### MOONCOOL

# TKI Fat Tire



OWNER MANUAL

### Welcome to the MOONCOOL Family!

### You are now the proud owner of a TK1 Fat Tire E-trike! Thank you for choosing MOONCOOL!

This manual is designed to guide you in completing the assembly. Please read this manual from beginning to end before starting assembly, and refer to it often as you work. If you experience difficulty, please ask a mechanically inclined friend for assistance or visit a local bike shop. You can also contact Mooncool Support by emailing support@mooncool.com.

#### **Important Notes**

In addition to assembly instructions, you will find very important information regarding safety, performance, and maintenance. It is vital that you read and comprehend all tips and precautions prior to your first ride. For questions, please ask a friend or contact Mooncool Support. Your tricycle shipment includes all the essential tools for assembling and adjusting the TK1. However, some tasks are easier with professional tools and skills. We recommend the assistance of a certified tricycle mechanic.

Before allowing anyone to ride your TK1, please request that they read this manual before their first ride. This will help avoid accidents or injuries. Your TK1 is a powerful riding machine, and it is important to insist that your friends and family members read this manual before riding.

**WARNING:** Wear a certified tricycle helmet when riding your TK1 Fat Tire. For night riding safety, also wear fluorescent or reflective clothing.

**WARNING:** Ride your TK1 entirely at your own risk. MOONCOOL cannot predict every riding circumstance, and makes no representation that tricycle riding is a safe activity. MOONCOOL is not responsible for personal injury or product damage.

**WARNING:** Bodily injury and property damage resulting from the use of your TK1 may not be covered by your existing insurance policies. It is your responsibility to purchase adequate insurance coverage.

**WARNING:** Improper assembly of your TK1 may result in significant damage to your TK1 and/or bodily injury. If you are uncertain of your skills, hire a qualified bicycle mechanic.

**WARNING:** The motor, controller, sensor, battery, and cables provided with your TK1 shall not be used for other purposes, including disassembly or modification. Doing so will violate your warranty and may damage certain components and/or cause bodily injury.

MOONCOOL tricycles are sold with a one-year warranty that covers all defective or damaged parts.

The MOONCOOL Service Department is located in Covina, CA.

MOONCOOL Service email address: support@mooncool.com

When sending a support request email, please include your order number, photos or videos to help us understand the problem, and a screenshot or photo of your invoice.

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Part Name

Rear Fender and Bracket

Rear Derailleur

Rear Axle

Frame

Chain

Front Basket

Rear Basket

Basket Long Gasket

Charger

Saddle

Pedal

Rear Wheel

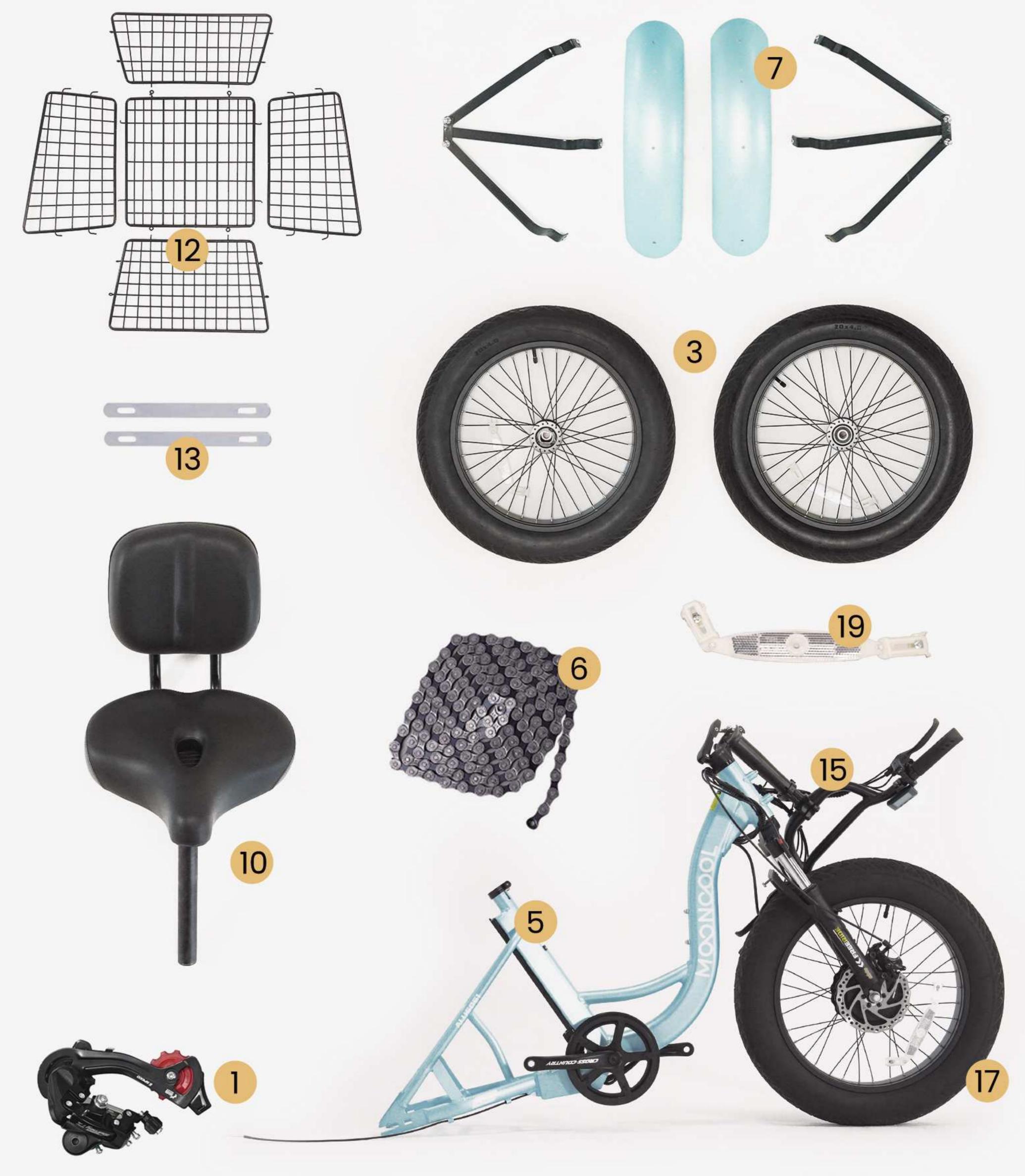
**Rear Axle Parts** 

Check all parts of the tricycle before assembly. If any parts are missing or damaged, please contact us via your account order.



Allen Wrenchs	Wrench	Wrench (for wheels)	Screwdriver

TIPS: You can choose to use other tools with better functionality for the installation.

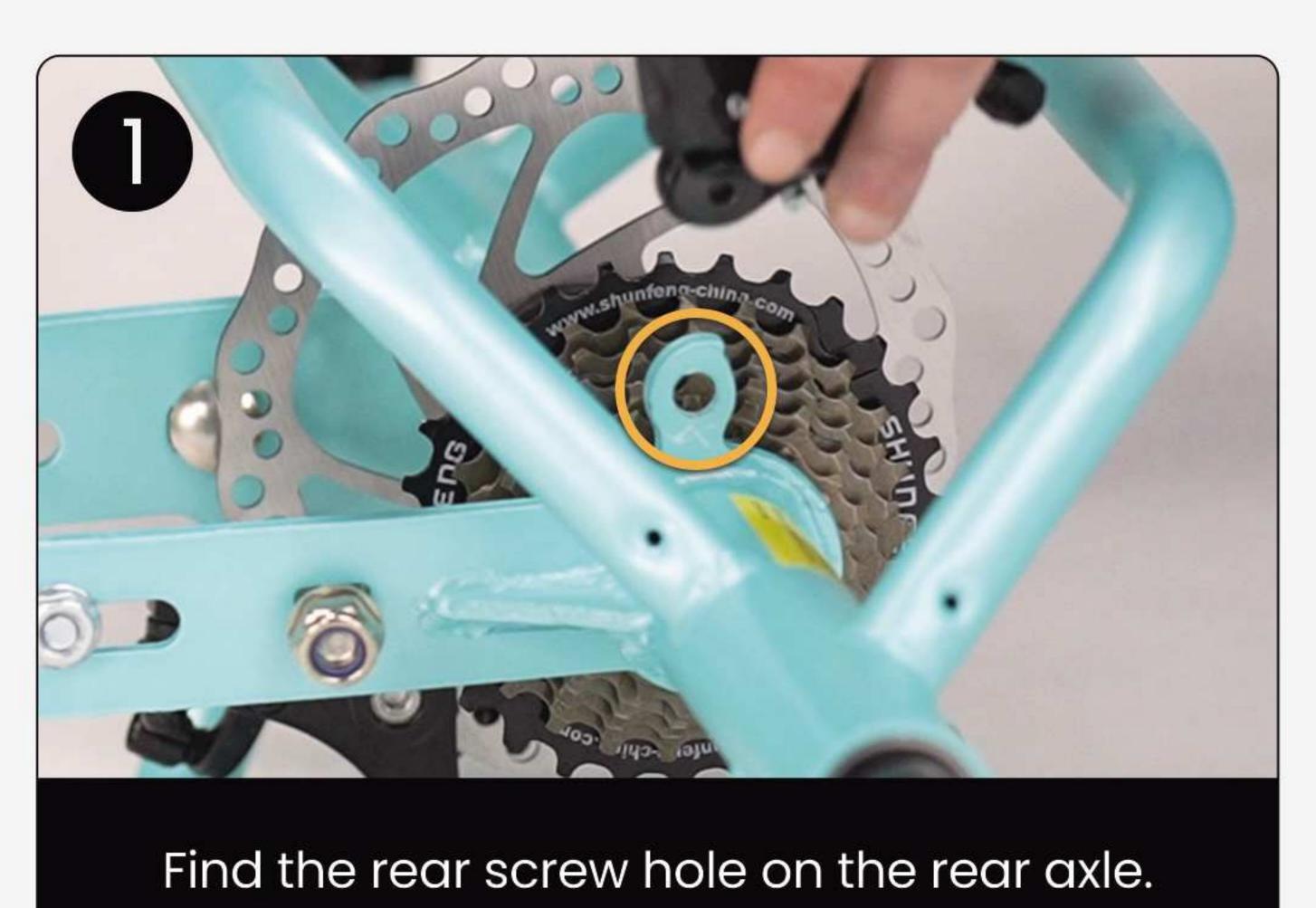


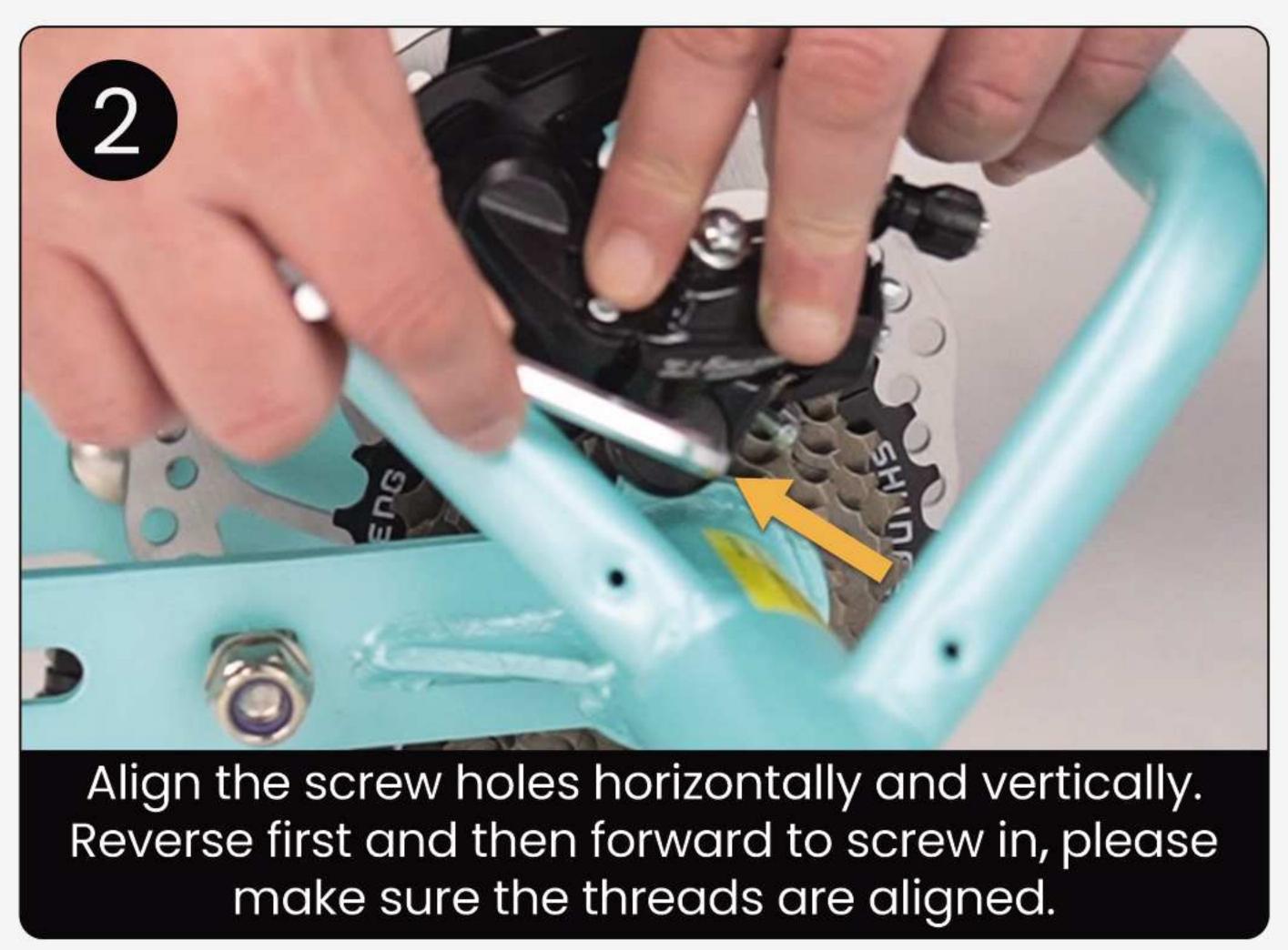
	15	Handlebar
	16	LED Lamp
	17	Front Wheel
	18	Battery
7	19	Reflective Stripe
	20	Key
	12	4
		20



### **Assembly Steps**

Ensure the screws and washers are in the correct position on the rear derailleur and align with the axle hole correctly. Tighten the screws vertically to secure.



