

SERVICE MANUAL

Procedural Recliner From Hill-Rom



Product No. P1320

For Parts Or Technical Assistance
USA (800) 445-3720 Canada (800) 267-2337
International: Contact your distributor.

man132ra

Procedural Recliner Service Manual

Revisions

Revision Letter	Pages Affected	Date
Preliminary Issue		March, 1998
Original Issue	All	June, 1998
A	All	October, 1999

man132ra

© 1999 by Hill-Rom Company, Inc. ALL RIGHTS RESERVED.

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 Company, Inc. (Hill-Rom).

Second Edition

First Printing 1998

Printed in the USA

Dartex® is a registered trademark of Courtaulds Textiles Limited.

Dual Lock® is a registered trademark of Minnesota Mining and Manufacturing Company.

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

Mechlok® is a registered trademark of P.L. Porter Company.

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

Steering Plus™ is a trademark of Hill-Rom, Inc.

Velcro® is a registered trademark of Velcro Industries, BV (a Dutch corporation).

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.

The only product warranty intended by Hill-Rom is the express, written warranty accompanying the bill of sale to the original purchaser. Hill-Rom makes no other warranty, express or implied, and in particular, makes no warranty of merchantability or fitness for a particular purpose.

Additional copies of this manual can be obtained from Hill-Rom.

To order additional copies of this manual, call (800) 445-3720, and place a parts order for part number man132ra.

Table of Contents

Chapter 1: Introduction

Purpose	1 - 5
Audience	1 - 5
Organization	1 - 5
Chapter 1: Introduction	1 - 5
Chapter 2: Troubleshooting Procedures	1 - 5
Chapter 3: Theory of Operation	1 - 5
Chapter 4: Removal, Replacement, and Adjustment Procedures	1 - 5
Chapter 5: Parts List	1 - 6
Chapter 6: General Procedures	1 - 6
Chapter 7: Accessories	1 - 6
Typographical Conventions	1 - 7
Introduction	1 - 8
Overview	1 - 8
Recline Lever	1 - 9
Adjustable Arms	1 - 9
Hilow Function	1 - 9
Trendelenburg Lever	1 - 9
Egress Assist Lever	1 - 9
Operating Precautions	1 - 10
Recliner Positioning	1 - 10
Brakes	1 - 10
Transport	1 - 10
Patient Restraint	1 - 10
Parts and Accessories	1 - 10
Preventive Maintenance	1 - 10
Upholstery	1 - 11

Procedural Recliner Positions	1 - 11
General Operation	1 - 17
Recline	1 - 17
To Recline From Full Upright	1 - 17
To Full Upright From Recline	1 - 17
Central Brake/Steer	1 - 17
To Steer	1 - 18
To Use the Steering Plus™ Steering System (Optional)	1 - 18
To Brake	1 - 18
To Lock the Individual Front Locking Casters (Optional)	1 - 18
To Change to the Neutral Position	1 - 18
Hilow Function (Optional)	1 - 18
To Raise	1 - 18
To Lower	1 - 18
Adjustable Arms	1 - 18
To Raise or Lower	1 - 18
Synchronized Footrest (Optional)	1 - 19
To Lower Footrest	1 - 19
To Store Footrest	1 - 19
Independent Footrest (Optional)	1 - 19
To Raise or Lower	1 - 19
Trendelenburg Lever (Optional)	1 - 19
To Place in the Trendelenburg Position	1 - 19
Full Flat Position	1 - 19
To Lower to Full Flat Position	1 - 19
To Raise From Full Flat Position	1 - 19
Egress Assist Lever (Optional)	1 - 20
To Place in the Egress Assist Position	1 - 20
Specifications	1 - 21
Physical Description	1 - 21
Regulations, Standards, and Codes	1 - 21

Model Identification	1 - 22
Safety Tips	1 - 23
Warning and Caution Labels	1 - 25
Chapter 2: Troubleshooting Procedures	
Getting Started	2 - 3
Initial Actions	2 - 3
Function Checks	2 - 4
Final Actions	2 - 7
Braking Malfunction	2 - 8
Loss of Steering Plus™ Steering System	2 - 9
Neutral Position Malfunction	2 - 10
Recliner Will Not Rise	2 - 11
Recliner Descent Rate Malfunction	2 - 13
Adjustable Arm Malfunction	2 - 15
Footrest Will Not Lower	2 - 16
Footrest Cannot Be Stored	2 - 17
Full Upright To Recline Position Malfunction	2 - 18
Recline To Full Flat Position Malfunction	2 - 19
Full Flat To Trendelenburg Position Malfunction	2 - 20
Egress Assist Malfunction	2 - 21
Independent Legrest Malfunction	2 - 22
Chapter 3: Theory of Operation	
Mechanical Cable System	3 - 3
Basic Description	3 - 3
Theory of Operation	3 - 3
Hydraulic System	3 - 4
Chapter 4: Removal, Replacement, and Adjustment Procedures	
Shrouds	4 - 5
Base Shroud Removal	4 - 5
Base Shroud Replacement	4 - 5
Lower Outer Arm Shroud Removal	4 - 6

Lower Outer Arm Shroud Replacement	4 - 6
Rear Shroud Removal	4 - 6
Rear Shroud Replacement	4 - 6
Upper Inner Arm Shroud Removal	4 - 6
Upper Inner Arm Shroud Replacement	4 - 7
Upper Outer Arm Shroud Removal	4 - 7
Upper Outer Arm Shroud Replacement	4 - 8
Seat and Back Cushion	4 - 9
Seat Cushion Removal	4 - 9
Seat Cushion Replacement	4 - 10
Back Cushion Removal	4 - 10
Back Cushion Replacement	4 - 11
Adjustable Arm Mechlok®	4 - 12
Removal	4 - 12
Replacement	4 - 13
Recline Mechlok®	4 - 14
Removal	4 - 14
Replacement	4 - 15
Egress Damper	4 - 16
Removal	4 - 16
Replacement	4 - 16
Hydraulic Pump Assembly	4 - 17
Removal	4 - 17
Replacement	4 - 20
Hydraulic Cylinder	4 - 22
Removal	4 - 22
Replacement	4 - 23
Hydraulic Hose	4 - 25
Removal	4 - 25
Replacement	4 - 26
Hydraulic System Servicing	4 - 27

Hydraulic Fluid Replenishment Procedure	4 - 27
Hydraulic System Bleed Procedure	4 - 28
Hilow/Legrest Pedal Assembly (Independent Footrest Model Only)	4 - 30
Removal	4 - 30
Replacement	4 - 31
Legrest Cylinder (Independent Legrest Model Only).	4 - 32
Removal	4 - 32
Replacement	4 - 32
Manual Legrest Manifold (Indepedent Legrest Model Only).	4 - 33
Removal	4 - 33
Replacement	4 - 34
Front Caster.	4 - 35
Removal	4 - 35
Replacement	4 - 35
Rear Brake Caster	4 - 37
Removal	4 - 37
Replacement	4 - 38
Steering Plus™ Steering System	4 - 39
Removal	4 - 39
Replacement	4 - 39
Fifth Wheel Caster	4 - 40
Removal	4 - 40
Replacement	4 - 40
Adjustable Arm Release Cable	4 - 41
Removal	4 - 41
Replacement	4 - 42
Flat Control Release Cable	4 - 43
Removal	4 - 43
Replacement	4 - 44
Egress Release Cables	4 - 45
Removal	4 - 45

Replacement	4 - 46
Trendelenburg Release Cable and Flat Control/Recline Cable	4 - 48
Removal	4 - 48
Replacement	4 - 49
Cable Adjustment	4 - 51
Typical Cable Adjustment	4 - 51
Recline Cable Adjustment	4 - 51
Flat Control and Trendelenburg Cable Adjustment	4 - 53
Egress Gas Spring	4 - 55
Removal	4 - 55
Replacement	4 - 56
Trendelenburg Gas Spring	4 - 57
Removal	4 - 57
Replacement	4 - 58
IV/Accessory Socket	4 - 59
Removal	4 - 59
Replacement	4 - 59
Footrest Latch Spring (P1320A Model Only)	4 - 61
Removal	4 - 61
Replacement	4 - 61
Chapter 5: Parts List	
Warranty	5 - 3
Service Parts Ordering	5 - 5
Exchange Policy	5 - 7
In-Warranty Exchanges	5 - 7
Out-of-Warranty Exchanges	5 - 7
Recommended Spare Parts	5 - 8
Base Frame—Base Shrouds	5 - 10
Base Frame—Brake/Steer and Label Assemblies	5 - 12
Base Frame—Hydraulic Pump and Fifth Wheel Assemblies	5 - 16
Base Frame—Scissors Assembly (Hydraulic Model only)	5 - 19

Base Frame—Independent Legrest Assemblies	5 - 20
Base Frame—Scissor and Caster Assemblies	5 - 22
Upper Recliner—Recline and Trendelenburg Assembly	5 - 24
Upper Recliner—Trendelenburg Gas Spring Assembly	5 - 28
Upper Recliner—Egress Gas Spring Assembly	5 - 30
Upper Recliner—Footrest Assembly (P1320A Model Only).	5 - 32
Upper Recliner—Footrest Assembly (P1320B Model Only).	5 - 36
Upper Recliner—Legrest Mechanism (Synchronized Legrest Only).	5 - 38
Upper Recliner—Legrest Mechanism (Independent Legrest Only).	5 - 40
Upper Recliner—Leg and Footrest Assembly (P1320A Model Only).	5 - 42
Upper Recliner—Leg and Footrest Assembly (P1320B Model Only).	5 - 43
Upper Recliner—Arm Assemblies	5 - 44
Strut Assembly (Model without Trendelenburg and Egress)	5 - 47
Back Assembly with Trendelenburg and Egress (P1320A Model Only).	5 - 48
Back Assembly with Trendelenburg and Egress (P1320B Model Only).	5 - 50
Back Assembly without Trendelenburg or Egress (P1320A Model Only)	5 - 52
Back Assembly without Trendelenburg or Egress (P1320B Model Only)	5 - 54
Seat Cushion Assembly (P1320A Model Only).	5 - 56
Seat Cushion Assembly (P1320B Model Only).	5 - 58
Back Cushion Assembly	5 - 60
Foley Bag Hook—P1330	5 - 61
Waist and Leg Transport Straps—P1331	5 - 62
Head Pillow—P1332	5 - 63
Patient Tray Assembly—P1333	5 - 64
Egress Adapter—P1335	5 - 65
Oxygen Tank Holder—P1334	5 - 66
Cables	5 - 68

Chapter 6: General Procedures

Cleaning and Care.	6 - 3
General Cleaning	6 - 3
Steam Cleaning	6 - 3

Hard to Clean Spots	6 - 3
Disinfection.....	6 - 3
Lubrication Requirements.....	6 - 4
Preventive Maintenance	6 - 5
Preventive Maintenance Schedule	6 - 6
Preventive Maintenance Checklist	6 - 8
Tool and Supply Requirements.....	6 - 9
Chapter 7: Accessories	
Accessories	7 - 3
Foley Bag Hook	7 - 5
Installation	7 - 5
Removal	7 - 6
Waist and Leg Transport Straps	7 - 7
Installation	7 - 7
Removal	7 - 7
Pillow	7 - 9
Installation	7 - 9
Removal	7 - 10
Patient Tray Assembly	7 - 11
Installation	7 - 11
Removal	7 - 12
Oxygen Tank Holder	7 - 13
Installation	7 - 13
Removal	7 - 13
Egress Adapter	7 - 15
Installation	7 - 15
Removal	7 - 15
Infusion Support System (ISS) Transfer Pole.....	7 - 16
Installation	7 - 16
Removal	7 - 16

Chapter 1

Introduction

Chapter Contents

Purpose	1 - 5
Audience	1 - 5
Organization	1 - 5
Chapter 1: Introduction	1 - 5
Chapter 2: Troubleshooting Procedures	1 - 5
Chapter 3: Theory of Operation	1 - 5
Chapter 4: Removal, Replacement, and Adjustment Procedures	1 - 5
Chapter 5: Parts List	1 - 6
Chapter 6: General Procedures	1 - 6
Chapter 7: Accessories	1 - 6
Typographical Conventions	1 - 7
Introduction.	1 - 8
Overview.	1 - 8
Recline Lever	1 - 9
Adjustable Arms	1 - 9
Hilow Function	1 - 9
Trendelenburg Lever.	1 - 9
Egress Assist Lever.	1 - 9
Operating Precautions.	1 - 10
Recliner Positioning	1 - 10
Brakes	1 - 10
Transport.	1 - 10
Patient Restraint	1 - 10

Parts and Accessories	1 - 10
Preventive Maintenance	1 - 10
Upholstery	1 - 11
Procedural Recliner Positions	1 - 11
General Operation	1 - 17
Recline	1 - 17
To Recline From Full Upright	1 - 17
To Full Upright From Recline	1 - 17
Central Brake/Steer	1 - 17
To Steer	1 - 18
To Use the Steering Plus™ Steering System (Optional)	1 - 18
To Brake	1 - 18
To Lock the Individual Front Locking Casters (Optional)	1 - 18
To Change to the Neutral Position	1 - 18
Hilow Function (Optional)	1 - 18
To Raise	1 - 18
To Lower	1 - 18
Adjustable Arms	1 - 18
To Raise or Lower	1 - 18
Synchronized Footrest (Optional)	1 - 19
To Lower Footrest	1 - 19
To Store Footrest	1 - 19
Independent Footrest (Optional)	1 - 19
To Raise or Lower	1 - 19
Trendelenburg Lever (Optional)	1 - 19
To Place in the Trendelenburg Position	1 - 19
Full Flat Position	1 - 19
To Lower to Full Flat Position	1 - 19
To Raise From Full Flat Position	1 - 19
Egress Assist Lever (Optional)	1 - 20
To Place in the Egress Assist Position	1 - 20

Specifications	1 - 21
Physical Description	1 - 21
Regulations, Standards, and Codes	1 - 21
Model Identification	1 - 22
Safety Tips	1 - 23
Warning and Caution Labels	1 - 25

NOTES:

Purpose

This manual provides requirements for the Procedural Recliner normal operation and maintenance. It also includes parts lists (in chapter 5) for ordering replacement components.

Audience

This manual is intended for use by only facility-authorized maintenance personnel. Failure to observe this restriction can result in severe injury to people and serious damage to equipment.

Organization

This manual contains seven chapters.

Chapter 1: Introduction

In addition to a brief description of this service manual, chapter 1 also provides a product overview.

Chapter 2: Troubleshooting Procedures

Repair analysis procedures are contained in this chapter. These procedures are used to gather information, identify the maintenance need, and verify the effectiveness of the repair.

Chapter 3: Theory of Operation

This chapter describes the application of the mechanical, electrical, and hydraulic systems employed in this product.

Chapter 4: Removal, Replacement, and Adjustment Procedures

Chapter 4 contains the detailed maintenance procedures determined necessary in chapter 2.

Chapter 5: Parts List

This chapter contains the warranty, part-ordering procedure, and illustrated parts lists.

Chapter 6: General Procedures

Cleaning, preventive maintenance, and other general procedures are described in this chapter.

Chapter 7: Accessories

A list of additional products, that can be used in conjunction with the Procedural Recliner, is available in chapter 7. Installation procedures for these accessories are also included.

Typographical Conventions

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

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

Figure 1-1. Warning and Caution



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

Figure 1-2. Caught Hazard Warning



- The symbol below highlights a CHEMICAL HAZARD WARNING:

Figure 1-3. Chemical Hazard Warning



- The symbol below highlights an ELECTRICAL SHOCK HAZARD WARNING:

Figure 1-4. Electrical Shock Hazard Warning



Introduction

Overview

The Procedural Recliner is an all-inclusive product ideally suited for the specialty needs of critical care, outpatient surgery, oncology, dialysis, chemotherapy, procedural rooms, exam rooms, and emergency areas of the hospital or other health care facility. The recliner makes positioning patients easy, increases the patient's comfort and the caregiver's efficiency while decreasing the need to transfer patients to and from beds and chairs. Its unique, easy-to-operate design makes movement of the recliner easy and reliable.

The standard features of the Procedural Recliner include mechanical and hydraulic systems for seating and positioning patients. Many options and accessories are available that give the Procedural Recliner significantly more versatility. The following are its key features:

- The Procedural Recliner converts from a chair to a recliner to a full flat position.
- The recliner adjusts to an infinite number of positions, which the patient can control.
- Arms are adjustable, and drop down for patient transfer and procedures.
- The height can be adjusted in all positions: chair, recliner, and full-flat.
- CPR can be performed at any height.
- The central brake/steer with fifth wheel Steering Plus™ Steering System ensures that the recliner can be both safely moved and stabilized.
- The Trendelenburg lever works in any position from full upright to full flat.
- The integrated footrest can also be used as a step.
- The chair has a patient egress function to assist getting the patient out of the Procedural Recliner.
- Many different cushion designs and materials can be selected, including vinyls from Hill-Rom or Dartex®¹ vinyls from Courtaulds Textiles Limited with sealed seams.
- A large storage area holds charts.

The Procedural Recliner has manual controls to operate the recline, adjustable arms, variable height (hilow), Trendelenburg, and the egress assist features.

1. Dartex® is a registered trademark of Courtaulds Textiles Limited.

These allow the caregiver to easily transition the patient surface into numerous positions.

Recline Lever

The Procedural Recliner can adjust from a fully upright to a fully reclined position. The recline lever is located on the forward end of the adjustable arms on the outside of each arm.

Adjustable Arms



WARNING:

Place the adjustable arms in the raised position when a patient is left unattended. Failure to do so could result in personal injury.

The adjustable arms may be adjusted while the recliner is in any position from full upright, to fully reclined, to full flat.

Hilow Function

The Procedural Recliner may be adjusted with the PUMP pedal to raise or lower the patient surfaces to assist in positioning the patient for nursing care, or for ease of entering and exiting the recliner. The PUMP pedal is located on either side of the recliner.

Trendelenburg Lever

The Trendelenburg lever is located at the back of the Procedural Recliner under the head section. Another function of this lever is to bring the patient surface into the full flat exam position.

NOTE:

Only the caregiver can bring the patient surface into the full flat/Trendelenburg position.

Egress Assist Lever

The egress assist function is used only to assist the patient in standing up. The egress assist lever is located on either side of the back section.

Operating Precautions

Before you operate the recliner, make sure to read and understand the contents of the *Procedural Recliner User Manual* and this manual. It is important that you read and strictly follow all safety guidelines in these manuals.

Recliner Positioning

When the patient is left unattended in the recliner, always leave the recliner in the **low** position with the **brake** engaged, and adjustable arms in the **raised** position.

Ensure that hands, feet, and equipment are well clear of the recliner frame assemblies when manually changing recliner positions.

Brakes

Always set the brake when the recliner is occupied and especially during patient transfers. The patient could be injured if the recliner unexpectedly moves. Push and pull the recliner sideways to ensure stability.

Transport

When caregivers are transporting the recliner, either individually or as part of a team, they should guide the recliner from the head end using the transport bar. This will help keep legs clear of the frame and feet clear of the caster base.

Patient Restraint

Appropriate medical personnel must determine the level of restraint necessary to ensure a patient remains safely in the recliner. The adjustable arms are not intended to be used as restraint devices.

Parts and Accessories

Use only Hill-Rom parts and accessories. Do not modify the recliner without authorization from Hill-Rom.

Preventive Maintenance

Perform preventive maintenance as scheduled in chapter 6.

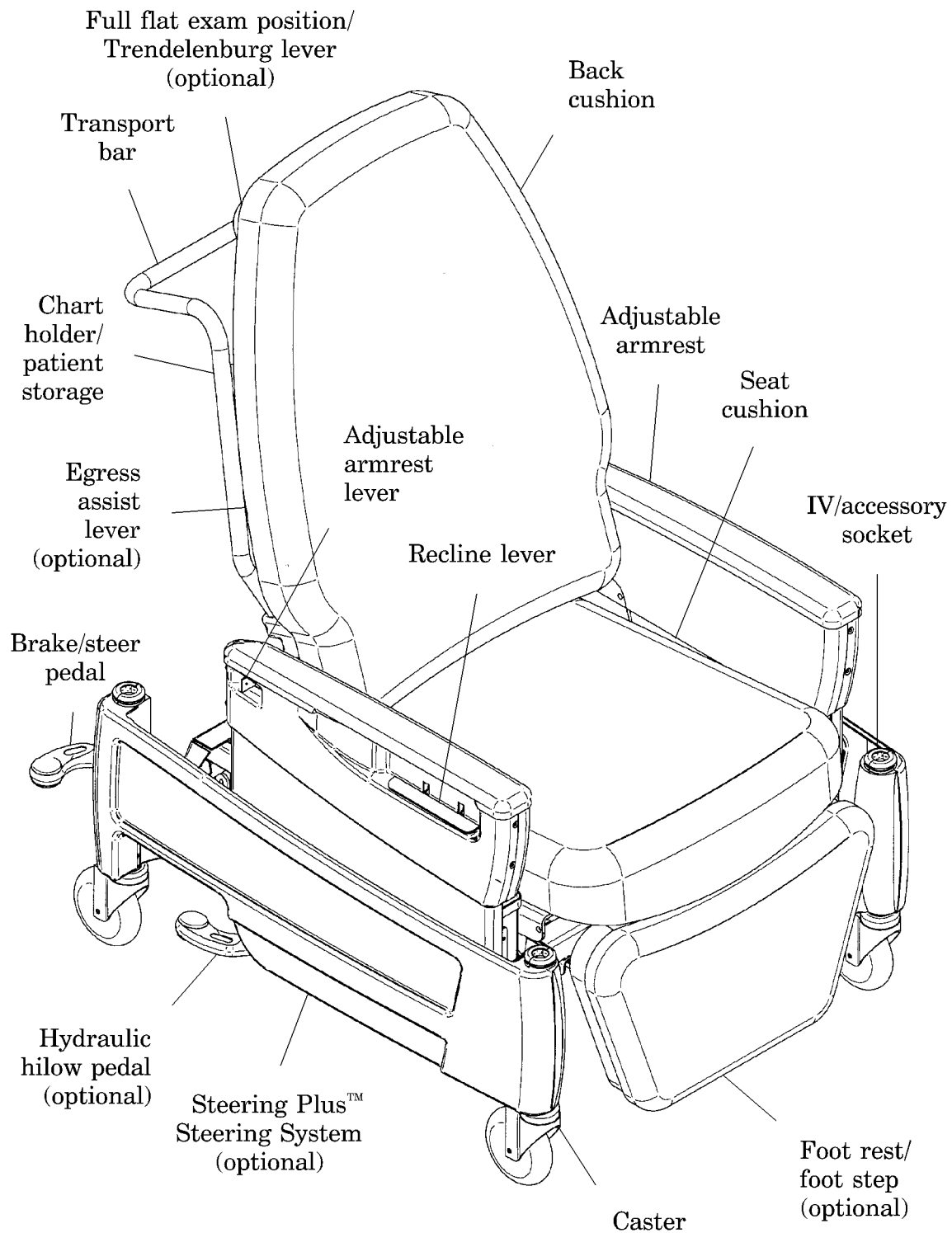
Upholstery

The use of surfaces that are not sold by Hill-Rom may substantially reduce the effectiveness of the safety features and systems incorporated into Hill-Rom recliners.

Procedural Recliner Positions

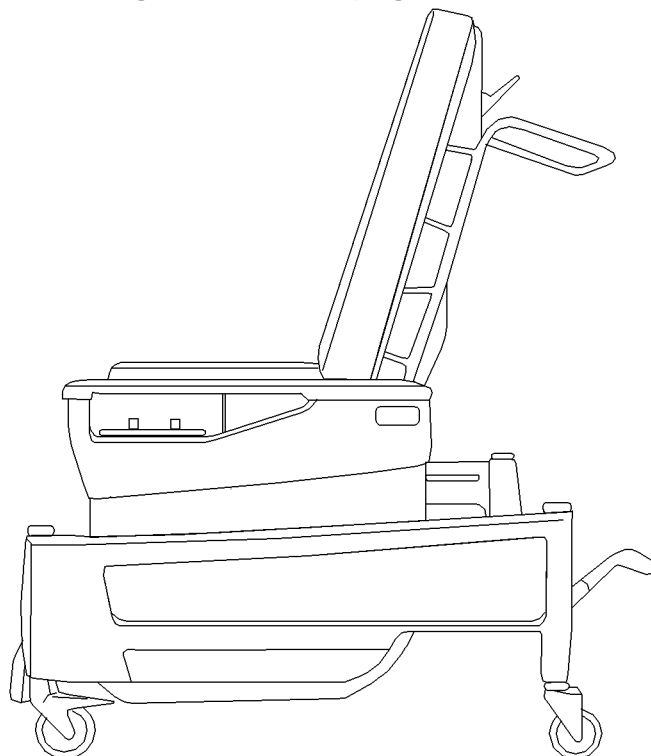
The Procedural Recliner location description and positions are shown in figures 1-5 through 1-14.

Figure 1-5. Procedural Recliner Location Description



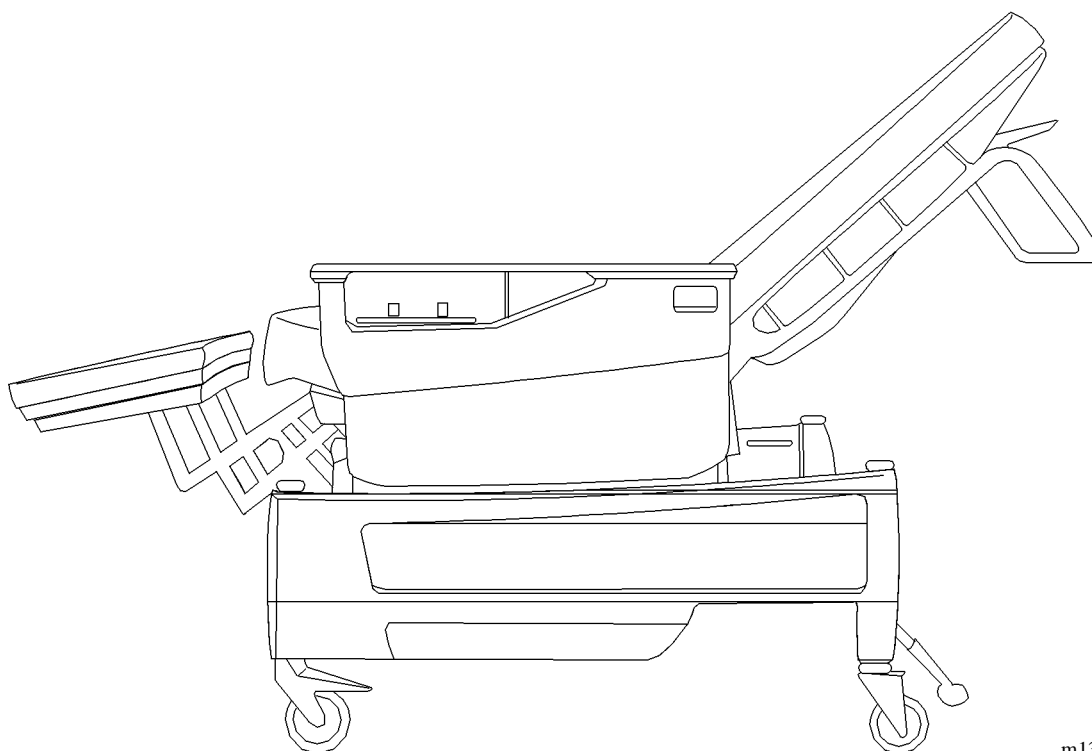
m132a052

Figure 1-6. Full Upright Position



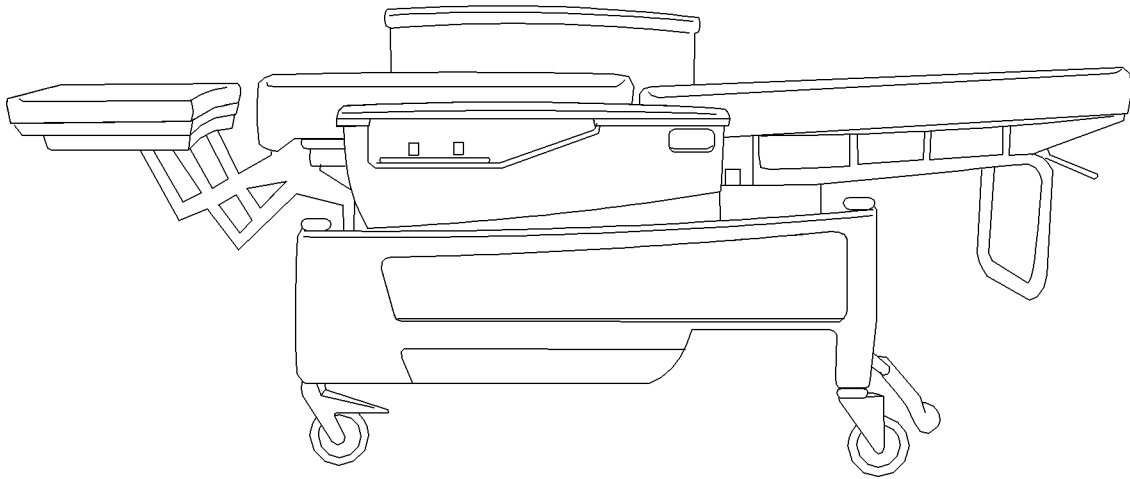
m132a043

Figure 1-7. Recline Position



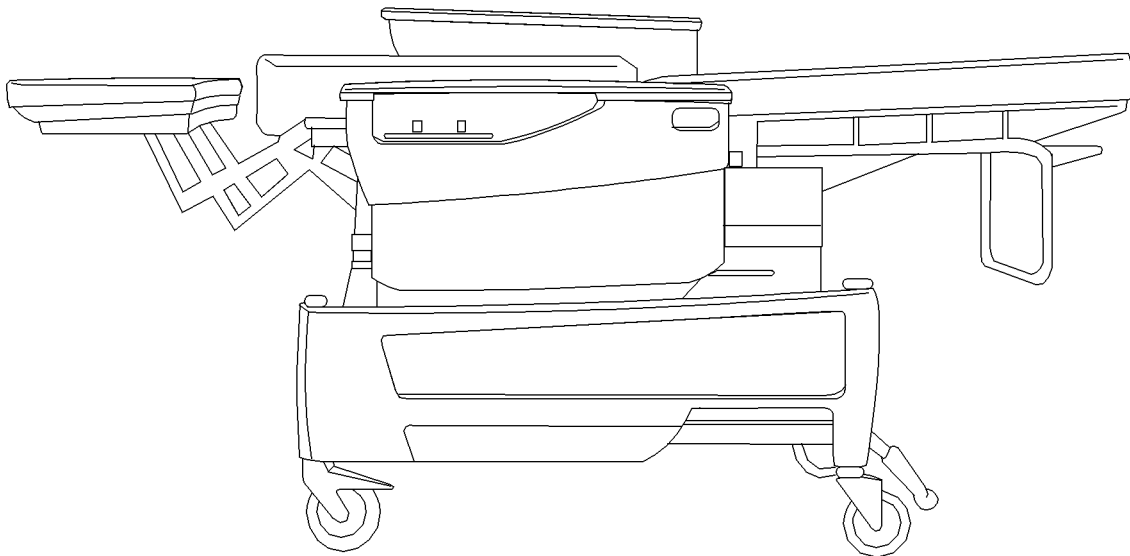
m132a044

Figure 1-8. Full Flat Position



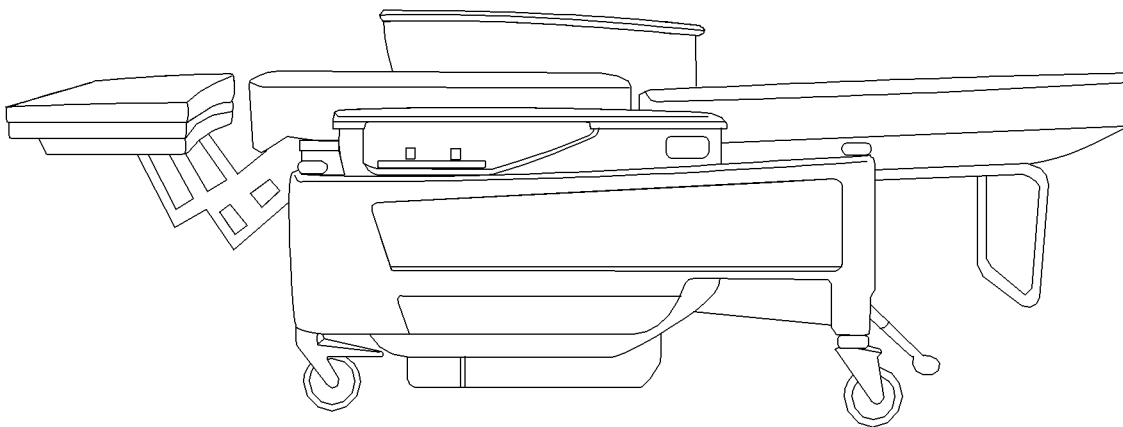
m132a045

Figure 1-9. High Flat Position



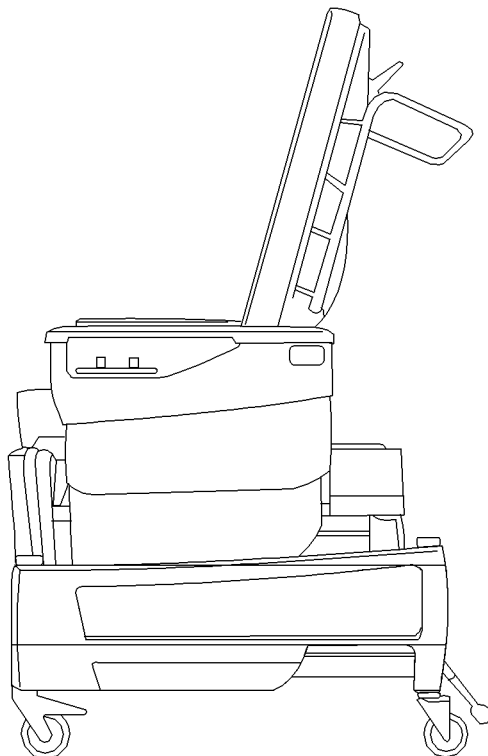
m132a047

Figure 1-10. Low Flat Position



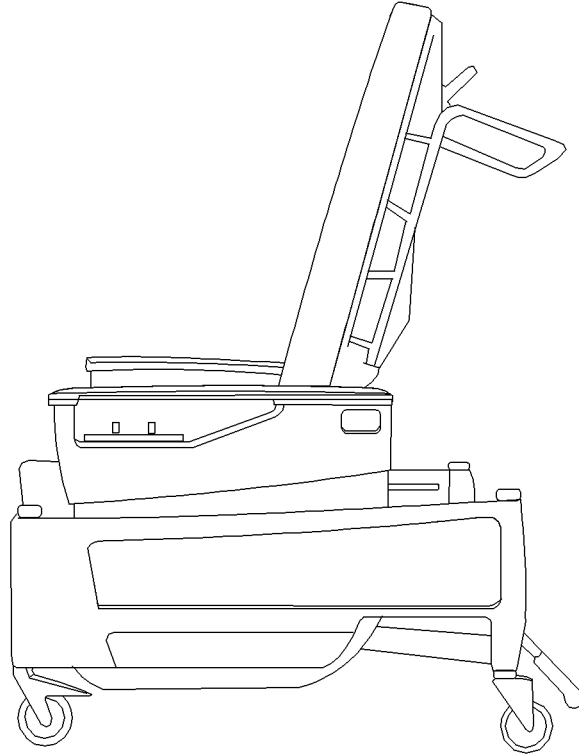
m132a046

Figure 1-11. High Full Upright Position



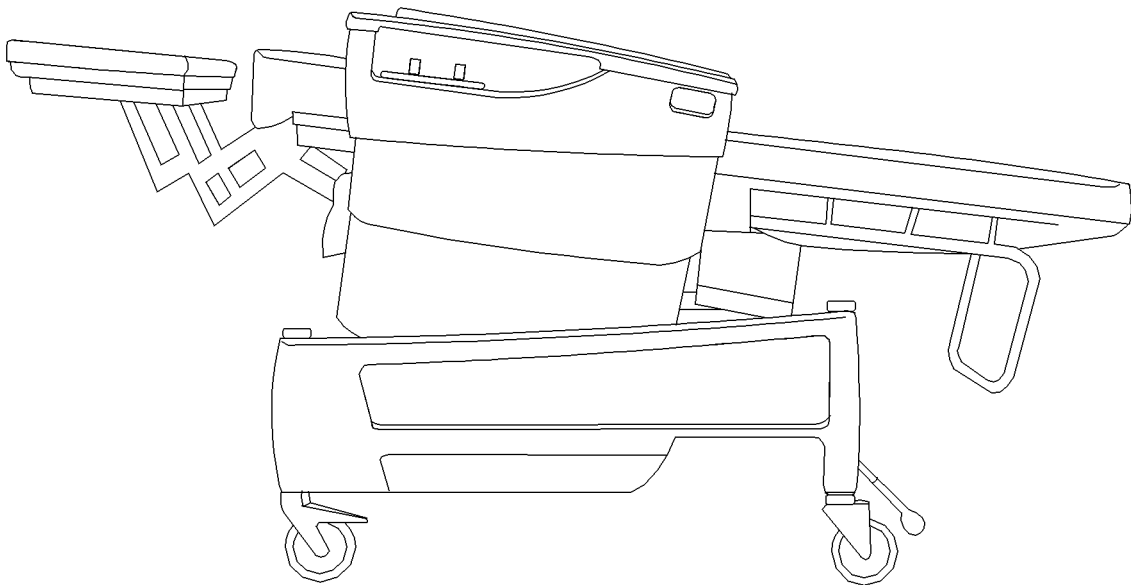
m132a048

Figure 1-12. Low Full Upright Position



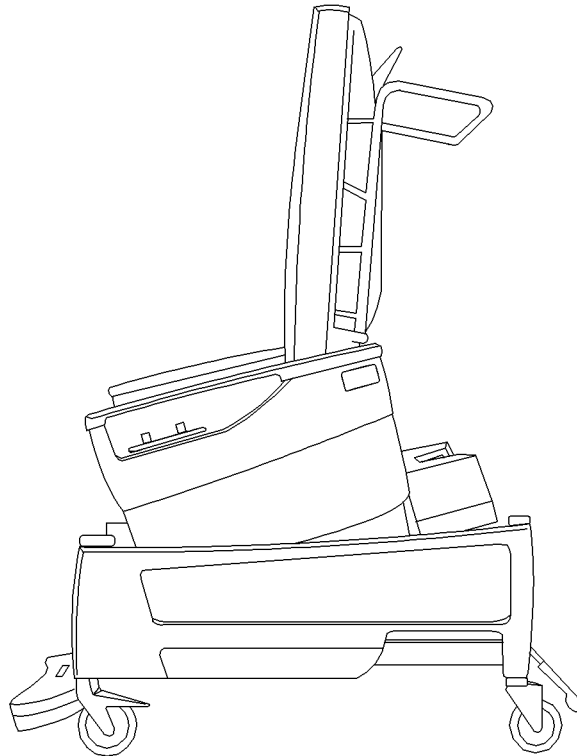
m132a049

Figure 1-13. Trendelenburg Position



m132a050

Figure 1-14. Egress Position



m132a051

General Operation

The following paragraphs explain the basic operation of the recliner.

Recline

To Recline From Full Upright

Raise the recline lever on the adjustable arm, and lean back.

To Full Upright From Recline

Raise the recline lever on the adjustable arm, and lean forward.

Central Brake/Steer

The Procedural Recliner has an optional Steering Plus™ Steering System and optional individual front locking casters.

To Steer

Press the STEER pedal located on the center of the brake/steer pedal. This disengages the brake.

To Use the Steering Plus™ Steering System (Optional)

- Press the STEER pedal located on the center of the brake/steer pedal. This lowers the fifth (center) wheel.
- To release steer, press either BRAKE pedal located on the outside end of the brake/steer pedal until the pedal is parallel to the floor.

To Brake

Press either BRAKE pedal located on the outside end of the brake/steer pedal. This will lock the two rear casters and lower the fifth wheel.

To Lock the Individual Front Locking Casters (Optional)

Press the caster lock located on top of either front wheel. This will lock that individual caster only.

To Change to the Neutral Position

To release the valve, press the brake/steer pedal until it is parallel to the floor.

Hilow Function (Optional)

To Raise

Press the PUMP pedal repeatedly to the floor until the desired height is reached.

To Lower

Lift the PUMP pedal with the top of the foot until the desired height is reached.

Adjustable Arms

To Raise or Lower

- Press and hold the lever; then lift or lower until the desired height is reached.
- Release the lever.

Synchronized Footrest (Optional)

To Lower Footrest

Take hold of the footrest with both hands at each corner, and pull down.

To Store Footrest

Pull up on the footrest, and push in.

Independent Footrest (Optional)

To Raise or Lower

- Switch the dual pedal control to engage the legrest hilow hydraulic system.
- Using the single PUMP pedal, raise or lower the legrest as necessary.

Trendelenburg Lever (Optional)

To Place in the Trendelenburg Position

Press the full flat/Trendelenburg lever, and push down on the head section until the desired angle is reached. This lever is functional from any position from full upright to full flat.

Full Flat Position

To Lower to Full Flat Position

Press the full flat/Trendelenburg lever under the head section, and push the head section down.

To Raise From Full Flat Position

Press the full flat/Trendelenburg lever under the head section, and raise the head section up.

Egress Assist Lever (Optional)

To Place in the Egress Assist Position

- Put the recliner in the full upright position as described in the recline section.
- Press the hilow PUMP pedal repeatedly to the floor until the patient's feet are 1" to 2" (3 cm to 5 cm) above the floor.
- While holding your free hand in front of the patient, press the egress lever.

Specifications

Physical Description

See table 1-1 on page 1-21 for Procedural Recliner system specifications.

Table 1-1. Specifications

Feature	Dimension
Overall length (Recliner in flat position)	75" (191 cm)
Overall width	32" (81 cm)
Width between adjustable arms	24" (61 cm)
Hydraulic cylinder specifications: Rated pressure Burst pressure	1,820 psi (12,548 kPa) 9,100 psi (62,742 kPa)
Floor to top of surface: Height—low position (Recliner in flat position) Height—high position (Recliner in flat position)	21" (53 cm) 32 1/2" (82.55 cm)
Seat width (Recliner in full upright position)	22 1/2" (57.15 cm)
Seat depth (Recliner in full upright position)	18" (46 cm)
Maximum Trendelenburg	12°
Maximum back incline	90°
Caster size	5" (13 cm)
Recliner weight	265 lb (120 kg)
Recliner—maximum safe working load	355 lb (161 kg)

Regulations, Standards, and Codes

None.

Model Identification

See table 1-2 on page 1-22 for Procedural Recliner model identification.

Table 1-2. Model Identification

Model Number	Description
P1320A	Procedural Recliner (manufactured before Fall 1999)
P1320B	Procedural Recliner (manufactured from Fall 1999 to present)

Safety Tips

**WARNING:**

Place the adjustable arms in the raised position when a patient is left unattended. Failure to do so could result in personal injury.

**WARNING:**

Only facility-authorized maintenance personnel should troubleshoot the Procedural Recliner. Troubleshooting by unauthorized personnel could result in personal injury or equipment damage.

**WARNING:**

A minimum of two people are required to lift the scissors assembly. Ensure proper lifting methods are used. Failure to do so could result in personal injury or equipment damage.

**WARNING:**

Make sure the recliner is in full flat position, and make sure it is secure. Failure to do so could result in personal injury or equipment damage.

**WARNING:**

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

**CAUTION:**

The hydraulic pump assembly is removed as a unit, which consists of the reservoir, pump, and all valves. Do not disassemble the hydraulic pump, or equipment damage can occur.

**CAUTION:**

Replace the caster with one of the same type (free, brake, or individual locking). Failure to do so could result in equipment damage.



WARNING:

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



CAUTION:

Do not use harsh cleaners, solvents, or detergents. Equipment damage could occur.



