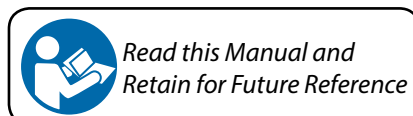




59T EZ Glide® Evacuation Chair

February 2013
Pub. No. 234-3298-03



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
Telephone	1.937.382.1451 ext. 1010
Email	quality.products@ferno.com

Ferno Customer Relations

For ordering assistance or general information:

CANADA AND THE U.S.A.

Telephone (Toll-free)	1.877.733.0911
Telephone	1.937.382.1451
Fax (Toll-free)	1.888.388.1349
Fax	1.937.382.1191
Internet	www.ferno.com

ALL OTHER LOCATIONS

For assistance or information, please contact your Ferno distributor. If you do not have a Ferno distributor, please contact Ferno Customer Relations:

Ferno-Washington, Inc., 70 Weil Way
Wilmington, Ohio 45177-9371, U.S.A.

Telephone	+1.937.382.1451
Fax	+1.937.382.6569
Internet	www.ferno.com

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.

Proprietary Notice

The information disclosed in this manual is the property of Ferno-Washington, Inc., Wilmington, Ohio, USA. Ferno-Washington, Inc. reserves all patent rights, proprietary design rights, manufacturing rights, reproduction use rights, and sales use rights thereto, and to any article disclosed therein except to the extent those rights are expressly granted to others or where not applicable to vendor proprietary parts.

Limited Warranty Statement

The products sold by Ferno are covered by a limited warranty, which is printed on all Ferno invoices. The complete terms and conditions of the limited warranty, and the limitations of liability and disclaimers, are also available upon request by calling Ferno at 1.800.733.3766 or 1.937.382.1451.



USERS' MANUAL

To request additional free users' manuals, contact Ferno Customer Relations, your Ferno distributor, or visit www.ferno.com.



Serial Number _____

Location: Seat panel rear frame



Ferno-Washington, Inc.
70 Weil Way
Wilmington, Ohio 45177-9371 U.S.A.

EC

REP

Ferno (UK) Limited
Stubs Beck Lane, Cleckheaton
West Yorkshire BD19 4TZ, United Kingdom

TABLE OF CONTENTS

Section	Page	Section	Page
Ferno Technical Support	2	6 - Using the Chair	15
Ferno Customer Relations	2	6.1 Before Placing the Chair in Service	15
1 - Safety Information	4	6.2 General Guidelines for Use	15
1.1 Warning	4	6.3 Transferring the Patient	16
1.2 Important	4	6.4 Rolling the Chair	16
1.3 Tip	4	6.5 Transporting a Patient Down Stairs	17
1.4 Bloodborne Disease Notice	4	6.6 Transporting a Patient Up Stairs	19
1.5 Symbol Glossary	5	6.7 Pausing On the Stairs	20
1.6 Safety and Instruction Labels	6	6.8 Using Additional Help	21
2 - Operator Skills and Training	6	7 - Maintenance	22
2.1 Skills	6	7.1 Maintenance Schedule	22
2.2 Training	6	7.2 Disinfecting/Cleaning Restraints	22
3 - About the Chair	7	7.3 Disinfecting/Cleaning the Chair	22
3.1 Description	7	7.4 Cleaning Tracks and Belts	22
3.2 Chair Features	7	7.5 Inspecting the Chair	23
3.3 General Specifications	7	7.6 Lubricating the Chair	24
3.4 Components	8	7.7 Do Not Lubricate Track System	24
4 - Setup	9	7.8 Reconditioning the Track Belts	25
4.1 Attaching Patient Restraints	9	7.9 Adjusting Track-Belt Tension	26
4.2 Restraint Configurations	9	7.10 Removing and Attaching the ABS Panels	28
4.3 Ankle Restraint	10	8 - Accessories	29
5 - Chair Features	11	9 - Parts and Service	30
5.1 Folding and Unfolding the Chair	11	9.1 U.S.A. and Canada	30
5.2 Track System	12	9.2 Worldwide	30
5.3 Extending Lift Bar	13	9.3 Parts List	30
5.4 Telescoping Lift Handles	13	9.4 Parts Diagrams	31
5.5 Footrest	14	Training Record	32
5.6 Wheel Locks	14	Maintenance Record	32

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.

Improperly attaching restraints can allow seat and back panels to dislodge, resulting in injury. Restraints must capture panel AND chair frame.

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

Lubricating the track system can result in injury to the patient and/or operators. Never lubricate the tracks 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. Failure to follow Important notices could result in damage to the product or property damage.

Important

1.3 Tip

Tips provide recommendations for easier use of the product.

Tip

1.4 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.

