

Bike2Power™ Bicycle-mounted USB Chargers



User Manual and Installation Guide

LightCharge Smartphone/Lights Bicycle USB Charger for Bottle Dynamo
LightCharge Smartphone/Lights Bicycle USB Charger for Hub Dynamo

User Manual and Installation Guide

LightCharge® for Bottle Dynamo / LightCharge® for Hub Dynamo

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Copyright

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Introduction

LightCharge® USB Bicycle Charger allows charging USB-chargeable mobile devices and bicycle lights while riding a bicycle. The device is designed to be used with the regular (utility) bicycles.

LightCharge® is compatible with the majority of the smartphones makes and models including Androids® and iPhones®. It is also compatible with USB and dynamo bicycle lights.

LightCharge for hub dynamo is compatible with most common bicycle hub dynamos, while LightCharge for bottle dynamo is compatible with a bottle (side) dynamo.

Charging with LightCharge® begins at as low as walking speeds. Install the device; connect your mobile device to the 2.0 USB charger port using your mobile device USB charging cable; connect bicycle lights to a designated LightCharge® connector and begin pedaling.

Read this guide carefully before installing and using LightCharge®. Review the user guide for your bicycle, mobile device, bicycle lights, and hub dynamo before installing the LightCharge® and connecting your chargeable devices.

Safety Instructions

(!) CAUTION

Obey your local laws. Always keep your hands free to operate the bicycle while cycling. Road safety must be your first concern while cycling. Do not attempt to make or receive calls, or operate your mobile device while cycling. Do not attempt to connect your mobile device or lights to the charger while cycling. Always stop to initiate, modify, or terminate any function on your mobile device and lights or to connect your mobile device and lights to the charger.

Only operate LightCharge® if it is safe under the cycling conditions. Do not attempt to remove or adjust any portion of LightCharge® while cycling. Always stop and loosen the mounting mechanisms to adjust any portion of LightCharge®. Make sure all parts of LightCharge® are secure before resuming your ride.

Allowing connector wire to hang loose is dangerous. Always secure the excess loose connector wire away from the moving, steering, or braking parts of the bicycle.

When installing the LightCharge®, make sure that it does not interfere with or hinder any of the bicycle moving, braking, or steering parts. Make sure that LightCharge® is installed where you cannot come in contact with it in the event of an accident or collision. Always make sure all parts of LightCharge® are securely installed before and after the ride. If you

are not sure how to install any portion of LightCharge®, consult or hire a professional installer.

Dynamo may become warm during operation. Do not touch the dynamo for a few minutes after completing your ride.

Incorrect installation of the dynamo may cause it to fall between the wheel spokes and jam the wheel. Always ensure that your dynamo is secure before and after the ride, and every few miles during the longer rides.

Incorrect installation of the dynamo may cause an increase in the wear of a bicycle tire. If you are not sure how to install the dynamo, consult or hire a professional installer.

The kits are impact resistant and water resistant, but **not waterproof**. Avoid submerging in water or using in rain or snow without a protective cover. If LightCharge® becomes wet, remove LightCharge® from the bicycle and allow it to dry out before reinstalling and using again.

The connectors of this device may contain a small amount of nickel. Persons sensitive to nickel may experience symptom from the prolonged skin contact with the connectors.

The kits may contain small parts which may constitute choking hazard. Keep them out of reach of small children.

Read the installation instructions carefully. Do not attempt to substitute any parts of the LightCharge®. Use LightCharge® only with the compatible mobile devices. Never force the connectors into ports. Make sure that the connectors match a port and that you have positioned them correctly.

These kits are not suitable for rough terrains or trick bicycling.

The kits may be affected by extreme temperatures. Always keep the kits between -15° C (5 F) and +55° C (131 F).

Bike2Power is not responsible for any damages or failure to the devices charged using the LightCharge®. Bike2Power is not responsible for any damages or failures caused to the bicycle used to mount the LightCharge®.

