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# User manual of King Song Electric Unicycle

## MODEL:KS



[www.szkingsong.com](http://www.szkingsong.com)

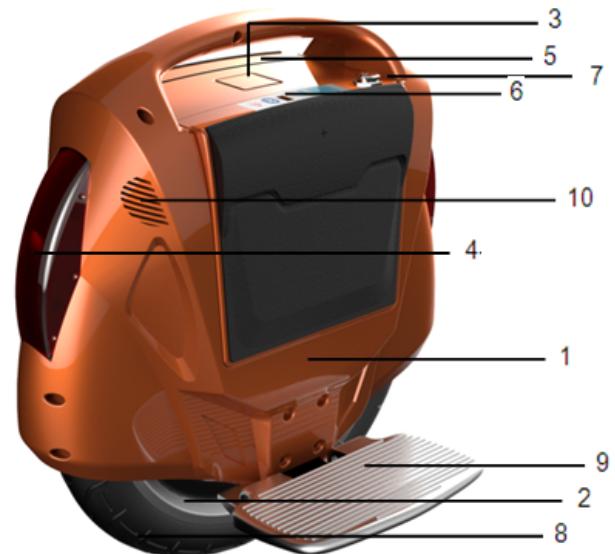
Thanks for purchasing KingSong Self-balancing Unicycle. The user manual below is a quick and convenient guide to its main functions providing the user with trouble free use for pleasure, please read the instructions carefully before use. But we can not ensure all types of emergencies are covered. Therefore, we remind you to drive carefully, to ensure safety driving.

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## 1. Product details

### 1.1 Diagram for reference

- ① Back shell
- ② Motor
- ③ Press button of battery compartment
- ④ Front&Rear LED Lights
- ⑤ Battery compartment
- ⑥ Touch buttons & battery indicator
- ⑦ Power button
- ⑧ Rubber tire
- ⑨ Metal Pedal
- ⑩ Speaker



### 1.2 Product Package

Electric Unicycle x 1 ; Charger x 1; User manual x 1

### 1.3 Core components

- Super magnetic suspension(levitation) motor: Super strong, super power, super silent
- Imported Panasonic Lithium battery: Panasonic original battery core, long lifespan
- Heavy duty aluminum alloy wheel frame: Anti pressure, waterproof, dust-proof, rustproof
- ABS+ BC body shell: Hard anti-friction, not easy to fade
- Natural Rubber Tyre
- Aviation aluminium alloy foot plate

## 2. Safety

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There are risks to ride or drive every vehicle. King Song electric unicycle is no exception. Please ensure this manual is read and understood beforehand, and do pay extra attention when riding.

## **2.1 Important**

1. Do not make rapid acceleration or deceleration or over incline forward or lean backwards.
2. Do not use King Song electric unicycle if there are any risks in accidental falls. Safety first.
3. When there is alarm of low power, LED indicator flickering with beeping, please decelerate at once and get down the unicycle in time, to avoid the injury caused by outage.

**Please keep in mind deeply:** Most of accidents are caused by rapid acceleration or deceleration, so please avoid that.

## **2.2 Attention:**

1. Please wear helmet, gloves, elbow/knee pads or other protection garments.
2. Please check the device before every ride, to make sure no parts are loose or damaged.
3. When there is crowded pedestrians, please lower your speed similar to their walking speed.
4. When carry the device, please make sure the power is off.
5. Do not put your fingers on the tire, to avoid injuries caused by fingers sucked between the tire and the plastic shell.
6. Do not ride King Song electric unicycle on highways and busy pavements.
7. Do not ride King Song electric unicycle on busy roads or crowded streets.
8. Do not ride King Song electric unicycle on rough or bumpy surfaces, such as muddy or pebbled roads.
9. Do not ride King Song electric unicycle on wet, slippery surfaces, especially snowy roads.
10. Do not ride King Song electric unicycle on slopes slanting more than 15° angle.
11. Do not allow children under 12 to use HX electric unicycle.
12. Do not ride King Song electric unicycle in bleak winter conditions.
13. Countermarch riding is dangerous. Try to avoid countermarch.

