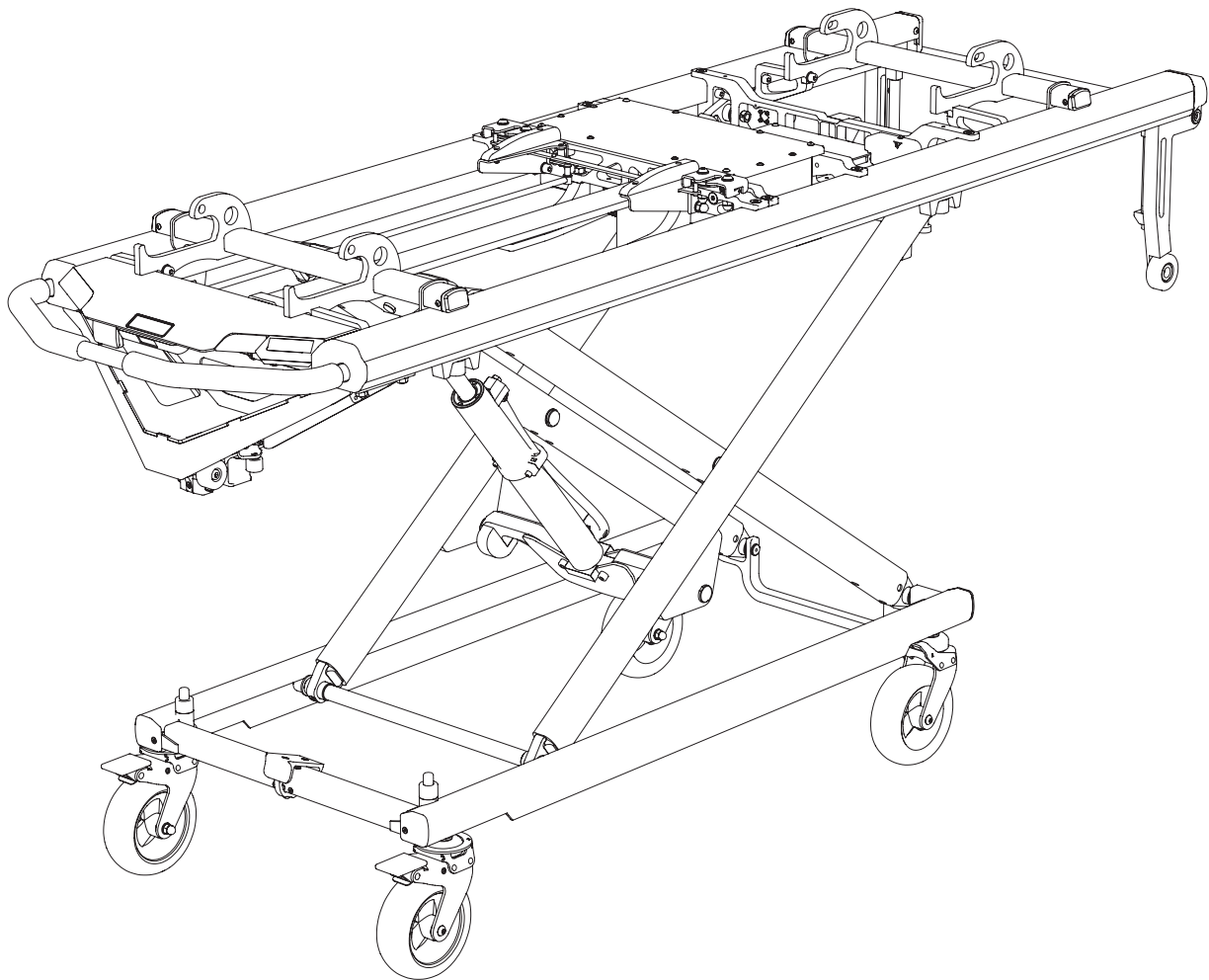




VIPER

Powered Ambulance Transporter System



Read this Manual and Retain
for Future Reference 

FERNO®

Instructions for Use

2025-09-29, Rev 1
Pub. No. VTR-IFU-EN

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	Country Code +1.937.382.1451
Fax	Country Code +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 and local protocol. Training on the proper use of this product must 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 intellectual property 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

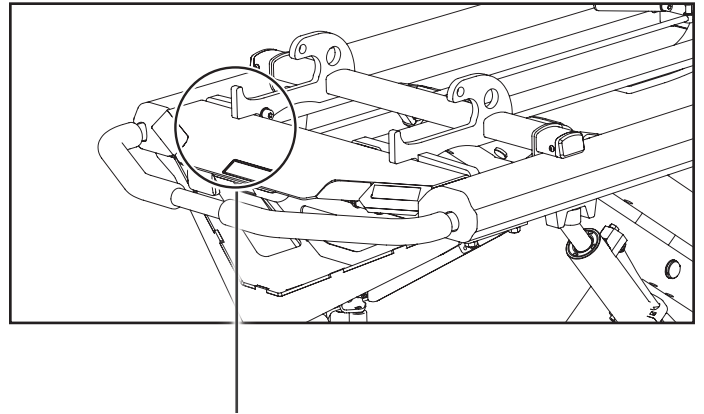
The products sold by Ferno are covered by a limited warranty, which is printed on all Ferno invoices. The complete terms and conditions of the limited warranty, and the limitations of liability and disclaimers, are also available upon request by calling Ferno at 1.800.733.3766 or 1.937.382.1451.

Adverse Event Notice

In the event of an adverse event or serious incident related to the use of this device, the end user/operator must report the incident to Ferno-Washington, Inc. at 70 Weil Way, Wilmington, Ohio 45177 USA, 1-877-733-0911, or via email at tscoordinator@ferno.com. If the incident occurred in the European Union, report it to Ferno's Authorised EU Representative and the competent authority of the Member State in which the end user is established.



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





DEVICE TRADE NAME (CATALOG NO)

 Date of Manuf.
  Serial Number
 

(01) GTIN
(11) Date of Manuf.
(21) Serial Number

MD CE

MEDIROL s.r.o., Na Strži 126/4, 140 00 Praha 4, Czech Republic

Unique Device Identification (UDI)

Ferno complies with the United States Food and Drug Administration's (FDA), MDA & CE Unique Device Identification (UDI) regulation to identify medical devices. The UDI label contains information in human- and machine-readable form, which includes the serial number, date of manufacture and product name.

The label is located on the control panel as per the photo above.



MEDIROL s.r.o.
Na Strži 126/4
140 00 Prague, Czech Republic

UK REP

Ferno (UK) Ltd.
Ferno House, Stubbs Beck Lane
Cleckheaton, West Yorkshire, BD19 4TZ
+44 (0) 1274 851999



TABLE OF CONTENTS

Section	Page
Ferno Customer Relations _____	2
Unique Device Identification (UDI) _____	2
1 - Safety Information _____	4
1.1 Warning _____	4
1.2 Notice _____	4
1.3 Bloodborne Disease Notice _____	4
1.4 Symbol Glossary _____	5
1.5 Safety and Instruction Labels _____	6
2 - Operator Focus _____	7
2.1 Operator Training _____	7
2.2 Using Additional Help _____	7
3 - About the Transporter _____	8
3.1 Description _____	8
3.2 Compliance _____	8
3.3 General Specifications _____	9
3.4 Components _____	10
4 - Setup _____	11
4.1 Ambulance Information _____	11
4.2 Install Accessories _____	11
4.3 Charge the Battery _____	11
4.4 Turn On the Transporter _____	11
4.5 Set the Loading Height _____	11
5 - Features _____	12
5.1 Power Switch _____	12
5.2 Display _____	12
5.3 Height-Control Buttons _____	13
5.4 Transporter Release Button _____	13
5.5 Sleep Mode _____	13
5.6 Lights (Optional) _____	14
5.7 Manual Override Raise/Lower Handle _____	14
5.8 Stretcher Release Lever _____	14
5.9 Battery _____	15
5.10 Integrated Charging System _____	16
5.11 Wheel Locks _____	17
5.12 Directional Wheel Locks _____	17
6 - Using the Transporter _____	18
6.1 Before Placing the Transporter in Service _____	18
6.2 General Guidelines for Use _____	18
6.3 Attaching and Removing A Stretcher _____	19
6.4 Powered Raising/Lowering _____	20
6.5 Moving the Transporter _____	21
6.6 Loading the Transporter _____	22
6.7 Unloading the Transporter _____	23
6.8 One Operator, Empty Transporter _____	23
6.9 Non-Powered Operation: Raising and Lowering _____	24
6.10 Non-Powered Operation: Loading _____	25
6.11 Non-Powered Operation: Unloading _____	26
7 - Maintenance _____	27
7.1 Maintenance Schedule _____	27
7.2 Service Life _____	27
7.3 Disinfecting _____	27
7.4 Cleaning _____	27
7.5 Preventative Maintenance Inspections _____	27
7.6 Pressure-Washing _____	28
7.7 Inspecting _____	29
7.8 Storing the Transporter _____	30
7.9 Viper Service App _____	31
8 - Troubleshooting _____	32
9 - Accessories _____	33
Training Record _____	34
Maintenance Record _____	35

1 - SAFETY INFORMATION

1.1 Warning

Warning safety alerts indicate a potentially hazardous situation that, if not avoided, could result in injury or death.



WARNING

Untrained helpers can cause injury or be injured. Trained operators must instruct helpers where to hold the Transporter to avoid injury.

Improper use of the Transporter can cause injury. Use the Transporter only for the purposes described in this manual.

An improper fastener can cause injury. Use only a compatible Ferno fastener designed for use with this Transporter.

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

Attaching improper items to the Viper Transporter can cause injury. Use only Ferno-approved items on the Viper Transporter.

Turning the power switch off while operating the Transporter can damage the Transporter. Only turn the power switch off when storing the Transporter.

The button lockout feature is active only when charging. Pressing height-control buttons while the Transporter is locked in the loading system can damage both the Transporter and the loading system. Do not press the buttons when the Transporter is locked in the loading system.

Improper charging can cause injury and damage. Charge the battery only with an approved adapter and Ferno charger or integrated charging system (ICS).

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

Use only the original charging adapter. Using a non-original adapter may cause damage to the product.

Do not connect the charging adapter when the stretcher is in use or with patient on it. There is a risk of injury to the operator and the patient.

When connected to an external AC voltage network, the stretcher meets the requirements of protection class I. To avoid the risk of electric shock, the stretcher must be connected to a power network with protective earthing.

When the battery capacity drops below 20%, start charging as soon as possible. There is a risk of the electronic system shutting down when battery charge drops below 20%.

Fully charge and balance the battery at least once every 2-4 weeks, depending on how often you use the stretcher. There is a risk of battery failure if this is not followed.

Improper maintenance can cause injury and damage. Maintain the stretcher and battery only as described in this manual.

An improperly secured stretcher can separate from the Transporter and cause injury. Attach the stretcher securely and verify that the locks have engaged.



WARNING

Uncontrolled movement can cause injury or damage. Support and control the Transporter at all times.

Moving the Transporter sideways can cause it to tip and injure the patient and/or operators. Move the Transporter only toward the control end or loading end.

Trained operators must consider the environment and terrain before moving. Moving the Transporter in a lowered position will minimise the potential of tipping the Transporter.

Uncontrolled movement can cause injury or damage. Support the load before using a manual override handle.

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

Failure to perform preventative maintenance inspections can cause injury or damage. Have the Transporter inspected regularly by a factory-trained technician

Spraying directly on the control box, the hydraulic unit or the wiring can damage the product. Pressure-wash the Transporter only as described in this manual.

Storing the Transporter in the loading system connected to the vehicle's electrical circuit for a long period can damage the battery. Always follow the instructions in this manual when storing the Transporter.

1.2 Notice

Notices emphasize important, but not hazard-related information. Failure to follow Notices could result in product or property damage.

NOTICE

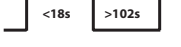
1.3 Bloodborne Disease Notice

To reduce the risk of exposure to blood or other potentially infectious materials when using the product, follow the disinfecting and cleaning instructions in this manual.