Compatible Devices

LightCharge® is compatible with 5v devices able to charge through USB and dynamo-chargeable and USB-chargeable bicycle lights.

LightCharge® is compatible with the major smartphone makes and models as well as Android® phones and iPhone®. LightCharge® may be connected to a hub dynamo or bottle (side) dynamo.

Parts and Technical Specifications

Parts*

LightCharge® Smartphone/Lights Bicycle USB Charger for Bottle Dynamo may contain:

- Dynamo Mounting Bracket
- Bottle (Side) Dynamo
- LightCharge® USB Charger
- DynaCap Tire Defender
- Protective mounting pad and zip ties

LightCharge Smartphone/Lights Bicycle USB Charger for Hub Dynamo may contain:

- LightCharge® USB Charger
- Protective mounting pad and zip ties.

*Product colors and accessories are subject to change without notice

Technical Specification*

PART	DIMENSIONS	WEIGHT	OPERATING TEMPERATURES
Dynamo / Mounting Brackets**	40.2 x 94.3 mm (1.6 x 3.7 in)	250 g w/ brackets (8.8 oz) 190 g w/o brackets (6.7 oz)	-15° C to +55° C (5 F to 131 F)
USB Charger	45 x 35 x 25 mm (1.7 x 1.4 x 1.0 in)	28 g (1 oz)	-15° C to +55° C (5 F to 131 F)

*All dimensions are approximated. ** Mounting bracket fits forks up to 1.25 inches in diameter

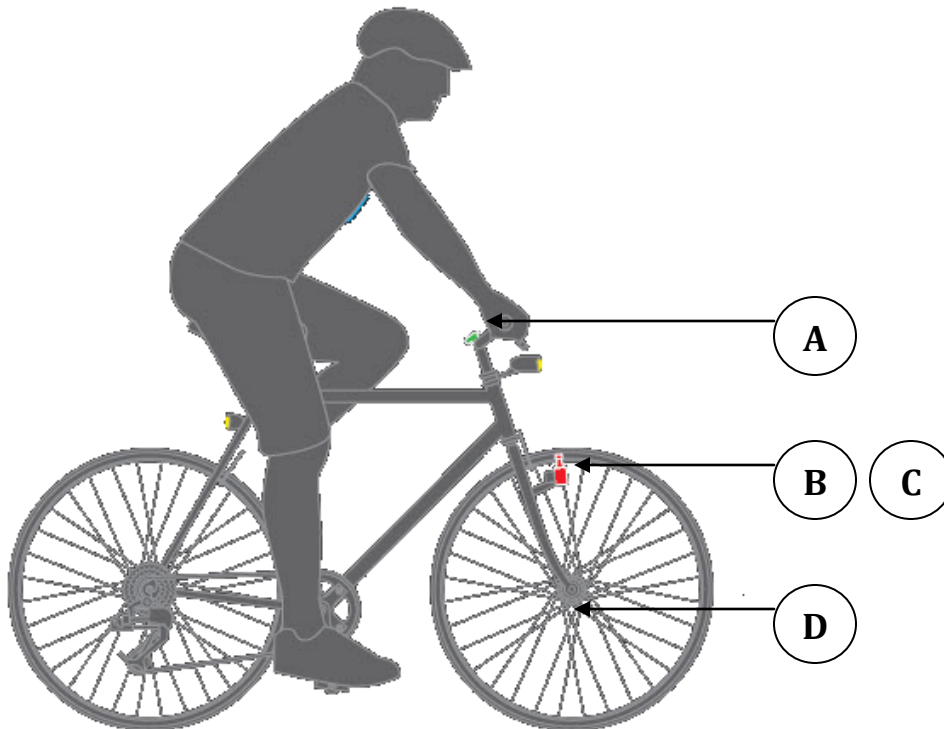
Output Power*

Speed of bicycle (km/h)	Charging electric current (mA)
7.4 (4.6 mi/h)	150
11.0 (6.8 mi/h)	200
12.5 (7.8 mi/h)	220
13.7 (8.5 mi/h)	235
14.0 (8.7 mi/h)	250

*Largest output current is 500mA. All values are approximated.