1.5 Symbol Glossary

The symbols defined below are used on the chair and/or 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



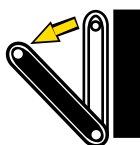
Read the Users' Manual



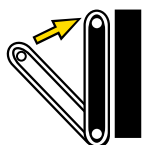
Chair Operation Requires
Two Trained Operators



Load Limit
(Safe Working Load in
pounds, kilograms, stone)



Open Track System



Close Track System



Unlocked



Locked



Do Not
Lubricate



Lubricate



Do Not Pressure Wash



Manufacturer



Authorized Representative in the
European Community



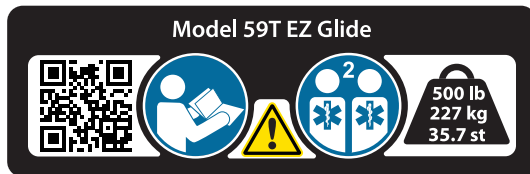
Product meets European
Union Standards



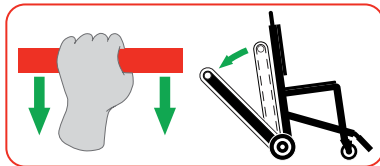
QR Code
(Access Online Material)

1.6 Safety and Instruction Labels

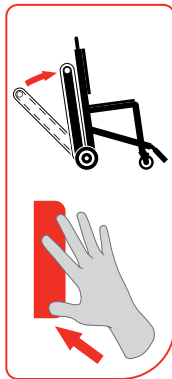
Safety and instruction labels place important information from the users' manual on the chair. Read and follow label instructions. Replace worn or damaged labels immediately. New labels are available from EMSAR (page 30) or from your distributor.



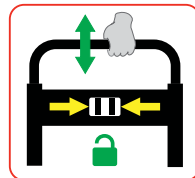
Safe Use Guidelines



Instruction: Opening Tracks



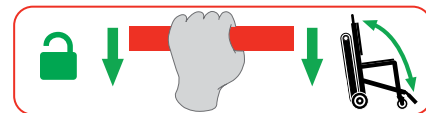
Instruction:
Closing Tracks



Instruction:
Adjusting Lift Bar



Risk of Injury: Do
Not Lubricate Tracks



Instruction: Folding/Unfolding the Chair



Ferno Products are Protected by Patents Worldwide



Safety Instruction: Attaching Restraints

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 32.

! WARNING

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

3 - ABOUT THE CHAIR

3.1 Description

The Ferno® Model 59T EZ Glide® Evacuation Chair (referred to as the chair in this manual) is an 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. Additional help may be required when working with heavy patients.

The chair is designed with belted tracks that enable operators to “glide” the chair down stairs instead of carrying it.

3.2 Chair Features

- Belted track system for “gliding” chair down stairs
- Molded ABS seat and back panels
- Choice of color
- 5-position extending rear lift bar
- 5-position telescoping front lift handle (2)
- 6" rear locking wheel (2)
- 4" front swivel wheel (2)
- Folding footrest
- Ankle restraint
- Patient restraints (shown on page 8)

For chair accessories, including mounts and restraints, see *Accessories*, page 29.

3.3 General Specifications

Specifications for the chair are shown in the table at right. Ferno reserves the right to change specifications without notice. For more information, contact Ferno Customer Relations or your Ferno distributor (page 2). Ferno reserves the right to change specifications without notice.



WARNING

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



Specification	Imperial	Metric
Load Limit	500 lb	227 kg
Load Limit (UK)		35.7 st
Weight*	33 lb	15 kg
Height		
Maximum	63.5	1613 mm
Minimum	37.5 in	953 mm
Width		
Overall	20.313 in	516 mm
Seat	16.5 in	419 mm
Depth (front to back)		
Tracks closed, Handles retracted	28.5 in	724 mm
Tracks Open, Handles extended	51 in	1295 mm
Folded		
Length x width x depth	37.5 in x 20.313 in x 8 in	953 mm x 516 mm x 200 mm
Wheels, Rear		
Diameter	6 in	152 mm
Width	1.25 in	32 mm
Wheels, Front		
Diameter	4 in	102 mm
Width	1.18 in	30 mm
Chair Construction	Rectangular aluminum	
Seat/Back Panels	ABS Plastic	
Wheel Bearings	Sealed/greaseless	

* Weight is without restraints or accessories



Load Limit

Inspect the chair if the load limit has been exceeded (See *Inspecting the Chair*, page 23).

3.4 Components



4 - SETUP

4.1 Attaching Patient Restraints

Use patient restraints to help hold the patient on the chair. Each restraint must capture **both** the aluminum chair frame and the seat or back panel. Follow local protocols when attaching restraints.

