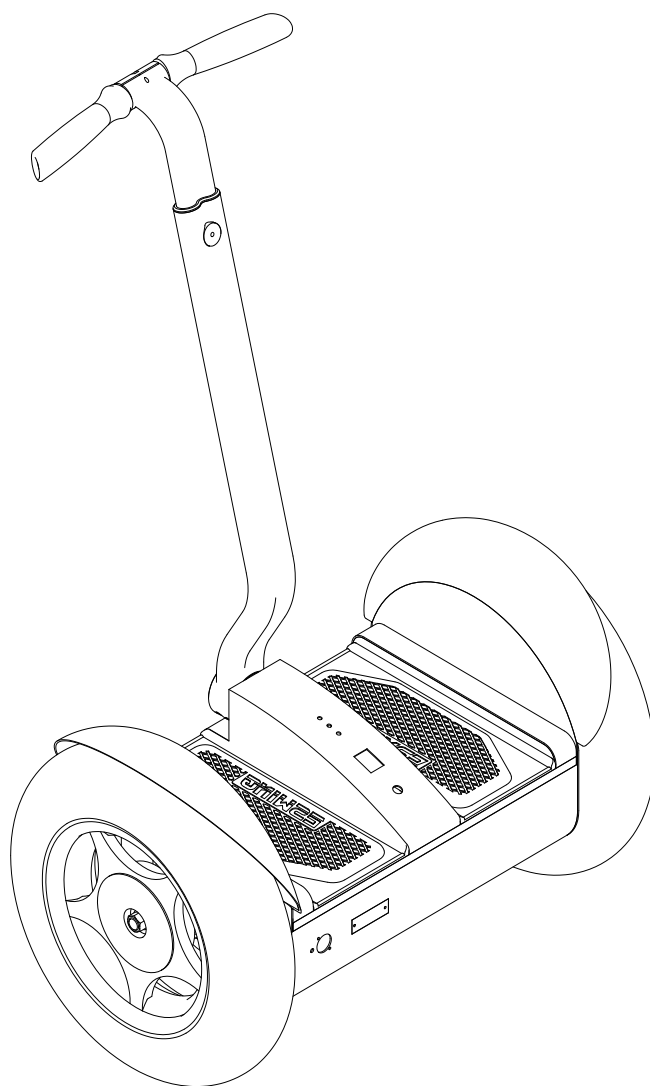


**ESWAY** 爱仕威

## **User Manual for ESWAY**



**Shenzhen Ocam Electronic Technology Co., Ltd**

## Welcome Use

The user manual comes with Esway for the users' reference when Esway (Smart Vehicle) are sold.

The user's manual is applied to all the Smart vehicles Esway made by our factory. You may find that some functions are different from what you ordered. It is normal because of different series.

The content and technical specification in this manual are valid when permitted to be printed. But Shenzhen Ocam Electronic Technology Co., Ltd has the right to alter and change technical specification or design without prior notification. And we will not assume any obligation.

To ensure our Esway brings you the best driving experience, the best way is to read the user manual carefully, you will learn how to drive this future transporter. After reading, please keep the user manual well so that you can refer to it any time when you need.

The warranty card will come with Esway. You can find your warranty rights in the user manual. Please read the user manual carefully so that you can know your rights and responsibilities well.

Please maintain Esway according to the user manual so that you can keep the scooter in the best condition. We have professional people who will supply you good after service and answer any questions and problem you care.

Sincerely wish you a nice driving!

## Safety Instructions

**For adults use only!**

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

**Please wear helmet, knee and elbow guards for safety purposes.**

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

**Our company is not responsible for the accident if you don not use it as the above request.**

It is hard for us to list all associated dangers when driving and maintaining Esway, therefore, please be careful and pay attention to the safety of yourself and others when riding.

