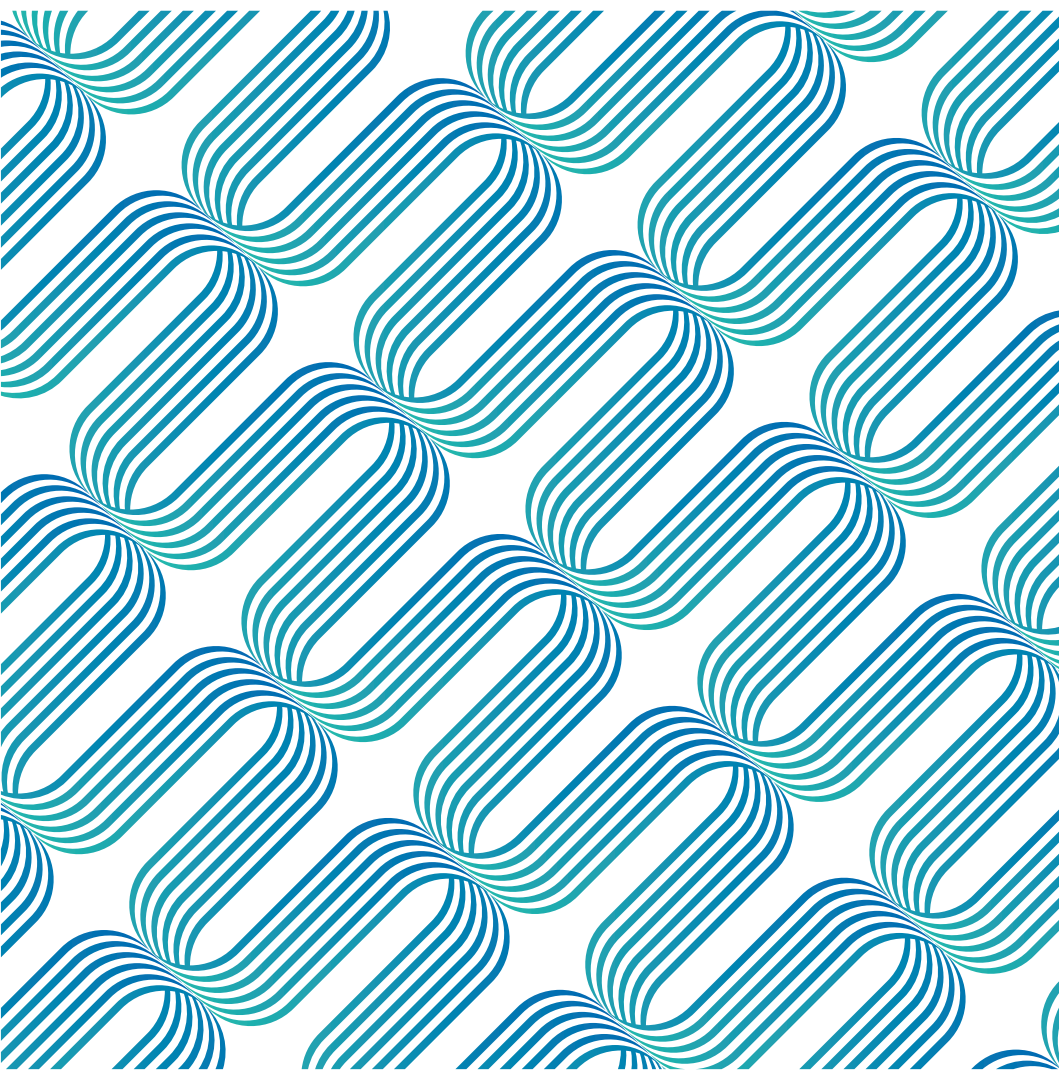


P RODUCT SPECIFICATION

Document No.:BBR-E-01
Version No: B



Preface

Dear Customer,

Thank you for choosing our Electric Wheelchair.

The Product Manual is a vital document, offering comprehensive information about the Electric Wheelchair, including its features, operating instructions, and after-sales service details. Before using the product, we kindly request that you thoroughly review the Product Manual to ensure proper operation and maintenance.

Thank you for your commitment to safety and optimal product performance.

Sincerely,

Shanghai Bangbang Robotics Co.,Ltd.



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01. Safety



02. Product Introduction



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08. Wireless Technology
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09. Instruc- Tions
For Electric Wheelchair
Product Service



10. Disclaimer



11. Report Serious
Event To Fda

01 / Safety Precautions

Please read the Safety section carefully before using the product and follow the instructions provided in the Manual.

The safety guidelines are designed to ensure the safe and proper use of the product. To distinguish between different levels of potential harm and damage resulting from misuse, possible damage is categorized as "warning" or "caution." Both categories are crucial safety reminders and must be strictly adhered to.

1.1 Signs



Warning

- The presence of this sign signifies potentially hazardous situations that, if ignored, could result in severe injury.



Attention

- The presence of this sign indicates hazardous situations that, if disregarded, may result in mild or moderate injuries and material damage.

1.2 Indication



Attention

This Electric wheelchair has passed the test in accordance with ISO 7176-9 Climatic Test.

- This test is designed to ensure that Electric wheelchair users and attendants have adequate time to move to a safe location during rainy weather.
- Please refrain from operating the Electric wheelchair during a thunderstorm. Avoid exposing the Electric wheelchair to heavy rain.
- Do not leave the Electric wheelchair in a damp environment for an extended period.
- Furthermore, refrain from spraying, washing, or using an automatic car washer on the Electric wheelchair.
- Direct exposure to rain, smoke, or humid air may result in electrical and mechanical failures, as well as potential rusting of the Electric wheelchair.

1.3 Waste Disposal



Attention

- In accordance with local laws and regulations, your product is to be treated separately from domestic waste. Please put it at the designated recycling point of your area. Recycling helps reduce waste and thus, benefits our environment.

1.7 Attention

(1) Driving on slopes

This Electric wheelchair has passed the test requirements of climbing on slopes not exceeding 100 with a load of 120 kg. DO NOT attempt to climb any slope exceeding 100.

While reversing on a slope, please ensure to slow down your Electric wheelchair. DO NOT reverse on a slope exceeding 100. Additionally, during reversing, please use extreme caution.

The ability of climbing a slope and the driving distance is affected by battery and local factors, such as (and not limited to): The user's body weight, topographical conditions (for example, grass, gravel, uneven surface), hill gradients, battery and service life, extreme temperature conditions, usage and weight of the fitting etcetera.

(2) Brake

The Electric wheelchair will stop in several seconds. When it brakes, please ensure that you are sitting properly and hold the handrail. Note: Electromagnetic brake will not take effect immediately, it will take effect after the wheel rotates for a ½ cycle.

(3) Emergency braking

In the event of a critical situation or unexpected movement, press the power switch key to make the Electric wheelchair stop (Important Note: Although this emergency break is effective, it is not to be used under normal conditions. Please also note that frequent use of the emergency break may lead to motor fault that may interfere with normal operation of your Electric wheelchair.

(4) Use of mobile phone

Do not drive the Electric wheelchair via Mobile Application at any time. Pay attention to road conditions while driving. The Mobile Application can only be used to assist patients move the wheelchair and set parameters. It is NOT intended to be used for driving the wheelchair.

(5) About RF Emission

< S > User Information

This equipment has undergone testing and complies with the standards for a Class B digital device, as outlined in Part 15 of the FCC Rules. These standards are intended to offer reasonable protection against disruptive interference in residential installations.

This equipment generates, uses, and can emit radio frequency energy. If it is not installed and used in accordance with the provided instructions, it may cause interference that is detrimental to radio communications. However, it cannot be guaranteed that interference will not occur in a specific installation.

If this equipment does result in harmful interference to radio or television reception, which can be determined by powering the equipment off and on, we encourage users to consider the following measures to address the interference:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Plug the equipment into an outlet on a different circuit than the one to which the receiver is connected.
- Seek assistance from the dealer or an experienced radio/TV technician for resolution.