USING TWO-PIECE RESTRAINTS

1. Feed the loop of a restraint strap through a slot in the seat or back panel.
2. Wrap the strap around the aluminum chair frame and feed the male or female buckle through the loop, then pull the strap tight against the frame and panel.
3. Repeat Steps 1-2 for the other half of the restraint.

USING ONE-PIECE RESTRAINTS

Note: Two-piece restraints are recommended.

1. To attach the seat-panel restraint, lay the restraint across the top of the seat panel and feed the male and female ends of the restraint down through the slots.
2. Wrap the restraint around the aluminum chair frame on each side of the chair, capturing both the panel **and** the frame (Figure 1).
3. Buckle the restraint and adjust the length.
4. Repeat Steps 1-3 to attach the back-panel restraint.

4.2 Restraint Configurations

Follow local protocols when configuring and using restraints. Two possible configurations are described below.

HORIZONTAL CONFIGURATION

Use one restraint for the chest and one restraint for the lap (Figure 2). Use additional restraints as needed.

1. Attach the chest straps through the vertical slots in the back panel.
2. Attach the lap straps through the seat panel slots.

CRISS-CROSS CONFIGURATION

Use two restraints for the torso and a third restraint for the lap (Figure 2).

1. Attach one strap of a restraint through a horizontal slot on the back panel of the chair.
2. Attach the mating strap of the same 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.



WARNING

Improperly attaching restraints can allow seat and back panels to dislodge, resulting in injury. Restraints must capture panel AND chair frame.

Important

Restraint rules (also follow your local protocols):

- Use a minimum of two restraints.
- One restraint must be secured across the chair seat to help hold the patient on the chair.
- Each restraint or strap must capture the aluminum chair frame and the plastic panel.

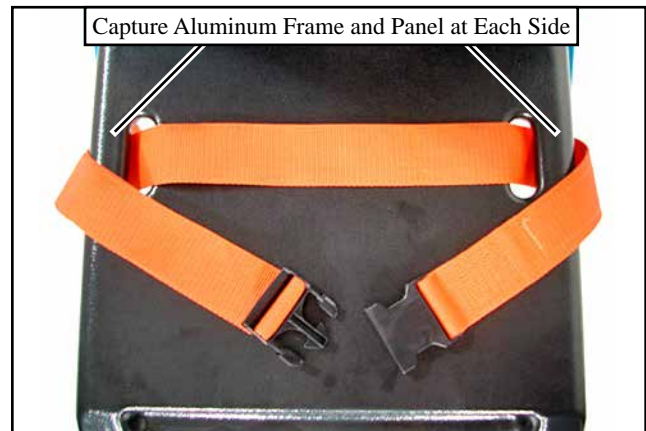


Figure 1 - Restraint Capturing Frame and Panel

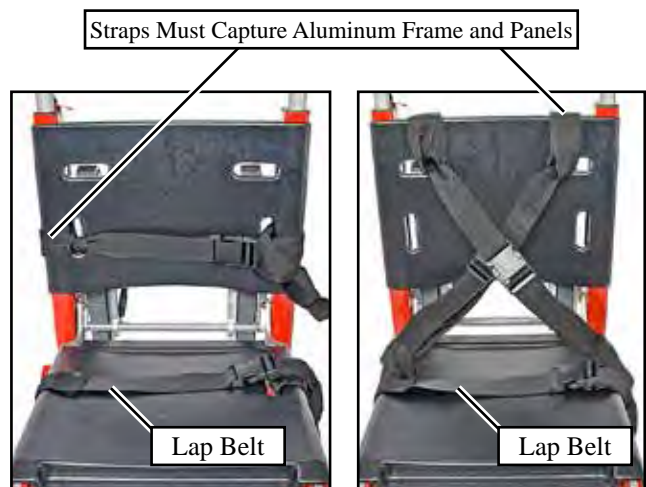


Figure 2 - Horizontal Configuration (Left) and Criss-Cross Configuration (Right)

4.3 Ankle Restraint

Use the ankle restraint to help keep the patient's feet on the footrest. 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, then pull the strap tight around the chair leg (Figure 3).
3. Attach the remaining strap to the opposite front leg.
4. Buckle the restraint and adjust the length (Figure 4).