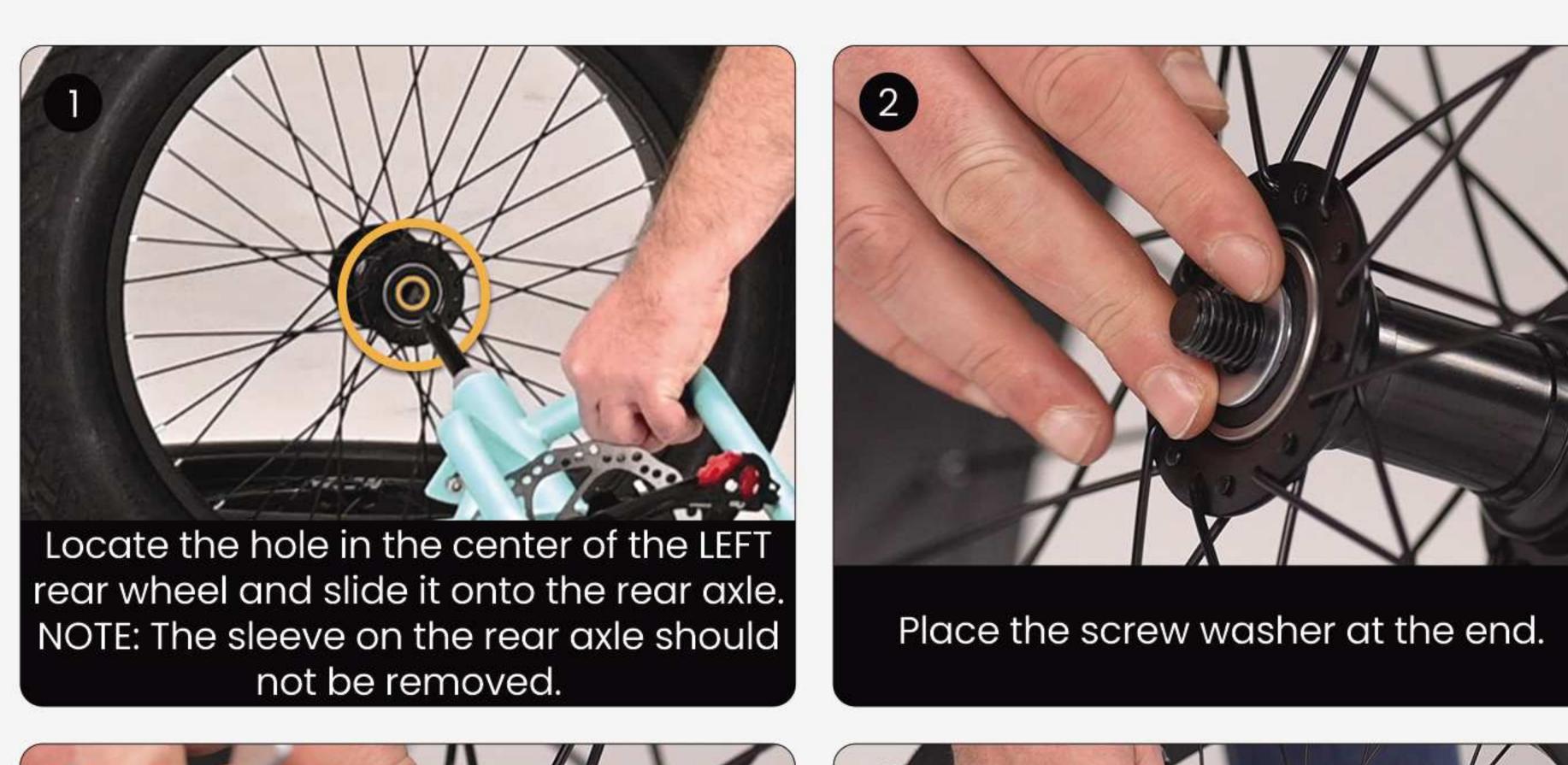


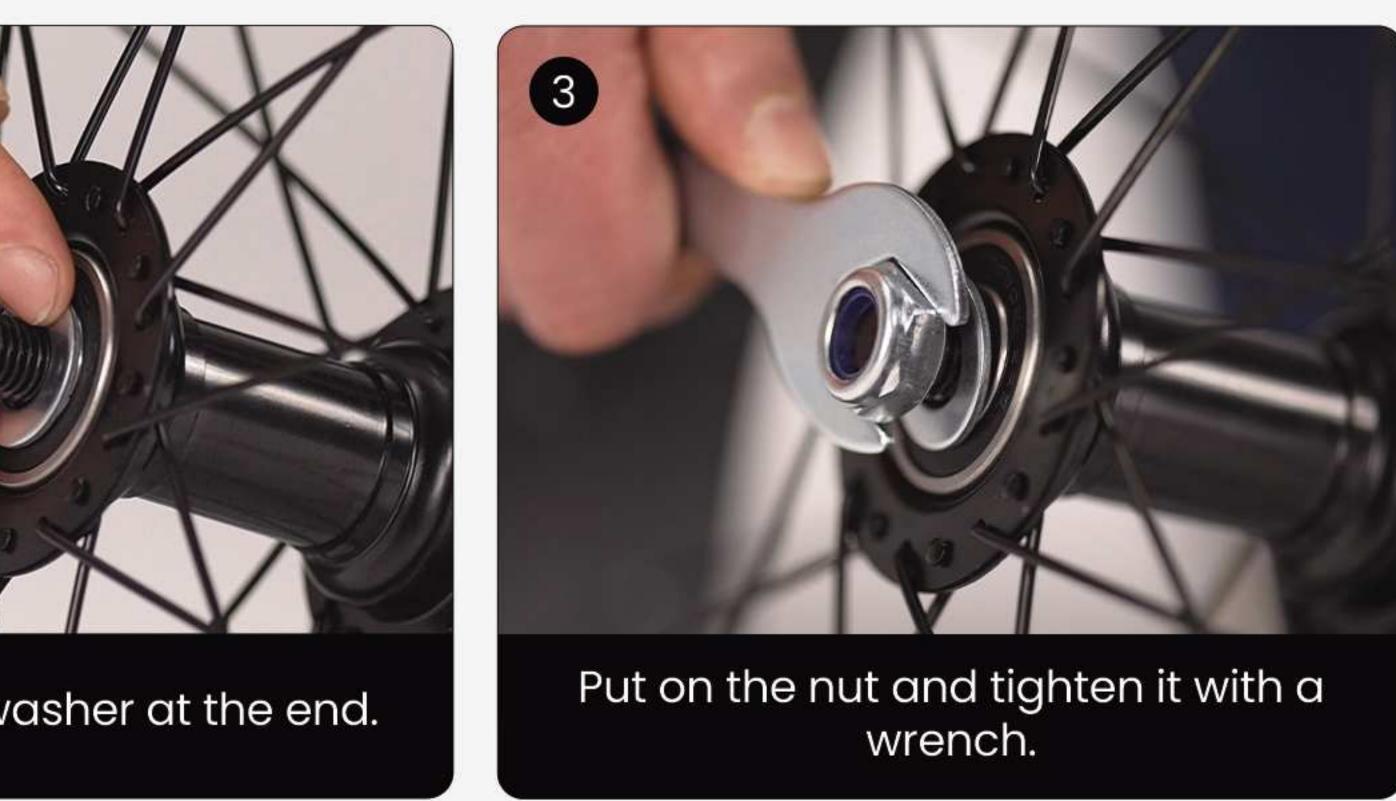




#### Parts and Tools









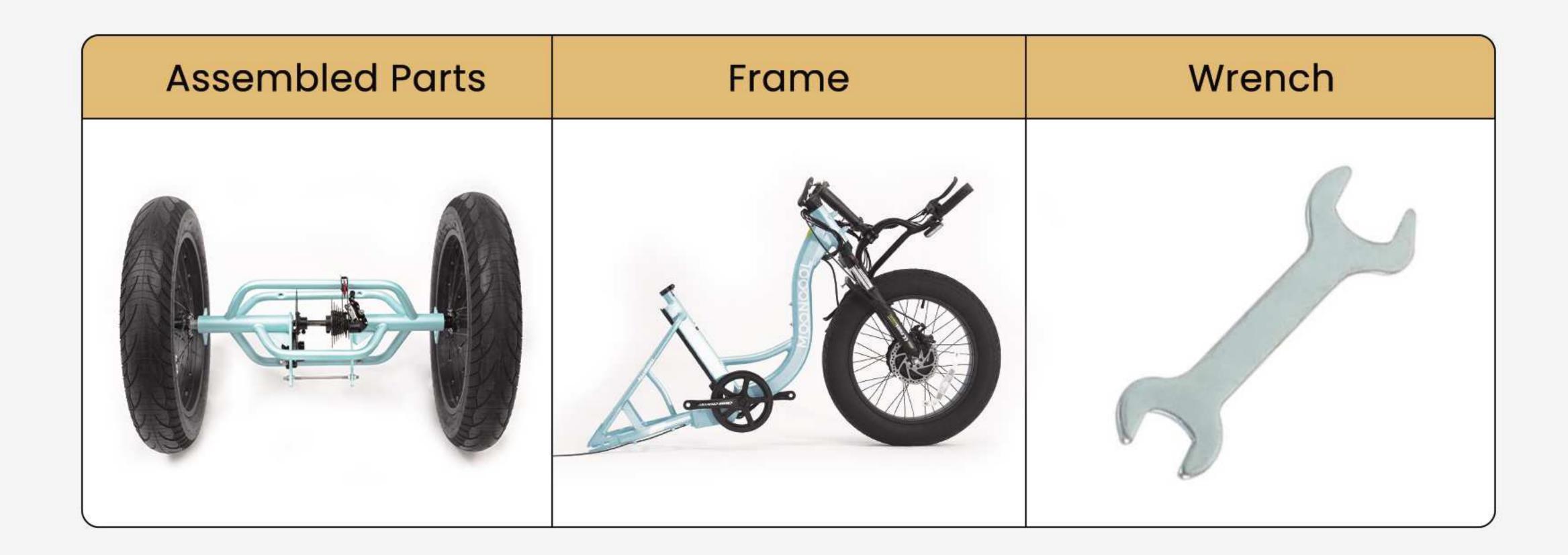




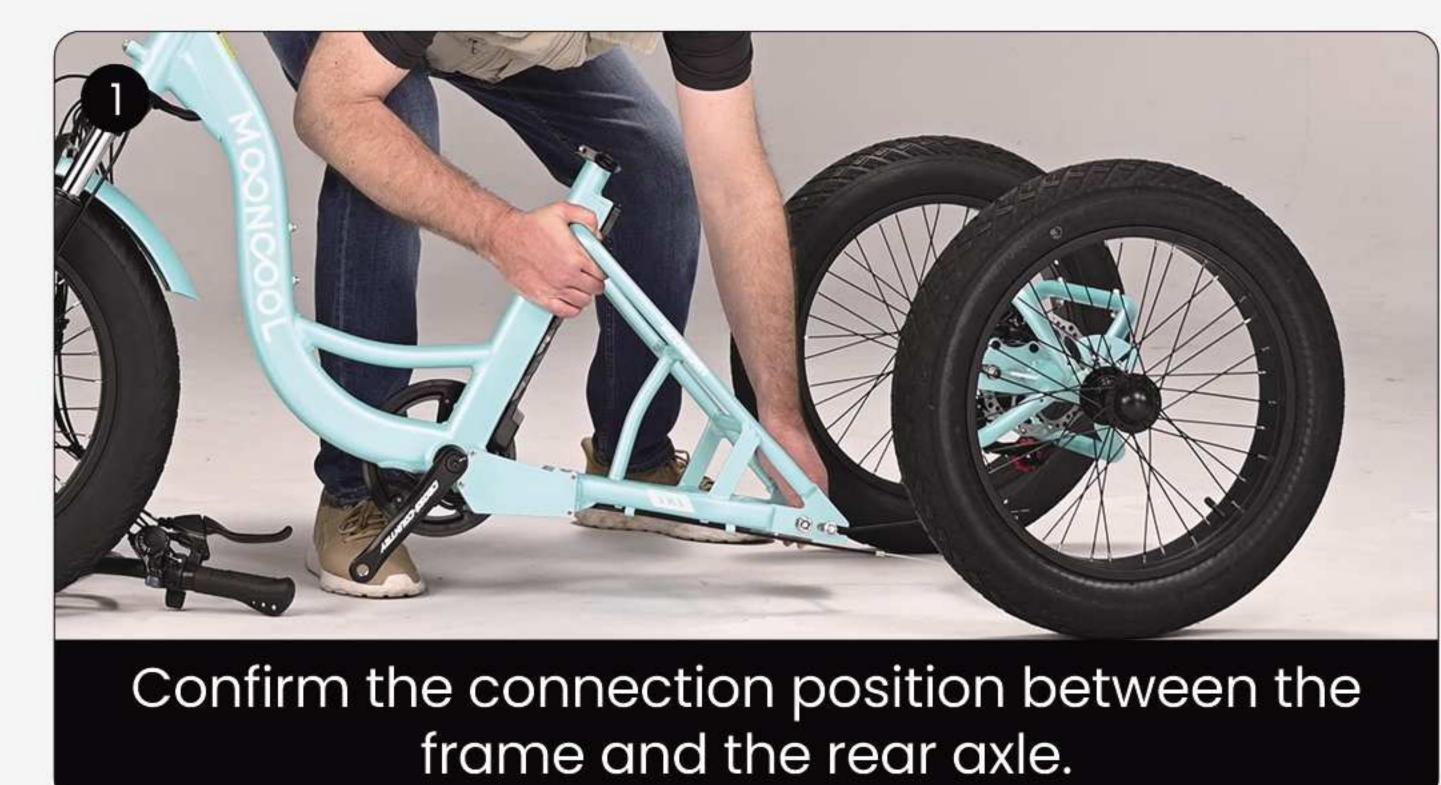




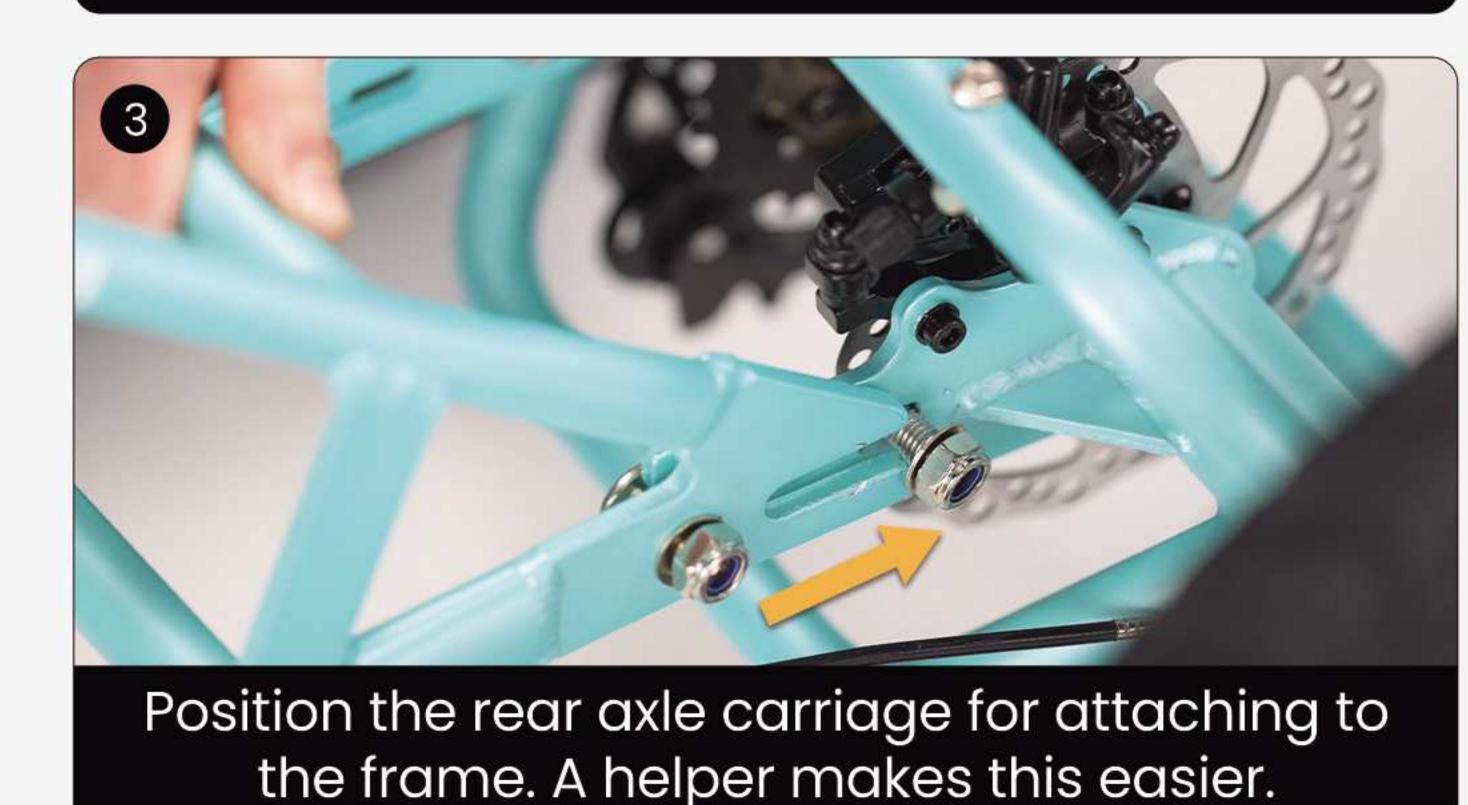


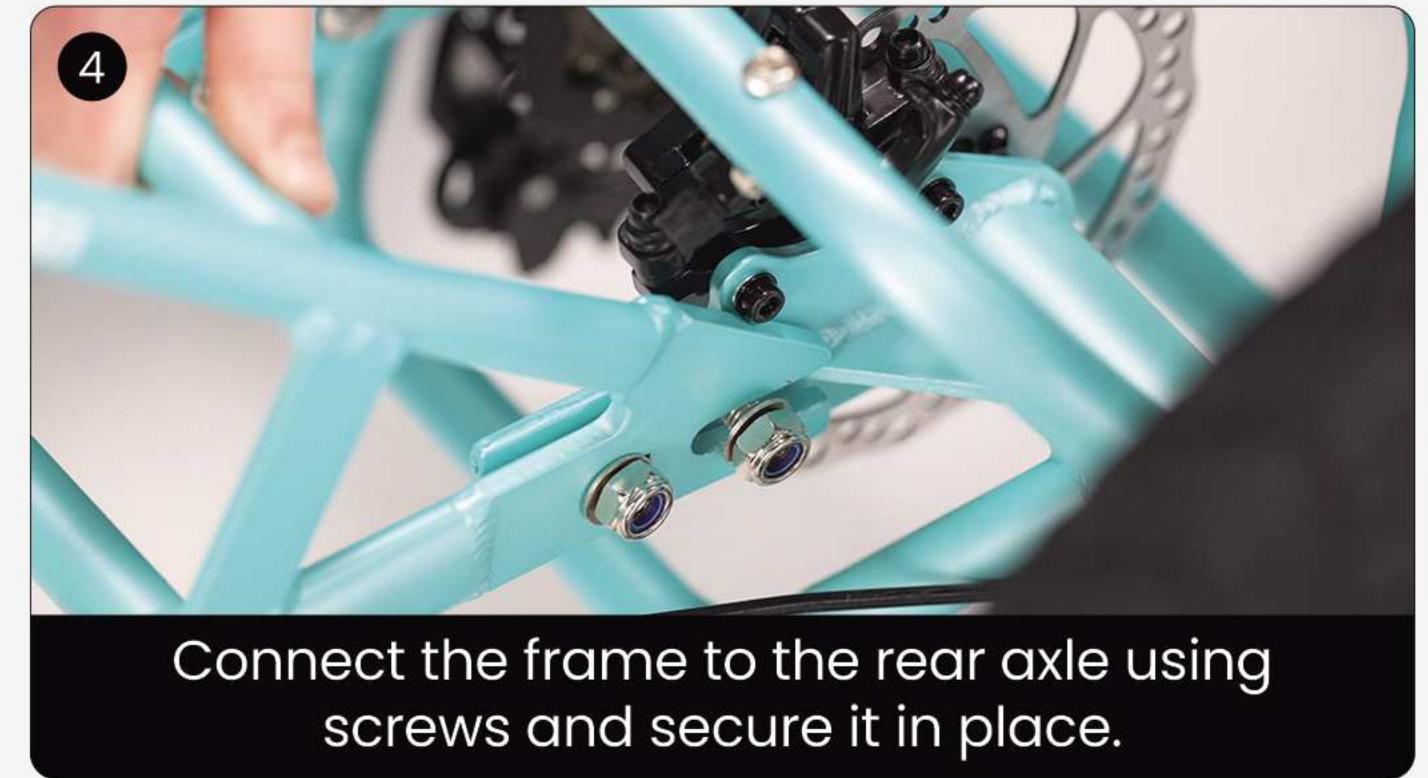


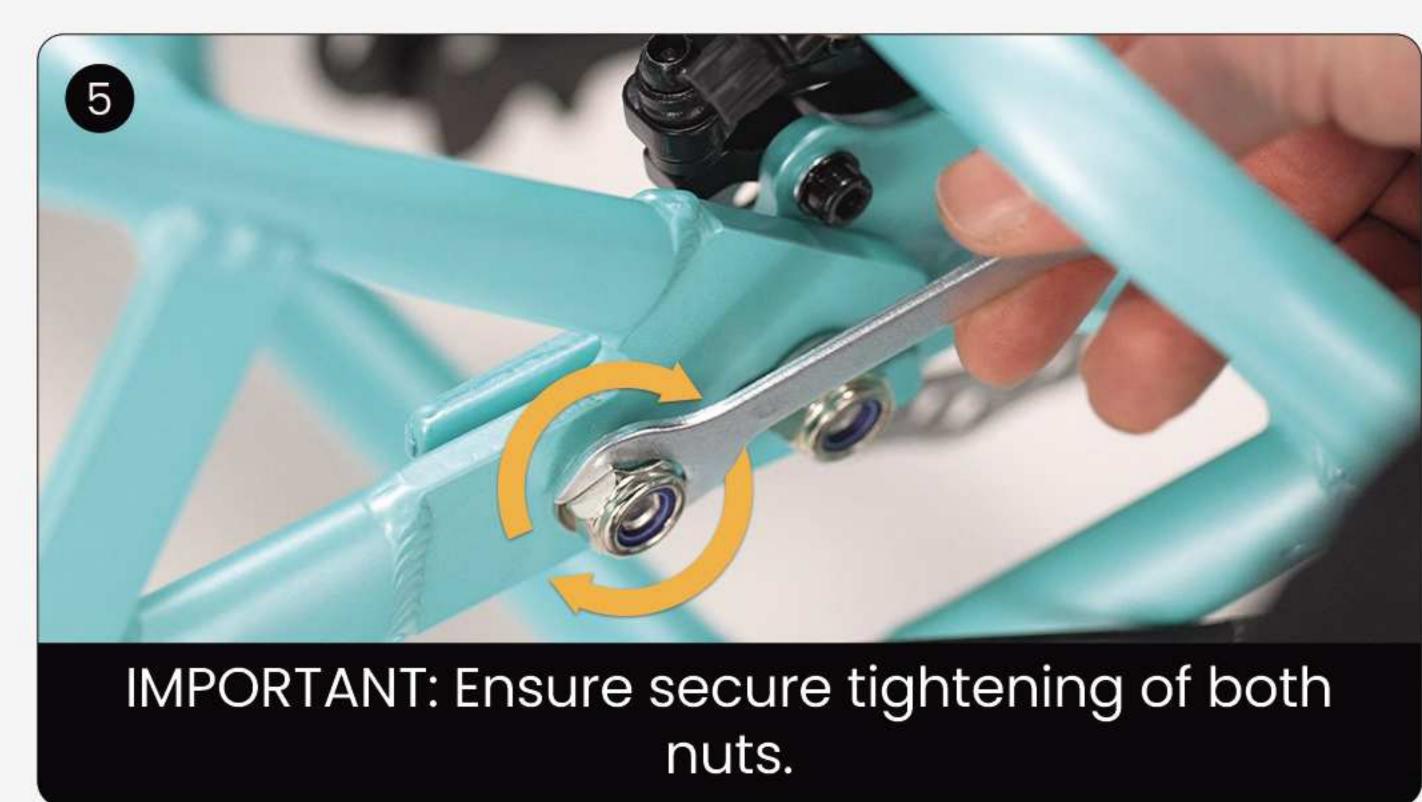
### **Assembly Steps**







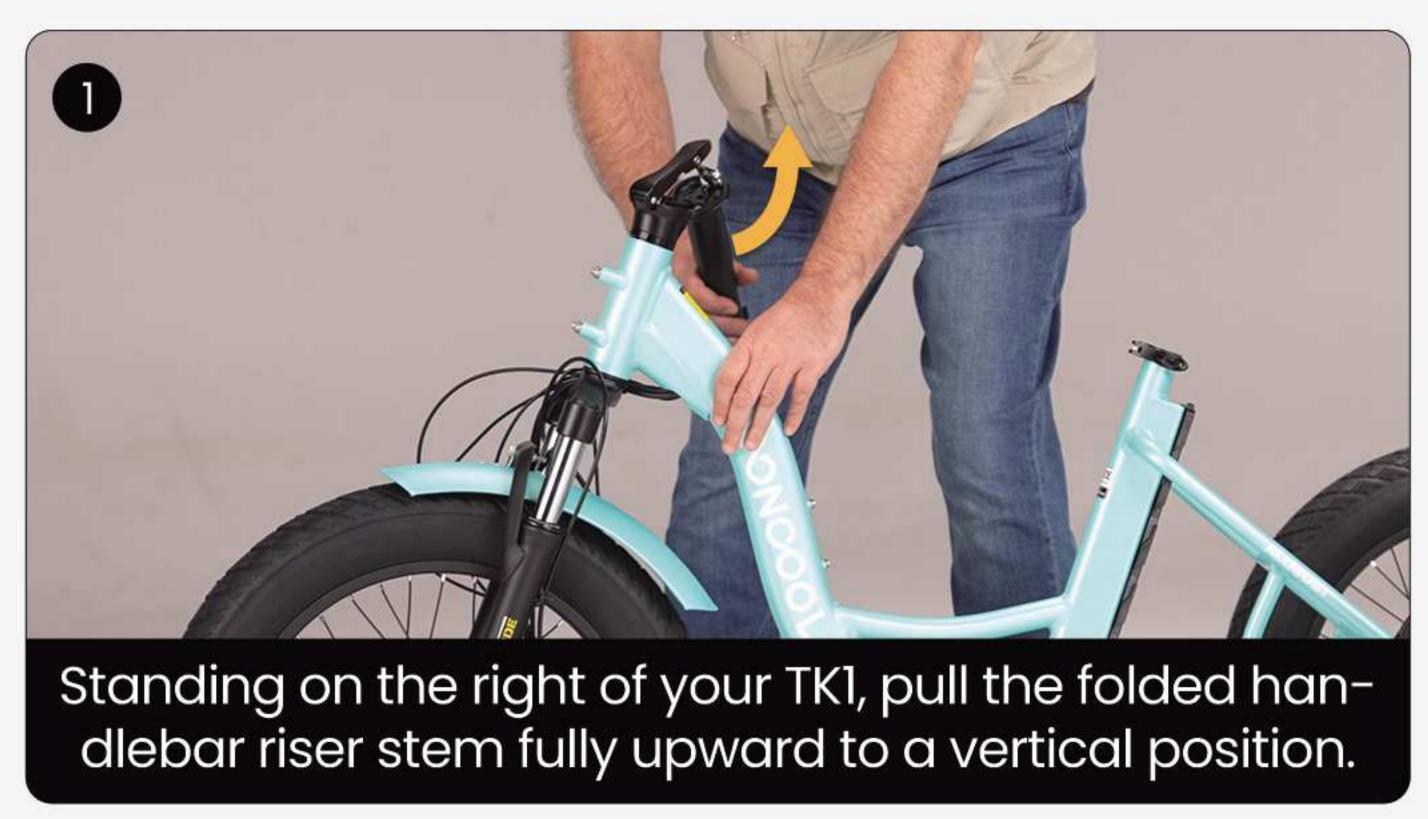




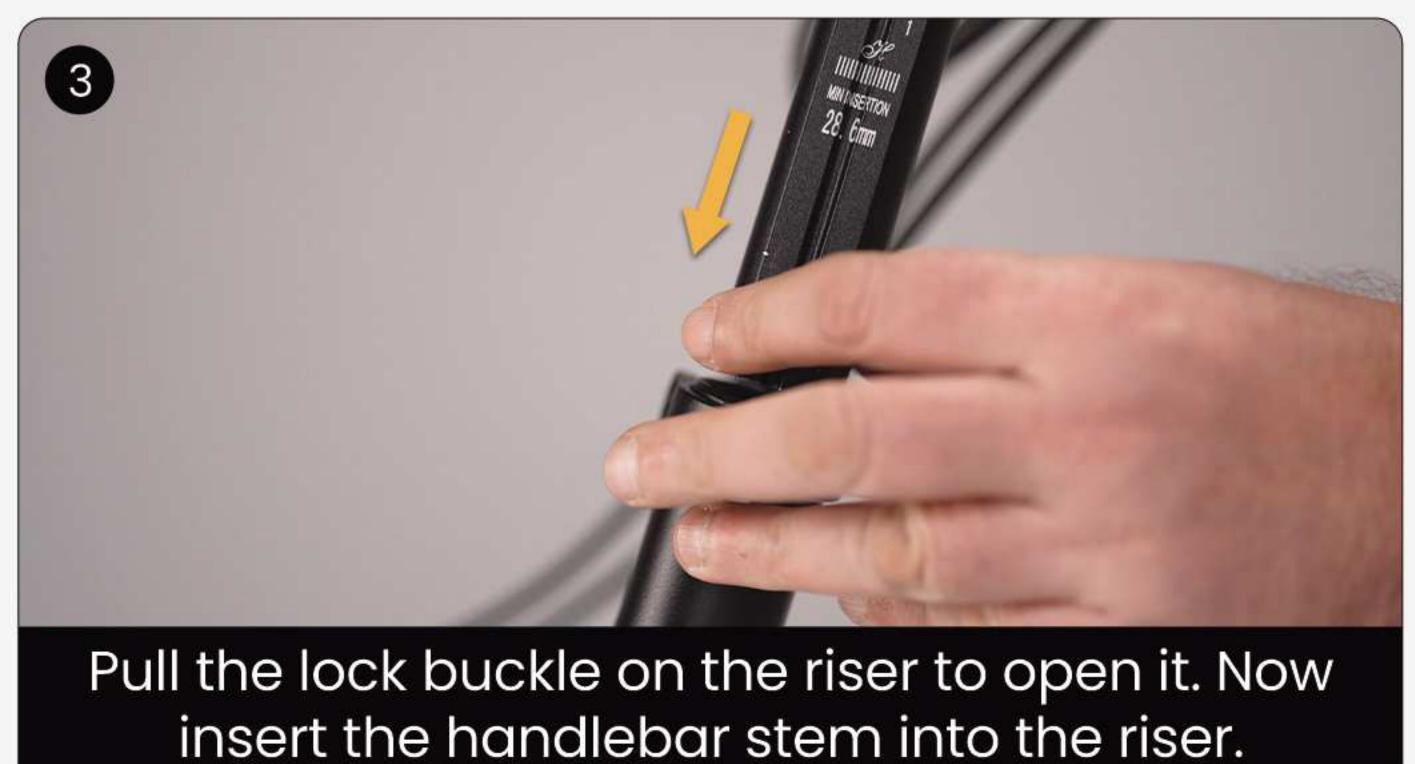


#### Parts and Tools

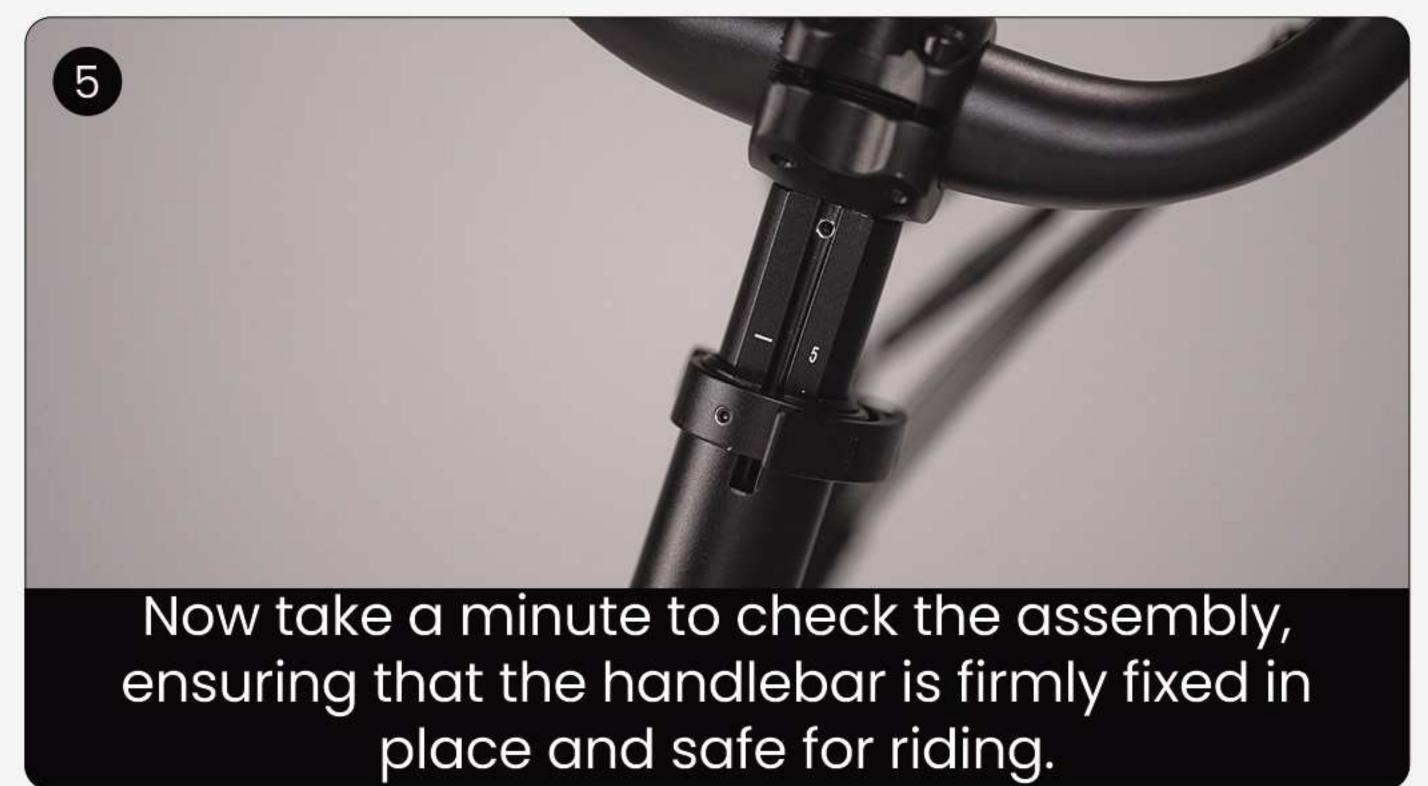




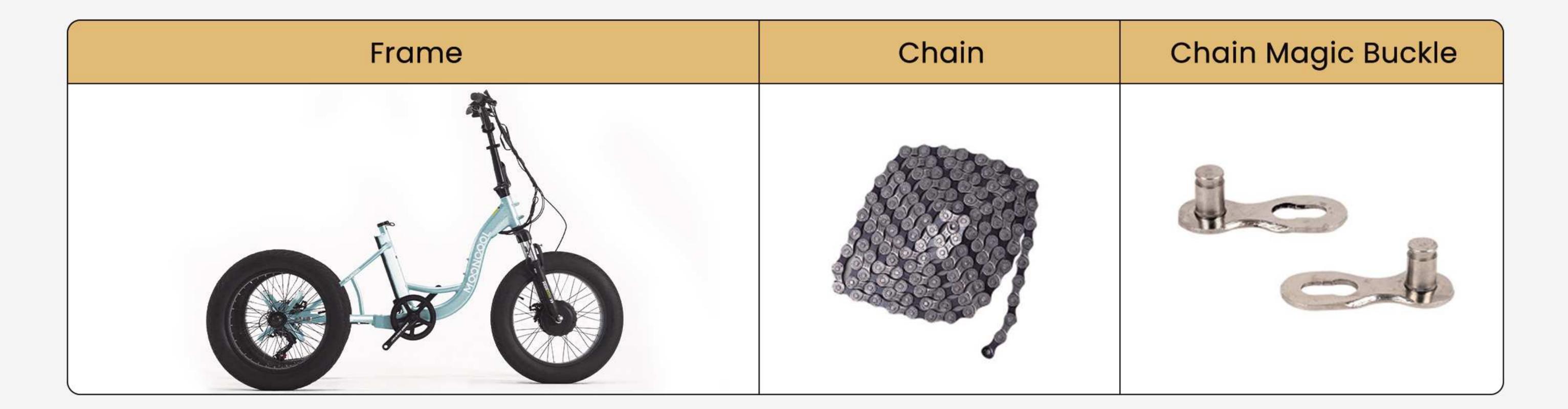




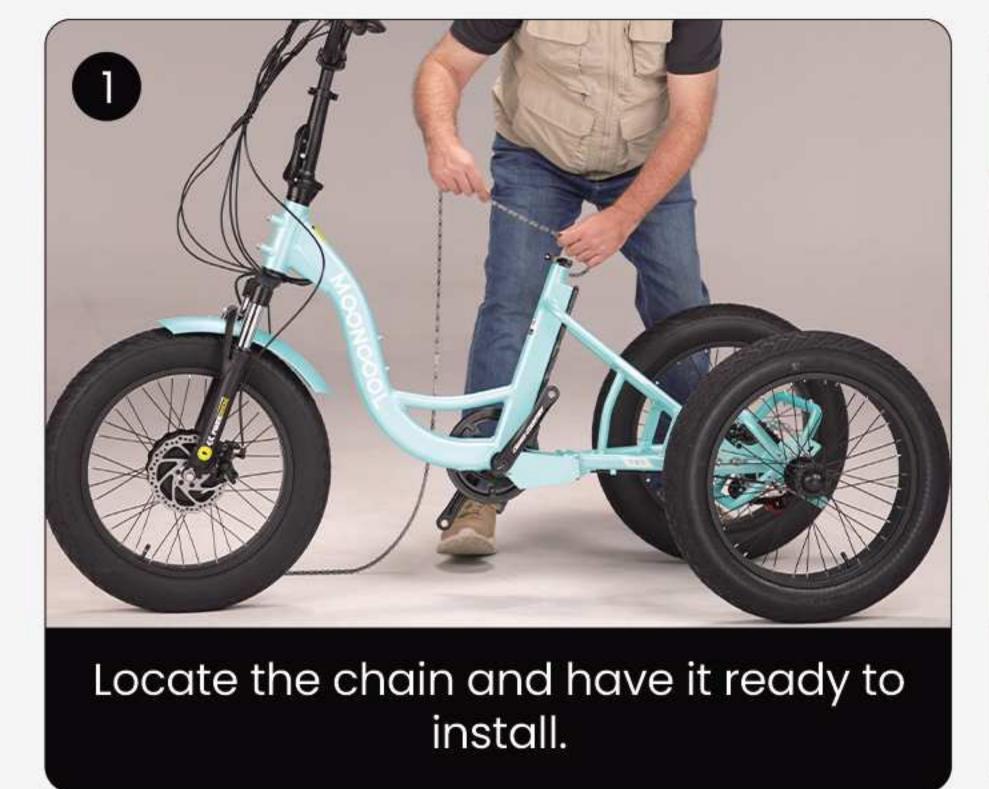








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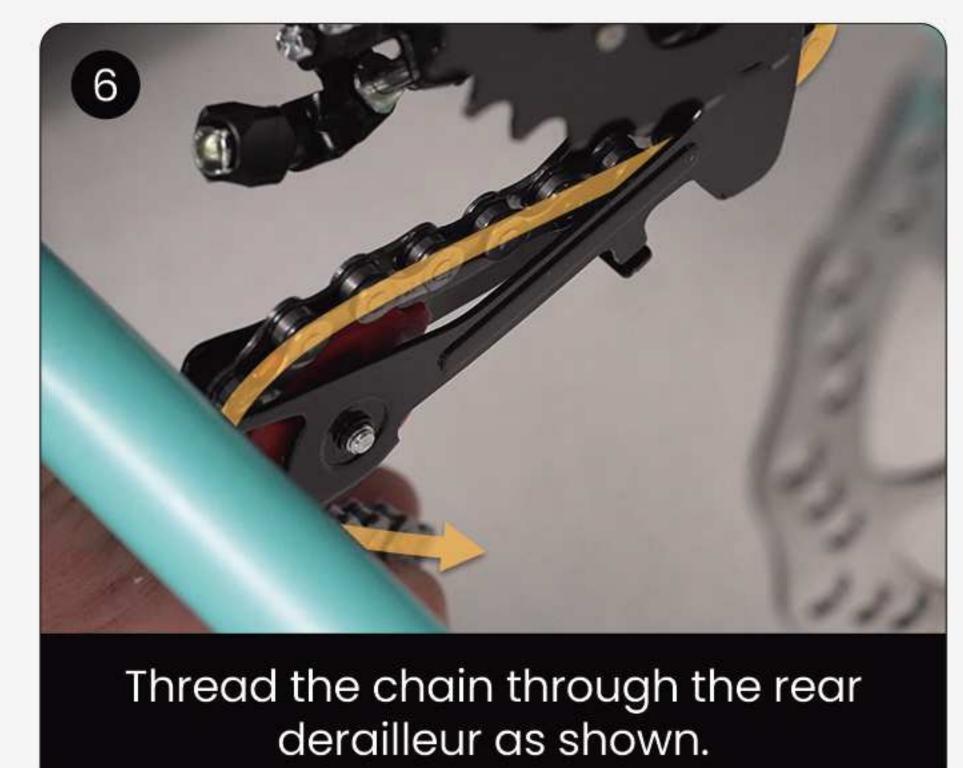


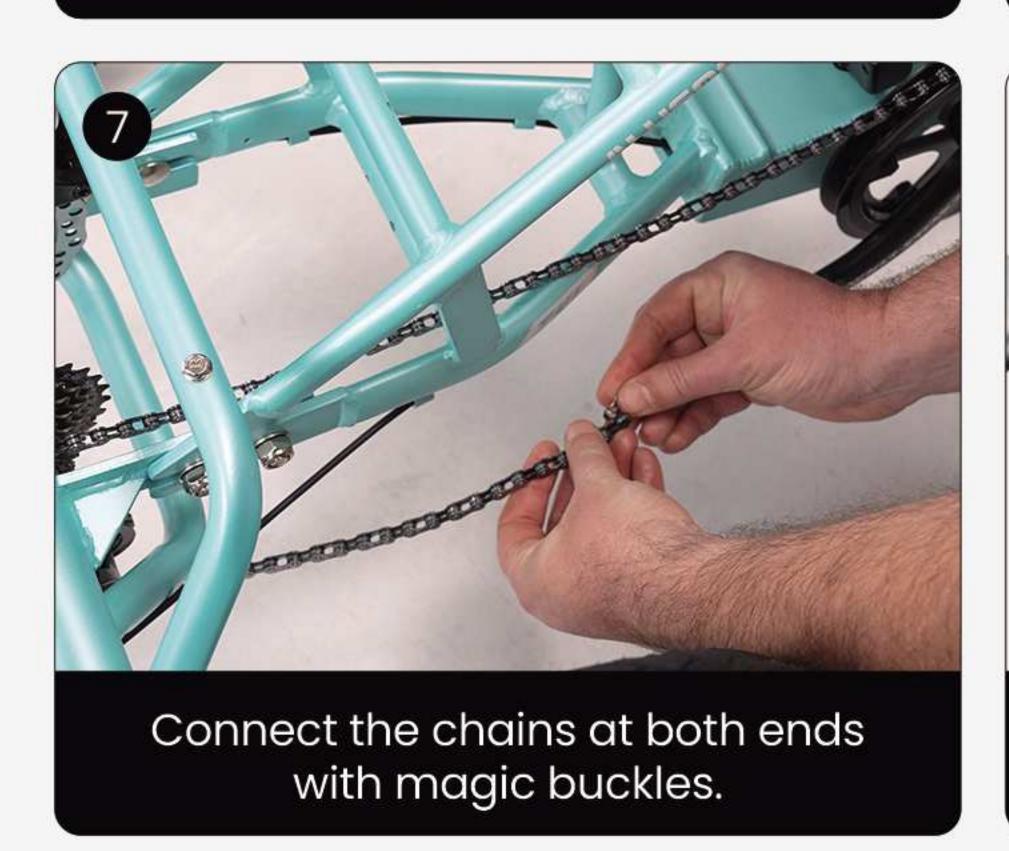




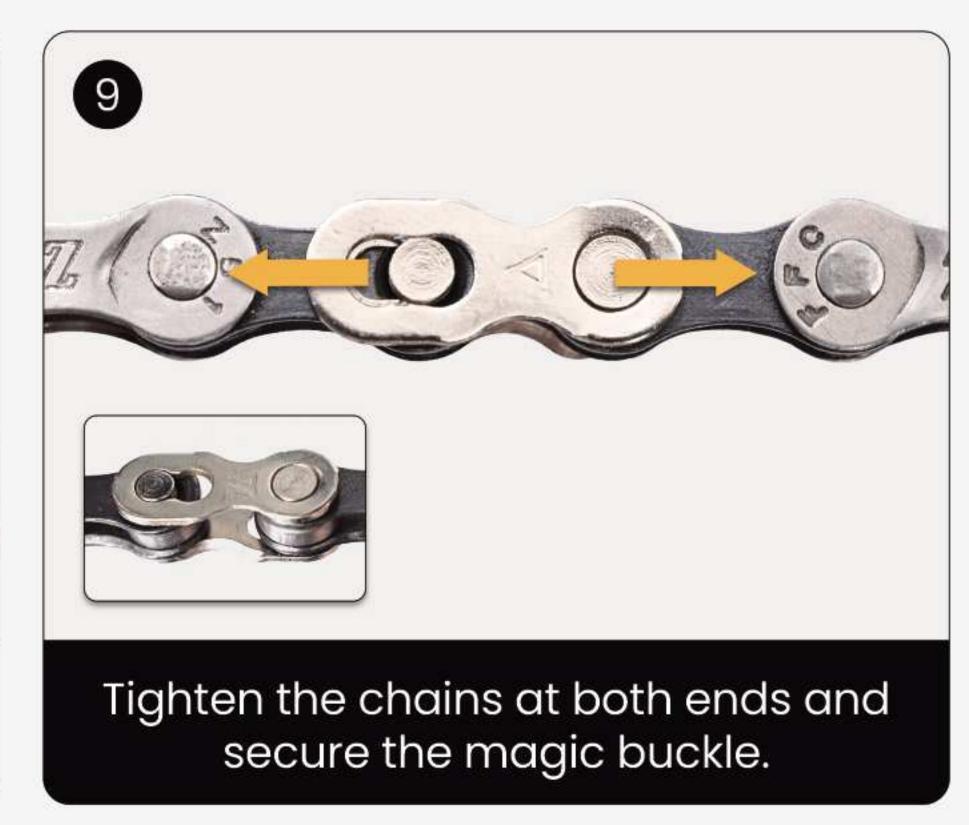




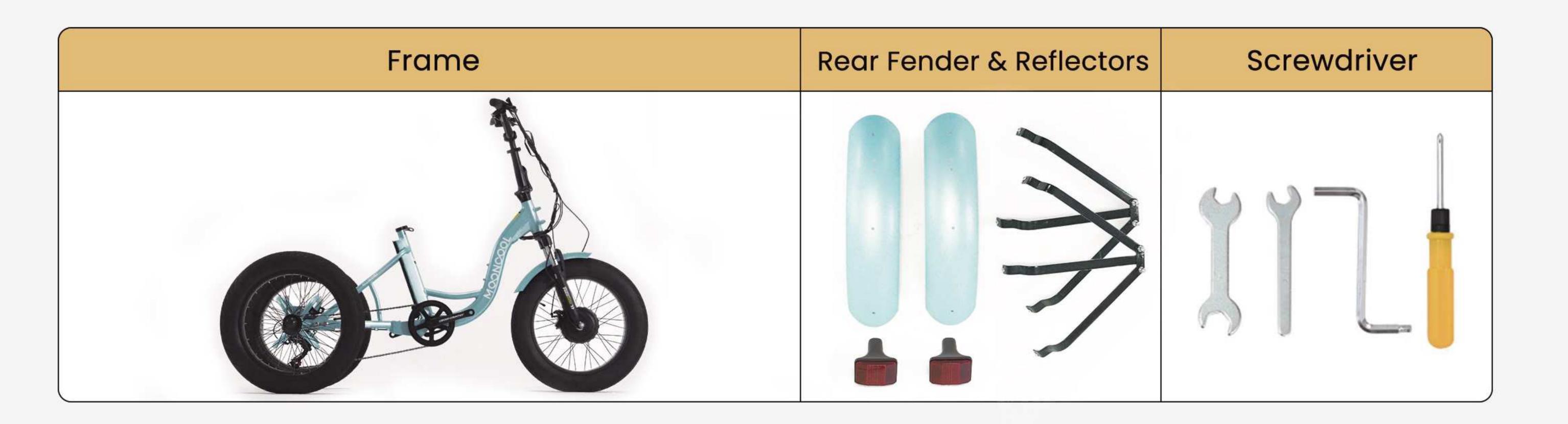






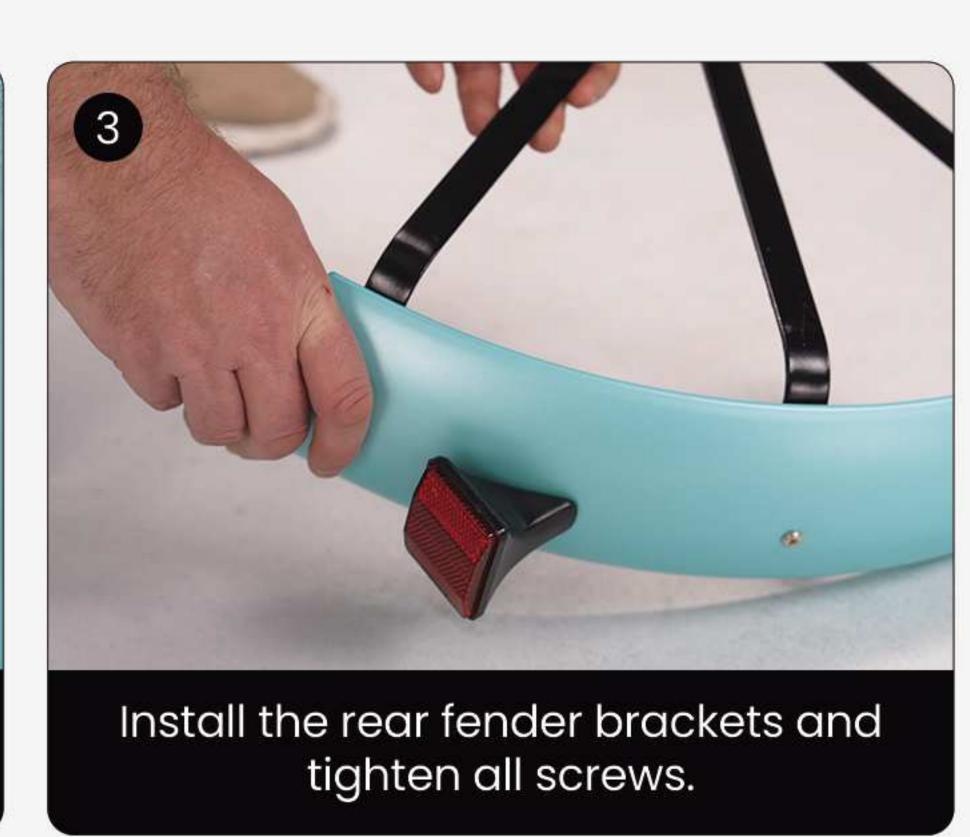


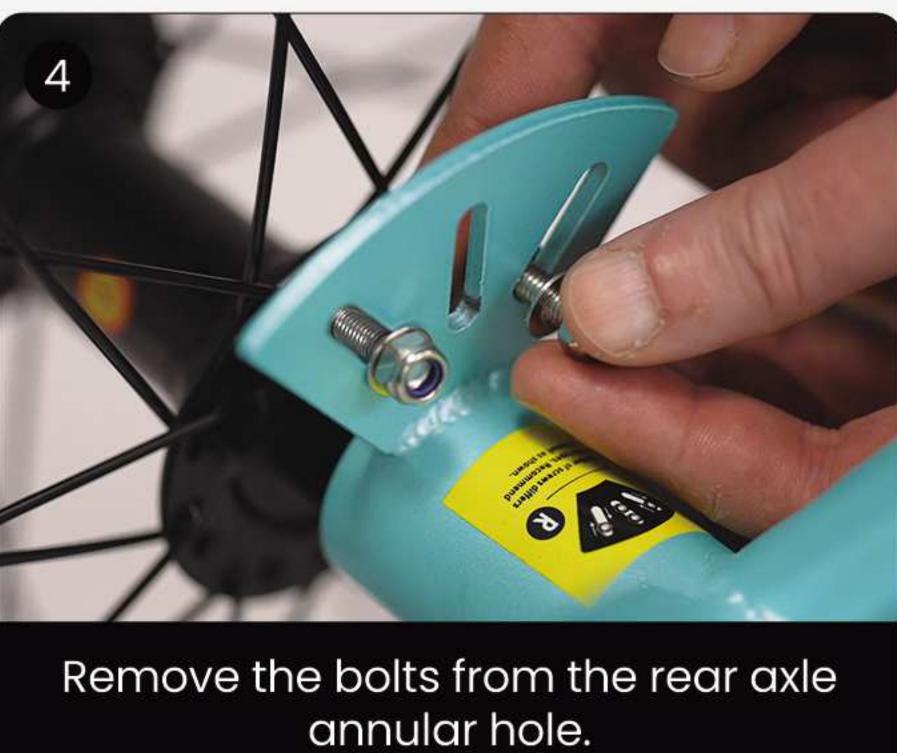
#### Parts and Tools

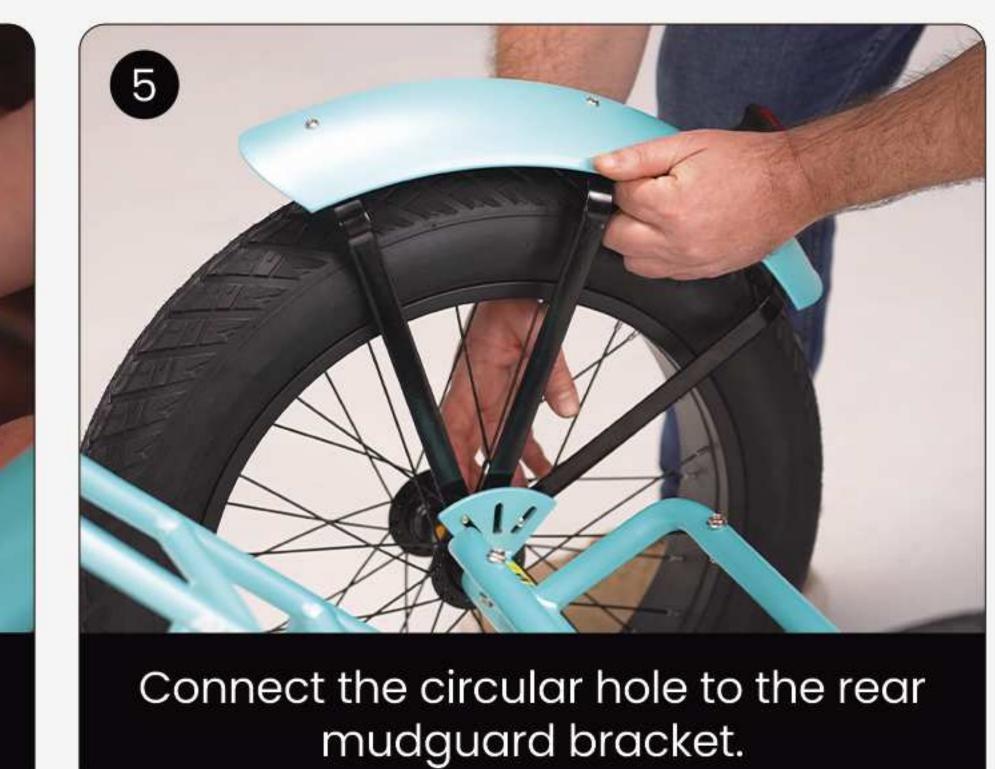








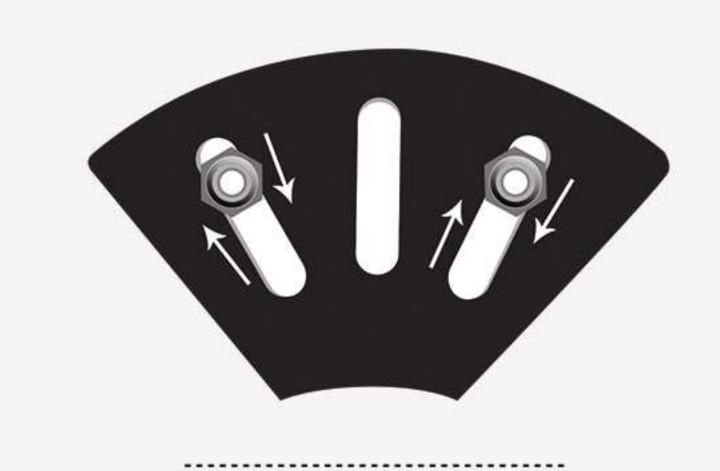






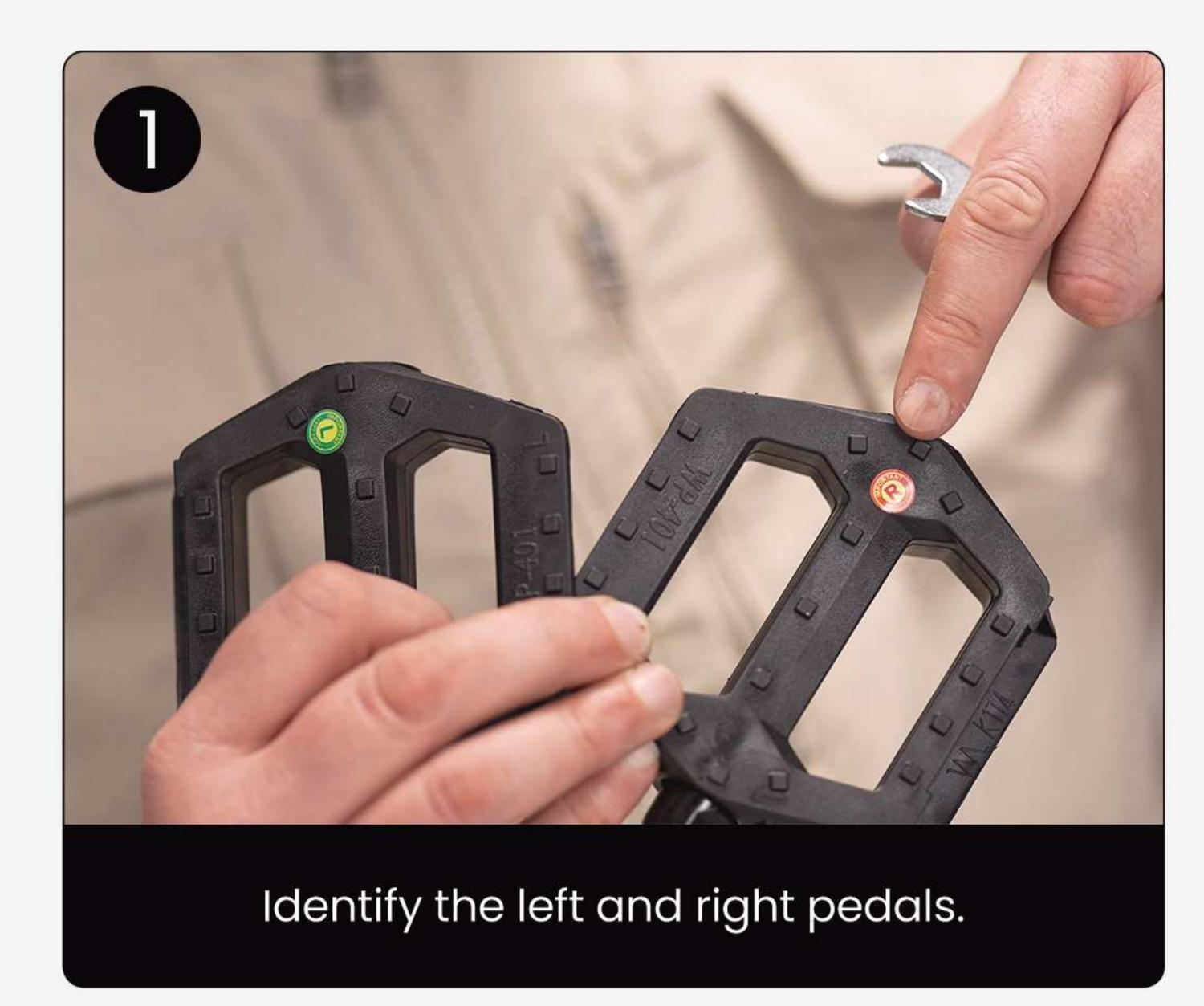


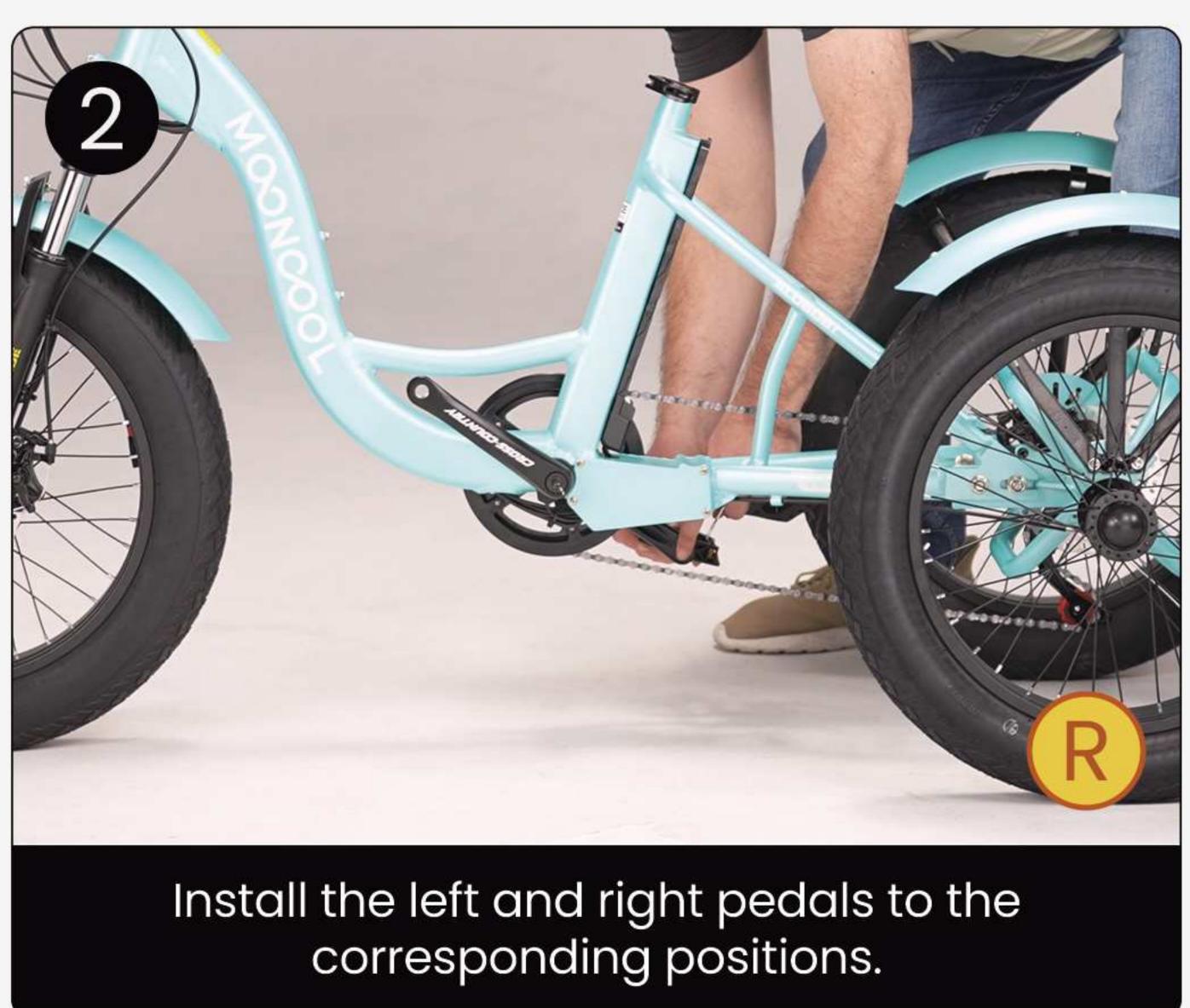


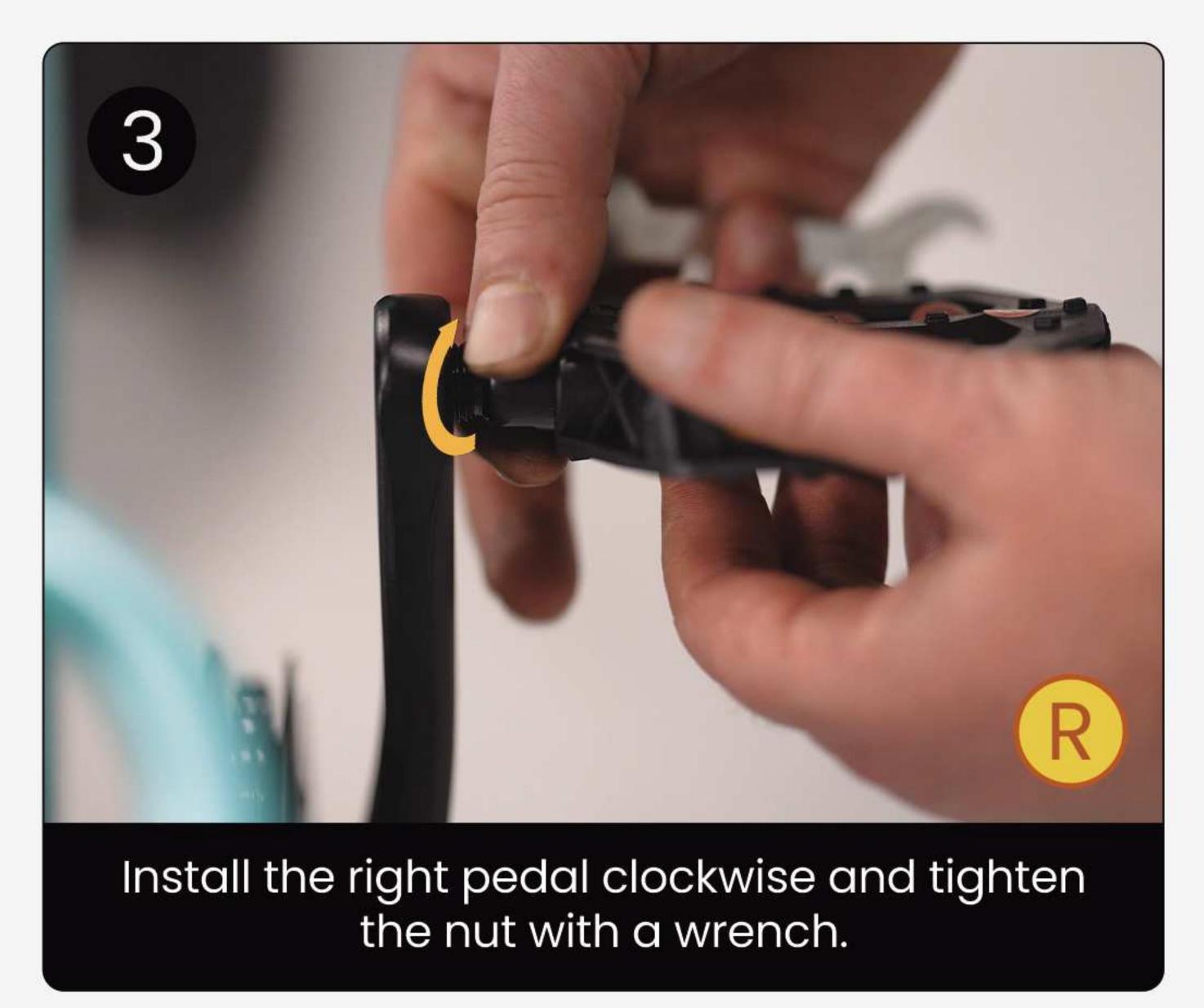


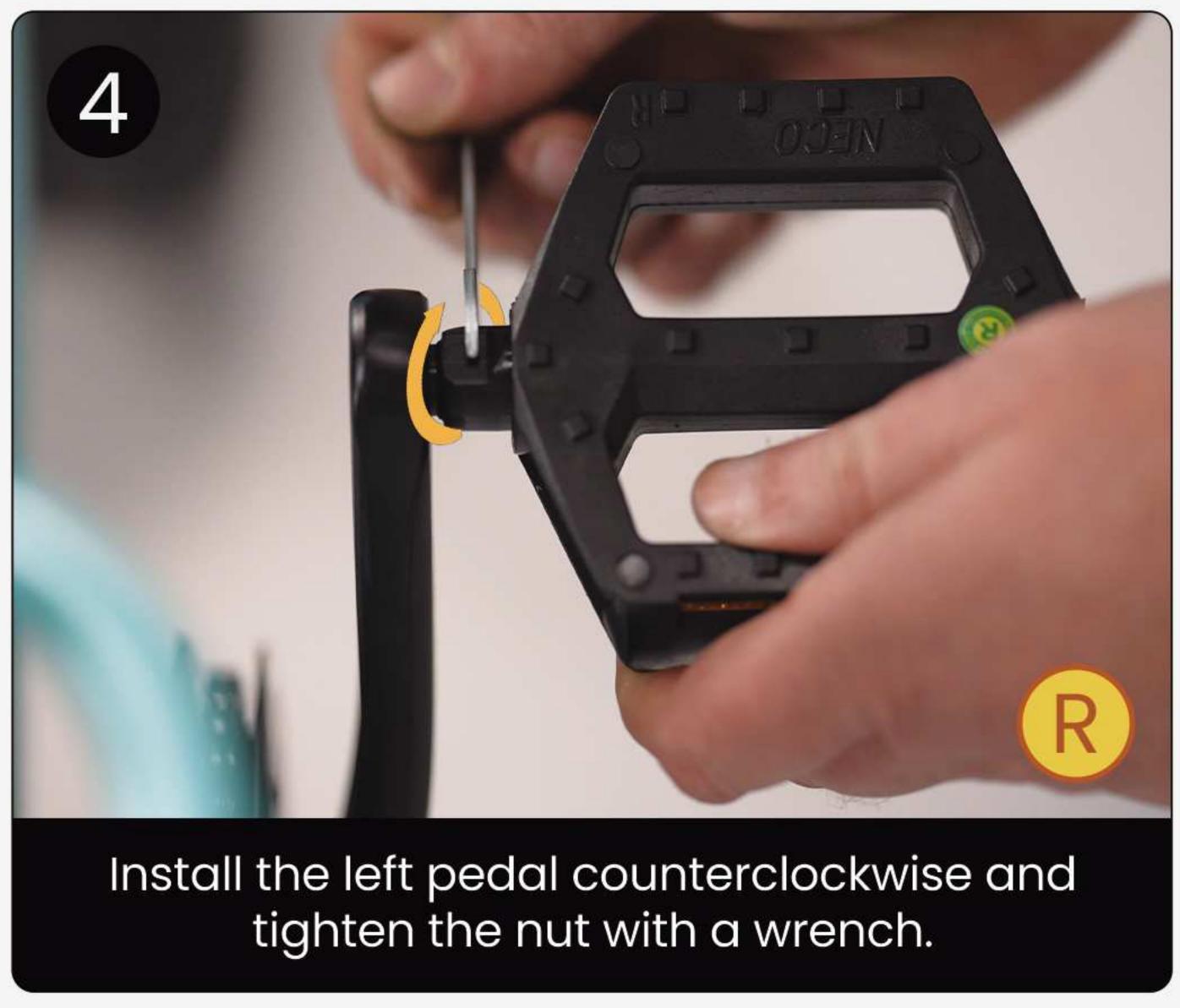
The middle bracket of the fender remains vertical, and the left and right bracket screws can be adjusted freely according to the required height.

