LIGHT BICYCLE®

USER MANUAL

TABLE OF CONTENTS

CONGRATULATIONS ON THE PURCHASE OF YOUR NEW LIGHT BICYCLE CARBON RIM/WHEELSET!

This comprehensive user guide includes everything you need to know about building and maintaining your new wheelset. We've also included other helpful information regarding warranty coverage and tire setup, but for further details please visit the support pages on www.lightbicycle.com.

We offer a discount for returning customers, please contact us (sales@lightbicycle.com) for more details.

1. SAFETY INSTRUCTIONS

Improper installation, usage, and service can cause severe damage to the wheels and pose a hazardous condition for the rider. To ensure a reliable riding experience with Light Bicycle products, please read and follow these instructions. Even if you have been riding for years, the instructions and suggestions are specific to Light Bicycle carbon products and you should be mindful of them before your first ride. If in any doubt, feel free to contact us at sales@lightbicycle.com or leave a comment on any page of our website.

- Special tools and basic knowledge of handling the bicycle and wheels are required for installation and maintenance. If in doubt, please consult a reliable wheel builder or get in touch with us.
- The rim/wheelset must be compatible with other parts of the bicycle including the tires, fork, axles, and cassette. Incompatibility can cause poor performance and potentially damage the wheels or frame/fork.
- We design and test your wheels for specific riding purposes. Unfit usage can shorten the product's life and even cause a wheel to crack, causing injuries to the rider. Be sure that you've purchased the correct product for the job.
- Use your hands to install the tires if you can. Re-insert the tire into the deepest part of the rim over and over again to create enough slack. If you must use a tire lever, use plastic. DO NOT use a metal tire lever as it will permanently damage the rim.
- Be watchful of the hazards in riding (potholes, debris, railway tracks, etc). These can cause a big crash resulting in severe injuries.
- After an excessive impact or crash, there may not be an immediate sign of failure. Please wipe down the rim, and even remove the tire for inspection, and report any potentially severe damage back to us.
- Rim Brake customers - Check your rim brake pads regularly for pollutants like metal flakes and stones that can ruin the brake track. DO NOT use pads with significant wear.
- DO NOT overheat the wheels. High temperatures can occur in bike transport when a wheel is placed next to the exhaust fumes from an automobile. Overheating of the rims will void the warranty as it damages the composite structure.

- Regularly inspect the wheels and watch out for any signs of cracks, scratches, dents, delaminations, or discoloration which could indicate that the wheels may need to be replaced or serviced. If in doubt, please contact us.

2. PRODUCT UNPACKAGING

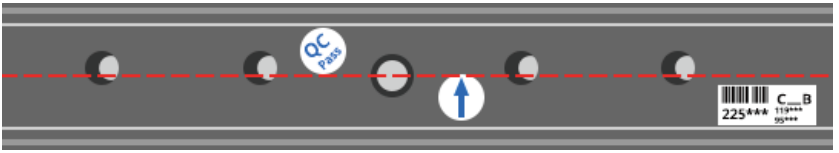
2.1 Inspect Your Package

Carefully inspect the package when unboxing and document with photos in case of any issue. If the product appears to have been damaged during transit, report a claim to us by email (sales@lightbicycle.com) within 7 days after delivery. We are unable to process claims for deliveries over 7 days. Your email must include a description of the damage, photos of the damage (packing box and the product), and your original waybill.

2.2 Special Label Stickers

On our rim/wheelset, there are five sticker marks:

- QC pass: All products must have passed QC check before shipping out.
- Blue arrow: It serves as a backup tool to distinguish the larger and shorter arcs of an asymmetric rim.
- Product serial number (with barcode): It is about 2 holes away from the valve. Essential in the event of warranty.



Asymmetric Rim

- Black arrow with the words “SPOKE DIRECTION” near a nipple hole: It indicates the hole for the first spoke and the direction to lace it.

- Anti-counterfeit hub labels: In the event of a wheelset warranty, it is essential that they remain installed.

Stickers like QC Pass and blue arrow may slip off in shipping. For the most used method to distinguish the larger and shorter arcs, refer to 3.1.1 Asymmetric Rims.

2.3 Inspect Your Items

2.3.1 Inspect Your Rims

Take a look at your rims before wheel building. Check for the following:

1) Scratches and cracks on the rim surface, caused by improper shipment.