Please follow traffic rules



1.5 Warnings (please carefully read)

- DO NOT attempt to pick up objects by bending down when sitting on the Electric wheelchair or the user may roll over. Consequently, the wheelchair may be damaged and the user may incur an injury.
- DO NOT drive on slippery surfaces, such as on water, oil or ice (or other slippery surfaces). In case this happens, the Electric wheelchair may be out of control;
- DO NOT attempt to drag another Electric wheelchair;
- DO NOT connect other medical equipment (examples include life support equipment, respirator etcetera) to the electronic system of the Electric wheelchair;
- DO NOT operate the Electric wheelchair when your judgement may be affected (such as after drinking or taking medicine);
- The line after the above should be removed;
- For any injury that results due to not adhering to local or international laws or regulations, we do not undertake any responsibility and hereby state the following;
- DO NOT disconnect, cut or modify the wiring harness parts that have been installed on the Electric wheelchair or connected to the Electric wheelchair under any condition;
- DO NOT use batteries that are not compatible with the Electric wheelchair, such as lead acid batteries that cannot be recycled etcetera;
- This device complies with part 15 of the FCC Rule. Operation is subject to the following two conditions:(1) This device may not cause harmful interference and(2) this device must accept any interference received, including interference that may cause undesired operation.

1.5 Excerpts from EMC-related guidelines and statements in manufacturer's accompanying documents

EMI Compliance Table (Table 1)

Phenomenon	Compliance	Electromagnetic environment
RF emissions	CISPR 11 Group 1, Class B	Home healthcare environment
Harmonic distortion	IEC61000-3-2 Class A	Home healthcare environment
Voltage fluctuations and flicker	IEC61000-3-3 Compliance	Home healthcare environment

EMS Compliance Table (Table 2-5)

Phenomenon	Basic EMC standard	Immunity test levels
		Home healthcare environment
Electrostatic discharge	IEC 61000-4-2	±8kV contact ±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 RD 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 18Hz sine,28V/m
710	704-787	Pulse modulation 217 Hz sine, 28V/m
745		
780		
810	800-960	Pulse modulation 18Hz sine, 28V/m
870		
930		
1720	1700-1990	Pulse modulation 217Hz sine, 28V/m
1845		
1970		
5785		

Table 4 – input a.c. power port

	Standard	Home healthcare environment
Electrical fast Transients/burst	IEC 61000-4-4	±2KV 100kHz repetition frequency
Surges Line-to-line	IEC 61000-4-5	±0.5kV, ±1kV
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 0°,45°,90°135°,180°,225°,270° and 315°
		0% U _T ; 1 cycle and 70% U _T ;25/30 cycles Single phase: at 0°
Voltage interruptions	IEC 61000-4-11	0% U _T ; 25/30 cycles U _T =rated input Voltage

Table 5 – signal input/output parts port

Table 5-Input a.c power port (1 of 2)

Phenomenon	Basic EMC standard	Immunity test levels	
		Professional healthcare facility environment	Home HEALT CARE ENVIRONMENT
Electrical fast Transients / bursts a))o)	IEC 61000-4-4	±2KV 100kHz repetition frequency	
Surgesa)b))o) Line-to-line	IEC 61000-4-5	±0.5kV,±1KV	
Surges a)b))k)o)	IEC 61000-4-5	±0.5kV,±1KV,±2Kv	
Line-to-ground			
Conducted disturbances Induced by field c)d)o)	IEC 61000-4-6	3V ^{m)} 0.15 MHz-80MHz 6V ^{m)} in ISM bands Between 0,15MHz and 80MHz ⁿ⁾ 80% AM at 1KHz ^{e)}	3V ^{m)} 0.15 MHz-80MHz 6V ^{m)} in ISM and amateur Radio bands between 0,15 MHz and 80MHz ⁿ⁾ 80% AM at 1KHz ^{e)}
Voltage dips ^{f)p)r)}	IEC 61000-4-11	0% U _T ; 0,5cycle ^{q)} , At 0°, 45°,90°, 135°,180°,225°,270°,and315° ^{oq)}	
		0% U _T ; 1 cycle And 70% U _T ; 25/30 cycles ^{h)} Single phase :at 0°	
Voltage interruptions ^{h))o)r)}	IEC 61000-4-11	0% U _T ; 250)300 cycle ^{h)}	

Table 6-Cable information

Cable	Max. cable length, Shielded/unshielded		Number	Cable classification
AC Power Line	1.8M	Unshielded	1 Set	AC Power
DC Power Line (USB Cable)	0.95M	Unshielded	1 Set	DC Power

- a) The test may be performed at any one power input voltage within the ME EQUIPMENT or ME system RATED voltage range .If the ME EQUIPMENT or ME system is tested at one power input voltage, it is not necessary to re-test at additional voltage.
- b) All ME EQUIPMENT and ME SYSTEM cables ore attached during the test.
- c) Calibration for current injection clamps shall be performed in a 150 Ci system.
- d) If the frequency stepping skips over on ISM or amateur bond, as applicable, upon additional test frequency shall be used in the ISM and amateur radio bond within the specified frequency range.
- e) Testing may be performed at other modulation frequencies identified by the RISK MANAGE- MET PROCESS.
- f) ME EQUIPMENT and ME SYSTEMS with a d c. power input intended for use with a.c-to-d.c converters shall be tested using a converter that meets the specifications the MANUFAC- TURER of the ME EQUIPMENT or ME SYSTEM. The IMMUNITY TEST LEVELE ore applied to the a.c power input of the converter.

- g) Applicable only to ME EQUIPMENT and ME SYSTEMS connected to single-phase a.c mains.
- h) E.g 10/12 means 10 periods at 50 Hz or 12 periods at 60 Hz.
- i) ME EQUIPMENT and ME SYSTEMS with RATED input current greater than 10 A /phase shall be interrupted once for 250/300 cycles any angle and all phases at the sometime(if applicable). ME equipment and ME SYSTEMS with battery backup shall resume line power operation after the test. For ME equipment and ME SYSTEMS with RATED input current not exceeding 18A , all phases shall be interrupted simultaneously.
- j) ME EQUIPMENT and ME SYSTEMS that do not have a surge protection device in the primary power circuit may be tested only of - 2kV line(s) to earth and 1 kV line(s) to line(s).
- k) Not applicable to Class II ME EQUIPMENT and ME SYSTEMS.
- l) Direct coupling shall be used.
- m) R.m.s before modulation is applied.
- n) The ISM (industrial scientific and medical) bands between 0,15 MHz to 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz ; 26.957 MHz to 27.282 MHz ; and 40.66MHz to amateur radio bands between 0,15 MHz and 80 MHz are 1,8 MHz to 2.0 MHz, 3.5 MHz to 4.0 MHz ,5.3 MHz to 5.4MHz, 7 MHz to 7.3 MHz 10,1MHz
- o) Applicable to ME EQUIPMENT and ME SYSTEMS with RATED input current less than or equal to 16 A/phase and ME EQUIPMENT and ME systems with RATED input current greater than 16 A/phase.
- p) Applicable to ME EQUIPMENT and ME SYSTEMS with RATED input current less than or equal to A/phase.
- q) At some phase angles applying this test to ME EQUIPMENT with transformer mains power input might cause an overcurrent protection device to open. This can occur due to magnetic flux saturation of the transformer core after the voltage dip. If this occurs, the ME EQUIPMENT or ME SYSTEM shall provide BASIC SAFETY during and after the test.
- r) For ME EQUIPMENT and ME SYSTEMS that have multiple voltage settings or auto ranging voltage capability the test shall be performed at the minimum and maximum RATED input voltage. ME EQUIPMENT and ME SYSTEMS with a RATED input voltage of less than 25% of the highest RATED input voltage shall be tested at one RATED input voltage within the range. See table 1 Note c) for examples calculations.
- s) Basic performance: The sample can maintain normal working condition when interference is applied during normal driving and folding.
- t) WARNING: Use of this equipment adjacent to or stocked 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.
- u) WARNING: 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.
- v) WARNING: Portable RF communication equipment (including peripheral devices, such as antenna cables and external antennas) can be used handheld if they are more than 5mm away from the human body.
- w) Essential performance: Electric wheelchair work normally.

02 / Product Introduction

2.1 Product features

- The Electric wheelchair relies on a DC brush motor as its core component for propulsion.
- Motor control is achieved through the use of a dedicated controller with brushes. The independent rocker operation enables forward movement, differential turning, and low-speed reversing.
- The frame structure incorporates patented technologies. A foldable four-bar linkage mechanism allows for both folding and expanding actions. The Electric wheelchair is equipped with the function of electric folding or manual folding.
- In the absence of any operation (no key, rocker, or APP operation) for 30 minutes, the Electric wheelchair will automatically power off.
- To activate cruise control mode, press and hold the "speed +" key for an extended duration. Push the rocker forward to initiate cruise control.

