



## **Robstep M2**

### Manual

- ◆ Thank you for choosing and buying Robstep M2
- ◆ This manual is designed to help you assemble, use and maintain Robstep M2 quickly



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# 1. Overview

## 1.1 General

- ◆ Introducing characteristics and principles of Robstep M2
- ◆ Describing safety and warning information
- ◆ Introducing every part and component of Robstep M2
- ◆ Notes for safe driving
- ◆ Providing driving methods and skills in detail
- ◆ Providing maintenance and servicing methods in detail

## 1.2 Reading Guide

- ◆ This manual is designed to help you use Robstep M2 correctly. For detailed and comprehensive information, please watch the video tutorial for safe driving.
- ◆ You can download the video tutorial for safe driving and the PDF file of this manual at the official website of Robstep Robot Co., Ltd. ([www.robstep.com](http://www.robstep.com)). These videos provide important information of products and guide you use Robstep M2 safely. To avoid injury, please drive Robstep M2 as specified in the video tutorial for safe driving.
- ◆ Please open the PDF file of this manual with Adobe Reader.

## WARNING

- 
- ◆ When driving Robstep M2, you may suffer injury from falling, losing control, collision, etc. To reduce unknown risks, please read this manual carefully and watch the video tutorial.
-

## 1.3 Description of Warning Signs

When reading this manual, please pay special attention to the following warning information:

|                                                                                                  |                                                                      |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
|  <b>WARNING</b> | <b>Warning: The user's improper operation may cause injury</b>       |
|  <b>NOTE</b>    | <b>Note: Items and using methods requiring attention of the user</b> |

## 2. Product Introduction

### 2.1 Model Description

- ◆ The product you purchased is the Robstep M2 two-wheel electric human transporter with dynamic balance developed and produced by Robstep. This product controls driving by the dynamic balancing principle, and controls the driving speed and direction of Robstep M2 with the adjustment of human postures.
- ◆ Robstep M2 is the second generation of Robstep M1, has greatly improved experience, safety, appearance, etc., and provides better driving experiences to the user.
- ◆ Robstep M2 is suitable for private trips, work inspection, indoor stadiums, tourism and entertainment, trips by car or subway, etc., to facilitate the trips of the user.

### 2.2 Serial Number of Products

- ◆ Every Robstep M2 has a unique serial number, which is used for quality tracing, insurance claim and claim for missing. Please retain the serial number.

- ◆ Method to acquire the serial number:  
Acquire from the packing case or the SN registration card (please take care of the serial number after acquisition).

## 2.3 Principle of Operation

- ◆ Robstep M2 mainly comprises the transporter body, wheels and a circuit system. Wheels are installed on both sides of the transporter body, and modules of the circuit system such as the power supply, a control circuit, a driving circuit, sensors and a control switch are installed in the transporter body. The wheels and the transporter body are connected by a rotary shaft, and a speed sensor, a gyroscope and an acceleration sensor transfer the rotary speed of wheels and the posture information of the transporter body to the control circuit, for controlling the torque and the moving speed of a motor to keep the balance of Robstep (Robstep M2 and the user). When the user stands on Robstep M2 correctly, Robstep M2 can match well with their body, and a power device controls the wheels to move forward or backward to keep balance when the body slightly inclines forward or backward.
- ◆ The handle has the function of controlling the transporter body to turn. When the handle turns, the transporter body turns.

### WARNING

- ◆ The inertial dynamic balancing and stabilization system built in Robstep M2 can keep the balance of the transporter body from front to back. However, the system cannot control the stable balance from left to right, so when the driver turns, their center of gravity must incline toward the steering rod, to overcome the centrifugal force of steering and

## 3. Remote control

### 3.1 Remote Control Type 1

- ◆ This type of remote control is a rechargeable device with information display and control functions and a maximum remote-control distance of 10 m, within which Robstep M2 can be controlled remotely in operation, and its working status can be monitored.

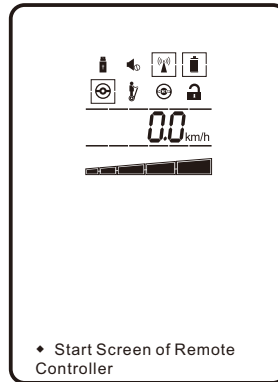


## NOTE

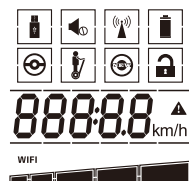
- ♦ It is recommended that you charge the remote controller fully before use at the first time.
- ♦ Please make sure the battery of the transporter body is installed correctly before you operate the remoter controller.
- ♦ Please make sure the charging port and the data plug are dry before you charge the remote controller.
- ♦ The time to fully charge the remote controller is 4 hours, and overcharging has adverse effect on performance of the battery.
- ♦ It is necessary to charge the remote controller for startup when the remote controller fully charged is powered off for more than 10 days.

### 3.1.1 Startup

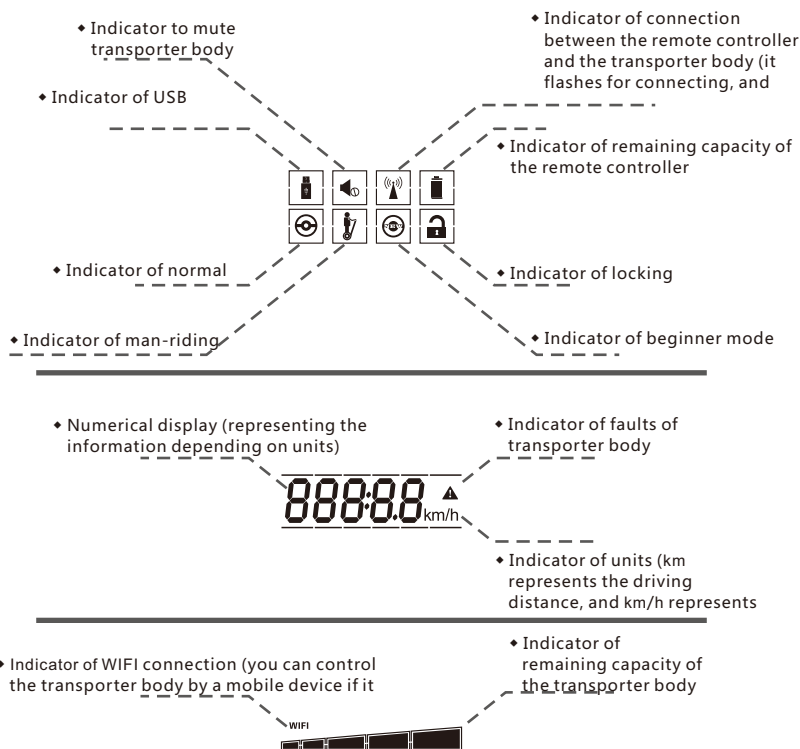
- ♦ The remote controller for Robstep M2 starts up when you hold down the " " key.



