

# VAMOS ⚡

## USER MANUAL



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## 1. Important Tips

★ Do not use your Vamos Bike before reading the specification carefully and knowing it's performance. If you lend your bike to someone, make sure they know how to operate and drive it! (Nothing worse than a friend ruining your new toy.)

★ Frequent starting, braking, climbing steep hills, upwind driving, overloading, etc. will consume the battery and affect the total range. The less you do these things, the longer the battery will last

★ If you are storing your Vamos Bike away for a long period of time keep the battery reasonably active and charge at least once every 2 months

★ Vamos Bikes are splash proof but not waterproof so driving in the rain is not an issue but driving deep into water is an issue and it will short circuit.

★ If you are to disassemble or refit your bike, Vamos can not take responsibility and the warranty will no longer be valid

★ Please do not throw away your battery! This is very bad for the environment and we at Vamos, will happily take it off your hands!

## 2. Parts



- |                |              |
|----------------|--------------|
| 1. Brake lever | 16. Disc     |
| 2. Grips       | 17. Pedal    |
| 3. Display     | 18. Crank    |
| 4. Handle bar  | 19. Crankset |

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- |                    |                         |
|--------------------|-------------------------|
| 5. Headlight       | 20. Middle axle         |
| 6. Throttle        | 21. PAS sensor          |
| 7. Stem            | 22. Kickstand           |
| 8. Battery         | 23. Saddle              |
| 9. Frame reflector | 24. Wheel               |
| 10. Front fork     | 25. Seat post clip      |
| 11. Battery key    | 26. Front reflector     |
| 12. Tyre           | 27. Controller (inside) |
| 13. Rim            | 28. Chain               |
| 14. Brake clip     | 29. Motor               |
| 15. Spokes         | 30. Seat post           |

### 3. Assembling & Adjusting

Step 1: Take the bike from the carton and take off all the protecting films and belts. It will be like the picture below.



Step 2: Move the front fork to the opposite site. And move the

handle bar to the front.



Undo the four screws and face the handlebar base away from the bike like shown in the diagram.



Step 3: Loose the two marked screws and move the stem and handlebar to the vertical position. Then insert the stem to the frame. Make sure all the safety lines must be into the frame.





Step 4: Tight the three screws on the stem



Step 5: Before inserting the front wheel make sure you put the wheel the right way in. You can tell by the disk brake being on the side of the disk clips.

Step 6: Put the wheel inside of the front fork.and make sure you place the different pads and nuts in the right spot. There are pads with a hook. Put the hook inside of the hole of the front fork



Make sure the disks land nicely in between the disk clips .



Step 7: Tight the screws and meanwhile make sure the wheel is in the center of the front fork.



Step 8: Make sure the stem, wheel and the frame are in line.

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Then tighten the centre screw. Also adjust the height of the handle bar. You can adjust the height to a position that is comfortable for you.



Step 9: The disk brakes should not need to be adjusted but you can tighten them if you feel the need to. The pictures depict two ways to tighten mechanical disk brakes with the first being the easier option.





Step 10: Insert the mudguard into the front fork and fix the three screws. Then adjust the mudguard to let the wheel in the center move smoothly.



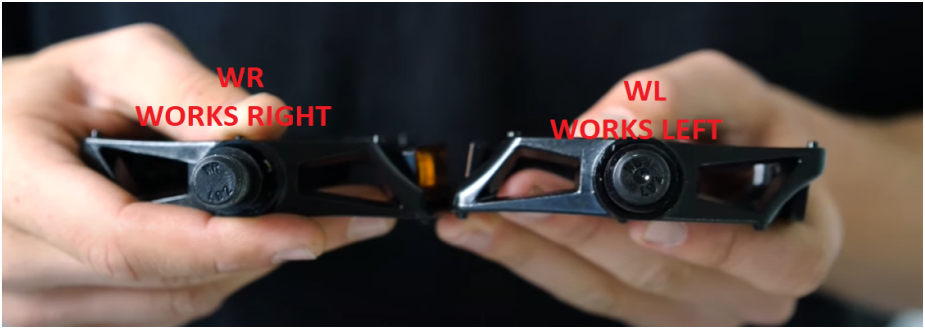
The mudguard for the Diablo is only with one screw. (Mudguard is also optional.)





