Pinnacle

ELECTRIC WHEELCHAIR



Pinnacle Navigator Max

USER MANUAL

1. INTRODUCTION

1.1 Read and follow all instructions, warnings, and notes in this manual before attempting to operate your power wheelchair for the first time. If there is any information in this manual which you do not understand, or if you require additional assistance for assembly or operation, please contact with your authorized local dealer. To use your product safely depends on whether you strictly follow the warnings, attentions and operating instructions in this manual. The company shall not be responsible for any injury or damage caused by non-compliance with the warnings, attentions and operating instructions.

1.2 The manual version is V1. 0.

1.3 The date issued is Oct 1st 2023.

1.4 Welcomes any questions, comments, and suggestions you may have about your electric wheelchair, especially those related to performance, safety, and reliability.

1.5 Make sure to read all of the instructions, warnings, and notes in this manual before attempting to operate your electric wheelchair for the first time. Your safety depends on how well you follow the contents of this manual. As such, is not liable for any damage and/or injuries that may occur as a result of unsafe operation, improper usage, or failure to follow the instructions, warnings, notes, and other contents of this manual.

1.6 Indications for use:

The Electric Wheelchair is a motor driven, indoor and outdoor transportation vehicle with the intended use to provide mobility to a disabled or elderly person limited to a seated position. This product is suitable for disabled people with mobility difficulties and elderly people.

1.7 Operational contexts of use

Patient is not suitable for the indications for use of the product, mental patient or any other unsuitable condition.

1.8 Use environment and conditions

The device is intended to be used in home, or around house.

Temperature range: 18°F-122°F;

Humidity:not greater than 93%.

1.9 Training for use

There are certain situations, including some medical conditions, where the user will need to practice operating the Navigator Max in the presence of a trained attendant. A trained attendant can be defined as a family member or a professional specially trained in assisting a user in various daily living activities.

2. PRECAUTIONS FOR SAFE USE

The example notices shown below are used throughout this manual to identify warnings and notices important to the safe, ongoing operation of your electric wheelchair. It is strongly recommended that you read and understand their usage completely before continuing.

2.1 Expiration Date

This electric wheelchair is energy, antisepsis and reusable product.

The safe and period of validity for wheelchair on the clinical use not only depends on its structural strength, but also on the user usage and use of the

product environment, user habits, whether in accordance with the periodic maintenance, and other factors.

Our products are valid from the date of production for 1 year.

2.2 Instructions before use

2.2.1 If not completely read and understand the user manual, please do not drive.

2.2.2 The maximum loading capacity is shown in the parameter table for technical features. Please do not overload driving. Please do not carry passengers.

2.2.3 Please do not drive after drunk or too tired.

2.2.4 Please do not drive at night or in the case of an unclear line of sight.

2.2.5 Please self-check before driving and refer to the manual section "adjusting" and "Practice before operation " if driving for the first time.

2.2.6 This wheelchair is not waterproof, do not expose in rain and snow as well as driving in rain or snow.

2.3 Attention in use

2.3.1 This electric wheelchair can drive on a good flat surface; do not drive on muddy, rugged, soft, narrow, icy road, bad roads such as dangerous roads without guardrails or waterways.

2.3.2 This electric wheelchair has the certain ability of groove obstacle, at this time you should reduce the speed and travel slowly.

2.3.3 This electric wheelchair has the certain climbing ability, the climbing angle is≥6°, but no more than 12°.

2.3.4 Please avoid driving in the crowds, traffic flows and other places with heavy traffic.

2.3.5 Please ensure that the control system is firmly installed, the joystick is vertical, correctly positioned. Keep your head as back as possible, lean against the backrest in case out of control due to the dump.

2.3.6 Turn on the power, firstly check if the current fastest speed setting is appropriate for yourself operating proficiency, or it should be adjusted for safety; We recommend to drive slowly at the beginning for each use, and gradually accelerate.

2.4 Electromagnetic interference (EMI)

Electromagnetic interference is from external electromagnetic wave energy (like radios, TV transmission stations, CB radio waves, and garage door starters, radio phones, etc.). Electromagnetic interference may affect the control system of the electric wheelchair. Some interference may lead to the brake failure, power on automatically, or steering failure, also may lead to the permanent damages to the control systems.

Below cables information are provided for EMC reference.

Cable	Max. cable length, Shielded/unshielded		Number	Cable classification
AC Power Line	0.9m	shielded	1 Set	AC Power
DC Power Line	0.9m	shielded	1 Set	DC Power

Important information regarding Electro-Magnetic Compatibility (EMC)

This electrical medical equipment needs special precautions regarding EMC and put into service according to the EMC information provided in the user manual;

The equipment conforms to this IEC 60601-1-2:2014 standard for both immunity and emissions. Nevertheless, special precautions need to be observed:

The equipment with ESSENTIAL PERFORMANCE/Following ESSENTIAL PERFORMANCE is intended used in Home healthcare environment.

ESSENTIAL PERFORMANCE:

The electric wheelchair can work normally without moving out of control, and the speed change is not more than ± 20%.

WARNING! Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally".

The use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

WARNING! Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the Navigator Max, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result. "

WARNING! If the use location is near (e. g. less than 1.5 km from) AM, FM or TV broadcast antennas, before using this equipment, it should be observed to verify that it is operating normally to assure that the equipment remains safe with regard to electromagnetic disturbances throughout the expected service life.

When the AC input voltage is interrupted, the equipment will stop battery charging and if the power supply restored, it could be recovered automatically, this degradation could be accepted because it will not lead to unacceptable risks and it will not result in the loss of basic safety or essential performance.

Following degradation caused by Electrostatic Discharge or Electrical fast transients/burst could be accepted because it will not lead to unacceptable risks and it will not result in the loss of basic safety or essential performance:

During all immunity tests, a digital tachometer was used to monitor the rotating speed of wheel and a clamp meter was used to monitor the output current of battery charger to verify the performance of EUT.