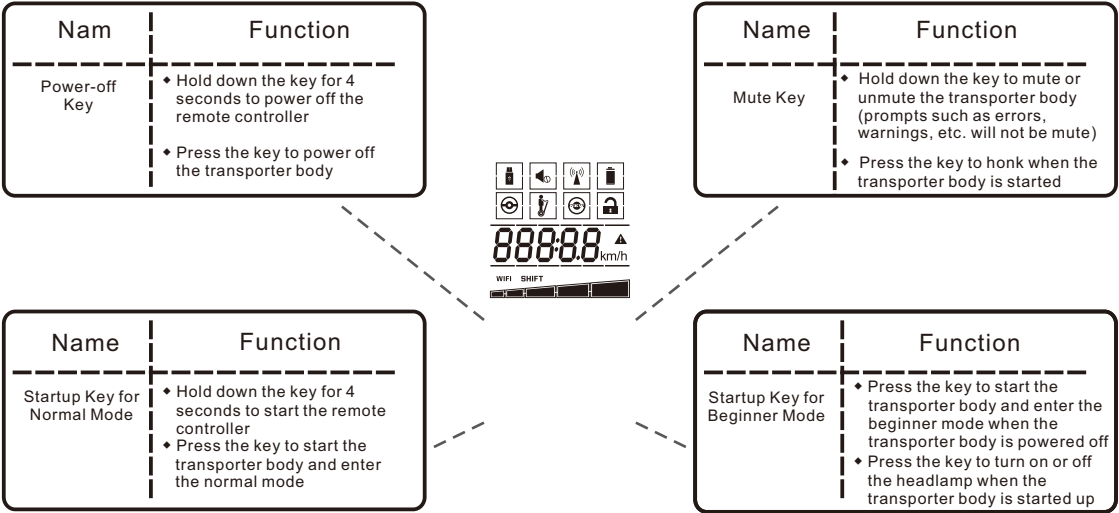
### 3.1.2 Detailed Description on Screen of Remote Controller



Screen of the remote controller



3.2.3 Description on Key Functions of Remote



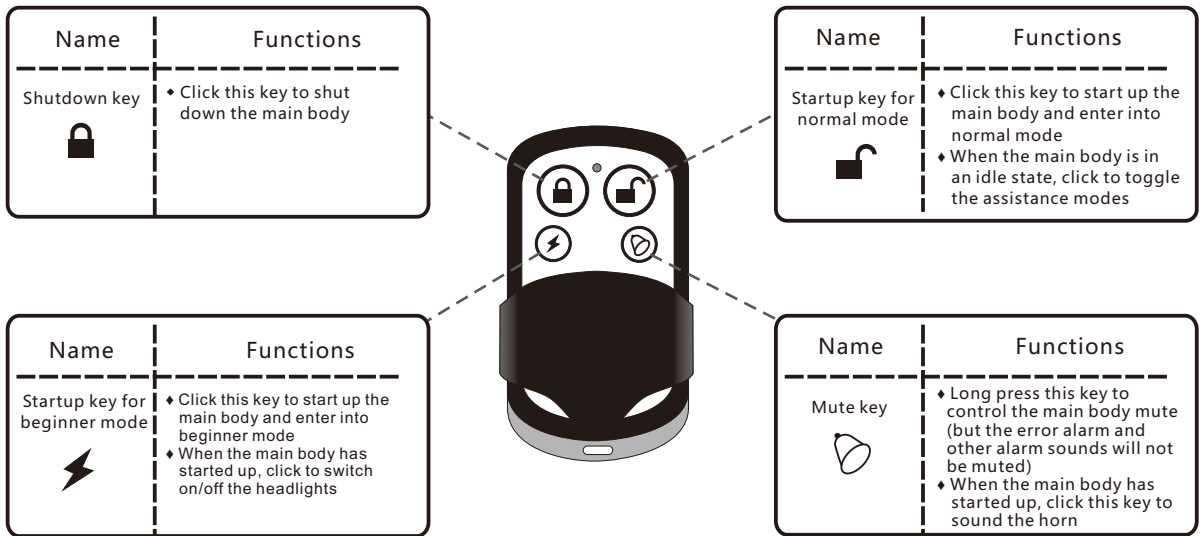
**NOTE**

- When Rostep M2 is under the normal mode or the beginner mode, the transporter body will be powered off automatically and keep connected with the remote controller after idling for more than 10 minutes; if the transporter body is under the sleep mode (Rostep M2 is under the idle status for more than 18 hours or the keys and of the remote controller are pressed), the remote controller will be powered off automatically.

## 3.2 Remote Control Type 2

- ◆ This type of remote control is powered by replaceable batteries, and its maximum remote-control distance is 10 m. In this range, Robstep M2 can be controlled remotely in operation.

### 3.2.1 Description of key functions



### 3.2.4 Detailed notes to the operation of remote control keys

| Type 1 | Type 2                                                                            | Startup of the main body                                                                                                | Shutdown of the main body                                      |
|--------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
|        |  | Click: shutdown in unmanned state; no functions available in manned state<br>Long press: shutdown of the remote control | Click: no function<br>Long press: shut down the remote control |
|        |  | Click: main horns<br>Long press: mute/unmute                                                                            | Click: no function<br>Long press: mute/unmute                  |
|        |  | Click: Enter assistance mode in unmanned state<br>Click: no function in manned state                                    | Click: Startup in normal mode                                  |
|        |  | Clicks: headlight ON/OFF                                                                                                | Click: Enter beginner mode                                     |

## 3.3 Introduction to Working Modes of Transporter Body

|                |                                                                                                                                                                                                                                     |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Beginner       | The mode is suitable for beginners, and has the speed limit of 5km/h and stable balance                                                                                                                                             |
| Normal Mode    | The mode is suitable for skilled users, and has the speed limit of 15km/h and high steering sensitivity                                                                                                                             |
| Assistant Mode | The mode is suitable for situations that the user is not riding or the road is bad for riding, and Robstep M2 assists the user when the user tows it. The transporter body automatically exits the mode after idling for 10 seconds |
| Sleep Mode     | Under the mode, the system is powered off. To activate Robstep M2, please press the startup button on the back of the transporter body                                                                                              |

