

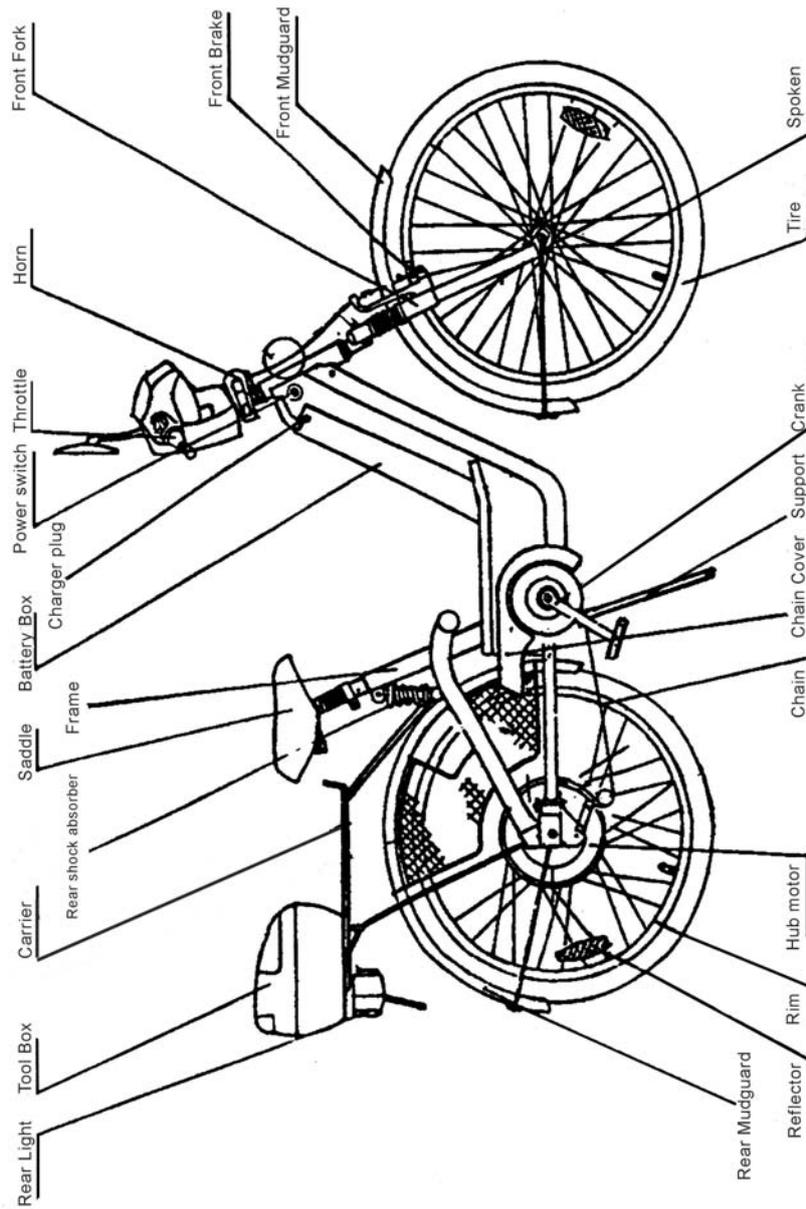
## **Read The Following Before Use**

- 1.Please read the manual carefully in order to become familiar with the electric bicycle components and how it functions before use.**
- 2.Please observe your local traffic rules.**
- 3.Young children, pregnant women and aged people should not use the electric bicycle.**
- 4.Please send old batteries to your local representative or battery recycle center to avoid environmental pollution.**
- 5.Read “★”signed parts carefully. If you do not understand please ask your local dealer.**
- 6.All photos and illustrations are only for general reference and may differ slightly for each different model electric bicycle.**

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## Chapter 1 Electric bicycle and it's components

