



Users' Manual

FAST Chair Removable Stair Powertraxx



September 2021, ver. 06

Pub. No. 50-8110-012_06



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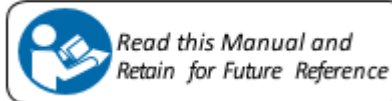
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Disclaimer



This manual contains general instructions for the use, operation and care of this chair. The instructions are not all-inclusive. Safe and proper use of this chair 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 chair be provided before using this chair in an actual situation.

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



Technical specification:

<i>Depth of seat</i>	<i>450 mm</i>
<i>Height of seat from floor</i>	<i>475 mm</i>
<i>Width of seat</i>	<i>415 mm</i>
<i>Front wheels /dia/</i>	<i>125 mm</i>
<i>Rear wheels /dia/</i>	<i>150 mm</i>
<i>Height of top handle max</i>	<i>580 mm</i>
<i>Overall length</i>	<i>695 mm</i>
<i>Overall height</i>	<i>1000 mm</i>
<i>Overall width</i>	<i>516 mm</i>
<i>Weight /without track/</i>	<i>11,2 kg</i>
<i>Weight /with track/</i>	<i>25 kg</i>
<i>Load capacity</i>	<i>227 kg</i>

TIP: Regular cleaning helps reduce the risk of transmitting disease and enables the equipment to function at its optimum

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.

Improper charging can cause injury or damage. Use only the Ferno-approved battery with the chair, and charge only with the Ferno-approved battery charger.

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.

**SPARE PARTS:**

Item	Part number	Description	QNT.
1	65-4119-001	ASSY LOCKING TELESCOPE	1
2	65-0403-001	REMOVABLE STAIR POWERTRAXX	1
3	65-4113-001	ASSY HANDLER INT OVAL PROFIL	2
4	65-4155-001	ASSY LOCKING FOOTS	1
5	75-0004-044	FRONT CHAIR WHEEL 125 MM	2
6	75-0004-043	REAR CHAIR WHEEL 150 MM	2
7	65-4118-001	SEAT VINYL FS CHAIR	1
8	65-4126-001	HEAD SUPPORT	1
9	65-0209-002	FOOT RESTRAINT, 50 MM (S-240\242)	1
10	65-0212-005	RESTRAINT, 1 PC 180 CM, BLAK PP, PLASTIC BUCKLE	2
11	50-4158-001	PIPE BACK WHEEL	1

ACCESSORY:

Item	Part number	Description	QNT.
12	65-4122-001	HANDLE, ASSEMBLY	1
13	65-4130-001	ASSY COMFORT FOOTBAR	1
14	65-4123-001	MASH BASKET FOR OXYGEN BOTTLE	1
15	62-4400-001	4-POINT RESTRAINT	1
16	65-4128-001	ARMREST KIT	1
17	65-4137-001	FRONT WHEELS LOCKING KIT	1

Ferno products meet the requirements of Medical Device Directive MDR 2017/745 as established by the European Union.

The chair meets the following standards:

- IEC 60601-1-2 (electrical and electromagnetic medical equipment standards)
- IP 55
- EN 1865



Using Patient Restraints

Use the lap and foot restraints to secure Patient into the Chair. Assess Patient condition to determine optimum strapping procedure.

- **Chest/Hips Restraint:** The chest restraint can also be used to secure the chair closed for stowage. Fasten the chest/hips restraint using plastic male/female buckling system. Pull the loose free end of the webbing strap to tighten the restraint.



- **Foot Restrain:** Once the patient's feet are comfortably placed on the integral footrest, the loose foot restraint can be fastened to secure the feet. Fasten foot strap using plastic male/female buckling system. Pull the loose free end of the webbing strap to tighten the restraint. Remember that the foot restraint also protects the operator when moving the Chair on stairs.



- Releasing Restraints: To release foot, chest and hips restraints, squeeze the two sides of the tang on the buckle inwards at the same time to pull the buckle apart.



4-Point Restraints (accessory)

1. To attach the seat restraint, lay the restraint on 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.
3. Buckle the restraint and adjust the length.
4. Repeat Steps 1-3 to attach the back-panel restraint.



1. Quick set-up guide

1.1 Unfold chair

For the purpose of this guide, the FAST Chair will be referred to as the Chair and the person being transported on the Chair will be referred to as the patient.

The Chair will normally be left in the folded condition and the first task will be to unfold and make the Chair safe for transporting a person.

Unbuckle the chest strap securing the chair and fold the chair out into the seated position.

Completely unfold the chair by holding the handle upright and firmly pushing down on the seat until an audible click is heard, this is the locking pins sliding into place, visually confirm this before seating a patient.



⚠ WARNING

Do not pull down the footrest until patient is seated!!

1.2. Adjust handle

The chair is fitted with an adjustable height handle. To adjust the handle, the operator must pull up on the red cable under the handle. This disengages the handle to slide up or down. When the desired position is reached the operator must release the cable.

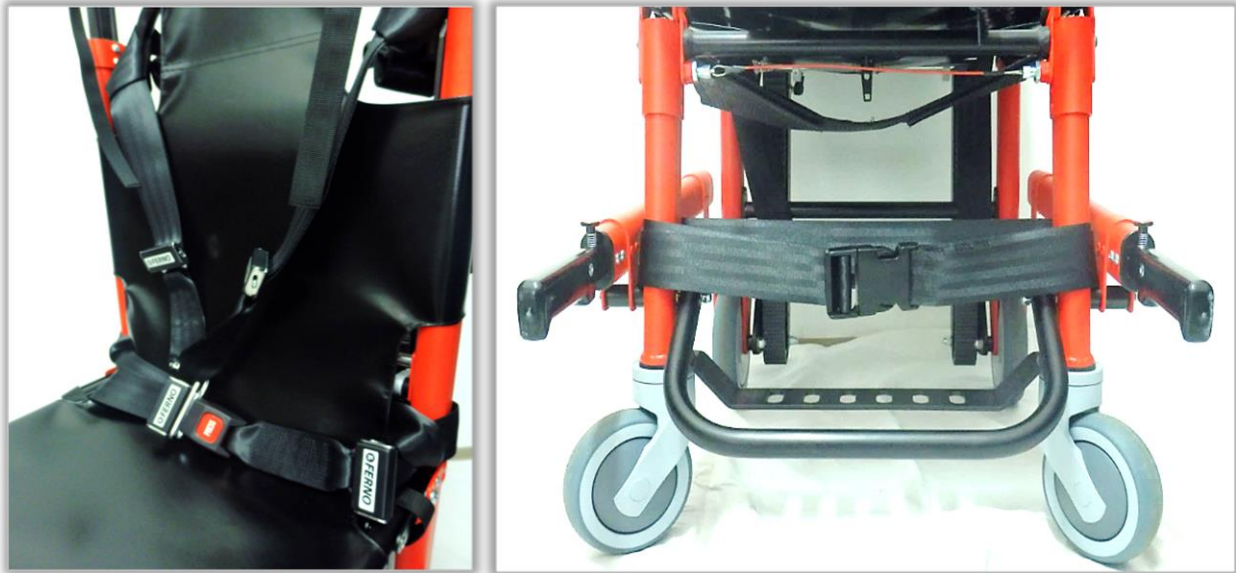


Pull the red cable under the handle upward and slide the handle up or down to its desired position.



