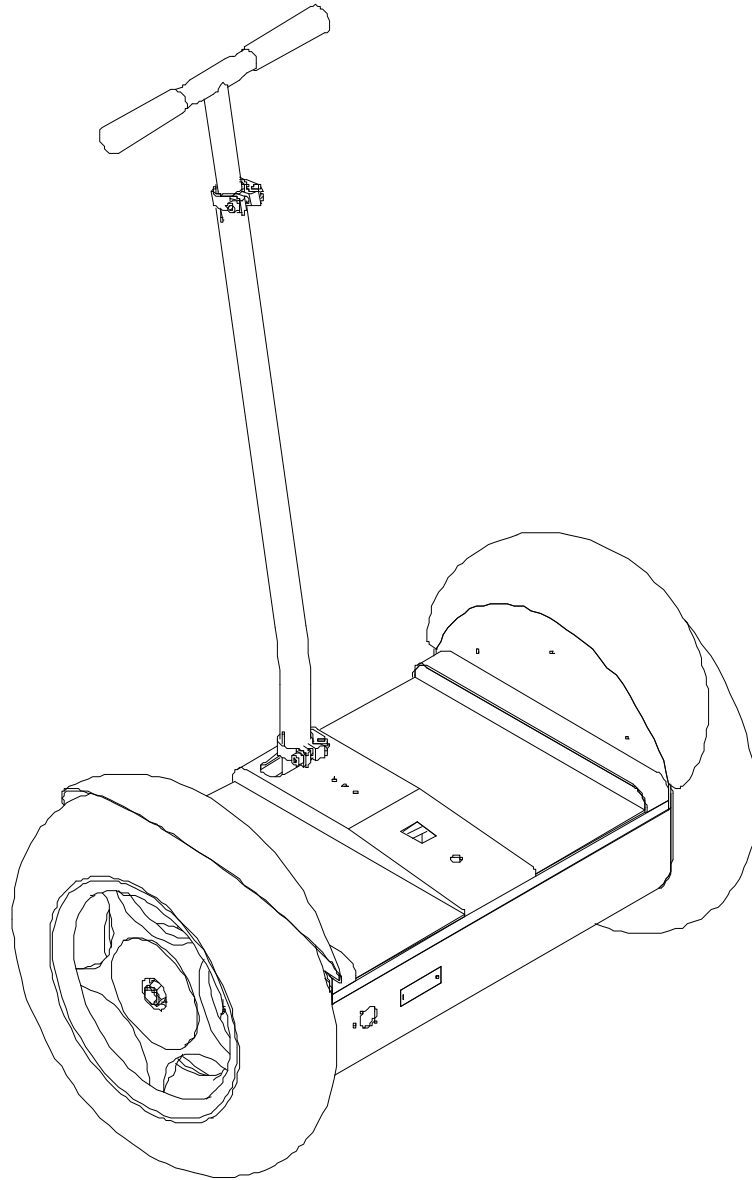


# User Manual for ESWING 2-Wheel Electric Scooter



When Eswing (Smart Vehicle) are sold, it comes with this user manual for users' reference.

User's manual is applied to all the Smart vehicles made by our factory. You may find that some function introduced in this manual is never seen in some particular vehicles (other brand) you have ever purchased.

The content and technical specification in this manual are valid when permitted to print. But our company has the right to terminate the use and change technical specification or design without prior notification and assuming the obligation.

To ensure our Eswing bringing you the driving pleasure, one of the best ways is to read the user manual carefully. You can learn how to drive this future transport. After your reading, please keep the user manual so that you can refer it any time when you need.

The warranty card came with Eswing will tell you the warranty rights in the user manual. Please read the user manual carefully in order to know your rights and responsibilities well.

Please maintain Eswing according to the user manual so that you can keep the scooter can be the best status. We have professional person who will supply you good afterservice and give you pleasant answer of any questions and your cared problem.

Sincerely wish you have a nice driving!

