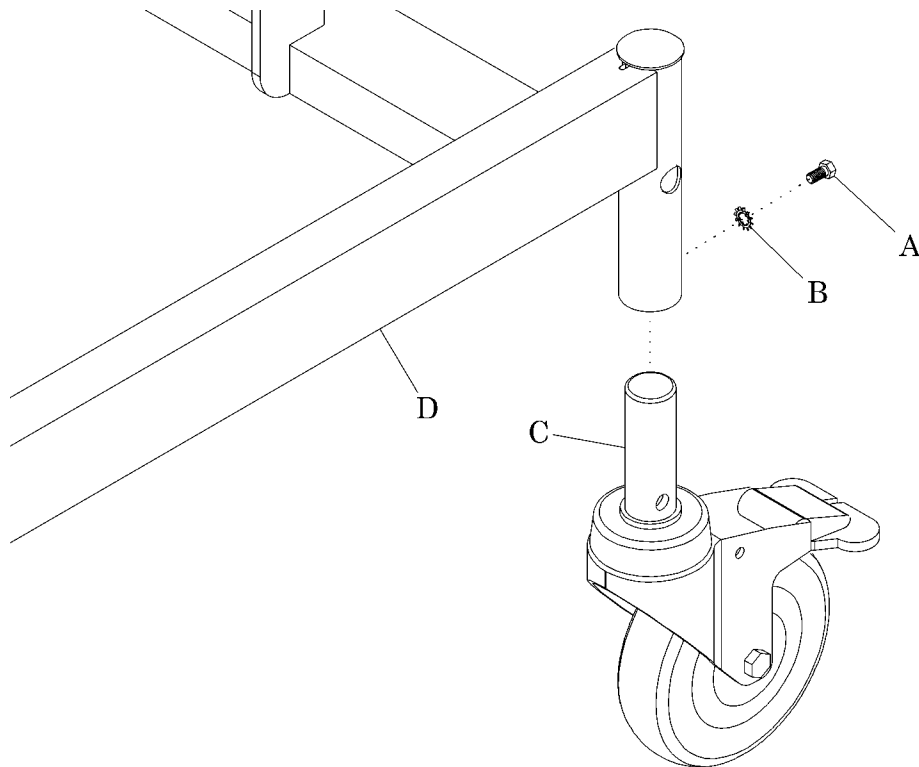


WARNING:

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 must work on off of the floor.
5. Remove the bolt (A) and washer (B) that attach the caster (C) to the bed frame (D) (see figure 4-28 on page 4-62).
6. Remove the caster (C) from the bed frame (D).

Figure 4-28. Casters for Individual Brake and Steer



m336_037

Replacement

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

4.28 4-Corner Brake and Steer—Caster Assembly

Tools required: Screwdriver
 Caster blocks
 Bed frame jack
 13 mm socket
 Ratchet

Removal

1. Disconnect the battery cable from the control board (refer to procedure 4.7 on page 4-16).



WARNING:

Failure to unplug the bed could cause injury or equipment damage.

2. Unplug the bed from its power source.



WARNING:

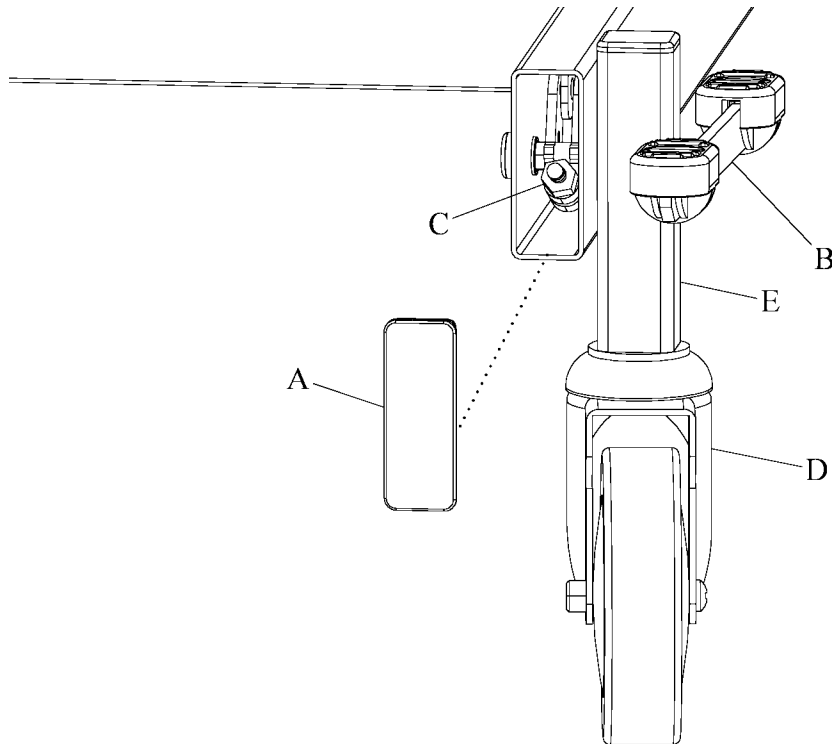
Put caster blocks behind the casters at the opposite end of the bed. Failure to do so could cause injury.

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 applicable end of the bed off of the floor.
5. Remove the end cap (A) from the bed frame (see figure 4-29 on page 4-64).
6. Put the brake pedal (B) in the neutral position.
7. Loosen the nut (C).
8. Remove the brake pedal (B).
9. Remove the caster (D) from the caster mount (E).

Replacement

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

Figure 4-29. 4-Corner Brake and Steer—Caster Assembly



m336_2_049

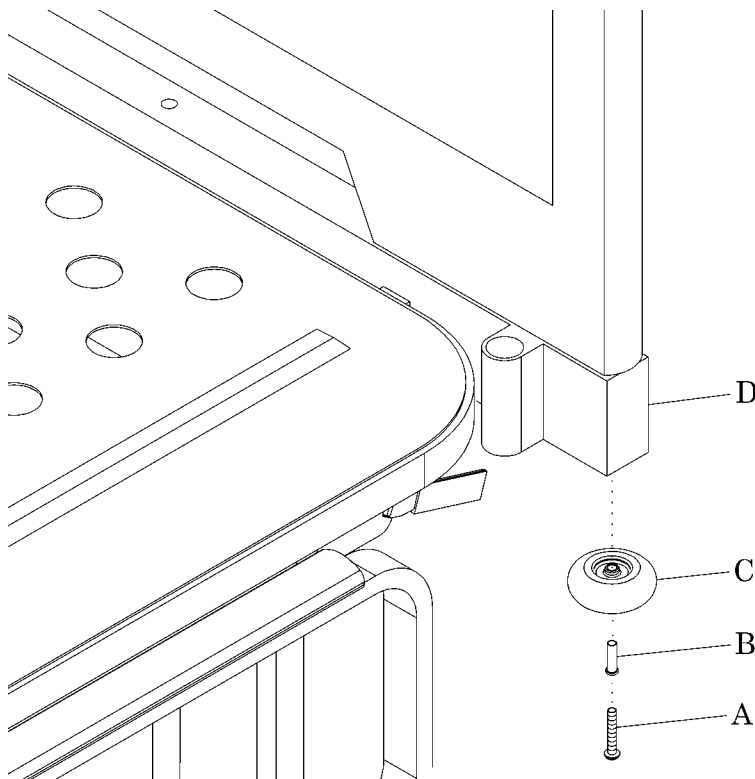
4.29 Bumper

Tools required: 5 mm hex wrench

Removal

1. Raise the bed to its highest position.
2. Remove the screw (A) and bushing (B) that attach the bumper (C) to the bed frame (D) (see figure 4-30 on page 4-65).

Figure 4-30. Bumper



m336_034

3. Remove the bumper (C) from the bed frame (D).

Replacement

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

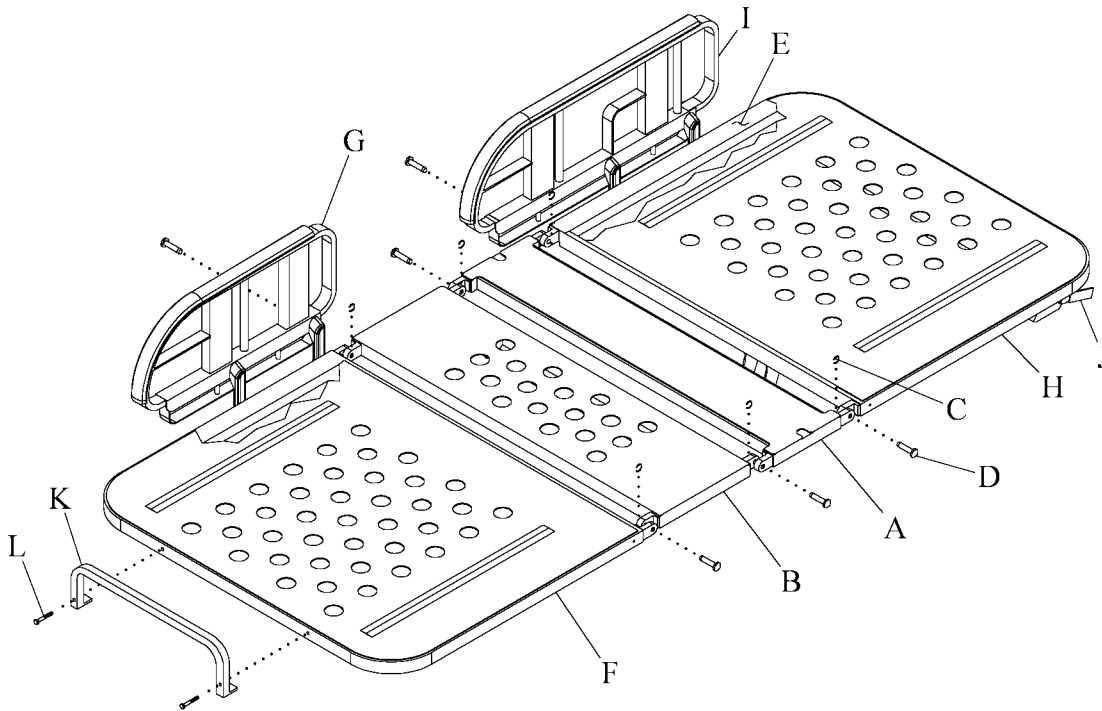
4.30 Sleep Surface Panels

Tools required: Screwdriver

Removal

1. Raise the bed to the highest position.
2. Lower the head and knee sections to their lowest positions.
3. If you are to replace a seat panel (A) or thigh panel (B), do as follows (see figure 4-31 on page 4-66):
 - a. Remove the four retaining rings (C) and four pins (D) that attach the panel (A) or (B) to the bed frame (E).
 - b. Remove the panel (A) or (B) from the bed frame (E).

Figure 4-31. Sleep Panels



m336_2_035

4. If you replace a foot panel (F), do as follows:
 - a. Remove the two footrails (G) from the bed frame (E) (refer to procedure 4.16 on page 4-37).