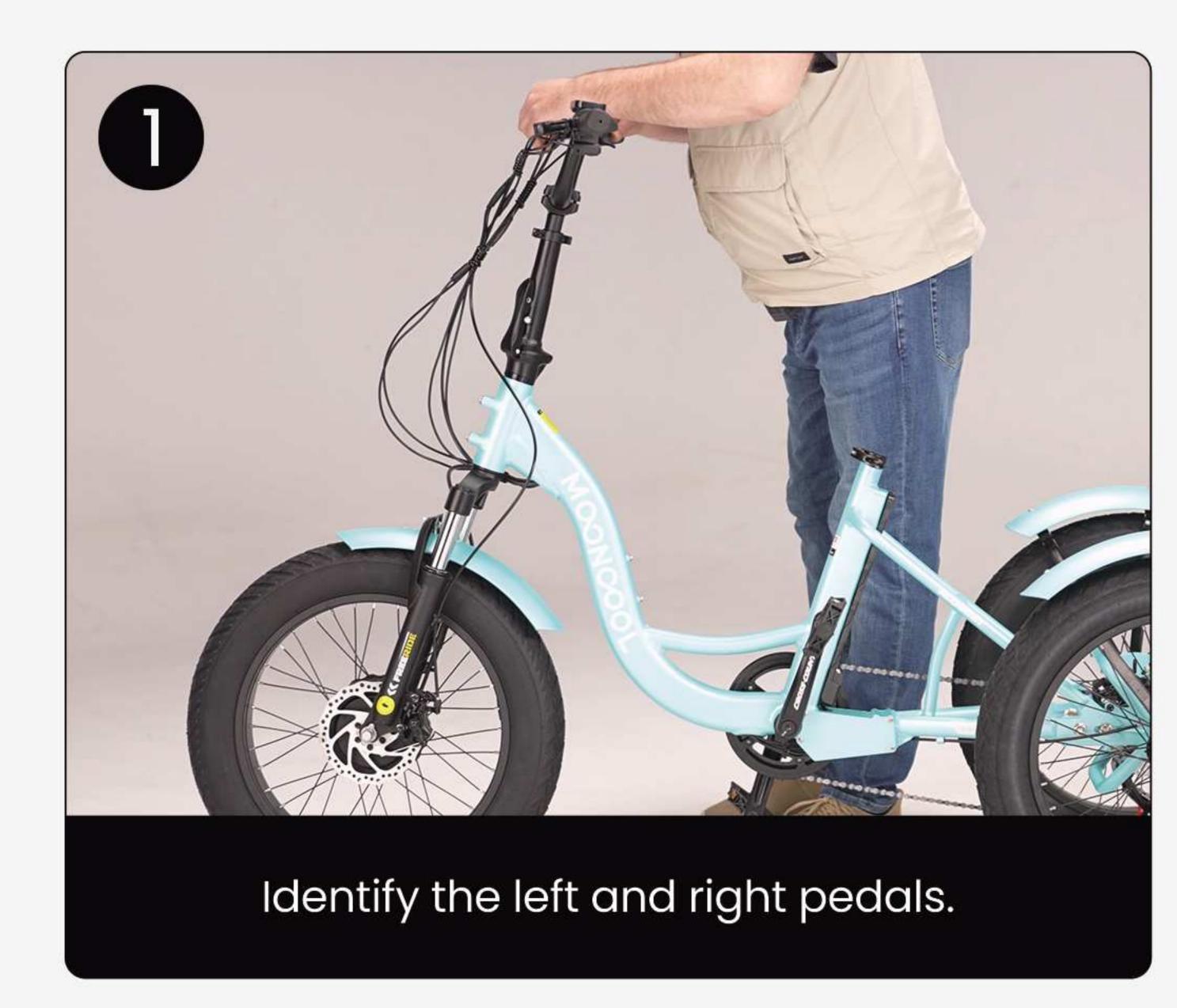


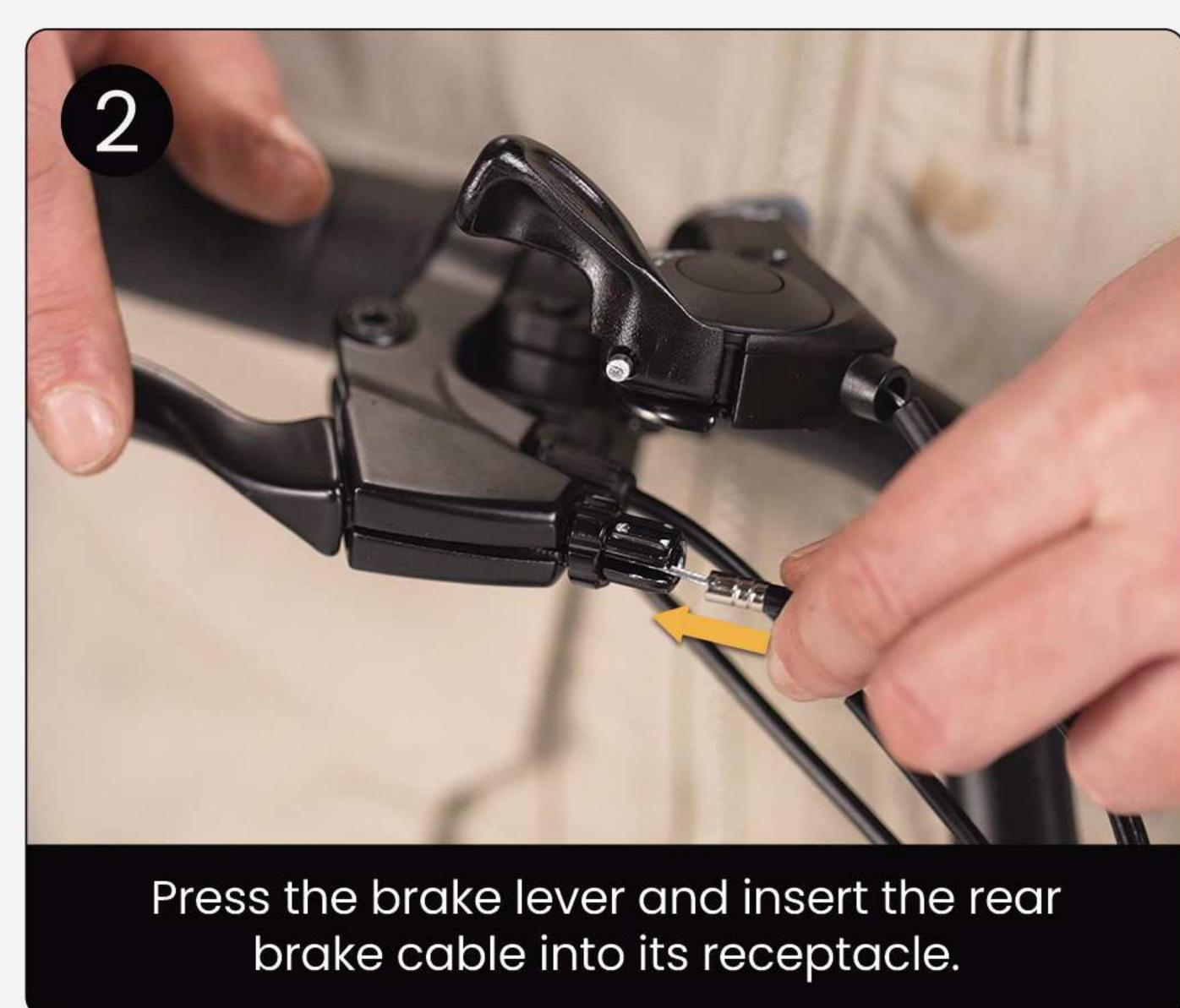


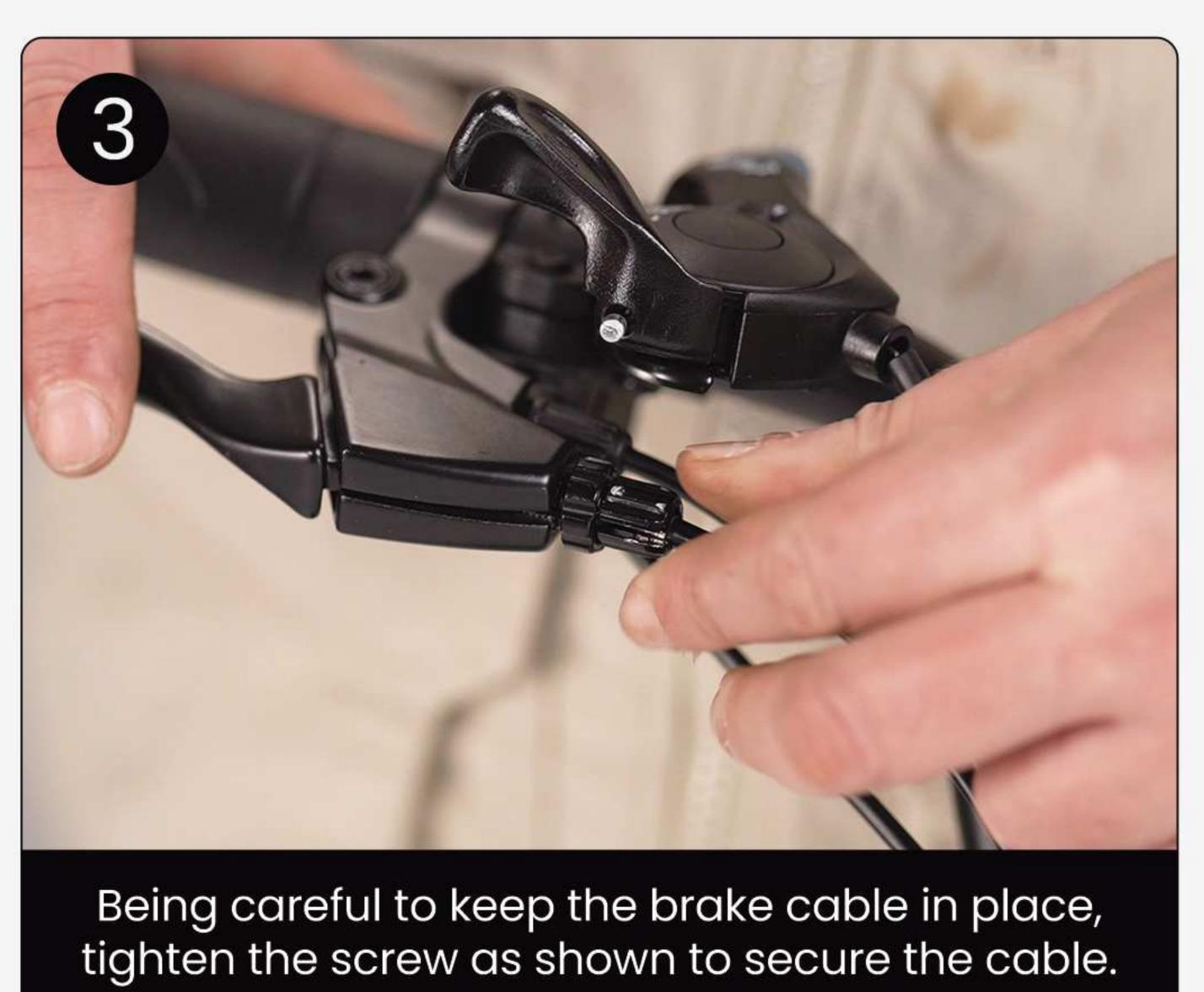


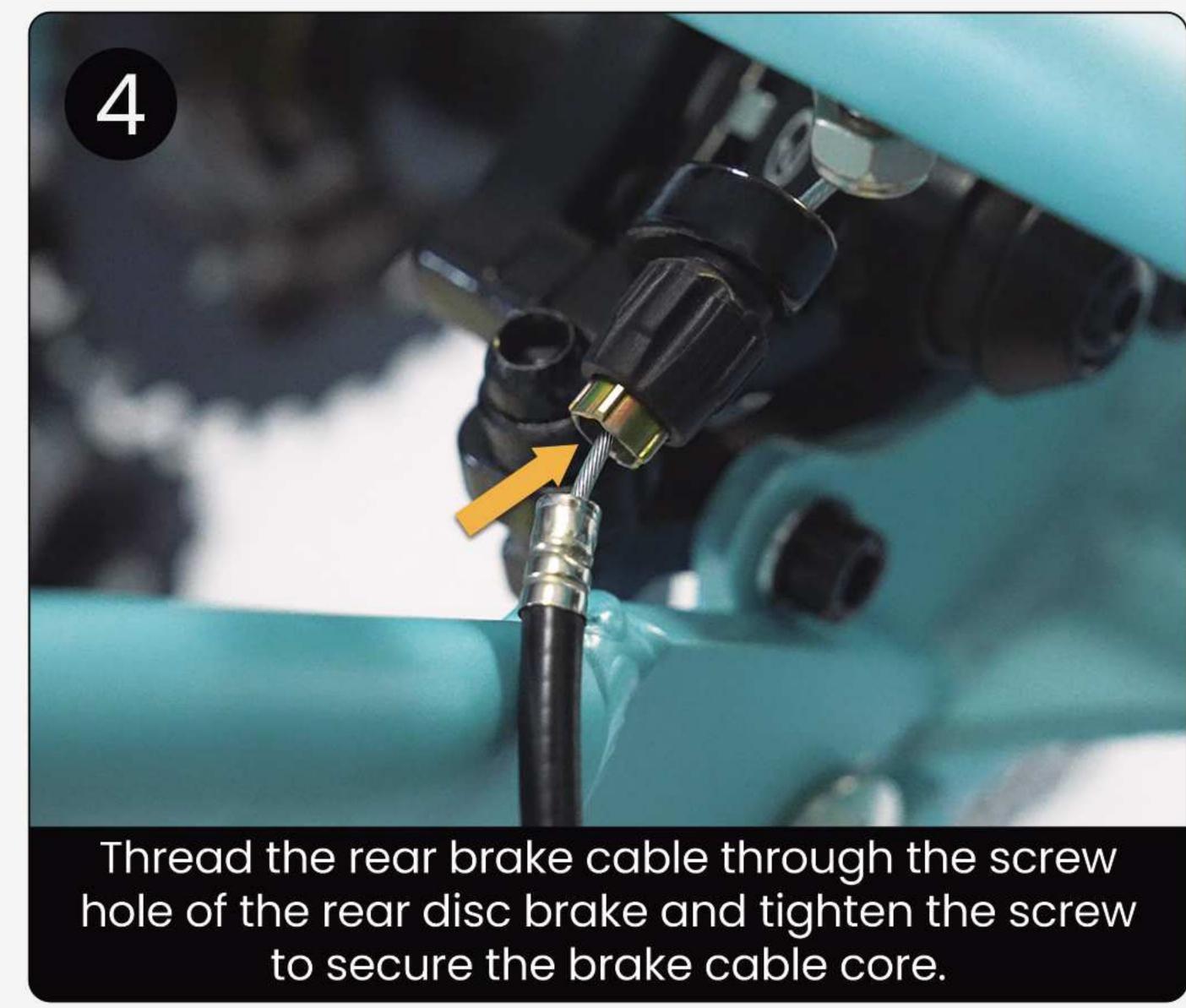


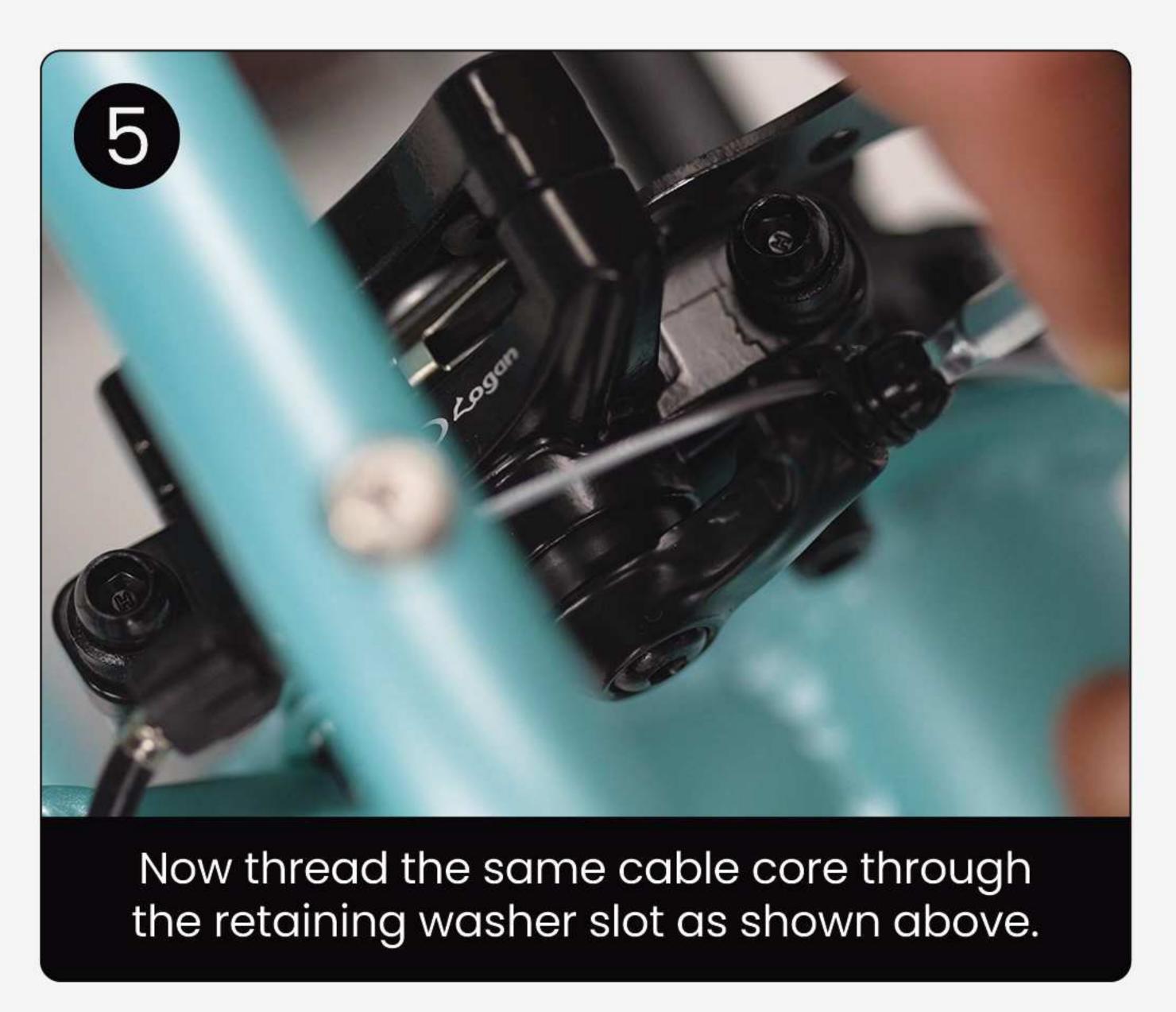


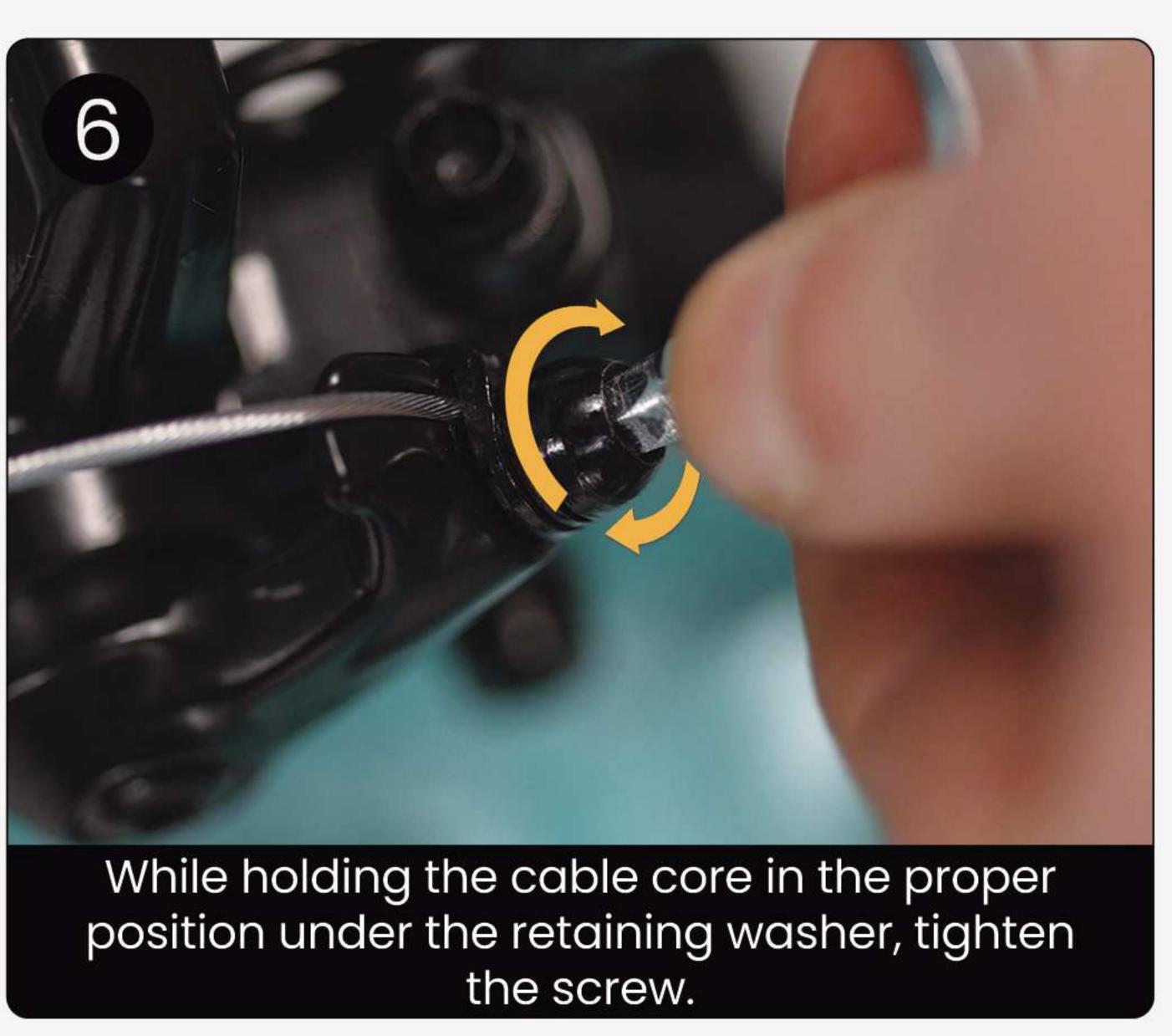


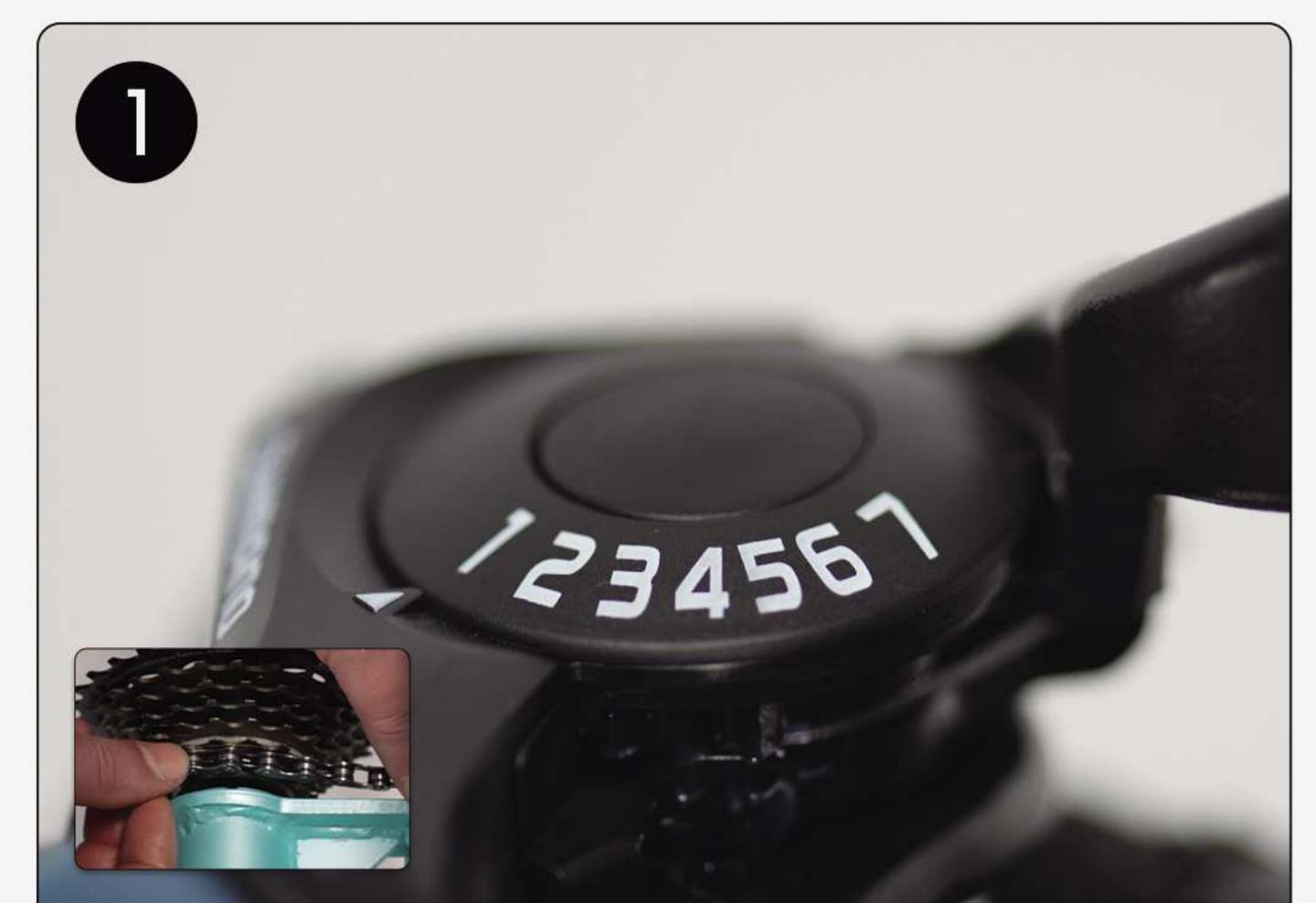




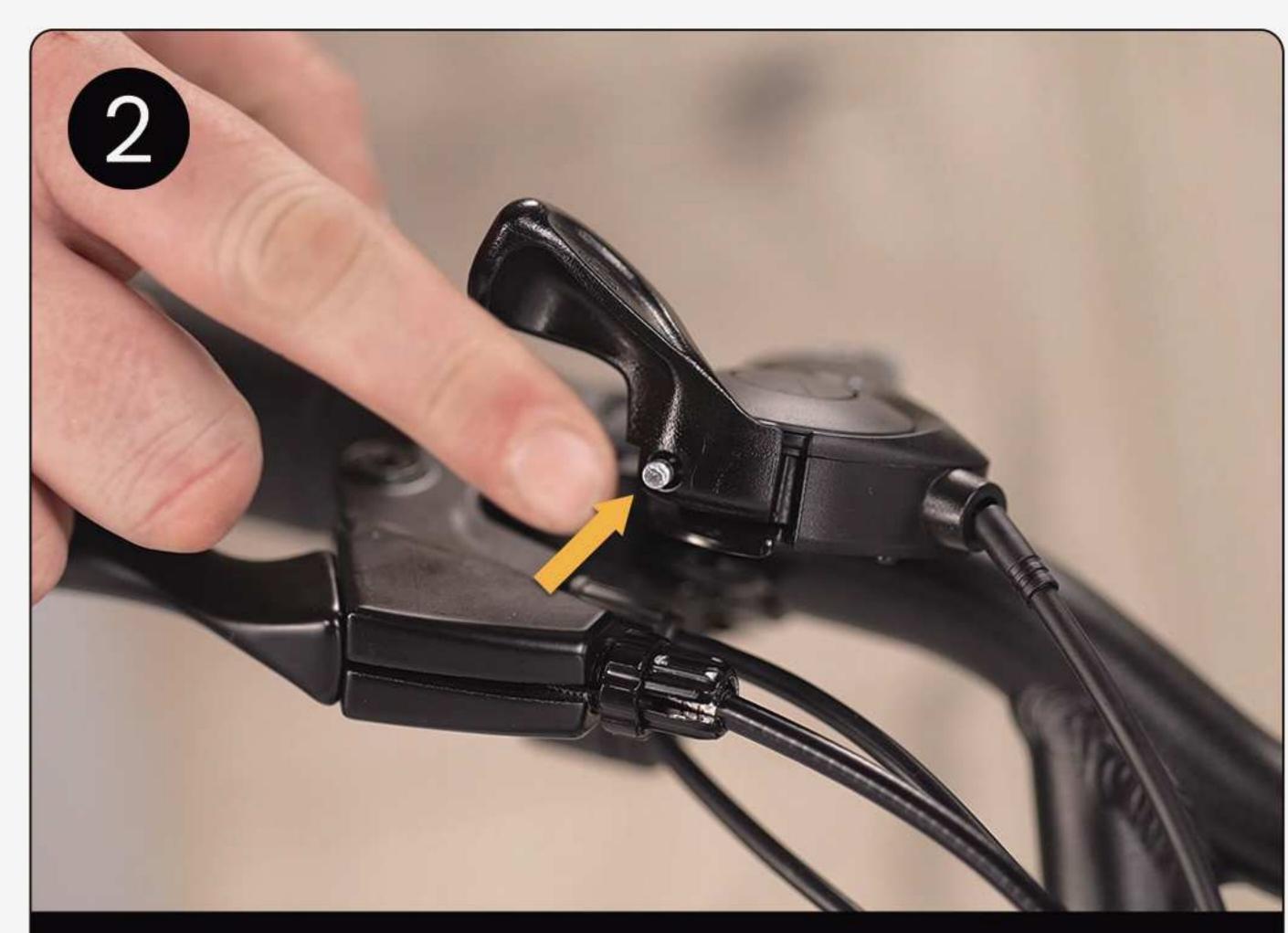




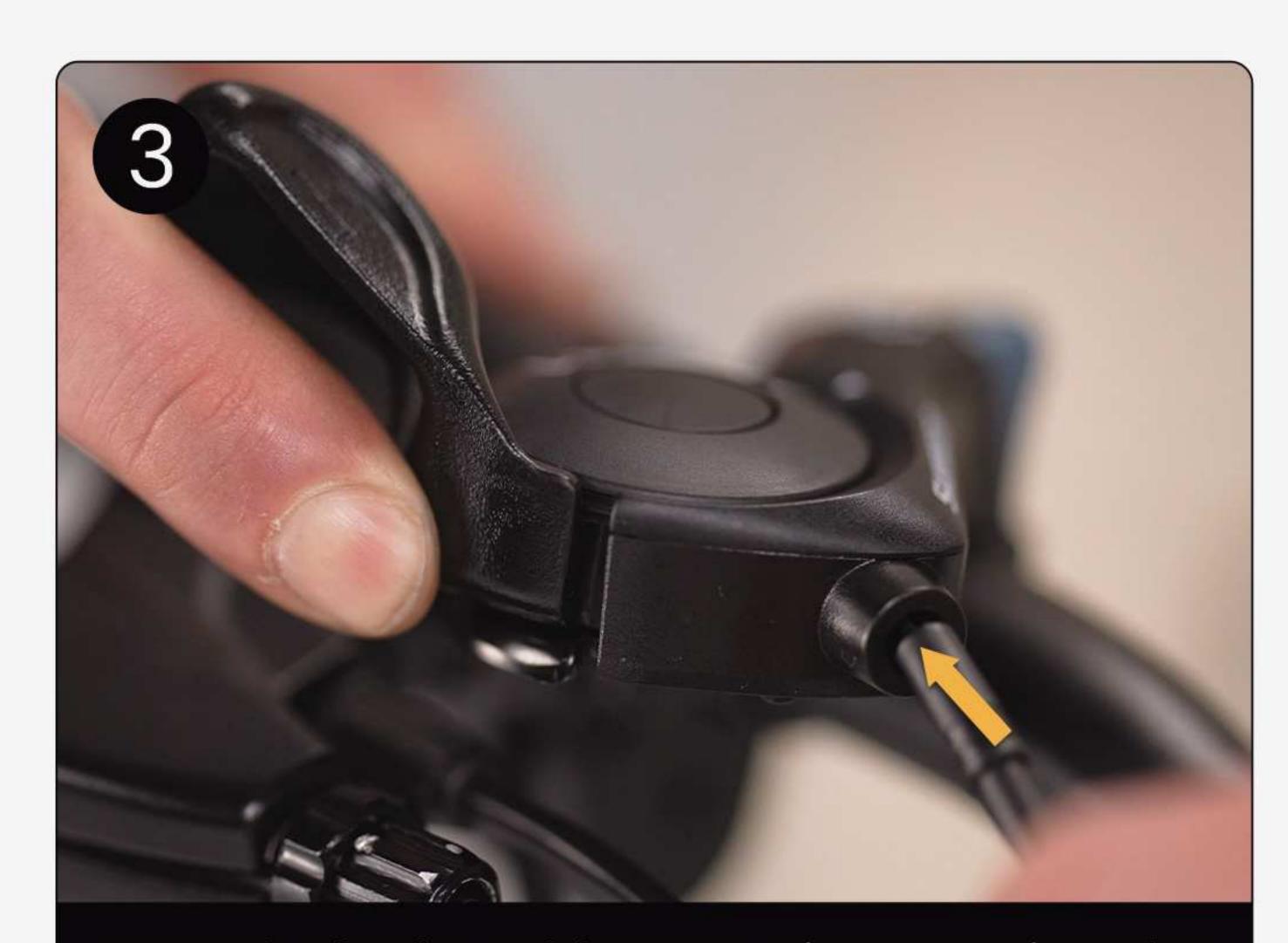




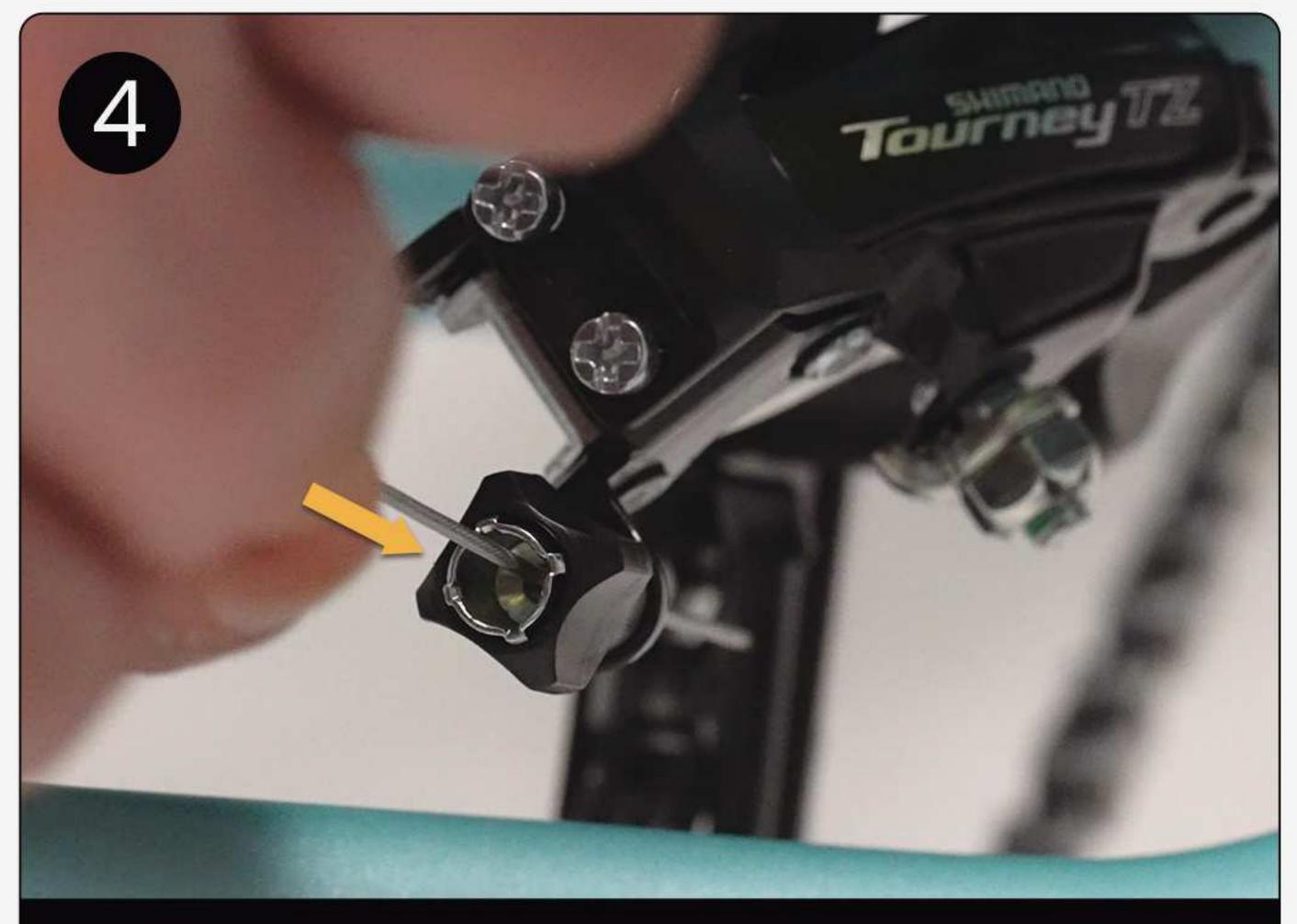
Push the shifter button to move to 7 on the dial. Then go to the rear axle and manually place the chain on the smallest gear.



Taking care that the screw does not come out, tighten the variable speed fiber core.



Insert the brake cable protective cover into the corresponding position on the shift lever.



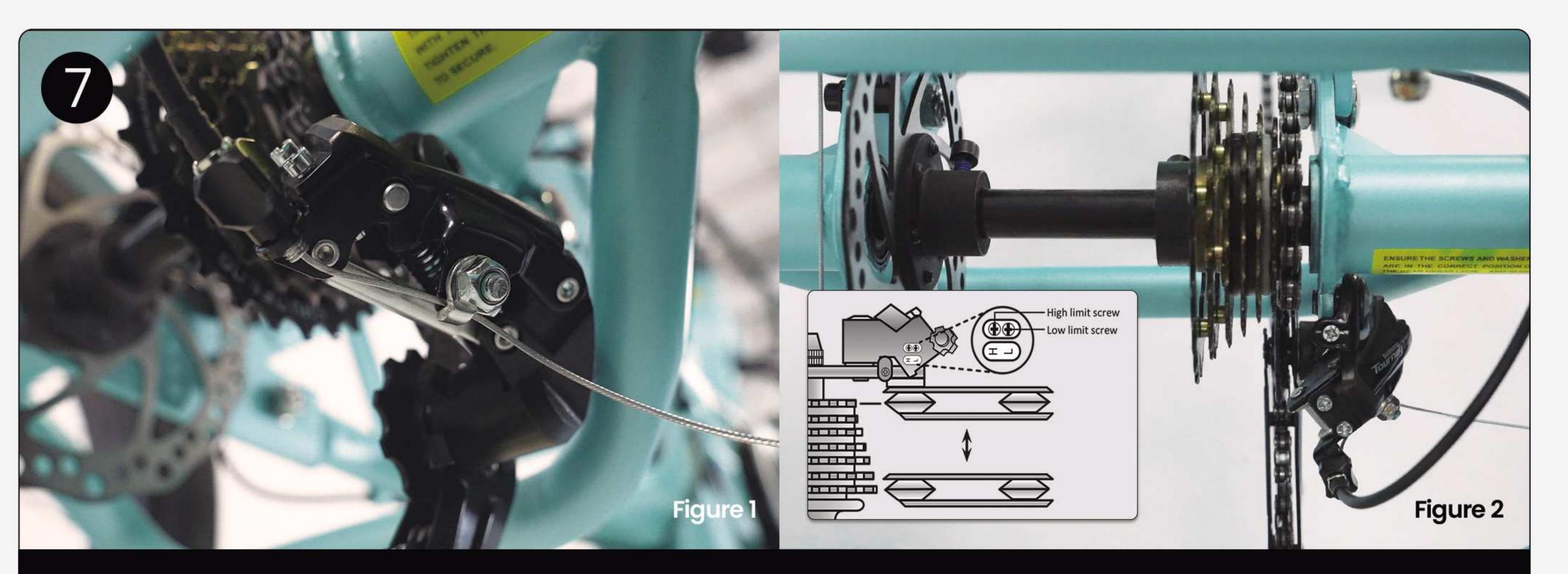
Thread the gear shift cable through the indicated hole on the derailleur.



Loosen the cable retaining bolt as shown and thread the shift cable into position before tightening.



Check to ensure that screws retaining the brake cable on the derailleur are tightened.



#### Adjusting the Rear Derailleur

The low limit screw (L) controls how far the derailleur can move toward the left wheel, and the high limit screw (H) controls derailleur movement toward the right wheel.

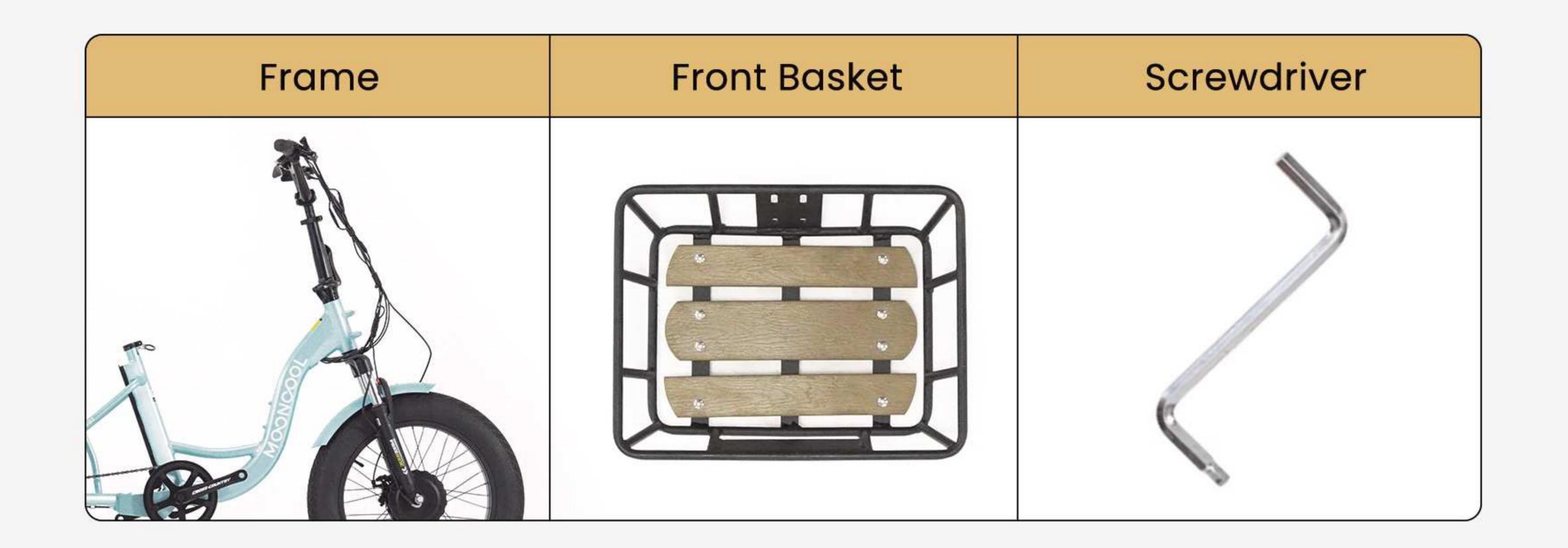
- ① Adjust the shifter on the handlebar until the indicator arrow points to the number 7.
- ② Disconnect the derailleur cable from the retaining bolt (Figure 1) and manually move the chain to the smallest rear sprocket (Figure 2).
- ③ Use a screwdriver to adjust the high limit screw (H) so the guide pulley is directly lined up with the smallest sprocket (Figure 2).
- (4) Reconnect the cable, pull out any slack, and securely tighten the retaining bolt.
- ⑤ Have a helper tilt the trike so that the right wheel is off the ground. Move the handlebar shifter to 6 and use the pedal to spin the wheel. The derailleur should move the chain crisply to the next sprocket. If needed, use the barrel adjuster to fine-tune the derailleur pulley's position by turning the barrel adjuster in the direction you want the chain to move. Check each gear in turn.
- ⑥ If you cannot shift smoothly to the lower gears (the larger sprockets: 1, 2, 3), manually place the chain on the largest sprocket and adjust the shifter so the indicator arrow points at 1.
- 7) Use a screwdriver to adjust the low limit screw (L) in quarter-turn increments until the guide pulley is directly lined up with the largest sprocket.
- ® Using the same technique as in #5 above, shift through all gears twice to check for smooth shifting. If not, readjust the derailleur position as described above. Check again for smooth, crisp shifting.

- When installing the derailleur, the handlebar shifter indicator arrow should be pointing to 7.
- When installing the derailleur, the chain must be manually placed on the smallest rear sprocket.

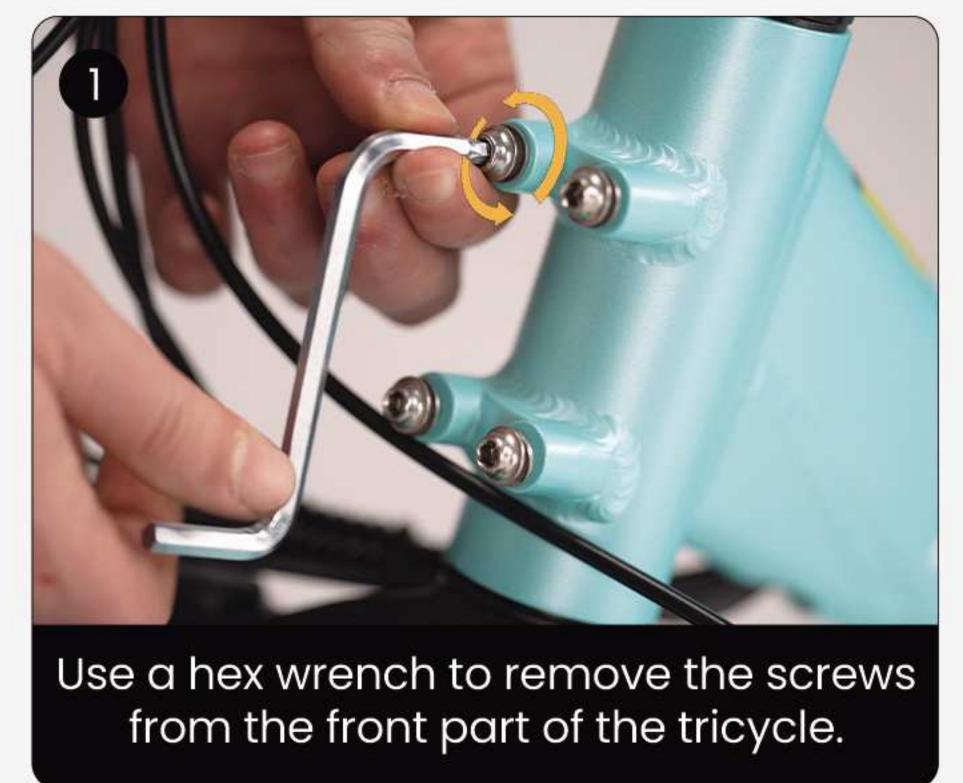
# Rear Basket Assembly 2.11 Assembly Steps