## 4.Information about Robstep M2

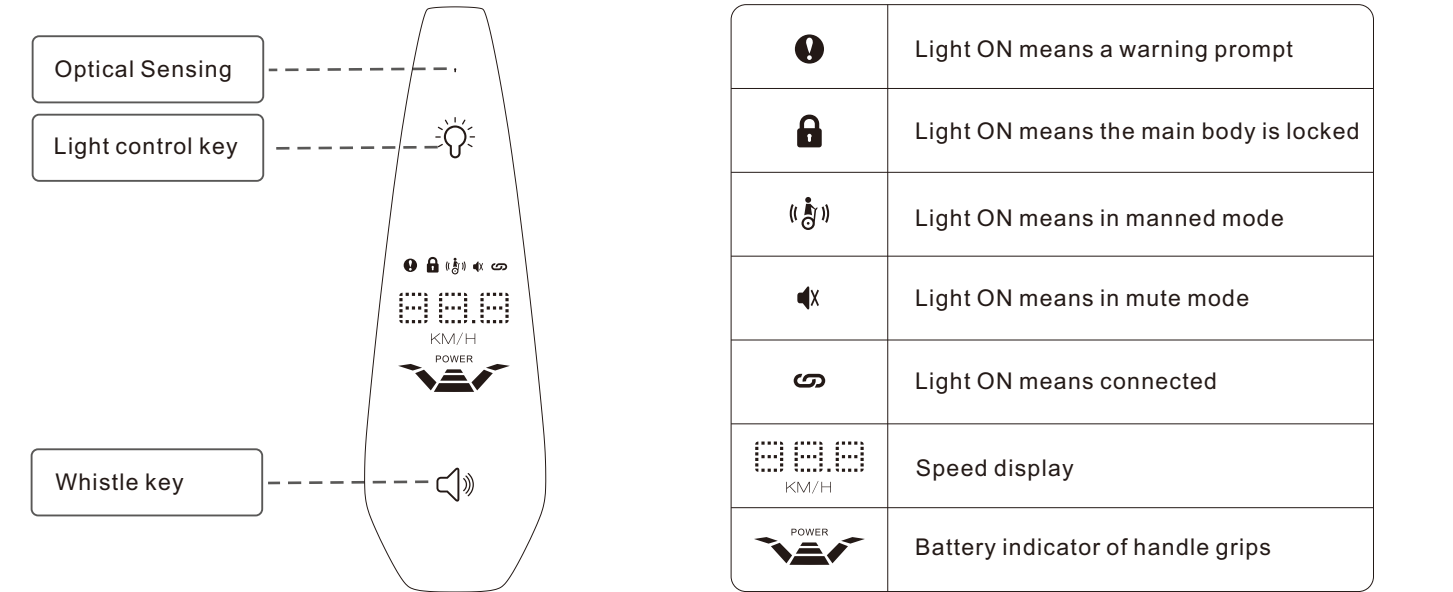
### 4.1 Main Parts

- ♦ A whole Robstep M2 mainly comprises the handle, a stretch rod, the transporter body, the battery, wheels, etc. The transporter body comprises a display panel, a grip, a foot pad, etc.



4.2 The information on the handle grip display interface (this part is optional; use according to your configuration)

- ◆ M2 with a displayed handle grip is aimed at giving users a better driving experience, and the touch intelligence operations are stylish, fashionable and high-tech.



4.2.1 How the displayed handle grip works

The displayed handle grip is powered by the rechargeable Li-ion battery. In a normal working state, it can display the various states of M2, and the touch keys can be used to control the headlights and horns of M2. In the following cases, the interface will automatically enter into sleep status:

- ◆ When M2 is in sleep saver mode, the handle grip will not be connected to M2, and it will enter into sleep status without any touch key operations within 1 minute

- ◆ When M2 is in shutdown/locked/charging status, the handle grip will shut off its display without any key operations within 1 minute and enter sleep status without any key operations within 30 minutes
- ◆ The handle grip will enter into sleep status when the battery charge is low

## NOTE

- ◆ If the handle grip enters into sleep status, press any touch key to wake it up.

### 4.2.2 The touch-key functions

The displayed handle grip has two touch keys, and their functions are shown in the figure below:

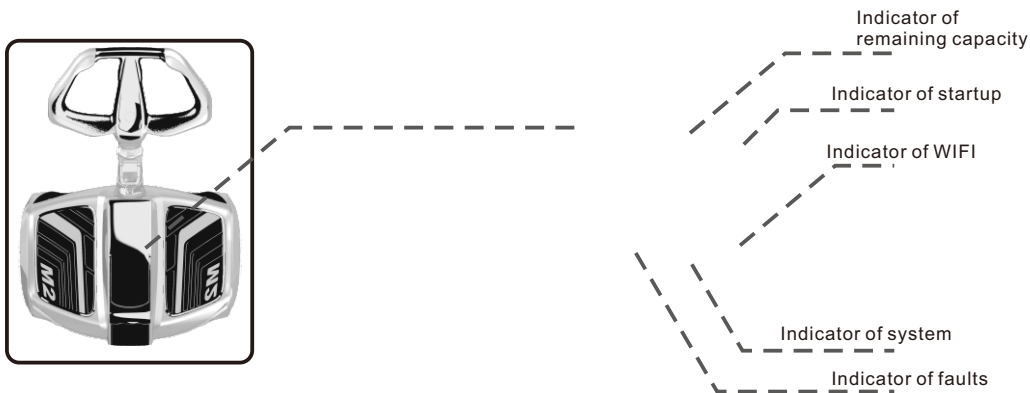
|                                                                                   |                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"><li>◆ Click to switch the headlight</li><li>◆ When the main body is idle, long press the key for about 8 seconds to lock the main body, and to unlock it, just shut down the main body using the remote control</li></ul> |
|  | <ul style="list-style-type: none"><li>◆ Click to whistle</li><li>◆ Long press for about 8 seconds to switch to mute</li></ul>                                                                                                                               |

## NOTE

- ◆ Do not hold down 2 keys and release 5 times, because this action will set the handle grip to enter into the wireless pairing state. If this happens, do not touch any buttons and the pairing status will automatically exit in 1 minute.

