



M. BARTELS
REHA IM- & EXPORT GMBH

Operation Manual

Stairclimber SA-3



FE-27-3

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INTRODUCTION

Thank you for purchasing STAIR AID, BARTELS POWERED STAIR CLIMBER. This manual describes proper operating procedure, inspection and maintenance. The user manual is a useful help for operator and passenger.

Before running the machine, be sure to read this manual thoroughly. Please keep this manual in the same, easily accessible place. Ensure that the STAIR AID SA-3 is operated by properly skilled and experienced person only! Never leave stair climber and passengers – except in emergency cases – alone on stairs.

All machines are referred to by their serial numbers. Whenever you inquire about a machine, be sure to inform us of its serial number.

The serial number is inscribed on the side of the machine. Please record its number and year, month and date of purchase in the operation manual.

• Type, Serial number QJ SA-3	• Powered stair climber, STAIR AID SA-3
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Please write the serial number and date purchased in the following blank space.

Serial number	
Date of Purchase	Year Month Day

- The STAIRMATE is a medical device class I and satisfies the requirements of ISO 7176-28.
- The STAIRMATE is a motorized stair-lift for in wheelchairs seated persons who are not able to overcome stairs on their own and thus it is associated with type B (ISO 7176-28: 2012 Annex A). The product is used exclusively to overcome stairs and has no driving mode for flat surfaces.
- STAIR AID is designed to carry one passenger.
Never carry a baby in the arms, have a child on the passenger's lap or carry any similar load while using STAIR AID even when the total weight does not exceed STAIR AID's maximum load. Unprescribed usage is dangerous. Only one passenger can use STAIR AID while Seat Belt is fastened.
- The operator must call out to the passenger to inform him/her the next action with simple words in order to reduce passenger's anxiety before the operator moves STAIR AID to the next phase of the procedure. (Pay special attention to reducing passenger anxiety before and during STAIR AID's ascent/descent of the stairs.)
- The stability tests have been performed with dummies. Standard wheelchairs were used.
- The results of the stability tests may vary in real situations.

SAFETY PRECAUTIONS

To maintain safe operation, important safety precautions, classified into ***Danger***, ***Warning*** and ***Caution***, are indicated in corresponding parts of the operation manual. The definition of each precaution is explained in the following section.

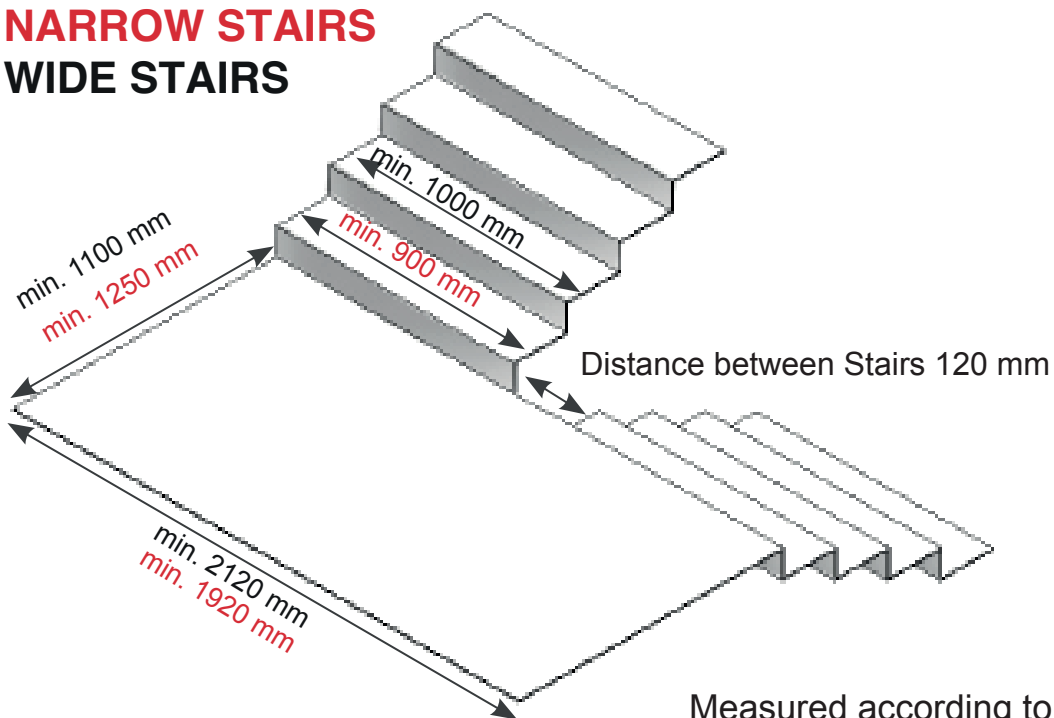
 CE-marking	With the CE marking the manufacturer declares compliance with the essential requirements of Directive 93/42 / EEC
 DANGER	Neglecting this warning indication or operating the machine improperly may cause serious personal injury or even death.
 WARNING	Neglecting this warning indication or operating the machine improperly may seriously endanger the concerned person's health or life.
 CAUTION	Neglecting this warning indication or operating the machine improperly may cause injury to the concerned person or damage the machine or related items. If you transfer this machine, be sure to attach this operation manual to the machine.

INHALT

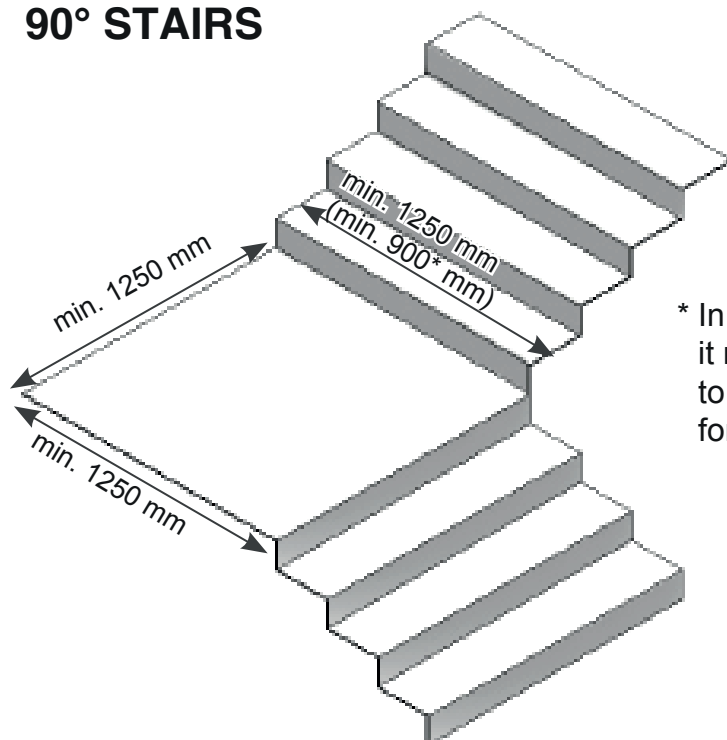
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MINIMUM LANDING SPACE

NARROW STAIRS WIDE STAIRS



90° STAIRS



* In case the width of stair is 900 mm, it may need a cut of the steering, i.e. to turn gradually with pushing machine forward and backward.

NOTES

1. ESSENTIALS OF SAFE OPERATION

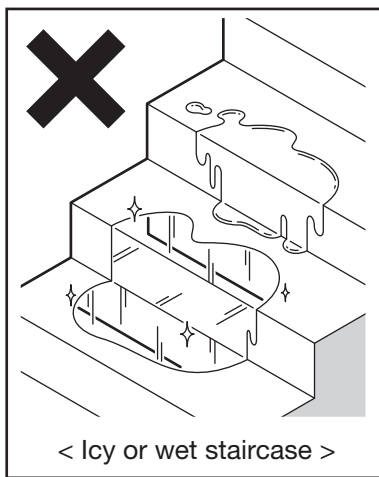
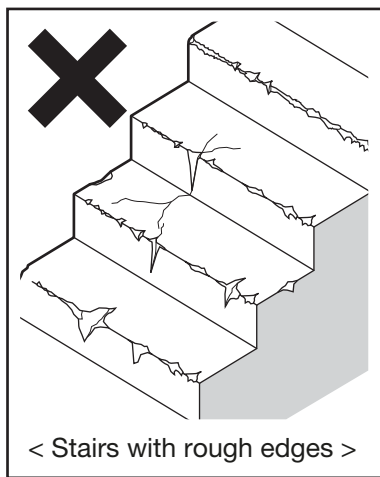
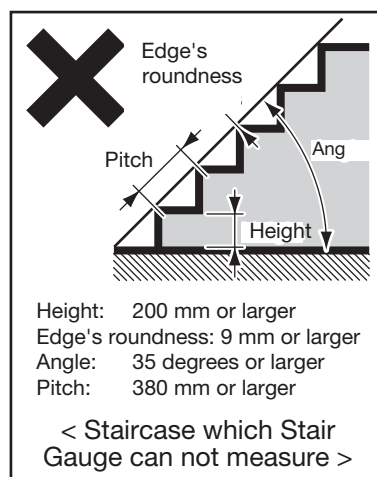
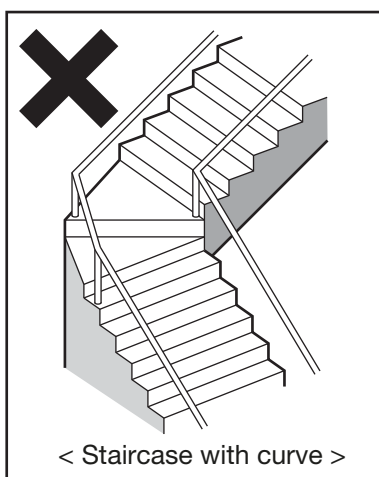
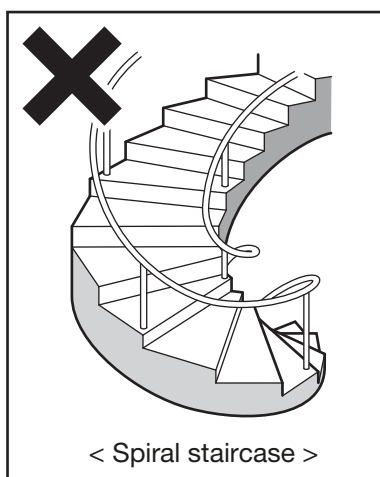
1.1 Purpose of use / Indication

Walking or very limited walking ability within the basic needs to move in ones own apartment and leave the apartment to go for short walk in the fresh air or to reach the usual places in the neighbourhood in order to take care of everyday business.

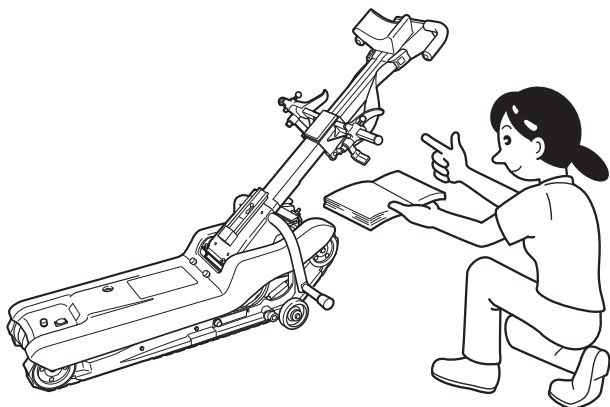
The supply of the stairmate is indicated when disabled people have to overcome stairs on a regular basis, e. g. in the house and in the apartment, the stairs are suitable for a stairmate and a wheelchair is available.

1.2 Advice - Stairs

The use on stairs with more than 35 ° inclination can lead to accidents of any kind. There is no insurance coverage in this case. The STAIRMATE may not be used on spiral or turn staircases, staircases with a slope greater than 35 °, stairs with damaged edges, icy, wet or slippery stairs.



The usage of the STAIRMATE requires a higher level of skills than using a wheelchair. Because of the increased risk it is recommended to carefully deal with the product and its operation.



1.3 Inspection

- The operator must check the STAIRMATE before every use.
- The check before use is needed for a safe operation.

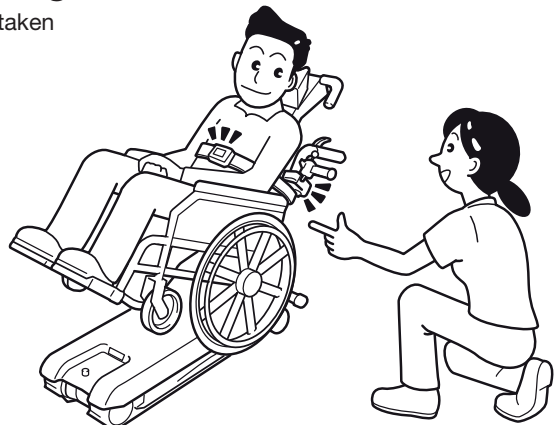
1.4 Handling of the battery

- Battery is a sealed type. It is unnecessary to refill it with water. Never dismantle Battery.
- Never position Battery near flame or short-circuit Battery.
- If Battery is cracked and its electrolytic solution contacts skin or clothes, immediately rinse the contaminated area with plenty of water
- If electrolytic solution splashes into the eye, rinse the eye with plenty of clean water and consult an ophthalmologist.
- Use special Battery Charger for charging Battery.



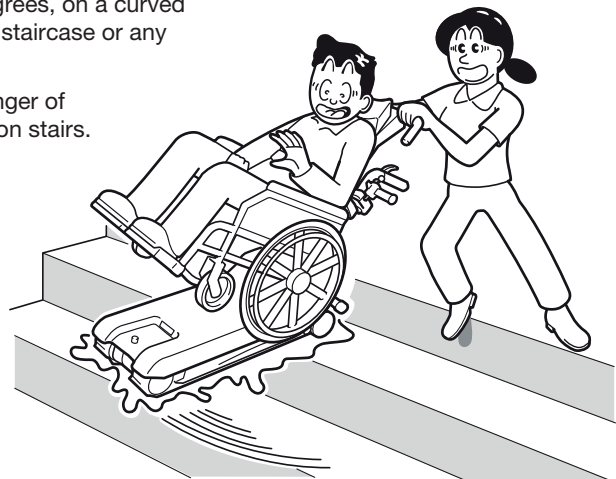
1.5 Safe operation through perfect knowledge

- The operator needs sufficient training. Be sure the training is undertaken before the operator runs this machine for the first time.
- Proper clothes, suitable to machine control, must be worn.
- The machine can be run only after Wheelchair is safely secured by Forks, Seat Belt and other necessary items.
- No operator overworked, sick, taking medicine, intoxicated, or otherwise inhibited may operate STAIR AID.



1.6 Usage on stairs

- Never run the machine on a staircase angle exceeding 35 degrees, on a curved staircase, an oily staircase, an icy staircase, a wet or slippery staircase or any other inappropriate staircase.
- Obliquely ascending or descending the stairs will result in danger of serious accident. The operator must avoid oblique operation on stairs. Always approach the staircase squarely.
- Whenever running the machine upward, the operator must always pay attention to the area behind him/herself. Do not run STAIR AID if the stairs is crowded. Whenever running the machine downward, the operator must always pay attention to the front of the machine. Do not run STAIR AID if the stairs is crowded.
- Never let go of the machine unless unavoidable circumstances separate the operator from the machine.

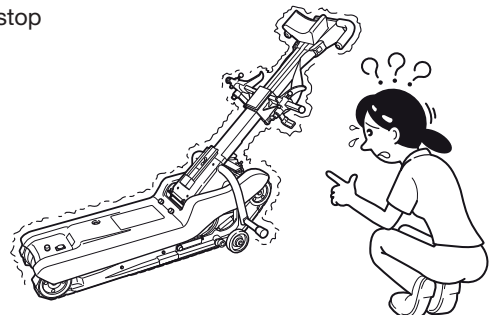


1.7 Stopping device

- If the machine gives trouble, malfunctions or is damaged, immediately stop operating the machine.
- Running it with a problem existing can result in a serious accident.

1.8 Surface finish

- The STAIRMATE shall not be used when the surface is unpaved or extremely rough. Furthermore the use is not recommended on deep pile and / or fringed carpets.



2. CONFIGURATION AND SPECIFICATIONS

2.1 PRODUCT CONFIGURATION

STAIR AID consists of the following assemblies.

