



**MODEL 59-T SERIES**



**MODEL 59 SERIES**

## **Models 59, 59-T EZ Glide<sup>®</sup> Evacuation Chair**

May 2009 GLO  
Pub. No. 234-3298-02



*Read this Manual  
and Retain for  
Future Reference*

## Ferno Technical Support

Customer service and product support are important aspects of each Ferno product. Please have the product serial number available when calling, and include it in all written communications. For technical support questions:

Telephone (Toll-free)	1.800.733.3766 ext. 1010
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## Ferno Customer Relations

For ordering assistance or general information:

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## Disclaimer

This manual contains general instructions for the use, operation and care of this product. The instructions are not all-inclusive. Safe and proper use of this product is solely at the discretion of the user. Safety information is included as a service to the user. All other safety measures taken by the user should be within and under consideration of applicable regulations. It is recommended that training on the proper use of this product be provided before using this product in an actual situation.

Retain this manual for future reference. Include it with the product in the event of transfer to new users. Additional free copies are available upon request from Customer Relations.



Serial Number \_\_\_\_\_

Location: Rear of Seat Panel Frame




**USERS' MANUAL  
AND TRAINING CD-ROMS**

To request additional free users' manuals or training CD-ROMs, contact Ferno Customer Relations, your Ferno distributor, or visit [www.ferno.com](http://www.ferno.com).

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# 1 - SAFETY INFORMATION

## 1.1 Warning

Warning notices indicate a potentially hazardous situation which, if not avoided, could result in injury or death.

**WARNING**

**Untrained operators can cause injury or be injured. Permit only trained personnel to operate the chair.**

**Improper use of the chair can cause injury. Use the chair only for the purpose described in this manual.**

**Attaching one-piece restraints improperly can allow seat and back panels to dislodge, resulting in injury. Restraints must capture panels AND chair frame.**

**Using the chair with the track unlocked can cause injury. Verify that the track is locked before transporting the patient.**

**Lubricating the track system can result in injury to the patient and/or operators. Never lubricate the track or belts.**

**Improper operation can cause injury. Operate the chair only as described in this manual.**

**An unattended patient can be injured. Stay with the patient at all times.**

**An unrestrained patient can fall off the chair and be injured. Use restraints to secure the patient on the chair.**

**Helpers can cause injury or be injured. Maintain control of the chair, operate the controls, and direct all helpers.**

**Improper maintenance can cause injury. Maintain the chair only as described in this manual.**

**Attaching improper items to the chair can cause injury. Use only Ferno-approved items on the chair.**

**Improper parts and service can cause injury. Use only Ferno parts and Ferno-approved service on the chair.**

**Modifying the chair can cause injury and damage. Use the chair only as designed by Ferno.**

## 1.2 Important

Important notices emphasize important usage or maintenance information.

Important

## 1.3 Bloodborne Disease Notice

To reduce the risk of exposure to bloodborne diseases such as HIV-1 and hepatitis when using the chair, follow the disinfecting and cleaning instructions in this manual.

## 1.4 Symbol Glossary

The symbols defined below are used on the chair and in this users' manual. Ferno uses symbols recognized by the International Standards Organization (ISO), American National Standards Institute (ANSI) and the emergency medical services industry.



General Warning of Potential Injury



Load Limit



Read the Users' Manual



Chair Operation Requires Two Trained Operators



Unlocked



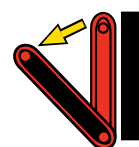
Locked



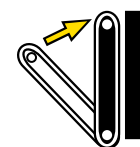
Do Not Lubricate



Lubricate



Open Track System



Close Track System



Product meets European Union Standards

## 1.5 Safety and Instruction Labels

Safety and instruction labels place important information from the users' manual on the chair.


Read and follow label instructions. Replace worn or damaged labels immediately. New labels are available from EMSAR (page 32), Ferno, or your Ferno distributor (page 2). The labels illustrated on pages 6 and 7 are affixed to the chair.

1.5 Safety and Instruction Labels (continued)

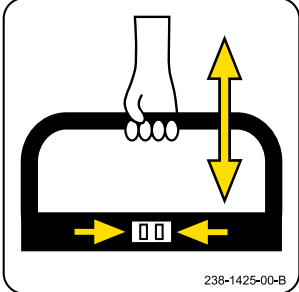
**MODEL 59-T EVACUATION CHAIR LABELS**

**Model 59-T EZ Glide Evacuation Chair**

- Minimum of two trained operators required
- Use only as described in users' manual
- Free users' manuals: 1-800-733-3766 or [www.ferno.com](http://www.ferno.com)



Label A  
Basic Safety Guidelines and Load Limit




Label B  
Instruction for Adjusting Lift Bar Height

**Pull then Fold/Unfold Chair**

238-1425-00-C

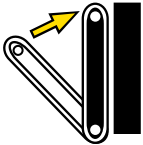
Label C - Instruction for Folding and Unfolding Chair



Label D  
Safety Instruction:  
Do NOT Lubricate  
Track System


Label F  
Instruction for  
Closing Track

**Push to Close**



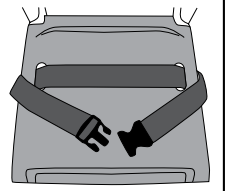
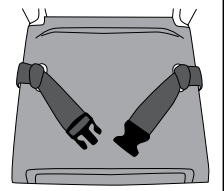
238-1425-00-F

**Pull to Open**



238-1425-00-E

Label E - Instruction for Opening Track

<p><b>⚠ WARNING</b></p> <p>Attaching restraints improperly can allow seat and back panels to dislodge, resulting in injury. Restraints must capture panel AND chair frame as shown.</p> <p style="font-size: x-small;">Free users' manuals: 1.800.733.3766 or <a href="http://www.ferno.com">www.ferno.com</a></p>	<p><b>One-Piece Restraint</b></p> 	<p><b>Two-Piece Restraint</b></p> 
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238-1440-00


Label 234-1440-00 Safety Instruction:  
How to Attach One- and Two-Piece Restraints

### 1.5 Safety and Instruction Labels (continued)

**MODEL 59 EVACUATION CHAIR LABELS**

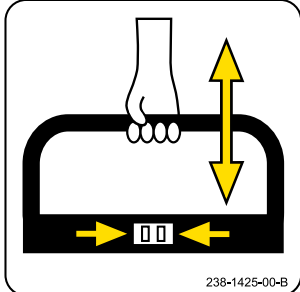
**Model 59 EZ Glide Evacuation Chair**

- Minimum of two trained operators required
- Use only as described in users' manual
- Free users' manuals: 1-800-733-3766 or [www.ferno.com](http://www.ferno.com)



238-1425-00-J

Label J  
Basic Safety Guidelines and Load Limit



238-1425-00-B

Label B  
Instruction for Adjusting Lift Bar Height

**Pull then Fold/Unfold Chair**

238-1425-00-C

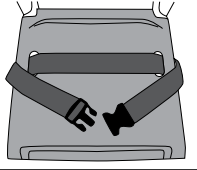
Label C - Instruction for Folding and Unfolding Chair

**WARNING**

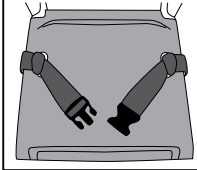
Attaching restraints improperly can allow seat and back panels to dislodge, resulting in injury. Restraints must capture panel AND chair frame as shown.