- b. Remove the two retaining rings (C) and two pins (D) that attach the foot panel (F) to the bed frame (E) (see figure 4-31 on page 4-66).
 - c. Remove the foot panel (F) from the bed frame (E).
5. If you replace the mattress stop (K), do as follows:
 - a. Remove the two screws (L).
 - b. Remove the mattress stop (K).
6. If you replace a head panel (H), do as follows:
 - a. Remove the two headrails (I) from the bed frame (E) (refer to procedure 4.16 on page 4-37).
 - b. Remove the CPR handle assembly (J) from the bed frame (E) (refer to procedure 4.15 on page 4-35).
 - c. Remove the two retaining rings (C) and two pins (D) that attach the head panel (H) to the bed frame (E) (see figure 4-31 on page 4-66).
 - d. Remove the head panel (H) from the bed frame (E).

Replacement

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

NOTES:

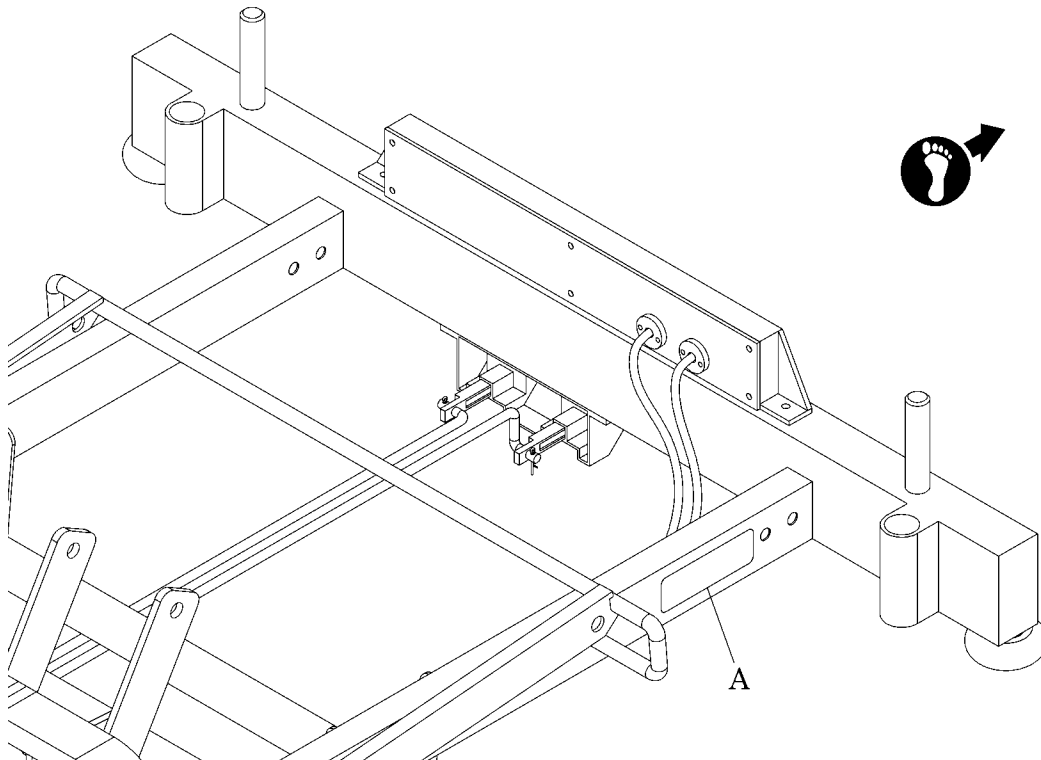
Chapter 5

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



m336_002

5

Call Hill-Rom Technical Support at 800-445-3720 (USA) with the information that follows:

- Six-digit customer account number
- Purchase order number
- Model number
- Serial number
- Part number(s)

To promptly order parts, request part prices and availability, or follow up on a service order, use the Hill-Rom fax number:

812-934-8472

Terms:

- Net 60 days
- F.O.B. Batesville, IN
- Prepaid shipping charges added to invoice
- All orders shipped by Hill-Rom nominated unless specified

Address all inquiries to:

ATTN TECHNICAL SUPPORT—PARTS
HILL-ROM COMPANY, INC.
1069 STATE ROUTE 46 E
BATESVILLE IN 47006-9167

Address all return goods to:

ATTN SERVICE STORES
DISTRIBUTION CENTER DOOR D23
HILL-ROM COMPANY, INC.
COUNTY ROAD 300E
BATESVILLE IN 47006-9167

NOTE:

To eliminate possible delays or incorrect billings, **do not** return any items without a Return Material Authorization (RMA) number. When a return is requested, an RMA packet is included with each order. This packet includes an RMA number, instructions, and a shipping label. If an RMA number is not available, get one by calling Hill-Rom Technical Support at 800-445-3720 (USA).

Exchange Policy

The following are policies for in-warranty and out-of-warranty exchanges from Hill-Rom.

In-Warranty Exchanges

In some cases, Hill-Rom will request that parts/products be returned for an examination. 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, get one by phoning Hill-Rom Technical Support at 800-445-3720 (USA).

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, get one by phoning Hill-Rom Technical Support at 800-445-3720 (USA). 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**BASIC CARE™ BED(S)
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 Basic Care™ Beds(s) 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 five (5) 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 May 5, 2004

war022

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, if you have a Model A bed. See table 5-2 on page 5-9 for a recommended spare parts list to service five units or more, if you have a Model B bed.

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

Part Number	Quantity	Description
131491	10	Fuse set, 120 V
131492	10	Fuse set, 230 V
131489	2	Head drive assembly
131487	2	Knee drive assembly
131488	2	Hi-low drive assembly
131422	2	Manual foot mod—Basic Care
131520	2	Control box assembly ^a , 100 V
131521	2	Control box assembly ^a , 110 V - 115 V
131522	2	Control box assembly ^a , 120 V - 127 V
131523	2	Control box assembly ^a , 220 V - 230 V
131524	2	Control box assembly ^a , 240 V
151458	2	Control box upgrade kit ^b , 100 V
151459	2	Control box upgrade kit ^a , 110 V - 115 V
151460	2	Control box upgrade kit ^a , 120 V - 127 V
151461	2	Control box upgrade kit ^a , 220 V - 230 V
151462	2	Control box upgrade kit ^a , 240 V
131493	2	Head/foot board assembly
131480	2	Head siderail assembly, right-hand
131482	2	Head siderail assembly, left-hand
131484	2	Foot siderail assembly, right-hand
131486	2	Siderail assembly, foot, left-hand
131438	2	Trendelenburg assembly, short length
131437	2	Trendelenburg assembly, standard length
131433	2	Brake/steer caster (central brake and steer)
131430	2	Swivel caster (central brake and steer)
131432	4	Brake caster (central brake and steer)

Part Number	Quantity	Description
131429	4	Individual brake caster
131434	2	Individual brake/steer caster
131501	5	Power cord ^e , CG 1, 15 (Bolivia, Brazil, Indonesia, South Korea, Vietnam, Egypt, Paraguay, Turkey, and St. Vincent & The Grenadines)
131502	5	Power cord ^e , CG 2, 16, 18 (Brunei, Hong Kong, Indonesia, Malaysia, Singapore, Vietnam, Oman, Bahrain, Yemen, United Arab Emirates, Kuwait, Macau, St. Kitts & Nevis, St. Lucia, and Iraq)
131503	5	Power cord ^e , CG 3, 14, 17 (Bahamas, Belize, Bermuda, Brazil, Cayman Islands, Colombia, Costa Rica, Ecuador, Thailand, Venezuela, El Salvador, Guatemala, Honduras, Jamaica, Nicaragua, Panama, Peru, Philippines, U.S. Virgin Islands, Lebanon, Mexico, Saudi Arabia, Aruba, Antigua Barbuda, and British Virgin Islands)
131504	5	Power cord ^e , CG 4, 19 (Australia, and New Zealand)
131505	5	Power cord ^e , Model BCG 5 (Chile, Uruguay and Syria)
131506	5	Power cord ^e , CG 6 (Japan)
131507	5	Power cord ^e , CG 7 (Taiwan)
131508	5	Power cord ^b , CG 8 (China)
131509	5	Power cord ^e , CG 9 (Argentina)

- a. Order control box assemblies in accordance with your facility's specifications.
- b. Order control box update kits in accordance with your facility's specifications.
- c. Order power cords in accordance with your facility's specifications.

Table 5-2. Recommended Spare Parts Base Frame—Model B

Part Number	Quantity	Description
131491	10	Fuse set, 120 V
131492	10	Fuse set, 230 V
131489	2	Head drive assembly
131487	2	Knee drive assembly
131488	2	Hi-low drive assembly
131422	2	Manual foot mod—Basic Care
151425	2	Control box assembly ^a , 100 V
151426	2	Control box assembly ^a , 110 V - 115 V
151427	2	Control box assembly ^a , 120 V - 127 V
151428	2	Control box assembly ^a , 220 V - 230 V
151429	2	Control box assembly ^a , 240 V
131493	2	Head/foot board assembly
151415	2	Head siderail assembly, right-hand
151417	2	Head siderail assembly, left-hand
151419	2	Foot siderail assembly, right-hand
151421	2	Siderail assembly, foot, left-hand
131438	2	Trendelenburg assembly, short length
131437	2	Trendelenburg assembly, standard length
131433	2	Brake/steer caster (central brake and steer)
131430	2	Swivel caster (central brake and steer)
131432	4	Brake caster (central brake and steer)
131429	4	Individual brake caster
131434	2	Individual brake/steer caster
131501	5	Power cord ^b , CG 1, 15 (Bolivia, Brazil, Indonesia, South Korea, Vietnam, Egypt, Paraguay, Turkey, and St. Vincent & The Grenadines)
131502	5	Power cord ^b , CG 2, 16, 18 (Brunei, Hong Kong, Indonesia, Malaysia, Singapore, Vietnam, Oman, Bahrain, Yemen, United Arab Emirates, Kuwait, Macau, St. Kitts & Nevis, St. Lucia, and Iraq)