• Handle Unit	• Back Pad	1 pc
• Drive Unit	• Wheels	
• Body Cover	• Battery Pack	
• Wheelchair Mount Unit	• Charger (12V)	1 unit
• Headrest	• Seat Cover	1 sheet
	Standard accessories	

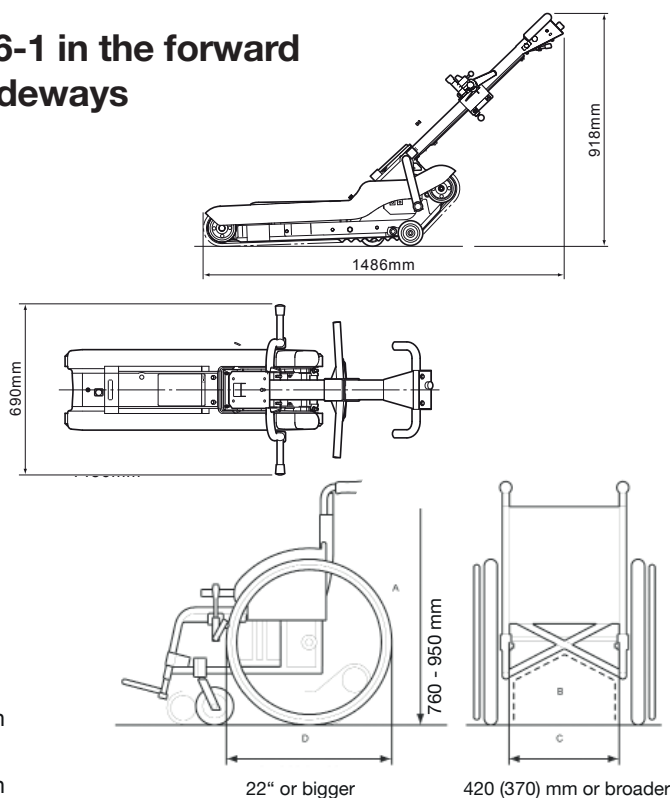
- For ordering the spare Battery Pack, please contact the sales agency.
- The additional Back Pad is optional. For ordering the Back Pad, please contact the sales agency.

2.2 SPECIFICATIONS

Model	SA-3
Passenger	1
Operator	1
Rubber Crawler	2 (Width: 51 mm)
Stair ascent speed	21 steps (6.5 m) / min. (measured according to ISO 7176-28)
Stair descent speed	32 steps (10.0 m) / min. (measured according to ISO 7176-28)
Maximum load	160 kg (Passenger + Wheelchair)
Maximum stair angle	35°
Max. allowable angle of the planes at the top end / bottom end of the stairs	> 35°
Running time (min) / charge	Ascending: 600 steps / 30 min. Descending: 840 steps / 30 min. (measured according to ISO 7176-28)
Battery	Maintenance free type sealed lead battery 12V - 20Ah
Charger	Input: 100-240VAC, 50/60Hz, 1.0A MAX Output: 12VDC, 3A
Weight	65 kg
max. operating force of switches	0,6 Nm.

Static stability according to ISO 7176-1 in the forward direction, backward direction and sideways

	Standard	Measurement
Turning radius	ISO 7176-5:2008	1150 mm
Turning area	ISO 7176-5:2008	1600 mm
Dynamic stability	ISO 7176-28:2012	35°
Static stability • forward • backward • sideways	ISO 7176-1:2014	<10° 7° 10°



STAIR AID'S Wheelchair-capable mount

- A: Wheelchair height 760 - 950 mm from the floor
- B: Space under the X-frame In case of B ≥ 150 mm, C has to be minimum 420 mm in width
- C: Inside width between base tubes In case of B ≥ 220 mm, C has to be minimum 370 mm in width
- D: Main Wheel diameter 22 inch or larger

The dimensions shown above are standard values. Some wheelchairs may not fit.

The following wheelchairs can be used:

The STAIRMATE can be used with all manually operated wheelchairs which have handgrips. The minimum seat width of 420 mm can be reduced with optional adapters to 370 mm. Please note the dimensions for wheelchair-holder on page 8. The wheelchair must not be converted for use with the stairmate. Thus, there is no limitation of the usage possibilities of the wheelchair used.

The following wheelchair types cannot be mounted:

1. Reclining type wheelchair
2. Foldable or detachable handle type wheelchair
3. Caliper brake installed Wheelchair. Wheelchairs with existing Problems. (such as damaged parts)n
4. Rebuilt, misappropriated wheelchairs

2.3 Used Materials

Frame: steel, powder coated; rubber crawlers: rubber; drive unit: aluminum injection molding.

2.4 Operating and storage conditions

1. Suitable for storage temperatures of -15 to +40 degrees Celsius
2. Suitable for operating temperatures of -15 to +40 degrees Celsius
3. Use with water according to IEC 60527 (IPx4)

2.5 Contraindications

Not known.

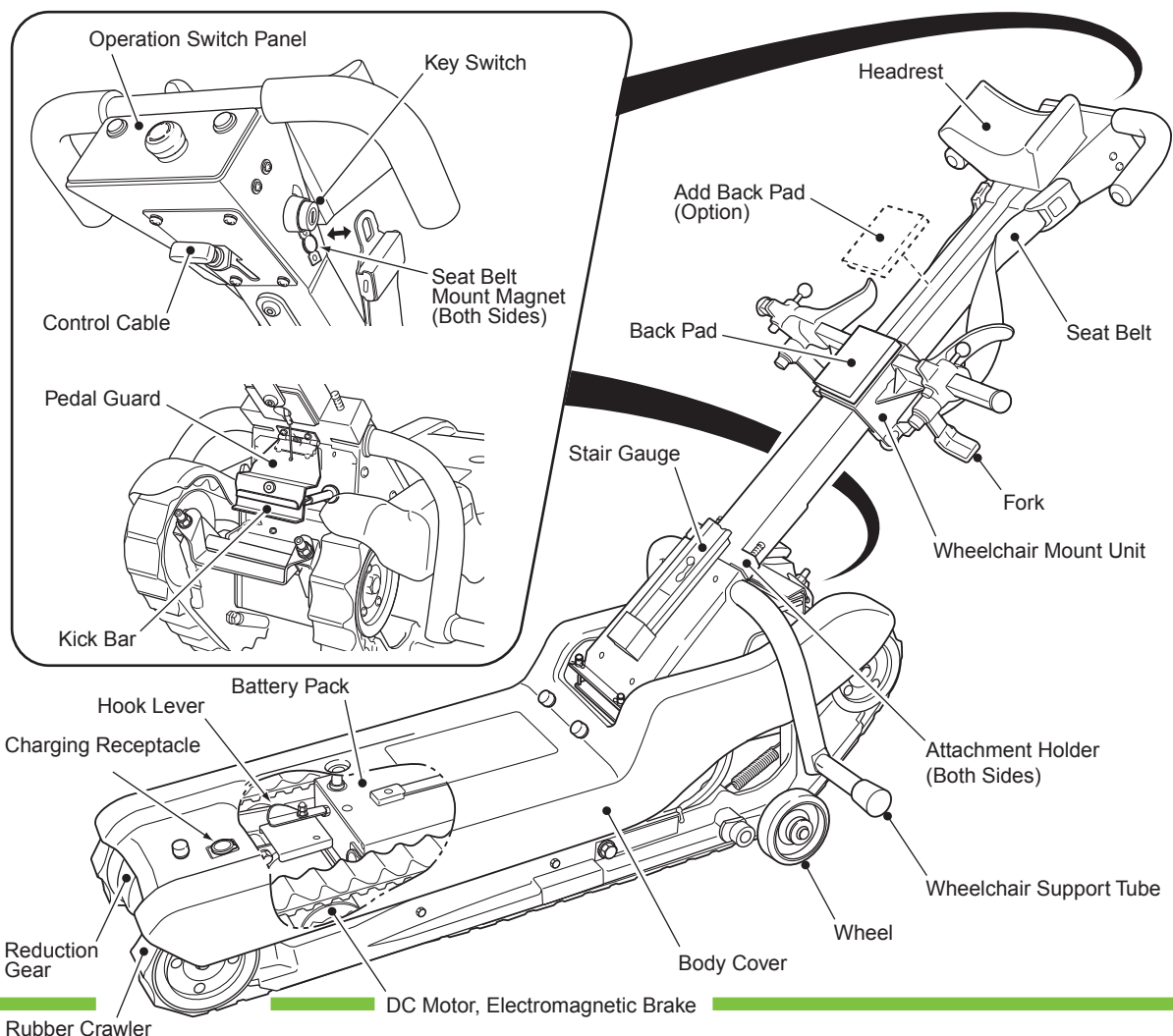
2.6 Electromagnetic radiation

Despite compliance with all applicable EMC directives and standards, it is possible that the electrical STAIRMATE is disturbed by other equipment (e. g. mobile phones, alarm systems) or disturbs them. In this case turn off the external device or move the STAIRMATE out of the disorder field.

2.7 Device identification

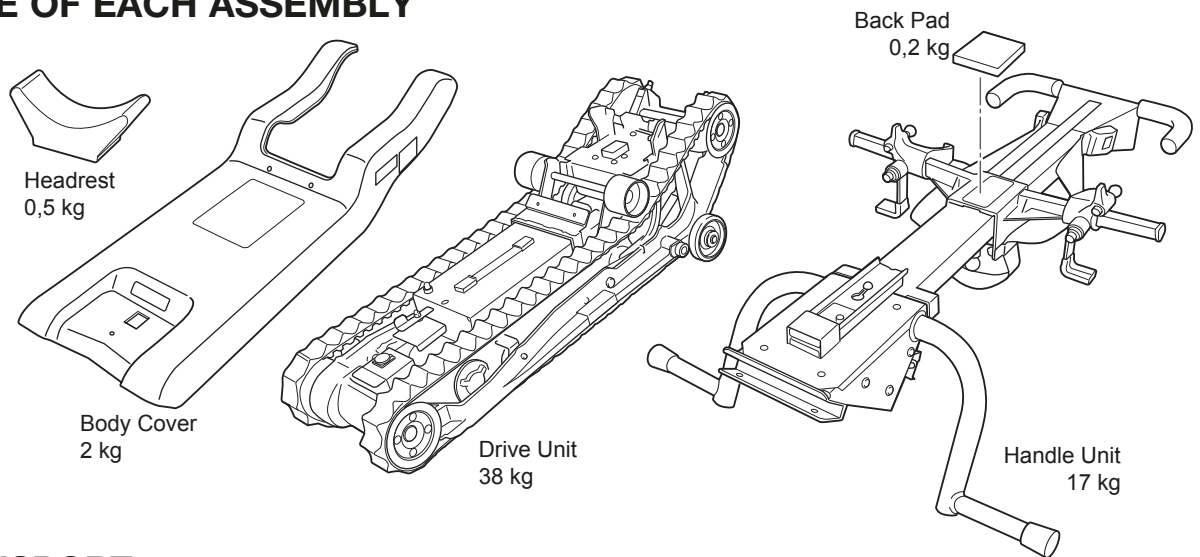
The identification of the device is performed by the nameplate. It consist of: serial number / max. loading capacity / weight / date of manufacture / power

3. NAME OF EACH UNIT



4. ASSEMBLING THE MACHINE

4.1 NAME OF EACH ASSEMBLY



4.2 TRANSPORT

- For transportation disassemble device into two parts: drive unit and adapter.
- For secure lifting of the drive unit raise at the front under the engine block or transverse bar and at the rear under the electric box.
- The adapter can be lifted safely and easily on the handles.

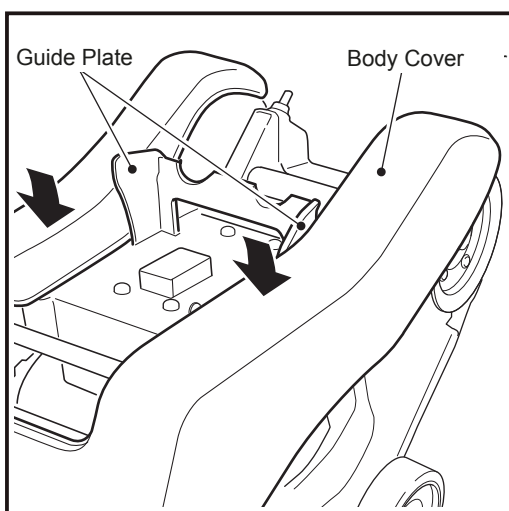
4.3 ASSEMBLY PROCEDURE



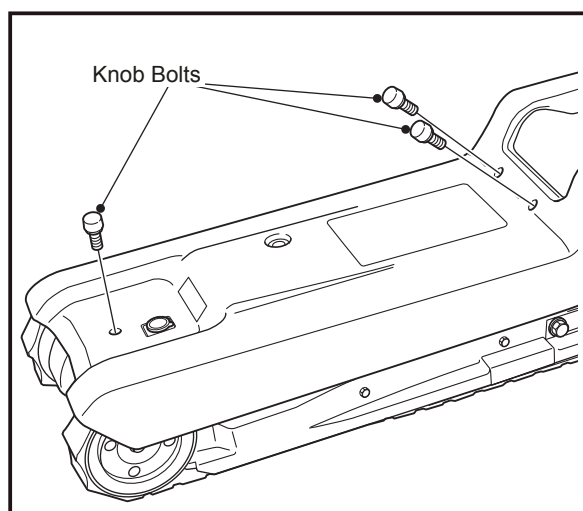
CAUTION

- Before STAIR AID is assembled, be sure to set Key Switch to „OFF“.
- After STAIR AID is assembled, confirm that Lock Pin is firmly secured by its „R“ Pin to Handle's Hook Point. Insecure Lock Pin attachment can cause passenger to fall or other serious accident.

1. Attach the Body Cover



Confirm that the edge of the Guide Plate is positioned above the Body Cover.

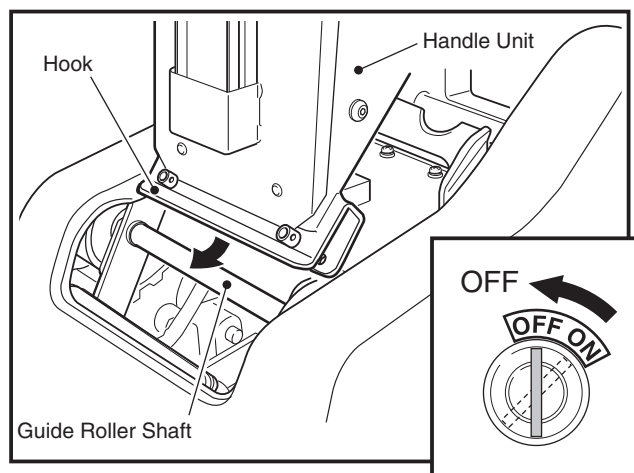


Tighten the three Knob Bolts.

For details about the Body Cover removing procedure, refer to:

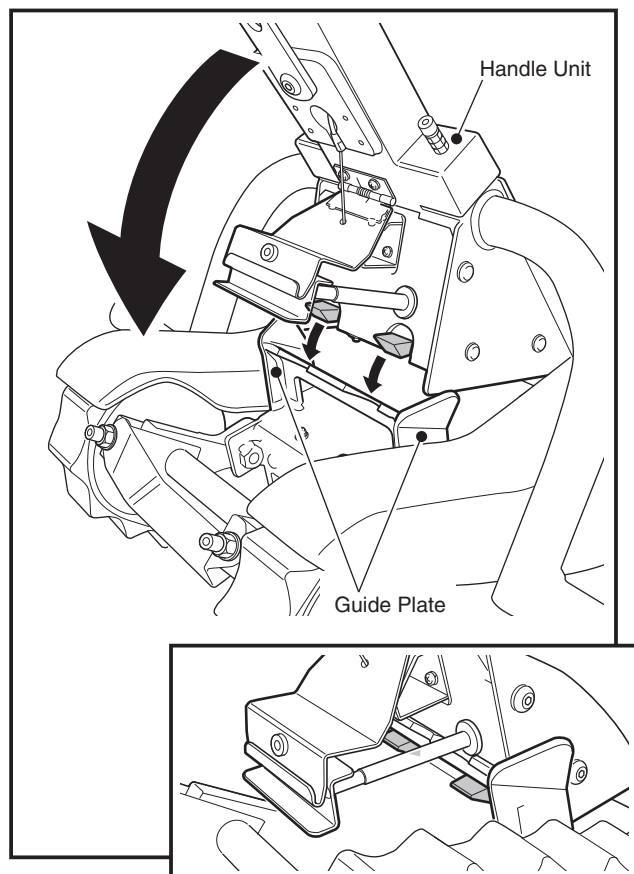
5.2 BATTERY PACK REMOVAL AND REINSTALLATION

2. Confirm that Key Switch is set to "OFF".
Set Handle Unit's Hook against Guide Roller Shaft and push it until Hook reaches its dead-end against Guide Roller Shaft.

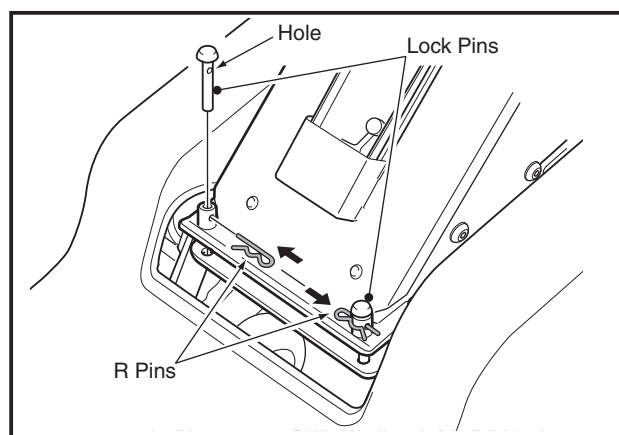


3. Lower Handle Unit to meet Guide Plate and secure it firmly.

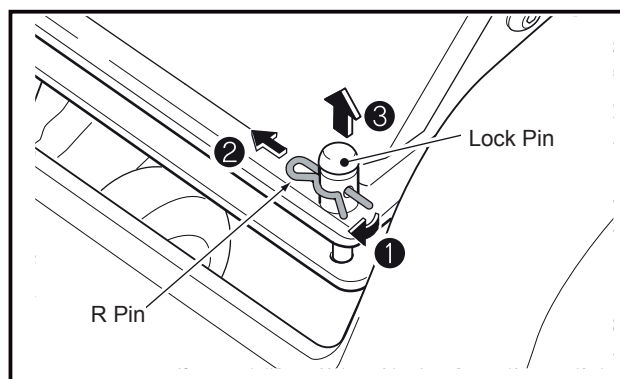
NOTE: Unless Handle Unit is fully locked, STAIR AID will not run even when Switch is pressed UP or DOWN.