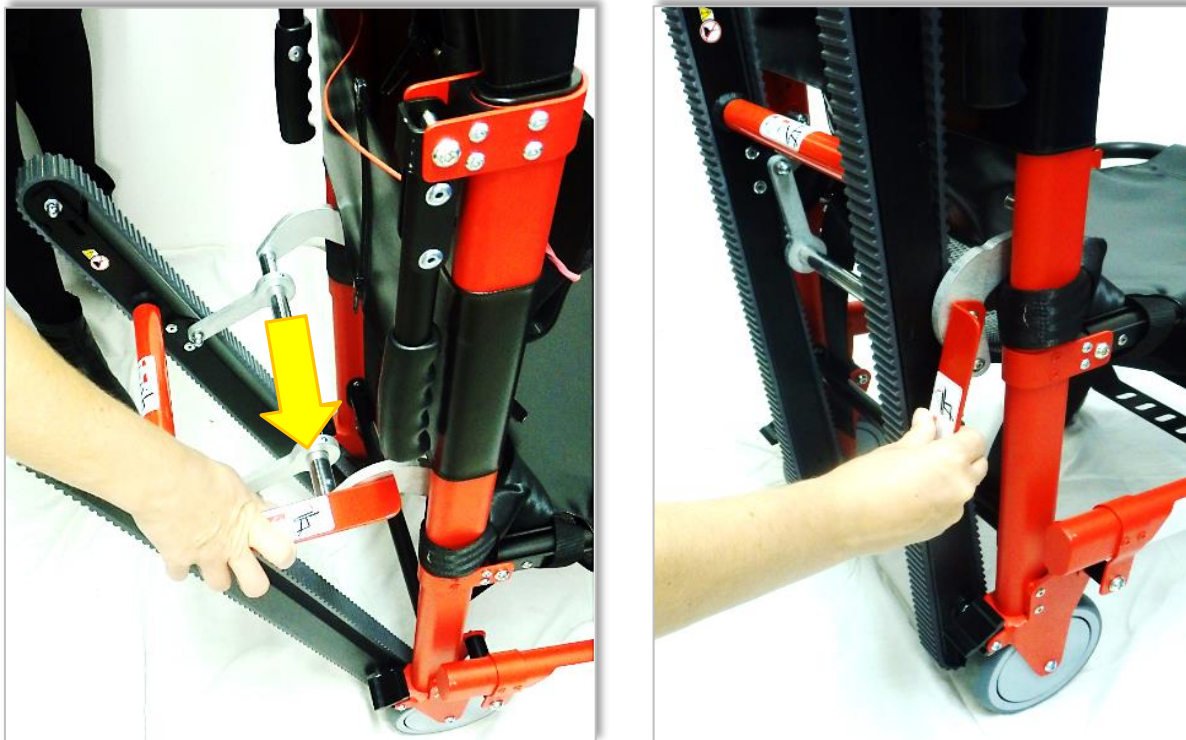
Final open position

Once the patient has been seated comfortably in the chair pull down the foot rest and place their feet on to it. Fasten all restraining straps to secure the patient.

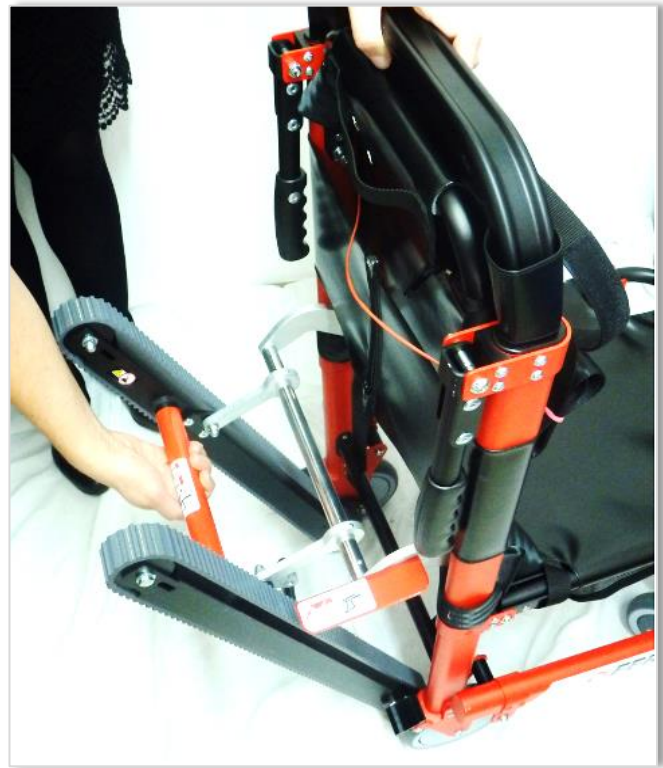


1.3. Unfold & Fold track

The track aids descent on stairs, do not unfold the track if the chair is not needed to descend stairs. To fold the track into the back of the chair push the lever downwards as shown, until track is flush with the back of the chair and locks in to position.



To unfold the track from the rear of chair pull the bar fitted to the track until the track locks in to position.



1.4. Telescopic carry handles

The chair is fitted with telescopic carrying handles to aid carrying the chair down stairs. To change position of the handles press button and pull/push handles to extend or shorten. To aid carrying the chair down/upstairs spill Rear locking lift handle. After using come back both handles to the starting position.



1.5 Attaching the Track (Chair Occupied)

The chair features an attachable track to aid operators when descending stairs.

1. With the Chair in the unfolded position, raise the red release handle at the bottom of the track and locate the lower track lock onto the axle. Ensure the track is locked in place.



Track attached on axle



Locating lower Track lock onto axle

2. Bring the Track upwards towards the chair and push into the chair until an audible click is heard, indicating the striker pins have locked into the push-to-close latches.

3. Always carry out a visual inspection to ensure both the location pins have located and attached the Track securely to the rear of the Chair.



Rotating Track upwards to attach to Chair



Track attached to Chair back via push-to-close latches

1.6 Attaching the Track (Chair NOT Occupied)

When the Chair is not occupied, an alternative method for attaching the Track is recommended.

1. Lay the Track on the floor and lift the Chair into place, locating the axle bar in to the lower Track lock.



Preparing to attach Track to unoccupied Chair

2. Push the Chair axle securely into the lower lock until it is locked in place.

3. Rotate the Track upwards and lock in place as described previously in steps on previous page.



1.7 Deploying the Track for Use

Once the Track are attached to the chair, they may be unfolded for use.

Whilst holding the Chair secure from the rear, pull the red 'Pull to Open' bar forwards and down, until the Track locks into position.



Pulling Track out for use

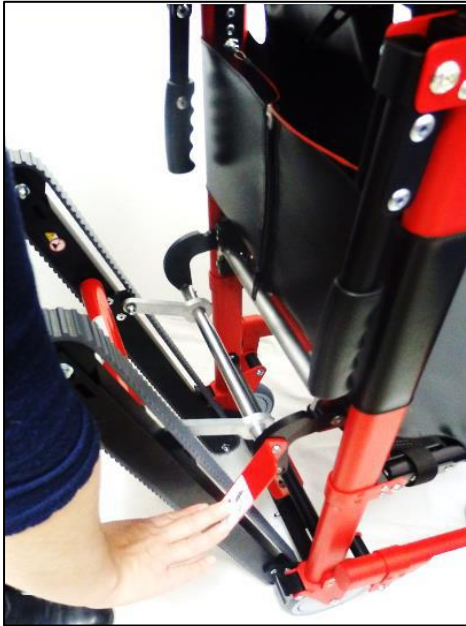


Chair with Track deployed ready for use

1.8 Stowing the Track

When not in use always ensure the Track is folded away securely to limit the chance of damage or injury.

1. To fold the track into the back of the chair, push the bar with RED 'Push to Close' label downwards as shown, until the track is flush with the back of the chair and locks into position.



Using 'Push to Close' bar to stow Track



Track stowed

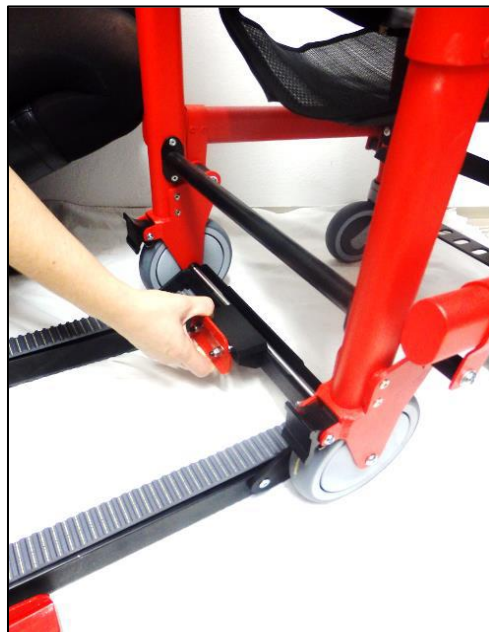
1.9 Removing the Track

Prior to folding the chair for storage or using chair as a carry chair, the Track must be removed. When the Chair is occupied with a patient, remove the track using the following procedure:

1. Pull the RED Track release bar down towards the floor to release the locating pins from the two push-to-close latches and detach Track from the top of the Chair.