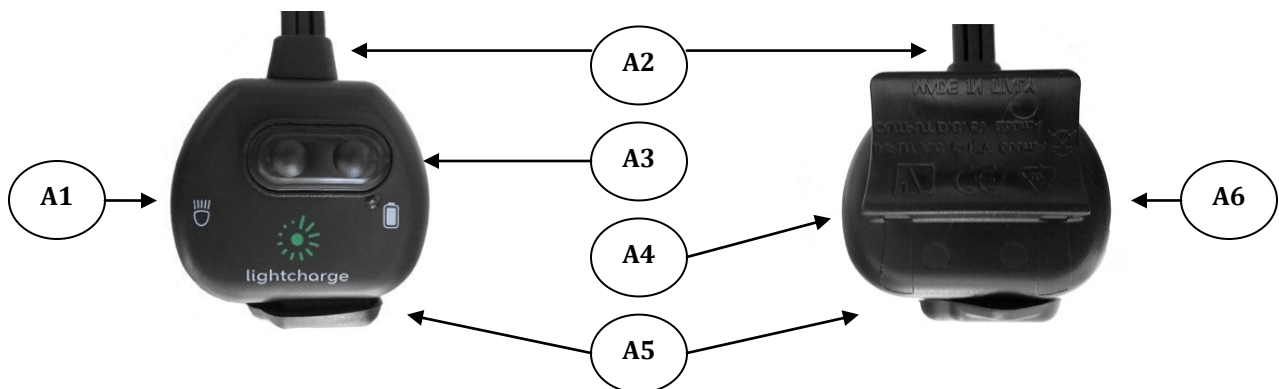
Installation Manual

Getting to Know Your LightCharge®



- B. Bottle Dynamo (included only with LightCharge® for Bottle Dynamo)
- C. Dynamo Mounting Bracket (Included only with LightCharge® for Bottle Dynamo)
- D. Location of Hub Dynamo (not included)