4. Check the hole position of the Lock Pin and insert it into the Handle Unit's Hook. Lift that Lock Pin slightly and insert the R Pin from the inside.

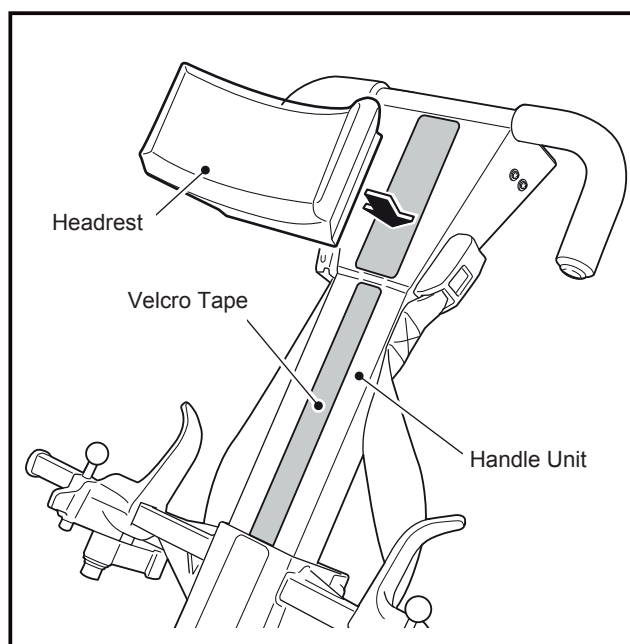


NOTE: When the Lock Pin is removed, remove the R Pin by following Steps and 2 in order as shown in the right figure.
3 Pull out the Lock Pin.

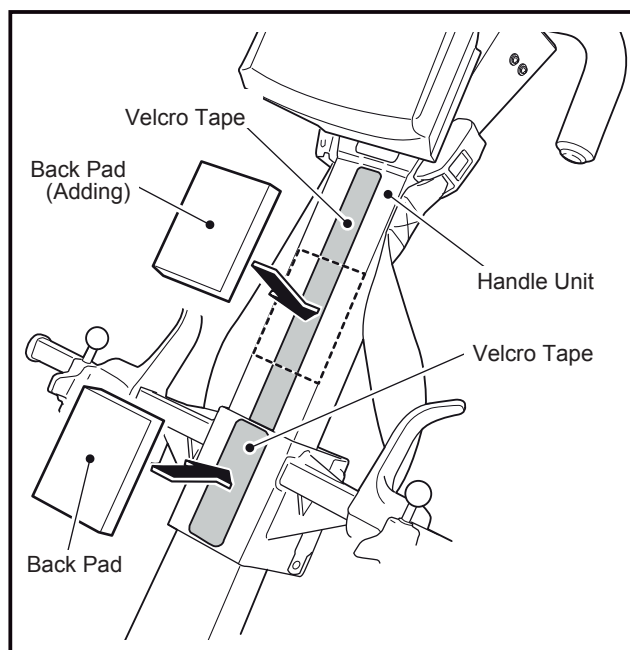


4.4 HEADREST AND BACK PAD ATTACHMENT

Attach the Headrest securely in place where the passenger's head is correctly positioned. Put the Headrest onto the Velcro Tape existing Handle Unit.



Attach the Back Pad to the Velcro Tape where it supports the passenger. The Back Pad can be additionally set to the Handle Unit if it is required. For ordering the Back Pad, please contact the sales agency.



5. DESCRIPTION OF EACH UNIT

5.1 SWITCHES

1. Key Switch

It turns on/off the power supply. When it is turned clockwise, the power will be ON and when turned counter-clockwise, the power will be OFF. Confirm that Power Lamp will glow when the power is ON.

NOTE: When STAIR AID is not to be used (to be stored, to be charged, to be transported), turn off Key Switch, remove Key and keep it in an appointed place.

2. UP/DOWN Push Button

These Buttons allow STAIR AID to go UP/DOWN the stairs.

When UP Button (color: Green) is pressed, the machine will ascend.

When DOWN Button (color: Red) is pressed, the machine will descend.

3. Emergency Stop Switch

When this Switch is pressed, the machine will stop immediately. STAIR AID won't restart. Even when the other Switch is pressed. The Power Lamp will go off.

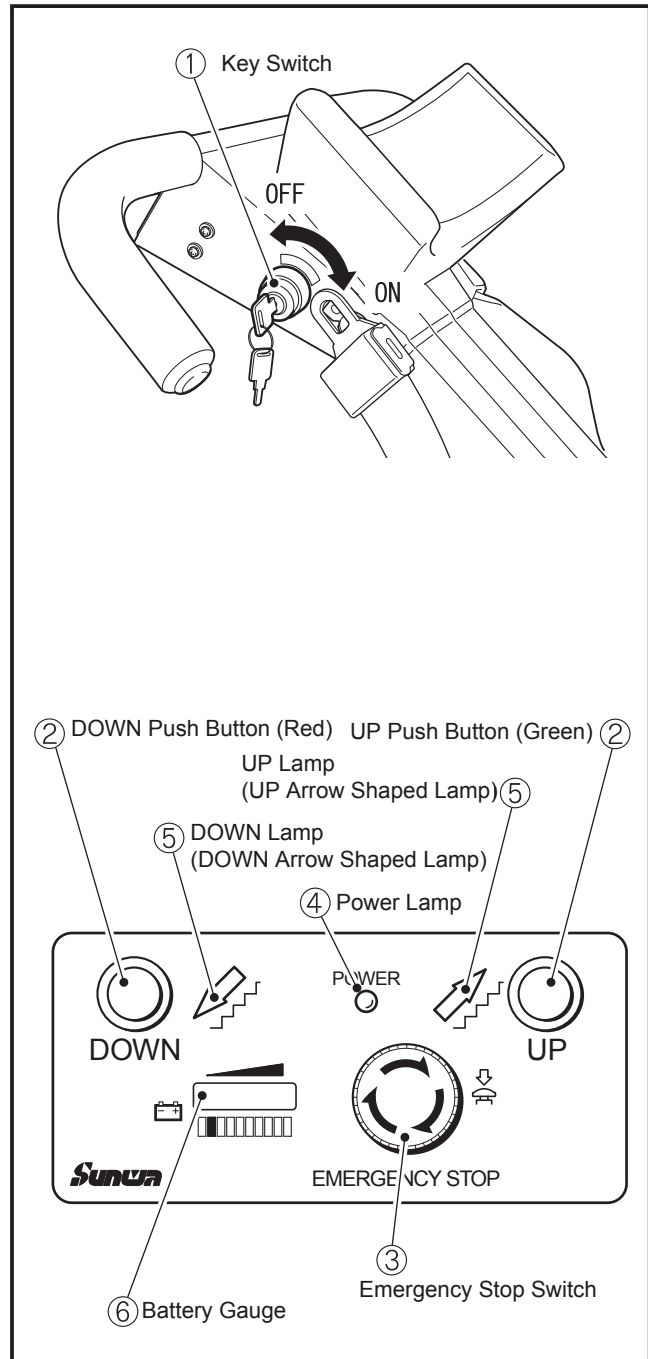
To release the emergency stop condition, turn Emergency Stop Switch in the "arrow" indicated direction.

4. Power Lamp

When the power is supplied, this lamp will glow. (The UP/DOWN operation will be available.)

5. UP Lamp (UP directional shaped arrow),
DOWN Lamp (DOWN directional shaped arrow)
When the corresponding button is pressed, the lamp will glow.

6. Battery Gauge



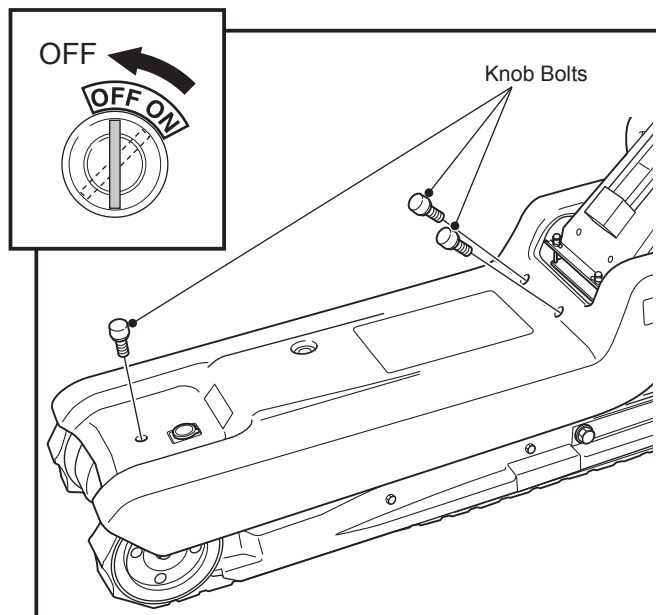
CAUTION

If Key Switch is kept in the ON position,
Battery will more quickly discharge.

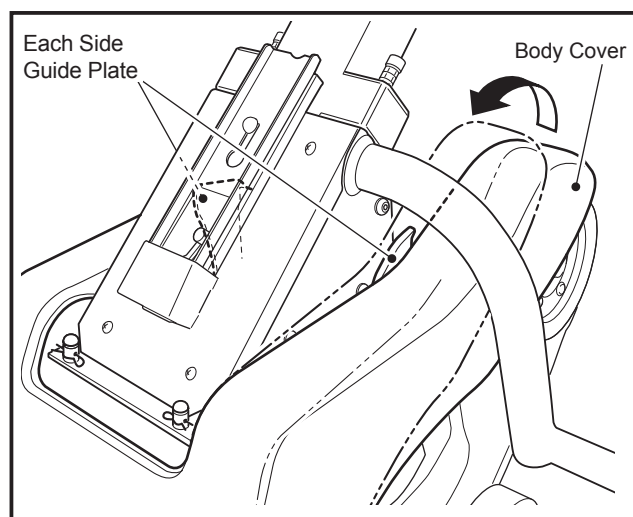
When the machine is not to be in use,
be sure to turn off Key Switch and remove it.

5.2 BATTERY PACK REMOVAL AND REINSTALLATION

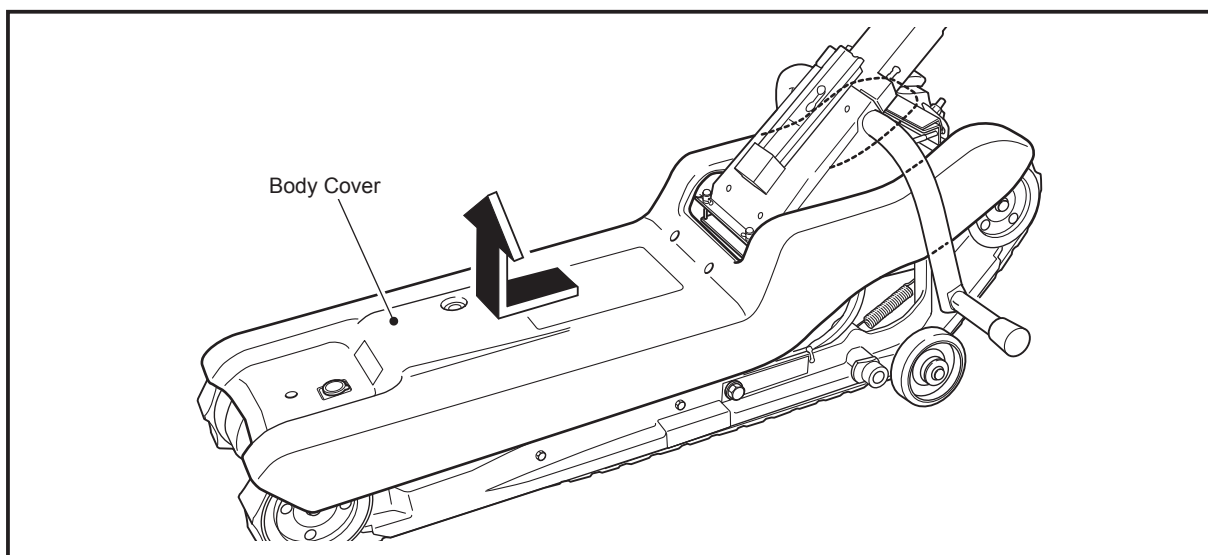
1. Conform that Key Switch is set to "OFF".
Loosen the Knob Bolts and remove them.



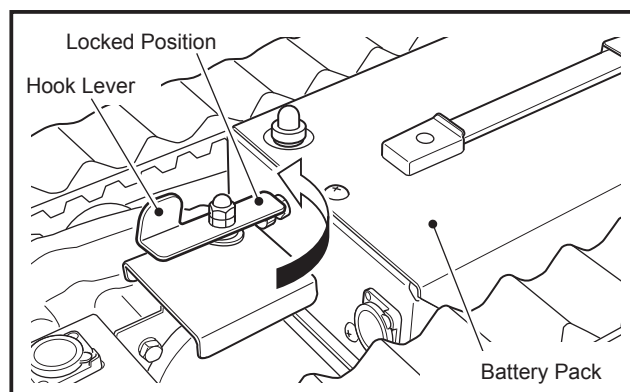
2. Pull up the rear edges of the Body Cover with hands and then push each side of the cover inward to cover the corresponding Guide Plate with a Body Cover.



3. Pull the Body Cover to the front and then pull it up to remove it.



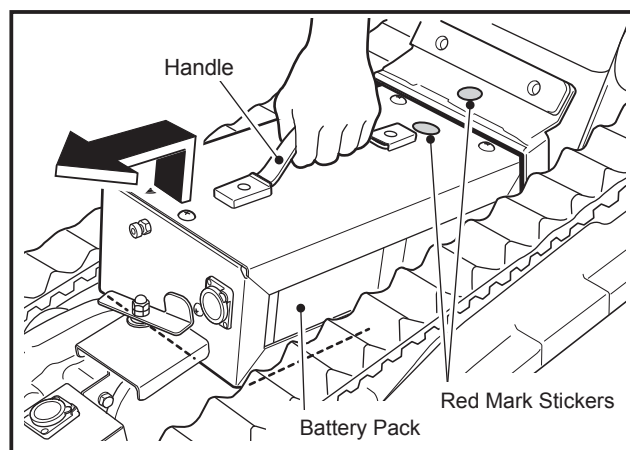
- Turn the Hook Lever at the front of the Battery Pack counter-clockwise to release the battery Pack.



- Pull the Battery Pack upward by holding the Battery Pack's Handle and then remove it by tilting and pulling it to the front.

- The battery Pack installation procedure is the reverse procedure of Battery Pack removal. Press the front side of the Battery Pack securely in order to contact the Battery Pack's Power Connector to the STAIR AID's Receptacle. When the Battery Pack is securely installed, turn the Hook Lever clockwise to lock the Battery Pack.

NOTE: Pay attention not to install the Battery Pack in reverse. (Set the Battery Pack's Red Mark with the STAIR AID's Red Mark.)



CAUTION

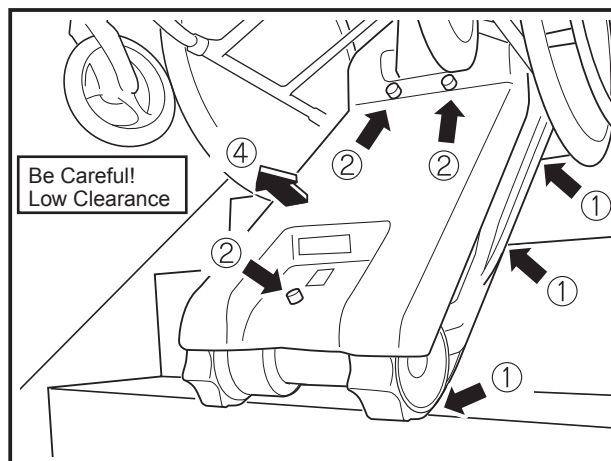
If Battery Pack is dropped, Battery may be damaged.

Pay attention to safe handling during Battery removal/reinstallation.