Releasing Track from push-to-close latches



Releasing the Track from the Chair

1.10. Fold chair



Pull the red cable under the seat outward



Fold the seat up



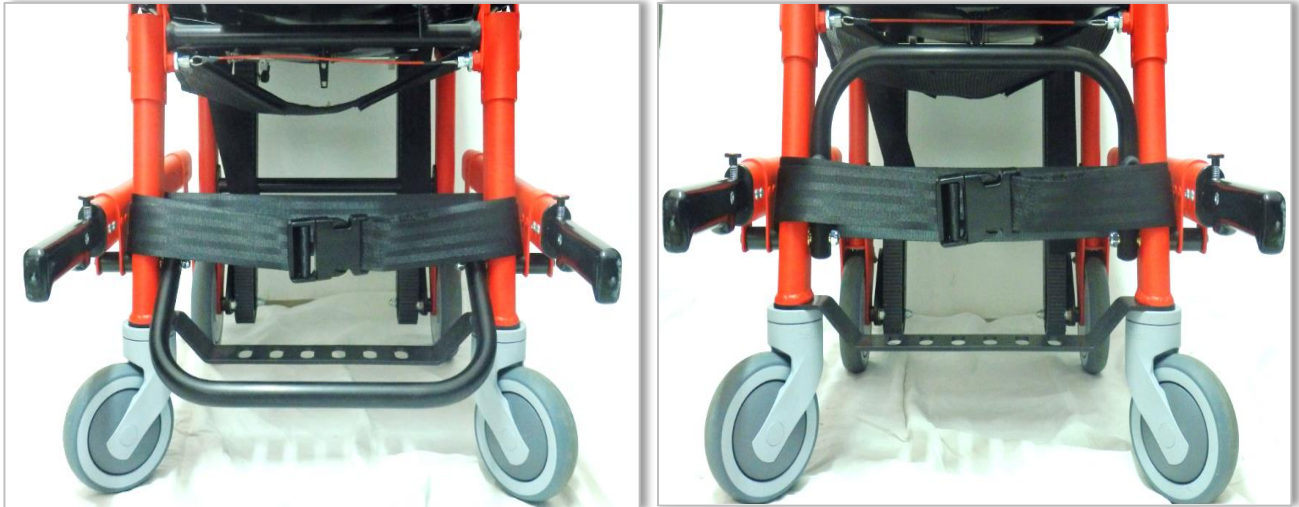
Continue folding the seat into its folded position



Folded position

1.11. Foot rest

Before folding the chair for storage ensure castors are locked facing forward, the foot rest is up and all handles are not extended.



The foot support is part of this chair. For unfolding is necessary to pull the chair frame down and for folding is necessary to pull the chair frame up.



2. Power System

2.1 PowerTraxx Components

The PowerTraxx consists of the following components:

- **CONTROL PANEL:** The control panel is attached to the lift bar. It allows the operator to control the speed and direction of the belts and monitor the batteries and other aspects of the chair.
- **PADDLES:** The paddles are attached to the control panel. The amount of pressure used by the operator to press the paddle determines the speed of the belts.
- **BELT:** The belts engage the stairs. The motor powers the belts. The user controls the speed and direction using the paddles.
- **MAIN BATTERY:** The 28V battery attaches to the motor and provides power. It is easily to remove, charge, and reattach. See Main Battery.
- **MOTOR:** The motor is located between the tracks at the base of the chair. The motor receives input from the paddles to control the speed and direction of the belts. It also monitors other aspects of the chair.
- **ANTENNA:** The antenna is mounted to the top of the motor. It allows wireless communications between the motor and control panel.
- **POWER SWITCH:** The switch is mounted to the top of the motor and allows easy ON/OFF control of the power system.
- **BRAKE (part of the motor):** The brake allows the belts to move only when a paddle is used. The brake engages automatically when the system has power. The operator may disengage the brake for nonpowered descent.
- **SPEED LIMITER (part of the motor):** If the system loses power or the brake is disengaged, the belts are free to rotate for non-powered descent. However, the speed limiter retards the speed of the belts to improve operator control for the descent.



Items Supplied

- 28 VDC Lithium-ion rechargeable battery (1)
- 28 VDC Battery charger (1) Choice of:
 - 100-120 VAC (60 Hz North America; 50/60 Hz Japan); UL Certified
 - 220-240 VAC, 50/60 Hz (Europe); CE Certified
- Interconnect cord with carrying case
- Users' manual



Main Battery



Battery Charger



Interconnect Cord

2.2 Main Battery

Note: *The battery and charger instructions from Milwaukee supersede those in this manual. For additional information, see the manuals provided with these components.*

The term “main battery” is used in this manual to describe the Milwaukee® 28-Volt DC, lithium-ion battery. The control panel also uses batteries. See Control-Panel Batteries.

The main battery powers the belts. It is sealed for resistance to precipitation, dirt, body fluids, cleaning solutions, etc. Use only the Ferno-approved battery and battery charger. A battery is provided with purchase of a chair or PowerTraxx retrofit kit.

2.2.1 Main battery information

- Lithium-ion batteries have no “battery memory.” You do not need to fully discharge the battery before recharging it.
- A typical fully-charged battery provides power to move an average patient (250 pounds/113 kg) up more than 200 stairs.



WARNING

Improper charging can cause injury or damage. Use only the Ferno-approved battery with the chair, and charge only with the Ferno-approved battery charger

Important

Battery capacity can be affected if the battery is stored for long periods below 0°F (-17°C) or over 150°F (66°C).



- Typical charging time is about one hour. Actual charging time varies based on frequency of recharge, depth of discharge, and battery age. If a battery becomes deeply discharged, extend the charging time.
- Patient weight, extreme temperatures, and the combination of using the chair to go up and/or down stairs affect the amount of use available from each battery charge.
- The manufacturer's recommended operating temperature for the battery itself is 14°F to 120°F (-10°C to 49°C). The battery may be used in temperatures outside this range. Battery capacity can be affected if the battery is stored for long periods below 0°F (-17°C) or over 150°F (66°C).
- Recycle batteries at the end of their service life. Do not dispose of batteries with municipal waste.
- Do not open the battery. There are no serviceable parts inside the battery.

2.2.2 Using the main battery

- The mounting slots are compatible with the motor and with the battery charger.
- Press the two red release buttons to disconnect the battery from the chair or battery charger.
- To check the charge of the main battery, press the test button on the battery
- Store the battery ONLY in a cool, dry place. DO NOT store where temperatures may exceed 120°F (50°C).
- If two batteries are available, keep the spare battery charged and ready for use

2.2.3 Main battery charge indicator

The charge indicator on the main battery illuminates one to four red lights to indicate the charge remaining in the battery (approximately 25% intervals).

Press the test button and the light(s) will illuminate briefly. With a full charge, all four lights are displayed. If the charge is lower than 10%, the first light flashes four times when the test button is pressed.

Extreme temperature (cold or hot), extreme patient weight, and the age of the batteries affect how quickly the charge in the batteries is used.

Important
If the main battery becomes overheated, it will shut off to protect itself. Allow an overheated battery to cool before use.