2) The product is specifically manufactured to your specifications (internal nipples, drain holes, no-hole rim bed etc).

3) The four special label stickers (QC pass, two arrow stickers, and the serial number).

2.3.2 Inspect Your Wheelset

Wipe off the lubricant residue around nipple holes with a soft rag and isopropyl alcohol. Examine your new wheelset before tire mounting. We recommend:

1) Thoroughly inspecting the rims, hubs, and other small parts for any signs of damage during transit.

2) Make sure the wheelset is built to your specifications.

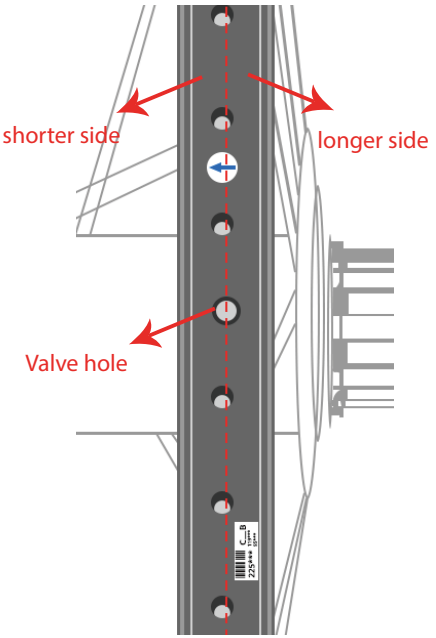
3) Check the label stickers (QC pass, two arrow stickers, serial number, anti-counterfeit hub label).

3. ASSEMBLY

3.1 For Rim Buyers: Wheel Building Guide

3.1.1 Asymmetric Rims

Asymmetric rims have shorter and longer arcs. There is a blue arrow sticker on the center channel, and the shorter arc is the side pointed. If the sticker is lost, place the rim sideways vertically in front of you, locate the serial number label, and flip the rim if needed to put the label right side up. View the rim from the center channel: the upper part is the shorter arc, and the lower part is the longer. Please make sure the rim is in the correct orientation: DIFFERENT FOR FRONT AND REAR WHEELS.



Rear Wheel

Video: how to build an asymmetric rim

F: the shorter arc is the drive (non-disc) side, and the longer arc is the non-drive (disc) side.

R: the longer arc is the drive (non-disc) side, and the shorter arc is the non-drive (disc) side.

3.1.2 Turbo Rim Lacing

The Turbo rim features spiral grooves on its surface, providing a significant aerodynamic advantage. Please note the designated rotational direction, indicated below. When lacing the Turbo rims to the hubs, ensure the lacing follows this directional guidance for optimal performance.

3.1.3 Spoke Selection

Spoke Type: Bladed or butted spokes both perform well and are common in high-performance wheel builds. Do not use straight gauge 2mm or thicker diameter spokes when building Light Bicycle wheels. These are too stiff to build with our carbon rims and will possibly cause the rim to crack. The use of straight gauge spokes will void your warranty.

Spoke Length Calculation: We provide free spoke length calculations for rim buyers. Please send us an email with measurements of your hubs, rim model, spoke number, spoke head type (straight-pull or J-bend), and nipple type (standard/raised head/internal nipples).

Hub shell dimensions required are as follows:

(1) Axle width

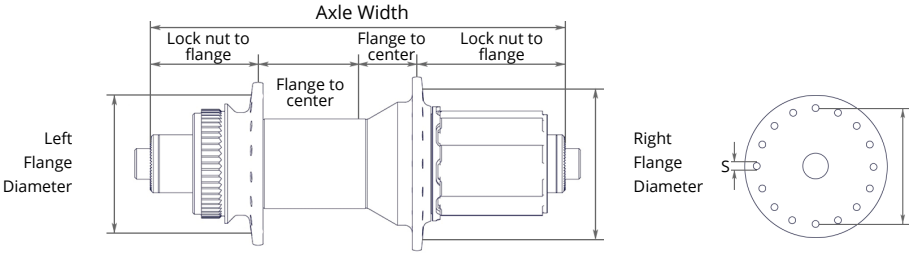
(2) Right/Left flange to outer end cap

(3) Left/Right flange to center distance

(4) Flange diameter (center of holes on one side to the other)

(5) Spoke hole diameter

If you can't find published figures, it is easy to measure with a caliper gauge.