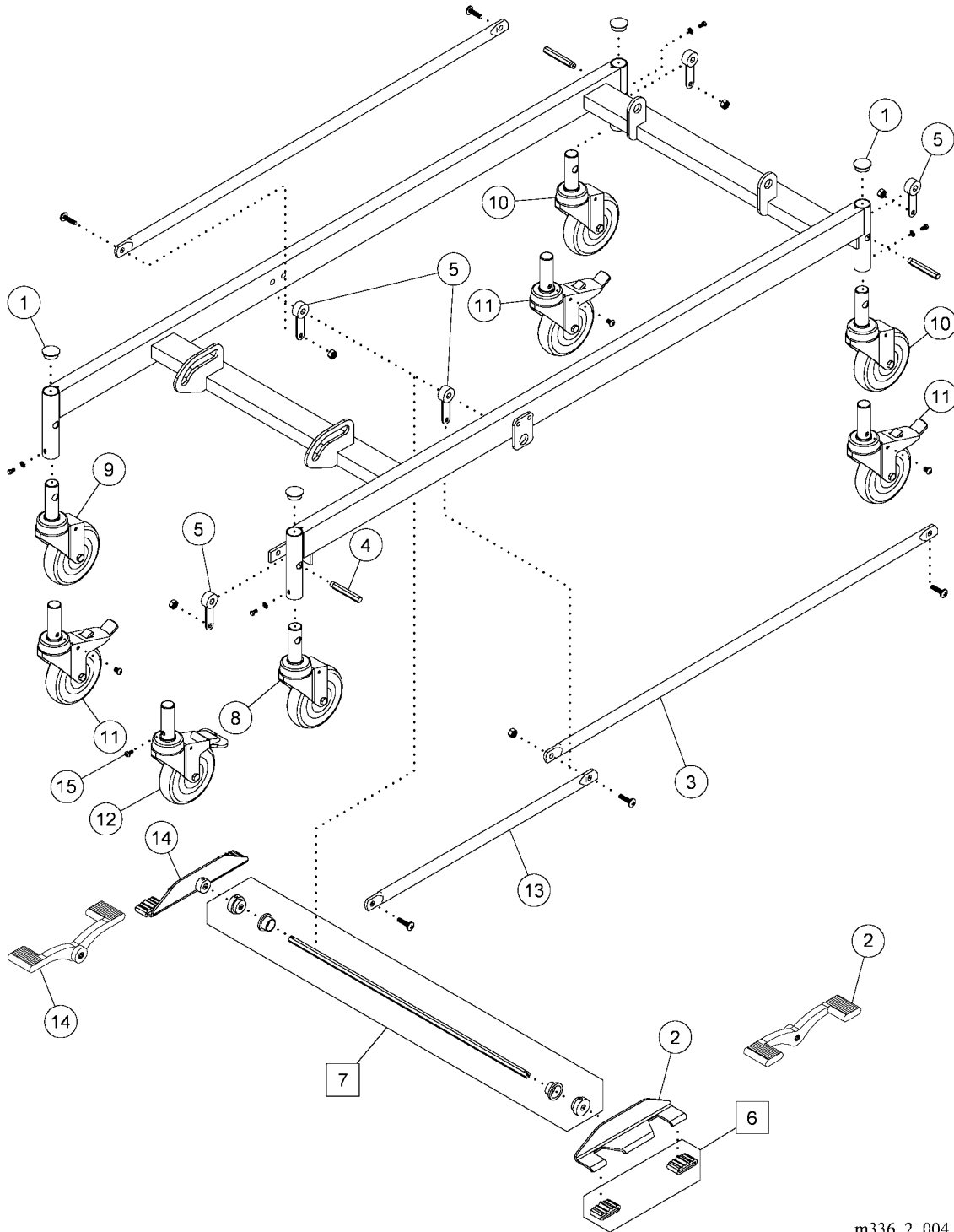
Part Number	Quantity	Description
131503	5	Power cord ^b , CG 3, 14, 17 (Bahamas, Belize, Bermuda, Brazil, Cayman Islands, Colombia, Costa Rica, Ecuador, Thailand, Venezuela, El Salvador, Guatemala, Honduras, Jamaica, Nicaragua, Panama, Peru, Philippines, U.S. Virgin Islands, Lebanon, Mexico, Saudi Arabia, Aruba, Antigua Barbuda, and British Virgin Islands)
131504	5	Power cord ^b , CG 4, 19 (Australia, and New Zealand)
131505	5	Power cord ^b CG 5 (Chile, Uruguay and Syria)
131506	5	Power cord ^b , CG 6 (Japan)
131507	5	Power cord ^b , CG 7 (Taiwan)
131508	5	Power cord ^b , CG 8 (China)
131509	5	Power cord ^b , CG 9 (Argentina)

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

NOTES:

Base Frame—Model A

Figure 5-2. Base Frame—Model A



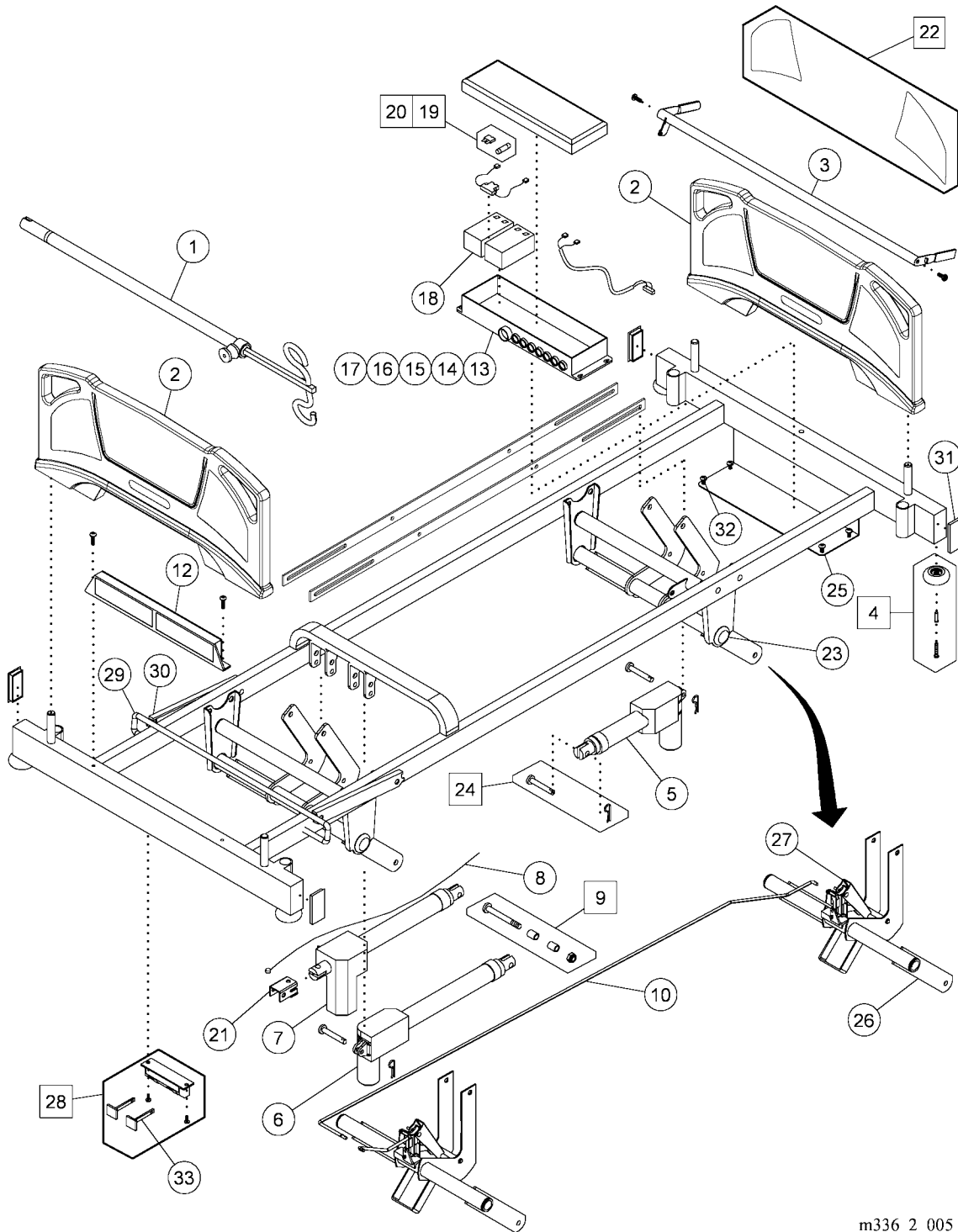
m336_2_004

Table 5-3. Base Frame—Model A

Item Number	Part Number	Quantity	Description
1	131439	4	Caster hole covers
2	131427	2	Central brake and steer pedal assembly, left-hand
3	131424	2	Brake/steer linkage, head end
4	not available	3	Caster hex rod
5	131421	5	Rocker arm assembly—Basic Care
6	131467	2	Brake/steer pedal pad set
7	131425	1	Brake/steer hex rod (center)
8	131433	1	Brake/steer caster (central brake and steer)
9	131430	1	Swivel caster (central brake and steer)
10	131432	2	Brake caster (central brake and steer)
11	131429	3	Individual brake caster
12	131434	1	Individual brake/steer caster
13	131423	1	Brake/steer linkage, foot end
14	131426	2	Central brake and steer pedal assembly, right-hand
15	141138	4	Caster bolt—without central brake and steering
	141137		Caster bolt—with central brake and steering

Upper Frame—P1440—Model A

Figure 5-3. Upper Frame—P1440—Model A



m336_2_005

Table 5-4. Upper Frame—P1440—Model A

Item Number	Part Number	Quantity	Description
1	P1445A	1	IV pole, Basic Care
2	131493	2	Head/foot board assembly
3	131475	1	CPR assembly (handles)
4	131440	4	Bumper assembly
5	131487	1	Knee drive assembly
6	131488	1	Hi-low drive assembly
7	131489	1	Head drive assembly
8	131668	1	CPR cable set
9	131495	1	Bolt assembly, hilo drive
10	141130 141131	1	Trend rods, standard Trend rods, short
11	151404	2	Hi-low transverse bars
12	131526	1	Control panel, foot end
13	131520	1	Control box assembly, 100 V
14	131521	1	Control box assembly, 110 V -115 V
15	131522	1	Control box assembly, 120 V - 127 V
16	131523	1	Control box assembly, 220 V - 230 V
17	131524	1	Control box assembly, 240 V
18	131490	2	Battery, control box (includes 2 batteries)
19	131491	1	Fuse set, 120 V
20	131492	1	Fuse set, 230 V
21	131671	1	Bracket, head actuator
22	151405	4	Laminate, triangle, right and left, head and foot board
23	131435	4	Trendelenburg indicator
24	131670	5	Pin, actuator
25	131525	1	Bracket, control box
26	141136	2	Hi-low lift arm
27	141175	2	Trend assembly part
28	151401	1	Trend, mount (includes trend knobs)
29	151402	1	Foot rack
30	151406	2	Saw-tooth rack insert

Item Number	Part Number	Quantity	Description
31	141128	4	Upper frame end caps
32	141490	4	Control box mounting screw
Not shown	151458	1	Control box upgrade kit, 100 V
Not shown	151459	1	Control box upgrade kit, 110 V - 115 V
Not shown	151460	1	Control box upgrade kit, 120 V - 127 V
Not shown	151461	1	Control box upgrade kit, 220 V - 230 V
Not shown	151462	1	Control box upgrade kit, 240 V