Free users' manuals: 1.800.733.3766 or [www.ferno.com](http://www.ferno.com)

One-Piece Restraint



Two-Piece Restraint



Label 234-1440-00  
Safety Instruction: How to Attach One- and Two-Piece Restraints

238-1440-00

## 2 - OPERATOR SKILLS AND TRAINING

### 2.1 Skills

Operators using the chair need:

- a working knowledge of emergency patient-handling procedures.
- the ability to assist the patient.

### 2.2 Training

Operator trainees need to:

- read and understand this manual.
- be trained on the use of the chair.
- practice with the chair before using it with a patient.
- record their training information. A sample training record sheet is provided on page 34.

**WARNING**

**Untrained operators can cause injury or be injured. Permit only trained personnel to operate the chair.**



### 3 - ABOUT THE CHAIR

#### 3.1 Chair Description

The Model 59-T and Model 59 EZ Glide® Evacuation Chairs (referred to as the chair in this manual) are emergency patient-handling devices designed to transport a seated patient up and down stairs and over flat surfaces.

The chair is for professional use by a minimum of two trained operators. A third person to “spot” may be required by local protocols, and additional help may be required when working with heavy patients.

The Model 59-T is designed with belted tracks that enable operators to “glide” the chair down stairs instead of carrying it. The Model 59 is untracked and is carried down stairs.

**CHAIR FEATURES:**

- Belted track system for “gliding” chair down stairs (Model 59-T only)
- Choice of molded ABS seat and back panels or soft vinyl seating
- Choice of color
- 5-position extending lift bar at rear of chair
- 5-position telescoping front lift handles
- 6" rear locking wheels
- 4" front swivel wheels
- Folding footrest
- Ankle restraint
- Multiple patient restraint options

**OPTIONAL ACCESSORIES:**

- Rear lift handles, locking or non-locking
- IV bag holder
- O<sub>2</sub> bottle holder
- Headrest (head pad with strap)
- Kwik Klip™ Restraint System
- Secure Mount (with spring release) for storing chair in ambulance or station
- Bracket (with hooks) for storing chair in station

 **WARNING**

**Improper use of the chair can cause injury. Use the chair only for the purpose described in this manual.**

#### 3.2 General Specifications

<b>Height</b>	
Maximum	63.5 in/161 cm
Minimum	37.5 in/95 cm
<b>Width</b>	
Overall	20.313 in/51.6 cm
Seat	16.5 in /42cm
<b>Depth (front to back, Model 59-T)</b>	
Tracks Closed, Handles Retracted	28 in/73 cm
Tracks Open, Handles Extended	51 in/130 cm
<b>Depth (front to back, Model 59)</b>	
Handles Retracted	27 in/69 cm
Handles Extended	40 in/102 cm
<b>Folded (Model 59-T)</b>	
	37.5 in x 20.313 in x 8 in 95 cm x 51.6 cm x 20 cm
<b>Folded (Model 59)</b>	
	37.5 in x 20.313 in x 7 in 95 cm x 51.6 cm x 18 cm
<b>Weight*</b>	
Model 59-T	33 lb/15 kg
Model 59	26 lb/12 kg
<b>Load Limit</b>	
	500 lb/227 kg

\* without restraints or accessories

Some specifications are rounded to the nearest whole number. Metric conversions are calculated before rounding the Imperial measurements. For more information, contact Ferno Customer Relations (page 2).

Ferno reserves the right to change specifications without notice.



**LOAD LIMIT**

Inspect the chair if the load limit has been exceeded (see *Inspecting the Chair*, page 24).



### 3.3 Components - Model 59-T and Model 59

Components of both chair models are the same except for those parts marked "59-T Only."

**Model 59-T**

**Model 59**



**RESTRAINT OPTIONS**



**USERS' MANUAL**



To request additional free users' manuals, contact Ferno Customer Relations (page 2).

## 4 - CHAIR SETUP

### 4.1 Restraint Configurations for Chair with ABS Panels

Follow local protocols when choosing a configuration. Two possible configurations are described below.

#### HORIZONTAL CONFIGURATION

Use one restraint for the chest and one restraint for the lap (Figure 1).

1. Attach the chest straps through matching horizontal or vertical slots in the backrest panel.
2. Attach the lap straps through the seat panel slots.

#### CRISS-CROSS CONFIGURATION

Use two restraints for the torso. Ferno recommends using a third restraint for the lap (Figure 2).

1. Attach one strap of a restraint through a vertical slot on the backrest panel of the chair.
2. Attach the other strap of the restraint through the seat panel slot on the opposite side of the chair.
3. Repeat with the second restraint, attaching its straps to opposite sides of the chair.
4. Attach the lap restraint through the seat-panel slots.



Figure 1 - Horizontal Restraint Configuration



Figure 2 - Criss-Cross Restraint Configuration with Lap Belt

### WARNING

Attaching one-piece restraints improperly can allow seat and back panels to dislodge, resulting in injury. Restraints must capture panels AND chair frame.

### 4.2 Using One-Piece Restraints

Ferno recommends using two-piece restraints with the backrest and seat panels, but if you choose to use one-piece restraints, they must capture **both** the panel and frame, as follows:

1. Work from the patient side of the panel and feed the ends of the restraint through the slots on opposite sides of the panel.
2. Wrap the restraint around the aluminum chair frame, capturing the panel **and** the frame (Figure 3 Top).
3. Buckle the restraint (Figure 3 Inset) and adjust the length.



Figure 3 - Top: Correctly Wrapped Restraint  
Inset: Restraint Fastened

### 4.3 Ankle Restraint

Attach the two-piece ankle restraint to the front legs of the chair. To attach the restraint:

1. Unbuckle the restraint to separate the straps.
2. Wrap a strap around one front leg of the chair and thread the buckle through the loop (Figure 4).
3. Pull the strap until the looped end is tight around the chair leg (Figure 5).
4. Attach the remaining strap to the other front leg of the chair.
5. Buckle the restraint and adjust the length (Figure 6).



Figure 4 - Threading Buckle Through Loop

### 4.4 Attaching Restraints to Chair With Soft Vinyl Seating

With soft vinyl seating, use the criss-cross restraint configuration plus a lap restraint (Figure 2, page 10). To attach the restraints:

1. Unbuckle a restraint to separate the straps.
2. Attach the strap with the female buckle piece to the left or right side of the backrest frame (Figure 7). Follow instructions in the restraint users' manual for attaching a two-piece restraint.
3. Attach the strap with the male buckle piece to the exposed area of the seat frame on the opposite side of the chair.
4. Repeat steps 1-3 to attach the second torso restraint.
5. Attach a lap restraint alongside the restraints already attached to the seat frame.
6. Fasten and adjust the restraints.



Figure 5 - Tightening Strap



Figure 6 - Ankle Restraint Attached



Figure 7 - Torso Restraints on Chair with Soft Vinyl Seating

## 5 - USING THE FEATURES

### 5.1 Chair Lock Bar

The red lock bar below the front edge of the seat disengages the lock for folding and unfolding the chair. Before seating a patient, verify that the chair is completely unfolded and the lock is engaged.

#### FOLDING THE CHAIR

1. Buckle the restraints and adjust them to prevent interference when folding the chair.
2. Roll the chair backward a foot or two to reverse the swivel wheels (Figure 8).
3. Stand at the side of the chair and grasp the chair backrest with one hand and the lock bar with the other hand (Figure 9).

4. Pull the lock bar forward, **then** begin folding the seat toward the backrest.

As you fold the seat, tilt the chair forward a little (Figure 10) to keep the front wheels turned outward so they will not hold the frame away from the seat and prevent the lock from engaging.