A. LightCharge

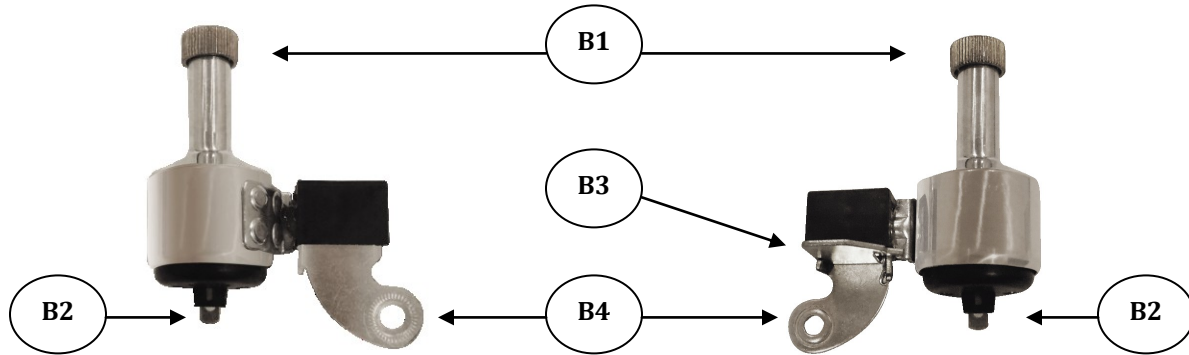


A1 Top
A2 Cable

A3 Charging Mode Switch
A4 Mounting Slots

A5 USB Port and Cover
A6 Bottom

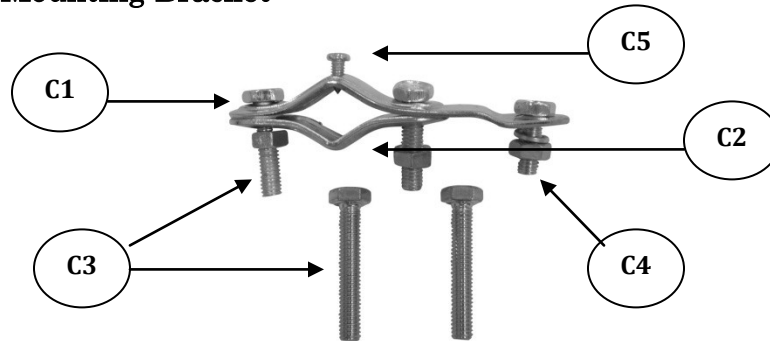
B. Bottle Dynamo



B1 Friction Roller
B2 Electrical Wire Port

B3 Release Lever
B4 Bracket Mounting Hole

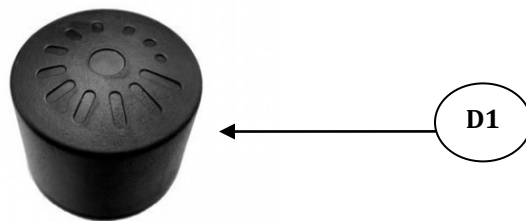
C. Dynamo Mounting Bracket



C1 Exterior Dynamo Mounting Bracket
C2 Interior Mounting Bracket
C3 Bracket Bolts (2) and Washers (2)

C4 Dynamo Adjustment Bolt
C5 Bracket Security Screw

D. DynaCap Tire Defender



D1 DynaCap

Mounting Dynamo*

(!) Use only the supplied dynamo.

* If installing LightCharge® for Hub Dynamo, skip to “Mounting LightCharge® USB Charger”, Page 9

Required Tools

2 Wrenches, 10 mm, regular, socket, or adjustable
 Pliers, Scissors
 Electrical tape and/or zip ties

Mounting

The dynamo may be mounted in any of the 4 positions shown below. Note that the dynamo release lever must be facing the spokes. The installation steps below can be applied to mounting in the either position.



Position “1” – L fork facing front



Position “2” – R fork facing rear



Position “3” – L seat stay facing front



Position “4” – Right seat stay facing rear

Step 1. Attach dynamo (B) to the exterior mounting bracket (C1)

- a. Attach dynamo to the exterior mounting bracket (C1) using the provided adjustment bolt (C4) with nut and washer.
- b. Attach through dynamo’s bracket mounting hole (B4).
- c. Tighten the bolt to achieve firm hold. Do not over-tighten.

Step 2. Attach the brackets (C1 and C2) to the front bicycle fork

- a. Attach the mounting brackets (C1 and C2) to the bicycle fork. Interior bracket (C2) should be positioned between the fork and the wheel.

- b. Use the provided bracket bolts and washers (C3). These bolts are provided in two different lengths. Select the length that best accommodated the diameter of the fork
- c. Tighten the bolts for the firm hold. Do not over-tighten.

Step 3. Adjust dynamo position

- a. Dynamo's friction roller (B1) should be firmly touching the middle of the tire at a right angle
- b. Adjust the friction head's position to the correct position by slightly loosening the bolts and adjusting the roller's height, angle, and distance until the correct position is reached.

Step 4. Tighten the bolts

- a. Once the correct position is reached, tighten all bolts to achieve the firm grip.
- b. Avoid over-tightening.

To Remove the Dynamo

- a. Loosen the bolts and remove the brackets from the fork.

To Disengage the Dynamo

The dynamo may be disengaged without removing it while not in use

- a. Press the release lever down
- b. The dynamo will snap away from the rim
- c. Reengage by pressing the release lever and pushing the dynamo toward the tire until it clicks in place

Mounting LightCharge® USB Charger

LightCharge® may be mounted on any of the bicycle tubes. When choosing a location, ensure the length the cable (A2) is sufficient to for the LightCharge® connectors to reach the bottom of the dynamo.