## **Safety Instructions**

**For adults use only!**

**Please abide by your local traffic management regulations!**

**Please wear helmet and sheath for safety purpose when you drive!**

**Please read the relevant driving guidelines description in this manual!**

It is hard for us to list all associated danger when driving and maintaining Eswing. Therefore, please be careful and pay attention to the safety of yourself and others when driving.

**The user manual contains important safety information -- Please read it carefully.**

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## Chapter I Introduction of Eswing

The working principle of the two wheels Scooter is mainly based on the basic principle called "dynamic stability" namely which is the automatic balance ability of vehicle itself. After judging body posture state with a built-in precision solid gyroscope, figuring out proper instructions through a sophisticated and high-speed central microprocessor, Electric scooter will drive the motor to balance the vehicle.

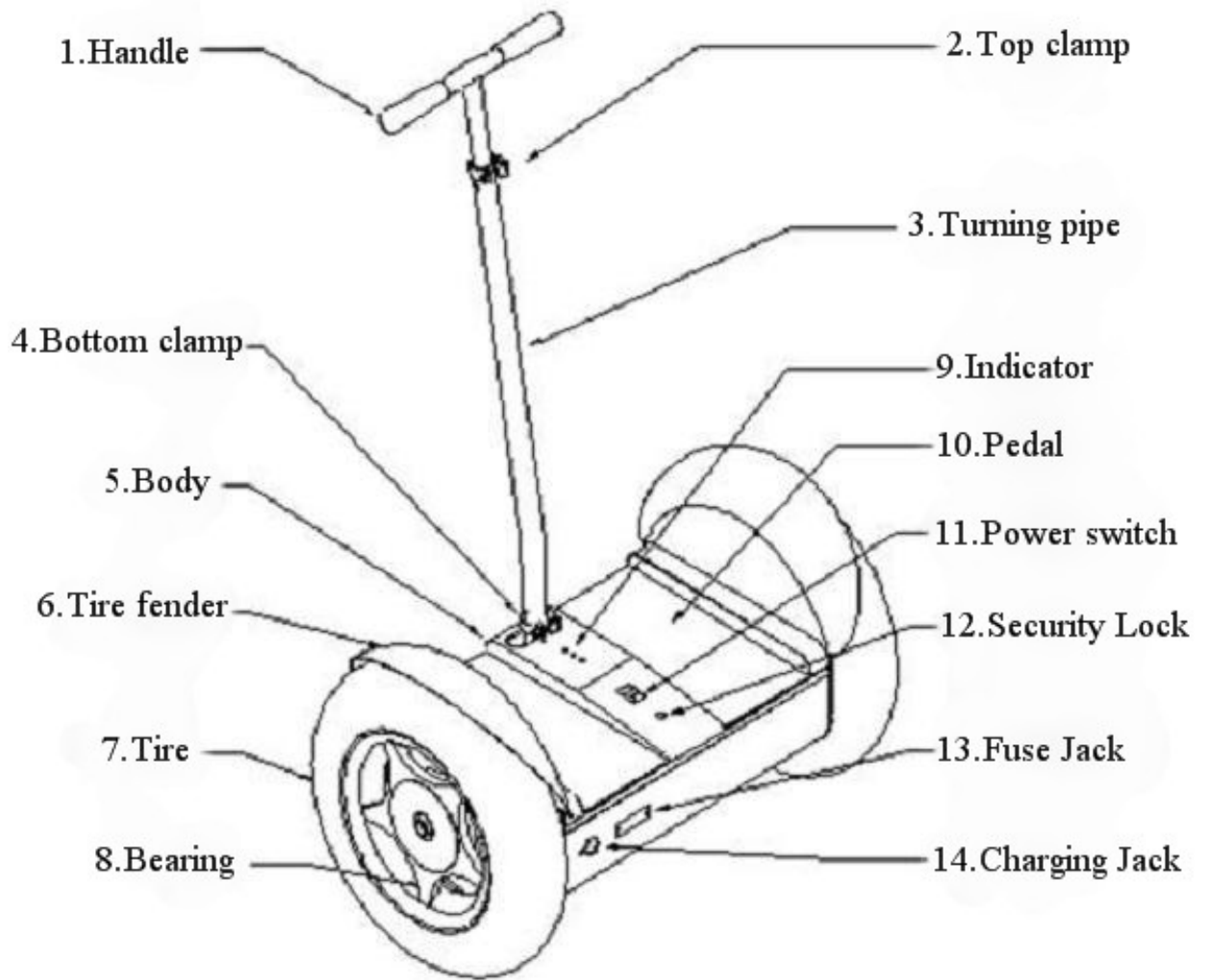
As a new transporter,Eswing is difficult to use the traditional classification to define this vehicle. Some people think that Eswing should be a kind of double-wheel bicycle (Unicycle), while other people think it should be a power Scooter (Stand-up Scooter), but it is a uniaxial double design which is different from the traditional biaxial double scooter .In some more formal occasions (for example: the official road regulations), this transporter is called Electric Personal Assistive Mobility Device (EPAMD), Commonly known as electric Vehicle instead of walking.