5. Press the seat against the backrest until the lock engages (Figure 11).
6. Verify the lock is engaged by pulling the seat away from the backrest without pulling the lock bar. The seat will not move if the lock is engaged.

#### UNFOLDING THE CHAIR

1. Stand beside the chair and grasp the backrest with one hand and the lock bar with the other hand.
2. Pull the lock bar forward, then pull the seat away from the backrest until it is fully unfolded and the lock engages.
3. Verify that the lock has engaged by holding the backrest in place while pulling up on the chair frame at the front of the seat without pulling the lock bar. The chair will not fold if the lock is engaged.

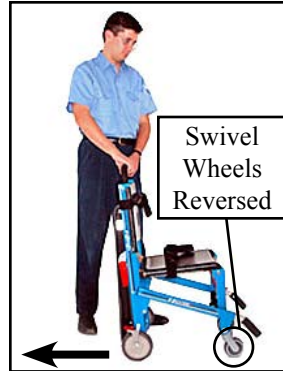


Figure 8 - Aligning the Wheels



Figure 9 - Disengaging the Lock



Figure 10 - Folding the Chair



Figure 11 - Engaging the Lock

### Important

The chair lock must be disengaged **before** beginning to fold or unfold the chair. Pull the lock bar forward, **then** begin to fold or unfold the chair.



## 5.2 Track System - Model 59-T Only

The Model 59-T track system enables operators to glide the chair down stairs instead of lifting and carrying it.

### GUIDELINES FOR USING THE TRACK SYSTEM

- Using the chair on stairs requires a minimum of two trained operators. Ferno recommends using a third person as a “spotter” (see *Gliding the Chair Down Stairs*, page 18).
- Verify that the track system is fully opened and locked into place before using it.
- Never lubricate track belts. Lubricated track belts can perform unpredictably, resulting in injury to the patient and/or operators.
- Moisture, water, snow, ice, or debris on or between the track and belts can cause irregular track-belt performance that results in sudden changes in the weight operators must support. Make sure the track and track belts are clean and dry before using the chair on stairs.
- Water, snow, ice, or debris on the stairs can cause poor footing for operators. To avoid possible injury, clear the stairs or select an alternate route.

### OPENING THE TRACK

1. Grasp the track-release bar located near the top of the track (Figure 12) and firmly pull it back until the track locks into the fully extended position.
2. Verify that the lock is engaged by trying to push the track closed. If the lock is fully engaged the track will not move.



### CLOSING THE TRACK

With your hand, push down on the red track-closing handle (Figure 13) until the track closes completely.

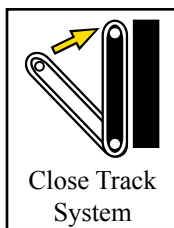


Figure 12 - Opening the Track



Figure 13 - Closing the Track

### WARNING

Using the chair with the track unlocked can cause injury. Verify that the track is locked before transporting the patient.

### WARNING

Lubricating the track system can result in injury to patient and/or operators. Never lubricate the track or belts.

### 5.3 Extending Lift Bar

Grasp the lift bar to move and guide the chair as you glide it down stairs, carry it up stairs or over obstacles, and roll it.

The lift bar adjusts to five locked positions (Figure 14, Left). Adjust the height according to operator preference and the task or situation at hand.

#### EXTENDING AND RETRACTING THE LIFT BAR

1. With one hand, squeeze the lift-bar release tabs together and with the other hand grasp the lift bar and raise or lower it (Figure 14, Inset).
2. Verify that the lift bar is locked by trying to raise or lower it without squeezing the release tabs. When the lock is engaged the lift bar will not move.

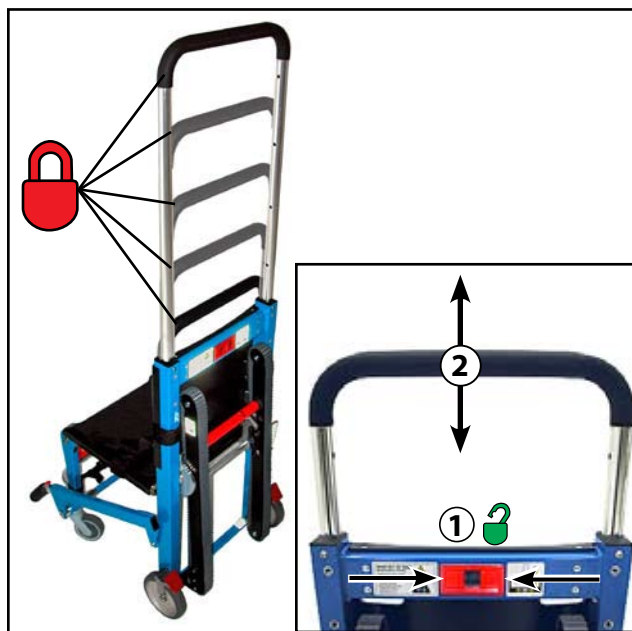


Figure 14 - Left: Lift-Bar Positions  
Inset: Adjusting Lift-Bar Height

### 5.4 Telescoping Lift Handles

The telescoping lift handles can be adjusted to five locked lifting positions (Figure 15, Right). Adjust the handles according to operator preference and the task at hand.

#### EXTENDING AND RETRACTING THE LIFT HANDLES

1. Press the release button (Figure 15, Inset) and push or pull the handle until it is near the stop point desired.
2. Release the button and slide the handle a little forward or backward until it locks into the stop point.
3. Verify that both handles are locked by trying to push or pull them without pressing the release buttons. When the locks are engaged, the handles will not move.

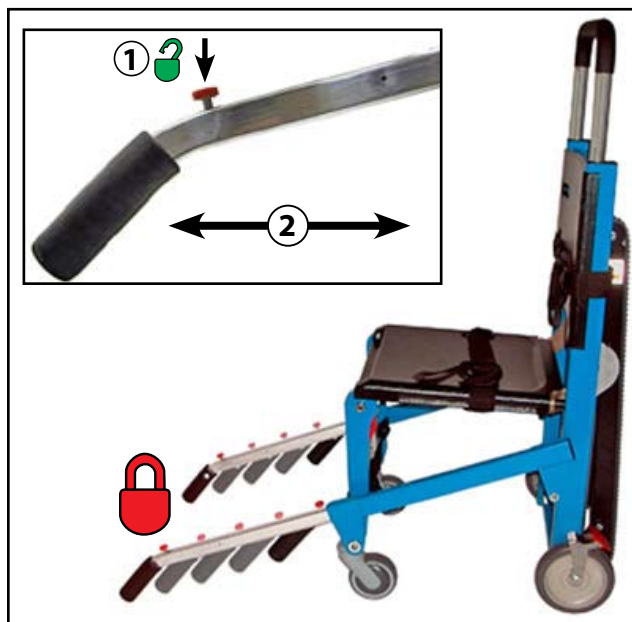


Figure 15 - Right: Lift-Handle Positions  
Inset: Extending/Retracting a Lift Handle

## 5.5 Footrest

The footrest has two positions: raised, for storage, (Figure 16) and lowered for use (Figure 17).

**To lower the footrest**, swing it down until it stops.

**To raise the footrest**, swing it up until it stops.

### GUIDELINES FOR USING THE FOOTREST

Use the footrest properly to ensure that it does not interfere with patient's or operators' feet.

- Before transferring the patient onto the chair, make sure the footrest is raised in the storage position.
- When preparing to transfer the patient off the chair, unfasten the ankle restraint and raise the footrest into the storage position **before** unfastening the patient's torso and lap restraints. This will prevent the patient from attempting to stand before the footrest has been stored out of the way of his/her feet.
- Keep the footrest raised when it is not in use.