1.4 Symbol Glossary

The symbols defined here are used on the product and/or in this manual. Ferno uses symbols recognised by the International Standards Organization (ISO), American National Standards Institute (ANSI) and the emergency medical services industry.

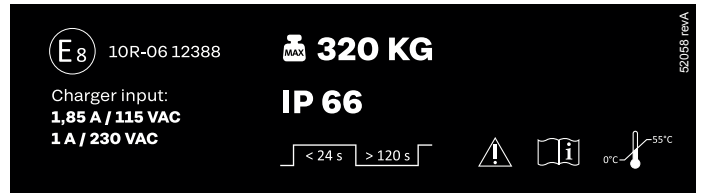
Symbol	Definition
	Extend Legs
	Retract Legs
	Release
	Lights

Symbol	Definition
	General warning of potential injury
	Read the users' manual
	Two trained operators required
	Load Capacity/Safe Working Load
	Lock
	Unlock
	Serial Number
	Medical Device
	Compliant with European Union standards
	Compliant with United Kingdom standards
	Date of Manufacture
	Manufacturer
	Temperature limit
IP 66	IP rating
	Duty cycle
	E8 homologation certificate
	OFF
	ON
	WEEE Directive: Dispose of batteries properly

1.5 Safety and Instruction Labels

Safety and instruction labels place important information from the users' manual on the Viper Transporter. Read and follow label instructions. Replace worn or damaged labels immediately.

Symbol	Definition	Part Number
A	General injury warning, read the users' manual, load capacity	52058
B	Loading height indicator, side	52089
C	Loading height indicator	52090
D	Directional wheel lock	52084
E	Manual override release handle (Non-powered lower/raise legs)	52060
F	Control buttons	52063



A

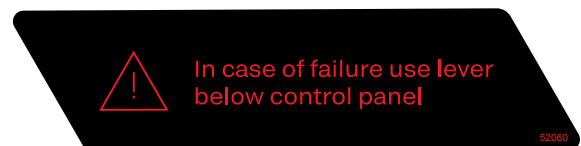


B

C



D



E



F

2 - OPERATOR FOCUS

2.1 Operator Training

Operator that using the Transporter:

- must read and understand this manual.
- must have training on proper use of the Transporter.
- must have the physical ability to assist the patient.
- must practice using the Transporter before using it with a patient.
- must keep training records. For a sample training record sheet, see "Training Record" on page 34.



WARNING

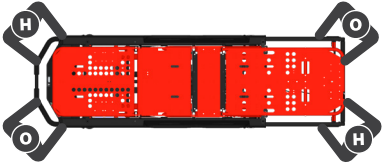
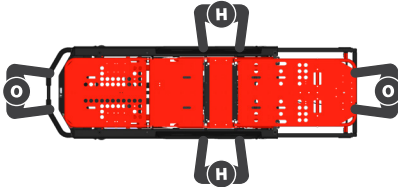
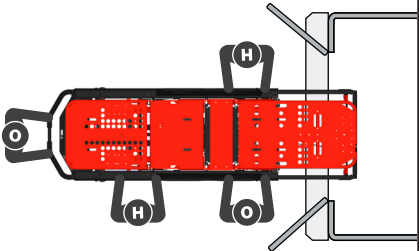
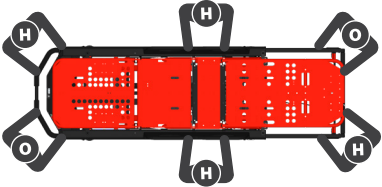
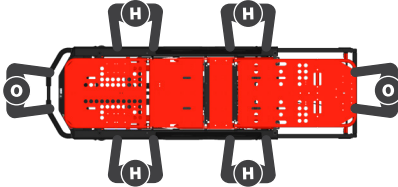
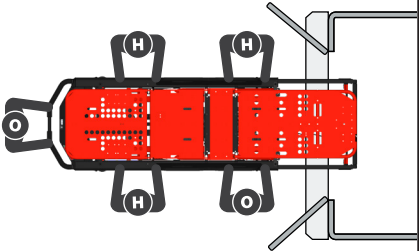
Untrained helpers can cause injury or be injured. Trained operators must instruct helpers where to hold the Transporter to avoid injury.

2.2 Using Additional Help

Trained operators may need additional help when working with heavy patients.

- Two trained people stand at either end of the Transporter and instructing the helpers.
- It is recommended that helpers work in pairs to help keep the Transporter balanced.

Look at the chart to see where the operators and helpers should stand.

Helpers	Changing Levels	Moving	Loading/Unloading
Two Operators + Two Helpers			
Two Operators + Four Helpers			

Key: O = Operator H = Helper

3 - ABOUT THE TRANSPORTER

3.1 Description

The Ferno® Viper Transporter is a medical device designed to transport a patient in a vehicle. It is designed for use in conjunction with Viper Lift-Off Stretcher or detachable Incubator Platform.

The Transporter is for use by a minimum of two trained operators.

OPTIONS

The Transporter comes equipped with options selected at time of purchase.

- Transport Wheels:
 - 150 mm diameter
 - 200 mm diameter
- Wheel Locks:
 - Two Wheel Locks, Foot-End
 - Four Wheel Locks

COMPATIBLE STRETCHER PLATFORM

- Ferno® Viper Lift-Off Stretcher
- Ferno® Viper Incubator Platform

COMPATIBLE FASTENERS

- Ferno® Viper Loading System (VLS)

3.2 Compliance

The Transporter meets the following standards:

- **EN 1865-2:** Patient handling equipment used in road ambulances – Part 2: Power assisted stretcher
- **EN 1865-3:** Patient handling equipment used in road ambulances – Part 3: Heavy duty stretcher
- **EN 1789:** Medical vehicles and their equipment – Road ambulances
- **EN 60601-1:2006:** Medical electrical equipment - Part 1: General requirements for basic safety and essential performance
- **EN 60601-1-2:2015:** Medical electrical equipment – Part 1-2: General requirements for basic safety and essential performance – Collateral Standard: Electromagnetic disturbances – Requirements and tests
- **EN 60601-1-6:2010:** Medical electrical equipment – Part 1-6: General requirements for basic safety and essential performance – Collateral standard: Usability



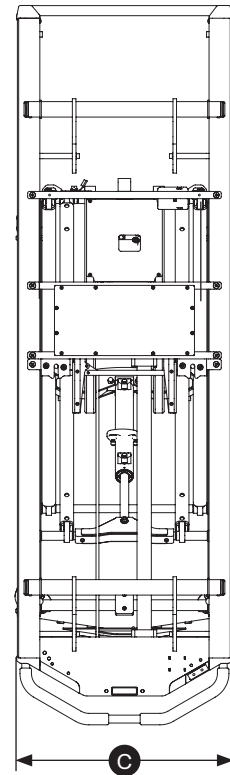
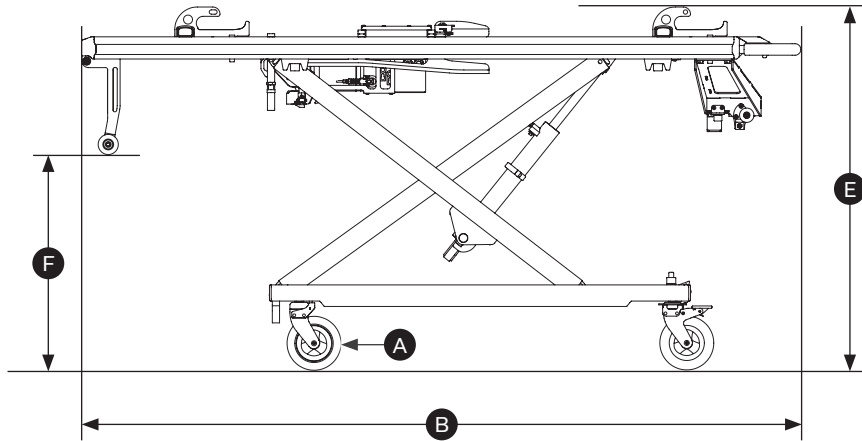
WARNING

Improper use of the Transporter can cause injury. Use the Transporter only for the purposes described in this manual.

An improper fastener can cause injury. Use only a compatible Ferno fastener designed for use with this Transporter.

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

3.3 General Specifications



Specifications	Metric	Imperial
A) Wheels	150 x 50 mm	6" x 2"
B) Length	2000 mm	79"
C) Width of Transporter	600 mm	24"
E) Height (Minimum-Maximum)	470 mm - 1420 mm	18" - 56"
F) Loading Height (User-Programmable)	Max 950 mm	Max 37.4"
Load Capacity (Unassisted)	320 kg / 50 st	705 lbs
Transporter Weight	71 kg	156 lbs

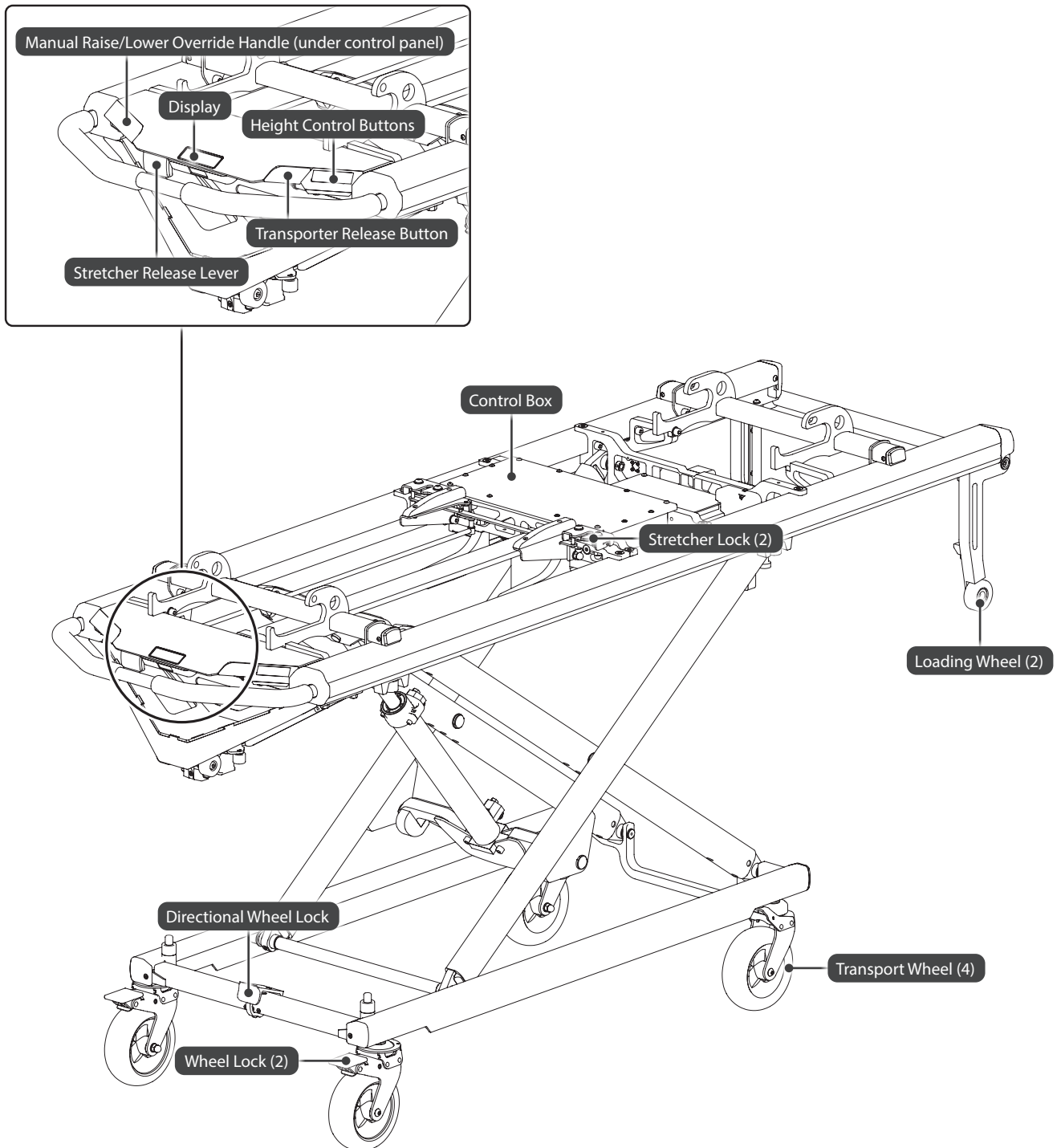
Specifications are rounded. Imperial conversions are calculated before rounding the metric measurement. Ferno reserves the right to change specifications without notice.