# 2.10 Front Basket Assembly Assembly Steps

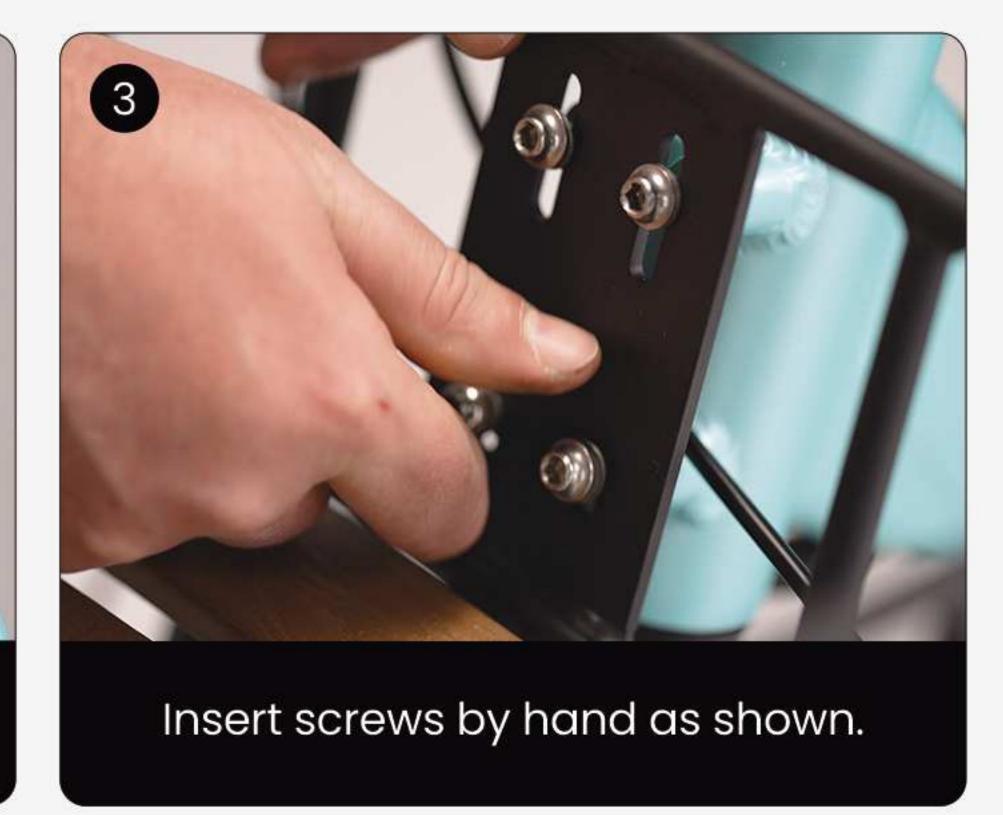
#### Parts and Tools

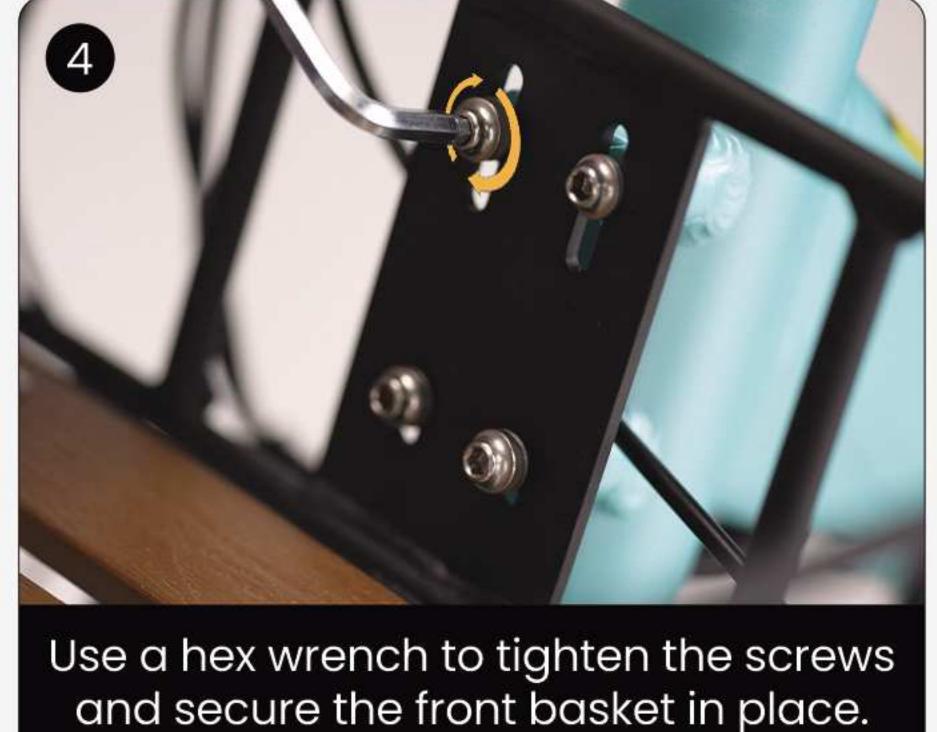


### **Assembly Steps**

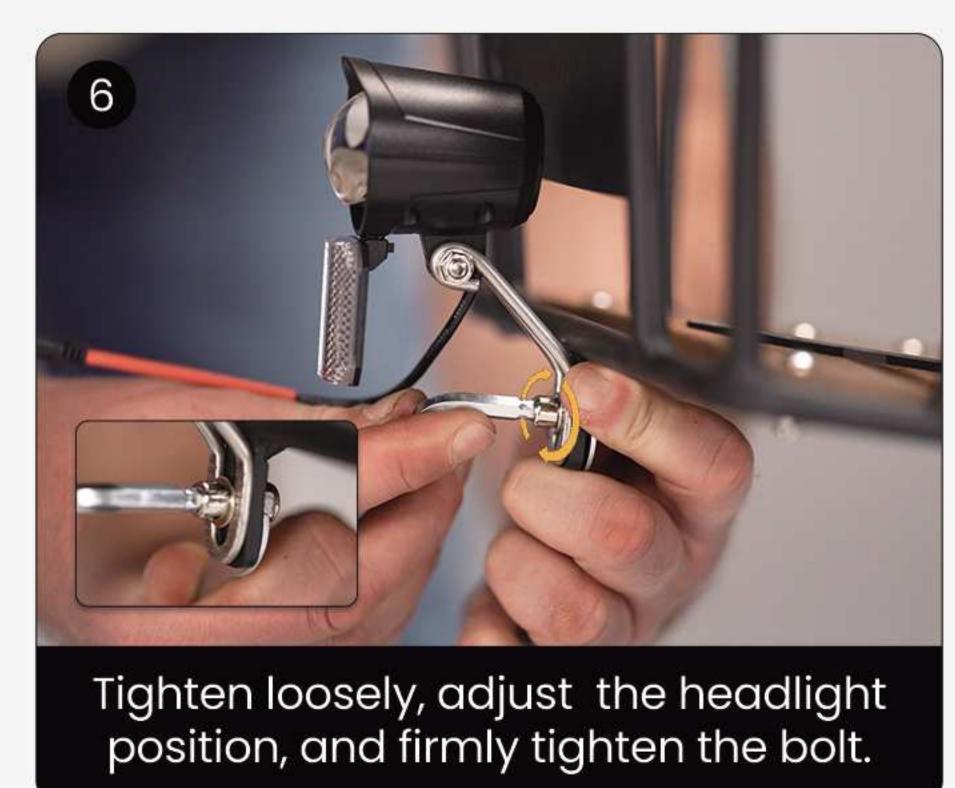


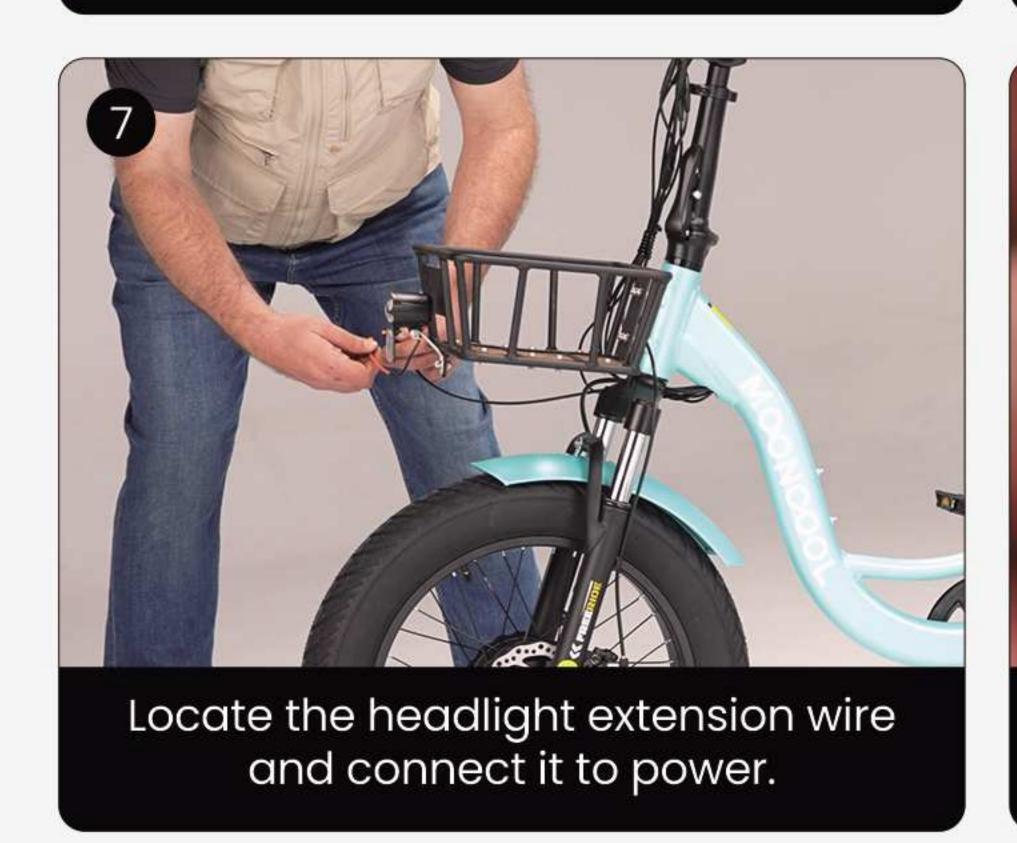








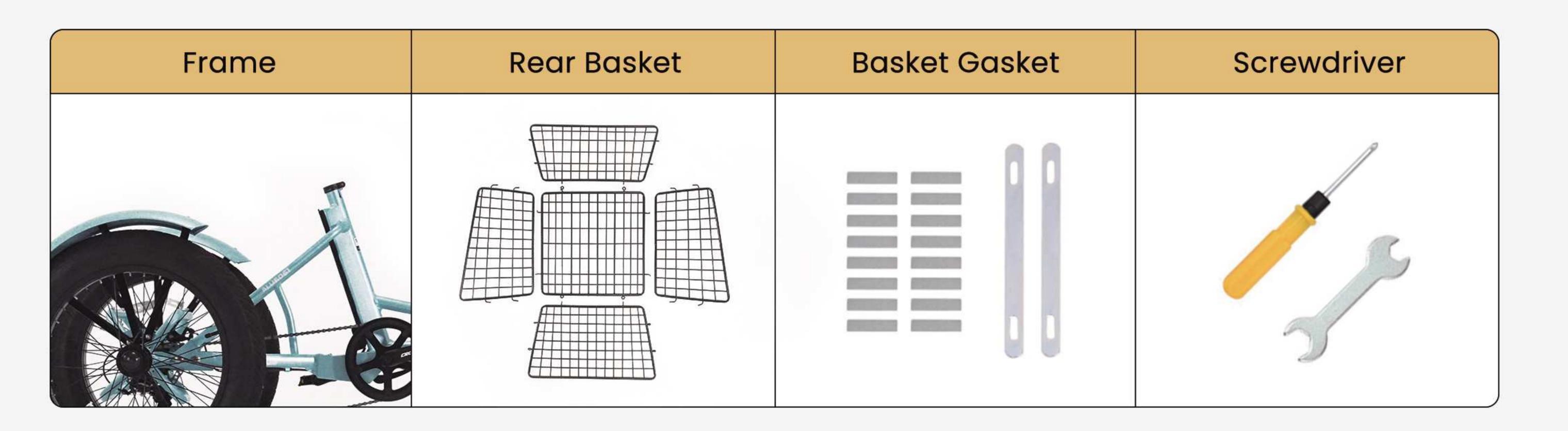


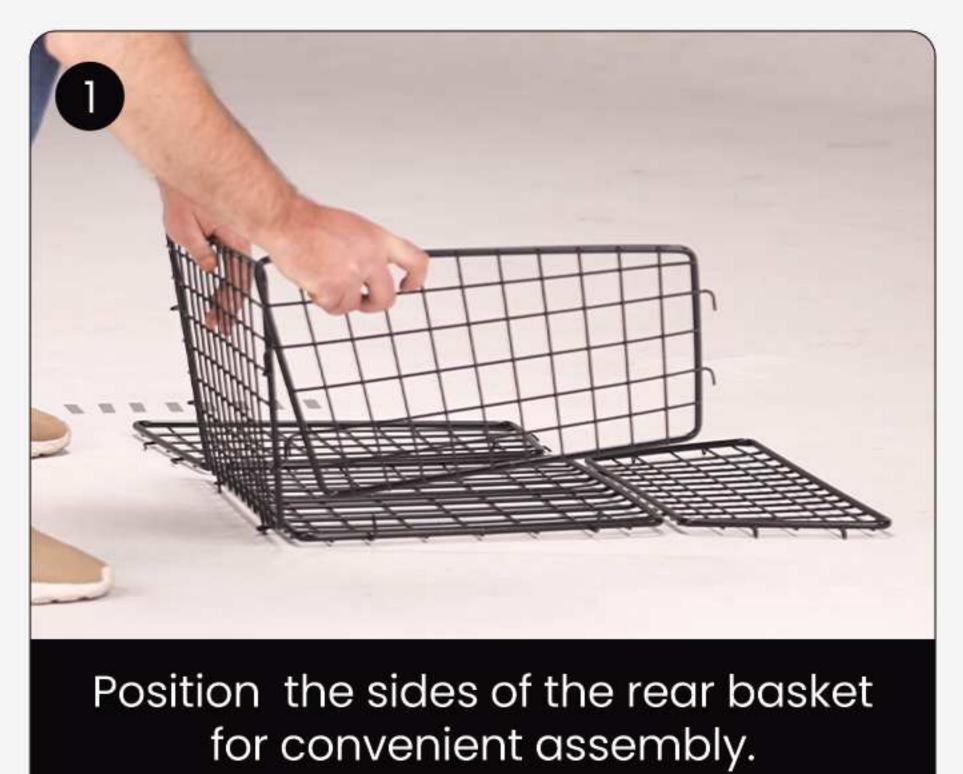


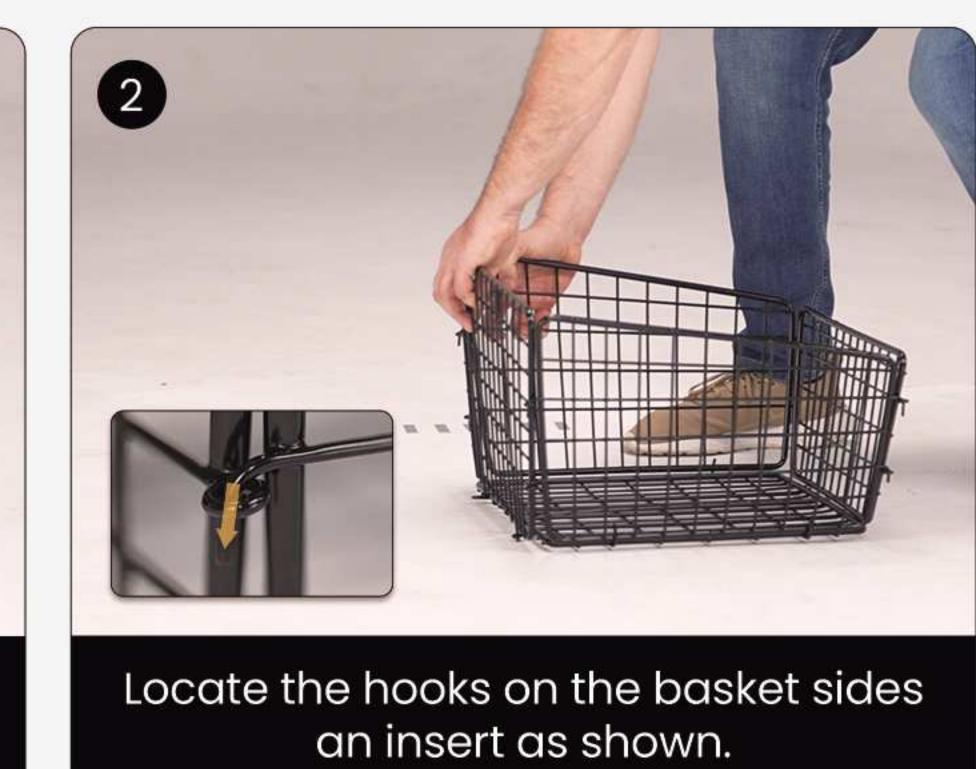




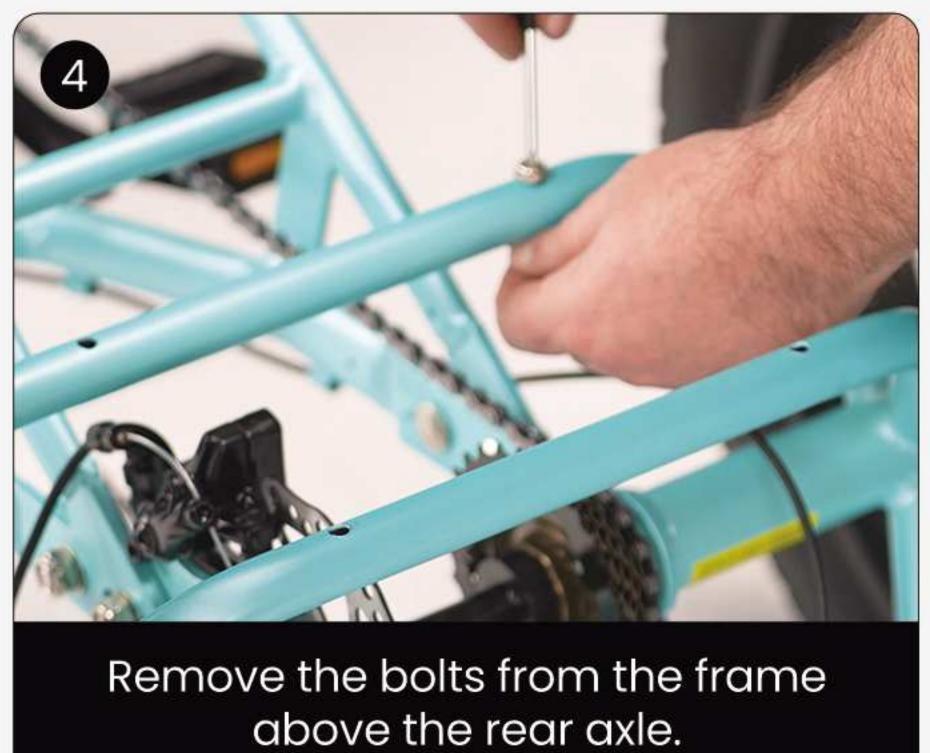
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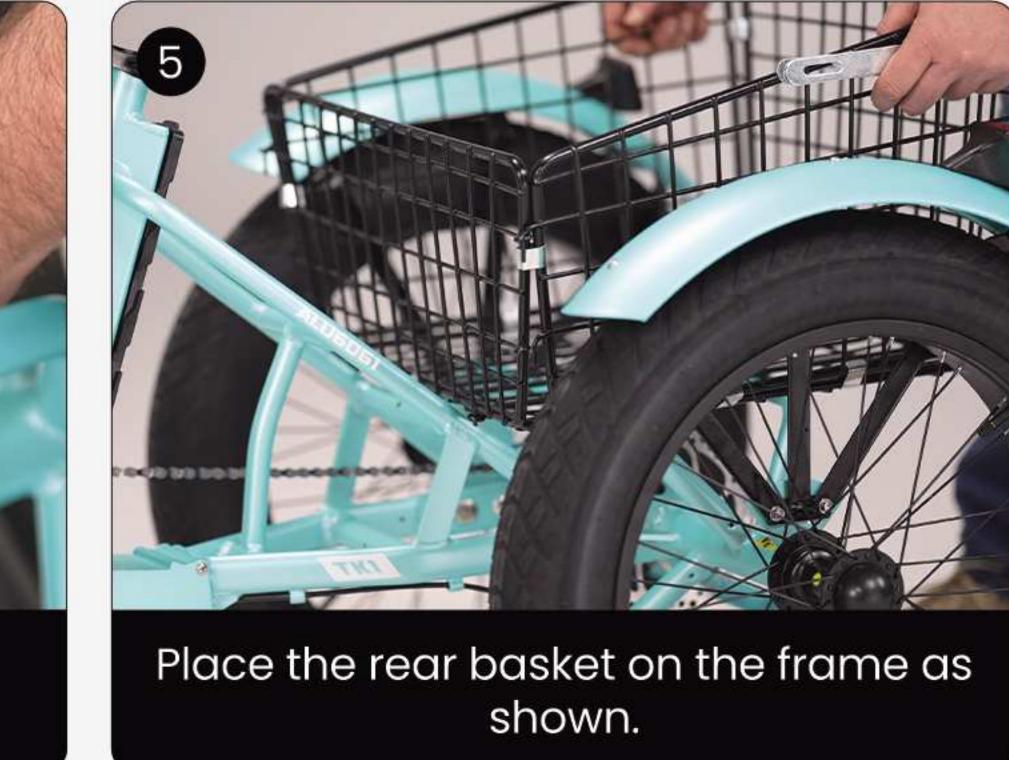


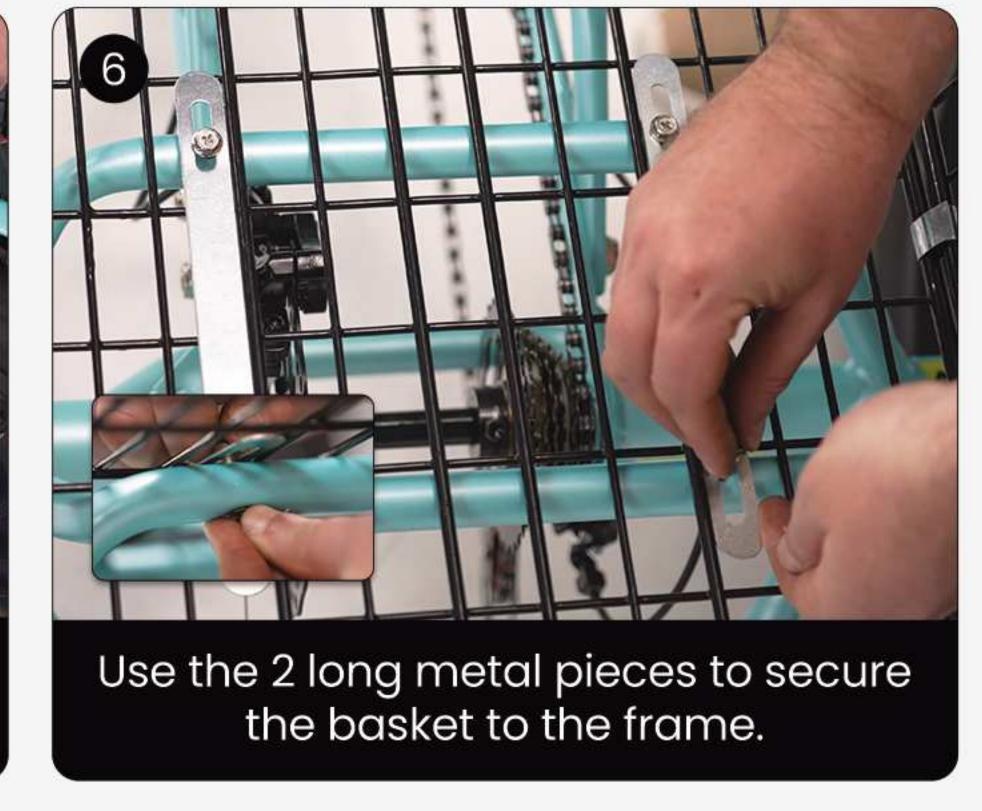


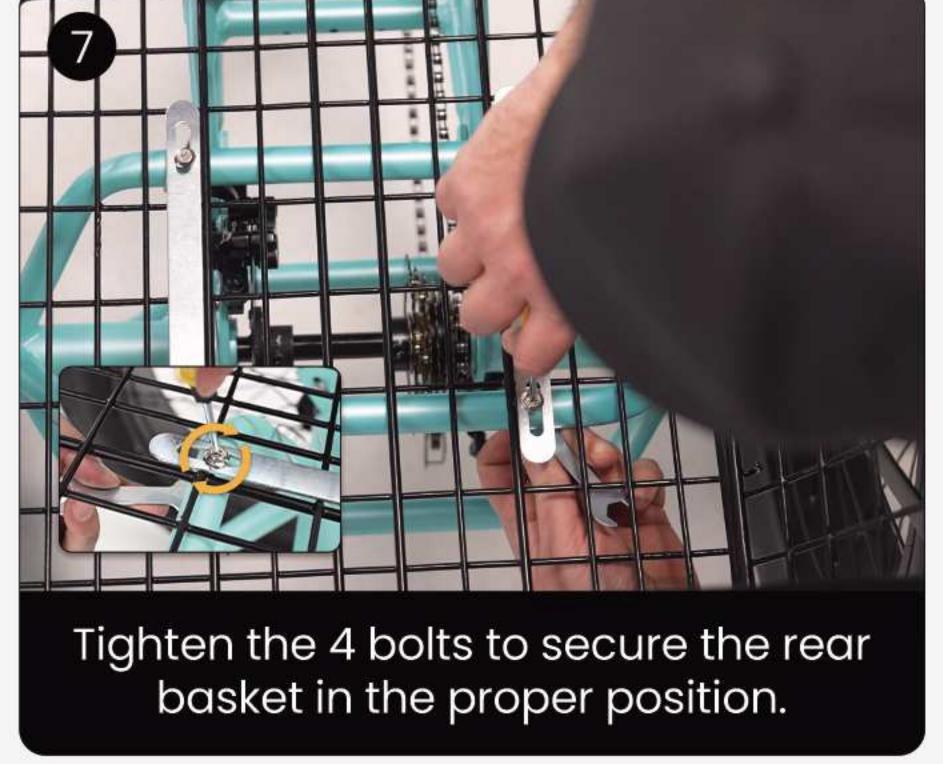


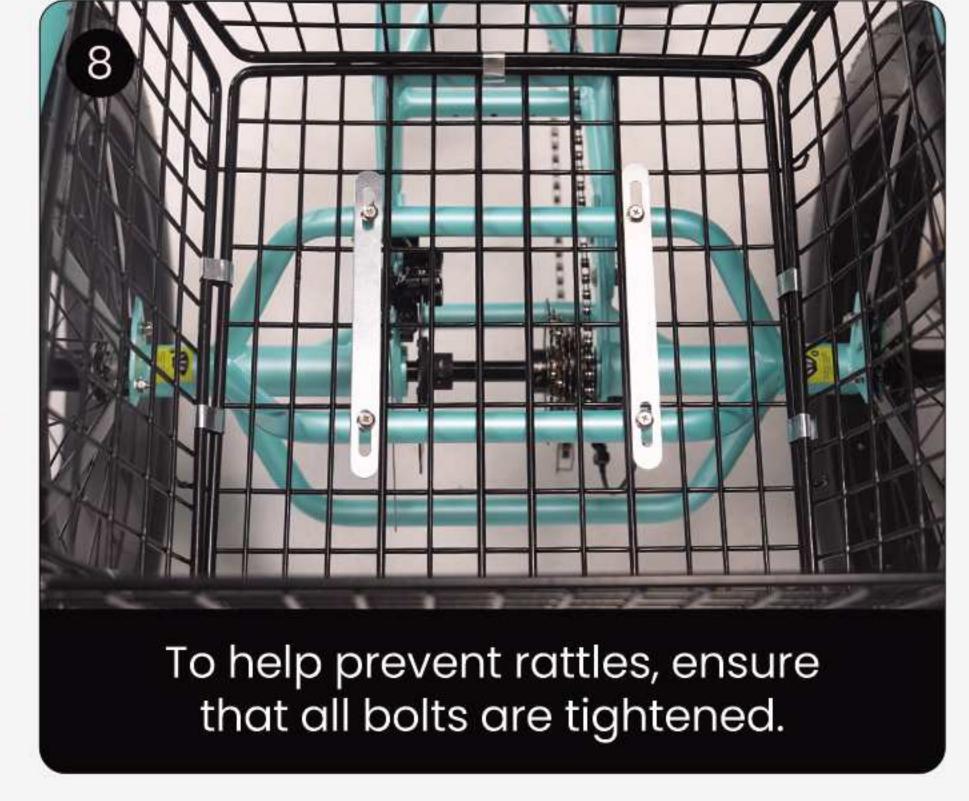


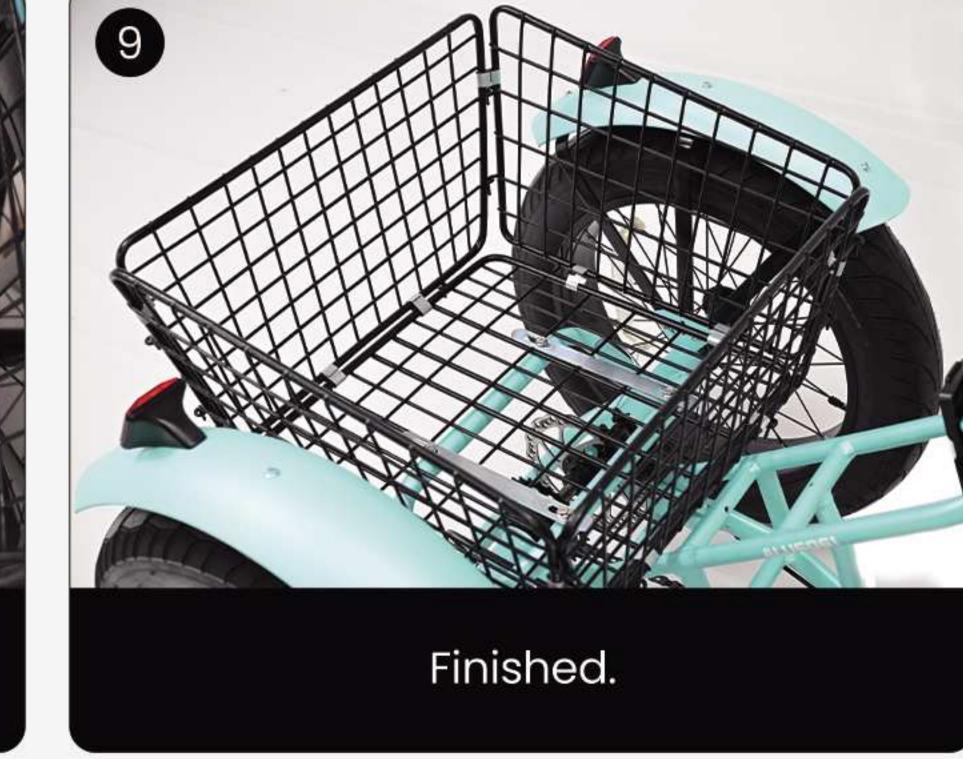












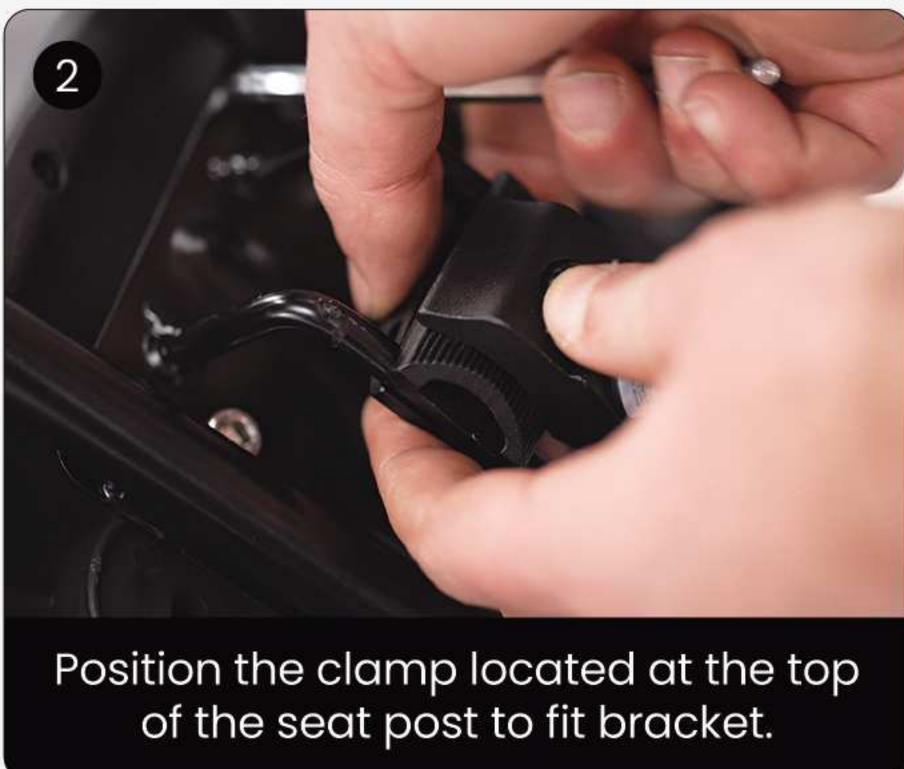
# Assembly Steps

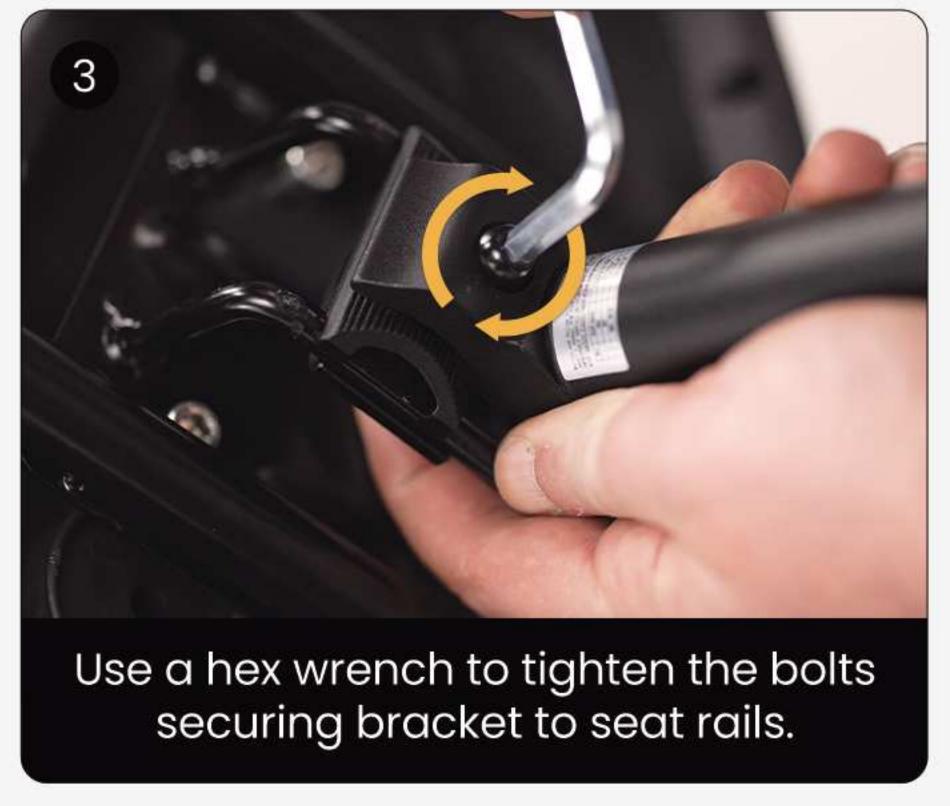
#### Parts and Tools

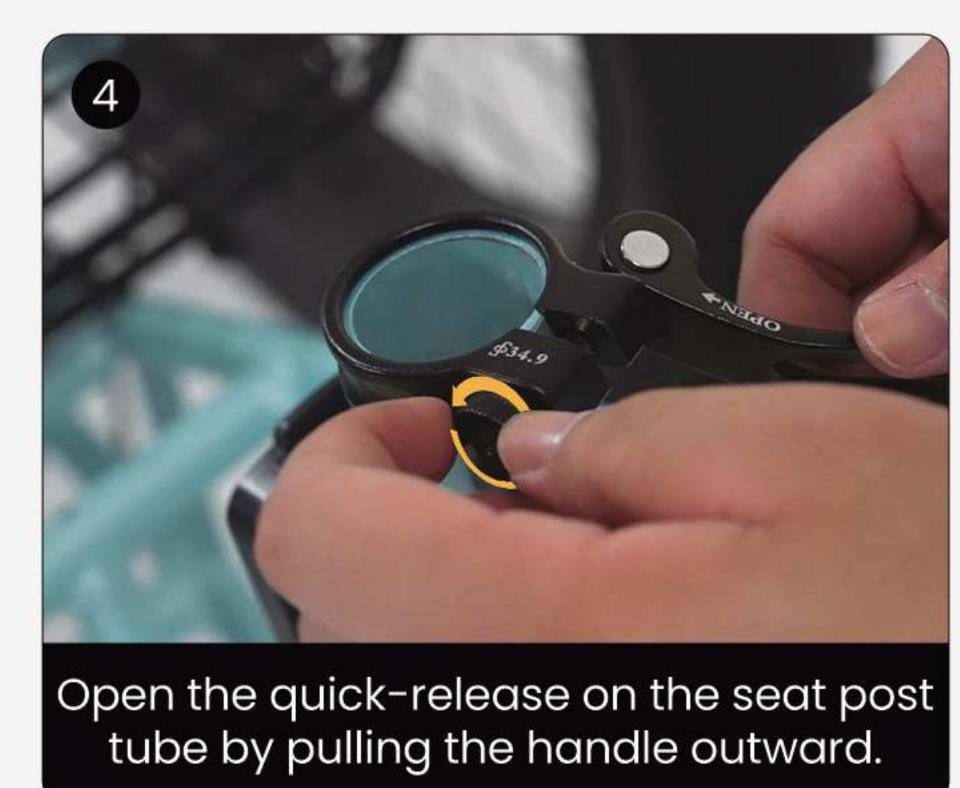


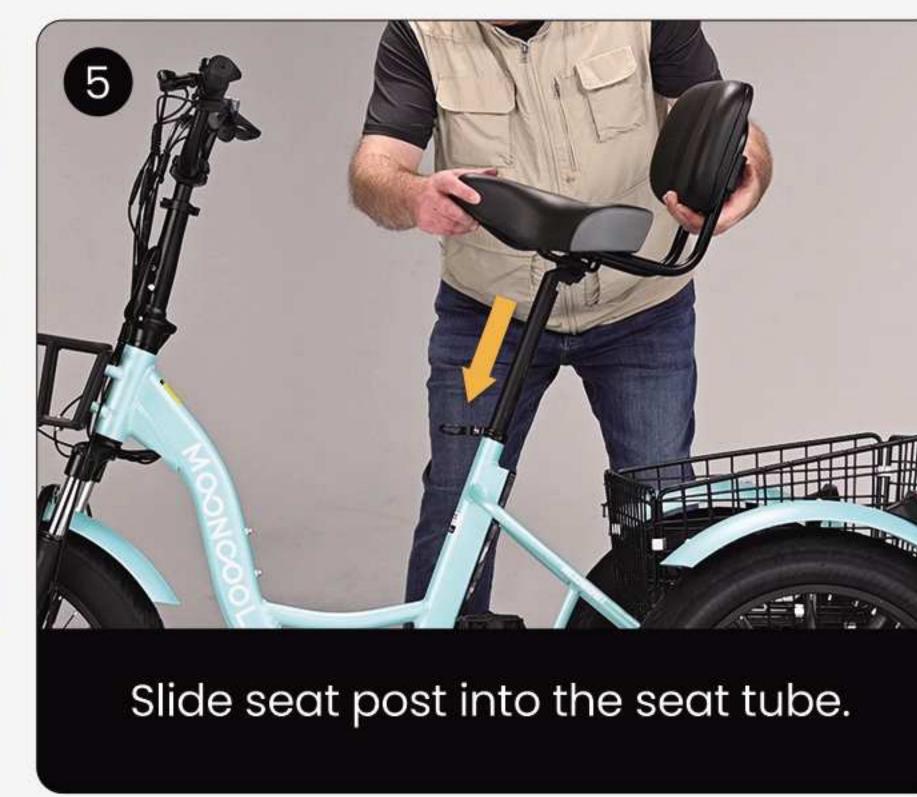
### **Assembly Steps**



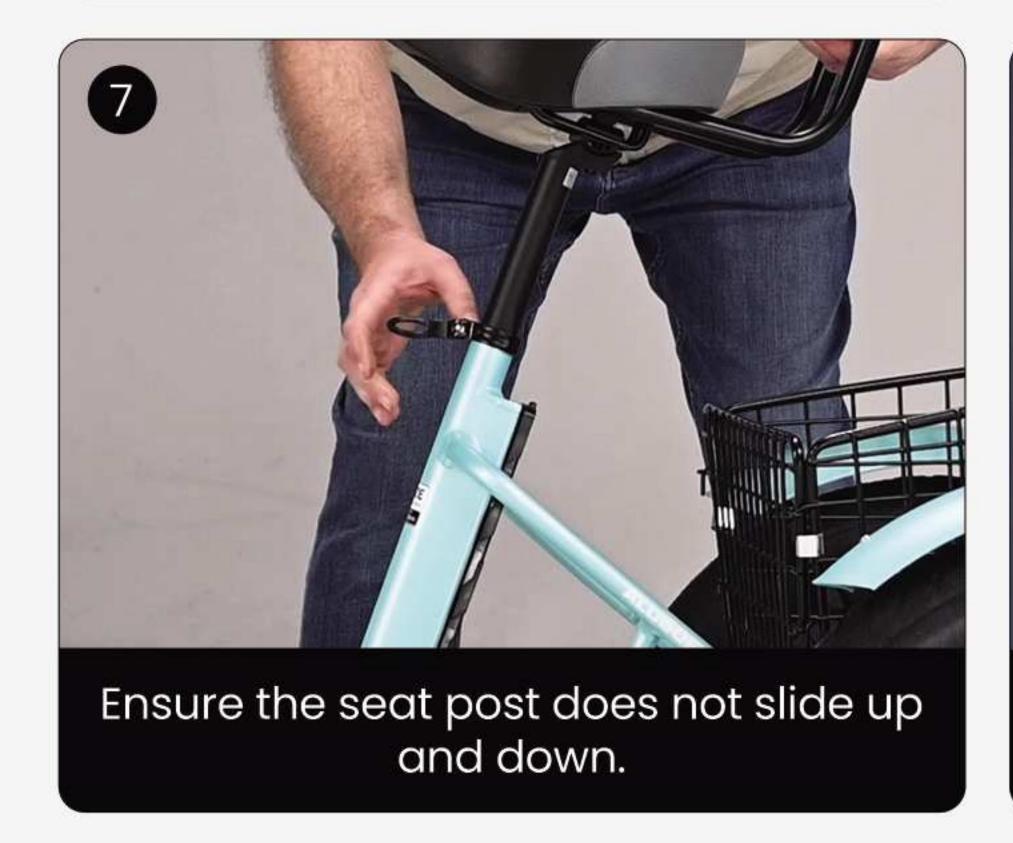


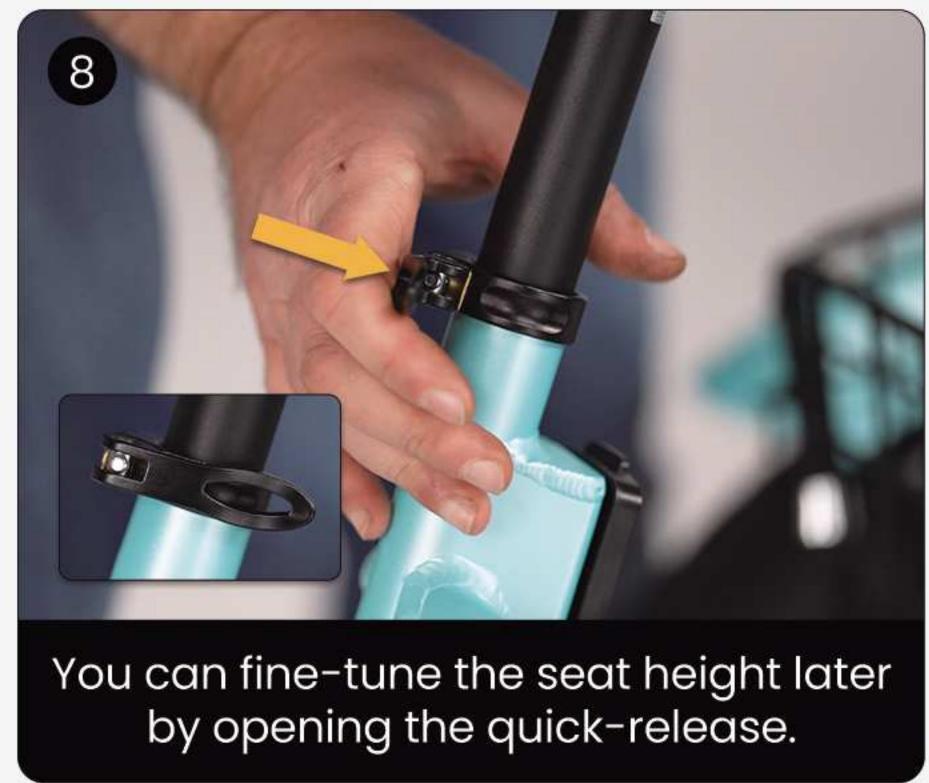


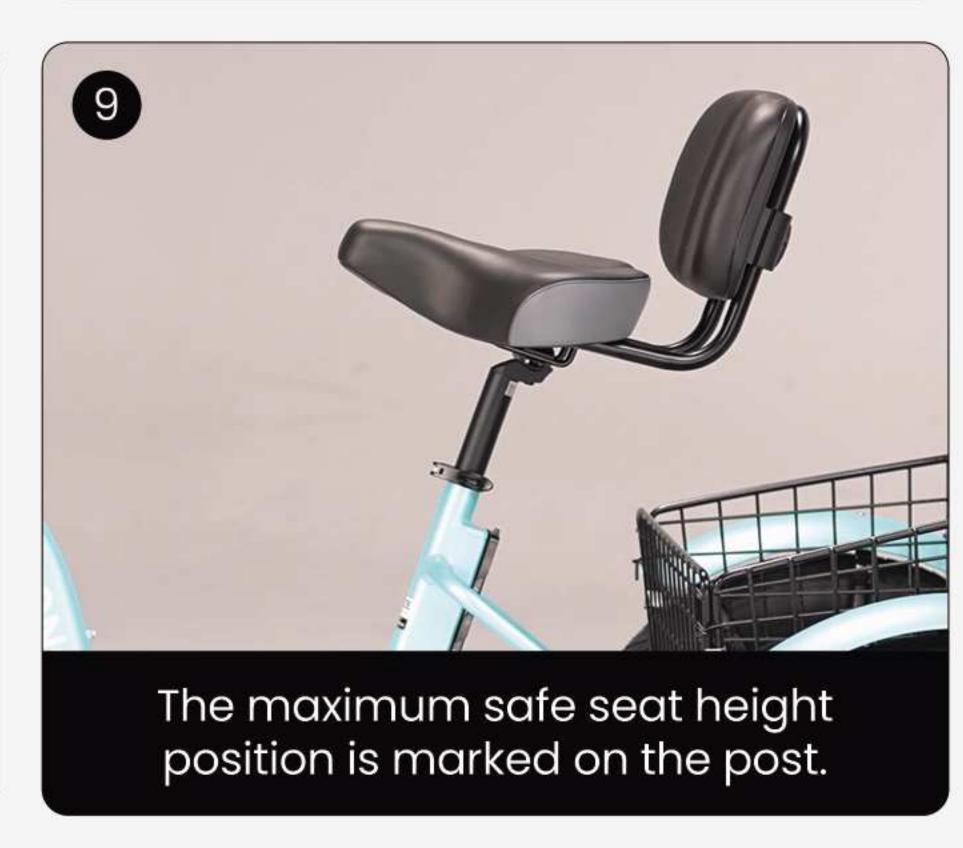








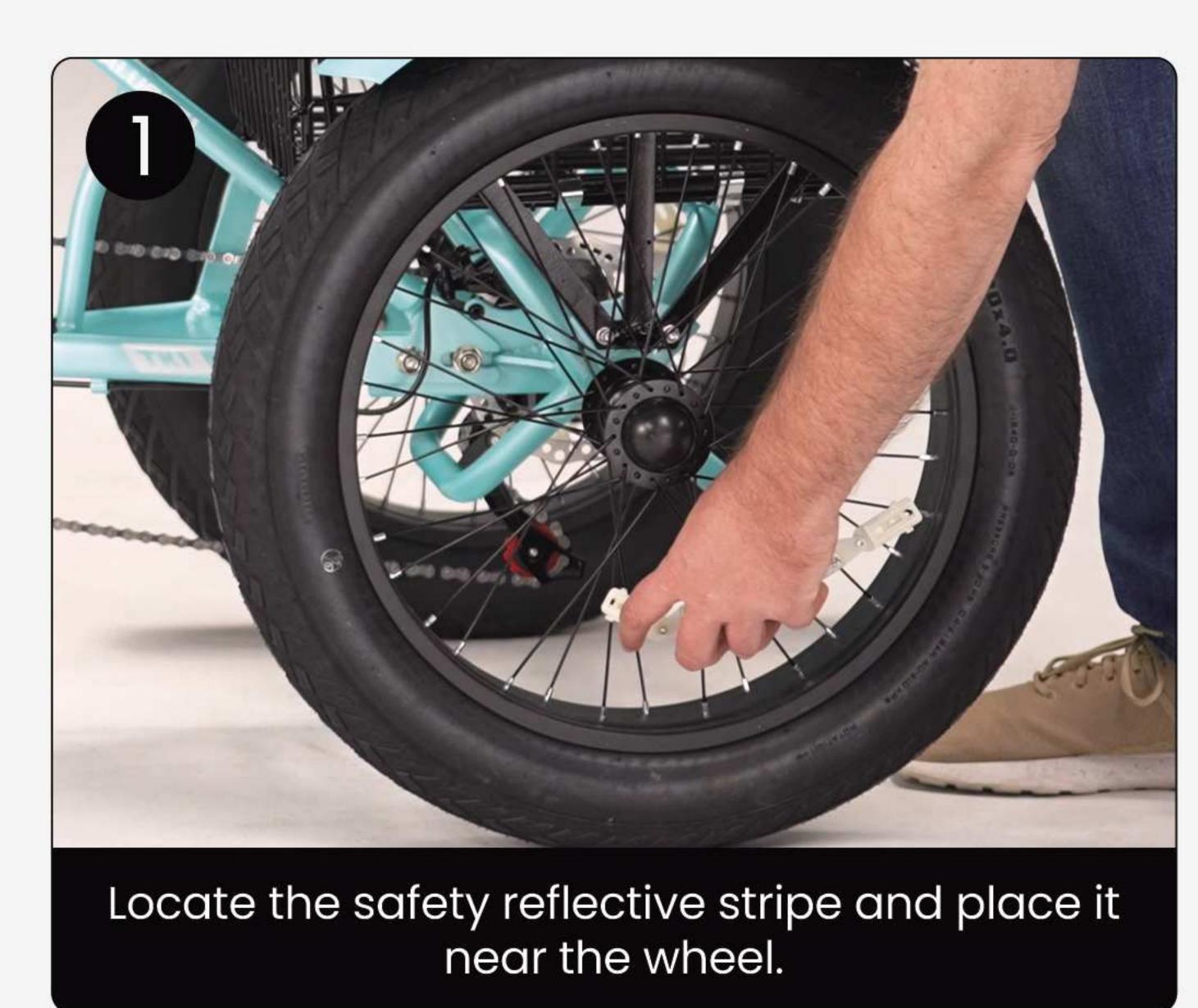


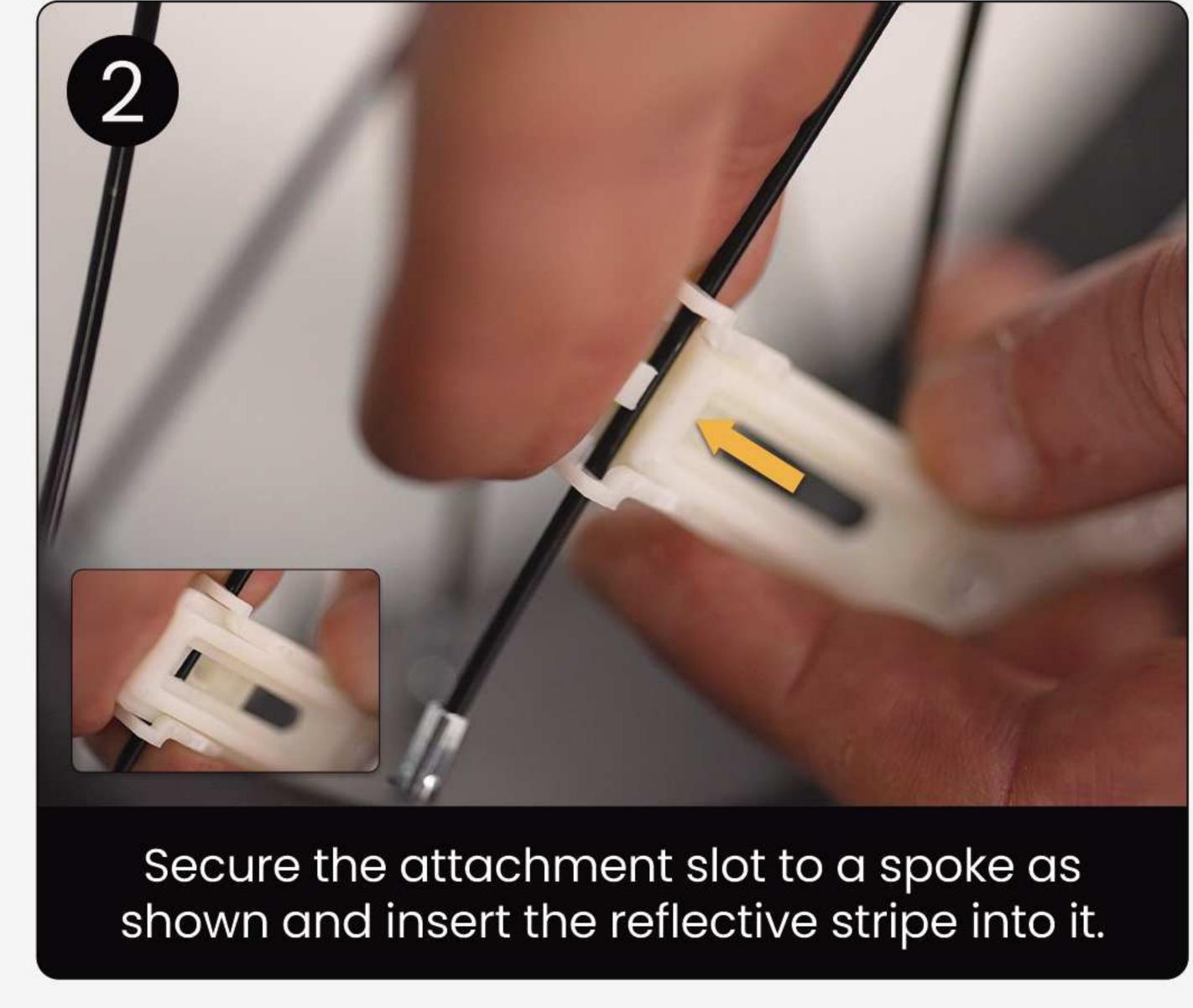


#### Parts and Tools



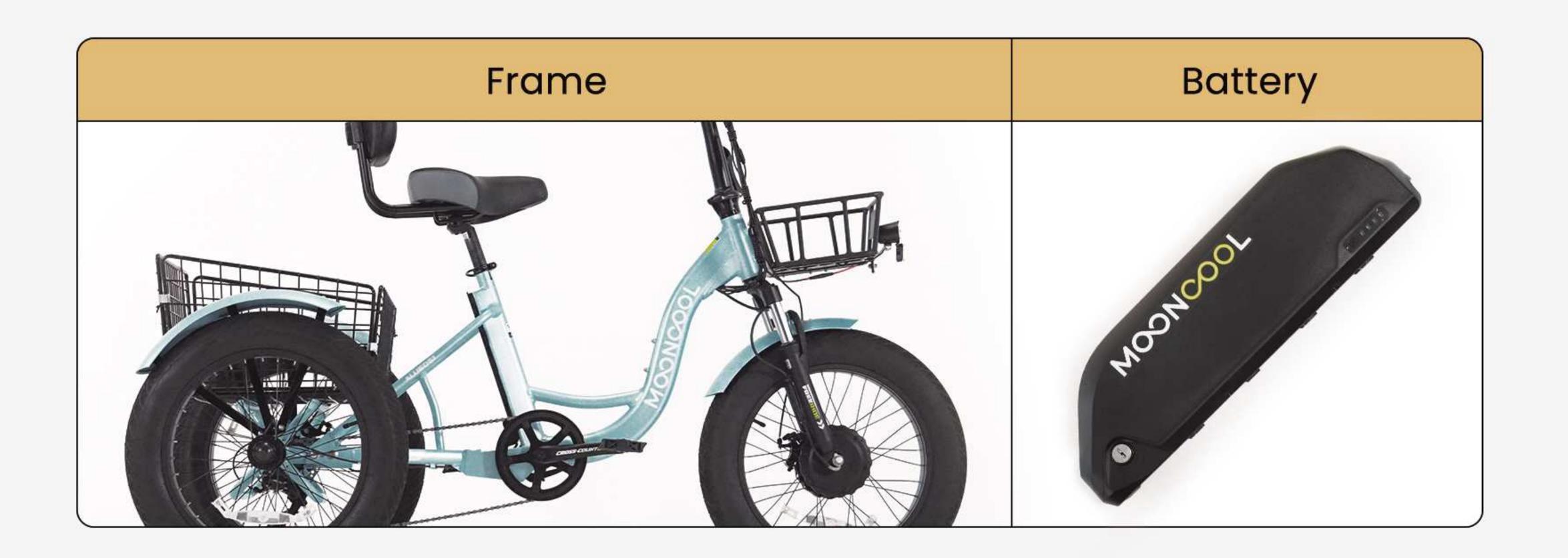
MARNING: Turn off the power before you connect the circuit.