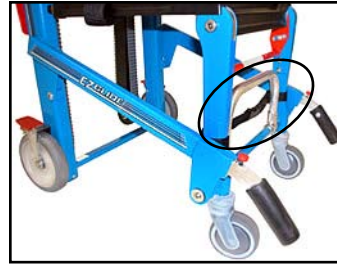


Figure 16 - Footrest Raised for Storage



Figure 17 - Footrest Lowered for Use

### Important

Raise the footrest into the storage position **before** transferring the patient onto or off from the chair.

## 5.6 Wheel Locks

The rear wheels of the chair are fitted with wheel locks to help keep the chair from rolling during patient transfer.

Stay with the chair and maintain control of it at all times. Do not use the wheel locks as a substitute for operator control.

**To engage a wheel lock**, press down on the rear end of the lock pedal (Figure 18).

**To disengage a wheel lock**, press down on the forward end of the lock pedal (Figure 19).



Figure 18 - Wheel Lock Engaged



Figure 19 - Wheel Lock Disengaged



## 6 - USING THE CHAIR

### 6.1 Before Placing the Chair in Service

- Personnel who will work with the chair need to read this manual.
- Set up the chair, following the instructions in *Chair Setup* (pages 10, 11).
- Confirm that the chair operates properly. See *Inspecting the Chair*, page 24.



#### WARNING

**Improper operation can cause injury. Operate the chair only as described in this manual.**



#### WARNING

**An unattended patient can be injured. Stay with the patient at all times.**

### 6.2 General Guidelines for Use

- Medical advice is beyond the parameters of this manual.
- It is the users' responsibility to ensure safe practices for the patient and themselves.
- A minimum of two trained operators is required.
- Follow standard emergency patient-handling procedures when operating the chair.
- **Operators work together and maintain control of the chair at all times.**
- Operators communicate with one another and use coordinated movements to operate the chair.
- Ferno recommends that a third trained person serve as a "spotter" while the chair is being moved up or down stairs.
- Lift only the weight you can safely handle. Use additional help when working with heavy loads (patient and equipment). For placement of help, see *Using Additional Help*, page 22.
- Stay with the patient at all times.
- Always use patient restraints to secure the patient on the chair.



#### WARNING

**An unrestrained patient can fall off the chair and be injured. Use restraints to secure the patient on the chair.**

## 6.3 Transferring the Patient

Always assist the patient onto and off from the chair.

### ASSISTING THE PATIENT ONTO THE CHAIR

1. Unfold the chair and verify that it is locked.
2. Engage the locks on the rear wheels.
3. Make sure the footrest is in the storage position.
4. Assist the patient onto the chair using accepted practices and following local protocols.
5. Fasten and adjust the torso and lap restraints.
6. Lower the footrest and place the patient's feet on it.
7. Fasten and adjust the ankle restraint (Figure 20).

### ASSISTING THE PATIENT OFF FROM THE CHAIR

1. Unfasten the ankle restraint.
2. Raise the footrest to the storage position.
3. Unfasten the torso and lap restraints.
4. Assist the patient off from the chair using accepted practices and following local protocols.

## 6.4 Rolling the Chair

### GENERAL GUIDELINES

- Roll the chair on smooth, flat surfaces whenever possible (Figure 21).
- For patient comfort, pull the chair backward over low obstacles such as door sills.
- Use the extending lift bar and telescoping foot-end handles to lift and carry the Model 59 chair over curbs, obstacles, rough surfaces and rough terrain.
- Use the tracks on the Model 59-T chair to "glide" the chair down over curbs or single steps (Figure 22).

### TO ROLL THE CHAIR

1. **Head-End Operator:** Release the wheel locks.
2. **Head-End Operator:** Adjust the lift bar to a comfortable height and grasp it to push and guide the chair on all four wheels (Figure 21), or tilt the chair back and roll it on its rear wheels.
3. **Foot-End Operator:** Assist the head-end operator as needed and attend the patient.



**Figure 20 - Patient Secured in Chair with Restraints**



**Figure 21 - Rolling the Chair**



**Figure 22 - Gliding the Chair Down a Curb**

## 6.5 Gliding the Chair Down Stairs - Model 59-T Only

### GENERAL GUIDELINES

- Using the chair on stairs requires a minimum of two operators. Use additional help as needed to control the chair (see *Using Additional Help*, page 22).
- Ferno recommends that the two operators face each other when transporting a patient down stairs and that a third trained person “spot” for the foot-end operator. However, the foot-end operator may face forward (with back to patient) if desired. Follow your local protocols for carrying chairs.
- Remove any water, ice, snow, or debris from the stairs before using the chair on them.
- Remove any water, ice, snow, or debris from the track and tread belts before using the chair on stairs.
- Verify that the track is locked in the open position before starting down the stairs with the chair.

### GLIDING THE CHAIR DOWN STAIRS

1. **Head-End Operator:** Roll the chair to the stairs and engage the wheel locks.
2. **Foot-End Operator:** Extend the foot-end lift handles to the desired stop point. Verify that both handles are locked.
3. **Spotter:** Stand below the foot-end operator with a hand on the operator's back to help steady and guide him/her throughout the descent.
4. **Head-End Operator:** Pull the track system toward yourself until the track locks open. Verify that the track is locked.
5. **Head-End Operator:** Raise the lift bar to the desired position and verify that it is locked (Figure 23).
6. **Head-End Operator:** Disengage the wheel locks (Figure 23) and tilt the chair back.
7. **Both Operators:** Working together, guide the chair over the edge of the top step, allowing the track belts to engage the step (Figure 24).

### ⚠ WARNING

Using the chair with the track unlocked can cause injury. Verify that the track is locked before transporting the patient.

### ⚠ WARNING

Lubricating the track system can result in injury to patient and/or operators. Never lubricate the track or belts.



Figure 23 - Preparing Model 59-T for the Descent



Figure 24 - Track Belts Engaging Top Step



8. Move the chair slowly downward until the tracks are resting on the top two or three steps. This establishes the glide angle (Figure 25).
9. To maintain the glide angle as you descend, work together as follows:
  - The **head-end operator** applies slight downward pressure on the extended lift bar.
  - The **foot-end operator** applies slight upward pressure on the foot-end lift handles.
10. **Both Operators:** When the chair reaches the bottom of the steps and the rear wheels are on the floor, the head-end operator tips the chair forward until all four wheels are on the floor and the foot-end operator retracts the lift handles (Figure 26).
11. **Head-End Operator:** Close the tracks and adjust the lift bar to a comfortable height, then roll the chair.

### To Pause During the Descent

To pause during the descent, tilt the chair forward just enough to allow the rear wheels to rest on the step while both operators hold the chair in place (Figure 27).

To continue down the stairs, tilt the chair back to the glide angle and engage the belts on the steps.



Figure 25 - Establishing the Glide Angle



Figure 26 - Preparing to Roll the Chair



Figure 27 - Pausing on the Stairs

## 6.6 Transporting the Patient Down Stairs - Model 59 Only

### GENERAL GUIDELINES

- Carrying the chair down stairs requires a minimum of two operators. Use additional help as needed (see *Using Additional Help*, page 22).
- Ferno recommends that the two operators face each other when transporting a patient down stairs and that a third person “spot” for the foot-end operator. However, the foot-end operator may face forward (with back to patient) if desired. Follow your local protocols for carrying chairs.