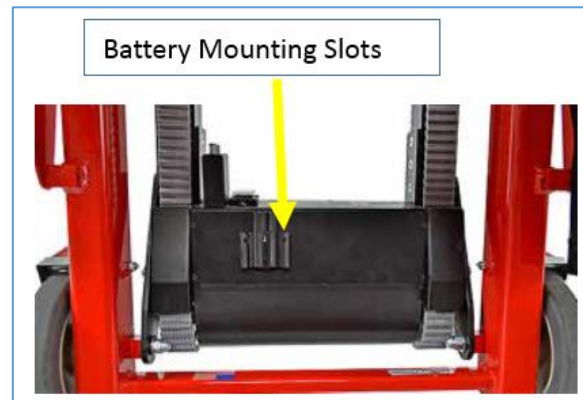


For additional information, see the Milwaukee® battery and battery charger manuals. Milwaukee® products are trademarks of the Milwaukee® Electric Tool Corporation, Brookfield, Wisconsin, USA. Milwaukee® is a subsidiary of Techtronic Industries Co. Ltd. For warranty claims, take the charger or battery to an authorized Milwaukee Service Center.

2.2.4 Main Battery shutoff

If the internal temperature of the battery becomes too high, the main battery will shut off to protect itself, and all powered chair motion stops.

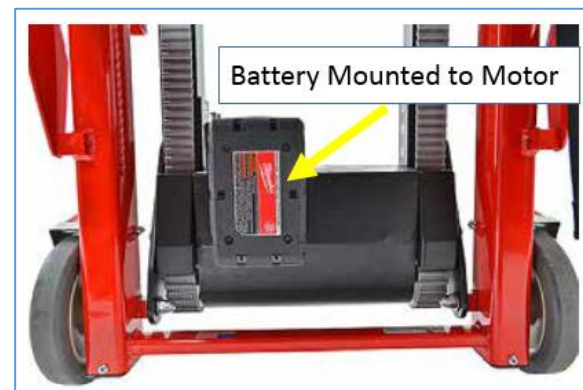
To verify the battery has overheated, press the test button on the battery. The battery will indicate it is overheated by flashing the lights alternately. Allow the battery to cool before use. When the battery is ready for use, pressing the test button will show the remaining charge.



2.3 Attaching and Removing the Main Battery

To attach the main battery to the chair: Align the mounting slots on the main battery with the mating ridges on the motor. Slide the main battery onto the slots until it snaps into the locked position. Verify that the main battery is securely mounted on the motor before using the chair.

To remove the main battery from the chair: Press both red release buttons on the main battery and slide it off the ridges on the motor.



2.4 Battery Charger

Note: *The battery and charger instructions from Milwaukee supersede those in this manual. For additional information, see the manuals provided with these components.*

A battery charger suitable for use with your local power supply is supplied with the chair:

- 100-120 VAC (60 Hz North America; 50/60 Hz Japan)
- 220-240 VAC, 50/60 Hz (Europe and other areas)

Important

Battery capacity can be affected if the battery is stored for long periods below 0°F (-17°C) or over 150°F (66°C)

Important

If the battery charger will be used inside an ambulance, it must be mounted. Mount the charger using the mounting bracket built into the battery-charger. (Mounting hardware is not supplied).

An adapter plug (not supplied) may be needed to adapt the charger plug for the outlet. Typical charging time is about one hour. If the batteries are deeply discharged, extend the charging time. Actual charging time may vary based on frequency of recharge, depth of discharge, and age of batteries. Store the charger **ONLY** in a cool, dry place. **DO NOT** store where temperatures may exceed 120°F (50°C).

If the charger will be used inside an ambulance, it must be securely mounted (mounting hardware not supplied).

A charger is included with purchase of a chair or PowerTraxx retrofit kit. For additional batteries or chargers.



2.4.1 Indicator lights

The charger has one red and one green indicator light. The lights work together to provide the following information:

- **RED (Continuous):** The battery is connected and is being charged.
- **GREEN (Continuous):** Charging is complete.
- **RED (Flashing):** The temperature of the battery is outside the proper charging range. Charging will begin when the battery reaches the correct charging temperature of 32°F-150°F (0°C-65°C).
- **RED/GREEN (Flashing alternately):** The battery is damaged or faulty. Replace the battery.

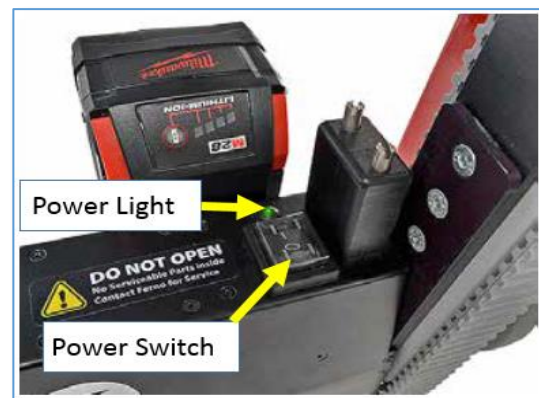
2.4.2 Charging the main battery

To attach a main battery for charging, align the slots on the main battery with the mating ridges on the charger. Slide the main battery onto the charger until it locks into position. Verify that the main battery is properly connected and the indicator light on the charger is lit. To disconnect, press the two red release buttons on the main battery and slide it off the charger.



2.5 Power Switch

The rocker-style power switch is located on top of the motor. It allows easy ON/OFF control of the power system.

The switch is protected from liquids and dirt by a rubber cover. You can press the switch through the cover. Do not remove the rubber cover.



To use the chair:

1. Press  (ON).
2. Tap a paddle up or down to awaken the wireless controller.
3. Allow a few seconds for the wireless connection to be established. When the control panel and motor link, the motor will emit three audible beeps.
4. Use the chair as instructed in this manual.
5. Press  (OFF) to disengage the power.

2.6 Paddles

The paddles are affixed to the control panel on the extending lift bar, where they are accessible to the operator's hands. The paddles are labeled with the symbol of a stairway and an arrow for "descend/down" and "ascend/up".

The amount of pressure used to press the paddle affects the speed of the belts. This allows the operator to control the speed of the chair on stairs.

To use a paddle:

1. Position your hands to comfortably grasp the extending lift bar, with at least one paddle accessible to your thumb.
2. Press the top or bottom of either paddle to operate the powered track system.



3. Control Panel

3.1 Control Panel Overview

The control-panel components are:

- **Brake Button** - The symbol on this button is a “Stop Sign” with a slash through it.
- **Indicator Light** - The light is illuminated red, green, or is not illuminated to provide feedback to the user.
- **Mode Button** - The symbol on this button is the Ferno “FW” logo.
- **Display** - The liquid-crystal display provides information about a variety of chair functions, including battery charge, battery status, brake status, calibration and setting information, and more.





3.1.1 Software versions

The information displayed varies depending on the software installed in the motor and control panel. The software version is displayed briefly during the calibration procedure. Be aware that you will need to calibrate the paddles to exit this mode.

3.1.2 Wireless connection

Each time the power switch is pressed ON, the motor must make a wireless connection with the control panel.

1. Press the power switch . The motor will beep every five seconds until it locates and connects with the control panel, or until you press .
2. Tap a paddle in either direction. The control panel awakens and attempts to connect with the motor.
3. When the components link, the motor emits three beeps. The display shows the standard screen indicating the status of the Main Battery. If there is sufficient power, the brake is engaged.

If the link fails, the control panel briefly displays the text, “MASTER not found!”. After this, the control panel will go to sleep.



If the text, “MASTER not found!” is displayed, the motor cannot locate the control panel. Do the following:

- Connect a charged main battery.
- Press the power switch.
- If these solutions don't work, attach the interconnect cord.

3.2 Brake Button

The brake prevents the belts from moving unless a paddle is pressed. By default, the brake is engaged when the system has power. To disengage or re-engage the brake, press the brake button on the control panel.

Disengage the brake to allow the belts to rotate without power (for example, to descend stairs without using the power system).

Depending on the version of the software, both the display and indicator light will change to match the current state of the brake. Refer to the images at right.