2.2 Indication for use

The intended use of the Electric Wheelchair (Model: BBR-LY-01-01) is to provide outdoor and indoor mobility to persons limited to a seated position that are capable of operating a powered wheelchair.

2.3 Intended user

Adult, maximum mass is less than 120kg.

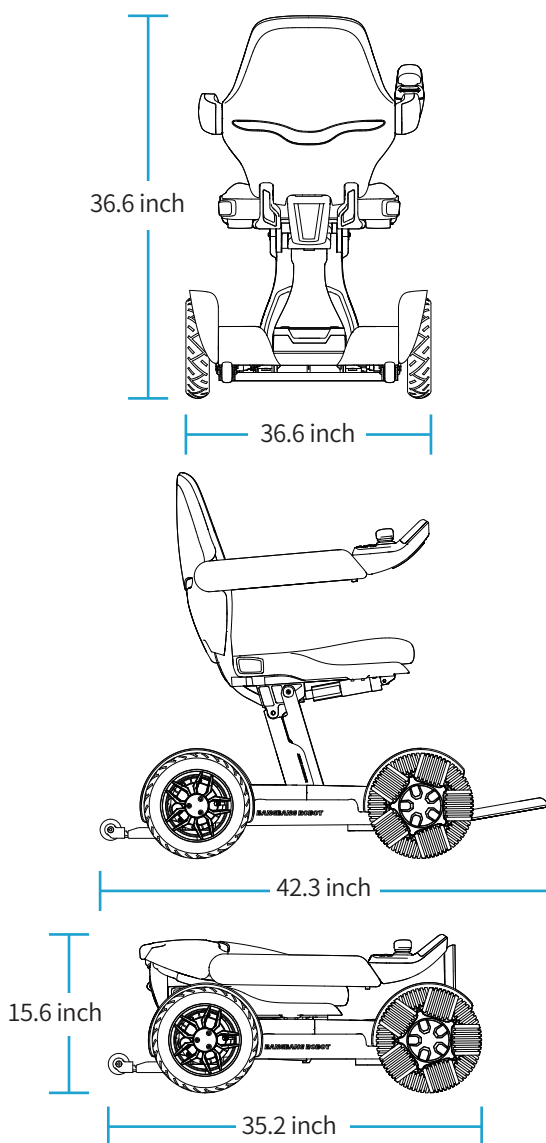
2.4 Contraindications

Patients with mental illnesses, such as those who temporarily or permanently lose attention or judgement are not allowed to use this product.

2.5 Expected environmental condition of use

Step lower than 45 mm,
Slopes with a gradient of 6 ° or less, Environment temperature:-10°C~50°C,
Cannot be driven on soft surface, such as sand, mud, snowy, frozen paths. Cannot be driven on gravel, light snow and grass.

2.6 Structure of the product



Unit: inch

2.7 Component introduct



Main structural composition of products: Motor, storage battery, control system, wheel, seat, handrail and pedal

Note: Refer to Product Package List for part list

2.8 Package list

Battery charger	1pcs
Battery	1pcs
User manual	1pcs
L-shaped hexagonal wrench (2.5MM)	1pcs
L-shaped hexagonal wrench (3MM)	1pcs
L-shaped hexagonal wrench (4MM)	1pcs
L-shaped hexagonal wrench (5MM)	1pcs
L-shaped hexagonal wrench (8MM)	1pcs
Phillips screwdriver	1pcs
Electric Wheelchair	1pcs

03 / Technical parameters

3.1 Specification sheet

standard reference		standard reference		Min
ISO 7176-5	Overall length with largest	ISO 7176-7	Seat plane angle	7.5°
ISO 7176-5	Overall width	ISO 7176-7	Effective seat depth	425mm
-	Folded length	ISO 7176-7	Effective seat width	425mm
-	Folded weight	ISO 7176-7	Seat surface height at front edge	515mm
-	Folded height	ISO 7176-7	Backrest angle	19.7°
ISO 7176-5	Total mass	ISO 7176-7	Backrest height	455mm
ISO 7176-5	Mass of the heaviest part	ISO 7176-7	Footrest to seat distance	428mm
ISO 7176-1	Static stability downhill	ISO 7176-7	Leg to seat surface angle	108°
ISO 7176-1	Static stability uphill	ISO 7176-7	Armrest to seat distance	290mm
ISO 7176-1	Static stability sideways	ISO 7176-7	Front location of armrest structure	445mm
ISO 7176-4	Energy consumption	ISO 7176-7	Hand rim diameter	-
ISO 7176-2	Dynamic stability uphill	ISO 7176-7	Horizontal location of axle	82mm
ISO 7176-10	Obstacle climbing	ISO 7176-7	Minimum turning radius	380mm
ISO 7176-6	Maximum speed forward	manufacture	Minimum occupant mass	120kg
ISO 7176-3	Minimum braking distance from max speed			

- a) Requirements and test methods for static, impact and fatigue strengths (ISO 7176-8)
- b) Power and control systems for electric wheelchairs-requirements and test methods (ISO 7176-14)
- c) Climatic test in accordance with ISO 7176-9
- d) Requirements for resistance to ignition in accordance with ISO 7176-16

3.2 Specification sheet

Product model	BBR-LY-01-01
Software version	1.0
Type Classes	Class A
Folding mode	Electric
Maximum speed forward	3.75mph
Battery quantity	1
Battery weight	7.7 lbs
Front and rear wheel specifications	The front wheels are 10" omnidirectional wheel and the rear wheels are 10" PU tire (2.4MPa~2.7MPa)
Motor parameters	DC motor rated voltage 24V, Rated power 200W*2
Lithium battery parameter	DC24V 20AH
Charger parameters	The entered voltage is 29.4V and the output current is 4A
Horizontal shift of the shaft	3.2 inch
Vertical shift of the shaft	12.9 inch
Pivot width	46.5 inch
Reversing width	46.5 inch
Ground clearance	2.5 inch
Required width of angled corridor	39.4 inch
Required doorway entry depth	45.3 inch
Required corridor width for side opening	45.3 inch
Product life	5years

3.2 Specification sheet

Enter novice mode	Press the key for novice mode
Quit novice mode	Press the key for novice mode again
Alarm	Keep a long press of SOS key
Lock	The default boot mode is lock mode, and the non-lock to lock state transition
Unlock	Switch locking status to non-locking status
Wireless remote mode	Operate by the control key on the remote
Quit remote control mode	Operate by the control key on the remote
fold	Keep a long press of horn key and SPD- key at the same time
Expand	Keep a long press of horn key and SPD+ key at the same time
Upgrade mode	When the APP detects new version, click to upgrade
Upgrade finished	It will be triggered after single module is upgraded
Upgrading	The equipment is upgrading
Attention, reserve	Reserving, warning tone
Powering on tone	Power on, and the powering on tone will ring after 3 seconds
Charging	Charging
Charging completed	It will be triggered after charging is completed
Band-type brake open	The band-type brake of the equipment opens
Power off tone	Power off, and the powering off tone will ring after 3 seconds
Equipment bumpiness	It will be triggered for equipment bumpiness
Equipment slant	It will be triggered when the equipment is under slant, the angle of left and right, front and rear exceeds 5°
Sharp bend	It will be triggered when the equipment is under sharp bend
Upgrade failed	There is something wrong during upgrading
Version V1.0	Voice version
Lower power, please charge	The battery life is lower than 20%, and it will be triggered in each minute
Stop Electric wheelchair folding	Stop Electric wheelchair folding
Stop Electric wheelchair expanding	Stop Electric wheelchair expanding
Pushing mode	Press the "+" and "-" keys simultaneously
Quit pushing mode	Push the rocker at will to quit mode under pushing mode
Rocker non-zero start detection	Rocker protection