### CARRYING THE CHAIR DOWN STAIRS

1. **Head-End Operator:** Roll the chair to the stairs and engage the wheel locks.
2. **Foot-End Operator:** Extend the foot-end lift handles to the desired stop point. Verify that both handles are locked and maintain your grasp.
3. **Spotter:** Stand below the foot-end operator with a hand on the operator’s back to help steady and guide him/her throughout the descent.
4. **Head-End Operator:** Raise the lift bar to the desired position and verify that it is locked.
5. **Head-End Operator:** Disengage the wheel locks and tilt the chair back.
6. **Operators and Spotter:** Operators work together to lift the chair and carry it down the stairs. The spotter keeps a hand on the foot-end operator’s back and provides verbal guidance (Figure 28).

**Note:** To pause during the descent, allow the rear wheels of the chair to rest on a step while both operators hold the chair in place (Figure 29). To continue down the stairs, tilt the chair back and lift and carry it.

7. **Operators:** At the bottom of the stairs, the operators set the chair on the floor and retract the lift handles.
8. **Head-End Operator:** Adjust the lift bar to a comfortable height before rolling the chair.



Figure 28 -Carrying the  
Model 59 Chair Down Stairs



Figure 29 -Pausing on the Stairs - Model 59 Chair



## 6.7 Transporting the Patient Up Stairs Models 59-T and 59

### GENERAL GUIDELINES

- Carrying the chair up stairs requires a minimum of two operators. Use additional help as needed (see *Using Additional Help*, page 22).
- The two operators face each other when transporting a patient up stairs. Ferno recommends that a third person “spot” for the head-end operator. Follow your local protocols for carrying chairs.

### CARRYING THE CHAIR UP STAIRS

1. **Head-End Operator:** Roll the chair to the bottom of the stairs and position it with the patient’s back to the stairs.
2. **Head-End Operator:** Extend the lift bar to the desired position and verify that it is locked.
3. **Spotter:** Stand above the head-end operator with a hand on the operator’s back to help steady and guide him/her throughout the ascent (Figure 30).
4. **Foot-End Operator:** Extend the foot-end lift handles to the desired position and verify that both handles are locked (Figure 30).
5. **Both Operators and Spotter:** Working together, the operators grasp the lift bar and lift handles and carry the chair up the stairs. The spotter keeps a hand on the head-end operator’s back and provides verbal guidance (Figure 31).
6. **Both Operators:** At the top of the stairs, the head-end operator sets the rear wheels of the chair on the floor and rolls the chair backward until the front wheels are securely on the floor.
7. **Foot-end Operator:** Retract the foot-end lift handles.
8. **Head-End Operator:** Adjust the lift bar to a comfortable height before rolling the chair.



Figure 30 - Preparing to Carry Model 59-T (Tracked) Chair Up Stairs

### Important

The EZ Glide track system was designed to assist in descending stairs. It can be used to ascend stairs, but in some circumstances it may be easier to lift and/or carry the chair up stairs.

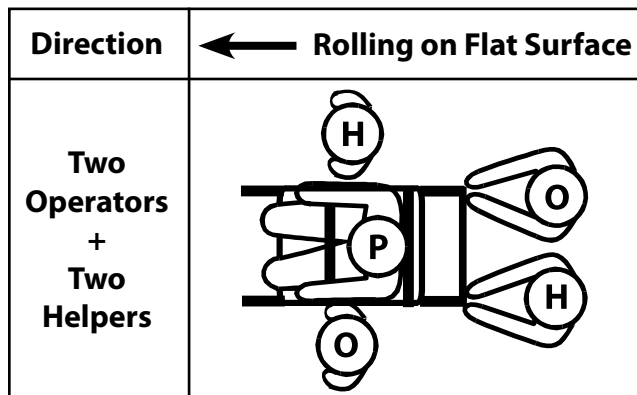


Figure 31 - Carrying Model 59 (Untracked) Chair Up Stairs

### 6.8 Using Additional Help

Operating the chair requires a minimum of two trained operators. Ferno recommends that the operators and helpers at opposite ends of the chair face each other when transporting a patient up or down stairs, and that a third trained person “spot” for the lead operator. However, all applicable local protocols for carrying chairs should be followed.

The trained operators should maintain control of the chair and operate the controls, and the designated lead operator should direct all helpers. The chart below shows suggested placement for operators and helpers.



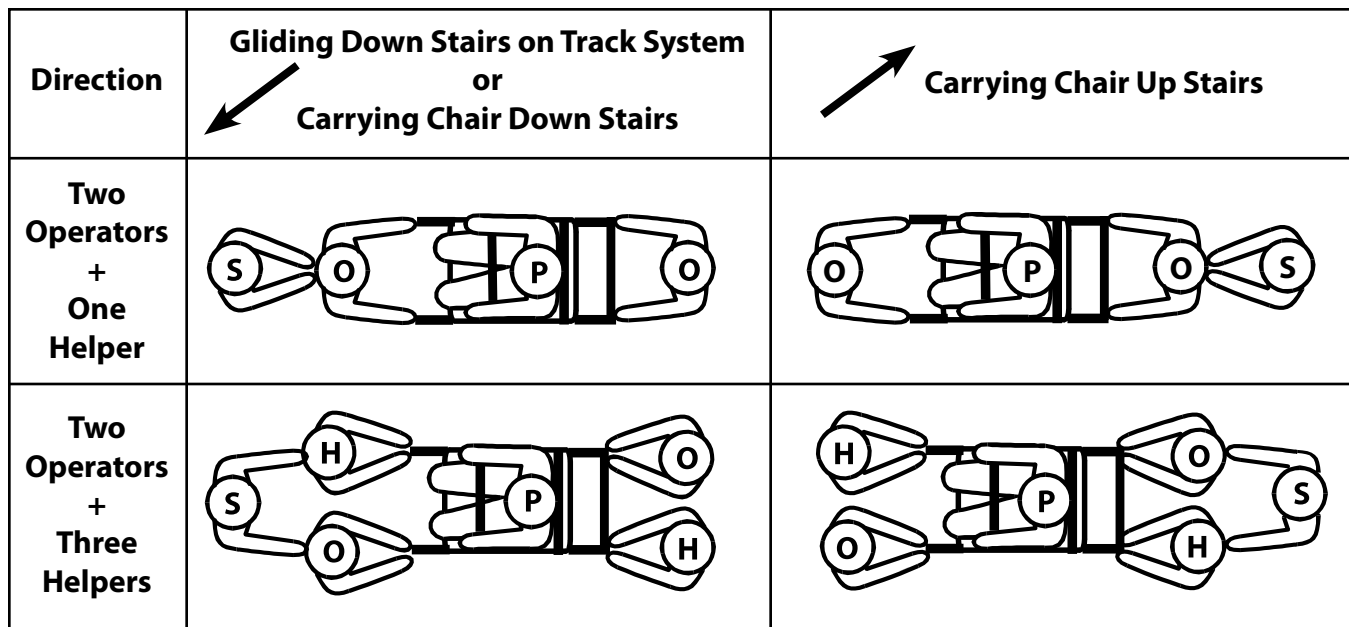
**LOAD LIMIT**

**500 lb**  
**227 kg**

Inspect the chair if the load limit has been exceeded (see *Inspecting the Chair*, page 24).

**⚠ WARNING**

**Helpers can cause injury or be injured. Maintain control of the chair, operate the controls, and direct all helpers.**



Key: O = Operator H = Helper S = Spotter P = Patient



## 7 - MAINTENANCE

### 7.1 Maintenance Schedule

The chair requires regular maintenance. Set up and follow a maintenance schedule. The table at right represents minimum intervals for maintenance.