- Load capacity is the amount of weight the Transporter is designed to hold, including stretcher, patient and accessories attached.
- Loading height is the distance from the ground to the bottom of the loading wheels.
- Transporter weight includes the battery but is without optional features.

Power System	
Charger Operating Range	-30°C to 70°C / -22°F to 158°F
Charger Output	48V, 3.34 A
Battery Operating Range	0°C to 65 °C / °32F to 149°F
Battery Output	37 VDC, 5Ah
Recommended Max Operating Duty Cycle	<24 sec ON; >120 sec OFF
Charging Time ⁴	Constant charging when in vehicle
Charging Time when fully depleted	Approx. 4.5 hrs
Input	100-240 VAC, 50/60 Hz, 2.0A

Construction	
Frame, Legs, Bed Surface	Aluminum
Wheels	Stainless steel bearings

3.4 Components



Control End

4 - SETUP

4.1 Ambulance Information

The patient compartment should have a level floor large enough for the Transporter and installed accessories, and the compatible loading system installed.

4.2 Install Accessories

Before placing the Transporter in service, assign appropriate personnel to install any accessories shipped with the Transporter. Keep accessory users' manuals with this manual for future reference.

4.3 Charge the Battery

Charge the battery immediately upon receipt until it has a full charge. To comply with shipping regulations, the Transporter must be shipped with less than a 30% charge.

Charge the battery by connecting the supplied Viper battery charger (see "Battery Charger" on page 16) or by securing the Transporter into a Viper Loading System (VLS) with integrated charging system correctly connected and powered.

4.4 Turn On the Transporter

The power switch is located under the control box (see "Power Switch", page 12). Turn the power switch ON (I) to turn on the Transporter.

4.5 Set the Loading Height

The user can set the Transporter so it stops automatically at a suitable loading height for the assigned vehicle in which it is being used.

To set or change the loading height:

1. On a level surface, raise or lower the Transporter until the yellow arrows on loading system are aligned within the loading height range on the Transporter (Figure 1).

Note: The yellow arrows should point to the upper half of the loading height range. This will provide a reserve for loading on uneven surfaces.

2. Press and hold **both**   height-control buttons until the blue indicator lights  reach 5 bars and flash quickly to confirm the new setting.
3. Lower and raise the legs to verify the Transporter stops at the new loading height. Test loading and unloading the Transporter with the vehicle.

Note: The loading height cannot be set when the Transporter is at the factory-set maximum height.



WARNING

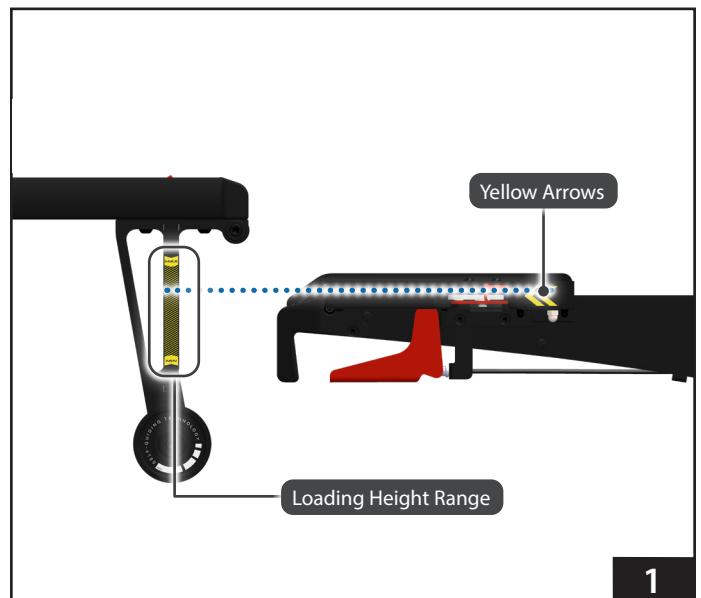
Attaching improper items to the Viper Transporter can cause injury. Use only Ferno-approved items on the Viper Transporter.

NOTICE

Loose items and debris on the patient compartment floor can interfere with the operation of the Viper Transporter with the fastening system. Keep the patient compartment floor clear.



**CHARGE
BATTERY
IMMEDIATELY
UPON RECEIPT**



1

5 - FEATURES

5.1 Power Switch

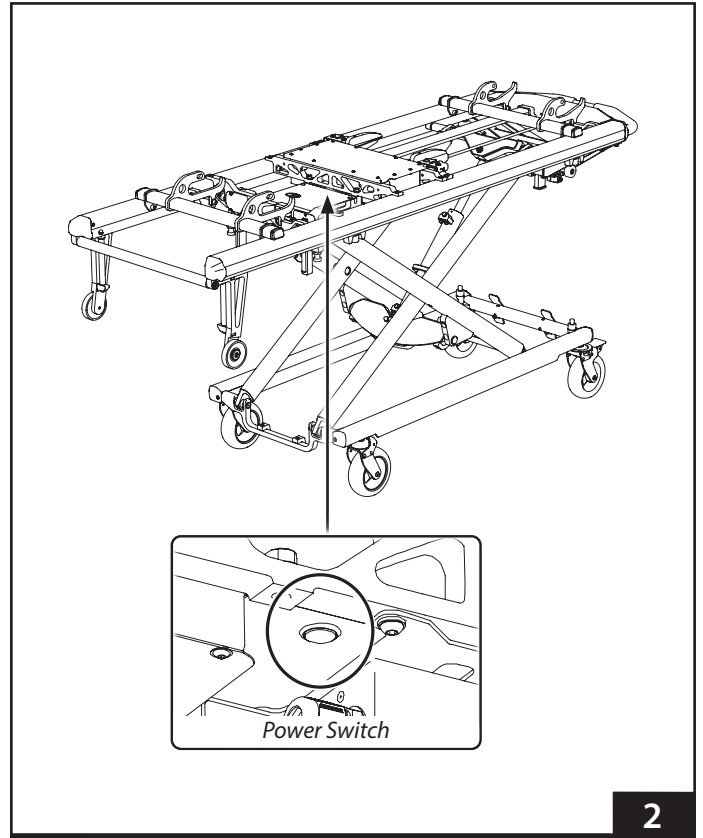
The power switch (Figure 2) can be accessed from the bottom of the control box.

Keep the switch in the ON (I) position. Turn the power switch OFF (O) only when storing the Transporter.



WARNING

Turning the power switch off while operating the Transporter can damage the Transporter. Only turn the power switch off when storing the Transporter.



2

5.2 Display

When the Transporter is activated, the display shows the Transporter status (Figure 3).

INDICATOR LIGHTS

These lights show approximate battery charge:

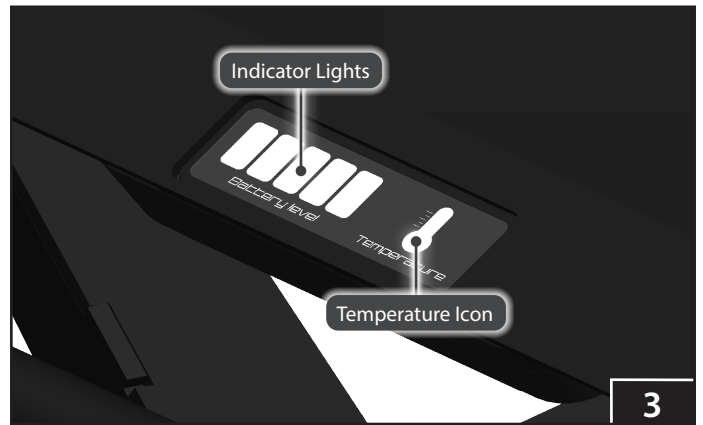
- 80 - 100%
- 60 - 79%
- 40 - 59%
- 20 - 39%
- < 19 %

When the battery is charging, the lights flash green.

The lights turn red or orange to alert the operator to functional issues (see "Troubleshooting", page 32).

TEMPERATURE ICON

This icon indicates low or high system temperatures.



3

5.3 Height-Control Buttons

Height-control buttons are located on the control panel (Figure 4).

EXTEND LEGS: Raises the Transporter when on the ground / lowers the legs when Transporter is on the loading arm.

RETRACT LEGS: Lowers the Transporter when on the ground / raises the legs when the Transporter is on the loading arm.

AUTOMATIC STOPS

The Transporter stops automatically at four set heights:

- Fully-lowered
- Fully-raised
- User-set loading height (only stops at this point when raising)

Viper Transporter has a number of pre-set positions where it will automatically stop when pressing (and keeping pressed) the  or  to raise or lower the Transporter. Additional to this, at any time the button is released, the Transporter will stop at that position.

When raising the Transporter from its lowest position, it will first automatically stop at the user-set loading height (see page 11). Depressing the  again, the Transporter will then continue to move up to the maximum height.

To set the loading height, see page 11.

BUTTON LOCKOUT

Buttons function is locked out to prevent accidental use when the Transporter is being charged.

5.4 Transporter Release Button

The Transporter release button (Figure 4) unlocks the Transporter from the loading system.

5.5 Sleep Mode

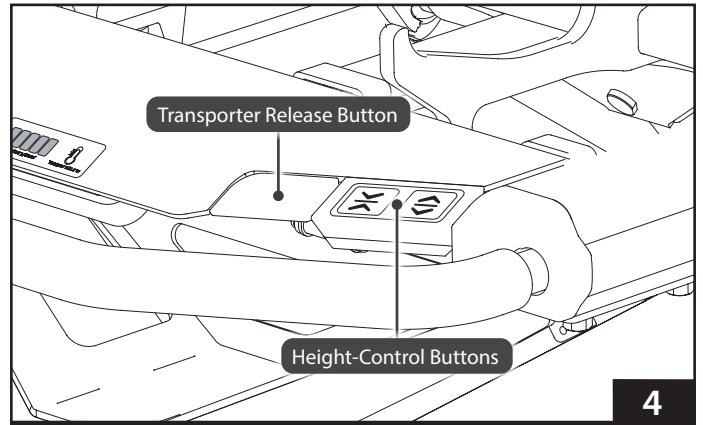
Sleep Mode conserves battery power. If the Transporter is not in use for more than 10 minutes (no buttons pressed), the system enters Sleep Mode. In Sleep Mode, the display and lights (optional) are OFF. Sleep time interval is configurable in Service App (see "Service App", page 31).

Press  or  to activate the Transporter.



WARNING

The button lockout feature is active only when charging. Pressing height-control buttons while the Transporter is locked in the loading system can damage both the Transporter and the loading system. Do not press the buttons when the Transporter is locked in the loading system.



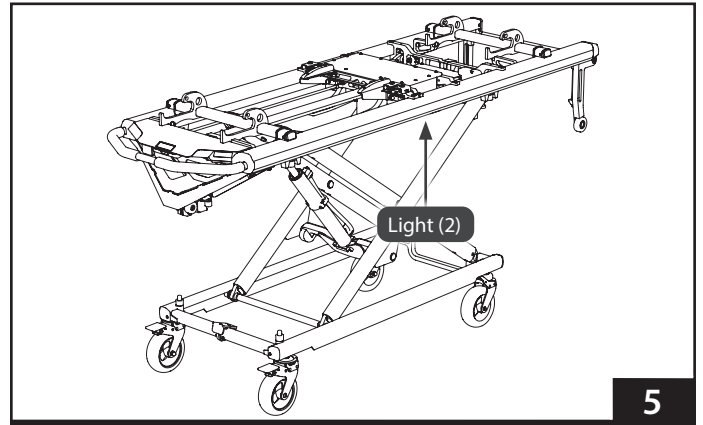
5.6 Lights (Optional)

Lights are located under main frame (Figure 5) and provide steady white light to illuminate the ground around the Transporter.