**Step 11: Common mistake- Please do not get the pedals muddled up!**

On the top of the pedal shaft, “L” shows the left side pedal and “R” shows the right pedal. The left pedal works in the reverse way when screwing on. Once they are on, use a spanner to make the pedals tight. And at the end of the assembling. Please do not forget to cover the rubber cap of the stem screw.



#### **4. Checks before riding**

Make sure that the brakes and the front & rear lights are all working

Check the pressure of the tyres.

Check that the display works well

Check the battery capacity

**Please note: if you use your bike frequently, it is recommended to inspect the performance of the fork, the frame, the suspension and the brakes.**

## 5. Operation and Adjustment

### 5.1 Using the bike

#### Start

Turn the system on with pressing the “C” (or on/off) button on the display for two seconds. The light on the display will indicate that you have started the e-bike. Use the throttle slightly (do not use it to maximum at the beginning), you will find that the engine will start.

#### speed up

With the vehicle’s starting, you can keep on using the throttle more and more but you will need to control your speed according to the situation. Other than the throttle you can use the PAS (Pedal Assistance System) to activate the motor in the bicycle. pedal like a normal bicycle and the PAS will start automatically. You can adjust PAS levels on the display.

◆If you use the e-bike at night, make sure to turn on the front light. The button is on the handle bar or on the top of the light itself. To turn on the front light hold down the + button

### 5.2 PAS System

#### Introduction of PAS

PAS system is a pedal assisted sensor that is installed in the middle axis position. When you Pedal the bicycle, the sensor will receive the action of the user. This will then send the signal to the controller which will start the motor.

#### How to start PAS System

Turn on the power of the bicycle and adjust PAS levels on the display. You pedal just like a normal bicycle and the PAS will start automatically.

### 5.3 Safety Height Mark

#### Handle stem position

Adjustable handlebars can be adjusted according to your preferred riding position.

#### Method for adjustment:

1. Screw off the adjusting screw in the stem.
2. Move the angle of the stem to your favorite position in the safety mark

(safety line).

3. Screw on the adjusting screw in the stem.

#### **Seat cushion position:**

The height of the seat can also be adjusted according to your favorite position by loosening the seat post clip..

The angle of the saddle is also adjustable. You can loosen the screw between the seat and seat post to adjust.

### **5.4 Brake System**

Brake system is incredibly important ,so it is necessary to check the brake system carefully before driving.

Sudden braking will not make the bicycle stop in a short distance and make the bicycle more likely to slide. It will not only cause danger but also increase the brake distance. So the brake system is only used for the adjustment of the speed of the bicycle.



Generally, the brake system includes the brake lever, braking device(disc brake, V brake and other brake types) and brake cable.

#### **Brake lever**

The structure of the brake lever is shown in Pic(left Pic):the right brake lever controls the front brake and the left brake lever controls the rear brake. This may be different in some countries due to the law. ·Adjustable screw is used for adjusting the distance between brake pads and rim.

·Effective distance of the brake lever is half of the distance between the brake lever and the grip. if the brake lever is near to the grip before braking tightly, that means there is a very large distance between the brake pads and the rim.

#### **Disc brake (as shown in right Pic.)**

Adjustment method for brake pads:

- 1.Screw off the position screw;
- 2.Adjust the distance of brake pads by left/right moving.
- 3.Screw on the position screw.



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### **Brake cable**

·Bifurcation should be avoided for internal wiring. So it is better to wear a tail sleeve at the end of the wires.



·The brake cable should be pulled out and oiled regularly to avoid rusting and resistance.

·It is better to wire the brake cable on a line. but if it must be bent, try to avoid small radian bending as possible.

·The brake cable should not be locked when the handlebar reaches the limit of left and right turning.

## **5.5 Shift System**

Shift system includes: Shift, front & rear derailleur, chain, flywheel and speed changing wiring.

The speed changing levels is the number of front crankset plates × the number of rear flywheel plates.

For example: 3 pieces of crankset plate (front) × 7 pieces of flywheel plate (rear) =21 speed.

### **Shift**

·The shift includes: speed display and finger shi

·Shifts are on both sides of the handle bar. The left one controls the front transmission and the right one controls the rear transmission.

·If there the speed of the bicycle is 6,7,8 or 9. That means there is only one plate for the crankset. So there is only a right shift to control the speed.



### **Rear Transmission Parts**

Rear Transmission parts include front derailleur and rear derailleur. If the speed changing wiring is too loose or too tight , you cannot change the speed smoothly. If so, you need to make a small adjustment.