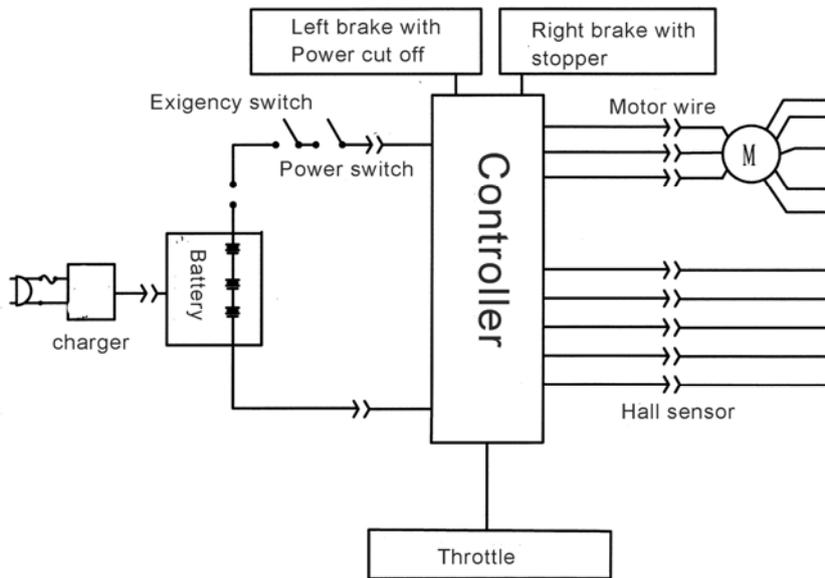
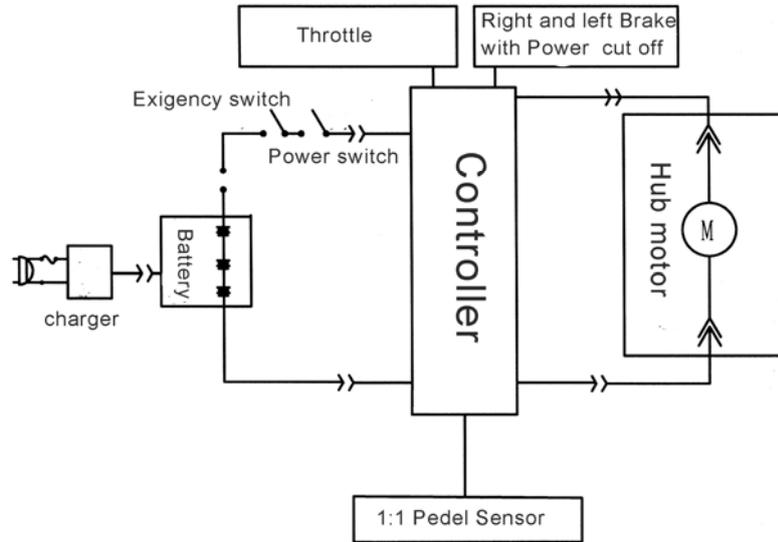


## Chapter 2 Models and technical specifications

	<p><b>PB1 Series</b> Lithium battery bike, aluminium frame. Battery voltage is 24V or 36V, battery capacity from 7AH to 12AH. The rated output power is from 150W to 250W. Brush motor or brushless motor. <u>(The user's manual for lithium bike will be supplied separately.)</u></p>
	<p><b>PB2 Series</b> Battery voltage is 36V, battery capacity from 10AH to 14AH, the rated output power is from 180W to 250W. Brushless motor.</p>
	<p><b>PB3 Series</b> Battery voltage is 36V, battery capacity from 10AH to 14AH, the output power is from 180W to 250W. Brushless motor</p>
	<p><b>PB4 Series</b> Battery voltage is 36V or 48V, battery capacity from 10AH to 14AH, the rated output power from 180W to 250W. Brushless motor</p>