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

# Contents

<b>Chapter I Introduction of Esway.....</b>	<b>4</b>
<b>Chapter II Parts Explained.....</b>	<b>5</b>
<b>Chapter III Instruction of remote control of Esway.....</b>	<b>7</b>
<b>Chapter IV Getting Started.....</b>	<b>8</b>
<b>Chapter V Esway Driving.....</b>	<b>10</b>
<b>Chapter VI Charging.....</b>	<b>13</b>
<b>Chapter VII Maintenance.....</b>	<b>14</b>
<b>Chapter VIII Notice.....</b>	<b>15</b>
<b>Chapter IX Indicator and Sound Alarm.....</b>	<b>16</b>
<b>Chapter X Technical Data.....</b>	<b>18</b>

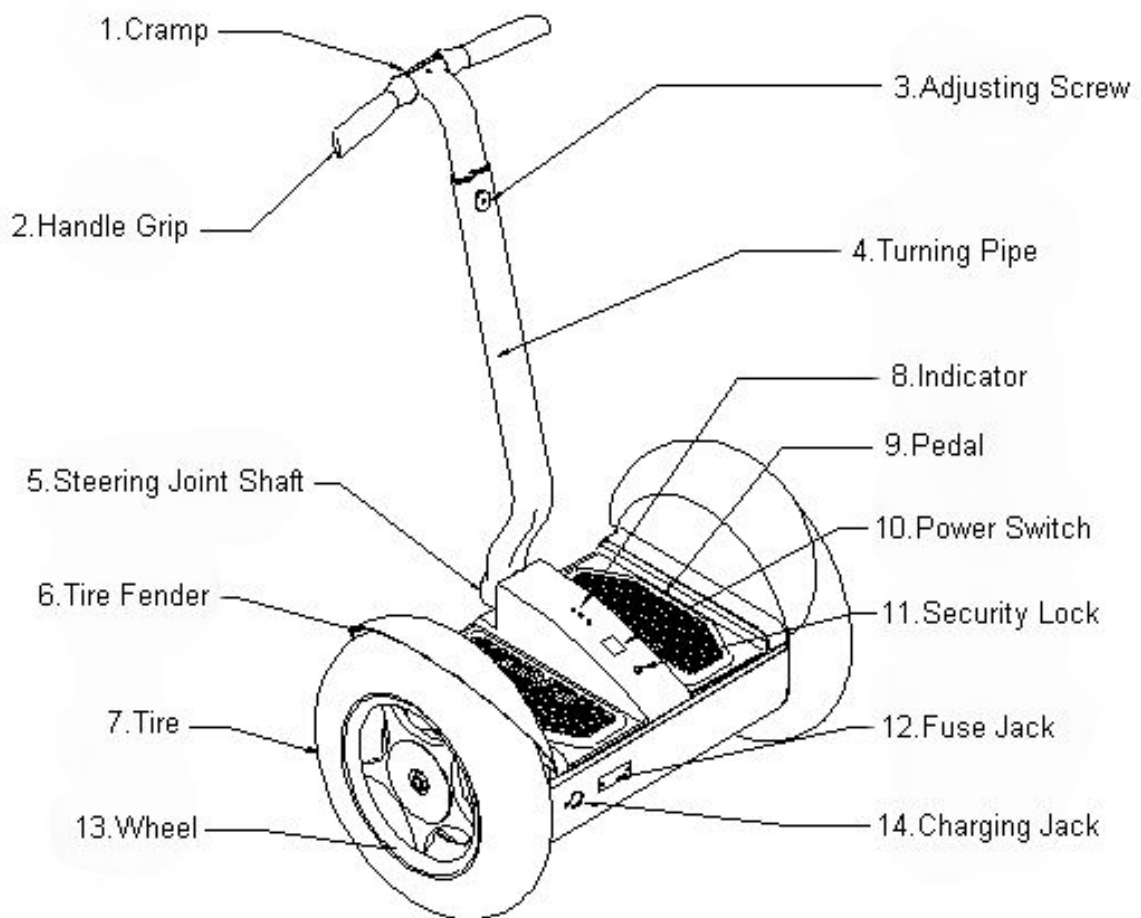
## **Chapter I Introduction of Esway**

The working principle of the two wheeled Scooter is based on the basic principle called "dynamic stability" which is the automatic balance ability of the vehicle itself. After judging body posture position with a built-in precision solid gyroscope, the vehicles electronic brain works out proper instructions through a sophisticated and high-speed central microprocessor, the 24V-28Ah battery drives the motor to balance the vehicle.