CAUTION:

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

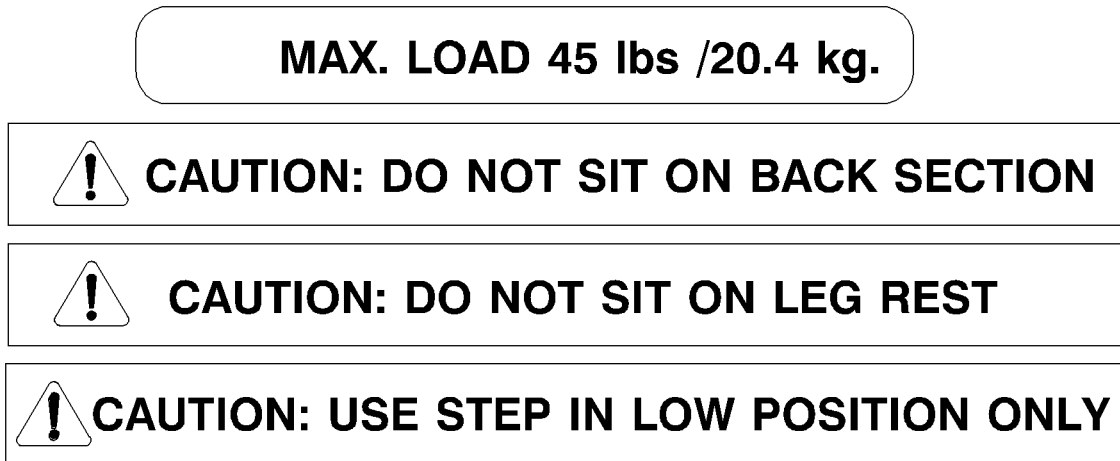


WARNING:

Only facility-authorized maintenance personnel should perform preventive maintenance on the Procedural Recliner. Preventive maintenance performed by unauthorized personnel could result in personal injury or equipment damage.

Warning and Caution Labels

Figure 1-15. Warning and Caution Labels



m132a022

NOTES:

Chapter 2

Troubleshooting Procedures

2

Chapter Contents

Getting Started	2 - 3
Initial Actions	2 - 3
Function Checks	2 - 4
Final Actions	2 - 7
Braking Malfunction	2 - 8
Loss of Steering Plus™ Steering System	2 - 9
Neutral Position Malfunction	2 - 10
Recliner Will Not Rise	2 - 11
Recliner Descent Rate Malfunction	2 - 13
Adjustable Arm Malfunction	2 - 15
Footrest Will Not Lower	2 - 16
Footrest Cannot Be Stored	2 - 17
Full Upright To Recline Position Malfunction	2 - 18
Recline To Full Flat Position Malfunction	2 - 19
Full Flat To Trendelenburg Position Malfunction	2 - 20
Egress Assist Malfunction	2 - 21
Independent Legrest Malfunction	2 - 22

NOTES:

Getting Started



WARNING:

Only facility-authorized maintenance personnel should troubleshoot the Procedural Recliner. Troubleshooting by unauthorized personnel could result in personal 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 completed). In each step, the normal operation of the product can be confirmed by answering **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 given order.

Start with **Initial Actions** to begin gathering information about the problem.

Perform the **Function Checks** to isolate or identify a problem and to verify the repair after completing each corrective action (replacing or adjusting a part, seating a connector, etc.).

Perform the **Final Actions** after the Function Checks to verify the repair.

If troubleshooting procedures do not isolate the problem, call Hill-Rom Technical Support at (800) 445-3720 for assistance.

2

Initial Actions

Use Initial Actions to gather information from operators concerning problems with the Procedural Recliner. Note symptoms or other information concerning the problem that the operator describes. This information helps identify the probable cause.

1. Someone who can explain the problem is available.

Yes No



→ Go to “Function Checks” on page 2-4.

2. Ask that person to demonstrate or explain the problem. The problem can be duplicated.

Yes No



→ Go to “Function Checks” on page 2-4.

3. The problem is a result of improper operator action.

Yes No



→ Go to “Function Checks” on page 2-4.

4. Instruct the operator to refer to the procedures in the *Procedural Recliner User Manual*. Perform the “Function Checks” on page 2-4 to ensure proper operation of the Procedural Recliner.

Function Checks

1. Initial Actions have been performed.

Yes No



→ Go to “Initial Actions” on page 2-3.

2. Put the recliner in the full upright, low position.

3. Put the recliner in the brake position by pressing down on either BRAKE pedal located on the outside end of the brake/steer pedal. The BRAKE pedal locks in that position, the two rear casters do not roll or rotate, and the fifth wheel (center wheel) lowers into position on the floor (**on recliners with Steering Plus™ Steering System option only**).

Yes No



→ Go to RAP 2.1.

4. **On recliners with individual front locking casters option**, manually lock the two front casters. The two front casters do not roll or rotate.

Yes No



→ Go to RAP 2.1.

5. **On recliners with individual front locking casters option**, unlock the two front casters. The two front casters unlock.

Yes No



→ Go to RAP 2.1.

6. **On recliners with Steering Plus™ Steering System option**, put the recliner in the steer position by pressing the STEER pedal located on the center of the brake/steer pedal. The STEER pedal locks in that position, the fifth wheel lowers into position on the floor, and the recliner is able to roll freely.

Yes No



→ Go to RAP 2.2.

7. **On recliners without Steering Plus™ Steering System option**, put the recliner in the steer position by pressing the STEER pedal located on the center of the brake/steer pedal. The STEER pedal locks in that position.
Yes **No**
↓ → Go to RAP 2.1.
8. Put the recliner in the neutral position by pressing either BRAKE pedal located on the outside end of the brake/steer pedal until it is parallel to the floor. The pedal locks in that position, the fifth wheel rises off the floor, and all four casters rotate and roll freely.
Yes **No**
↓ → Go to RAP 2.3.
9. With the recliner in the full upright, low position and no load on it, press either the right or left side PUMP pedal 26 times to raise the recliner to the high position. The recliner rises, and no more than 26 full strokes are required to reach the high position.
Yes **No**
↓ → Go to RAP 2.4.
10. Lift the PUMP pedal with the top of your foot, and lower the recliner. The recliner takes between 5 s and 15 s to descend from the high to the low position.
Yes **No**
↓ → Go to RAP 2.5.
11. Raise and lower the adjustable arms by pressing the lever on the arm with one hand and grasping the middle of the arm with the other. The adjustable arms go up and down without binding or use of excessive force, and the arm locks into position when the lever is released.
Yes **No**
↓ → Go to RAP 2.6.
12. **On recliners with the footrest option**, lower the footrest by grabbing each outside corner and pulling down. The footrest releases easily without excessive force and lowers parallel to the floor.
Yes **No**
↓ → Go to RAP 2.7.
13. **On recliners with the footrest option**, store the footrest by pulling up on the center, and then push in. The footrest latches into place.
Yes **No**
↓ → Go to RAP 2.8.

14. With the recliner in the full upright position, footrest in the stored position, and someone seated in the recliner, raise the recline lever located on the adjustable arm, and have the person lean back on the back section. The recliner moves from the full upright position to the recline position and anywhere in between without binding. Excessive force is not required on the recline lever or on the back section.

Yes No

↓ → Go to RAP 2.9.

15. Press the recline lever, and put the recliner in the full upright position.

16. With no one seated in the recliner, press the full flat/Trendelenburg lever located at the back of the recliner under the head section, and push down. The recliner transitions from the fully upright position to full flat, and anywhere in between without binding. Little effort is required on the full flat/Trendelenburg lever and on the back section.

Yes No

↓ → Go to RAP 2.10.

17. With the recliner in the full flat position, press the full flat/Trendelenburg lever, and push down to put the recliner in the Trendelenburg position. Some additional force is necessary. The recliner moves from the full flat to Trendelenburg without binding, and little effort is required on the full flat/Trendelenburg lever and on the back section.

Yes No

↓ → Go to RAP 2.11.

18. Press the full flat/Trendelenburg lever, and raise up on the head section until the recliner is in the full upright position.

19. Put the recliner in the high position by repeatedly pressing the PUMP pedal.

20. With the recliner in the full upright and high position, press the egress lever located at the back of the recliner under the head section on either side. Push down on the front end of the adjustable arm until the recliner is in the egress assist position. The recliner moves to the egress position without binding, and little effort is required on the egress lever.

Yes No

↓ → Go to RAP 2.12.

21. **On recliners with the independent legrest option**, set the pedal assembly in the legrest position.

22. Raise the legrest by repeatedly pressing the PUMP pedal. Lift the PUMP pedal using the top of your foot, and lower the legrest. The legrest goes up and then down.

Yes No

↓

→ Go to RAP 2.13.

23. Go to “Final Actions” on page 2-7.

2

Final Actions

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

2.1 Braking Malfunction

1. The brake/steer pedal locks in the brake position when engaged.

Yes	No
↓	→ Inspect the two rear casters for excessive wear (see figure 4-12 on page 4-27). If necessary, replace the defective rear brake caster (refer to procedure 4.14). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 2.
2. The two rear casters lock in the brake position and do not roll or rotate when the pedal is placed in the brake position.

Yes	No
↓	→ Replace the defective rear brake caster (refer to procedure 4.14). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 3.
3. **On recliners with the individual front locking casters option**, the two front casters lock in the brake position and do not roll or rotate when manually locked.

Yes	No
↓	→ Replace the defective caster (refer to procedure 4.13). If this solves the problem, go to “Final Actions” on page 2-7.
4. Another part of the recliner interferes with the brake/steer pedal mechanism.

Yes	No
↓	→ Call Hill-Rom Technical Support at (800) 445-3720.
5. Take appropriate actions to eliminate the interference.
This solves the problem.

Yes	No
↓	→ Call Hill-Rom Technical Support at (800) 445-3720.
6. Go to “Final Actions” on page 2-7.

2.2 Loss of Steering Plus™ Steering System

1. The brake/steer pedal locks in the steer position when engaged.

Yes No

↓

→ Inspect the two rear casters for excessive wear (see figure 4-12 on page 4-27). If necessary, replace the defective rear brake caster (refer to procedure 4.14). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 2.

2. The fifth wheel lowers into position on the floor.

Yes No

↓

→ Inspect the fifth wheel linkage and springs for proper assembly (refer to procedure 4.14). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 3.

3. The fifth wheel is worn.

Yes No

↓

→ Go to step 6.

4. Replace the fifth wheel (refer to procedure 4.16).

This solves the problem.

Yes No

↓

→ Go to step 6.

5. Go to “Final Actions” on page 2-7.

6. Another part of the recliner interferes with the Steering Plus™ Steering System.

Yes No

↓

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

7. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

↓

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

8. Go to “Final Actions” on page 2-7.

2.3 Neutral Position Malfunction

1. The brake/steer pedal locks in the neutral position when engaged.

Yes	No
↓	→ Inspect the two rear casters for excessive wear (see figure 4-12 on page 4-27). If necessary, replace the defective rear brake caster (refer to procedure 4.14). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 2.
2. The fifth wheel rises off of the floor, and the recliner is able to roll freely.

Yes	No
↓	→ Inspect the fifth wheel linkage and springs for proper assembly (refer to procedure 4.16). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 3.
3. Another part of the recliner interferes with the Steering Plus™ Steering System.

Yes	No
↓	→ Call Hill-Rom Technical Support at (800) 445-3720.
4. Take appropriate actions to eliminate the interference.
This solves the problem.

Yes	No
↓	→ Call Hill-Rom Technical Support at (800) 445-3720.
5. Go to “Final Actions” on page 2-7.

2.4 Recliner Will Not Rise

2

1. **On recliners with the independent legrest option**, inspect the lever arms on the manual legrest manifold are properly oriented and are attached to the cam sleeve.

The manual legrest manifold lever arms are functioning.

Yes No

↓

→ Remove the seat cushion (refer to procedure 4.2) and back shroud (refer to procedure 4.1) to gain access to the manual legrest manifold. Replace the manual legrest manifold, as necessary (refer to procedure 4.12).

2. Press the PUMP pedal **26** times to raise the recliner from the low to the high position.

The recliner raises to the high position.

Yes No

↓

→ Remove the seat cushion (refer to procedure 4.2) and back shroud (refer to procedure 4.1) to gain access to the hydraulic pump assembly and pump pedal weldment. Go to step 4.

3. Go to “Final Actions” on page 2-7.

4. Press the PUMP pedal down to the floor, and visually check to make sure the hydraulic pump lever (E) is moving full stroke, the hydraulic cylinder is moving, and the connection from the hydraulic cylinder to the scissors assembly is correct (see figure 4-8 on page 4-19).

The PUMP pedal goes to the floor.

Yes No

↓

→ Inspect the pump pedal shaft for a bent pedal or shaft. If necessary, call Hill-Rom Technical Support at (800) 445-3720.

5. The hydraulic pump piston rod is moving full stroke.

Yes No

↓

→ Make sure the hydraulic pump lever (E) and release rod are assembled correctly for proper engagement (see figure 4-8 on page 4-19). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 7.

6. The hydraulic cylinder is moving.

Yes No

↓

→ Check the hydraulic system assembly, cylinder, and hose for leaks. Make sure the hydraulic reservoir has the proper amount

of hydraulic oil. If necessary, service the hydraulic pump system assembly with hydraulic oil (refer to procedure 4.9). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 7.

7. The hydraulic cylinder is properly attached to the scissors assembly (refer to procedure 4.7).

Yes No

↓

→ Correct the attachment of the hydraulic cylinder to the scissors assembly (refer to procedure 4.7). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 10.

8. Replace the hydraulic pump assembly (refer to procedure 4.6).

This solves the problem.

Yes No

↓

→ Go to step 10.

9. Go to “Final Actions” on page 2-7.

10. Another part of the recliner interferes with the PUMP pedal/hydraulic assembly.

Yes No

↓

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

11. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

↓

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

12. Go to “Final Actions” on page 2-7.

2.5 Recliner Descent Rate Malfunction

1. Lift the pump pedal with the top of your foot, and lower the recliner.

The recliner takes between 5s and 15 s to descend from the high to the low position.

Yes No

↓

→ Make sure the hydraulic pump lever (E) and release rod are assembled correctly for proper engagement (see figure 4-8 on page 4-19). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 3.

2. Go to “Final Actions” on page 2-7.

3. Remove the hydraulic cylinder (refer to procedure 4.7).



WARNING:

A minimum of two people are required to lift the scissors assembly. Ensure proper lifting methods are used. Failure to do so could result in personal injury or equipment damage.

4. Inspect the scissors assembly for binding by manually raising the recliner.

The recliner rises manually without binding in the scissors assembly.

Yes No

↓

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

5. Replace the hydraulic pump assembly (refer to procedure 4.6).

This solves the problem.

Yes No

↓

→ Go to step 7.

6. Go to “Final Actions” on page 2-7.

7. Another part of the recliner interferes with the PUMP pedal / hydraulic assembly.

Yes No

↓

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

8. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

↓

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

9. Go to “Final Actions” on page 2-7.

2.6 Adjustable Arm Malfunction

2

1. The adjustable arms require excessive force to raise or lower.

Yes No

↓ → Go to step 6.

2. Remove the inner arm shroud (refer to procedure 4.1).
3. Remove the outer arm shrouds (refer to procedure 4.1).
4. Press the lever on the arm, and inspect the Mechlok®¹ release for full motion.

The Mechlok® release is moving through full motion.

Yes No

↓ → Replace the adjustable arm cable (refer to procedure 4.17).
Continue to step 5.

5. Press the lever on the arm with one hand, grasp the middle of the arm with the other hand, and raise or lower the arm.

The adjustable arm is going up and down.

Yes No

↓ → Replace the adjustable arm Mechlok® (refer to procedure 4.3).

6. Another part of the recliner interferes with the adjustable arm assembly.

Yes No

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

7. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

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

8. Go to “Final Actions” on page 2-7.

1. Mechlok® is a registered trademark of P.L. Porter Company.

2.7 Footrest Will Not Lower

1. Inspect the pivot points of the footrest for obstruction or interference from another part of the recliner.

Another part of the recliner interferes with the footrest pivot points.

Yes No

↓

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

2. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

↓

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

3. Go to “Final Actions” on page 2-7.

2.8 Footrest Cannot Be Stored

1. The footrest latches into place without falling.

Yes No

↓

→ Inspect to ensure that the foot guards and cables are properly folding into place and that they are not obstructed. If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 3.

2. Go to “Final Actions” on page 2-7.

3. Replace the footrest latch spring (refer to procedure 4.25).

This solves the problem.

Yes No

↓

→ Go to step 5.

4. Go to “Final Actions” on page 2-7.

5. Another part of the recliner interferes with the footrest assembly.

Yes No

↓

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

6. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

↓

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

7. Go to “Final Actions” on page 2-7.

2.9 Full Upright To Recline Position Malfunction

1. The recliner requires excessive force to move from the full upright to the recline position.

Yes No

↓ → Go to step 6.

2. Remove the seat cushion (refer to procedure 4.2).
3. Remove the inner arm shroud (refer to procedure 4.1).
4. Remove the outer arm shroud (refer to procedure 4.1).
5. Raise the left recline lever located on the adjustable arm, and inspect the recline Mechlok®¹ release for full motion. Do the same for the right recline lever.

The Mechlok® release is moving through full motion.

Yes No

↓ → Adjust the recline cable (refer to procedure 4.21). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 6.

6. The recline Mechlok® is going up and down properly.

Yes No

↓ → Replace the recline Mechlok® (refer to procedure 4.4). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 7.

7. Another part of the recliner interferes with the recline mechanism.

Yes No

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

8. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

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

9. Go to “Final Actions” on page 2-7.

1. Mechlok® is a registered trademark of P.L. Porter Company.

2.10 Recline To Full Flat Position Malfunction

1. The recliner requires excessive force to move from the recline to the full flat position.

Yes No

↓ → Go to step 6.

2. Remove the seat (refer to procedure 4.2).
3. Remove the inner arm shroud (refer to procedure 4.1), if necessary.
4. Remove the outer arm shroud (refer to procedure 4.1), if necessary.
5. Remove the back cushion (refer to procedure 4.2), if necessary.
6. Raise the full flat/Trendelenburg lever located at the back of the recliner under the head section, and inspect the recline Mechlok®¹ release for full motion.

The Mechlok® release is moving through full motion.

Yes No

↓ → Adjust the full flat/Trendelenburg cable (refer to procedure 4.18). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 7.

7. The recline Mechlok® is going up and down properly.

Yes No

↓ → Replace the recline Mechlok® (refer to procedure 4.4). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 8.

8. Another part of the recliner interferes with the full flat/Trendelenburg assembly.

Yes No

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

9. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

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

10. Go to “Final Actions” on page 2-7.

1. Mechlok® is a registered trademark of P.L. Porter Company.

2.11 Full Flat To Trendelenburg Position Malfunction

1. The recliner requires excessive force to move from the full flat to the Trendelenburg position.

Yes No

↓ → Go to step 3.

2. Adjust the Trendelenburg cable (refer to procedure 4.18).

This solves the problem.

Yes No

↓ → Inspect the Trendelenburg gas spring for proper operation. If necessary, replace the Trendelenburg gas spring (refer to procedure 4.20). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 4.

3. Go to “Final Actions” on page 2-7.

4. Another part of the recliner interferes with the full flat/Trendelenburg assembly.

Yes No

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

5. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

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

6. Go to “Final Actions” on page 2-7.

2.12 Egress Assist Malfunction

2

1. The recliner requires excessive force to move to the egress assist position.

Yes No

↓ → Go to step 8.

2. Remove the back cushion (refer to procedure 4.2).

3. Press the egress handle located at the back of the recliner under the head section on either side. Inspect the cable for proper attachment to the mechanism.

The cable is properly attached to the egress handle.

Yes No

↓ → Attach the cable to the egress handle (refer to procedure 4.19). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 4.

4. Inspect the egress cable to ensure it operates correctly.

The egress cable is functioning properly.

Yes No

↓ → Adjust the egress cable (refer to procedure 4.18). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 5.

5. Inspect the egress gas spring for proper operation.

The egress gas spring is functioning properly.

Yes No

↓ → Replace the egress gas spring (refer to procedure 4.19). If this solves the problem, go to “Final Actions” on page 2-7. Otherwise, go to step 6.

6. Another part of the recliner interferes with the egress assist assembly.

Yes No

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

7. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

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

8. Go to “Final Actions” on page 2-7.

2.13 Independent Legrest Malfunction

1. Set the pedal assembly in the legrest position.

The pedal assembly sets in the independent legrest position and engages the lever arms of the manual legrest manifold.

Yes No



→ Replace the hilow/legrest pedal assembly (refer to procedure 4.10).

2. Press the PUMP pedal to raise the legrest from the low to the high position.

The legrest rises to the high position.

Yes No



→ Remove the seat cushion (refer to procedure 4.2) and back shroud (refer to procedure 4.1) to gain access to the hydraulic pump and the pump pedal weldment. Continue to step 5.

3. Using the top of your foot, lift the PUMP pedal to lower the legrest from the high to the low position.

The legrest lowers.

Yes No



→ Remove the seat cushion (refer to procedure 4.2) and back shroud (refer to procedure 4.1) to gain access to the hydraulic pump and the pump pedal weldment. Continue to step 5.

4. Go to “Final Actions” on page 2-7.

5. Ensure the hydraulic pump reservoir has the proper amount of hydraulic oil.

The reservoir has the proper amount of fluid.

Yes No



→ Fill the reservoir to the proper level (refer to procedure 4.9).

6. Inspect to ensure the lever arms on the manual legrest manifold are properly oriented and attached to the cam sleeve.

The lever arms of the manual legrest manifold are functioning properly.

Yes No



→ Remove the seat cushion (refer to procedure 4.2) and back shroud (refer to procedure 4.1) to gain access to the manual legrest manifold. Replace the manual legrest manifold (refer to procedure 4.12).

7. Press the PUMP pedal down, and visually check to ensure the hydraulic pump lever (E) is moving full stroke (see figure 4-8 on page 4-19), the legrest cylinder is moving (refer to procedure 4.11), and the connection from the hydraulic pump to the legrest cylinder is correct.

The PUMP pedal goes to the floor.

Yes No

↓ → Inspect the pump pedal shaft for a bent pedal or shaft. If necessary, call Hill-Rom Technical Support at (800) 445-3720.

8. The hydraulic pump piston rod is moving full stroke.

Yes No

↓ → Ensure the hydraulic pump lever (E) and release rod are assembled correctly for proper engagement (see figure 4-8 on page 4-19).

9. Replace the hydraulic pump (refer to procedure 4.6).

This solves the problem.

Yes No

↓ → Go to step 11.

10. Go to “Final Actions” on page 2-7.

11. Replace the manual legrest manifold (refer to procedure 4.12).

This solves the problem.

Yes No

↓ → Go to step 13.

12. Go to “Final Actions” on page 2-7.

13. Replace the legrest cylinder (refer to procedure 4.11).

This solves the problem.

Yes No

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

14. Go to “Final Actions” on page 2-7.

NOTES:

Chapter 3

Theory of Operation

Chapter Contents

Mechanical Cable System.....	3 - 3
Basic Description	3 - 3
Theory of Operation	3 - 3
Hydraulic System	3 - 4

NOTES:

Mechanical Cable System

Basic Description

The mechanical cable system consists of seven activation controls:

- Right side recline
- Left side recline
- Right side egress assist
- Left side egress assist
- Right side adjustable arm rest
- Left side adjustable arm rest
- Full flat/Trendelenburg

Of the seven activation controls, two are patient-controlled: the right and left side recline. The other five activation controls are caregiver-controlled. The activation controls consist of the following:

- Ten cables
- Two cable splitters, which are used to facilitate multi-cable inputs to actuate one, or a set, of devices
- Two gas springs
- Three Mechlok®¹ assemblies
- One damper
- One flat control mechanism

Theory of Operation

The mechanical cable system operates by the use of four levers. The basic routing of these cables and the actions that take place when one of these levers is actuated is described in the following table (see table 3-1 on page 3-4).

NOTE:

All references to the left and right side are of the point of view of the patient seated in the recliner.

1. Mechlok® is a registered trademark of P.L. Porter Company.

Table 3-1. Recliner—Activation Control Features

Lever Actuated	Cable Routing/Results
Full flat/Trendelenburg lever	The right side cable goes through the flat splitter located at the back of the seat frame. This cable actuates the flat control pin and the recline Mechlok® ^a to engage the full flat function. The left side cable goes to the Trendelenburg gas spring to engage the Trendelenburg function.
Egress assist lever	The right and left side cables actuate the egress gas spring.
Recline lever	The right and left side cables go through the recline splitter located at the front of the seat frame; then one cable from the splitter goes to the recline Mechlok®.
Adjustable arm rest lever	Each arm has an internally routed cable that goes to its corresponding arm Mechlok®.

a. Mechlok® is a registered trademark of P.L. Porter Company.

Hydraulic System

The hydraulic system provides power to raise and lower the recliner through a pumping action in its operating mode. The system consists of a hydraulic pump (with reservoir and valves combined in one unit), a hydraulic cylinder, a release valve assembly, and an interconnecting hydraulic line.

The independent legrest can be positioned without affecting the back frame. A single hydraulic pump powers both the height of the chair and the position of the legrest. A dual pedal allows selection of either the hi/low function of the chair or the legrest function, which works independently. When it is selected, a single PUMP pedal elevates the chair or legrest.

Chapter 4

Removal, Replacement, and Adjustment Procedures

Chapter Contents

Shrouds	4 - 5
Base Shroud Removal	4 - 5
Base Shroud Replacement	4 - 5
Lower Outer Arm Shroud Removal	4 - 6
Lower Outer Arm Shroud Replacement	4 - 6
Rear Shroud Removal	4 - 6
Rear Shroud Replacement	4 - 6
Upper Inner Arm Shroud Removal	4 - 6
Upper Inner Arm Shroud Replacement	4 - 7
Upper Outer Arm Shroud Removal	4 - 7
Upper Outer Arm Shroud Replacement	4 - 8
Seat and Back Cushion	4 - 9
Seat Cushion Removal	4 - 9
Seat Cushion Replacement	4 - 10
Back Cushion Removal	4 - 10
Back Cushion Replacement	4 - 11
Adjustable Arm Mechlok®	4 - 12
Removal	4 - 12
Replacement	4 - 13
Recline Mechlok®	4 - 14
Removal	4 - 14

Replacement	4 - 15
Egress Damper	4 - 16
Removal	4 - 16
Replacement	4 - 16
Hydraulic Pump Assembly	4 - 17
Removal	4 - 17
Replacement	4 - 20
Hydraulic Cylinder	4 - 22
Removal	4 - 22
Replacement	4 - 23
Hydraulic Hose	4 - 25
Removal	4 - 25
Replacement	4 - 26
Hydraulic System Servicing	4 - 27
Hydraulic Fluid Replenishment Procedure.	4 - 27
Hydraulic System Bleed Procedure	4 - 28
Hilow/Legrest Pedal Assembly (Independent Footrest Model Only)	4 - 30
Removal	4 - 30
Replacement	4 - 31
Legrest Cylinder (Independent Legrest Model Only).	4 - 32
Removal	4 - 32
Replacement	4 - 32
Manual Legrest Manifold (Independent Legrest Model Only).	4 - 33
Removal	4 - 33
Replacement	4 - 34
Front Caster.	4 - 35
Removal	4 - 35
Replacement	4 - 35
Rear Brake Caster.	4 - 37
Removal	4 - 37
Replacement	4 - 38

Steering Plus™ Steering System	4 - 39
Removal	4 - 39
Replacement	4 - 39
Fifth Wheel Caster	4 - 40
Removal	4 - 40
Replacement	4 - 40
Adjustable Arm Release Cable	4 - 41
Removal	4 - 41
Replacement	4 - 42
Flat Control Release Cable	4 - 43
Removal	4 - 43
Replacement	4 - 44
Egress Release Cables	4 - 45
Removal	4 - 45
Replacement	4 - 46
Trendelenburg Release Cable and Flat Control/Recline Cable	4 - 48
Removal	4 - 48
Replacement	4 - 49
Cable Adjustment	4 - 51
Typical Cable Adjustment	4 - 51
Recline Cable Adjustment	4 - 51
Flat Control and Trendelenburg Cable Adjustment	4 - 53
Egress Gas Spring	4 - 55
Removal	4 - 55
Replacement	4 - 56
Trendelenburg Gas Spring	4 - 57
Removal	4 - 57
Replacement	4 - 58
IV/Accessory Socket	4 - 59
Removal	4 - 59
Replacement	4 - 59

Footrest Latch Spring (P1320A Model Only)	4 - 61
Removal	4 - 61
Replacement	4 - 61

4.1 Shrouds

Tools required: Phillips head screwdriver
1/4" open end wrench

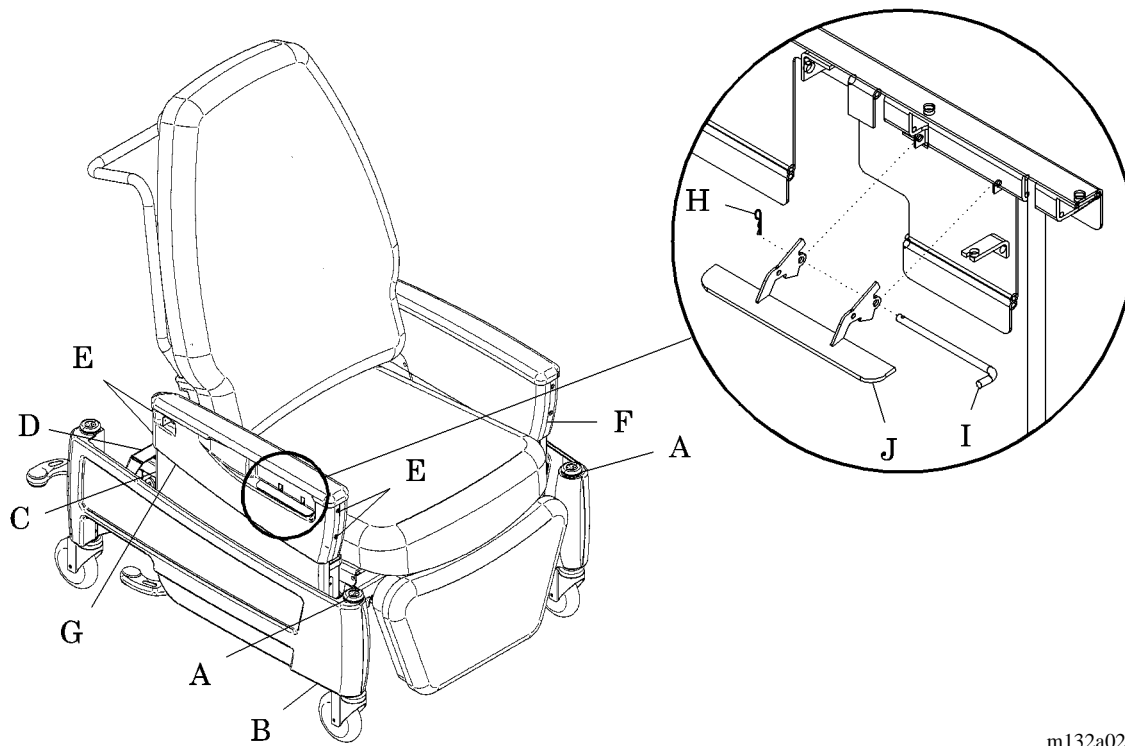
Base Shroud Removal

NOTE:

Hill-Rom recommends that you have the recliner in the full upright position for ease of removal and replacement of the base shroud.

1. Remove the IV/accessory sockets (A) from each corner of the recliner (refer to procedure 4.24) (see figure 4-1 on page 4-5).

Figure 4-1. Shrouds



2. Pull straight up on the base shroud (B), and remove it from the recliner.

Base Shroud Replacement

1. Align the base shroud (B) over the base weldment on each corner of the recliner.
2. Press down on the base shroud (B).

3. Install the IV/accessory sockets (A) on each corner of the recliner (refer to procedure 4.24).

Lower Outer Arm Shroud Removal

NOTE:

The lower outer arm shroud is held in place with Dual Lock®¹ strips. It may be necessary to put the recliner in a higher position to gain access to them.

Remove the lower outer arm shroud (C) by gently pulling it away from the recliner.

Lower Outer Arm Shroud Replacement

NOTE:

The lower outer arm shroud is held in place with Dual Lock® strips. It may be necessary to put the recliner in a higher position to gain access to them.

Install the lower outer arm shroud (C) on the recliner.

Rear Shroud Removal

NOTE:

The rear shroud is held in place with Dual Lock® strips.

Remove the rear shroud (D) by gently pulling it away from the recliner.

Rear Shroud Replacement

NOTE:

The rear shroud is held in place with Dual Lock® strips.

Install the rear shroud (D) on the recliner.

Upper Inner Arm Shroud Removal

1. Put the recliner in the full flat position.
2. Using the phillips head screwdriver, remove the four screws (E) (two front and two rear for each side) that attach the inner (F) and outer (G) arm shrouds.

1. Dual Lock® is a registered trademark of Minnesota Mining and Manufacturing Company.

NOTE:

The upper inner arm shroud is held in place with Dual Lock®¹ strips.

3. Remove the upper inner arm shroud (F) by gently pushing in toward the recliner.

Upper Inner Arm Shroud Replacement

1. Put the recliner in the full flat position.

NOTE:

The upper inner arm shroud is held in place with Dual Lock® strips.

2. Install the upper inner arm shroud (F) on the recliner.
3. Using the phillips head screwdriver, install the four screws (E) (two front and two rear for each side) that attach the inner (F) and outer (G) arm shrouds.

Upper Outer Arm Shroud Removal

1. Remove the upper inner arm shroud (F) (see “Upper Inner Arm Shroud Removal” on page 4-6).
2. Gently pull on the bottom of the outer shroud (G), locate the retaining hairpin (H) underneath securing the recline lever (J), and release the pivot shaft (I).
3. Remove the retaining hairpin (H).
4. Remove the pivot shaft (I).
5. If the upper outer arm shroud (G) is being replaced, do the following. Otherwise, go to step 6.
 - a. Using the phillips head screwdriver and 1/4" open end wrench, remove the screw and nut that attaches the recline cable to the recline lever (J).
 - b. Remove the recline lever (J) and the upper outer arm shroud (G).
6. If the upper outer arm shroud (G) is being positioned out of the way for access, remove the e-clip that secures the recline cable to the frame. This will allow the shroud to be positioned out of the way.

1. Dual Lock® is a registered trademark of Minnesota Mining and Manufacturing Company.

Upper Outer Arm Shroud Replacement

1. If the upper outer arm shroud (G) was replaced, do the following. Otherwise, go to step 2.
 - a. Install the recline lever (J) and the upper outer arm shroud (G).
 - b. Using the phillips head screwdriver and 1/4" open end wrench, install the screw and nut that attaches the recline cable to the recline lever (J).
2. If the upper outer arm shroud (G) was being positioned out of the way for access, install the e-clip that secures the recline cable to the frame.
3. Install the release pivot shaft (I) that secures the recline lever (J).
4. Install the retaining hairpin (H) that attaches to the release pivot shaft (I).
5. Install the upper inner arm shroud (F) (see "Upper Inner Arm Shroud Replacement" on page 4-7).

4.2 Seat and Back Cushion

Tools required: Screwdriver
Phillips head screwdriver

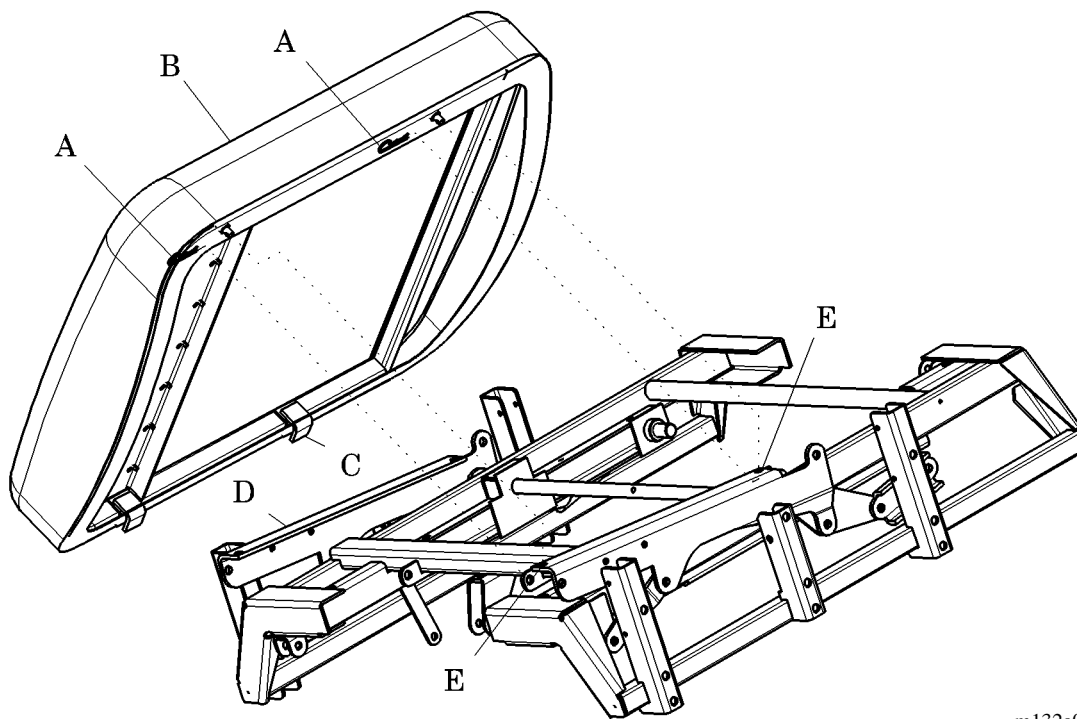
Seat Cushion Removal

NOTE:

All references to the left and right are from the point of view of the patient sitting in the recliner.

1. Locate the two retaining hairpins (A) under the seat cushion (B) on the left side of the recliner (see figure 4-2 on page 4-9).

Figure 4-2. Seat Cushion



m132a060

2. Remove the two retaining hairpins (A).
3. Lift the front of the seat approximately 1" (3 cm), and pull the seat toward the patient's left, and away from the recliner.

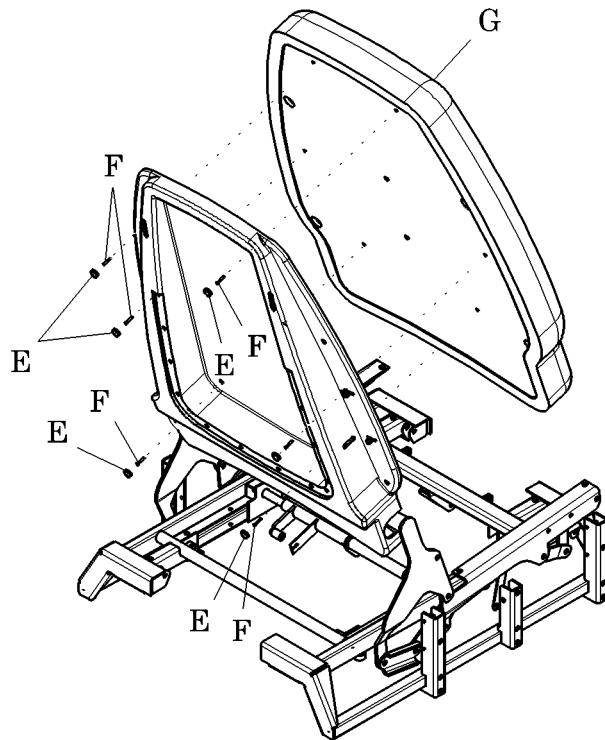
Seat Cushion Replacement

1. Bring the seat cushion (B) in from the patient's left to right, and position by sliding the brackets (C) into the seat frame weldment (D).
2. Position the seat cushion (B) in the seat frame weldment holes (E).
3. Install the two retaining hairpins (A).

Back Cushion Removal

1. Using the phillips head screwdriver, remove the two corner screws securing the patient storage net. This will allow access to the two screws located at the bottom side of the back section (inside the patient storage net).
2. Using the screwdriver, carefully remove the six snap caps (E) from the screws (F) (see figure 4-3 on page 4-10).

Figure 4-3. Back Cushion



m132a059

3. Using the phillips head screwdriver, remove the six screws (F) that secure the back cushion (G).

4. Remove the back cushion (G).

Back Cushion Replacement

1. Align the back cushion screw holes with the holes in the back section.
2. Using the phillips head screwdriver, install the six screws (F) that secure the back cushion (G).
3. Using the phillips head screwdriver, install the two corner screws that secure the patient storage net.
4. Install the six snap caps (E) on the screws (F).

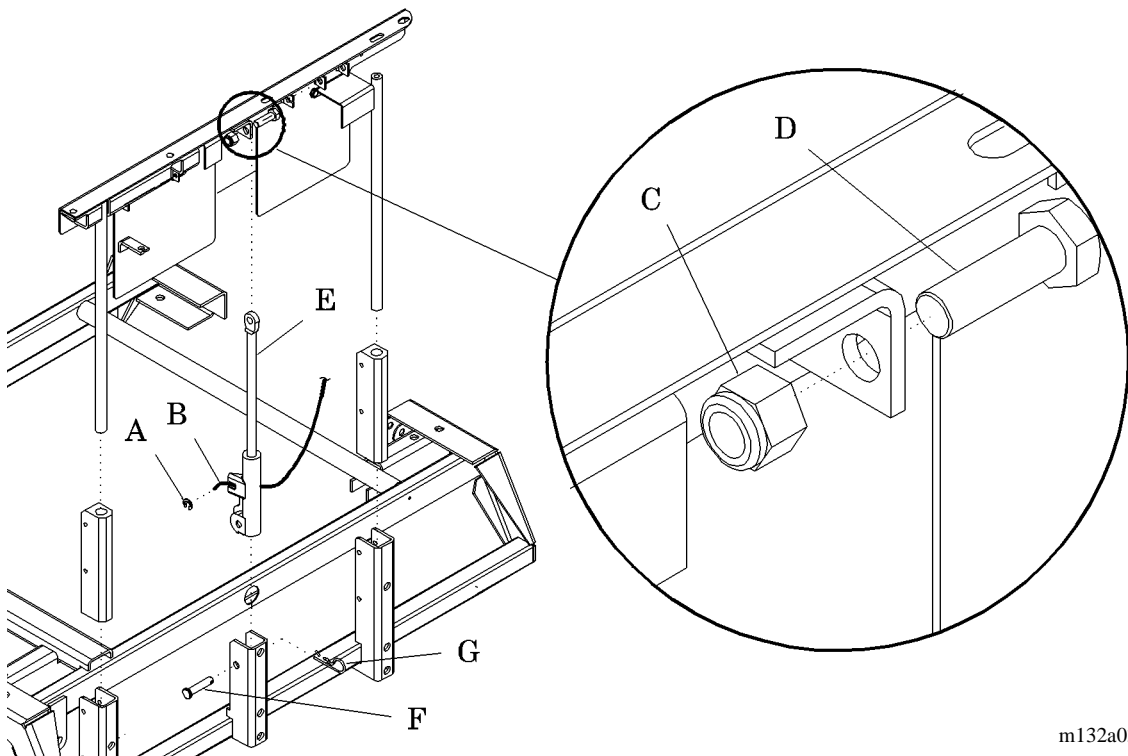
4.3 Adjustable Arm Mechlok®¹

Tools required: Needle nose pliers
1/2" open end wrench (2)

Removal

1. Remove the upper outer arm shroud (refer to procedure 4.1).
2. Using the needle nose pliers, remove the clip (A) and cable (B) from the adjustable arm Mechlok® (E) (see figure 4-4 on page 4-12).

Figure 4-4. Adjustable Arm Mechlok®



3. Using the two 1/2" open end wrenches, remove the bolt (D) and nut (C) at the top of the adjustable arm Mechlok® (E).
4. Support the adjustable arm, and remove the retaining hairpin (G) and clevis pin (F) at the bottom of the adjustable arm Mechlok® (E).
5. Remove the adjustable arm Mechlok® (E).

1. Mechlok® is a registered trademark of P.L. Porter Company.

Replacement

NOTE:

Ensure the left Mechlok®¹ is installed on the left side, and the right Mechlok® is installed on the right side from the point of view of the patient sitting in the recliner.

1. Raise the adjustable arm, and place the adjustable arm Mechlok® (E) into position.
2. Install the clevis pin (F) and retaining hairpin (G) at the bottom.
3. Using the two 1/2" open end wrenches, install the bolt (D) and nut (C) at the top, and tighten.
4. Place the cable (B) into position, and secure with the clip (A).
5. Raise and lower the adjustable arm to be sure of proper operation.
6. Install the upper outer arm shroud (refer to procedure 4.1).