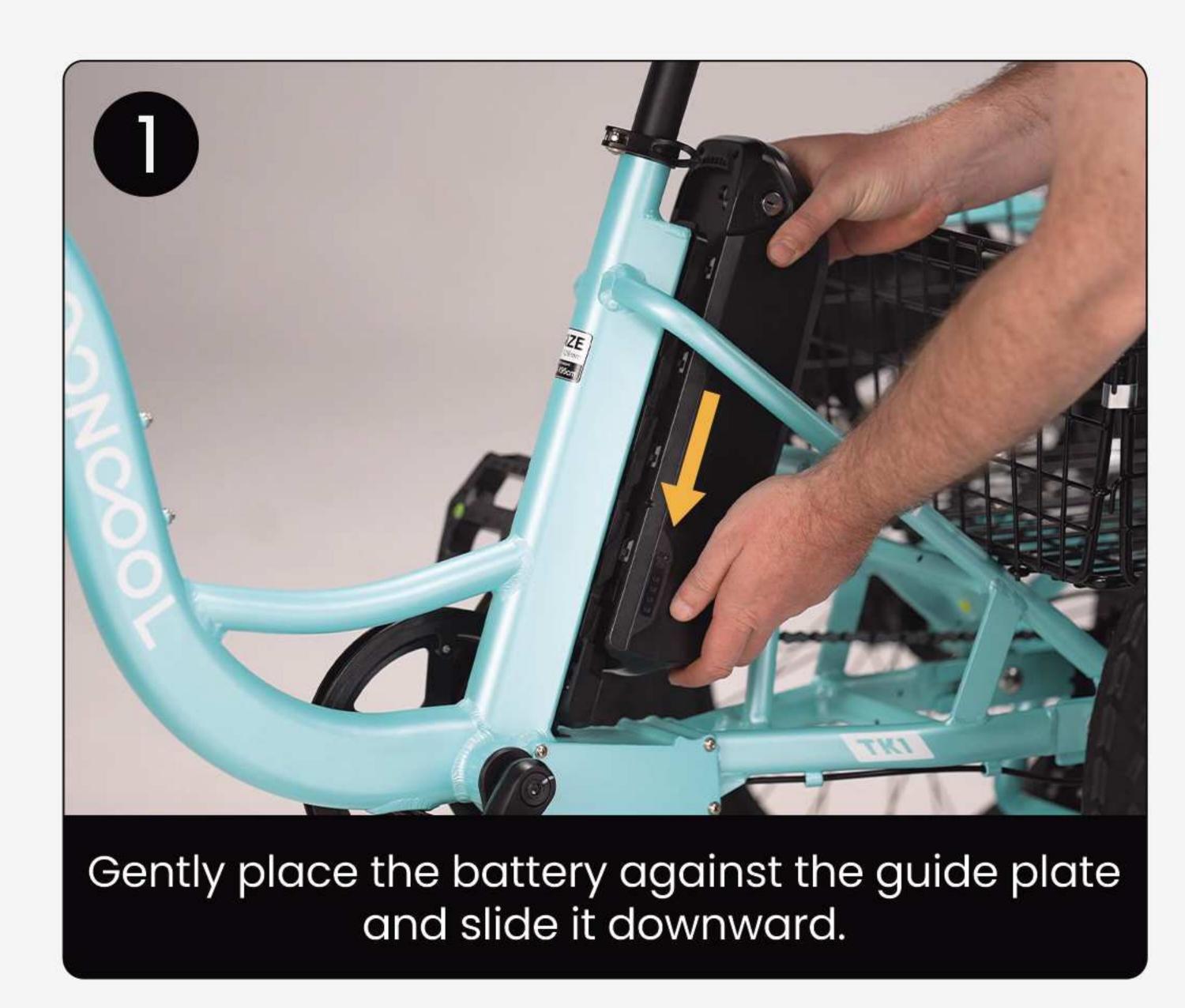


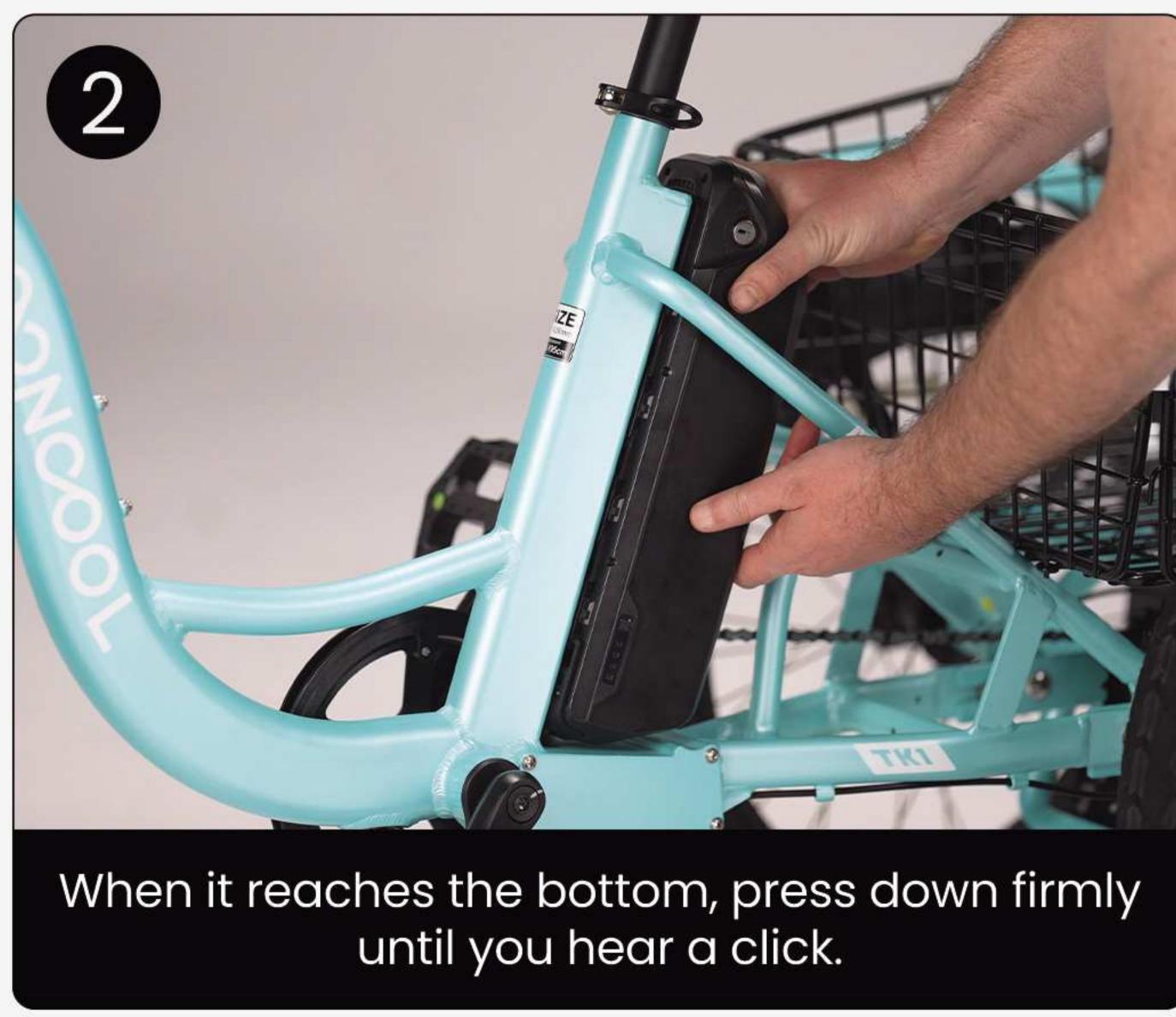




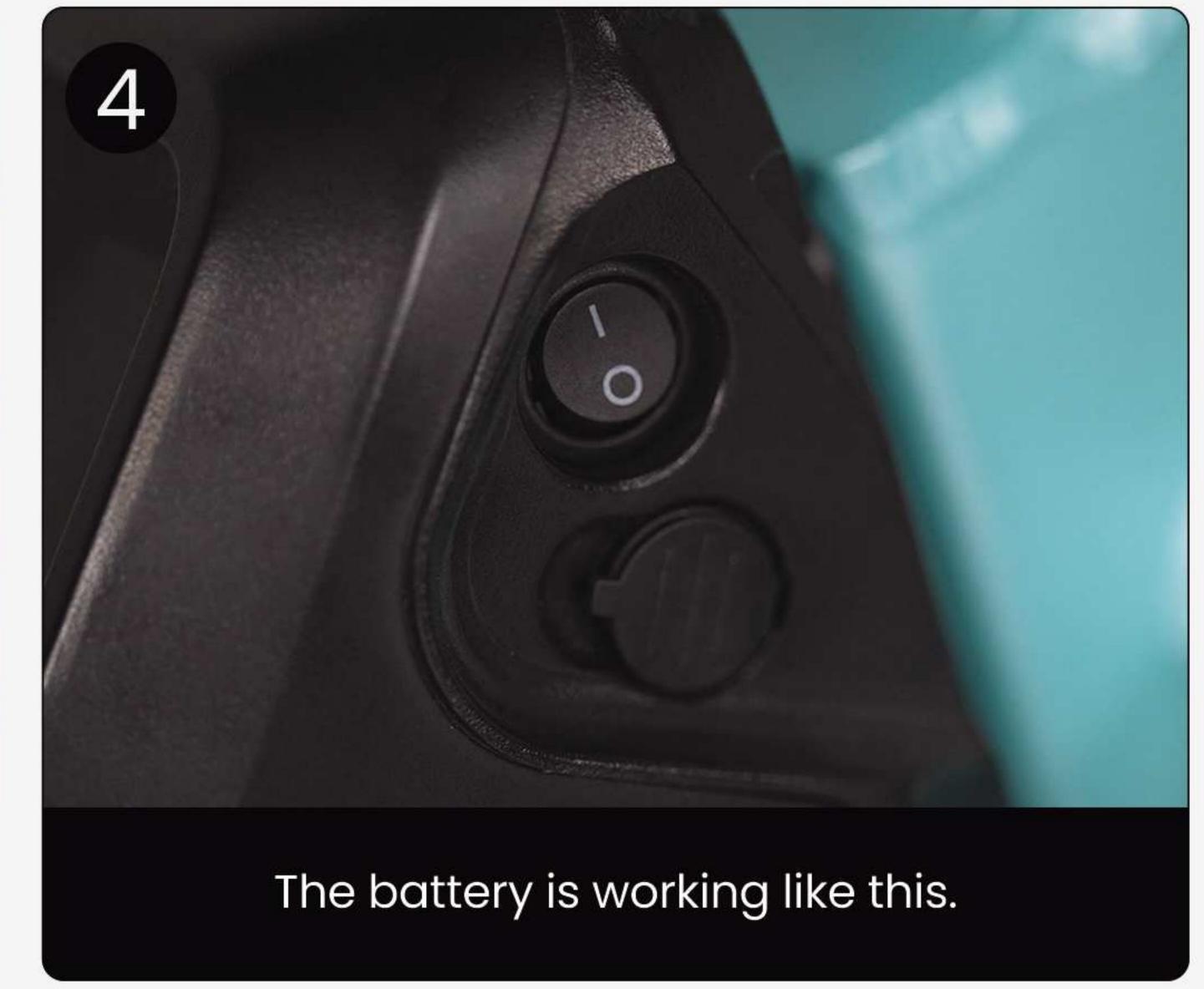


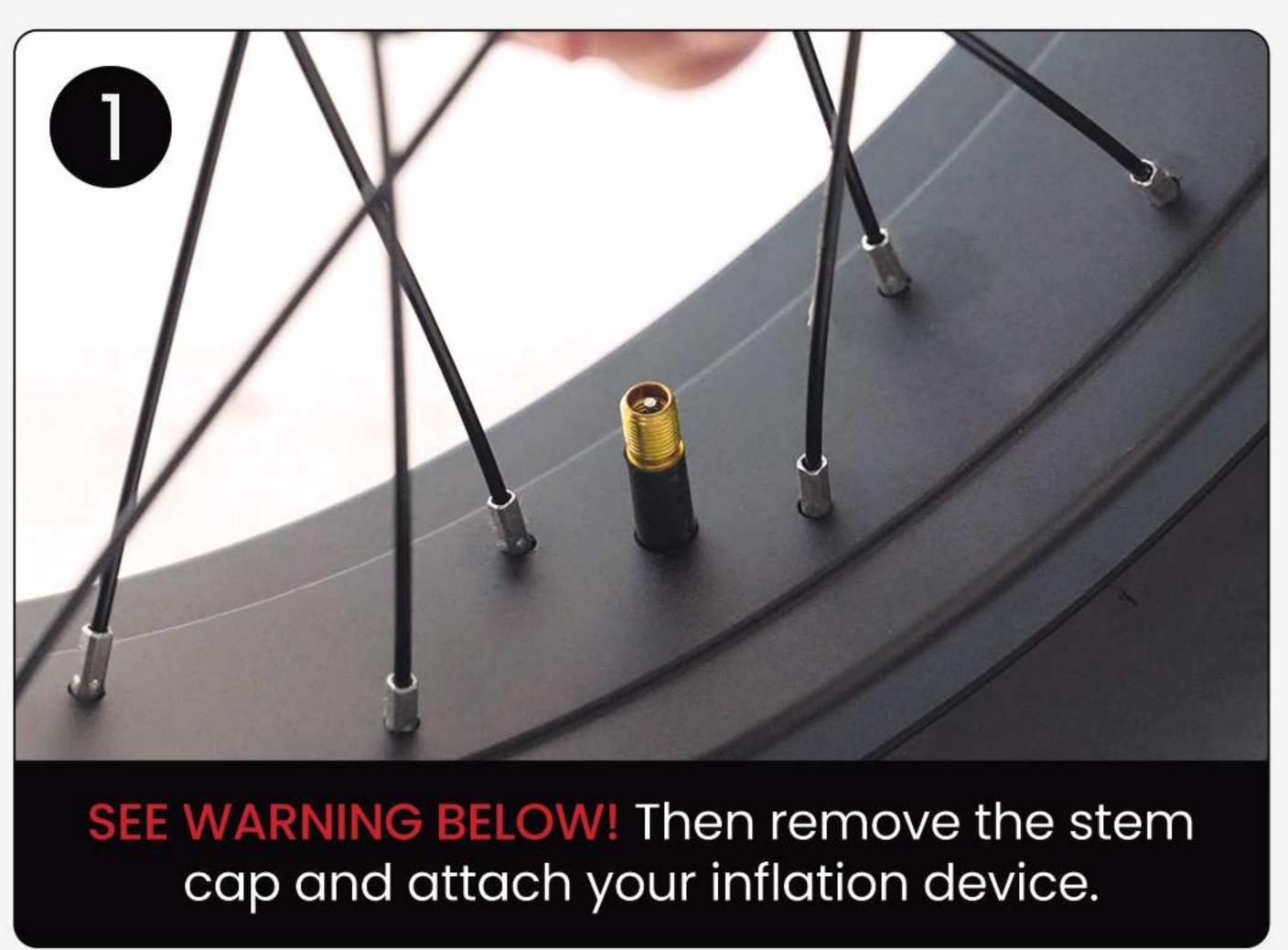
### Assembly Steps

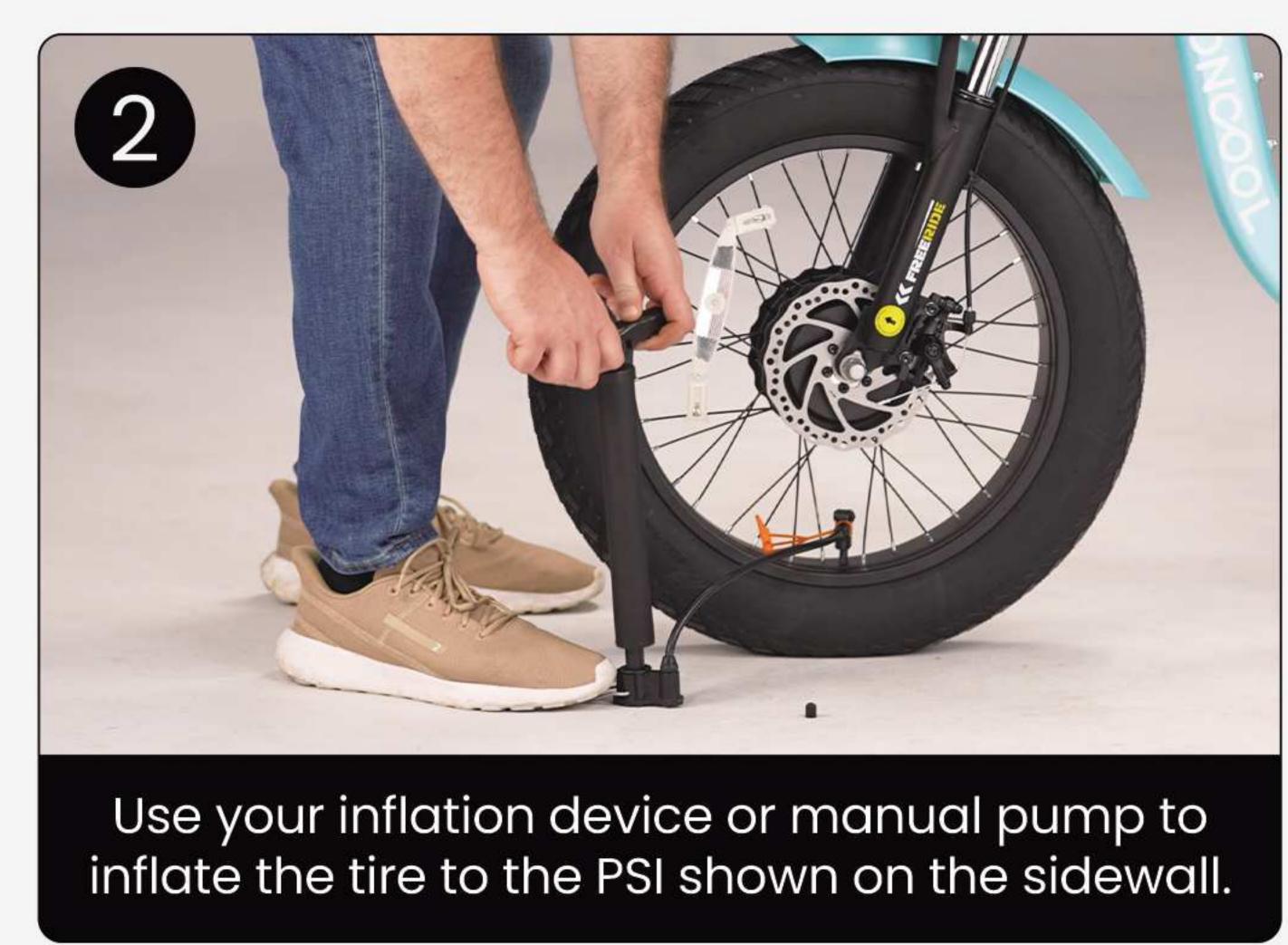


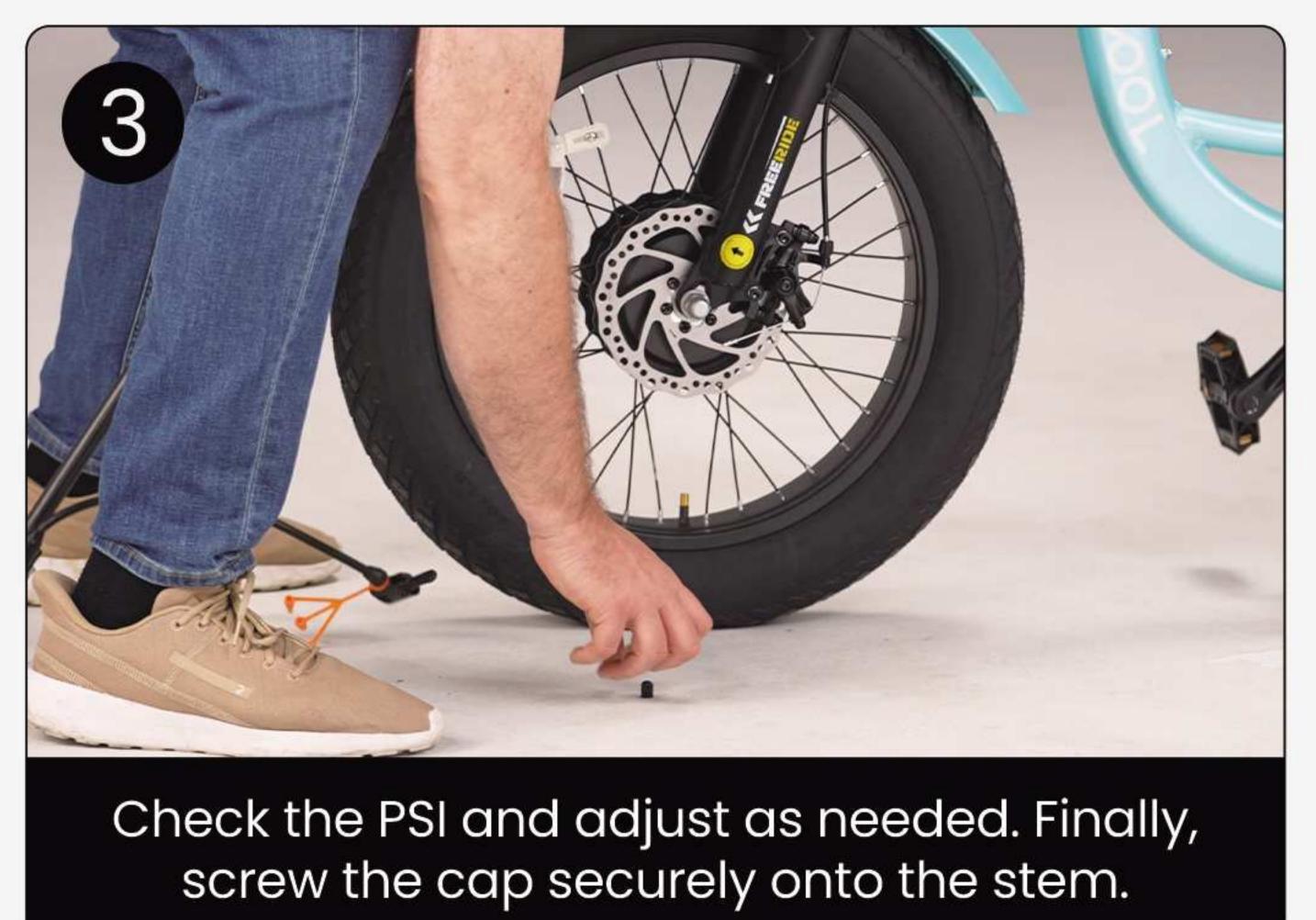


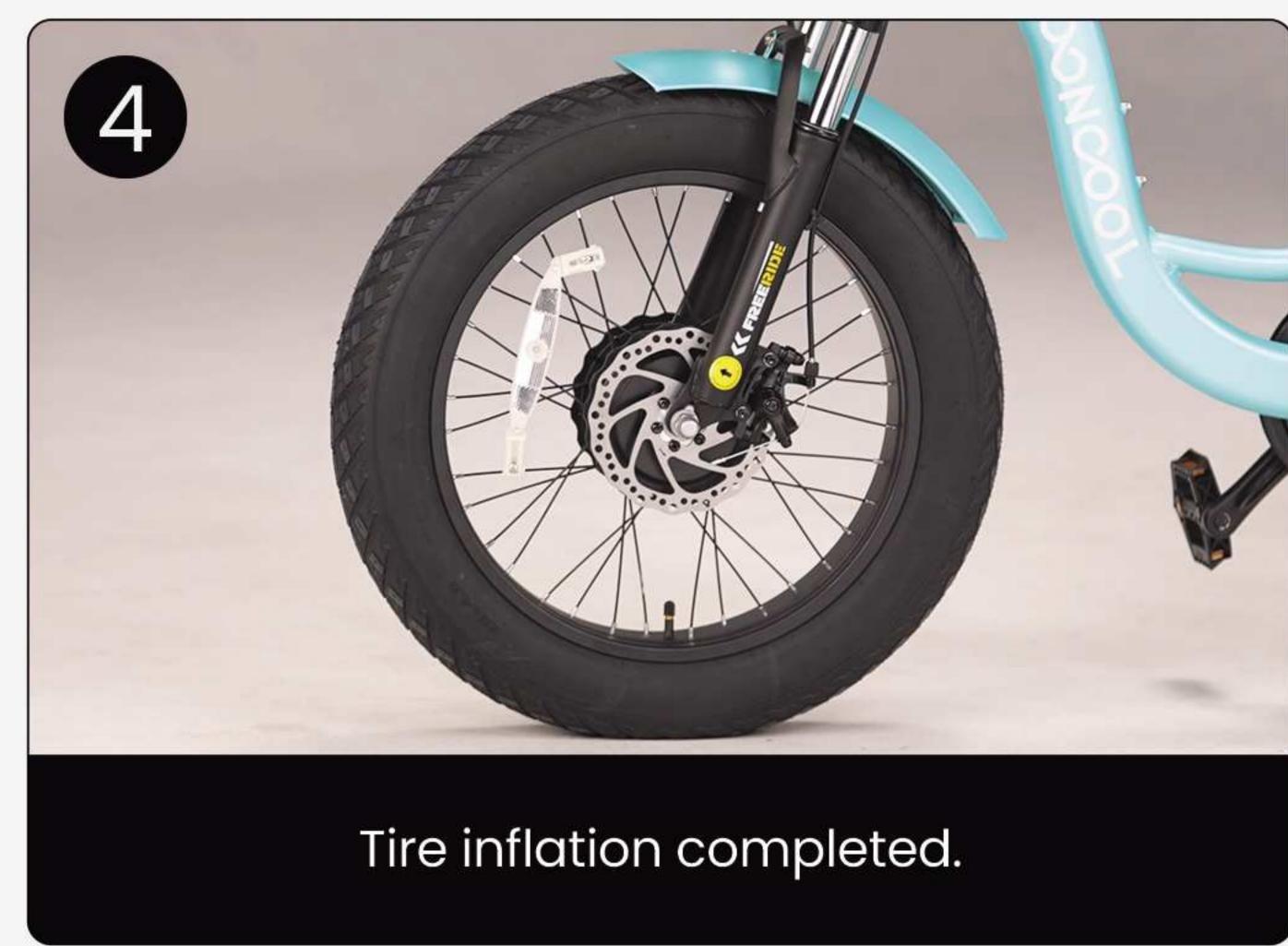












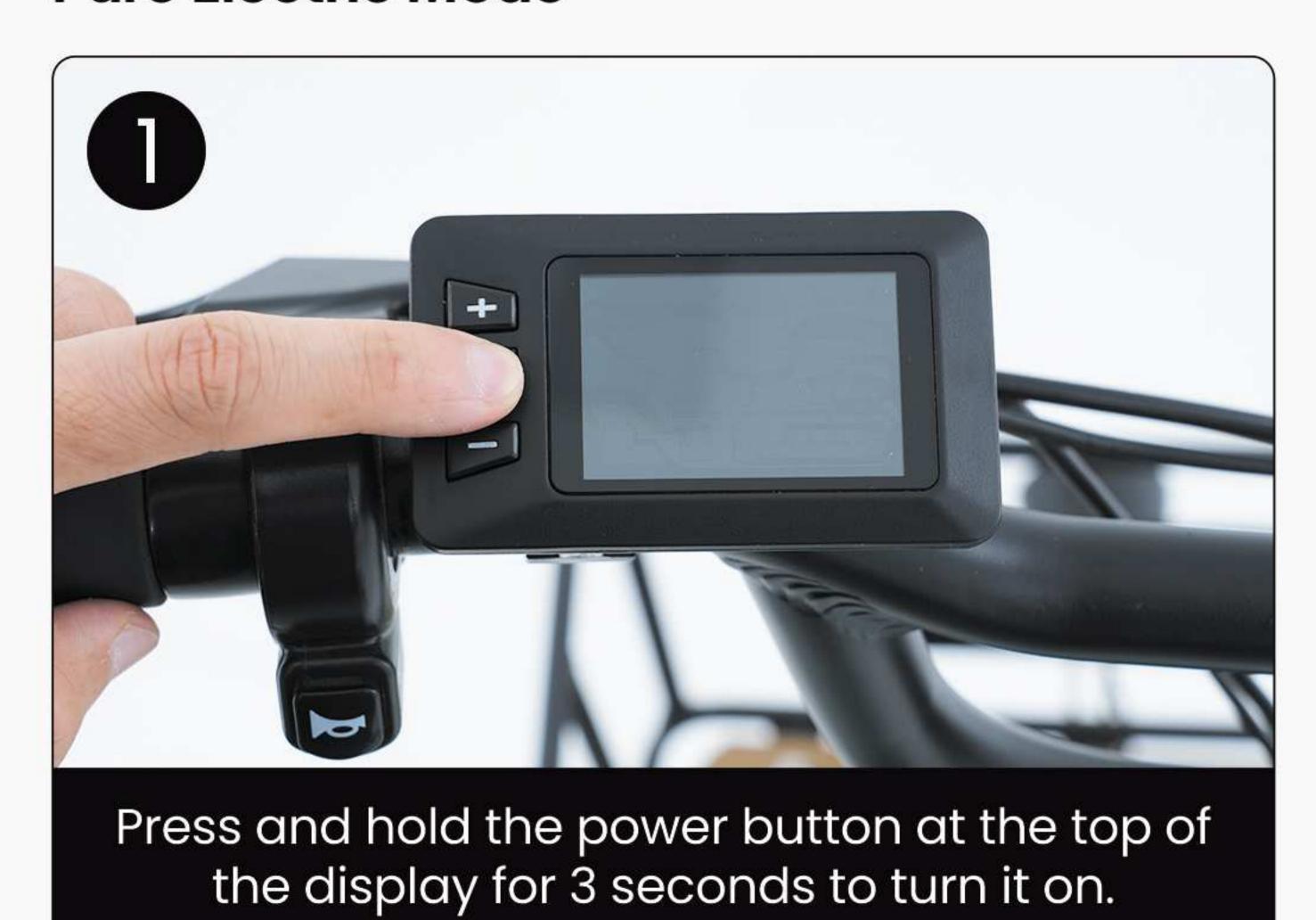


### Tire Inflation Operation Warning:

- 1. When it is necessary to replace a tire tube, place the new or patched tube evenly inside the tire. Then carefully insert the edge of the tire into the wheel rim, one side at a time.
- Inflate the tire to approximately 50% of the PSI stated on the sidewall. Then check all edges of the tire
  to ensure they are completely seated inside the wheel rim. If not, deflate and adjust.
- 3. Continue inflating until the PSI stated on the sidewall is reached. Ensure that the safety line on the tire is evenly exposed around the rim on both sides.
- 4. Never exceed the maximum PSI stated on the sidewall.

### Operation & Function

#### **Pure Electric Mode**





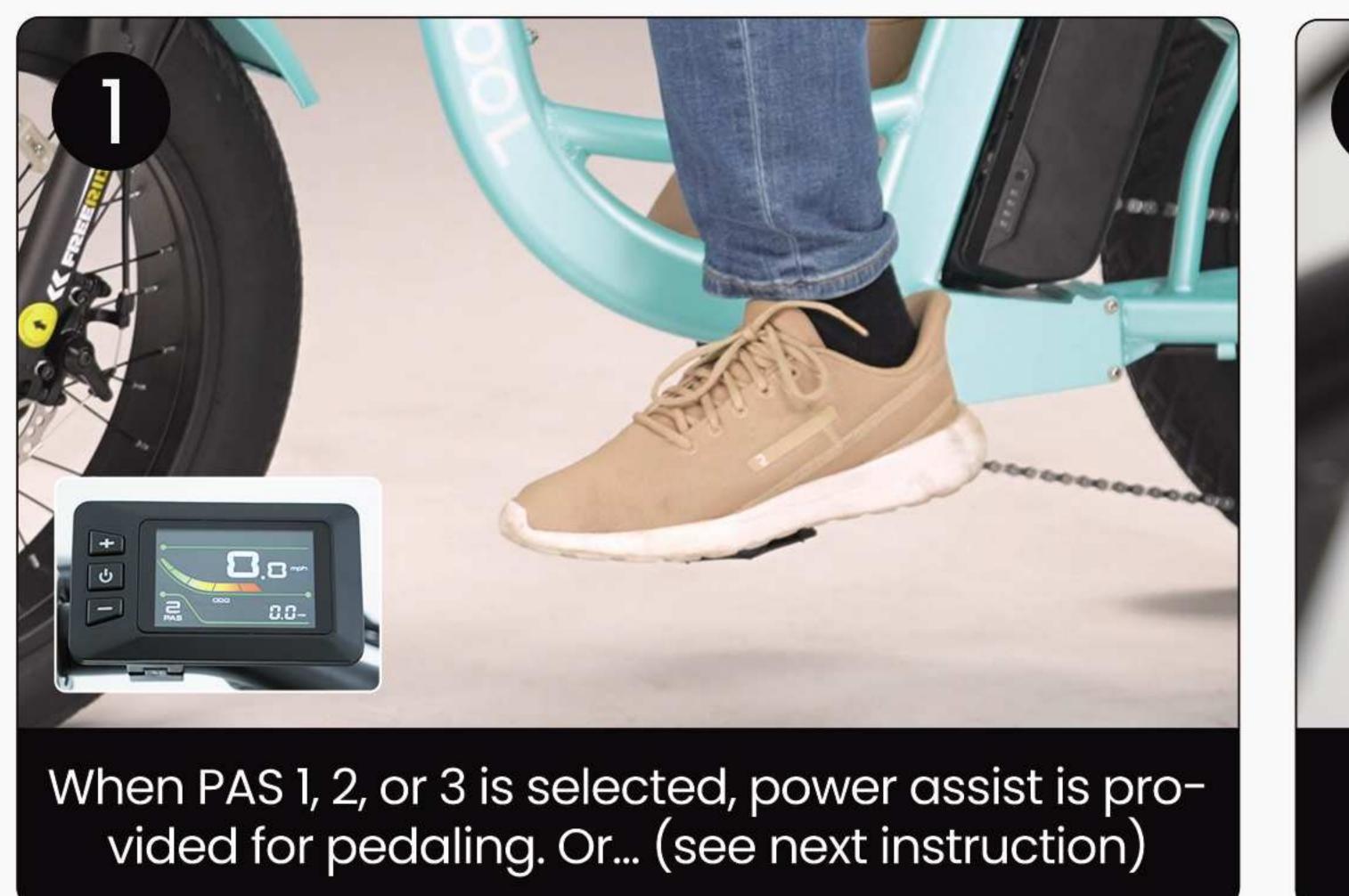


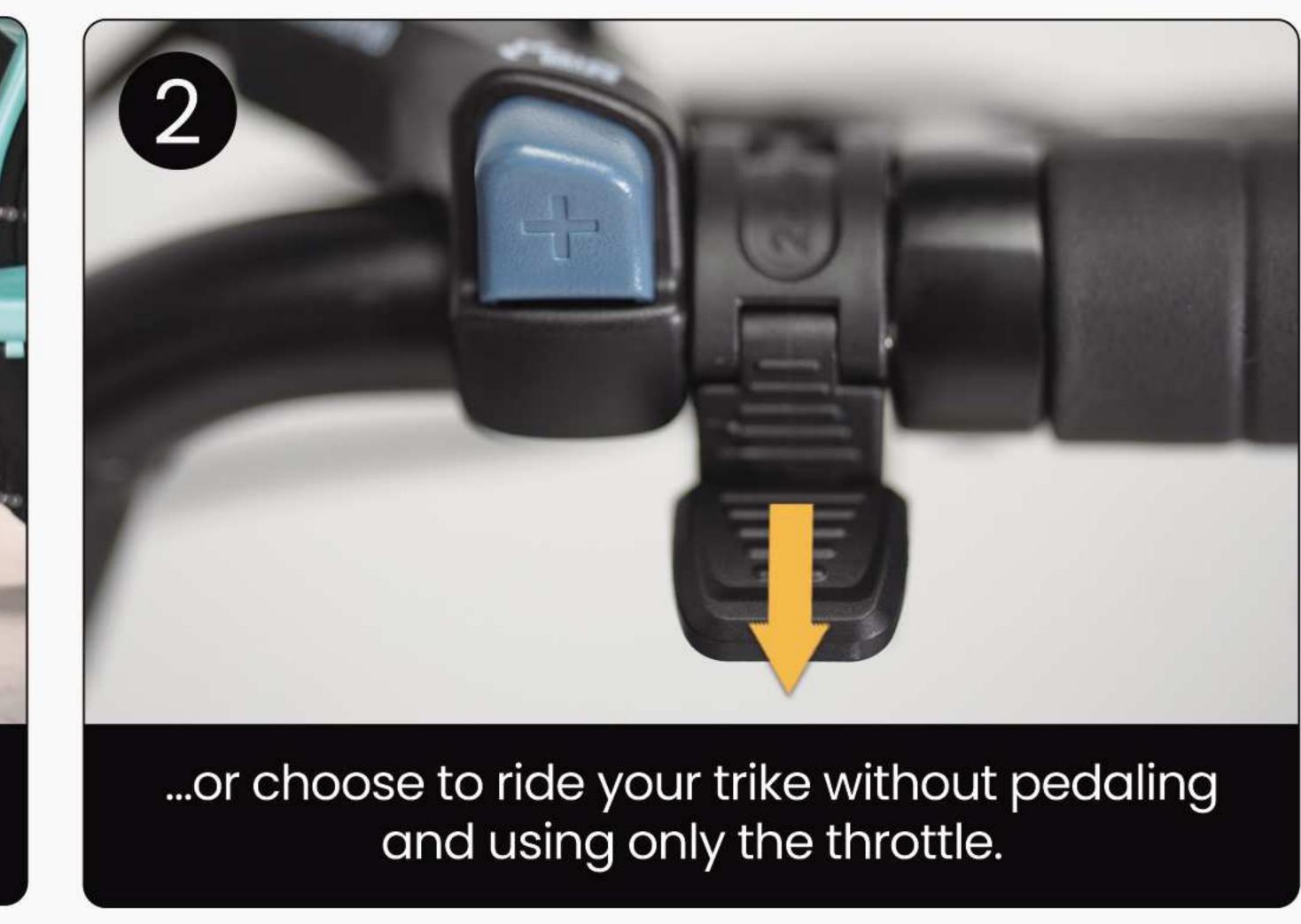






#### Electric Mode as Assistance





#### Switch the Light on/off



### Operation & Function

#### Specifications

- 48V power supply
- Rated operating current: 25mA
- Maximum operating current of the display: 30mA
- Shutdown leakage current: <1uA</p>
- Operating current supplied to the controller: 50mA
- lacktriangle Use temperature: -20  $\sim$  60°C
- lacktriangle Storage temperature: -30  $\sim$  70°C

#### Appearance

Display appearance and dimensional drawing

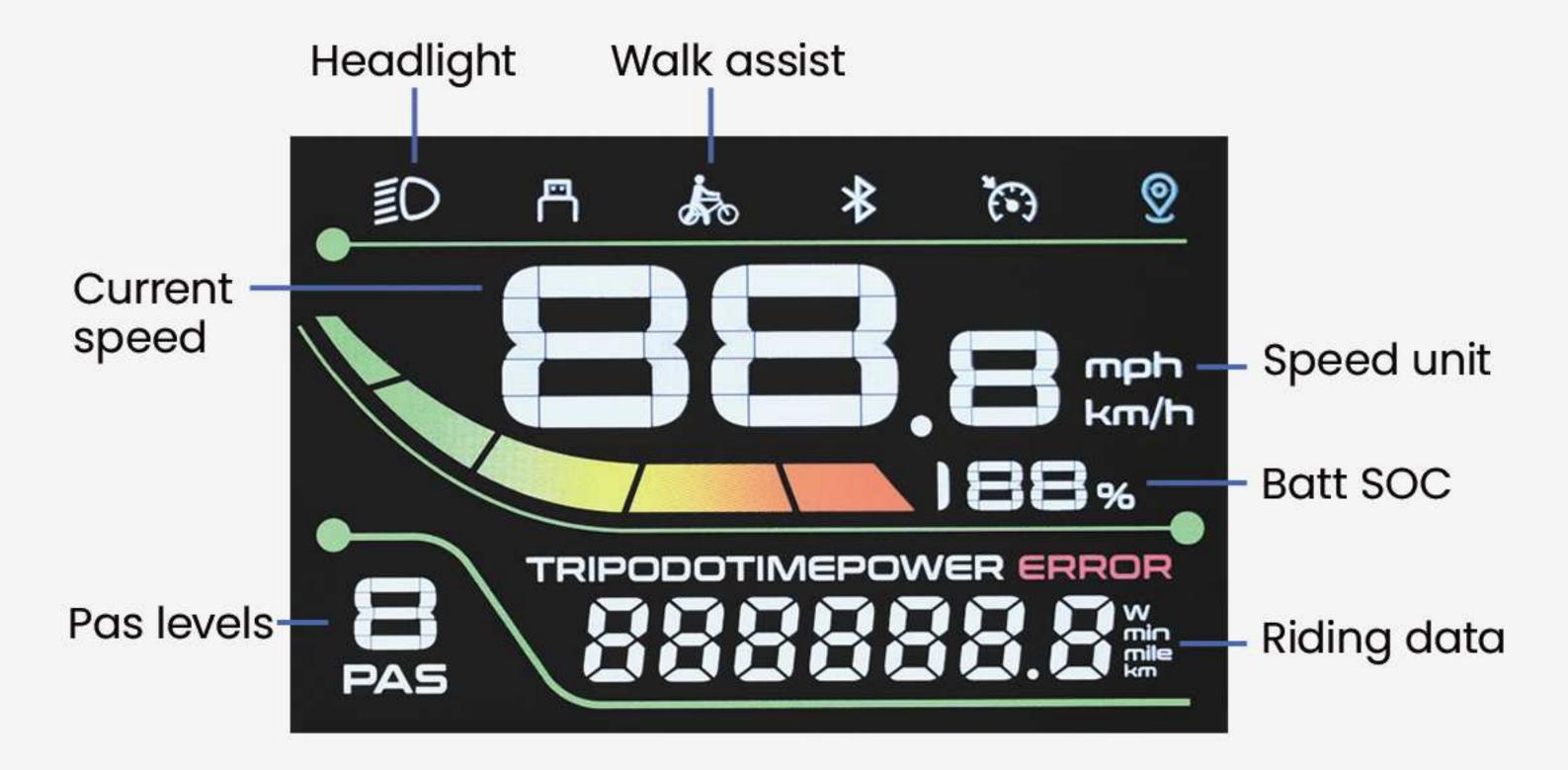


### Functional Overview and Functional Area Distribution

Display offers a variety of features to meet your riding needs,including:

- Intelligent battery SOC
- Motor power indication
- Assist level control
- Speed display (including real-time speed, maximum speed,average speed)
- Mileage display (including TRIP and ODO)
- Walk assistance control
- Riding time
- Backlight control
- Error code
- Multiple parameter settings
- Reset to defaults

#### **♦**Functional Area Distribution



#### General operations

#### Button Definition

The display has three buttons, including the on/off, plus and minus buttons. In the following instructions, the button is replaced by the words "ON/OFF", the button is replaced by the word "UP" and the button is replaced by the word "DOWN".