Other sudden unpredictable risks may occur during use, please ride with care. King Song electric unicycle will not be responsible for any injuries caused by misuse of the product.

## **3.Main Features:**

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3.1 USB Port to Charge Gadgets: Connect one end of the charge cable to the USB port, and another end to the gadgets like mobile phone, just plug and play

3.2 Front illuminating & Rear Braking Lights

3.3 BT Speaker: Activate the BT function of the electric unicycle, search available BT on your mobile phone, find and match the BT named "King Song", then you can play music freely after successfully connected.

3.4 Removable Battery Compartment: Press down the snap switch, at the same time, pull up the battery compartment by another hand.

3.5 APP:

#### 3.5.1 App Download and Connection

Firstly, download and install app, activate BT on electric unicycle, select "Connecting Device-Secure" in the "Basic Function" Menu, then scan devices to find "King Song" (sometimes, it displays as "null") and connected (The original password is "1234"), Datas like voltages will be available immediately. If failed to connect, pls trying to make BT pairing in the BT setting of your mobile phone, then back to the software to connect directly



#### 3.5.2 Basic Information

Users can check all the detailed information on the Basic Function Interface, including temperature, mileage, speed, voltage and so on, which will help you get a better idea of the electric unicycle's running status. For example, when the voltage is detected as 55V, it indicates that the battery level may not enough to support far distance traveling, you should charge it to avoid battery dying.

#### 3.5.3 Riding Mode

Riding mode refers to the ration mode during start-off and breaking. Under aggressive

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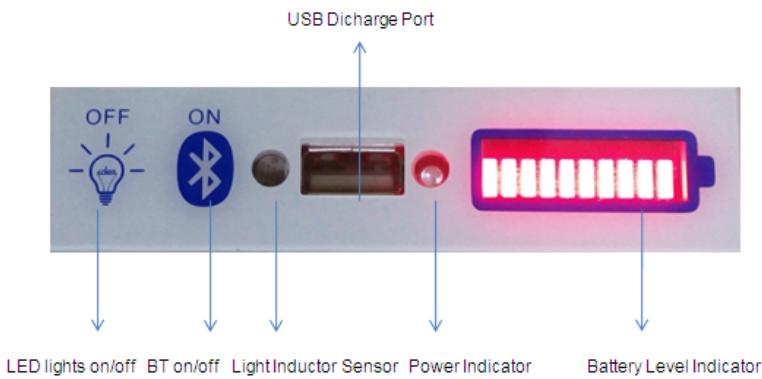
mode, the pedal will keep still when starting off or breaking. While, under soft mode, the pedal will slant along with the gravity center, that is, leaning forward when starting off, leaning backward when braking. The main difference of the two modes lies in : soft mode is suitable for long distance travel, which can bring a more comfortable riding experience, relieve the leg's fatigue. Aggressive mode is more flexible, can satisfy the group who wants to perform skills like aerial jumping, also it can avoid pedal scraping when climbing or down steep hills. You can select the corresponding riding mode in the " Basic Function" menu.

In theory, soft mode is more power saving than aggressive mode.

#### 3.5.4 Calibration alignment

Firstly, Power on the unicycle and keep the unicycle still, connect your mobile phone with the unicycle, back to the " Basic Function" Menu, Select " Level Calibration", you will hear continual beeping. Then place the unicycle vertically on the ground, restart it, the calibration is done if you hear long beeping after 5 times continual beeping. If another 5 times continual beeping followings, it indicates calibration failed.

1. Customized Pedal, comfortable riding
2. Refined Control System Software can be used to different terrain and ensure stable riding
3. Touch buttons



3.8.1: Battery Level Indicator: 10 bar LED lights to show battery level, more accurate.