1. Mechlok® is a registered trademark of P.L. Porter Company.

4.4 Recline Mechlok®¹

Tools required: Needle nose pliers
Rubber mallet
1/4" punch

Removal

1. Remove the seat cushion (refer to procedure 4.2).

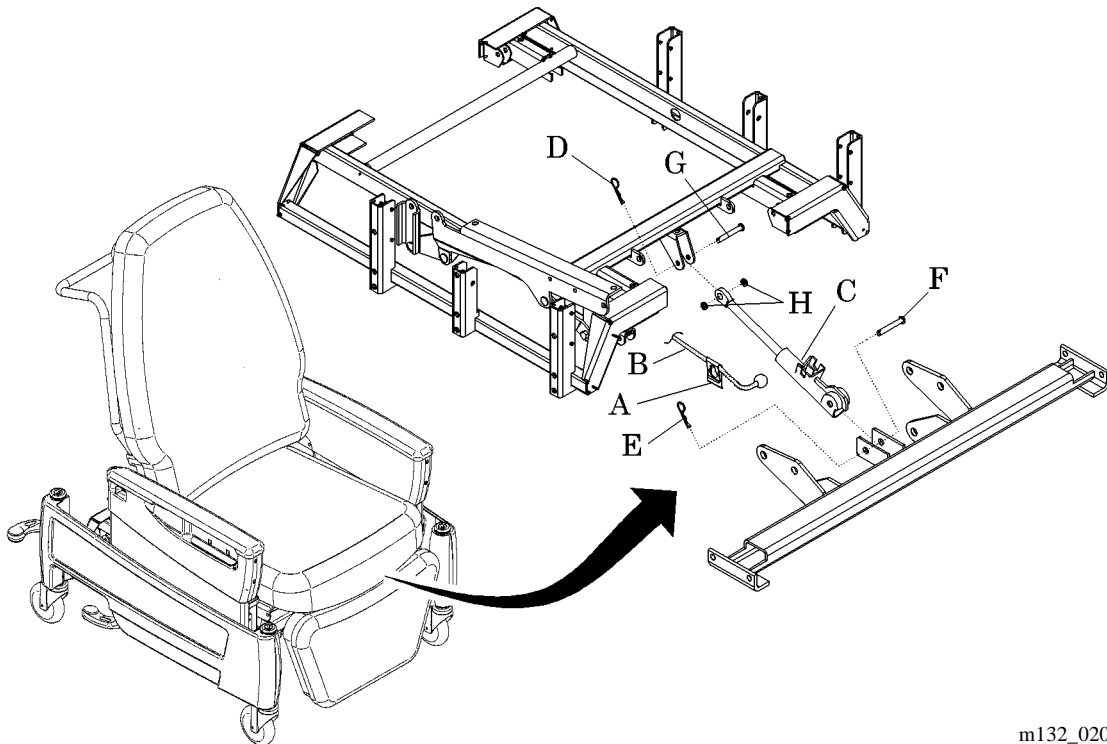


WARNING:

Make sure the recliner is in full flat position, and make sure it is secure. Failure to do so could result in personal injury or equipment damage.

2. Put the recliner in the full flat position.
3. Using the needle nose pliers, remove the clip (A) and cable (B) from the recline Mechlok® (C) (see figure 4-5 on page 4-14).

Figure 4-5. Recline Mechlok®



m132_020

1. Mechlok® is a registered trademark of P.L. Porter Company.

4. Remove the retaining hairpins (D and E) from the top and bottom of the recline Mechlok®¹ (C).
5. Using the 1/4" punch and rubber mallet, remove the clevis pin (F) from the bottom of the recline Mechlok® (C).

NOTE:

If tools are not available, carefully lift up on the footrest to remove the clevis pin.

6. Remove the top clevis pin (G), two nylon spacers (H), and the recline Mechlok® (C).

Replacement

1. Place the recline Mechlok® (C) in position.
2. Install the following in this order: top clevis pin (G), one nylon spacer (H), recline Mechlok® (C), and then another nylon spacer (H).
3. Install the retaining hairpin (D) in the top of the recline Mechlok® (C).
4. Install the clevis pin (F) and retaining hairpin (E) in the bottom of the recline Mechlok® (C).

NOTE:

If necessary, raise up on the footrest to help align the clevis pin with the Mechlok®.

5. Place the cable (B) into position, and secure with the clip (A).
6. Raise the recline lever on the adjustable arm, and make sure recline positioning operates properly.
7. Install the seat cushion (refer to procedure 4.2).

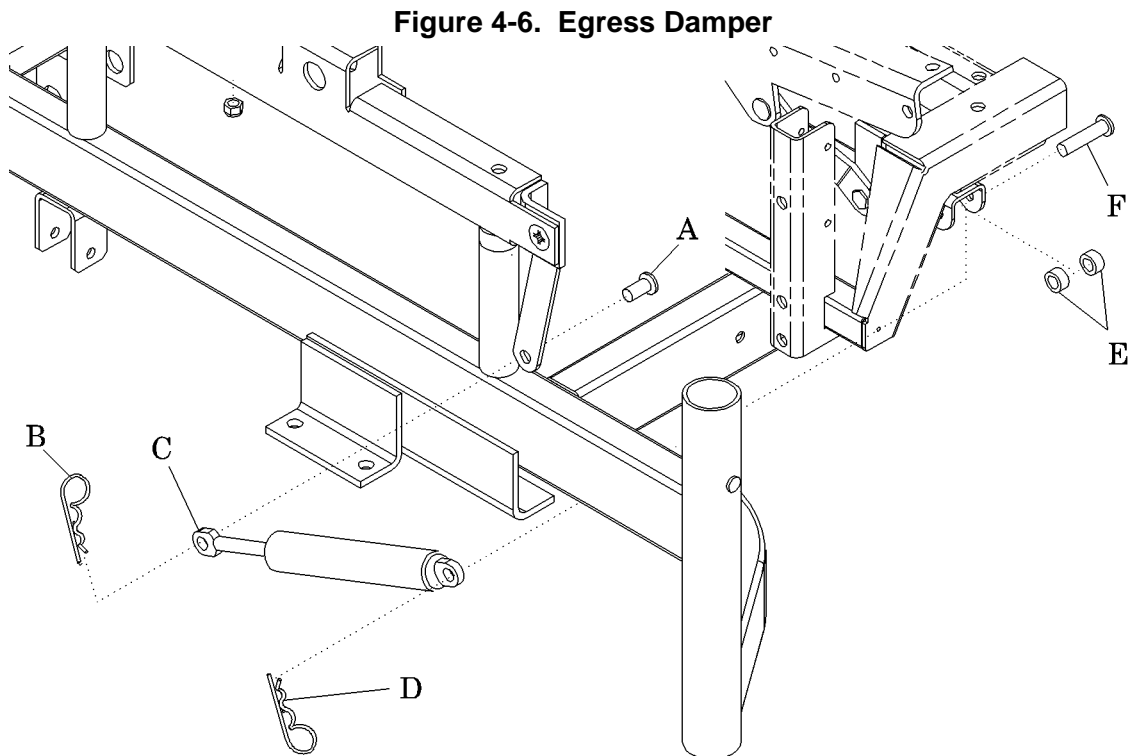
1. Mechlok® is a registered trademark of P.L. Porter Company.

4.5 Egress Damper

Tools required: None

Removal

1. Remove the retaining hairpin (B) from the damper pin (A) (see figure 4-6 on page 4-16).



m132_029

2. Remove the retaining hairpin (D) from the groove pin (F).
3. Remove the spacers (E).
4. Remove the egress damper (C).

Replacement

1. Position the egress damper (C) on the recline weldment.
2. Install the groove pin (F), spacers (E), and retaining hairpin (D).
3. Install the damper pin (A) and retaining hairpin (B).

4.6 Hydraulic Pump Assembly

Tools required: 1/2" open end wrench
Ratchet
1/2" socket
5/8" open end wrench
Temporary support (4" x 4" x 4" block)

NOTE:

This procedure removes and replaces the entire hydraulic pump assembly, which includes the hydraulic cylinder, hydraulic hose, and hydraulic pump. To remove or replace the hydraulic cylinder, see "Hydraulic Cylinder" on page 4-22. To remove or replace the hydraulic hose, see "Hydraulic Hose" on page 4-25.

Removal

**WARNING:**

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

**CAUTION:**

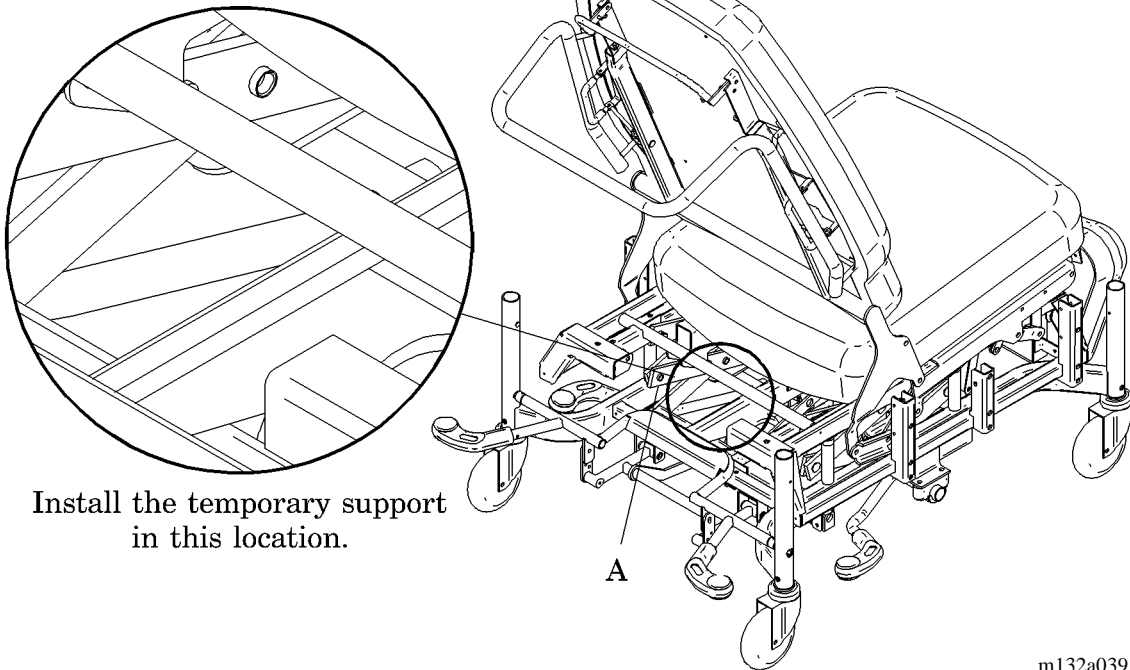
The hydraulic pump assembly is removed as a unit which consists of the reservoir, pump, and all valves combined. Do not disassemble the hydraulic pump, or equipment damage can occur.

1. Raise the recliner enough to install a temporary support (4" x 4" x 4" block) in between the links of the scissors assembly (A) (see figure 4-7 on page 4-18).

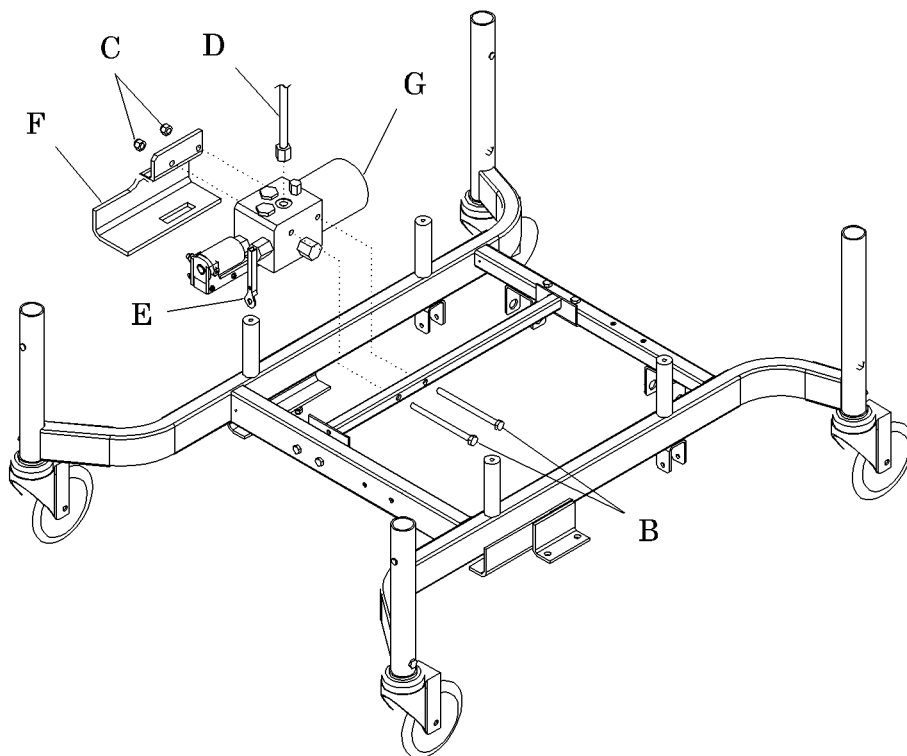
Figure 4-7. Hydraulic Pump Temporary Support Location

NOTE:

Shrouds removed for clarity.



2. Lower the recliner onto the temporary support.
3. Record the mechanical interface between the pump lever (E) and release rod. This will aid in the installation (see figure 4-8 on page 4-19).

Figure 4-8. Hydraulic Pump Assembly

m132a025

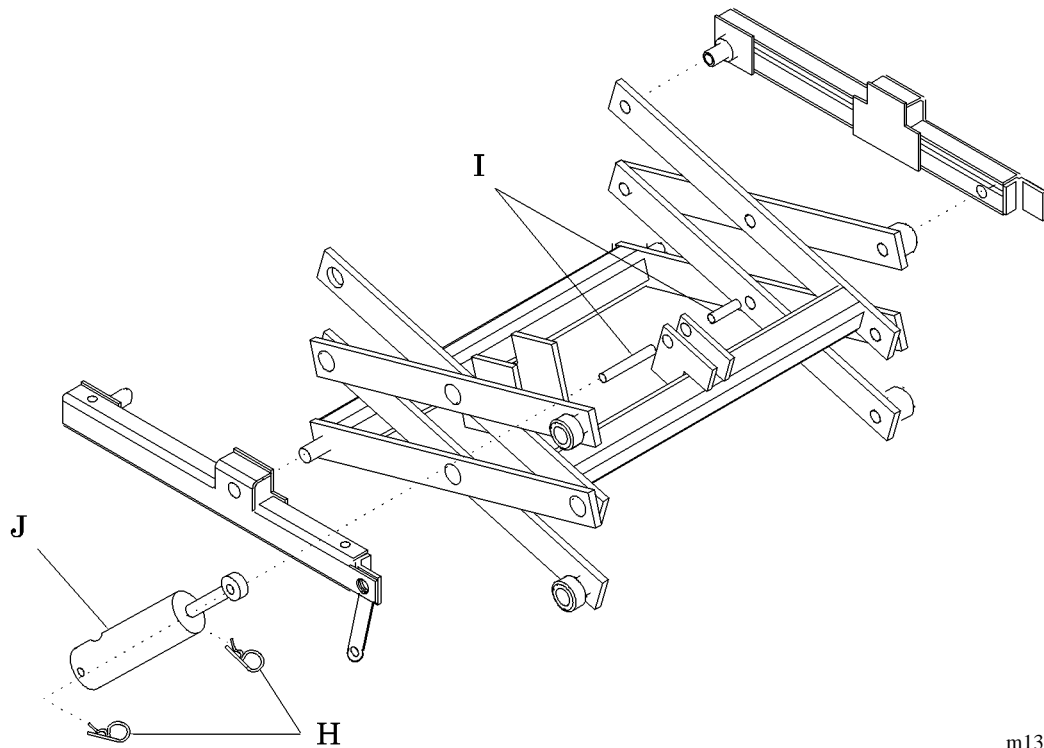
4. Raise the pump lever (E) and remove from the release rod.
5. If you are releasing only the hydraulic pump, follow these steps:
 - a. Using the 5/8" open end wrench, remove the hydraulic hose (D) from the hydraulic pump assembly (G).
 - b. Install a protective cap on the hydraulic hose.

OR

Go to step 6.

6. Using the 1/2" socket, ratchet, and 1/2" open end wrench, remove the two bolts (B), nuts (C), and bracket (F).
7. Remove the two retaining hairpins (H) from the top and bottom retaining pins (I) (see figure 4-9 on page 4-20).

Figure 4-9. Hydraulic Cylinder



m132a075

8. Remove the top and bottom retaining pins (I).
9. Remove the hydraulic pump assembly (G) (see figure 4-8 on page 4-19).

Replacement

1. Using the 1/2" socket, ratchet, and 1/2" open end wrench, install the two bolts (B), nuts (C), and bracket (F) that secure the hydraulic pump assembly (G) to the recliner.

NOTE:

To aid in the installation, raise up on the PUMP pedal with your hand to align the bolt holes.

2. If the hydraulic pump assembly (G) was separated from the hydraulic hose (D), follow these steps:
 - a. Remove the protective cap from the hydraulic hose.
 - b. Using the 5/8" open end wrench, install the hose on the pump.

OR

Go to step 3.

3. Install the pump lever (E) on the release rod.
4. Install the top and bottom retaining pins (I) that secure the hydraulic cylinder (J) (see figure 4-9 on page 4-20).
5. Install the two retaining hairpins (H) on the top and bottom retaining pins (I).
6. Raise the recliner and remove the temporary support from the scissors assembly (A) (see figure 4-7 on page 4-18).
7. Using the PUMP pedal, raise and lower the recliner to check for proper hilow operation.
8. If necessary, service the hydraulic system (refer to procedure 4.9).

4.7 Hydraulic Cylinder

Tools required: 5/8" open end wrench
Temporary support (4" x 4" x 4" block)

Removal



WARNING:

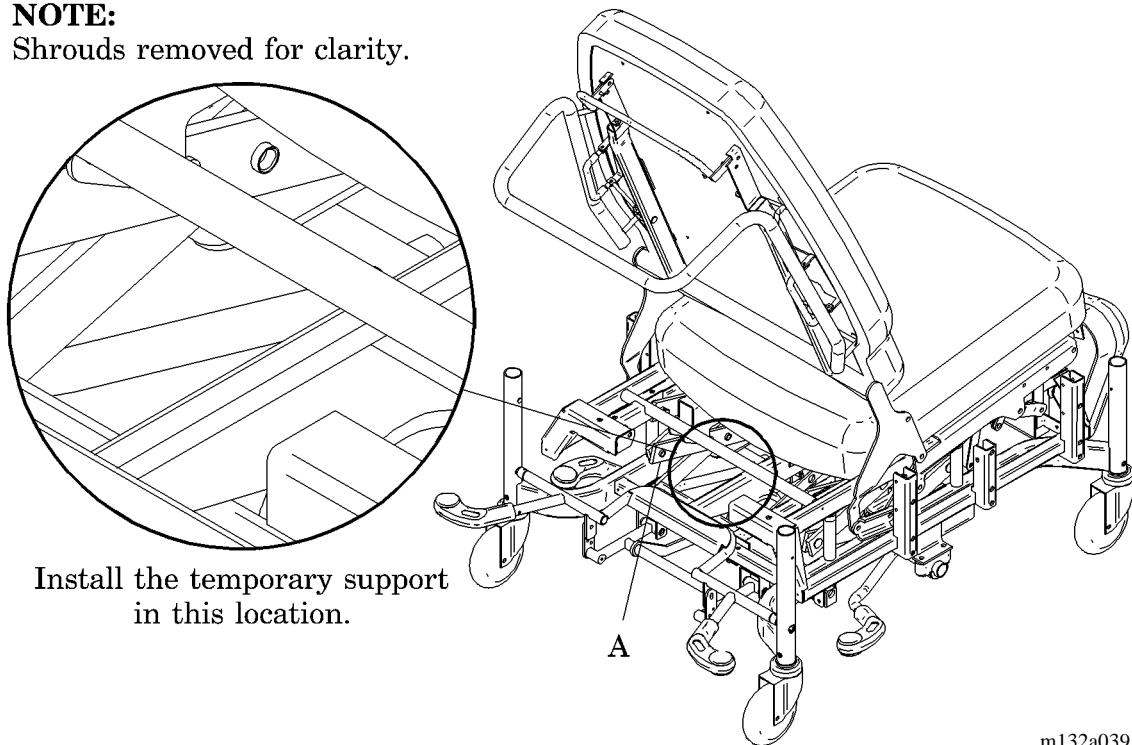
Do not work under an unsupported load. Install the appropriate temporary supports. Failure to do so could result in personal injury or equipment damage.

1. Raise the recliner enough to install a temporary support (4" x 4" x 4" block) between the links of the scissors assembly (A) (see figure 4-10 on page 4-22).

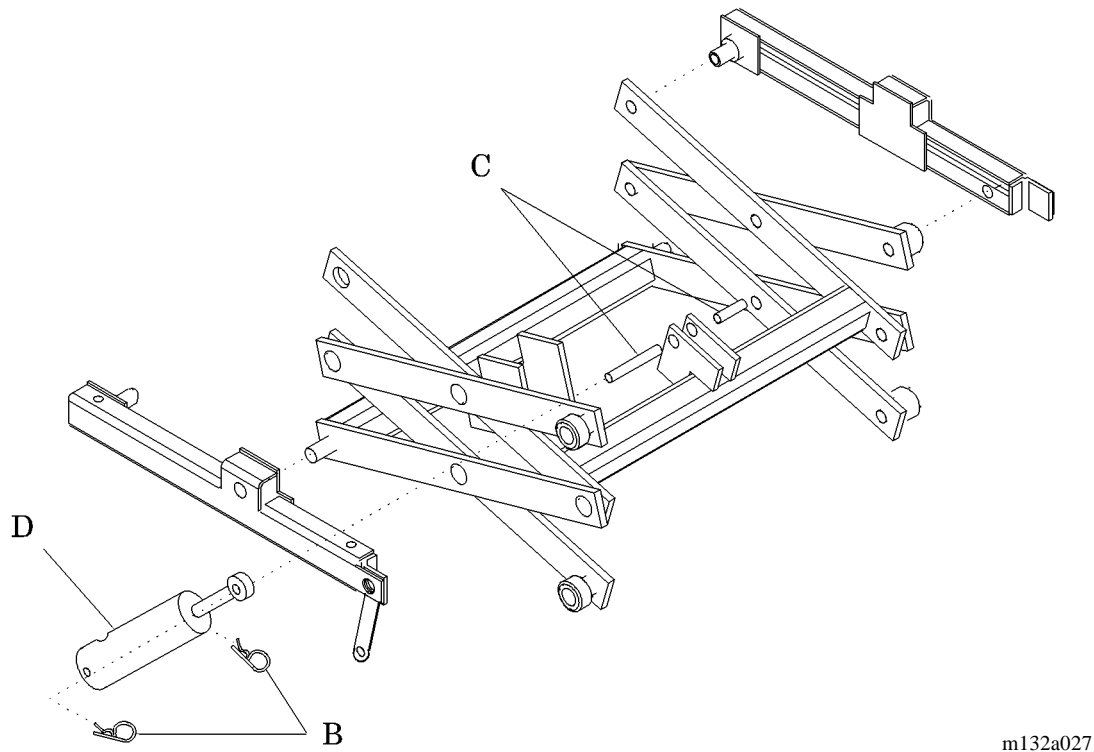
Figure 4-10. Hydraulic Pump Temporary Support Location

NOTE:

Shrouds removed for clarity.



2. Lower the recliner onto the temporary support.
3. Remove the two retaining hairpins (B) from the top and bottom retaining pins (C) (see figure 4-11 on page 4-23).

Figure 4-11. Hydraulic Cylinder

4. Using the 5/8" open end wrench, remove the hydraulic hose from the hydraulic cylinder (D).
5. Install a protective cap on the hydraulic hose.
6. Remove the hydraulic cylinder (D).

Replacement

1. Install the top and bottom retaining pins (C) that secure the hydraulic cylinder (D).
2. Install the two retaining hairpins (B) on the top and bottom retaining pins (C).
3. Remove the protective cap from the hydraulic hose.
4. Using the 5/8" open end wrench, install the hydraulic hose on the hydraulic cylinder (D).
5. Raise the recliner and remove the temporary support from the scissors assembly (A) (see figure 4-10 on page 4-22).

6. Using the PUMP pedal, raise and lower the recliner to check for proper hi/low operation.
7. If necessary, service the hydraulic system (refer to procedure 4.9).

4.8 Hydraulic Hose

Tools required: 5/8" open end wrench
Temporary support (4" x 4" x 4" block)

Removal

**WARNING:**

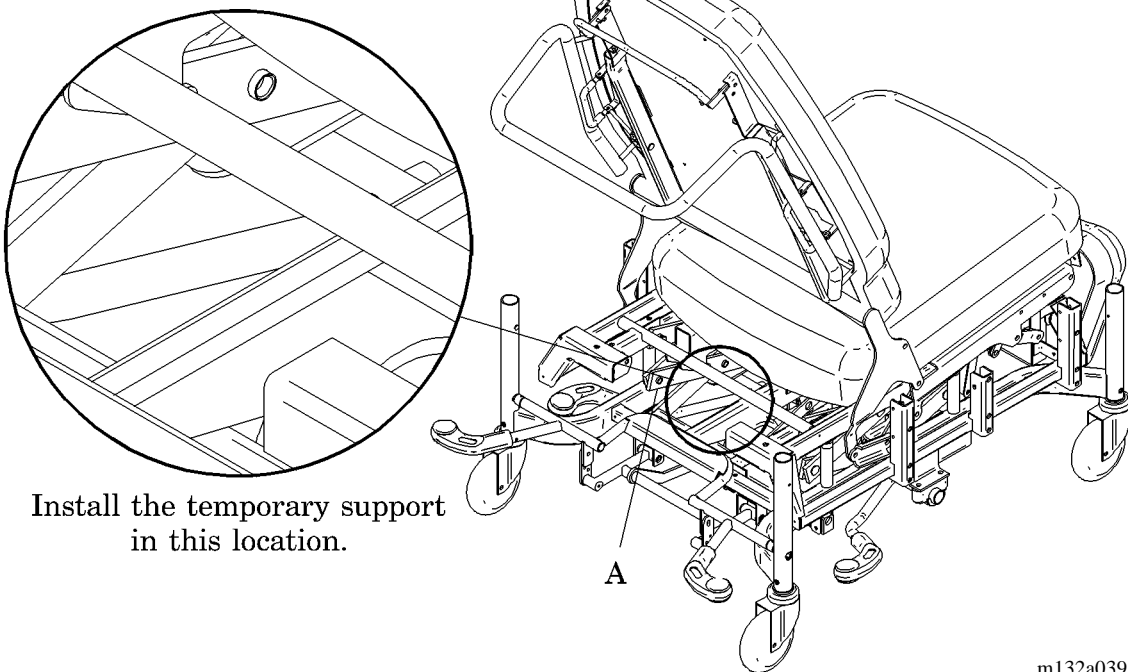
Do not work under an unsupported load. Install the appropriate temporary supports. Failure to do so could result in personal injury or equipment damage.

1. Raise the recliner enough to install a temporary support (4" x 4" x 4" block) between the links of the scissors assembly (A) (see figure 4-12 on page 4-25).

Figure 4-12. Hydraulic Pump Temporary Support Location

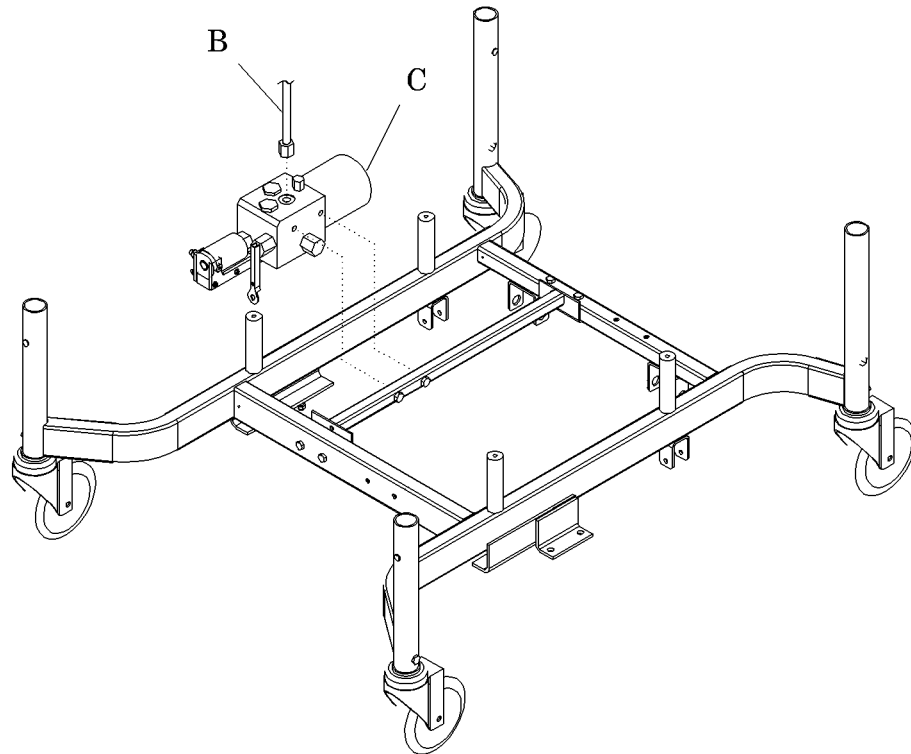
NOTE:

Shrouds removed for clarity.



2. Lower the recliner onto the temporary support.
3. Using the 5/8" open end wrench, remove the hydraulic hose (B) from the hydraulic pump assembly (C) and the hydraulic cylinder (see figure 4-13 on page 4-26).

Figure 4-13. Hydraulic Pump Assembly



m132a076

4. Remove the hydraulic hose (B).

Replacement

1. Using the 5/8" open end wrench, install the hydraulic hose (B) on the hydraulic pump (C) and the hydraulic cylinder.
2. Raise the recliner, and remove the temporary support from the scissors assembly (A) (see figure 4-12 on page 4-25).
3. Using the PUMP pedal, raise and lower the recliner to check for proper hi/low operation.
4. If necessary, service the hydraulic system (refer to procedure 4.9).

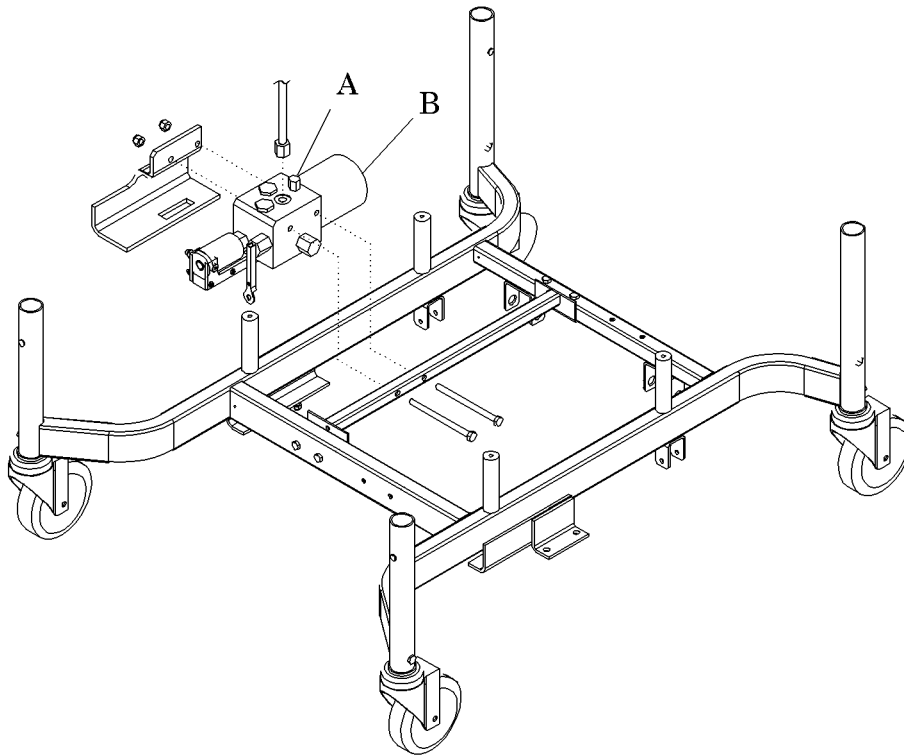
4.9 Hydraulic System Servicing

Tools required: 5/8" socket
Ratchet
Funnel
Temporary support (4" x 4" x 4" block)

Hydraulic Fluid Replenishment Procedure

1. Put the recliner in the low position.
2. Using the 5/8" socket and ratchet, remove the reservoir breather (A) from the hydraulic pump (B) (see figure 4-14 on page 4-27).

Figure 4-14. Hydraulic Fluid Replenishment Procedure



m132_033

3. Place the funnel in the breather port.
4. With the recliner in the low position, fill the hydraulic pump reservoir with hydraulic fluid until it is a **minimum** of 2.25" (5.72 cm) from the bottom of the reservoir.
5. Remove the funnel from the breather port.

6. Using the 5/8" socket and ratchet, install the reservoir breather (A) on the hydraulic pump (B).
7. Using the PUMP pedal, raise and lower the recliner to check for proper hi/low operation.

Hydraulic System Bleed Procedure



WARNING:

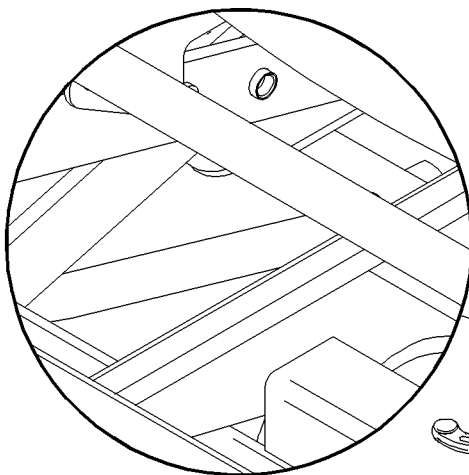
Do not work under an unsupported load. Install appropriate temporary supports. Failure to do so could result in personal injury or equipment damage.

1. Raise the recliner enough to install a temporary support (4" x 4" x 4" block) between the links of the scissors assembly (A) (see figure 4-15 on page 4-28).

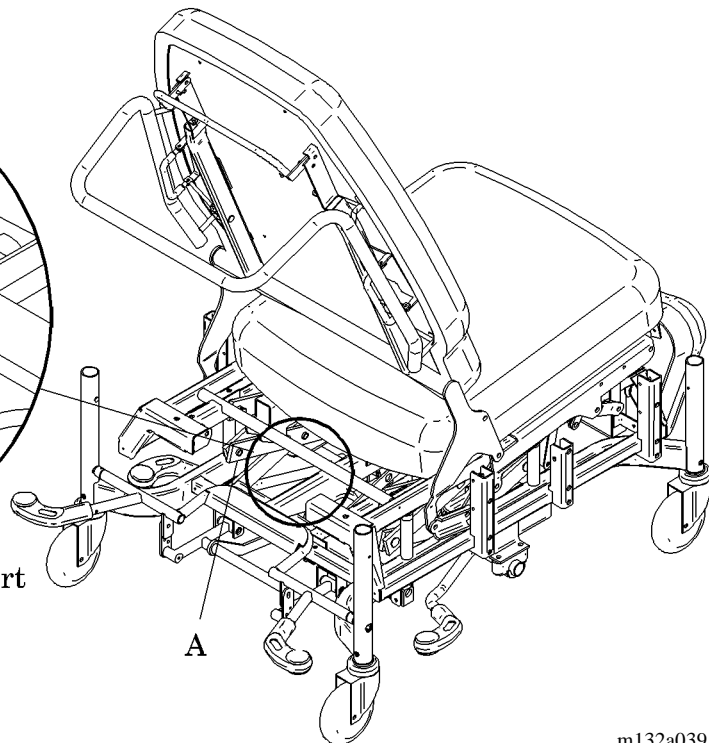
Figure 4-15. Hydraulic Pump Temporary Support Location

NOTE:

Shrouds removed for clarity.



Install the temporary support in this location.



m132a039

2. Lower the recliner onto the temporary support.

3. Remove the hydraulic cylinder, but leave the hydraulic hose connected (refer to procedure 4.7).
4. Rotate the hydraulic cylinder upside down, so the hydraulic hose connection is at the top, and the shaft points to the floor.
5. Using the PUMP pedal, raise the recliner until the hydraulic cylinder shaft fully extends.
6. Lower the recliner until the hydraulic cylinder is fully retracted.
7. Perform step numbers 5 and 6 two more times.
8. Install the hydraulic cylinder (refer to procedure 4.7).
9. Raise the recliner, and remove the temporary support from the scissors assembly (A).
10. Using the PUMP pedal, raise and lower the recliner to check for proper hi/low operation.

4.10 Hilow/Legrest Pedal Assembly (Independent Footrest Model Only)

Tools required: Temporary support (4" x 4" x 4" block)
Rubber mallet
Punch

Removal



WARNING:

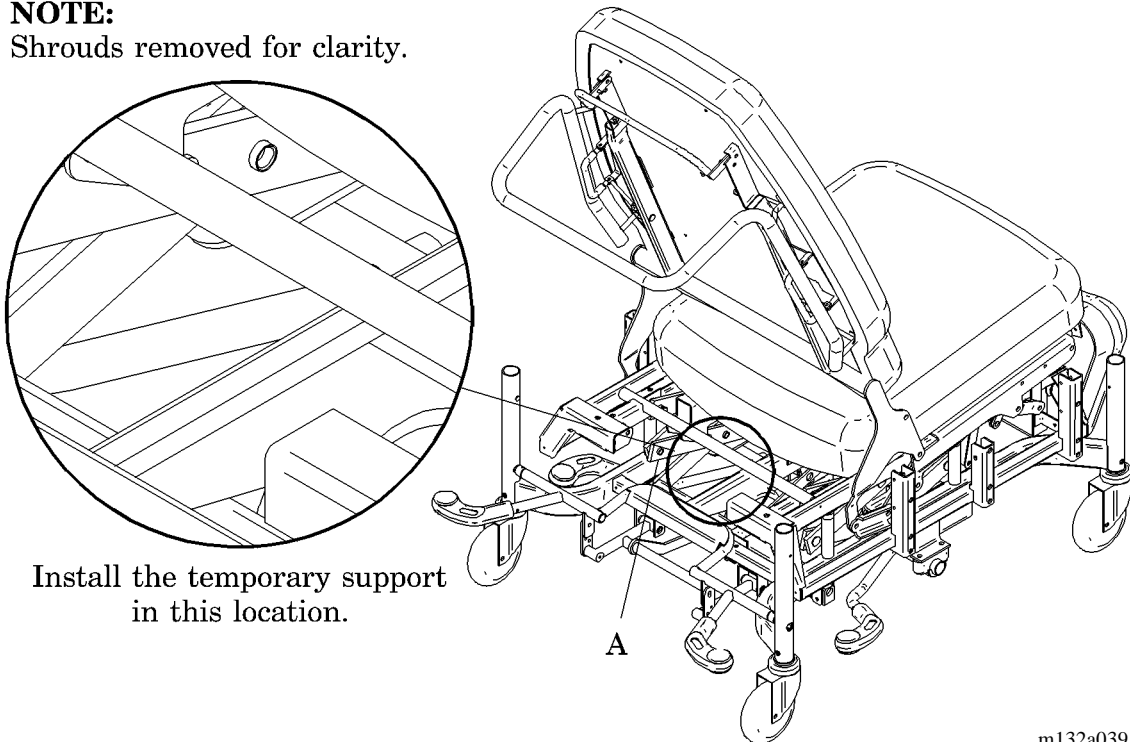
Do not work under an unsupported load. Install the appropriate temporary supports. Failure to do so could result in personal injury or equipment damage.

1. Raise the recliner enough to install a temporary support (4" x 4" x 4" block) between the links of the scissors assembly (A) (see figure 4-16 on page 4-30).

Figure 4-16. Hydraulic Pump Temporary Support Location

NOTE:

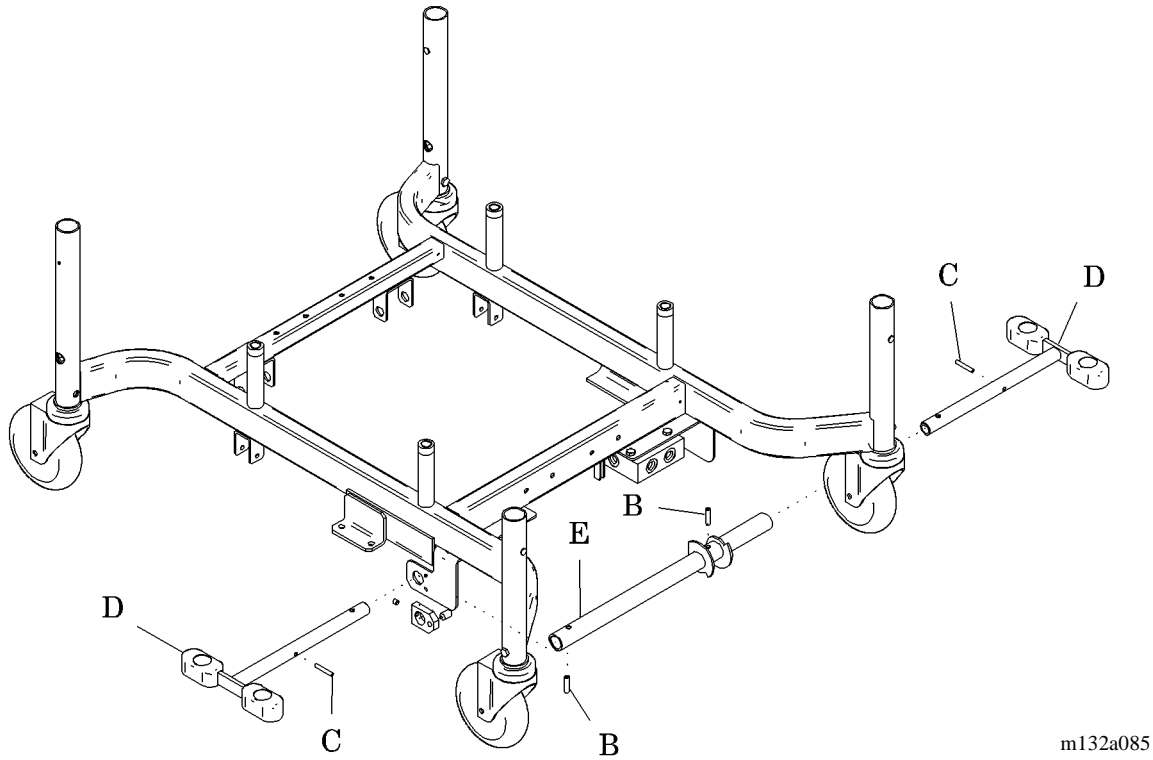
Shrouds removed for clarity.



2. Lower the recliner onto the temporary support.

3. Using the rubber mallet and punch, remove the spring pin (B) and roll pin (C) securing the pedal assembly (D) to the cam sleeve weldment (E) (see figure 4-17 on page 4-31).

Figure 4-17. Hilow/Legrest Pedal Assembly



m132a085

4. Remove the pedal assembly (D) from the cam sleeve weldment (E).

Replacement

Assemble in reverse order.

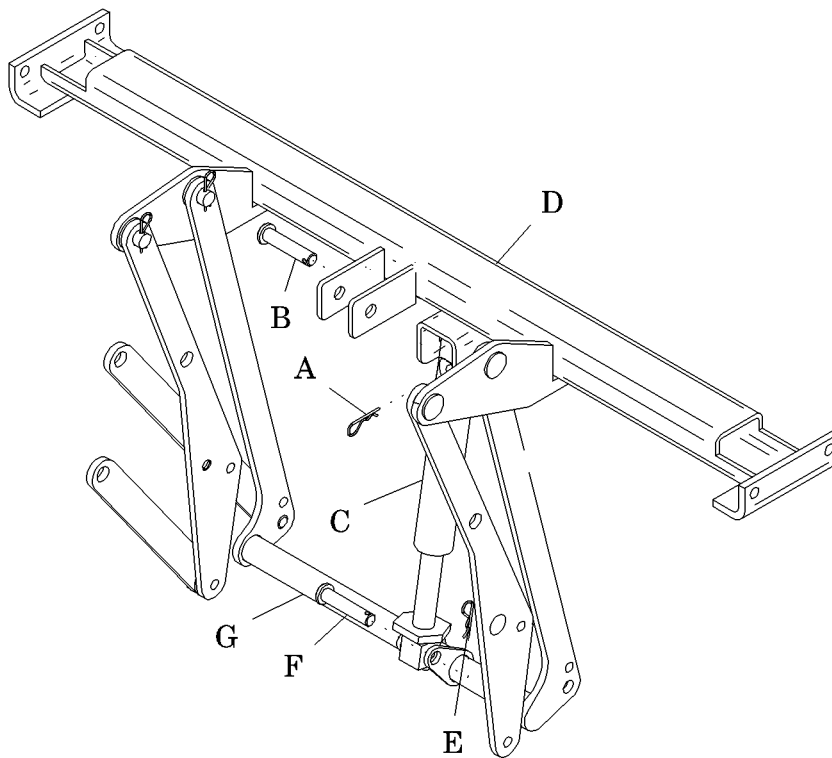
4.11 Legrest Cylinder (Independent Legrest Model Only)

Tools required: None

Removal

1. Place the legrest in the raised position.
2. Remove the cotter pin (A) and Mechlok®¹ clevis pin (B) securing the legrest cylinder (C) to the legrest cross channel weldment (D) (see figure 4-18 on page 4-32).