5.3 EMERGENCY BATTERY PACK REMOVAL AND REINSTALLATION (INEVITABLE BATTERY PACK REPLACEMENT WHILE STAIR AID IS ON THE STAIRS)

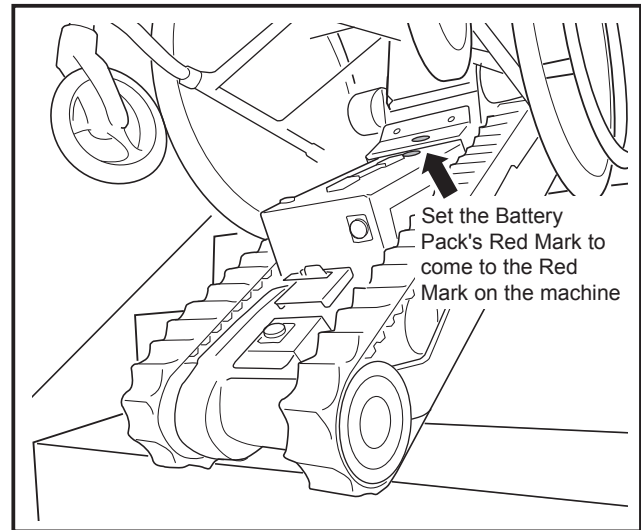
First, inform the passenger of initiating the replacement of the Battery.

- Stop STAIR AID so that the number of the Rubber Crawlers contacting points with the stairs is at its maximum.
- Loosen three Knob Bolts. Remove the two Knob Bolts at back first. Do not remove the front Knob Bolt at this time.
- Pull up both rear edges of the Body Cover with hands. Then push both sides of the cover inward in order for them to be positioned at the inside of the Body Cover. (Refer to 5.2 (2.))
- Remove the front Knob Bolt, pull the cover out to the front, and pull up the cover to remove it.



5. Remove the Battery Pack by referring to 5.2 (4.) and (5.).
6. The Battery Pack installation is the reverse procedure of its removal. Press the front of the Battery Pack from its top in order to connect its terminals securely. When the Battery Pack is securely installed, turn the Hook Lever clockwise to lock the Battery Pack.

NOTES: When the Battery Pack is installed, pay attention that the Battery Pack is correctly oriented.
The Red Mark (indicated by the Red arrow in the figure on right) of the Battery Pack must come to the Red Mark affixed on the machine.

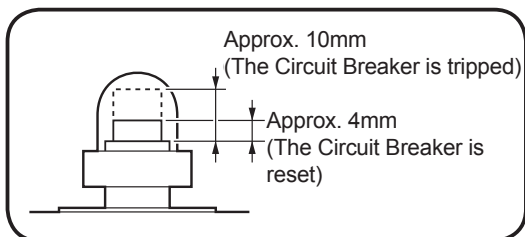
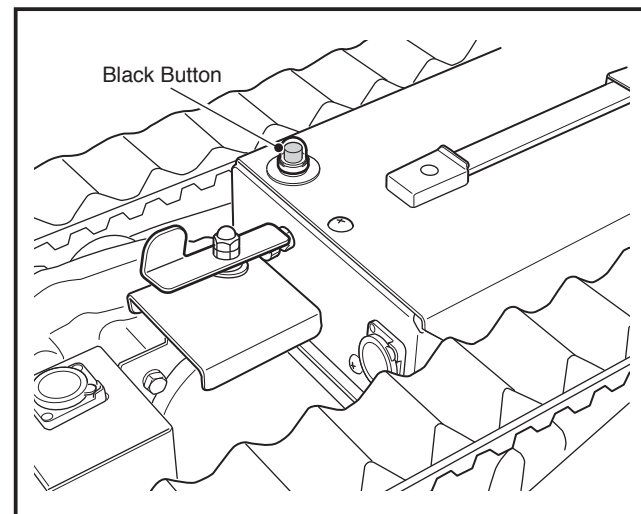


7. After STAIR AID goes UP or DOWN the stairs and moves to a safe and level ground, get off the passenger and remove the Wheelchair, then install the Body Cover.

5.4 CIRCUIT BREAKER RESETTING PROCEDURE

The Circuit Breaker trips in order to protect the machine from being overloaded. In such case, STAIR AID cannot be operated. If the Circuit Breaker is tripped, press the Black Button covered with transparent cover until its click sound is heard.

The Button condition can be seen and it can be pressed even if the Body Cover is installed.

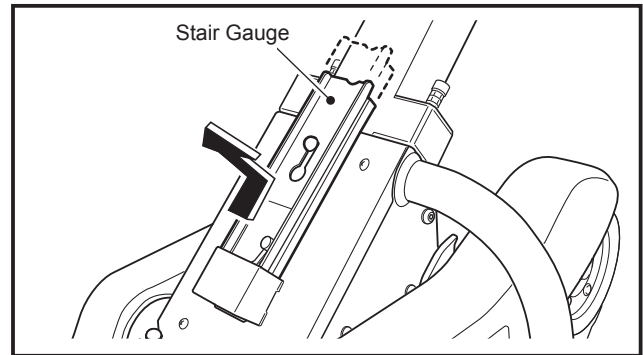


CAUTION

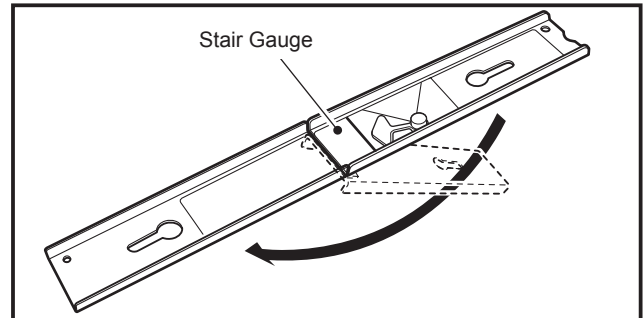
- If the Circuit Breaker is frequently tripped, some trouble may exist. Ask for repair or inspection.
- While the Circuit Breaker is tripped, STAIR AID cannot be operated even if the UP/DOWN Button is pressed.

5.5 STAIR GAUGE HANDLING PROCEDURE

1. Detach Stair Gauge from the front of Handle Unit.

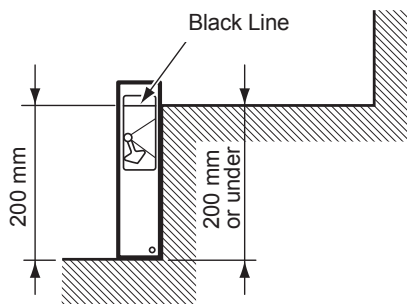


2. Open the folded Stair Gauge and check the stair angle and the stair pitch.

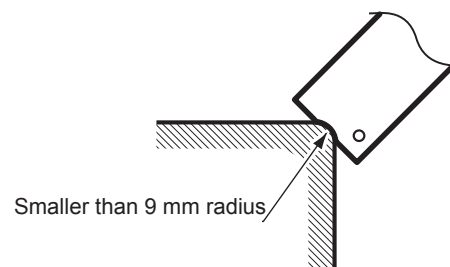


3. Confirm the following four check items.

- 3.-1 The stair height is 200mm or under.
(The height is lower than the Black Line indicated in the figure.)

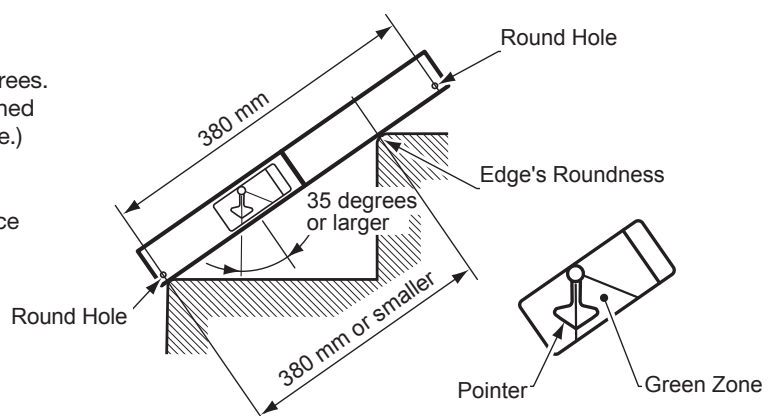


- 3.-2 The stair edge's roundness is 9 mm radius or smaller.



- 3.-3 The stair angle is lower than 35 degrees.
(The stair Gauge's Pointer is positioned within the Stair Gauge's Green Zone.)

- 3.-4 The stair pitch is 380mm or smaller.
(The pitch is smaller than the distance between the Round Holes.)



CAUTION




If any of the stairs dimensions (stair height, stair edge roundness, stair angle or stair pitch) exceeds the permissible range, operation on that stairs may be dangerous. Never operate STAIR AID in such stairs.

6. BATTERY CHARGE SYSTEM

6.1 BATTERY

A Sealed Lead Battery is used in STAIR AID. It is a maintenance-free and non water requiring Battery. Whenever Battery is handled, be sure to follow the cautions shown below.

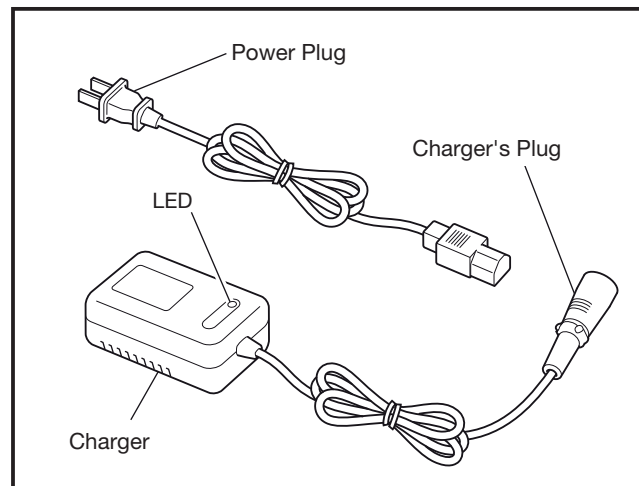
NOTE: Immediately after Battery is used, Battery must be charged using special Battery Charger. If insufficient battery charge is left, less power for following operations will result in difficulty of operation. Or if Battery is left depleted for a long period of time, it may be damaged.

 DANGER	<ul style="list-style-type: none">• Never charge Battery in closed room.• Never bring Battery near a flame.• Never disassemble Battery.• Never connect Battery Terminals with tools or metals.
 WARNING	<ul style="list-style-type: none">• Use special Battery Charger for charging Battery.• Always check Battery's condition. If any crack or deformation or water leakage is observed, replace with a new one.• Clean and wipe Battery with a cool or warm water moistened cloth. Never wipe with gasoline, thinner, organic solvent or oil moistened cloth.• If the electrolytic liquid from a damaged Battery contacts skin or clothes, rinse the area with plenty of water immediately. If the electrolytic liquid invades the operator's eye, rinse it with clean water immediately and consult an ophthalmologist.
 CAUTION	<ul style="list-style-type: none">• Battery is a sealed type. Never remove its cover. If the cover is removed, Battery will become unusable.• Battery may lose its usefulness if it is over discharged.• If Battery is not to be used for a long period of time, remove it from the machine and charge it completely. Keep it in cool and dry place and charge it again monthly. Even though Battery is not used during storage, its capacity constantly decreases. Therefore its performance will decrease compared with the previous occasion the machine was used.

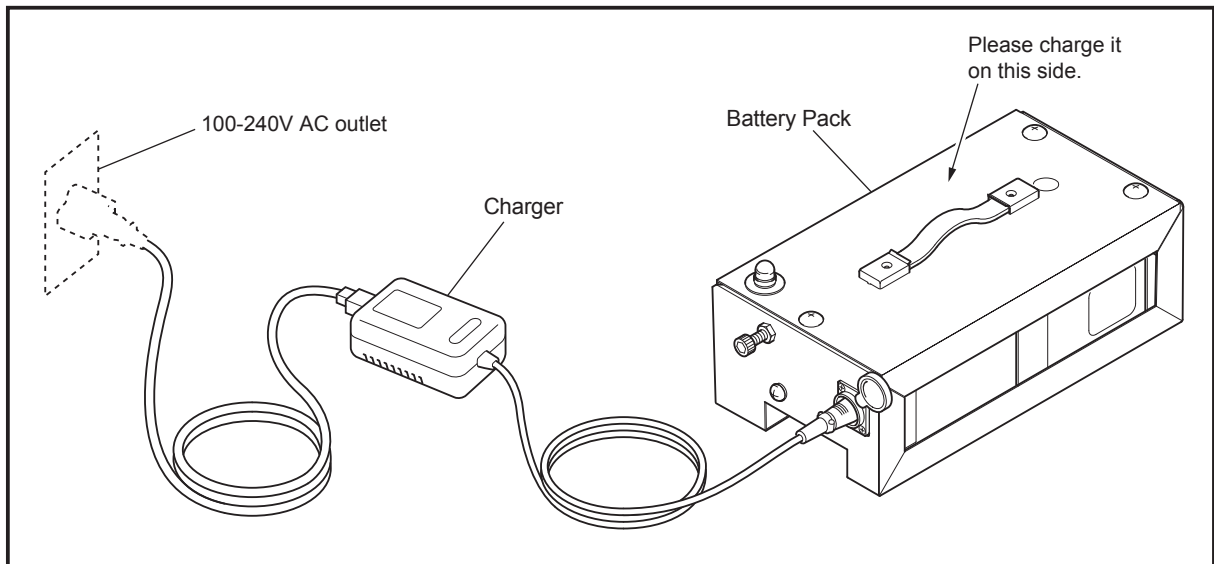
6.2 CHARGER

A special Battery Charger is used for STAIR AID. Battery is automatically charged depending on battery discharge rate at a given time.

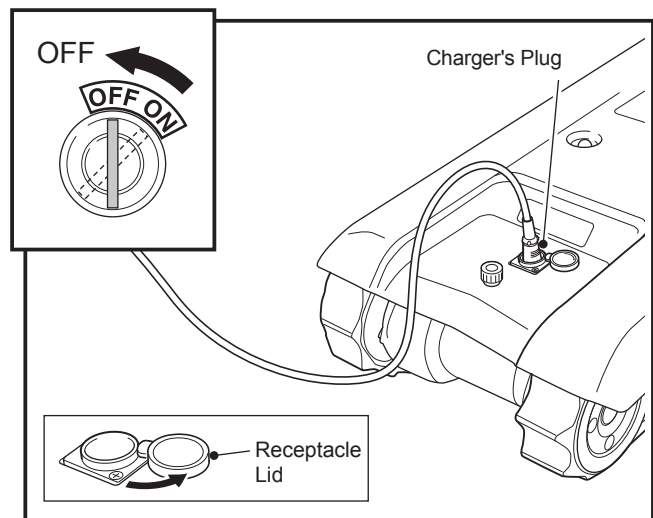
This Battery Charger is not equipped with a timer function. When battery reaches its fully charged level (Charger's Green LED will illuminate), Battery will continue to be charged with trickle current (0.1 to 0.2A). Be sure to disconnect Charger's Plug from Battery Pack after Green LED illuminates. (Charging Battery completely will take 8 hours.)



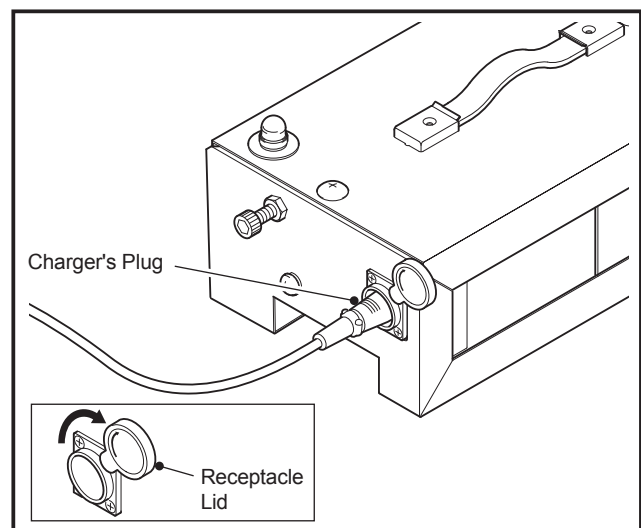
6.3 CHARGING PROCEDURE



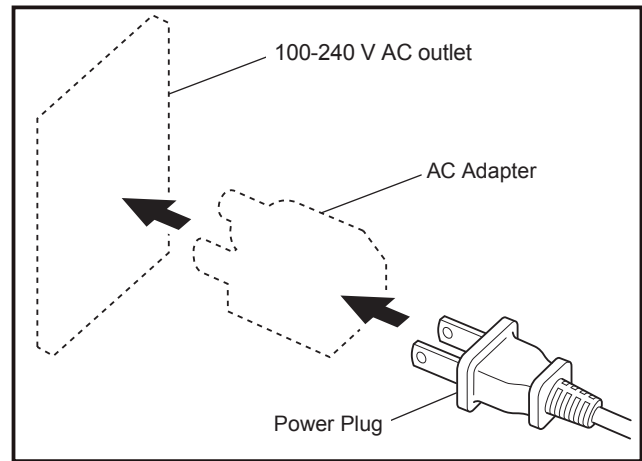
- 1.1 The case of the charging with direct connecting to STAIR AID
Turn off the Key Switch of STAIR AID.
Open the Receptacle and connect the Charger's Plug to the Receptacle of STAIR AID as shown in the right figure.
Even if any buttons are pushed, the machine never works during charging.



- 1.2 The case of the charging with connecting to Battery Pack
Open Battery Pack's Receptacle Lid.
Connect Battery Charger's Plug to Receptacle.



2. Connect AC Adapter to outlet (AC 100 to 240 V).
Connect Power Plug.



CAUTION

Prepare an area-specific AC conversion Adapter for installation between AC outlet and Power Plug.