3.2.1 Original software

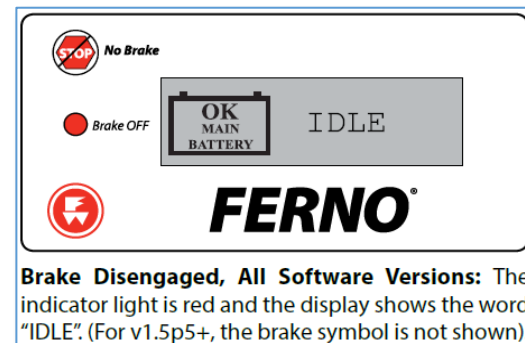
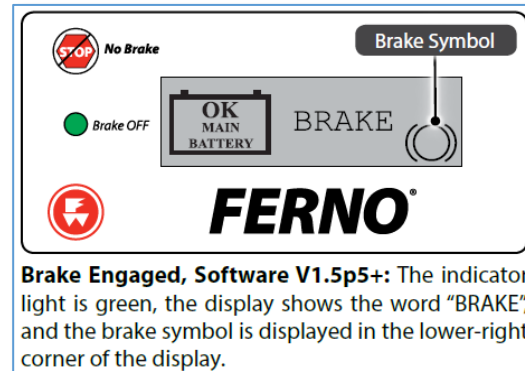
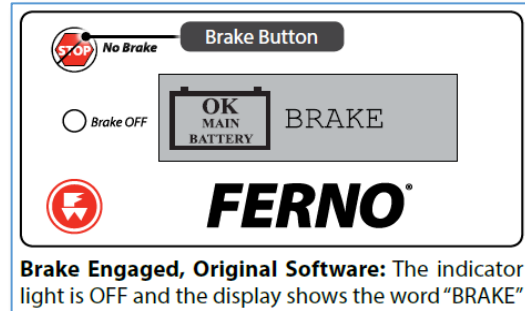
- **Brake engaged:** The indicator light is off; the display shows the word, “BRAKE”.
- **Brake disengaged:** The indicator light is red and the display shows the word “IDLE”.

3.2.2 Software v 1.5p5+


- **Brake engaged:** The indicator light is green; the display shows the word “BRAKE”, and the brake symbol is displayed.
- **Brake disengaged:** The indicator light is red; the display shows the word “IDLE”. The brake symbol is not displayed.


3.2.3 Speed limiter

With or without power, an internal speed-limiting device limits the speed of the belts as the chair descends stairs. Use care and control the descent of a chair that is unpowered or has the brake disengaged.



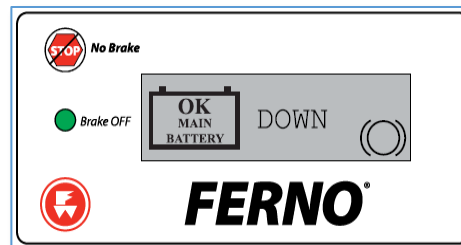
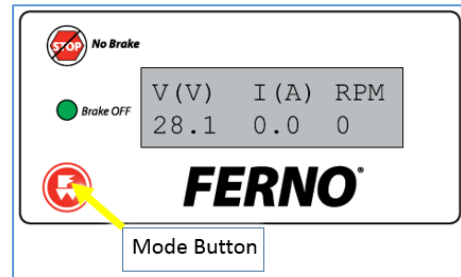
3.3 Mode Button

The mode button is the Ferno logo 

Press and hold  for four seconds to show the chair status on the display. The display will show the current voltage and amperage used by the power system, plus the revolutions per minute (RPM) of the motor.

Note: *The RPM indicator tells only the speed of the motor, not the belts.*

The chair can be used normally while the status screen is displayed. To return to the standard screen, press the mode button briefly.



3.4 Display: Ascending (UP) or Descending (Down)

When a paddle is pressed, the display shows your choice of direction by displaying the word “UP” or “DOWN”. The text is shown while the tracks are in motion. When the paddle is released, the display returns to the standard screen.

3.5 Display: Battery Status

The display shows battery-status information for the main battery and the AA batteries in the control panel.

3.5.1 Main battery

The main battery is shown as an icon on the left side of the display. With a full or moderate charge, the text inside the icon reads, “OK Main Battery.” As the charge becomes low, the display will show different icons based on the software version installed in the control panel (refer to the chart below).



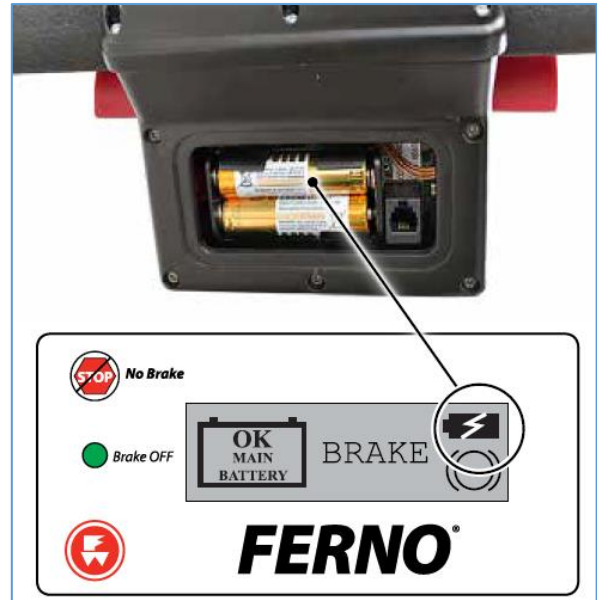
Note: *A charge indicator is also built into the main battery. If in doubt, press the test button on the main battery.*

3.5.2 AA batteries

Two AA-size batteries power the control panel. If the AA battery warning icon (⚡) appears in the upper right corner of the display, replace the AA batteries.

Also, if there are no lights on the control panel and the paddles stop functioning, the AA batteries may need to be replaced.

	Original Software	Updated/ Mixed Components	Current v1.5p5+
Full to Moderate Charge	OK Main Battery	OK Main Battery	OK Main Battery
Low Charge	CHECK Main Battery	CHECK Main Battery LED Blinks Red	CHECK Main Battery LED Blinks Red
Insufficient Charge Remains	CHECK Main Battery	CHECK Main Battery LED Blinks Red	"X" Through Battery LED Blinks Red



3.6 Display: Fault Codes

Software version 1.5p5+ and later provides feedback on the display for three different faults, if they occur.

Fault codes are not displayed if the chair has an earlier version of the software. If a fault occurs, the chair will stop functioning and the display will turn off.

In all cases, contact EMSAR or your Ferno distributor for assistance.

Control-Panel Fault (E1) – If there is a fault or damage to the control panel (such as a loose or cut wire), a warning triangle symbol and error code “E1” are shown at the left side of the display.

