

# Beach Surrey Bikes

## E kit Installation Guide



# Electric Assist Installation

## **WARNING**

- Installing an electric assist kit may require cutting of metal, making electrical connections, and handling batteries.
- If you are not knowledgeable and comfortable with the steps in this guide, please do not attempt to install yourself.
- Improper installation could result in damaged equipment, personal injury, or death.

## Congratulations on the purchase of your new Surrey bike!

It is important for you to understand your new Surrey. By reading this manual before you go out on your first ride, you'll have a better understanding of its operating components, and get more enjoyment from your new Surrey. It is also important that your first ride on your new Surrey is taken in a controlled environment, away from cars, obstacles, and other cyclists.

**GENERAL WARNING:** The user assumes all risk for all personal injuries and damages. Cycling and Surrey bike riding can be a hazardous activity even under the best of circumstances. Proper maintenance of your Surrey is your responsibility as it helps reduce the risk of injury. Any fall or collision can result in serious injury or even death. Like any sport, cycling involves risk of injury and damage. By choosing to ride a Surrey, you assume the responsibility for that risk, so you need to know — and to practice — the rules of safe and responsible riding and of proper use and maintenance. Proper use and maintenance of your bicycle reduces risk of injury. Because it is impossible to anticipate every situation or condition which can occur while riding, this Manual makes no representation about the safe use of the Surrey under all conditions.

It is recommended that all riders wear a helmet at all times. Failure to do so could increase the chances of injury or death. There are risks associated with the use of any Surrey bike which cannot be predicted or avoided, and which are the sole responsibility of the rider. Electric assist kits require all riders to wear a helmet in most areas. Please check your local laws and ordinances and wear a helmet.

**A SPECIAL NOTE FOR PARENTS:** It is a tragic fact that most cycle accidents involve children. As a parent or guardian, you bear the responsibility for the activities and safety of your minor child. Among these responsibilities are to make sure that children are not permitted to operate the Surrey; that it is in good repair and safe operating condition; that you and your child have learned, understand and obey not only the applicable local motor vehicle, bicycle, and traffic law, but also general safety precautions.

This manual is not intended as a comprehensive use, service, repair or maintenance manual. Please see your dealer for all service, repairs or maintenance.

The warranty, or any implied warranty does not cover normal wear and tear and all warranties are void if the Surrey is used for other than normal activities, such as, but not limited to stunt riding, rain/water/dew exposure, commercial use, steep downhill riding, overloading, and collision.