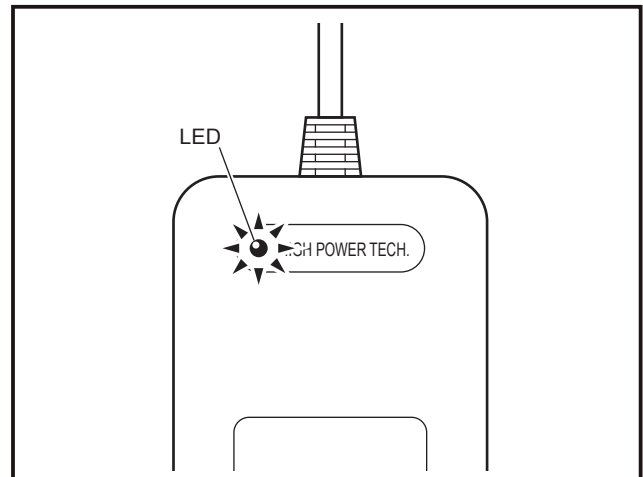
3. When Power Plug is inserted, the charging process immediately starts. The charging progress is indicated by LED's colors.

Red Power is supplied.

Orange . . Charging.

Green . . . Fully charged.

NOTE: To confirm a fully charged Battery Pack, be sure to check it via Charger's full charge indication (green illuminated LED). Do not check via Battery Gauge indication. Battery Gauge indication does not accurately correspond to the actual battery capacity.



4. When charging is completed, disconnect Power Plug from the outlet and disconnect Charger's Plug from Battery Pack's Receptacle.



CAUTION

- This Charger is not equipped with a timer function. When Green LED illuminates, disconnect Charger's Plug from Battery Pack's Receptacle.
- Charge Battery in an ambient temperature between 5 and 40°C. If Battery is charged in an ambient temperature lower than 5°C, it may not charge fully.

6.4 MALFUNCTION, INSPECTION, RESOLUTION PROCEDURE

TROUBLE	CAUSE	COUNTERMEASURE
No power supplied. LED won't illuminate.	Insufficient insertion of Power Plug into outlet.	Check outlet and securely connect Power Plug.
	No power is supplied.	Check power and other relevant parts.
	Power Cord is broken.	Arrange its repair or replacement.
	Battery Charger's power source trouble.	Arrange a check or repair.
	Receptacle and Plug are improperly connected.	Check the connecting parts and securely connect them.
	Battery Pack is improperly connected.	Check the connecting parts and securely connect them.
Green LED illuminates soon after the start of charging.	Battery is normally charged.	Normal.
	Battery malfunction.	Replace with a new Battery.
The charging process is completed however workable period is shortened.	Battery nearly dead.	Replace with a new Battery.
	Ambient temperature is low during charging.	Charge Battery in an ambient temperature between 5 and 40°C.

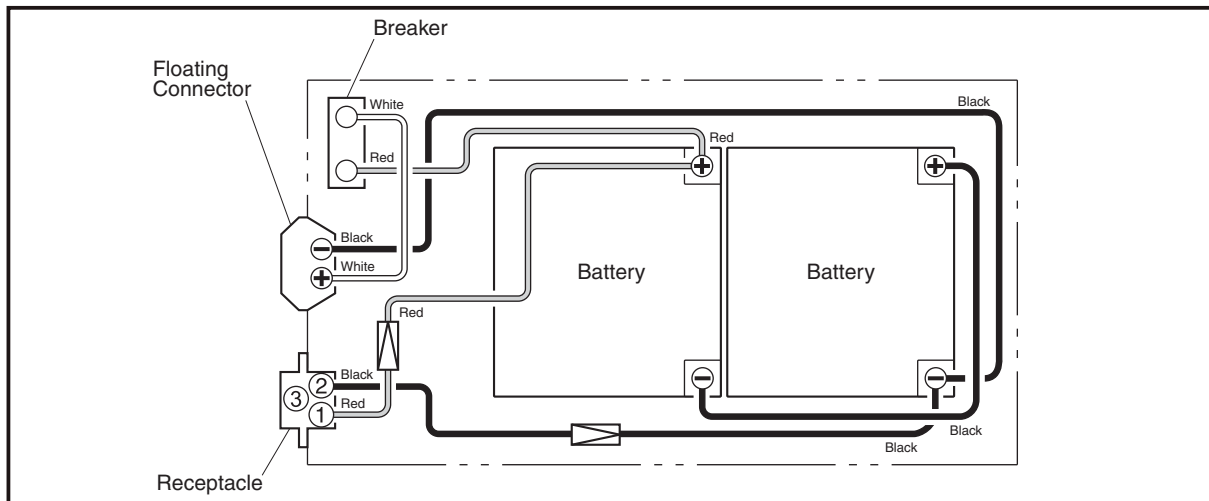
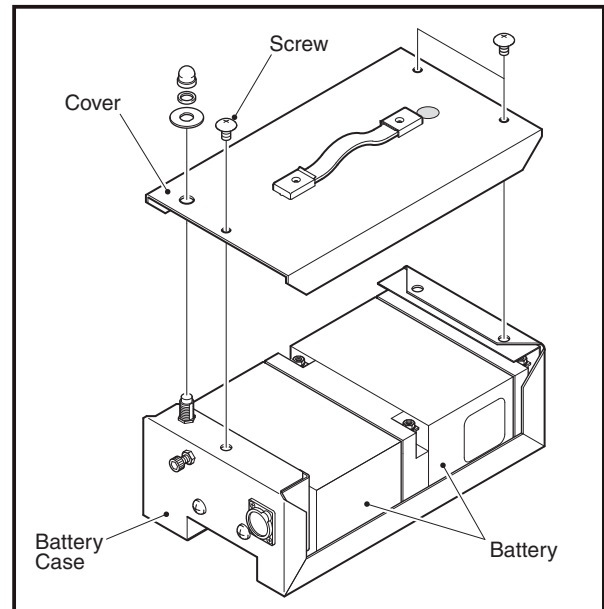


CAUTION

- For safe handling of Charger, be sure to read the instructions thoroughly before using Charger.
- Charger is only to be used with an AC100-240V power source. Never connect Power Cable to any other power source specification.
- Be sure to finish trickle charging within 12 hours after battery charging process is completed. Extended charging may reduce battery capacity resulting in shorter battery life.
- Battery and Charger's Output Terminals have polarity. Confirm that those Terminals are correctly connected according their polarity. Improper connection will result in a short circuit and cause a cable to melt or other serious charger malfunction.
- Never remove Charger Cover or you will risk receiving an electric shock.
- Keep Charger indoors, away from direct sunlight and water splashes. Neglecting this can cause fire, electric shock or equipment malfunction.
- As Battery deteriorates, its voltage will fail to reach normal full-charge voltage.

6.5 BATTERY REPLACEMENT

1. Unscrew the screw mounting Battery Case and Cover.
2. Disconnect cables from Battery Terminals, remove exhausted Batteries, and install new ones.
3. Connect cables to Battery Terminals as shown in the figure below. Confirm that cables are properly connected to proper terminals. Then apply adhesive agent to Connectors to prevent their loosening.



CAUTION

While Key Switch is set to ON, power will be supplied from Battery. If STAIR AID is not be used, be sure to set Key to OFF and remove it from Key Switch.

6.6 HANDLING WARNINGS OF LEAD BATTERY

For safe operation of the Battery, read thoroughly the caution items described on the instruction manual and also read the following cautions.

1. Do not keep the Battery at a place where there may be a danger of flooding. Keeping the Battery in such places may cause leakage resulting in an electric shock or fire.
2. Make sure the polarity terminals are connected correctly. Wrong terminal connection will cause excessive current resulting in fire or damage to the machine.
3. Do not weld the Battery's terminal or charge the Battery by connecting cables with wrong polarity terminals. It may cause leakage of electrolytic solution, overheating or explosion.
4. Never use the Battery near heating places such as power transformers. Never use or keep the Battery in an automobile under a blazing sun, a place where direct sun beam reaches, near a stove, or anywhere a fire may occur. The Battery temperature may rise resulting in leakage of electrolytic solution, overheating or explosion.
5. Never disassemble, remodel or destroy the Battery. Doing so may cause leakage of electrolytic solution, overheating or explosion.
6. Use the Special Battery Charger or keep the battery charged as specified by the manufacturer. Charging with other charging condition may cause overheating of the Battery or discharge of hydrogen gas resulting in leakage of electrolytic solution, overheating or explosion.
7. The Battery contains diluted sulfuric acid. If diluted sulfuric acid adheres to skin or clothes due to leakage, rinse it immediately with water. If diluted sulfuric acid gets into your eyes, rinse it immediately with plenty of tap or clean water, then go see a doctor. Diluted sulfuric acid into the eye may cause loss of sight. Diluted sulfuric acid adhering to the skin may cause burn.
8. The operating temperature range of the Battery is shown below. Operation outside the operating temperature range reduces Battery performance and shortens its life, and furthermore it may cause leakage of electrolytic solution, overheating or explosion.
Discharge cycle: -15 to +50°C Charge cycle: 0 to +40°C Storage temperature: -15 to +40°C
9. Never use the Battery for anything other than as specified. Usages other than the specified purposes may cause leakage of electrolytic solution, overheating or explosion.
10. Excessive repeated overcharging may shorten the life of the Battery. Follow the specified Battery charging condition.

Please cooperate in recycling the Battery

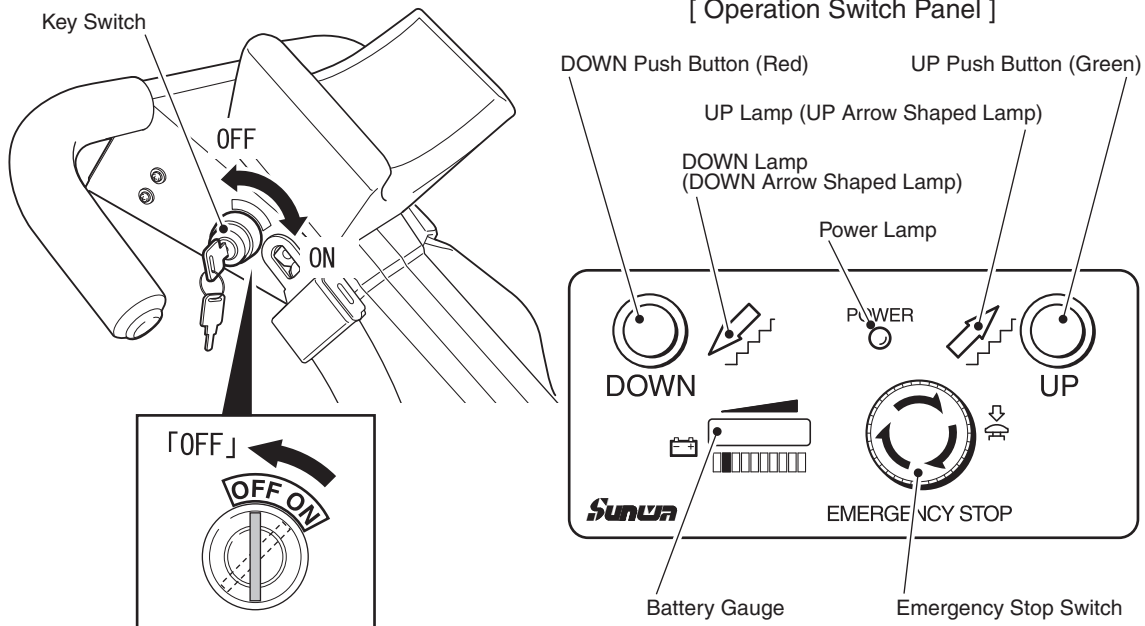
Used Battery will be recycled. For Battery disposal, contact the sales agency or SUNWA Co., Ltd.

When the Battery is returned, be sure to apply insulation tape to the Battery terminals. Used Battery still maintains charge. Battery terminal exposure may cause explosion or fire.

7. PRE-USE INSPECTION

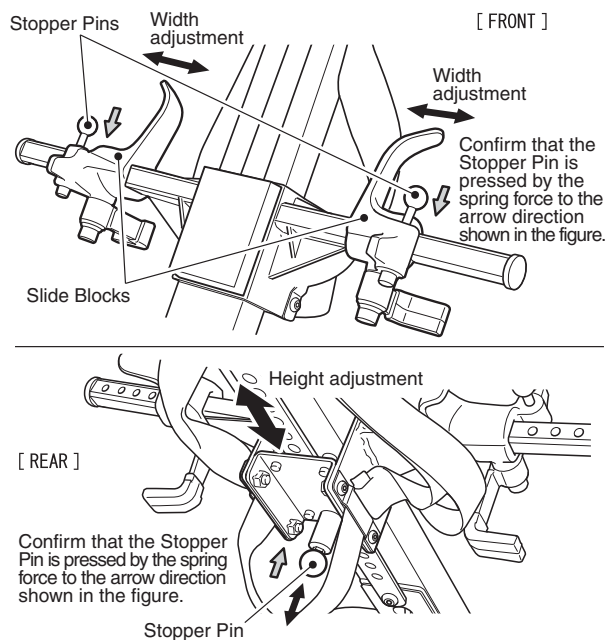
Before using the machine, be sure to carry out the daily inspection.
The daily inspection will prevent trouble. It is essential before handling STAIR AID.

SWITCH INSPECTION



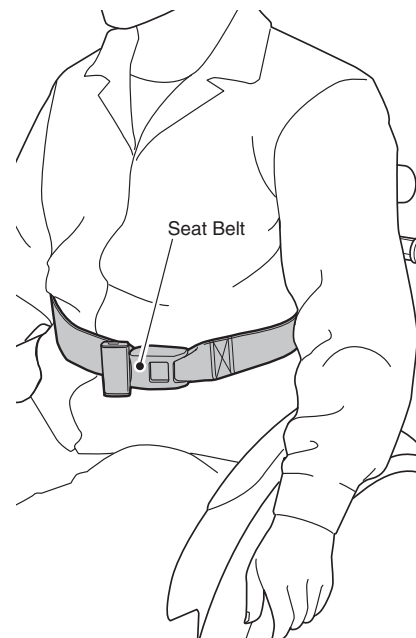
Check that all switches function correctly.

WHEELCHAIR MOUNT UNIT INSPECTION



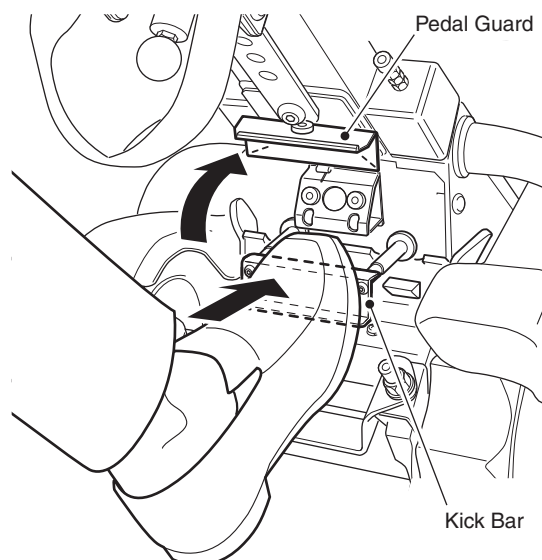
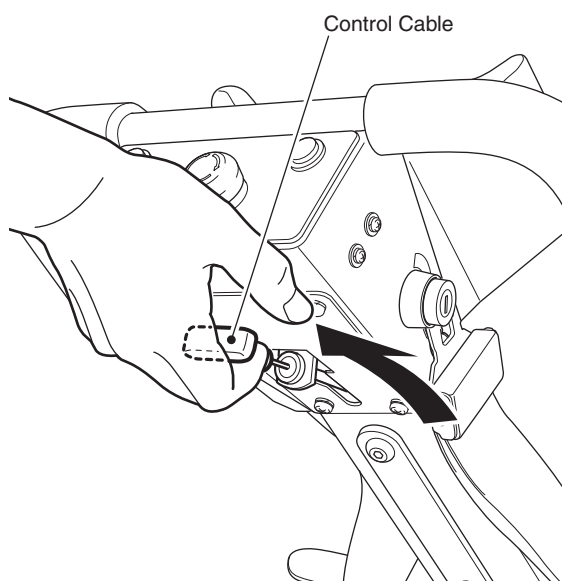
Check that there is no deformation or crack in Wheelchair Mount Unit and that it functions correctly.

SEAT BELT INSPECTION



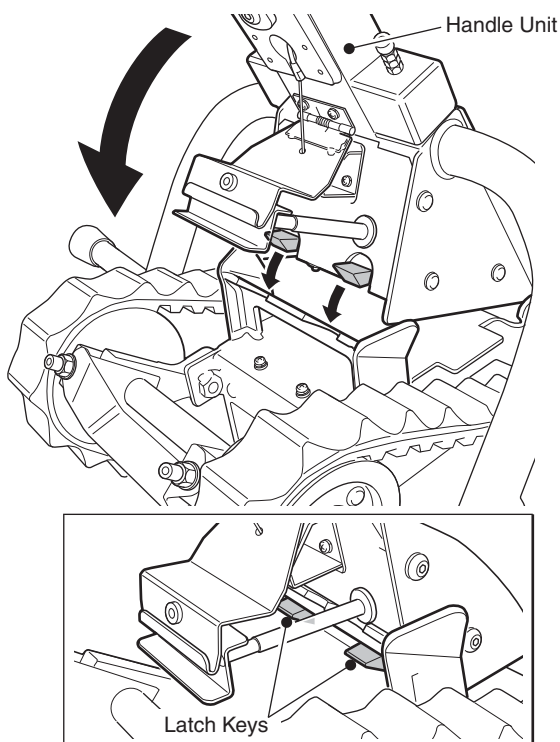
Check that there is deformation or crack in any Seat Belt securing part and Seat Belt is securely locked.