As a new transporter, Esway is difficult to classify in the traditional way, some people think that Esway should be a kind of double-wheeled Unicycle, while other people think it should be classed as a power stand-up Scooter, with its uniaxial double design which is different from the traditional biaxial double scooter, for official road regulations, this transporter is called Electric Personal Assistive Mobility Device (EPAMD)

The vehicle is equipped with dual wheels, its width is as narrow as a normal adult shoulder's width. It is 43 kg and battery-operated. It is not necessary to have a brake or throttle during driving. When the driver leans their body forward, Esway will run forward, when the body is upright, it will stop. It uses the dynamic balance principle, as the body moves to change the center of gravity so as to keep balance. Just as the human body stands and leans forwards it can lose balance, but the body's natural instinct will maintain balance, the dynamic stability replicates this. Esway uses the wheels to replace the function of the feet, reproducing the high precision balance action of a human, it is also cheap and convenient to use. The energy comes from two repeat charging BTM batteries which are free from maintenance. If sufficient power is supplied to your battery, the full charge capacity will last continuous for 5 hours driving, the driving range depends on the way you drive and ground conditions, driving on grass and slopes will consume more driving power.

## Chapter II Parts Explanation



**Picture 1**

### **1. Handle Bar/Turning Pipe**

(1)Used to control and make the Esway 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. The driver can adjust it according to his or her own height to

make the handle bar comfortable.

(3) Lock the steering rod after adjustment, then turn the handle bar to confirm that it has had been locked.

(4) Above adjustment of the handle bar/ turning pipe should be locked in position before driving.

(5) The turning pipe can be taken apart easily for carrying or storage.

## **2. Power Switch**

(1) The power switch is used to turn on and off the power, when the power switch is on the Esway will finish the initialization-settings.

(2) It is dangerous to stand on Esway without turning on the power.

## **3. Pedal Switch (SAFE switch)**

(1) The pedal can be active up or down, it has a built in safety switch. Esway can check whether someone on scooter by pedal switch.

(2) The pedal switch is safety insurance, when driving, if the driver leaves the Esway, the pedal switch will reset and then will stop after 3 seconds siren alarm.

## **4. Indicator Lights on Pedal**

(1) Green light (Operating light 1)

Battery is full, system is normal.

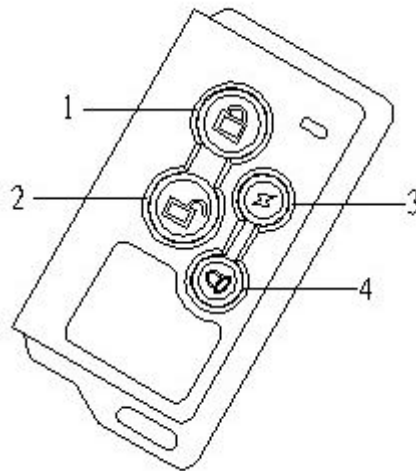
(2) Orange light (warning light 2)

Battery will run out soon.

(3) Red light (warning light 3)

Battery will run out completely

## Chapter III Instruction of remote control of Esway



Picture 2

### 1. Function of Remote Control

(1)Button 1: Open balance output. Esway can keep self balance without driver on it.

(2)Button 2: Close balance output.

(3)Button 3: High Speed Mode: (Max speed: 16 KM, the turning is the most flexible and sensitive).