	<p><b>PB5 Series</b></p> <p>Battery voltage is 48V, battery capacity from 10AH to 14AH, the rated output power is from 250W to 350W. Brushless motor</p>
	<p><b>PB7 Series</b></p> <p>Battery voltage is 48V, battery capacity from 10AH to 14AH. The rated output power is from 250W to 350W. More new features, e.g. EABS (electronic braking system), drum brake, rear wheel locking system etc. Brushless motor.</p>
	<p><b>PB8 Series</b></p> <p>Battery voltage is 48V, battery capacity from 17AH to 20AH. The rated output power is from 350W to 450W, More new features, e.g. EABS (electronic braking system), drum brake etc. Brushless or brushless with gear motor.</p>
	<p><b>LEV Series</b></p> <p>Battery voltage is 48V, battery capacity from 17AH to 20AH, the output power from 500W to 1000W. More new features, Brushless motor</p>

### Chapter 3 Electric bicycle circuit diagram



## **Chapter 4 Charger and how to use it correctly**

### **4.1.Charger**

Our charger is purpose built for our bicycles. The label on the back side of the charger indicates the input voltage. Please check the voltage with your local standard, and pay attention whether the output voltage and plug are of the correct voltage rating and type.

### **4.2.How to use charger correctly**

● Please always fully charge your battery pack after each ride. This will ensure the longest possible life of the battery. If the battery is left in a state of low charge for long periods the battery life will be limited. Use only the supplied lead acid charger. Use of different chargers may cause serious injury to you and may damage the battery pack. The indicator lights on the end of the charger provide important information about charger and battery.

A. Red-----the battery is charging

B. Orange---the battery is almost full

C. Green-----the battery is completely full and in maintenance mode.

● Charging the battery on the bike.

Please turn off the key switch . . . . (also called ignition switch) before charging the batteries. First connect the output plug of the charger into the charging socket of the electric bicycle, second connect the input plug of charger with your local power socket. Make sure the charger is well ventilated it is normal for the charger to get warm, do not obstruct air ventilation of the charger..

● Charging battery alone

When you charge the battery away from the electric bicycle, . . . first insert the output plug of charger to battery charging socket, then insert the input plug of charger to your local power socket. Charging two batteries together can be done using the adaptor cable provided with your electric bicycle. Connect the output plugs of the adaptor to both batteries then connect the input plug of the adaptor to the output plug of the charger and connect the input plug of the charger to your local power socket.

- When you charge the battery away from the electric bicycle, please ensure that you place the charger and battery on a flat surface. Do not place the battery upside down, please do not place anything on the charger or battery when charging; please keep the charger in a well ventilated area when charging.

- When carrying the charging, please try to avoid dropping it.

### **4.3 Charge attention**

- ★The charger's plug contain electricity so please take care that children do not try to touch the points or insert objects into the charger as it carries high voltages inside.

- ★Please keep charger in an area where it can not be reached by young children.

- ★Do not submerge the charger in liquid and keep away from moist environments and avoiding spilling liquids onto the charger.

#### **★Important note**

- ★**Please do not use another brand of charger or battery on electric bicycle except when they are tested by our authorized professionals.**

**If the red light on the charge indicator does not change color after a long period of charging (>12h), it is likely there are some problems with the battery or charger. Please stop charging to avoid overcharging battery. Take the charger and battery pack to your authorized service center.**

### **4.4 BM (Battery Management) Charger**

The BM charger is made up of high-tech CPU chip which optimises the life of the batteries. The charger monitors the battery state of charge during charging and adjusts the voltage and current going in to the battery in a precise manner.

#### **Attention: ●**

- ★After a number of years use, the battery capacity will slowly reduce. It is now possible to rejuvenate the battery by adding a special liquid, and then re-charging the battery by BM charger which will renew the battery capacity gradually. You can add battery liquid at service center.

- ★BM charger has heat protecting function, when the charger overheats the

BM charger will automatically reduce output power. If the charger becomes overheated or charging time is too long, you should send the charger to authorized service center immediately.

## **Chapter 5 Battery and attention**

**5.1. Batteries have life spans:** the battery capacity will be reduced over time and the overall performance of the battery will reduce accordingly.

### **5.2. Correct use and attention of battery:**

● Always keep the battery in a fully charged state. No matter how much power is used, the battery should be charged each time after use in order to extend battery life. For batteries held in long term storage, it should be fully charged at least monthly to ensure optimum condition.