To turn the lights ON, press  button.

Press  button again to turn the lights OFF.

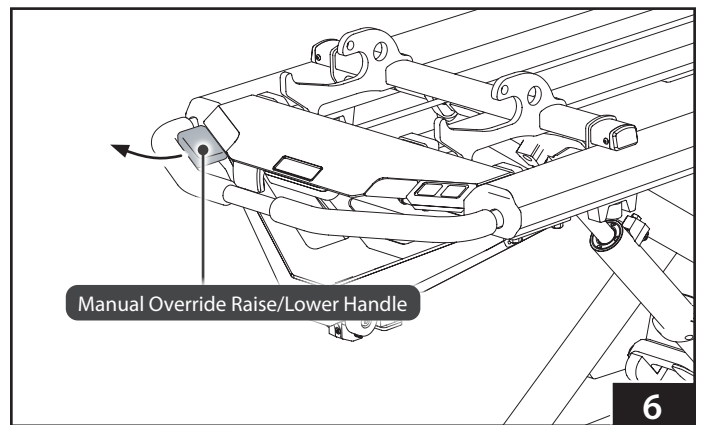
Note: Lights turn OFF automatically when system enters Sleep Mode (page 13) and turn ON again when the Transporter is activated.



5.7 Manual Override Raise/Lower Handle

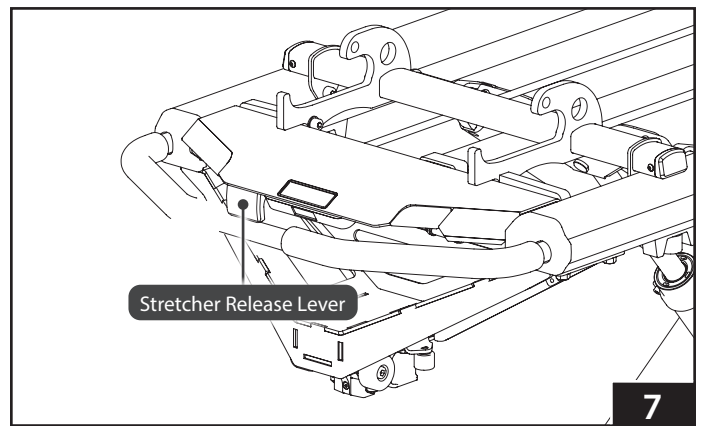
Manual override handle is located under control panel (Figure 6). This handle disengages the Transporter's power system and allows operators to raise or lower the Transporter manually.

Refer to the non-powered operation sections of this manual to operate the Transporter manually.



5.8 Stretcher Release Lever

Stretcher release lever (Figure 7) is located at the Transporter control end and unlocks the stretcher for removal.



5.9 Battery

The integrated 37 V battery is a rechargeable battery with capacity of 5000 mAh and a battery management system (BMS) to extend its life.

When secured in the VIPER Loading System with a powered integrated charging system, the stretcher hydraulic system is disabled, ensuring it cannot be moved up or down when loaded.

Battery Features:

- Press any height control button to display the approximate battery charge (1 to 5 bars)
- **Charging indicator lights (5):** When the control height button is pressed, the number of lights illuminated on control panel indicates approximate battery charge. Lights flash green when the battery is charging in the vehicle on the loading system or when charging with the supplied external mains battery charger when outside the vehicle.
- **Temperature icon:** A blue flashing symbol indicates a low battery temperature. A red flashing symbol indicates a high temperature of one of the electronic components. If the problem persists, inspect the stretcher.
- **Sleep Mode:** After a period of inactivity, the stretcher will enter Sleep Mode to conserve battery power. Press any height-control button on the transporter to wake the transporter from Sleep Mode.
- **Charging:** The integrated charging system (ICS) uses power from the ambulance electrical system to automatically charge the battery while the stretcher is secured in a VIPER Loading System. Alternatively, it is possible to charge the stretcher outside of the vehicle using the supplied external mains charger which connects to the connector on the control box (Figure 8). The recommended ambient temperature for charging the battery is 0°C - 25°C. Charge the battery in a stable temperature environment.
- **Balancing:** During balancing, the voltages on the individual cells of the battery are equalized. This process starts when the battery has been fully charged and may take several tens of minutes. Battery Balancing is indicated by flashing all five indicator lights.



WARNING

Improper charging can cause injury and damage. Charge the battery only with an approved adapter and Ferno charger or integrated charging system (ICS).

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

Use only the original charging adapter. Using a non-original adapter may cause damage to the product.

Do not connect the charging adapter when the stretcher is in use or with patient on it. There is a risk of injury to the operator and the patient.

When connected to an external AC voltage network, the stretcher meets the requirements of protection class I. To avoid the risk of electric shock, the stretcher must be connected to a power network with protective earthing.

When the battery capacity drops below 20%, start charging as soon as possible. There is a risk of the electronic system shutting down when battery charge drops below 20%.

Fully charge and balance the battery at least once every 2-4 weeks, depending on how often you use the stretcher. There is a risk of battery failure if this is not followed.

Improper maintenance can cause injury and damage. Maintain the stretcher and battery only as described in this manual.

NOTICE

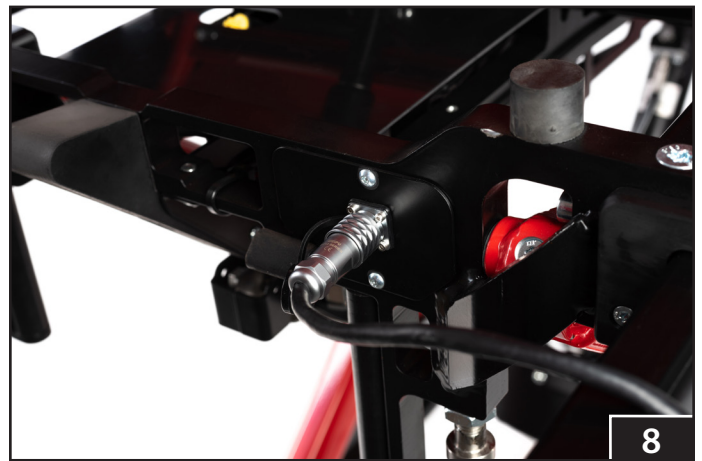
Fully charge the battery immediately upon receipt of the stretcher and before using the stretcher. Shipping regulations require the battery to be shipped with a maximum 30% charge. Failure to charge the battery in a timely manner can damage the battery.

To charge a battery inside an vehicle, use a VIPER Loading System with integrated charging system.

Charge Ferno batteries only with a compatible Ferno charger.

A fully charged new battery allows approximately 50 lift cycles with a load of 100 kg. This value is indicative only.

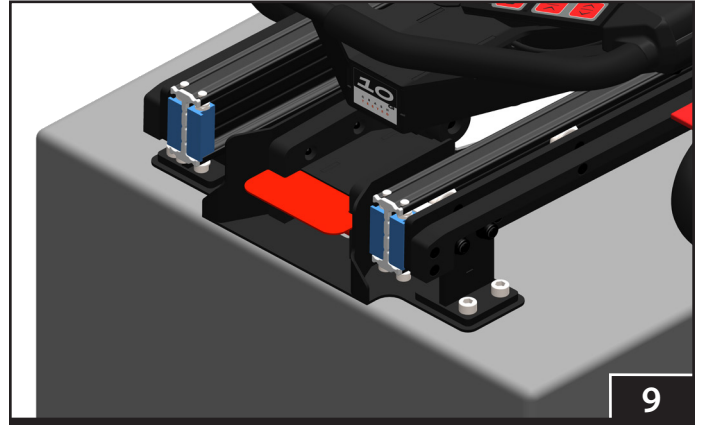
As the battery ages and the number of charge cycles increases, the number of lifts per fully charged battery decreases. This is a natural process.



5.10 Integrated Charging System

When the Transporter is locked in the loading system (Figure 9), integrated charging system charges the Transporter battery and disables all powered operations of the Transporter (up/down, Transporter release from platform, etc.). Confirm the loading system is receiving power from the vehicle. The Transporter light indicators will flash green when charging or stay constant 5 bar green when fully charged.

If the battery has a very low charge, the charging system may not be able to charge the battery. In this case, connect the battery directly to the external charger.



5.11 Wheel Locks

Wheel locks (Figure 10) stop wheel rotation when engaged, and help keep the Transporter from moving during patient transfer and certain medical procedures. Wheel locks are mounted to control-end transport wheels (or to all transport wheels, optional).

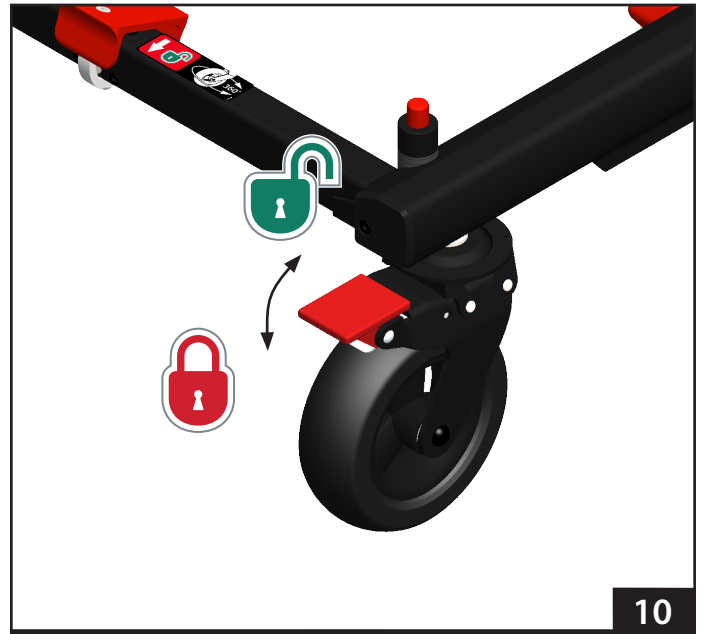
Press the red lever down to engage the lock. Press the opposite end of the lever to unlock.

Remain with the Transporter and keep control of it at all times. Do not leave the patient unattended.

NOTICE

Wheel locks are not a substitute for operator control. The operators must remain with the Transporter and keep control of it at all times. Do not leave the patient unattended.

Wheel locks are not brakes. Do not use wheel locks to slow a moving Transporter.



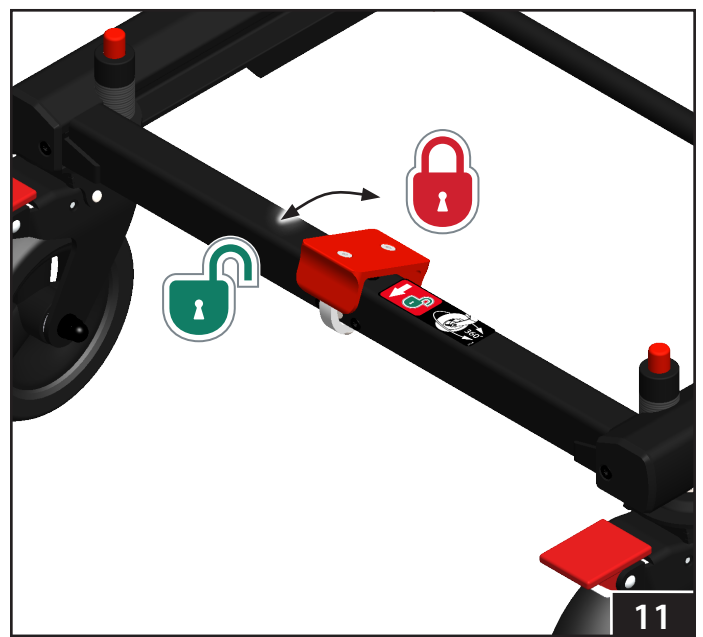
10

5.12 Directional Wheel Locks

Directional wheel locks (Figure 11) allow the operators to lock the direction of both loading-end transport wheels in line with the length of the Transporter.