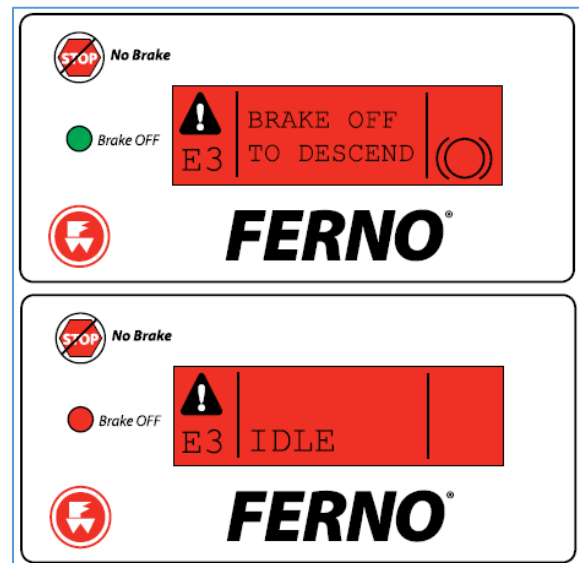
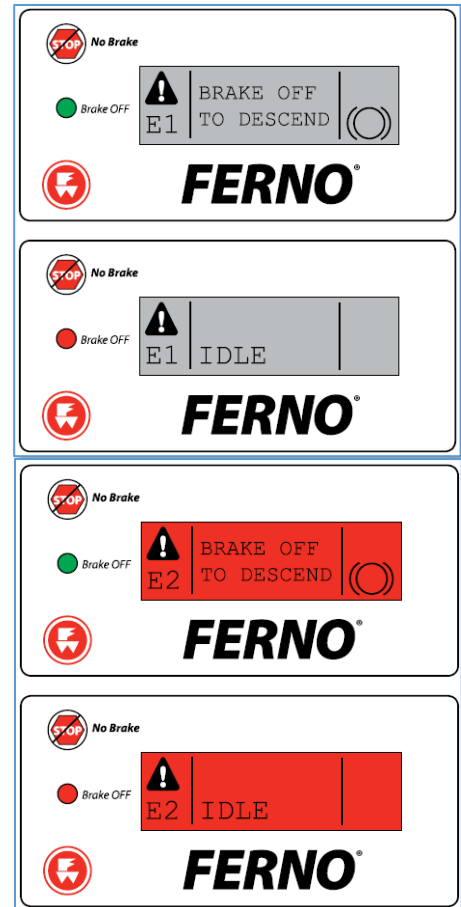
Motor Overheating Fault (E2) – If the motor becomes overheated, a warning triangle symbol and error code “E2” are shown at the left side of the display, and the background is illuminated red.

Failure of Motor Module (E3) – If the motor module (circuit board, electronics, etc.) fails, a warning triangle symbol and error code “E3” are shown at the left side of the display, and the background is illuminated red.

3.6.1 Using a chair with a fault

If a fault code appears, the operators do the following:

- If the brake is engaged, the center area of the display shows a text reminder: “Brake Off To Descend”. This is a reminder to the operators that the chair may be used in its nonpowered mode.
- The operators make preparations to use the chair in non-powered mode, including stopping on the stairs, adding additional helpers, or other preparations to help control the chair. Follow local protocols for non-powered chair operation.
- Press the brake button to disengage the brake. The display changes to “IDLE”, which verifies the brake is disengaged. Also, the brake symbol is not shown.
- The warning triangle and fault code remain visible on the display until repairs are made.




4. Additional PowerTraxx Information

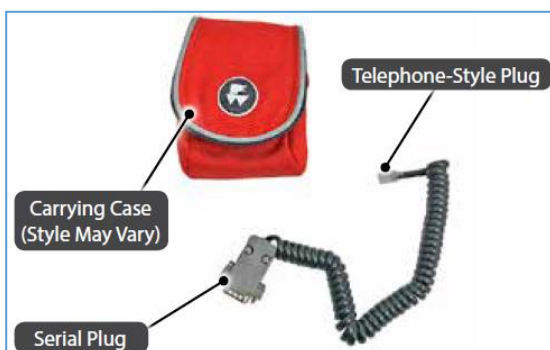
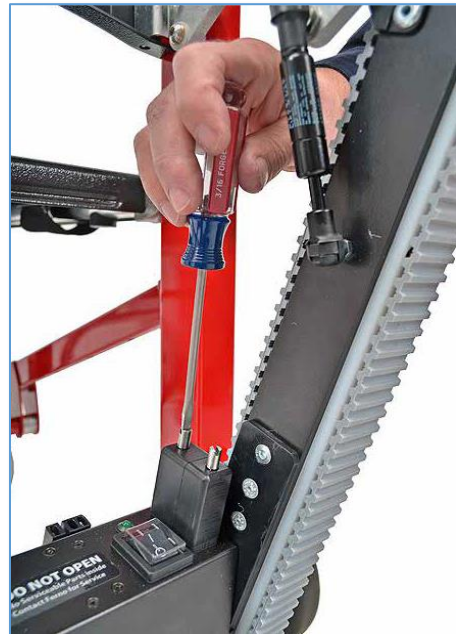
4.1 Interconnect Cord

The interconnect cord physically connects the control panel with the motor. It serves two purposes:

- (Optional) The interconnect cord can be connected permanently to bypass the wireless system. If you decide to use the interconnect cord permanently, arrange the cord so it will not be pinched by opening, closing, or using the chair.

- The interconnect cord can re-establish the wireless link between the control panel and motor. The control panel and motor are linked during assembly and should not lose contact during normal use. If the connection is lost, do the following to re-link the components:

1. Open the access door to the control panel batteries and connect the telephone-style plug on the interconnect cord to the port on the control panel.
2. Use a flat-blade screwdriver to remove the two screws and wireless antenna.
3. Plug the serial plug on the interconnect cord into the port on the motor.
4. Turn the power switch  and allow the unit to synchronize the wireless controller to the motor.
5. Disconnect the interconnect cord and reattach the wireless antenna and control-panel access door.



4.2 Calibrating the Paddles

4.2.1 Knowing when calibration is needed

The paddles are pressure-sensitive. When properly calibrated, the paddles allow the operator to control the speed of the belts.


Applying less pressure should make the belts move slowly, while depressing the paddle fully should make the belts move as quickly as possible.

Recalibration of the paddles is needed when you observe any of the following:

- there is no difference between a light touch of the paddle and fully-depressing the switch (the belts should not immediately begin moving at full speed with only light pressure)
- if the belts continue to move when the switch has been released (no pressure)





4.2.2 Calibration procedure

1. If needed, disconnect the interconnect cord. Press the power switch . Wait until the lights on the control panel turn off and the control panel is inactive (about five seconds).

Note: *The calibration procedure cannot begin unless the interconnect cord is disconnected, the power is OFF, and the control panel is inactive.*

2. Do not touch the up/down paddles.

3. Simultaneously press the brake  and mode  buttons on the control panel.

Note: *If Step 3 is completed properly, the control panel will illuminate with a red background. The software version is briefly shown, then the calibration sequence begins. If the background is not red and the standard screen is displayed, repeat Steps 1-3.*

4. Instruction: “Throttle UP 100% Then Press a Key”: Press and hold the ASCEND part of the paddle fully, then press the mode or brake button.

5. Instruction: “Throttle DW 100% Then Press a Key”: Press and hold the DESCEND part of the paddle fully, then press the mode or brake button.

6. Instruction: “Throttle IDLE 0% Then Press a Key”: Leave the paddle in the neutral position and press the mode or brake button.

7. If you completed all steps properly, the display will show “Calibration OK!” Begin using the chair normally.

4.2.3 If the calibration fails

Repeat Steps 1-7. Do not press the paddles until directed to, and press in the proper direction. If the paddles cannot be recalibrated, contact Ferno Technical Support for assistance.

5. Intended use

For the purpose of this manual, the FAST Chair will be referred to as the Chair and the person being transported on the Chair will be referred to as the patient. The Chair is a handling device designed to transport a patient, in a seated position, on stairs and level ground. The Chair will glide smoothly down a wide range of stair types and can quickly return to a four wheel chair at the end of a run of stairs. When on two or four wheels it can rotate within its own length making it ideal for half landings and similar restricted areas. Where conditions require the chair may also be carried using the anti-slip handle grip areas.

6. Safety Precautions

To ensure safety and satisfaction with your new Chair, all users should read these instructions and the individual portions of recognized emergency care manuals that relate to the application and use of Carrying Chairs. It is recommended that a minimum of two trained operators control a loaded Chair on stairs, they should assess whether additional assistance is required.

6.1. Operator Skills

Minimum recommended skills are as follows:

- The strength, balance, co-ordination and common sense to safely operate the Chair.
- The ability to select the proper equipment and procedures for the circumstances.
- Operators should have been trained in the operation of the Chair.
- The ability to understand and follow the procedures described in this manual.
- Operators should have a working knowledge of emergency patient-handling procedures.


6.2. Operator Training


Minimum recommended training is as follows:

- A training plan approved by an EMS training officer (or equivalent).
- Read and understand the instructions in this manual.
- Practice using the fully-equipped Chair with weight and under simulated conditions.
- Trainees should be tested to verify their understanding of Chair operation.
- Keep training records. Annual refresher training for all Chair operators is recommended.


