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# E-SURREY BRIEF USER MANUAL

## CAUTION

1. Before using the e-surrey, please read the battery & charger and display and e-surrey user manual carefully.

2. Check whether the condition of the vehicle is good, such as whether brakes are sensitive, whether the tire pressures are sufficient, whether the screws and plugs are loose, whether the wires are worn or exposed, whether battery is fully charged, whether the vehicle is abnormal. If you find problems, please contact the professional in time. **Check carefully to ensure riding safely!**

3. Please abide by the traffic regulations. Speed should be slowed down on rainy or snowy days or on slippery roads. Brakes should be increased braking distance to ensure safety.

4. Must be controlled in slow speed by brakes on the downhill road! Recommended no riding on steep slope road! Pedal riding on the gently short slope road that slope of the road is less than 10 degrees, Prohibit that surrey propulsion depended solely on motor!

5. Do not wading to avoid damaging motor and electrical appliances. Prohibit water level submerged to the rear wheel motor hub.

6. Do not decompose and change the circuit by yourself.

7. When the motor has started but it can not work, you should turn off the motor (setting the assist ratio gear to 0) to avoid damaging the electrical appliances.

8. Do not modify and set P parameters and C parameters of the controller!

9. Suggest keeping the e-surrey in dry and cool place to avoid direct sunlight when no used.

10. Use the battery and charger safety according to the battery manual. Charging appropriate time is 10 to 11hr.

11. The battery (60V) used is a safe power supply, but the two metal contacts of the battery box can not be touched by wet hands at the same time, and can not be contacted with the metal at the same time, otherwise it will produce a more short-circuit current and cause an accident.

12. Please contact the distributor or manufacturer if you have any questions.

## CONTROLLER AND DISPLAY

The controller is placed in iron box that under the aluminum sheet near battery box. The controller circuit diagram is shown in the following. Motor is brushless hub motor. Headlight uses 12V DC voltage (from the controller) LED lamp. Air switch placed in the iron box is closed (in off).

Display is placed in the front frame.

## ASSEMBLY

Battery has be placed in the battery box and has be connected to the controller.

Motor has be connected to the controller.

Display and PAS sensor have be connected to the controller, but display need to install on the front frame.

Headlight need be connected to the positive and negative WAGO splicing connectors correspondingly, the connectors have be connected to the controller.

**Turn on the air switch after the e-surrey has be assembled.**

## HOW TO START OR STOP THE E-SURREY ?

PAS (power assist system) sensor is installed on the front left axel, so sensor signal respond to the front left pedal. Only sensor signal start to output after turn a circle of the left pedal. Do not start-up the e-surrey on the uphill road or downhill road.

1. Turn on the display ( LCD-BT2) and set the assist ratio gear 1 as start-up pas model.

2. First everyone tap on pedals together to let start the e-surrey go forward. Do not let front left pedal cycling alone, especially during the start-up stage.

3. Gradually increase the assist ratio gear with the increase of e-surrey speed. The assist ratio

gear 2 corresponding about 8 km/hr, the assist ratio gear 3 corresponding about 12 km/hr.