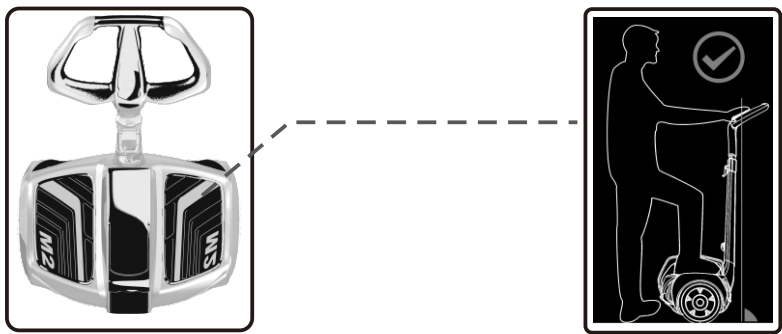
### 4.3 Information about Display Panel

- ♦ The display panel of Robstep M2 shows the operation status of the transporter body.



### 4.4 Foot pad

- ♦ When the transporter body is started up, it automatically keeps balance if the user steps on the foot pad of Robstep M2.



## 4.5 Battery

- ◆ This section mainly introduces the specifications, correct charging method, serving method, safety notes, etc. of the battery of Robstep M2.

### 4.5.1 Specifications of Battery

| Battery Type              | 4.4Ah Lithium Battery                                    | 6.6Ah Lithium Battery                                    |
|---------------------------|----------------------------------------------------------|----------------------------------------------------------|
| Charging Time             | Around 4 hours                                           | Around 6 hours                                           |
| Voltage                   | 72v                                                      | 72v                                                      |
| Weight of Battery         | 2.0kg (only for reference, be subject to actual battery) | 3.0kg (only for reference, be subject to actual battery) |
| Initial Capacity          | 4.4Ah                                                    | 6.6Ah                                                    |
| Size                      | 65±0.5 (length) * 18±0.5 (width)                         | 65±0.5 (length) * 18±0.5 (width)                         |
| Working Temperature       | -20 ~60 (the recommended working temperature: 0 ~45 )    | -20 ~60 (the recommended working temperature: 0 ~45 )    |
| Charging Temperature      | 0 ~45 (the recommended charging temperature: 10 ~30 )    | 0 ~45 (the recommended charging temperature: 10 ~30 )    |
| Storage Time (10 ~30 )    | More than 6 month (stored after full charge)             | More than 6 month (stored after full charge)             |
| Relative Storage Humidity | 80±25%R.H                                                | 80±25%R.H                                                |

#### 4.5.2 Capacity Depletion of Battery

- ◆ When five green LED indicators on the display panel extinguishes, the capacity of the transporter body of Robstep M2 is very low, the transporter body produces a voice prompt "The transporter body is almost out of battery, please get off", the system decelerates automatically, and the user must stop driving at this time because the transporter body will be powered off automatically after 7 seconds. In this case, if the user does not stop driving Robstep M2, he/she is inclined to fall and suffer injury, and the service life of the battery may shorten.
- ◆ When the user starts the transporter in the case that the capacity of the battery is very low, the transporter body produces a voice warning "Please use the transporter after full charge", and it cannot work.

### **WARNING**

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- ◆ The user should hear voice prompts and operate correspondingly for safety when driving.
- 

#### 4.5.3 Steps to Charge Battery

- ◆ Open the charge port on the transporter body of Robstep M2.
- ◆ Insert one end of the charging cable into the charge port on the transporter body of Robstep M2 (make sure the charge port is dry), and insert the plug of the charger into the power socket.
- ◆ When the indicator of the charger turns to green from red, the battery is fully charged.

### **WARNING**

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- ◆ Please use a local standard plug
- ◆ Please charge and store the battery as described in the manual. Improper operation may cause damage to the battery or reduce the service life of the battery.
- ◆ The time to fully charge Robstep M2 is around 4 to 6 hours, and the charger will be powered off automatically after full charge.
- ◆ The battery has a limited service life, the normal using frequency is 600, and the capacity declines to only 80% of the original capacity after the using frequency exceeds 600. If the use frequency exceeds 600, the using time may quickly shorten after the battery is fully charged.
- ◆ Please fully charge the battery before using the first time. The battery will discharge slowly if it is not used for a long time due to storage and transportation.
- ◆ The battery can be charged before full discharge or capacity depletion.
- ◆ Please charge the battery under the temperature from +10°C to +30°C to keep the optimum performance of the battery.
- ◆ It is normal that the battery warms up after being used for a long time. (the recommended working temperature of the battery is from 0°C to 45°C)
- ◆ In cold places, the driving distance of the transporter will shorten even if it uses a fully charged battery.

- ◆ Please keep the environment for charging clean and dry.
  - ◆ Please do not charge if the charge port is wet.
  - ◆ Please do not throw the battery into a fire, heat the battery, or store the battery under high temperatures.
  - ◆ Please do not throw the battery into water, and keep it dry during storage.
  - ◆ Please do not insert conductive articles into the charge port, or electronic devices in the transporter body may be damaged due to short circuit.
  - ◆ Please do not disassemble the battery or modify it.
- 

#### 4.5.4 Ultra-high or Ultra-low Temperature of Battery

- ◆ Robstep M2 has the maximum operating efficiency when the temperature of the battery is within the range described in the battery specification. When the temperature of the battery is too high or too low during driving, the system triggers a safety warning.
- ◆ The temperature before or after charge must be in the recommended range. When the temperature is close to the recommended value, the charging efficiency is highest. When the temperature is too low or too high, the charging time will extend or the battery can not be fully charged.
- ◆ Under low temperature, the driving distance of Robstep M2 will shorten.

#### 4.5.5 Notes on Transporting Battery



- ◆ The lithium battery is regarded as a dangerous article, and it may not be transported without the prior approval of local laws.
  - ◆ If you want to transport Robstep M2 with a lithium battery by air or separately transport the lithium battery of Robstep
- 

#### 4.5.6 Other Notes for Using Battery



- ◆ Please strictly use the battery as described in the manual to ensure your safety and the safety of others, extend the service life of the battery as long as possible and improve its performance.
- ◆ When you find the battery is damaged, leaks, has a peculiar smell or warms up, please do not use. If Robstep M2 is out of battery, please stop using immediately and charge it.