When you change the speed, if the chain cannot be changed from the bigger gear to the smaller gear you should roll the screw to the up direction. If the

chain cannot be changed from the smaller gear to the bigger gear you should roll the screw to the down direction. This screw is for small adjustments. There is also a nut for a big adjustment. You need a banner to loosen or tighten the wire.



## 5.6 Carrier

Maximum loading of the carrier should be less than 15KGS.

This luggage carrier is not designed for a trailer. If assembling the child-seat on the carrier please do so with extreme caution and make sure it is no more than the recommended weight. The bicycle performance may be different (particularly when steering and braking) when the luggage carrier is loaded, please pay attention.

Please make sure that any luggage on the carrier is secured safely.

Please put the luggage evenly to the two sides of the luggage carrier.

## 5.7 Battery

### Installing and removing the battery

Remove the battery: turn off the lock located on the battery to the last level. Pull out the battery slightly.

Install the battery: Put the battery on its guided spot. Put the battery into its socket slightly and lock it.

### Charging the battery

The battery's autonomy is indicated with the LED lights located on the battery, and also on the display located on the handlebar.

Your battery must be charged in the regular temperature, non-flammable and dry place. Also, it must not be covered.

Here are the steps to be followed when charging your battery:



<b>Step 1</b>	Turn the battery off. The LED lights will be off.
<b>Step 2</b>	Plug the charger plug into the socket located on the charger (Pic.A). Make sure to make them tight. And also put the battery plug into the battery socket.
<b>Step 3</b>	Connect the charger to the socket in your house.
<b>Step 4</b>	Check the LED light on the charger: <ul style="list-style-type: none"><li>• The red LED light is on: the battery is being charged.</li><li>• The green LED light is on: the battery is charged; you can unplug the charger.</li></ul>



It takes about 5-6 hours for a full charge when using the standard charger supplied by the original bicycle company. Faster charger is not suggested to be

used.

### **Battery autonomy and life**

#### **Autonomy**

Your bicycle's autonomy is from 45 to 70 with PAS. It depends on many different factors (level of PAS used, different roads, rider's weight, frequent stops/start-ups, hills, tyre pressure, etc...)

#### **Battery**

With the use of the battery the capacity of the battery will lower gradually. If the available autonomy of the battery no longer satisfies your needs, you will be able to obtain a new one from VAMOS.

#### **Maintenance**

If you don't use your bike for more than 45 days, store it in a dry place to protect the electronic components and try to charge at least once every 2 months.

**Note:** *Never store a completely discharged battery. During the winter or long storage periods, it is recommended to charge the battery every 45 to 60 days. Don't forget to switch it off. Store your battery at a temperature between 15° to 25°.*

### **Battery safety instructions**

For your safety, you should follow these rules:

**Always handle with great care**

**Always keep it away from children**

**Do not open, hit, pierce or submerge it**

**Keep it away from more than 60° temperatures.**

**Never create a connection between the +/- plugs.**

**Never sleep near a battery when it is charging**

**Only use the charger that comes with your bicycle**

**If your battery is damaged, do not use it, bring it back to Vamos as soon as possible**

5.8

## 5.9 Lubrication

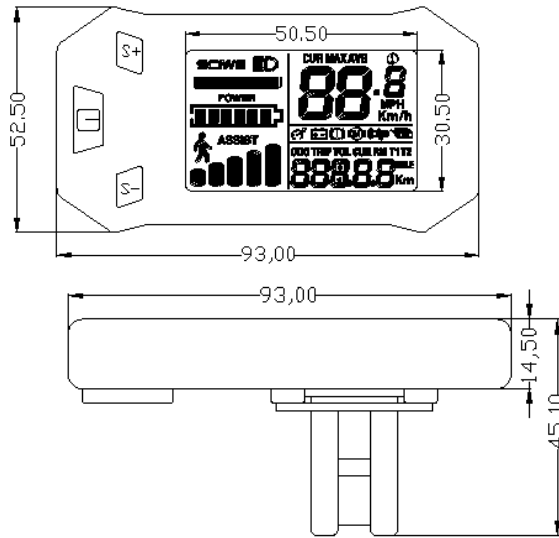
Frequency	Component	Lubricant	How to Lubricate
Weekly	Chain	Chain Lube	Brush On or Squirt
	Speed shift	Oil	Brush On or Squirt
	Pulleys	Chain Lube	Oil Can
	Derailleurs	Oil	3 drops from oil can
	Brake Calipers	Oil	can
	Brake Levers	Oil	2 drops from oil can
Monthly	Shift Levers	Lithium Based Grease	Disassemble
Every Six Months	Freewheel	Oil	2 squirts from oil can
	Brake Cables	Grease	Disassemble
Yearly	Bottom Bracket	Grease	Disassemble
	Pedals	Grease	Disassemble
	Derailleur	Grease	Disassemble
	Cables	Grease	Disassemble
	Wheel	Grease	Disassemble
	Bearings		
	Headset		
	Seat Post		