Step 1. Select the desired location

- a. Select the mounting location.
- b. Make sure the cable's connectors can reach the bottom of the dynamo.

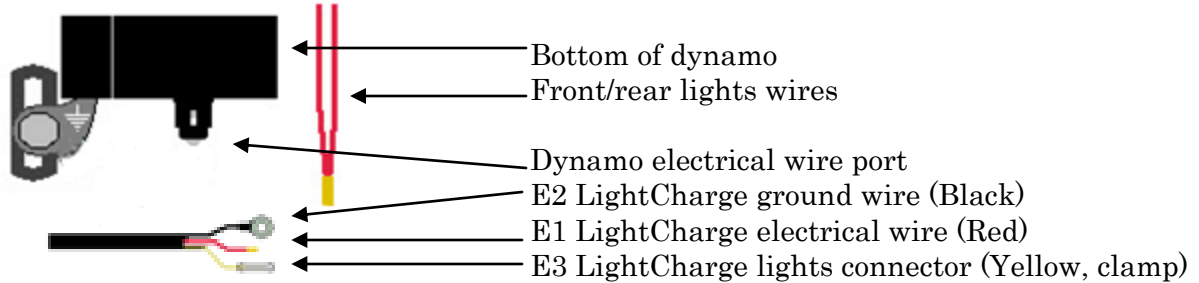
Step 2. Mount LightCharge®

- a. Optional – use the protective mounting pad provided between the charger and the tube to prevent slippage.
- b. Position LightCharge® in top position A1. USB charger port (A5) may be facing a direction that best suits your charging needs
- c. Use the zip ties provided to secure the LightCharge® by inserting them through the mounting slots (A4).
- d. Cut off the excess zip ties.

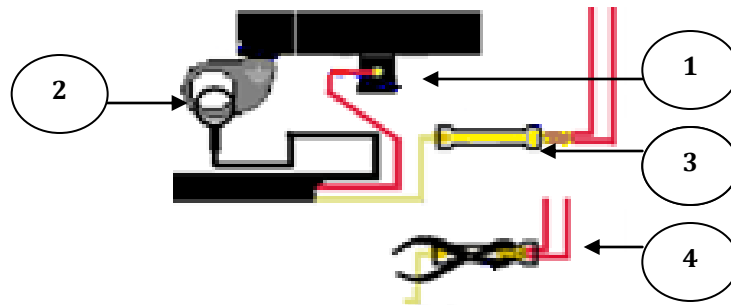
Connecting LightCharge to Bicycle Lights and Bottle Dynamo*

* If installing LightCharge® for Hub Dynamo, skip to “Connecting LightCharge USB Charger to Bicycle Lights and Hub Dynamo”, Page 11