6.3. Warning

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


 WARNING
Bleach, phenols and iodine can cause damage. Do not apply products containing these chemicals to the Chair.
Improper lubricants can cause damage. Use light oil to lubricate the Chair.

 WARNING
Blood borne Disease Notice -To reduce the risk of exposure to blood borne diseases (such as HIV-1 and hepatitis), when using the Chair, follow the maintenance instructions in this manual.
Rear locking lift handle is intended only for over stairs transport, not for chair turning.

 WARNING
NEVER LUBRICATE OR ALLOW LUBRICANTS TO COME INTO CONTACT WITH THE TRACK SYSTEM

 WARNING
Unfold the track for use only when it is occupied and only when you need to transfer the patient upstairs or downstairs.

Every three months lubricate the hinge pins with light oil paying particular attention to the cross section bolts.

 WARNING
<ul style="list-style-type: none"> ✓ Never exceed the maximum load capacity of 227 Kg. ✓ Only qualified personnel trained in the use of the Chair should use it. ✓ For safety purposes, it is essential that patients should always be secured with restraints. ✓ Never leave a loaded Chair unattended ✓ An unloaded Chair may tip backwards. If located on an incline, wherever possible face the Chair down an incline with the castor locks engaged. ✓ Avoid rapid Chair repositioning – this may cause injury to the patient. Support the Chair while adjusting handles ✓ Establish regular inspection procedures and responsibilities to ensure proper maintenance as described. ✓ In cases of cervical, spinal or some fracture injuries, use of the Chair for patient transfer is not recommended. ✓ Never leave the Chair unsupported with a person on-board as the Chair is designed to tilt back easily. ✓ Improper maintenance can cause injury and unpredictable operation. Maintain the Chair only as described in this manual. ✓ Improper parts and service can cause injury and damage. Use only FERNO-approved parts and service

7. FAST Chair Operation

- Refer to Quick Set-up Guide

7.1. Folding and Unfolding the Chair

The Chair folds for shipping and storage.

To Unfold

1. Release the chest strap from the Chair and allow the chair to fold down into the seated position.
2. Completely unfold the chair by holding the handle upright and firmly pushing down on the seat until an audible click is heard, this is the locking pins sliding into place, visually confirm this before seating a patient.

To Fold

When folding the chair ensure the following procedure is carried out:

1. Fully lower the Upper Handle (see below)
2. Check that the carrying handles at the front of the chair are not extended.
3. Ensure foot rest is folded up.
4. Ensure the track is folded flush with the back of chair.
5. Ensure the rear wheels are locked and the front castors are facing forward before folding. This allows for easy and safe folding.
6. To release the chair for folding, pull the red cable under the seat outward and fold the chair forward until it is fully collapsed.
7. Stand the chair upright on the back wheels.
8. The wheels can now be unlocked so that the chair may be rolled into position.
9. The Chair chest strap can be used to secure the Chair in the closed position.

7.2. Height Positional Upper Handle

The upper handle can be locked into four different positions to assist operations on stairs and also to allow for height variations of operator and patient. . The chair is fitted with an adjustable height handle. For the handle adjustment into other requested position it is necessary to pull and rotate on 90° degrees of the groove pin at the right side handle in the order to lock off at the right side handle. Thereafter it is necessary to lock off left groove pin at the left side by pulling and holding in unmeshed position. You have to adjust the handle by movement down or movement up at pin pulling till reaching of requested position. After groove pin locking off at the left side, it is necessary to lock the pin at the right side handle. Having to be sure about correct pin fitting (locking) resulting the correct locking handle position.

7.3. Extending Carrying Handles

The telescopic carrying handles are located at the front of the chair just above the castor wheels and are to be used in conjunction with the Track Wheels. When using the Track Wheels extend the handles to suit the height of the operator.

The handles are easily extended or shortened by pressing down on the buttons located on the handles with the thumb and pulling or pushing the handles to extend or shorten. Ensure the handles are locked before attempting to lift or carry the chair.

7.4. Patient Restraint

Use the lap and foot restraints to secure patient into the Chair. Assess patient condition to determine optimum strapping procedure.

1. Chest Restraint - The chest restraint is also used to secure the chair closed for stowage. Fasten the chest restraint using plastic male/female buckle system. Pull the loose end free end of the webbing strap to tighten the restraint.

2. Foot Restraint-Once the patient's feet are comfortably placed on the integral footrest, the loose foot restraint can be fastened to secure the feet. Fasten foot strap using plastic male/female buckle system. Pull the loose free end of the webbing strap to tighten

3. Releasing Restraints -To release foot and lap restraints, squeeze the two sides of the tang on the buckle inward at the same time and pull the buckle apart.

7.5. FAST Chair Wheels

The Chair is fitted with two large wheels with brakes to the rear and two swiveling castors below the foot rest.

- The Chair may be wheeled using all four wheels where the front swivel castors provide excellent maneuverability, alternatively, should conditions require, the chair may be tilted back and run on the two larger wheels. ALWAYS inform the patient of your intentions.

- To apply the brakes on the rear wheels, press down on the brake pedal above the wheels. To release the brake raise the brake pedal with your foot.

7.6. FAST Chair

In addition to the wheels the Chair is fitted with a track system to allow the operators to glide the chair down stairs instead of lifting and carrying.

Guidelines for using the track system:

- Using the Chair on stairs requires a minimum of two trained operators. FERNO Manufacturing recommends using a third person as a “spotter” (see, using the Chair on Stairs).
- Verify that the track is fully opened and locked into place before using it.
- Verify that the telescopic handles are locked before lifting.
- Never lubricate track belts. Lubricated track belts can perform unpredictably, resulting in injury to the patient and/or operators.
- Moisture, water, snow, ice or debris on or between the track and belts can cause irregular track-belt performance that results in sudden changes in the weight operators must support. Make sure the track and track belts are clean and dry before using the Chair on stairs.
- Always clear stairs of debris etc., which could interfere with the operation of the Chair or impede the operators.

Opening the Track:

1. Grasp the top of the chair with one hand and with the other grasp the track release bar (red labelled) located near the top of the tracks and firmly pull it back until the track locks into the fully extended position.
2. Verify that the lock is engaged by trying to push the track closed. If the lock is fully engaged the track will not move.

Closing the Track:

With one hand, grasp the track release bar (red labelled) located near the top of the tracks and with the other hand push down on the track closing handle located on the right side of the tracks. Pushing the track closed with the track release bar will assist this action.

7.7. Checking the FAST Chair

The following checks are required each day before the use of the Chair:

- Overall cleanliness of the Chair.
- Check that there are no bent or damaged parts, missing fasteners, etc.
- Check that the wheels rotate freely with no excess movement or damage.
- Check that the Chair unfolds and locks securely in the seating position for normal use.
- Check that the track system opens and closes correctly, examine the tracks for damage.
- Check the upholstery for cracks, splits or any loose fabric or stitching, etc.
- Check that the upholstery is correctly secured to the frame.

If in any doubt then contact a FERNO Fieldcare Service Engineer.

8. Operating Procedure

8.1. General Information

IMPORTANT:

Always inform the patient before a manoeuvre.

Chair operation requires a minimum of:

- Two trained operators when the Chair is being used to transport a patient on stairs.
- One operator only, can safely use the Chair on flat surfaces including single steps, thresholds etc. but this must be at the discretion of the operator who must assess all likely conditions.
- One operator can safely load/unload a patient using the Chair from a vehicle fitted with a ramp, automatic tail-lift or other approved mechanical lifting mechanism.
- Circumstance such as access, weather conditions or patient weight may require additional help when operating on stairs; this must be assessed at the time however the following is a suggested configuration:

1. Placement techniques, heavy patients, rough terrain or unusual circumstances may require more additional help; this must be assessed at the time however the following is a suggested configuration.