Keep maintenance records. A sample maintenance record sheet is provided on page 35.

When using maintenance products, follow the manufacturers' directions and read the manufacturers' material safety data sheets. You can purchase a recommended disinfectant from your Ferno distributor or Ferno Customer Relations (page 2).

### 7.2 Disinfecting/Cleaning Restraints

**Ankle Restraint:** Place buckled restraint in a mesh bag and launder in a washing machine using warm water, a disinfectant soap, and gentle agitation. Hang the restraint to dry. Do not put it in a dryer.

**Chest and Lap Restraints:** Disinfect and clean restraints as directed in the restraint users' manual provided. Additional, free users' manuals can be obtained from Ferno Customer Relations (page 2).

### 7.3 Disinfecting/Cleaning Chair

**To disinfect:** Remove restraints and seat and backrest panels or soft vinyl cover. Wipe all surfaces of the chair and panels or cover with disinfectant. Follow the disinfectant manufacturer's directions for application method and contact time.

**To clean:** Wash panels or cover, and all parts of the chair, with warm water and a mild detergent. Rinse with clean water. Dry with a towel or allow to air-dry.

### 7.4 Cleaning Track and Belts

To ensure predictable belt performance, it is important to keep the track and belts free of oil, grease, dirt, and debris.

1. Hold the belts away from the track frame and remove any debris.
2. Clean both sides of the track frame, and both belts, with SD-20 All-Purpose Cleaner and a clean cloth. Follow instructions on the container.
3. Dry track and belts thoroughly.

**Note:** To order SD-20 Cleaner, call Spartan Chemical Company at 1.800.537.8990.

Minimum Maintenance Intervals	Each Use	As Needed	Each Month
Disinfecting Chair (this page)	•		
Cleaning Chair (this page)		•	
Cleaning Track System (this page)		•	
Inspecting Chair (page 24)		•	•
Inspecting Track System (page 24)	•	•	
Lubricating (page 25)		•	

 **WARNING**

**Improper maintenance can cause injury. Maintain the chair only as described in this manual.**

**Important**

Disinfectants and cleaners containing bleach, phenolics, or iodines can cause damage. Use caution when disinfecting and cleaning with products containing these chemicals.

**Important**

Water under high pressure, or steam, can penetrate joints, flush away lubricant, and cause corrosion. Use caution when cleaning moving parts such as joints and hinges.

**Important**

Using abrasive cleaning compounds or applicators on the chair can cause damage. Do not use abrasive materials to clean the chair.

## 7.5 Inspecting the Chair

Have your service's equipment maintenance personnel inspect the chair at regular intervals. Track and track belts should be inspected after each use.

Follow the checklists on this page and work the chair through all its functions as described in this manual.

If inspection shows damage or excessive wear, remove the chair from service until repairs are made. See *Parts and Service*, pages 32 and 33.

### INSPECTION CHECKLIST

#### FOR MODEL 59-T AND MODEL 59 CHAIRS

- Are all components present?
- Is the chair free of excessive wear?
- Are all screws, nuts, bolts, rivets, and roll pins securely in place?
- Do all moving parts operate smoothly and properly?
- Do all locks on the chair operate properly?
- Does the chair roll smoothly?
- Are the restraints properly installed?
- Is restraint webbing in good condition with no cuts or frayed edges?
- Are restraint buckles free of visible damage and do they operate properly?
- Do installed accessories operate properly without interfering with chair operation?

### INSPECTION CHECKLIST

#### FOR TRACK AND BELTS

- Are the track and belts free of lubricant, dirt and debris?
- Is there visible damage to the track or belts?
- Are inner cords of belts visible (indicating the need for replacement)?
- Are the belt-tensioning bolts and nuts tight?
- Do the belts roll properly?
- Do the track and belts perform properly?

### 7.6 Lubricating the Chair - Model 59-T and Model 59

Disinfect and clean the chair before applying lubricant.

There are two identical lubrication points on the chair. They are located where the brass bushing in the chair lock bar slot meets the stainless steel slide in the chair leg (Figure 32).

Lubricate each lubrication point with **one** drop of SAE 30-weight oil, then move the lock bar back and forth a few times to work the oil into the slide. Remove any excess lubricant with SD-20 Cleaner.



**Lubricate**

**Note:** To order SD-20 Cleaner, call Spartan Chemical Company at 1.800.537.8990.

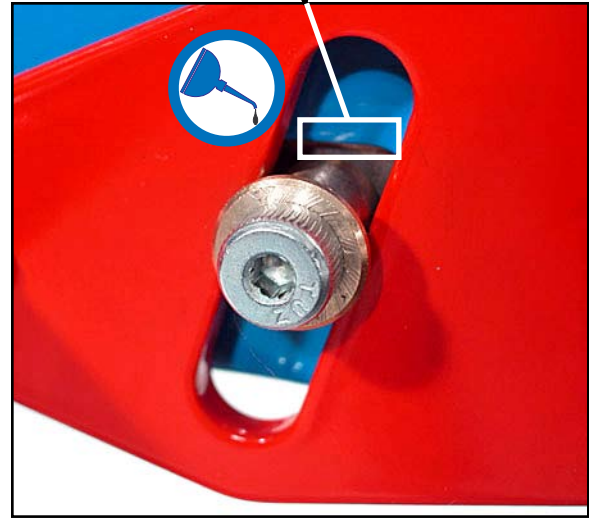
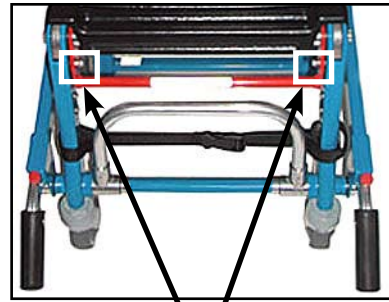


Figure 32 -  
Top: Lubrication Point Locations  
Bottom: Lubrication Point Close-up

#### Important

Lubricating parts that should not be lubricated allows dirt and foreign particles to collect on those parts, resulting in damage. Lubricate **only** the numbered reference points shown.

### 7.7 Do Not Lubricate Track System on Model 59-T

Never lubricate the track, the track belts, or any other part of the track system. Lubricants on the belts or track can cause the chair to perform unpredictably, resulting in injury to the patient and/or operators.

A label (Figure 33) instructing the user **not** to lubricate the track system is affixed to each side of the track. If these labels become damaged or worn, replace them immediately (see *Parts and Service*, page 32 and 33).



**Do Not Lubricate**

If track or belts pick up oil or grease during use or while the chair is being serviced, clean the track and belts with SD-20 All-Purpose Cleaner before using the chair again. See *Cleaning Track and Belts*, page 23, for cleaning instructions.

#### WARNING

Lubricating the track system can result in injury to patient and/or operators. Never lubricate the track or belts.



Figure 33 - Label on Chair Track

## 7.8 Adjusting Track-Belt Tension

### WHEN TO ADJUST BELT TENSION

Track belt tension needs to be adjusted when:

- a nut and bolt become loose
- a belt pulls away from the track more than 1-1/2 in. (3.8 cm) when measured using Method 1 on Page 27.
- a belt pulls away from the track more than 1 in. (2.5 cm) when measured using Method 2 on Page 27.

### Important

Adjusting the belt tension is a two-person operation.

### TOOLS NEEDED

2 ea	7/16-inch Wrench
1 ea	#4 Phillips Screwdriver
1 ea	Ruler or Measuring Tape

### TENSION-ADJUSTMENT

1. Open the track and lay the chair on its back on a workbench as shown in Figure 34.

#### OR

Stand the chair on its wheels on a workbench, then open the track and engage both wheel locks.