The vehicle equipped with dual wheels, its width is shorter than normal adult shoulder's width, 45 kg weight, and battery -powered motor vehicle. During driving,it is no necessary for braking or throttling stem.When driver's keep body forwarded, Eswing will run forward; When the body is upright, it will stop. It uses dynamic balance principle, as the body moves, to change the center of gravity of movement so as to keep balance. Just as human body stands and forwards, it will lose balance, but the body's natural balance organ will tell the brain such case, then maintain balance under the order that moving steps given by the brain. Eswing uses the wheels to replace the function of the feet, reproduces the high precision balance action of human,it is also cheap and convenient to move. The energy comes from two repeat charging BTM batteries which are for free maintenance. If sufficient power is supplied to your battery, the full charge capacity will last Continuous 5 hours driving. Driving range depends on the way you drive and ground conditions. Drving on grassland and slope will consume more driving power.



**Eswing**

## Chapter II Parts Explanation of Eswing



Picture 1

## 1. Turning Pipe

- (1) Used to control and make the Eswing turn left or right, turn around, rotate 360 degrees. It also has support function and can play a subsidiary role in keeping body balance.
- (2) The height is adjustable. Driver can adjust it according to own height to make the handle bar on the abdomen.
- (3) Lock steering rod after adjustment, then turn the handle bar to confirm that it had been locked well.
- (4) Above adjustment of turning pipe should be finished before driving.
- (5) The turning pipe can be taken apart easily in carrying.

## 2. Power Switch

- (1) The power switch used to turn on and turn off the power and when the power switch opens, Eswing also finishes initialization-setting.
- (2) It is dangerous to stand on E-swing without turning on the power.

## 3. Pedal Switch (SAFE switch)

- (1) The pedal can be active up and down. It can close and open built-in safe switch.
- (2) The pedal switch is a safety insurance. In driving, if driver leaves Eswing, the pedal switch will reset and then Eswing will stop in 2 seconds.

## 4. Indicator Lights on Pedal

- (1) Green light (operation light 1)—RUN

**Continuous On(no blinking):** Eswing is working well. Battery is normal and in standby mode.

- (2) Orange light (warning light 2)

**Blinking:** overload! Motor will automatically slow down.

**Continuous On(no blinking):** battery is in low power; It should be charged in time.

- (3) Red light (warning light 3)

**Continuous On(no blinking):** battery power used up and must be charged immediately.

Please charge it before the battery is finished (red led is on). As it will be harmful to the battery and reduce the life of battery.

**Fast blinking during driving:** It means that you should adjust your body when moving forward at high speed. At this time, Eswing will upraise backward automatically to stop driver lean forward so that can limit the speed and keep driver safe.

The vehicle may have problem when you see following situation after powered on.