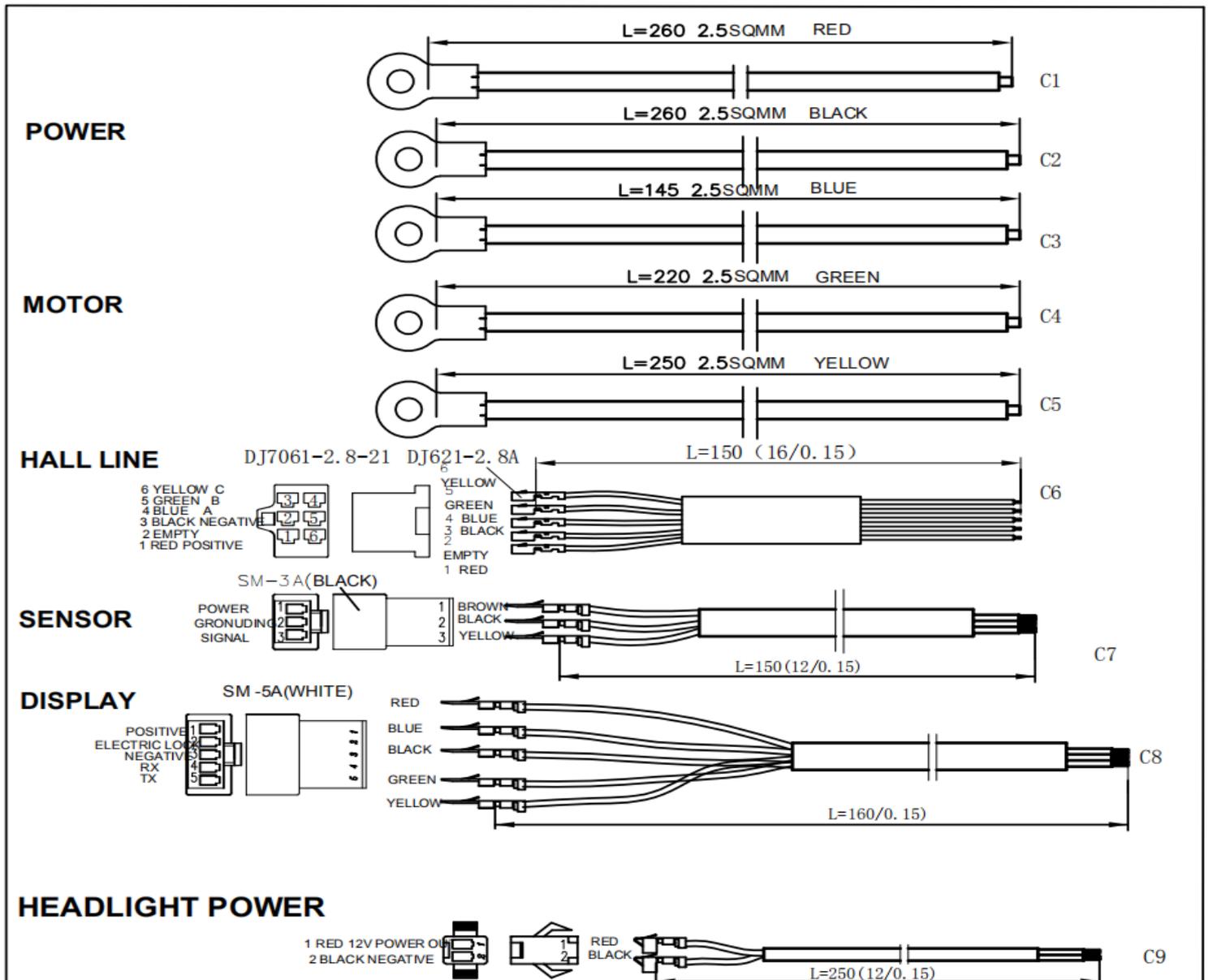
4. Recommended that appropriate riding speed is from 6 to 10 km/hr, suggested that the max speed parameter setting is 10km/hr, no exceeded 15km/hr. The factory max speed parameter setting is 15km/hr.

5. The assist ratio gear 1 to 3 is appropriate for normal cycling. Recommend the assist ratio gear 1 or 2 on the flat road and the assist ratio gear 2 or 3 on the gentle uphill road (slope of the road is less than 10 degrees).Suggested to use the assist ratio gear 4 or 5 occasionally.