**Note:** The frequency of maintenance should increase when using your bike in wet or dusty conditions. Do not over lubricate. Never use a degreaser to lubricate your chain

## 5.10 LCD display operation

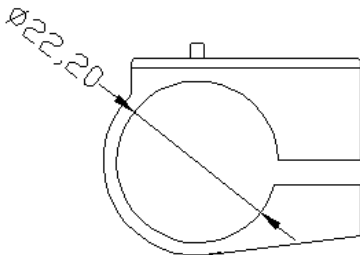
### . Shape, Size and Material

The shell of this product is ABS, the transparent LCD window is imported high hardness Acrylic.



Front view

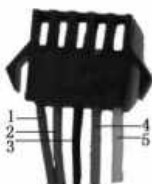
Side view



**.Working voltage and wiring**

- 1 working voltage : DC24V /36V compatible、 36/48V compatible ( set on LCD), Other voltage can be customized.
- 2 Wiring :  
Standard connector wiring





Connector to the controller



LCD outlet terminal



abutment terminal

#### Standard connector wiring turns

wiring turns	color	function
1	Red ( VCC )	Power wire
2	Blue ( K )	Controller and power controlling wire
3	Black ( GND )	Earth wire
4	Green ( RX )	Data receiving wire
5	Yellow ( TX )	Data sending wire

#### EXTENTION FUNCTION

Headlight: Brown ( DD ) : headlight positive pole ,

White ( GND ) : headlight negative pole。

PWM Voltage type assistance controlling out independence speed sensor,

Order new function for different color of wire

#### .Functions

##### 1、 Display function

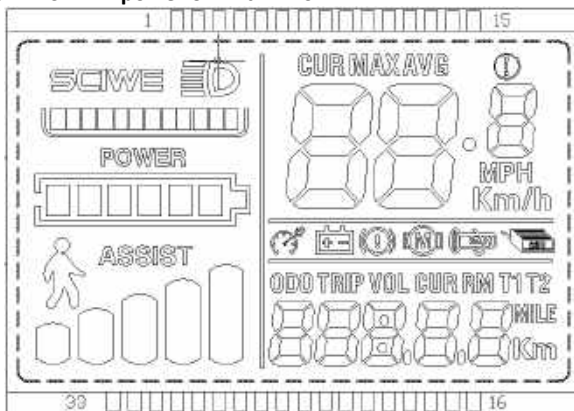
Speed display、 Assistance display、 Battery power display、 Fault display、 Total range display、 current range display、 fix-speed cruise、 brake display、 headlight display

##### 2 . Control and set function

Power control 、 headlight control 、 6Km/h control 、 fix-speed cruise control、 rim size set、 5 levels assistance set、 max speed set、 Automatic dormancy set、 backlight brightness set、 Starting method set、 driving method set、 assistance sensibility set、 assistance magnet disc type set、 voltage set、 current-limit of controller set.


##### 3. CommunicationPprotocol : UART

**ALL ON DISPLAY power on within 15**



**Display introduction**


1 Headlight 

2. Current levels  This function needs software support in the controller.

3. Voltage levels POWER 

4. Multifunction display area 

Total range ODO, Current range TRIP, Voltage VOLT, Current CURRENT, Rest of range RM (a software support in BMS needed) 、 working time TIME

5. Speed display area 

Current speed CUR、 Max speed MAX、 Average speed AVG

Unit MPH, KM/H

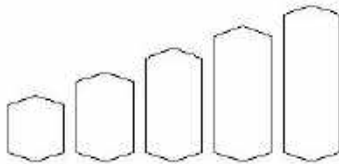
The display will calculate the speed according to the rim size and signal data (Motor hall needs to set the magnet quantity).