EMI Compliance Table (Table 1)

Table 1 - Emission

Phenomenon	Compliance	Electromagnetic environment
RF emissions	CISPR 11 Group 1, Class B	Home healthcare environment
Harmonic distortion	IEC 61000-3-2 Class A	Home healthcare environment
Voltage fluctuations and flicker	IEC 61000-3-3 Compliance	Home healthcare environment

EMS Compliance Table (Table 2-5)

Table 2 - Enclosure Port

Phenomenon	Basic EMC standard	Immunity test levels
		Home healthcare environment
Electrostatic	IEC 61000-4-2	±8 kV contact

Discharge		±2kV, ±4kV, ±8kV, ±15kV air
Radiated RF EM field	IEC 61000-4-3	20V/m 26MHz-2.5GHz 80% AM at 1kHz 10V/m 80MHz-2.7GHz 80% AM at 1kHz
Proximity fields from RF wireless communications equipment	IEC 61000-4-3	Refer to table 3
Rated power frequency magnetic fields	IEC 61000-4-8	30A/m 50Hz or 60Hz

Table 3 – Proximity fields from RF wireless communications equipment

Test frequency (MHz)	Band (MHz)	Immunity test levels
		Home healthcare environment
385	380-390	Pulse modulation 18Hz, 27V/m
450	430-470	FM, ±5kHz deviation, 1kHz sine, 28V/m
710	704-787	Pulse modulation 217Hz, 9V/m
745		
780		
810	800-960	Pulse modulation 18Hz, 28V/m
870		
930		
1720	1700-1990	Pulse modulation 217Hz, 28V/m
1845		
1970		
2450	2400-2570	Pulse modulation 217Hz, 28V/m
5240	5100-5800	Pulse modulation 217Hz, 9V/m
5500		
5785		

Table 4 – Input a. c. power Port

Phenomenon	Basic EMC standard	Immunity test levels
		Home healthcare environment
Electrical fast transients/burst	IEC 61000-4-4	±2 kV 100kHz repetition frequency
Surges Line-to-line	IEC 61000-4-5	±0.5 kV, ±1 kV
Conducted disturbances induced by RF fields	IEC 61000-4-6	3V, 0.15MHz-80MHz 6V in ISM bands and amateur radio bands between 0.15MHz and 80MHz 80%AM at 1kHz
Voltage dips	IEC 61000-4-11	0% U_T; 0.5 cycle At 0º, 45º, 90º, 135º, 180º, 225º, 270º and 315º

		0% U_T; 1 cycle and 70% U_T; 25/30 cycles Single phase: at 0º
Voltage interruptions	IEC 61000-4-11	0% U_T, 250/300 cycles

Table 5 – Signal input/output parts Port

Phenomenon	Basic EMC standard	Immunity test levels
		Home healthcare environment
Conducted disturbances induced by RF fields	IEC 61000-4-6	3V, 0.15MHz-80MHz 6V in ISM bands and amateur radio bands between 0.15MHz and 80MHz 80%AM at 1kHz

2.5 More information

WARNING! Never try a new manoeuvre on your own, out of the manual stated.

WARNING! Do not use the wheelchair other than for its original purpose. Avoid any use, such as weight training, sports and athletics, hauling, moving or towing anything, that may lead to safety hazards and undue stress on the wheelchair.

WARNING! We strongly recommend that you do not smoke cigarettes while seated on you wheelchair. You must adhere to the following safety guidelines if you decide to do so:Keep ashtrays a safe distance from the seat cushions. Always make sure cigarettes are completely extinguished before disposal.

WARNING! Before getting on/off the wheelchair, you should sit behind as for as possible to avoid injury caused by overturning.

WARNING! Avoid concentrating your weight on the footrest. Otherwise, it will cause to overturn and personal injury.

WARNING! Do not use the wheelchair in manual mode without accompanying person, which may cause personal injury.

WARNING! Do not make any alterations to the wheelchair without permission. Adding accessories may change some of the wheelchair specifications such as total weight, size, or center of gravity. Please note that some changes may damage things around you.

WARNING! Please does not change your seat specification. Do not place any cushions or pillows on the seat, which will result in the user falling out from the wheelchair caused by instability of seat.

WARNING! Be extremely careful when using oxygen near electrical circuits or combustible materials. Please contact with your oxygen supplier for information on the safe use of oxygen.

WARNING! Do not change the controller settings. Please ask your service provider to check it if you notice any changes in your ability to control the wheelchair.

WARNING! During the operation, the wheelchair may suddenly stop at any time. Do not operate the wheelchair if it is abnormal or irregular.

WARNING! To prevents the wheelchair from losing control and moving on its own, do not place the wheelchair in manual mode on any inclined plane.

WARNING! If you expect to sit in a fixed position for a long time, turn off the

power to prevent accidental movement of the wheelchair.

WARNING! Avoid any accessories that may interfere with the operation of the joystick. Otherwise, it will cause the wheelchair to move unexpectedly.

WARNING! Keep yourself, clothing and other objects away from the wheel while the wheelchair is moving. Do not drag anything behind the wheelchair while driving.

WARNING! Do not connect any other devices to the electronic system or turn on any other device with the wheelchair battery.

WARNING! When disconnecting wiring harness, please hold the terminal in case damage to it. Do not pull the wiring harness directly.

WARNING! Keep all charger connector terminal clean and dry, away from damp to prevent damage to electrical system and personal injury.

WARNING! The storage temperature of wheelchair is 18°F-122°F. Long term storage in low or high temperature environment will damage its function.

WARNING! Always check electrical components for corrosion. Check all brakes for looseness, wear or damage. Check wiring harnesses and terminal posts for breakage. If necessary, please do the replacement.

WARNING! Please ensures the safety of wheelchairs and batteries during transportation. Never transport wheelchairs or batteries with combustible materials.

WARNING! Do not connect the cable directly to the battery terminal/clip for charging.

WARNING! Do not remove the fuse from the battery harness. If the fuse is damaged, please contact with your supplier for replacement.

WARNING! Do not operate the wheelchair with a drained battery. You might get trapped.

WARNING! Please slow down when turning, don`t make sharp turns, keep the center of gravity stable when turning. To prevent rollover, do not move the center of gravity in the opposite direction when turning.

WARNING! Drive straight up the slope when climbing. Both front wheels should land at the same time. To reduce the possibility of overturning, do not make an angle with the slope; do not make the wheel on one side or the side of the wheelchair to go up the slope first. Be particularly careful when climbing any slopes.