Connectors



Connecting to the Dynamo and Bicycle Lights



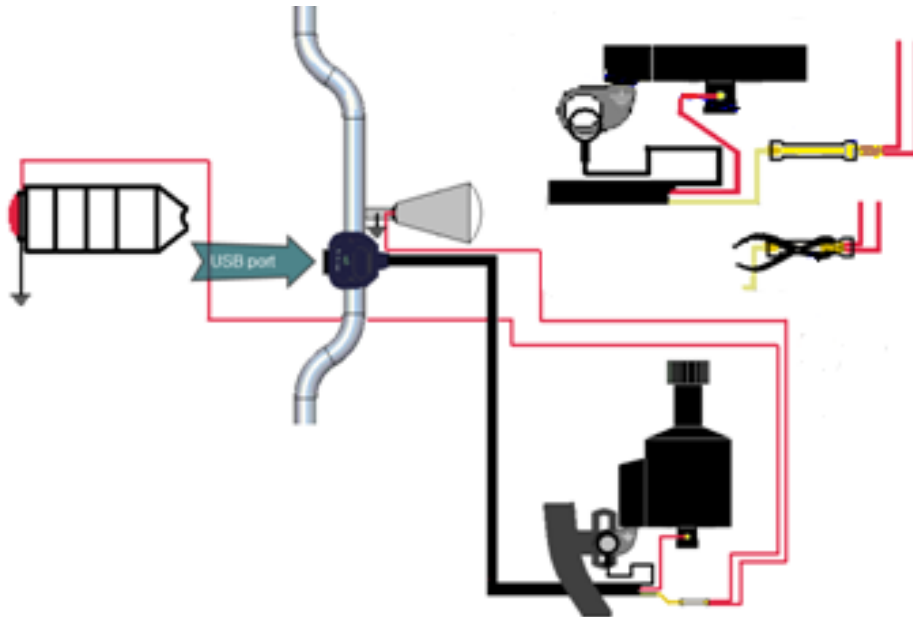
Connecting to the Dynamo

- 1 Press on the dynamo's electrical port so that the holes are aligned. Insert the end of the red electrical wire (E1) into dynamo port, and release.
- 2 Slip the black ground wire (E2) over the dynamo adjustment bolt (C4) and secure the bolt.

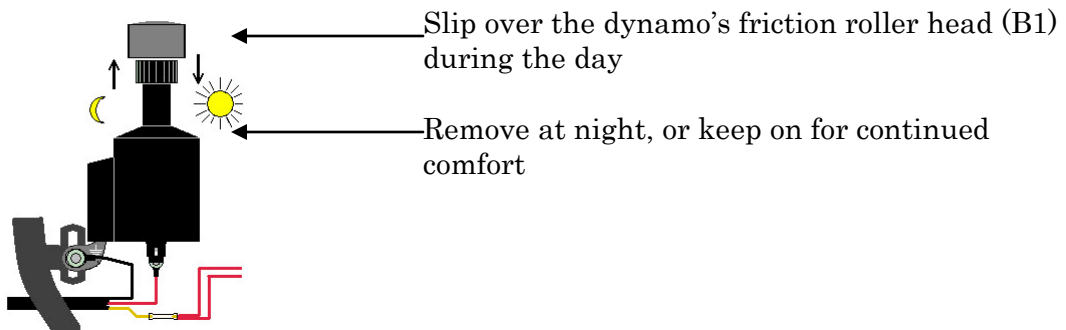
Connecting to Bicycle Lights

- 3 Take the ends of the bike lights and twist them together.
- 4 Insert the ends into LightCharge® lights connector clamp (E3). Tighten the clamp.

Full Installation Diagram

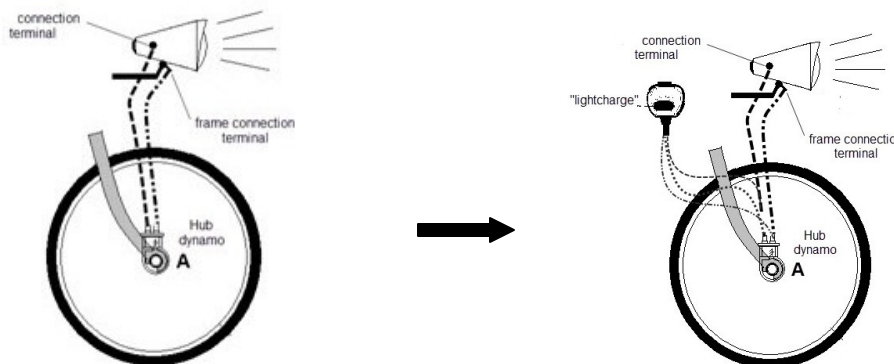


How to use the DynaCap



Connecting LightCharge USB Charger to Bicycle Lights and Hub Dynamo

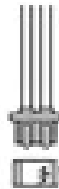
LightCharge® is compatible with most standard hub dynamos. It can be connected to a hub dynamo and dynamo lights simultaneously.