04 / Use of Electric wheelchair

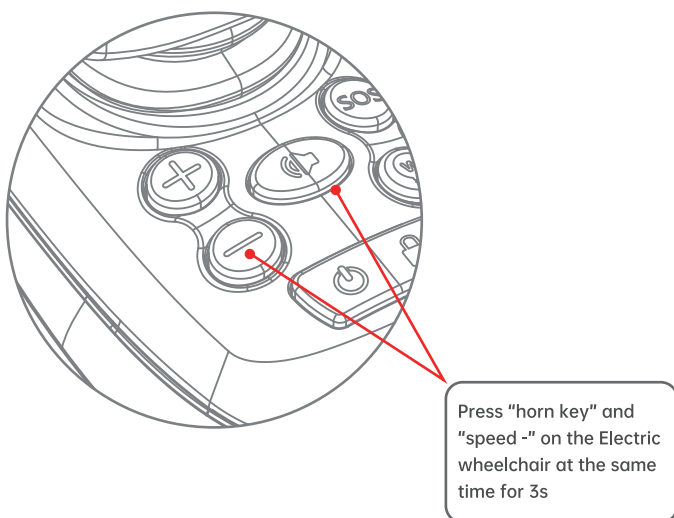
4.1 Notice

- When operating the Electric wheelchair for the first time, choose ground that has a flat and hard surface to ensure there are no obstacles. Please also ensure that there are no pedestrians around you.
- Electric wheelchair' s maximum load capacity is 120 kg. DO NOT exceed this load capacity. It is limited for 1 person use.
- Ensure that you have fastened the safety belt of the Electric wheelchair.
- Correctly sit on the Electric wheelchair, slightly push the rocker of the controller forward. The Electric wheelchair will move forward and backwards, and turn left or right. After release, the Electric wheelchair will stop. Please practice these instructions a few times to get the hang of your Electric wheelchair' s operation.
- During steering, please clear any barriers nearby.
- DO NOT steer on pedestrians or during driving.
- When the Electric wheelchair operates under a relatively challenging condition (for example, while entering through a door or whilst steering), please slow down its operation. It is suggested that the speed of the Electric wheelchair should be transferred to the lowest level in a harsh environment.
- Check whether or not the conditions of operation of the Electric wheelchair are good, for example, if the performance is smooth.
- After 30 minutes, the Electric wheelchair will shut down automatically.

4.2 Expand and fold

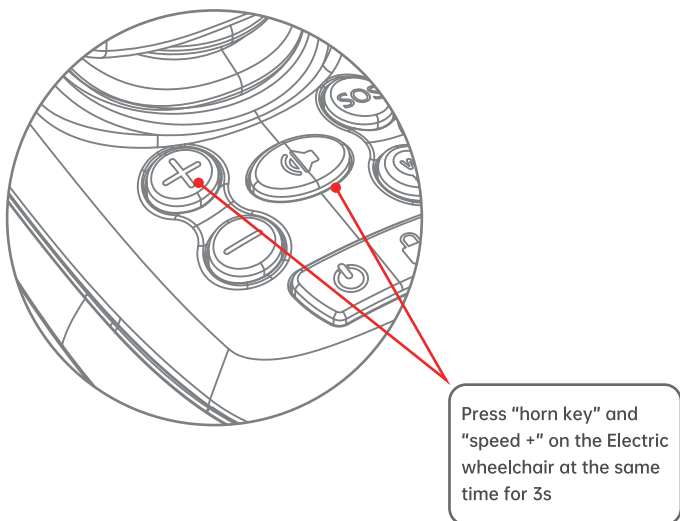
In the process of folding or expanding, swing the rocker will stop folding or expanding. After the intermediate stop, the folding or expanding can be continued according to the operation of 1 and 2.

4. 2. 1 Folding of the Electric wheelchair



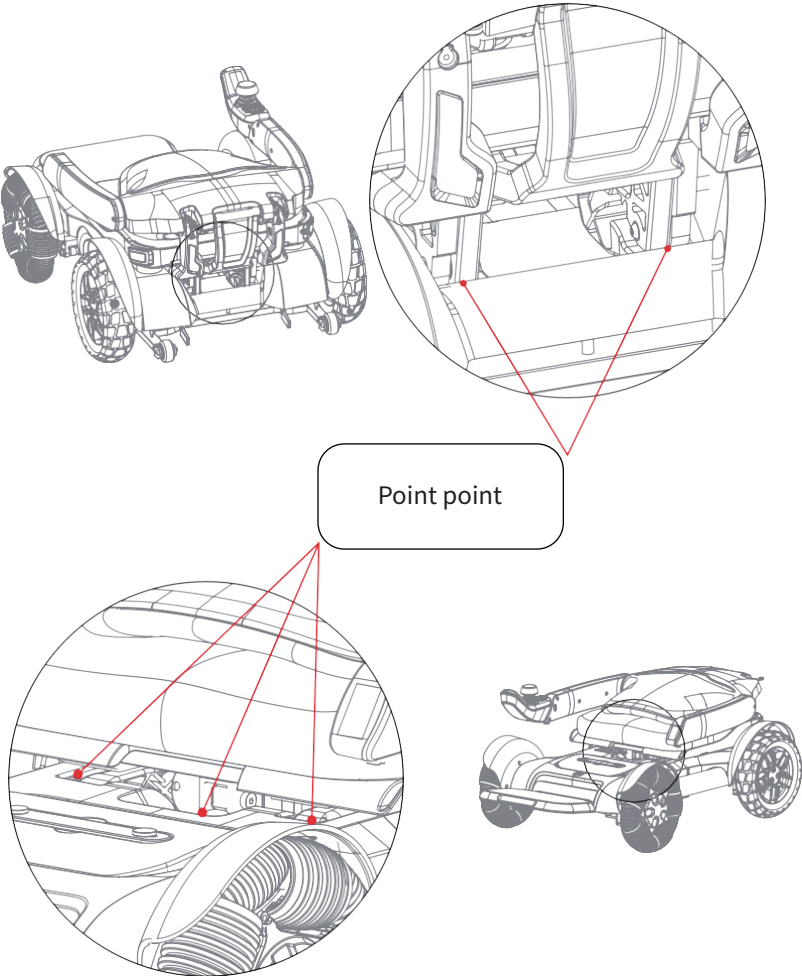
Folding your Electric wheelchair, if there is no other command, it will stop automatically after folding

4. 2. 2 Expanding of the Electric wheelchair



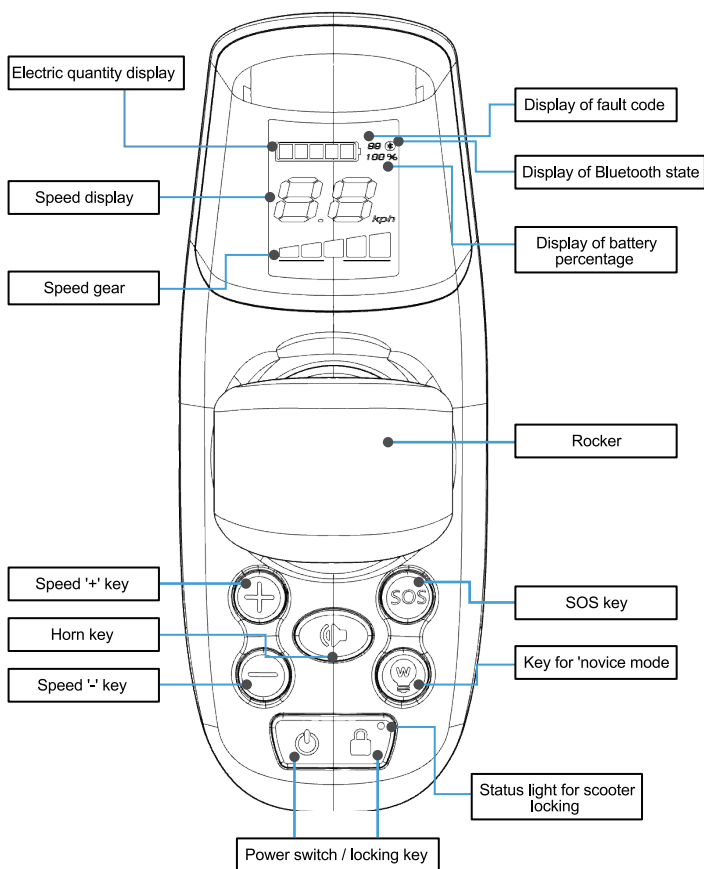
Expanding Electric wheelchair, if there is no other command, it will stop automatically after unfolding

4.2.3 Pinch point



4.3 Controller

4. 3. 1 Introduction to controller



4. 3. 2 Instruction of controller

Rocker

By pushing the controller rocker, the direction and speed of the Electric wheelchair can be controlled;

Power switch / locking key

Long press for 2 seconds to turn on the power, long press for 2 seconds to turn off the power;

Press the power key, the locking indicator of the Electric wheelchair is off, the Electric wheelchair is unlocked

Press the power key, the locking indicator of the Electric wheelchair is on, the Electric wheelchair is locked

Speed '+' key

When it is pressed, the speed is up-regulated;

Keep a long press of "+" key to enter cruise control mode, and push the rocker forwards to start the machine

Speed '-' key

When it is pressed, the speed is down-regulated;

Horn key

Keep a short press of the horn key, the horn will ring for once; The horn complies with national noise standard;

Status light for Electric wheelchair locking

After powering on, the locking function will be entered in default; During use, locking mode can be entered under any control mode;

Under locking function, the rocker cannot control the chassis motor to move. After unlocking, the chassis motor can be controlled to move.