#### 6. Fault display area



Motor fault , Throttle fault , controller fault , brake lever fault , protecting of under voltage 

#### 7. Assistance display area



Assistance ( 0-5 levels )、Cruise

#### 8. Setting

P01 : Brightness of the backlight , 1 is the lowest level , 3 is the highest level ;

P02 : Unit of the range , 0 : KM ; 1 : MILE ;

P03 : Voltage : 24V , 36V , 48V , Default 36V ;

P04 : Dormancy time : 0 , no dormancy ; Other numbers is the dormancy time , unit is 0-60 minutes ;

P05 : Assistance level : 0-3levels : 1 level 2V , 2 level , 3V , 3 level , 4V ;

1-5levels: 1 level 2V , 2 level , 2.5V , 3 level , 3V ,  
4 level , 3.5V , 5 level,4V;

P06: Rim size : Unit , inch ; precision : 0.1 ;

P07: Number of magnet steel : Range : 1-100 ;

P08: Speed limit : Range 0-50km/h , 50 means no speed limit ,

1. No signal communication condition ( Display controlling ) :When the actual speed larger than setting speed , Turn off the PWM output ; When the actual speed is less than the setting speed , Turn on the PWM output automatically , Driving speed is the current speed

±1km/h ; ( Only limited to PAS not Throttle

2. Signal communication condition ( Controller controlling ) :Driving speed will be kept to the setting speed.

Tolerance : ±1km/h ; ( Limited to both PAS and throttle )

Mark: The data here is based on KM. When the unit setting is Mile, The speed on the display is the correct Mile. But the data setting in this menu will not be changed. So it is different to the actual speed.

P09 : Zero starting、Unzero starting setting , 0 : Zero starting ; 1 : Unzero starting ;

P10 : Driving method setting

0 : Assistance driving(Throttle is unusable)。

1 : Throttle driving(PAS is unusable)。

2 : Both Assistance and throttle driving(The Zero starting is unusable when under throttle driving)。

P11 : Sensitivity of PAS Range : 1-24 ;

P12 : Strength of PAS starting Range : 0-5 ;

P13 : Magnet types of PAS setting 5 , 8 , 12 three types

P14 : Current limit of controller Default 12A Range : 1-20A

P15 : This function has not developed

P16: ODO set to 0. Long press the top button for 5s.

#### . Button introduction

Buttons will be like this



#### Button introduction

Button operations are short press, long press and combination long press. Short press is used for convenient and frequent operations. For example:



1. When riding , If you need to change the assistance or speed , short press.



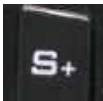
2. Change to multifunction area when riding, short press.

Single button long press is used for mode and switch.

Combination press(long press) is used for parameter setting.

Operation details :

1. Modify assistance levels

Short press  , Assistance + 1

Short press  , Assistance - 1

2.Change to speed display

Long press  + 

3.set/clear 6KM/H cruise, headlight turn on/off

Stop vehicle , long press  , will be 6KM/h cruise ; Long press



when riding , it will be fix speed cruise , If it is under fix speed cruise currently , it will release cruise ;



Long press turn on/off headlight.

4. Turn on/off display



Long press

5. Change to multifunction display area



Short press

6. Setting parameter



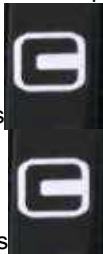
Long press + will be into parameter setting page , the parameter setting can be including , Rim size(inch), number of magnet steel , brightness of the display, under voltage point and etc. ( setting : P01-P14 ) ;



In the page of parameter setting , short press +parameter , or



short press -parameter , parameter will be shining after setting , after choose the parameter ,





4. a. Long press to save, shining will stop.

b. short press to change to the next parameter and save the



last parameter at the same time.



2. Press  + , quit setting and save , If you don't press , it will quit and save automatically after 10S.

## 6. Recommended safety instructions & maintenance

### 6.1 Recommended safety instructions

#### Helmet

For safe riding- use of a bicycle helmet.

#### Tyres

Inspect the abrasion of your tyres on a regular period and check the tyre pressure at least once a month.

#### Reflector

please make sure that the position of reflectors and lamps are not obscured when luggage is attached to the luggage carrier

#### Battery

Cf. Chapter. 4.7

### 6.2 Maintenance

#### Caution:

Bike maintenance and repairing needs more skills and professional tools. Using the replacing parts from your dealer only.

#### Cleaning

Always remove the battery when cleaning. Use soapy water or water mixed with a gentle detergent, and then rinse with clean water.

Make sure to keep the controller dry.

Do not use a high pressure washer!

#### Maintenance

Your electric bicycle is safe for the environment.