6. Turn off the motor while there is abnormal sound or abnormal tremble or overheat and abnormal taste.

7. Gradually decrease the assist ratio gear to 0, pull on the brakes and turn off the display.

### CONTROLLER CIRCUIT DIAGRAM



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## ■ Integrated advantages of this product

Stylish appearance, Safe and Efficient, Energy conservation and Environmental protection

## ■ Features

1. Extending the service life of the battery
2. Extending the mileage
3. Full time protection
4. Automatic intelligent control chip

## ■ Instructions

1. Before charging, read the instructions carefully.
2. Charging time is around 9 to 12 hours. When charging the indicator light is red. When the indicator light is green, it enters into the state of trickle power supply.
3. Please plug the output side first, then connect the attaching plug during use.
4. Please pull the attaching plug first, then unplug the output plug.
5. Do not charge non-rechargeable batteries.
6. Do not start the e-surrey with the charge connected.
7. Regular supervision is recommended during charging.
8. Severe vibration shall be prohibited when using or carrying.
9. The charger should be protected against humidity, liquid and dust. If the liquid gets in it, please immediately stop using.
10. Used in high temperature environment is prohibited.
11. Prevent flames, sparks and water.
12. Provide adequate ventilation during charging. Locate battery charger in a well ventilated area during charging.
13. Do not disassemble charger, take it to a qualified service technician when service or repair is required. Incorrect reassembly may result in risk of electric shock or fire.
14. The rechargeable batteries may become hot during charging. User should take extra care when taking out the batteries after charging.

## ■ Common Failure

Phenomenon of Failure	Reason of Failure
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<p>The red light is not bright(or only the green light is bright)</p>	<ol style="list-style-type: none"> <li>1. If the output fuse inside the charger brakes and cause no output voltage, it is because the positive pole and negative pole of the battery do not match the charger' s poles.</li> <li>2. There may exist disconnection in the output cable of the charger.</li> <li>3. If the cable between the battery case' s charging plug and the battery is disconnecting or the output plug is not well connected with the socket, it maybe because of the connective cable of the battery pack is cut off or the fuse in the battery case has blown.</li> <li>4. Serious sulfation of the battery plate makes battery pack invalid, thus makes the battery pack can not be charged.</li> <li>5. Red luminotron of the charger is broken.</li> </ol>
<p>(If charging time is not as long as requested time)</p>	<ol style="list-style-type: none"> <li>1. The capacity of the battery pack has decreased and the performance becomes worse.</li> <li>2. There is a single battery of the battery pack with obviously low capacity and much higher voltage.</li> <li>3. The capacity of the battery pack is not fully used, and there is still lot of capacity in the battery pack.</li> </ol>
<p>The state of the charger can not change when normally use(that means the indicator light can not turn from red to green)</p>	<ol style="list-style-type: none"> <li>1. The malfunction occurred in the battery pack, i.e there occurs a "full" phenomenon (that means a single battery of the battery pack has an internal short-circuit problem)which makes low voltage in the battery. The temperature rises abnormally while charging, and the charger can not change state.</li> <li>2. After the battery pack using for a while, because of seriously water losing inside the battery, the current in the last phase of the charging maybe increase and the charger can not change the state normally. and the temperature of the battery is rising abnormally or the battery may be charged to bulging.</li> <li>3. The ambient temperature is too much higher while charging, that makes the current inside the battery pack increase,and the current of the last phase of charging can not change state normally.</li> <li>4. Some of this failure may be caused by functional failure of the charger. For example ,the control of the charger is not well connected because of severe vibration, then the voltage is out of control, the battery is over-charged and the charger can not change state normally.</li> </ol>
<p>The indicator light works abnormally</p>	<p>The charger or the indicator light is broken</p>
<p>Friendly Reminder</p>	<ol style="list-style-type: none"> <li>1. The charger is only used for e-surrey, the positive pole(+) and the negative pole (-) of the battery must be in accordance with the chargers ,the charger may be broken.</li> <li>2. The red light does not change to green after charging 12hours,but if pull the output plug off then light change to green, this means the charger is normal, please check the battery or the other parts of e-surrey.</li> <li>3. If the e-surrey can not run as far as before, but the red light can normally change to green while charging, that the charger is normal please check the battery or the other parts of e-surrey.</li> </ol>