To lock, press the top of lock lever located at the control-end of the Transporter. The directional wheels will lock automatically when they align with the length of the Transporter when the Transporter starts to move. To unlock, press the opposite end of the lever to disengage and allow 360° swivelling of the loading-end wheels.

The directional wheels must be locked before loading the Transporter into a vehicle or unloading the Transporter from a vehicle.



11

6 - USING THE TRANSPORTER

6.1 Before Placing the Transporter in Service

- Before use, personnel who will work with the Transporter must read and understand this manual. Appropriate training is also required. See "Operator Training", page 7.
- Install any accessories shipped with the Transporter, if not already fitted. Keep accessory users' manuals with this manual for future reference.
- Turn the power switch ON (I) to turn on the Transporter.
- Charge the battery until it is fully charged.
- Set the loading height according to the vehicle it is being used in (page 11).
- Confirm that the Transporter operates properly. See "Inspecting", page 29.



WARNING

Turning the power switch off while operating the Transporter can damage the Transporter. Only turn the power switch off when storing the Transporter.

NOTICE

Charge the battery immediately upon receipt. Shipping regulations require the battery to be shipped with a 30% charge. Failure to charge the battery in a timely manner can damage the battery.

Charge the battery only with a compatible Ferno charger or loading system.

6.2 General Guidelines for Use

Medical advice is beyond the parameters of this manual. It is the operators' responsibility to ensure safe practices for the patient and themselves. A minimum of two trained operators is required.

- Follow standard patient-handling procedures when operating the Transporter.
- Communicate with one another and use coordinated movements to operate the Transporter.
- Talk to the patient. Communicate with the patient before changing the Transporter position.
- Stay with the patient at all times. Do not leave a patient unattended.
- Use additional help as needed (page 7).
- Read the stretcher and loading system users' manual.
- The Transporter enters Sleep Mode when not in use to preserve the battery. To wake the Transporter from Sleep Mode, press  or .

6.3 Attaching and Removing A Stretcher

The Transporter is designed for use with a range of Ferno® lift-off stretcher platforms. See “Compatible Stretchers” on page 8. The stretcher platform can be locked onto the Transporter with the patient’s head at either end of the Transporter.

A stretcher locks onto the Transporter when the pins on the bottom of a stretcher platform engage the locks on the Transporter (Figure 12).

ATTACHING THE STRETCHER

1. Lock the wheel locks to help hold the Transporter stationary.
2. Lift the stretcher platform and position it slightly toward the control end of the Transporter (Figure 13). Use additional help as needed to control the load (see Using Additional Help, page 7).
3. Align the stretcher glides with the Transporter main frame and set the stretcher on the Transporter main frame.
4. Move the stretcher toward the loading end of the Transporter until the stretcher pins fully engage in the Transporter locks.
5. Verify that the stretcher is locked by attempting to pull it toward the control end of the Transporter. If the locks have engaged, the stretcher will remain fixed on the Transporter. If the locks have not engaged, repeat Steps 2-4.
6. Release the wheel locks before moving the Transporter.

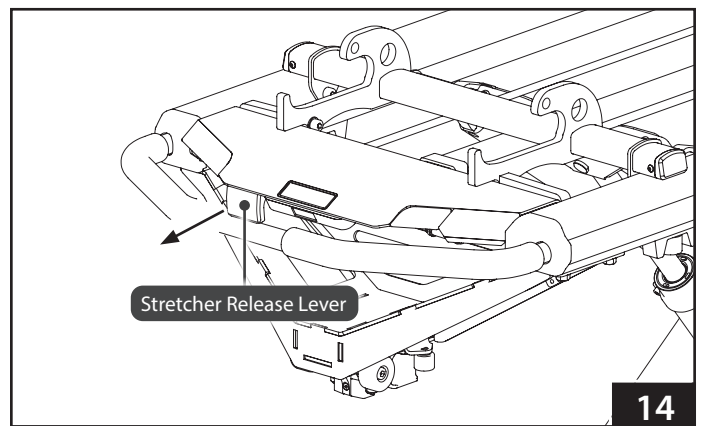
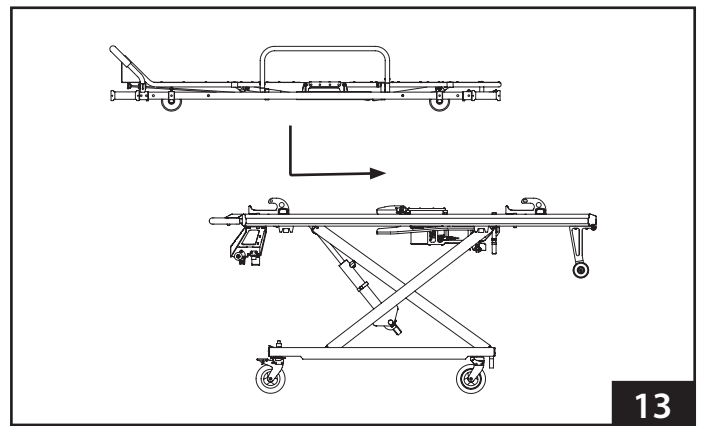
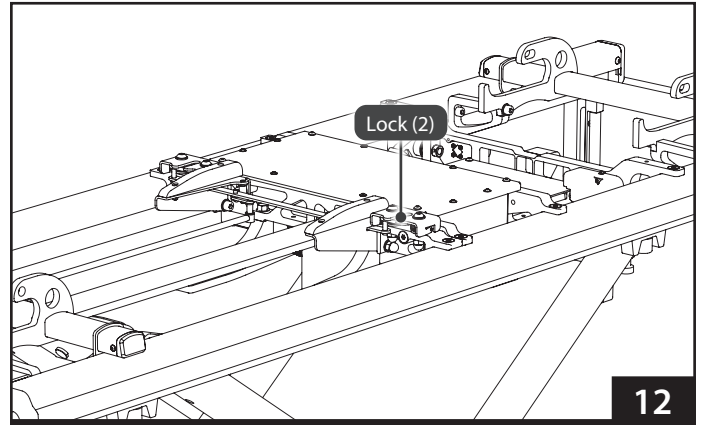
REMOVING THE STRETCHER

1. As the operator pushes the stretcher release handle on the Transporter (Figure 14), both operators move the stretcher slightly toward the control end of the Transporter to move the pins out of the locks.
2. Let go of the stretcher-release handle when the stretcher has cleared the pins.
3. Together, lift the stretcher off the Transporter. Use additional help as needed to control the load. See “Using Additional Help” on page 7.



WARNING

An improperly secured stretcher can separate from the Transporter and cause injury. Attach the stretcher securely and verify that the locks have engaged.



6.4 Powered Raising/Lowering

Raising or lowering the legs with a patient on the Transporter requires a minimum of two trained operators who are communicating, working together, and maintaining control of the Transporter at all times.

Be aware that the Transporter automatically stops at the minimum height, user-set loading height (only when raising), and at the maximum height. To continue, press  or .

1. Keep both hands on the Transporter main frame. Maintain control of the Transporter so it does not shift when raising or lowering the legs. During the position change, move with the Transporter and maintain your grasp on the main frame.
2. Press  or  to awaken the Transporter from Sleep Mode.
3. Press  or  until the Transporter reaches the desired height (Figure 15).

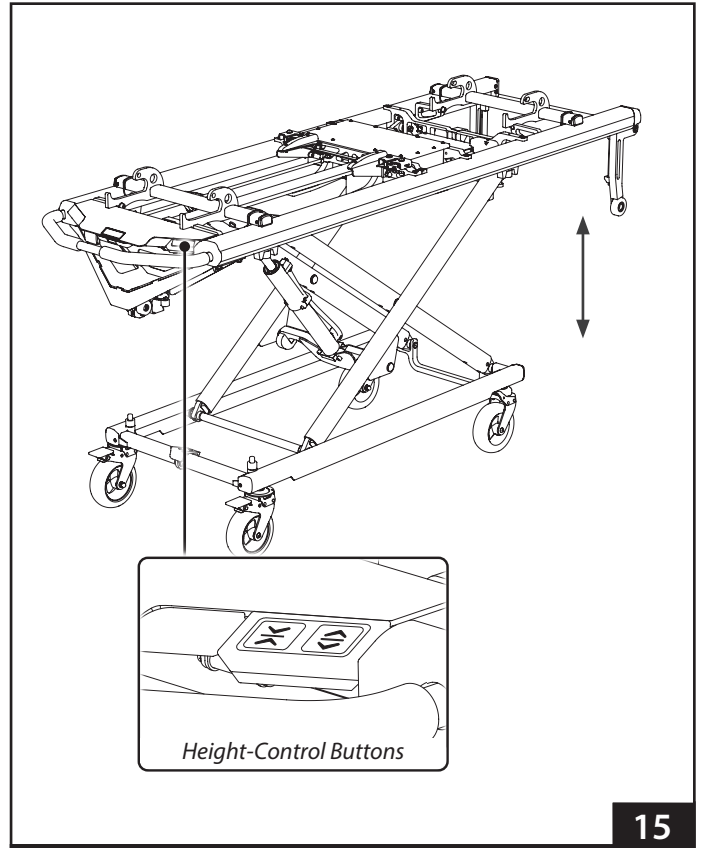


WARNING

Uncontrolled movement can cause injury or damage. Support and control the Transporter at all times.

NOTICE

Operators must maintain a firm grasp on the main frame and control the Transporter at all times. Be prepared to help raise or lower the Transporter.



6.5 Moving the Transporter

Moving the Transporter with a patient on it requires a minimum of two trained operators who are communicating, working together, and maintaining control of the Transporter at all times.

Use additional trained helpers as needed to safely control the weight of the patient and the Transporter. See "Using Additional Help", page 7.

Move the Transporter on smooth, unobstructed surfaces whenever possible. Do not move the Transporter sideways or push the Transporter using the backrest. Move the Transporter only with both hands grasping the Transporter main frame.

Move the Transporter at the recommended transport height. Moving above this height can increase the chance for the Transporter to tip.

1. Make sure the patient is secured.
2. Press  or  to adjust the Transporter height (Figure 16).
3. Operators position themselves at the ends of the Transporter, grasp the main frame with both hands and maintain control of the Transporter. If needed, direct trained helpers where to stand and how to grasp the Transporter.

The recommended height at which to move the Transporter is dependent on the height/preference of the operators, but may also be dictated by local manual handling protocols and procedures.

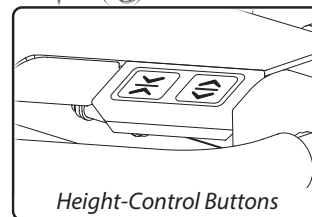
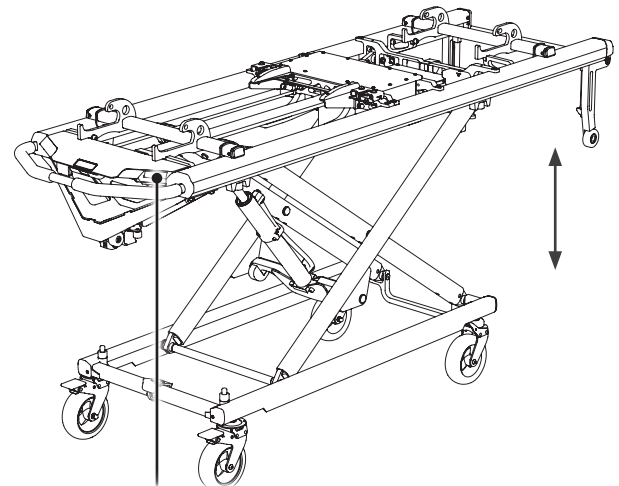
The height of the Transporter should be set as low as possible to minimise the risk of tipping, especially on rough ground, but at a height such that the operator is in control and comfortable operating the Transporter.