Figure 3 - Attaching the Ankle Restraint

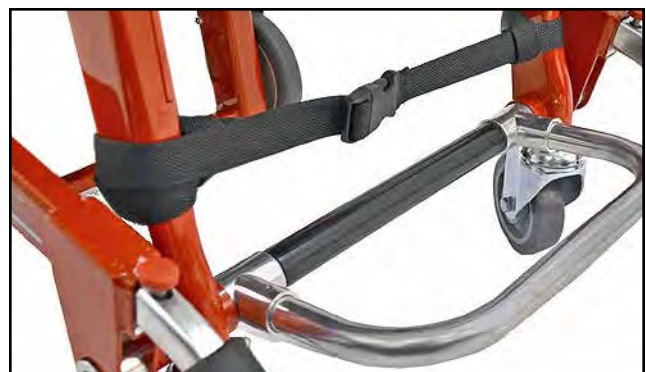


Figure 4 - Ankle Restraint Attached

5 - CHAIR FEATURES

5.1 Folding and Unfolding the Chair

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

FOLDING AN OPEN CHAIR

1. Buckle the restraints and arrange the straps to prevent interference with folding the chair.
2. Roll the chair backward to reverse the swivel wheels (Figure 5).
3. Standing at the side of the chair, grasp the lift bar with one hand and the lock bar with the other hand.
4. Pull the lock bar forward (Figure 6), toward the front of the chair, **then** fold the seat toward the lift bar.

AS YOU FOLD THE SEAT: Tilt the chair forward (Figure 7) to keep the swivel wheels rotated outward. This prevents the wheels from holding the frame away from the seat and allows the lock to engage.

5. Press the seat against the back-panel frame until the lock engages (Figure 8).
6. Verify the lock has engaged by pulling the seat away from the lift bar without pulling the lock bar. The seat will not move if the lock is engaged.

Note: If the swivel wheels prevent the chair from locking in the folded position, hold the chair at a greater tilt to allow the swivel wheels to rotate away from the chair frame.

UNFOLDING THE CHAIR

1. Stand beside the chair and grasp the lift bar with one hand and the lock bar with the other hand.
2. Pull the lock bar forward (toward the front of the chair), then pull the seat away from the lift bar until the chair fully unfolds and the lock engages.
3. To verify the lock has engaged, hold the lift bar while pulling up on the chair frame at the front of the seat. The chair will not fold if the lock is engaged.

Tip

Folding and Unfolding the Chair

The chair lock must be disengaged before you begin folding or unfold the chair. Pull the lock bar forward, then fold or unfold the chair.

When folding the chair, tilt the seat forward so the swivel wheels rotate outward, away from the seat.



Figure 5 - Reversing the Wheels



Figure 6 - Disengaging the Lock Bar



Figure 7 - Folding the Chair



Figure 8 - Engaging the Lock

5.2 Track System

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

GUIDELINES FOR USE

- Using the chair on stairs requires a minimum of two trained operators. Ferno recommends using a third person as a “spotter” (see *Transporting a Patient Down Stairs*, page 17).
- Verify that the track system is fully open and locked before use.
- Never lubricate the belts. Lubrication can cause the belts to perform unpredictably, resulting in injury to the patient and/or operators.
- Moisture, water, snow, ice, or debris on or between the tracks and belts can cause irregular belt performance that results in sudden changes in the weight operators must support. Make sure the tracks and belts are clean and dry before using the chair on stairs.
- Moisture, 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 SYSTEM

1. Grasp the red release bar (Figure 9) and firmly pull the track system away from the chair until it locks in the open position.
2. Verify that track system has locked by trying to push the tracks closed. If the lock is fully engaged, the track system will not close.

CLOSING THE TRACK SYSTEM

With your hand, push the red closing handle down (Figure 10) until the track system closes completely.

WARNING

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

WARNING

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

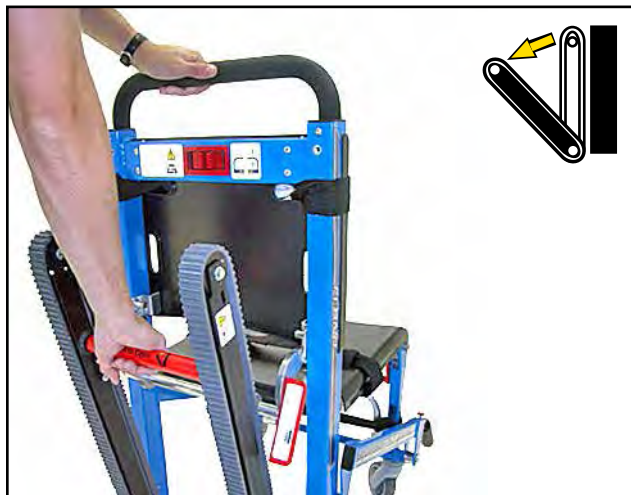


Figure 9 - Opening the Track System



Figure 10 - Closing the Track System

5.3 Extending Lift Bar

The rear operator uses the lift bar to guide and steer the chair when rolling the chair and to control the chair on stairs.

The lift bar adjusts to five locked positions (Figure 11). Adjust the height according to operator preference and the task or situation at hand.