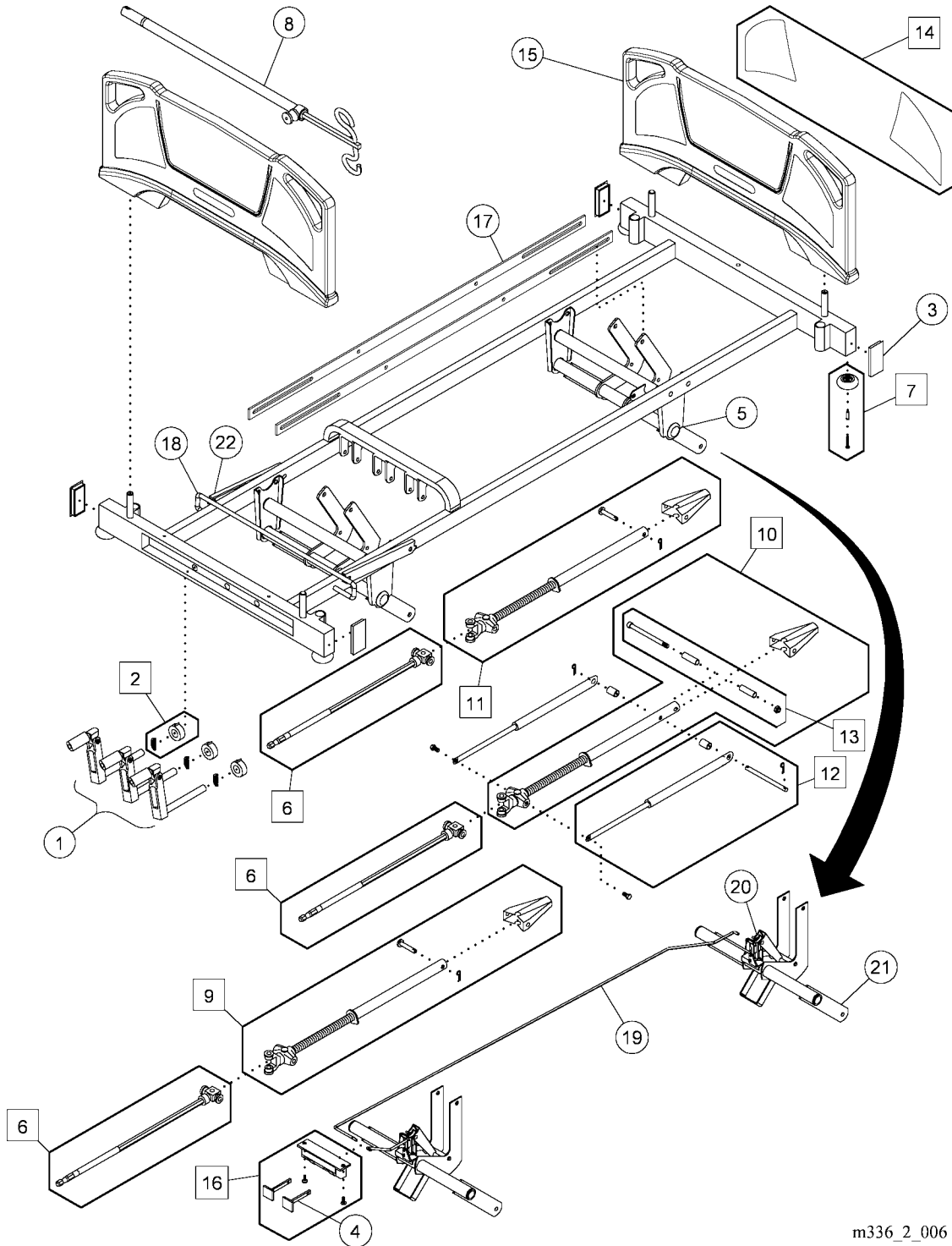
NOTE:

Order control box and control box update kit as applicable.

NOTES:

Upper Frame—P1441—Model A

Figure 5-4. Upper Frame—P1441—Model A



m336_2_006

Table 5-5. Upper Frame—P1441—Model A

Item Number	Part Number	Quantity	Description
1	131422	1	Manual foot mod—Basic Care (includes labels)
2	131466	3	Spring, manual crank assembly
3	141128	1	End caps
4	141127	1	Trend knobs
5	131435	4	Trendelenburg indicator
6	131497	3	Connecting rod, manual
7	131440	4	Bumper assembly
8	P1445	1	IV pole, Basic Care
9	131500	1	Shaft, knee
10	131498	1	Shaft, hi-low
11	131496	1	Shaft, head
12	131499	2	Springs, hilow
13	131495	1	Bolt assembly, hi-low drive
14	151405	4	Laminate, triangle, right and left, head and foot board
15	131493	2	Head and foot board assembly
16	151401	1	Trend mount with trend knobs and screws
17	151404	2	Transverse bar
18	151402	1	Footrack
19	141130 141131	1	Trend rods, standard Trend rods, short
20	141175	2	Trend assembly part
21	141136	2	Hi-low lift arm
22	151406	2	Saw-tooth rack insert

Siderails—Model A

Figure 5-5. Siderails—Model A

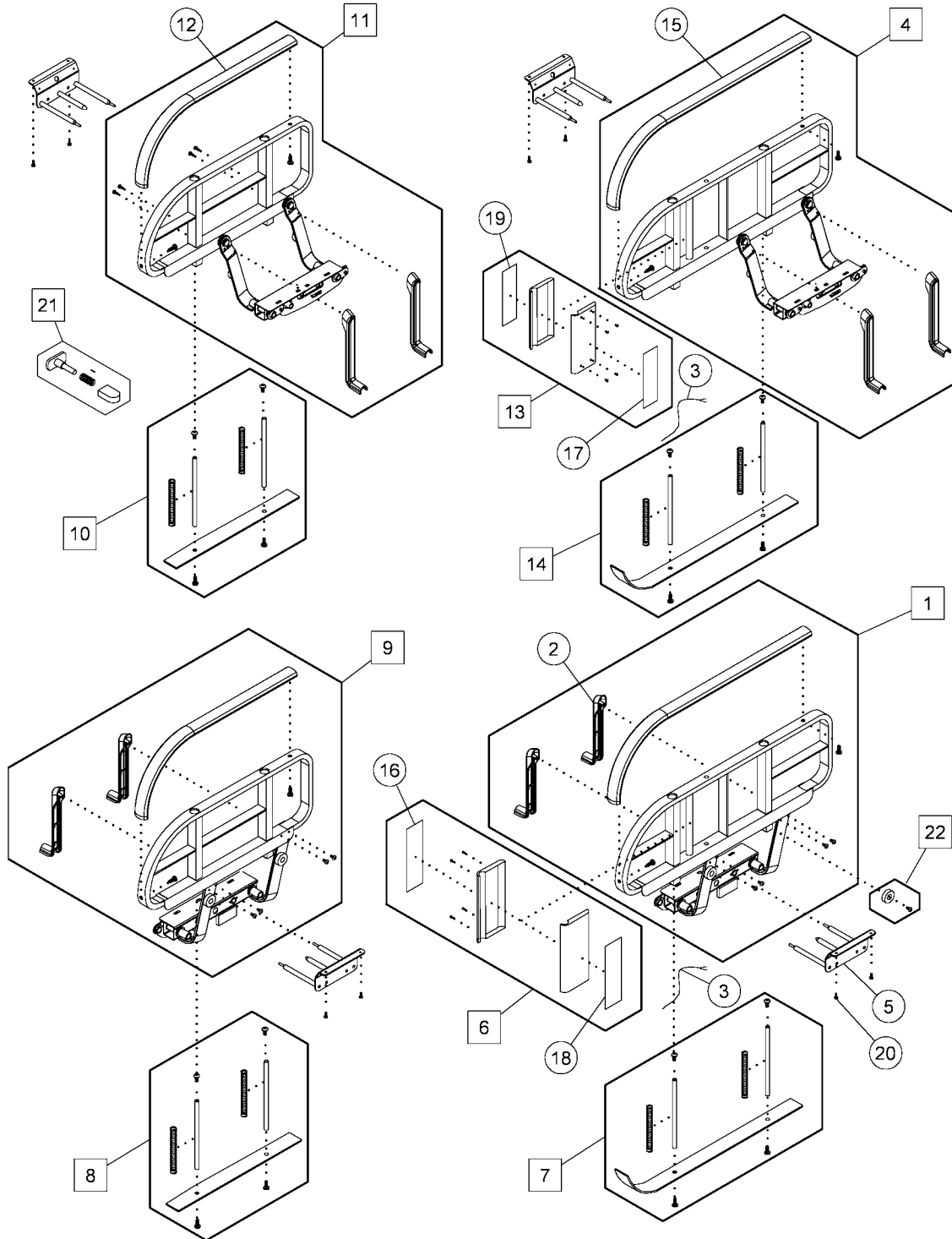
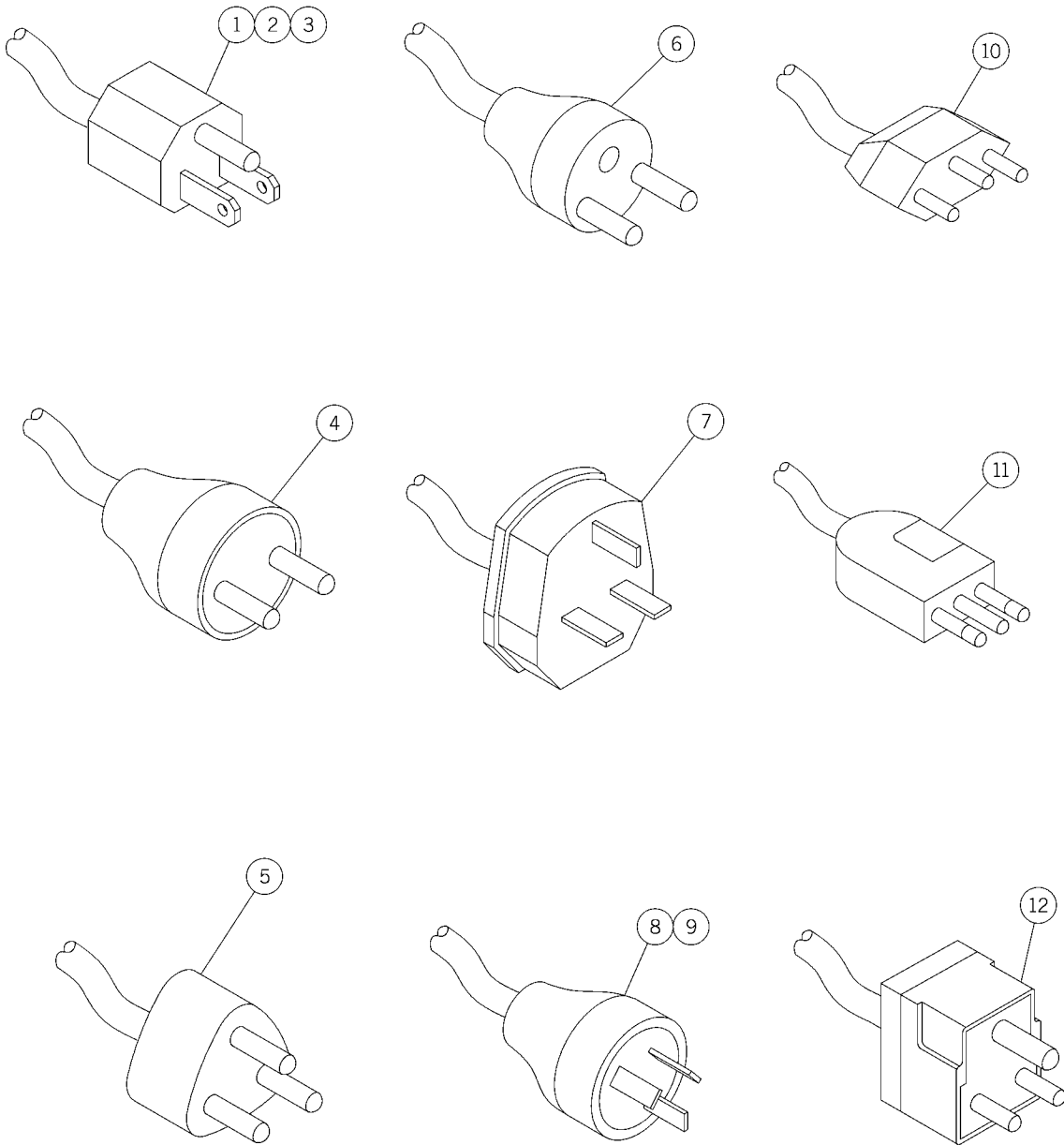