- ◆ If you will not use Robstep M2 for a period of time, please store it after full charge and charge it every three months or more frequently.
  - ◆ When the battery is used up, please charge it in time, or the battery may be damaged due to over-discharge.
  - ◆ When the capacity of the battery is low and the transporter body produces a warning and automatically decelerates to stop, please stop driving immediately and charge the battery. Before charging, please do not try to use Robstep M2. If you try to use it, the service life of the battery may be reduced, and safety accidents may happen.
  - ◆ Only professionals can disassemble and maintain the battery.
  - ◆ Please do not allow pets or children to come in contact with the battery. Please make sure the charger is pulled out before installing the battery or driving. All activities related to Robstep M2 are dangerous during charging.
  - ◆ The battery contains dangerous substances, please do not try to open or insert any article into the battery.
  - ◆ Please do not come in contact with any substance leaking from the battery.
  - ◆ Please only use the charger provided by Robstep to charge Robstep M2.
  - ◆ The battery of Robstep M2 should be transported and treated with the prior approval of local laws.
-

## 5. Safety Notes for Robstep M2

- ◆ We hope all drivers drive Robstep M2 safely and enjoy the driving. All previous experiences on learning how to drive bicycles and cars, ski or use other similar traffic tools are suitable for our product.
- ◆ You can drive Robstep M2 safely following related contents of the manual and the video tutorial for safety driving. We strongly recommend you read the manual carefully and watch the video tutorial for safe driving before driving Robstep M2 at the first time. Before driving, please check tires of Robstep M2 for damage, and check parts and components for loosening. For any abnormal conditions, please contact the agent for repairs in time.

### **WARNING**

- 
- ◆ Please read the manual carefully and watch the video tutorial for safe driving. You can learn a lot of important safety information from them, such as notes for high-temperature and low-temperature driving, speed limit, safety parking, etc.
  - ◆ Before using Robstep M2, please install every part correctly to protect Robstep M2 from damage during use.
  - ◆ Please do not use Robstep M2 to injure persons or damage property.
  - ◆ Please do not change parts of Robstep M2 at random. If you change them, the performance of Robstep M2 will be affected or even Robstep M2 will be damaged, causing serious injury.
- 

### 5.1 Weight Limit for Driver

- ◆ The maximum weight limit for driver: 120Kg
- ◆ The minimum weight limit for driver: 20Kg

### 5.2 Maximum Driving Distance

The maximum driving distance of Robstep M2 is affected by many factors, such as:

- ◆ Road condition: The driving distance will increase if you drive the transporter on smooth roads; and the driving distance will shorten if you drive the transporter on hilly or bumpy roads.
- ◆ Speed and driving habits: The driving distance will increase if you keep the driving speed stable and constant; and the driving distance will shorten if you start, stop, accelerate or decelerate the transporter frequently.
- ◆ Weight of driver.
- ◆ Temperature: The driving distance will increase if you store and drive Robstep M2 under recommended temperatures; and the driving distance will shorten if you drive the transporter under low temperatures.

- ◆ Proper charging and servicing of the battery is helpful to increase the driving distance, or the driving distance will decrease.
- ◆ The driving distance increases during downwind driving, and decreases for upwind driving.

### 5.3 Driving under High or Low Temperature Environment

- ◆ When you drive Robstep M2 under high-temperature environment, parts and components such as the motor, the battery, the driving system, etc. warm up obviously, which may affect the performance and service life of the whole transporter. When the temperatures of the parts and components rise to the alarm limit (over 50℃), the speed limit decreases, and the driving speed you can drive at decreases; the decrease depends on actual temperatures (the higher the temperatures, the bigger the decrease). When the temperatures of the parts and components rise to the alarm limit (over 80℃), a safe stopping alarm is triggered, and you must stop driving to cool Robstep M2.
- ◆ When you drive in a low-temperature environment, lubrication of movable parts in the transporter body will be affected, and the drag force will increase; at the same time, the discharge and capacity of the battery will decline obviously. Thus, please do not use Robstep M2 violently at low-temperature environment (below -5℃), which may cause injury to persons from falling and control losing of the transporter body.

### 5.4 Uphill or Downhill Driving

- ◆ Robstep M2 has the maximum uphill angle of 15 and the maximum downhill angle of 15. The driver should pay attention to the road grade and drive carefully.
- ◆ When you drive uphill, and the transporter body has worked with heavy loads for a long time, parts and components in the system warm up fast, and the battery is under a heavy load status. The service life and capacity of the battery will shorten after uphill driving for a long time. Thus, we do not recommend you drive Robstep M2 uphill for a long time. In addition, due to the heavy load, the system of the transporter body will automatically decrease the maximum driving speed for safety during uphill driving.
- ◆ When you drive downhill, the system may be under the energy recovery mode depending on the grade and load, thus continuous downhill driving is helpful to increase the driving distance. When the capacity of the battery is very high, continuous charging during downhill driving may cause an overcharge of the battery and even damage to the battery. Thus, the system will automatically decrease the maximum driving speed to reduce the possibility of overcharge.

### 5.5 Speed Limit

- ◆ Robstep M2 can keep the balance of the driver when the driving speed is lower than the limit. When the speed is higher than the limit, the handle of Robstep M2 automatically inclines toward the driver, and the driver can control the speed within the safety limit.
- ◆ Please keep a certain distance between the body and the handle.

## **WARNING**

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- ◆ Please do not drive erratically or turn on a slope, or the balance angle of Robstep M2 may be offset to affect driving safety.
- 

### 5.6 Abnormal Conditions

- ◆ When the system generates a prompt for depleting the battery or safe stopping, please stop driving Robstep M2; if you do not stop, Robstep M2 can not keep balance due to low capacity, and the driver may suffer injury.
- ◆ When the capacity of the battery decreases to the minimum, please stop driving. If you continue to drive Robstep M2, the service life of the battery may be affected.
- ◆ When the transporter body is abnormal and the transporter body produces a voice warning "The transporter has faults, please repair it", please stop driving.

### 5.7 Safe Stopping

- ◆ When the monitoring system in Robstep M2 monitors abnormal conditions of the transporter body (too low capacity, too high temperature, wrong service life, etc.), the transporter body produces voice warnings "Please use the transporter after full charge", "The transporter body is aged, please service", "DDD", "The transporter has faults, please repair", etc.; the system generates a safe stopping message, the error indicator of Robstep M2 lights up, and the transporter decelerates actively to brake by adjusting its posture. After the transporter decelerates, the driver should get off and take measures accordingly.