**Red light flash 2 times:** problem of gyroscope.

**Red light flash 3 times:** problem of accelerometer.

**Red light flash 4 times:** Eswing in locked or pedal switch is not restoration (the pedal switch is pulled up).

**The three indicator flash at the same time:** The pedal switch is not in right position(the pedal switch is pressed down) or driver leave Eswing when driving,which make the pedal switch restoration(the pedal switch is pulled up).In this situation,if the pedal switch is still not in right position(the pedal switch is pressed down),Eswing will think driver fall down and stop automatically for keep driver safe.

**Please remember,pedal switch must be in right position(the pedal switch is pressed down),or Eswing will stop power and lose balance so that driver will fall down.**

## Chapter III Getting Started

### 1.The Right Starting Operation

Hold the turning pipe with one hand, keep the pedal horizontal ,turn on the power switch and make the green light continuous on.It means starting success(refer to picture 2,3,4).Then hold the handlebar firmly with two hands(refer to picture 5).

**Please make sure the pedal is placed horizontally and then turn on the power switch.** Because Eswing will consider the current pedal's position as its original position setting. This is very important step. If the original position is not set correctly, it will bad for vehicle's balance during driving.



Picture 2



Picture 3



Picture 4



Picture 5

## 2.The Wrong Starting Operation (refer to picture 6 and 7 )

Eswing will consider the current pedal's position as its original position setting, so it is hard for driver to stand on Eswing if the pedal is not horizontal. The original position can be setted after repeated power on and off. For example, you can turn off Eswing and make the pedal in horizontal, then turn on it and test it. Like this adjust, until you think it is good.



Picture 6

Picture 7

## 3. Correct Example As Follows (refer to picture8)

(Must keep Eswing is horizontal before power on)



Picture 8



## Chapter IV Driving

Driving Eswing (2 wheel self-balance vehicle) is totally different from a traditional car. Eswing does not have a brake, accelerator and gear system. Please read the user manual or instruction of professional person before your first driving Eswing. It is very addictive to drive Eswing. Once you enjoy the fun of driving, you will can not help to drive it when you have any chance. Following instructions will be very helpful for your driving.

### 1. Standing on Eswing

After start, hold the handlebar with left hand. meanwhile step on pedal with right foot(refer to picture 9); or hold the handlebar with right hand, meanwhile step on pedal with left foot(after press down the pedal switch, Eswing will start computer balance, and you will feel very solid plane). Order is the left hand-right foot-left foot -right hand or right hand -left foot-right foot-left hand. At this time, you have stood on the balanced Eswing. Stand straightly without any action, just relax and keep balance, Eswing will stop in original place(refer to picture 10).



Picture 9



Picture 10

### 2. Driving Forward Straightly

Just keep your body lean forward slowly(the center gravity of your body forward), Eswing will run forward straightly(refer to picture 11). The driving speed is controlled by the leaning angle of your body forward. The more the faster, the less the slower. For a stable driving, we suggest keep your body leaned forward slowly. It is dangerous for lean forwarder suddenly. This is just like sudden acceleration when driving a car.



Picture 11

### **3.Braking,Driving Backward**

Driving backward is not recommended for driver's safety. Because it is hard for you to watch the back things when driving.Eswing's turning radius is zero, which can easily achieve continuous spin around 360 degrees in original place.When you drive forward straightly,if you want to slow down or stop,you can keep your body leaned backward or squat down (the center of gravity backward). Lean slowly or smoothly backward is helpful for slowing down and stopping stably(refer to picture 12).



Picture 12

**Tip:**Driving forward straightly is just like pushing the handle front,which is similar to push forward Shovel grass car .When backward, the feeling is like pulling handle back.

#### **4.Turning in Original Place, Turn Around and Rotate 360 Degrees**

It is easy and flexible for turning Eswing when driving. Keep the turn pipe left-forward or right-forward to the end, at the same time keep you body correspondingly left-forwarded or right-forwarded as the trend of Eswing(refer to picture 13 and 14).Thus you can easily achieve various turn.When Eswing turn to the right position, you only need to make turn pipe returned original position and stand straightly.Eswing will stop.