WARNING! Do not drive on potentially dangerous roads or slopes, including but not limited to roads covered with snow, ice, cut grass, or wet leaves.

WARNING! Please drives down a slope at the minimum speed. If the descent speed is faster than expected, release the joystick lever to stop the wheelchair, and then press the lever lightly to control the descent speed.

WARNING! Do not place the wheelchair in the front seat of vehicle during transportation. Otherwise, it may move and disturb the driver.

WARNING! Please contact your service provider if any accessories of seat unit become loose; Please replace the worn or damaged parts immediately.

WARNING! The recommended maximum climbing angle was tested in a controlled environment. The climbing ability of your wheelchair is affected by factors such as your weight, the speed of your wheelchair, and the angle at which you approach the slope.

WARNING! Reversing is only possible on flat roads. When reversing, please operate smoothly at low speed. Please stop frequently and check to make sure there are no obstacles on the road. To prevent rollover, do not tilt down or backward

along the slope.

WARNING! When sitting in a wheelchair, avoid any position or movement that can change your center of gravity. This may cause the wheelchair to tilt.

WARNING! Do not put all the weight on one side of the wheelchair armrest, such use may cause the wheelchair to tilt.

WARNING! Do not put your hands above the seat or tilt your body. This may damage the backrest and cause you to fall down.

WARNING! Even if your wheelchair can cross high obstacles, we recommend that you do not try to cross the specified height. Such operations may cause the wheelchair to be unstable, even rollover and cause severe personal injury. If you have any concerns about safely crossing obstacles, please ask for help. Please pay attention to your operating skills and personal restrictions. You may need to remove or cover the sills and install ramps at exits and entrances.

WARNING! Do not attempt to climb over obstacles on slopes. Do not rely on a wheel to get over obstacles.

WARNING! Never operate the wheelchair near railroad tracks or crossings.

WARNING! Do not drive the wheelchair along the edge of a stream, lake or sea. Please do not drive the wheelchair across the water.

WARNING! Do not expose wheelchair to open flames.

WARNING! Keep your wheelchair in a dry and clean environment. Do not take the wheelchair to shower, bath, pool or sauna. Rain, snow, salt, fog/spray conditions and frozen/smooth surfaces can cause wheelchair screws and some fixtures to rust untimely.

WARNING! Avoid prolonged exposure to excessively hot and cold environments; it may damage the cushioned and non-cushioned parts of the wheelchair as well as the battery and battery components.

WARNING! Do not drag the wheelchair. Dragging may exceed its own speed threshold, causing damage to key parts of the wheelchair.

WARNING! Be extremely careful when moving an idle wheelchair up and down the stairs. Requiring the participation of physically capable people.

WARNING! Do not cross stairs or escalators with the wheelchair.

WARNING! Do not sit on a wheelchair while it is any transport vehicles.

WARNING! For safer handling:Always keep the power off before moving. Failure to do so may result in touching the joystick and causing the wheelchair to move unexpectedly. Make sure the brakes are locked so to prevent the wheelchair from moving during handling. This wheelchair could be driven into the elevator, while you must turn off the power and sit firmly to ensure that the wheelchair will not move after entering the elevator.

WARNING! Please consults your healthcare professionals routinely to ensure there are no health or physical conditions that may limit or impair you ability to safely operate your wheelchair. Consult your physician if you are taking prescription or over-the-counter medication or if you have any physical limitations. Some medications and physical limitations may impair your ability to safely operate your wheelchair.

WARNING! Do not operate your wheelchair while you are under the influence of alcohol, as this can impair your ability to safely operate your wheelchair.

WARNING! Every wheelchair is different. Take the time to learn it before your driving.

WARNING! Be aware that becoming a capable and safe wheelchair operator will take time and practice.

WARNING! To ensures your safety, please read and understand this manual. You must be on high alertness when driving any wheelchair to ensure safety.

WARNING! Radio wave sources, such as radio stations, television stations, amateur radio transmissions, two-way radios and mobile phones can affect wheelchair controller.

WARNING! Should reduce the possibility of severe injury due to accidental braking or movement of the electric wheelchair:1. Do not turns on portable personal communication devices, such as citizen band(CB) radios and mobile phones when the electric wheelchair is powered on; 2. Pay attention to nearby transmitters, such as radio or television stations, and try to avoid approaching them.3. In the event of unexpected movement or brake release, the electric wheelchair should be turned off as soon as possible under safe conditions; 4. Please notes that adding accessories or parts, or modifying electric wheelchair may make it more susceptible to interference from radio wave sources(note:there is no easy way to assess the influences of above modifications on the wheelchair`s overall immunity from radio wave sources); and report to the electric wheelchair manufacturer of all accidents of unexpected movement or brake release, and pay attention to nearby radio sources and other important information.

WARNING! Please return the discarded batteries, controllers, motors, etc. to the supplier or manufacturer for disposal to avoid environment pollution.

3. PERFORMANCE AND STRUCTURE

3.1Product Structure

The wheelchair is mainly composed of front wheel, drive wheel, frame, controller, motor and drive devices, armrests, push-handle, backrest, seat cushion, pedal, battery case and charger. The structural diagram is as below(fig 1):

①Controller
②Armrest
③Backrest
④Push-handle
⑤Seat cushion
⑥Front wheel
⑦Frame
⑧Drive wheel
⑨Motor and drive device
⑩Battery case



Fig 1

Fig 23.2 To protect your wheelchairs from potential damage during transportation, fold the wheelchairs before transportation, when in use, the folded wheelchairs need to be unfold first(see fig 3, fig 4):



Fig 3



Fig 4

WARNING! Make sure that the Locking Knob(see fig 5) is securely tightened prior to operation. Failure to do so may result in personal injury or damage to the equipment.


Fig 5

3.3 Check the electrodes on the Rear Unit and the Battery and clean of any contaminants that may prevent adequate electrical contact.