## **WARNING**

- 
- ◆ When the user gets off, Robstep M2 keeps balance for 1 second.
  - ◆ For safe stopping due to too low capacity, please do not force startup and drive of Robstep M2. Forced startup may increase driving risk, cause serious damage to the battery, and reduce the service life and capacity of the battery.
-

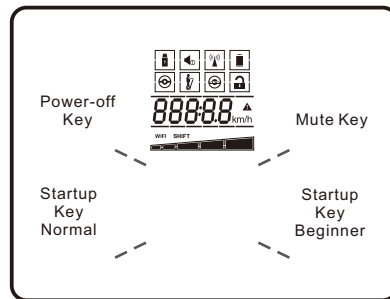
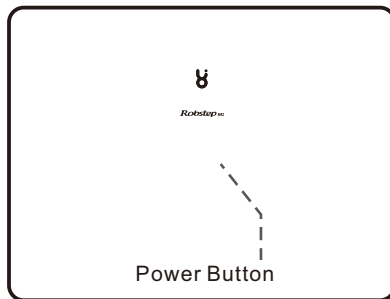
## 6.Steps to Drive Robstep M2

You should pay attention to related safety notes during using Robstep M2. Thus, you must fully understand all notes in this manual before driving, and it is very important to understand these safety notes before using.

- ◆ Before using, please make sure Robstep M2 is assembled, and charge the battery continuously for more than 4 hours. For installation of specific parts and charge of the battery, please see this manual.
- ◆ Before driving, you should fully know the driving environment.
- ◆ Please wear a safety helmet and protective clothing before driving Robstep M2.
- ◆ Please do not wear sharp objects to avoid injury during driving.
- ◆ Robstep M2 is a traveling tool for one person, and only one person can stand on the transporter body during using.
- ◆ When you practice driving, please do it on a spacious and flat indoor or outdoor site with the area of at least 5m\*5m. At the same time, please make sure the site is safe and spacious, the ground is flat, and no car, pedestrian, pet, bicycle or other obstacle interfere the practice.
- ◆ Please do not practice driving on wet and slippery ground.

### 6.1 Startup of Transporter Body

Description of startup steps



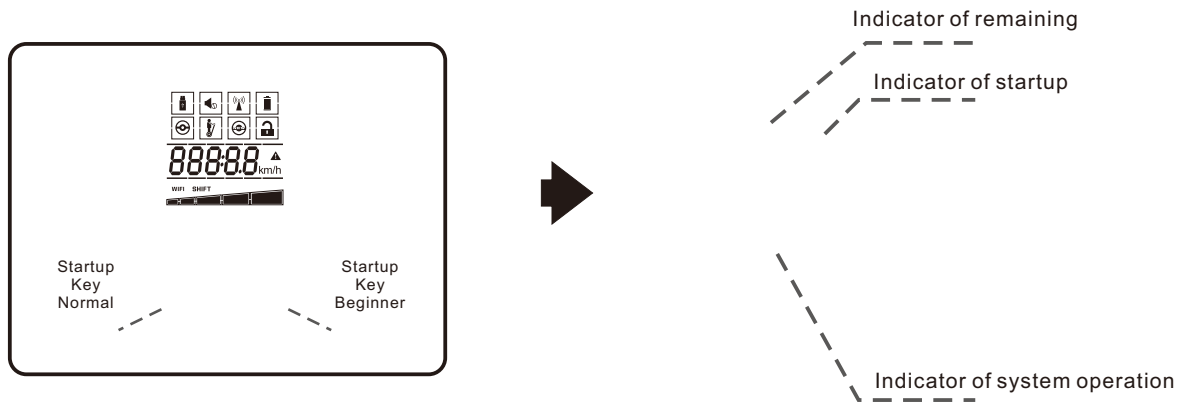
When you start Robstep M2 for the first time or did not use it for a long time, please turn on the system power (for normal startup, please ignore this step)

Then, use the remote controller to control accordingly (for detailed functions, please refer to Chapter 3 Information about Remoter Controller for Robstep M2)

## 6.2 Steps to Drive

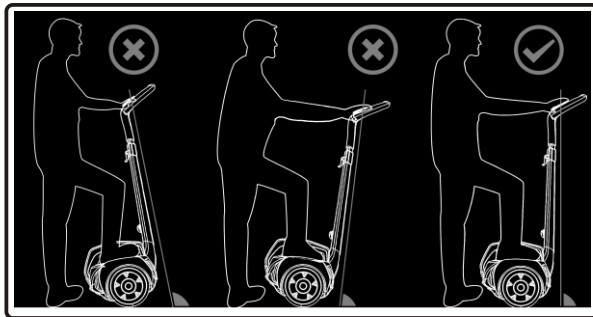
### Step 1: Start Robstep M2

First, please use the remote controller for startup. Then, the indicators of remaining capacity, startup and system on the display panel light up, and the transporter body produces a voice prompt indicating normal startup.



### Step 2: Get ready for driving

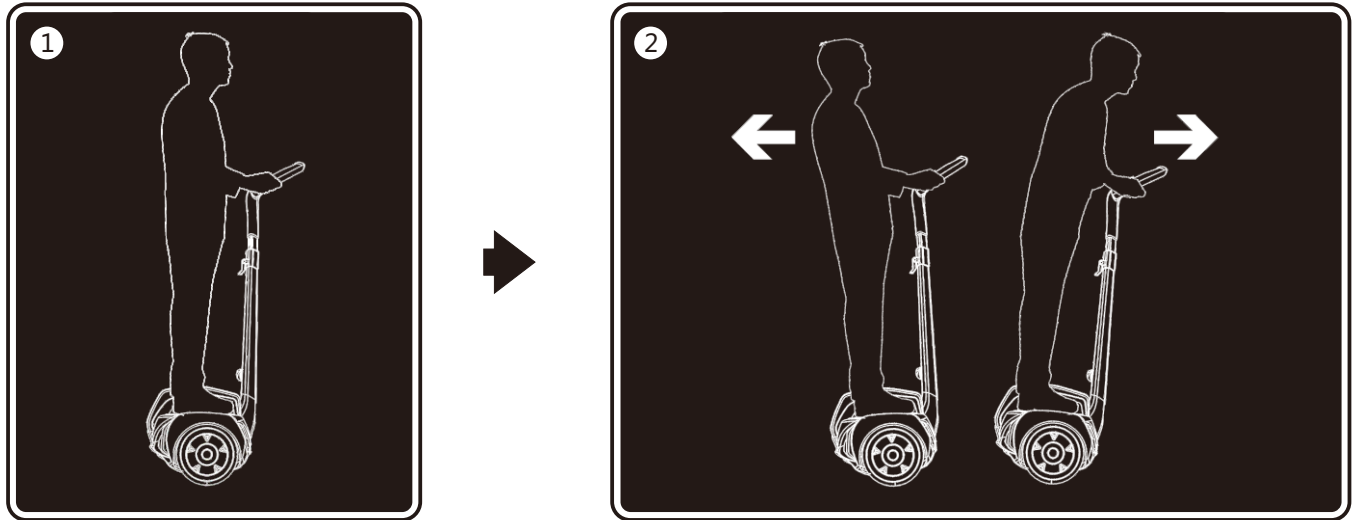
Before getting on, please make sure the direction of the handle is normal and the transporter body keeps an upright balance, and then put one foot on the foot pad.