3.1.4 Tensioning & Stress Relieving

Spoke Tensioning: During wheel building, bring the spokes to an even tension with a maximum tolerance of 5% for all drive and all non-drive sides. For the recommended spoke tensions, please refer to the following chart.

	Non-drive side (Front)	Drive side (Rear)
Mountain bike	115~130kgf	115~130kgf
Road disc-brake	120~135kgf	120~135kgf
Road non-disc	100~115kgf	120~135kgf
Fat bike	105~120kgf	105~120kgf

Stress-Relieving: During and after wheel building, get the wheel stress relieved properly. If a spoke develops a sharp bend in it while building, please replace the spoke.

3.1.5 Rim Tape & Valve Stem Tubeless Installation

If using tubeless-ready rims (with spoke access holes in the rim bed), when converting to tubeless, first tape the rim for a good air seal. You will need scissors or a utility knife, isopropyl alcohol and clean shop rags or a microfiber cloth.

Install The Rim Tape

Step 1 - Clean the entire rim bed with isopropyl alcohol and let it dry completely.

Step 2 - Place the rim vertically on a mat, get the valve stem hole at the top, and hold the rim between your legs.

Video: how to tape a rim

Step 3 - Start taping the rim two holes away from the valve. Rotate the wheel forward and pull on the tape. Keep it tight.

Step 4 - Press firmly in the direction the tape was applied, followed by both edges of the tape to ensure a tight fit. If air bubbles arrive, pull the tape up and redo that area.

Step 5 - Pass over the valve again by about 1cm and cut the tape. (Note that if your tape is not wide enough, narrower tape in 2 laps (left and right) will work, just be sure it's wide enough to cover the holes adequately.)

Tech Notes: Using thick tape can make tire mounting difficult. Reusing tape is not recommended. Apply one or two laps of rim tape to ensure the spoke access holes are well covered. If an inner tube rim strip is present, remove it before taping. If running pressure greater than 50psi or the rim tape is not wide enough for your rim, use two laps of tape. Evenly apply the tape. Find a tutorial video on rim taping on our Youtube channel. A poor seal may cause the inflated air to squeeze into the rim chamber and damage the rim.

Install The Valve Stem

Step 1 - Locate the valve hole.

Step 2 - Make a tiny “X” with a sharp utility knife for the valve to go through.

Step 3 - Prep the valve by removing the plastic cap, remove the collar and o-ring, then tighten down the small metal presta valve.

Step 4 - Slowly twist the valve stem as you push it through the tape and into the valve hole.

Step 5 - Put the o-ring on, screw the collar onto the stem (with the concave base facing the o-ring), and ensure the collar is secure. You can push down on the rubber end with your thumb as you tighten the collar. The rubber base should mushroom out and seal the rim. Do not over-tighten the collar.

3.1.6 Sticker Installation

Removable stickers are only available on our Falcon Pro and MTB rims.

Install Removable Stickers

Step 1 - Clean the rim with isopropyl alcohol and let it dry completely.

Step 2 - Locate the position to apply the sticker on the rim sidewall (90° from valve hole).

Video: how to apply a sticker

Step 3 - Pull the sticker off the backing and apply it from the outer diameter first, leaving a 1.5-2mm gap along the outer circumference of the rim. Smooth the sticker on with your finger across its length and work your way to the inner diameter.

Tech Notes: Use clean hands when installing stickers. To spot the 90° from the valve hole, count your spoke holes and divide the number by four. For example, if you have a 32h rim, the 90° should be eight counts away from the valve hole. To place the sticker right at the 90° spot, gently fold the sticker in half to double-check the middle's location. If there is a contaminant on the back of the sticker, place a drop of water on the spot to work the debris off. If there are air bubbles, gently lift the sticker to open the spot with the bubble and apply pressure to work it out.

3.1.7 Tubeless Rim Lacing

Tubeless rims do not have access holes on the center channel, just a solid piece of material. The only hole you'll see in the center channel is the valve hole. In order to build tubeless wheels, you need to feed individual nipples into the valve holes, one at a time. Then a magnet is typically used to trace the nipples to the appropriate spoke hole. There are also lacing kits available that allow you to pull the nipples through the rim with a string or wire.

Method A:

Step 1 - Thread the magnetic piece into a nipple and drop it into the rim at the valve hole.