Picture 13



Picture 14

#### **5.Turning In driving**

Eswing's turning range is calculated automatically according to the driving speed,.The speed is faster, the turn range will be less to ensure security.In the process of driving, it is finished by turn pipe and body's corporation.To turn left, turn pipe should be swung smoothly to the left,at the same time body lean to the left.The angle of Eswing's turning is decided by the swinging angle of turning pipe and the leaning of body.

**Tip:** the actual driving is finished by the above combination action. Some people said driving Eswing is like combination of riding horses and skiing, while others said the body movement is like Michael Jackson's dancing. Eswing also is called thinking car.It means driver can drive Eswing according his thought.

#### **6.Driving in Bad Weather**

Eswing is not waterproof.Please do not drive Eswing in rain day.It is easy to made Eswing's motherboard (refer to picture 15)and the motor(refer to picture 16) electric machinery damaged when water flowing into Eswing.Eswing will not work normally.

Eswing can't be drived on the snowfield.

Eswing does not have night lighting, so please do not drive Eswing without Street lamp in the evening.

In China, Eswing is hard to defined, so please don't drive on the road for motor vehicle. When driving on the sidewalk, single driveway or public places, please comply with local traffic regulations and the provisions of the ministries.



**Picture 15**



**Picture 16**

## **Chapter V Charging**

When you find the orange lamp and red indicator is continuous on, it shows Eswing need to be charged. First, turn off the power switch and use the specialized 24 V battery charger. Insert the plug into Eswing's charge mouth, then connect the power. When charger is connected power well, Red light will continuous on. It shows Eswing is in charging (refer to picture 17).

The charger has two indicators. Red light means in charge. Green light means full charge. It is time to pull out charger. The input voltage of charger is 110-240v, output voltage is 25-27v, AC electric current is 1.2 -1.5 A, charger. It take 8-10 hours to make full charge. After full charge, green light will be on. Meantime, it will decrease the charging electric current of output. The charger will make heat when in charging, so please keep it in suitable condition.

**Please keep power switch of Eswing off when in charge, otherwise, Eswing will cause power consumption, It is bad for charging.**



**Picture 17**

## **Chapter VI Maintenance**

All other items are not mentioned in below content should be done by our professional person or technicians.

### **1.The Maintenance of Battery**

Eswing use BTM free maintenance battery. When you find the orange lamp and red lamp light continuous on, please charge in time. Please keep the charge time not over 15 hours. If you don't use Eswing for long time, please also keep it charged. Excessive discharge and charge is bad for battery's life and even lead to scrap battery.

### **2.When not Drive Eswing**

Please turn off the power switch or turn off the power switch, then lock the switch, in case of accidental start

### **3.Replacing Fuse**

The fuse of Eswing is 40A car fuse. The fuse maybe burned after overload and crashed sharply. When you found that there is no any action and indicator is off after start Eswing. Please check the fuse whether is burned. If you want to replace fuse, please open the fuse cover of back body with screwdriver, take out the fuse using clamp and replace a new fuse.

#### **4.Fixing Tire Fender**

Eswing has its own tire fender.You need fix it by yourself because of package.It is easy to fix it.Please screw on the enclosed 6 screws and fix the fender in right position(3 holes).

#### **5.Fastening Nut of Tire**

Please pay attention to the big nut of tire regularly.Check it whether loose.regu.After long driving long time,if you found the nut is loose,please stop to drive Eswing and fasten the nut by using 21mm spanner with 108 dynamics.

#### **6.Maintenance of Tire**

The normal air pressure is the basic conditions to guarantee the safe driving .The standard tire pressure is  $250 \text{ kpa} = 2.5 \text{ bar} = 2.55 \text{ kg/cm}^2 = 36.25 \text{ psi}$ , that is what we often say 2.5 kg.It is necessary to check the tire pressure regularly. Under inflation and excessive inflation will cause wear the tire unequally, which influences comfort and yardage and shorten the life of tire. Under-inflated tire also influences power saving. So check the tire every day is necessary. Check the tire pressure and check if there is trauma .Whether change the tire if there are impaled foreign bodies or abrasion, it depends.