Table 5-6. Siderails—Model A

Item Number	Part Number	Quantity	Description
1	131480	1	Head siderail assembly, right-hand (does not include the control module (131515) or control cable (131513))
2	131478	8	Wire cover
3	131513	2	Siderail control cable
4	131482	1	Head siderail assembly, left-hand (does not include the control module (131515) or control cable (131513))
5	131669	4	Siderail bracket
6	131515	1	Control module, patient left
7	131483	1	Siderail retraction bar assembly, head, left-hand
8	131673	1	Siderail retraction bar assembly, foot, left-hand
9	131486	1	Siderail assembly, foot, left-hand
10	131485	1	Siderail retraction bar assembly, foot, right-hand
11	131484	1	Foot siderail assembly, right-hand
12	131477	2	Top cane, foot siderail
13	131514	1	Control module, patient right
14	131481	1	Siderail retraction bar assembly, head, right-hand
15	131476	2	Top cane, head siderail
16	131518	1	Control label, patient side, left-hand
17	131516	1	Control label, patient side, right-hand
18	131519	1	Control label, caregiver side, left-hand
19	131517	1	Control label, caregiver side, right-hand
20	141133	2	Screw, side bracket mount
21	141139	4	Siderail pull knob
22	141136	2	Siderail rollers
Not shown	131672	1	Siderail control label set (includes items: 16, 17, 18 and 19)

Power Cord

Figure 5-6. Power Cord



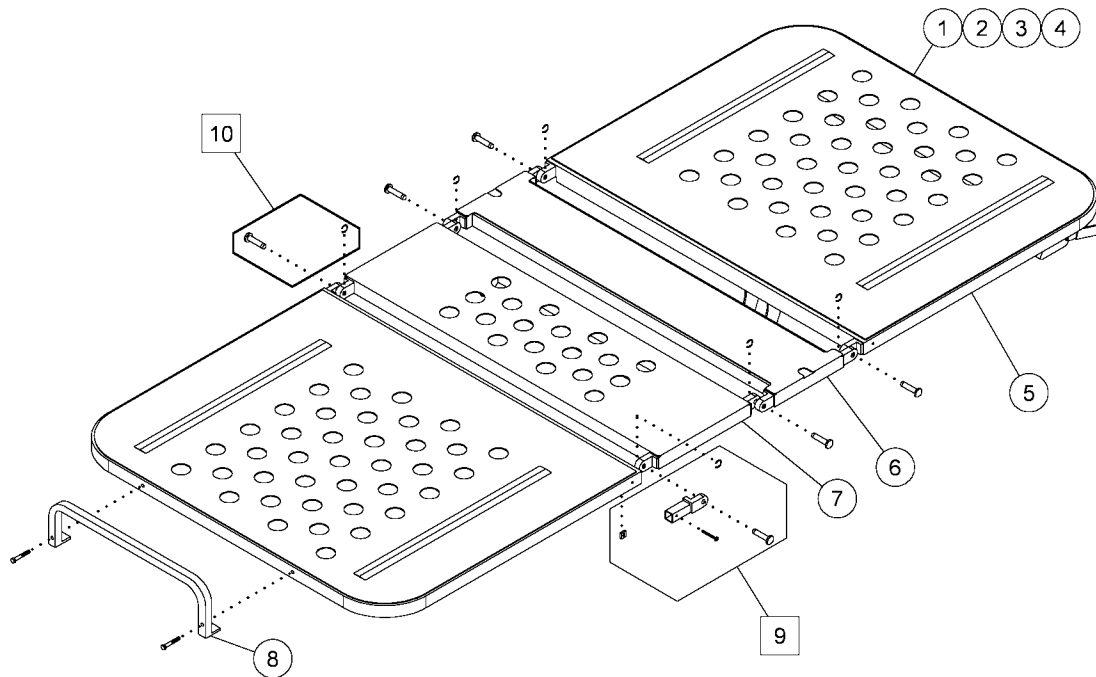
m336_003

Table 5-7. Power Cord

Item Number	Part Number	Quantity	Description
1	131503	1	Power cord, CG 3, 14, 17 (Bahamas, Belize, Bermuda, Brazil, Cayman Islands, Colombia, Costa Rica, Ecuador, Thailand, Venezuela, El Salvador, Guatemala, Honduras, Jamaica, Nicaragua, Panama, Peru, Philippines, U.S. Virgin Islands, Lebanon, Mexico, Saudi Arabia, Aruba, Antigua Barbuda, and British Virgin Islands)
2	131506	1	Power cord, CG 6 (Japan)
3	131507		Power cord, CG 7 (Taiwan)
4	131509	1	Power cord, CG 9 (Argentina)
5	131501	1	Power cord, CG 1, 15 (Bolivia, Brazil, Indonesia, South Korea, Vietnam, Egypt, Paraguay, Turkey, and St. Vincent & The Grenadines)
6	131502	1	Power cord, CG 2, 16, 18 (Brunei, Hong Kong, Indonesia, Malaysia, Singapore, Vietnam, Oman, Bahrain, Yemen, United Arab Emirates, Kuwait, Macau, St. Kitts & Nevis, St. Lucia, and Iraq)
7	131504	1	Power cord, CG 4, 19 (Australia, and New Zealand)
8	131508	1	Power cord, CG 8 (China)
9	131505	1	Power cord, CG 5 (Chile, Uruguay and Syria)

Sleep Surface

Figure 5-7. Sleep Surface



m336_2_007

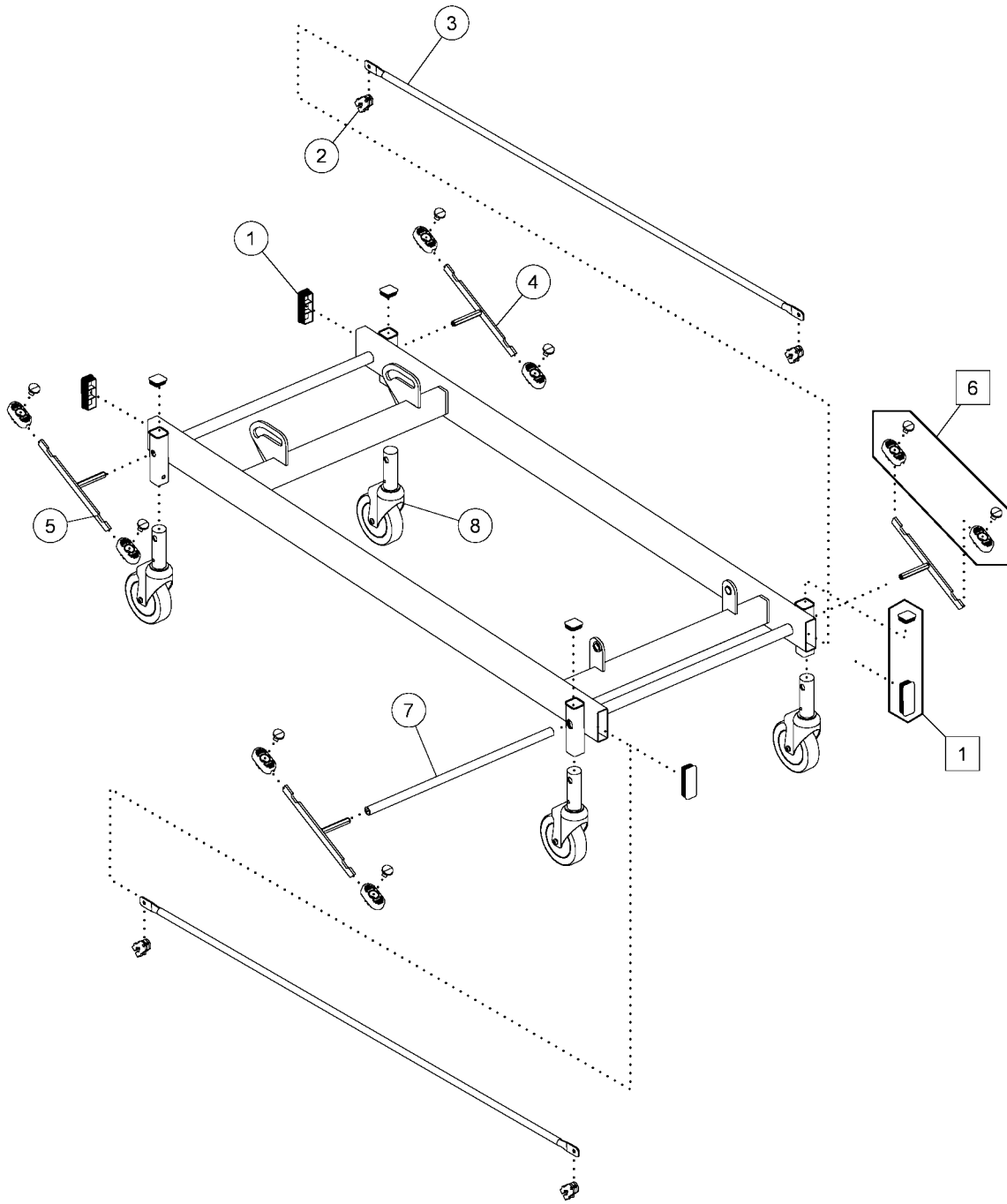
Table 5-8. Sleep Surface

Item Number	Part Number	Quantity	Description
1	131469	1	Head panel, electric, standard length
2	131470	1	Head panel, electric, short length
3	131471	1	Head panel, manual, standard length
4	131472	1	Head panel, manual, short length
5	131441	1	Seat panel
6	131473	1	Knee panel
7	131474	1	Foot panel
8	151403	1	Mattress stop
9	141129	12	Pivot blocks and screws
10	141134	6	Sleep surface pivot bolt and E clip
Not shown	131468	2	Pad, foot section

NOTES:

Base Frame—Model B

Figure 5-8. Base Frame—Model B



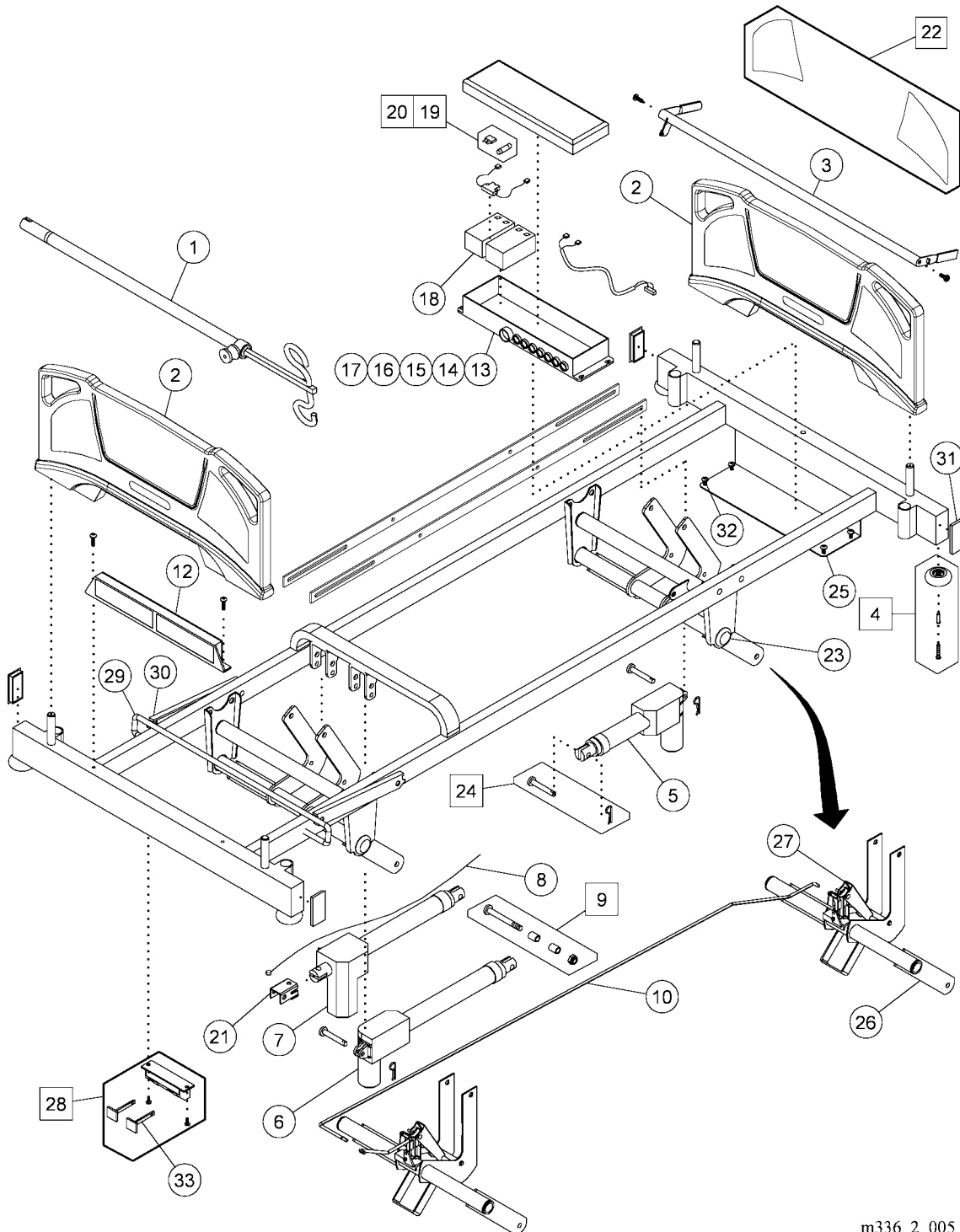
m336_2_048

Table 5-9. Base Frame—Model B

Item Number	Part Number	Quantity	Description
1	151414	4	Caster hole covers (includes frame covers)
2	151408	4	Rocker arm assembly
3	151409	2	Brake/steer link, head end
4	151411	2	Brake/steer pedal, right-hand
5	151413	2	Brake/steer pedal, left-hand
6	151412	1	Pedal pad set, brake/steer
7	151410	2	Hex rod, brake/steer
8	131433	1	Brake/steer caster
	131430	1	Swivel caster
	131432	2	Brake caster
	131429	3	Individual brake caster
	131434	1	Individual brake/steer caster

Upper Frame—P1440—Model B

Figure 5-9. Upper Frame—P1440—Model B



m336_2_005

Table 5-10. Upper Frame—P1440—Model B

Item Number	Part Number	Quantity	Description
1	P1445	1	IV pole, Basic Care
2	131493	2	Head/foot board assembly
3	131475	1	CPR assembly (handles)
4	131440	4	Bumper assembly
5	131487	1	Knee drive assembly
6	131488	1	Hi-low drive assembly
7	131489	1	Head drive assembly
8	131668	1	CPR cable set
9	131495	1	Bolt assembly, hi-low drive
10	141130	2	Trend rods, standard
	141131	2	Trend rods, short
11	151404	2	Hi-low transverse bars
12	151431	1	Control panel, foot end
13	151425	1	Control box assembly, 100 V
14	151426	1	Control box assembly, 110 V -115 V
15	151427	1	Control box assembly, 120 V - 127 V
16	151428	1	Control box assembly, 220 V - 230 V
17	151429	1	Control box assembly, 240 V
18	131490	2	Battery, control box (includes 2 batteries)
19	131491	1	Fuse set, 120 V
20	131492	1	Fuse set, 230 V
21	131671	1	Bracket, head actuator
22	151405	4	Laminate, triangle, right and left, head and foot board
23	131435	4	Trendelenburg indicator
24	131670	5	Pin, actuator
25	151430	1	Bracket, control box
26	151432	2	Ho-low lift arms
27	141175	2	Trend assembly part
28	151401	1	Trend mount (includes trend knobs)
29	151402	1	Foot rack

Item Number	Part Number	Quantity	Description
30	151407	2	Saw-tooth rack insert
31	141128	2	Upper frame end caps
32	141490	4	Control box mount screws and nuts
33	141127	2	Trend knobs

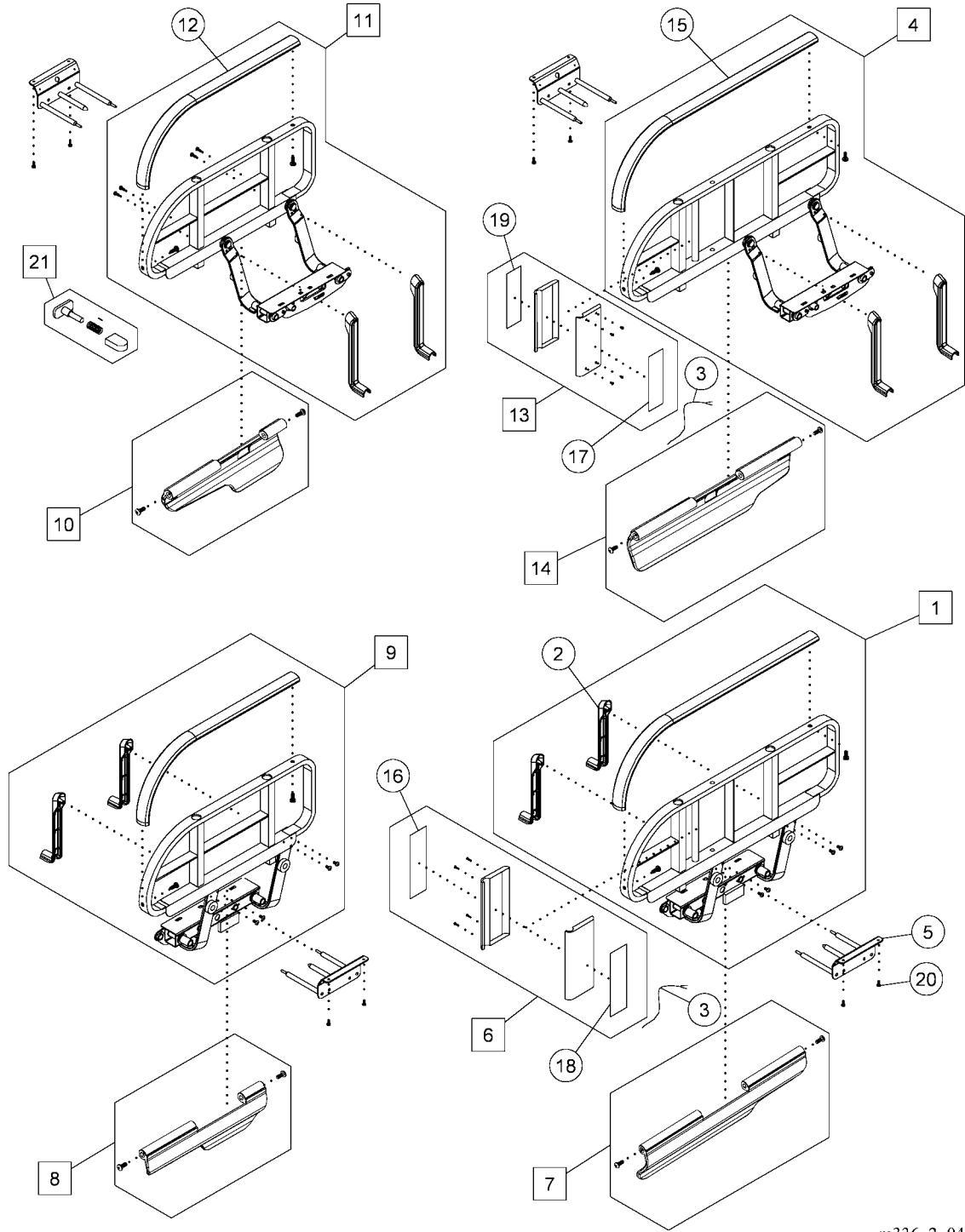
NOTE:

Order the control box assembly as applicable.

NOTES:

Siderails—Model B

Figure 5-10. Siderail—Model B



m336_2_047

Table 5-11. Siderails—Model B

Item Number	Part Number	Quantity	Description
1	151417	1	Head siderail assembly, left-hand (does not include the control module (151424) or control cable (131513))
2	131478	8	Wire cover
3	131513	2	Siderail control cable
4	151415	1	Head siderail assembly, right-hand (does not include the control module (151424) or control cable (131513))
5	131669	4	Siderail bracket
6	151424	1	Control module, patient left
7	151418	1	Siderail plastic assembly, head, left-hand
8	151422	1	Siderail plastic assembly, foot, left-hand
9	151421	1	Foot siderail assembly, left-hand
10	151420	1	Siderail plastic assembly, head, right-hand
11	151419	1	Foot siderail assembly, right-hand
12	131477	2	Top cane, foot siderail
13	151423	1	Control module, patient right
14	151416	1	Siderail plastic assembly, head, right-hand
15	131476	2	Top cane, head siderail
16	131518	1	Control label, patient side, left-hand
17	131516	1	Control label, patient side, right-hand
18	131519	1	Control label, caregiver side, left-hand
19	131517	1	Control label, caregiver side, right-hand
20	141133	2	Screw, side bracket mount
21	141139	4	Siderail pull knob
Not shown	131672	1	Siderail control label set (includes items: 16, 17, 18 and 19)



NOTES:

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.

Lubrication Requirements



WARNING:

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



CAUTION:

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

Oilite®¹ bearings and bushings are utilized in several places on the system. By retaining oil, the pores give a self-lubricating quality to the bearings and bushings. If any silicone-based lubricant is applied to the bearings and bushings or anywhere else on the system, this self-lubricating quality is neutralized.

It is safe to apply the lubricants listed below to the unit (see table 6-1 on page 2-3):

Table 6-1. Lubricants

Part Number	Description
8252 (1400)	Non-detergent SAE30 weight oil (apply to Oilite® bearings and bushings)
SA3351 (1400)	4 oz lithium grease

1. Oilite® is a registered trademark of Beemer Precision, Incorporated.

Part Number	Description
SA3352 (1400)	Gear grease (use on motor gears only)
SA0646 (1400)	Teflon® lubricant (dry)

a. Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.