# Tools

- A cutoff tool/grinder or Dremel



- Crank Puller



- Hand Rivet gun

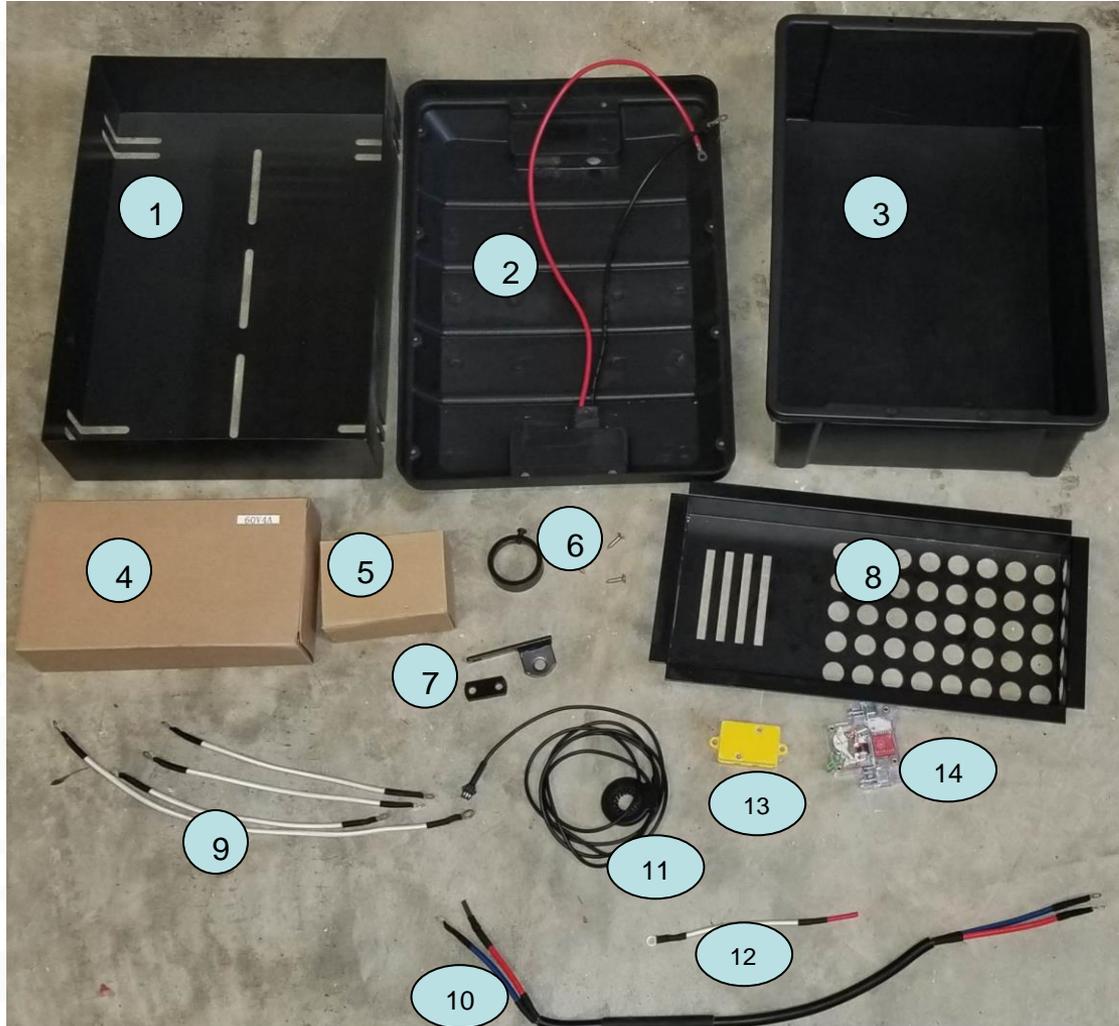


## Common Tools

screw drivers  
pliers (needle nose)  
Wire cutters/strippers  
Two adjustable wrenches  
Car jack stands  
Socket wrench  
Zip Ties

Visit [www.BeachSurrey.com](http://www.BeachSurrey.com) for information on where to order tools

# E kit parts



1. Battery box base (opt)
2. Battery box lid with charge port
3. Battery box
4. Charger
5. Display
6. Pedal sensor protection ring (optional)
7. Motor brake mount parts
8. Controller and wiring housing box
9. Battery connection wires
10. Power wire from battery
11. Pedal sensor
12. Wire for breaker
13. Terminal block x2
14. Circuit breaker

Not Pictured: Wheel with motor, brake drum, Batteries, controller

# Remove back driver side wheel

1. Lift back end of bike with a jack and place jack stands under frame for safety.
2. Remove chain from back gear (driver side). Loosen bolts on either side of the wheel.
3. Disconnect brake cable (check that your brake cable will seat into the brake hub on the motorized wheel, if not you may need to order a brake cable)
4. Note the metal tab holding the brake hub in place. This is the piece that will need to be removed with a Dremel or cut off tool.



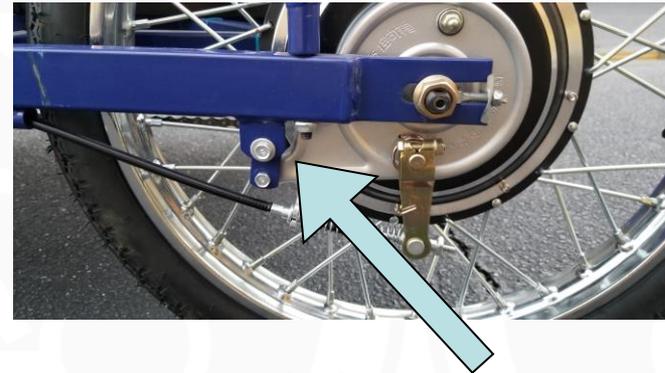
5. Note: Some Surreys from other manufactures use a different brake hub and do not have this metal tab

# Install new wheel with motor

- Unpack your wheel with hub motor installed
- Install brake drum into hub
- Slide it onto the bike frame on the driver
- The sprocket should be on the inside



- It should install just like the old wheel except for how the brake hub is secured.
- Place chain over sprocket and adjust wheel so that chain has proper tension and the wheel is in straight alignment.
- Tighten bolts to secure



There are two metal pieces, one attaches to the bike frame under the rear seat support and the other smaller piece 'floats' so that it can easily be secured to the brake hub. You will need 2 bolts to attach.



Re-attach brake cable.

# Pedal Sensor

You will need to remove the crank from the driver side using a crank puller tool.

Slide on pedal sensor and then install the metal sensor guard.