Under locking mode, after the APP is connected, there will be a pop-up box to remind locking mode.

SOS key

Press the button for 3 seconds, the Walkman will sound the alarm.

Key for 'novice mode'

The driving parameters of the Electric wheelchair are automatically adjusted to gear and data suitable for novices to practice.

4. 3. 3 Instruction for LCD screen menu

Electric quantity display

The device controls the electric quantity display light, displays the electric quantity in real time, and displays it in 5 grids

Speed display

LCD screen displays the driving speed of the Electric wheelchair in km/h.
The precision of the displayed speed is $\pm 5\%$.

Speed gear

Press '+' key for once, the speed will be increased to the next gear, gear 5 is the highest.
Press '-' key for once, the speed will be decreased to the next gear, gear 1 is the lowest.
The above function can be achieved in APP.

Display of fault code

For the diagnostic code displayed by the built-in information diagnostics of the product, refer to 5.3troubleshooting for the content.

Bluetooth status display

When Bluetooth is not connected, the Bluetooth indicator on the LCD screen is off ;
When Bluetooth is connected, the Bluetooth indicator on the LCD screen is on.

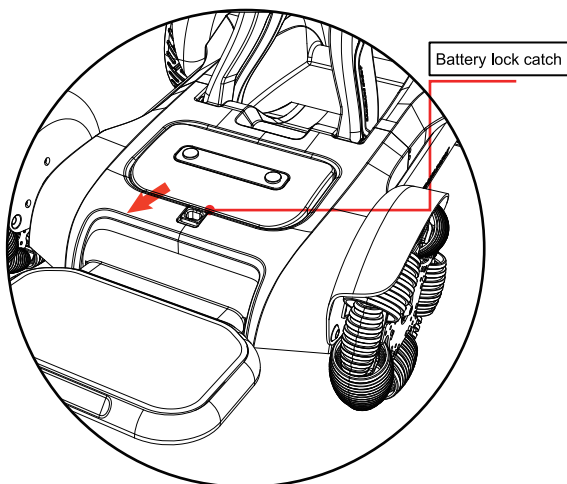
Percentage of Electric quantity displayed

The Electric quantity is displayed in percentage, and the above function can be achieved in APP.

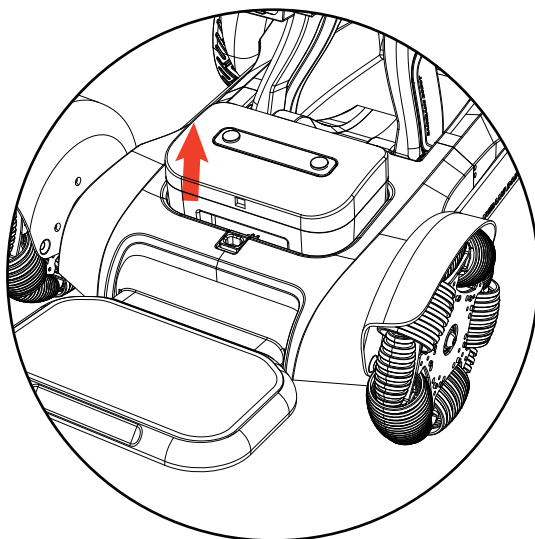
4.4 Battery

4. 4. 1 Battery removal

- 1 • Open the battery lock catch on the Electric wheelchair chassis

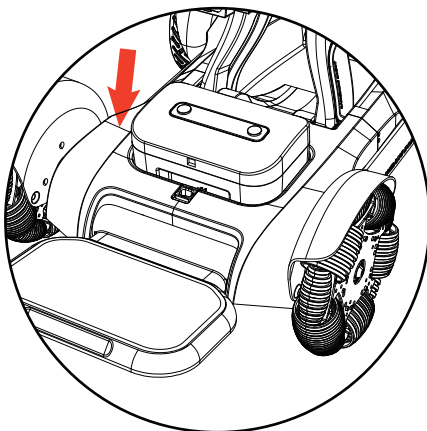


- 2 • Take out the battery upwards

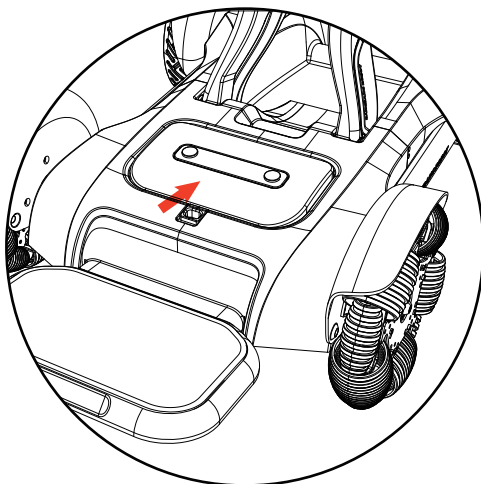


4. 4. 2 Replacement of battery

- 1 ▪ Place the battery into the battery slot

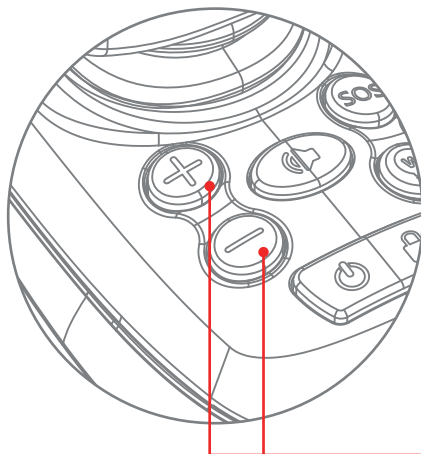


- 2 ▪ Close the battery lock catch



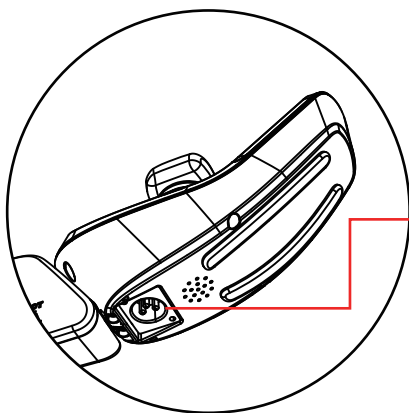
4.5 Switch to pushing mode

Press '+' key and '-' keys at the same time to enter pushing mode and swing the rocker; this will quit the pushing mode.



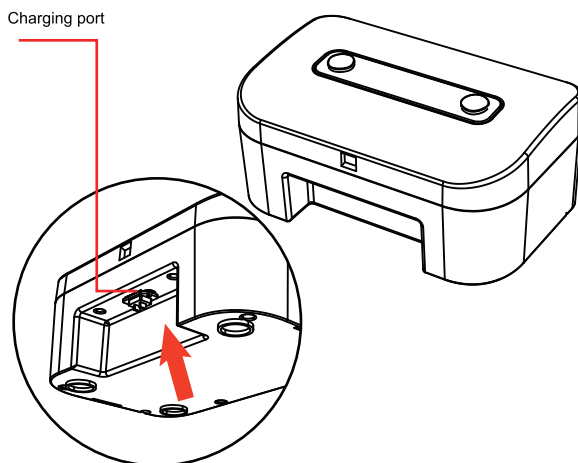
Enter pushing mode

Charging Method I: Connect the charger and plug it into the port below the controller.



Charging portcontroller

Charging method II: Take out the battery box and plug the charger to the charging port of the battery box.