Step 2 - Holding the rim sideways, use the other magnet to pull the nipple along the rim and guide it into the appropriate hole.

Video: how to lace a rim without access holes

Step 3 - Unscrew the little magnet from the nipple and thread the nipple onto the spoke. Repeat process for all nipples.

Method B:

Step 1 - Thread a new gear/shifter cable into the spoke hole, through the rim and out through the valve hole (be sure to use a new cable because the end of it should be soldered to prevent fraying).

Step 2 - Slide a nipple onto the cable at the valve hole side, and then lightly clamp a cable end-cap on the end of the cable to prevent the nipple from sliding off. You'll probably want to buy a bulk bag of cable end caps, but often you can re-use them if you are careful when re-opening the cap with pliers.

Step 3 - Gently pull the cable through the rim, and the nipple will pop out of the nipple hole.

Step 4 - Hold the nipple with some long nose pliers, ideally ones with a flat jaw so it doesn't scar the nipple.

Step 5 - Quickly tug the cable so the cable end-cap pops off and the cable comes out. The nipple stays in place because you're holding it with the pliers.

Step 6 - Thread the nipple onto the spoke. Repeat the process for all nipples.

3.2 For Wheelset Buyers: Tire Mounting Guide

All our rims (excluding tubular) are tubeless compatible. We specially design the slope and depth of the center channel (the deepest part) to make the rim more tire mounting-friendly, and the key to easier tire installation is to put both tire beads onto the center channel, rather than on the bead seat.

Please refer to the maximum pressures set by the rim and tire manufacturers, and adhere to the lower limit. Please refer to our website for detailed information on tubeless pressure recommendations and tire size charts. Tutorial videos on tire mounting can be found on our Youtube channel.

3.2.1 Tubed Tire Installation

Step 1 - Place the wheel perpendicular with the valve hole at the highest point. Align the label of the tire with the valve hole.

Step 2 - Use your hands to mount one side of the tire bead onto the center channel.

Step 3 - Inflate the inner tube a bit to make it easier to mount. Feed the valve stem of the tube through the valve hole. Seat the tube entirely underneath the tire and onto the rim.

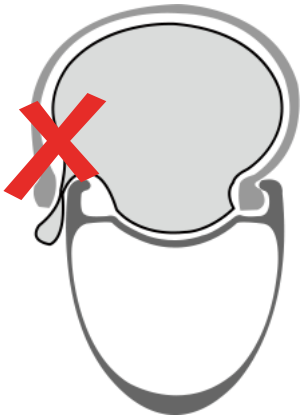
Video: how to install a tight tire

Step 4 - Install the other half of the tire bead onto the center channel of the rim.

Step 5 - Inspect the tire bead area to avoid pinching the tube between the tire and the rim.

Step 6 - Pump up the tire, be careful not to over-inflate. Be sure to check the pressure again before riding.

Tech Notes: Tape the rim bed if running at higher pressures. Give the tire a bit of pull upwards to stretch it if the tire is too tight to install fully on the second side of the tire bead. We do not suggest using tire levers, but if you have to, use plastic levers and never use metal ones!



Do not leave the tube to hang outside.

The tube is completely between the tire and rim.

3.2.2 Tubeless Tire Installation

If converting to tubeless with a tubeless-ready wheel (with access holes in the rim bed), skip back to 3.1.4 Rim Tape & Valve Stem Tubeless Installation for more detailed instructions. You will need: a tubeless valve stem, a set of pliers (optional), an injection tool for bleeding hydraulic brakes or inserting sealant, and a bottle of tubeless sealant.

Step 1 - Install the tubeless valve stem and tighten the collar for a good seal.

Step 2 - Mount one side of the tire bead onto the center channel of the rim.

Video: how to mount a tubelesstire

Step 3 - Install the other side of the tire bead into the center channel *Install the sealant when you have ¾ of this side installed if you do not have an injection tool. Rotate the sealant into an area where both sides of the bead are installed before trying to finish popping the tire fully into the rim.

Step 4 - Inject the sealant through the valve stem (core removed).

Step 5 - Inflate the tire to push the beads outwards and upwards to the bead seat on either side of the center channel.

Step 6 - Spin the wheel to cover the inner tire wall with the sealant.