#### Poweron/off

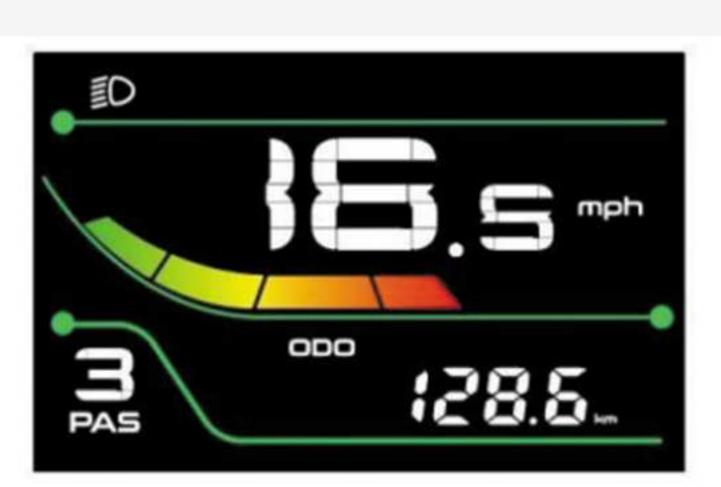
After long pressing " button for 2S, the meter starts to work and provide the working power for the controller. In the power-on state, long press " button for 2S to turn off the power of the bike. In the off-state, the display no longer uses the power from the battery and the leakage current of the display is less than luA.

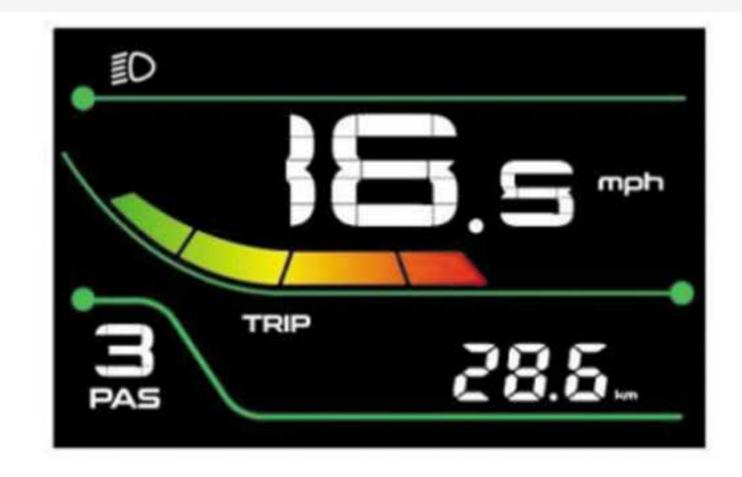
■ The display automatically shuts off if the electric bike is not used for more than 5 minutes.

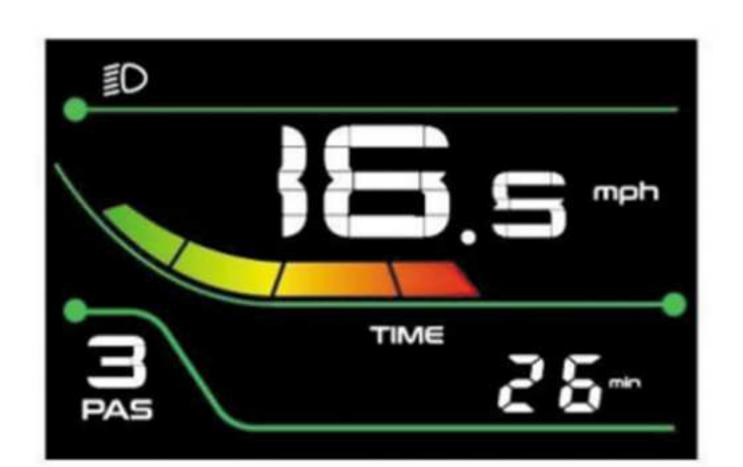
#### Display Interface

After the display is turned on, it will display real-time speed (km/h) and single mileage (km) by default. Short press "ON/OFF" button to display information between single mileage TRIP (km), total mileage ODO (km), riding time

TIME (min), power POWER (W), and it cycles back to Trip again.









Display interface switching

#### Walk assist

Press and hold the "-" button, after 2 seconds, the electric bike enters the walk assist state and bike moves at a constant speed of 6 kilometers per hour. At the same time, the screen displays ".". If release the "-" button, the bike will immediately stop power output and return to the state before walk assist is engaged.



Walk assist

- The walk assist function can only be used when the user pushes the e-bike, please do not use it in the riding state.
- Turn on/off the backlight

Press and hold the "up" button for 2s, the brightness of the backlight of the display will decrease, and the controller will be informed to turn on the headlight at the same time. Press and hold the "up" button again for 2s, the LCD backlight brightness will be restored and the controller will be notified to turn off the headlight.



Turn on the backlight interface

#### Assist level Selection

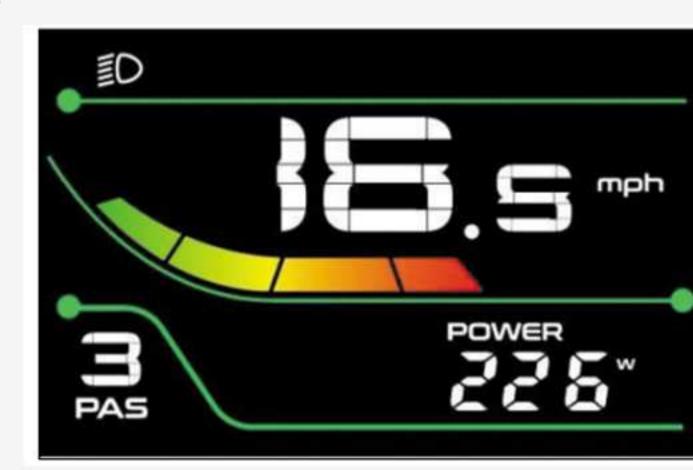
Short press **the** "+" or "-" button to switch the electric bike assist levels and change the motor output power, the default range of assist level is 0-3, level 0 is no assistance, level 1 is the lowest power, level 3 is the highest power. When it reaches 3 gears, press "+" button briefly again, the interface still displays 3. When the assist level reaches 0, press "-" button briefly again, the interface still displays 0.



Assist level interface

#### Motor power display

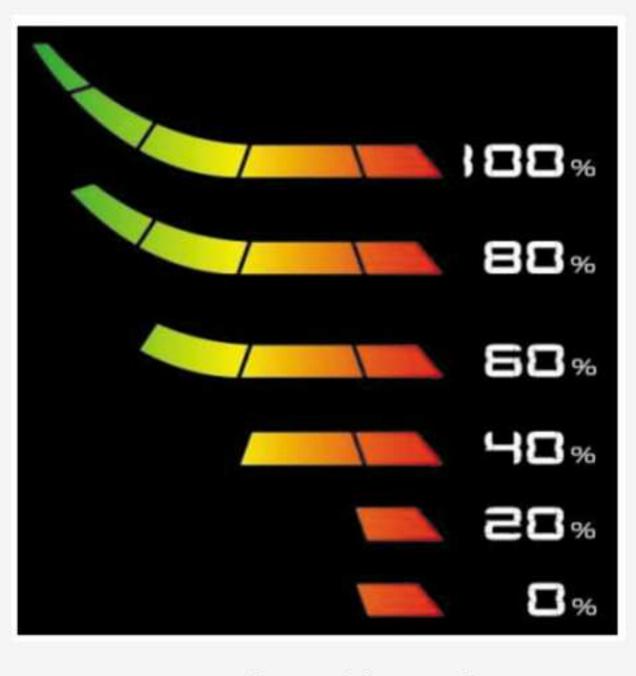
Motor output power can be known through the display,shown in the figure below.



Motor power interface

#### Battery level

The battery level is divided into 5 bars to display, the following are, undervoltage-0% (no battery please charge), 20%, 40%, 60%, 80%, 100% power status.



Battery level interface

#### Error code display

When there is a malfunction in the electric control system of the electric bike, the display will automatically display the error code, see Appendix 1 for the detailed definition of the error code.



Error Code Display Screen

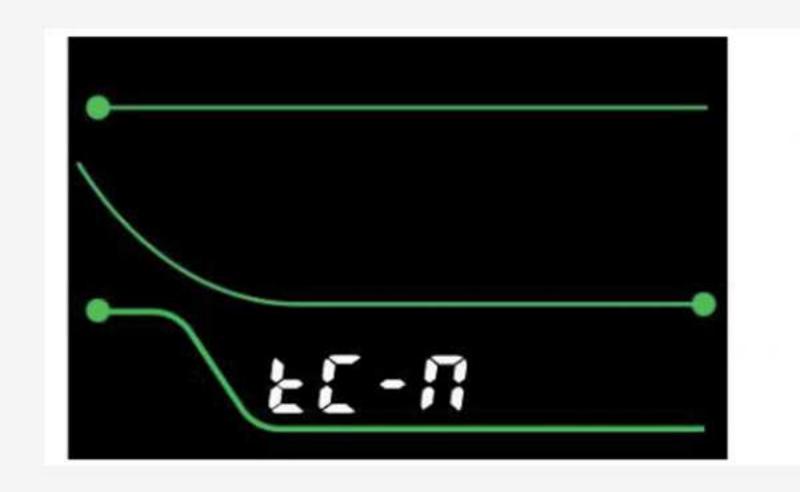
■ When an error code is displayed, please troubleshoot the problem in time, or else the electric vehicle will not be able to run normally after the problem occurs.

#### Settings

- Each setting item needs to be performed with the vehicle in stationary condition.
- Trip clearance

In the main interface, press and hold down "DOWN" and "ON / OFF" **key 2S** at the same time to enter the single mileage clearing interface.

TC stands for clearing single trip mileage. Press "up" or "down" button briefly to select Y/N, Y means clearing single ride mileage, N means not clearing single ride mileage; press "ON/OFF" button briefly to confirm. Press "ON/OFF" button to confirm.





Trip clearance interface

### Operation & Function

#### Reset to defaults

At home interface, press and hold down the "UP" and "ON/OFF" buttons at the same time to enter the interface of restoring factory settings. Short press "UP" or "DOWN" button to select Y/N, Y meansrestoring factory settings, N means not restoring factory settings; short press "ON/OFF" button to confirm.

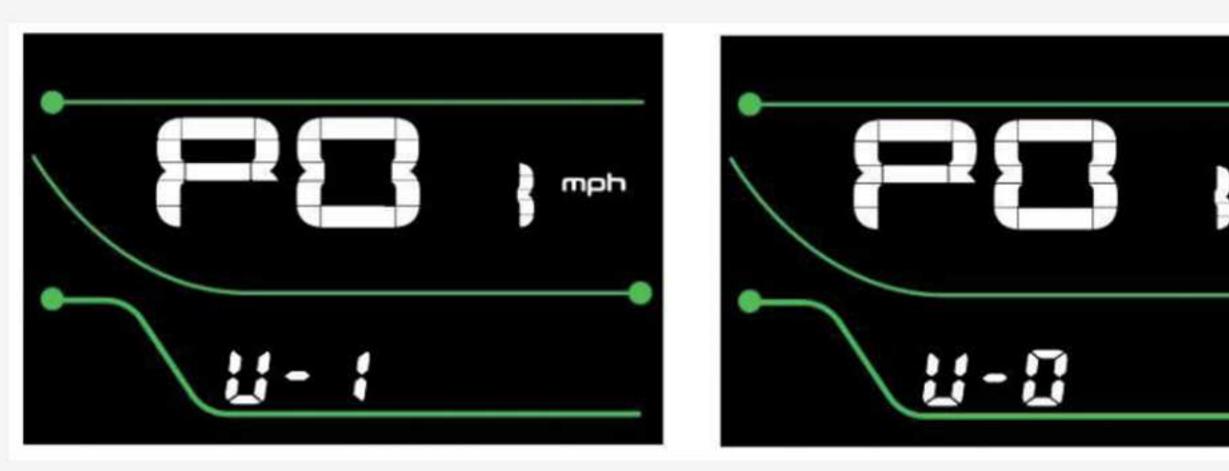


Reset to defaults

When the vehicle is stationary and in the power-on state, press and hold down the "+" and "-" buttons at the same time for more than 2 seconds for the display to enter the general setting state.

#### Conversion of imperial and metric units

PO1: Unit setting: U stands for unit, 1 stands for imperial system, 0 stands for metric system. Press "+" or "-" button to change the unit of speed and mileage, short press "ON / OFF" button to confirm, long press "ON / OFF" button to confirm and exit the general setting status. Short press "ON / OFF" button to confirm, long press "ON / OFF" button to confirm and exit the general setting state.



Unit Conversion Setting

#### Speed Limit info

P02: Speed limit info. The default speed limit is 25km/h, not adjustable, short press "ON / OFF" to enter the next setting parameters.



Speedlimit Interface

#### Automatic shutdown time

P03: It stands for the setting of auto power off time (auto power off time when there is no more speed and stationary state). Press"UP" or "DOWN" to select the auto shutdown time, the range is "1-10" (min), the default is 5min auto shutdown. Short press "ON/OFF" button to save and enter the next setting interface. Long press "ON/OFF" button for more than 2s to save and exit the general setting interface.



Auto Power Off Time Setting Screen

#### Brightness of backlight

P04:Backlight Brightness Setting. bL represents the backlight brightness. Parameter 1,2,3 can be set to indicate the brightness of backlight, 1 is the darkest, 3 is the brightest, the default brightness is 3. The default brightness is 3. Short press "UP" or "DOWN" button to change the backlight brightness parameter, short press "ON/OFF" button to confirm,long press "ON/OFF" button to confirm and exit the routine. Press "UP" or "DOWN" button to change the backlight brightness parameter.



Backlight brightnesssetting interface

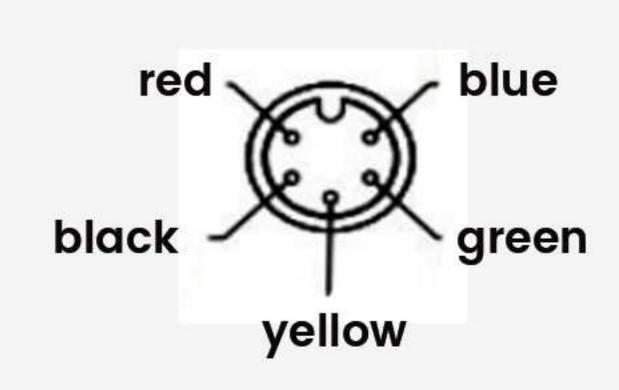
#### Exit Settings

In the setting state, short press "ON/OFF" button is to confirm the input to save the current setting; long press "ON/OFF" button (more than 2 seconds) is to confirm to save the current setting and exit the current setting state; long press "-" button (more than 2 seconds) is to cancel the current operation and exit the setting without saving the current setting data. Long press "ON/OFF" button (more than 2 seconds) is to confirm saving the current setting and exit the current setting state; Long press "-" button (more than 2 seconds) is to cancel the current operation and exit the setting, without saving the current setting data.

■ If no operation is performed for one minute, the meter automatically exitsthe setup state.

#### Wiring diagram

Standard connector wiring sequence



Standard connector wiring diagram

Standard Wiring Sequence	Standard Cable Color	Functionality
1	Red (VCC)	Display Power Cord
2	Blue (Key)	KP
3	Black (GND)	Display GND
4	Green (RX)	Data receiving line of the display
5	Yellow (TX)	Data transmission line of the display

■ Some products have waterproof connectors for the leads, so the user cannot see the color of the leads inside the harness.

#### Quality Commitment and Warranty Coverage

#### I. Warranty information:

- 1. Where the normal use of the product itself due to quality problems caused by the failure, in the warranty period the company will be responsible for giving limited warranty.
- 2. The warranty period of the product is within 24 months from the meter's factory.

#### II. The following are not covered by the warranty

- 1. Shell is opened
- 2.Connector is damaged
- 3. Meter factory, shells cratches or shell damage
- 4. Meter lead wire scratched or broken
- 5. Failure or damage due to irresistible (e.g., fire, earthquake, etc.) or natural disasters(e.g., lightning strikes, etc.)
- 6. Product out of warranty

#### Warnings

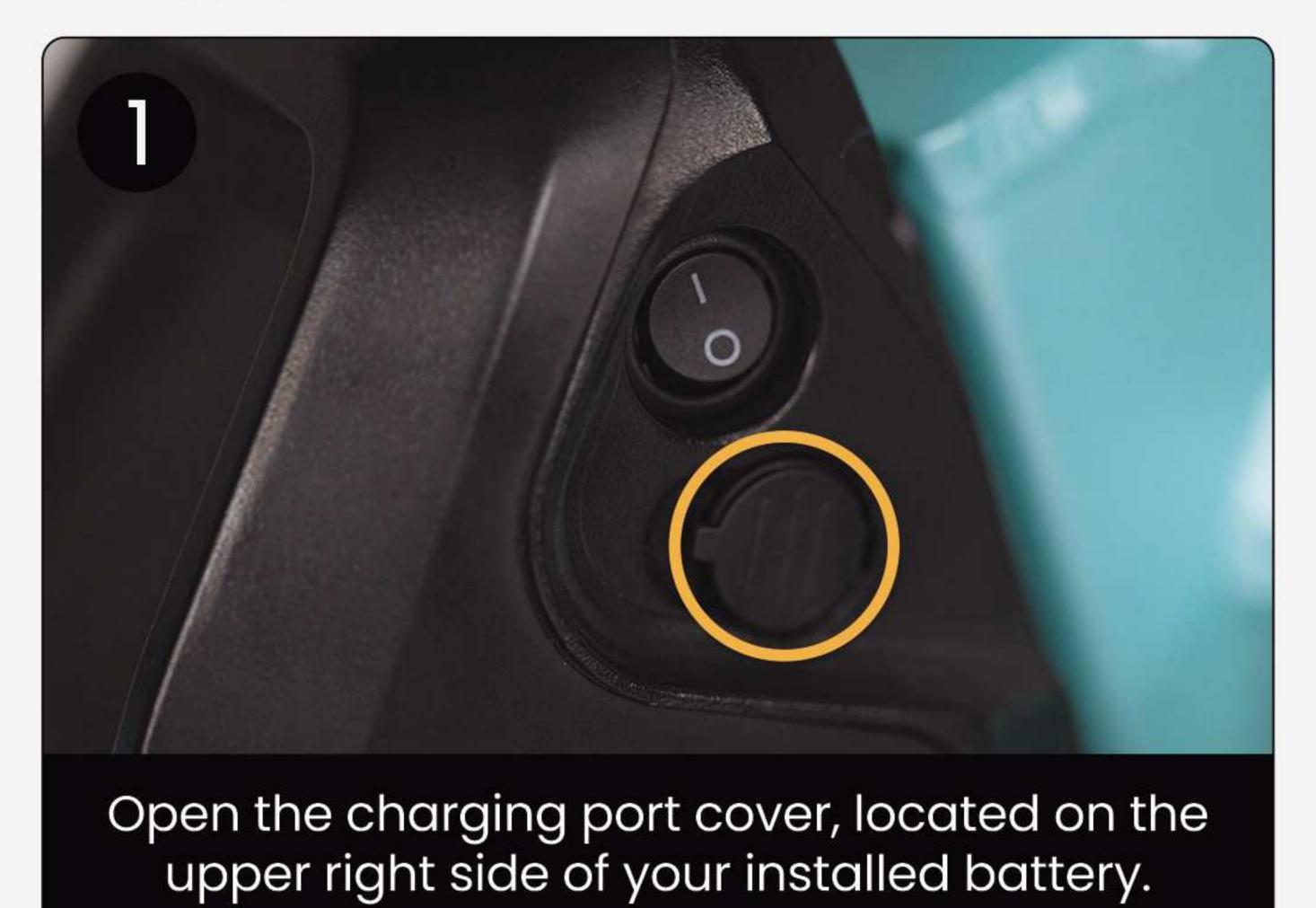
- Avoid bumping the display as much as possible.
- do not plug and unplug the display in power-on status.
- Regarding the background parameter settings of the meter, please do not change them arbitrarily, otherwise normal riding cannot be guaranteed.
- When the meter does not work properly, send it for repair as soon as possible.

#### Appendix 1: Error Code Definition Table

Error code	Definition
21	Current fault
22	Throttle fault
23	Motor phase loss
24	Motor Hall signal abnormality
25	Brake abnormality
30	Communication fault

## ttery

#### Charging













Always check the remaining power of your battery. If it is less than 20%, please charge your battery as soon as possible.

#### Precautions and Guidelines for the Battery



Reading and understanding the following points can help you properly use, maintain, and store your battery, which is very important for improving the performance of your e-trike, extending the lifespan of your battery, and ensuring the safety of yourself and your property.

**WARNING:** Charge your battery ONLY with the charger provided by Mooncool. If the battery is nearly fully discharged, it will take 7-8 hours to reach a full charge. However, it will have a longer lifespan if you routinely stop the charging process at about 95%.

**WARNING:** Improper removal, maintenance, or storage may result in serious consequences. NEVER use your battery to power anything other than your TK1. Do not short-circuit the battery. Failure to heed any of these warnings may cause fire, explosion, personal injury, property damage, or even death.

**WARNING:** Remove the battery from your TK1 or from the charger if you notice an unusual odor, heating, discoloration, deformity, or any other unusual appearance. Do not use it, and contact support@mooncool.com.

#### NOTE:

**A.** Store your battery where the temperature is between 50 °F and 77 °F (10 °C and 25 °C) and humidity is moderate. Do not store other items near your battery.

**B.** For long-term storage, charge your battery to about 70%. Recharge to 70% every month.

C. Avoid bending or striking your battery cell. Take care not to drop it or create a short circuit.

**D.** If you do any soldering or welding while working on your battery, the temperature of your tool tip must not exceed 350 ° C (662 ° F). Make no more than 5 welds of less than 3 seconds each, and allow cooling time after each weld.

**E.** All batteries have a limited lifespan and very gradually degrade with use or storage. By observing the warnings and cautions in this manual, you can extend the lifespan of your battery.

#### Factors that Affect the TK1's Range

- Life and state of charge of the battery.
- External temperatures.
- Tire pressure.
- The rider's weight.
- Riding style and choice of assistance level.
- Road/path conditions.
- Weather conditions.
- Frequent stops and starts during your rides.
- Condition of bearings and all other moving parts.

#### Getting the Best Possible Range

- Fully charge the battery.
- Check tire pressure.(recommended depending on body weight, load and route profile)
- Reduce the load.
- Do not ride too fast.
- Maintain a constant speed.

### Battery

#### Long-term Storage

When storing the battery for more than 3 months, ensure that the battery is in a dry location where the humidity does not exceed 75% and the temperature is between 40°F (4.5°C) and 78°F (25°C).

The initial charge for storage should be 70% to 75%, and the charge should be checked every two months and brought back to the proper storage level if necessary.

#### Disposal of Waste Batteries

According to the battery law, we are obliged to inform you.

Regarding the sale of batteries or the delivery of equipment containing batteries/rechargeable batteries/lamps, we are obliged to inform you of the following.

Do not dispose of your old device in the household waste!

You are legally obligated to return used batteries/rechargeable batteries/lamps as the end user. In the case of a removable battery/accumulator or illuminant, you must return them separately to the appropriate return system. You can return used devices/batteries/lamps to the collection points of the public waste disposal authorities.



#### **Basic Troubleshooting**

Symptoms	Possible Causes	Most Common Solutions
The trike does not work.	<ol> <li>Insufficient battery charge or loose wire connections.</li> <li>Battery not fully seated in the tray.</li> <li>Failure to follow power-up instructions.</li> <li>Brakes are applied, or the brake lever is not returning to its original position.</li> <li>The battery's discharge fuse has failed.</li> </ol>	<ol> <li>Charge the battery.</li> <li>Clean and repair the connectors.</li> <li>Install battery correctly.</li> <li>Turn on the e-bike in proper sequence.</li> <li>Disengage brakes.</li> <li>Replace discharge fuse.</li> </ol>
Irregular acceleration and/or reduced top speed.	1. Insufficient battery power.  2. Loose or damaged throttle.	1. Charge the battery or purchase a new one.  2. Replace the throttle.
The motor does not respond when the bike is powered on.	<ol> <li>Loose wiring.</li> <li>Loose or damaged throttle.</li> <li>Loose or damaged motor plug wire.</li> <li>Damaged motor.</li> </ol>	<ol> <li>Repair and/or reconnect.</li> <li>Tighten or replace.</li> <li>Secure or replace.</li> <li>Repair or replace.</li> </ol>
Reduced range.	<ol> <li>Low tire pressure.</li> <li>Low or faulty battery.</li> <li>Driving with too many hills, headwind, braking, and/or excessive load.</li> <li>Battery discharged for a long period of time without regular charges, aged, damaged, or unbalanced.</li> <li>Brakes rubbing.</li> </ol>	<ol> <li>Adjust tire pressure.</li> <li>Check the connections or charge the battery.</li> <li>Assist with pedals or adjust the route.</li> <li>Balance the battery; contact mechanic if reduced range persists.</li> <li>Adjust the brakes.</li> </ol>
The battery can not be charged.	<ol> <li>Charger not well connected.</li> <li>Charger damaged.</li> <li>Battery damaged.</li> <li>Wiring damaged.</li> <li>Blown charge fuse.</li> </ol>	<ol> <li>Adjust the connections.</li> <li>Replace.</li> <li>Replace.</li> <li>Repair or replace.</li> <li>Replace charge fuse.</li> </ol>
The wheels or motor make strange noises.	Loose or damaged wheel spokes or rim.     Loose or damaged motor wiring.	1. Tighten, repair, or replace.  2. Reconnect or replace the motor.

#### **Error Detection**

Your electric tricycle is equipped with an error detection system integrated into the display and controller. If the electronic control system breaks down, an error code should be displayed. The following error codes are the most common and can aid in troubleshooting. If your electric tricycle has an error code displayed at any time, it is recommended that you cease operation and contact us immediately.

Error Code Definition Table				
Error Code	Error Name		Error Code	Error Name
E021	Abnormal current.		E024	Hall component failure.
E022	Throttle failure.		E025	Brake handle failure.
E023	Motor phase trike.		E026	Communication failure.

**PLEASE NOTE:** A communication error appears when the display is not properly receiving data from the controller. Possible causes are as follows:

- 1. (a) The wiring harness connecting the display to the controller is unplugged or broken. (b) The display is not compatible with the controller. (c) The internal circuits of the display are damaged.
- 2. The Hall component in your motor may be failing or not properly connected.
- 3. The throttle may be failing, improperly connected, or damaged. When released, it may not be returning to the correct position.
- 4. Motor phase failure caused by loose or incorrect connections or short-circuiting.
- 5. Brake failure caused by improper connections, damage, or the brake levers not returning to the fully released position.
- 6. Abnormal current caused by failure of transistors in the motor.

#### Additional Information about Wear

Components of e-trikes are subject to a higher rate of wear compared to conventional trikes due to their faster speed and greater weight. This increased wear rate is not a product defect.

When the useful lifespan of a component is exceeded, it can fail suddenly, potentially resulting in serious injury to the rider, damage to property, or even death. It is your responsibility to regularly inspect your TK1's components for signs of wear, such as cracks, scratches, changes in color, or abnormal operation. These signs can indicate that a component is approaching the end of its useful life.



Worn components should be replaced immediately. If you are unfamiliar with e-trike maintenance, it is your responsibility to learn about it or consult a certified e-trike mechanic.

Important TK1 Specifications		
Maximum speed	16 Mph	
Maximum permissible load	400 LBS	

Important Battery Specifications		
Battery type	Lithium-ion	
Nominal voltage	48V	
Nominal Capacity	14.5Ah	

Important Motor Specifications		
Front wheel hub motor		
Power	≤500W	
Voltage	48V	

Important Controller Specifications		
Undervoltage protection value	41V	
Overvoltage protection value	20A	

Important Battery Charger Specifications	
Input voltage	AC 100-120V~50/60Hz 2.0A
Output voltage	54.6V DC
Output current	2A

#### IMPORTANT PRECAUTIONS

For the safety of yourself, your property, and your trike, it is your responsibility to read and follow the many warnings, cautions, and notices in this manual. Failure to read and heed these could result in serious injury to yourself and/or property, or even death.

#### **WARNING!**

Indicates a hazard or unsafe practice that will result in severe injury or death. Failure to read, understand and follow the safety information in this manual may result in serious injury or death.

#### CAUTION!

Indicates a hazard or unsafe practice that could result in minor injury.

#### NOTICE

Indicates a hazard unrelated to personal injury, such as property damage.

#### **User Responsibility**

#### **WARNING!**

Do not install any kind of battery powered motor or internal combustion engine. Do not install anypersonal injury or death, as well as loss of property.

All persons assembling, using, and maintaining the tricycle must read and understand the safety warnings and operating instructions in this manual before using the tricycle.

It is the responsibility of the user, or in the case of a child rider, an adult, to ensure the tricycle is properly maintained and in proper operating condition. Doing so will reduce the risk of injury. Always conduct regular maintenance and inspection of your tricycle. Complete the Safety Checklist at the end of this section before each use.

A responsible adult must always supervise the use of the tricycle by a child. You must ensure:

- The child is wearing the proper protective attire and approved tricycle helmet.
- The child is seated securely and the tricycle is properly fitted to the child.
- The child understands applicable laws and common sense rules of safely and responsibly riding a motorized tricycle.

#### Personal Safety

#### **WARNING!**

When riding your tricycle, always wear protective clothing, shoes, and a certified helmet. Ensure that nothing interferes with steering, braking, or pedaling. Failure to do so may result in serious injury or death. See **Figure 2**.

#### Protective Gear and Clothing

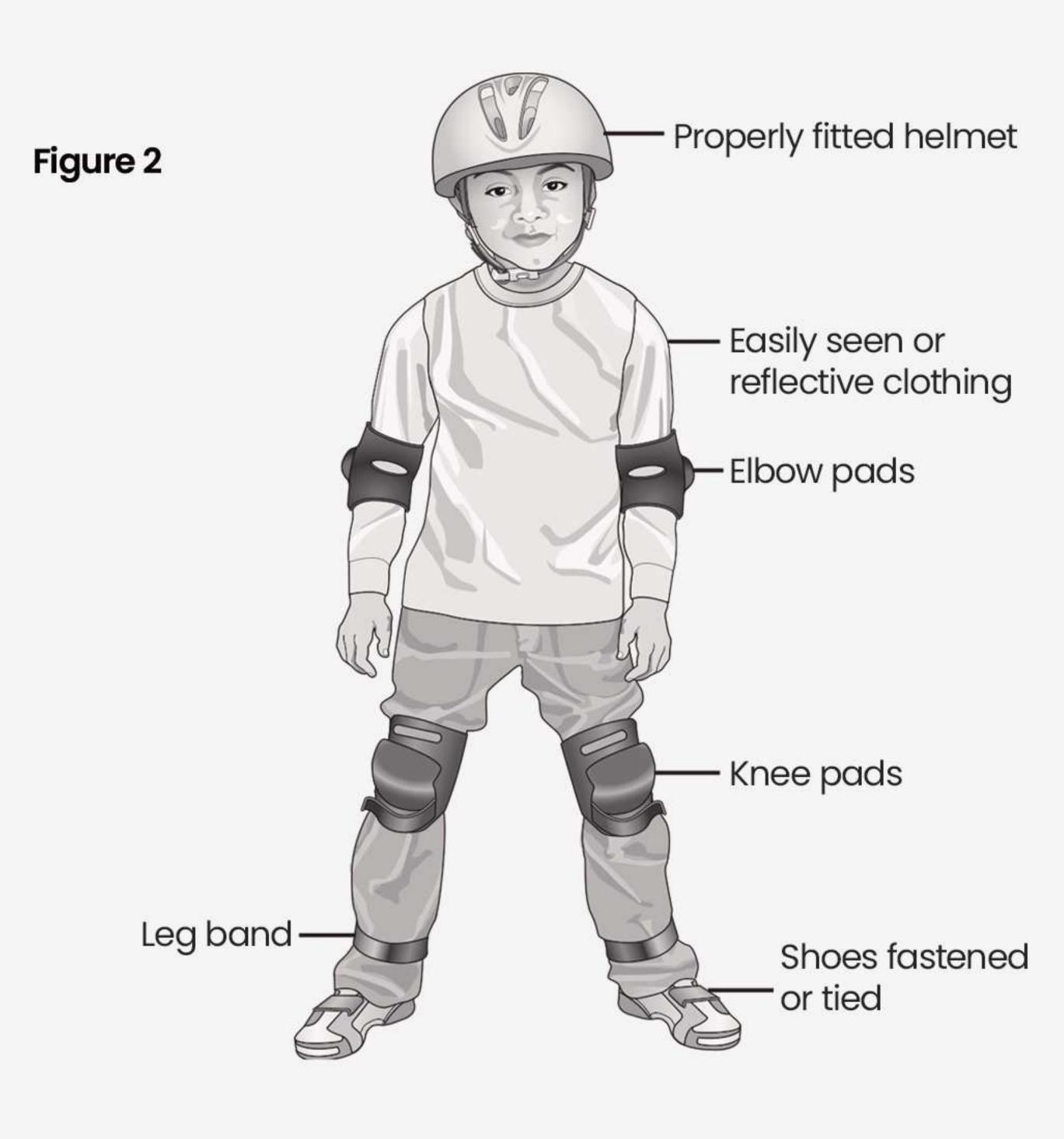
#### You are responsible to always wear the following:

- Colors that are easily seen and, if possible, reflective clothing.
- Clothing appropriate for the weather conditions.
- Use of protective gear such as pads for the knees and elbows is highly recommended for children.
- A properly fitted, ASTM or SNELL approved, bicycle helmet shall be worn at all times by anyone allowed to ride your tricycle.

#### **Clothing To Avoid:**

 Loose clothing parts, strings, or jewelry that may become entangled with moving parts or interfere with handling of your tricycle.

- Pants with loose pant legs. If necessary, always tuck pant legs into a sock or use a leg band to avoid the clothing becoming caught in the drive chain.
- Shoes with untied shoe laces.



#### Quick-release Levers

#### **WARNING!**

Improper setup or maintenance of the quick-release levers may result in an unexpercted movement, loss of control, and serious injury or death. Before riding always check that the quick-release lever is firmly locked in place and the seat does not move.

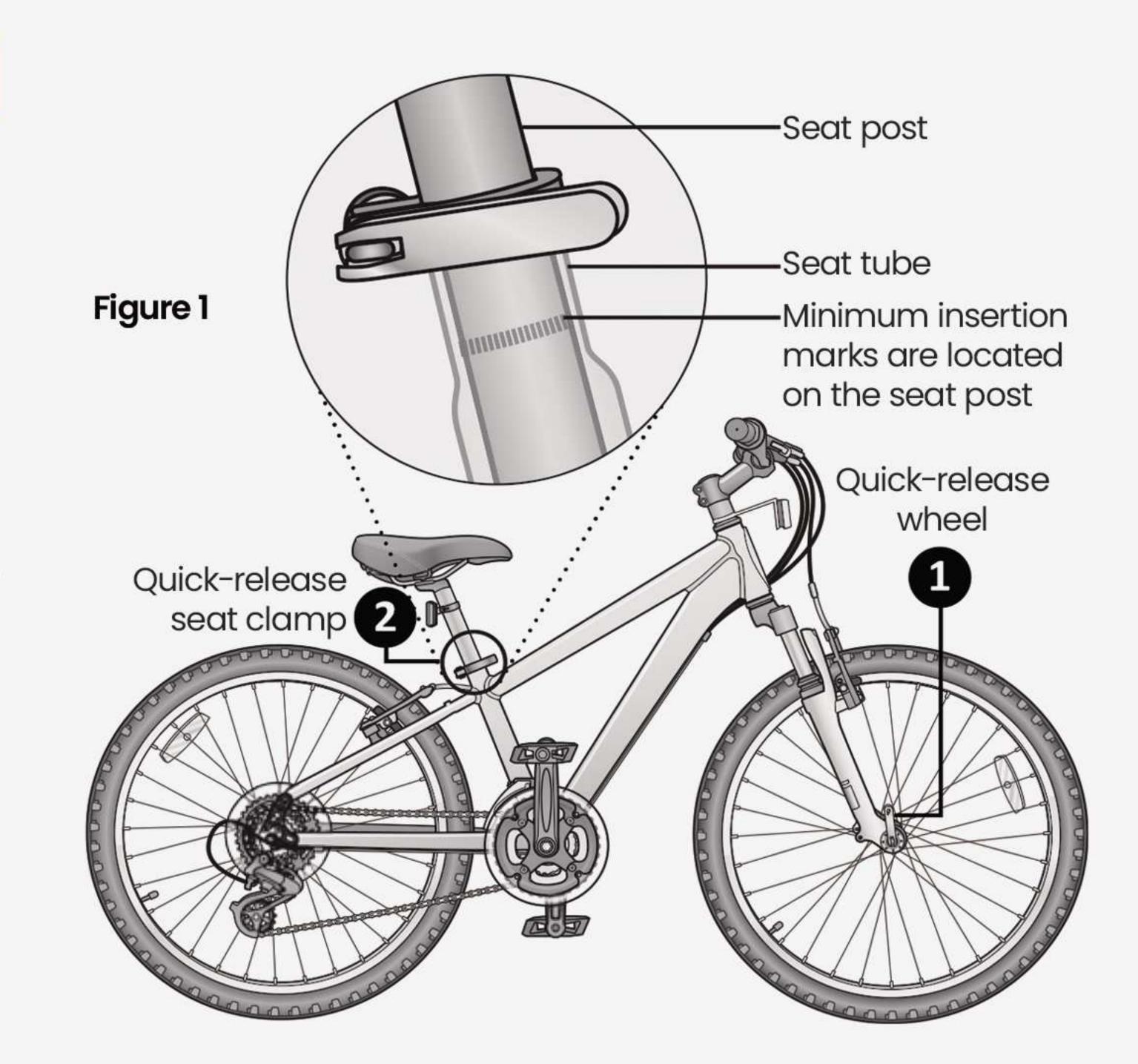
#### Wheels

 Some tricycles will come equipped with quick-release levers for the front wheel. The wheels must be securely locked. Ensure the wheel quick-release lever is firmly locked in place. Figure 1

#### Seat Post

2 Ensure the seat post's minimum insertion marks are not visible above the quick-release seat clamp and the clamp is locked in place.

Note: See Section 4: Adjusting the Seat Height if adjustments are needed.



#### Helmet Use

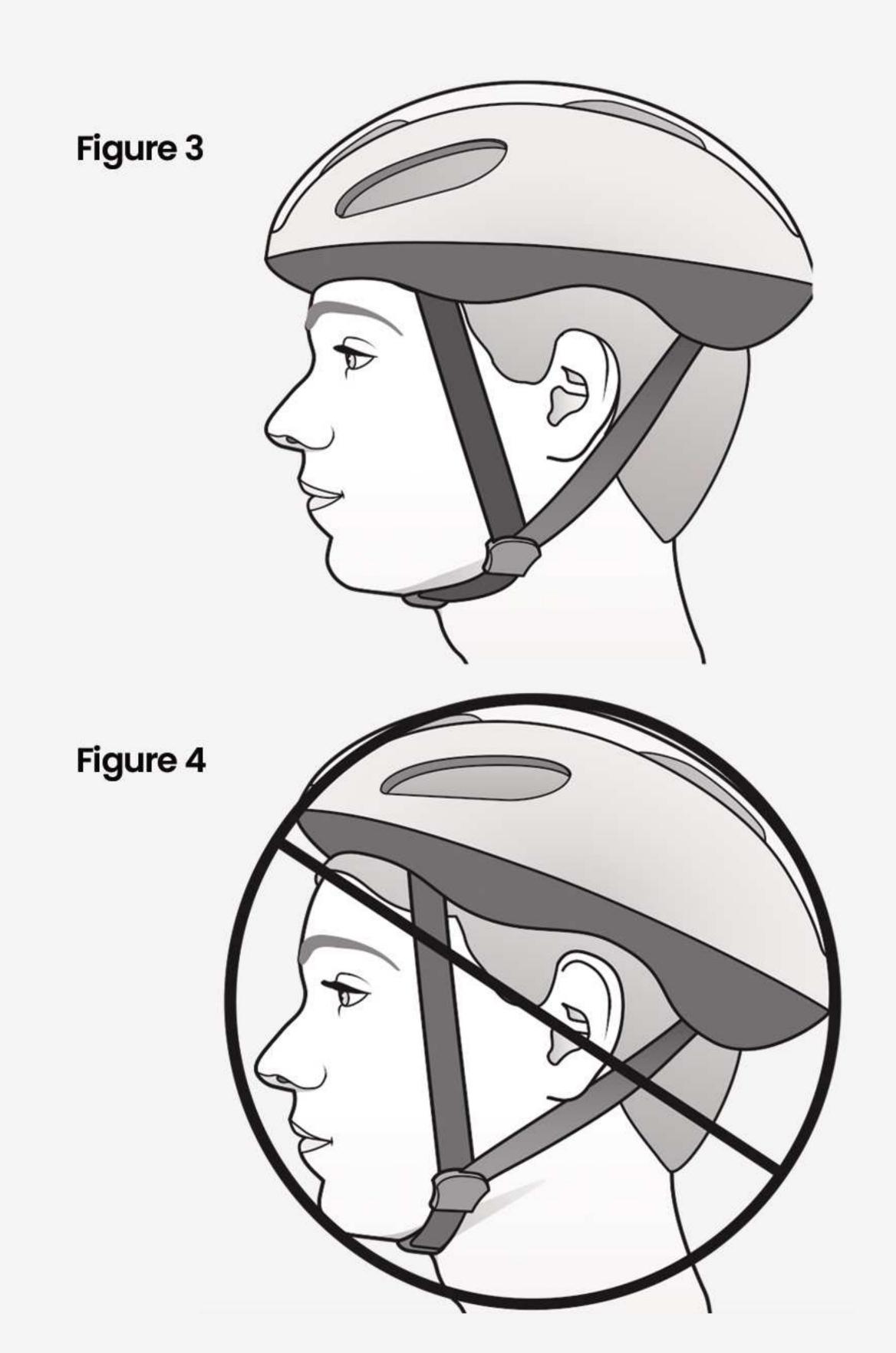
Important! Many states and provinces have passed helmet laws. Make sure you know your state's helmet laws. It is your job to enforce these rules with your children. Even if your state/province does not have a children's helmet law, it is recommended that everyone wear a helmet when cycling. When riding with a child carrier seat or trailer, children must wear al helmet.