#### **7.Appearance Cleaning**

It is necessary to keep the pedal and body of Eswing clean.Please clean the gravel, soil or other dirt things on Swing after your driving. Don't use any corrosive chemical such as petrol to clean Eswing.You can clean Eswing by using soft cloth without water.Don't wash Eswing with water.

## **Chapter VII Notice**

### **1.Keep Pedal of Eswing Horizontal**

Eswing will consider the current pedal's position as its original position setting when power on, so the pedal will be not horizontal after power on.It is hard for driver to stand on Eswing if the pedal is not horizontal.The horizon of pedal maybe change when gyroscope is not warm up.The horizon of pedal can be adjusted by repeated power on and off and on.



## **2.Balance Output of Eswing**

Computer balance will start immediately after your pressing the pedal switch of Eswing.If you always keep pressed the pedal switch,the computer balance will always start.But computer balance will keep balance even the pedal switch restoration(the pedal switch is pulled up) when at a low speed.In case driver can leave and push Eswing.Please pay attention,Eswing will have a trend forward if without load when Eswing keep computer balance.Therefor,don't leave Eswing without driver on road.Eswing will run automatically by itself until Eswing fall down backward when the speed over setting.

## **3.Eswing Standing**

When you want to make Eswing stood after your driving.You can make Eswing powered off and branch putted down,Eswing will be fixed(refer to picture 18)



**Picture 18**

## **4.Accident Water**

Power off Eswing immediately when Eswing fall into the water accidentally.Do not drive it again when you are not sure. so that fault will not be expanded. Eswing is 45kg. In the case,you can pull Eswing easily without power to home and contact us.We will give you afterservice guide.

## **5.Red Light Flash 4 Times**

(1)Check whether Lock is locked.Red flight will flash 4 times when you power on if the lock is locked.Eswing is locked when in transportation to avoid accident.So please unlock Eswing before your testing when you receive.

(2) Pedal problem also can lead red light flash 4 times. You can press pedal switch several times by using your hand. Make pedal restoration (the pedal switch is pressed down). Then power on Eswing. If red light still flash, please contact us.

## **6.Red Light Flash 3 or 2 Times**

It means that transducer has problem. Please power off and stop drive Eswing. Then contact us.

## **7.Red Flash Continuous,Eswing Has No An Action**

Eswing has overcurrent system. The inner overcurrent system will protect Eswing when Eswing crash or short circuit. At this time, red will flash continuously and Eswing will stop any action. In this situation, power off then power on. Test Eswing whether can work well. If can't, please contact us.

## **8.Lock Switch**

Locking Eswing to prevent run by accident (refer to picture 19). Power off then lock. When you power on again, red light will flash 4 times. It means Eswing is locked. When you power on and Eswing start to initialize, if you lock Eswing at this time. Locking will lead to pedal switch short circuit. Eswing will think that driver have stood on it and then start automatic balance. It is dangerous to drive Eswing in this case. Because pedal switch will keep connected. Eswing will not stop and keep moving all the time.



**Picture 19**



## Chapter VIII Technical Data

Net Weight	45 kg
Dimension	40*40*70 cm
Max cruise speed	18km/h
Max load	100kg
Max. Mileage (after full charging)	30-35 km
Max climb capability	15 degree
Min turning radius	0
Charging time	8 h-10 h
Battery	PB,24V,28Ah
Power	brush DC Motor
Voltage	100 v-240 v
Max Power	700 watts (2*350w/pc)
Lifetime of battery	1-3 years
Tire	17 in / 43 cm vacuum resistance of puncture
Wheel	12 in / 26 cm (Aluminum Rim)
Height of handle	70-102 cm adjustable
Height of footplate	10in 26cm
Specification of footplate	11.5×25 in / 16×40 cm
Max. Height above ground	13 cm
Standard Pressure	250 kpa
Certificates	CE & ROHS & FCC