RASING AND LOWERING THE LIFT BAR

1. Pinch and hold the release tabs together with one hand to unlock the lift bar (Figure 12), then raise or lower the lift bar with the other hand.
2. When the lift bar is near the desired position, let go of the release tabs and raise or lower the lift bar until it locks into position.
3. 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.

5.4 Telescoping Lift Handles

The telescoping lift handles adjust to five locked positions (Figure 11). Adjust the handles according to operator preference and the task at hand.

EXTENDING/RETRACTING THE LIFT HANDLES

1. Press the release button (Figure 13) and push or pull the handle near the desired stopping point.
2. Release the button and slide the handle a little forward or backward until it locks into position.
3. Lock both handles at the same position. 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 11 - Lift Bar and Lift Handle Positions

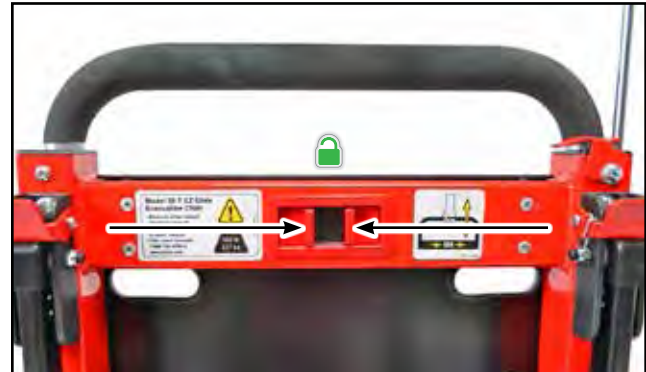


Figure 12 - Pinch Tabs Together to Unlock Lift Bar



Figure 13 - Lift Handle Release Button

5.5 Footrest

The footrest has two positions: raised for storage, (Figure 14) and lowered for use (Figure 15).

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. Seat the patient before lowering the footrest.
- 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.

Tip

Footrest

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



Figure 14 - Footrest in Storage Position



Figure 15 - Footrest Lowered for Use

5.6 Wheel Locks

The rear chair wheels 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 the rear end of the lock pedal (Figure 16).

To disengage a wheel lock, press down the forward end of the lock pedal.



Figure 16 - Wheel Lock

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 *Setup* (pages 9-10).
- Confirm that the chair operates properly. See *Inspecting the Chair*, page 23.

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.
- **Operators work together and maintain control of the chair at all times.**
- Follow standard emergency patient-handling procedures when operating the chair.
- 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 using the chair on 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 21.
- Stay with the patient at all times.
- Always use patient restraints to secure the patient on the chair.
- 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 system is locked in the open position before using the chair on stairs.



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.



WARNING

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



WARNING

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

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 wheel locks.
3. Verify that 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 17).

ASSISTING THE PATIENT OFF FROM THE CHAIR

1. Engage the wheel locks.
2. Unfasten the ankle restraint and 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 18).
- For patient comfort, pull the chair backward over low obstacles such as door sills.
- Close the track system and use the extending lift bar and telescoping foot-end handles to lift and carry the chair over curbs, high obstacles, and rough terrain.
- Use the track system to glide the chair down over curbs or single steps (Figure 19).

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 18), 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 17 - Patient Secured with Restraints



Figure 18 - Rolling the Chair



Figure 19 - Gliding Down a Step or Curb

6.5 Transporting a Patient Down Stairs

GENERAL GUIDELINES

- Using the chair to move down stairs requires a minimum of two trained operators working together. Use additional help as needed to control the chair (see *Using Additional Help*, page 21).
- Ferno recommends that the two operators face each other when transporting a patient on stairs and that a third trained person “spot” for the foot-end operator. In some cases, the foot-end operator may be able to descend the stairs facing forward, with his back to the patient. Follow your local protocols for using 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 system and belts before using the chair on stairs.
- Verify that the track system is locked in the open position before using the chair on stairs.
- If the operators tire or need to attend the patient while on stairs, see *Pausing On the Stairs*, page 20.

GLIDING THE CHAIR DOWN STAIRS

1. **Head-end Operator:** Roll the chair near the stairs and engage the wheel locks.
2. **Head-end Operator:** Open the track system (See *Track System*, page 12). Verify that it has locked.
3. **Both Operators:** Raise the lift bar and/or extend the foot-end lift handles to the desired positions and verify that all handles are locked (Figure 20).
4. **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 (Figure 20).
5. **Head-end Operator:** Disengage the wheel locks.



WARNING

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

Tip

The Landing Zone

Ferno recommends you visualize a “landing zone” of at the top or bottom of the stairway. The landing zone should provide enough clear, safe space for the chair to be set on all four wheels, away from the edge of the stairway.