WARNING

Moving the Transporter sideways can cause it to tip and injure the patient and/or operators. Move the Transporter only toward the control end or loading end.

Trained operators must consider the environment and terrain before moving. Moving the Transporter in a lowered position will minimise the potential of tipping the Transporter.



Height-Control Buttons

16

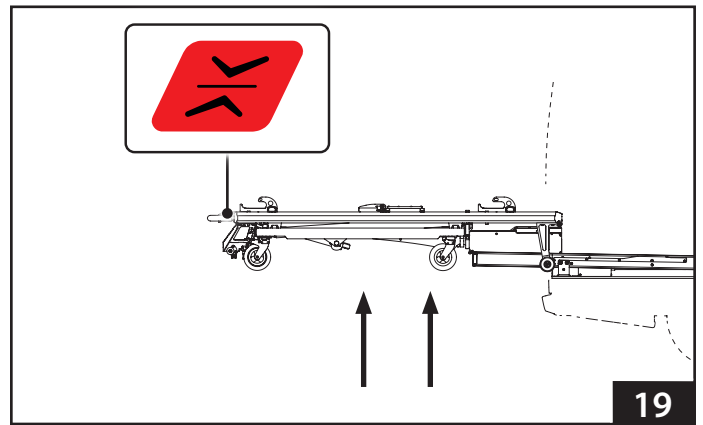
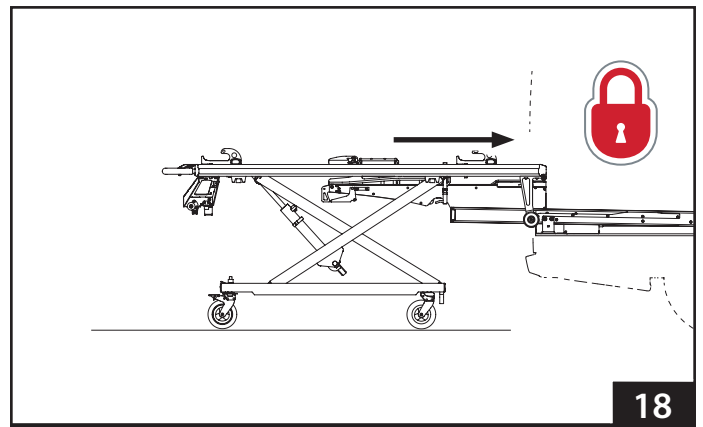
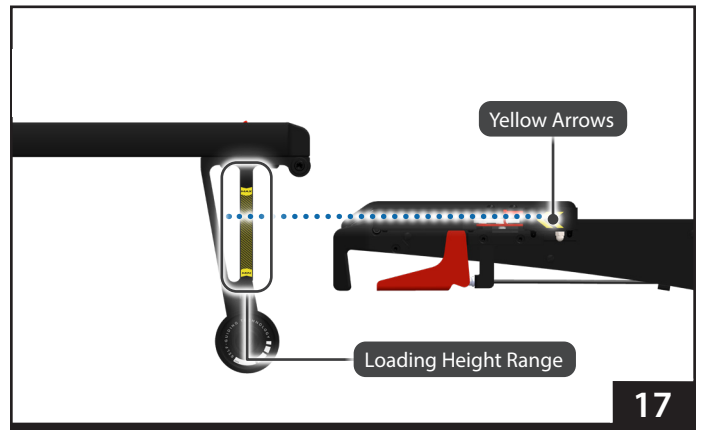
6.6 Loading the Transporter

Loading the Transporter into a vehicle with a patient on it requires a minimum of two trained operators who are communicating, working together, and maintaining control of the Transporter at all times.

To set the loading height, see “Set the Loading Height”, page 11.

1. Raise the vehicle folding bumper, if present.
2. Lock the directional wheels.
3. Move the Transporter near the vehicle back door.
4. Extend the loading arm **fully** (refer to the loading system users' manual).
5. Press  to raise the Transporter to the user-set loading height. The yellow arrows on the loading arm must align within the loading height range shown on the Transporter (Figure 17). If not, press  or  to adjust the Transporter height.
6. Align the Transporter with the loading system, then move the Transporter into the vehicle until the Transporter locks in the loading arm (Figure 18). If not, re-adjust the position of the Transporter and retry.
7. Press and hold  to lower the Transporter onto the loading arm and fully raise the Transporter legs (Figure 19).
8. Push the Transporter completely into the vehicle and confirm it is locked into the loading system by pulling back on the Transporter. The loading arm red release handle must be in horizontal position (Figure 20).

Button Lockout: Do not press  or  while the Transporter is inside the vehicle. Also refer to “Button Lockout”, page 13.



WARNING

Failure to engage the Transporter in the loading arm during loading can cause injury. Operators must ensure the Transporter is secure in the loading arm before attempting to raise the legs.

NOTICE

If the vehicle is parked on an uneven surface, the operators may need to raise the Transporter higher than the user-set loading height to allow the Transporter to move into the loading arm.

6.7 Unloading the Transporter

Unloading the Transporter from a vehicle with a patient on it requires a minimum of two trained operators who are communicating, working together, and maintaining control of the Transporter at all times.

1. Raise the vehicle folding bumper, if present.
2. Press the loading arm release handle to unlock the loading arm (Figure 21).
3. Grasp the Transporter with both hands and pull the Transporter on the loading arm **completely** out of the vehicle as far as it will go until the loading arm stops and the Transporter is fully out of the vehicle (Figure 22).
4. Press and hold  until the legs stop and touch the ground (Figure 22).
5. Press transporter release button to disengage the Transporter from loading arm (Figure 23).
6. Move the Transporter completely out of the loading arm. Keep the Transporter parallel with the extended loading arm during moving.
7. Press  to lower the Transporter before moving. See "Moving the Transporter" on page 21.

NOTICE

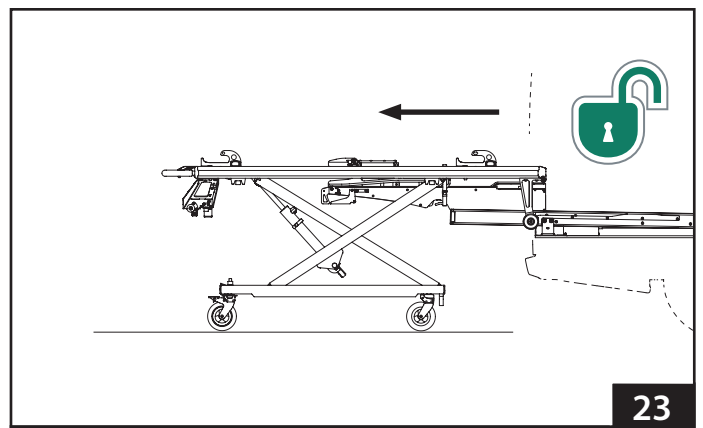
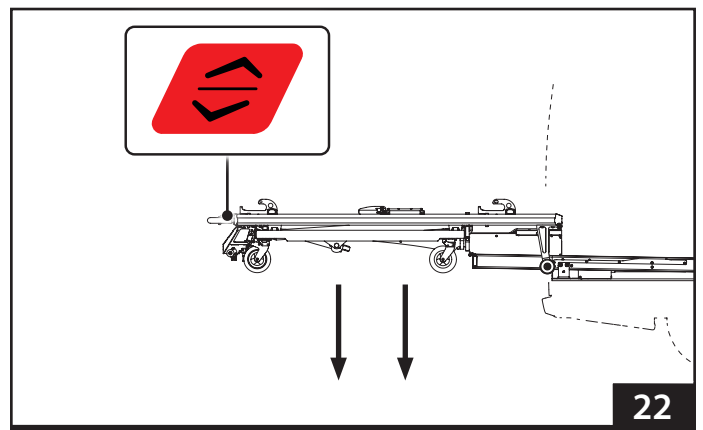
If the vehicle is parked on an uneven surface, the operators may need to adjust the Transporter height to allow the Transporter to move out of the vehicle.

6.8 One Operator, Empty Transporter

If local protocols permit, an empty Transporter (without patient) may be operated by one trained operator. Always use two operators when a patient is on the Transporter.

Raising and Lowering: Press  or  to adjust the Transporter height.

Loading and Unloading: Follow the procedures as for two operators. See "Loading the Transporter" on page 22 or "Unloading the Transporter" on this page.



6.9 Non-Powered Operation: Raising and Lowering

When the battery charge is low or depleted, use the manual override system to operate the Transporter. Use additional trained helpers as needed. See "Using Additional Help" on page 7.

MANUAL RAISING OR LOWERING

1. Stand at the opposite ends of the Transporter and grasp the main frame with an underhand grip (palms facing up).
2. Lift the Transporter slightly to lift the weight off the leg locking mechanism.
3. Pull the manual override handle fully (Figure 24) and keep it pulled whilst making the position change.
4. Manually lift or lower the stretcher to the desired height, keeping the Transporter at that position until the legs touch the ground.
5. Release the manual override handle to lock the Transporter at the desired height.
6. Slowly lower your hands and loosen grip to ensure the Transporter has stabilised at the new position.

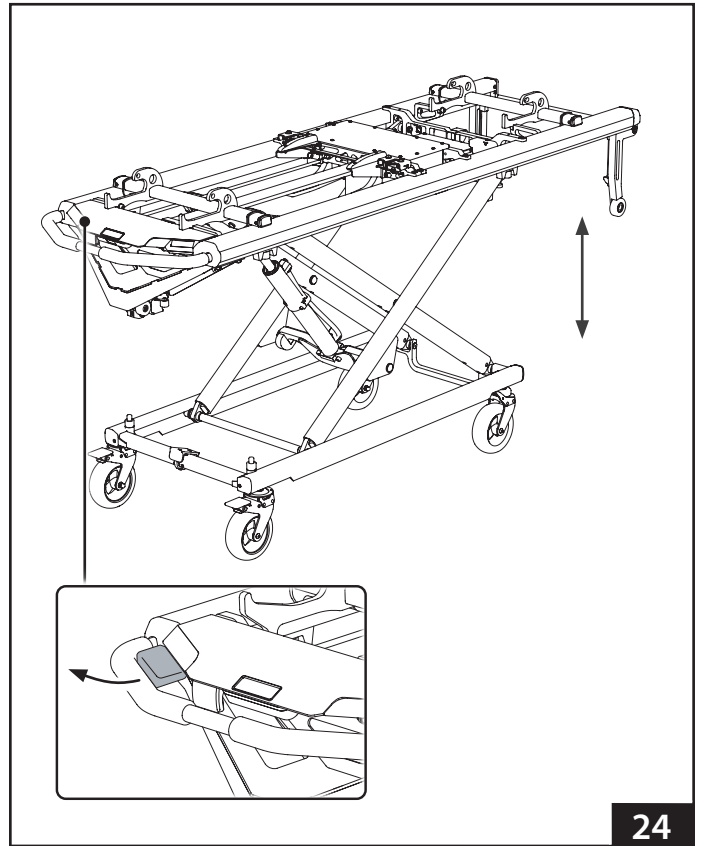


WARNING

Uncontrolled movement can cause injury or damage. Support the load before using a manual override handle.

NOTICE

The manual override handle will not function unless the weight has been lifted off the leg locking mechanism. This is a safety feature to help prevent accidental lowering of the legs.