3.4 Controller adjusting

3.4.1 Insert the controller handle into the armrest tube (it can be installed in the left and right armrests according to actual use requirements). The joystick can be adjusted to most comfortable position according to the user's specific situation. When adjusting it, please loose the knob of the armrest and then the joystick shall be stretched. When stretched at your most comfortable position, the joystick shall be firm locked after the knob tightened (see fig 6)


Fig 6

3.4.2 The controller motor and battery connectors are connected to the motor and battery respectively(see fig 7, fig 8).


Fig 7


Fig 8

3.5 Armrest adjusting(see fig 9)

For the convenience of getting on/off the wheelchair for people who have trouble

with walking, the armrest of this product can be flipped up. To flip up the armrest,

just press the lock button under the armrest, flipping upward meanwhile(Fig.7).

When to flip down the armrest, just press downward the armrest, when you hear

the "click" sound, indicating that the lock button has stuck into the armrest.

The armrest is reset now.

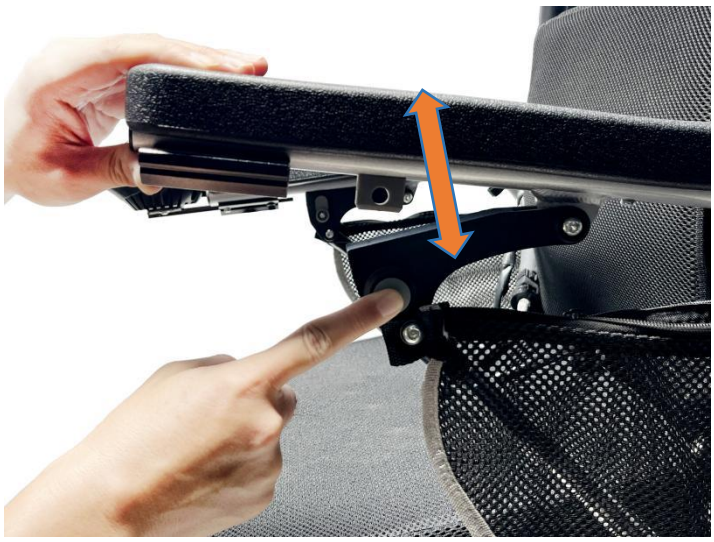


Fig 9

3.6 Battery adjusting(see fig 8, fig 10)

Hold the battery handle and align the other end of the battery with the right socket of the battery tube. Enter the bottom, and then align the red and black power plug with the square hole slot under the battery tube.


Fig 10

3.7 Charging the battery(see fig 11)


Fig 11

3.7.1 The electric wheelchair is designed to allow for safe, quick, and easy battery charging using the Off-Board Charger Assembly. Follow these instructions to Charge your battery safely, guaranteeing a long running life for your wheelchair.

CAUTION! Always charge the wheelchair Battery using the Off-Board Charger Assembly provided with your wheelchair. Do not use any other type of battery charger. Failure to do so will void your warranty and cause damage to the equipment.

Each new Battery needs to be "conditioned" in order to operate at maximum efficiency. Follow the tips below with each new Battery.

Fully charge any new Battery prior to its initial use. Charging details are explained below:

- Operate your wheelchair throughout house and yard as usual. Move slowly at first, and stay close to home until you become better acquainted with your safe driving distance by reading the Battery Condition Indicator.
- Charge the Battery for ten (10) to twelve (12) hours for a full charge, then continue to operate the wheelchair as usual
- With each charging cycle, the Battery efficiency will increase, reaching its peak performance level after four (4) or five (5) charging cycles.
- If your wheelchair Battery ever needs to be replaced, please purchase new Batteries according the following specifications:

Battery Type	Lithium Battery
Voltage	24V
Capacity	20Ah

● If you do not use the wheelchair frequently, fully charge the battery every two weeks to prevent it from failing.

● Recharge the battery as soon as possible after it is depleted. Completely discharging the batteries can shorten the effectiveness and life span of the battery.

3.7.2 Following these steps to charge your Battery using the Off-Board Charger Assembly:

Position your wheelchair near a standard wall outlet. Make sure that the wheelchair is off by removing the Power Switch from the Tiller Console.

NOTE: The Battery can also be removed from the wheelchair itself and charged separately if necessary. Simply follow the installation instructions to remove the Battery from the wheelchair and follow these instructions to charge it. The wheelchair won't run while it's charging.

●Lift the rubber plug cover on the front of the Battery to reveal the 3-Pin Charger Socket and Overload Protector(see fig12).

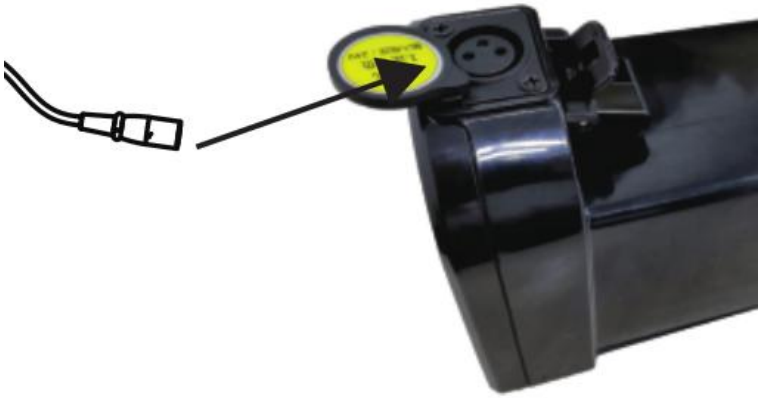


Fig 12

●Insert the output connector of the Off-Board Charger Assembly into the 3-Pin Charger Socket of the Battery, making sure to align the pins properly.

●Plug the input connector of the Off-Board Charger Assembly into the wall outlet. The blue light on the Charger Assembly will illuminate indicating that the unit is charging.

●When the Battery charging is nearly finished, the green light on the Charger Assembly will turn on. It is recommended that you continue charging the Battery for one (1) to two (2) more hours to ensure maximum charge (full charging should take ten (10) to twelve (12) hours).

●Once the Battery is fully charged, unplug the input connector of the Charger Assembly from the wall outlet. Remove the output connector of the Charger Assembly from the 3-Pin Charger Socket on the front of the Battery and replace the cover. Your wheelchair is now ready for use.