#### Your certified helmet should... (see Figure 3)

- Be comfortable
- Have good ventilation
- Fit correctly
- Cover forehead

#### Incorrect helmet position: Figure 4

Helmet does not cover the forehead



#### Reflectors

#### **WARNING!**

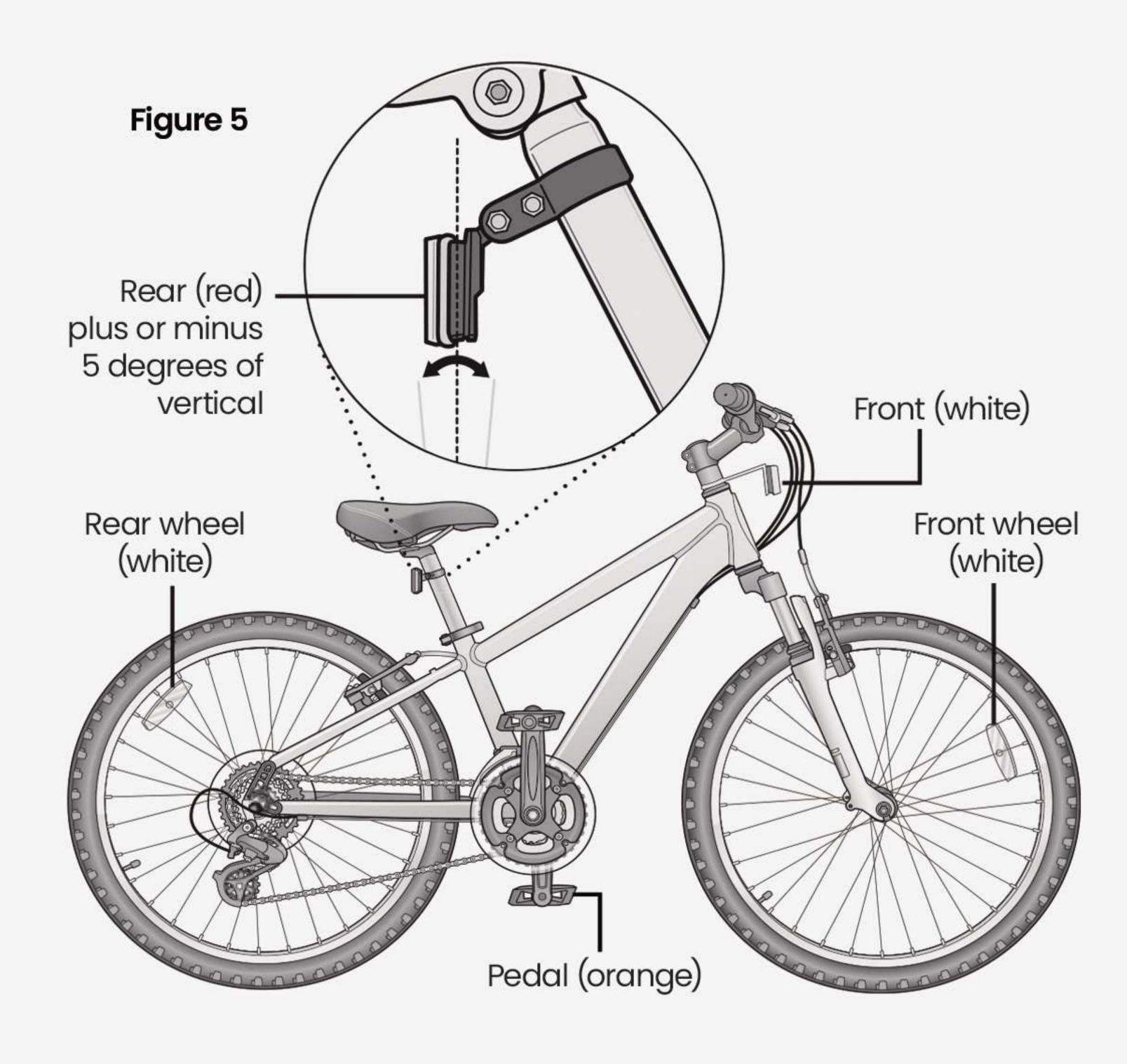
Missing, damaged, or dirty reflectors will affect the ability of others to see and recognize you as a moving cyclist, increasing the risk of being hit, serious injury or death. Always check the reflectors are in place and make sure they are clean, straight, unbroken and securely mounted before riding the tricycle.

Important! Federal regulations require every tricycle over 16 inches to be equipped with front, rear, wheel, and pedal reflectors. Many states require specific safety devices. It is your responsibility to familiarize yourself with the laws of the state where you ride and to comply with all applicable laws, including properly equipping yourself and your trike as the law requires.

Tricycles under 16 inches are considered "sidewalk tricycles" and may not be fitted with reflectors. These tricycles should not be ridden on streets, at night or unsupervised by an adult.

Check and confirm the front and rear reflectors are in the correct position: **Figure 5** 

- Front Reflector: Should aim forward (when viewed from above) and be mounted so it is within 5 degrees of vertical.
- Rear Reflector: Should aim straight back (when viewed from above) and be mounted so it is within 5 degrees of vertical.



#### Riding Safety

#### **WARNING!**

Riding the tricycle in unsafe conditions (i.e. at night), in an unsafe manner, or disregarding traffic laws may result in an unexpected movement, loss of control, and serious injury or death.

#### **General Safety**

- Familiarize yourself with all the tricycle's features before riding. Practice gear shifts, braking, and the use of toe clips and straps, if installed.
- Always ride defensively in a predictable, straight line. Never ride against traffic.
- Expect the unexpected (e.g., opening car doors or cars backing out of concealed driveways).
- Take extra care at intersections and when preparing to pass other vehicles.
- Maintain a comfortable stopping distance from all other riders, vehicles and objects. Safe braking distances and forces are subject to the prevailing weather conditions. Do not lock up the brakes. When braking, always apply the rear brake first, then the front. The front brake is more powerful and if it is not correctly applied, you may lose control and fall.
- Always use the correct hand signals to indicate turning or stopping, as well as the trikes turn signal lights.

- Obey the traffic laws (e.g., stopping at a red light or stop sign, giving way to pedestrians).
- Wear proper riding attire, reflective if possible, and avoid open toe shoes.
- Do not use items that may restrict your hearing and vision.
- Do not carry packages or passengers that will interfere with your visibility or control of the bicycle.

#### **Road Conditions**

- Be aware of road conditions and concentrate on the path ahead. Avoid potholes, gravel, wet road markings, oil, curbs, speed bumps, drain grates, and other obstacles.
- Cross train tracks at a 90 degree angle or walk your bicycle

#### **Wet Weather**

- When riding in wet weather always wear reflective clothing and use safety lights to enhance visibility.
- Exercise extreme caution when riding in wet conditions.
- Ride at a slower speed. Turn corners gradually and avoid sudden braking.
- Brake earlier, it will take a longer distance to stop.
- Pot holes and slippery surfaces such as line markings and train tracks all become more hazardous when wet.

#### **Night Riding**

- Important! Riding a tricycle at night is not recommended. Check your local laws regarding night riding.
- Ensure tricycle is equipped with a full set of correctly positioned and clean reflectors.
- Use a white light on the front and a red light on the rear. Use lights with flashing capability for enhanced visibility.
- If using battery powered lights, make sure batteries are well charged.
- Wear reflective and light colored clothing. Wear reflective clothing and use safety lights for increased visibility.
- Ride at night only if necessary. Slow down and use familiar roads with street lighting.

#### Hill Technique

- Gear down before a climb and continue gearing down as required to maintain pedaling speed.
- On the descent, use the high gears to avoid rapid pedaling.
- Do not exceed a comfortable speed; maintain control and take additional care.
- Braking will require additional distance. Initiate braking slowly and earlier than usual.

#### **Cornering Technique**

#### Before You Ride Safety Checklist

Before every ride, it is important to carry out the following safety checks. Do not ride a tricycle that is not in proper working condition!

#### Accessories

- The reflectors are properly placed and not obscured.
- All other fittings on the tricycle are properly and securely fastened, and functioning.
- O The rider is wearing a properly fitted helmet (protective gear if necessary) and that clothing and loose items are properly constrained.

#### Bearings

O All bearings are lubricated, run freely and display no excess movement, grinding or rattling.

#### Brakes

- The front and rear brakes work properly.
- O The brake pads are not overly worn and are correctly positioned in relation to the discs.
- O The brake control cables are lubricated, correctly adjusted and display no obvious wear.
- The brake control levers are lubricated and tightly secured to the handlebar.

#### Chain

The chain is oiled, clean and runs smoothly.

- Brake slightly before cornering and prepare to lean your body In the same direction you are turning. This also applies for curves.
- Maintain the inside pedal at the 12 o'clock position and slightly point the inside knee in the direction you are turning.
- Keep the other leg straight, do not pedal through fast or tight corners.
- Decrease your riding speed, avoid sudden braking and sharp

#### Safe Riding Rules for Children

- Many states require that children wear a helmet while cycling. Always wear a properly fitted helmet.
- Do not play in driveways or the road.
- Do not ride on busy streets.
- Do not ride at night.
- Obey all the traffic laws, especially stop signs and red lights.
- Be aware of other road vehicles behind and nearby.
- Before entering a street: Stop, look left, right, and left again for traffic. If there's no traffic, proceed into the roadway.
- If riding downhill, be extra careful. Slow down using the brakes and maintain control of the steering.
- Never take your hands off the handlebars, or your feet off the pedals when riding downhill.

#### Cranks and Pedals

- The pedals are securely tightened to the crank arms.
- The crank arms are secured to the axle and are not bent.

#### Frame and Fork

- The frame and fork are not bent or broken.
- The quick-release clamps are locked in place.

#### Steering

- The handlebar and post are correctly adjusted and tightened, and allow proper steering.
- O The handlebars are set correctly in relation to the forks and the direction of travel.
- The handlebar binder bolt is tightened.

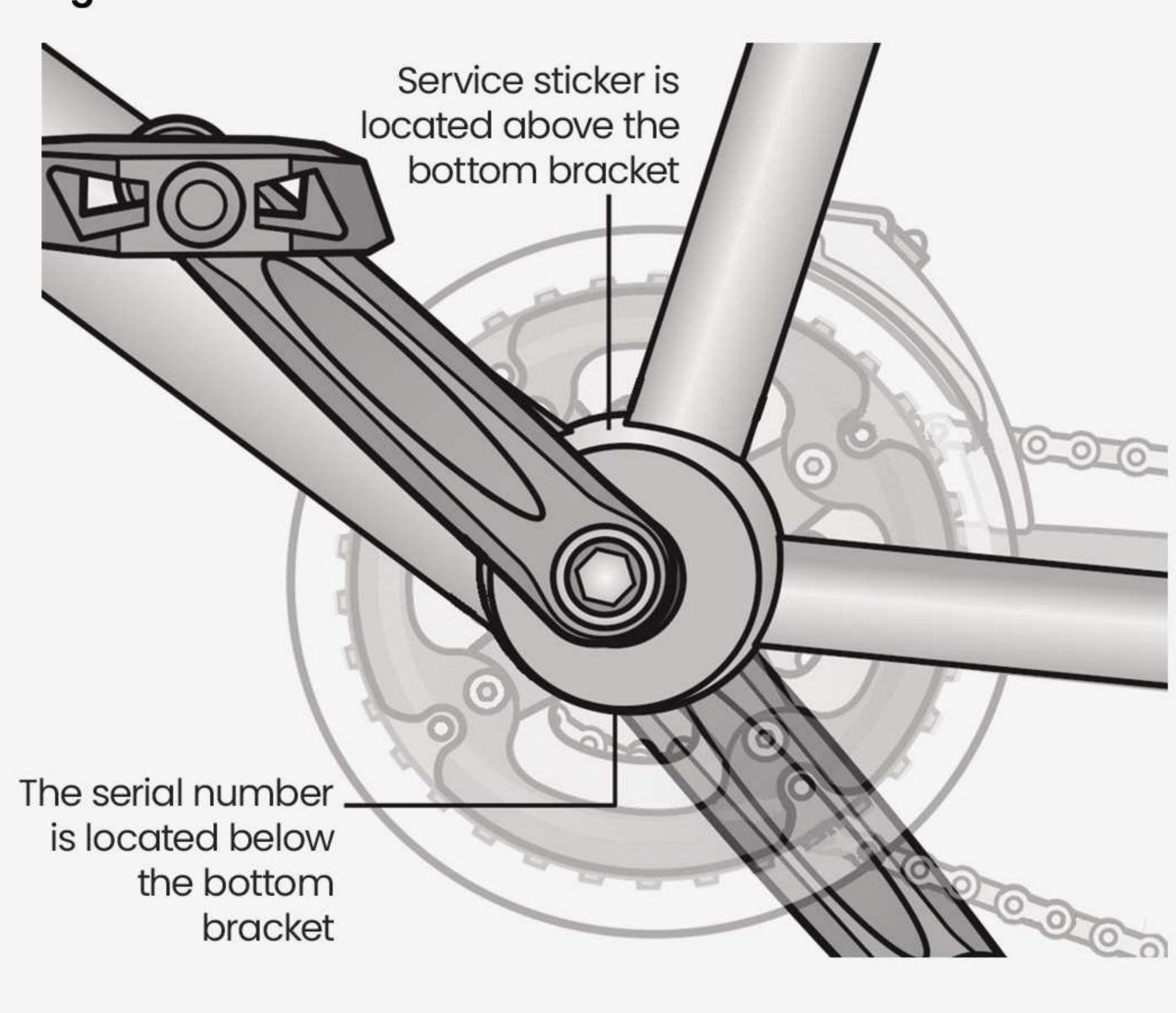
#### Wheels and Tires

- O The rims do not have dirt or grease on them.
- The wheels are properly attached to the bicycle and axle.
- O The tires are properly inflated within the recommended pressures displayed on the tires sidewall.
- O The tires have the proper amount of tread, no bulges or excessive wear.

After assembly is completed, you will need to make a few adjustments—such as to the brakes, derailleur, and seat height. If you need assistance with questions or replacement parts, please send an email to support@mooncool.com and include your order number and serial number. See Figure 6.

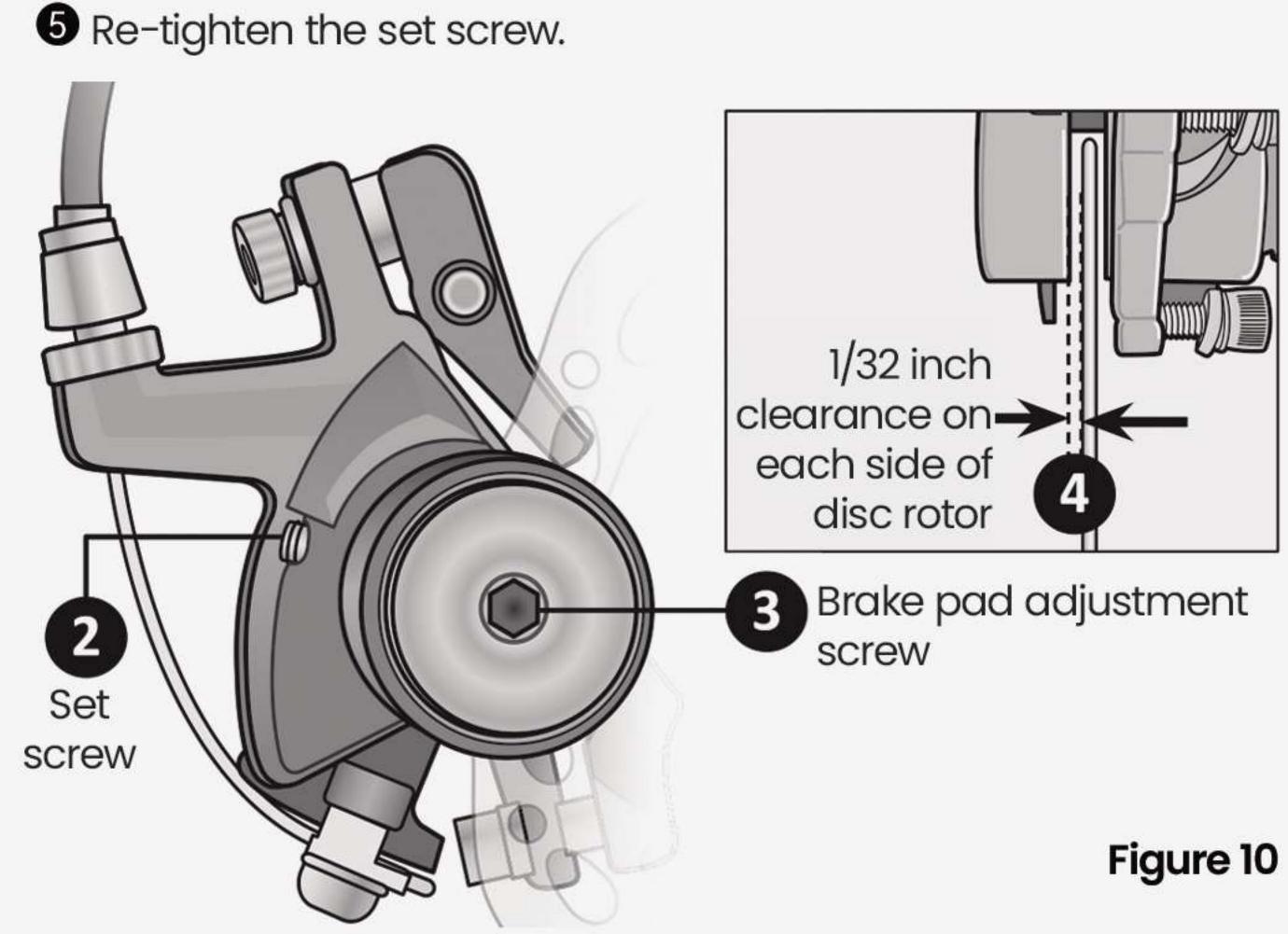
Please allow for possible delays due to time zone differences.

Figure 6



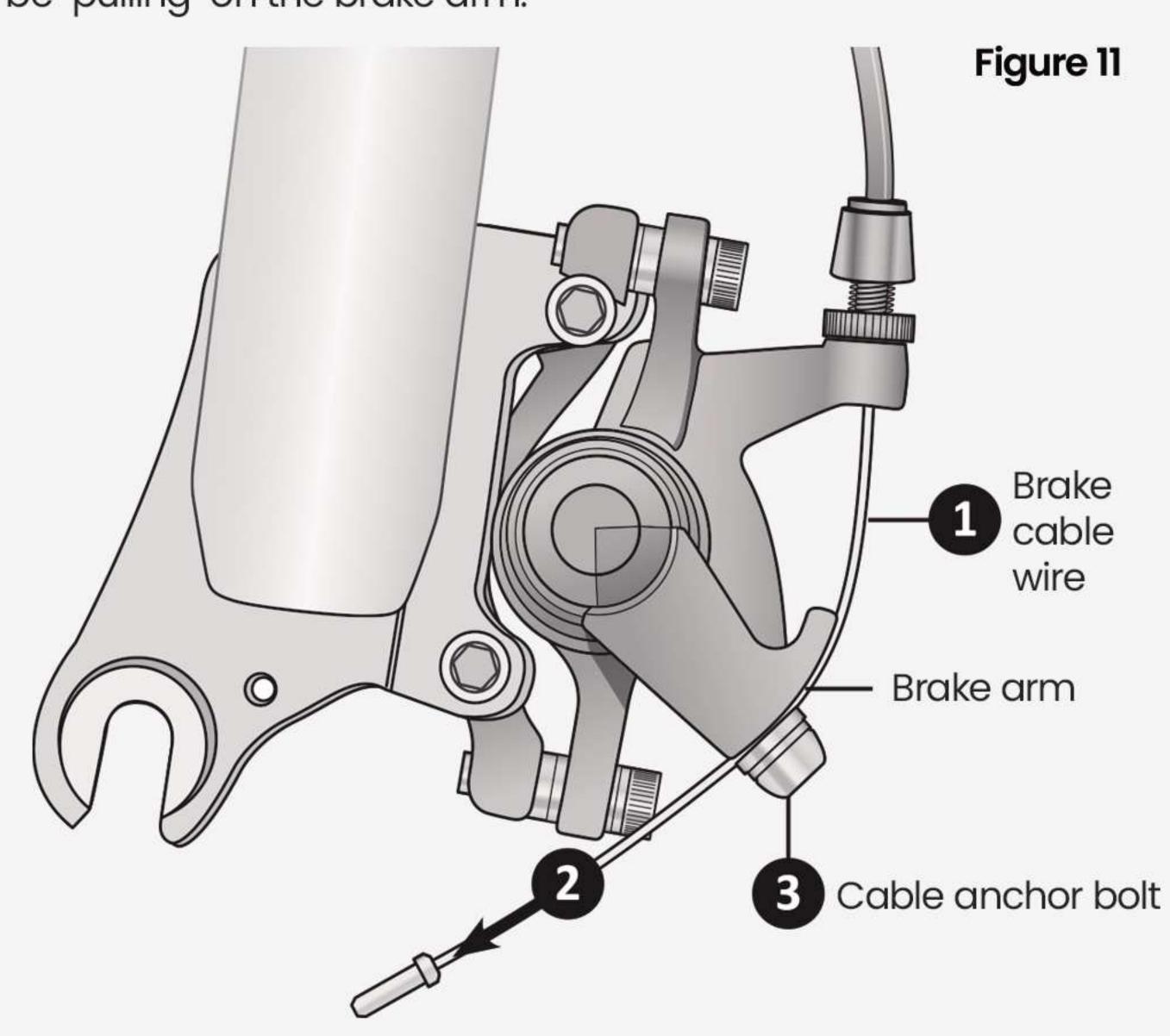
#### Center the Brake Pads

- 1 Insert a 1/32" spacer gage between the disc rotor and brake pad. **Figure 10**
- 2 Using a 2.5mm Allen wrench, loosen the set screw.
- 3 Using a 5mm Allen wrench, turn the brake pad adjustment screw to move the brake pad. Turning the pad clockwise moves it towards the disc rotor, counterclockwise moves the pad away from the disc rotor.
- 4 Adjust the pad until the gap between the disc rotor and the brake pads are even (1/32" per side).



#### Attaching the Brake Cable to the Brake Arm

- 1 If the brake cable wire is not attached to the brake arm then loosen the cable anchor bolt until you can see a gap large enough for the brake cable wire. Figure 11
- 2 Pull on the brake cable wire and place it under the cable anchor bolt.
- Tighten the cable anchor bolt. Note: The brake cable should not be "pulling" on the brake arm.



#### Adjusting the Disc Brake

#### **WARNING!**

Disc brakes are sharp, keep fingers away from the brake caliper and rotor. If fingers contact the disc brake while the wheel is turning serious injury may occur.

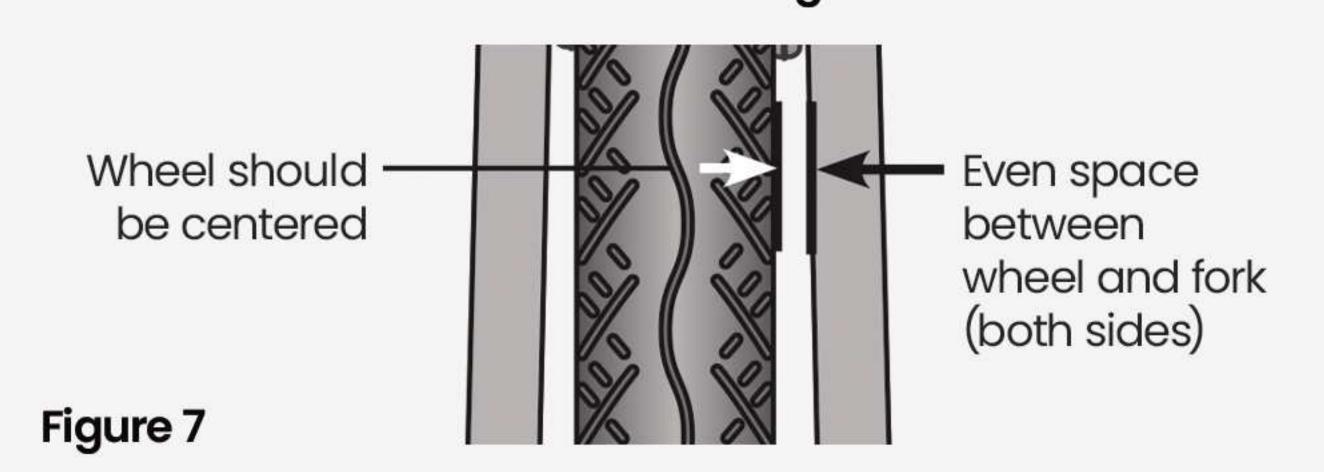
Important! Different types of disc brakes may require specific adjustments not covered in this section. If you are unsure of what needs to be done please consult a bike shop.

Misalignment of the disc brake may be due to the following:

- The wheel is not centered.
- The caliper body is misaligned.
- The brake pads are not centered.

#### Center the Wheel

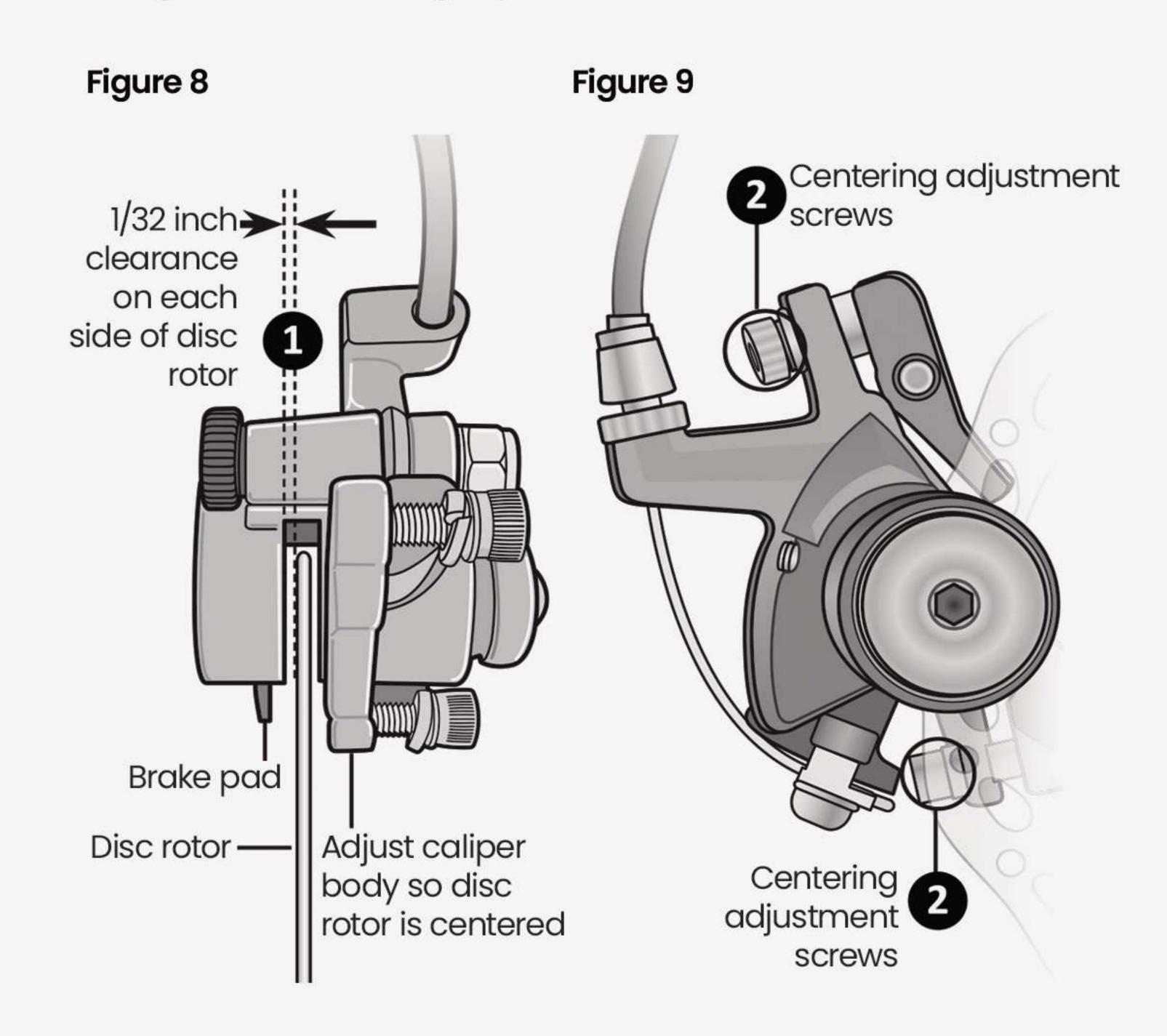
Rotate the wheel and look at the gap between the rim and fork. If the gap is uneven, loosen the axle nuts and adjust until the wheel and disc rotor are centered. Figure 7



#### Realign the Caliper Body

Using a 5mm Allen wrench, loosen the two centering adjustment screws. Adjust the caliper body until the gap between the disc rotor and the brake pads in the caliper body is even (1/32" per side). **Figure 8** 

2 Tighten the centering adjustment screws.



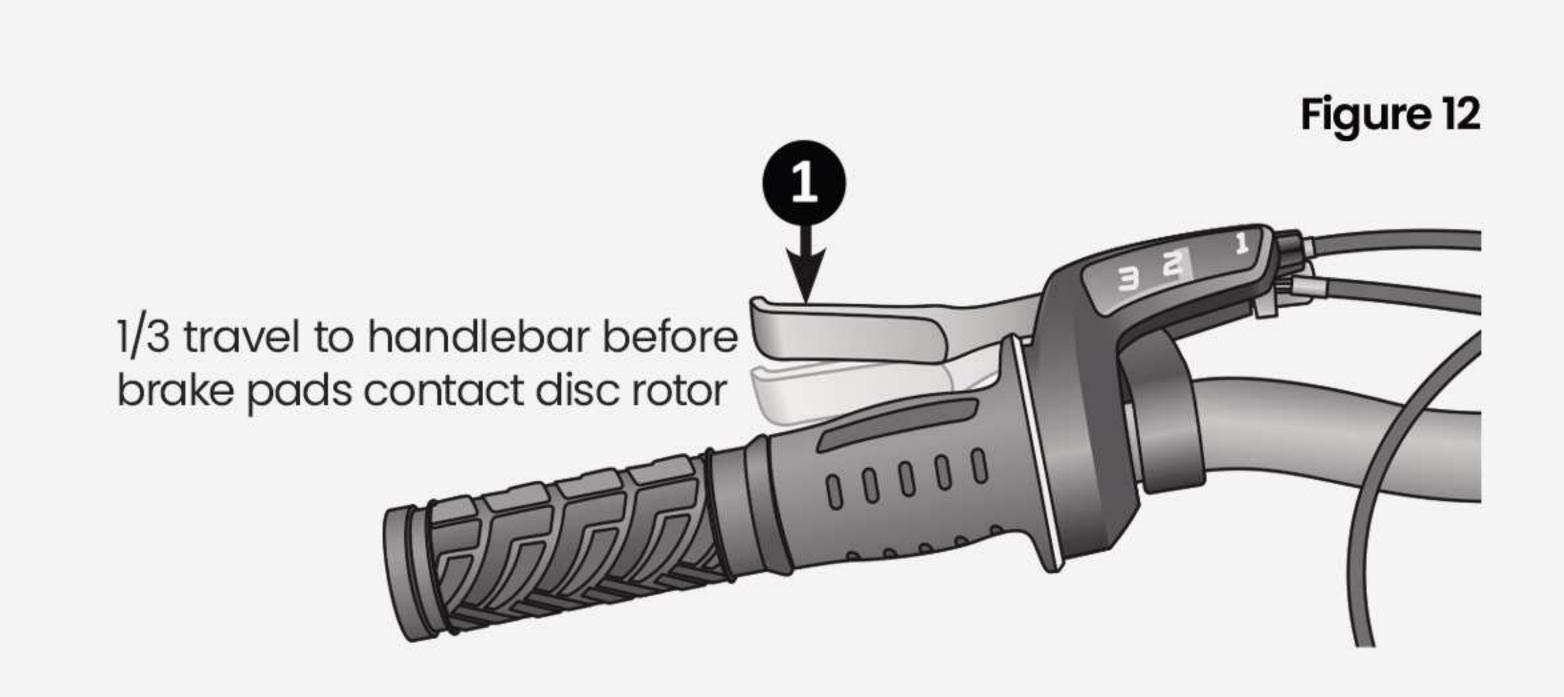
#### Adjusting the Cable Tension

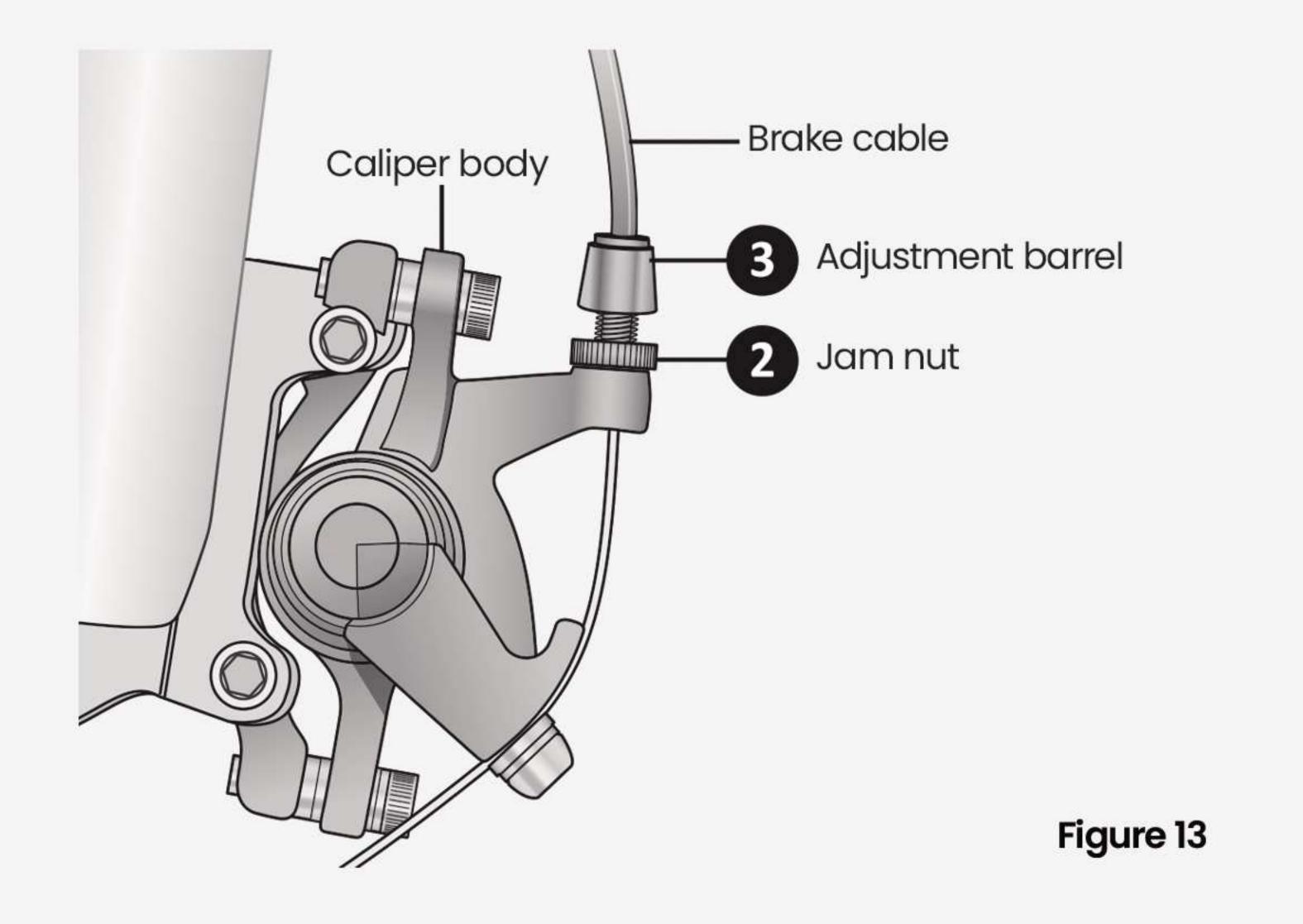
- 1 Check that the brake cable tension allows the brake lever about 1/3 of the travel before the brake pads contact the disc rotor. If the cable has stretched or slipped, re-adjust the brake cable tension. Figure 12
- 2 At the caliper body, or brake lever, slightly loosen the jam nut that is next to the adjustment barrel. Figure 13
- 3 Turn the adjustment barrel to adjust the cable tension. Turning clockwise will loosen the brake cable tension, counter-clockwise will tighten the brake cable tension.
- Re-check that the brake cable tension allows the brake lever to move about 1/3 of the travel before the brake pads contact the disc rotor. Once you have the desired brake tension, tighten the jam nut.

#### Brake is correctly adjusted when:

- The brake pads do not drag on the disc rotor.
- Both brake pads move away from the disc rotor equally when the brake is released.
- When the brake is applied, the brake pads contact the disc rotor before the brake lever reaches about 1/3 of the way to the handlebar.

After brake adjustment, squeeze the brake lever as hard as you can several times and re-inspect if the wheel and brake pads are centered. If necessary, repeat brake adjustments. Roll the trike forward and squeeze each brake lever in turn to check for effective stopping power.





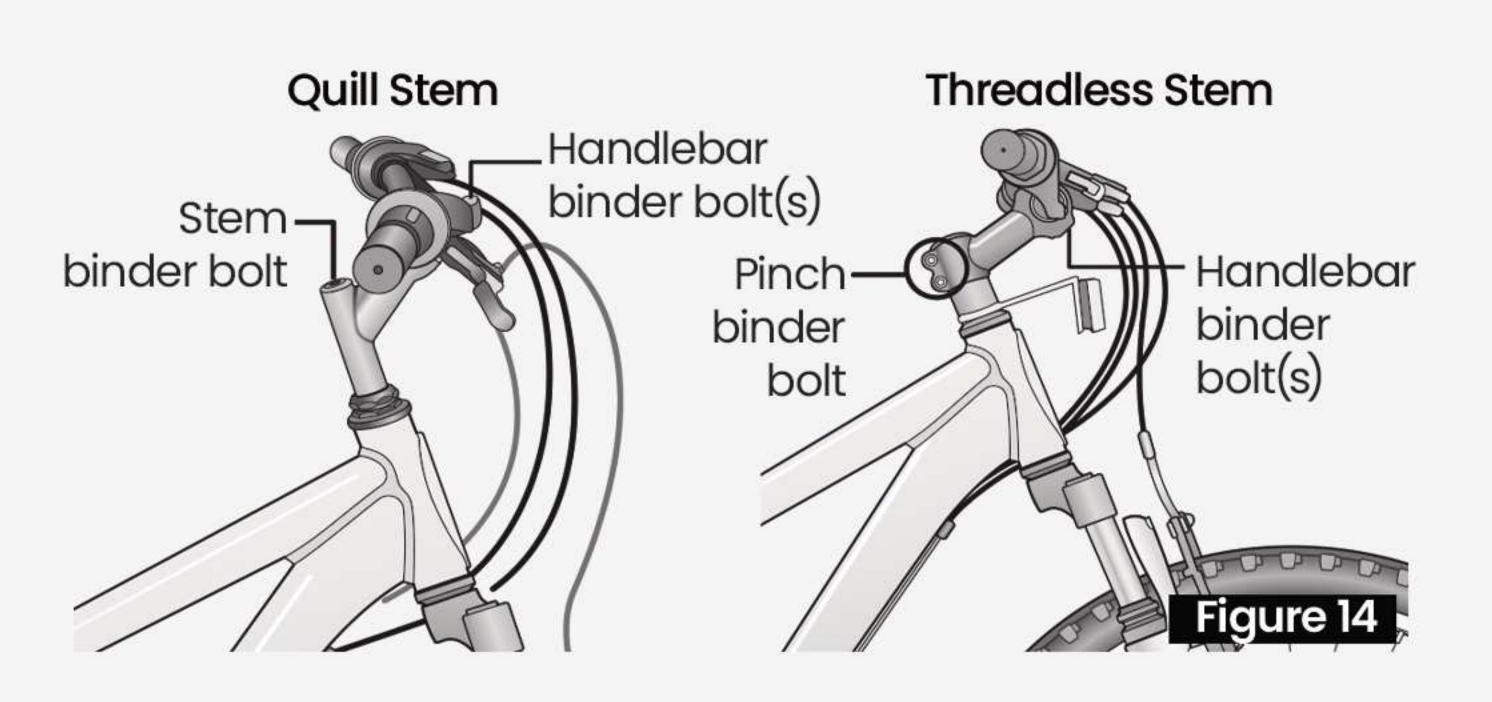
#### Adjusting the Handlebar

#### **WARNING!**

- Always check for improper handlebar movement before every ride—your safety depends on it! Failure to do this check could result in serious injury or death and/or damage to your trike. Also, ensure that the minimum insertion mark on the stem post is not visible above the headset.
- Failure to properly tighten handlebar components may result in loss of control, serious injury or death. Always check the handlebar cannot move and is secured to the frame before riding the bicycle.

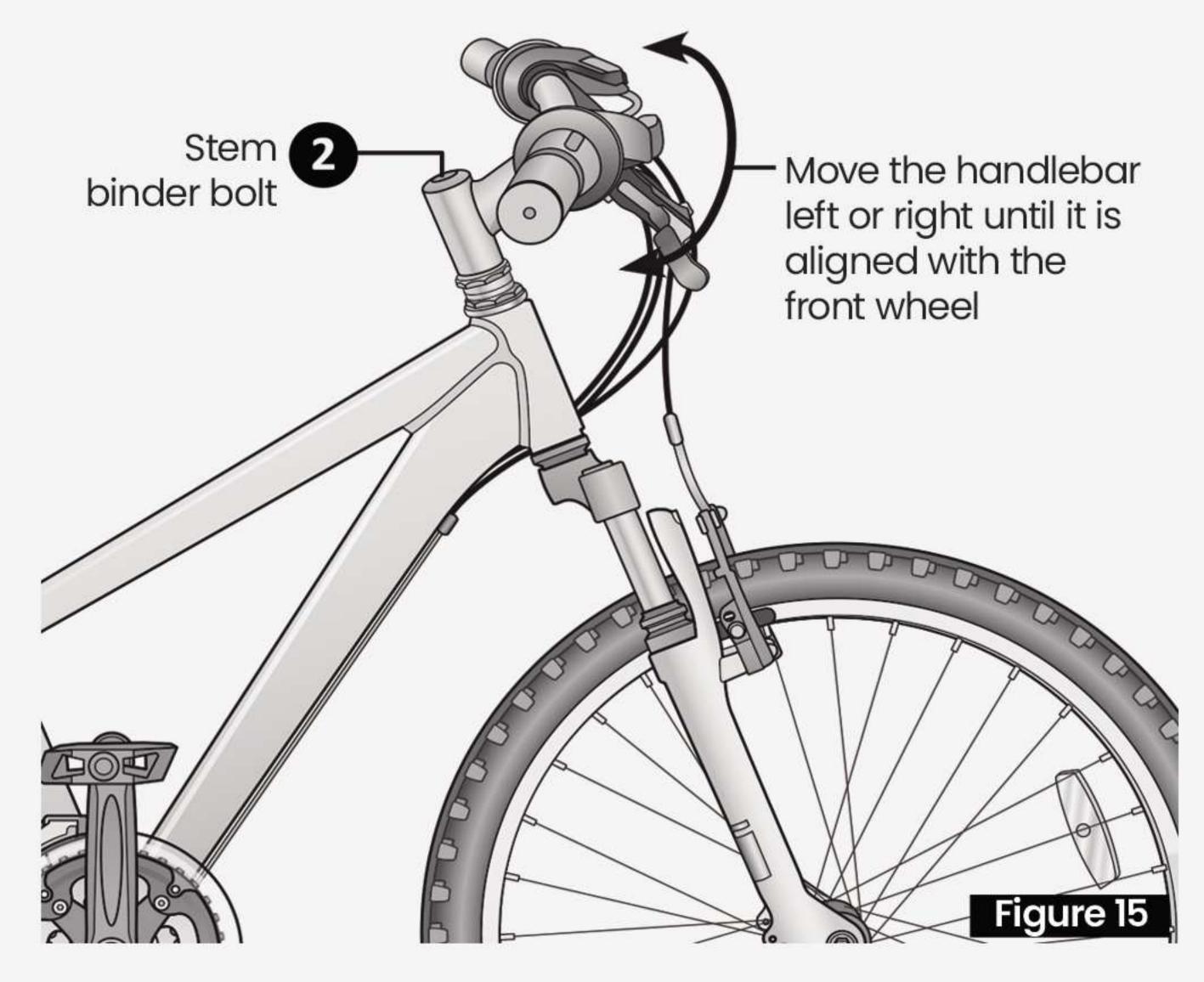
#### Adjusting the Handlebar Height

Instructions for adjusting the handlebar height depend on whether your trike has a quill or clamp (threadless) stem.



#### Align the Handlebar (with quill stem)

- 1 Stand in front of the handlebar and hold the front wheel between your legs.
- 2 Using an Allen wrench, loosen the stem binder bolt and move the handlebar left or right until it is aligned with the front wheel. Figure 15
- 3 Tighten the stem binder bolt and check the handlebar is securely attached and cannot move.