(4)Button 4: Beginner Mode (Max speed: 8 KM, turning is slow.)

(5)Function of recording pedal horizontal level. Powering on Esway, setting a suitable position, pressing Button 3 and Button 4 at the same time, after two beep sounds, Esway will remember it as default position.

### Attention:

(1)Keep Esway horizontal and power on it, press pedal switch, you can drive Esway without remote control.

(2)Default mode is Normal Mode (Max speed: 12 KM, turning is flexible and sensitive).

(3)All the function of remote control button is valid only after driver leave Esway.

### 2.Function of Sound Alarm

(1)One beep sound: confirming reception of remote control

(2)Fast and short sound: after driver leave Esway. It detect without driver on it.

(3)Continuous sound: over max speed. System limits the speed.

(4)Continuous five sounds: lock system (problem of pedal switch).

## Chapter IV Getting Started

### 1. The Right Starting Operation

Hold the turning pipe/handle bar with one hand, keeping the pedal upright ,turn on the power ,after green light, orange light and red light flash at the same time, the green light stay on continuous, It means starting success (refer to picture 3,4,5). Then hold the handlebar firmly with two hands (refer to picture 6).

Make sure the pedal is on horizontal level when power on Esway. Because Esway cannot power on if it is not on horizontal level.



Picture 3



Picture 4



Picture 5



Picture 6



## 2. Wrong Starting Operation (refer to picture 7 and 8 )

Esway cannot power on if it is not on horizontal level. So we must make sure the pedal is on horizontal level, then power on it.



Picture 7



Picture 8

### 3. Correct Starting Operation (refer to picture 9)

Make the pedal of Esway on horizontal level before power on it.



Picture 9

## Chapter V Driving

Driving the Esway 2 wheel self-balance vehicle is totally different from anything you may have driven before, Esway does not have a brake, accelerator or gear system. Please read the user manual or get instruction from an experienced person before your first ride.

Esway is very addictive once you enjoy the fun of driving, you will not help yourself driving it whenever you get the chance, following these instructions will be beneficial for your enjoyment.

Below description will be helpful to your driving.

Tip: We suggest you use Beginner Mode if you did not driver our Esway before.

### 1. Standing on Esway

After switching on, hold the handlebar with left hand. Meanwhile step on pedal with right foot (refer to picture 10); or hold the handlebar with right hand, meanwhile step on pedal with left foot. The sequence is the left hand-right foot-left foot -right hand or right hand -left foot-right foot-left hand. By this time you will have stood on the balanced scooter. Stand upright without any body move, just relax and keep your body balance, then Ewing will still stay still (refer to picture 11).



**Picture 10**



**Picture 11**

## **2. Driving straight forward**

Lean your body forward slowly using the centre of gravity, Esway will move forward (refer to picture 12). The driving speed is controlled by the leaning angle of your body. Lean forward more, Esway will go faster and vice versa. For a stable driving, we suggest lean forward slowly. It is dangerous for leaning forward suddenly. This is just like a sudden acceleration when driving a car.



**Picture 12**

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

Driving backward is not recommended for the driver's safety, because it is hard for you to see behind when driving. Turning radius of Esway is zero, which you can easily

achieve in a continuous spin around 360 degrees on the spot. When you drive forward in a straight line and you want to slow down or stop, you can lean backward or squat down (the center of gravity backward). Lean slowly or smoothly backward is helpful for slowing down and stopping safely (refer to picture 13).



**Picture 13**

**Tip:** Driving forward in a straight line you just simply push the handle forward, then backward to slow down or stop.

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

It is easy to turn the Esway when driving. Keep the turning pipe/handle bar left-forward or right-forward to the end, at the same time keep your body corresponding, left-forwarded or right-forwarded as the trend of Esway (refer to picture 14 and 15). Thus you can easily achieve various turns. When the Esway faces the right position, you only need return the pipe to the original position and stand straight Esway will stop.