● We suggest that when moving away from a standing start, the electric bicycle should be moved off by pedaling to reduce the battery consumption and extend battery life.

● When charging the battery, please check the temperature of the battery box cover, and the light of charger indicator. If the battery gets too hot or if the light does not change color, please send the charger and battery together to your authorized service center.

### **5.3. Important note:**

★ Do not use another brand of charger on our battery.

★ Do not mount another brand of battery on our electric bicycle. The different polarity could result in the damage to the electronic controller.

★ In low temperature condition (below 15 °C), the battery capacity and mileage will be reduced by 20%-30%.

★ In low temperature conditions, the battery voltage may be reduced, it is possible that the low voltage protection system will start working in advance. Again, you should start off the bike by pedaling to avoid this.

★ If any or all of the batteries are replaced, please do not mix charged

**and uncharged batteries together, or it could damage the batteries.**

## **5.4 Battery maintenance**

The following conditions mean the batteries need to be maintained.

- Batteries decline in performance over time. If you experience reduced running distance, the batteries may require additional maintenance or replacement.

- When charging the battery if the indicator light remains orange after charging for 12 hours, the indicator light remains orange, the batteries and the battery charger should be checked and not used until they are.

If the batteries are not to be used for a period of three months then they should be charged monthly. If that is not possible, then they should be checked by an authorised agent before being used.

- After a period of approximately 8 months, the capacity of the batteries to hold charge may degenerate. Checking by an authorised service centre may become necessary.

You can send the battery to your local service center for checking or, if the batteries are to be disposed of, then please do it in a responsible manner such as recycling etc.

## **Chapter 6 Electric motor and maintenance**

### **6.1 Permanent magnet (brushless) motor**

The electric bicycle motor is usually a permanent magnet (brushless) motor which features high output torque and efficiency. Maintenance is not required for this motor. Regular checks should be carried out to ensure that all component parts are secured on the bike and that all screws etc are tightened. When the motor is working, some noise is normal.

### **6.2 Important note:**

**★Do not ride electric bicycle in rainy weather or when the water level exceeds the height of the axle of the motor. The motor could become impregnated with water and malfunction necessitating expensive repairs or replacement.**

### **6.3 Super Power (SP) Geared motor**

This motor features high torque at low speed. It also features effective energy conversion and power saving leading to strong propulsion and high efficiency of power utilization.

### **6.4 SP motor maintenance**

Lubrication of the motor should be carried out in accordance to Chapter13.

## **Chapter 7 Controller and attention**

### **7.1.Controller system**

The Controller system is composed of control board, driver, indicator, throttle, and brake lever. The main function is speed control, excess current protection, low voltage protection, EABS (Electrically Assisted Brake System).

### **7.2.Use and attention of controller**

The main control board is located in the middle of the electric bicycle. Due to the high current, the control board needs adequate ventilation. Please make sure that the controller is not subjected to prolonged periods in direct sunlight or rain. When starting the electric bicycle and on steep uphill sections you should pedal the bike to reduce excessive consumption of power.

We recommend you to turn the throttle slowly to introduce power once the bike is in motion.

### **7.3.Controlling mode**

- E-bike: Only throttle, just turn the throttle to drive electric bicycle.
- Pedelec: The intelligent sensor is mounted on the middle axle and provides a signal to the CPU chip in the controller. The pedal signal CPU then controls the output current to the motor.
- Dual controls : There are dual controls on some electric bicycles, both throttle and pedal control. Use pedal or throttle control first when two modes are working at the same time.