3.8 Overload Protector

This unit is designed for wheelchair safety by switching off and on a protective panel mounted on a lithium battery. It will immediately cut off power supply if the motor is overloaded or the voltage is too low so as to protect motors and electrical components from damage. To restore the protector function, use the charger to charge the wheelchairs or Reinsert the battery connector.

3.9 Safety Belt adjusting(see fig 13)

For your safety, the safety belt must be fastened before you drive the

wheelchair.



Fig 13

3.10 Anti-tipper Instruction

Anti-tipper is a safety device to prevent the wheelchair from turning over when driving on the slope(Fig 14). After pulling out the limit pin(①position), the position of the anti-tippers can be adjusted, and after the adjustment is completed, the limit pin is inserted into the corresponding limit hole. The position of the wheelchair anti-tippers is adjustable at two levels.

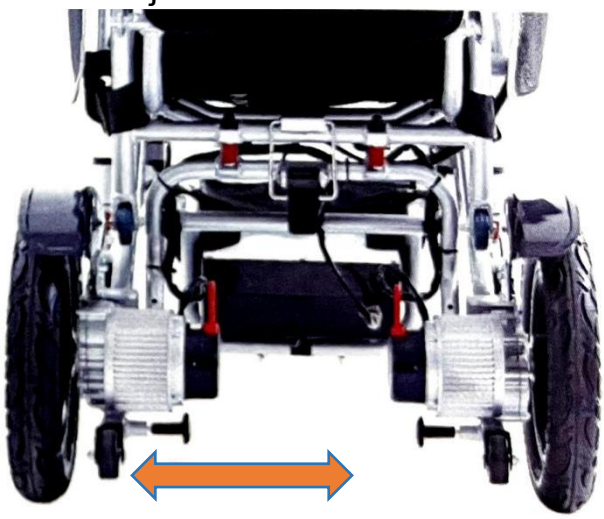


Fig 14

3.11 Adjusting brake lever

There is a set of brake lever attached with driving motor. When the lever is pushed at location “ELECTRIC”, the wheelchair will be in electric mode, which will only be operated by power. When the lever at location “MANUAL”, the wheelchair will be in manual mode, which will only be pushed by hand. (Fig 15)



Fig 15

WARNING! When the wheelchair is in manual mode, do not use your wheelchair unless getting help from your assistant. Otherwise, it may result in personal injury. Do not set your wheelchair in manual mode when it is on an incline.

Otherwise, the wheelchair could be out of control to roll down by itself, and result in personal injury.

3.12 Folding

If the wheelchair needs to be folded, please pull up the latch at the rear of the wheelchair body, meanwhile push forward the backrest, the wheelchair body latch will detach the fixed pin(Fig 5). Then push the backrest forward with one hand and flip up the seat cushion with another hand, then the wheelchair could be folded. With the wheelchair body folded in place, flip up the footrest, the wheelchair can be placed standing up.

3.13 Controller operation(see fig 2)

3.13.1 Joystick

All the electric components to control the wheelchair are integrated to the joystick, including: power switch, battery indicator, speed indicator, speed selector button, horn button, joystick handle. You can implement all the operations of this wheelchair the above buttons.

3.13.2 Power switch: It is the switch to supply power to the control system. Press the power switch to turn the power on. the power indicator light and speed indicator light will be on. Press it again, the power is off, then the power indicator light as well as the speed indicator light will go out.

3.13.3 Speed selector button(Up and Down button):Down-button:After turning on the power, the speed indicator displays the current maximum driving speed, and will decrease by one bar with each press on it. The number of displayed bars represents the current maximum speed. The range could be adjusted by the user.

Up button:After turning on the power, the speed indicator displays the current minimum driving speed, and will increase by one bar with each press on it. The number of displayed bars represents the current maximum speed. The range could be adjusted by the user. The maximum speed of the electric wheelchair is 6km/h, and the speed of each gear is shown in the fig16.

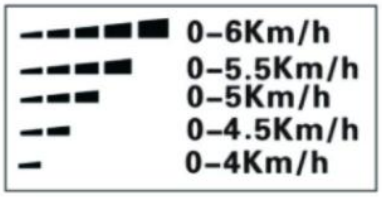


Fig 16

3.13.4 Battery indicator: It displays the battery storage. All bars lit : power is sufficient; 3-4 bars displayed indicates the power is ok. Lower than 2 bars indicates lack of power and the battery needs to be charged.

3.13.5 Joystick handle: The main function of the joystick is to control the direction and speed of wheelchair.

3.14 Operation

3.14.1 Preparation before operation

Please fold the pedal first then hold the armrest to sit on the wheelchair; Do not get off the wheelchair by stepping on the pedal. Otherwise the wheelchairmaybe turned over, which is dangerous.

Do not turn on the power switch when get into the wheelchair, and turn off the power switch when get off from the wheelchair.

3.14.2 Practice before operation

Find a spacious place like square and have a assistant to help you practice

until you have enough confidence to operate it.

Be certain to shut down the power when you get on and off the chair, and set the speed control button to the speed you want.

We recommend you set the lowest speed until you can operate the electric wheelchair skillfully.

Practice stopping, moving forward and backward. Push the handle and move the Wheelchair anywhere you want.

4. TECHNICAL PARAMETER

Specifications

Measurement items/Performance Parameter	Measured values/Navigator Max
Overall dimensions(L*W*H)	1000mmX630mmX 920mm
Stowage length	800mm
Stowage width	630mm
Stowage height	430mm
Rising	150mm
Total mass	27kg
Mass of the heaviest part	2kg
Pivot width	1700mm
Reversing width	1700mm
Ground chearance	35mm
Required width of angled corridor*	1000mm
Required doorway entry depth*	1080mm
Required corridor width for side opening*	540mm
Operating force:joystick	2N
Operating force:push button	2N
Seat plane angle	2°
Effective seat depth	440mm
Seat width	440mm
Effective seat width	500mm
Seat surface height at front edge	520mm
Back support angle(backrest angle)	12°
Back support height(backrest height)	470mm
Back support width(backrest width)	440mm
Footrest to seat	440mm
Footrest clearance	90mm
Footrest length	200mm
Footrest to leg angle	16°
Leg to seat surface angle	16°
Armrest height	220mm
Front of armrest to back support(front of armrest to backrest)	360mm
Armrest length	330mm
Armrest width	60mm
Armrest angle	4°