Disconnecting Lights from Hub Dynamo

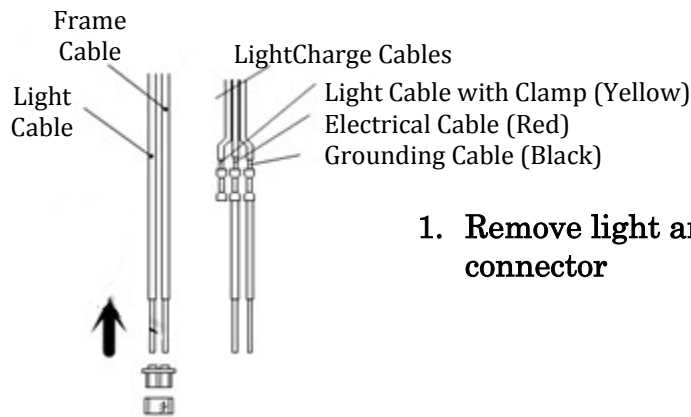


1. Remove connector cover from hub dynamo connection terminal

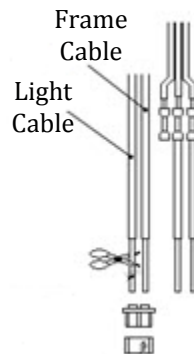


2. Remove connector from the cover

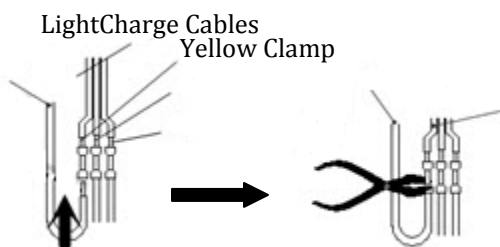
Connecting light(s) to LightCharge®



1. Remove light and frame cables from connector

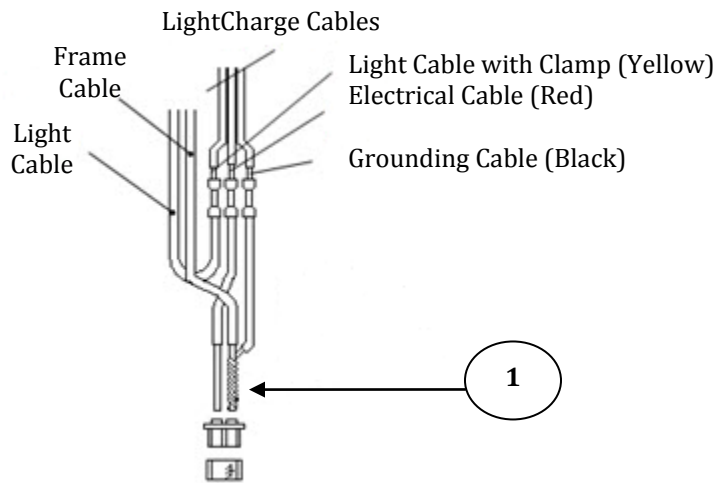


2. Cut approximately 3/8" to 1/2" from lights cable to fit the LightCharge® lights clamp

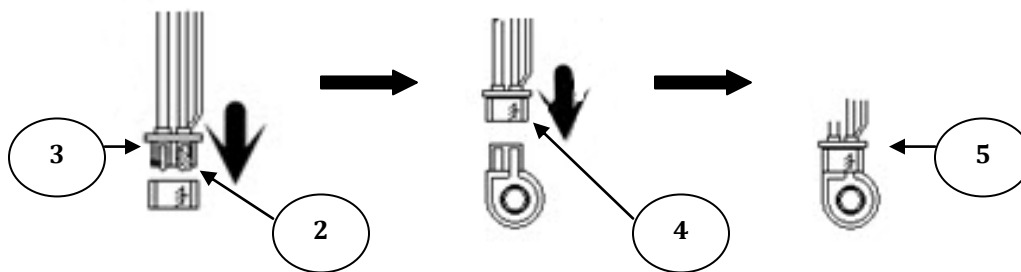


3. Insert lights cable into LightCharge yellow clamp
4. Tighten the clamp

Connecting LightCharge® to dynamo hub



1. Twist LightCharge® ground wire and frame wire together



2. Insert the twisted wires into hub connector
3. Insert the LightCharge red wire into hub connector
4. Slightly bend and insert the connector into cover
5. Insert cover back into hub connections terminal

Disconnecting from a standard hub dynamo

To disconnect LightCharge® from the hub, follow the above steps in reverse.

Operating LightCharge®

Connecting mobile devices

- Step 1.** Place your mobile device into designated phone holder or another location
- Step 2.** Connect mobile device to charger
- a. Use USB charging cable provided with your mobile device
 - b. Plug the USB end of your charging cable into the charger’s USB port (A5)

Charging mobile devices

- Step 1.** Connect the mobile device to the charger
- Step 2.** Begin pedaling faster than 4 miles per hour which typically a walking speed

Step 3. If charging does not begin immediately after you start pedaling, do one of the following

- a. Increase speed
- b. Stop the bicycle and adjust the dynamo's position to the correct position (if using a bottle dynamo); or, check the connection hub connection
- c. Stop the bicycle and check all connections including your USB cable
- d. Stop the bicycle and detach USB charging cable from your mobile device for a few seconds

Note: While charging your mobile device, the dynamo output may not be enough to charge your mobile device if you use a Bluetooth® headset with it.

Switching between charging lights and charging mobile devices

LightCharge® does not charge the mobile device and bicycle lights simultaneously. You may choose which device to charge by using the charging mode switch.

- a. Use charging mode switch (A3) to alternate between charging lights and mobile devices plugged in to USB port.

Taking Care of Your Device