### Step 3: Control movement of Robstep M2

First, after you stand on Robstep M2 stably, please keep Robstep M2 static.

Then, you can slightly lean forwards or backwards to control Robstep M2 to move forwards or backwards. Please remember that the leaning range should be small.



### Step 4: Control the transverse direction of Robstep M2

When you swing the handle of Robstep M2 to the left, Robstep M2 turns left; when you swing the handle to the right, Robstep M2 turns right.

### Step 5: Decelerate to stop

During driving, you can lean slightly forwards and backwards to change the center of gravity, and when the transporter body brakes slowly and does not move forwards, you should control the center of gravity and keep balance to stop Robstep M2.

#### Step 6: Get off

You should stop Robstep M2 before getting off, when one foot touches the ground, the other foot leaves the foot pad quickly, and the transporter body enters the non-riding mode after producing a voice prompt.

### **WARNING**

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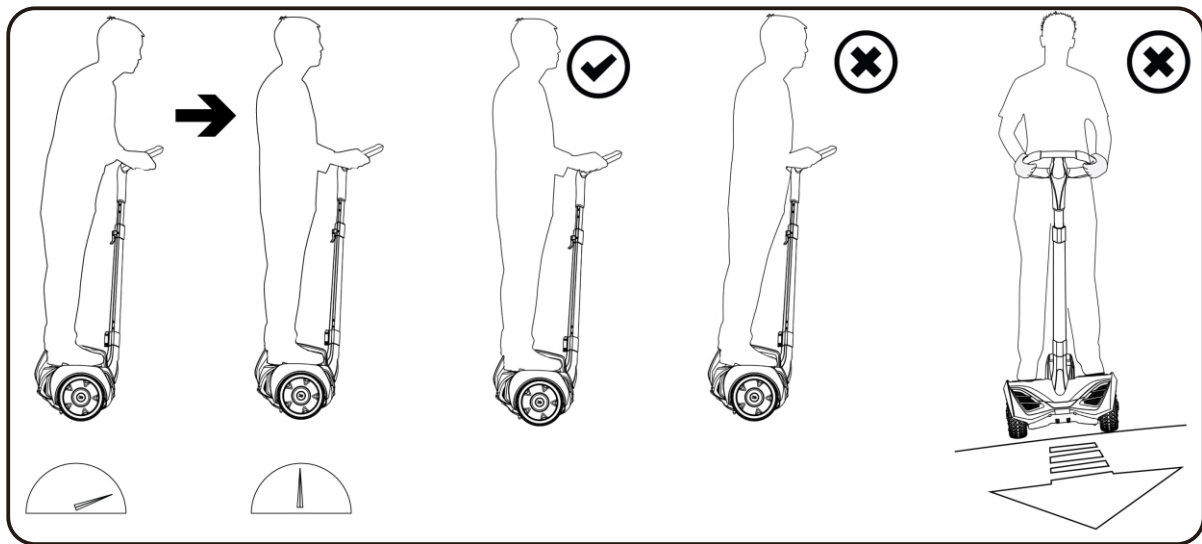
- ◆ Please do not shake the handle violently, or the probability of accidents may increase.
  - ◆ Please do not suddenly change the gravity center of the whole body backwards during stopping, especially on smooth roads. Large acceleration and deceleration may cause slippage of wheels and injury to persons.
  - ◆ When you get off, please do not pull the handle backwards, try to keep the balance of Robstep M2, and avoid backward movement of the transporter body to injure the user.
  - ◆ Please do not drive on wet and slippery roads. This road condition may cause slip of wheels of Robstep M2 and control
- 

## 6.3 Driving Practice

When you want to drive Robstep M2 outdoors, please make sure you can skillfully drive Robstep M2 for your safety before driving:

- ◆ When you drive Robstep M2 for the first time, please practice driving on a safe and spacious site under the beginner mode.
- ◆ Please practice repeatedly in an open site until you can get on, get off, drive forwards, drive backwards, turn and stop easily and skillfully.
- ◆ If you can not drive Robstep M2 skillfully, please do not drive the transporter in dangerous places where children, pedestrians, or traffic obstacles appear.
- ◆ When you drive Robstep M2, your height increases; please pay attention to obstacles overhead and avoid them, and when you drive through low places, please protect your head, avoid injury, and get off to pass through if applicable.
- ◆ You can practice driving in different terrains, but you must decelerate in unfamiliar terrain. The wheels of Robstep M2 can not leave the ground at any time.
- ◆ When you drive Robstep M2 under a new environment, please concentrate on driving and be careful.
- ◆ Robstep M2 is a traffic tool designed for smooth roads. During driving, the user should pay more attention to road conditions, especially crossing speed control bumps and grass among buildings, and the user need to learn to avoid obstacles by drive practice.

## 6.4 Correct Driving Posture



### WARNING

- ◆ Please drive following the guide for correct operation, and practice frequently.
- ◆ When the traffic is heavy, please get off and walk to reduce the occurrence probability of accidents as much as possible.

## 7. Maintenance and Servicing of Robstep M2

- ◆ The user needs to perform routine maintenance of Robstep M2. This chapter mainly describes steps and important prompts to service or maintain Robstep M2.

### **WARNING**

- ◆ Before performing the steps below, please make sure the power supply and the charging cable of Robstep M2 are disconnected. When the transporter is powered on or the battery is charged, please do not perform the steps below.