PEDAL GUARD AND KICK BAR INSPECTION



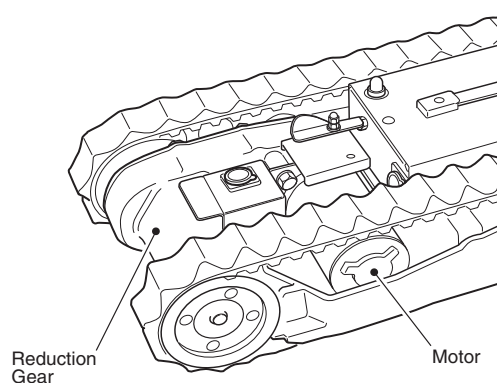
Check that there is no crack or other damage to Control Cable, Pedal Guard or Kick Bar and that they function normally.

LOCK UNIT INSPECTION



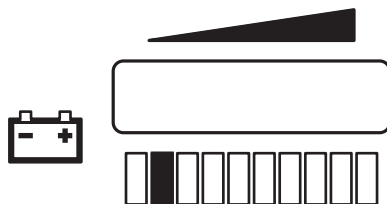
Check that Lock Unit functions correctly, and Handle Unit remains stowed when Handle is locked. Each latch Key is secured by spring force and it is latched.

MOTOR, REDUCTION GEAR INSPECTION



Remove the Body Cover and check that no abnormal noise, deformation, crack or oil leakage exist.

BATTERY GAUGE INSPECTION



Check that the right end lamp of Battery Gauge is illuminated. When the charge level decreases, the illumination will shift to the left. If Battery Gauge is not illuminated at the right end, it means Battery is not fully charged or battery capacity is reduced due to its deterioration. The total running period will be diminished.



CAUTION

Do not turn on the Key Switch while the Battery is charged. If the Key Switch is turned on, the indicator will display full of charge irrespective of actual battery charged level, resulting in shortened operating time.

BATTERY GAUGE INDICATION

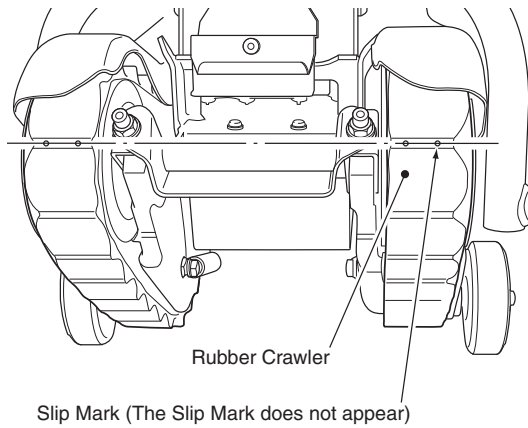
Battery Gauge	Available time (Charging percentage)
<p>1</p> <p>The right end LED illuminates</p>	<p>30 min. (100%)</p>
<p>2</p> <p>The fourth LED from the right end illuminates</p>	<p>20 min. (65%) After operating, charge STAIR AID's Battery Pack</p>
<p>3</p> <p>The seventh LED from the right end illuminates</p>	<p>10 min. (30%)</p>
<p>4</p> <p>The second LED from the left end flashes</p>	<p>Stop (0%) Stop operating the machine and charge Battery immediately</p>
<p>5</p> <p>The first and second LEDs from the left end flash</p>	<p>This indication being prolonged will result in rapid Battery deterioration. Be sure to stop the machine at the „4“ indication and charge Battery.</p>



CAUTION

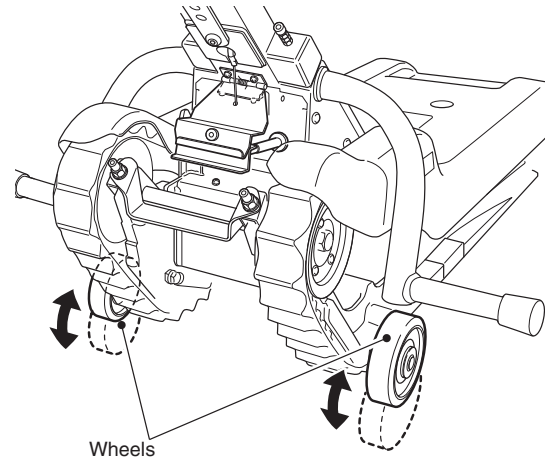
When Key Switch is set to ON, Battery Gauge indication may differ from its previous indication when the power was last turned on.

RUBBER CRAWLER INSPECTION



Check that there is no crack, wear or pitch error regarding Rubber Crawlers. The pitch error can be confirmed from Slip Mark deviation.

WHEEL INSPECTION



- Check that Wheels moves smoothly.
- Check that no crack or damage exists in the Wheels.

SCREWS INSPECTION

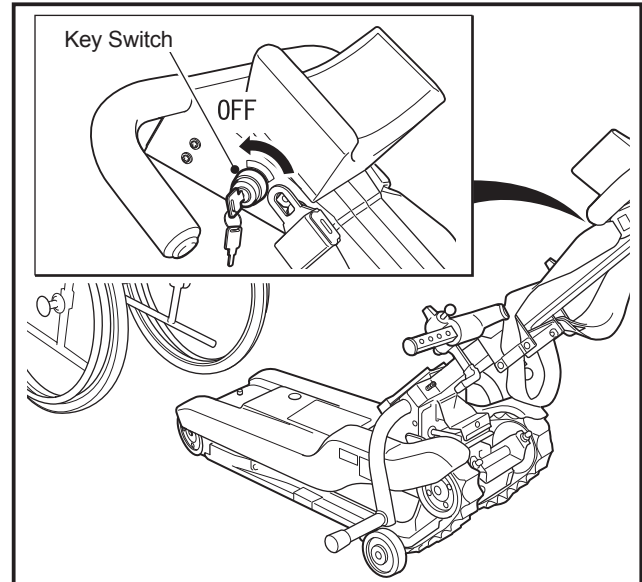
Check that no Screw has dropped out and that all Screws are tightly attached.

8. OPERATION

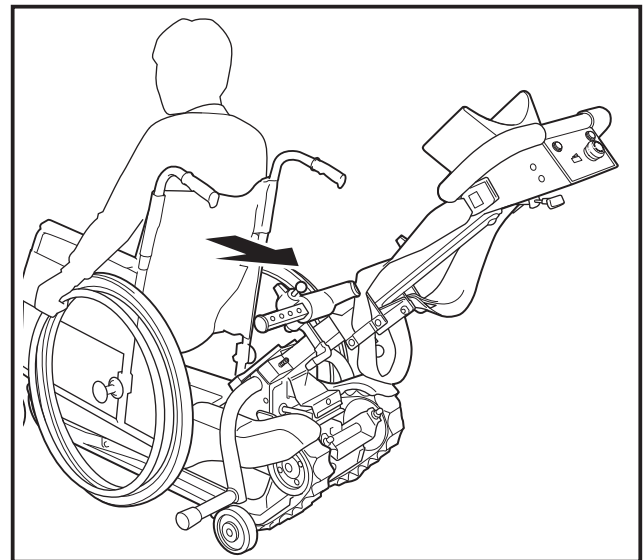
Check that the stair height, edge's roundness of the stairs, angle of the stairs, and the stairs pitch are within specifications by using the Stair Gauge.

8.1 WHEELCHAIR SETTING

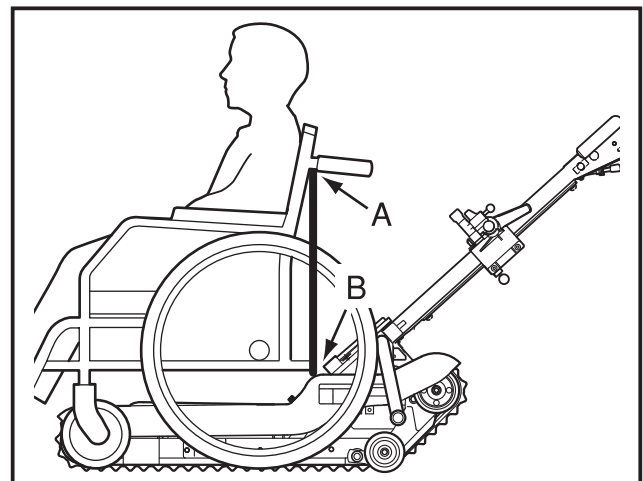
1. Confirm that Key Switch is set to "OFF".



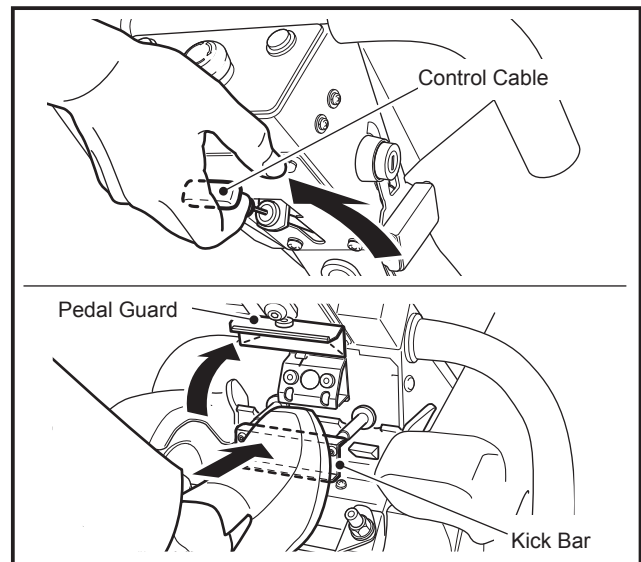
2. Set Wheelchair from the front of STAIR AID.



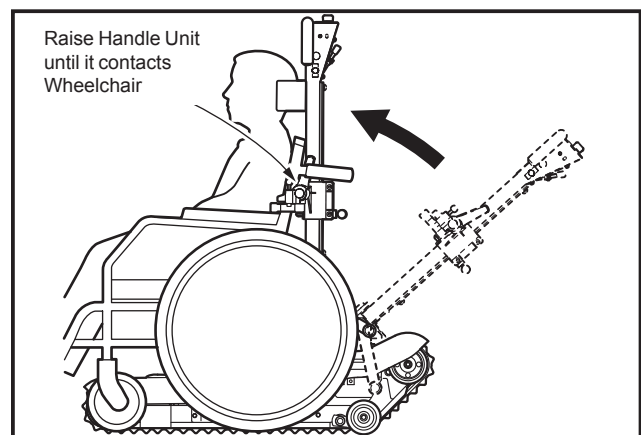
3. Adjust so that point A on the Wheelchair's handle and point B of STAIR AID are aligned vertically. And then set the Wheelchair's parking brake.



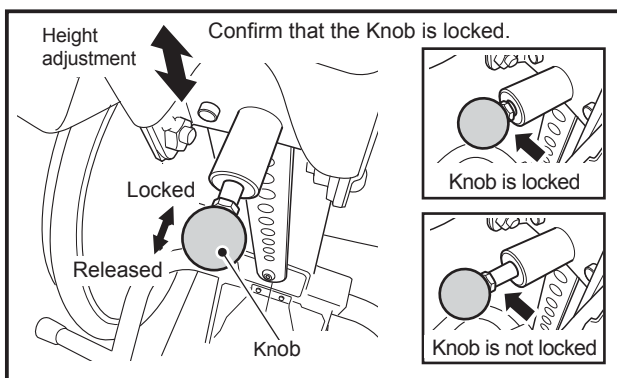
4. Pull Control Cable and raise Pedal Guard.
Push Kick Bar with a toe and release Handle Lock.



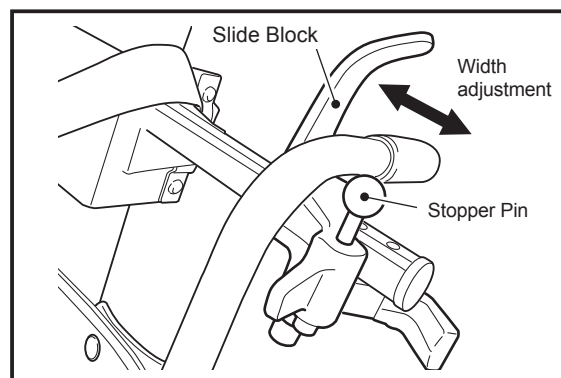
5. Raise Handle Unit until it lightly contacts Wheelchair.



6. Slide each adjustable part of Wheelchair Mounting Unit until it contacts the inside of Wheelchair's handles.



Wheelchair Mount Unit's vertical adjustment Pull the Knob so that the Wheelchair's handle comes to the Slide Block, and then move the Wheelchair Mount Unit vertically to adjust its height.



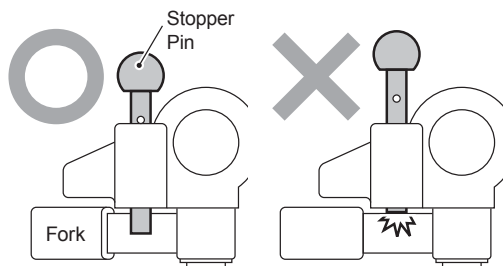
Slide Block's lateral adjustment
Move each Slide Block laterally so that it is positioned between the stopper pin and Slide Block.



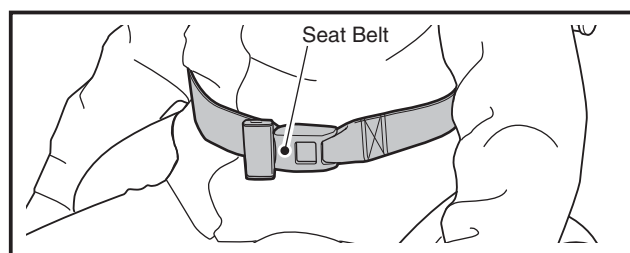
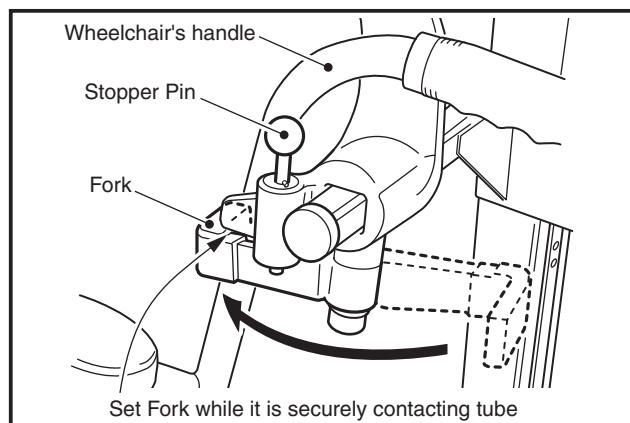
CAUTION

For Wheelchair handle width adjustment, set the right and left Slide Blocks to be equidistant from the center line of the machine.
If Wheelchair mounting is off center, STAIR AID's balance may be lost resulting in danger.

7. While pulling Stopper Pin, set Fork so that it secures Wheelchair's handle, and then the release Stopper Pin to lock Fork firmly.



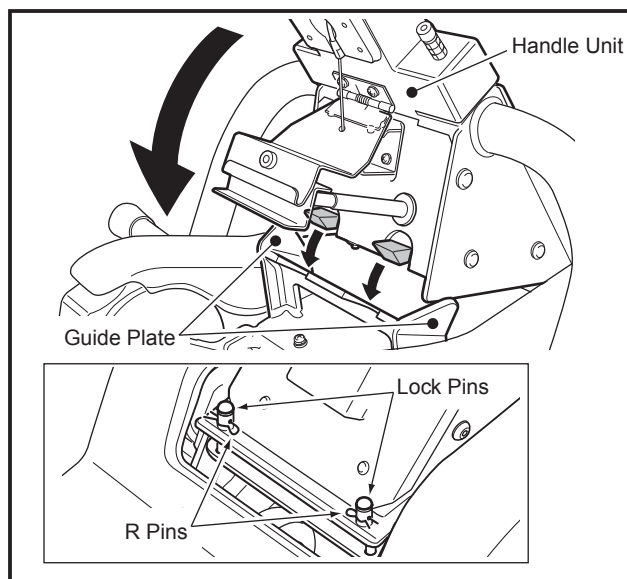
8. Adjust Seat Belt length to suit to the passenger. Securely fasten Seat Belt with Buckle. Confirm that Seat Belt is securely fastened.



WARNING

- Confirm that the tongue of Seat Belt and Buckle are completely latched.
- Ascending/Descending stair with unlatched Seat Belt is very dangerous. Never take a passenger in Wheelchair without fastening Seat Belt.