2. Loosen the bolt and black cap locking nut located at the top end of the track (Figure 35).
3. Slide the #4 Phillips screwdriver into the adjustment slot (Figure 35).
4. While one person tensions the belt by using the #4 Phillips screwdriver to pull the belt roller toward the top of the track, the other person uses the two 7/16-inch wrenches to tighten the bolt and nut only enough to hold the tension (Figure 36).

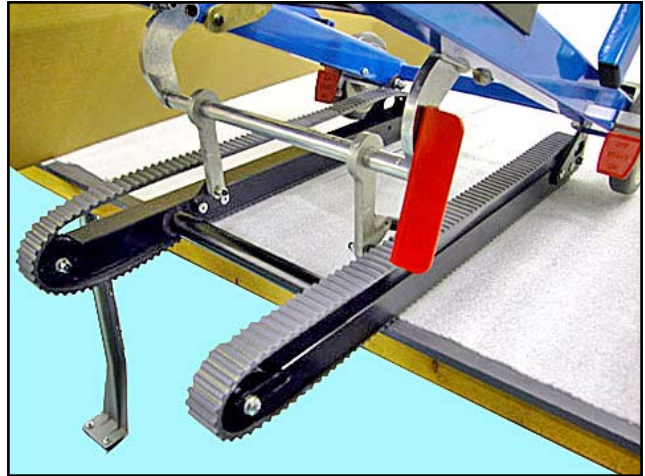


Figure 34 - Chair Positioned for Tensioning Procedure  
(See Step 1 for Alternate Position)

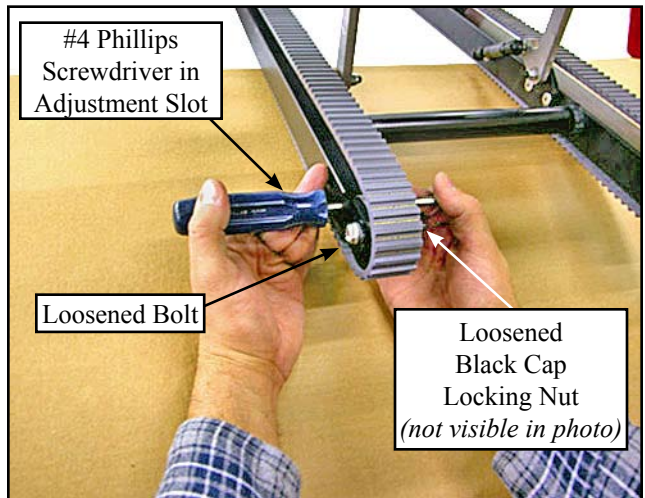


Figure 35 - Belt Ready for Tensioning



Figure 36 - Tensioning the Belt



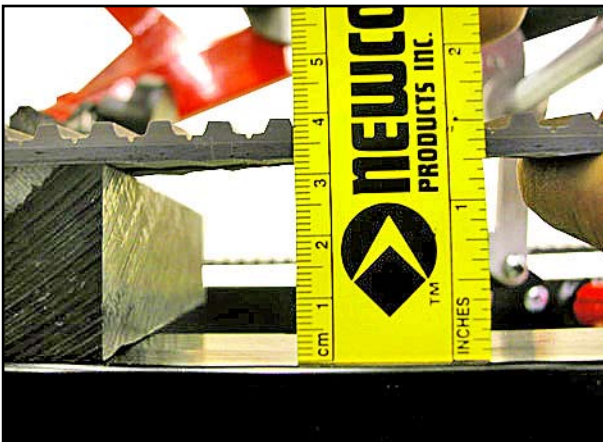
5. There are two methods for checking belt tension. You can use whichever method you prefer, but do not use the chair position from one method with the measurement range from the other method.
6. Use Method 1 (below, left) if the chair is laying on its tracks on a work bench. Use Method 2 (below, right) if the chair is standing on its wheels.
7. It may be necessary to repeat the tensioning and measuring one or more times to achieve the correct belt tension.
8. When the belt tension is correct, finish tightening the bolt and nut to maintain the tension.
9. Repeat Steps 2-6 to adjust the tension of the other track belt.

### Method 1

#### CHAIR MUST BE LAYING ON ITS TRACKS ON A WORKBENCH

Grasp the belt at the track midpoint and pull the belt away from the track to remove any slack, then measure the distance between the exposed surface of the track and the inner surface of the belt. Take the measurement at the track midpoint.

The belt is correctly tensioned when the measurement from the exposed surface of the track to the inner surface of the belt is 1-1/4 in. to 1-1/2 in. (3.175 cm to 3.8 cm), as shown in Figure 37.



*Figure 37 - Checking Tension with Chair Laying on Its Tracks on a Work Bench*

### Method 2

#### CHAIR MUST BE STANDING ON ITS WHEELS

Grasp the belt at the track midpoint and pull the belt away from the track to remove any slack, then measure the distance between the exposed surface of the track and the inner surface of the belt. Take the measurement at the track midpoint.

The belt is correctly tensioned when the measurement from the exposed surface of the track to the inner surface of the belt is 3/4 in. to 1 in. (1.9 cm to 2.5 cm) as in Figure 38.



*Figure 38 - Checking Tension with Chair Standing on Its Wheels*

## 7.9 Reconditioning the Track Belts

Track belts need reconditioning when the inner surface becomes glassy or glazed. As this glazing occurs, the belts begin to move less freely over the steps and the belt teeth begin to skip, rather than roll, over the steps.

### ITEMS REQUIRED FOR RECONDITIONING BELTS

1 ea	Permanent marker
1 ea	50-80 grit sandpaper
1 ea	Wood block

To recondition the belts:

1. Place the chair on a workbench.
2. Apply wheel locks.
3. Roll the belt away from the track and mark the inner surface with a permanent marker to identify the starting point for sanding (Figure 39).
4. Place sanding block between belt and track and move the block up and down to sand the inner surface of the belt (Figure 40).

**Note:** Take care not to sand the surface of the track.

5. Repeat Steps 3 and 4 with the other belt.
6. Secure a simulated patient weight to the chair and glide the chair down a flight of stairs to test whether the belts roll over the steps properly.
7. If the belts do not perform properly, you may need to re-sand them, or they may need to be replaced. See *Parts and Service*, pages 32 and 33, to order replacement belts.



**Figure 39 - Marking the Starting Point for Sanding the Belt**



**Figure 40 - Sand in Direction of Arrows**

## 7.10 Removing and Attaching the ABS Panels

The molded ABS seat and backrest panels snap on and off the chair frame.

### BACKREST PANEL

**To remove the backrest panel:** gently pull downward on the flange near one bottom corner and pull the corner of the panel away from the chair (Figure 41). Repeat at the opposite corner. Then slide the panel up off the two keepers at the top of the frame (Figure 42).

**To attach the backrest panel:** Orient the panel with the horizontal restraint slots uppermost. Slide the two holes in the top flange down over the keepers on the top of the backrest frame, then press both lower corners of the panel against the sides of the frame until they snap into place over their keepers.

### SEAT PANEL

**To remove the seat panel:** Pull upward on the panel flange at each front corner to pop the panel free of the seat frame (Figure 43) then lift the panel off the chair.