### 7.1 Handling Notes

Lift and put down Robstep M2 with proper skills, and follow the steps below:

- ◆ Make sure Robstep M2 is not connected with the charger and is powered off.
- ◆ Lift the transporter body with one hand, and grip the foot of the lever for the next grade of the handle with the other hand to lift Robstep M2 for handling. Please do not use the casing of the transporter body as the bearing point for handling. You can also use the rear rack of Robstep (a secondary handling part) to handle easily.

### 7.2 Maintenance

- ◆ Check tire components regularly. Shake the tires along the rotary direction by hand, and observe whether tire components shakes. If they shake, please check the bolts used to install the tire and screw tightly.
- ◆ Check the right and left tires for serious wear regularly. If the tires are worn, please contact the after-sale department to change them.
- ◆ Please check the screws used to connect the handle and handle lever components together, and tightly screw if they are loose.
- ◆ Every time before use, please check the locking part of the quick release for loosening, and check the lock spanner for tightness and serious wear. You can try to shake the locked handle lever. If the handle lever shakes or loosens, please check the locking part of the quick release for damage. If the locking part has no damage, you only need to lock the lock spanner.

## **NOTE**

- ◆ For safe driving, after the service life of the whole transporter is reached (the driving distance reaches 25,000km, and the using frequency of the battery exceeds the normal using frequency), when you start Robstep M2, the transporter body will be powered off automatically after the system warns for errors automatically.

## 7.3 Cleaning

Notes before Cleaning:

- ◆ Please make sure the power supply and the charging cable of Robstep M2 are disconnected.
- ◆ Wipe the casing with soft cloth to clean Robstep M2.

## **WARNING**

- ◆ Please do not clean Robstep M2 with water or other liquids. If water or other liquids penetrate the transporter, electronic parts in Robstep M2 may have permanent damage.

## 7.4 Storage

- ◆ Please store Robstep in a dry place with suitable environment temperature indoors. If you will not use the transporter for a long time, please do not connect it with the power supply.

## **WARNING**

- ◆ The user may not open the cover, internal control circuit and gear box of Robstep M2 without permission. There are no user maintenance parts and components.
- ◆ The user may not disassemble Robstep M2 without permission, or we regard that the user waives the warranty of this product.
- ◆ If you will not use Robstep M2 for a period of time, please store it after full charge and charge it every three months or more frequently.

## 8.Parameters of Robstep M2:

|                             | Robstep M2                  | Remarks                                                                                                                                                                                                                                            |
|-----------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum Cruising Speed      | 15km/h ①                    | ① The maximum cruising speed can be configured by an application. During driving, the transporter keeps dynamic balance and runs at a speed larger than the maximum cruising speed in a short time.                                                |
| Cruising Distance           | 20km ②                      |                                                                                                                                                                                                                                                    |
| Maximum Climbing Angle      | 15°                         |                                                                                                                                                                                                                                                    |
| Net Weight                  | 15.8kg ③                    | ② The cruising distance is measured on smooth roads under the temperature of 25°C and the load of 70kg. This parameter is affected by the capacity of the battery, the driving habit, the load, the environment temperature, road conditions, etc. |
| Load                        | 20-120kg                    |                                                                                                                                                                                                                                                    |
| Minimum Turning Radius      | 0m                          | ③ The net weight refers to weight of the whole transporter with a 4.4Ah lithium battery.                                                                                                                                                           |
| Whole Size                  | 140*53*45.5(cm) ④           |                                                                                                                                                                                                                                                    |
| Battery                     | 72v 4.4Ah Lithium Battery ⑤ | ④ The whole size refers to the size when the control lever stretches to the greatest extent.                                                                                                                                                       |
| Charging Requirements       | 110-240vAC-60hz             |                                                                                                                                                                                                                                                    |
| Charging Time               | 4h ⑥                        | ⑤ The standard battery configuration of M2 is the 4.4Ah battery. You can choose a 6.6Ah battery to increase the cruising distance, but the net weight will increase by around 1Kg.                                                                 |
| Tire Type                   | Flat-free Vacuum tire       |                                                                                                                                                                                                                                                    |
| Service Life of Transporter | ≥25000km                    |                                                                                                                                                                                                                                                    |

# 9.Front, Top and Left Views and Size of Robstep M2



## 10. Fault Treatment

When Robstep M2 has a fault or you suspect a fault that you cannot repair, please contact the service center of Robstep for repair.

### Wishing you a pleasant user experience

The version of this M2 manual: V1.1. All the information in the manual (until the date when this manual is printed) is up-to-date information. The company, however, will constantly optimize and improve the product, therefore, any suspension or change of the relevant content of this manual will be made without prior notice. Please visit the official website for the latest information.

If any problems occur during use, please refer to the instruction manual. If the problem cannot yet be solved through this manual, please visit the Website at [www.robstep.com](http://www.robstep.com) or call customer service at: 4000-163580 (I can help you along the way).

Dongguan Robstep Robot Co., Ltd. wishing you a pleasant user experience!

### WARNING

- 
- ◆ When you drive Robstep M2, you may collide or fall if you lose control of Robstep M2. Thus, it is very important to understand the safety notes, warnings and notes to drive Robstep M2, and you must learn to drive Robstep M2 safely to avoid danger.
  - ◆ You can see this manual and watch the video tutorial for safe driving to learn safe driving skills.
  - ◆ This manual introduces all instructions and notes. The user of Robstep M2 must read this manual carefully and use the transporter following requirements in this manual. Robstep shall not be liable for any legal consequences resulting from the user's operation without following prompts or violation to warnings.
  - ◆ For more information and support, please visit the official website of Robstep ([www.robstep.com](http://www.robstep.com)).
  - ◆ For service centers and information related, please visit the official website [www.robstep.com](http://www.robstep.com) or dial the unified national service hotline 4000-163580 (I will help you all the way).
  - ◆ PICC This product is insured by the People's Insurance Company of China.
-

Dongguan Robstep Robot Co., Ltd.

Customer service hotline: +86-769-2662-1018

Official site: [www.robstep.com](http://www.robstep.com)

Email: [info@robstep.com](mailto:info@robstep.com)

Address: Building 2, Songhu Huake Industrial Park, 6 South Gongye Road,  
China Songshan Lake National Hi-Tech Industry Development Zone

FCC Compliance Statement: This device complies with Part 15 of the FCC rules. Operation is subjected 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.

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Product operating temperature: < 40 °C.

### **CE Mark Warning**

# **CE 0700**

This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.