**Picture 14**



**Picture 15**

## 5. Turning in Driving

Esway's turning range is calculated automatically according to the driving speed, the speed is faster, the turn range will be less to ensure safety of the driver, and it is stopped by the turning pipe and body's corporation. To turn left, the turning pipe should be swung smoothly to the left at the same time as your body leans left. The angle of Esway's turn is decided by the swinging angle of the turning pipe and the leaning of your body.

**Tip:** the actual turning is finished by the above combination of actions, driving the Esway is like a combination of riding horses and skiing, or the movement is like Michael Jackson's dancing. Esway also is called a thinking car, which means the driver can drive Esway according to his thoughts.

## 6. Driving in Bad Weather

Esway is not waterproof. Please do not drive Esway on rainy days. It is easy to damage the motherboard and the motor if water gets into the electrics.

Esway cannot be driven in the snow.

Esway does not have night lights, so please do not drive Esway in the dark

In China, Esway is hard to define, so please don't drive on public roads used for motor vehicles .When driving on the sidewalk, single driveway or public places, please comply with local traffic regulations and the local bye laws.

# Chapter VI Charging

When you find the orange lamp and red indicator is continuously on, it shows the battery needs to be charged. First, turn off the power switch and use the specialized 24 V battery charger. Insert the plug into Esway's charge jack, then connect the power. When charger is connected the Red light will glow continuously, showing Esway is in charge mode (refer to picture 16).

The charger has two indicators-the red light means on charge, Green light means fully charged, 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, The charger takes 8-10 hours to fully charge. When fully charged the green light will be on continuously the charging electric current will then decrease output. The charger will become warm when charging, so please keep in suitable place.



**Picture 16**

**Please keep power switch of Esway off when on charge, otherwise, Esway will cause power consumption, which is bad for charging.**

## **Chapter VII Maintenance**

All other items that are not mentioned below should be done by a professional person or technician.

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

Esway use BTM free maintenance battery. When you find the orange lamp and red lamp light continuously on, please charge. Keep the charge time to no more than 15 hours. If you are not using Esway for long periods, keep it charged, excessive discharge and re-charge is bad for the battery's life and can even lead to having to scrap the battery. (Suggestion: please keep it charged every month even you don't drive it)

### **2. When not Drive Esway**

Please turn off the power switch then lock the switch, in case of accidental starting.

### **3. Replacing Fuse**

The fuse of Esway is 50A car fuse, the fuse maybe burned after overload or crashed sharply, when you find that there is no action, and the indicator is off after switching on, check the fuse if it is burnt out, you need to replace fuse, open the fuse cover at the back of body with screwdriver, take out the fuse using clamp and replace with a new fuse.

#### **4. Fastening Nut of Tire**

Pay attention to the big nut on the wheel, regularly check, if it is loose tighten with a 21mm spanner to 108 torque.

#### **5. Maintenance of Tire**

The normal air pressure is the basic conditions to guarantee your safe driving .The standard tire pressure is 250 kpa = 2.5 bar = 2.55 kg/cm<sup>2</sup> = 36.25 psi, that is what we recommend. It is necessary to check the tire pressure regularly, under inflation and excessive inflation will cause unequal tire wear, which influences comfort and mileage and shorten the life of tire, under-inflated tires also influence power saving. Also check for cuts and splits which could cause the tire to deflate at a rapid rate, causing injury to the rider.

#### **6. Appearance Cleaning**

It is necessary to keep the pedal and body of Esway clean. Please clean the gravel, soil and mud off after you're driving. Don't use any corrosive chemical such as petrol to clean Esway, you can clean Esway by using soft cloth and brush, don't wash Esway with water.