#### 7.4. Other functions of controlling system

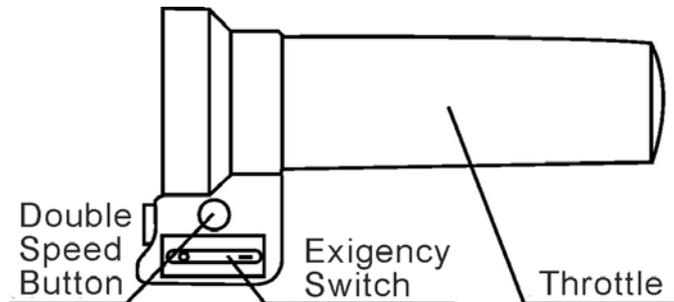
● Some models include EABS (electrically assisted braking system): When braking, the magnetic field in the motor will be reversed to force the motor to stop and recharge battery with torque energy. **So please do not turn off the power switch when traveling downhill. The inertia will destroy the electronic controller.**

● Program motor (where fitted): Is a new type of brushless motor controlled by CPU. The characteristics are high efficiency, wide efficiency zone and small current. Large output torque and excellence in performing on inclines. It is normal that there are some noises when start up electric bicycle.

● Double speeds throttle control system (where fitted):

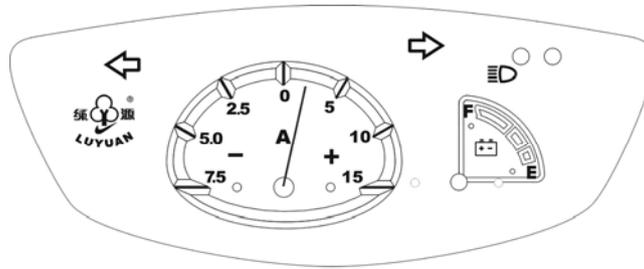
The double speeds switch is mounted on the throttle. Press the button to make the electric bicycle drive at higher speed. Once the switch is released the bike will resume normal operation.

● Emergency power off switch: If the electric bicycle is out of control, and the controller fails, you can turn off the emergency switch to cut the power immediately. In the diagram, it is referred to as the Exigency Switch.



● Ampere gauge and energy regeneration (where fitted):

Some models use an ampere gauge on the display board, "+" direction tells you the motor working state and the power consumption. "-" direction tells you how much energy is regenerated when the energy regeneration system is active. When the electric bicycle is moving, using the brake lever will activate the power regeneration process, recharging the batteries through the controller until the electric bicycle has stopped.



● Power assist controller: Some models have new power assist fitted. This method differs from Pedelec mode in Part 7.3.B in it is not necessary to pedal all the time in power assist mode. The procedure is as follows:

Step.1. Turn on the power switch. Neither pedaling assistance nor motor itself will work.

Step.2. Turn the throttle, the electric bicycle comes into electric power supply mode (>2 seconds).

Step.3. Release the throttle, the electric bicycle will come into power assistance mode. On a flat road, with pedaling assistance, the electric bicycle is in high speed and without pedaling assistance, is in low speed. This mode can save 30%-50% of electric power.

Step.4 Hold the brake lever to stop the motor assist from working.

## Chapter 8 Assembling electric bicycle

<b>Step 1: install front wheel</b>		
		
To adjust the front brake, please see the Item: 9.2		
<b>Step 2: install front basket</b>		
		

<b>Step 3: install mirror</b>			
			
<b>Step 4: install rear box</b>			
			
<b>Step 5: install pedal</b>			
			
<b>Step 6: testing and trial</b>			
			

## Chapter 9 Adjust electric bicycle

### 9.1 .Adjust saddle height

Some models can adjust the height of the saddle such as PB1, PB2 and PB3 series, as follows:

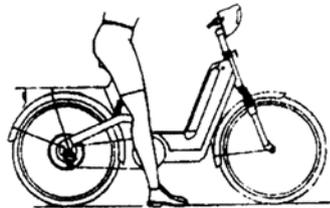
▼ the standard height of saddle should be such that the foot can touch ground.

See photo A

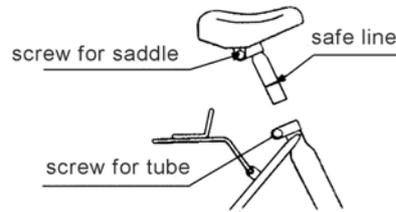
▼ pay attention that the safety line on saddle tube can not be out any further

when adjusting the height of saddle. See photo B

▼ for the models with mounted suspension tube, the standard weight is adjusted to 75KG in production, and the scope of suspension spring is between 50-100KG. You can adjust the saddle according to your weight as follows: pull out the seat tube, adjust the bottom bolt of the suspension by turning clockwise to expand preload to 100KG, and turning counter-clockwise to reduce the preload to 50KG.