Figure 4-18. Legrest Cylinder



m132a086

3. Remove the cotter pin (E) and Mechlok® clevis pin (F) securing the legrest cylinder (C) to the manual legrest linkage weldment (G).
4. Remove the legrest cylinder (C) from the unit.

Replacement

Assemble in reverse order.

1. Mechlok® is a registered trademark of P.L. Porter Company.

4.12 Manual Legrest Manifold (Independent Legrest Model Only)

Tools required: Temporary support (4" x 4" x 4" block)
5/8" open end wrench
1/2" open end wrench

Removal



WARNING:

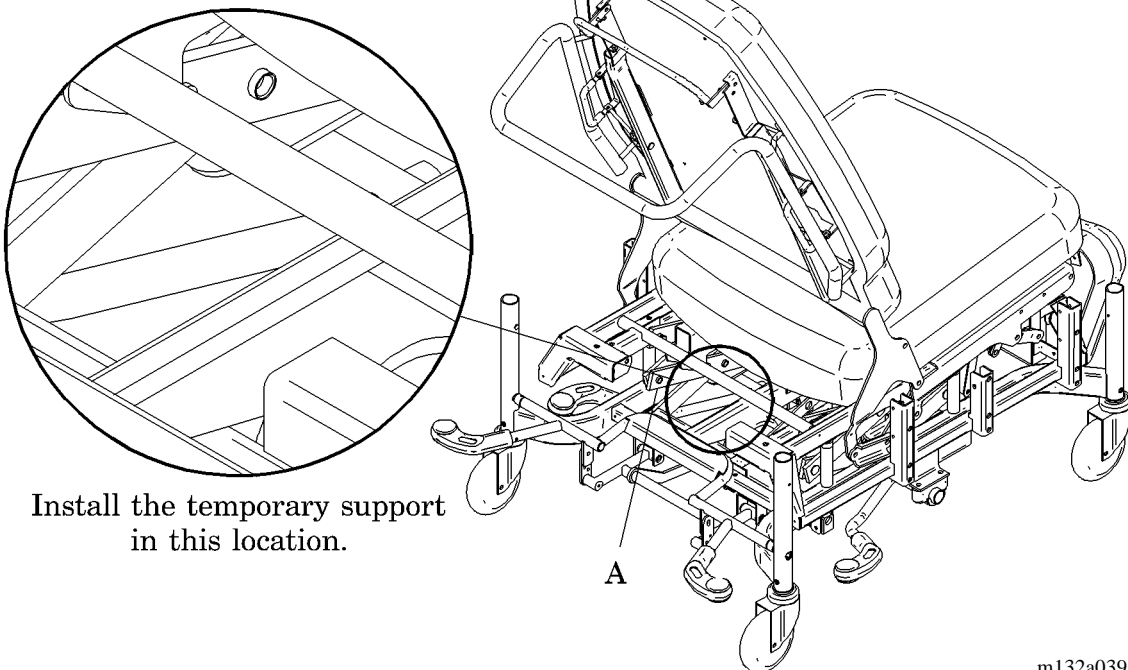
Do not work under an unsupported load. Install the appropriate temporary supports. Failure to do so could result in personal injury or equipment damage.

1. Raise the recliner enough to install a temporary support (4" x 4" x 4" block) between the links of the scissors assembly (A) (see figure 4-19 on page 4-33).

Figure 4-19. Hydraulic Pump Temporary Support Location

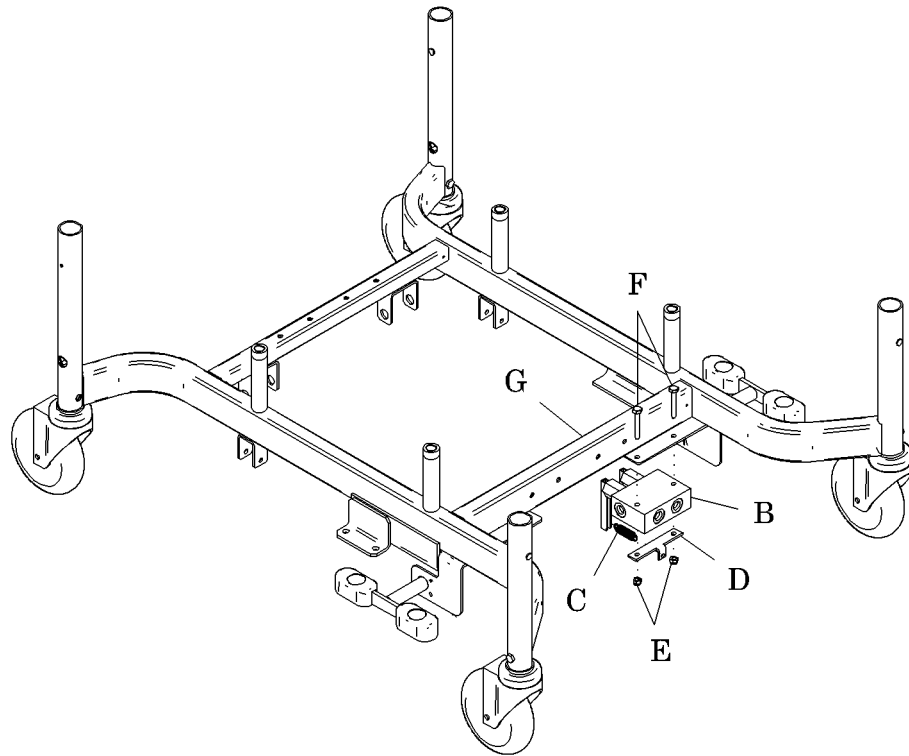
NOTE:

Shrouds removed for clarity.



2. Lower the recliner onto the temporary support.
3. Using the 5/8" open end wrench, remove the cables from the manual legrest manifold (B) (see figure 4-20 on page 4-34).

Figure 4-20. Manual Legrest Manifold



m132a087

4. Detach the spring (C) from the spring mount plate (D).
5. Using the 1/2" open end wrench, remove the two nuts (E) and two cap screws (F) securing the manual legrest manifold (B) to the base frame (G).
6. Remove the manual legrest manifold (B) and spring mount plate (D) from the base frame (G).

Replacement

Assemble in reverse order.

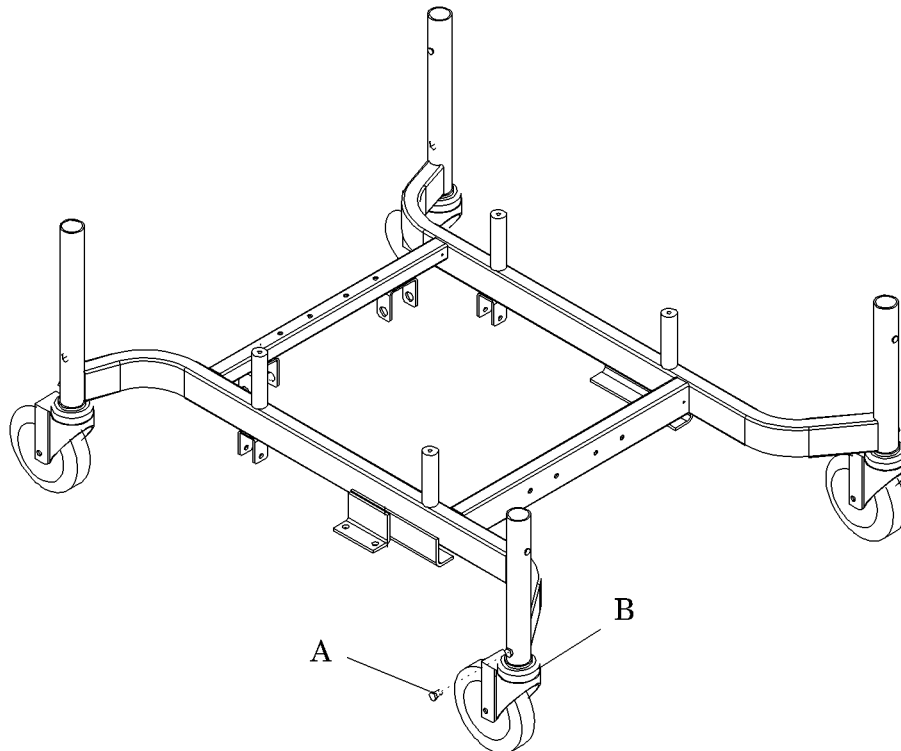
4.13 Front Caster

Tools required: 6" block
Ratchet
7/16" socket

Removal

1. Set the recliner on an approximately 6" high block.
2. Using the 7/16" socket and ratchet, remove the bolt (A) that secures the front caster (B) to the base weldment (see figure 4-21 on page 4-35).

Figure 4-21. Front Caster



m132_026

3. Remove the front caster (B).

Replacement



CAUTION:

Replace the caster with one of the same type (free, brake, or individual locking). Failure to do so could result in equipment damage.

1. Install a front caster (B) of the same type as the one removed by aligning the bolt hole with the base weldment hole.
2. Using the 7/16" socket and ratchet, install the bolt (A) that secures the caster (B).
3. Remove the block.
4. Check for proper operation of the front caster (B).

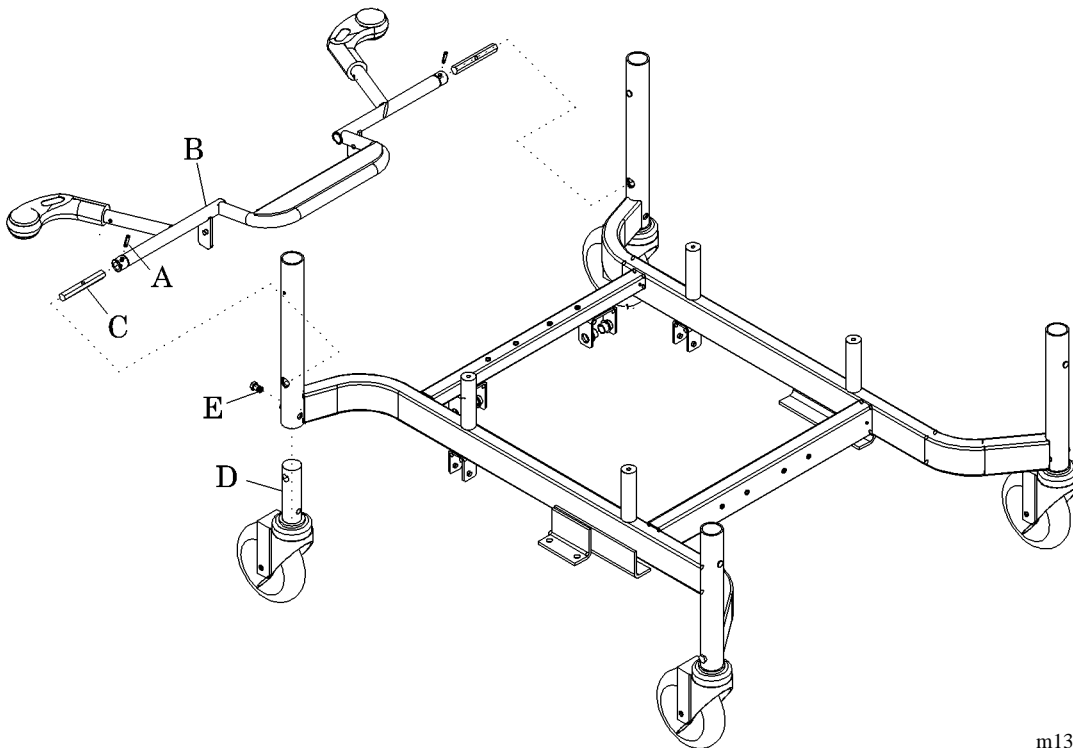
4.14 Rear Brake Caster

Tools required: 6" block (15 cm)
Ratchet
7/16" socket
3/16" pin punch
Hammer
Soft-jawed pliers

Removal

1. Remove the base shroud (refer to procedure 4.1).
2. Set the recliner on an approximately 6" (15 cm) high block.
3. Using the 3/16" pin punch and hammer, remove the spring pin (A) that secures the brake/steer pedal weldment (B) to the pedal hex rod (C) (see figure 4-22 on page 4-37).

Figure 4-22. Rear Brake Caster



m132a024

4. Using the soft-jawed pliers, remove the pedal hex rod (C).

5. Using the 7/16" socket and ratchet, remove the bolt (E) that secures the rear brake caster (D) to the base weldment.
6. Remove the rear brake caster (D).

Replacement

1. Install the rear brake caster (D) by aligning the bolt hole with the base weldment hole.
2. Using the 7/16" socket and ratchet, install the bolt (E) that secures the rear brake caster (D).
3. Using the soft-jawed pliers, install the pedal hex rod (C) back into place by aligning the hole in the rod with the hole in the brake/steer pedal weldment (B).
4. Using the hammer, install the spring pin (A) through the brake/steer pedal weldment (B) and the pedal hex rod (C).
5. Remove the block.
6. Check for proper operation of the rear brake caster (D).
7. Install the base shroud (refer to procedure 4-1).

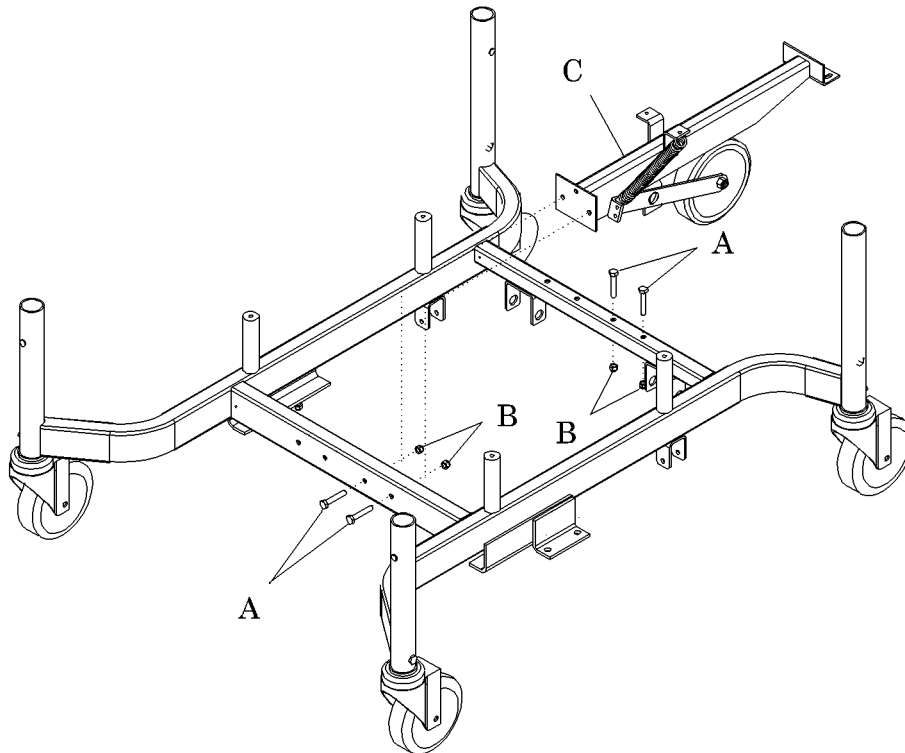
4.15 Steering Plus™ Steering System

Tools required: 7/16" socket
Ratchet

Removal

1. Record the mechanical interface between the brake/steer pedal and the fifth wheel assembly. This will aid in the installation.
2. Using the 7/16" socket and ratchet, remove the four bolts (A) and nuts (B) that secure the fifth wheel assembly (C) (see figure 4-23 on page 4-39).

Figure 4-23. Steering Plus™ Steering System



m132_031

3. Remove the fifth wheel assembly (C).

Replacement

1. Perform the removal procedure in reverse order.
2. Check for proper operation of the Steering Plus™ Steering System.

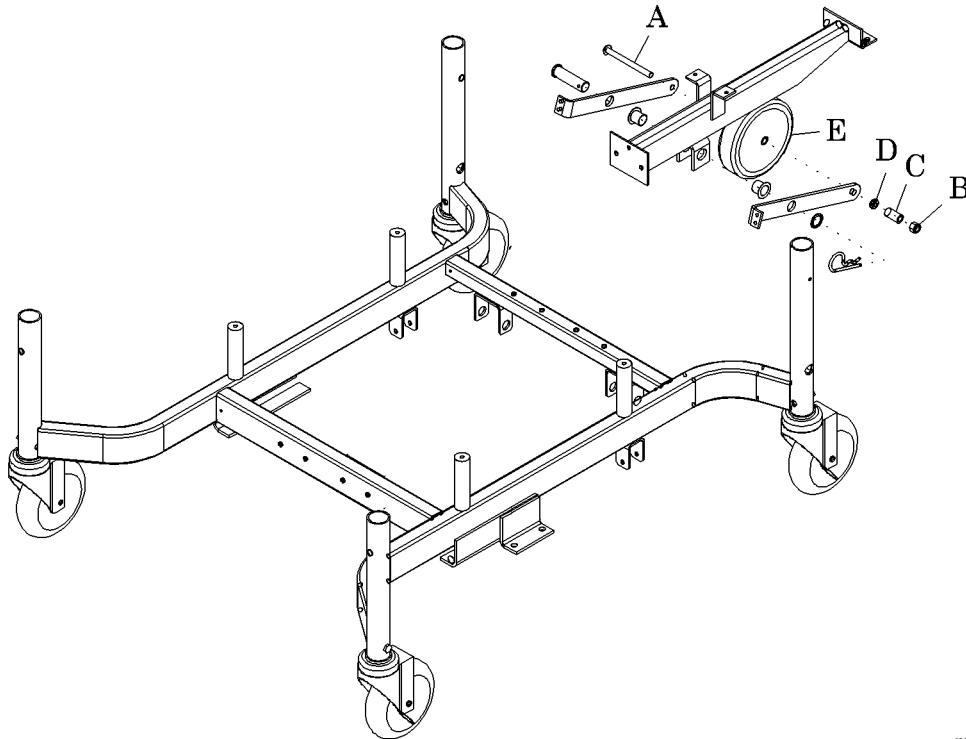
4.16 Fifth Wheel Caster

Tools required: 1/2" open end wrench
Screwdriver

Removal

1. Put the recliner in the neutral position.
2. Using the 1/2" open end wrench and screwdriver, remove the screw (A), nylock nut (B), fifth wheel roller shaft (C), and jam nut (D) (see figure 4-24 on page 4-40).

Figure 4-24. Fifth Wheel Caster



m132a023

3. Remove the fifth wheel caster (E).

Replacement

1. Install the fifth wheel caster (E) in reverse order of the removal steps.
2. Check for proper operation of the fifth wheel caster (E).

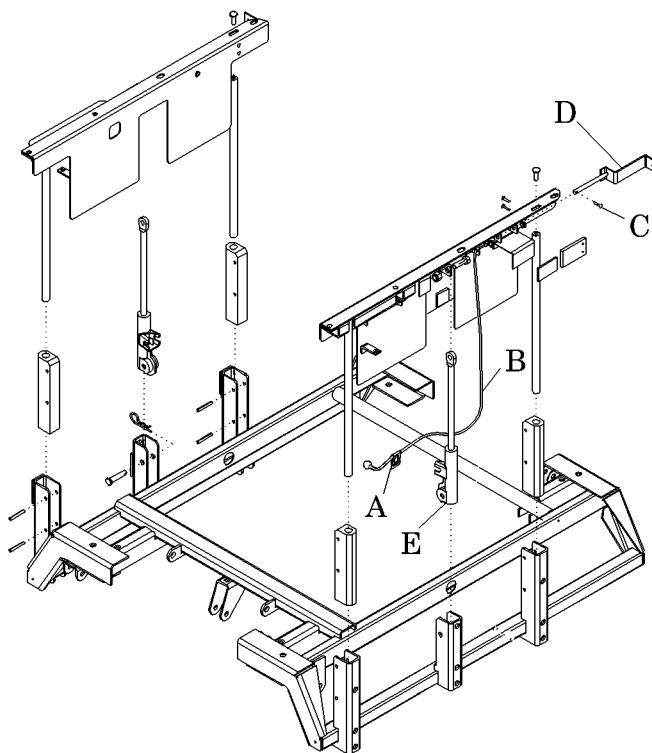
4.17 Adjustable Arm Release Cable

Tools required: Drill
1/8" drill bit
Needle nose pliers
Blind rivet installation tool

Removal

1. Remove the upper inner arm shroud, upper outer arm shroud, and lower outer arm shroud (refer to procedure 4.1).
2. Using the needle nose pliers, remove the clip (A) and adjustable arm release cable (B) from the adjustable arm Mechlok®¹ (E) (see figure 4-25 on page 4-41).

Figure 4-25. Adjustable Arm Release Cable



m132_037

3. Using the drill and 1/8" drill bit, remove the blind rivet (C) that secures the adjustable arm release cable (B) to the adjustable arm lever (D).
4. Remove the e-clip that secures the cable to the arm assembly.

1. Mechlok® is a registered trademark of P.L. Porter Company.

5. Remove the adjustable arm release cable (B).

Replacement

1. Place the adjustable arm release cable (B) into position, and install the clip (A) on the adjustable arm Mechlok®¹ (E).
2. Install the e-clip that secures the cable to the arm assembly.
3. Using the blind rivet installation tool, install a new rivet (C) to secure the adjustable arm release cable (B) to the adjustable arm lever (D).

NOTE:

No adjustment is necessary for the adjustable arm cable.

4. Raise and lower the adjustable arm to be sure of proper operation.
5. Install the following shrouds: upper inner arm, upper outer arm, and lower outer arm (refer to procedure 4.1).

1. Mechlok® is a registered trademark of P.L. Porter Company.

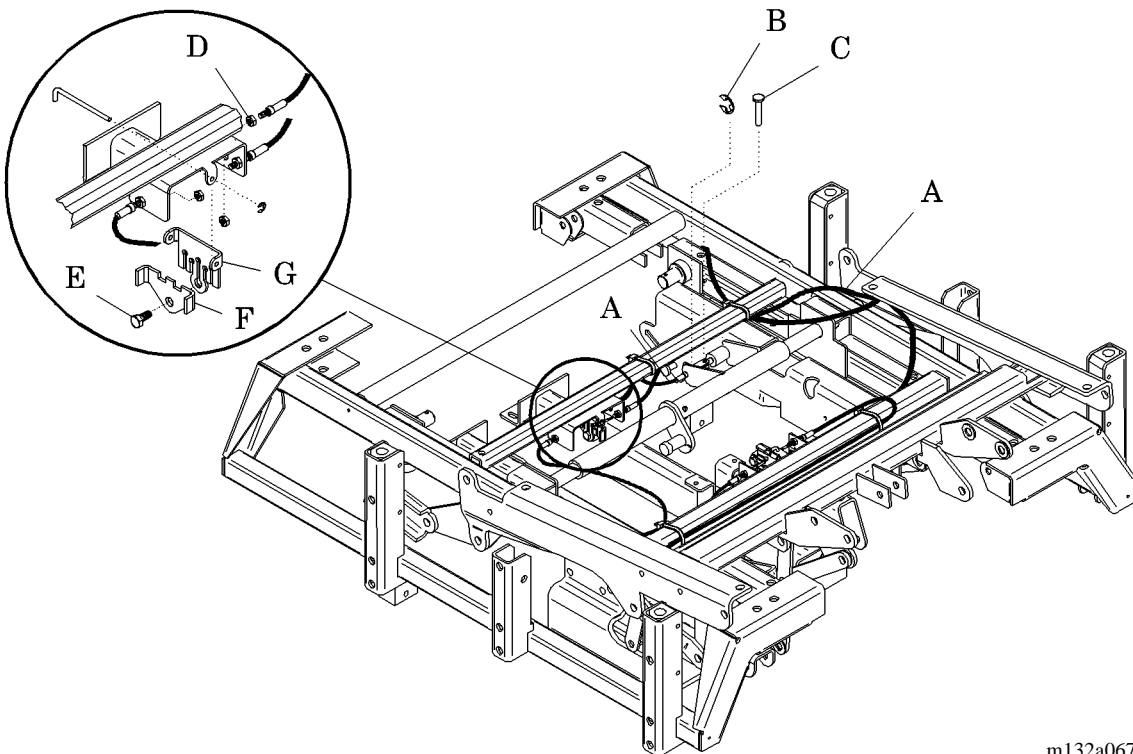
4.18 Flat Control Release Cable

Tools required: 7/16" open end wrench (2)
Drill
1/8" drill bit
Blind rivet installation tool
3/8" open end wrench
Needle nose pliers

Removal

1. Remove the seat cushion (refer to procedure 4.2).
2. Record the cable routing and the wire tie positions before proceeding. This will aid in the installation.
3. Using the drill and 1/8" drill bit, remove the blind rivet (C) securing the flat control release cable (A) to the flat control release pin (see figure 4-26 on page 4-43).

Figure 4-26. Flat Control Release Cable



4. Using the needle nose pliers, remove the e-clip (B).

5. Using the 7/16" open end wrench, remove the cable adjusting nuts (D) at the cable junction end of the flat control cable splitter (G).
6. Using the 3/8" open end wrench, remove the bolt (E) securing the cable locking clamp (F) at the cable junction.
7. Remove the flat control release cable (A).

Replacement

1. Position the flat control release cable (A) at the cable junction end of the flat control cable splitter (G).
2. Using the 3/8" open end wrench, install the bolt (E) securing the cable locking clamp (F) at the cable junction.
3. Using the 7/16" open end wrench, **loosely** install the cable adjusting nuts (D) at the cable junction end of the flat control cable splitter (G). Do not tighten.
4. Using the needle nose pliers, install the e-clip (B).
5. Using the blind rivet installation tool, install a new rivet (C) securing the flat control release cable (A) to the flat control release pin.
6. Ensure you route the cable properly, and install wire ties in their correct locations as previously recorded.
7. Tighten the cable adjusting nuts (D) using the 7/16" open end wrench.
8. Raise and lower the recliner from full flat to full upright position and check for proper operation.
9. If necessary, adjust the flat control release cable (refer to procedure 4.21).
10. Install the seat cushion (refer to procedure 4.2).

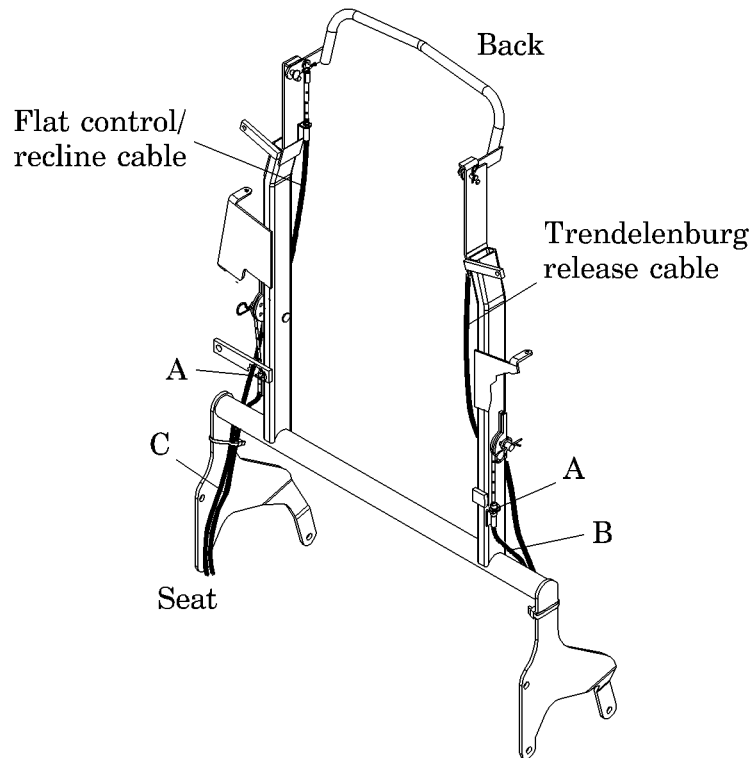
4.19 Egress Release Cables

Tools required: Needle nose pliers
7/16" open end wrench

Removal

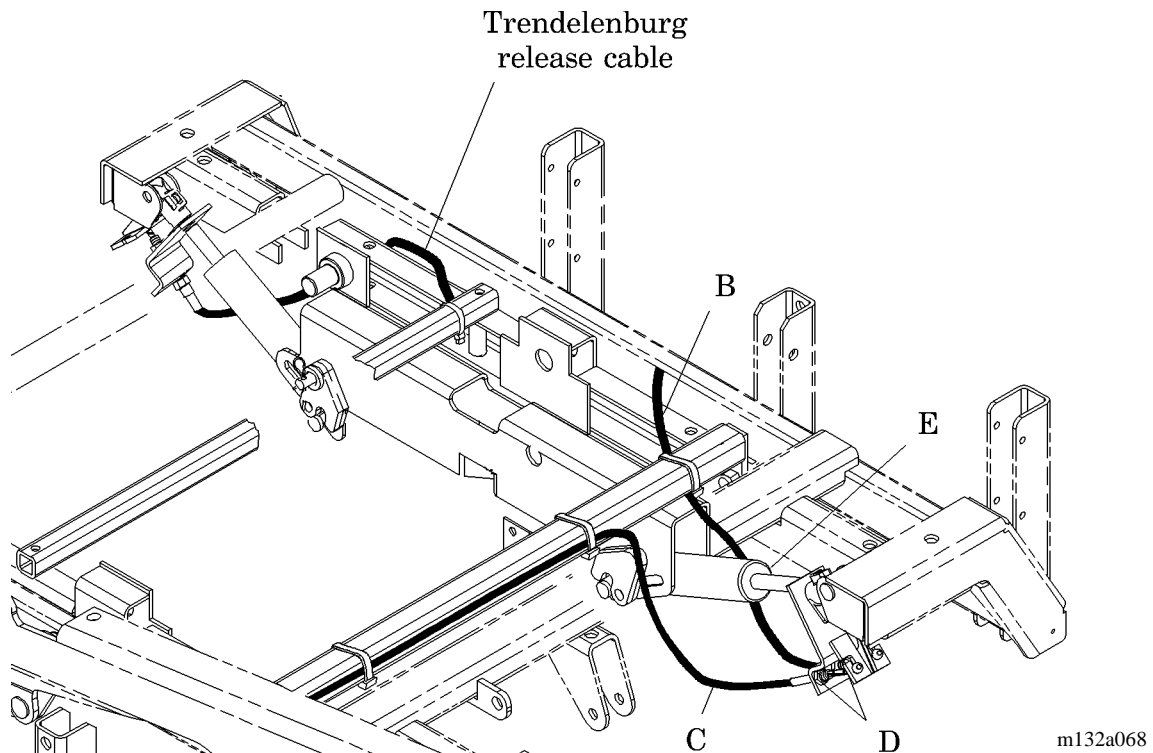
1. Remove the back cushion (refer to procedure 4.2).
2. Before proceeding, record the cable routing and the wire tie positions before proceeding to aid in the installation.
3. Using the needle nose pliers, remove the e-clip, nylon spacer, and pivot pin securing the egress handle.
4. Using the needle nose pliers, remove the e-clip (A) securing the egress release cable (see figure 4-27 on page 4-45).

Figure 4-27. Egress Release Cables Back Section



m132a065

5. Using the 7/16" open end wrench, remove the cable adjusting nuts (D) at the cable junction end of the egress gas spring (E) (see figure 4-28 on page 4-46).

Figure 4-28. Egress Release Cables Gas Spring Attachment

6. Remove the egress release left cable (B) or egress release right cable (C).

Replacement

1. Position the egress release left cable (B) or egress release right cable (C) at the cable junction end of the egress gas spring (E).
2. Using the 7/16" open end wrench, **loosely** install the cable adjusting nuts (D) at the cable junction end of the egress gas spring (E). Do not tighten.
3. Using the needle nose pliers, install the e-clip (A) (see figure 4-27 on page 4-45).
4. Ensure you route the cable properly, and install the wire ties in their correct locations as previously recorded.
5. Tighten the cable adjusting nuts (D) using the 7/16" open end wrench (see figure 4-28 on page 4-46).
6. Check for proper egress assist operation. If necessary, adjust the egress release cable (refer to procedure 4.21).

7. Install the back cushion (refer to procedure 4.2).

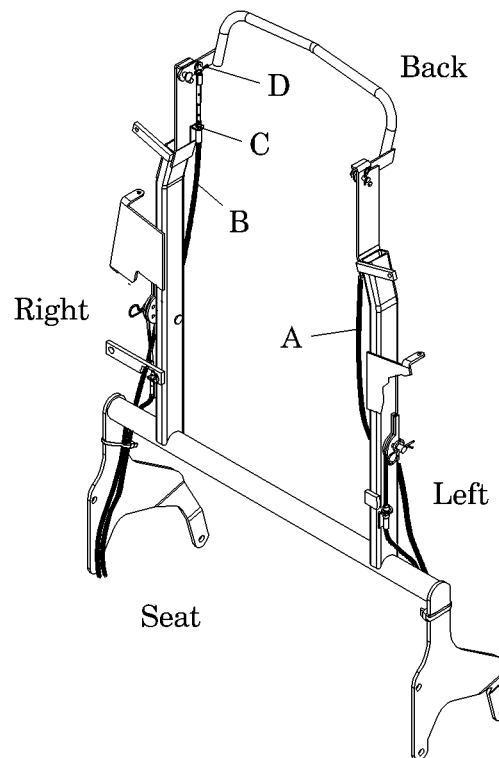
4.20 Trendelenburg Release Cable and Flat Control/Recline Cable

Tools required: Needle nose pliers
7/16" open end wrench

Removal

1. Remove the back cushion (refer to procedure 4.2).
2. Record the cable routing and the wire tie positions before proceeding. This will aid in the installation.
3. Ensure the left (as viewed from a patient in the recliner) Trendelenburg release cable (A) goes to the Trendelenburg gas spring, and the right flat control/recline cable (B) goes to the flat control cable splitter (see figure 4-29 on page 4-48).

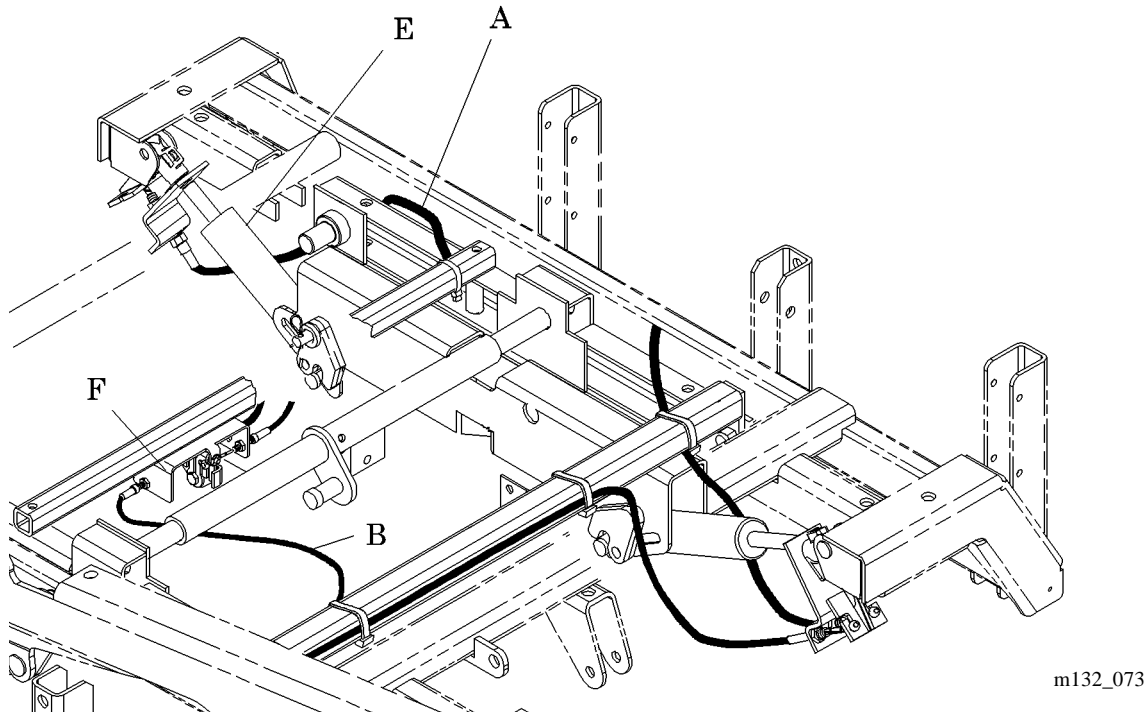
Figure 4-29. Trendelenburg Release and Flat Control/Recline Cables



4. Using the needle nose pliers, remove the e-clip (C).
5. Remove the retaining hairpin (D) that secures the cables to the Trendelenburg/flat release handle.

6. For the **left Trendelenburg release cable (A)**, use the 7/16" open end wrench to remove the cable adjusting nuts at the cable junction end of the Trendelenburg gas spring (E) (see figure 4-30 on page 4-49).

Figure 4-30. Trendelenburg Release and Flat Control/Recline Cables



7. For the **right flat control/recline cable (B)**, use the 7/16" open end wrench to remove the cable adjusting nuts at the flat control cable splitter (F).
8. Remove the Trendelenburg release cable (A) and flat control/recline cable (B).

Replacement

NOTE:

The left (as viewed from a patient in the recliner) Trendelenburg release cable (A) goes to the Trendelenburg gas spring, and the right flat control/recline cable (B) goes to the flat control cable splitter (see figure 4-29 on page 4-48).

1. For the **left Trendelenburg release cable (A)**, position the cable at the cable junction end of the Trendelenburg gas spring (E) (see figure 4-30 on page 4-49).

2. For the **right flat control/recline cable (B)**, position the cable at the cable junction end of the flat control cable splitter (F).
3. Using the 7/16" open end wrench, **loosely** install the cable adjusting nuts at the cable junction end of the Trendelenburg gas spring (E) or flat control cable splitter (F). Do not tighten.
4. Using the needle nose pliers, install the e-clip (C) (see figure 4-29 on page 4-48).
5. Install the retaining hairpin (D).
6. Ensure you route the cable properly, and install the wire ties in their correct locations as previously recorded.
7. Tighten the cable adjusting nuts using the 7/16" open end wrench.
8. Check for proper Trendelenburg and full flat operation.
9. If necessary, adjust the Trendelenburg cable (refer to procedure 4.21).
10. Install the back cushion (refer to procedure 4.2).

4.21 Cable Adjustment

Tools required: 7/16" open end wrench

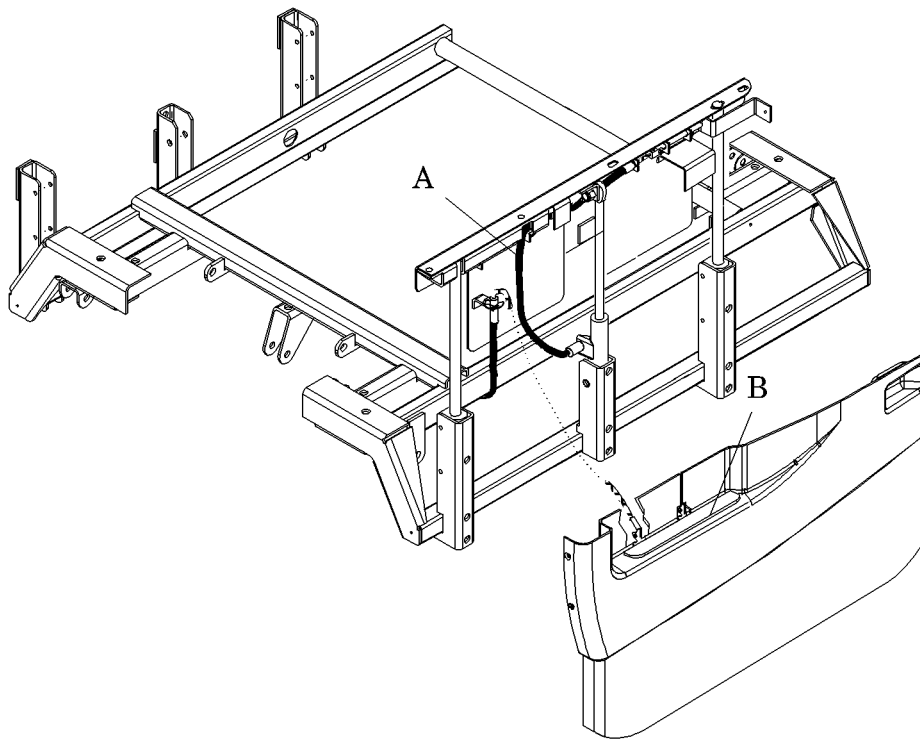
Typical Cable Adjustment

When adjusting cables, keep enough tension on the cable so that as soon as a lever is pulled (engaged), the cable actuates the corresponding Mechlok®¹ or gas spring. Additionally, avoid having so much tension as to keep the corresponding Mechlok® or gas spring from returning to its locked (non-engaged) position.

NOTE:

There is no adjustment for the adjustable arm cable (A) (see figure 4-31 on page 4-51).

Figure 4-31. Recline Lever and Adjustable Arm Cable



m132a066

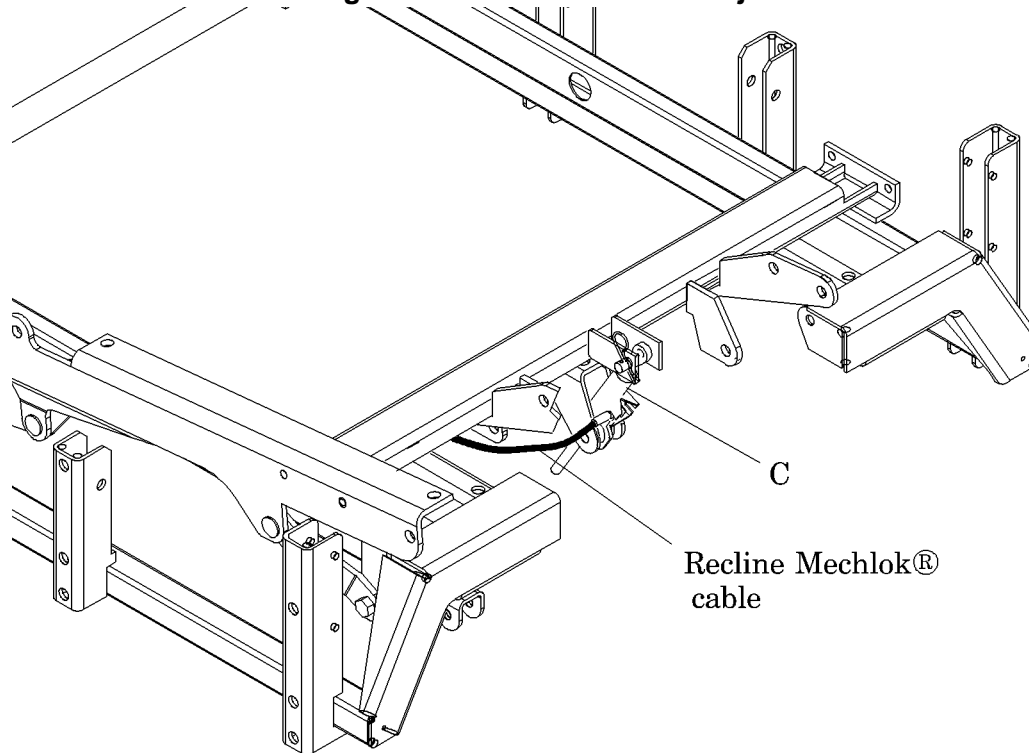
Recline Cable Adjustment

1. Remove the seat cushion and back cushion (refer to procedure 4.2).

1. Mechlok® is a registered trademark of P.L. Porter Company.

2. Put the recliner in the full flat position.
3. Raise the right recline lever (B) on the adjustable arm.
4. Check the recline Mechlok®¹ (C) for full travel (see figure 4-32 on page 4-52).