9. Pull down Handle Unit along its guide plate and lock it securely.

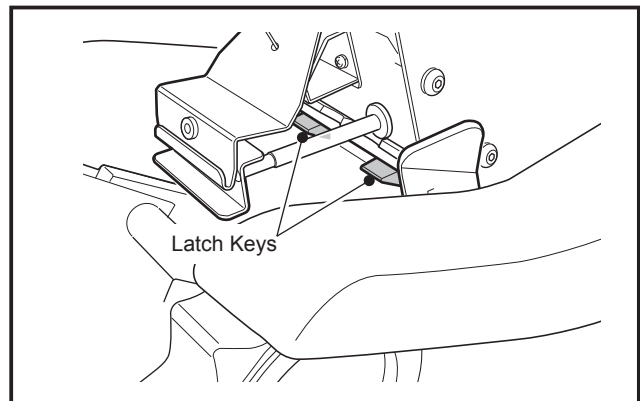
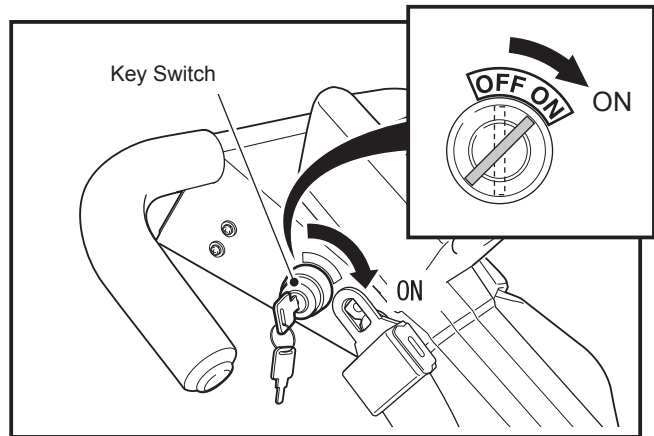


WARNING

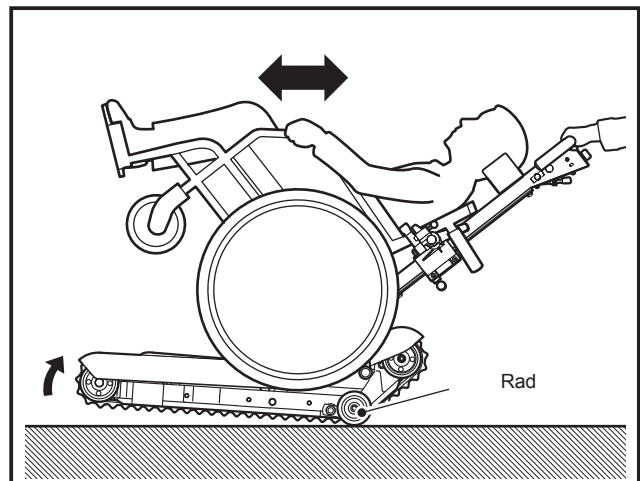
- Handle Unit may fall to the front when it is pulled. Never release the handle to prevent dangerous situation.
- Reconfirm that Lock Pins are installed to Handle's Hook Point and they are securely locked with their "R" Pins. If Lock Pins are insecurely inserted, a serious accident such as passenger injury may occur.

10. Set Key Switch to ON.

NOTE: Check that Battery Gauge shows Battery Pack charged enough. (Refer "Battery Gauge inspection") Unless Handle Unit is fully locked, Battery Gauge will not illuminate. (STAIR AID will not run even when Button is pressed UP or DOWN.) Check that the two Latch Keys are firmly latched with the spring force.



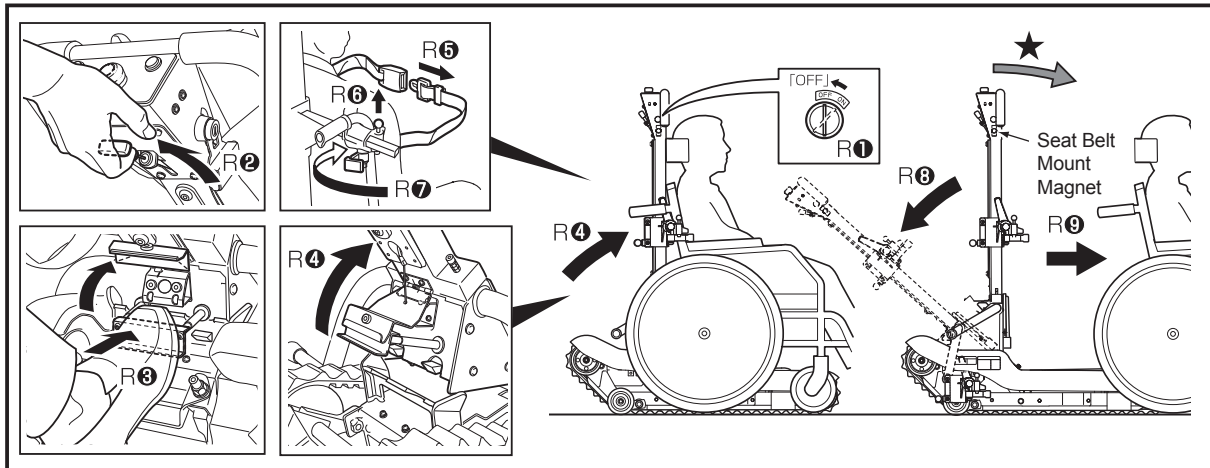
11. To run STAIR AID on a flat floor surface, manually push/pull STAIR AID on its Wheels. Do not use its Rubber Crawlers. The operator must hold both Handle Grips and transfer Wheelchair using STAIR AID's Wheels while tilting STAIR AID to make its Wheels act the fulcrum.



WARNING

If operator releases Handle while Wheelchair is set on STAIR AID, STAIR AID may topple. To prevent a serious accident, operator must never release his/her hands from STAIR AID's Handle.

12. To release Wheelchair from STAIR AID, carry out with the reverse procedure of the attachment steps. (R1 ~ R9)



NOTE: When STAIR AID is not in used, be sure to return Seat Belt to its original position on STAIR AID.



CAUTION

Because the operator is positioned at the rear of the passenger, the passenger cannot see operator's movement and he/she may feel anxiety. As the operator operates STAIR AID, he/she must describe the operation in a clear voice at the following times:

1. When the Wheelchair's handle is set to the Slide Block and then the handle is pulled down to the operator's side.(When the operation of P25, 8-1 9. is started.)
2. When the handle is pulled down to the operator's side for unloading the Wheelchair. (When the operation of P.27, 8-1 12. - R4 started.)

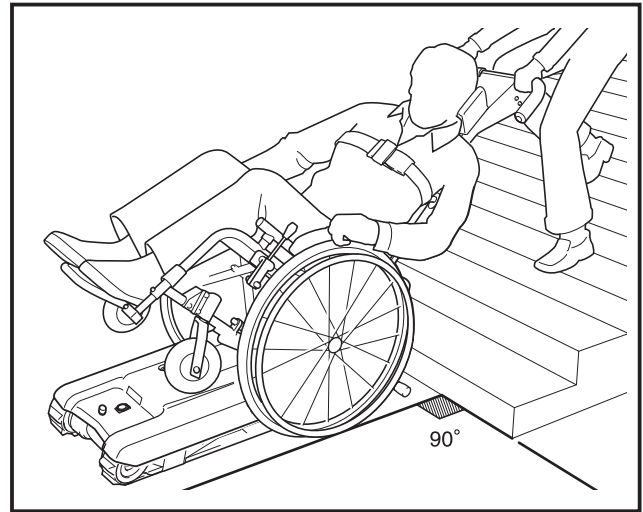


WARNING

If procedure R8 and R9 are executed in reverse, the handle may fall down to the (*) direction. Be sure to move the handle to the (*) direction, confirm that the handle is locked, and then perform procedure R9.

8.2 ASCENDING STAIRS

1. Position STAIR AID at the stairs Position STAIR AID at the base of the stairs, at a right angle (90°) to the stairway with the passenger's back towards the stairs.

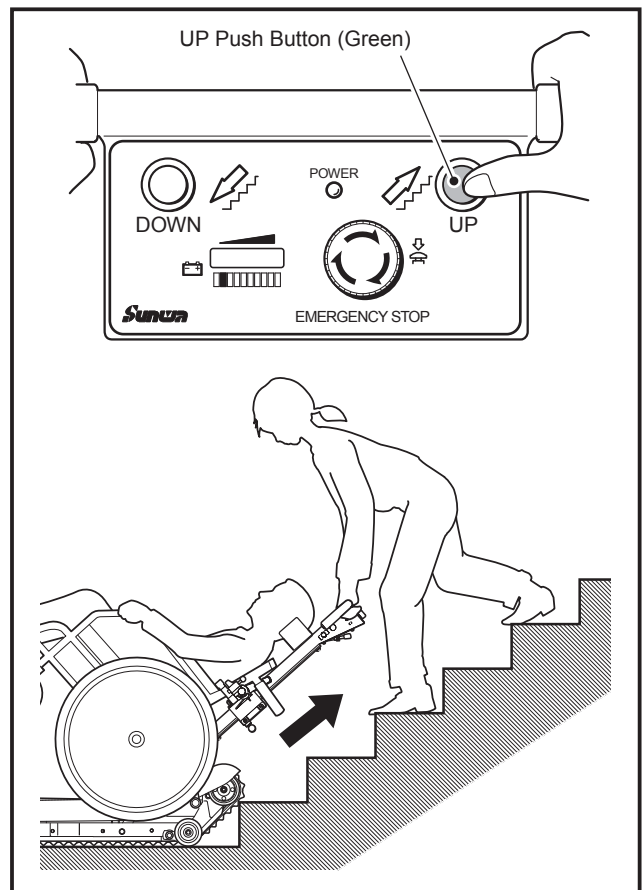


CAUTION

- If STAIR AID is run on the wooden stairs, some rubber marks may remain.
- If stair's slip preventing braid is loose, Rubber Crawlers may damage it further. Set STAIR AID at a right angle (90°) to the stairs.

2. Start ascending
Hold the STAIR AID's handle firmly with both hands while pressing the UP Push Button (Green).

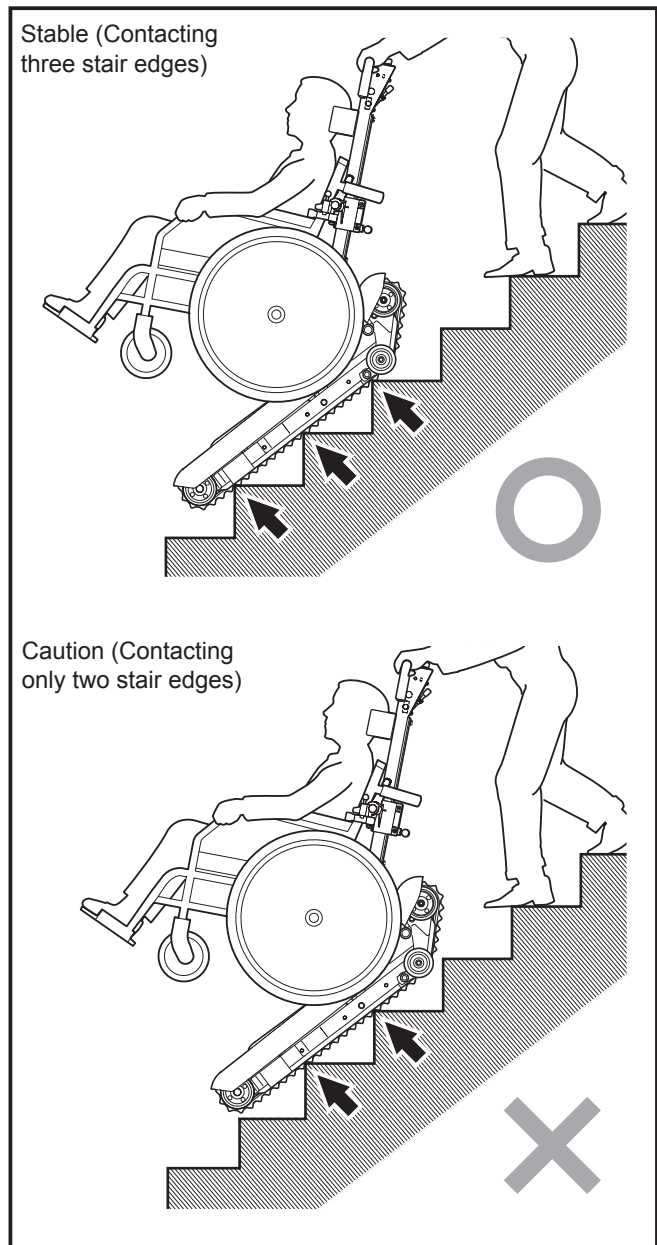
NOTE: Be sure to hold the handle with both hands. Do not pull or push the handle. The purpose of holding handle is to prepare for unforeseen accident. Pay attention not to put the operator's foot between the stairs and Rubber Crawler.



WARNING

- If the lugs of the left and right Rubber Crawlers do not contact a stair edges at the same time, STAIR AID will climb the stair askew. This is a highly risky situation.
- The operator must hold Handle Grips with both hands the whole time STAIR AID is on stair or landings.
- While STAIR AID runs on the stairs, the operator must be positioned upward of STAIR AID. Improper supporting of STAIR AID may cause a loss of balance and overturning or other serious accident.

3. Stopping STAIR AID in the middle of the stairs
Once the finger is released from Button, Electro-magnetic Brake will function immediately and STAIR AID will immediately stop.
Because the lugs rest on the stair edges, STAIR AID will not slide down the stairs.



WARNING

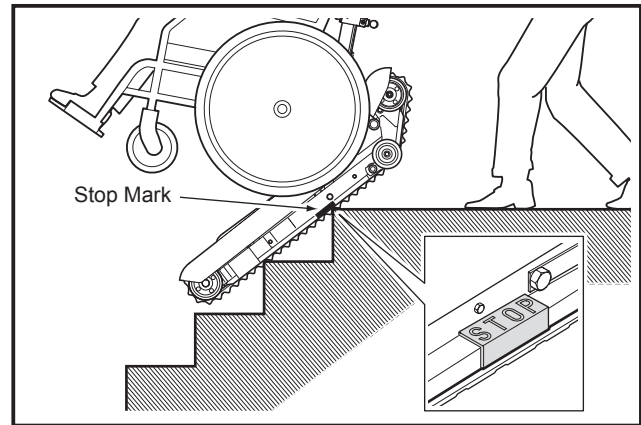
Never release the handle during operation.

If the handle is released accidentally, find a place where the Rubber Crawlers can contact the stair edges as much as possible. If not, it may lose balance depending on the passenger's balance and the stopping point.

4. STAIR AID reaches the top of the stairs:

1. When STAIR AID reaches a landing or, the top of the stairs, be sure to stop STAIR AID for a moment when Stop Mark is just on the edge of top stair.

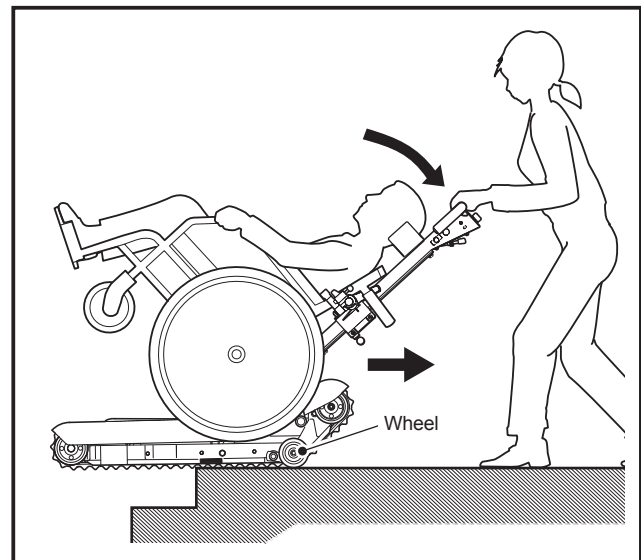
NOTE: Stop Mark is only an approximate point. The stop position will vary according to the passenger's dimensions.



WARNING

If STAIR AID is not stopped at its stop position and UP Switch is kept pressed, STAIR AID will suddenly fall down backward. This will be dangerous.

2. After STAIR AID is temporarily stopped, pull Handle slowly toward the operator. STAIR AID's Wheels will contact the floor. After Wheels' contact is confirmed, press UP Switch again to move STAIR AID to a safe, flat area.