24

6.10 Non-Powered Operation: Loading

To load the Transporter into the vehicle if there is no power on the Transporter and no way of charging the battery, follow the normal loading procedures, but with the following differences:

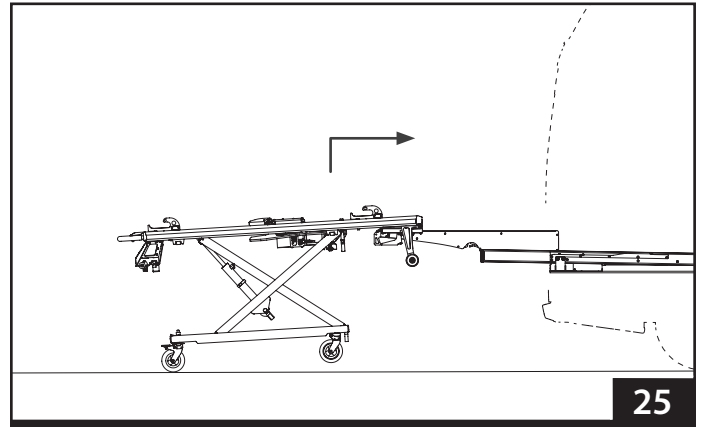
1. Raise the vehicle folding bumper, if present.
2. Lock the directional wheels.
3. Move the Transporter near the vehicle back door.
4. Extend the loading arm **fully** (refer to the loading system users' manual).
5. **If helpers are available:**
 - Use additional help to adjust the Transporter to the loading height (see "Non-Powered Operation: Raising and Lowering" on page 24).
 - Align the Transporter with the loading system, then move the Transporter into the vehicle until the Transporter locks in the loading arm.

If helpers are not available:

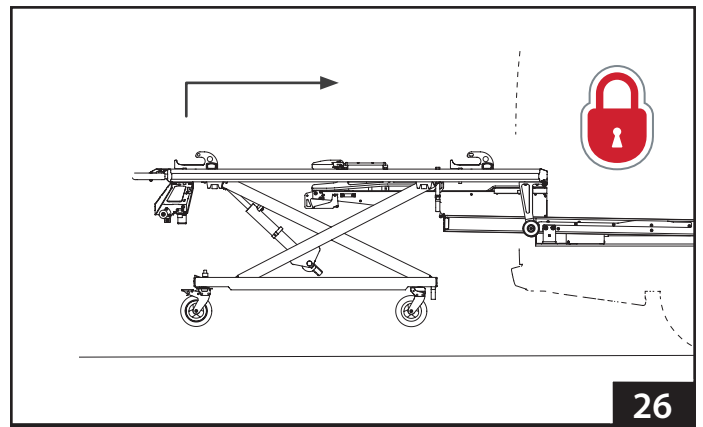
- Manually raise the Transporter as high as possible.
 - Align the Transporter with the loading system, then lift the loading-end of the Transporter and position it on the slider of the loading arm (Figure 25).
 - Lift the control-end and push the Transporter towards the vehicle until the Transporter locks in the loading arm (Figure 26).
6. Confirm the Transporter is locked in the loading arm by pulling it slightly outwards from the vehicle. If not, adjust and retry.
 7. Pull the raise/lower manual override lever and keep it engaged.
 8. Hold the lower frame of the undercarriage by the longitudinal beams, ensuring your fingers rest on the outer surfaces (Figure 27).
 9. Raise the undercarriage to raise the Transporter legs (Figure 28).

Note: The Transporter legs must be fully raised to be able to unlock the loading arm, allowing the Transporter to be loaded into a vehicle.

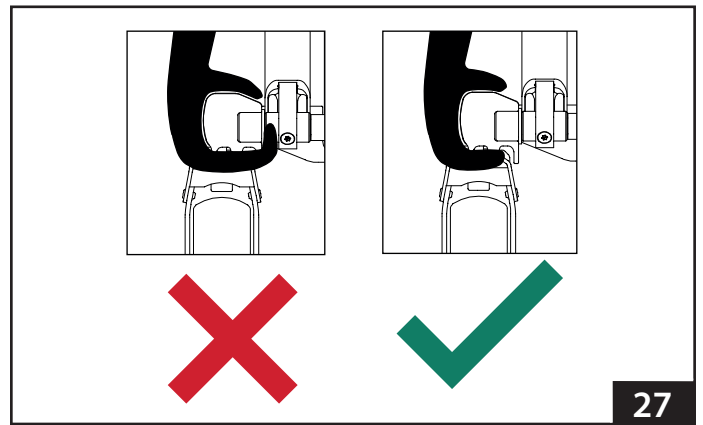
10. Push the Transporter completely into the vehicle and confirm it is locked into the loading system. The loading arm red release handle must be in horizontal position.
11. Release the manual override handle.



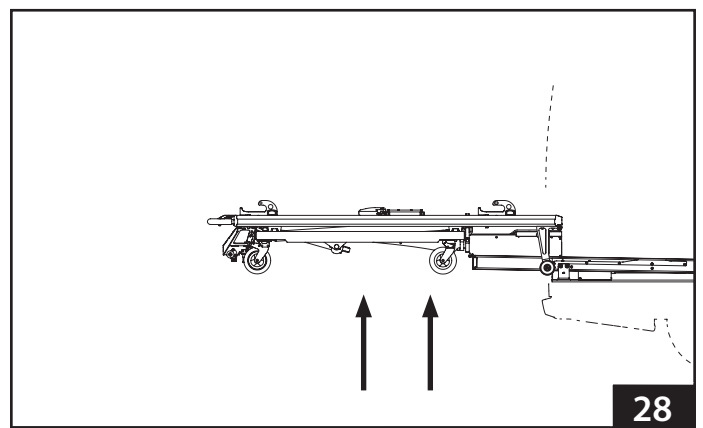
25



26



27



28

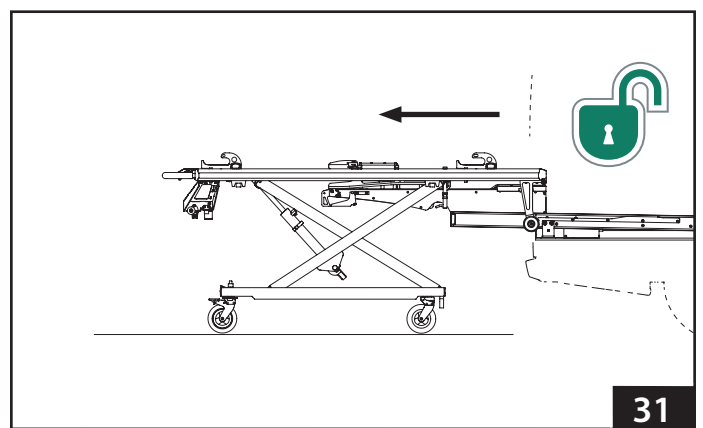
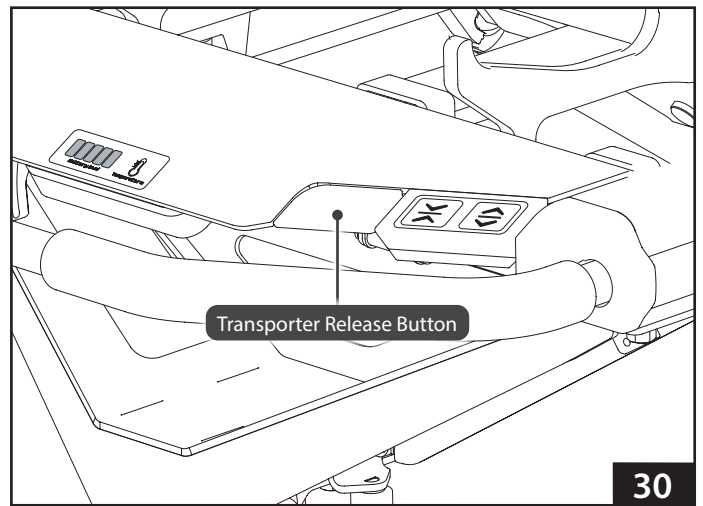
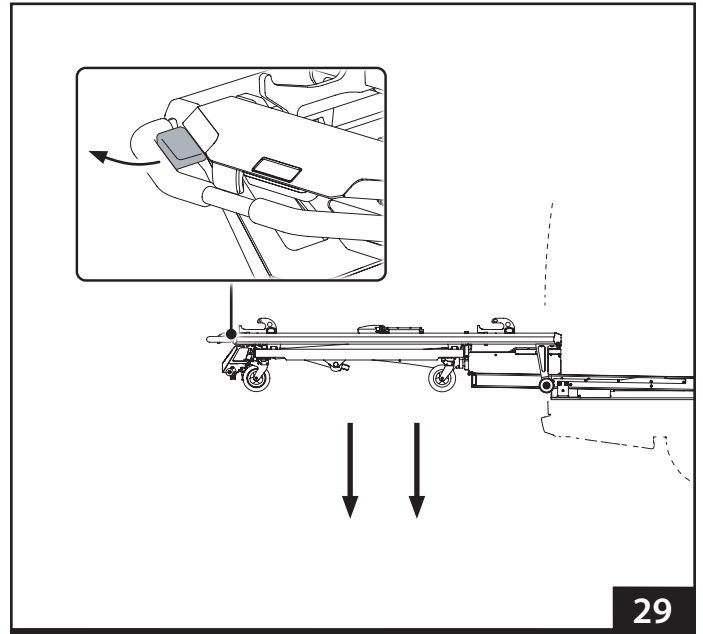
6.11 Non-Powered Operation: Unloading

To unload the Transporter from a vehicle if there is no power on the Transporter and no way of charging the battery, follow the normal unload procedures, but with the following differences:

1. Raise the vehicle folding bumper, if present.
2. Press the loading system release handle to unlock the loading arm.
3. Grasp the Transporter with both hands and move the loading arm and the Transporter completely out of the vehicle until the loading arm stops.
4. Pull and hold the manual override handle until the legs stop and touch the ground (Figure 29). Release the override handle.
5. Press the Transporter release button to release the Transporter from the loading arm (Figure 30).
6. Move the Transporter completely out of the loading arm (Figure 31). Keep the Transporter parallel with the extended loading arm during the movement.

Note: Support the loading-end of the Transporter when the telescoping frame is leaving the slider of the loading arm. The Transporter may drop slightly as it is not at its regular height for unloading.

7. Lower the Transporter (see "Non-Powered Operation: Raising and Lowering" on page 24) before moving.



7 - MAINTENANCE

7.1 Maintenance Schedule

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

Keep maintenance records. For a sample record sheet, see "Maintenance Record" on page 35.

When using maintenance products, always follow the instructions given by the manufacturers, and read any material safety data sheets.

7.2 Service Life

Many factors affect a product's service life, including frequency of use, local environment, maintenance and other factors.

Follow the disinfecting, cleaning, and inspection procedures in this manual to ensure long life for the Transporter.

7.3 Disinfecting

Wipe all surfaces with disinfectant. Follow the disinfectant manufacturer's instructions for application method and contact time. It is recommended to inspect the Transporter for damage as you disinfect it.

7.4 Cleaning

1. Remove the stretcher and any accessories.
2. Hand clean all surfaces of the Transporter with warm water and a mild detergent, or pressure-wash the Transporter as described in "Pressure-Washing" on page 28.
3. Rinse with warm, clear water. Dry the Transporter with a towel or allow it to dry.

Note: Do not lubricate the Transporter. Lubricating allows dirt and foreign particles to collect on the Transporter, resulting in damage.

4. When fully dry, reattach the stretcher and the accessories.

7.5 Preventative Maintenance Inspections

Preventative maintenance inspections must be performed by a factory-trained service technician regularly. The product is first checked 24 months after purchase and then every 12 months. Always make sure the product is properly cleaned and disinfected before inspection.



WARNING

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

Failure to perform preventative maintenance inspections can cause injury or damage. Have the Transporter inspected regularly by a factory-trained technician.

Minimum Maintenance	Each Use or Daily	As Needed	Monthly
Disinfecting (this page)	•		
Cleaning (this page)		•	•
Pressure-Washing (page 28)		•	
Inspecting (page 29)		•	•

NOTICE

Disinfectants and cleaners containing phenolics or iodines can cause damage. Do not use products containing these chemicals. If bleach is used, rinse with plenty of clear water to remove bleach residue.