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 6-2. Preventive Maintenance Schedule

Function	Procedure
Trendelenburg	Make sure Trendelenburg and Reverse Trendelenburg operate correctly.
Lockout controls	Make sure each lockout operates correctly.
Brake and steer (option)	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.
Individual brake/steer caster	Make sure the brake and steer functions operate 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.
Pivot points	Lubricate all pivot points on the bed.
Power cord and connector	<p>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:</p> <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 (electric model only).

Function	Procedure
Battery	Replace the batteries every two 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.

Preventive Maintenance Checklist

Table 6-3. Preventive Maintenance Checklist

Date																Function			
Hill-Rom	Manufacturer																	Trendelenburg	
																			Lockout controls
																			Brake and steer (option)
																			Individual brake caster
																			Individual brake/steer caster
																			Caster tires
																			Siderail controls
																			Siderail
																			Pivot points
Model Number																		Power cord and connector	
																		Headboard and footboard	
																		CPR release	
																		Battery	
																		Electrical	
																		General appearance	
Serial Number																			
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:	

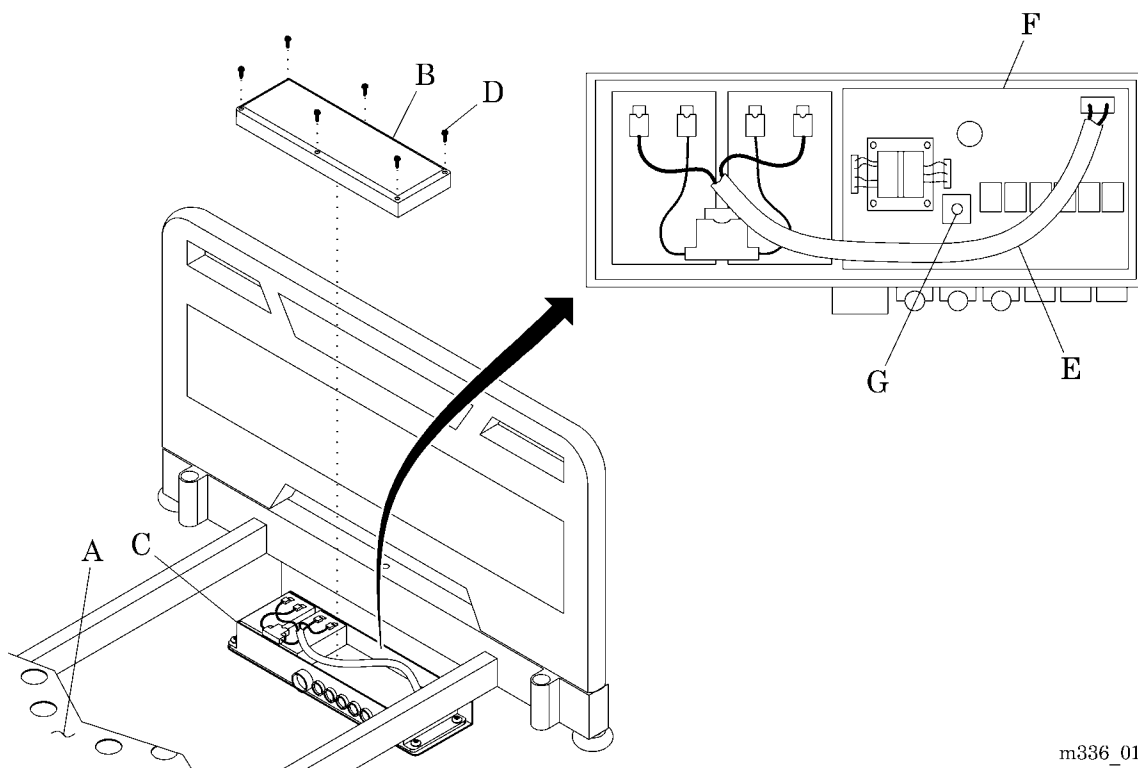
6.1 Sleep Mode

If the bed will be disconnected from its AC power source for an extended period of time, do this procedure to conserve battery power.

Tools required: Phillips head screwdriver

1. Raise the head section (A) to its full up position.
2. Lower the bed to have access to the cover (B) on the control box assembly (C) (see figure 6-1 on page 6-9).

Figure 6-1. Control Box



m336_012



SHOCK HAZARD:

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

3. Disconnect the bed from its power source.
4. Remove the six screws (D) that attach the cover (B) to the control box (C).

5. Disconnect the battery cable (E) from the control board (F).
6. Make sure the indicator (G) turns off.
7. Connect the battery cable (E) to the control board (F).

NOTE:

The indicator should remain off.

8. Install the six screws (D) to attach the cover (B) to the control box (C).

6.2 CPR Cable Adjustment

Tools required: Needle nose pliers
Small adjustable wrench

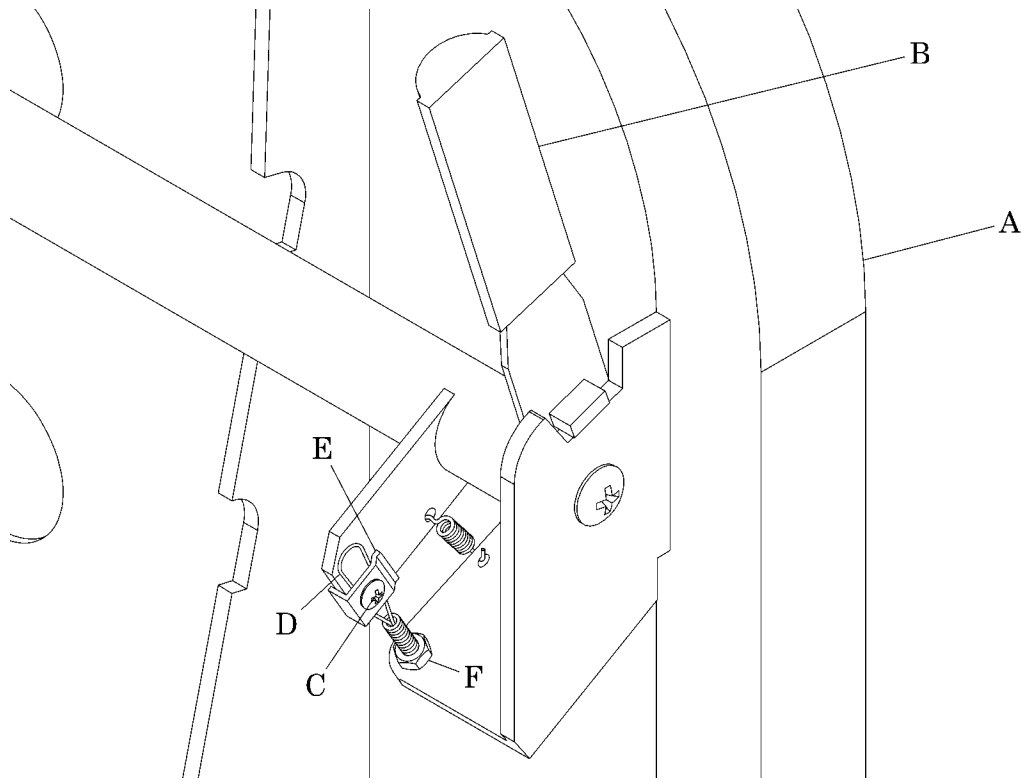
1. If the head section (A) does not lower quickly enough when you operate the CPR handle (B), do as follows (see figure 6-2 on page 6-12):
 - a. Loosen the screw (C) that attaches the CPR wire (D) to the bracket (E).
 - b. Pull a small part of the CPR wire (D) out of the cable (F).
 - c. While you hold the CPR wire (D) tightly, tighten the screw (C) to attach the wire (D) to the bracket (E).

NOTE:

While the CPR wire is held tightly, the head section will lower slowly.

- d. Operate the CPR handle (B) to make sure the head section (A) lowers at the correct rate.
- e. If the head section (A) does not lower quickly enough when the CPR handle (B) is operated, repeat step 1.
- f. If the head section (A) lowers too quickly when the CPR handle (B) is operated, go to step 2.

Figure 6-2. CPR Adjustment



m336_013

2. If the head section (A) lowers too quickly when the CPR handle (B) is operated, do as follows:
 - a. Loosen the screw (C) that attaches the CPR wire (D) to the bracket (E).
 - b. Allow a small part of the CPR wire (D) to go into the cable (F).
 - c. Hold the CPR wire (D) tightly, tighten the screw (C) to attach the wire (D) to the bracket (E).

NOTE:

While the CPR wire is held tightly, the head section will lower slowly.

- d. Operate the CPR handle (B) to make sure the head section (A) lowers at the correct rate.
 - e. If necessary repeat step 1 or step 2 until the head section (A) lowers at the correct speed.
3. Do the “Function Checks” on page 2-2.

Chapter 7

Accessories

Accessories

Table 7-1. Accessories List

Product Number	Description
P1445	IV pole
P846F	Trapeze support, light neutral
P847B	Fracture frame (adapter set—3/4" pin)
P847C	Fracture frame adapter set—1/2" pin

7.1 IV Pole—P1445

Tools required: None

The two-sectioned, telescopic IV pole fits into any of the four socket locations on the bed: two at the head end, and two at the foot end.

Installation

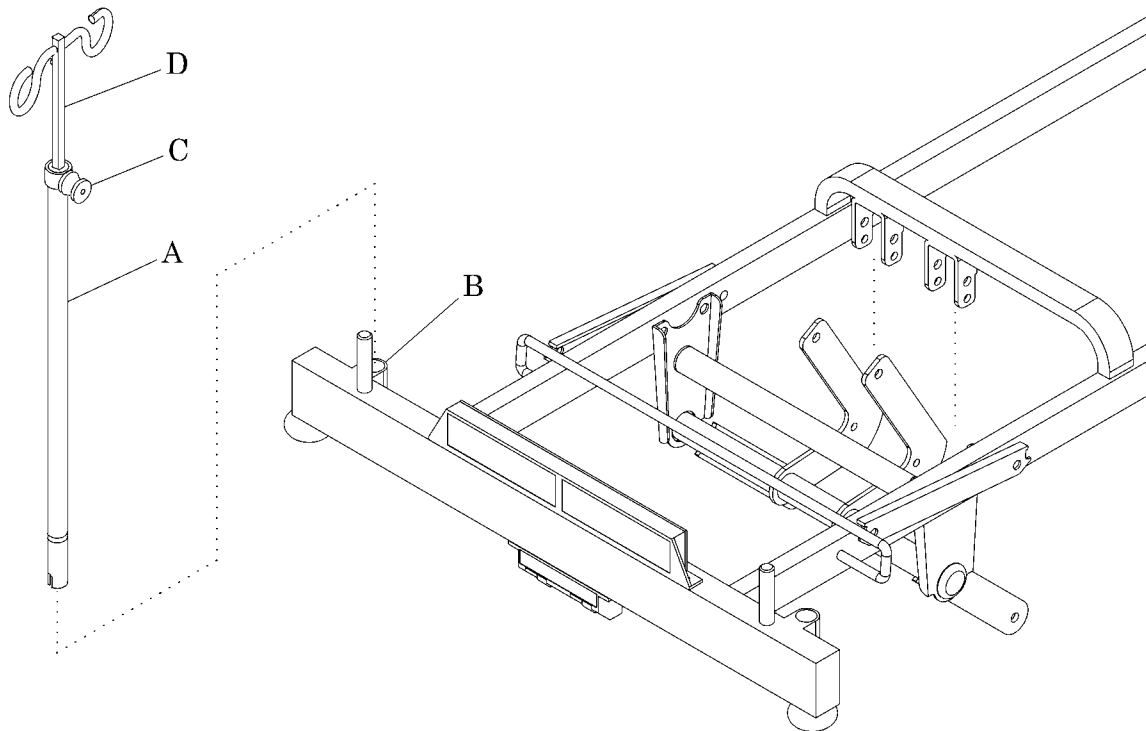


WARNING:

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

1. Put the IV pole (A) into the socket (B).
2. Turn the lower section of the IV pole clockwise to lock it in place (see figure 7-1 on page 7-2).