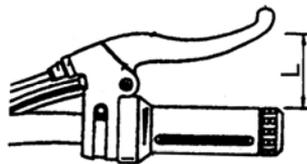
Picture A



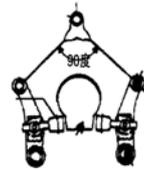
Picture B

## 9.2 Adjust front cantilever brake or V brake

● Check right brake lever as per photo C. The brake should be fully applied when the distance of brake lever reaches half the distance of "L".



Picture C



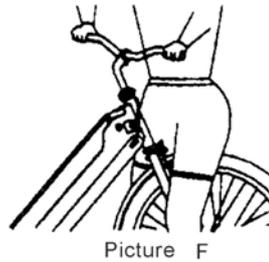
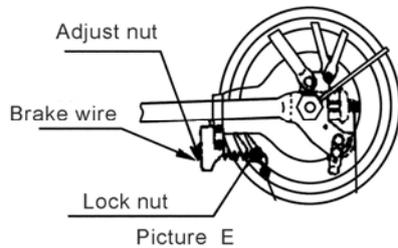
Picture D

● Release the nut on the brake cable retaining bolt, then tighten or release the brake cable so that the distance from the rim to the brake shoe is 1.5mm. If the distance between the rim and brake shoes is uneven, use the adjusting screws at the bottom of the brake arm to equalize the distance. Turning the screw clockwise will increase the distance, alternately turning the screw anti-clockwise will decrease the distance

### 9.3. Adjust rear clasp brake

A. Check left brake lever as per photo C The brake should be fully applied when the distance of brake lever reaches half the distance of "L".

B. To correct poor adjustment of the rear brake, release the locknut, turn the adjusting nut anti-clockwise. When correct adjustment is achieved fasten the locknut.



- When braking efficiency is poor, adjust the bolt. Or you can loosen the nut on the brake cable retaining bolt, then tighten or loosen steel wire. Another way is to adjust the adjustment screws on the outer edge of the rear brake assembly. Loosen the lock nut on the 3 adjustment screws on the outer edge of the brake assembly. Use the throttle to slowly spin the rear wheel and slowly adjust each adjustment screw until the brake lining starts to touch the brake drum (wheel will slow down and brake can be heard dragging). Back screw off slightly until brake is no longer dragging. Lock screw into place using the lock nut. Repeat process until all 3 screws are adjusted correctly

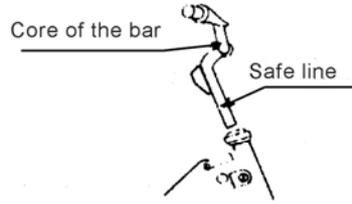
### 9.4 .Adjust handlebar

- stand in front of handlebar as per photo F, clamp the front wheel with your legs and hold the handlebar, adjust the handlebars to the correct position, then fasten the stem bolt.

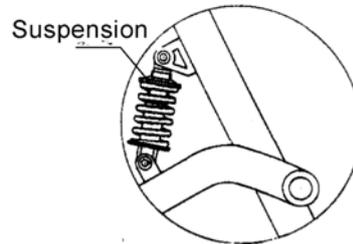
- when adjusting the height of handlebar, take care the safety line on the stem is not out further than the safety marking.

### 9.5. Adjust the spring on the rear suspension

The standard setting for the rear suspension in production is 75Kg. The scope of the spring is 50 to 100Kg. You can re-adjust the spring to meet your requirements as follows: pull out the seat tube, adjust the bottom bolt of the suspension, turn in clockwise to increase preload to 100KG, and turn out counter-clockwise to reduce the preload to 50KG as in photo H.