Figure 4-32. Recline Cable Adjustment

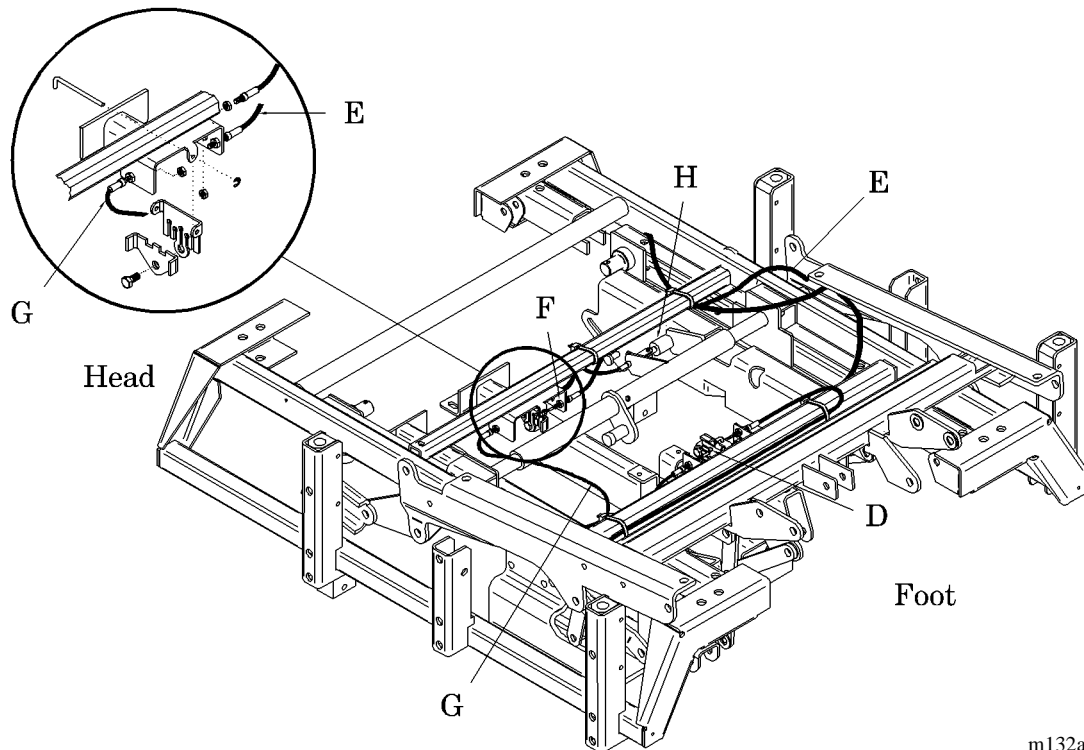


m132a069

5. Check the right side recline cable for proper adjustment at the recline splitter (D) located at the front of the seat frame (see figure 4-33 on page 4-53).

1. Mechlok® is a registered trademark of P.L. Porter Company.

Figure 4-33. Cable Adjustment



m132a074

6. Using the 7/16" open end wrench, adjust so the right side recline cable is **slightly loose** when pushed near the recline splitter (D), and securely attached to the splitter plate, but not activating (pulling) it.
7. Raise the left recline lever on the adjustable arm, and check the recline Mechlok®¹ (C) for full travel (see figure 4-32 on page 4-52).
8. Check the left side recline cable for proper adjustment at the recline splitter (D) (see figure 4-33 on page 4-53).
9. Using the 7/16" open end wrench, adjust so the left side recline cable is **slightly loose** when pushed near the recline splitter (D), and securely attached to the splitter plate, but not activating (pulling) it.

Flat Control and Trendelenburg Cable Adjustment

1. Remove the seat cushion and back cushion (refer to procedure 4.2).
2. Put the recliner in the full flat position.

1. Mechlok® is a registered trademark of P.L. Porter Company.

3. Check the flat control jumper cable (E) for proper adjustment at the flat splitter (F) located at the back of the seat frame, and the recline splitter (D) located at the front of the seat frame (see figure 4-33 on page 4-53).
4. Using the 7/16" open end wrench, adjust so the cable is **taut** when pushed near the flat splitter (F) and recline splitter (D), and securely attached to the splitter plates, but not activating (pulling) them.
5. Check the right side flat control/recline cable (G) for proper adjustment at the flat splitter (F) located at the back of the seat frame.
6. Using the 7/16" open end wrench, adjust so the cable is **taut** when pushed near the flat splitter (F), and securely attached to the splitter plates, but not activating (pulling) them.
7. Raise the recliner from full flat to the recline position of approximately 25°.
8. Check the flat control pin (H) to make sure it is locked in the slotted cutout (engaging beyond its radius).
9. Pull the flat/Trendelenburg control lever, and check to make sure the pin is releasing from the slotted cutout.
10. Ensure the flat control pin has a clearance of 0.030" to 0.060" (0.76 mm to 1.52 mm) between the seat channel assembly.
11. Check the recline functions, and ensure the recliner is properly functioning.
12. Adjust the recline cable if necessary (see "Recline Cable Adjustment" on page 4-51).
13. Check the full functions of the recliner, egress gas spring and cables, and Trendelenburg gas spring and cables. Adjust these if necessary (see "Typical Cable Adjustment" on page 4-51).

4.22 Egress Gas Spring

Tools required: 7/16" open end wrench (2)

Removal

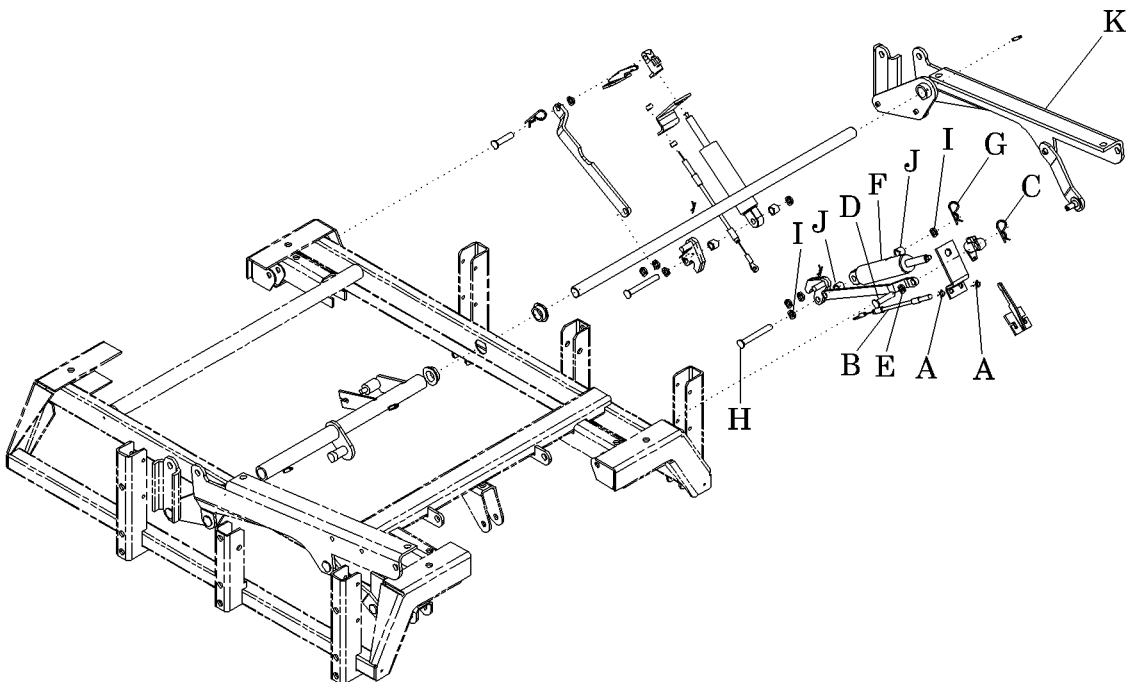


WARNING:

Make sure the recliner is in full flat position, and make sure it is secure. Failure to do so could result in personal injury or equipment damage.

1. Put the recliner in the full flat position.
2. Remove the seat cushion (refer to procedure 4.2).
3. Using the 7/16" open end wrench, remove the four cable adjusting nuts (A) that secure the two egress cables (B) to the actuating arm (K) (see figure 4-34 on page 4-55).

Figure 4-34. Egress Gas Spring



m132a035

4. Remove the two egress cables (B) from the actuating arm (K).
5. Remove the retaining hairpin (C) from the groove pin (D).

6. Remove the groove pin (D) and the pin spacer (E) from the egress gas spring (F).
7. Remove the retaining hairpin (G) from the pivot pin (H).
8. Remove the pivot pin (H), the pin spacer(s) (I), and the cylinder spacers (J) from the egress gas spring (F).
9. Remove the egress gas spring (F).

Replacement

1. Install the pivot pin (H), the pin spacer(s) (I), and the cylinder spacers (J) that secure the egress gas spring (F).
2. Install the retaining hairpin (G) in the pivot pin (H).
3. Install the groove pin (D) and the pin spacer (E) in the egress gas spring (F).
4. Install the retaining hairpin (C) in the groove pin (D).
5. Install the two egress cables (B) on the actuating arm (K).
6. Using the 7/16" open end wrench, tighten the four cable adjusting nuts (A) that secure the two egress cables (B) to the actuating arm (K).
7. Raise the recliner from full flat to full upright position.
8. Engage the egress lever and check for proper egress assist operation.
9. If necessary, adjust the egress cables (refer to procedure 4.21).
10. Install the seat cushion (refer to procedure 4.2).

4.23 Trendelenburg Gas Spring

Tools required: 7/16" open end wrench (2)

Removal

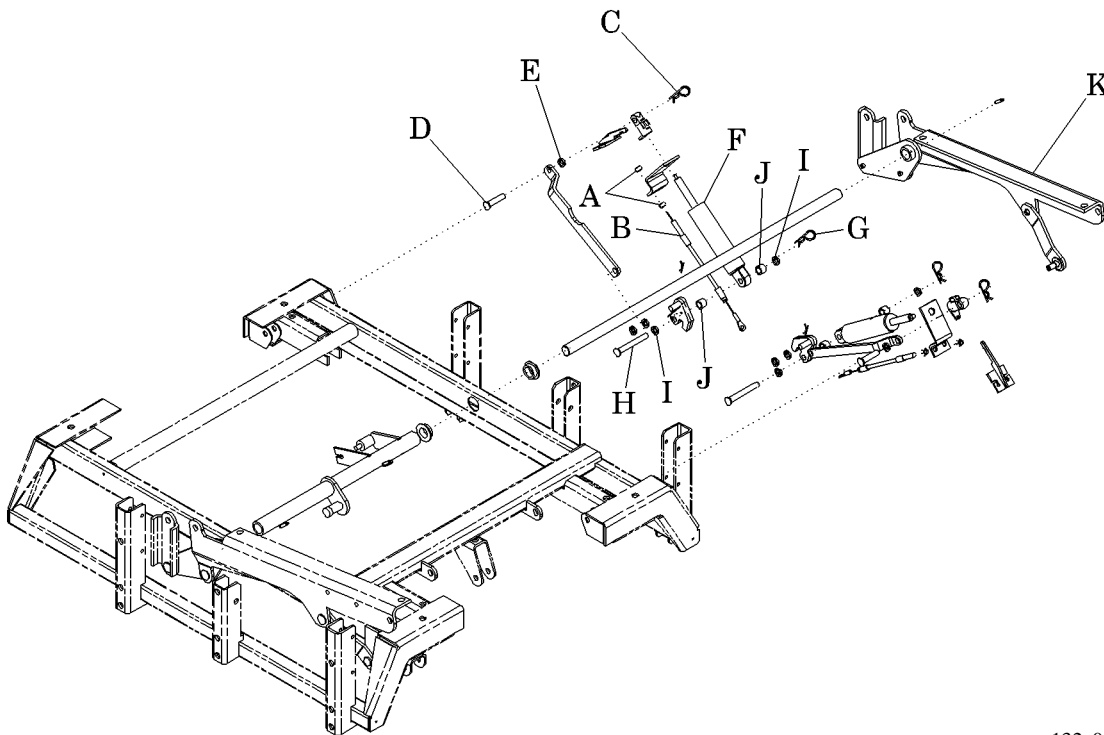


WARNING:

Ensure the recliner is in full flat position and is secure. Failure to do so could result in personal injury or equipment damage.

1. Put the recliner in the full flat position.
2. Remove the rear shroud (refer to procedure 4.1).
3. Using the 7/16" open end wrench, remove the two cable adjusting nuts (A) that secure the Trendelenburg cable (B) to the actuating arm (see figure 4-35 on page 4-57).

Figure 4-35. Trendelenburg Gas Spring



m132a034

4. Remove the Trendelenburg cable (B) from the actuating arm.
5. Remove the retaining hairpin (C) from the groove pin (D).

6. Remove the groove pin (D) and the pin spacer (E) from the Trendelenburg gas spring (F).
7. Remove the retaining hairpin (G) from the pivot pin (H).
8. Remove the pivot pin (H), the pin spacer(s) (I), and the cylinder spacers (J) from the Trendelenburg gas spring (F).
9. Remove the Trendelenburg gas spring (F).

Replacement

1. Install the pivot pin (H), pin spacer(s) (I), and cylinder spacers (J) that secure the Trendelenburg gas spring (F).
2. Install the retaining hairpin (G) in the pivot pin (H).
3. Install the groove pin (D) and the pin spacer (E) in the Trendelenburg gas spring (F).
4. Install the retaining hairpin (C) in the groove pin (D).
5. Install the Trendelenburg cable (B) on the actuating arm.
6. Using the 7/16" open end wrench, tighten the two cable adjusting nuts (A) that secure the Trendelenburg cable (B) to the actuating arm.
7. With the recliner in full flat position, engage the Trendelenburg/full flat lever and check for proper Trendelenburg operation.
8. If necessary, adjust the Trendelenburg cables (refer to procedure 4.21).
9. Install the rear shroud (refer to procedure 4.1).

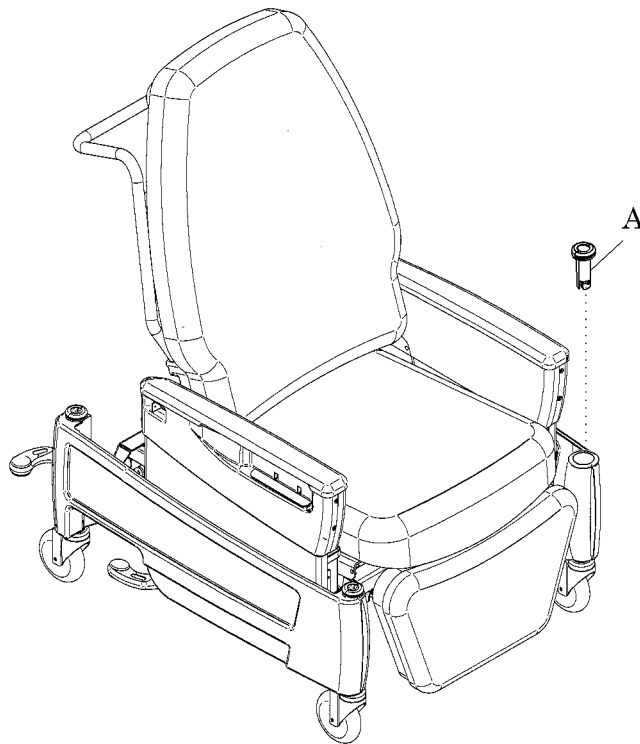
4.24 IV/Accessory Socket

Tools required: None

Removal

1. Locate the IV/accessory socket (A) on each corner of the recliner (see figure 4-36 on page 4-59).

Figure 4-36. IV/Accessory Socket



m132_036

2. Place the palm of your hand on top of the IV/accessory socket (A), push down, and turn the socket 1/4-turn counterclockwise.
3. Pull up on the IV/accessory socket (A), and remove it from the recliner.

NOTE:

The IV/accessory socket has a two-piece configuration.

Replacement

1. Align the two pieces of the IV/accessory socket (A).
2. Install the IV/accessory socket (A) at the corner of the recliner.

3. Align the pin in the base weldment with the cutout in the IV/accessory socket (A).
4. Place the palm of your hand on top of the IV/accessory socket (A), push down, and turn the socket 1/4-turn clockwise.

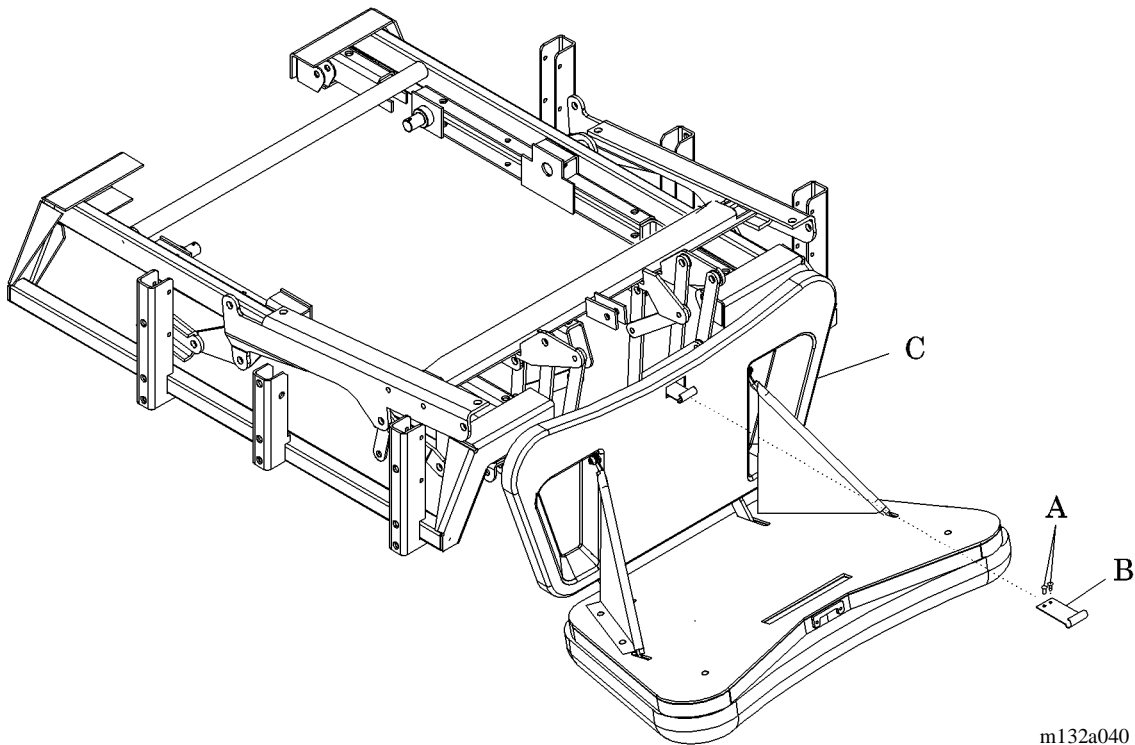
4.25 Footrest Latch Spring (P1320A Model Only)

Tools required: 7/16" open end wrench (2)
Drill
1/8" drill bit

Removal

1. Using the drill and 1/8" drill bit, remove the two rivets (A) securing the legrest spring (B) to the footrest (C) (see figure 4-37 on page 4-61).

Figure 4-37. Footrest Latch Spring



2. Remove the legrest spring (B).

Replacement

1. Perform the removal procedure in reverse order.
2. Ensure the footrest (C) will lower and store properly.

NOTES:

Chapter 5

Parts List

Chapter Contents

Warranty	5 - 3
Service Parts Ordering	5 - 5
Exchange Policy	5 - 7
In-Warranty Exchanges	5 - 7
Out-of-Warranty Exchanges	5 - 7
Recommended Spare Parts	5 - 8
Base Frame—Base Shrouds	5 - 10
Base Frame—Brake/Steer and Label Assemblies	5 - 12
Base Frame—Hydraulic Pump and Fifth Wheel Assemblies	5 - 16
Base Frame—Scissors Assembly (Hydraulic Model only)	5 - 19
Base Frame—Independent Legrest Assemblies	5 - 20
Base Frame—Scissor and Caster Assemblies	5 - 22
Upper Recliner—Recline and Trendelenburg Assembly	5 - 24
Upper Recliner—Trendelenburg Gas Spring Assembly	5 - 28
Upper Recliner—Egress Gas Spring Assembly	5 - 30
Upper Recliner—Footrest Assembly (P1320A Model Only)	5 - 32
Upper Recliner—Footrest Assembly (P1320B Model Only)	5 - 36
Upper Recliner—Legrest Mechanism (Synchronized Legrest Only)	5 - 38
Upper Recliner—Legrest Mechanism (Independent Legrest Only)	5 - 40
Upper Recliner—Leg and Footrest Assembly (P1320A Model Only)	5 - 42
Upper Recliner—Leg and Footrest Assembly (P1320B Model Only)	5 - 43
Upper Recliner—Arm Assemblies	5 - 44
Strut Assembly (Model without Trendelenburg and Egress)	5 - 47

Back Assembly with Trendelenburg and Egress (P1320A Model Only)	5 - 48
Back Assembly with Trendelenburg and Egress (P1320B Model Only)	5 - 50
Back Assembly without Trendelenburg or Egress (P1320A Model Only)	5 - 52
Back Assembly without Trendelenburg or Egress (P1320B Model Only)	5 - 54
Seat Cushion Assembly (P1320A Model Only)	5 - 56
Seat Cushion Assembly (P1320B Model Only)	5 - 58
Back Cushion Assembly	5 - 60
Foley Bag Hook—P1330	5 - 61
Waist and Leg Transport Straps—P1331	5 - 62
Head Pillow—P1332	5 - 63
Patient Tray Assembly—P1333	5 - 64
Egress Adapter—P1335	5 - 65
Oxygen Tank Holder—P1334	5 - 66
Cables	5 - 68

Warranty

HILL-ROM, INC. LIMITED WARRANTY

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

GENERAL WARRANTY (APPLICABLE UNLESS A SPECIFIC WARRANTY IS LISTED)

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

SPECIFIC WARRANTIES

MATTRESS WARRANTIES

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

EXPENDABLES WARRANTIES

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

TO OBTAIN PARTS AND SERVICE

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

OUT OF WARRANTY EXCHANGE POLICY

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

PARTS AVAILABILITY POLICY

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

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

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

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

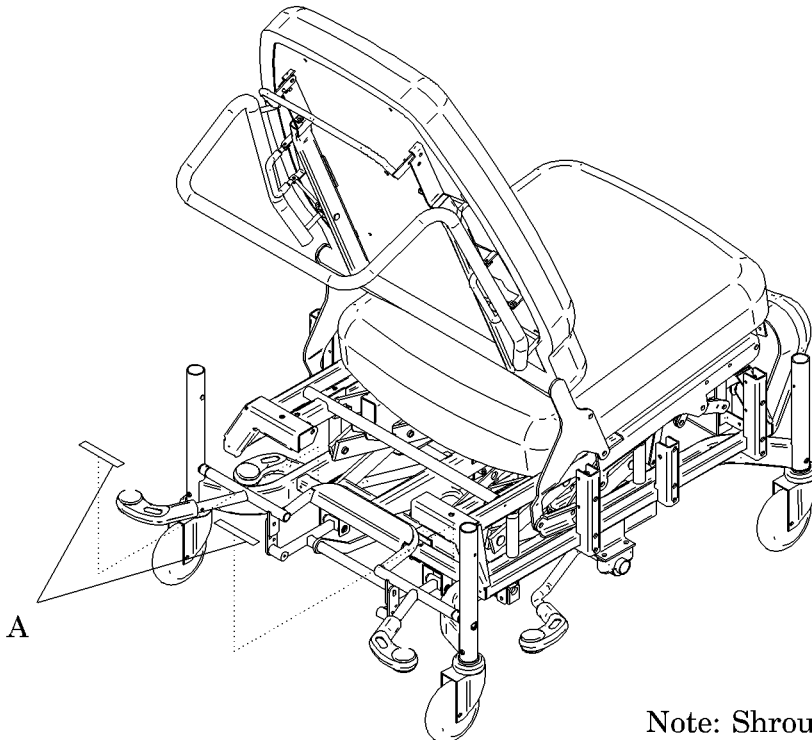
Revised October 20, 1998

NOTES:

Service Parts Ordering

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

Figure 5-1. Product Identification Label Location



Note: Shrouds removed for clarity.

m132a019

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

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

Hill-Rom also provides a fax number to promptly order parts, request part prices and availability, or follow up on a service order. The fax number is (812) 934-8472.

To order parts, a \$40.00 minimum will prevent a charge for processing your order.

Terms:

- Net 30 days
- F.O.B. Batesville, IN
- Prepaid shipping charges added to invoice
- All orders shipped UPS ground 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, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720.

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

NOTE:

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

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

Do not return any parts without an RMA number. When parts/products have been requested to be returned, Hill-Rom will include an RMA packet with the parts/products shipment. If an RMA number is not available, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720.

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, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720. If you fail to return the equipment within 30 days, Hill-Rom will invoice your facility for the **difference between the exchange price and the new price of the part.**

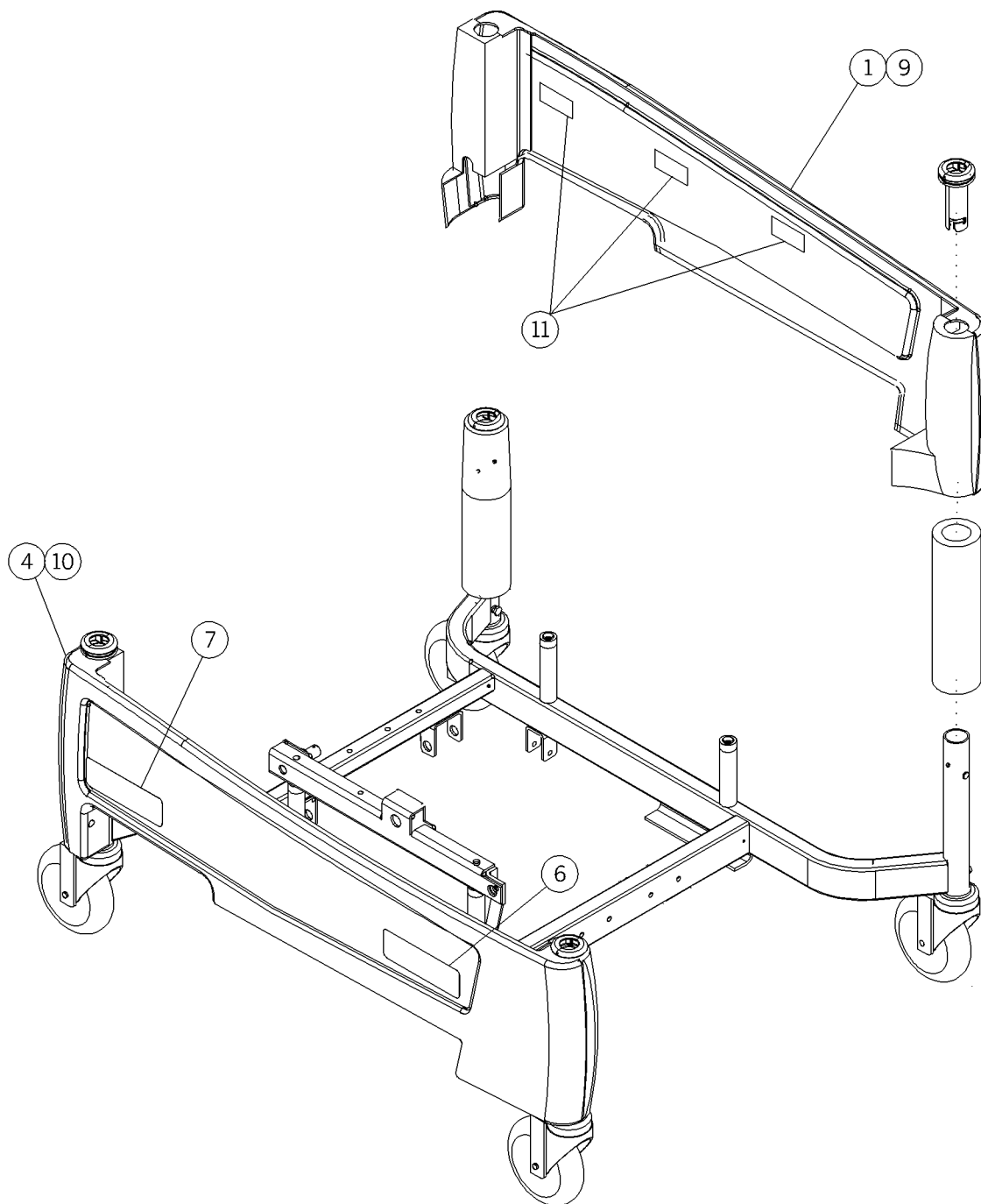
Recommended Spare Parts

There are no recommended spare parts for the Procedural Recliner.

NOTES:

Base Frame—Base Shrouds

Figure 5-2. Base Frame—Base Shrouds



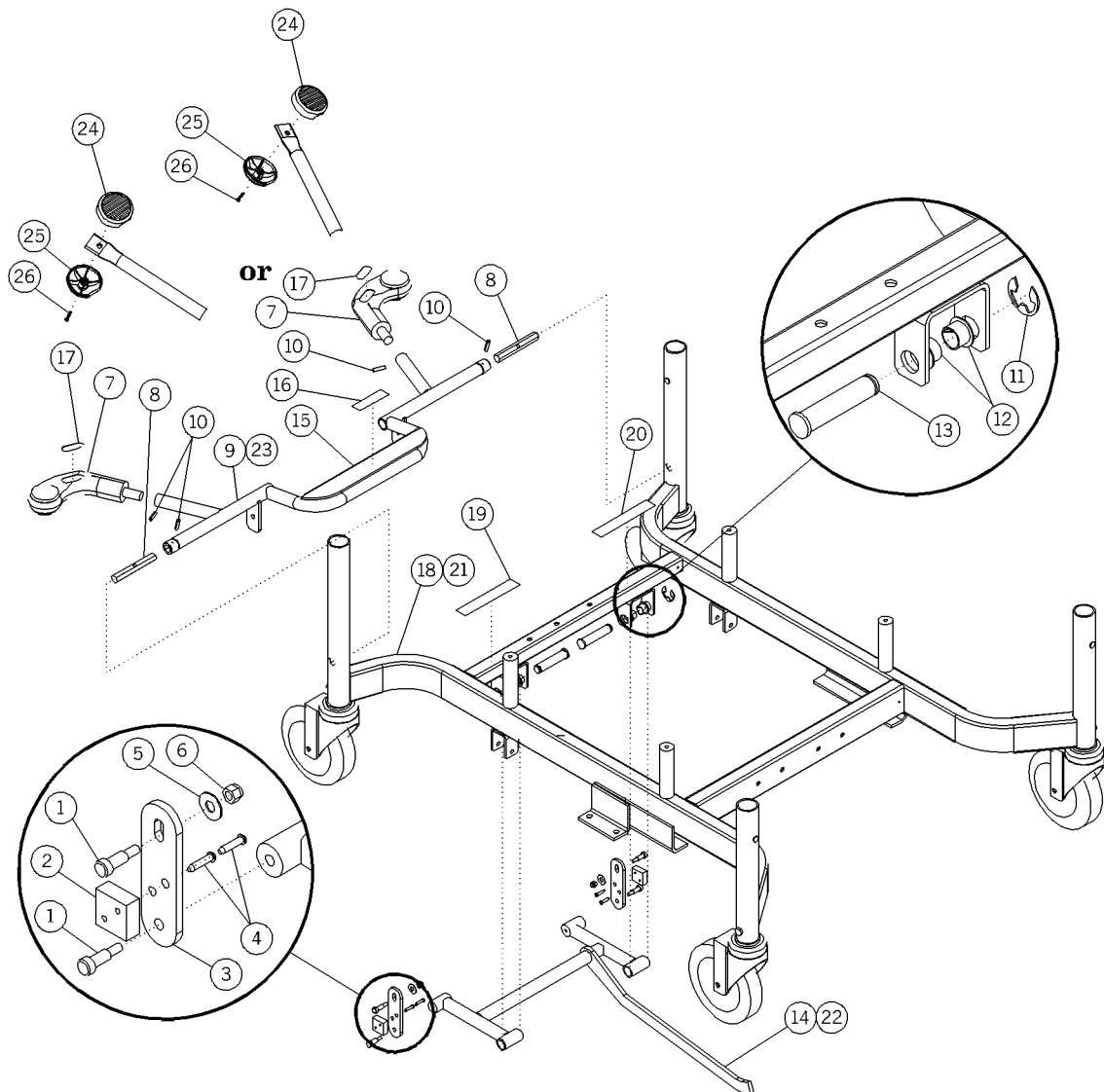
m132a062

Table 5-1. Base Frame—Base Shrouds

Item Number	Part Number	Quantity	Description
1	60271 (1320)	1	Assembly left base shroud (synchronized legrest model only)
2			
3			
4	60272 (1320)	1	Assembly right base shroud (synchronized legrest model only)
5			
6	61774 (1320)	2	Label, product name
7	38776 (1320)	2	Base label
8			
9	64108 (1320)	1	Base shroud lh, manual legrest (independent legrest model only)
10	64110 (1320)	1	Base shroud rh, manual legrest (independent legrest model only)
11	6255806 (1320)	6	Hook (1" wide) cut length (independent legrest model only)

Base Frame—Brake/Steer and Label Assemblies

Figure 5-3. Base Frame—Brake/Steer and Label Assemblies



m132a003

Table 5-2. Base Frame—Brake/Steer and Label Assemblies

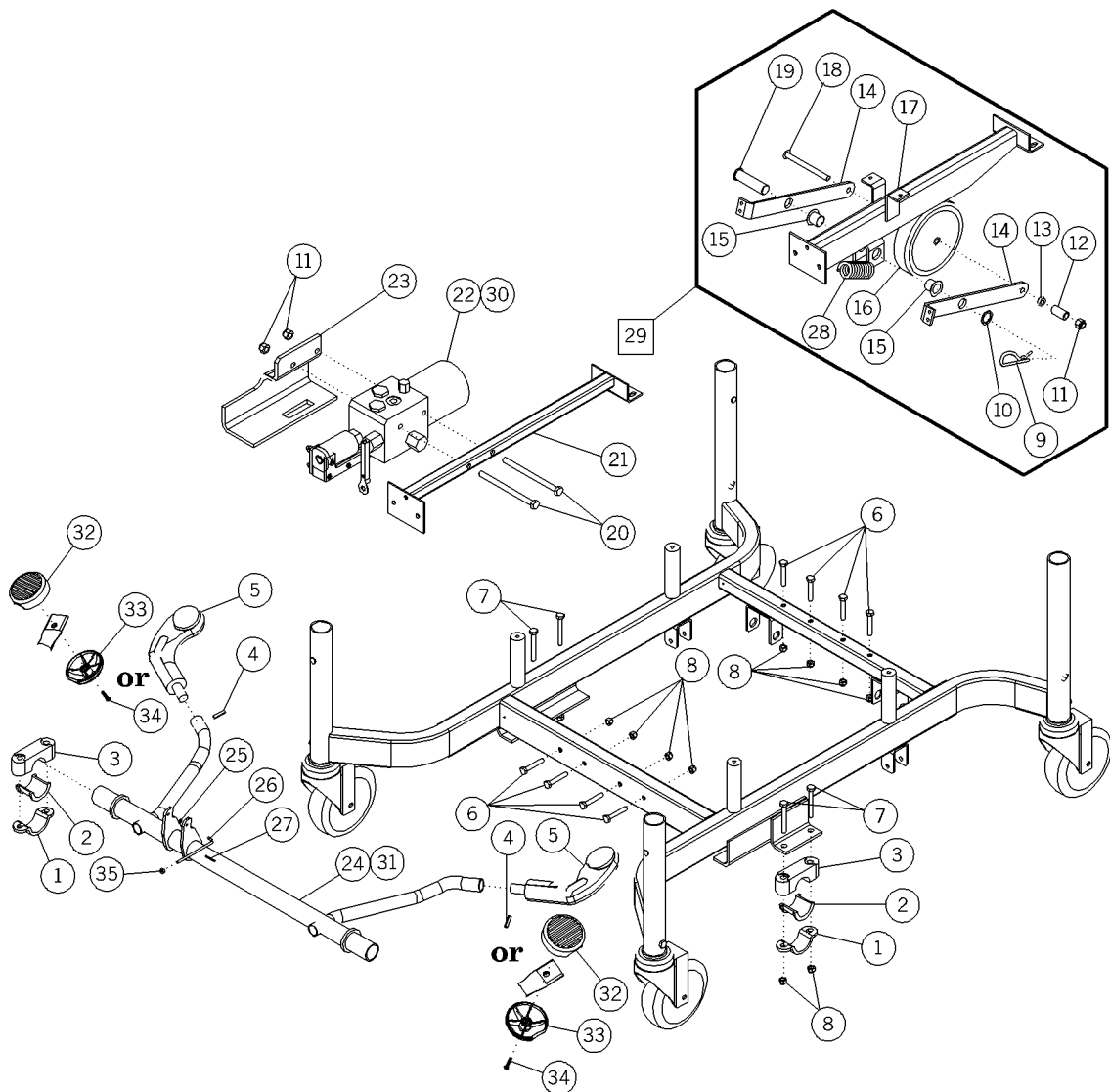
Item Number	Part Number	Quantity	Description
1	90338-04 (1320)	2	Shoulder screw (fifth wheel model only)
2	61672 (1320)	2	Neutral detent block (fifth wheel model only)
3	60416pl (1320)	2	Linkage, lower (fifth wheel model only)
4	90188-10 (1320)	4	Screw (fifth wheel model only)
5	61613 (1320)	2	Washer, fifth wheel (fifth wheel model only)
6	23 (1320)	2	Nut (fifth wheel model only)
7	43984 (1320)	2	Steer pedal (P1320A model only)
8	60304pl (1320)	2	Rod, pedal hex
9	60330 (1320)	1	Weldment, upper brake and steer (P1320A model only)
10	60437 (1320)	4	Pin, spring (P1320A model only)
11	60455 (1320)	2	E-clip (fifth wheel model only)
12	60341 (1320)	4	Bearing, lower brake and steer (fifth wheel model only)
13	60318pl (1320)	2	Shaft, lower pedal (fifth wheel model only)
14	6033948 (1320)	1	Weldment, lower brake and steer (fifth wheel model only) (P1320A model only)
15	62359 (1320)	1	Pedal plate tread (P1320A model only)
16	61764 (1320)	1	Label, steer (P1320A model only)
17	61765 (1320)	2	Label, brake (P1320A model only)
18	60263 (1320)	1	Base frame weldment (P1320A model only)
19	61762 (1320)	1	Label, manufactured date/year
20	61761 (1320)	1	Label, model number
21	6410048 (1320)	1	Base frame weldment (P1320B model only)
22	6522648 (1320)	1	Lower brake and steer weldment (fifth wheel model only) (P1320B model only)
23	6522748 (1320)	1	Upper brake and steer weldment (P1320B model only)

Item Number	Part Number	Quantity	Description
24	4917102 (1320)	2	Pad, foot pump pedal, top (P1320B model only)
25	4917202 (1320)	2	Pad, foot pump pedal, bottom (P1320B model only)
26	42140 (1320)	2	Screw (P1320B model only)

NOTES:

Base Frame—Hydraulic Pump and Fifth Wheel Assemblies

Figure 5-4. Base Frame—Hydraulic Pump and Fifth Wheel Assemblies



m132a002

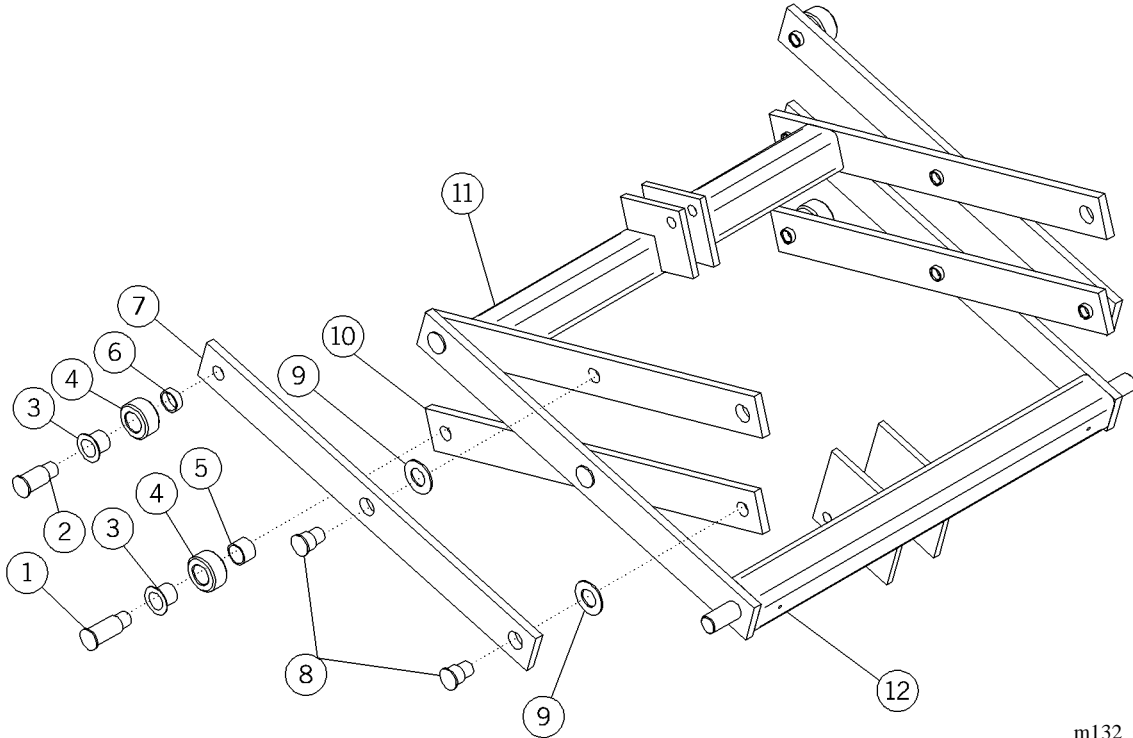
Table 5-3. Base Frame—Hydraulic Pump and Fifth Wheel Assemblies

Item Number	Part Number	Quantity	Description
1	41037 (1320)	2	Foot section bushing plate (hydraulic model only)
2	41036 (1320)	2	Foot section pivot bushing (hydraulic model only)
3	41023 (1320)	2	Trendelenburg pivot block (hydraulic model only)
4	60437 (1320)	2	Pin, spring (hydraulic model only) (P1320A model only)
5	43984 (1320)	2	Steer pedal (hydraulic model only) (P1320A model only)
6	90018-28 (1320)	4	Hex head cap screw
7	90018-32 (1320)	4	Cap screw (hydraulic model only)
8	90234-04 (1320)	4 or 8	Nut
9	6029405 (1320)	1	Cotter pin (fifth wheel model only)
10	61877 (1320)	1	Washer (fifth wheel model only)
11	45810 (1320)	1	Glide insert
12	61677 (1320)	1	Roller fifth wheel shaft (fifth wheel model only)
13	61880 (1320)	1	Jam nut (fifth wheel model only)
14	60320pl (1320)	2	Pivot, arm (fifth wheel model only)
15	60277 (1320)	2 or 4	Wheel bushing
16	SA3712 (1320)	1	5" tente wheel (fifth wheel model only)
17	6030833 (1320)	1	Weldment, mounting bracket (fifth wheel model only)
18	60322 (1320)	1	Slotted drive screw (fifth wheel model only)
19	60319pl (1320)	1	Shaft fifth wheel mounting (fifth wheel model only)
20	60617 (1320)	2	Screw (hydraulic model only)
21	60317 (1320)	1	Weldment, hydraulic pump (hydraulic model only)
22	61419 (1320)	1	Hydraulic pump system (hydraulic model only)

Item Number	Part Number	Quantity	Description
23	60309pl (1320)	1	Pump arm support bracket (hydraulic model only)
24	60460 (1320)	1	Weldment pump pedal shaft (hydraulic model only) (P1320A model only)
25	60328 (1320)	1	Rod retainer e-clip (hydraulic model only)
26	60462 (1320)	1	Release rod (hydraulic model only)
27	60464 (1320)	1	Pin spring (hydraulic model only)
28	60329 (1320)	2	Spring, fifth wheel (fifth wheel model only)
29	6164905 (1320)	1	Fifth wheel module upgrade
30	60307 (1320)	1	Hydraulic pump assembly
31	6522848 (1320)	1	Pump pedal shaft weldment (hydraulic model only) (P1320B model only)
32	4917102 (1320)	2	Pad, foot pump pedal, top (hydraulic model only) (P1320B model only)
33	4917202 (1320)	2	Pad, foot pump pedal, bottom (hydraulic model only) (P1320B model only)
34	42140 (1320)	2	Screw (hydraulic model only) (P1320B model only)
35	65320 (1320)	1	Zip twist nut (hydraulic model only)

Base Frame—Scissors Assembly (Hydraulic Model only)

Figure 5-5. Base Frame—Scissors Assembly (Hydraulic Model only)