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

Do not lubricate the Transporter. Applying lubricant can cause damage to the Transporter.

Water under high pressure, or steam, can penetrate joints and cause corrosion. Use caution when cleaning the moving parts.

Clean and disinfect the product properly before preventative maintenance inspection.

7.6 Pressure-Washing

Use caution when cleaning the Transporter with pressurised water. Wear all safety equipment recommended by the manufacturer of the pressure washer. Do not pressure wash the battery.

1. Remove the stretcher and any accessories.
2. Turn the power switch OFF (○) and engage the wheel locks.
3. Set the nozzle pressure at or below 20,000 kPa/2,900 psi or less and 15 liters/4 gallons per minute or less. Keep the nozzle at least 50 cm/20" away from the Transporter at all times. **Do not spray directly on the control box, the hydraulic unit or the wiring** (Figure 32).
4. Use only cold water without disinfectants.
5. Spray the legs and wheels of the Transporter.
6. Allow the Transporter to dry for 10 minutes.
7. Turn the power switch ON (I).
8. When fully dry, reattach the stretcher and the accessories.



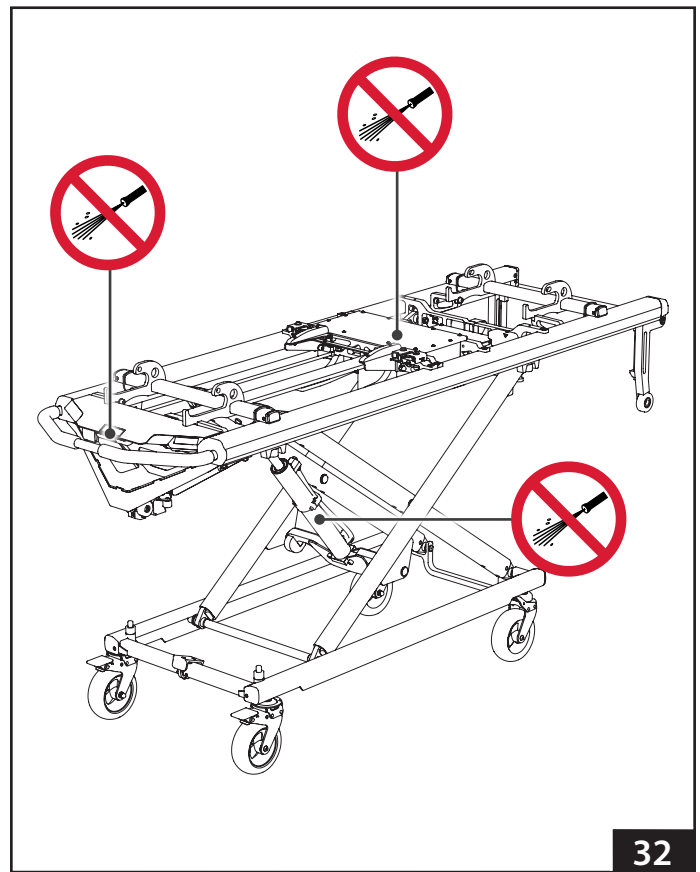
WARNING

Spraying directly on the control box, the hydraulic unit or the wiring can damage the product. Pressure-wash the Transporter only as described in this manual.

NOTICE

The Transporter is water-resistant. When pressure-washing:

- Turn the power switch off.
- Keep nozzle pressure at 20,000 kPa/2,900 psi or less, or 15 liters/4 gallons per minute or less.
- Keep the nozzle at least 50 cm/20" from the Transporter at all times during cleaning.
- To clean the display and buttons, reduce water pressure and/or increase the distance (greater than 50 cm/20").
- Do not spray water upward into the wiring or forcibly at or around the control panel and the control box.



32

7.7 Inspecting

Inspect the Transporter regularly. Follow the checklist on the right and try all the Transporter functions described in this manual.

A daily inspection is recommended at the start of each operator shift, including the manual override release handle and the electrical inspection on this page.

If the inspection reveals damage or excessive wear, remove the Transporter from service until it has been repaired.

Electrical Inspection

- Do both sets of height-adjustment buttons function properly?
- Does the powered system operate properly through the full range of motion?
- Does the powered system operate smoothly, without binding or excessive noise?
- Does the actuator stop running at the user-set loading height, fully-raised and fully-lowered positions?
- Do all indicator lights on the control panel function?
- Is there a visible sign of damage to the control box?
- Are all cords/cables free of excessive wear, cuts, and fraying?
- Does the integrated charging system charge the Transporter battery and prevent Transporter operation when the Transporter is secured in the loading system?

Mechanical Inspection

- Are all components present?
- Is the Transporter free of excessive wear?
- Does the hydraulic power system operate smoothly, without excessive noise?
- Is all hardware securely in place?
- Do all moving parts operate smoothly and properly?
- Does the Transporter load and unload properly?
- Do the legs show signs of wear or damage?
- Does the manual override release handle function properly and is the cable free of excessive play?
- Does the Transporter move smoothly?
- Do the wheels show excessive wear or damage?
- Do the wheel locks and the directional wheel locks engage properly and function properly?
- Is the ambulance properly prepared for the Transporter with the loading system installed?
- Do the installed accessories operate properly without interfering with Transporter operation?
- Are contacts of integrated charging system clean and make a good connection?

7.8 Storing the Transporter

If the Transporter will not be in service for long period of time, prepare it for storage as follows:

- Lower the Transporter to the fully-lowered position. Turn the power switch OFF (O).
- Charge/discharge the battery to 30-50% before storing it. Do not store the battery with full charge.
- Maximum storage duration is **3 months**.
- After a period of storage, charge the battery fully before use.
- Store the Transporter only indoors in a cool, dry place.
 - Do not store the Transporter outdoors, or where temperatures will exceed 23°C / 73°F.
 - Battery capacity can be affected if the Transporter is stored for long periods outside of the recommended temperature range.

Before returning the Transporter to service:

- Fully charge the battery.
- Turn the power switch ON (I).
- Have your service's equipment maintenance personnel inspect the Transporter. See "Inspecting" on page 29.



WARNING

Storing the Transporter in the loading system connected to the vehicle's electrical circuit for a long period can damage the battery. Always follow the instructions in this manual when storing the Transporter.

NOTICE

Before placing the Transporter in storage, charge/discharge the battery to 30-50%. Never store a fully-charged battery.

A battery with a very low charge may not be able to be charged by the integrated charging system in the loading system. Connect the battery directly to the external charger.

If the control box sustains noticeable or suspected damage or is hot to the touch, immediately remove it from service and store outside of a building.

7.9 Viper Service App

The Viper service app is available for iOS and Android mobile devices to provide service and usage information of the Transporter. Advanced settings features are available only for Ferno service technicians upon login.

To install: Search for “Viper Service” in the App Store or Google Play Store and install the application (Figure 33).

To connect:

1. Launch the “Viper” service app on your mobile device.
2. If asked, allow the app to use bluetooth connection.
3. Press  or  to activate the Transporter.
4. Select the Transporter you want to connect. The Transporter is identified by the serial number of a control box on the patient right (Figure 34).
5. When successfully connected, the indicator lights on the control panel illuminate yellow .

To disconnect: Click the “Disconnect” button in the service app.

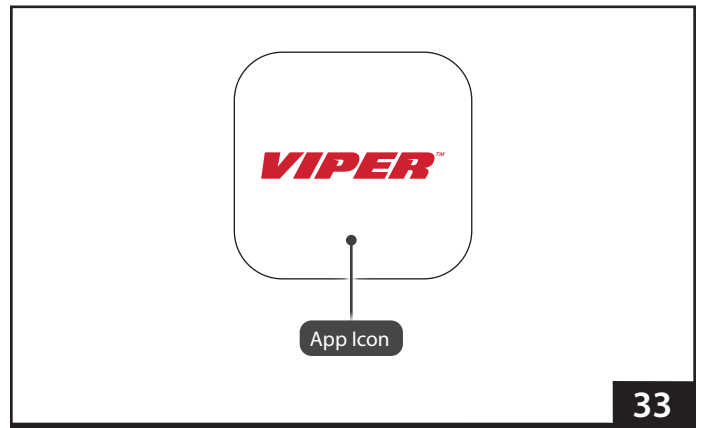
FEATURES

System status screen:

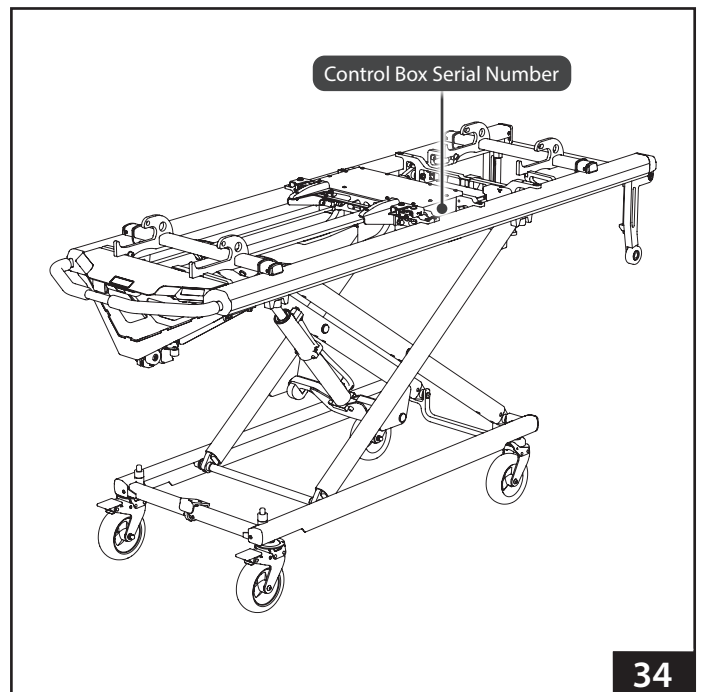
- Warning and error messages
- Firmware information
 - Main Unit firmware
 - BMS firmware
- Battery information
 - Capacity
 - Voltage
 - Battery current
 - Highest cell voltage
 - Lowest cell voltage
 - Charging voltage
 - Battery temperature
 - Invertor temperature
 - Battery cycles
 - Overall inner temperature
- Usage information
 - Number of relative cycles
- Motor information
 - RPM
 - Current
 - Temperature
- Battery management system information
 - BMS temperature
- Download CSV data file feature
- Download PDF service report feature

Height positions screen:

- Current height
- Loading height
- Highest position possible
- Lowest position possible



33



34

8 - TROUBLESHOOTING

Indicator lights alert the operator to functional issues. Red lights are high priority, orange lights are medium priority. For service, contact your distributor.

Indicator Lights	Meaning	Solution
 Five indicator lights flash orange	The motor current is high, because Transporter is overloaded, or maximum motor running time has been exceeded. The system stops the motor for 5 seconds.	Press  or  to continue. Provide manual lift assistance if the situation repeats.
 Five indicator lights illuminate red	Exceeding the range of high or low operation temperatures, low battery voltage or interrupted CANBUS communication. The system switch off within 5 seconds to protect electronic components.	1. Connect the external battery charger. 2. Press  or  to activate the Transporter. 3. Contact an authorised service center.
 No lights out	Sleep mode activated or system shut down.	1. Press  or  to activate the Transporter. 2. Connect the external battery charger. 3. Contact an authorised service center.

9 - ACCESSORIES

Ferno offers a full line of accessories approved for use with the Viper Transporter. Follow all instructions in accessory users' manuals. Keep the instructions with this manual.

When using accessories, be aware of any special considerations such as doorway heights and widths, or other factors which may be affected by the addition of the accessory/accessories to the Viper Transporter.

Contact Ferno Customer Relations (page 2) or your Ferno distributor for Viper information.



WARNING

Attaching improper items to the Viper Transporter can cause injury. Use only Ferno-approved items on the Viper Transporter.

TRAINING RECORD

[illegible]

MAINTENANCE RECORD

[illegible]

Aviation

Military

Mortuary

EMS

Rescue