3.8.2: Power Indicator: Indicator will turn blue when BT/LED lights are flipped on. Every time

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the touch button being activated, the indicator will flick to suggest you that your operation is effective.

3.83: USB Discharge port: Gadgets like mobile phone, Tablet can be charged

## **4.Precautions and preparation**

### **4.1 Precautions**

#### **4.1.1. Use the auxiliary belt to ensure safety driving**

As beginners, can use the auxiliary belt to prevent the unicycle from scraping

Tie the belt to the handle of the unicycle, tread one foot on the treadle, adjust the belt to a proper length.

When losing the balance, have to jump from the unicycle, you can drag the unicycle with the belt to protect it from broken.

#### **4.1.2.How to control the balance**

The self-balancing unicycle achieves balancing by versus of the gyroscope.

When leaning forward, the unicycle will accelerate; when lean forward, the unicycle will decelerate to keep the balance between the driver and the device itself.

Like riding bicycle, you have to keep left or right balancing by your body and the riding speed

Do not ride on slippery or bumpy surfaces, friction between the tire and the ground is essential to keep the balance

### **4.2.Preparation**

Find a proper spot: please don't ride in the highway or anywhere there are a lot of cars and peoples, should not ride on the bumpy, gravel roads,

Warm up your body and be equipped with helmets, elbow, knee supporters if needed

Check the battery level, shack the unicycle to avoid potential unsafe factors like looseness, abnormal sound, push the unicycle by hand to check whether it exists frictions between the tire

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and body shell.

Find a friend to assist you if needed

Tie the auxiliary belt to the handle, adjust it to a proper length.

Please don't speed up and reduce suddenly in order to keep good maintenance.

Don't lean too much in order to not to fall, speeding is prohibited. In case of falling, given the priority to body safety.

Refer to the following driving steps to start learning.

### **4.3 How to use**

#### **4.3.1 Start the unicycle**

Grasp the handle with one hand, place the unicycle vertically on the ground, and unfold the two treadles. If the unicycle tilts either forward or backwards after power is switched on, then wait until it reverts to upright position before riding.

Press the power key to turn on the unicycle, the battery level will illuminate and buzzer will beep, then the vehicle is ready to use.

We suggest that you push the unicycle forward and backward to get an idea of the intensity of acceleration and deceleration.

If the unicycle tilts either forward or backward after power is switched on, then wait until it reverts to upright position before riding.

#### **4.3.2 Try to stand on the unicycle**

Stand on the center of the treadle with your preferred foot, so that you can lean your gravity center to the foot.

Stand up, use the foot on the treadle to control the forward and backward balancing, and lean your shank on the rubber plate tightly

Gradually lean your gravity center to the foot on the treadle, a triangle support is required with your shank, foot and the balancing unicycle, otherwise it's very difficult to transfer the gravity center to the unicycle. If you failed to transfer the gravity center, further riding is not suggested.

#### **4.3.3 Go forward**

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For novice, like riding bicycle, transfer your gravity center to the unicycle, tread the pedal forward slightly, meanwhile, kick the other foot backward slightly, the unicycle will go forward, try to keep balance during riding, and gradually put the other foot on the treadle.

For intermediate learner, pay more attention to the following two points: keep at a certain speed, control the speed through leaning forward and backward. Try to extend the riding distance by repeated exercises.

#### **4.3.4 Turning**

We found beginner tends to rotate the upper torso to turn, to improve the efficiency, we suggest you to make it by adjusting the tilt of treadles.

### **5. Battery and Charging**

#### **5.1 Temperature effect on battery**

Battery power will vary with the temperature, mileage per charge will have slight difference under different temperature, following table is just for your reference.