Figure 7-1. IV Pole



m336_009

Removal

3. To remove the IV pole (A), turn it counterclockwise, and lift it from the socket (B).

Adjustment

4. To change the height of the IV pole (A), pull the knob (C) out and adjust the upper section (D) of the IV pole (A) to the necessary height.

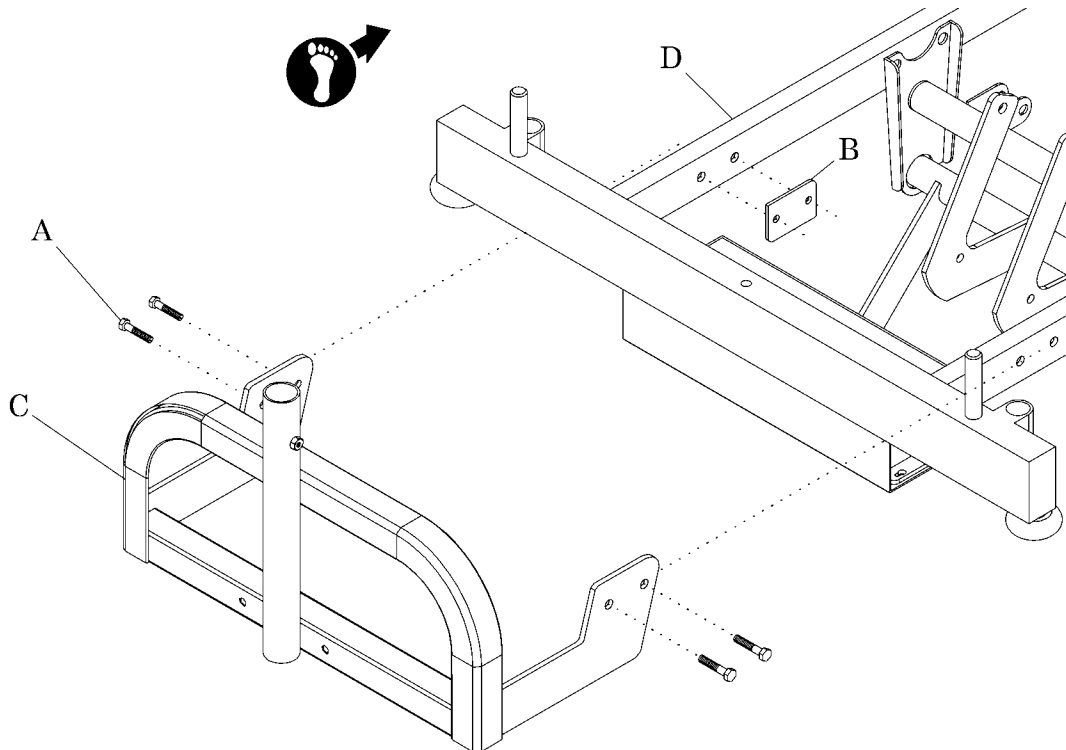
7.2 Trapeze Support—P846F

Tools required: 3/8" socket
Drive ratchet
3/8" wrench

Installation

1. Install the four bolts (A) and two backing plates (B) to attach the trapeze support (C) on the bed frame (D) (see figure 7-2 on page 7-4).

Figure 7-2. Trapeze Support



m336_010



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.

2. Lock out the hilow function.

Removal

1. Loosen and remove the four bolts (A) and the two backing plates (B).
2. Remove the trapeze support (A) from the bed frame (D).

7.3 Fracture Frame Adapter—P847B and P847C

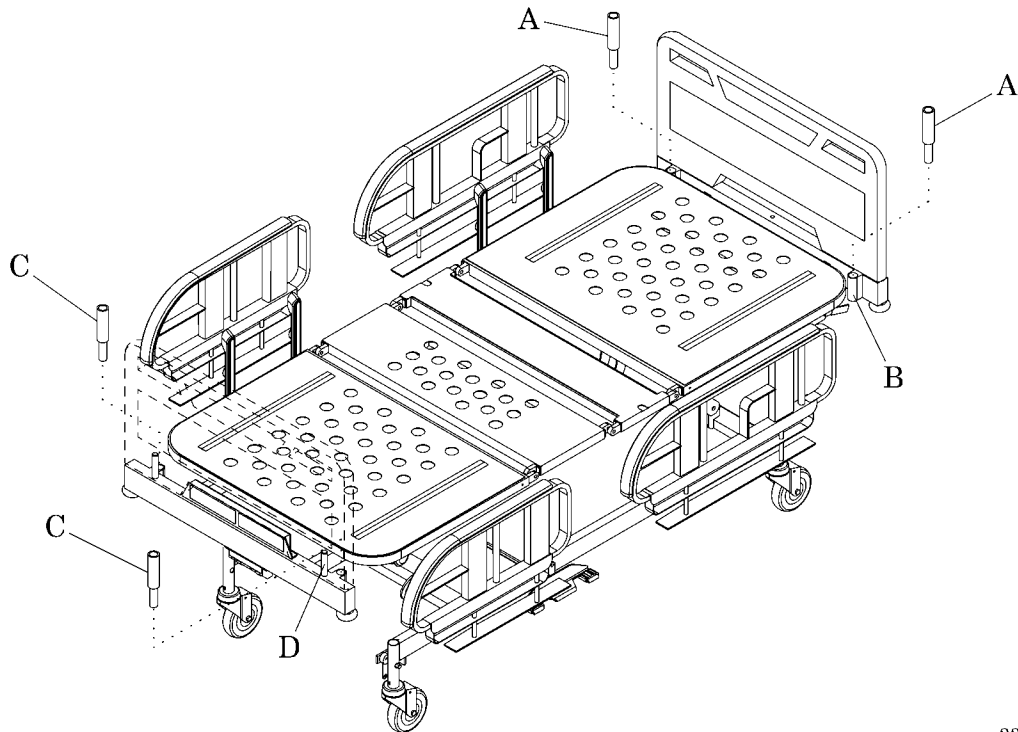
Tools required: None

Hill-Rom has two different fracture frame adapters available to handle most fracture frame equipment. The model P847B sockets have a 3/4" inside diameter, while the P847C sockets have a 1/2" inside diameter. Please specify which size is necessary when ordering.

Installation

1. Put the short adapter tubes (A) into the IV sockets (B) at the head end of the bed (see figure 7-3 on page 7-6).

Figure 7-3. Fracture Frame Adapter—P847B and P847C



m336_011

2. Put the long adapter tubes (C) into the IV sockets (D) at the foot end of the bed.

Removal

1. Lift the short adapter tubes (A) upward from the IV sockets (B) at the head end of the bed to remove the short adapter tubes (A).

2. Lift the adapter tubes (C) upward in order to remove them from the IV sockets (D) at the foot end of the bed.
3. Do the “Function Checks” on page 2-2.

NOTES:

**Global Headquarters US**

Hill-Rom Company, Inc.
1069 State Route 46 E
Batesville, IN 47006-9167
Tel: 800-445-3720
www.hill-rom.com

US Rental Therapy

Hill-Rom Company, Inc.
Tel: 800-638-2546

St. Paul, MN

Hill-Rom Company, Inc.
Tel: 651-490-1468 or 800-426-4224
www.thevest.com

International

Hill-Rom Company, Inc.
Tel: +1 (0)812 934 8173
Fax: +1 (0)812 934 7191
www.hill-rom.com
international@hill-rom.com

Australia

Hill-Rom Australia Pty. Ltd.
Tel: +61 (0)2 8814 3000
Fax: +61 (0)2 8814 3030

Belgique/België

Hill-Rom Medical Services BV
Tel: +31 (0)347 / 32 35 32
Fax: +31 (0)347 / 32 35 00

Canada

Hill-Rom Canada
Tel: 800-267-2337

中国

Hill-Rom Shanghai
Tel: +86 (0)21 5396 6933
Fax: +86 (0)21 5383 3136

Deutschland

Hill-Rom GmbH
Tel: +49 (0)211 16450 0
Fax: +49 (0)211 16450 182

España

Hill-Rom Iberia S.L.
Tel: +34 (0)93 685 6009
Fax: +34 (0)93 666 5570

France

Hill-Rom SAS
Tel: +33 (0)2 97 50 92 12
Service: +33 (0)820 01 23 45
Fax: +33 (0)2 97 50 92 00

香港 Hong Kong

Hill-Rom Asia Ltd.
Tel: +852 (0)2297-2395
Fax: +852 (0)2297-0090

Ireland

Hill-Rom Ltd.
Tel: +353 (0)1 413 6005
Fax: +353 (0)1 413 6030
dublin.sales@hill-rom.com

Italia

Hill-Rom S.p.A.
Tel: +39 (0)02 / 950541
Fax: +39 (0)02 / 95328578

日本

Hill-Rom Japan
Tel: +81 (0)3 5715 3420
Fax: +81 (0)3 5715 3425

대한민국

c/o Hill-Rom Japan
Tel: +81 (0)3 5715 3420
Fax: +81 (0)3 5715 3425

Nederland

Hill-Rom Medical Services BV
Tel: +31 (0)347 / 32 35 32
Fax: +31 (0)347 / 32 35 00

New Zealand

Hill-Rom Australia Pty. Ltd.
Tel: +61 (0)2 8814 3000
Fax: +61 (0)2 8814 3030

Nordic Region:**Sverige, Denmark, Norge**

Hill-Rom AB
Tel: +46 (0)8 564 353 60
Fax: +46 (0)8 564 353 61
se.marketing@hill-rom.com

Österreich

Hill-Rom Austria GmbH
Tel: +43 (0)2243 / 28550
Fax: +43 (0)2243 / 28550-19
austria@hill-rom.com

Portugal

Hill-Rom Iberia S.L.
Tel: +34 (0)93 685 6009
Fax: +34 (0)93 666 5570

South East Asia

Hill-Rom Singapore
Tel: +65 (0)6391 1322
Fax: +65 (0)6391 1324

Suisse/Schweiz

Hill-Rom SA
Tel: +41 (0)21 / 706 21 30
Fax: +41 (0)21 / 706 21 33
hrch.info@hill-rom

United Kingdom

Hill-Rom Ltd.
Tel: +44 (0)1530 411000
Fax: +44 (0)1530 411555