Picture G



Picture H

### 9.6. Adjust the chain

Loosen the two rear axle nuts. Turn the chain adjusting nuts in clockwise to tighten the chain. Pay attention that in adjusting, the rear wheel and frame are parallel, and then fasten the axle nuts. If the chain is too tight, just loosen the chain adjusting nuts and move the rear wheel and forward. Alternately you can send your electric bicycle to maintenance center for professional adjustment.

### 9.7. Lubricant parts and cycle

Parts requiring lubrication are front axle, rear axle, middle axle, chainwheel and front fork. Please clean and lubricate the parts every six months.

### 9.8. Bolt Torque Settings:

The following table provides the torque settings that you need to exert on respective parts.

Parts name	Moment
Handlebar	18NM
Front stem	18NM
Saddle	18NM

Saddle stem	18NM
Front wheel axes	18NM
Rear wheel axes	30NM
Middle axes bolt	30NM

### 9.9. Regular Checks:

★ Parts such as front forks, front and rear wheel, saddle, handlebar and brake are necessary to be checked at regular intervals to ensure the safe operation of the bike.

## Chapter 10 .Using the Electric Bike

### 10.1.Main Operating Parts

- Key Switch: The key switch is a lock placed between the battery and controller (see circuit diagram), the controller light on the display board is lit when you turn the lock to "ON".

- Emergency power off switch

This connects in series with the key switch and is located on the handlebar. It is designed for emergency conditions only. Turn these two switches on provides power to the motor. If the electric bicycle malfunctions or the braking fails, just press the emergency power off switch, electric power and motor will stop completely.

- Throttle: The throttle is your right handlebar; turn the throttle inward to speedup, in opposite direction to slow down. We suggest you to turn the throttle slowly, as overexertion may result in damage.

- Brake cut out switch: Front and rear brakes are in left and right hand, the same as a bicycle. In addition, the electric bicycle has a brake power cut out switch. When you apply the brakes, a signal is sent to the controller to cut the power to the motor. You can not start your electric bicycle if the brake cut-out switch is engaged.

● Lights and Horn:

The switches of head light and rear light are on the left hand side. When you drive at night, please turn on the lights. Push the indicator switch to “L” when you turn left, and push to “R” when you turn right. Push to middle when you stop turning. Remember that bike indicators are not self cancelling.

The switch for the horn is on your left handgrip, just press the button to make the horn work.

● Battery level indicator

Usually, LED or instrument panel could be found on the handlebar and indicates the approximate energy remaining. When only one LED is on or the indicating needle is in the red area it indicates the battery is near empty and must be charged. When the controller detects low battery level, power to the motor is automatically cut off. Sometimes the battery indicator does not show low current and will start the motor for a while, but controller will cut off the power soon. If the electric bicycle cuts out please do not continue to turn throttle as it could result in damage to the battery.

**Attention:**

**★In traffic if you frequently start up and stop, and on rough terrain or heavy loading factor, the battery indicator may come down quickly. It is normal for the battery indicator to increase after riding for some distance.**

**★ When the charging light on display board is lit, please stop using the throttle. Keep in mind do not turn the power lock frequently to continue riding by throttle, or it will damage the battery.**

**Our suggestion:**

- ▽ when you ride your electric bicycle a long distance, we suggest riding using low power mode to extend mileage.
- ▽ when starting the electric bicycle, we suggest pedaling first then turning the throttle.
- ▽ we suggest riding by pedaling and electric power together.
- ▽ when riding downhill, we suggest releasing the throttle.

## **10.2 .Basic operations**

Kick up the stand; turn on the power switch, then check the performance of electric bicycle:

- check the throttle
- Check the electric brakes (EABS) where fitted
- Check the brake performance

**If the brakes have a problem, please send your electric bicycle to maintenance centre for repair.**

- Sit on the saddle and turn throttle until you reach maximum speed.
- Release the throttle to slow the electric bicycle down. All other riding methods for the electric bicycle is the same as a pedal bicycle.

## **10.3. security attention:**

- Please observe your local traffic rules.
- Do not ride electric bicycle before reading this manual and do not lend it to people who are new to electric bicycles.
- Keep the brakes in good condition. In rainy and snowy conditions please brake earlier and steadily to avoid brake lock-up.
- Please turn on lights and ride carefully at night. On rough roads please slow down, or the strong vibrations will destroy the rim and tire.