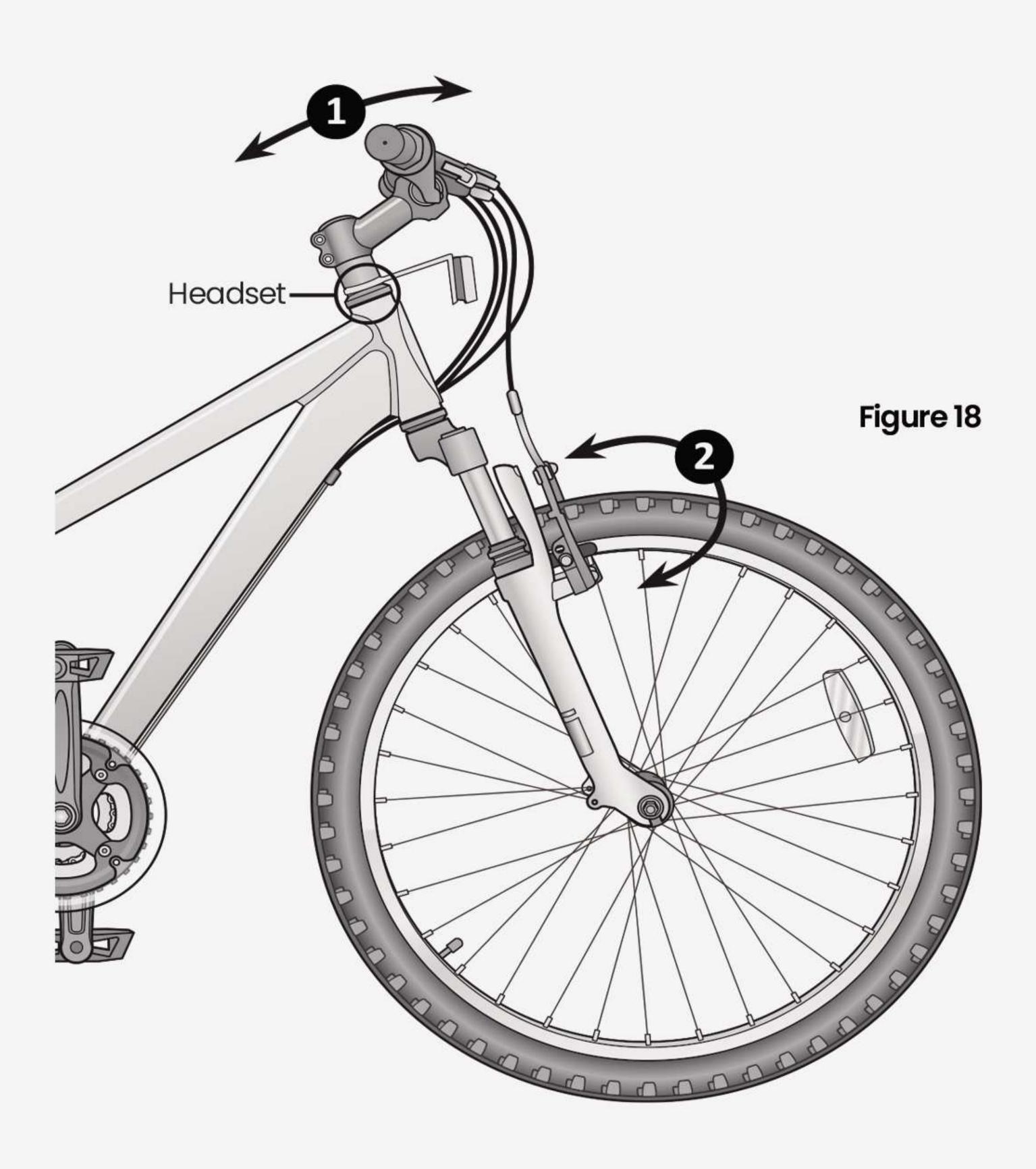


#### Adjusting a Threadless Headset

Threadless headsets are similar to threaded headsets, they use two sets of bearings and bearing cups. Unlike a threaded headset, a threadless headset does not have an upper threaded race or use a threaded steerer tube. Instead the steerer tube extends from the fork all the way through the head tube and above the headset and is held in place by the stem clamped on

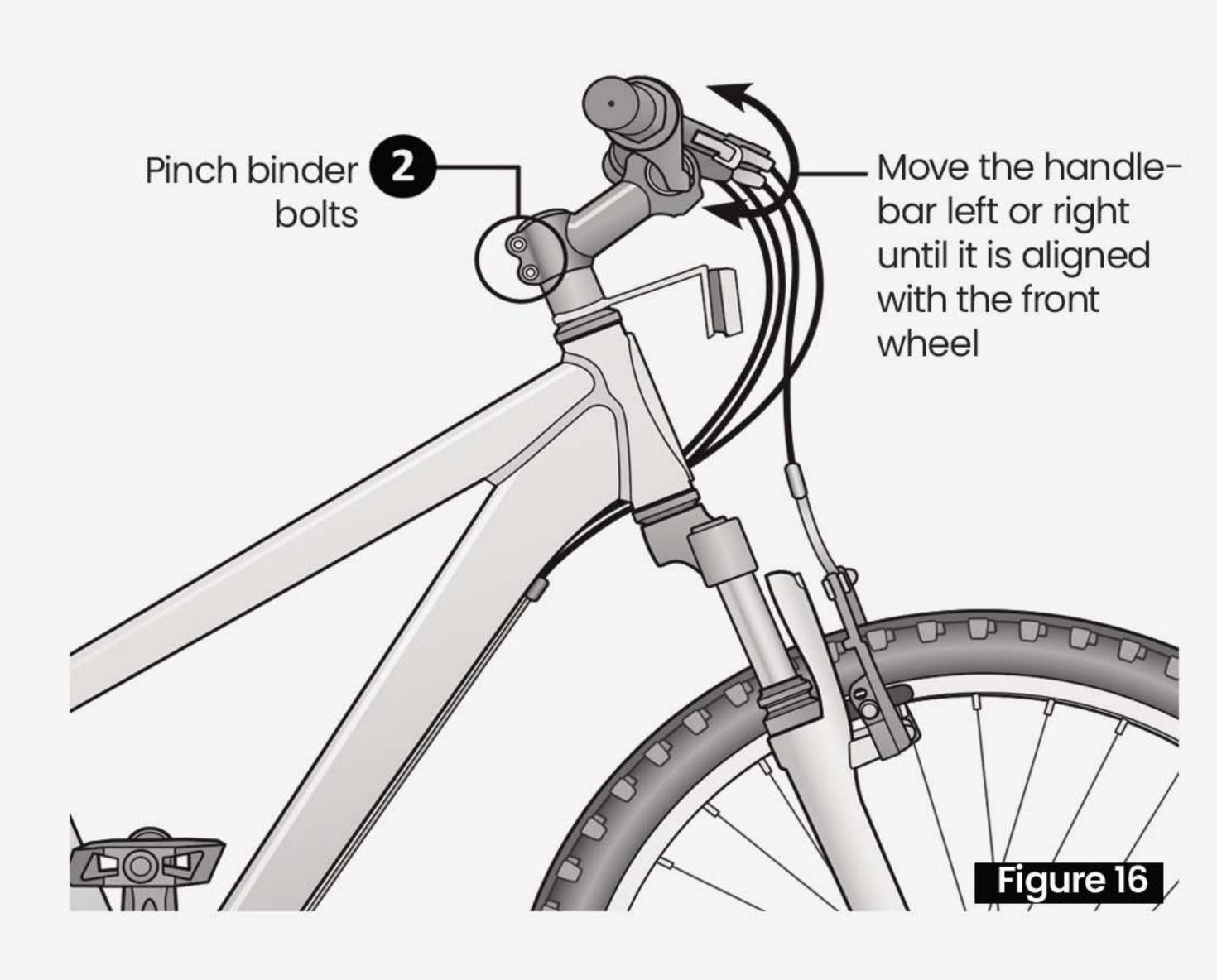
Conduct the following checks to determine if there is play in the headset:

- 1 Shakiness: Apply the front brake and push the handlebars back and forth, front to back or if the bicycle is on a workstand and the front wheel removed, push and pull on the forks. If you feel a knocking sensation or "clunk" it means the headset is too loose. Important! Use care with suspension forks, because the legs may have play in sliders. Grab upper portion of fork. Figure
- 2 Stiffness: Lift the front of the frame so the front wheel is off the ground. The handlebar and wheel should flop to one side or another. If there is drag or binding the headset is too tight.



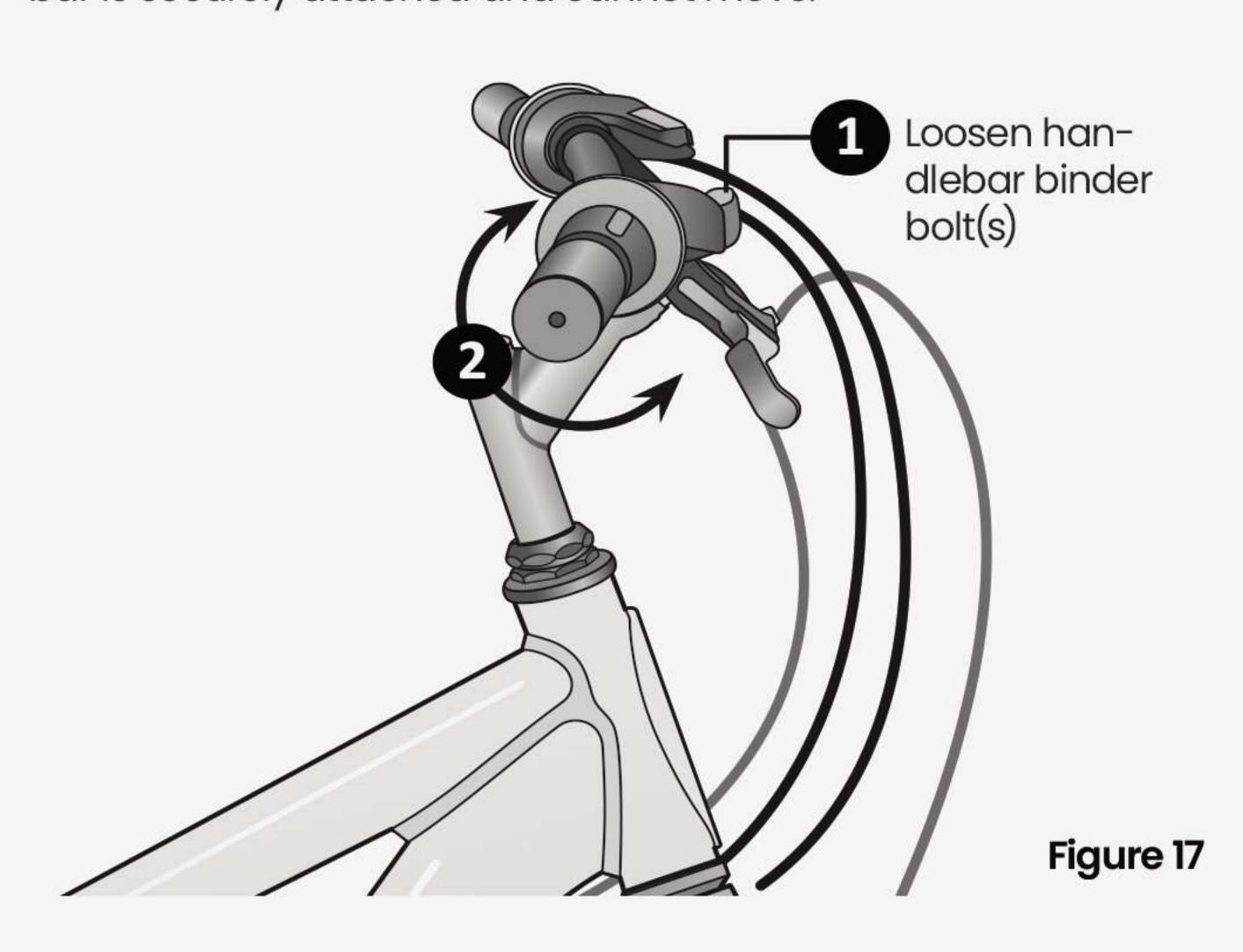
#### Align the Handlebar (with threadless stem)

- 1 Stand in front of the handlebar and hold the front wheel between your legs.
- 2 Using an Allen wrench, loosen the pinch binder bolts and move the handlebar left or right until it is aligned with the front wheel. **Figure 16**
- 3 Tighten the stem binder bolt and check the handlebar is securely attached and cannot move.



#### Adjust the Handlebar Angle (all stem types)

- Using an Allen wrench loosen the handlebar binder bolt(s). Figure 17
- 2 Rotate the handlebar into the desired position.
- 3 Check that the handlebar is centered to the frame and front wheel. Sit on the seat and check your reach to grips, shifters and brakes. Refer to Section 1, Fig. 1.2: Seat Height and Handlebar Reach for guidelines.
- Tighten the handlebar binder bolt(s) and check the handlebar is securely attached and cannot move.



#### Adjusting the Headset Tension

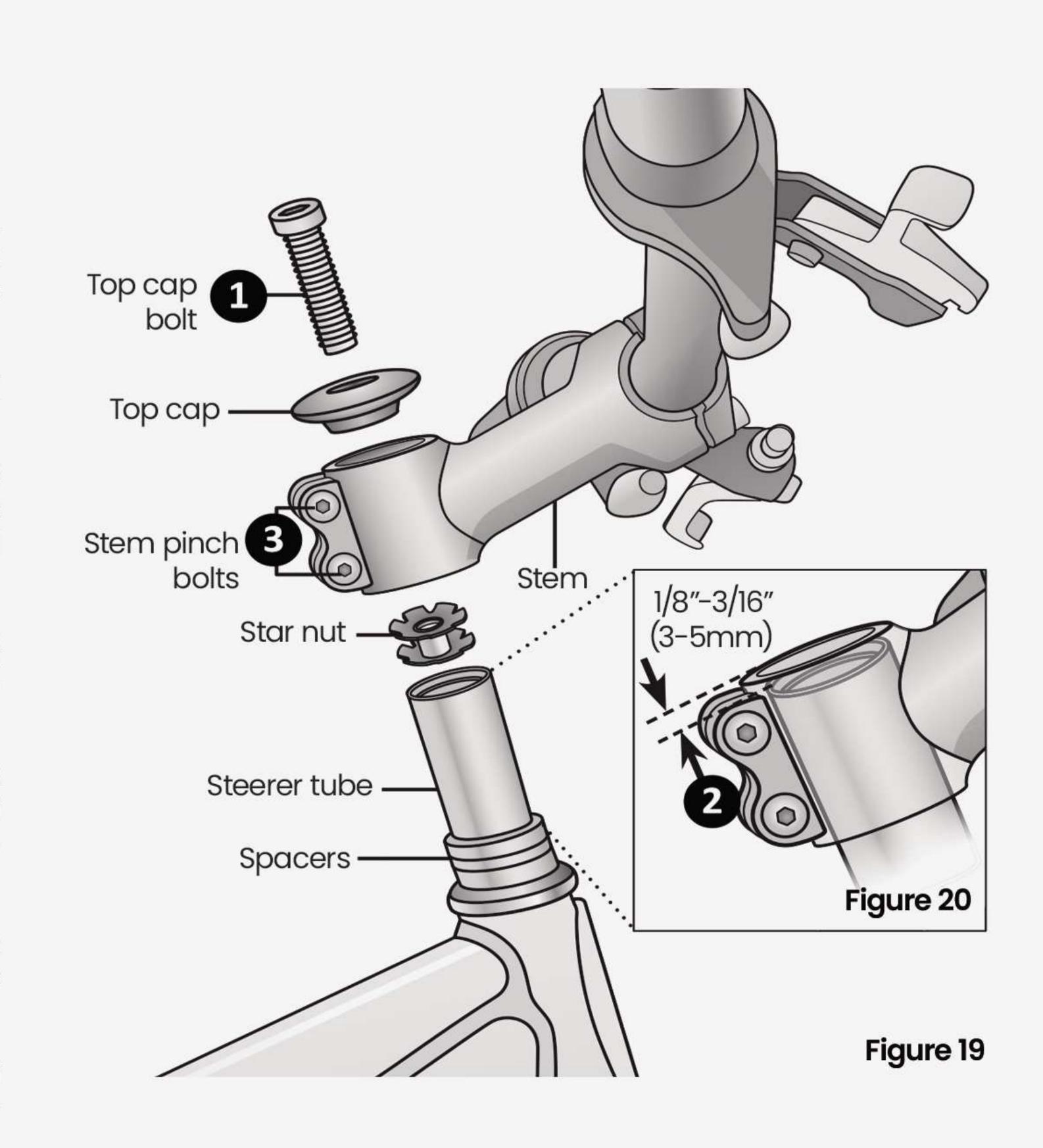
1 Loosen the top cap bolt and remove the top cap.

Important! Do not disassemble the headset or loosen any parts. Be sure the end of the fork is on the ground or being held with your free hand, because once you loosen the top cap the fork assembly may fall out of the frame. Figure 19

2 Check that the gap between the top of the steerer tube and top of the stem is between 3-5 mm (1/8" -3/16"). Figure 20

If the gap is not correct add or remove spacers until it is. The stem needs to press down on the spacers in order to adjust the bearings. If the gap is correct then re-install the top cap and tighten the top cap bolt until it is snug. Do not over tighten.

- 3 Slightly loosen the stem pinch bolts. The stem probably won't move but make sure the stem remains aligned with the fork and wheel.
- Re-install and tighten the top cap down with a 1/4 to 1/2 turn of the top cap screw and test for shakiness in the headset. If there is still play in the headset then turn the top cap bolt another 1/4 to 1/2 turn. Repeat this process until the shakiness is gone.
- **5** Lift up the front wheel of the bicycle, if the wheel **does not** move freely left to right the top cap bolt is too tight. If this is the case turn the top cap bolt back some.
- 6 Repeat steps 3 and 4 until there is no play in the headset. If the play in the headset cannot be rectified with these adjustments, please consult a bike shop or qualified mechanic.



Failure to follow all local and state regulations and laws pertaining to tricycle use as well as the safety warnings in this manual may result in serious injury or death. Always follow all local and state regulations and laws pertaining to tricycle use, follow the safety warnings in this manual and use common sense when riding the tricycle. Always conduct a pre-ride check of the tricycle condition before riding.

#### **Brake Operation**

#### **A WARNING!**

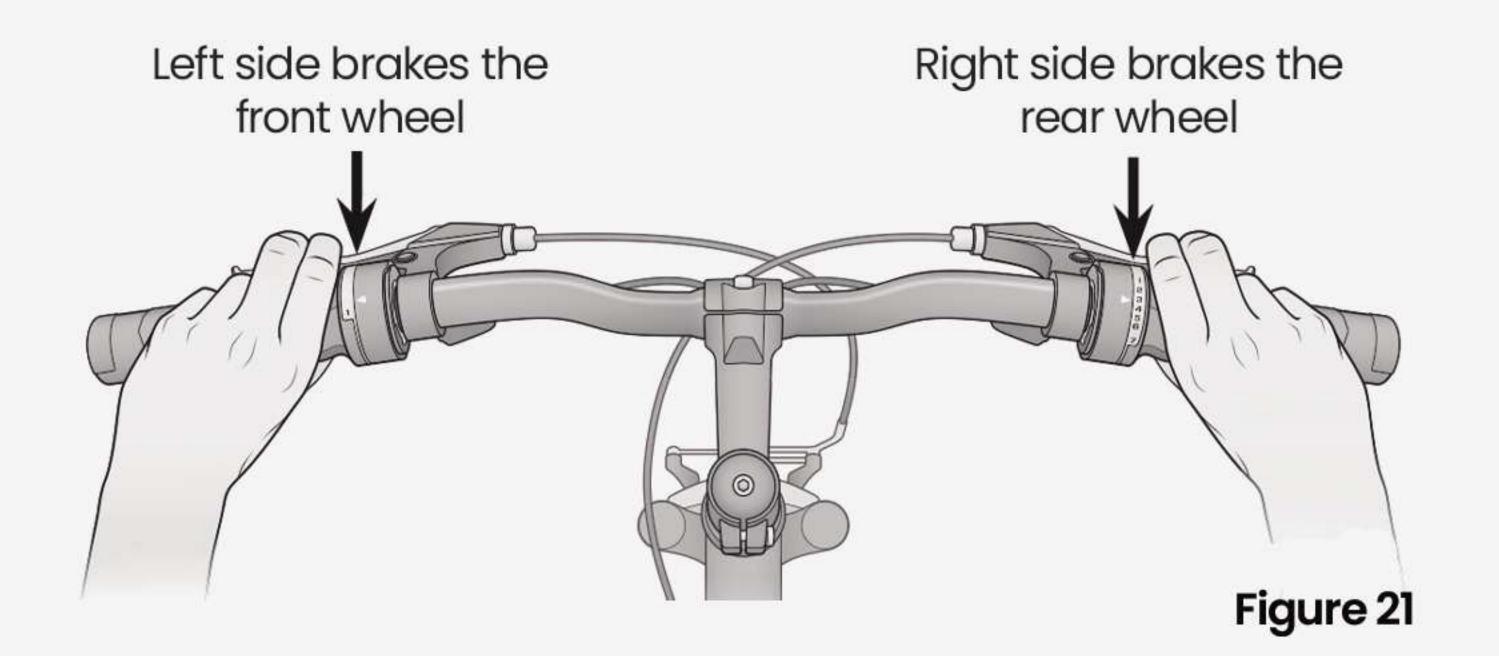
- If the front brake is applied too quickly or too hard, the front wheel can stop turning resulting in a front pitch over or cause the bicycle to lose steering function leading to a crash.
- Disc brake rotor's become hot during use and can burn the skin if contacted. Do not touch or come in contact with the disc rotor when it is hot. Allow it to cool before touching.

Hand operated brakes have a separate hand lever to operate front and rear brakes. Front hand brake levers are located on the left side of the handlebar, and rear hand brake levers are located on the right side of the handlebar. **Figure 21** 

You may operate one brake at a time, or all together, however, be careful to pay close attention to front brakes locking up. To avoid this:

- Apply both brakes simultaneously, while shifting your body weight back slightly to compensate for braking force.
- As terrain changes, the rider must practice and learn how the tricycle will respond in a new terrain or weather change. The same tricycle will react differently if it is wet, or if there is gravel on the road etc.
- Always test the brakes and be sure you feel comfortable with the reaction. If the riding conditions are too steep (off road for example) and you are unsure, dismount the tricycle and walk past the questionable terrain before riding again.
- Remember that as you apply the brakes your weight will want to shift forward, and the wheels will want to stop.

Note: See Section 4: Adjusting the Brakes for information on brake adjustment.



#### Using the Rear Shifter

The rear shifter (right) will have an indicator that reads either low to high or a series of numbers from 1 and up. Low or "1" is the lowest gear. This is used for slower riding, hill climbing, or to allow for easier pedaling. It is recommended to start off in this gear and move through the gears as speed increases or as comfortable.

#### **Using the Front Shifter**

Note: Not all models have a front shifter. The front (left) shifter will have an indicator that reads either low to high or a series of numbers from 1 and up. Low or "1" is the lowest gear. The front shifter acts much like the rear shifter, but the change between gears is greater. This means that one shift at the rear derailleur will result in a subtle change in pedaling speed, but one shift at the front derailleur will result in a large change in pedaling speed. Think of the front shifter as a range: low and high or low, medium, and high. Low is used for slower riding, hill climbing, or to allow for easier pedaling. It is recommended to start off in this gear and move through the gears as speed increases or as comfortable.

#### To Use the Trigger-style Shifter

please consult a bike shop or qualified mechanic.

**Left shifter:** Use your index finger to shift down to a lower gear, and your thumb to shift up to higher gear. **Figure 22** 

#### Trigger-style Shifter

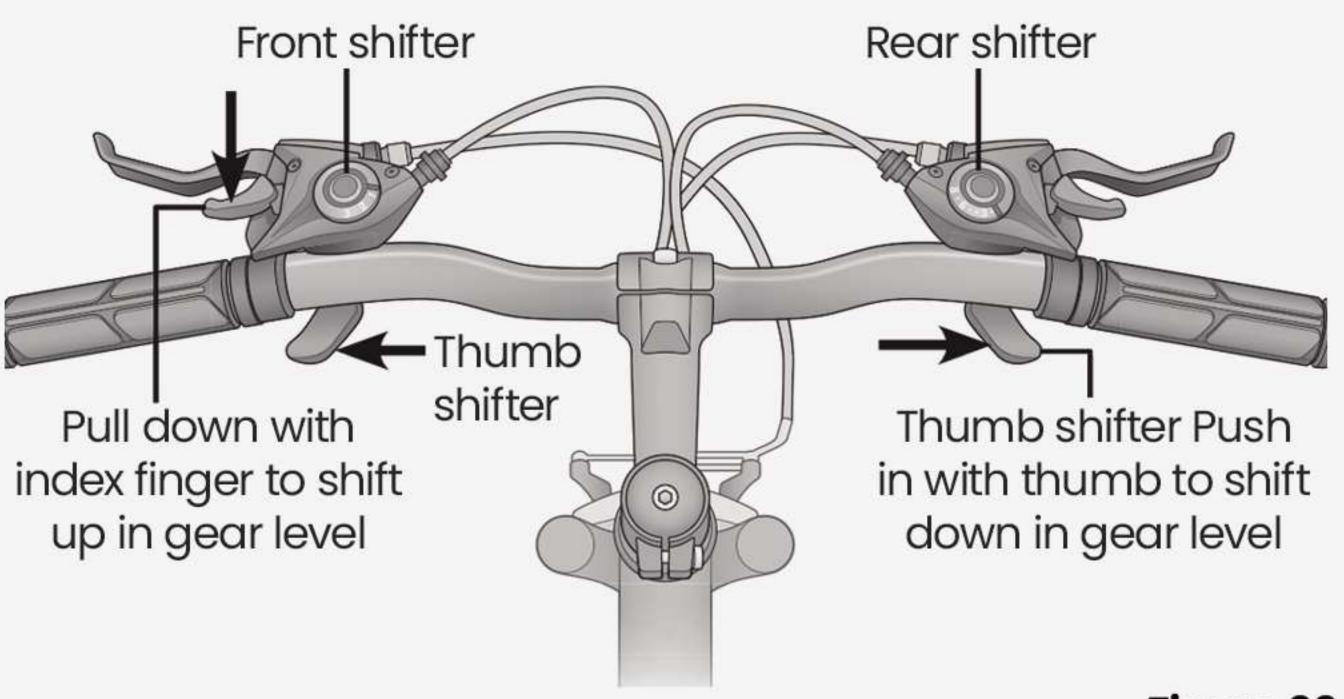


Figure 22

#### Gear Operation

#### **A WARNING!**

Improper shifting can result in the chain jamming, or becoming derailed resulting in loss of control, serious injury or death Always be sure the chain is fully engaged in the desired gear before pedaling hard. Avoid shifting while standing up on the pedals or under load.

Important! Best practices for proper shifting:

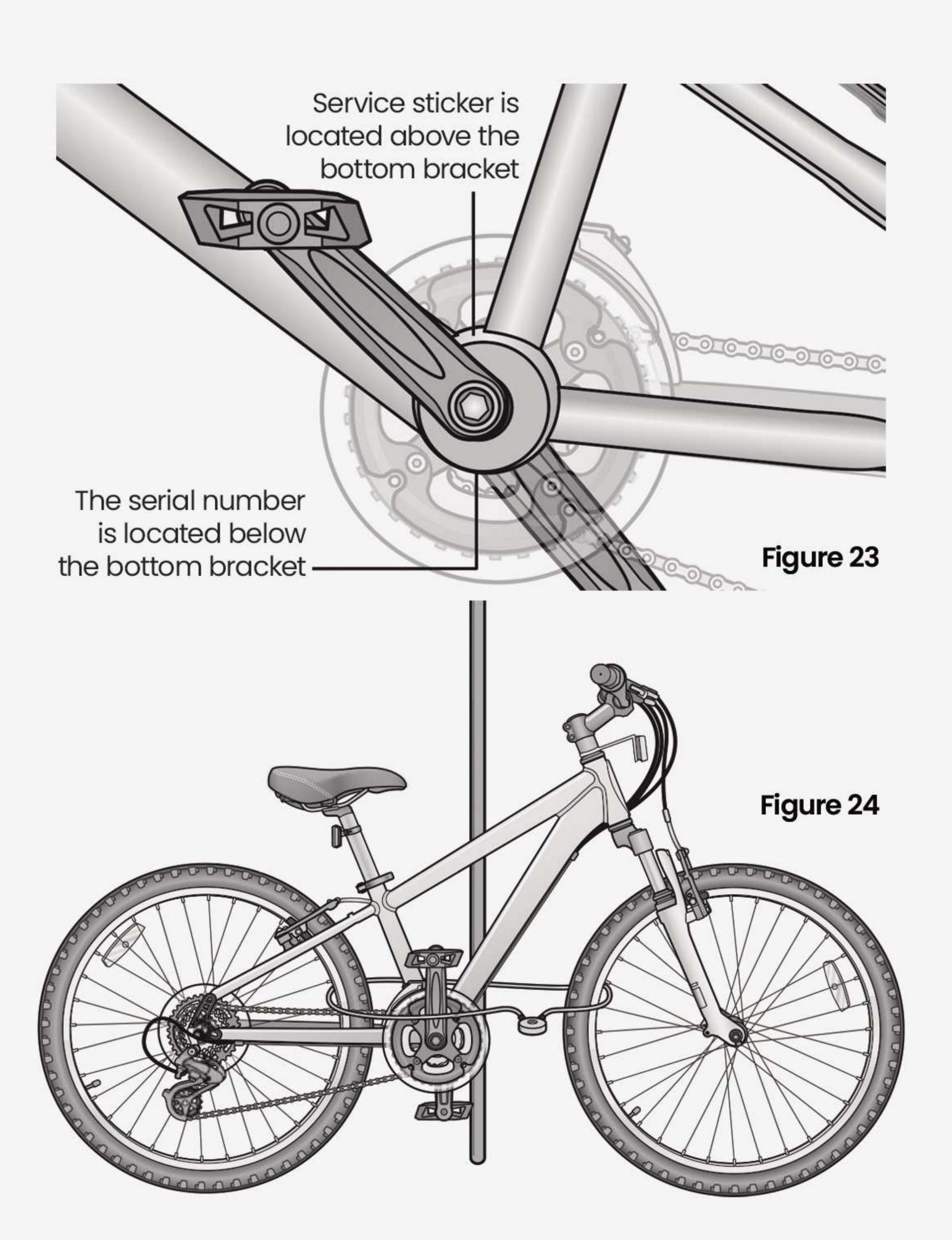
- Relax 50% of the pressure on the pedals just before shifting, and only shift one gear at a time. Ensure that the chain is fully engaged in that gear before resuming normal pressure on the pedals.
- It is OK to ride the whole time in only one gear if this is comfortable.
- Shift only while pedaling forward and seated. When shifting, lessen the pressure exerted on the pedals during the shift.
- Once you have successfully shifted gears, it is OK to start to pedal hard if desired.
- Pedaling hard while shifting can cause the chain to skip and not engage the appropriate gear.
- Backpedaling should be avoided on derailleur bikes because the chain can jam and cause the bike to become unstable.

See **Section 4: Adjusting the Derailleur** for further information on proper gear adjustment.

#### Security

You just bought a new tricycle! Don't lose it. It is advisable that the following steps be taken to prepare for and help prevent possible theft:

- Maintain a record of the tricycle's serial number, generally located on the frame underneath the bottom bracket. Figure 23
- Register the tricycle with the local police and/or tricycle registry
- Invest in a high quality tricycle lock that will resist hacksaws and bolt cutters.
- Always lock your tricycle to an immovable object if it is left unattended. Keep in mind that individual parts of a tricycle may be stolen. Most commonly, if you lock just a wheel or jus the frame, other parts may be removed from the tricycle. Although it is impossible to lock all the parts, it is suggested to lock the major components if possible. Figure 24
- Use a lock that is long enough to lock the frame and both wheels if possible. Some models with quick-release front wheels allow the front wheel to be placed beside the frame so a smaller lock can be used to lock all 3 components.
- Be aware that a quick-release seat post can be stolen. It is recommended to remove the seat post and saddle and carry it with you if you believe that this is a risk.



Maintenance

#### **WARNING!**

- Failure to conduct maintenance on the tricycle may result in malfunction of a critical part and serious injury or death. Proper maintenance is critical to the performance and safe operation of the tricycle.
- The recommended intervals and need for lubrication and maintenance may vary depending on conditions the tricycle is exposed to. Always inspect the tricycle and conduct necessary maintenance before each use of the tricycle.

This section presents important information on maintenance and will assist you in determining the proper course of action to take if you do have a problem with the operation of the tricycle. If you have questions regarding maintenance please contact us with e-mail support@mooncool.com. **Do not** call the store where the tricycle was purchased.

#### Correct routine maintenance of your new bike will ensure:

- Smooth running
- Longer lasting components
- Safer riding
- Lower running costs

#### **Basic Maintenance**

The following procedures will help you maintain your tricycle for years of enjoyable riding.

- For painted frames, dust the surface and remove any loose dirt with a dry cloth. To clean, wipe with a damp cloth soaked in a mild detergent mixture. Dry with a cloth and polish with car or furniture wax. Use soap and water to clean plastic parts and rubber tires.
- Store your tricycle under shelter. Avoid leaving it in the rain or exposed to corrosive materials.
- Riding on the beach or in coastal areas exposes your tricycle to salt which is very corrosive. Wash your tricycle frequently and wipe or spray all unpainted parts with an anti-rust treatment. Make sure wheel rims are dry. After rain, dry your tricycle and apply anti-rust treatment. If the hub and bottom bracket bearings of your tricycle have been submerged in water, they should be taken out and re-greased. This will prevent accelerated bearing deterioration.
- If paint has become scratched or chipped to the metal, use touch up paint to prevent rust. Clear nail polish can also be used as a preventative measure.
- Regularly clean and lubricate all moving parts, tighten components and make adjustments as required.

#### Lubrication Schedule

Component	Lubricant	Method		
Monthly				
Chains	Chain lube or light oil	Brush on or squirt		
Brake calipers	Oil	Three drops from oil can		
Brake levers	Oil	Two drops from oil can		
Freewheel	Oil	Two drops from oil can		
Derailleur Systems	Light oil or grease	All pivot points should be lubricated (more often in severely rainy or muddy conditions). Wipe off any excess oil.		
Brake cables	Lithium based grease	Remove cable from casing. Grease entire length. Wipe off excesslubrication from other surfaces.		
Brake lever and caliper pivot points	Light oil	Two to three drops from oil can		
Shifting cables	Thin layer of grease	Clean and grease		
	Yearly			
Bottom bracket	Lithium based grease	Disassemble		
Pedals	Lithium based grease	Disassemble		
Wheel bearings	Lithium based grease	Disassemble		
Headset	Lithium based grease	Disassemble		
Seat stem	Lithium based grease	Disassemble		
If pedals cannot be disassembled		See bicycle mechanic for maintenance		

**Note:** The frequency of maintenance should increase with use in wet or dusty conditions. Do not over lubricate. Remove excess lubricant to prevent dirt build up. **Never** use a degreaser to lubricate your chains (WD-40).

#### Parts Maintenance

Tires Frequency: Inspect and maintain at least each use.

Inspect	Action	Maintenance
Tire Inflation	Check tire pressure.	Inflate tire to the pressure indicated on the tire sidewall. See "Inflating a Tire Tube" for more detail if the tire is flat and see "Fixing a Flat Tire" for more detailed instructions.
	Check for proper bead seating when inflating or repairing the tire.	Reduce air pressure in the tube and re-seat the bead.
	Spin wheel and check rotation/align- ment is smooth and even.	Loosen axle nut(s) and adjust until properly seated. If the hub bearings are malfunctioning, consult a bike shop.
Bead Seating	Check for broken or loose spokes.	See bicycle mechanic for repair.
Tread	Inspect for signs of excessive wear, flat spots or cuts and damage.	Replace tire.
Valves	Check that valve caps are fitted and free of dirt.	Clean dirt from the valve.

#### Wheels

#### Frequency: Inspect and maintain at least each use.

Inspect	Action	Maintenance	
Rims	Inspect for dirt and grease.	Use a clean rag or wash with soapy water, rinse, and air dry.	
Wheels  Ensure that all wheels are properly placed on their axle and the axle nuts are tightened.		Adjust if necessary and tighten axle nuts.	
	Spin wheel and check rotation/align- ment is true	See bicycle mechanic for repair.	
Spokes	Check for broken or loose spokes.	See bicycle mechanic for repair.	
Hub Bearings	Lift each wheel and see if there is movement side to side.	See bicycle mechanic for repair.	

#### Drivetrain (pedals, chains, chainwheel, crank set, freewheel)

#### Frequency: as noted.

Inspect	Action	Maintenance	
Pedals	Every month, check each pedal is securely set and tighten Check monthly to ensure each pedal is properly set and tight on the crank arm.	If necessary, re-set and tighten.	
	Before each ride, check that all pedal reflectors are clean and visible.	Clean or replace.	
Pedal Bearings	Before each ride, grasp each pedal and try to move it up, down, right, left. If you find looseness or roughness, the pedal bearings need adjustment, lubrication, or replacement.	See bicycle mechanic for repair.	
Chains	Every week, check the chain is clean, properly lubricated, rust-free, and is not stretched, broken, or has stiff links.	Lubricate if necessary. Replace if rusted, stretched, or broken.	
Crank Set	Evory month check the crank set (crank arms, chain rings, and bottom bracket axle and bearings) is correctly adjusted and tight.	See bicycle mechanic for repair.	

#### Brakes

#### Frequency: Inspect and maintain before each use.

Inspect	Action	Maintenance	
Levers	Each month, ensure that your brake levers are easily reachable and properly tightened on the handlebar.	If necessary, re-set and tighten.	
Pads	Check pad position, gap and pressure.	See Section 4: Adjusting the Brakes	
Cables	Check the outer casing for kinks, stretched coils and damage. Check cables for kinks, rust, broken strands or frayed ends.	e. Replace cable.	
	Check the housing is seated properly into each cable stop of the tricycle.	It is recommended that the cables and housing be replaced every riding season.	

#### **Hub Bearings**

Hub bearings require special thin wrenches called cone wrenches. If you do not own these tools, do not attempt hub bearing adjustments. Have a qualified bicycle mechanic perform the adjustment if you have any doubts.

- 1 Check to make sure neither nut is loose.
- 2 To adjust, remove the wheel from the tricycle and loosen the nut on one side of the hub while holding the bearing cone on the same side with a cone wrench.
- 3 Rotate the adjusting cone as needed to eliminate free play.
- Re-tighten the nut while holding the adjusting cone in posi-
- 6 Re-check that the wheel can turn freely without excessive side play.

#### Inflating the Tire Tube

#### **WARNING!**

- An unseated tire can rupture unexpectedly and cause serious injury or death. Be sure the tire is properly seated when inflating the tube.
- Over inflation or inflating the tube too quickly may result in the tire blowing off the rim and damaging the bicycle or causing injury to the rider. Always use a hand pump to inflate the tube. **Do not** use a gas station service pump to inflate the tube.

#### Follow these steps to inflate a tire:

- Remove the valve cap and inflate to about 50% of the maximum. Inflate to recommended pressure (see tire sidewall).
- Be sure the tire is evenly seated on the rim, both sides.
- Spin the wheel and check for high and low areas.
- Complete inflation to the recommended psi found on the sidewall of the tire.
- Be sure the tire is evenly seated on the rim, both sides. If not, release some air and repeat steps three through six.
- Check for dirt in the valve cap or stem. Clean dirt from cap or stem.
- Securely replace the valve cap on the stem.

#### Repairing a Flat Tire

#### **WARNING!**

An unseated tire can rupture unexpectedly and cause serious iniury or death. Be sure the tire is properly seated when inflating the tube.

#### Follow these steps to fix a flat tire:

- Match tube size and tire size (see tire sidewall for size).
- 2 Remove the wheel from the tricycle. Deflate the tire tube completely.
- 3 Squeeze the tire beads into the center of the rim.
- Opposite the valve, use a tricycle tire lever to pry the tire bead up and out of the rim. Repeat around the wheel until one bead is off the rim.
- **5** Remove tube. Release second tire bead.
- 6 Remove tire.
- Tarefully inspect inside of the rim and tire for the cause the
- 1/4 full and place inside tire.
- ② Insert the valve stem through valve stem hole in rim.
- Start at the valve stem and install the first bead onto therim. Repeat for the second bead.
- Slowly inflate the tire tube, checking the tire is seated properly and not pinched as the tire tube is inflated.

#### Troubleshooting Guide

Problem	Possible Causes	Remedy		
Gear shifts not working properly	<ul> <li>Derailleur cables sticking/stretched/ damaged</li> <li>Front or rear derailleur not adiusted properly</li> <li>Indexed shifting not adjusted properly</li> </ul>	<ul> <li>Lubricate/tighten/replace cables</li> <li>Adiust derailleurs</li> <li>Adjust indexing</li> </ul>		
Slipping chain	<ul> <li>Excessively worn/chipped chain wheel or freewheel sprocket teeth</li> <li>Chain worn/stretched</li> <li>Stiff link in chain</li> <li>Non-compatible chain, chainring, or freewheel</li> </ul>	<ul> <li>Replace chain wheel, sprockets and chain</li> <li>Replace chain</li> <li>Lubricate or replace link</li> <li>Seek advice at a bicycle shop</li> </ul>		
Chain jumping off the freewheel sprocket (rear of trike) or jumping off the chain ring (near pedals).	<ul> <li>Chain wheel out of true</li> <li>Chain wheel loose</li> <li>Chain wheel teeth bent or broken</li> <li>Rear or front derailleur side-to-side travel out of adjustment</li> <li>Shifting when carrying an excessive load or with too much pressure on the pedals.</li> </ul>	<ul> <li>Re-true if possible, or replace</li> <li>Tighten mounting bolts</li> <li>Repair or replace chain wheel/set</li> <li>Adjust derailleur travel</li> </ul>		
Constant clicking noises when pedal- ing	<ul> <li>Stiff chain link</li> <li>Loose pedal axle/bearing</li> <li>Loose bottom bracket axle/bearings</li> <li>Bent bottom bracket or pedal axle</li> <li>Loose crankset</li> </ul>	<ul> <li>Lubricate chain/adjust chain link</li> <li>Adjust bearings/axle nut</li> <li>Adjust bottom bracket</li> <li>Replace bottom bracket axle or pedals</li> <li>Tighten crank bolts</li> </ul>		
Grinding noise when pedaling	<ul> <li>Pedal bearings too tight</li> <li>Bottom bracket bearings too tight</li> <li>Chain fouling derailleurs</li> <li>Derailleur jockey wheels dirty/binding</li> </ul>	<ul> <li>Adjust bearings</li> <li>Adjust bearings</li> <li>Adjust chain line</li> <li>Clean and lubricate jockey wheels</li> </ul>		
Freewheel does not rotate	Freewheel internal pawl pins are jammed	Lubricate. If problem persists, replace the free- wheel		
Brakes not working effectively  Brake pads worn down  Brake pads greasy, wet or dirty  Brake cables are binding/stretched/damaged  Brake levers are binding  Brakes out of adjustment		<ul> <li>Replace brake pads</li> <li>Clean pads</li> <li>Clean/adjust/replace cables</li> <li>Adjust brake levers</li> <li>Center the brake pads</li> </ul>		
Brakes squeal or squeak during use	<ul> <li>Brake pads worn down</li> <li>Brake pads dirty or wet</li> <li>Disc is dirty or wet correct</li> </ul>	<ul> <li>Replace pads</li> <li>Clean pads and rim</li> <li>Correct pads toe-in</li> <li>Tighten mounting bolts</li> <li>Clean disc with an approved cleaner</li> </ul>		
Knocking or shuddering when applying brakes  Bulge in the rim or rim out of true  Brake mounting bolts loose  Brakes out of adjustment  Fork loose in head tube		<ul> <li>True wheel or take to a bike shop for repair</li> <li>Tighten bolts</li> <li>Center brakes and/or adjust brake pads toe-in</li> <li>Tighten headset</li> </ul>		

#### **Troubleshooting Guide**

Problem	Possible Causes		Remedy	
Wobbling wheel	<ul> <li>Axle broken</li> <li>Wheel out of true</li> <li>Hub comes loose</li> </ul>	<ul> <li>Headset binding</li> <li>Hub bearings collapsed</li> <li>Quick-release mechanism loose</li> </ul>	<ul> <li>Replace axle</li> <li>True wheel</li> <li>Adjust hub bearings</li> </ul>	<ul> <li>Adjust headset</li> <li>Replace bearings</li> <li>Adjust quick-release mechanism</li> </ul>
Inaccurate steering	<ul> <li>Wheels not aligned in frame</li> <li>Headset loose or binding</li> <li>Front forks or frame bent</li> </ul>		<ul> <li>Align wheels correctly</li> <li>Adjust/tighten headset</li> <li>Consult a bike shop regarding frame realignment</li> </ul>	
Frequent punctures	<ul> <li>Inner tube old or faulty</li> <li>Tire tread/casing worn</li> <li>Tire unsuited to rim</li> </ul>	<ul> <li>Tire not checked after previous puncture</li> <li>Tire pressure too low</li> </ul>	<ul> <li>Replace inner tube</li> <li>Replace tire</li> <li>Replace with correct tire</li> </ul>	<ul> <li>Remove sharp object embedded in tire</li> <li>Correct tire pressure</li> <li>File down spoke</li> </ul>

#### **MOONCOOL Warranty Information**

Your TK1 is covered by Mooncool's generous product warranty. Take time to become familiar with the following details.

All products purchased from Mooncool come with a hassle-free warranty. Mooncool warrants the products for a limited time from the date of delivery.

#### Coverage

For clarity, we don't provide shipping service to Alaska, Hawaii, Puerto Rico, or other U.S. territories. Warranty parts will be shipped only within the continental United States (the lower 48 states).

2-year Warranty: Frame, fork, motor, battery, throttle, LCD display, wiring harness, front light, rear light, and charger.

1-year Warranty: Accessories and spare parts: stem, handlebar, headset, brakes (excluding brake pads), bottom bracket, crankset, pedals, kickstand, rims, wheel hub, freewheel, cassette, derailleur, and shifter.

30-day Warranty: All missing parts, grips, tires and tubes, cables, brake pads, and saddle upholstery are warranted for 30 days from delivery.

Ownership Coverage: The first owner is fully covered as described above. Subsequent owners are likewise covered, but only until the expiration date of the original owner's warranty. The original owner's order number must be provided with all warranty claims.

Other Warranty Exclusions: Any installation, assembly, or disassembly is not covered by this warranty.

All of the following items are not covered:

- improper assembly, use, care, or operation;
- modifications or failure to follow the recommended assembly or aftercare instructions;
- abuse, negligence, accident, fire or water damage, transportation by the customer, or other causes beyond our control.

- any issues or problems with second-hand goods.
- battery is not warranted from damage resulting from power surges, use of an improper charger, improper maintenance or other such misuse, normal wear or water damage. (limitations continued in next column)

Limitations: We won't be responsible for any damage, failure, or loss caused by any unauthorized service or use of unauthorized parts.

Shipping Damage: Damaged products during shipping are not covered by the warranty. NOTE: We will provide you with a replacement for such damaged products, provided that you do the following:

- 1. Notify Mooncool of the damaged product in the shipping process within 5 days after you receive it.
- 2. Provide us with pictures and/or a video of the damaged product within 5 days.
- 3. Return all original packaging along with the product.
- 4. Inspect the damaged product immediately upon signing for the shipment from the shipper.

5. If you choose to use an independent shipping method, such as a freight forwarder or similar service, Mooncool will not be responsible for the replacement of any products damaged during such shipping methods.

#### Making a Warranty Claim

Send your order number and images or videos of your product issues to our official mailbox: support@mooncool.com. Once confirmed, Mooncool customer service will send you free replacement parts. You'll also receive a notification email with the tracking number. Replacement parts will automatically be shipped to the original shipping address of your order. If there is any change in your shipping address, please contact us in time and inform us of your new address by email sent to support@mooncool.com.

#### **Conditions Of Warranty**

- 1. Your tricycle has been designed for general transportation and recreational use, but has not been designed to withstand abuse associated with stunting and jumping. This warranty does NOT cover damage to your TK1 or any person or property resulting from use of your TK1 for stunting or trick riding or jumping.
- 2. This warranty does not cover ordinary wear and tear or anything you break accidentally or deliberately.
- 3. This warranty does not cover normal wear and tear, improper assembly or maintenance, or installation of parts or accessories not originally intended or compatible with the tricycle as sold. The warranty does not apply to damage or failure due to accident, abuse, misuse, neglect, or theft. Claims involving these issues will not be honored.
- 4. It is the responsibility of the individual consumer purchaser to assure that all parts included in the factory-sealed carton are properly installed, all functional parts are initially adjusted properly, and subsequent normal maintenance services and adjustments necessary to keep the tricycle in good operating condition are properly made.
- 5. This warranty does not apply to damage due to improper installation of parts, installation of any kind of power plant or internal combustion engine, modification or alteration of the brakes, drive train, or frame in any way, or failure to properly maintain or adjust the tricycle.

**NOTICE:** Tricycle specifications subject to change without notice.