**To attach the seat panel:** Align the panel with the chair frame and press down to snap the panel onto the frame.



Figure 41 - Releasing a Bottom Corner of the Backrest



Figure 42 - Lifting the Backrest Panel Over the Keepers



Figure 43 - Releasing a Corner of the Seat Panel



### 7.11 Removing and Attaching the Soft Vinyl Seating

To remove the seating:

1. Unfasten the snap at each corner of the vinyl at the top of the backrest (Figure 44).
2. Lay chair on its back and unbuckle both retaining straps beneath the seat (Figure 45).
3. Unfasten the four snaps on the vinyl flap beneath the seat at the front of the chair (Figure 46).
4. Lift the cover off the chair and return the chair to the upright position.

To attach the seating:

1. Fasten the snap at each corner of the vinyl at the top of the backrest.
2. Lay chair on its back and fasten the buckles of both retaining straps.
3. Fasten the four snaps on the vinyl flap beneath the seat at the front of the chair.
4. Pull the free end of each buckled retaining strap until the strap is tight (Figure 47), then return the chair to the upright position.

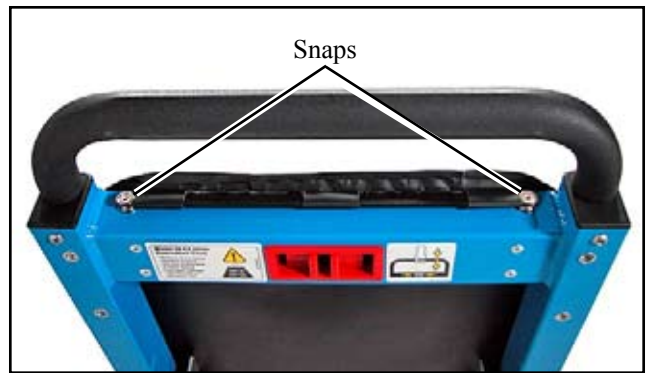


Figure 44 - Unfasten Snaps



Figure 45 - Unbuckle Straps

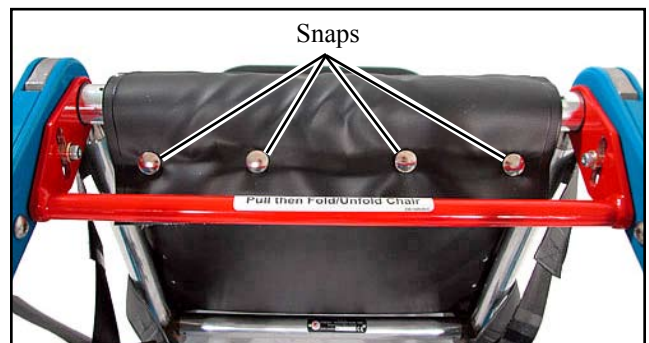


Figure 46 - Unfasten Seat Snaps



Figure 47 - Tighten Straps

## 8 - ACCESSORIES AND RELATED PRODUCTS

Ferno offers a full line of emergency medical service accessories (fasteners, IV poles, immobilizers, blankets, etc.). Selected items approved for use with the chair are listed here.

Always follow the instructions packed with accessories. Keep the instructions with this manual. Be aware of any special considerations (loading heights, door widths, etc.) when using accessories.

For product information, contact Ferno Customer Relations (page 2).

### WARNING

**Attaching improper items to the chair can cause injury. Use only Ferno-approved items on the chair.**

### 8.1 EZ Glide Chair Accessories

Description	Part #
Kwik Klip™ Restraint System	031-4002
IV Bag Holder Complete	082-1976
IV Bag Holder Replacement Strap	082-1972
Headrest Complete	031-4000
Head Strap Replacement	082-1970
EZ Glide® Oxygen Cylinder Holder	082-1977
Oxygen Cylinder Replacement Straps	031-3661
Non-Locking Rear Lift Handle	
Pair	082-1974
Right	082-2008
Left	082-2007
Locking Rear Lift Handles	
Pair	082-1975
Right	082-2010
Left	082-2009
Secure Mount Storage Brackets (with spring release)	082-2072
Storage Bracket (with hooks)	082-2073
Vinyl Storage Cover	031-4023
Metal Storage Cabinet	050-6534

### 8.2 Restraints

Description	Part #
Ankle Restraint	082-1973
430 Restraint, 2-piece, 5 ft., black, metal buckle	031-3892
430 Restraint 2-piece, 7 ft., black, metal buckle	031-3911
430-P Restraint 2-piece, 5-ft., black, plastic buckle	031-3797
430-P Restraint, 2-piece, 7-ft., black, plastic buckle	031-3801
416 Restraint, 2-piece, 5 ft., black, metal rescue-style buckle	031-3928
416 Restraint, 2-piece, 7 ft., black, metal rescue-style buckle	031-3999
Coated Restraint, 2-piece, 5 ft., green, nonabsorbent straps, metal buckle	E32032

**Note:** See Components, page 9 for a photo of restraint options.

**Note:** Models 430 and 430-P restraints also available in 5-foot and 7-foot lengths in burgundy or orange.

## 9 - PARTS AND SERVICE

### 9.1 U.S.A. and Canada

In the United States and Canada, to order parts or for professional cot repair, contact EMSAR® - the only agent authorized by Ferno to manage, service, and repair Ferno products.

Telephone (Toll-Free)	1.800.73.EMSAR
Telephone	1.937.383.1052
Fax	+1.937.383.1051
Internet	www.EMSAR.com

### 9.2 Worldwide

To order Ferno parts, and for professional repair, contact your Ferno distributor. Your distributor is the only agent authorized by Ferno to manage, service, and repair Ferno products.

### 9.3 Parts List

Ref. #	Description	Part #
1	ABS backrest panel	190-1489
2	Track-close push handle	190-1500
3	ABS seat panel	190-1490
4	Seat bumper, pair w/hardware (n/v)	190-1501
5	Inner telescoping handle assy. (right-side or left-side)	090-5837
6	Telescoping handle, grip only	190-1495
7	4" Front caster, complete	190-1494
8	Rear brake assy, right	090-5841
9	6" Rear wheel w/hardware	190-1493
10	Ankle restraint	082-1973
11	Track lower roller w/hardware	190-1498
12	Rear brake assy, left (n/v)	090-5843
13	Track belt only	190-1496
14	Track upper roller w/hardware	190-1497
15	Lift bar lock assy	190-1492
16	Lift bar handle, complete	190-1491
17	Soft vinyl seating	031-4004
18	Gas spring assy (n/v)	190-1499
19	Label sheet and logo (n/s)	190-1502
20	Telescoping handle assembly	See chart at right
21	Seat frame assembly	090-5840
22	59-T Track frame weldment	090-5842
23	59-T Track release linkage	090-5844

(n/s) = not shown

(n/v) = not visible in photo

#### WARNING

**Improper parts and service can cause injury. Use only Ferno parts and Ferno-approved service on the cot.**

#### WARNING

**Modifying the cot can cause injury and damage. Use the cot only as designed by Ferno.**

Telescoping Handle Assemblies (complete)		
Color	Patient Side	Part #
Red	Left	190-1619
Red	Right	190-1688
Orange	Left	190-1687
Orange	Right	190-1620
Green	Left	190-1621
Green	Right	190-1692
Platinum/Silver	Left	190-1689
Platinum/Silver	Right	190-1622
Blue	Left	190-1618
Blue	Right	190-1686
White	Left	190-1691
White	Right	190-1690

**Note:** Please specify the RIGHT-side or LEFT-side assembly and color when ordering a telescoping handle assembly. "Right" or "Left" is as viewed by a patient sitting in the chair.

9.4 Parts Diagrams



19 21 Not Shown

20 Refer to Chart On Page 32