Distance between armrests	440mm
Front location of armrest structure	380mm
Handrim diameter	N/A
Propelling wheel diameter	320mm
Horizontal displacement of wheel axle	120mm
Vertical displacement of wheel axle	350mm
Castor wheel diameter	200mm
Maximum over the obstacle height	40mm
Maximum speed	6km/ h
Maximum safe speed for turning	5.5km/h
Braking distance on horizontal road	1500mm
Maximum safe slope braking	2500mm
Minimum turning radius	1650mm
Maximum load capacity	120kg
Driving range	15km
Hill-holding ability	10°
Maximum climbing degree	9°
Static stability	9°
Dynamic stability	6°
Motor specification	24V/ 350W
Battery specification	24V20Ah
Maximum output current of controller	45A
Maximum output current of charger	2A

Note:

①Dimension tolerance ±50mm, Angle tolerance ±3°, weight tolerance ±2kg;

②The weight capacity is tested with a dummy or personnel of same weight.

③Maximum Potential Range is tested on flat road with average speed. It will vary according to road conditions, usage habits and so on.

5. GUIDELINES

Here are some general guidelines to follow in order to keep your electric wheelchair working in top condition:

5.1 All wheel bearings are pre-lubricated and sealed. No additional lubrication is required.

5.2 Avoid prolonged exposure to any extreme conditions, including cold, heat, and moisture.

5.3 If exposed to moisture, dry thoroughly and test device to make sure electronic controls are functioning normally. Do not hose off wheelchair or bring it into direct contact with standing or flowing water.

5.4 The wheelchair is intended to operate ideally between temperatures of 18°F and 122°F. If exposed to temperatures outside of this range, let wheelchair rest indoors for several hours to return to acceptable temperature.

5.5 Clean the Tiller Console regularly to avoid dirt and grime from getting into the controls.

5.6 Periodically check all electrical connectors to make sure that they are tight and secured properly. Clean battery terminal connections as well to prevent

corrosion.

5.7 The following table can be helpful in laying when to check each component:

Check	Every Operation	Weekly	Monthly	Six Months
Drive Devices		X		
Brakes	X			
Connections		X		
Battery Charge Level	X			
Wheel Wear			X	
Motors				X
Console Devices		X		
Cleanliness	X			

6. FAULT ANALYSIS AND TROUBLESHOOTING

For your convenience, this wheelchair is equipped with an automatic fault warning device. Once it is out of order, the horn will sound. You can find where the fault is according to the table below. If the fault persists after checking, please contact your service agent （see fig 17）.

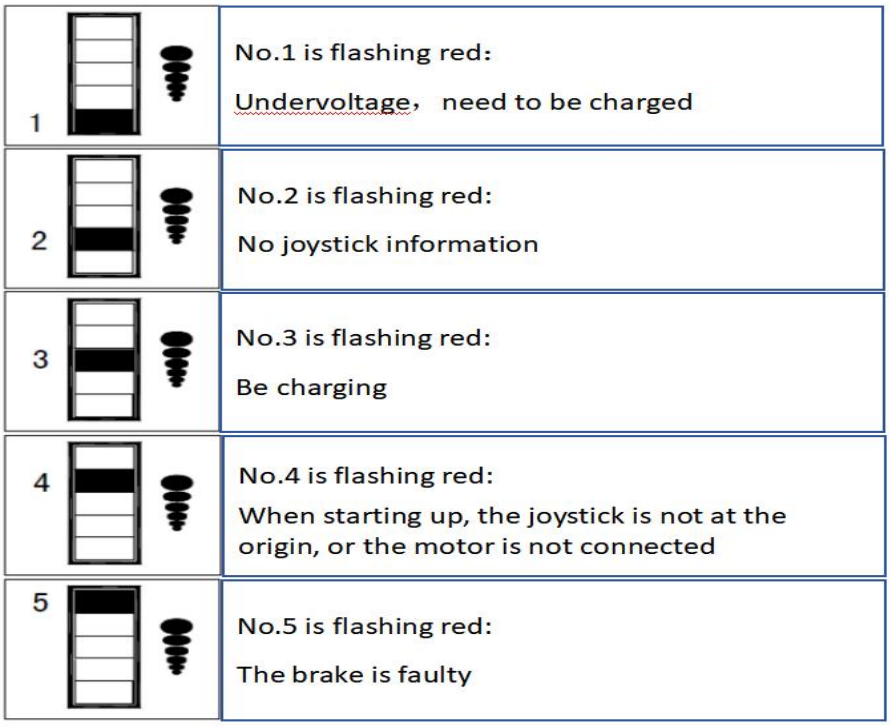


Fig 17

ATTENTION!

In order to ensure the quality of wheelchair, during the maintenance, if any consumable parts such as battery, wheels, joystick, motor/actuator and charger need to be replaced, please contact this company or dealer, replacing the original parts of same model and specification.

7. SAFETY PROTECTION DEVICE AND ACCIDENT HANDLING

7.1 Overload protector: Refer to user manual3.8.

7.2 Safety belt: Refer to user manual 3.9.

7.3 Please release the joystick whenever there is a wheelchair fault, the

wheelchair will be stopped.

8. MAINTENENCE AND REPAIR

8.1 Maintenance

Like other motorized vehicle, your power wheelchair also requires routine maintenance. Some checks can be performed by yourself, others you can ask for assistance from your service agent. Preventive maintenance is very important. If you follow the maintenance and checks in this section, your wheelchair will give you years of trouble-free operation. For any questions regarding the maintenance or operation of the wheelchair, please contact your dealer or our after-sales service dept.

8.1.1 Humidity

Your wheelchair, like most electrical and mechanical equipment, is susceptible to external conditions. In any case, the wheelchair should be avoided damp environment. Direct or prolonged exposure to water or dampness could cause the wheelchair to malfunction electronically and mechanically. Water can cause electrical components to corrode.

8.1.2 Temperature

- Some parts of your wheelchair are susceptible to temperature.
- Too high or too low temperature will affect the performance of the wheelchair.