A battery that no longer works must be returned to your dealer so that he may

pass it to a recycling company.  
 The engine does not require maintenance.

## 7. Regular maintenance

### 7.1 Recommended values of the nut torque

<b>Front Wheel Nuts</b>	22-27 Newton Meters	16.2-19.8 ft.-lb.
<b>Rear Wheel Nuts</b>	24-29 Newton Meters	17.5-21.3 ft.-lb.
<b>Seat Binder Nut</b>	12-17 Newton Meters	8.8-12.5 ft.-lb.
<b>Seat Pillar Clamp Nut</b>	15-19 Newton Meters	11.0-14.0 ft.-lb.
<b>Brake Anchor Nut</b>	7-11 Newton Meters	5.1-8.1 ft.-lb.
<b>Handlebar Clamp Nut</b>	17-19 Newton Meters	12.5-14.0 ft.-lb.
<b>Head Stem Expander Nut</b>	17-19 Newton Meters	12.5-14.0 ft.-lb.
<b>Crank Cotter Pin Nuts</b>	9-14 Newton Meters	6.6-10.3 ft.-lb.
<b>Brake Centre Bolt</b>	2-17 Newton Meters	1.5-12.5 ft.-lb.

### 7.2 Recommended Checklist

Frequency	Task
Before every ride	Be sure batteries are fully charged Check tire pressure Check brake operation Check spokes loosening
After every ride	Be sure to fully charge batteries Wipe the water quickly
Weekly	Lubrication as per schedule 4.8
Monthly	Inspect wires Inspect connectors Check derailleur adjustment Check brake adjustment Check brake and gear cable adjustment Check tire abrasion and pressure Check wheels and spokes tightness Check hub, headset, crank and bearings looseness Check pedals tightness

	<p>Check handlebars and stem tightness</p> <p>Check seat and seat post tightness and comfortably adjusted</p> <p>Check frame and fork for safety</p> <p>Lubrication as per schedule 4.8</p> <p>Safety check</p>
Every six months	<p>Lubrication as per schedule 4.8</p> <p>Check all points as per monthly service</p> <p>Check and replace brake pads if required</p> <p>Check chain abrasion</p>
Yearly	Lubrication as per schedule 4.8

## 8. Fault & Solving

NO.	Fault	Reason	Solving
1	Speed adjustment is not sensitive or the max speed is too low	<ol style="list-style-type: none"> <li>1. Low battery voltage</li> <li>2. Something is wrong with the throttle</li> <li>3. Something is wrong with controller</li> </ol>	<ol style="list-style-type: none"> <li>1. Recharge the storage battery</li> <li>2. Replace the throttle and controller</li> </ol>
2	The motor does not work when the power is on	<ol style="list-style-type: none"> <li>4. Something is wrong with the throttle</li> <li>5. Bad connecting of the power lock and plugs</li> <li>6. Something is wrong with controller</li> <li>7. Something is wrong with PAS sensor</li> </ol>	<ol style="list-style-type: none"> <li>3. Replace the throttle, controller or PAS sensor</li> <li>4. Weld the connecting part again</li> <li>5. Adjust the distance between the two parts of the PAS sensor.</li> </ol>
3	Less mileage for one charge	<ol style="list-style-type: none"> <li>8. Tire pressure is less</li> <li>9. Wrong charge or</li> </ol>	<ol style="list-style-type: none"> <li>6. Put more pressure in the tire</li> <li>7. Properly charge the</li> </ol>

		<p>the fault of charger</p> <p>10. Storage battery is damaged or end of life</p> <p>11. Frequent braking starting and overloading</p>	<p>storage battery or replace charger</p> <p>8. Replace the storage battery</p>
4	The charger fails to charge	<p>12. The connection of the charger is loose or damaged</p> <p>13. The welding points of the storage battery falls off or damaged</p>	<p>9. Weld connections or replace it</p> <p>10. Weld connections or replace it</p>
5	The PAS fails to assist power	<p>14. Bad contact of the sensor or it is damaged</p> <p>15. Bad contact of PAS or it is damaged</p>	<p>11. Adjust the place of the sensor or replace it</p> <p>12. Connect the lines</p>

## 9. Warranty

Information regarding your electric bicycle warranty coverage terms is available from our website. When you need a replacement or repairing under your warranty, you should send the numbers of frame, motor, battery and controller. And provide pictures or videos to prove the damage was caused by a human.