4.6 storage

- The packaged Electric wheelchair should be stored at a temperature of -40°C - 60°C
- The relative humidity does not exceed 95%.
- Atmospheric pressure shall be 56-146kPa and the Electric wheelchair shall be stored in the room without the harmful gas that may cause corrosion and with good ventilation; it is not allowed to press and pile up Under packed status, the maximum piling height is three layers.
- DO NOT store in places that can get close to high temperature sources or direct sunlight for a long periods of time.
- If you need to store for a long time, please turn off the power switch after full charge.
- If the product is stored exceeding one month, please fully charge and then continue storing and using.

05 / Maintenance and troubleshooting

5.1 Daily spot inspection and maintenance scheme

- Regularly (weekly or monthly, depending on the use frequency) check the connecting parts, such as screws and nuts, etc. of the frame for loosening, falling and corrosion, etc.;
- Regularly check the movable joint parts for jam and falling, etc.;
- Regularly check the tires for aging and serious wear, etc.;
- During use of the Electric wheelchair, in case of rain or wet weather, the Electric wheelchair shall be wiped dry as soon as possible to prevent rust due to dampness;
- Solarization of the Electric wheelchair under high temperature weather shall be avoid.

5.2 Troubleshooting

When you call after-sales service at 4000-400-882 for repairing, please provide the fault code.

For the function of built-in information diagnostor of the product, the displayed diagnostic code can react the abnormalities.

Fault code	Abnormal state	
20-24	Rocker protection	Fault alarm
E1	Keystroke anomalies	Fault alarm
E5	Relay abnormalities	Fault alarm
E6	Machine protection	Fault alarm
90-99	Drive protection	Fault alarm
40-42	Holding brake opening	Fault alarm

4.6 storage

After each use:

- Wipe the parts except for wheels using a wet towel.
- Wash the wheels with water and avoid using petroleum-based solvents.
- Do not use a high-pressure washer.
- After cleaning, visually inspect if the surface is clean.

06 / APP operation guide of scooter

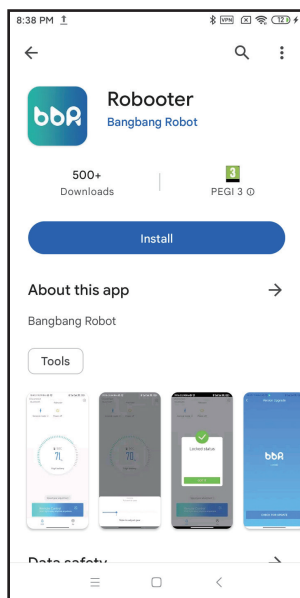
Download APP

Scan the QR code to download Mobile Application

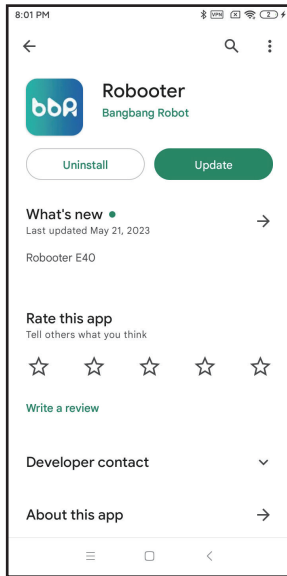


Install APP

(Android)

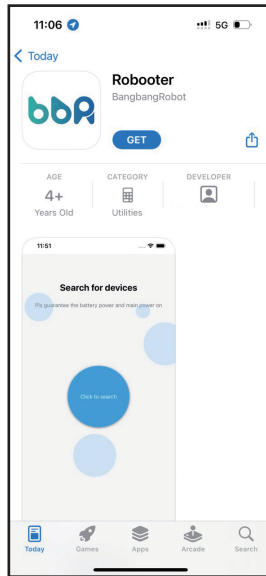


The above screen is displayed after scanning, click [Install](#) to install the mobile application.

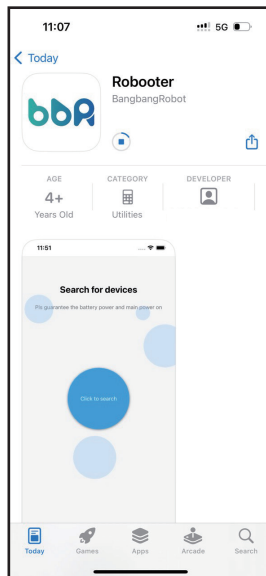


The above screen indicates that the installation of the mobile application is complete.
Click  on the above screen to open the mobile application.

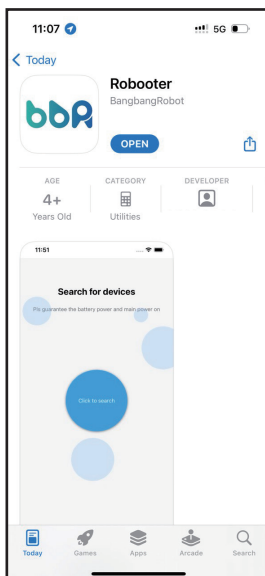
(IOS)



The above screen is displayed after scanning. Click [GET](#) to install the mobile application.



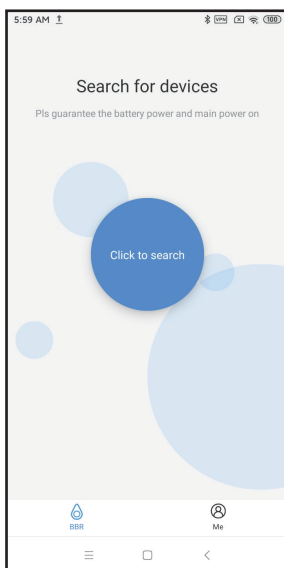
The above screen indicates that the mobile application is being installed



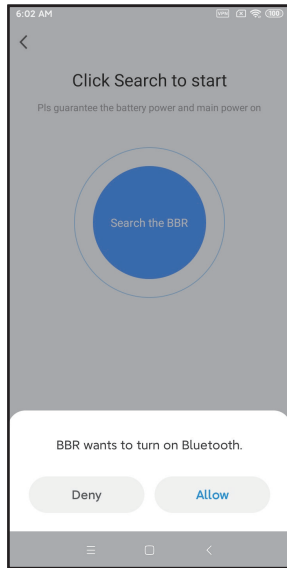
The above screen indicates that the installation of the mobile application is complete.

Click **OPEN** on the above screen to open the mobile application

Connect Device



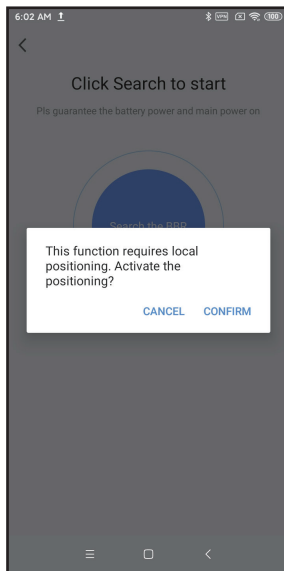
Click **Click to search** on the above screen to search device.



Note: Obtain phone permissions

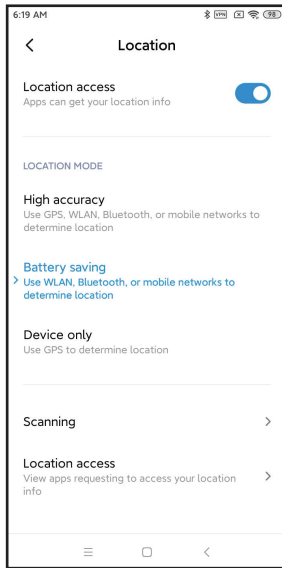
Click [Allow](#) on the above screen to turn on your mobile's Bluetooth

Install APP



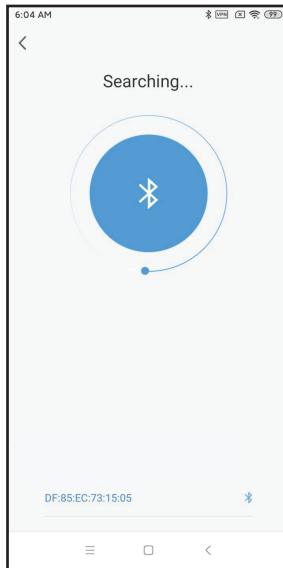
Note: Obtain phone permissions

Click [CONFIRM](#) on the above screen to turn on your phone's location.