Tech Notes: Double check that your tires are tubeless compatible. Use only plastic if levers are necessary. For brand-new tires, use a tube and inflate the tire overnight to straighten it in case the foldings are too stiff. If the tire is quite tight, work the tire bead repeatedly into the deepest part of the rim and avoid using tire levers aggressively. Also, try lubricating the rim tape and tire beads with soapy water or sealant. To make tire bead installation easier, put either side of the tire bead completely into the deep center channel (ensure the gap space is smooth for mounting), then push the other side of the tire bead into the center channel. You will hear a sound as the beads snap into the bead seat. Refer to the instructions on the tubeless sealant packaging for amount suggestions.

1 2

If you can't manage to mount the tire, please double-check:

(1) The recommended tire width for your rim

(2) Your tire compatibility

(3) The thickness of your tape.

If nothing helps, please contact us with the problem described and we will get back to you asap.

3.2.3 Tubular Tire Installation

Tubular tire installation is much more time consuming than clincher style. You will need tubular glue, a flux brush, a truing stand, and some shop rags.

Step 1 - Inflate the tire enough to expose the base tape. Glue the base tape of the tire and the rim bed between holes. Brush gently to make the layer even and thin. Let them dry completely in a clean and well-ventilated area.

Step 2 - Repeat Step 1 to form the second coat.

Step 3 - Apply the third and final glue layer on the rim bed and the base tape. Let them half-dry (being tacky to touch).

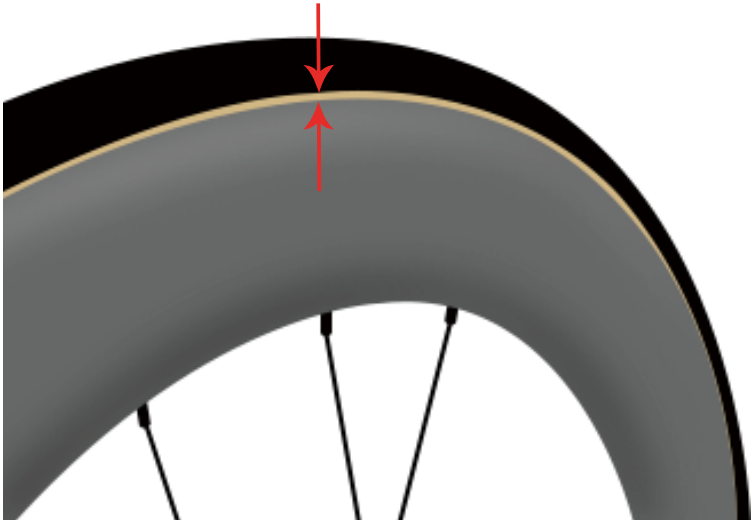
Step 4 - Place the wheel perpendicular on the floor (valve-hole at the top). Deflate the tire, feed the valve into the valve hole, and press the tire down firmly.

Step 5 - Stretch the tire a bit with your hands holding either side of the valve and roll the tire over onto the middle of the rim bed.

Step 6 - Check if the tire is centered on the rim. Inflate the wheel to 30psi, spin it on a truing stand, and detect any hops or lateral plays. If off-centered, deflate it and adjust the off-centered spots.

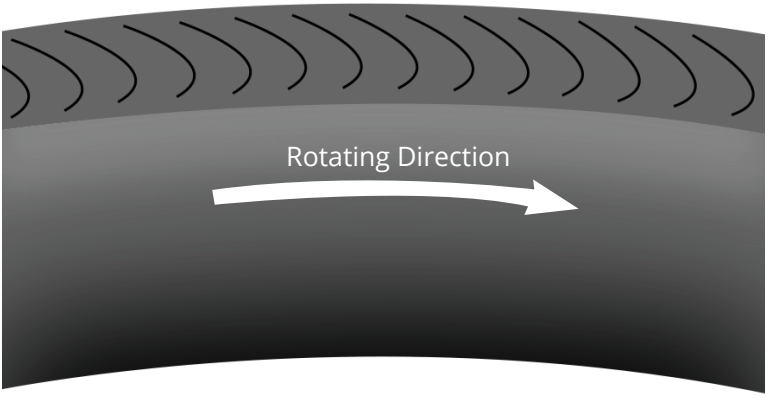
Step 7 - Inflate to your recommended psi. Clean the glue residue from the rim and brake surface with isopropyl alcohol. Let the wheel dry completely.