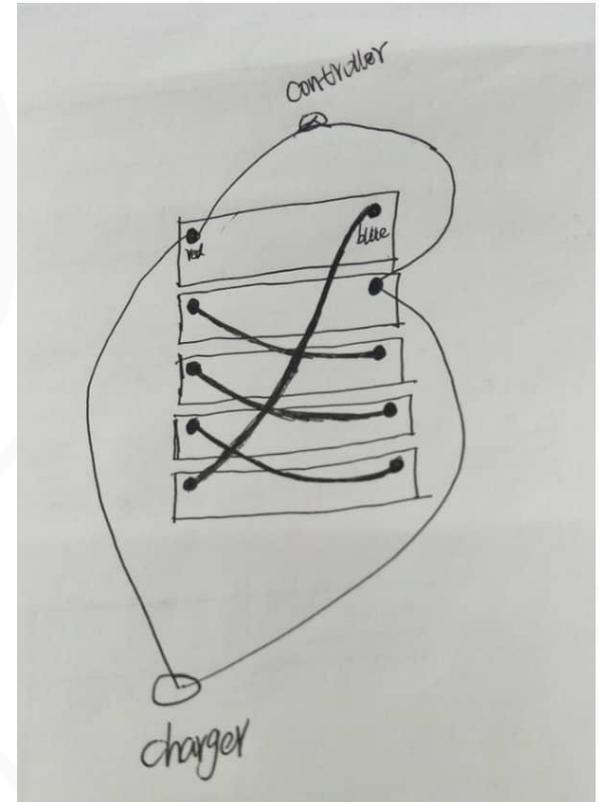
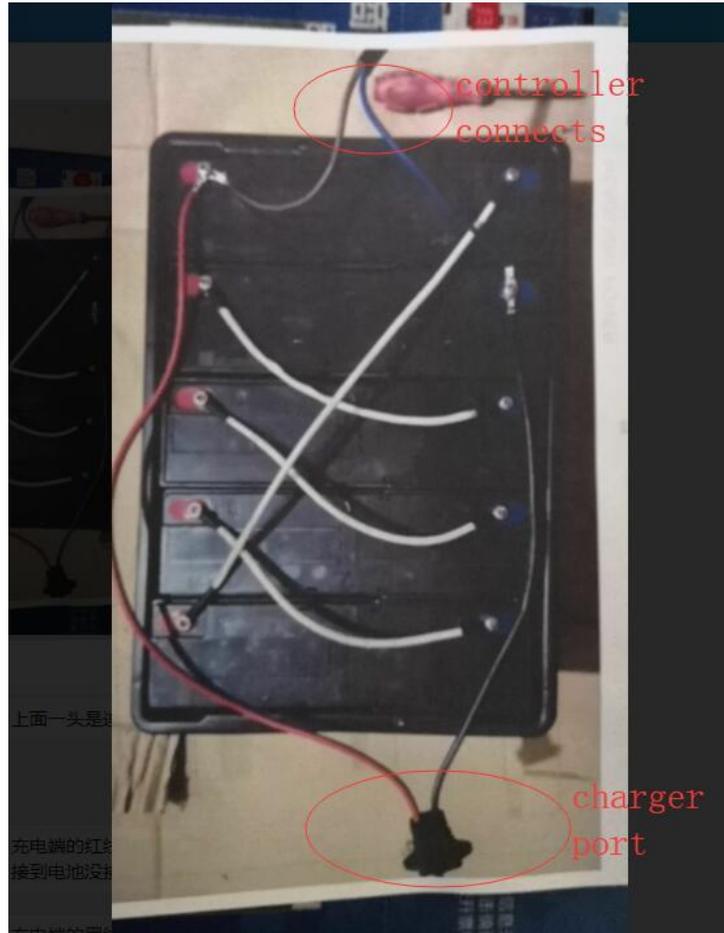
Use zip ties to secure the wire.

Be sure the pedal sensor is in the correct orientation. The 'teeth' go against the direction you would pedal