## **10.4. Daily maintaining attentions:**

● You should check up your electric bicycle regularly, the items are as follows:

- ▽ wheel running , pneumatic tire, brake performance, brake drag.
- ▽ key switch, handgrips loose or not, if loose, please change it at once.
- ▽ motor is clean.
- Riding attention
  - ▽ in order to protect the tyre, please avoid driving on rough road .
  - ▽ pedal when climbing for long distances or steep inclines.
- Parking attention:
  - ▽ park the electric bicycle smoothly.
  - ▽ do not park the electric bicycle in hot sun for a long period of time, especially the battery.

▽ in order to protect the paint, please do not park the electric bicycle in moist or high temperature situations.

● **Maintain your electric bicycle by an authorised service center:**

▽ check all nuts and bolts, especially the locknuts on front and rear wheels.

▽ check the braking performance.

▽ check the wheel and rim

● **Important note**

★ Do not break or burn the battery, or else the battery liquid will cause injury or even cause an explosion. Please send expired batteries to service center or battery recycle unit.

## **Chapter 11. Deal with emergency**

### **11.1 Deal with braking failure**

Brake failure is dangerous especially on declines, so you should check the brake before riding. If the brake is ineffective please adjust it. If the brake fails whilst riding, please slow down at once, and send the electric bicycle to service center.

### **11.2 Dealing with momentary power failure:**

● check cleanness of the terminal points on the battery.

● check the main power plugs. If loose or disconnected, please reconnect it correctly.

● check the brake cut-out switch, if it short circuits due to rain, please dry it with a blower. Do not park your electric bicycle in rain for long time.

### **11.3 Dealing with electric power control failure:**

Turn off the emergency power off switch

## **Chapter 12. Trouble shooting**

failure	Cause	Remedy
Turn on power switch; "power" light is not working.	A.battery terminal connection failure B.the fuse on battery or in electric bicycle blown C.power switch failure D.wire in battery board is not connected E.controller malfunction	A.clean terminals B.change fuse C.send to service center for repairing.
Turn on electric power, turn throttle the motor can not work.	A.motor line connect failure. B.controller malfunction	A.check the motor wires or send to service center. B.send to service center.
Release throttle, motor can not cut power	A.throttle malfunction B.controller malfunction	A.send to service center
Motor is very noisy on rough road	A.motor clutch failure	A.send to service center
No driving power in riding	A、brake lever affected by moisture or failure B.controller malfunction	A.dry the brake switch with a blower or send to service center B.send to service center

## Chapter 13 New technical points

	<p><b>There is a built-in burglar alarm inside battery of some simple model electric bicycles.</b></p>
<p>A. Turn on and off of power switch twice within 3 seconds. After hear three unusual sounds, the battery is under the guarded condition.</p> <p>B. Hit the bicycles or battery. Alarm will sound</p> <p>C. Turn on power switch. The alarm will stop</p>	
	<p><b>Rear wheel lock system.</b></p> <p>On some models there is a lock located within the rear brake that is key operated. We have designed a unique technique of magnetic coding which makes the power system completely inoperable except to the owner of the vehicle.</p>
	<p><b>SP (gear) motor features high Starting torque, effective energy conversion and saving power, leading to strong propulsion and high efficiency of power utilization.</b></p>
<p>A. Replace lube after initially riding 300km. Afterward replace it every 3000km.</p> <p>B. Do not fill lube above upper limit.</p> <p>To change the lubricant</p> <p>C. Place electric bicycle on center stand, start motor to warm it for 3 minutes, turn off power.</p> <p>D. Loose screws on inlet and outlet. Drain old lube.</p> <p>E. Tighten outlet screw. Fill gear box with 120ml of approved lubricant.</p> <p>F. Tighten inlet screw.</p>	

## Chapter 14 .Local dealer and service center

**Local Seller:**

**Local Service:**