Figure 20 - Preparing to Descend

6. **Both Operators:** Together, tilt the chair back until the belts engage the floor (Figure 21).
7. **Both Operators:** Working together, guide the chair slowly forward and downward until the tracks engage two or three steps. This establishes the glide angle (Figure 22).
8. **Both Operators:** To maintain the glide angle as you descend, work together and:
 - **Head-end Operator:** Apply slight downward pressure on the extended lift bar.
 - **Foot-end Operator:** Apply slight upward pressure on the foot-end lift handles.
9. **Both Operators:** At the bottom of the stairway, tilt the chair onto all four wheels.
10. If the chair has reached the destination, prepare the chair for rolling by retracting the lift handles and lowering the lift bar to a comfortable height. Close the track system.
11. To continue the descent, adjust the lift handles and lift bar as needed to maneuver the chair to the next stairway.

Note: In a narrow stairway, you may need to retract the handles between each flight of stairs.



Figure 21 - Tilting the Chair Onto the Tracks



Figure 22 - Glide Angle



Figure 23 - Preparing to Roll the Chair

Transporting a Patient Up Stairs**Tip**

The EZ Glide track system was designed to assist in descending stairs. To ascend stairs, lift and carry the chair. When carrying the chair, close the track system to keep it out of the way of the head-end operator.

The Landing Zone**Tip**

Ferno recommends you visualize a “landing zone” of at the top or bottom of the stairway. The landing zone should provide enough clear, safe space for the chair to be set on all four wheels, away from the edge of the stairway.

6.6 Transporting a Patient Up Stairs

GENERAL GUIDELINES

- Carrying the chair up stairs requires a minimum of two operators. Use additional help as needed (see *Using Additional Help*, page 21).
- Ferno recommends that the two operators face each other when transporting a patient up stairs and that a third person “spot” for the head-end operator. Follow your local protocols for carrying chairs.
- If the operators tire or need to attend the patient while on stairs, see *Pausing On the Stairs*, page 20.

CARRYING THE CHAIR UP STAIRS

- Both Operators:** Roll the chair to the bottom of the stairs and position it with the patient's back to the stairs.
- Head-End Operator:** Extend the lift bar to the desired position and verify that it is locked. Do not open the track system.
- 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 24).
- Foot-End Operator:** Extend the foot-end lift handles to the desired position and verify that both handles are locked (Figure 24).
- 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 25).
- 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.
- If the chair has reached the destination, prepare the chair for rolling by retracting the lift handles and lowering the lift bar to a comfortable height.
- To continue the ascent, adjust the lift handles and lift bar as needed to maneuver the chair to the next stairway.

Note: In a narrow stairway, you may need to retract the handles between each flight of stairs.



Figure 24 - Preparing to Carry the Chair



Figure 25 - Carrying the Chair Up Stairs

6.7 Pausing On the Stairs

If the operators tire, or need to attend the patient during a transport up or down stairs, the operators communicate and work together to pause on the stairs (Figure 26).

PAUSING DURING A DESCENT

Both operators tilt the chair forward, off the tracks, to allow the rear wheels to rest on the step. Both operators hold the chair in place.

To resume a descent, both operators tilt the chair back to the glide angle and engage the belts on the steps. Then, continue down the stairs as instructed in *Transporting the Patient Down Stairs*, pages 17-18.

PAUSING DURING AN ASCENT

Both operators set the chair down on its rear wheels on a step. Both operators hold the chair in place (Figure 26).

To resume, lift and carry the chair as instructed in *Transporting the Patient Up Stairs*, page 19.



Figure 26 - Pausing On the Stairs

6.8 Using Additional Help

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

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

Direction	Rolling on Flat Surface
Two Operators and Two Helpers	

⚠ WARNING

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

Load Limit

500 lb
227 kg
35.7 st

Inspect the chair if the load limit has been exceeded (See *Inspecting the Chair*, page 23).

Direction	DESCEND	ASCEND
Two Operators and One Helper		
Two Operators and Three 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 33.

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 the Chair

To disinfect: Remove restraints and seat and back panels. Wipe all surfaces of the chair and panels with disinfectant. Follow the disinfectant manufacturer's directions for application method and contact time.

To clean: Wash panels 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 Tracks 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 in North America, contact the Spartan Chemical Company, Maumee, Ohio, USA at 1.800.537.8990 or visit www.spartanchemical.com on the internet.

Minimum Maintenance Intervals	Each Use	As Needed	Each Month
Disinfect the Chair (this page)	•		
Clean the Chair (this page)		•	
Clean Tracks and Belts (this page)		•	
Chair Inspection (page 23)		•	•
Track System Inspection (page 23)	•	•	
Lubricating the Chair (page 24)		•	
Adjust Belt Tension (page 26)		•	



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

DO NOT PRESSURE WASH

Water under high pressure, or steam, can penetrate joints, flush away lubricant, and cause corrosion. Do not pressure wash the chair.