Tech Notes: When gluing the rim, take care not to get the glue inside the holes of the rim. Make sure the coats are thin and evenly applied. Please refer to the glue maker for suggested dry time. Mount the tire onto the rim with your hands, as tools can damage the rim. When a tubular tire is centered, the exposed amount of base tape should be the same around the whole rim.



3.2.4 Wheel Installation

Do not ride a bicycle with unsecured wheels. This can cause severe injuries. Make sure that both wheels are in the center position of the frame. If installing rim brake wheels with grooved graphene brake surfaces, pay attention to our suggested wheel rotation direction.



4. SERVICE & CARE

4.1 Cleaning the Wheels

Clean your bicycle and wheels regularly to keep things moving smoothly. After a muddy ride, give your wheelset a quick wash and then wipe them down with a clean, soft rag. Braking surfaces need special treatment. A bar of mild soap and water should work for the rim brake track. Isopropyl alcohol, which can be found in drug stores, can be used for rim brake and disc brake surfaces. Regularly check your brake pads for metal flakes or hard particles that can ruin the brake track. Wipe off dirt and grime around the hub's seals, and if you need extra protection for the hub, apply some waterproof grease. Do not use a pressure washer or hose to clean your bicycle and components.

4.2 Transport

Do not stack heavy things on top of the bike or wheels. We suggest using a carton to protect the wheels. Keep the wheels away from automobile exhaust or other heat sources. Use car racks carefully as the fixing device may impair the rims.

4.3 Maintenance

Bicycle maintenance requires special knowledge and tools. If in doubt, consult a reliable and experienced bicycle mechanic. You need to regularly check the bicycle and wheels, and make some replacements if necessary to maintain a high performance. Please consult the manufacturer for specific instructions on servicing other components.

Recommended Maintenance Schedule:

Before each ride	Weekly	Every 4 Months	Yearly
Inspect the wheels for any signs of dents, scratches, damages, delamination, discoloration.	Check the brakes (no rubbing against the rim).		Clean and check your rim surface, braking surface, brake pads thoroughly. Repair or replace the rim or pads if needed.
Check the spoke tension of the wheels.	Check if there are twisted, broken, or loose spokes.		Check the spokes and nipples and replace or rebuild the wheel if necessary.
Inspect the tires for air pressure and signs of significant wear, cracks, and slits. Make sure the valve collar is tight. Check the gluing of tubular tires.		Add more sealant. Reglue the tubular tires. Inspect the tires for signs of wear and cracks.	Service the tires (refer to the tire manufacturer's instructions).
Check that the wheels are secure and smooth-rolling.	Check that all threads and bolts are tight. Clean the bicycle.	Check hubs for play and clear friction.	Clean and lubricate the hubs (refer to the specific instructions by the manufacturer or consult an experienced bike mechanic).

* You can adjust the maintenance frequency based on your actual riding conditions.

5. WARRANTY

5.1 Limited or Lifetime Warranties

Non-Pro Series Products

Light Bicycle warranties all Falcon, Recon, and Drift series rims from manufacturer's defects in materials and workmanship for a period of 3 years from the date of purchase. Within the warranty period, if your rims are damaged in a crash, we offer a 10% crash replacement discount.

Pro Series Products

Light Bicycle warranties all Falcon Pro, Recon Pro, and Drift Pro series rims from manufacturer's defects in materials and workmanship specifications for a limited period of 5-year from the date of purchase. Or upgrade to a Lifetime Guarantee and ride with more confidence. Within the warranty period, if there is a crash accident or your rims wear out, you can replace them at a greatly reduced cost with a 25% crash replacement discount.

The warranty is not transferable and only applies to the original owner. Please refer to our website for detailed information about warranties.

5.2 Submitting a Warranty Claim

When submitting a warranty, contact us by email (sales@lightbicycle.com) and we will address your issues within 24 hours.

3 steps to easily file a claim and get you back riding asap:

1. Dismount your tire, locate your product serial number on the rim bed and take a photo of the label.
2. Take a close shot of the affected product area or a video of abnormal noise or cracks.
3. Email us with the serial number of your item, description of the damage, proof of purchase, and the photos/videos.

Scan the code to visit our website.

CONTACT US

Global Warehouse

Email: sales@lightbicycle.com

Phone: +86-18030305013
+86-0592-6254228

Skype: light_bicycle

North American Warehouse

Email: support@lightbicycle.com

Phone: +1 (253) 216-2535