Temperature (°C)	-20	-10	0	10	20	30	40	50
174Wh using ratio	40%	60%	80%	90%	95%	100%	105%	110%
Mileage/Charge (Km)	8	12	16	18	19	20	21	22

#### **5.2 Charging**

The device has a built-in lithium battery, No extra battery installation is required, just charge the device when it indicates low battery.

Plug in the power source after inserting the charger plug, this can prevent potential risk to ensure a safer charger

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It takes around 90 mins to get 100% charge, when the red lights turn into green, indicating the charging is completed.

If not in urgent need, please wait until charging complete before unplugging, because after charging, the protection circuit will perform flow equilibrium

**Battery level:** A ten-bar LED indicator is used to indicate battery level. All ten-bar LED will light up when power level is more than 85% and will go off one by one as the level decreases. Please check power level before usage to ensure there is enough power for the return trip.

When power level is lower than 5%, all lights will flicker and the buzzer will sound off. The front part of the treadle will descend to force you to decelerate and eventually stop. Please do not restart when this occurs to avoid any accidents.

Sustained range will decrease during winter. This is because the battery performance decreases quickly in cold conditions. In -15°C, for example, battery performance is only about half in comparison to that in room temperature.

## **6. Care and Maintenance**

### **6.1 Conservation**

Don't place the unicycle in a wet condition

If left unused, recharge the battery at least once a month to avoid the battery exhausted and maintain longevity of the battery. Meanwhile, the battery can't be dismantled arbitrarily, in case of changing, pls contact us, we will provide you with professional services

Clean the unicycle with wet cloths and detergent, gasoline, solvent or any other chemical reagent are forbade.

Use the inflation tube to inflate the tire. Without the tube, you will not be able to pump air into the wheel.

### **6.2 Change tire**

Allen driver and cross screwdriver are require to change tire

Unscrew all the screws on the body shell with cross screwdriver, 7 screws each side.

There are 6 screws on each side under the treadles, unscrew the six hex socket screws on the opposite side of the charger slot, pls notice that never unscrew the hex socket screws on the

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side of the charger slot.

After unscrewing the screws, rotate the shell body until you can dismantle the tire freely, avoid pulling out the electric cables around the handle area.

After repairing, install the body shell and fix the screws.

## 7. Specifications

Product Performance	
Top speed	around 25 kilometer/hour ( Alerting when exceeding 18km/h and 22km/h)
Mileage	18-23km( Depends on the rider's weight, road condition and temperature )
Maximum Gradability	Around 25°, 60kg riders up to 30°
Battery Set	174Wh, Panasonic lithium battery, with equilibrium, overcharge, over-discharge, over-current protection
Operating temperature	About -10°-60°
Max Load	120Kg
Charger	Input: AC 80~240 V, Output: 67.2V、2A
Charging time	Around 90mins
Rated Power	500W
Max Power	2000W
Appearance of the weight	
Machine size (mm)	447.5mm (H) x 404mm(L) X 164mm (Thickness)
Package Size (mm)	460 mm(H)* 555mm(L)* 235mm(Thickness)
Pedal Distance from Ground	110mm(without load)
Tire Diameter	Diameter 295mm
Net weight	11.5kg
Body interface	High quality waterproof charging port, power on/off button, bluetooth on/off button, LED braking on/off button
Display panel	Highlight LED battery indicator
Production measures	
Tilting Protection	Average 45°left and right (Motor will stop when over 45°), place the machine vertically on the ground to restart automatically after crashing, no need to restart manually.

Speed Limit Protection	Beep when exceed limit speed
Low Battery Protection	Beep when battery lower to 10%, the front of the pedal will rise gradually to lower the speed until stop
<b>Message</b>	
Battery Indicator	Highlight LED to indicate battery level
Battery level	Flicker when battery lower than 5%, LED bar all light up when the battery above 85%, then fade gradually with the battery consumption
Sound Alerting	Buzzer beep when machine falling down to the ground, Beep when powering on, Continual beep when low battery power protection activated.

### **FCC Warning**

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.