8.1.3 Regular guidance

- Avoid knocking or hitting the control units.
- Avoid prolonged exposure of your wheelchair to extreme conditions, such as overheat, under-cooling or moisture environment.
- Keep the controller clean.
- Check all connections, and ensure that they are all tight, secure and not corroded.
- If the battery indicator on the controller only shows red, indicating that the battery is low, it should be charged immediately.
- All wheel bearings are lubricated and sealed. No need to lubricate them.

8.1.4 Maintenance after use

- Turn off the power.
- Inhibit children and unconscious persons to use the wheelchair.
- Store the wheelchair in normal temperature to prevent deformation so that it keeps its performance for long period.
- Clean the wheelchair with a clear and soft cloth and dry it. Never use any chemicals to clean it. (to prevent deformation and discoloration).
- Remove the cloth cover of the seat rest to be washed if it is dirty, and then dry it for use.

8.1.5 Daily Checks

In order to keep the wheelchair always in good condition, you should check it before each use and keep weekly, monthly, semi-annual check. See the table below for the inspection items.

Inspection Items	At any time	Weekly	Monthly	Semi annual
Wheel hubs, driving mechanism and fasteners			○	
Joystick function	○			

Brake	○			
Connecting lines		○		
Battery condition	○			
Tire condition			○	
Frame condition				○
Motor and driver condition			○	○
Front wheel steering and other functions		○		
Cleanliness	○			

8.1.6 Cleaning

- Never wash your wheelchair with water or expose directly to water.
- Surface of wheelchair frame is coated with a protective coating. Therefore, it is very easy to wipe it clean with a damp cloth. Never use any chemicals to clean the vinyl on seat and armrest, as they may cause the latter slip or chapped. You can use a damp cloth and neutral soapy water to clean them, and then dry thoroughly.

8.2 Repairment

8.2.1 Users could repair or replace some spare parts like push handle, push handle cover which could be self- maintained or replaced under the instructions of after-sales service staff of our corporation or the dealers.

8.2.2 Within the warranty, our corporation or the dealers will maintain or replace the faulted spare parts, like motor, battery, charger, controller, bearing, shaft sleeve, etc., due to material or manufacturing defects free of charge.

8.2.3 The spare parts like motor, controller, etc. which are confirmed by the after-sale staff or our corporation or our dealers to be dissembled could be sent to our corporation or the dealers for maintenance.

8.2.4 Please contact your distributor or the after-sale service dept. of our corporation for any questions regarding the maintenance of power wheelchairs.

ATTENTION!In order to ensure the quality of wheelchair, during the maintenance, if any consumable parts such as battery, wheels, joystick, motor/actuator and charger need to be replaced, please contact this company or dealer, replacing the original parts of same model and specifications. The repair should be carried out at the professional maintenance room of our corporation or the dealer(s).

8.3 Packing List

Produce Name	QTY	Product Name	QTY
Scooter vehicle (including battery)	1 PCs		
Charger	1 PCs		
User manual	1 PCs		

9. TRANSPORTATION AND STORAGE

9.1 Transportation

You can load and transport according to the shipping marks and graphics on cartons. For details, see the attachment.

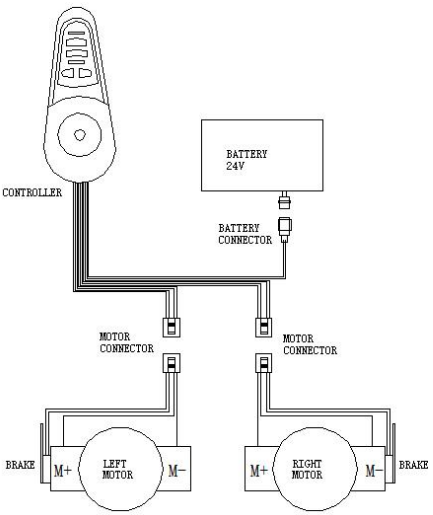
9.2 Storage

Your wheelchair should be stored in a clean indoor environment with relative humidity not greater than 93%, temperature between 18°F-122°F, good ventilation and free from corrosive gas. Remove the battery from the wheelchair prior to storage. Otherwise, the frame may rust and the electronics may be damaged.

10. LABELS, PACKING LOGO DESIGN

Symbol	Introductions	Symbol	Introductions
	Manufacturer Name Address		Manufacture Date
	Batch Code		Unique Device Identification
	Warnings and Precautions		non-sterile
	medical device		Use-by date
	Keep dry		Keep away from Sunlight
	Consult instructions for use		Country of Manufacture
	Importer		Distributor
	Upper limit of Humidity		Model Number

11. WIRING DIAGRAM



LCD Controller Manual

★ Product Overview

This controller adopts advanced motion control algorithms, fashionable design concepts, and humanized design, so that users can use it easily, safely, and comfortably. This controller can be applied to the operation platform of robot, electric wheelchair, amusement equipment, getaway car, le bar car, monitoring equipment and various mobile products.