2. Keep the load limit of the Chair in mind when working with a heavy patient. If it suspected that the load limit has been exceeded then a full inspection of the Chair should be conducted, preferably by FERNO Field care.

3. Operators must take extra precautions when operating the Chair on uneven ground. If the ground is too uneven it is recommended to transfer the patient by pulling the chair backwards. With the back of the patient facing the operator.



WARNING

Regular cleaning helps reduce the risk of transmitting disease and enables the equipment to function at its optimum

4. Extra precautions should be taken to prevent the Chair from slipping in adverse, wet or icy weather conditions.

5. Stay with the patient at all times and always use the patient restraints provided.

6. Always follow good lifting procedures as specified in current manual handling regulations and your appropriate training manual.

7. Follow standard emergency patient-handling procedures when operating the Chair.

8. Medical advice is beyond the parameters of the manual. It is the user's responsibility to ensure safe practices for both themselves and the patient.



WARNING

Improper use can cause injury! Use the Chair only for the purpose described in this manual.

8.2. Moving the Chair

- Place the patient on the Chair using local protocols for patient handling. Ensure that the patient is seated with their back fully against the back panel and their head securely positioned within the head pad (see page 6 for fitting of Head Pad) before using the lap restraint.

- Chest and foot restraints must be applied before moving the Chair.

- When moving patients always inform them of what you are going to do.

8.3. Using the Chair on Level Ground

- Before rolling the Chair on level ground, the head end operator adjusts the upper handle to the desired position for comfortable use. (Rear locking lift handle is intended only for over stairs transport, not for chair turning on level ground)
- Inform the patient so that they are aware about what is happening.
- Two castor wheels are affixed to the foot end frame. These assist with movement on level ground and mean that the Chair can be used without tilting backwards.
- The operator at the foot end of the Chair assists as required with obstacles like door frames or uneven surfaces. The lower handle can be used to overcome larger obstacles.



8.4. Gliding the Chair Downstairs

- It is strongly recommended that the following procedures be practiced with a chair loaded with dummy weights such as bagged builders sand or gravel.
- Using the Chair on stairs requires a minimum of two operators. Use additional help as needed to control the Chair.
- It is recommended that the two operators face each other when transporting a patient down stairs. If available a third person should assist by acting as a guide for the foot-end operator.
- Ensure the route down the stairs is clear of obstructions that could affect the safety of the operators or the function of the tracks (see page 10).



1. **Head-end operator** – fully extend the upper handle and ensure it is locked. (see page 9).
2. **Head-end operator** – lower the track and ensure it is locked (see page 11)
3. **Foot-end operator** – take up position on the stairs facing the chair gripping the lower foot-end handle.
4. **Both operators** – working together, guide the Chair over the edge or the top step, allowing the track belts to engage the step.
5. **Both operators** – move the Chair slowly downwards until the tracks are resting on the top two or three steps.

This establishes the glide angle. Ensure both operators are comfortable before proceeding.



WARNING

Before positioning the patient on the Chair, always ensure the Chair is fully unfolded and that the safety rings are up and over each hinge bracket.

Avoid rapid Chair repositioning as this may result in patient injury. Support the Chair while adjusting handles.

Never leave a patient unattended in the Chair and always use restraints.



6. To maintain the glide angle –

- **Foot-end operator** – applies slight downward pressure on the extended upper handle.
- **Head-end operator** – applies slight upward lift to the foot-end lift handles.

7. **Both operators** – when chair reaches the bottom of the steps and rear wheels are on the floor, the foot end operator releases the foot-end handle, the head-end operator tips the Chair forward until all four wheels are on the floor.

8. If this is the end of the stairs then the **Head-end operator** can fold the track and lower the upper handle to a comfortable height.

Head end operator leans the Chair backwards until the patient's weight is on the transport wheels.

At this point, the lower handle is more easily accessible to the foot end operator. The Chair can then be rolled towards the foot of the stairs. Position both track assemblies squarely against the facing edge of the step. The operators can then move the Chair up the stairs by pushing (foot end operator) and pulling (head end operator).

The head end operator is responsible for guiding the Chair up the stairs whilst the foot end operator assists as required.

If there is a need to manoeuvre the Chair on stairs the head end operator may need to adjust the upper handle to a higher or lower position.

TO PAUSE DURING DESCENT

To pause during the descent, tilt the Chair forward just enough to allow the rear wheels to rest on the step while both operators hold the Chair in place. To continue down the stairs, tilt back the Chair and regain the glide angle (see step 5 above)

Up Stairs: Once the patient is seated on the Chair and restrained, adjust the upper handle into a position that is comfortable for your height. (See Section Upper Handle). The upper handle position can be changed to provide a better hand grip.

Always inform the patient about what is happening.



9. Care of the FAST Chair

9.1. Disinfection

Disinfect all surfaces of the Chair including the head pad and patient restraints. Follow disinfectant manufacturers' directions for use. Spray or wipe disinfectant onto the patient restraints. Do not immerse in disinfectant.


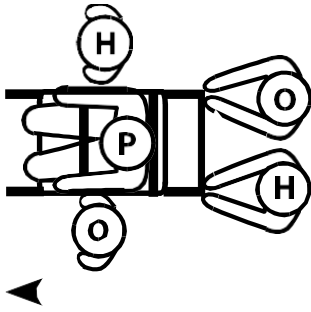

9.2. Cleaning





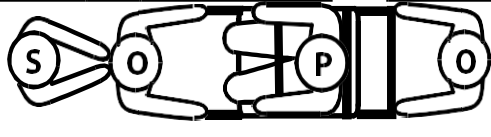
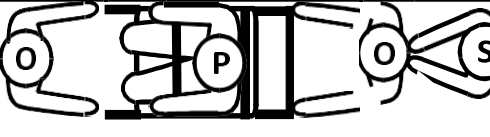
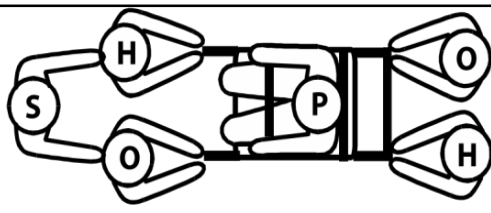
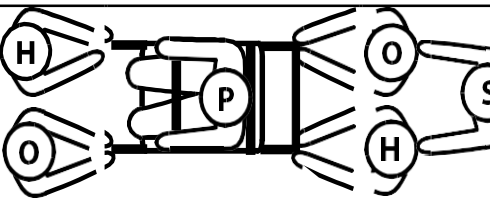
Clean the Chair and its components with a clean cloth or soft brush and warm soapy water. Rinse with warm water and air dry. Do not clean with products containing bleach or phenol. A stiff bristled brush can be used if necessary.

10. 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	 WARNING
Two Operators and Two helpers		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 Inspect the chair if the load limit has been exceeded (See <i>Inspecting the Chair</i> , page 37).

Direction	 DESCEND 	 ASCEND 
Two Operators and One helper		
Two Operators and Three helpers		

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

11. Maintenance

The FAST Chair requires regular maintenance. Set up and follow your own maintenance schedule but use the following as a minimum.

More frequent maintenance will be required in situations of heavy use. If any damage is discovered, take the Chair out of service until repair or replacement can be made.

When using any product for maintenance, follow the manufacturers' guidelines and read the manufacturers' material safety data sheet.

Action	As Needed	Each Month
Disinfecting	•	
Cleaning	•	
Inspection	•	•
Lubrication		•

 WARNING
Improper maintenance can cause injury. Maintain the Chair only for the purpose described in this manual.

 WARNING
Improper use can cause injury! Use the Chair only for the purpose described in this manual.

12. Warranty and Service

Standard terms and conditions apply to all sales. A copy is available upon request. These contain full details of warrant terms and do not limit the statutory rights of the customer.

For service, maintenance and any questions regarding this, or any other FERNO product, please contact:

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As our policy is one of continuous development FERNO Slovakia s.r.o. reserves the right to change the specifications without notice.

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