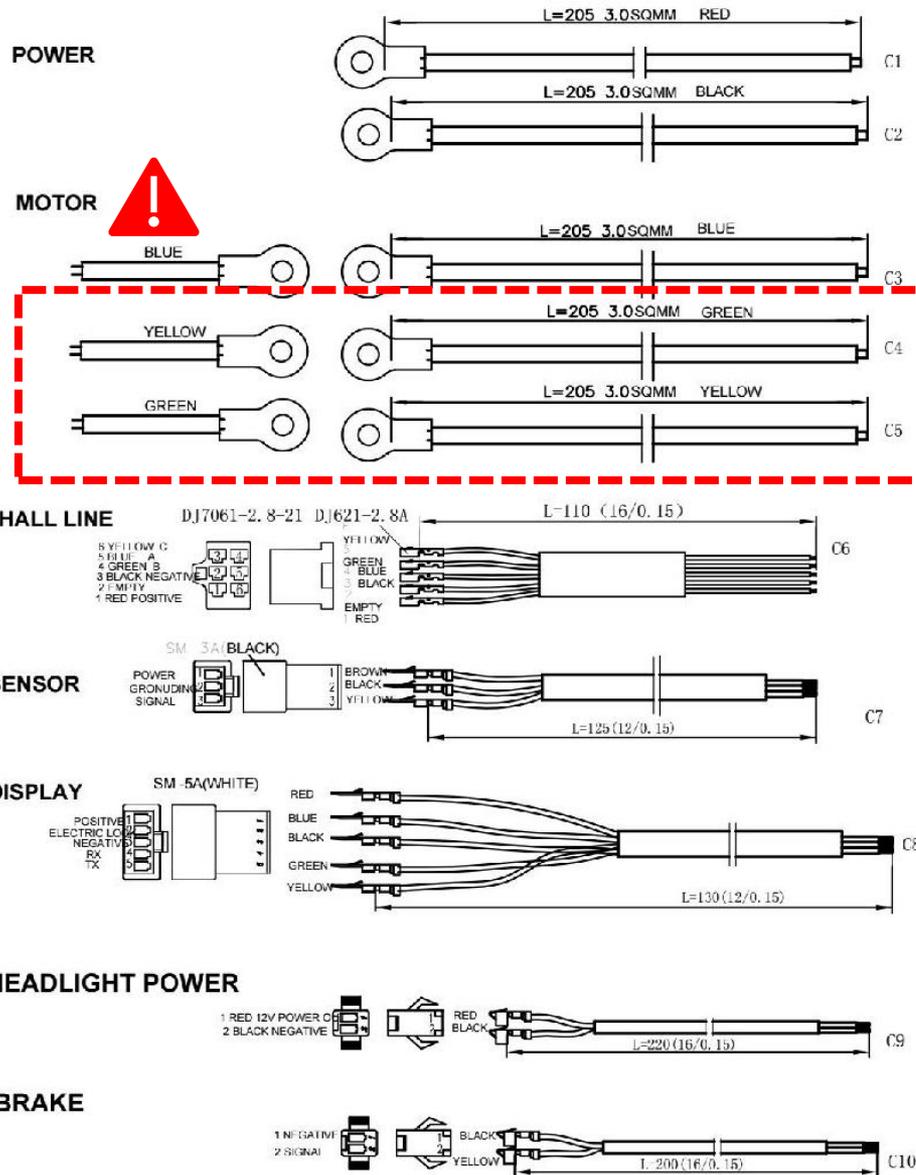


# Battery box

Batteries should be connected as seen in the image and sketch.



# Wiring diagram



- The power and motor lines should be connected using the yellow terminal blocks.
- The circuit breaker should be installed between the power line coming from battery and the power line going to the terminal block.
- **CRITICAL:** ⚠️ the motor power lines connect green to yellow and yellow to green. Improper connection can result in shorting out the controller.

# Control and wire housing

The metal box houses the controller and wiring connections. It should fit under the floor plate. If you do not have a floor plate you will need to secure it to the bottom of the bike frame and be sure it is not tampered with while riding. Floor plates can be reattached using rivet tool or screws



Controller

Terminal Block x2 (they are stacked in photo so difficult to see there are 2)

Breaker (tip: zip tie to box so that it can be switched from hole on the end)



LCD display should be mounted in reach of the driver. Secure wire with zip ties

# Wiring

This bike did not have a center floor. It is secured it to the bottom of the bike frame next to the battery box. You can use bolts or zip ties to attach. Be sure it is not tampered with while riding.

Power lines going to motor

Terminal block connecting motor to controller. Note the wiring diagram and coloring of the wires – not matched color to color.  The motor power lines are connected yellow to green and green to yellow.

Breaker installed between power line from batteries and power going to controller

Power line from Batteries

# Electric Pedal assist

Be sure to read the included manual on how to operate and control the pedal assist. This can be downloaded from our website.

There is a cadence sensor on the driver side pedal location. It requires slow and steady movement to keep the motor engaged. This is a safety feature to keep the bike from riding on by itself should the driver not be present.

The pedal assist can get the bike moving pretty fast. Please be aware of your surroundings and understand that braking time is reduced when going fast. You must also STOP pedaling to disengage the motor when applying the brake. User assumes all liability when operating the electric pedal assist.

Do NOT alter any factory settings on the controller. This could result in malfunction and create a dangerous operation of the electric pedal assist.

Do not ride the pedal assist bike through any water or allow the bike to be exposed to rain or water.

Do not use the pedal assist when climbing any incline with a grade greater than 5%