## **Chapter VIII Notice**

### **1. Balance Output of Esway**

Computer balance will start immediately after you press the pedal switch of Esway. If you keep pressing the pedal switch, the computer balance will always start, the computer will keep balance for 5s even if the pedal switch is restored when at a low speed. Please pay attention, Esway will keep balance if the balance output function is ON. That means putting this scooter on the road without driver on, it will go all by itself.

### **2. Esway Parking**

For temporary parking, you can just turn on the balance output function and lean it against a wall or step that can stop it from moving forward; for long time parking, you can switch off the power and put the parking stand down. This parking stand can be purchased from

us independently.

### **3.Accident Water**

Turn the power off immediately if Esway falls into water accidentally. Do not drive it again if you are not sure of the default. The Esway weighs 43kg. You can pull it easily without power home and then contact us; we will give you guide.

### **4.Lock Switch**

Lock Esway to prevent running by accident. Power off and then lock, when you power on again, red light will flash 5 times, it means Esway is locked.

When you power on and Esway starts to initialize, if you lock Esway at this time, the locking will lead to pedal switch short circuit. Esway will think that driver has stood on it and then start automatic balance. Please do not drive under this situation.

## **Chapter IX Indicator and Sound Alarm**

### **1.Indicator introduction**

(1)Green light (operating light 1)

**Continually On (no blinking):** System is normal. Battery is full.

(2) Orange light (warning light 2)

**Continually On (no blinking):** battery is low; it needs to be charged in time.

**Blinking:** overload!

(3) Red light (warning light 3)

**Continuous on (no blinking):** battery run out and must be charged immediately.

**Fast blinking during driving(sound alarm continuously):** It means that you should adjust your body when moving forward at high speed. At this time, the Esway will upright itself automatically to stop the driver from leaning forward, to limit the speed and keep the driver safe.

**2.Sound alarm fast:** The pedal switch is not in the correct position (the pedal switch is



pressed down) or the driver has left the Esway when driving, which can make the pedal switch reset (the pedal switch is pulled up). In this situation, if the pedal switch is still not in the correct position in 3s (the pedal switch is pressed down), Esway will think driver has fallen off and will stop automatically to keep the driver safe.

**Please remember, pedal switch must be in right position (the pedal switch is pressed down), or Esway will switch off power and the rider will lose balance.**

### **3.Sound alarm 5 times**

(1)Check whether Lock is locked. After lock, the indicator will not light when you power on Esway and sound alarm 5 times. Esway is locked when in transportation to avoid accident. So please unlock Esway before you drive it after you receive.

(2)Pedal problem also can lead red light to flash 5 times, you can press pedal switch several times by using your hand to make pedal restore (the pedal switch is pressed down).Then power on Esway, if red light still flash, please contact us.

### **4.Indicator light normal, Esway Has No any Action**

After power on Esway, green light, orange light and red light flash, green light is continuous on, normal starting ends. Esway can't balance by using remote control or pressing pedal switch. It means that there is some problem of gyroscope or accelerometer. In above two situations, please power off Esway and stop driving, then contact us.

### **5.Function of battery display and sound alarm**

**Green light continually On:** Display system working well and battery in normal state.

**Orange light continually On:** battery is low; it should be charged in time.

**Red light continually On:** battery power run out and must be charged immediately.

Always keep battery charged before it is fully run out (red light is continually on). It is harmful to battery and will reduce battery's life.

## **Chapter X Technical Data**

Model Number	ES1402
Dimension	68cm *43cm*43cm
Net Weight	43 kg
Power	Brush DC motor, max 1600W
Tire	17 in vacuum smooth (Black Aluminum Rim)
Height of handle	80-110 cm adjustable
Max Load	150 kg
Max Speed	18 km/h
Max Distance	35 km
Height of Pedal	26 cm
Max. Height above ground	13 cm
Turning Radius	0 m
Max climb capability	≤30 degree
Standard Pressure	250 kpa
Battery Display	3 state
Charging time	8-10 h
Package Size	70cm* 45cm* 50cm