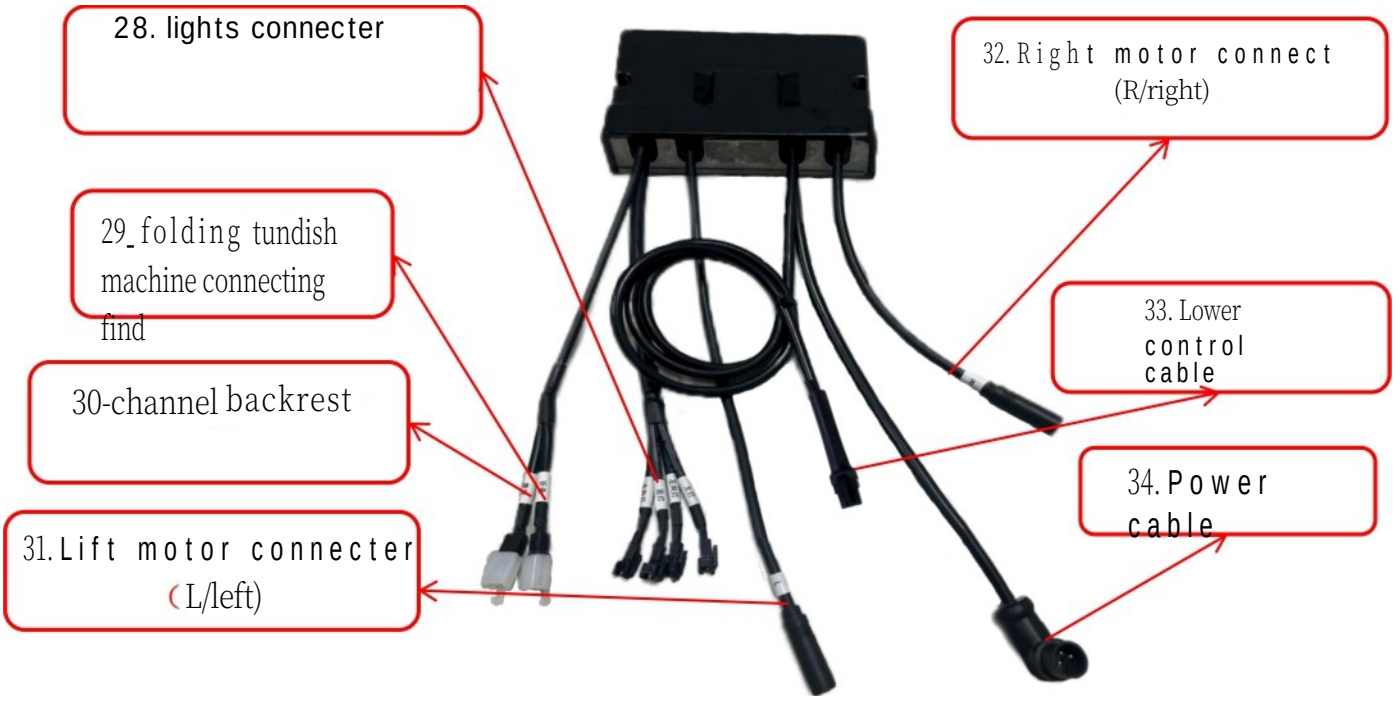
★ Product Features

1、LCD folding backrest model: the wheelchair can be unfolded and folded with one key; the angle of the backrest can be adjusted electrically.

Illustration:




22' Horn
23'Light
24.USB Supply 5v/2A Output
25'mounting holes
26.Communication Killing
27.charging port


28. lights connecter
29_folding tundish machine connecting find
30-channel backrest
31.Lift motor connecter (L/left)
32. Right motor connect (R/right)
33. Lower control cable
34. Power cable

★ Functional Description

1、Remote control operation (Note: there are remote control function of the controller, see the remote control manual for details)

①After successful pairing of the remote control and the controller, the wheelchair can be operated: such as wheelchair forward, backward, left turn, right turn, gear increase, gear decrease, horn control, seating position adjustment and child lock function on/off.

② Child lock function is enabled, manipulate the handle, rear control, booster or remote control, the wheelchair does not move, the controller shut down and restart the child lock function still exists; child lock function is lifted, as shown in Figure 1, the wheelchair can be used normally.

2、Controller panel status display when the child lock function is on

The controller screen blinks with a lock, representing the child lock function on state, as in Figure 2.



4、LCD Folding back model

①One-touch unfolding: Long press the folding key the LCD controller for about 3 seconds and ▪▪P1▪▪ appears on the screen, then let go and press the plus key the wheelchair can be unfolded by one touch.

②One-touch folding: Long press the folding key the LCD controller for about 3 seconds, and ▪▪P1▪▪ will appear on the screen, then let go and press the minus key , the wheelchair can be folded by one touch. Note: During the operation of ①② above, pressing any key will terminate the action.

③ Press and hold the back button on the controller for about 3 seconds, "P2" will appear on the screen of the controller, then let go and press the horn icon the prompt will be ▪▪Backrest Adjustment" , and you can control the handle to adjust the backrest.

4. Pressing horn and silence icon for 15 seconds can remove child lock function

Note: During the operation of ③ above, pressing the horn key or backrest key will exit the backrest adjustment.

★ Main technical indicators

1. Rated supply constant voltage DC24V;
2. Maximum motor drive current: 35A/50A;
3. Operating voltage: 22V DC to 30V DC;
4. Brake voltage: DC 24V, Brake current: supports 2A max;
5. Battery charging current: 3A/5A (charging via controller);
6. Current required for parking standby before shutdown: less than 55 mA;
7. Operating temperature: -25℃ to +60℃;
8. Storage temperature: -45℃ to +80℃;
9. Waterproof rating: IPX4 (electronic equipment) Applicable drive motor form.

★ VI: Fault Codes

Fault display code	**malfunctions**	**Troubleshooting**
Screen E1 flashing	Handle not in place	Do not operate the joystick during power-on, and hold it for 1 second after power-on. Maneuver the joystick again!
Screen E2 Blinking/left motor error	Bad connection on left motor	Check that the left motor connection wire is connected to the controller properly!
Screen E3 Blinking/Left Brake Error	Bad connection on left brake	Check the left motor brake cable and controller link for proper function!
Screen E4 Blinking/right motor error	Bad connection on right motor	Check the right motor connection wire and controller connection for proper function!
Screen E5 Blinking/right brake error	Bad connection on right brake	Check the right motor brake cable and controller link for proper function!
Screen E7 Blinking/Handle Error	Handle Malfunction	Check to see if the rocker stays out of position during power-up, blocking jamming Phenomenon!
Screen E9 Blinking/brake error	Parameter misconfiguration	Check that the motor brake clutch is in the correct position or wheelchair Brake parameters are set incorrectly!
Screen E10 Blinking	MOS short circuit	Controller needs to be returned to the factory aftermarket!
Screen E11 Flickering/low battery	Low battery	Check the battery voltage for undervoltage or overvoltage!
Screen E12 flashing	Left motor shorted	Check the left motor connection wire for a broken

		two-pole short overload!
Screen E13 Blinking	Shorted right motor.	Check the right motor connection wire for a broken bipolar short overload!
Screen E14 flashing	Rear control, cell phone, remote control hand The handle is not in place.	Check the motor for foreign objects or pits jammed
Screen E30 Blinking	Manual/electrical toggle switch incorrect	Motorized mode requires switch to be set to 1