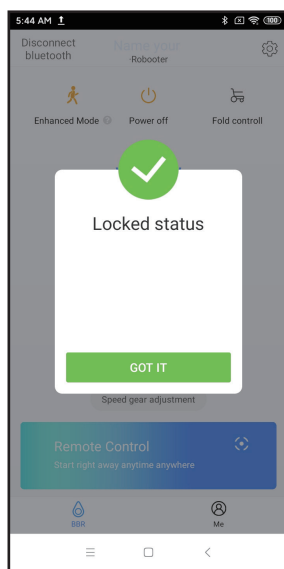
Note: Obtain phone permissions

Click "Location access" on the above screen to turn on your phone's location.



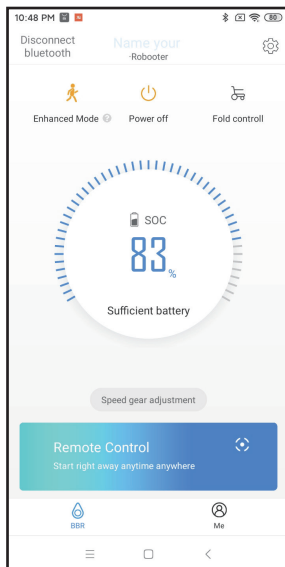
Once the above operation has been done mobile application start searching for the device.

Click DF:85:EC:73:15:05 to pair the mobile application and device.



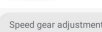
Note: When the wheelchair is in lock mode, display this interface. After turning on the wheelchair, enter the lock mode automatically. Only use the app after unlocking on the wheelchair.

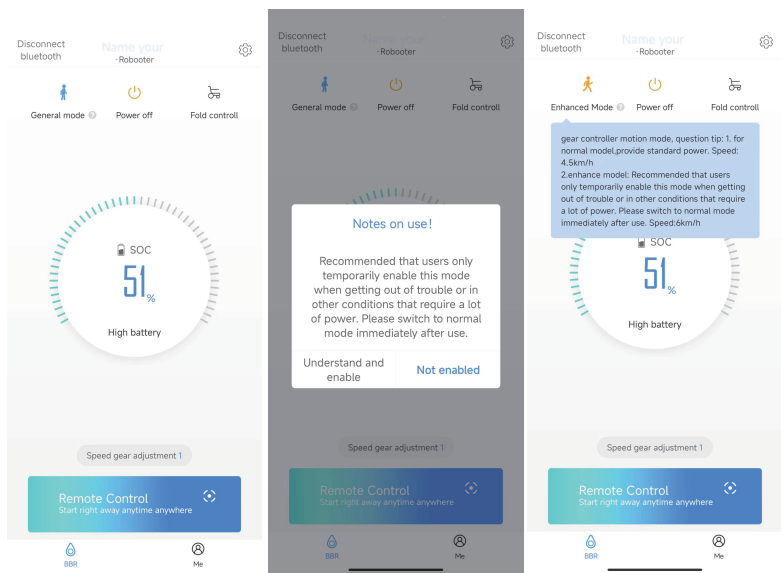
The above screen indicates a successful connection. Click **GOT IT** in the above screen to access status screen of the electric wheelchair



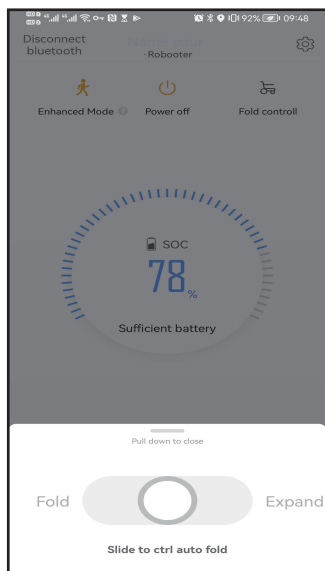
Click  to turn off the device.

Click  to disconnect the bluetooth connection.

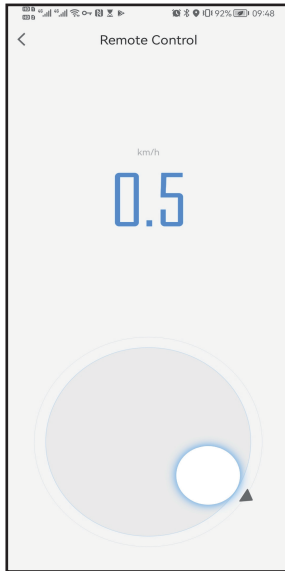
Click  to adjust the device speed. (Adjustable speed in 5 gears)



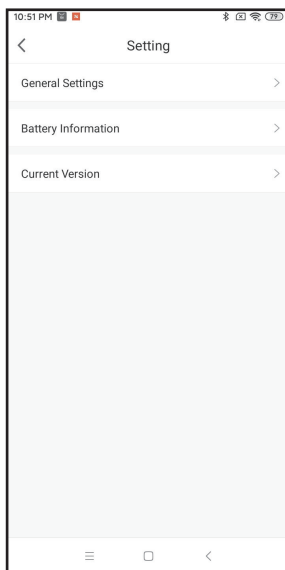
Click  in status screen to access enhanced mode adjustment and general mode adjustment. (General mode speed: 4.5km/h, enhanced mode speed: 6km/h)



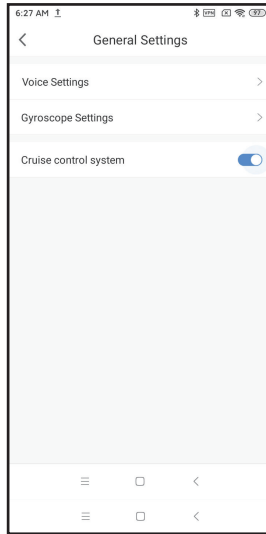
Click  in the status screen to access the remote folding control screen. The circle slides left to fold the device and right to expand it.



Click Remote Control the status screen to access the remote control mode
 Circle up to move forward, down to move back, left to turn left, right to turn right.

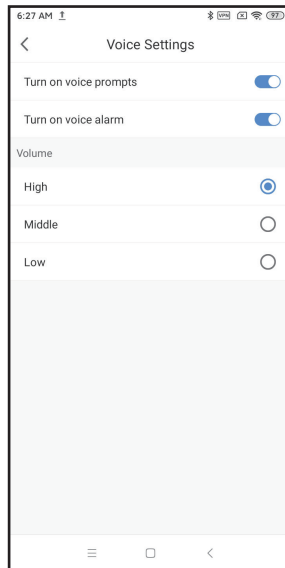


Click  in the top right corner to access the setting screen



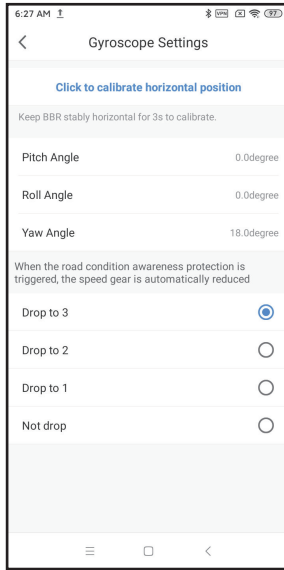
Click “General Settings” in the setting screen to access the general settings mode.

Cruise control system: slide left to turn off cruise control, slide right to turn on cruise control.



Click”Vocice settings” in the General settings to access the voice settings mode. Turn on voice prompts: slide left to turn off voice, slide right to turn on voice.

Turn on voice alarm: slide left to turn off voice, slide right to turn on voice. Adjustable 3-step volume: High, Middle, Low.



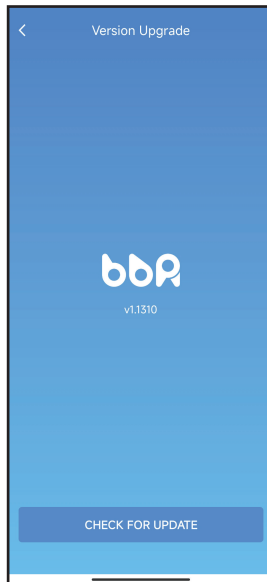
Click”Gyroscope settings”in the General settings to access the gyroscope settings mode.

Click on "Click to calibrate horizontal position" to calibrate the horizontal position. (factory setting ok, no user action required)

When the road condition awareness protection is triggered, the speed gear is automatically reduced, 4 modes adjustable: speed down to 3rd gear, speed down to 2nd gear, speed down to 1st gear, no speed reduction.



Click “Battery information” in the setting screen to access battery information screen. Shows battery power percentage and battery status.