CAUTION

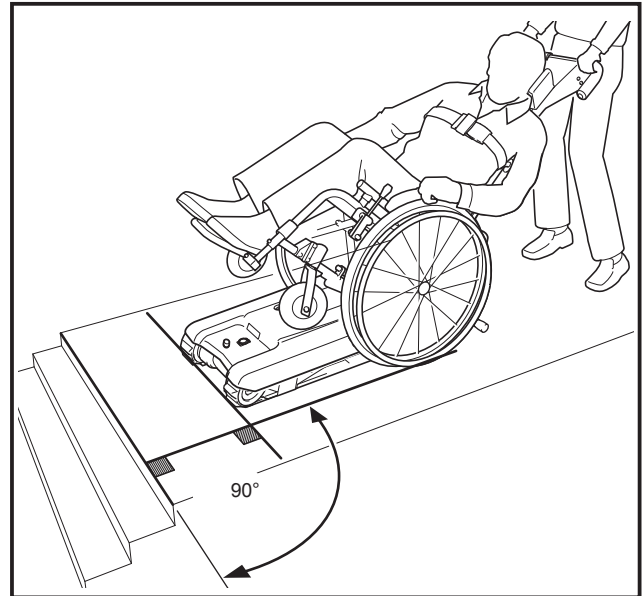
Because Operation Switches are positioned behind the passenger and the operator controls STAIR AID from the rear of the passenger, an unaccustomed passenger may feel anxiety. As the operator operates STAIR AID, he/she must describe the operation in a clear voice at the following times :

1. Before attaching or releasing Wheelchair to/from STAIR AID.
2. Before pressing UP Switch.
3. Before STAIR AID starts ascending the stairs.
4. Before tilting STAIR AID to bring its Wheels to the floor after it reaches its Stop Mark.
5. Before changing STAIR AID's direction.

8.3 DESCENDING STAIRS

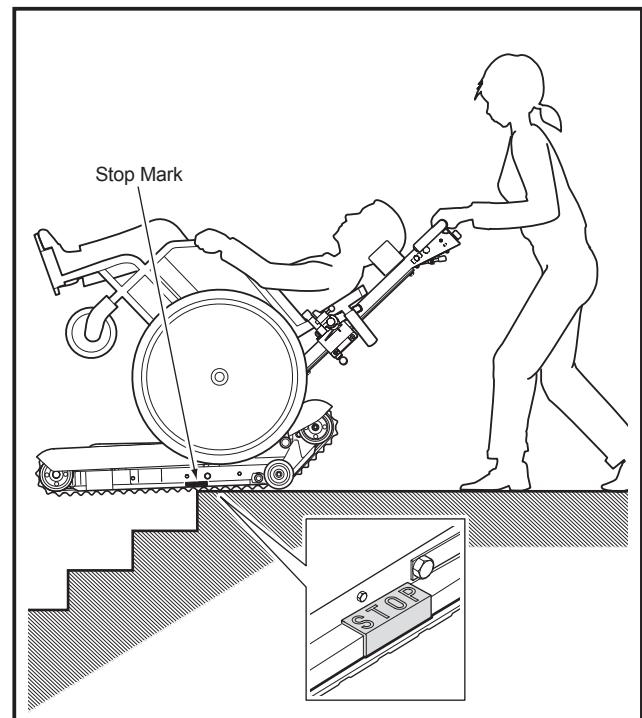
1. Start descending:

Position STAIR AID at the top of the stairs, at a right angle (90°) to the stairway with the passenger facing toward the stairs.



- ### 2. Press the lower side of UP/DOWN Switch to set STAIR AID. When STAIR AID's Stop Mark reaches the top edge of the stairs, be sure to stop STAIR AID for a moment.

NOTE: Stop Mark is only an approximate point. The stop position will vary according to the passenger's dimensions.



CAUTION

- If STAIR AID is run on the wooden stairs, some rubber marks may remain.
- If stair's slip preventing braid is loose, Rubber Crawlers may damage it further.

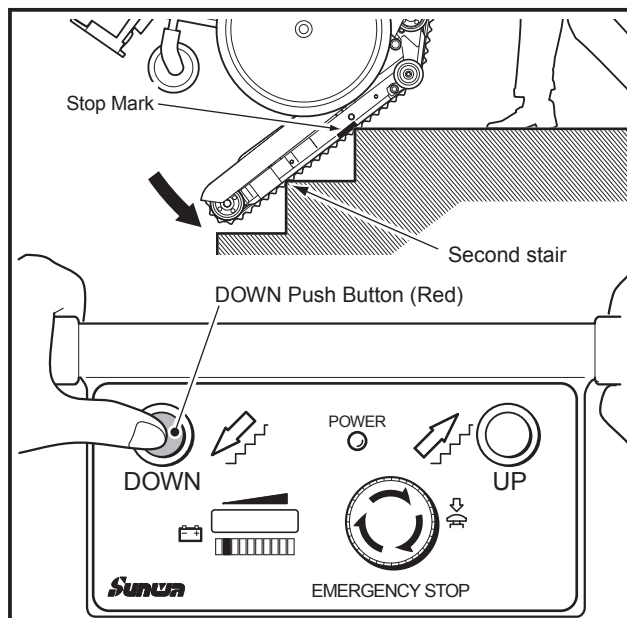


WARNING

- If the lugs of the left and right Rubber Crawlers do not contact a stair nose at the same time, STAIR AID will descend the stairs askew. This is a highly risky situation.
- If STAIR AID is not stopped at its stop position and DOWN Switch is kept pressed, STAIR AID will suddenly fall down forward. This will be dangerous.
- The operator must hold Handle Grips with both hands the whole time STAIR AID is on stairs or landings.

3. Slowly push handle until Rubber Crawlers contact the second stair while keeping STAIR AID balanced at the same position.

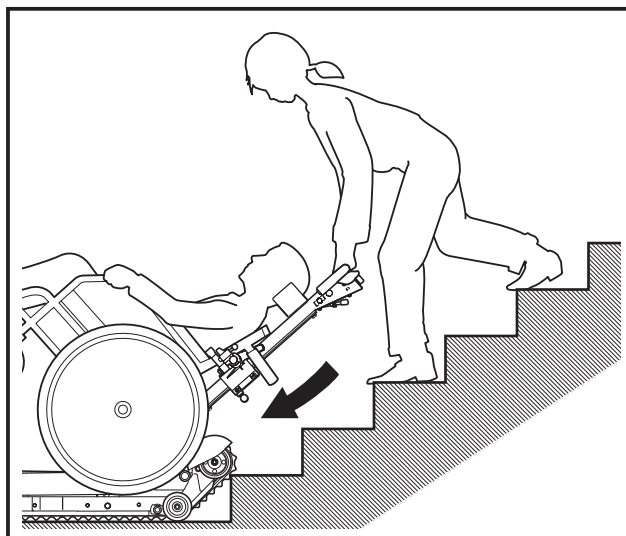
4. When Rubber Crawlers contact the lower stair and STAIR AID becomes stable, press DOWN Push Button (Red).



WARNING

While STAIR AID runs on the stairs, the operator must be positioned upward of STAIR AID. Improper supporting of STAIR AID may cause a loss of balance and overturning or other serious accident.

5. STAIR AID reaches the bottom of the stairs. Keep pressing DOWN Switch until STAIR AID reaches the bottom of the stairs. STAIR AID will automatically transfer to horizontal running. Release DOWN Switch and Wheel STAIR AID to a safe area.



CAUTION

Because Operation Switches are positioned behind the passenger and the operator controls STAIR AID from the rear of the passenger, an unaccustomed passenger may feel anxiety. As the operator operates STAIR AID, he/she must describe the operation in a clear voice at the following times :

1. Before attaching or releasing Wheelchair to/from STAIR AID.
2. Before pressing DOWN Switch.
3. Before STAIR AID starts descending the stairs.
4. Before tilting STAIR AID to bring its Wheels to the floor after it reaches its Stop Mark.
5. Before changing STAIR AID's direction.

9. DAILY MAINTENANCE AND CARE

9.1 BATTERY

- When STAIR AID is not to be used or its Battery Pack is to be charged, turn off Key Switch and remove Key. If Key Switch is kept in the ON position, Battery will quickly discharge and it may not have capacity to run STAIR AID the following day.
- After the end of operation or before storing it, be sure to charge Battery using special Charger. (Because it requires a long charging time, if it is not charged enough, it will be difficult to operate the following day.)
- When storing STAIR AID for a long period of time, maintain its Battery in a fully charged state. Not doing so will result in an extremely short life. (Even if Battery is already fully charged, recharge Battery again monthly.)

9.2 RUBBER CRAWLERS

- If oil adheres, immediately wipe it off completely.
- Check there is no crack or wear concerning Rubber Crawlers. If any defect on Rubber Crawler is observed, stop STAIR AID immediately and replace the part with a new one.

9.3 STORAGE OF STAIR AID

- If STAIR AID is stored for a long period of the time, turn the Rubber Crawlers once per month to avoid the Rubber Crawler from having a permanent bending deformation.

9.4 CLEANING AND DESINFECTION

You can clean the frame parts made of metal and plastic with a damp cloth. For tough dirt you can use a usual mild household detergent. Remove cleaning residues with a damp cloth and allow the product to air dry or wipe with a dry cloth. Pressure washer and running water is not suitable for cleaning the STAIRMATE because of the risk to damage electronic parts. Do not use solvents and abrasives, acids, alcohol or caustic aids. The STAIRMATE is suitable for spray / wipe disinfection with a mild household usual disinfectant on alcoholic basis. The use of VAH listed disinfectant is recommended. Before disinfecting the device shall be cleaned carefully. Subsequently, the product can be wiped with a damp cloth with disinfectant or be treated with spray disinfectants. The Stairmate is to be moistened uniformly with disinfectant and not be redried. Please ensure that no disinfectant gets into electronic parts or the bearings of the rubber crawlers.

10. TERMS OF GUARANTEE

The activated guarantee is for a period of five years, apart from batteries and rubber parts. It is limited to complaint parts free of charge excluding freight, cost for labor or travelling expenses.

11. MAINTENANCE / REPAIR

The STAIRMATE must be serviced once a year. The maintenance release has to be made by an authorized dealer (please see list of agents). Failure to comply with the maintenance interval, the warranty expires.

The following parts are maintained:

Frame / Tandem rollers / rubber crawlers / motor / magnetic brake / battery box / electrical control / adapter

In case of a defect or damage please get in contact with an authorized dealer (please see page 42/43).

A spare parts list is provided to authorized dealers.

12. RE-USAGE

The STAIRMATE is suitable for re-usage, as long as possible safety precautions or other regulations no longer apply. Clean and disinfect before re-use according to point 9.4. Prior to each re-use, inspection and approval must be carried out by the authorized retailer.

13. INSPETCTION BY THE OPERATOR

It is important that the unit keep a good condition through the following check items on daily basis. Neglecting this procedure may cause an accident or may shorten the life of unit.

- Required checking before operation.

No.	CHECK ITEM	WHAT SHOULD BE CHECKED	FREQUENCY	REMARK
1	Key Switch and Battery's remaining capacity	When the Key Switch is turned on, each switch and button work correctly. Battery Gauge shows enough capacity to operate the unit. When the Key Switch is turned off, each switch and button do not work.	each time.	
2	UP / DOWN Switch	After turning on the Key Switch, press and hold UP or DOWN side, the Rubber Crawlers run correctly in each direction. Releasing the switch, the Rubber Crawlers stop immediately.	each time.	
3	Emergency Stop Button	During the procedure No.2, pressing the button, the Rubber Crawlers stop immediately.	each time.	
4	Abnormal noise from running Rubber Crawler	During the procedure No.2, any abnormal noise is not from running Rubber Crawlers.	each time..	
5	Rubber Crawlers' condition	No looseness is in tension of the Rubber Crawler. And no wrong alignment is between left and right. No lacking of outer lug is on the surface.	each time..	
6	Sprocket, Idler Wheel and Side Ring	No deforming is found.	monthly	
7	Rubber Wheels	Excessive wearing or damage. The Wheel Bracket has a smooth motion in upward/downward.	each time.	
8	Locking up / Release the Handle Unit	The Handle Unit is securely locked up on or released from the Drive Unit. The Pedal Guard can be smoothly opened to push the Kick Bar forward. The Kick Bar can be pushed smoothly forward.	each time.	
9	Wheelchair Mount Unit	The Slide Arm smoothly moves vertically. The Slide Blocks smoothly moves on the Slide Arms. The Stopper Pins lock the Forks.	each time.	
10	Seat Belt	The Seat Belt is fastened securely.	each time.	
11	Battery	No stain due to battery's leakage or no corrosion are on the Battery Case.	monthly	

- Required check after the operation

No.	CHECK ITEM	WHAT SHOULD BE CHECKED	FREQUENCY	REMARK
1	Battery's remaining capacity	LED indicator on the Battery Gauge has moved after the operation? In case that the LED indicator moved into one position or more, charge the Battery in no time.	each time.	Whenever it's necessary.
2	Exterior	Any deformed part on the exterior?	each time.	
3	Charging	Any damage is on the wire or the plug of charger?	monthly	
		The power switch of charger functions correctly? The charging procedure does not have any problem?	each time.	

Appropriate Locking Washer tightening procedure

If the Locking Washer is reused, check that its locking head is not opened and no crack is observed.
Follow the setting procedure shown below (the left figure is the appropriate setting procedure):



- If any trouble or malfunction has arisen which is not described in the table above, contact the sales agency. An improper countermeasure may cause danger.
- For details on periodical inspections, please contact an authorized and specialized sales agency where you purchased STAIR AID.

14. LIFETIME

The expected lifespan of the STAIRMATE depends on the compliance of the intended purpose, consideration of the safety advices, periodic cleaning and maintenance as well as external factors such as slope and weight of the passenger.

It can be calculated a theoretical lifetime of approx. 10 years. Beyond this period, the STAIRMATE can be used furthermore in a safe state of the product.

15. DISPOSAL

Please check the disposal regulations of your residence and dispose the product through your local recycling centers. Your dealer can help you to answer your questions concerning disposal.

NOTES

16. DEALER

Austria/Czech

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Switzerland

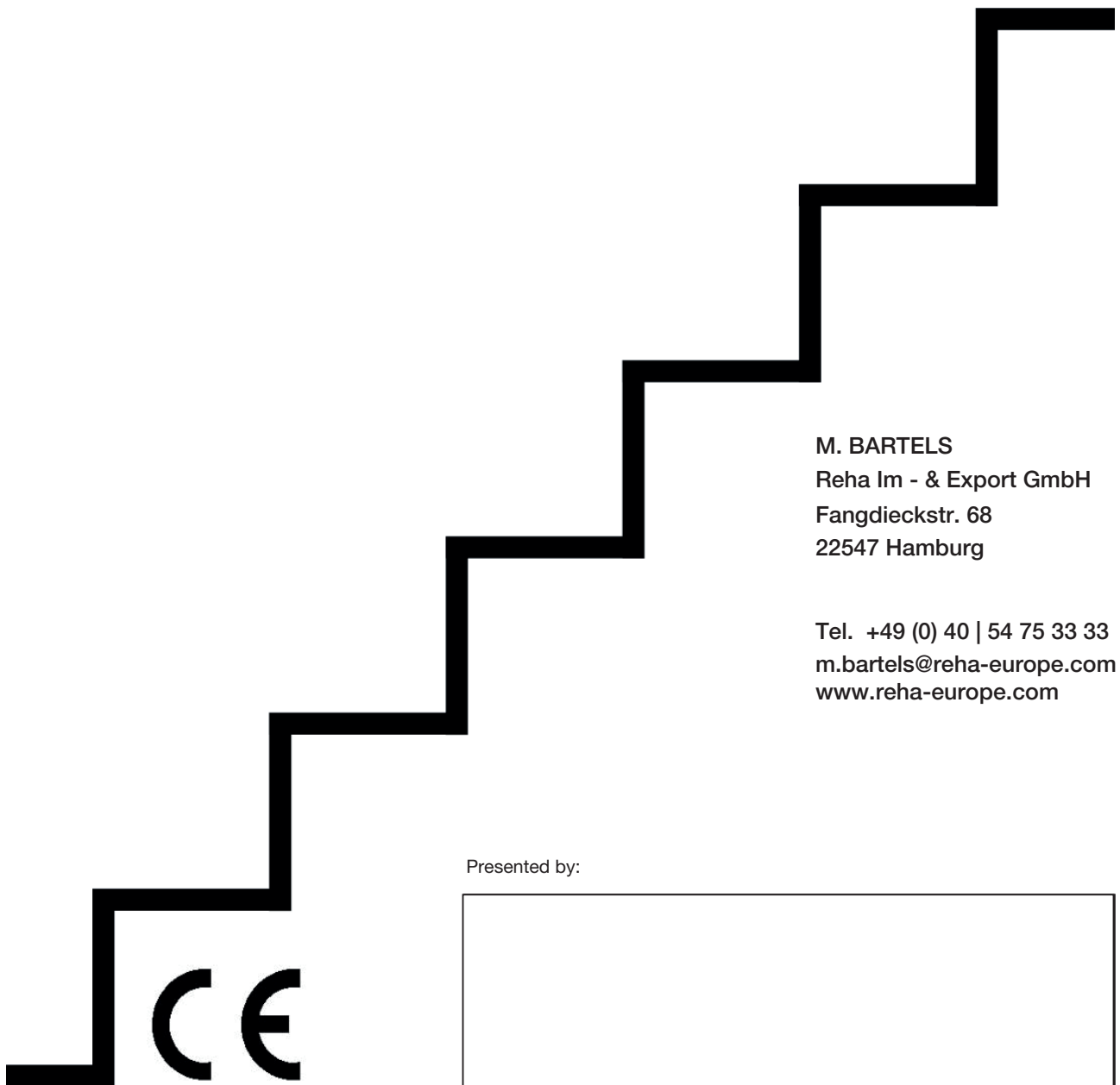
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