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. Conduct a visual inspection of the track system before use, and a thorough inspection of the track system 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 30-31.

CHAIR INSPECTION

- 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?

TRACK SYSTEM INSPECTION

- Are the tracks and belts free of lubricant, dirt and debris?
- Is there visible damage to the track or belts?
- Do the belts operate properly through the full range of motion, without becoming loose or off-track?
- Are the inner cords of the belts visible (indicating the need for replacement)?
- Are the belt-tensioning bolts and nuts tight?

7.6 Lubricating the Chair

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 54).

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.

Note: To order SD-20™ Cleaner in North America, contact the Spartan Chemical Company, Maumee, Ohio, USA at 1.800.537.8990 or visit www.spartanchemical.com on the internet.

Important

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



Figure 27 - Lubrication Point (Each Side)

7.7 Do Not Lubricate Track System

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

A label (Figure 28) instructing the user **not** to lubricate the track system is affixed to each track. If these labels become damaged or worn, replace them immediately (see *Parts and Service*, pages 30-31).

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 Tracks and Belts*, page 22, for cleaning instructions.

WARNING

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



Figure 28 - Label: Do Not Lubricate

7.8 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. Engage the 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 29).
4. Wrap the wood block with sandpaper and place the sanding block between belt and track. Move the block up and down to sand the inner surface of the belt (Figure 30).
5. Rotate the track belt as needed to access additional surface to sand.

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

6. Repeat Steps 3-5 with the other belt.
7. 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.
8. 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 30-31, to order replacement belts.



Figure 29 - Marking the Starting Point for Sanding the Belt



Figure 30 - Sand in Direction of Arrows

7.9 Adjusting Track-Belt Tension

TOOLS NEEDED

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

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. (38 mm) when measured using Method 1 on page 27.
- a belt pulls away from the track more than 1 in. (25 mm) when measured using Method 2 on page 27.

Adjusting Belt Tension

Adjusting the belt tension is a two-person operation.

Tip

TENSION-ADJUSTMENT

1. Decide if you will use Method 1 or Method 2 to measure and adjust the track-belt tension, according to the instructions on page 27.
2. **For Method 1:** Open the track system and lay the chair on its tracks on a workbench as shown in Figure 31.
For Method 2: Stand the chair on its wheels on a workbench, then open the track system and engage both wheel locks.
3. Loosen the bolt and black cap locking nut located at the top end of the track (Figure 32).
4. Slide the #4 Phillips screwdriver into the adjustment slot (Figure 32).
5. 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 33).

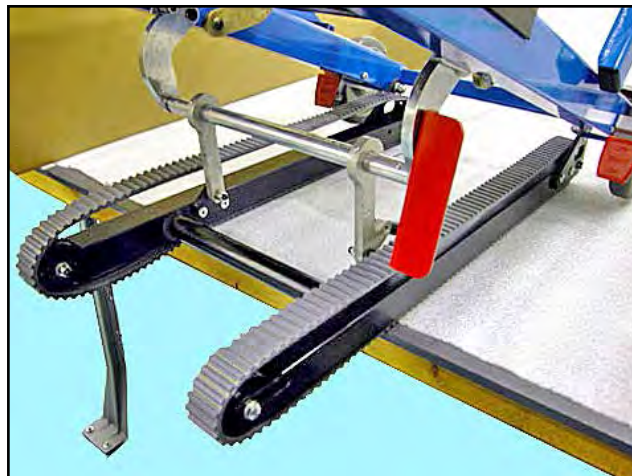


Figure 31 - Chair Positioned for Tensioning Procedure
(See Step 1 for Alternate Position)

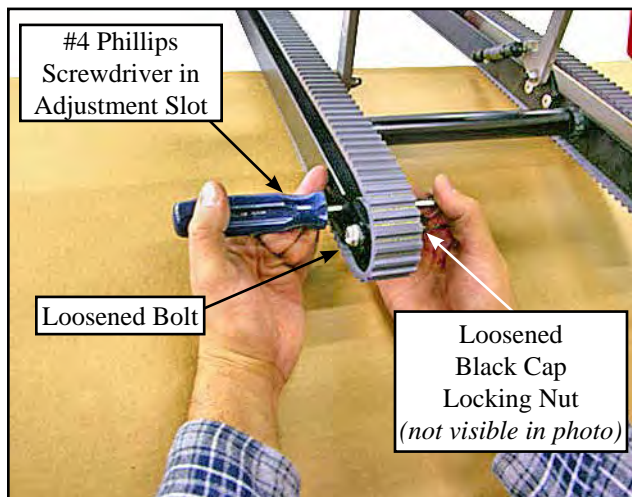


Figure 32 - Belt Ready for Tensioning



Figure 33 - Tensioning the Belt

6. 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.