Click “Current Version” in the setting screen to access version upgrade mode. Show current device version.
Click [CHECK FOR UPDATE](#) to upgrade version of device.

07/Cybersecurity

We recommend the user creates strong password for mobile phone, to avoid illegal intrusion of equipment.

Please download the App by scanning the QR code in the manual at any time.

Please only update the App through google play (for Android phone) or app store (for iphone) at any time.

Please do not install APPs on jailbroken phones.

08/Wireless technology and functions

8.1 Wireless functions description

The wheelchair can be controlled by mobile phone via Bluetooth 4.1(IEEE 802.15.4 Bluetooth) technology.

8.2 operating characteristics of the wireless technology

- Protocol: Bluetooth 4.1
- Frequency band: 2.4GHz ISM frequency band
- Frequency: 2.400GHz ~ 2.4835GHz GHz
- Modulation technology: GFSK
- Spread spectrum technology: Frequency-Hopping
- Output power: +4dBm~-20dBm (in 4dB steps)
- Sensitivity: -93dBm(BLE mode)
- Distance:<10m

8.3 Wireless security measures

At the application layer, AES128 is used to re-encrypt the interactive data by hardware. The 128-bit initial password will be calculated by the feature code of the interactive parties according to the algorithm and will be continuously updated and synchronized during the connection process. Since there are dynamic random change codes and sequence codes in the data, the actual data sequence of each communication is changing, and the real data will be seen after decryption. If the data is incorrect or the content verification is illegal several times, the connection will be interrupted and the blacklist will be added at the same time, until the coverage can be removed. Ensure that the signal is transmitted as expected.

8.4 Information addressing wireless issues

If mobile phone cannot control the wheelchair correctly, please stop use mobile phone and use the button on wheelchair immediately.

Please remove other wireless devices from the environment, and connect mobile phone to wheelchair again, try controlling wheelchair with mobile phone. Do not use mobile phone until mobile phone can control the handpiece correctly.

8.5 Information about any wireless coexistence issues and mitigations

When using the mobile phone, try to keep other wireless devices away from the wheelchair, at a minimum of 2m distance.

8.6 RF Wireless communications information

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) this device must accept any interference received, including interference that may cause undesired operation.

8.7 Warnings

Stay away from environments with high levels of EM disturbances.

Do not operate the device if its performance is compromised due to EM disturbances. Using accessories and cables other than those specified or provided by the manufacturer may result in increased electromagnetic emissions or decreased electromagnetic immunity, leading to improper operation.

During operation, avoid placing the device near other devices, as this may result in improper operation. If such proximity is necessary, ensure that both the device and the adjacent device are operating normally.

While in use, keep portable RF communications equipment (including peripherals like antenna cables and external antennas) at least 30 cm (12 inches) away from any part of the device, including manufacturer-specified cables. Failure to do so may degrade the equipment's performance.

e.WARNING: Common RF emitters in close proximity (such as RFID readers, electronic security systems like metal detectors and electronic article surveillance, near-field communications systems, wireless power transfer, and specialized medical emitters like electrocautery, MRI, electrosurgical units, and diathermy equipment) may produce EMI. Please minimize exposure to these devices as much as possible during use.

09/Instruction to Electric wheel-chair product service

9.1 Quality warranty dictionary and period for wearables

List of wearables	"Three guarantees" term	Range of "three guarantees"
Roller of omnidirectional wheel	1,200km or 6 months (the earlier one shall prevail)	The roller has degumming or slip
Driving wheel	1,200km or 6 months (the earlier one shall prevail)	The surface of the tire cracks
Cushion	3 months	The issues of fading or sick seam, etc., due to non-human factor
Backrest	3 months	The issues of fading or sick seam, etc., due to non-human factor
Safety belt	3 months	The issues of fading or sick seam, etc. due to non-human factor
Key	3 months	3 months
Enclosure and pedal cushion	Not in the range of warranty	

9.2 Service obtaining

In case warranty services are required, users can directly contact the authorized service agencies or log in to the official website of the Company at www.bongbongrobotic.com to leave a message on the support page or call the official after-sales service at 4000-400-882 to reach us. We will arrange after-sales technicians to assist you.

When applying for warranty, please provide valid proof of purchase and the "three guarantees" certificate. During product purchase, users should request an invoice with complete information from the distributor and retain it. If the invoice does not accurately correspond to the products, has been altered, or is unclear, it will be considered invalid. If the product has undergone repairs or replacements, users should maintain corresponding maintenance or replacement records.

In cases where users cannot provide the above-mentioned documents, if we can confirm that the product or part is still within the warranty period, we may offer warranty service, but these conditions are not obligatory. When applying for warranty service, users must follow our necessary procedures, including providing relevant information and adhering to specific identification and problem-solving steps.

Except as specified herein, warranty services are provided by authorized service agencies for the respective products. In instances of multiple authorized service agencies, users can choose one nearby.

Excepting for the Company instructs otherwise, product replacement or product return is generally conducted by the distributor of the product. In case of replacement or return, you shall submit the product to the distributor, the distributor will replace or return for you in accordance with the process.

In this document, distributor means the merchants provide product to the users by sales or other methods. Shanghai Bangbang Robot Co., Ltd., authorized service agencies and distributors providing warranty in accordance with the regulations of this document are collectively called as "service provider".

10/Disclaimer

Content of the Product Manual is the intellectual property of Shanghai BangBang Robotics Co., Ltd. (hereinafter referred to as the "Company") and copyright is reserved by the Company. All parts of the Products, including accessories and software, are owned by the Company. Without written consent of the Company, no one shall copy, extract or translate to other languages the Manual or any content included in any form. The Company carefully compiles the Product Manual with a sense of responsibility for users, but does not guarantee completeness or accuracy of its content. The Product Manual, as a pure technical document, includes no implied content or content with oblique reference to any third party and assumes no responsibility for understanding ambiguity by the users for typo reasons. In the case of direct or indirect loss of information or career termination caused by the Product Manual or all the information on the products mentioned inside, the Company bears no responsibility in this regard.

In use of all the products of Shanghai BangBang Robotics Co., Ltd., the users shall strictly follow the Product Manual and instructions for use on the Company's official website (www.bangbang-robotics.com) to operate the Robot and not violate any prohibition marked in the Product Manual in the process of using the Robot. In the case of physical injury or property damage to the users or third parties caused by their operation without strictly abiding by the instructions for use or in violation of the prohibitions marked in the Product Manual, the above-mentioned actors shall bear corresponding legal responsibilities.

As the Company keeps improving and updating the Products, it's necessary to regularly log onto its official website to inquire latest instructions for use and use conditions or contact the distributor for the latest user manual. The Company reserves the right to revision to the Product Manual without further notice.

Right to ultimate interpretation reserved by the Company.

11/Reprot serious event to FDA

"MedWatch is the Food and Drug Administration's (FDA) program for reporting serious reactions, product quality problems, therapeutic inequivalence/failure, and product use errors with human medical products, including drugs, biologic products, medical devices, dietary supplements, infant formula, and cosmetics.

If you believe that you or a family member has experienced a serious reaction to a medical product, we encourage you to bring the reporting form to your doctor. Your healthcare provider can offer clinical information from your medical records to assist the FDA in evaluating your report.

However, we understand that for various reasons, you may prefer not to have the form completed by your healthcare provider, or your healthcare provider may choose not to fill out the form. Your healthcare provider is not obligated to report to the FDA. In such cases, you can complete the Online Reporting Form yourself.

You will receive an acknowledgment from the FDA once your report is received. Reports are reviewed by FDA staff, and you will be contacted only if additional information is required.

To submit voluntary adverse event reports to the FDA, please use one of the following methods:

- 1.Report Online at <https://www.accessdata.fda.gov/scripts/medwatch/index.cfm?action=reporting.home>
- 2.Use the Consumer Reporting Form FDA 3500B. Follow the instructions on the form to either fax or mail it for submission.
- 3.For assistance in filling out the form, refer to MedWatchLearn. The form is available at www.fda.gov/downloads/aboutFDA/reportsmanualsforms/forms/ucm349464.pdf
- 4.Call FDA at 1-800-FDA-1088 to report by telephone.
- 5.Health professionals often use Reporting Form FDA 3500. The form is available at www.fda.gov/downloads/aboutFDA/reportmanualsforms/forms/ucm163919.pdf.

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