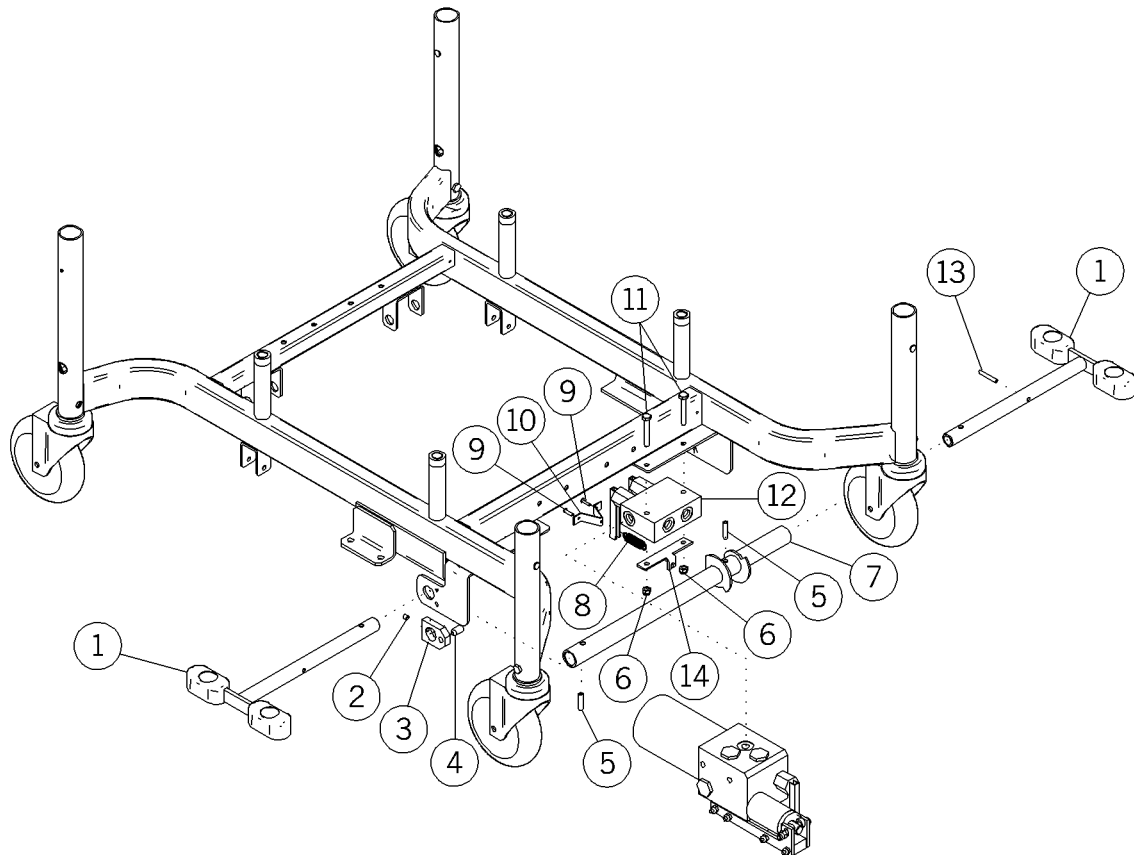
m132_010

Table 5-4. Base Frame—Scissors Assembly (Hydraulic Model only)

Item Number	Part Number	Quantity	Description
1	60278pl (1320)	2	Wheel rivet bottom
2	60301pl (1320)	2	Wheel rivet top
3	60277 (1320)	4	Wheel bushing
4	60276 (1320)	4	Scissors wheel
5	60279 (1320)	2	Wheel spacer bottom
6	60302 (1320)	2	Wheel spacer top
7	60283pl (1320)	2	Scissors link “D”
8	60299pl (1320)	8	Scissors link rivet
9	60300 (1320)	8	Scissors link rivet spacer
10	60281pl (1320)	2	Scissors link “B”
11	60292pl (1320)	1	Scissors link weldment top
12	60284pl (1320)	1	Scissors link weldment bottom

Base Frame—Independent Legrest Assemblies

Figure 5-6. Base Frame—Independent Legrest Assemblies



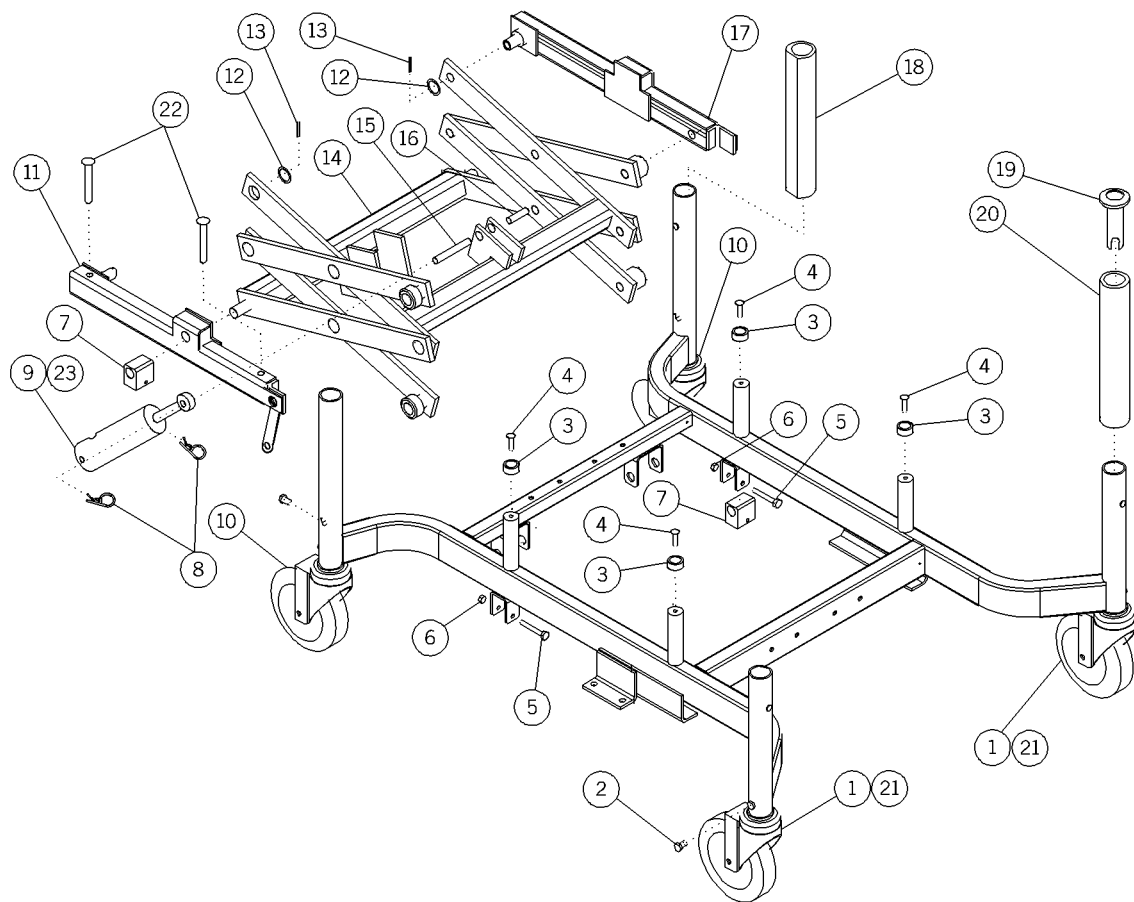
m132a079

Table 5-5. Base Frame—Independent Legrest Assemblies

Item Number	Part Number	Quantity	Description
1	64058 (1320)	2	Pedal assembly
2	4648501 (1320)	1	Cup point setscrew
3	64041pl (1320)	1	Collar
4	64049 (1320)	1	Viler
5	3517 (1320)	2	Spring pin
6	90234-04 (1320)	2	Nut
7	64056pl (1320)	1	Cam sleeve weldment
8	64060 (1320)	1	Spring cam
9	6124703 (1320)	2	Pop rivet
10	64059 (1320)	1	Strapping
11	90018-32 (1320)	2	Cap screw
12	64045 (1320)	1	Manual legrest manifold
13	12434 (1320)	2	Roll pin
14	64052 (1320)	1	Spring mount plate

Base Frame—Scissor and Caster Assemblies

Figure 5-7. Base Frame—Scissor and Caster Assemblies



m132a001

Table 5-6. Base Frame—Scissor and Caster Assemblies

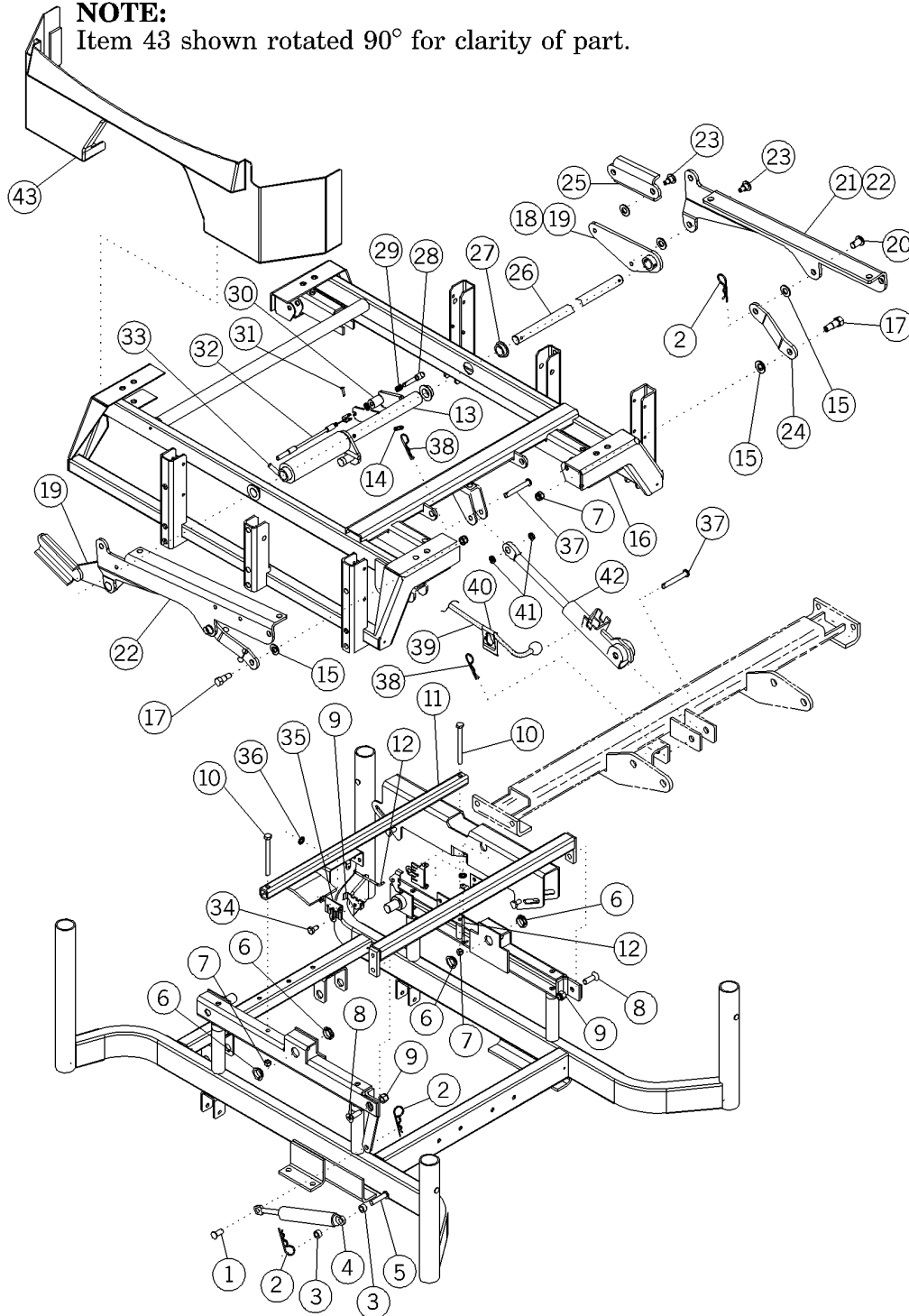
Item Number	Part Number	Quantity	Description
1	6119928 (1320)	2	Caster, tente (independent front locking caster model only)
2	61260pl (1320)	4	Caster screw base
3	60273 (1320)	4	Stop bumper
4	90301-16 (1320)	4	Setscrew
5	90018-28 (1320)	2	Hex head cap screw (hydraulic model only)
6	90234-04 (1320)	2	Nut (hydraulic model only)
7	60274 (1320)	2	Scissors pivot bushing fixed (hydraulic model only)
8	6029404 (1320)	2	Retaining pin, hairpin cotter (hydraulic model only)
9	60295 (1320)	1	Hydraulic cylinder—scissors (hydraulic model only)
10	9022922 (1320)	2	Rear caster
11	60418pl (1320)	1	Pivot channel assembly right (hydraulic model only)
12	44595 (1320)	2	Washer (hydraulic model only)
13	37275 (1320)	2	Roll pin (hydraulic model only)
14	60275 (1320)	1	Scissors assembly (hydraulic model only)
15	60297pl (1320)	1	Retaining pin “B” (hydraulic model only)
16	60296pl (1320)	1	Retaining pin “A” (hydraulic model only)
17	60417pl (1320)	1	Pivot channel assembly left (hydraulic model only)
18	60472 (1320)	2	Bumper foam, rear
19	61270 (1320)	4	Accessory socket
20	61267 (1320)	2	Bumper foam, front
21	9022923 (1320)	2	Front caster (independent swivel caster model only)
22	9024440 (1320)	4	Hex head cap screw (fixed height model only)
23	61420 (1320)	1	Hydraulic hose (hydraulic model only)

Upper Recliner—Recline and Trendelenburg Assembly

Figure 5-8. Upper Recliner—Recline and Trendelenburg Assembly

NOTE:

Item 43 shown rotated 90° for clarity of part.



m132a013

Table 5-7. Upper Recliner—Recline and Trendelenburg Assembly

Item Number	Part Number	Quantity	Description
1	61268pl (1320)	1	Damper pin (egress model only)
2	6029403 (1320)	2	Cotter pin
3	61269 (1320)	2	Spacer
4	61281 (1320)	1	Egress damper (egress model only)
5	60333pl (1320)	1	Trendelenburg cylinder headed groove pin
6	61337 (1320)	4	Nyliner
7	60619 (1320)	2	Nut
8	61679 (1320)	2	Large flat head machine screw
9	61865 (1320)	2	Cable splitting retaining plate
10	90018-48 (1320)	2	Screw
11	60423pl (1320)	1	Trendelenburg channel assembly
12	61867 (1320)	2	Recline release cable pivot
13	61331pl (1320)	1	Weldment, shaft sleeve
14	61276 (1320)	1	Groove pin
15	60621 (1320)	2	Recline/legrest spacer
16	60610 (1320)	1	Weldment Trendelenburg frame
17	61382 (1320)	2	Pivot pin
18	60923 (1320)	1	Crank left weldment (shown)
19	60924 (1320)	1	Crank right weldment
20	60987pl (1320)	1	Pivot pin
21	60925pl (1320)	1	Seat link left (shown)
22	60926 (1320)	1	Seat link right
23	60622pl (1320)	2	Recline/legrest rivet
24	60930pl (1320)	1	Trendelenburg/seat link
25	60929pl (1320)	1	Intermediate link
26	61275 (1320)	1	Shaft
27	61272 (1320)	4	Shaft bearing Trendelenburg
28	61291 (1320)	1	Flat control pin
29	61293 (1320)	1	Flat control spring
30	61778 (1320)	1	E-clip
31	6124701 (1320)	1	Blind rivet

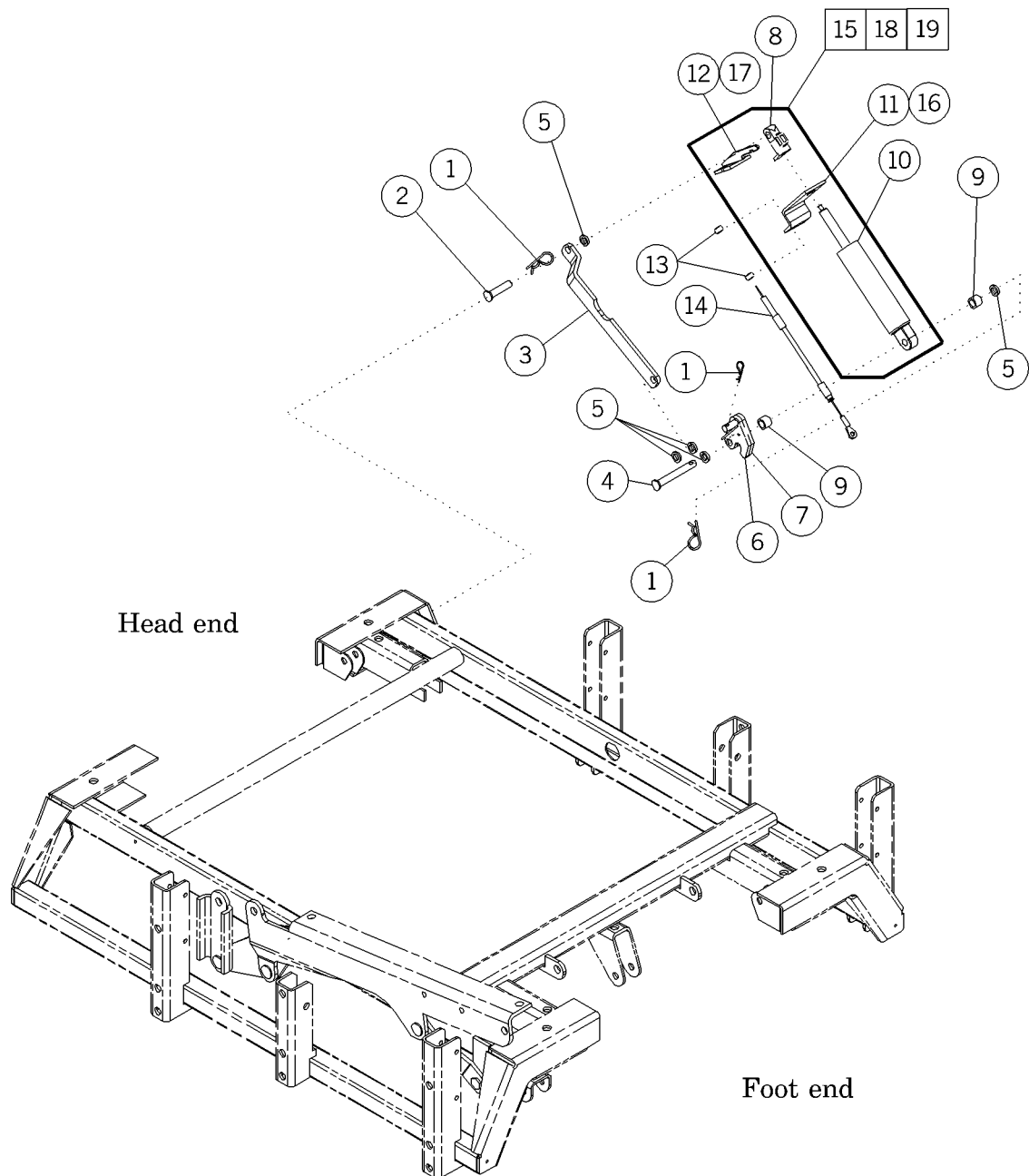
Item Number	Part Number	Quantity	Description
32	60609 (1320)	1	Flat control jumper (release) cable
33	61274 (1320)	1	Torsion spring
34	21913 (1320)	2	Screw
35	61864 (1320)	2	Cable splitter retaining plate
36	60328 (1320)	2	Rod retainer e-clip
37	61350 (1320)	2	Clevis pin, Mechlok® ^a
38	6029404 (1320)	2	Retaining pin, hairpin cotter
39	61673 (1320)	1	Recline Mechlok® cable
40	61339 (1320)	2	Mechlok® cable clip
41	61269 (1320)	2	Spacer
42	60942 (1320)	1	Recline Mechlok®
43	61678 (1320)	1	Assembly, rear Trendelenburg shroud

a. Mechlok® is a registered trademark of P.L. Porter Company.

NOTES:

Upper Recliner—Trendelenburg Gas Spring Assembly

Figure 5-9. Upper Recliner—Trendelenburg Gas Spring Assembly



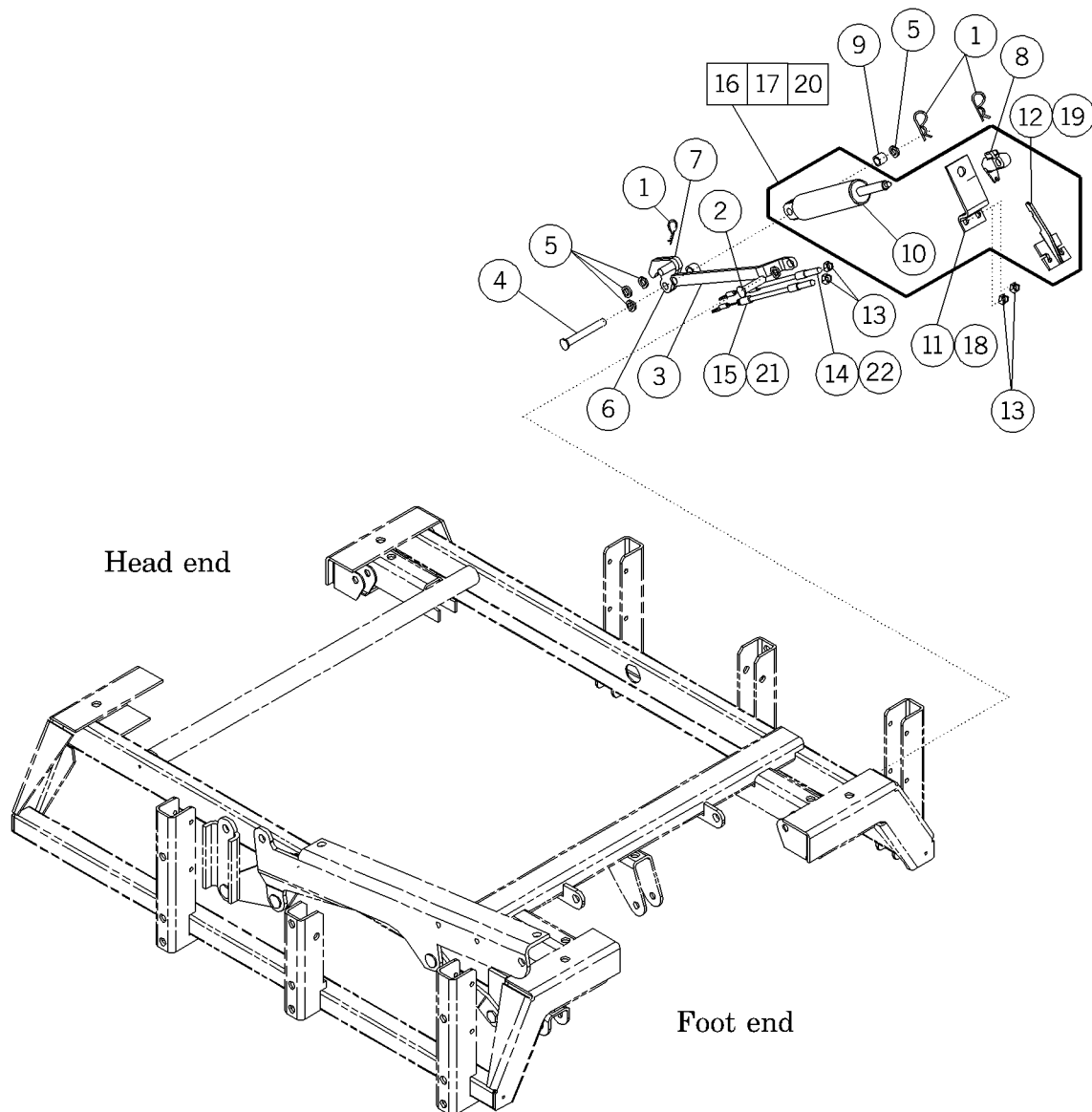
m132a014

Table 5-8. Upper Recliner—Trendelenburg Gas Spring Assembly

Item Number	Part Number	Quantity	Description
1	6029403 (1320)	3	Cotter pin
2	60333pl (1320)	1	Trendelenburg cylinder headed groove pin
3	60280 (1320)	1	Lift arm weldment
4	61607pl (1320)	1	Trendelenburg lock pivot pin
5	61342 (1320)	5	Trendelenburg cylinder pin spacer
6	60298 (1320)	1	Trendelenburg cylinder headed groove pin
7	61606 (1320)	1	Weldment Trendelenburg lock right
8	61285 (1320)	1	Trendelenburg gas spring release head
9	61608pl (1320)	2	Trendelenburg cylinder spacer
10	61280 (1320)	1	Trendelenburg/egress gas spring
11	61284 (1320)	1	Egress gas spring release plate (P1320A only)
12	61433pl (1320)	1	Egress gas spring release arm (P1320A model only)
13	4435 (1320)	2	Locknut
14	61378 (1320)	1	Trendelenburg release cable
15	62515 (1320)	1	Trendelenburg/egress gas spring cylinder (P1320A model only)
16	63694pl (1320)	1	Egress gas spring release plate (P1320B model only)
17	63700pl (1320)	1	Gas spring release arm (P1320B model only)
18	63702 (1320)	1	Trendelenburg gas spring assembly (P1320B model only)
19	63306 (1320)	1	Egress strut (gas assist Trendelenburg with no egress models only)

Upper Recliner—Egress Gas Spring Assembly

Figure 5-10. Upper Recliner—Egress Gas Spring Assembly



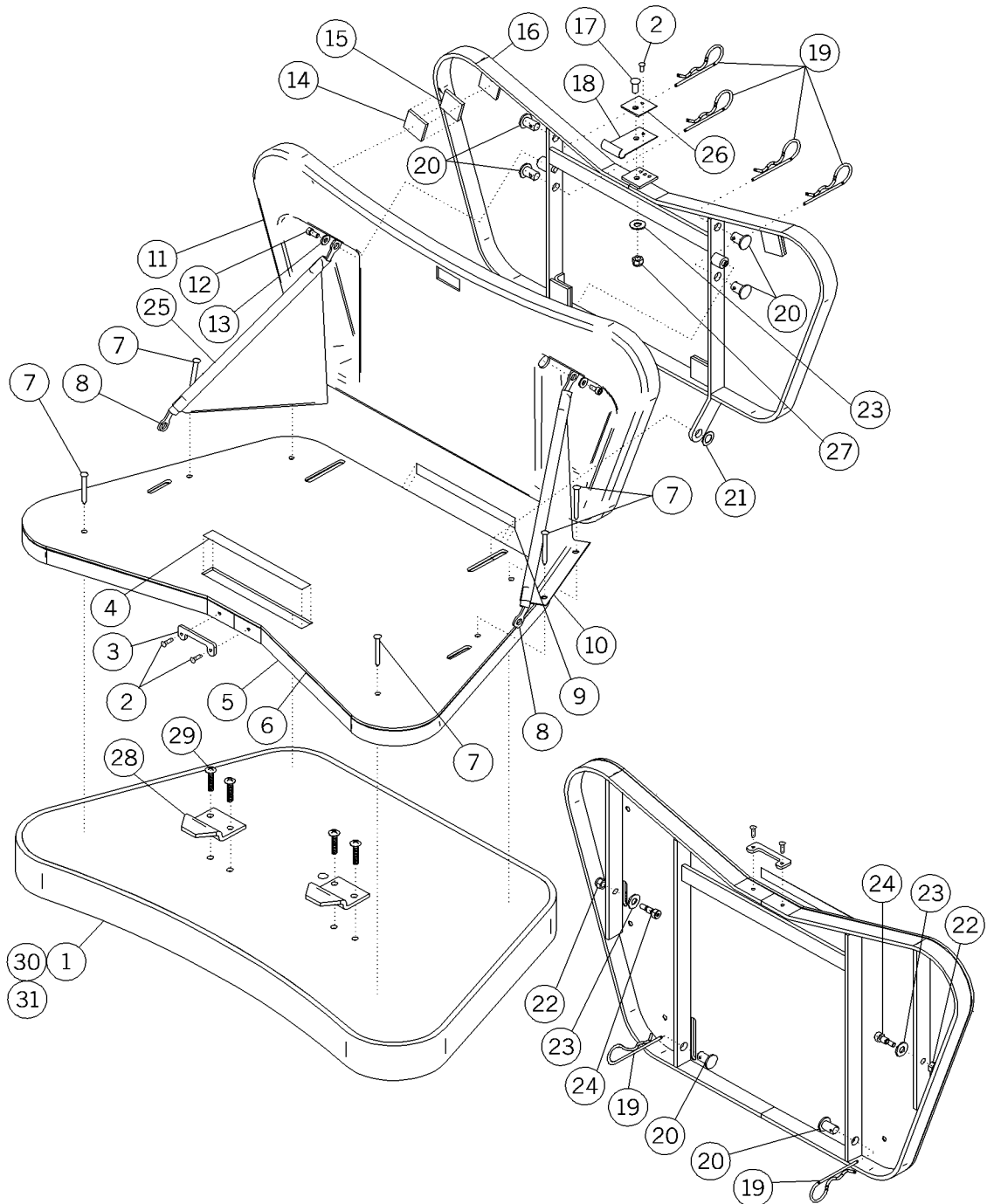
m132a063

Table 5-9. Upper Recliner—Egress Gas Spring Assembly

Item Number	Part Number	Quantity	Description
1	6029403 (1320)	3	Cotter pin
2	60333pl (1320)	1	Trendelenburg cylinder headed groove pin
3	60325pl (1320)	1	Egress lock arm
4	61607pl (1320)	1	Trendelenburg lock pivot pin
5	61342 (1320)	5	Trendelenburg cylinder pin spacer
6	60298 (1320)	1	Trendelenburg cylinder headed groove pin
7	61609 (1320)	1	Weldment Trendelenburg lock left
8	61285 (1320)	1	Trendelenburg gas spring release head
9	61608pl (1320)	2	Trendelenburg cylinder spacer
10	61280 (1320)	1	Trendelenburg/egress gas spring
11	61284 (1320)	1	Egress spring release plate (P1320A model only)
12	61433pl (1320)	1	Egress gas spring release arm (P1320A model only)
13	4435 (1320)	4	Locknut
14	61375 (1320)	1	Egress release left cable (P1320A model only)
15	61376 (1320)	1	Egress release right cable (P1320A model only)
16	62515 (1320)	1	Trendelenburg/egress gas spring cylinder (P1320A model only)
17	63306 (1320)	1	Egress strut (for models with gas assist egress and no Trendelenburg only)
18	63694pl (1320)	1	Egress gas spring release plate (P1320B model only)
19	63700pl (1320)	1	Gas spring release arm (P1320B model only)
20	63701 (1320)	1	Egress gas spring assembly (P1320B model only)
21	63693 (1320)	1	Right egress cable (P1320B model only)
22	63692 (1320)	1	Left egress cable (P1320B model only)

Upper Recliner—Footrest Assembly (P1320A Model Only)

Figure 5-11. Upper Recliner—Footrest Assembly (P1320A Model Only)



Weldment footrest frame bottom view

m132_005

Table 5-10. Upper Recliner—Footrest Assembly (P1320A Model Only)

Item Number	Part Number	Quantity	Description
1	62297 (1320) †††	1	Leg and footrest cover assembly
2	6124701 (1320)	3	Blind rivet
3	61610 (1320)	1	Catch plate
4	61760 (1320)	1	Label, leg rest
5	61056 (1320)	1	Weldment footrest frame
6	61055 (1320)	1	Footrest tread
7	9004124 (1320)	6	Screw
8	61392 (1320)	2	Cable footrest
9	61878 (1320)	1	Label, step
10	6161101 (1320)	1	Foot guard, left
11	61052 (1320)	1	Footrest shroud
12	61340 (1320)	2	Large socket head cap screw
13	61440 (1320)	2	Washer
14	6099201 (1320)	2 or 6	Dual Lock® ^a
15	6099401 (1320)	2 or 6	Dual Lock®
16	61044 (1320)	1	Weldment inner footrest frame
17	17290 (1320)	1	Screw
18	61430 (1320)	1	Spring, legrest
19	6029403 (1320)	6	Cotter pin
20	60987pl (1320)	6	Pivot pin
21	60293 (1320)	2	Legrest washer
22	60620 (1320)	2	Nut
23	1012 (1320)	2	Washer
24	9033806 (1320)	2	Screw, shoulder
25	6161102(1320)	1	Foot guard, right
26	60438 (1320)	1	Reinforcement plate
27	90234-04 (1320)	1	Nut

a. Dual Lock® is a registered trademark of Minnesota Mining and Manufacturing Company.

††† Specify upholstery color.

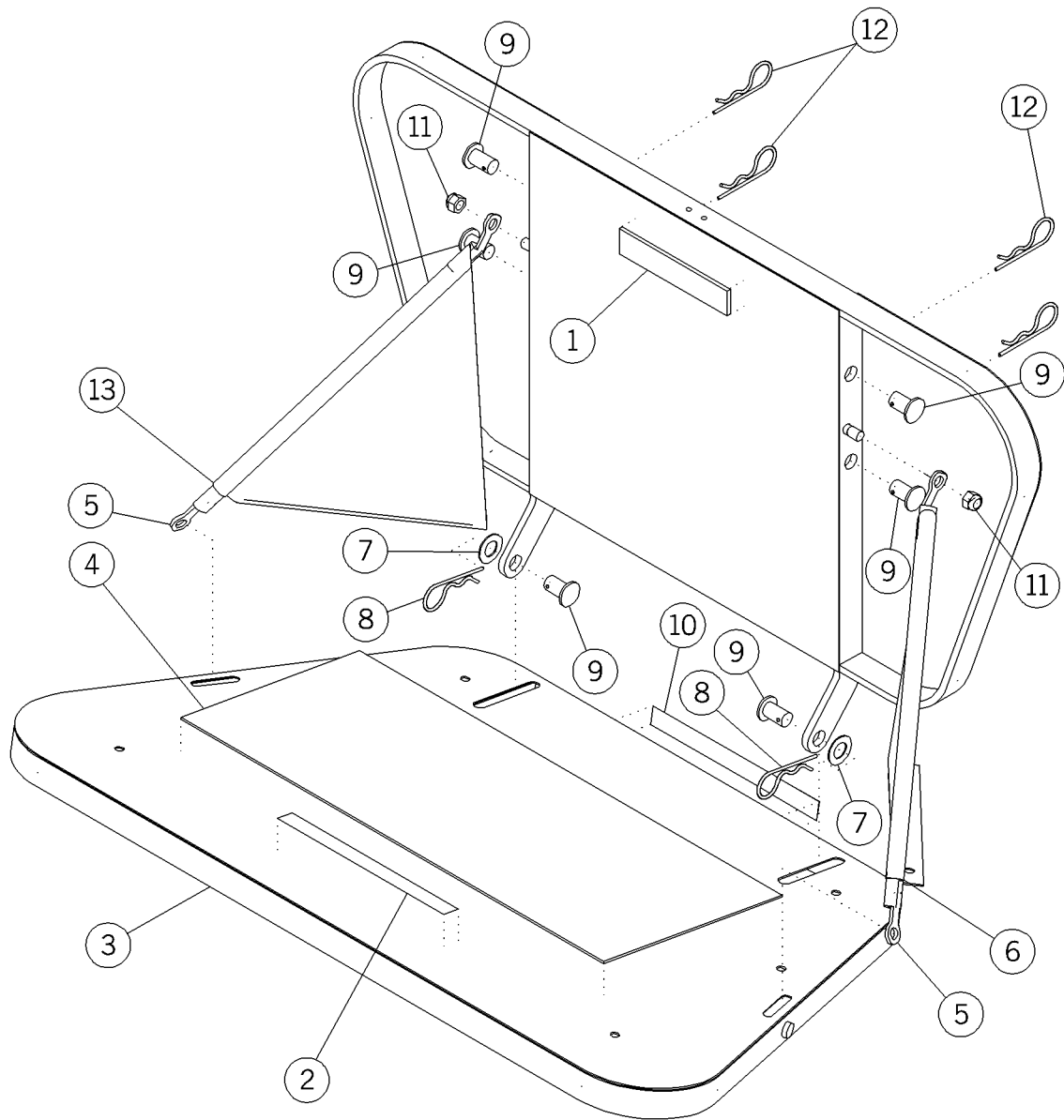
Item Number	Part Number	Quantity	Description
28	61332 (1320)	2	Cushion mounting bracket
29	60408 (1320)	4	Screw
30	6177601 (1320) †††	1	Leg and footrest assembly
31	6177633 (1320) †††	1	Leg and footrest assembly (flame resistant model only)

††† Specify upholstery color.

NOTES:

Upper Recliner—Footrest Assembly (P1320B Model Only)

Figure 5-12. Upper Recliner—Footrest Assembly (P1320B Model Only)



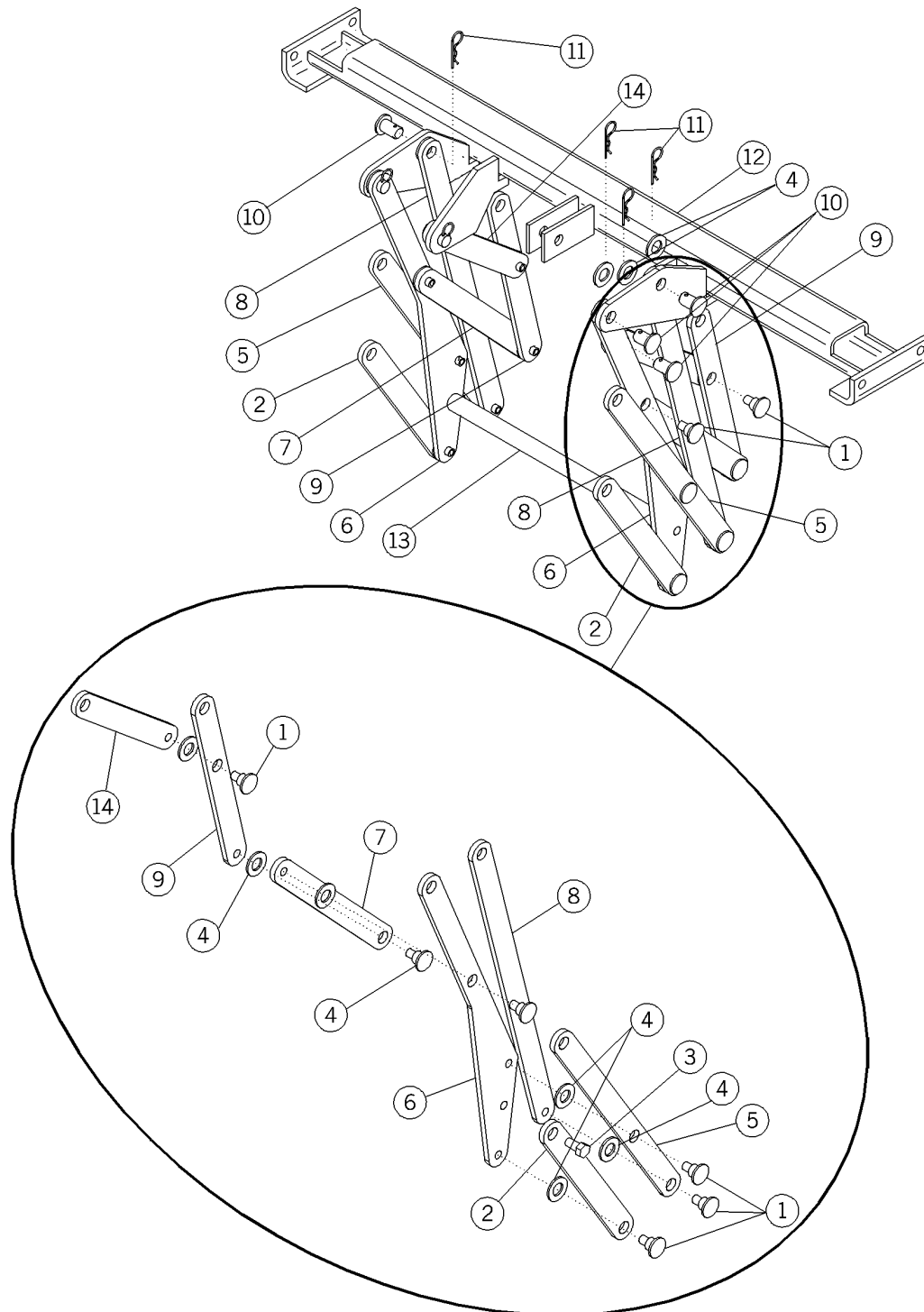
m132a077

Table 5-11. Upper Recliner—Footrest Assembly (P1320B Model Only)

Item Number	Part Number	Quantity	Description
1	65099 (1320)	1	Magnet
2	61760 (1320)	1	Label, legrest
3	6354048 (1320)	1	Footrest frame weldment
4	63541 (1320)	1	Footrest tread
5	63539 (1320)	2	Footrest cable
6	6161101 (1320)	1	Foot guard, left
7	60293 (1320)	2	Legrest washer
8	6029403 (1320)	6	Cotter pin
9	60987pl (1320)	6	Pivot pin
10	61878 (1320)	1	Label, step
11	90234-04 (1320)	4	Nut
12	6029403 (1320)	6	Cotter pin
13	6110102 (1320)	1	Foot guard, right

Upper Recliner—Legrest Mechanism (Synchronized Legrest Only)

Figure 5-13. Upper Recliner—Legrest Mechanism (Synchronized Legrest Only)



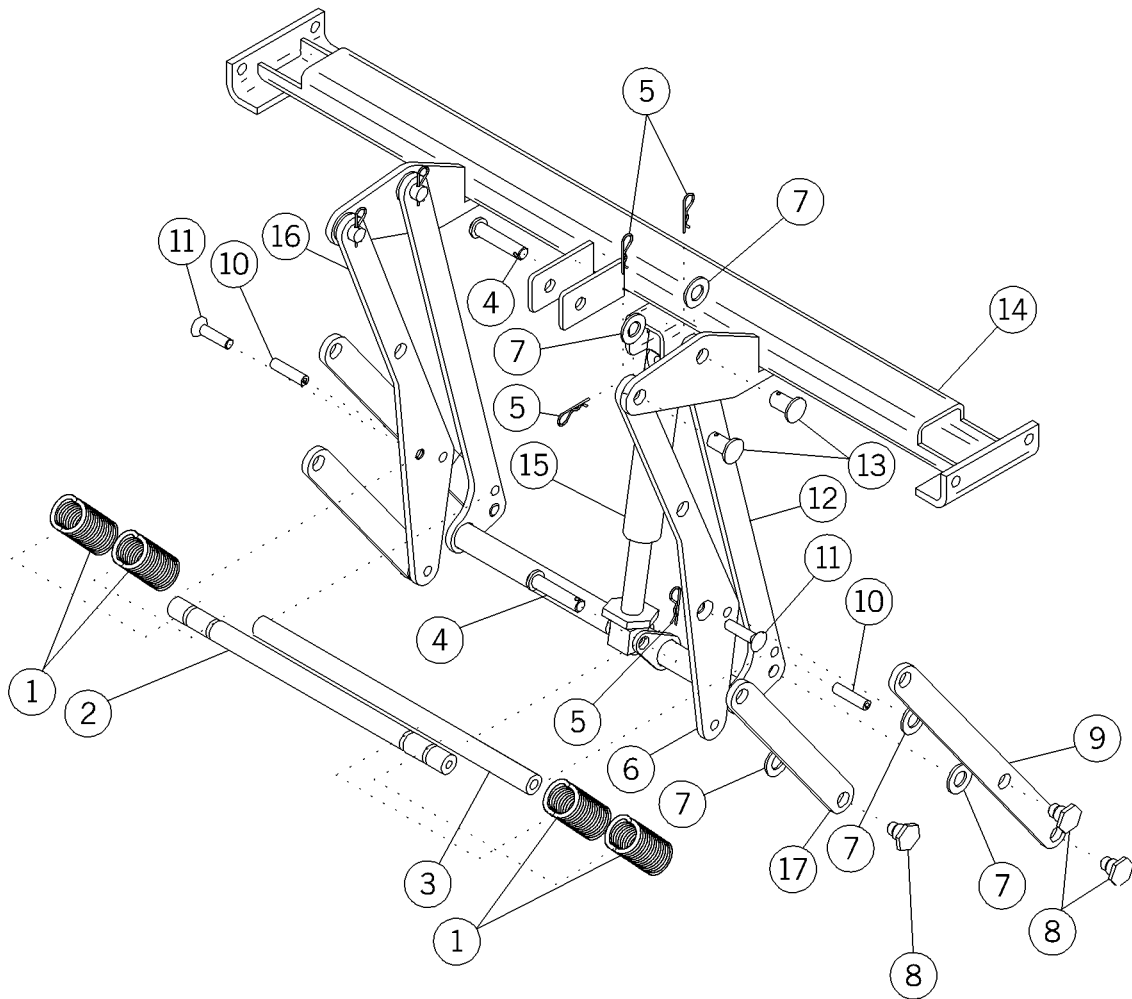
m132a007

**Table 5-12. Upper Recliner—Legrest Mechanism
(Synchronized Legrest Only)**

Item Number	Part Number	Quantity	Description
1	60622pl (1320)	16	Recline/legrest rivet
2	60986pl (1320)	2	Link “C”
3	9936 (1320)	2	Hex bolt
4	60621 (1320)	18	Recline legrest spacer
5	60984pl (1320)	2	Link “D”
6	61037pl (1320)	2	Link “A”
7	61049pl (1320)	2	Major “C”
8	60985pl (1320)	2	Link “B”
9	61047pl (1320)	2	Major “A”
10	60987pl (1320)	2	Pivot pin
11	6029403 (1320)	6	Cotter pin
12	60937 (1320)	1	Weldment legrest cross channel
13	61042pl (1320)	1	Tie rod
14	61048pl (1320)	2	Major “B”

Upper Recliner—Legrest Mechanism (Independent Legrest Only)

Figure 5-14. Upper Recliner—Legrest Mechanism (Independent Legrest Only)



m132a080

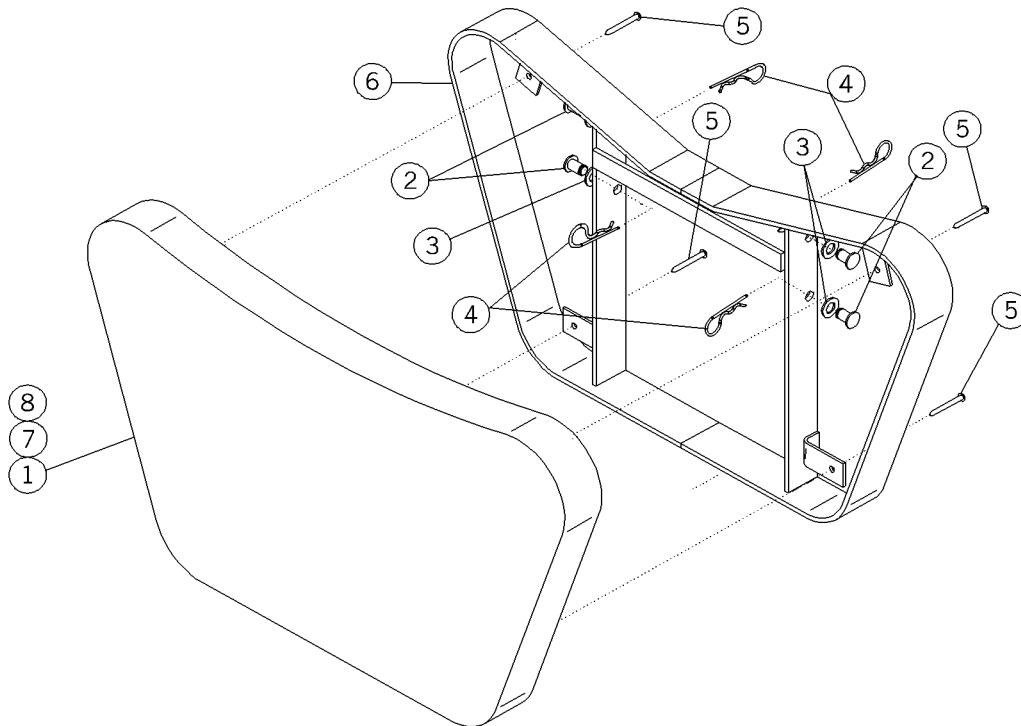
**Table 5-13. Upper Recliner—Legrest Mechanism
(Independent Legrest Only)**

Item Number	Part Number	Quantity	Description
1	64061 (1320)	4	Spring, legrest
2	64046pl (1320)	1	Upper spring support
3	64057pl (1320)	1	Lower spring weldment
4	61350 (1320)	2	Clevis pin, Mechlok® ^a
5	6029403 (1320)	6	Cotter pin
6	6103701pl (1320)	1	Link “A” (lh)
7	60621 (1320)	12	Recline/legrest spacer
8	64631pl (1320)	6	Legrest bolt
9	60984pl (1320)	1	Link “D”
10	12434 (1320)	2	Roll pin
11	90301-16 (1320)	2	Setscrew
12	64054pl (1320)	1	Linkage weldment, manual legrest
13	60987pl (1320)	6	Pivot pin
14	6405548 (1320)	1	Cross bar weldment, manual legrest
15	64042 (1320)	1	Legrest cylinder
16	61037pl (1320)	1	Link “A” (rh)
17	60986pl (1320)	1	Link “C”

a. Mechlok® is a registered trademark of P.L. Porter Company.