(!) Handle your LightCharge® devices and accessories with care.

Keep the devices dry. Any type of moisture can corrode the electronic circuits. That includes humidity, precipitation, and all types of liquids. If the devices become wet, allow them to dry out completely.

Avoid using or storing the devices in the dirty and dusty areas. Moving parts and electronic components of the device can become damaged.

Do not attempt to open the devices. Do not bend, drop, or crush the devices. Avoid dropping, knocking, or shaking the devices. Rough handling may result in damage to the mechanical parts of the device.

Use only soft, clean, and dry cloth to clean the surfaces of the devices.

Do not paint the devices. Painting your device may result in clogging the moving parts and ports, and prevent the device from proper operation

Recycle your used electronic products, batteries, and packaging materials to the dedicated recycling outlets.

Limited Warranty

Bike2Power warrants its products to be free from the manufacturer's defects for 90 (ninety) days from the date of the original purchase. This warranty extends only to the original retail purchaser and covers defects and malfunction occurring in a course of the product's

ordinary use. This warranty does not apply if the product has been damaged, or if malfunction is a result of the unusual wear and tear, or a result of misuse, abuse, alteration, failure to follow direction, or improper installation, or maintenance, or cleaning.

Any implied warranties of merchantability or fitness for a particular purpose are limited in duration as stated in the paragraph above. Bike2Power's sole obligation under the implied warranties is to exchange or repair the entire product or its defective part at Bike2Power sole discretion.

To make a warranty claim, please contact us by writing to:

Attn: Warranty Claims
Bike2Power
26016 Alizia Canyon Drive, Unit B
Calabasas, CA 91302

Please include the following information in your correspondence:

- Your full name, address, and contact information
- Your order date and number
- The description of the product's malfunction or defect

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To the extent that this Limited Warranty is inconsistent with local law, this Statement shall be deemed modified to be consistent with such local law. Under such local law, certain disclaimers and limitations of this Limited Warranty may not apply to the customer.

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