Use Method 1 (below, left) if the chair is laying on its tracks on a workbench. 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 3-7 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. (31.75 mm to 38 mm), as shown in Figure 34.

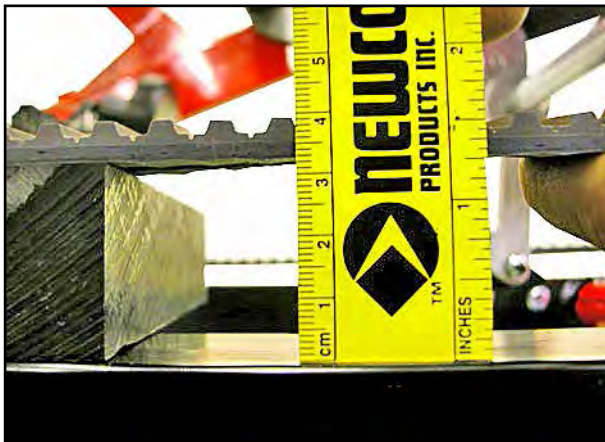


Figure 34 - Checking Tension with Chair Laying on Its Tracks on a Workbench

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. (19 mm to 25 mm) as in Figure 35.



Figure 35 - Checking Tension with Chair Standing on Its Wheels

7.10 Removing and Attaching the ABS Panels

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

BACK PANEL

To remove the back panel: Gently pull downward on the flange near one bottom corner and pull the corner of the panel away from the chair (Figure 36). Repeat at the opposite corner. Then slide the panel up off the two keepers at the top of the frame.

To attach the back panel: Orient the panel with the horizontal restraint slots uppermost. Slide the two holes in the panel top flange down over the keepers on the chair frame (Figure 37), then press both lower corners of the panel against the sides of the frame until they snap into place over the 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 38) 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 36 - Releasing a Back Panel Bottom Corner

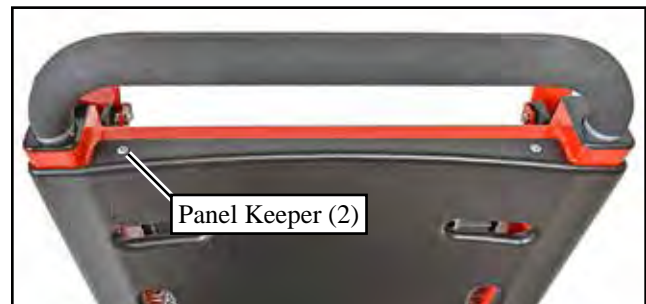


Figure 37 - Back-Panel Keepers



Figure 38 - Releasing a Seat Panel Corner

8 - ACCESSORIES

Ferno offers a full line of emergency medical service accessories. 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.

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, Soft	031-4000
Headrest, Folding	083-2182
Head Strap Replacement	082-1970
EZ Glide® Oxygen Cylinder Holder	082-1977
Oxygen Cylinder Replacement Straps	031-3661
Locking Rear Lift Handles (Pair)	082-1975
Vinyl Storage Cover	031-4023

WALL MOUNTS

Description	Part #
Secure Mount Storage Brackets (with spring release)	082-2072
EZ Glide with PowerTraxx Secure Mount (Suitable for use in an Ambulance)	057-3085
EZ Glide Wall Bracket (Hook Secures Top of Chair Only)	082-2073
Metal Storage Cabinet	050-6534

RESTRAINTS

Description	Part #
Ankle Restraint	082-1973
430 Restraint, 2-piece, 5' (1.5 m), black, metal buckle	031-3892
430 Restraint 2-piece, 7' (2.1 m), black, metal buckle	031-3911
430-P Restraint 2-piece, 5' (1.5 m), black, plastic buckle	031-3797
430-P Restraint, 2-piece, 7' (2.1 m), black, plastic buckle	031-3801
Coated Restraint, 2-piece, 5' (1.5 m), green, nonabsorbent straps, metal buckle	E32032

Note: See Components, page 8 for a photo of restraint options.

Note: Models 430 and 430-P restraints also available in 5-foot (1.5 m) and 7-foot (2.1 m) 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 chair 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	Gas spring assy (n/s)	190-1499
18	Label sheet and logo (n/s)	190-1502
19	Telescoping handle assembly	See chart at right
20	Seat frame assembly (n/s)	090-5840
21	59T Track frame weldment	090-5842
22	59T Track release linkage	090-5844

(n/s) = not shown



WARNING

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



WARNING

Modifying the chair can cause injury and damage. Use the chair 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



TRAINING RECORD

Date	Name	Training Method

MAINTENANCE RECORD

Date	Maintenance Performed	By