Upper Recliner—Leg and Footrest Assembly (P1320A Model Only)

Figure 5-15. Upper Recliner—Leg and Footrest Assembly (P1320A Model Only)



m132_006

Table 5-14. Upper Recliner—Leg and Footrest Assembly (P1320A Model Only)

Item Number	Part Number	Quantity	Description
1	62297 (1320) †††	1	Leg and footrest cover assembly
2	60987pl (1320)	4	Pivot pin
3	60621 (1320)	4	Recline legrest spacer
4	6029403 (1320)	4	Cotter pin
5	9004124 (1320)	4	Screw
6	61333 (1320)	1	Weldment legrest
7	6177601 (1320) †††	1	Leg and footrest assembly
8	6177633 (1320) †††	1	Leg and footrest assembly (flame resistant model only)

††† Specify upholstery color.

Upper Recliner—Leg and Footrest Assembly (P1320B Model Only)

Figure 5-16. Upper Recliner—Leg and Footrest Assembly (P1320B Model Only)

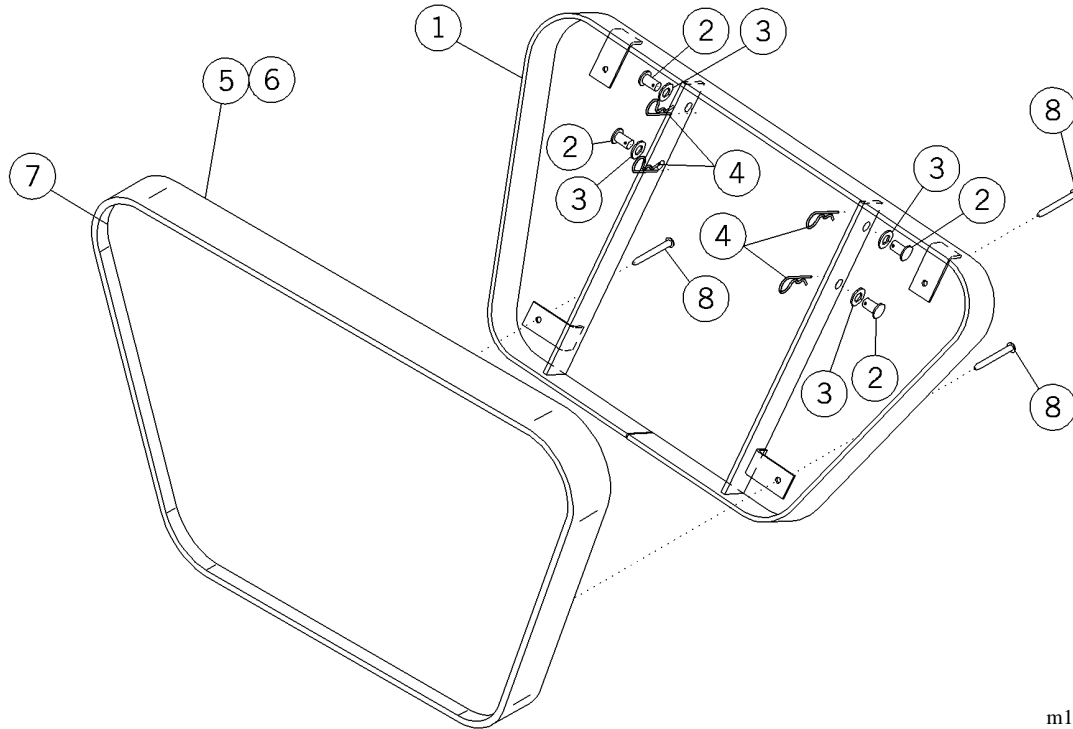


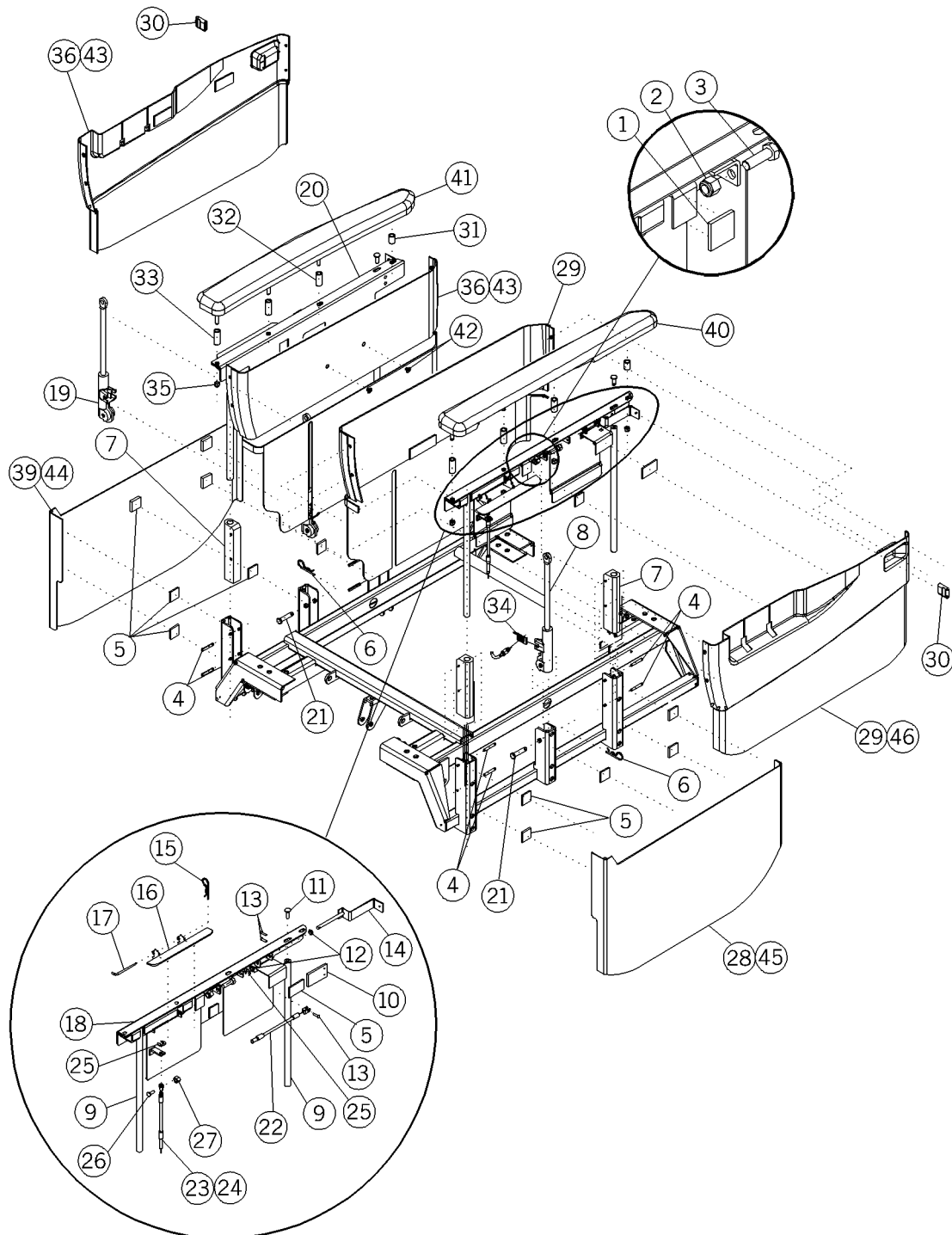
Table 5-15. Upper Recliner—Leg and Footrest Assembly (P1320B Model Only)

Item Number	Part Number	Quantity	Description
1	6354848 (1320)	1	Legrest weldment
2	60987pl (1320)	4	Pivot pin
3	60621 (1320)	4	Recline/legrest spacer
4	6029403 (1320)	4	Cotter pin
5	6352801 (1320) †††	1	Leg and footrest assembly
6	6352833 (1320) †††	1	Leg and footrest assembly (flame resistant model only)
7	63530 (1320) †††	1	Leg and footrest cover assembly
8	9004124 (1320)	4	Screw

††† Specify upholstery color.

Upper Recliner—Arm Assemblies

Figure 5-17. Upper Recliner—Arm Assemblies



m132a004

Table 5-16. Upper Recliner—Arm Assemblies

Item Number	Part Number	Quantity	Description
1	6099401 (1320)	2 or 4	Dual Lock® ^a
2	60619 (1320)	2	Nylock nut
3	9001616 (1320)	2	Hex head cap screw
4	3517 (1320)	8	Spring pin
5	6099402 (1320)	8	Dual Lock®
6	6029404 (1320)	2	Retaining pin, hairpin cotter
7	61344 (1320)	4	Arm rod bushing
8	60458 (1320)	1	Mechlok® ^b arm left
9	61061pl (1320)	2	Arm rod
10	60974 (1320)	2	Arm release slide
11	90289-12 (1320)	2	Screw
12	61343 (1320)	4	Arm release bushing
13	6124701 (1320)	4	Blind rivet
14	61421pl (1320)	2	Arm release lever weldment
15	6029401 (1320)	2	Cotter pin
16	6142533 (1320)	2	Recline release lever weldment
17	61643pl (1320)	2	Recline release lever pivot pin
18	61336pl (1320)	1	Weldment, arm structure left
19	60467 (1320)	1	Mechlok® arm right
20	61335pl (1320)	1	Weldment, arm structure right
21	61350 (1320)	2	Clevis pin, Mechlok®
22	61676 (1320)	2	Arm release cable
23	61675 (1320)	1	Recline release cable left
24	61674 (1320)	1	Recline release cable right
25	61778 (1320)	4	E-clip
26	9002506 (1320)	2	Pan head machine screw
27	309 (1320)	2	Nut
28	61439 (1320)	1	Shroud, left arm lower outer (synchronized legrest model only)

a. Dual Lock® is a registered trademark of Minnesota Mining and Manufacturing Company.

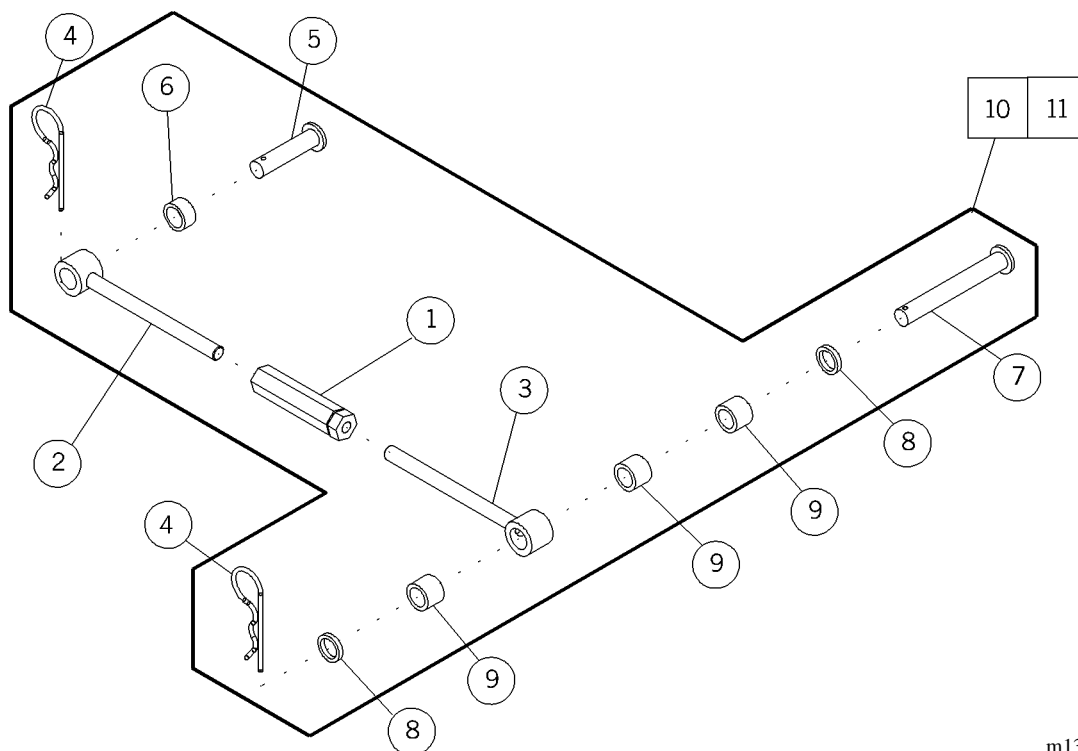
b. Mechlok® is a registered trademark of P.L. Porter Company.

Item Number	Part Number	Quantity	Description
29	61301 (1320)	1	Left arm shroud assembly (synchronized legrest model only)
30	61306 (1320)	2	Arm release lever cover
31	6033803 (1320)	2	Arm spacers
32	6033802 (1320)	2	Arm spacers
33	6033801 (1320)	2	Arm spacers
34	61339 (1320)	2	Mechlok® cable clip
35	4435 (1320)	8	Locknut
36	61300 (1320)	1	Right arm shroud complete (synchronized legrest model only)
37			
38			
39	61436 (1320)	1	Shroud, right arm lower outer (synchronized legrest model only)
40	61313 (1320)	1	Arm top left
41	61312 (1320)	1	Arm top right
42	64720 (1320)	4	Panel fastener
43	6560901 (1320)	1	Right arm shroud assembly (independent legrest model only)
44	64116 (1320)	1	Shroud, right arm lower, manual legrest (independent legrest model only)
45	64117 (1320)	1	Shroud, left arm lower, manual legrest (independent legrest model only)
46	6560801 (1320)	1	Left arm shroud assembly (independent legrest model only)

a. Mechlok® is a registered trademark of P.L. Porter Company.

Strut Assembly (Model without Trendelenburg and Egress)

Figure 5-18. Strut Assembly (Model without Trendelenburg and Egress)



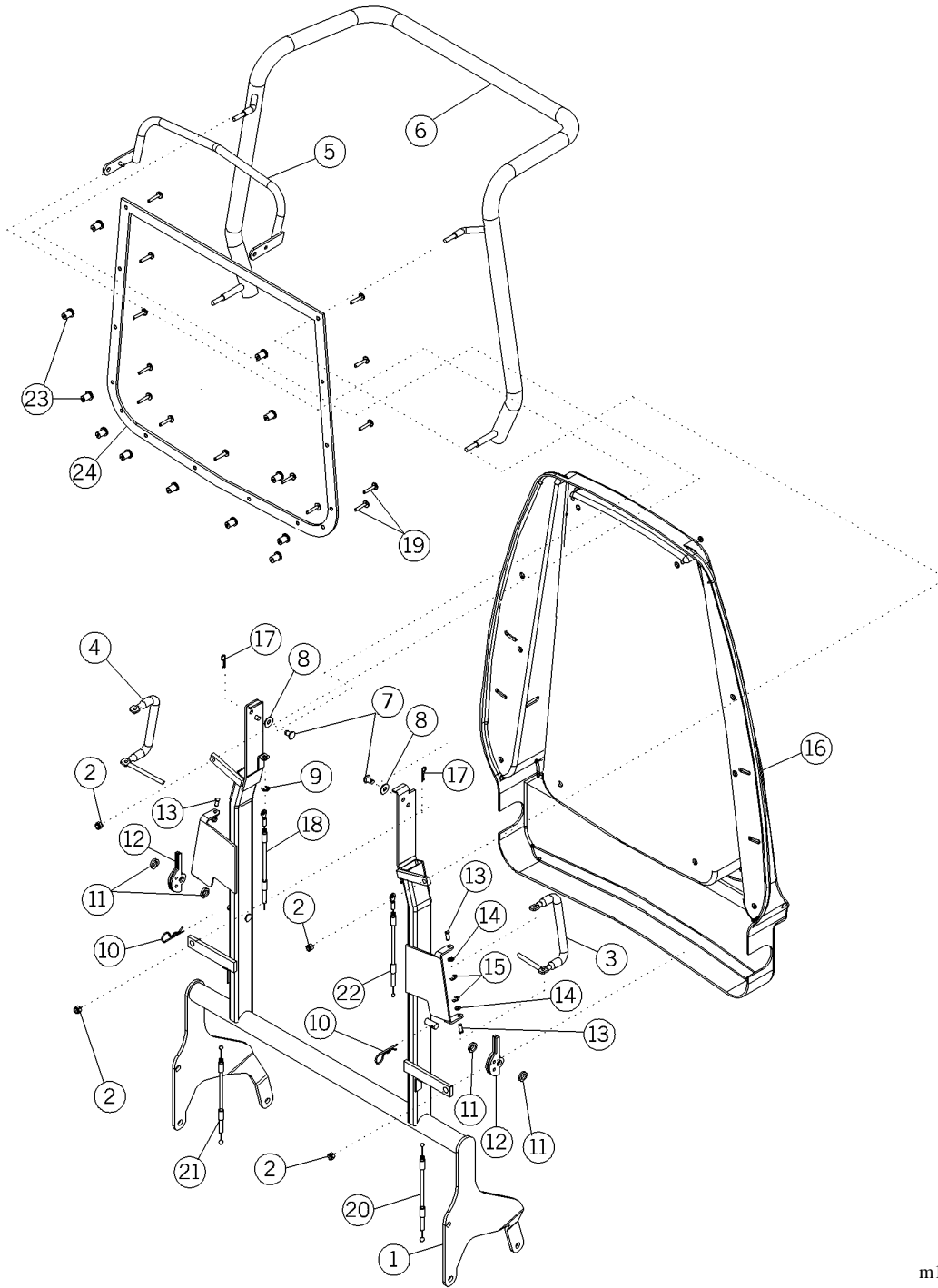
m132a071

Table 5-17. Strut Assembly (Model without Trendelenburg and Egress)

Item Number	Part Number	Quantity	Description
1	46320pl (1320)	1	Turnbuckle
2	60466pl (1320)	1	Weldment eye (rh)
3	60432pl (1320)	1	Weldment eye (lh)
4	6029403 (1320)	4	Cotter pin
5	60333pl (1320)	1	Trendelenburg cylinder head groove pin
6	61269 (1320)	1	Spacer
7	61607pl (1320)	1	Trendelenburg lock pivot pin
8	61342 (1320)	5	Trendelenburg cylinder pin spacer
9	61608pl (1320)	2	Trendelenburg cylinder spacer
10	62514 (1320)	1	Strut assembly
11	63306 (1320)	1	Egress strut (models with gas assist Trendelenburg and no egress only)

Back Assembly with Trendelenburg and Egress (P1320A Model Only)

Figure 5-19. Back Assembly with Trendelenburg and Egress (P1320 Model Only)



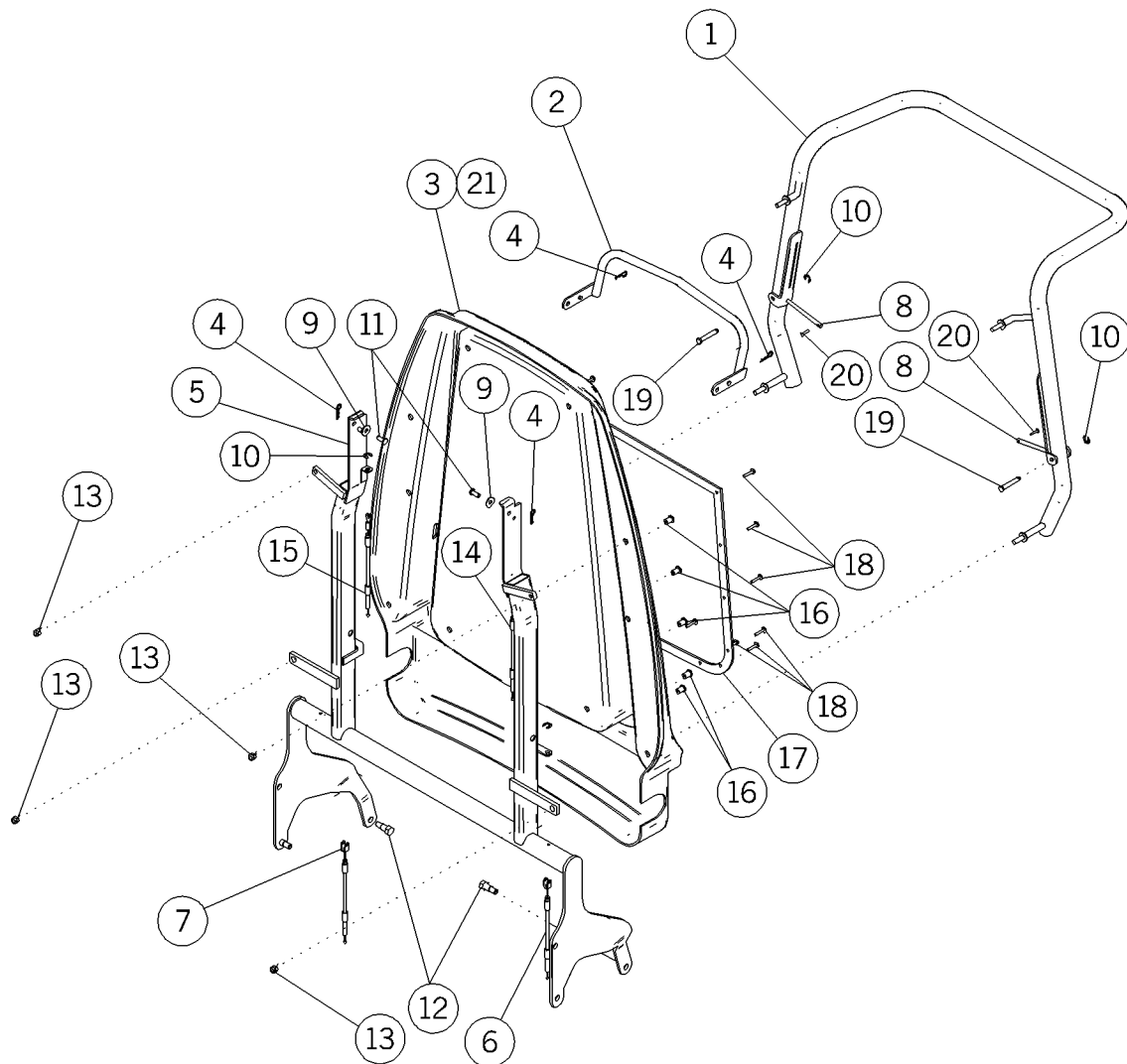
m132a012

**Table 5-18. Back Assembly with Trendelenburg and Egress
(P1320A Model Only)**

Item Number	Part Number	Quantity	Description
1	61239pl (1320)	1	Weldment back frame
2	90234-04 (1320)	4	Nut
3	61388 (1320)	1	Egress handle left (egress model only)
4	61389 (1320)	1	Egress handle right (egress model only)
5	6061333 (1320)	1	Trendelenburg/flat release handle weldment
6	6128233 (1320)	1	Pushbar weldment
7	61041pl (1320)	2	Trendelenburg release pivot pin
8	61255 (1320)	2	Nylon washer
9	61778 (1320)	2	E-clip
10	6029403 (1320)	2 or 4	Cotter pin
11	61429 (1320)	4	Egress pulley spacer (egress model only)
12	61398pl (1320)	2	Weldment, egress pulley (egress model only)
13	61383 (1320)	4	Egress handle pivot pin (egress model only)
14	61384 (1320)	4	Egress handle pivot pin spacer (egress model only)
15	60980 (1320)	4	E-clip (egress model only)
16	61246 (1320)	1	Shroud back
17	6029401 (1320)	4	Cotter pin
18	61377 (1320)	1	Flat control release cable
19	61870 (1320)	14	Well nut threaded insert
20	61375 (1320)	1	Egress release cable left
21	61376 (1320)	1	Egress release cable right
22	61378 (1320)	1	Trendelenburg release cable
23	61868 (1320)	14	Phillips head screw
24	61240 (1320)	1	Storage net

Back Assembly with Trendelenburg and Egress (P1320B Model Only)

Figure 5-20. Back Assembly with Trendelenburg and Egress (P1320B Model Only)



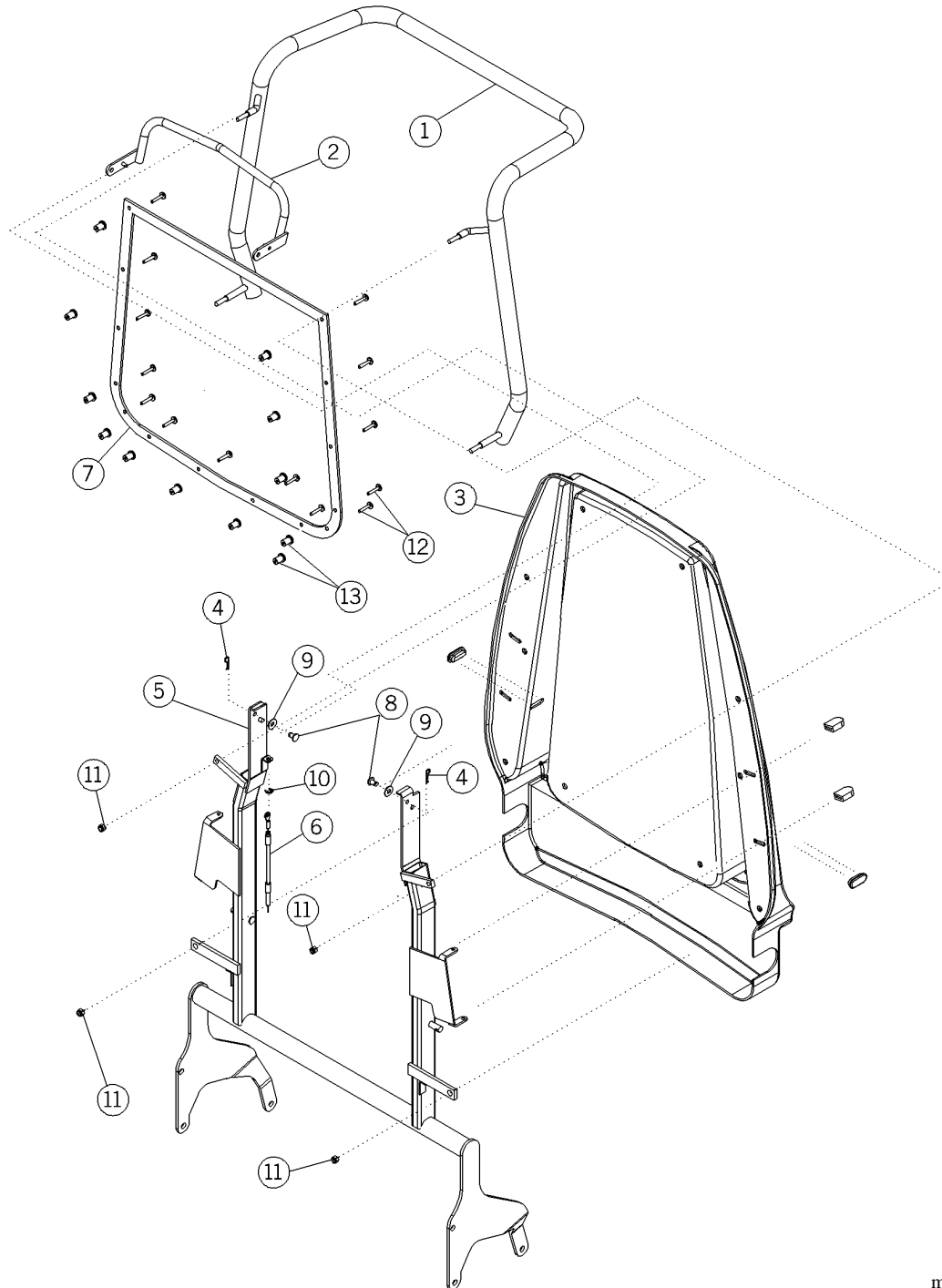
m132a083

**Table 5-19. Back Assembly with Trendelenburg and Egress
(P1320B Model Only)**

Item Number	Part Number	Quantity	Description
1	6370533 (1320)	1	Push bar weldment
2	6061333 (1320)	1	Trendelenburg/flat release handle weldment
3	6554001 (1320)	1	Back shroud
4	6029401 (1320)	4	Cotter pin
5	63703pl (1320)	1	Back frame weldment
6	63693 (1320)	1	Right egress cable
7	63692 (1320)	1	Left egress cable
8	6369933 (1320)	2	Egress handle weldment
9	61255 (1320)	2	Nylon washer
10	61778 (1320)	6	E-clip
11	61041pl (1320)	2	Trendelenburg release pivot pin
12	61382 (1320)	2	Pivot pin
13	90234-04 (1320)	4	Nut
14	61378 (1320)	1	Trendelenburg release cable
15	61377 (1320)	1	Flat control release cable
16	61870 (1320)	14	Well nut threaded insert
17	61240 (1320)	1	Storage net
18	61868 (1320)	14	Phillips head screw
19	63731pl (1320)	1	Egress pin
20	6124701 (1320)	2	Blind rivet
21	6554033 (1320)	1	Back shroud (flame-resistant model only)

Back Assembly without Trendelenburg or Egress (P1320A Model Only)

Figure 5-21. Back Assembly without Trendelenburg or Egress (P1320A Model Only)



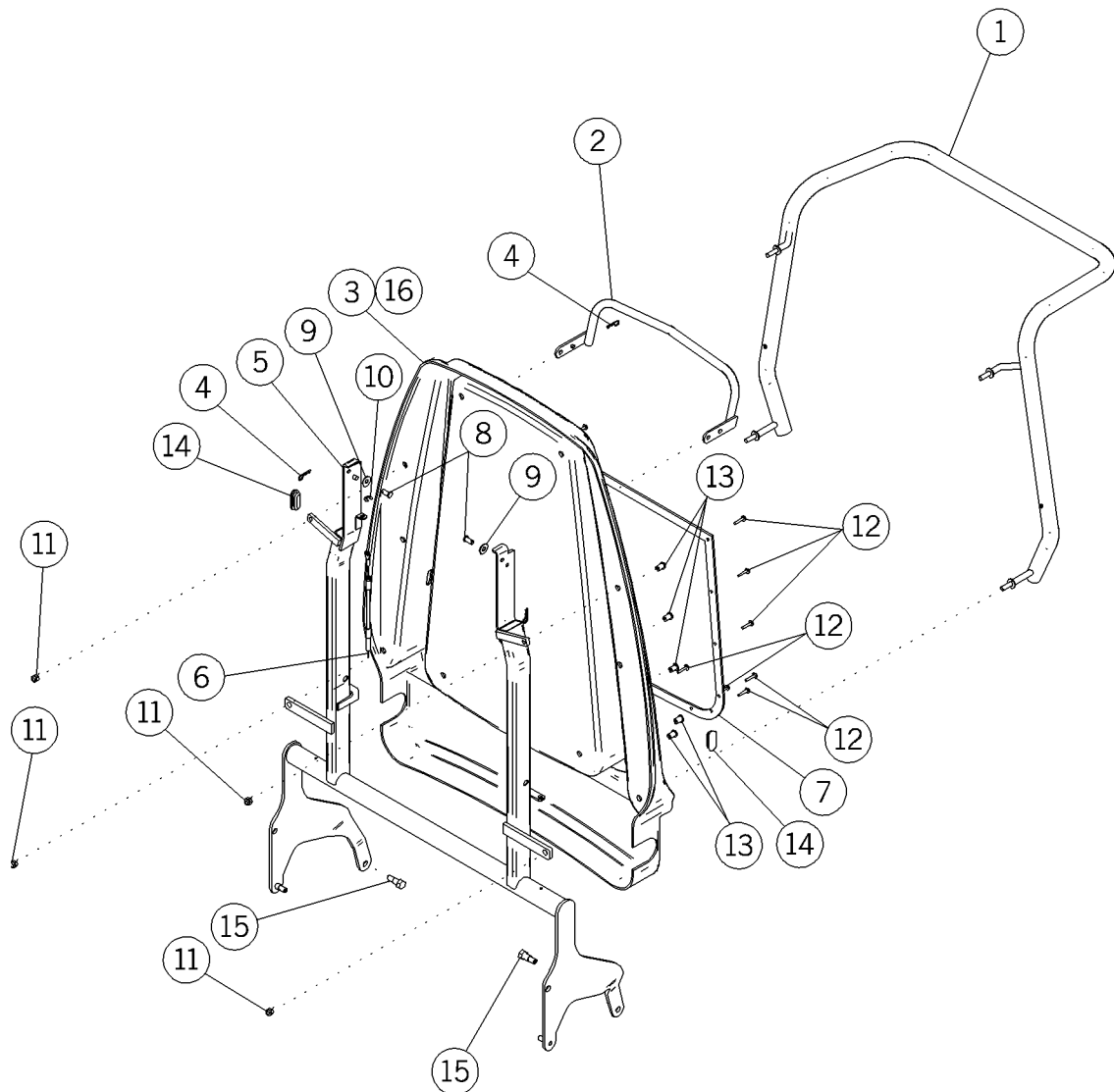
m132a064

**Table 5-20. Back Assembly without Trendelenburg or Egress
(P1320A Model Only)**

Item Number	Part Number	Quantity	Description
1	6128233 (1320)	1	Weldment push bar
2	6061333 (1320)	1	Weldment Trendelenburg/flat release handle
3	6124633 (1320)	1	Shroud back
4	6029401 (1320)	4	Cotter pin
5	61239pl (1320)	1	Weldment back frame
6	61377 (1320)	1	Flat control release cable
7	61240 (1320)	1	Storage net
8	61041pl (1320)	2	Trendelenburg release pivot pin
9	61255 (1320)	2	Nylon washer
10	61778 (1320)	4	E-clip
11	90234-04 (1320)	4	Nut
12	61868 (1320)	14	Screw
13	61870 (1320)	14	Well nut threaded insert

Back Assembly without Trendelenburg or Egress (P1320B Model Only)

Figure 5-22. Back Assembly without Trendelenburg or Egress (P1320B Model Only)



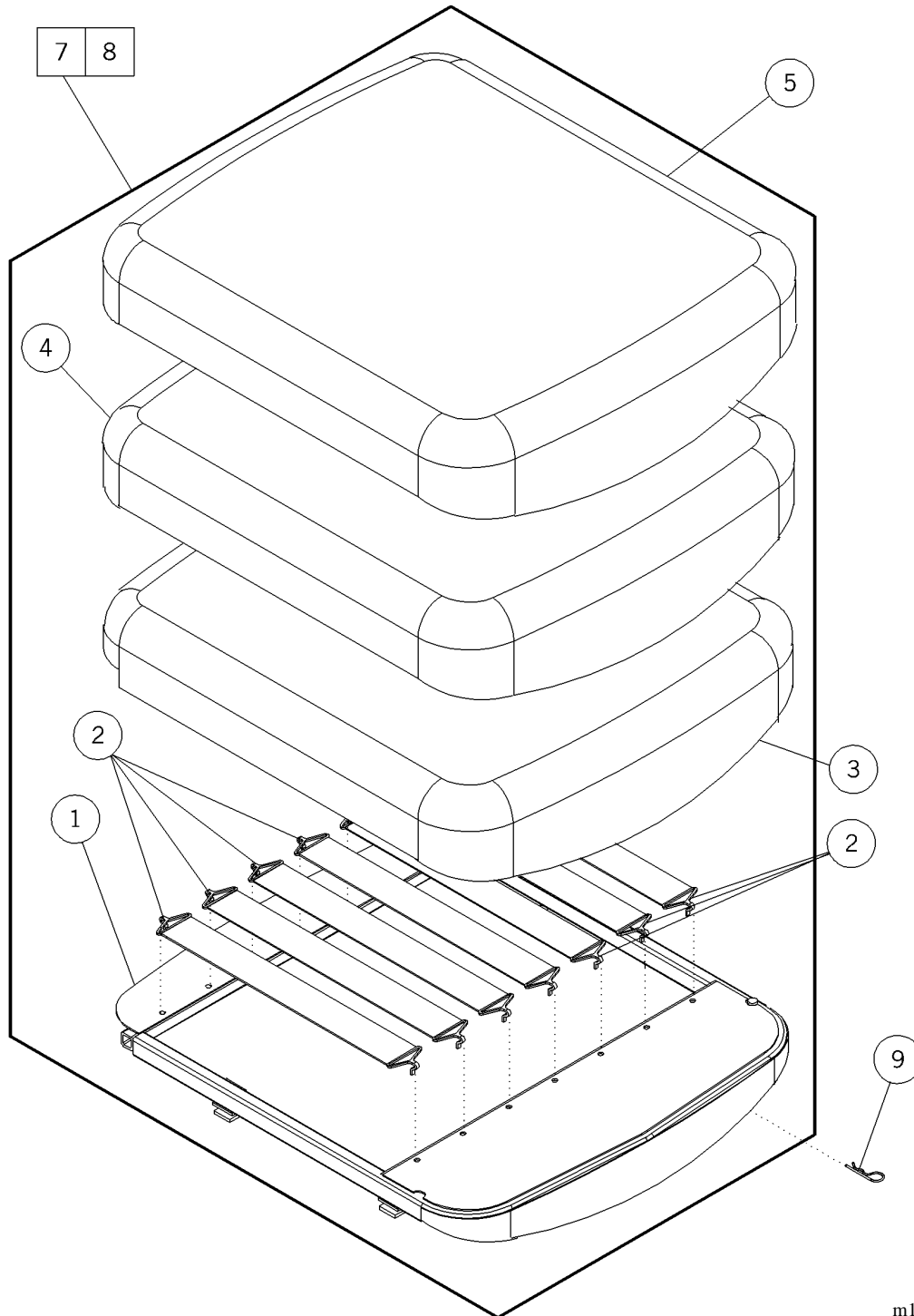
m132a082

**Table 5-21. Back Assembly without Trendelenburg or Egress
(P1320B Model Only)**

Item Number	Part Number	Quantity	Description
1	6370533 (1320)	1	Push bar weldment
2	6061333 (1320)	1	Trendelenburg/flat release handle weldment
3	6554001 (1320)	1	Back shroud
4	6029401 (1320)	4	Cotter pin
5	63703pl (1320)	1	Back frame weldment
6	61377 (1320)	1	Flat control release cable
7	61240 (1320)	1	Storage net
8	61041pl (1320)	2	Trendelenburg release pivot pin
9	61255 (1320)	2	Nylon washer
10	61778 (1320)	4	E-clip
11	90234-04 (1320)	4	Nut
12	61868 (1320)	14	Phillips head screw
13	61870 (1320)	14	Well nut threaded insert
14	6168048 (1320)	2	Plug for egress slot
15	61382 (1320)	2	Pivot pin
16	6554033 (1320)	1	Back shroud (flame-resistant model only)

Seat Cushion Assembly (P1320A Model Only)

Figure 5-23. Seat Cushion Assembly (P1320A Model Only)



m132a015

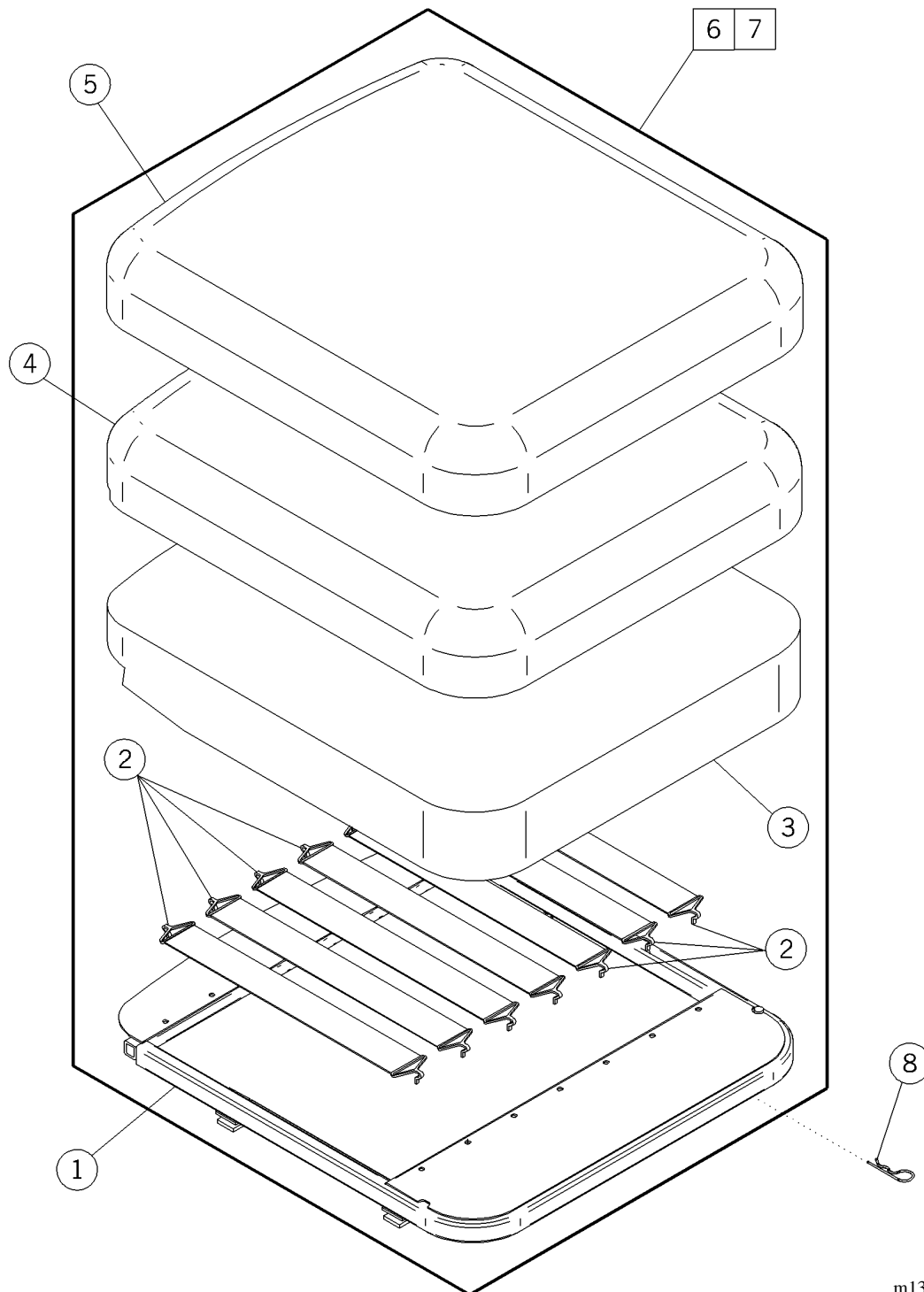
Table 5-22. Seat Cushion Assembly (P1320A Model Only)

Item Number	Part Number	Quantity	Description
1	60977 (1320)	1	Weldment seat frame
2	60623 (1320)	7	Seat strap
3	60978 (1320)	1	Seat foam
4	62287 (1320)	1	Seat cushion fire barrier assembly (flame resistant model only)
5	6228001 (1320) †††	1	Seat cover assembly
6			
7	6177501 (1320) †††	1	Seat assembly
8	6177533 (1320) †††	1	Seat assembly (flame resistant model only)
9	6029403 (1320)	2	Cotter pin

††† Specify upholstery color.

Seat Cushion Assembly (P1320B Model Only)

Figure 5-24. Seat Cushion Assembly (P1320B Model Only)



m132a084

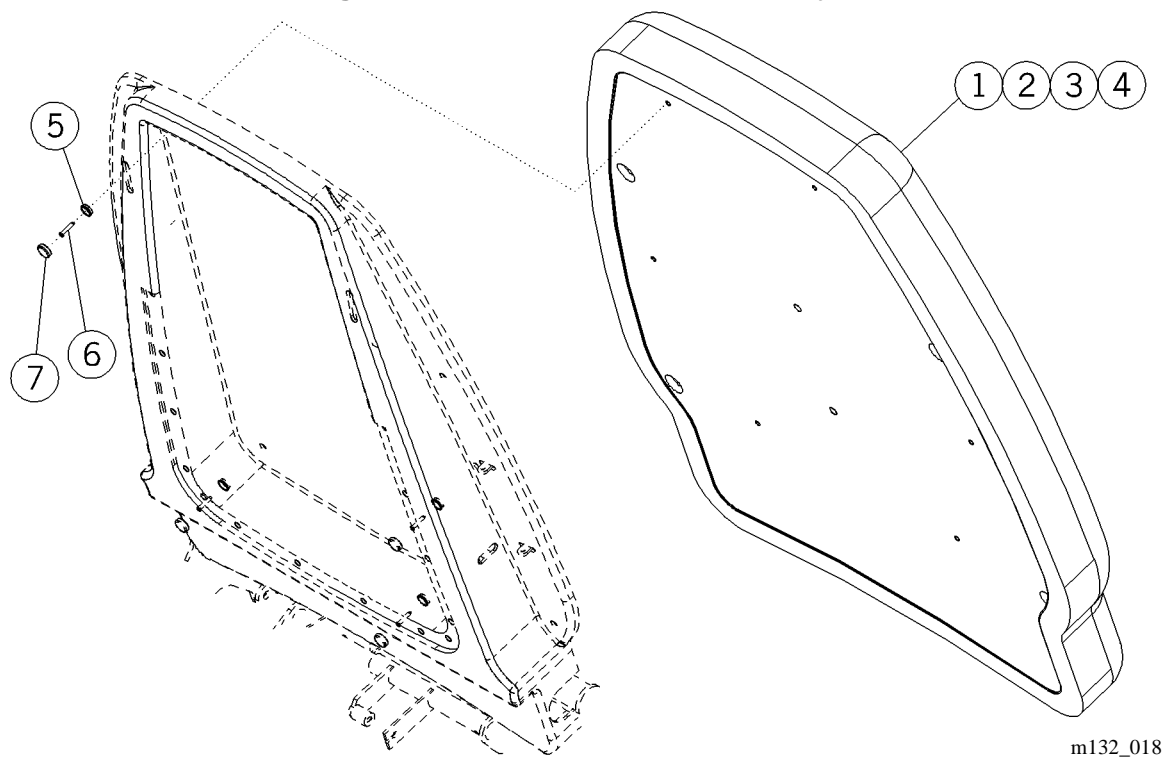
Table 5-23. Seat Cushion Assembly (P1320B Model Only)

Item Number	Part Number	Quantity	Description
1	63524 (1320)	1	Weldment, seat frame
2	60623 (1320)	7	Seat strap
3	63527 (1320)	1	Seat foam (3")
4	63520 (1320)	1	Seat cushion fire barrier assembly (flame resistant model only)
5	6351601 (1320) †††	1	Seat cover assembly
6	6351501 (1320) †††	1	Seat cushion assembly
7	6351533 (1320) †††	1	Seat cushion assembly (flame resistant model only)
8	6029403 (1320)	2	Cotter pin

††† Specify upholstery color.

Back Cushion Assembly

Figure 5-25. Back Cushion Assembly



m132_018

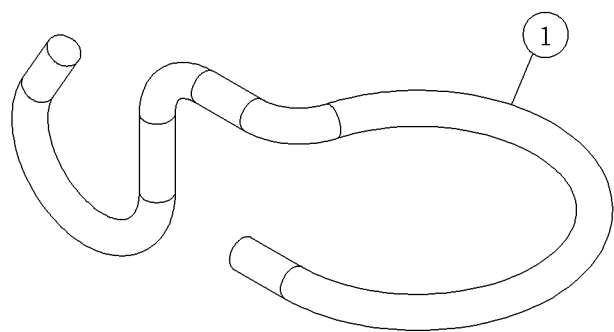
Table 5-24. Back Cushion Assembly

Item Number	Part Number	Quantity	Description
1	6165101F (1320) †††	1	Back cushion assembly (flat)
2	6165101C (1320) †††	1	Back cushion assembly (contoured)
3	6165133F (1320) †††	1	Back cushion assembly (flat, flame resistant model only)
4	6165133C (1320) †††	1	Back cushion assembly (contoured, flame resistant model only)
5	61647 (1320)	6	Snap cap bottom
6	61345 (1320)	6	Screw
7	61646 (1320)	6	Snap cap top

††† Specify upholstery color.

Foley Bag Hook—P1330

Figure 5-26. Foley Bag Hook—P1330



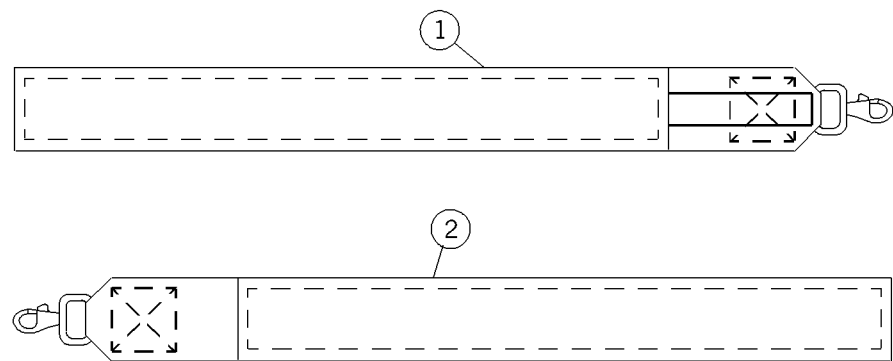
m132_038

Table 5-25. Foley Bag Hook—P1330

Item Number	Part Number	Quantity	Description
1	61271 (1320)	1	Foley bag hook

Waist and Leg Transport Straps—P1331

Figure 5-27. Waist and Leg Transport Straps—P1331



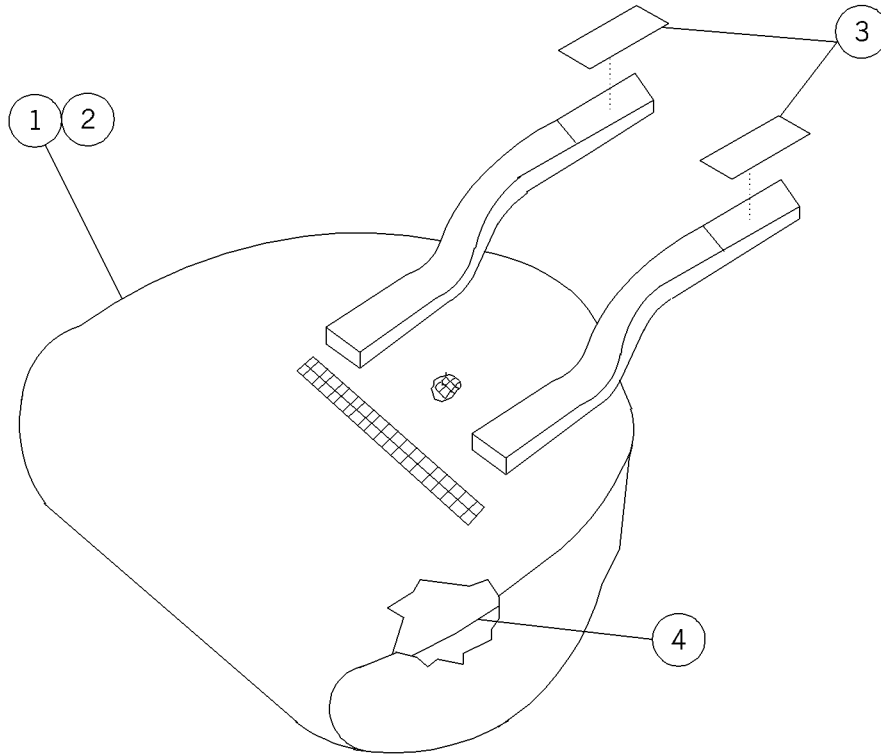
m132_061

Table 5-26. Waist and Leg Transport Straps—P1331

Item Number	Part Number	Quantity	Description
1	6141801 (1320)	2	Waist and leg transport strap
2	6141802 (1320)	2	Waist and leg transport strap

Head Pillow—P1332

Figure 5-28. Head Pillow—P1332



m132a017

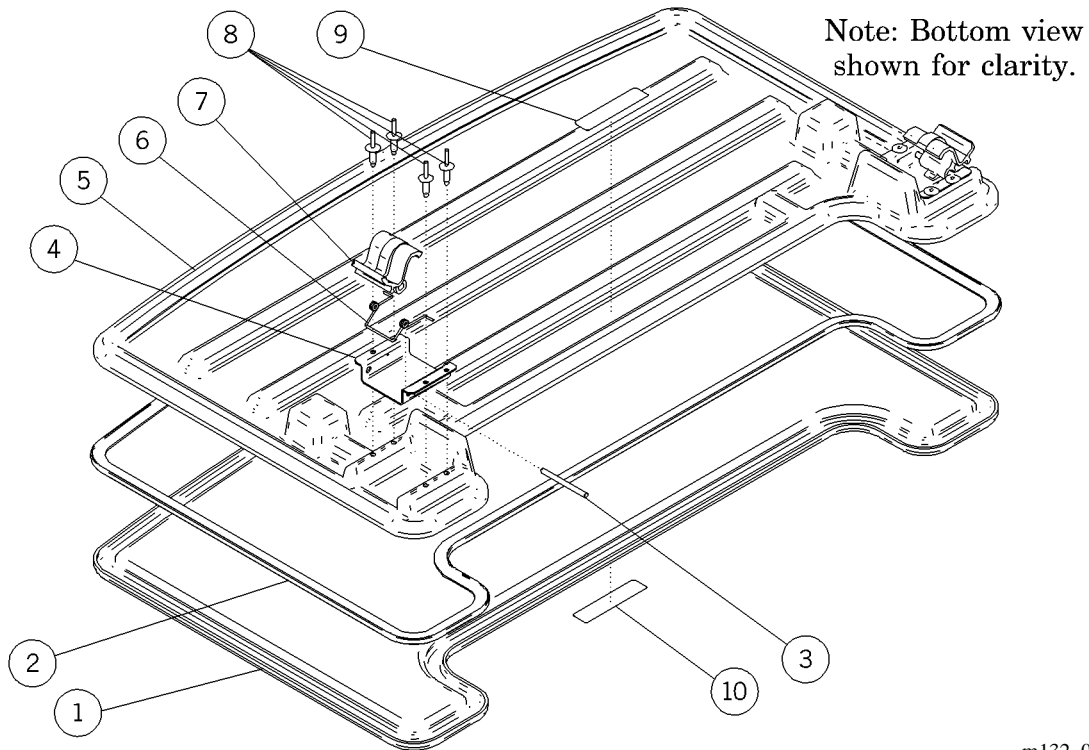
Table 5-27. Head Pillow—P1332

Item Number	Part Number	Quantity	Description
1	6098101 (1320)†††	1	Head pillow cover assembly
2	6098133 (1320)†††	1	Head pillow cover assembly (flame resistant model only)
3	6188101 (1320)	2	Loop
4	62290 (1320)	1	Pillow foam

††† Specify upholstery color.

Patient Tray Assembly—P1333

Figure 5-29. Patient Tray Assembly—P1333



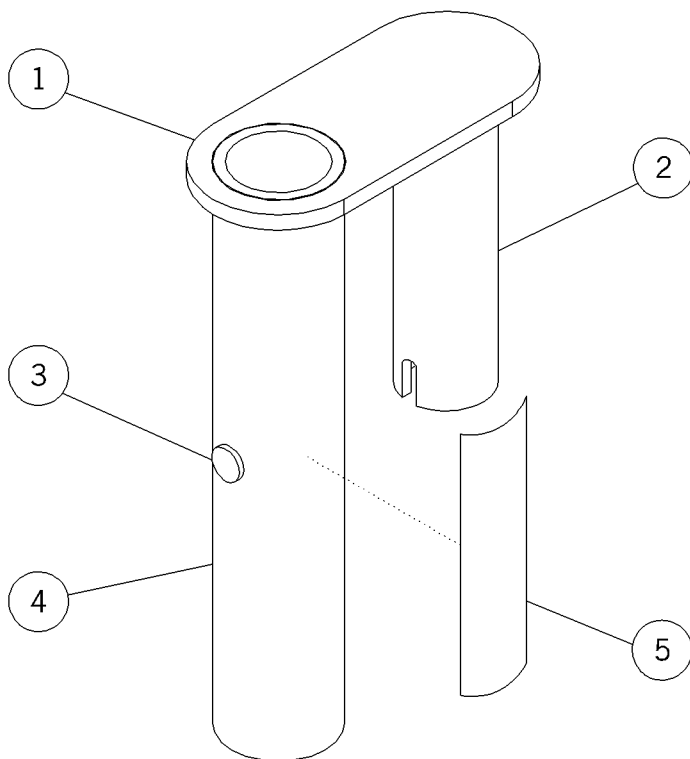
m132_009

Table 5-28. Patient Tray Assembly—P1333

Item Number	Part Number	Quantity	Description
1	6094148 (1320)	1	Tray cover
2	46432 (1320)	1	Patient tray molding
3	61352 (1320)	2	Latch bar
4	60939pl (1320)	2	Release bracket
5	60940 (1320)	1	Tray bottom
6	61871 (1320)	2	Spring
7	6133848 (1320)	2	Patient tray latch
8	46411 (1320)	8	Bulbex blind rivet
9	61860 (1320)	1	Label, utility tray
10	46410 (1320)	1	Label—patient tray weight warning

Egress Adapter—P1335

Figure 5-30. Egress Adapter—P1335



m132_016

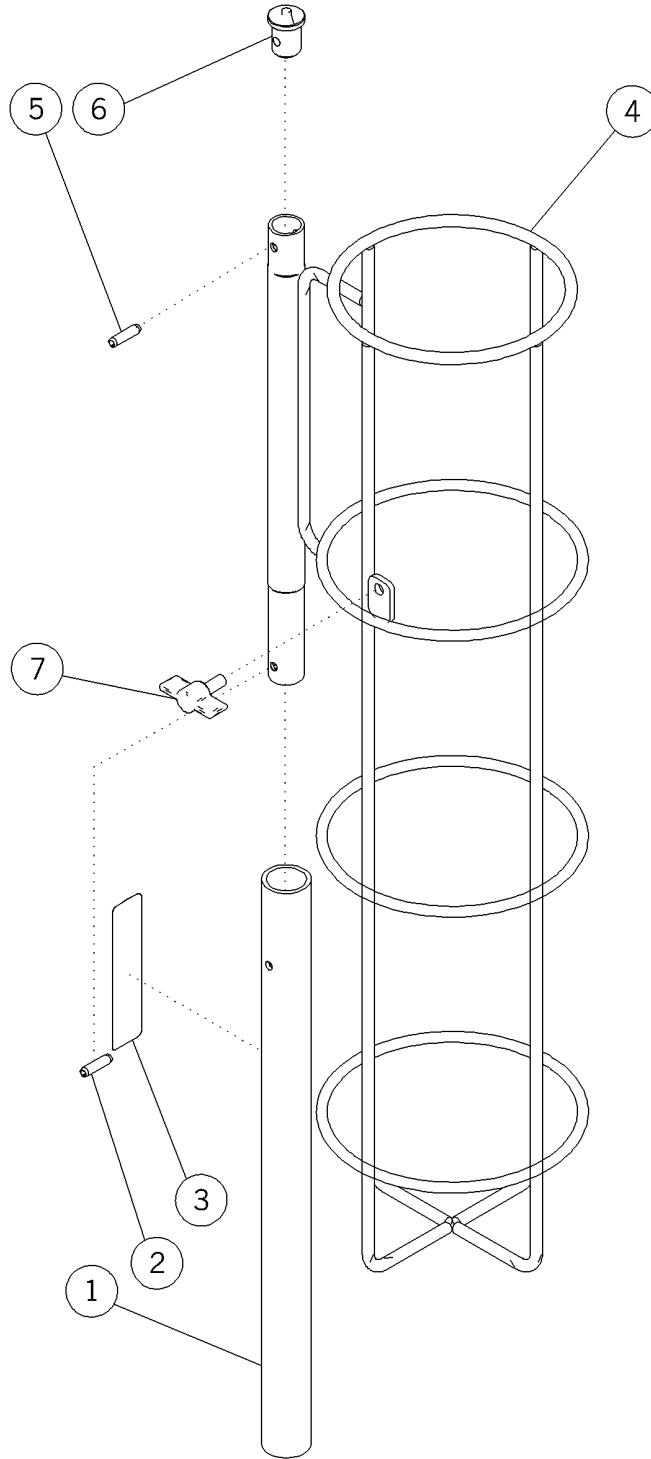
Table 5-29. Egress Adapter—P1335

Item Number	Part Number	Quantity	Description
1	62365 (1320)	1	Egress adapter plate
2	62364 (1320)	1	Egress adapter post
3	61645 (1320)	1	Accessory socket pin
4	62363 (1320)	1	Egress adapter tube
5	61883 (1320)	1	Egress adapter label

5

Oxygen Tank Holder—P1334

Figure 5-31. Oxygen Tank Holder—P1334



m132_011

Table 5-30. Oxygen Tank Holder—P1334

Item Number	Part Number	Quantity	Description
1	60306 (1320)	1	Oxygen tank post
2	142 (1320)	1	Roll pin
3	61872 (1320)	1	Label, oxygen tank holder
4	42703 (1320)	1	Oxygen tank holder
5	9685 (1320)	1	Roll pin
6	36339 (1320)	1	Tube end
7	38135 (1320)	1	Knob assembly

Cables

Table 5-31. Cables

Part Number	Quantity	Description
60609 (1320)	2	Flat control jumper cable
60614 (1320)	1	Flat control/recline cable
61375 (1320)	1	Egress release left cable (P1320A model only)
61376 (1320)	1	Egress release right cable (P1320A model only)
63693 (1320)	1	Right egress cable (P1320B model only)
63692 (1320)	1	Left egress cable (P1320B model only)
61377 (1320)	1	Flat control release cable
61378 (1320)	1	Trendelenburg release cable
61673 (1320)	1	Recline Mechlok® ^a cable
61674 (1320)	1	Recline release cable right
61675 (1320)	1	Recline release cable left
61676 (1320)	2	Arm release cable

a. Mechlok® is a registered trademark of P.L. Porter Company.

Chapter 6

General Procedures

Chapter Contents

Cleaning and Care.	6 - 3
General Cleaning	6 - 3
Steam Cleaning	6 - 3
Hard to Clean Spots	6 - 3
Disinfection.	6 - 3
Lubrication Requirements.	6 - 4
Preventive Maintenance	6 - 5
Preventive Maintenance Schedule	6 - 6
Preventive Maintenance Checklist	6 - 8
Tool and Supply Requirements.	6 - 9

NOTES:

Cleaning and Care



WARNING:

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



CAUTION:

Do not use harsh cleaners, solvents, or detergents. 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 use any steam cleaning device on the Procedural Recliner. Excessive moisture can damage mechanisms 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, you may first need to saturate the spot.

Disinfection

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

Lubrication Requirements



WARNING:

Follow the product manufacturer's instructions. Failure to do so could result in personal 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 following lubricants to the system:

- P/N 8252 M-1 penetrating oil (small bottle—apply to the Oilite® bushings and bearings)
- P/N SA3351 lithium grease (small tube)

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

Preventive Maintenance



WARNING:

Only facility-authorized maintenance personnel should perform preventive maintenance on the Procedural Recliner. Preventive maintenance performed by unauthorized personnel could result in personal injury or equipment damage.

The Procedural Recliner requires an effective maintenance program. We recommend that you perform annual preventive maintenance (PM) and testing for Joint Commission on Accreditation of Healthcare Organizations (JCAHO). PM and testing not only meet JCAHO requirements but will ensure a long, operative life for the Procedural Recliner. PM will minimize downtime due to excessive wear.

The following PM schedule guides the technician through a normal PM procedure on the Procedural Recliner. 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 Procedural Recliner. However, your facility can modify this checklist or design another to fit your needs. Keeping close records and maintaining the Procedural Recliner are two effective ways to reduce downtime and ensure the patient remains comfortable.

Preventive Maintenance Schedule

Table 6-1. Preventive Maintenance Schedule

Function	Procedure
Brake	Press either BRAKE pedal to engage the brake position, checking to see the pedal seats in that position, and the two rear casters do not roll or rotate. Inspect the neutral detent block and casters for wear.
Steering Plus® Steering System	Press the STEER pedal to engage the Steering Plus® Steering System. Check to ensure the fifth wheel lowers onto the floor. Check for any interferences. Ensure the fifth wheel linkage and springs are correctly installed. With the brake set, check for 3/4" to 1 1/4" (1.91 cm to 3.18 cm) clearance between the floor and the fifth wheel.
Neutral	Place the recliner in the neutral position, checking to see that the pedal seats in that position, and all four casters rotate and roll freely. Inspect the neutral detent block for wear.
Caster tires	Check tires for cuts, tread wear, etc.
Independent front locking casters	Press the caster lock on each of the two front casters to engage the brake, checking to see that they do not roll or rotate.
Adjustable arms	Inspect for proper up/down operation without binding and use of excessive force.
Pivot points	Lubricate all pivot points on the recliner.
Trendelenburg	Inspect for proper operation. Inspect the gas spring for physical damage.
Hilow positions	Test the pump action of the recliner. It should not require more than 26 full strokes to achieve maximum height with no load. Test the descent rate of the recliner. It should take from 5 s to 15 s to descend from high to low position.
PUMP pedal	Check for proper hydraulic cylinder extension when the pedal is depressed.
Pedals	Ensure all pedal pads are glued down.
Push bar	Make sure the push bar is securely attached.
Legrest (synchronized)	Check for proper operation when reclining.
Footrest	Inspect the foot guards and cables for proper appearance, and attachment. Inspect the footrest latch for wear.
Egress assist	Inspect for proper operation. Inspect the gas spring for physical damage.

Function	Procedure
Overall appearance	Inspect for general aesthetics of the recliner. Inspect all labels, and replace as necessary. Touch up paint where necessary. Inspect for cleanliness.

Table 6-2. Preventive Maintenance Checklist

[illegible]

Tool and Supply Requirements

The following tools and supplies are required to service the Procedural Recliner:

- 1/8" punch
- 1/4" punch
- 1/4" open end wrench
- 1/2" open end wrench
- 7/16" open end wrench
- 5/8" open end wrench
- 1/2" socket and ratchet
- 1/8" drill bit
- Drill
- Blind rivet installation tool
- Needle nose pliers
- Hammer
- Rubber mallet
- Phillips head screwdriver
- Screwdriver
- Temporary support (4" x 4" x 4" block)
- 5/8" socket
- 6" block
- 7/16" socket
- Ratchet
- 3/16" pin punch
- Soft-jawed pliers
- 3/8" open end wrench

NOTES:

Chapter 7

Accessories

Chapter Contents

Accessories	7 - 3
Foley Bag Hook	7 - 5
Installation	7 - 5
Removal	7 - 6
Waist and Leg Transport Straps	7 - 7
Installation	7 - 7
Removal	7 - 7
Pillow	7 - 9
Installation	7 - 9
Removal	7 - 10
Patient Tray Assembly	7 - 11
Installation	7 - 11
Removal	7 - 12
Oxygen Tank Holder	7 - 13
Installation	7 - 13
Removal	7 - 13
Egress Adapter	7 - 15
Installation	7 - 15
Removal	7 - 15
Infusion Support System (ISS) Transfer Pole	7 - 16
Installation	7 - 16
Removal	7 - 16

NOTES:

Accessories

See table 7-1 on page 7-3 for Procedural Recliner accessories.

Table 7-1. Accessories List

Product Number	Description
P1330A	Foley bag hook
P1331A	Waist and leg transport straps
P1332A	Pillow
P1333A	Patient tray assembly
P1334A	Oxygen tank holder
P1335A	Egress adapter
P158	ISS transfer pole

NOTES:

7.1 Foley Bag Hook

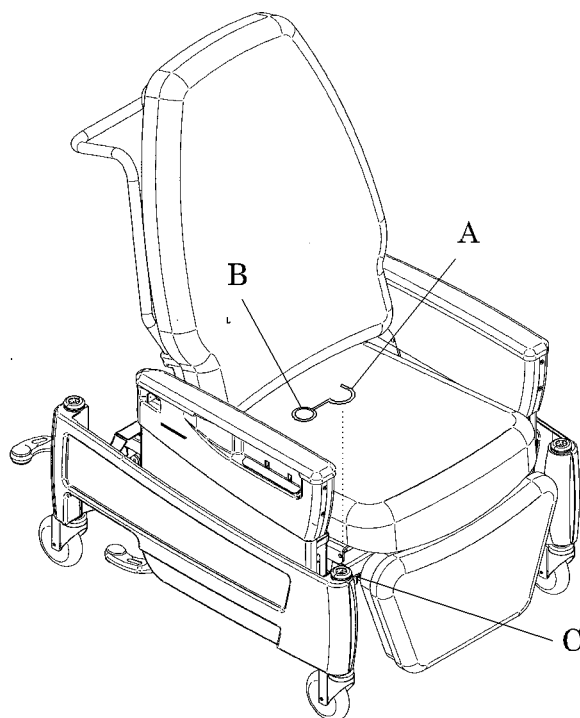
Tools required: None

The Foley bag hook is used for attachment of Foley drainage bags. The Foley bag hook can be used at any of the four IV/Accessory sockets of the Procedural Recliner.

Installation

1. Grasp the Foley bag hook (A) so that the spiral end (B) is going upward (see figure 7-1 on page 7-5).

Figure 7-1. Foley Bag Hook



m132_053

NOTE:

Some force will be necessary to install the Foley bag hook around the IV/Accessory socket.

2. Place the Foley bag hook (A) around the IV/Accessory socket (C).

Removal

Push in on the Foley bag hook's spiral end (B), and remove the Foley bag hook (A) from the IV/accessory socket (C).

7.2 Waist and Leg Transport Straps

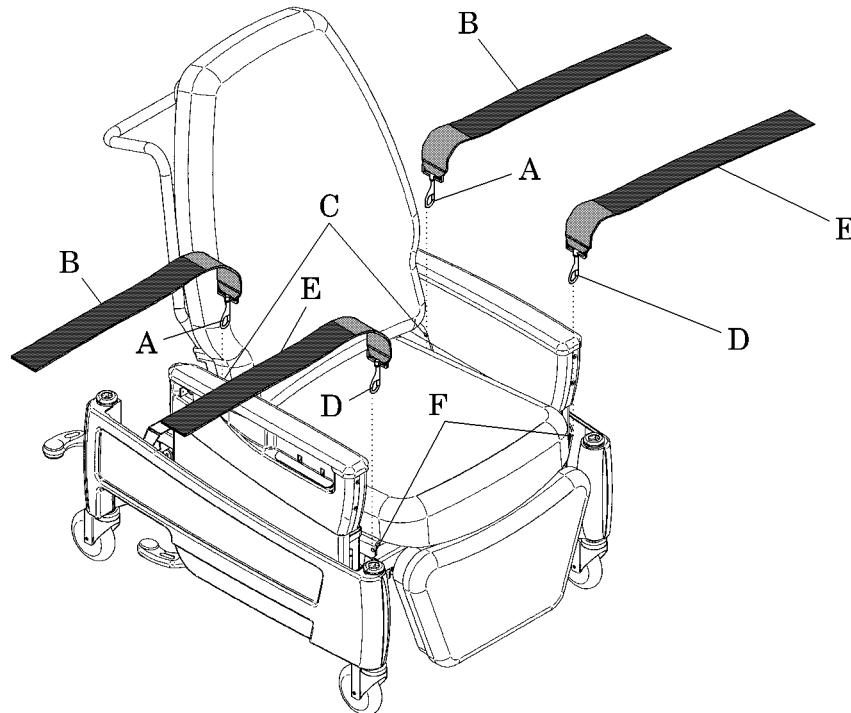
Tools required: None

The Procedural Recliner has two attachment areas for the waist and leg transport straps. They are attached to the recliner by the use of a clasp hook.

Installation

1. Attach the clasp hook (A) of each waist transport strap (B) to the slot in the seat link (C) located at the back corners of the recliner seat frame (see figure 7-2 on page 7-7).

Figure 7-2. Waist and Leg Transport Straps



m132_054

2. Attach the clasp hook (D) of each leg transport strap (E) to the slot in the seat link (F) located under the front of the recliner seat frame (on both sides).

Removal

1. Remove the clasp hook (A) of the waist transport straps (B) from the slot in the seat link (C) located at the back corner of the recliner seat frame.

2. Remove the clasp hook (D) of the leg transport straps (E) from the slot in the seat link (F) located under the front of the recliner seat frame.

7.3 Pillow

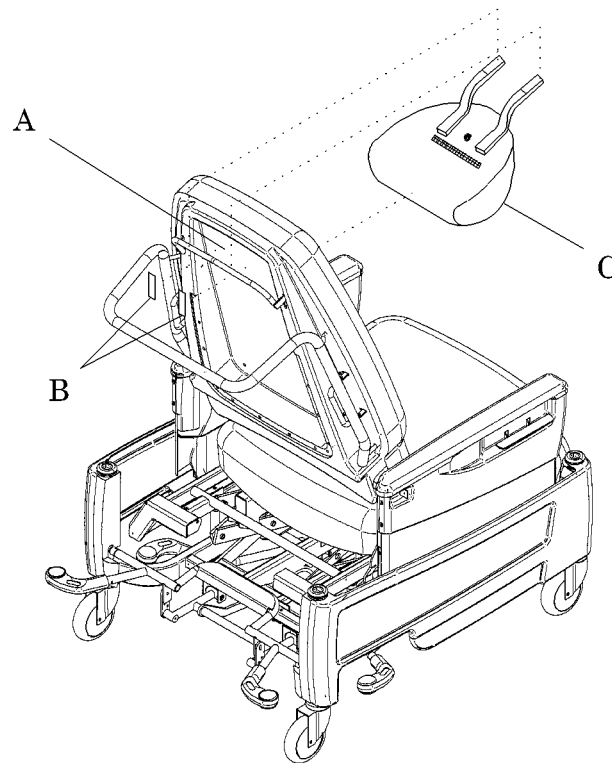
Tools required: Measuring tape
 Clean cloth
 Approved disinfectant

The pillow attaches to the back of the head section with Velcro®¹ strips, which are packaged with the pillow.

Installation

1. Using a clean cloth and approved disinfectant, clean the back of the head section (A) (see figure 7-3 on page 7-9).

Figure 7-3. Pillow



m132_055

2. Allow this to dry thoroughly.
3. Peel the adhesive off of the two Velcro® strips (B).
4. Using the measuring tape, place the two Velcro® strips (B) 8 1/2" (21.59 cm) apart from one another on the back of the head section (A).

1. Velcro® is a registered trademark of Velcro Industries, BV (a Dutch corporation).

5. Place the pillow (C) in the desired position and secure it to the Velcro®¹ strips (B) on the back of the head section (A).

Removal

Grasp the pillow (C) on both sides and carefully remove from the Velcro® strips (B).

1. Velcro® is a registered trademark of Velcro Industries, BV (a Dutch corporation).

7.4 Patient Tray Assembly

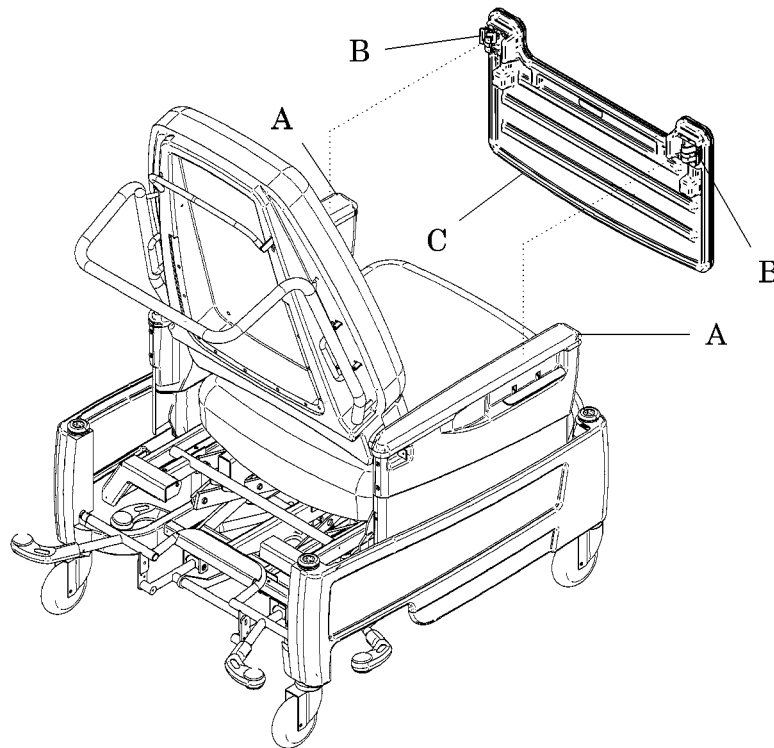
Tools required: None

The patient tray attaches to the adjustable arms.

Installation

1. Adjust the adjustable arms (A) if they are not in a position appropriate for attaching a tray (see figure 7-4 on page 7-11).

Figure 7-4. Patient Tray Assembly



m132_056

2. Squeeze the two latches (B) under the patient tray (C), and place the patient tray (C) on the adjustable arms (A).

NOTE:

The patient tray can either slide onto the adjustable arms from the front or be placed over the top.

3. Release the two latches (B), and make sure the patient tray (C) is secure on the recliner.

4. If the patient tray (C) needs to be moved along the adjustable arms (A), do the following:
 - a. Squeeze the two latches (B), and move the patient tray (C) to the appropriate position.
 - b. Release the two latches (B).

Removal

Squeeze the two latches (B), and remove the patient tray (C).

7.5 Oxygen Tank Holder

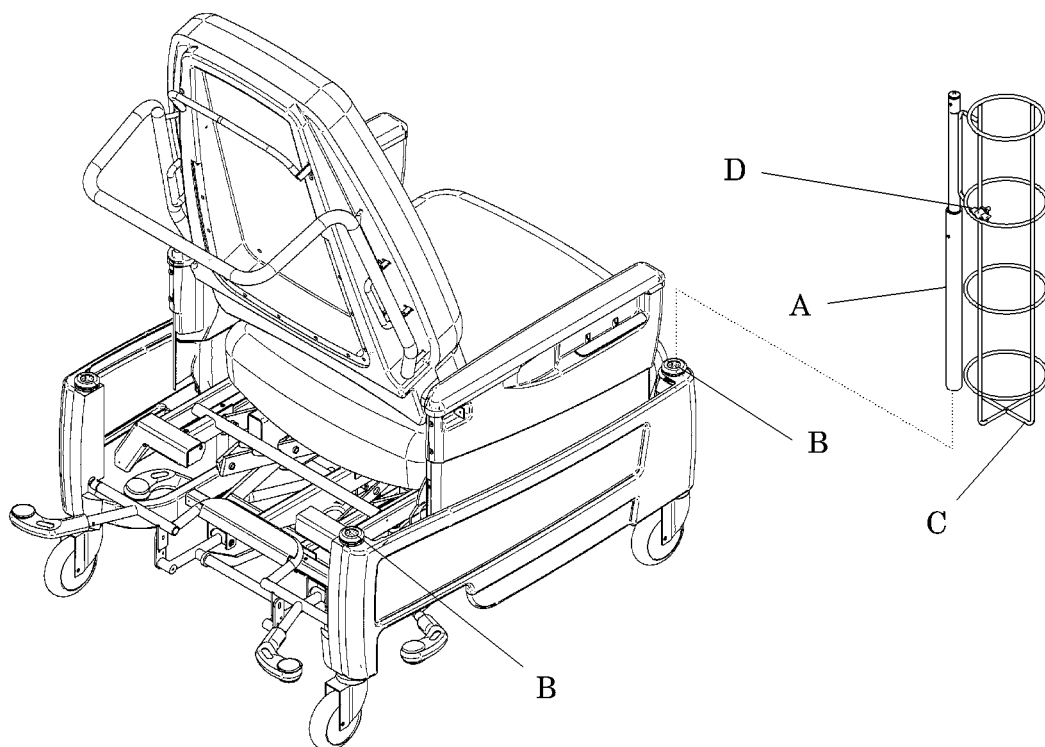
Tools required: None

The oxygen tank holder can be used at any of the four IV/accessory sockets of the Procedural Recliner.

Installation

1. Place the oxygen tank holder's mounting bar (A) into one of the four IV/accessory sockets (B) located at each corner of the recliner (see figure 7-5 on page 7-13).

Figure 7-5. Oxygen Tank Holder



m132_057

2. Place the oxygen tank in the oxygen tank holder (C).
3. Secure the oxygen tank in the oxygen tank holder (C) by turning the thumbscrew knob (D) clockwise until it stops.

Removal

1. Turn the thumbscrew knob (D) counterclockwise to loosen.

2. Remove the oxygen tank.
3. Grasp the oxygen tank mounting bar (A), and remove from the recliner.

7.6 Egress Adapter

Tools required: None

The egress adapter enables the use of the two front IV/Accessory sockets when the recliner is in the egress position.

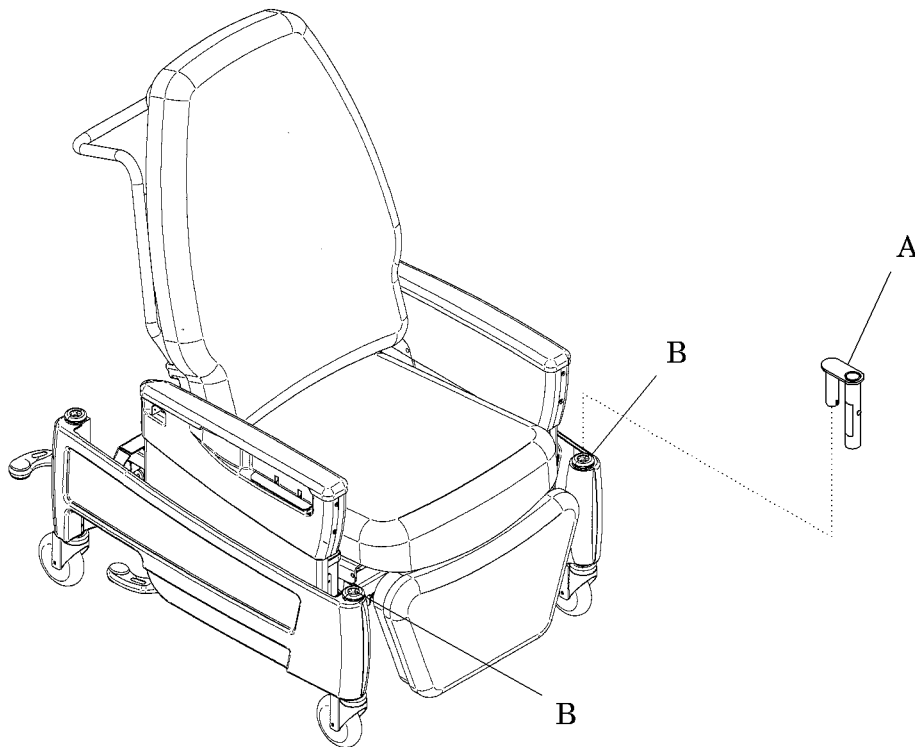
Installation

NOTE:

The longer post remains out in front of the socket.

1. Place the smaller part of the egress adapter (A) into one of the two front IV/Accessory sockets (B) (see figure 7-6 on page 7-15).

Figure 7-6. Egress Adapter



m132_058

2. Make sure the slotted cut-out on the small post of the egress adapter (A) is seated against the pin in the IV/Accessory socket (B).

Removal

Grasp the egress adapter (A) and remove from the recliner.

7.7 Infusion Support System (ISS) Transfer Pole

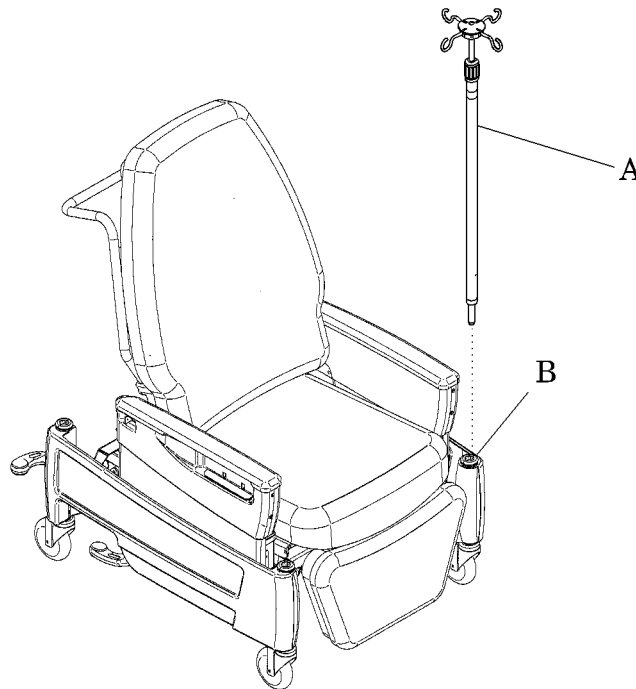
Tools required: None

The ISS transfer pole mounts in any of the four IV/Accessory sockets located at each corner of the Procedural Recliner.

Installation

1. Put the ISS transfer pole (A) into one of the four IV/Accessory sockets (B) located at each corner of the recliner (see figure 7-7 on page 7-16).

Figure 7-7. IV Pole (ISS)



m132_041

2. To extend the upper portion of the ISS transfer pole (A), turn the black collar counterclockwise, and manually raise the upper section of the pole.
3. Lock the pole in place by turning the black collar (C) clockwise until it stops.

Removal

1. To lower the ISS transfer pole (A), grasp the upper section of the pole, turn the black collar counterclockwise, and manually lower the pole.

2. Remove the ISS transfer pole (A) from the IV/accessory socket (B).

NOTES:
