TL Carbon

User Manual

2026.06



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Using this Manual

Legend

Symbols Used in Texts

⚠ Warning! Potential Hazards

Note

Symbols Used in Illustrations

Apply grease

Apply threadlocker

Important Information

This manual contains important information about safety, assembly, and maintenance. Please read the whole manual carefully before using for the first time.

- Refer to the manufacturer's instructions and official website to learn about the usage and service information of the third-party components on the electric bicycles (hereinafter referred to as bikes).
- Assembling, fixing, and maintaining the bike requires professional skills and specialty tools. This manual only contains basic operations and precautions. It is recommended to have authorized retailers carry out the assembly, troubleshooting, and maintenance if you cannot operate by yourself.
- Refer to the warranty document provided with your bike or visit https://www.amflowbikes.com/support/policy for the warranty information about this product.
- The bikes have a fixed pre-set speed limit at which the motor assistance will automatically shut off.
- Do not make any unauthorized modifications to the drive unit. Otherwise, the warranty may become void.

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- This manual is subject to update. Please check the latest version from https://www.amflowbikes.com/tl-carbon/downloads.
- Ensure electrical connectors remain clean and dry. Do not apply any grease or adhesives to the connectors. Avoid exposure to humid or dusty environments to prevent short circuits. Ensure connections are securely fastened when installing the electrical components.

* While riding, the A-weighted sound pressure level is less than 70 dB(A).

Video Tutorials

Go to the address below or scan the QR code to watch the tutorial videos, which demonstrate how to use the product safely:

https://www.amflowbikes.com/tl-carbon/video

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1 Safety Notice

1.1 Intended Use

This bike is intended for condition 1, 2, and 3. Below is the description of different conditions.

⚠
- This bike is not intended for use in condition 4 or above. Failure to follow the intended use may cause damage to the frame and other components or even injury.
- Installing accessories such as front racks, rear racks, fenders, or a trailer restricts this bike to condition 2. Do not ride beyond the supported condition range.

Condition	Description	Jumping Limitation
Condition 1	Flat and smooth paved surfaces, where the tires are always on the ground during riding.	Not Supported
Condition 2	Including condition 1, plus unpaved gravel roads and trails with moderate grades, where the tires can occasionally lift off the ground while riding.	< 15 cm
Condition 3	Including condition 1 and 2, as well as rough roads and paths that require technical skills.	< 60 cm
Condition 4	Including condition 1, 2, and 3, plus rough technical areas that require advanced technical skills, and moderately sized obstacles. Small jumps are supported during riding.	< 120 cm
Condition 5	Including condition 1 to 4, as well as professional tracks and rugged terrains that require extreme jumping maneuvers.	Unlimited

1.2 Riding Safety Precautions

Make sure you have read and understood the riding safety instructions in the *Safety Guidelines*, and always strictly adhere to them.

- Do not abruptly apply excessive braking force to the front wheel, as this could lift the rear wheel off the ground and result in a fall.
- While riding, watch out for road hazards such as potholes, road shoulders, drains, or objects that may damage the tires.

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- Keep your body away from the sharp edges of the chainring, the moving chain, rotating pedals, cranks, and wheels.
- The brake rotors and the motor surface may become hot during use. Do not touch them.
- Do not perform stunt or trick riding unless your bike is specifically designed for extreme sports.
- Never hold onto a moving vehicle while riding.
- Before installing a child seat or cargo rack, always consult the manufacturer or an authorized retailer to confirm compatibility with your bike model. Only install these accessories if supported by your bike model, and ensure the maximum load capacity is not exceeded.

1.3 Electric Bike Safety Precautions

- Because electric bicycles accelerate faster than conventional bicycles, pay extra attention to road conditions while riding, especially when there are obstacles on the road.
- Always power off the drive system when not riding or prior to performing any maintenance. This prevents the motor from engaging if the cranks are accidentally turned. Ensure the drive system is powered off in the following situations:
  - Pushing the bike when Walk mode is not enabled.
  - Carrying or loading the bike for transportation.
  - Assembling or disassembling the bike.
- Because electric bicycles are significantly heavier than conventional bicycles, be aware of the following:
  - Increased difficulty in carrying, loading, and parking.
  - Longer braking distances, requiring you to brake earlier.
  - Potential reduction in maneuverability and cornering performance.
- Be extremely careful when viewing or using the control display while riding, as distractions may lead to accidents.

1.4 Passenger and Cargo Safety

- Use only accessories supplied by the manufacturer or an authorized retailer. Using unauthorized accessories may damage the bike or void the warranty.

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- When installing any rack, fender, or trailer accessory, strictly follow the instructions in the corresponding product manual to ensure it is securely fastened.
- When carrying cargo or towing a trailer, the braking distance will increase. Practice in a safe area to familiarize yourself with the bike's handling under load before riding. Do not exceed the maximum load limit specified for any accessory. For load limits, refer to the Structural Weight Limits section.
- Carrying passengers or cargo may be prohibited in certain regions. Always check and comply with local laws and regulations regarding the carrying of passengers and cargo on e-bikes. Users are solely responsible for ensuring compliance.

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2 Product Profile

2.1 Overview



1. Brake Lever
2. Wireless Controller
3. Dropper Post Lever
4. Handlebar
5. Bike Light
6. Stem
7. Shift Controller
8. Saddle
9. Dropper Post
10. Control Display
11. Down Tube
12. Top Tube
13. Rear Shock
14. Yoke
15. Seat Tube
16. Seatpost Clamp
17. Chainstay
18. Seatstay

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19. Brake Caliper
20. Rear Rack
21. Rear Fender
22. Rear Fender Support Rod
23. Rear Derailleur
24. Cassette
25. Brake Rotor
26. Kickstand
27. Chain
28. Chain Guide
29. Chainring
30. Crank
31. Pedals
32. Bottle Cage
33. Drive Unit
34. Downtube Skid Plate
35. Main Battery
36. Front Fender Support Rod
37. Spoke
38. Rim
39. Tires
40. Front Fender
41. Fork
42. Head Tube

2.2 Geometry

Visit the following link to access the factory-standard geometry specifications:

https://www.amflowbikes.com/tl-carbon/specs

2.3 Modification Guidelines

⚠
- Certain components of the bike, including the drivetrain, dropper post, front and rear wheels, rear shock, fork, and brakes, may be replaced with other models. Before making any modifications, always consult an authorized retailer and the component manufacturer to confirm compatibility. Failure to verify compatibility, or improper installation, operation, or maintenance of components, may result in product damage or serious personal injury.
- Certain components and hardware on the bike are proprietary to the brand. Ensure that only genuine parts are used during installation. Using non-original parts may damage the bike, compromise safety, and void the warranty. Contact an authorized retailer to purchase the genuine parts if necessary.

Component Compatibility

Component	Compatible Sizes / Specs
Seat Collar Diameter	34.9±0.1 mm

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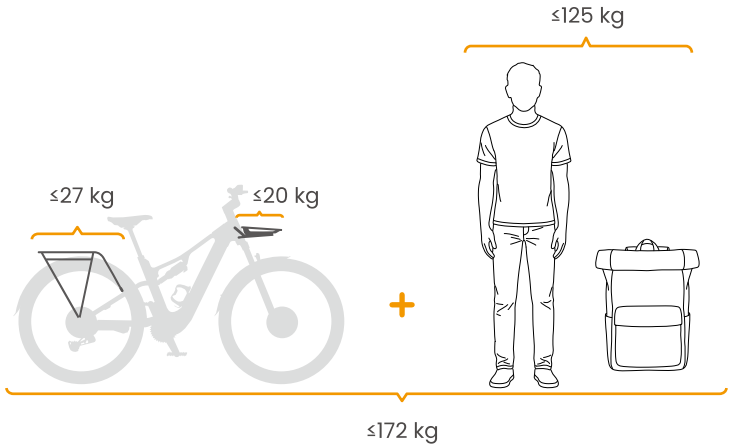
Component	Compatible Sizes / Specs
Dropper Post Diameter	31.6 mm
Maximum Compatible Rear Tire Size	27.5 × 2.6 inch (with the original rear fender and rear rack installed) 29 × 2.6 inch (without rear fender and rear rack)
Rear Wheel Travel	105 mm
Shock Length / Stroke	190 mm / 45 mm
Recommended Shock Sag	Fork: 20-25% Shock: 20-25%
Fork Travel	120 mm
Minimum Chainring	32 t
Maximum Chainring	38 t (BCD104, spider-mount chainring only)
Minimum / Maximum Front Brake Rotor	160-200 mm
Minimum / Maximum Rear Brake Rotor	180-200 mm
Bottle Clearance	16 oz bottle
Wired front light	12 V / 2.5 A

2.4 Structural Weight Limits

⚠ Riding with loads exceeding the specified weight limits may damage the frame or components and increase the risk of falling.

Limit	Maximum Limit
Maximum Rider Weight	125 kg
Maximum Front Rack Load	20 kg
Maximum Rear Rack Load	27 kg
Maximum Trailer Load (including trailer's own weight)	60 kg

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3 Riding Tips

3.1 Initial Setup

Before first use, select the appropriate stem based on your height, and perform the following adjustments.

1. **Stem Size Check**

   Each frame comes with a short stem pre-installed and a long stem included. Refer to the table below to confirm the correct stem size for your height.

Height	Frame	Recommended stem size
155-162 cm	S	Short
162-175 cm	M	Long
175-182 cm	L	Short
182-190 cm	XL	Long

   To replace the stem, refer to the *Quick Start Guide*, or contact an authorized retailer.

   ⚠ Incorrect installation of the headset cups or stem may damage the fork steerer tube and thus result in a fall while riding.

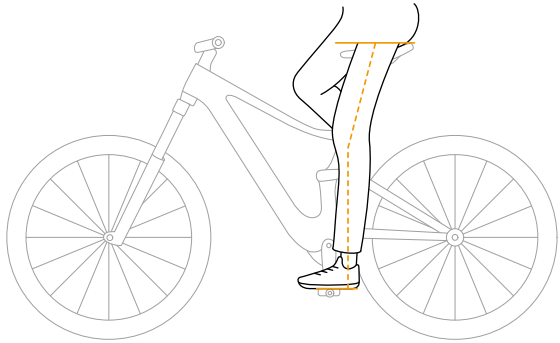
   For more sizing information, visit the following link:

   - Specifications: https://www.amflowbikes.com/tl-carbon/specs
   - FAQ: https://www.amflowbikes.com/tl-carbon/faq

2. **Saddle Adjustment**

   Saddle Height: Use the dropper post lever to adjust the saddle to an appropriate height according to the riding position shown in the illustration. If you need to further adjust the dropper post insertion depth, refer to the *Maintenance Manual* for detailed instructions, or contact an authorized retailer.

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Saddle Position: Refer to the saddle manufacturer's instructions.

3. **Fork and Rear Shock Adjustment**

   Air Pressure: Refer to the data in the *Quick Start Guide* to set the appropriate pressure based on the total weight (rider and payload).

   Rebound damping: refer to the tutorial video and the shock absorber manual for your specific model to adjust rebound.

4. **Tire Pressure Adjustment**

   Refer to the data in the *Quick Start Guide* to set the appropriate pressure based on the total weight (rider and payload).

   For aggressive riding, off-road use, or heavier loads, it is recommended to increase the tire pressure moderately above the baseline to reduce the risk of a blowout.

5. **Brake Lever Adjustment**

   By default, the left lever operates the front brake and the right lever the rear brake, but this may vary by country or region. Before riding, gently squeeze each lever and check which wheel it brakes, making sure the setup suits your riding habits and complies with local regulations. If adjustment is required by local regulations, contact an authorized retailer or professional bike shop.

3.2 Pre-ride Safety Check

Before every ride, make sure to perform the following pre-ride safety checks.

⚠ Do not ride the bike if there are any signs of damage. Contact an authorized retailer or professional bike shop for inspection and repair.

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Drive System

- Battery: Check that the battery level is sufficient, and ensure it is securely installed within the frame with no looseness or abnormal noise.
- Control Display: Ensure it can power on normally, function properly, and no error code is shown.
- Bike Light: Confirm the light can be turned on normally using the preset controls, and the brightness is normal.

Braking System

- Lever Feel: When squeezing the front and rear brake levers, ensure they do not touch the handlebars and provide firm resistance.
- Braking Performance: Squeeze the brake levers and push the bike to ensure the wheels are fully locked and do not rotate.

Wheels and Tires

- Tire Pressure: Press on the tires to ensure they feel firm and resilient.
- Surface Inspection: Ensure tires have no cracks, bulges, or significant wear.
- Fastening Check: Ensure the thru-axle is tightened to the specified torque, and that no spokes are loose or broken.

Drivetrain

- Chain Condition: Ensure the chain is free of visible rust.
- Shifting: Ensure that the chain moves smoothly across the cassette when shifting, without abnormal noise or risk of chain drop.
- Pedals and Cranks: Ensure they are securely installed with no signs of looseness.

Frame and Other Mechanical Components

- Dropper Post: Ensure the seatpost clamp is securely tightened and the saddle is secure. Ensure the minimum insertion depth mark on the dropper post is not visible.
- Frame: Ensure there are no abnormal noises caused by loose components. Ensure all accessories such as the mudguard and racks (if equipped) are securely mounted and no bolts are loose.
- Reflectors: Ensure all reflectors are correctly positioned, intact, and free of dirt or obstructions.

3.3 Preparation for Riding

Before riding, take the safety precautions to reduce the risk of injury.

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- Ensure your bike is fitted with all safety equipment required by local regulations, such as reflectors, a bell, lights, a license plate.
- Before riding, ensure you are familiar with all bike components and the operation of the control display and controllers.
- Before riding, ensure you have completed all essential safety checks.
- Always wear a helmet while riding. Make sure the helmet fits properly and meets the required safety standards.
- Always wear clothing suitable for riding. Loose clothing or accessories may get tangled in the bike.
- Do not wear sandals or ride barefoot. Choose well-fitting shoes that can grip the pedals, and make sure your shoelaces are tied securely.
- It is recommended to wear reflective clothing when riding at night and highlight your feet and legs by wearing reflective accessories.
- Make sure all accessories are secured.

3.4 Riding Tips

To get a better riding experience and extend the lifespan of your bike, follow the tips below.

- Make sure to shift gears correctly. Pedal forward after pressing the shift controller to complete a gear change. Do not shift gears while pedaling backward, or start pedaling backward immediately after shifting, as this can jam the chain and damage the bike.
- Avoid shifting across multiple gears at once.
- Do not move the bike backward when the chain is on the larger cassette cogs. Otherwise, the drivetrain may be damaged.
- While riding, adjust the gear ratio as needed to ensure you are within the appropriate cadence range.
- Maintain a steady pedaling rhythm. When climbing, avoid pedaling at a low cadence in a high gear. It is recommended to maintain your cadence within an optimal range.
- Control your speed when cornering. Stop pedaling early before entering a turn and keep the inner pedal at the highest point to avoid losing control or falling due to excessive speed or pedal strikes.
- Avoid dragging the brakes to prevent the brake rotor and brake pad from overheating, which could lead to brake failure.
- Carrying cargo increases braking distance and turning radius. Ride smoothly at a steady speed, and never accelerate, brake, or turn abruptly.

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- When carrying cargo, do not exceed the maximum load of the rack or carrier. Distribute the load evenly and secure it firmly to prevent load shifting, which could cause a loss of control.
- For off-road or mountain riding, remove the kickstand and fenders. This prevents mechanical interference during steep descents, jumps, or over rough bumps, which could lead to a loss of control or injury. For removal and installation, refer to the *Maintenance Manual*.

3.5 Range Management

You can view the estimated range for different assist modes on the battery page in the Avinox Ride App app while riding. By riding efficiently and choosing the appropriate assist modes, you can optimize the range during your rides.

- Adjust the assist modes according to road conditions:
  - Use Auto or Eco mode to extend battery range.
  - Adjust the assist parameters based on the current terrain.
- Maintain an optimal cadence while riding. A low cadence strains the motor and rapidly drains the battery.
- Maintain proper tire pressure and regularly clean and lubricate the chain to minimize energy loss from resistance.
- For rides in low temperatures, store the bike at room temperature and only bring it outdoors immediately before your ride.
- Avoid unnecessary load and towing, as excessive weight increases energy consumption.
- For long-distance rides, you can use multiple official batteries to increase the total range.

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4 Using for the First Time

4.1 Using for the First Time

Downloading Avinox Ride App

Scan the QR code to download the latest version.

Once the drive system is paired with the Avinox Ride App app via Bluetooth, users can customize the assist parameters and control display, and enable Bike Protection function in the app.

- The interface and functions of the app may vary as the software version is updated. Actual user experience is based on the software version used.
- To check the Android and iOS operating system versions supported by the Avinox Ride App app, visit https://www.avinox-ebike.com/avinox-system/downloads.

Pairing and Activating

When powered on for the first time, follow the prompt on the control display to complete pairing and activation. Tap Skip and you can ride for a trial without activation. After the trial distance has run out, follow the steps below to pair and activate before you can continue to use it.

1. Press and hold the power button of the control display to power on.
2. Swipe up to enter Settings and tap **Pair With App** to view the QR code.
3. Make sure Bluetooth and network are enabled on your mobile device. Open the Avinox Ride App app, then tap **Pair** and scan the QR code to pair.

Binding Key Code

The key code binding feature is only available for bikes with a removable battery and a battery key.

After activating the bike, the Avinox Ride App app will enter the **Bind Key Code** interface. Scan the barcode on the key with the app to complete the binding. Once successful, go to

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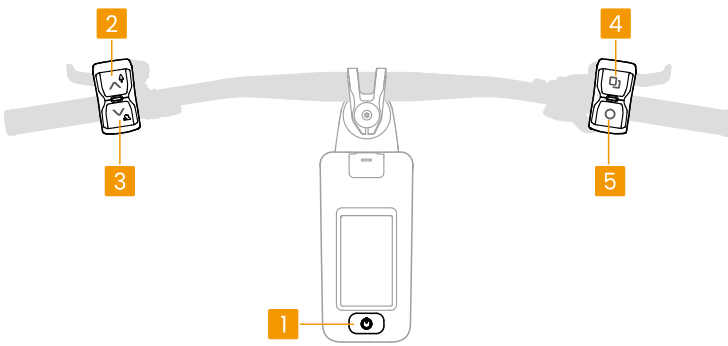
the app's home screen and tap **About Devices** > **Key Code** to view it. Keep your key safe. If lost, contact the bike manufacturer, and provide the bound key code for a replacement.

Updating Devices

When connected with the drive system, there will be a prompt in the app if a version update is available. It is recommended to update to the latest version to get a better user experience.

Make sure there is enough battery power before updating. During the update, make sure the signal on your phone is strong, and that the Bluetooth connection remains stable. Do not move the bike or power off the control display.

Button Features



1. **Power Button**
   - Press and hold to power on/off. Press and hold for 20 s to force power off.
   - After powering on, press to cycle through the different assist modes.
2. **Assistance Level Increase Button** ∧
   - Press to change to the next assist mode.
   - Press and hold to activate Boost mode and the control display will display a countdown. Press the power button or any button on the left wireless controller to exit Boost mode.
3. **Assistance Level Decrease Button** ∨
   - Press to return to the previous assist mode.

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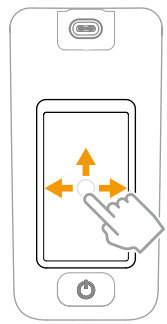
- Press and hold and then release the button to activate Walk mode. Once activated, press and hold the button to get power assistance to help pushing the bike uphills. Press the power button or any other button to exit Walk mode.

4. **Upshift button (customizable)**
   - Press to upshift.
   - Press and hold to turn on the lights.
   - Swipe up on the control display to enter Settings, and then you can customize functions for the button in **Customize Controls**.
5. **Downshift button (customizable)**
   - Press to downshift.
   - Press and hold to switch between high and low beams.
   - Swipe up on the control display to enter Settings, and then you can customize functions for the button in **Customize Controls**.

Operating the Control Display

After the control display is powered on, it will show the home screen page. Tap or swipe on the screen to interact with the control display.

- Home Screen: Display the basic information.
- Swipe left: Enter the ride data pages, which can be customized in the app.
- Swipe right: Enter Control Center.
- Swipe up: Enter Settings to add accessories, set the recording mode and more.



Fine-Tuning the Rear Derailleur

If shifting is not smooth or unusual drivetrain noise occurs while riding, fine-tune the rear derailleur using the control display.

Swipe up on the display and go to **General** > **Calibration** > **Electronic Rear Derailleur Calibration**, then use the **Fine-Tune Position** function to fine-tune the rear derailleur. When finished, return to the previous menu to save the settings.

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It is recommended to have the derailleur adjusted by an authorized retailer or professional bike shop to ensure proper shifting performance and riding safety.

4.2 Assist Modes

The drive system provides four standard assist modes: Auto, Eco, Trail, and Turbo, and also supports Boost mode with high power output and Walk mode.

- Refer to the Button Features section to learn how to switch the assist modes.
- When connected to the app, users can customize the assist parameters. Refer to Custom Assist Modes for more details.

Standard Modes

On the control display or in the app, tap **Custom Assist Modes** to view the assist parameters for Auto, Eco, Trail, and Turbo, and adjust them according to your riding preferences and scenarios.

The four standard modes offer varying levels of assistance to handle different riding scenarios.

Auto: This mode automatically adjusts assistance based on different riding situations, providing a moderate level of assistance to enhance the range.

Eco: With gradual start-up acceleration and lower assistance, this mode conserves battery energy and is suitable for long-distance flat terrain riding.

Trail: This mode provides moderate start-up acceleration and stronger assistance and is suitable for cross-country technical route.

Turbo: This mode provides maximum assistance and is suitable for steep slopes.

Walk Mode

Press and hold ⌄ to activate Walk mode, then press and hold the button to get power assistance when pushing the bike or starting on an incline. It also supports auto hold to prevent rollback on slopes.

The assistance will shut off automatically when you stop pressing ⌄ or the speed exceeds 6 km/h. Press the power button or any other button to exit Walk mode.

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Stationary Gear Shifting

Stationary gear shifting is supported when using Walk mode. After activating Walk mode, press the shift controller and lift the rear wheel, then press ⌄ twice to shift gears quickly.

⚠
- Only use Walk mode when pushing the bike. Using in inappropriate situations may cause accidents and personal injury.
- Make sure to keep your body away from the rotating crank and pedals to avoid injury when using Walk mode to assist pushing the bike and gear shifting.

Boost Mode

Boost mode delivers a temporary surge of extra power. Press and hold ⌃ to activate Boost mode. A countdown will begin on the control display. Pedaling during the countdown provides greater assistance, making it ideal for tackling challenging obstacles or steep climbs.

Boost mode will exit automatically when the countdown ends. To exit Boost mode early, press the power button or any button on the left wireless controller.

Before use, make sure Boost mode is enabled in the **Custom Assist Modes** setting on the control display or in the app.

Boost Local Enhancement

In the **Custom Assist Modes** setting on the control display or in the app, you can enable **Boost Local Enhancement**. Once enabled, the motor outputs the power and torque specific to Boost mode when activated, while the other parameters remain unchanged.

⚠ If **Boost Local Enhancement** is enabled, switching directly from Off mode to Boost mode will result in no motor assistance. Please be aware of this functional characteristic to avoid riding hazards.

Custom Assist Modes

Users can create new assist modes tailored to their riding preferences. Tap **Custom Assist Modes** in the app, then tap + to add a new assist mode and customize its parameters.

- Make sure the drive system is powered on and connected to the app when setting the assist modes.
- Tap ⬢ to adjust the order of the assist modes, hide or delete certain custom modes.

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4.3 Intelligent Functions

Ride Data Sync

Open the app, tap > **Terms & Privacy** > **Cloud Sync & Backup**, and enable **Cloud Sync & Backup**. Once enabled, ride data can be synced and backed up using the mobile network. The synced ride data can be viewed on other devices by logging into the account.

Bike Protection

The drive system provides Bike Protection functions, allowing users to set a digital password and use the phone as the Bluetooth key to unlock the bike automatically. If the bike is moved by accident, it will sound an alarm and the app will also receive a notification.

- The Bike Protection functions may not be available for extended use when the bike is in an environment below 0° C (32° F) or the battery level is lower than 5%.
- The Bike Protection functions can only be set when the bike and mobile phone are connected via Bluetooth.
- The notifications can be pushed to the mobile phone only after enabling the app notification permission on the phone.

Password Authentication

Open the app, tap **Bike Protection** and then **Password Authentication**. Follow the instructions to set the password.

Once setup is complete in the app, restart the control display. The screen will prompt you to enter a password to unlock, indicating that Password Authentication is now enabled.

Mobile Key Unlock

After enabling Password Authentication, you can then enable Mobile Key Unlock.

1. Open the app, tap **Bike Protection** and then enable **Mobile Key Unlock**. Once enabled, the bike will be automatically locked when powered off.
2. When you return to the bike with your paired mobile phone, power on the control display to unlock instantly, no password needed.

- The drive system will power off and be locked automatically when the parking time exceeds the set duration of auto power off.

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- It is recommended to also use a physical lock for added security.

Abnormal Movement Alerts

After enabling Password Authentication, users can activate the Abnormal Movement Alerts function.

1. Open the app, tap **Bike Protection**, and then enable **Abnormal Movement Alerts**.
2. Once enabled, if abnormal movement is detected while the bike is locked:
   - The control display will sound an alarm and an alert will display on the screen.
   - The app will push a notification at the same time.

   The abnormal movement will trigger a notification in the app only if the bike and mobile phone remain connected. Otherwise, only the control display will sound an alarm.
3. Tap **View Bike Location** in the app. When the bike and the mobile phone are connected, you can check the bike location on the map.
   - If the alarm is unnecessary, tap **Beep Off & Keep Locked**. The beep will stop and the bike will remain locked.
   - To unlock the bike for someone else, tap **Authorize & Unlock** in the app or tap **Cancel** on the control display and enter the password. The beep will stop and the bike will be unlocked.

   After tapping **Authorize & Unlock**, the Abnormal Movement Alerts function will be disabled for an hour. During this period, moving the bike will not trigger the alarm.
4. To disable the function temporarily, go to **Bike Protection** in the app, tap **Disable Temporarily** and choose the duration.

Remote Bike Control

When the bike is connected with the mobile phone via Bluetooth or mobile data, tap **Security** in the app to view the regularly updated bike location and status. If movement is detected, the app will also display the movement track. If the control display is powered on, tap **Beep** to enable the bike to sound an alarm.

When connected to the bike via Bluetooth, users can power on the bike using the app.

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Disabling Bike Protection

Users can disable the bike protection functions in the app. It is required to enter the password when disabling the password authentication function. Once disabled, mobile key unlock and abnormal movement alerts functions will no longer be available. Users can also disable these two functions individually with the password authentication function still enabled.

Apple Find My

After adding the bike to the Apple Find My app, you can check its location at any time. If your bike is lost, activate Lost Mode immediately. Follow the instructions to provide your contact information, allowing other devices in the Apple Find My network to help locate your bike.

Adding Your Bike

1. Press and hold the power button of the control display to power on.
2. Choose either of the following methods to make the bike discoverable:
    - Swipe up on the control display, tap **Apple Find My** > **Add Device**. The bike will enter pairing mode.
    - Quickly press the power button eight times. A beep sounds for each press, and a long beep sounds after the eighth press. The bike enters pairing mode.
3. Open the Find My app on iPhone, tap the **Items** tab, and select **Add Other Item**. When your iPhone discovers the bike, tap **Connect**. After pairing is complete, the bike will be automatically linked to your Apple ID.

Removing Your Bike From Apple Find My

If you plan to sell your bike or switch to a different Apple ID, make sure to remove the bike from the Find My app on your iPhone first.

Keep your iPhone connected to the bike via Bluetooth, tap **Remove Item** in the Find My app on your iPhone to unbind the bike.

If your iPhone is not connected to the bike during removal, the bike will not be unbound automatically. In this case, you still need to manually unbind the bike on the control display using one of the following methods:

- Swipe up on the control display to open **Apple Find My**, then tap **Reset**.
- With the bike powered on and unlocked, quickly press the power button 15 times. A beep sounds for each press, and a long beep sounds after the 15th press. The bike will automatically be unbound.

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- It is recommended to enable Password Authentication on the control display to prevent unauthorized resets of the Apple Find My feature.

Setting Control Display

Open the app and tap **Bike Screen Display** to edit, add, and delete the data pages on the control display. After selecting a page, you can change the layout and replace data items in the page.

Before setting, make sure the drive system is powered on and connected to the mobile phone.

Control Display Navigation

Once navigation routes are sent to the control display using the Avinox Ride App app, navigation information will be shown on the control display during your ride.

Preparing Routes

There are multiple ways to prepare your navigation routes in the Avinox Ride App app.

Importing Local Files

1. On the app home screen, tap to enter the navigation page.
2. Select **Local File**, tap +, then choose a local route file and import it.

Importing from Third-Party Platforms

1. On the app home screen, tap **> Bind to Third-Party Account**, and follow the instructions to complete the setup.
2. The riding routes from the third-party platform will automatically appear on the navigation page.

To sync routes from Komoot, the route must be saved in the Komoot app and the corresponding map must be unlocked first. Otherwise, the route cannot be synced even if the account is bound.

Generating a Navigation Route From Ride Data

1. On the app home screen, tap to enter the ride data page.
2. Select a ride data record, tap to generate a navigation route based on this record.

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Sending Route

1. Power on the control display. Ensure the bike and the mobile phone are connected via Bluetooth.
2. After selecting the route in the app, tap **Send to Device**. The route will be sent to the control display.

Managing Imported Routes

Swipe up on the control display, then select **Navigation** > **Imported** to view the imported routes.

Tap any route, then swipe up to view its details. Tap **Delete** to remove the route.

Using Control Display Navigation

After you get to the starting point of the route, make sure the bike has acquired a GNSS signal before starting navigation.

1. On the navigation page of the control display, select the route and tap **Start Navigation**.
2. Tap to preview the entire route, and tap to switch back to navigation mode. Tap to temporarily exit the navigation interface. The navigation task will keep running in the background. Swipe right on the control display to open Control Center, then tap the ongoing navigation task to return to the navigation interface.
3. Tap any blank area on the navigation interface, and ■ will appear on the display. Tap ■ and follow the prompt to end navigation.

Turn Alarm function is enabled by default. A turn prompt will appear on the control display and a beep will sound as a turn approaches.

Adding Accessories

The drive system is able to connect with various accessories, providing more ways to record data during riding.

- It is not supported to connect to multiple accessories of the same type simultaneously. Disconnect from the previous device before pairing with a new one.

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- When connecting a new wireless controller, press and hold the up and down buttons on the wireless controller simultaneously until the indicator flashes green and then follow the instructions to connect.

1. Press and hold the power button of the control display to power on, and then power on the accessory.
2. Swipe up to enter Settings. Tap **Accessories** > **Add** and the system will start searching for nearby devices.
3. Tap the device name displayed on the control display to start pairing. Follow the on-screen instructions to complete the connection.

The added devices are displayed on the **Accessories** page. Tap the device name to view the detailed information. Tap **Forget Device** to unpair with the device.

Smart Heart Rate Control

After **Smart Heart Rate Control** is enabled, the motor will dynamically adjust the assistance based on your real-time heart rate during riding. Some parameters in the assist modes cannot be customized while this feature is enabled.

Connecting a Heart Rate Monitor

1. Press and hold the power button of the control display to power on, and then power on the heart rate monitor.
2. Enable heart rate broadcasting on the heart rate monitor.
3. Swipe up on the control display to enter Settings. Tap **Accessories** > **Add Accessory**, and the system will start searching for nearby devices.
4. Tap the displayed device name to start pairing. Follow the on-screen instructions to complete the connection.

- Different heart rate devices have different ways to enable heart rate broadcasting. For details, refer to the user guide provided by the device manufacturer.
- Different control displays and heart rate monitors support different connection protocols. Switch between ANT+ pairing or Bluetooth pairing according to the supported protocol of your device.

Using Smart Heart Rate Control

1. Tap **Custom Assist Modes** on the home screen in the app, or swipe up on the control display to open the settings page and then tap **Custom Assist Modes**. Tap the icon in the upper-right corner and enable **Smart Heart Rate Control**.

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2. Set your **Target Heart Rate**, **Fluctuation Range**, and **High Heart Rate Alert**.

You can view your current heart rate on the control display. During your ride:

- If your current heart rate is too low, the system will appropriately reduce the assistance so that you put in more effort and your heart rate gradually increases.
- If your current heart rate is high, the system will increase the assistance to reduce your pedaling effort and bring your heart rate back into the set range.
- When your heart rate goes above or below the set range, the system will beep and display a pop-up alert, prompting you to adjust your riding pace.
- If you receive a high heart rate alert, reduce your exercise intensity, or consider stopping the ride to avoid accidents.

SmoothShift

Power on the control display and swipe up, then tap **SmoothShift** to enable the function. Once enabled, you can complete gear shifts without pedaling when starting, descending, or preparing to stop.

This function requires a compatible derailleur. Check the on-screen instructions for specific model requirements.

⚠ Enable this function only when necessary. Use with caution when it is enabled.

Advanced Features

Swipe up on the control display to open the settings page, then tap **Advanced Features** to enable functions such as **Gear Shifting Suggestions**, **Extreme Attitude Protection**, **Freehub Pre-Engagement**, **Quick Start**, **Chain Protection**, and more. Check the on-screen descriptions for more details about each feature.

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5 Battery Management

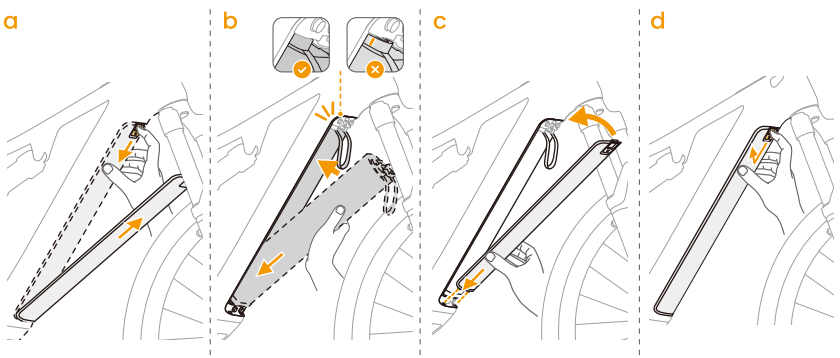
5.1 Dual Battery System

This bike supports the dual battery system. In addition to the main battery inside the down tube, an optional secondary battery can be installed at the water bottle cage position to extend the overall riding range.

- The secondary battery is only supported in countries and regions where permitted by local laws and regulations.
- Installing the secondary battery requires a compatible mounting kit and connection cable. The secondary battery, mounting kit, and connection cable are all sold separately.

Main Battery Installation and Removal

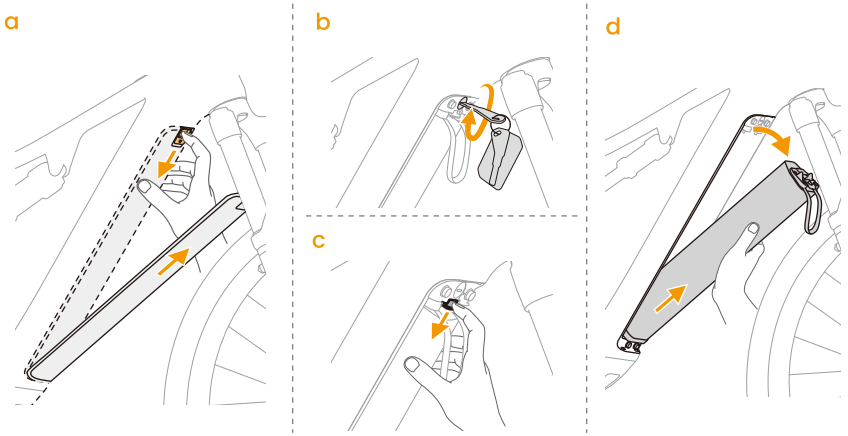
Installation



- Push the battery in firmly until you hear two audible clicks, and make sure the alignment mark on the battery is no longer visible, indicating that the battery is securely in place.
- Ensure the latch is fully engaged when installing the downtube skid plate.
- After riding, make sure to clean the latch on the downtube skid plate to prevent mud and sand buildup, which may cause latching issues.

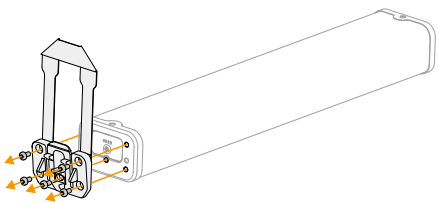
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Removal



Secondary Battery Installation and Removal (Avinox RS480 battery)

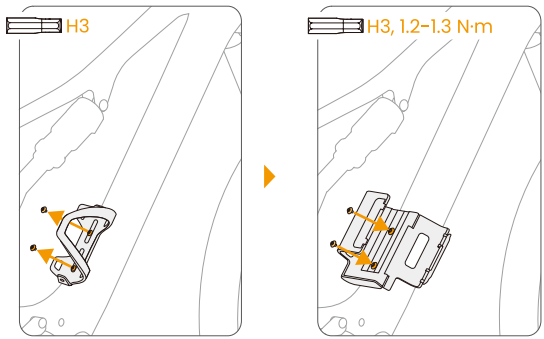
- Activation is required when using the secondary battery for the first time. After installing the battery, power on the control display and follow the instructions in the app to complete activation.
- Before installing the Avinox RS480 battery as a secondary battery, remove the five bolts to detach the strap and latch near the power button.



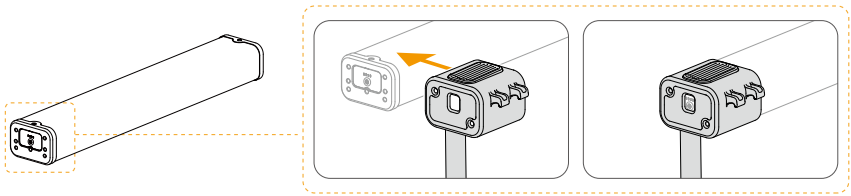
- The mounting kit and connection cable shown are for illustration purposes only. Actual products may vary.

1. Remove the bottle cage. Use the bolts of the water bottle cage to secure the battery cage to the down tube.

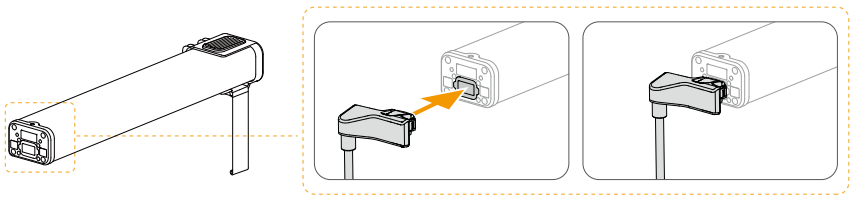
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2. Install the retention band on the power button end of the battery.

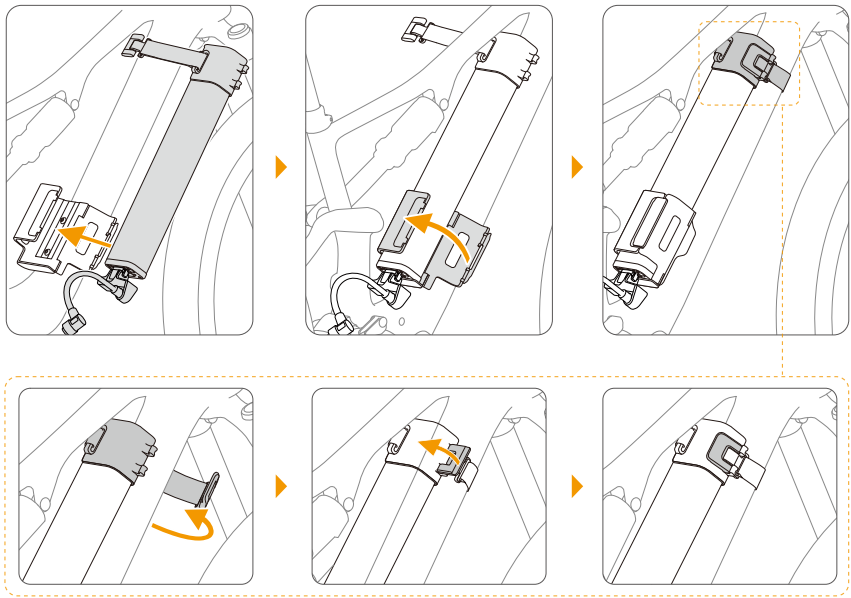


3. Connect the connection cable to the charging port of the battery.

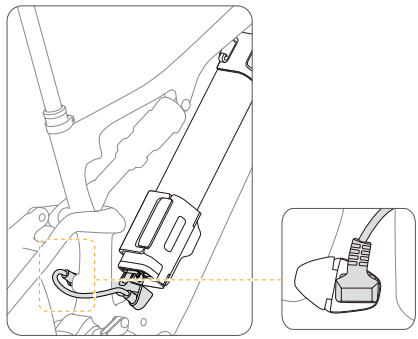


4. Slide the secondary battery into the cage from the drive side of the frame, then close the cage until the latch snaps into place. Pull the retention band around the down tube and secure it in place.

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5. Open the protective cover of the charging port on the bike and connect the cable.



- Reverse the steps for removal.
- Always power off the drive system before installing or removing the secondary battery.

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5.2 Using Dual Battery System

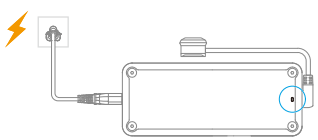
1. Check Battery Status: On the app home screen, tap **Battery** to view the remaining charge of both the main battery and secondary battery, and set their respective charging limits.
2. Battery Settings: Swipe up on the control display to enter Settings, tap **Accessories** to view the currently installed secondary battery, then tap it to enter the settings page. You can also check the charge levels of both batteries in the Control Center, and tap to open the battery settings page.
   - **Auto Switch** On: The system automatically manages the discharge sequence. It prioritizes the secondary battery for discharge. Once it reaches a low battery level, the system seamlessly switches to the main battery.
   - **Auto Switch** Off: Manually switch between the main battery and the secondary battery.

If a fault occurs with the active battery, the control display will prompt you to switch batteries. Switching batteries will automatically disable **Auto Switch**.

5.3 Charging the Battery

Charger Information

- Make sure to use the official charger to charge the battery.
- While charging, place the charger on a level surface and do not move the bike.



Charger Indicator	Description
Solid Red	The battery is charging
Solid Green	The battery is fully charged
Solid/Flashing Yellow or Off*	The charger is in an abnormal protection state. Stop charging immediately and contact the bike manufacturer or an authorized retailer for assistance.

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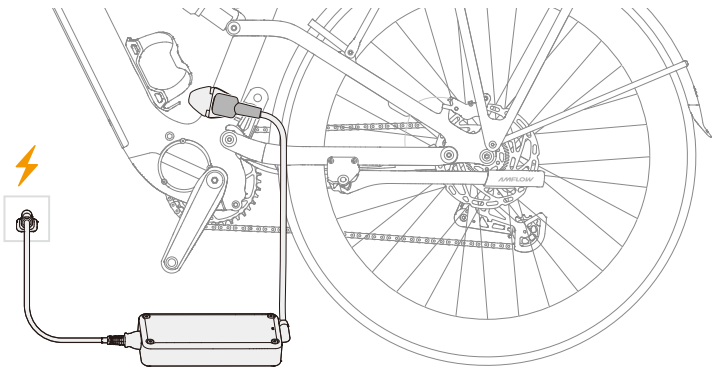
* A solid yellow light is normal when no battery is connected.

Battery Charging Methods

Charging the Main Battery

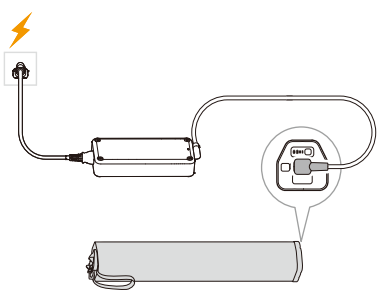
- **On-bike Charging**

  1. Open the charging port cover and connect the charger. During charging, the bike screen will display the current battery level.
  2. Unplug the charger and close the port cover after the battery is fully charged. Do not pull the power cable by force when removing the charger.



- **Off-bike Charging**

  After removing the battery from the down tube, place it on a flat surface, and connect the charger to the battery's charging port.



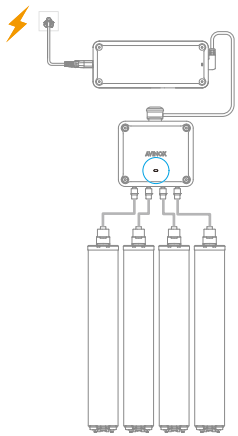
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Charging the Secondary Battery

Remove the secondary battery from the bike and place it on a flat surface. Use the official charger to connect to the charging port of the battery.

Using the Charging Hub

The charging hub supports connecting multiple batteries simultaneously. Once connected, the charging hub charges the batteries in sequence from a high to a low battery level.



Flashing Pattern	Description
Solid Yellow	Charging hub is idle
Breathing Green	Charging
Solid Green	All batteries fully charged
Solid Red	Charging over-current, abnormal input voltage, or other errors (reconnect the battery or charger to resume charging)

Press the button on the battery to check the battery level. When fully charged, all four indicators turn green.

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5.4 Battery Safety Notice

Usage

- Do not use non-original batteries and chargers.
- Do not expose the battery to liquids. If water seeps inside the battery, do not use or charge it again, and contact the bike manufacturer for assistance.
- Do not disassemble or pierce batteries in any way.
- The electrolytes in the battery are highly corrosive. If any electrolytes come into contact with your skin or eyes, immediately wash the affected area with water and seek medical support.
- Do not leave the batteries near heat sources or in a high temperature environment.
- Avoid any impact to the battery. Otherwise, the battery may be damaged. Do not use a battery if it is involved in a crash or heavy impact.
- Keep the batteries out of the reach of children.
- Handle the battery with care during installation and removal. Never drop the battery.
- When the connection cable for the secondary battery is not connected, ensure the charging port cover is securely closed after charging and during rides.

Charging

- Do not continue to use if the charger port or cable shows signs of wear or other damage.
- Disconnect the battery from the charging device when it is fully charged. Do not overcharge the battery. Otherwise, the battery cells may be damaged.
- The battery life may be reduced if it is charged at a high temperature. After each ride, allow the battery to cool down to approximately room temperature before charging. Charging the battery at a temperature of 0° to 40° C (32° to 104° F) can extend the battery life significantly.
- Do not charge in a wet environment, and make sure the charging port is dry. Keep the battery well-ventilated and cool.
- Do not charge the battery unattended. Do not move the bike or rotate the cranks while the charger is plugged.
- This product is not intended for use by persons with physical, mental, or sensory impairments or by children.
- To avoid burns, do not touch the charger with your hands while charging.

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5.5 Battery Maintenance

- It is recommended to tap **Battery** in the Avinox Ride App app to set a charging limit.
- The battery should be stored in a cool and dry environment without direct sunlight at a temperature from 0° to 40° C (32° to 104° F).
- Regularly check the battery level and battery cycle counts. Battery capacity may be affected after using for 500 cycles, which will not impact riding.
- Regularly inspect the battery. Do not use batteries with signs of damage, leaking fluid, or odor and contact bike manufacturer for assistance.
- Charge the battery promptly when the power level drops below 10%, otherwise the battery life may be affected
- Do not use alcohol, solvents, or abrasive cleaners to wipe the battery or charger. Use a clean, soft cloth for cleaning.
- Battery performance will be affected if the battery is not used for an extended period. Discharge and charge the battery completely once every three months to keep it in good condition.

- Do not store a battery for an extended period after fully discharging. Otherwise, the battery may over-discharge and cause irreparable damage to the battery cell.
- For long-term storage, remove the battery from the frame and store it out of reach of children. It is recommended to store the battery at a 30% charge level to prevent battery aging or over-discharge.
- When the battery is stored separately, keep the battery terminals away from metal objects to prevent short circuits.
- Before transportation, discharge the battery to below 30%. For long-distance transportation or battery shipping, use a dedicated carrying box to prevent damage. Do not transport a damaged battery.

5.6 Disposal

Batteries, chargers, and electronic devices cannot be disposed of with household waste. Make sure to dispose of these items in an environmentally friendly way in accordance with local regulations. Ensure the battery is fully discharged before disposing of it.

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6 Using Accessories

6.1 Using the Rear Rack

The rear rack features a MIK HD quick-release interface and supports MIK HD–compatible accessories (such as baskets and pannier racks).

Click the link below or scan the QR code to watch the tutorial video.

https://www.amflowbikes.com/tl-carbon/video

⚠ Do not exceed the rear rack's maximum load (including the accessory's own weight). Overloading may damage the rack and cause loss of control.

To remove the rear rack, refer to the *Maintenance Manual* for detailed instructions.

6.2 Using the Front Rack

TL Carbon supports an optional front rack. The front rack is a flat tray and comes with a cargo net to secure loads.

Click the link below or scan the QR code to watch the tutorial video.

https://www.amflowbikes.com/tl-carbon/video

⚠ When carrying cargo, distribute the load evenly and reduce your speed, as excessive weight at the front may affect steering and handling.

To install the front rack, refer to the *Maintenance Manual* for detailed instructions or contact an authorized retailer.

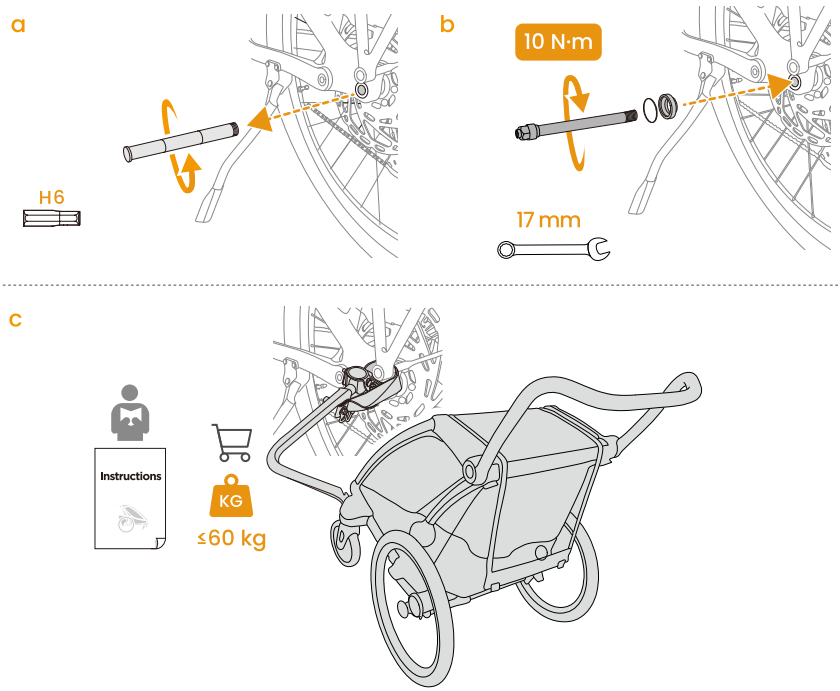
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6.3 Connecting a Trailer

Replace the original rear wheel thru-axle with the trailer thru-axle to attach a trailer.

Click the link below or scan the QR code to watch the tutorial video.

https://www.amflowbikes.com/tl-carbon/video



1. Remove the original rear wheel thru-axle and keep it for future use.
2. Insert the trailer axle and tighten to the specified torque as shown.
3. Following the trailer manufacturer's instructions, attach the trailer hitch arm to the trailer thru-axle.

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To remove, first detach the hitch arm according to the trailer manual, then reinstall and tighten the original thru-axle.

⚠ The maximum load capacity of the trailer axle is 60 kg. For trailer load limits, refer to the trailer manual. Overloading may damage the connector and cause loss of control.

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7 Bike Maintenance

It is recommended to have an authorized retailer regularly perform inspection and maintenance on your bike to ensure its longevity and riding safety.

- Servicing and maintaining the bike requires professional expertise and specialized tools. For your safety, any maintenance or repair tasks not explicitly described in this manual should be handled by an authorized retailer or a professional bike shop.
- The lifespan of the components depends on riding conditions and frequency. Regularly have the authorized retailer inspect the bike and components for wear.

- Make sure to repair or service the bike after you understand the correct operations. Incorrect operations may cause damage to the bike and thus result in accidents.
- Do not continue to use the bike if it shows any signs of damage. Ask the authorized retailer for a complete inspection.
- Always power off the system when performing inspection and maintenance on the bike.
- When using a repair stand, do not clamp the frame. This may damage the frame and lead to accidents while riding.

7.1 Cleaning

Regularly cleaning your bike can reduce surface wear and extend the lifespan of the components.

- Use a damp cloth with a neutral detergent to clean your bike. Never use harsh chemicals or alcohol.
- Refer to the manufacturer's instructions for details on cleaning the drivetrain.
- When cleaning the rack and fenders, check the mounting screws for looseness and tighten them promptly.
- When cleaning the kickstand, do not spray it or its pivot directly with a high-pressure washer or strong water jet, as this may wash out the grease and allow water ingress, causing rust or stiff movement.

- Make sure the charging port cover and USB-C charging port cover are securely closed during cleaning.

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- Do not use a high-pressure power washer directly on the electrical components, bearings or seals.

7.2 Lubrication

After each cleaning, once the bike is fully dry, it is recommended to inspect and lubricate the drivetrain and moving parts according to the manufacturer's instructions. Proper lubrication ensures product performance and extends its service life.

Consult an authorized retailer for appropriate lubricants and recommended lubrication frequency.

- Lubrication intervals depend on riding and cleaning frequency. Clean and lubricate the bike more often in coastal areas or with frequent use.
- Regularly lubricate the thru-axle. The frequency of maintenance varies depending on how often the wheels are detached.
- Maintain the kickstand regularly. Remove grit, mud, and other debris from its inner surfaces and joints, then apply lubricant. Clean and service the kickstand promptly after riding in muddy or sandy conditions.

- Do not apply the lubricants to the brakes, pedals, and rims.
- Do not rotate the chainring backward when cleaning and lubricating the chain. Otherwise, the drive unit and battery may be damaged.

7.3 Regular Inspection

The mechanical components on the bike have a limited service life. Continued use beyond the lifespan may lead to sudden damage. Regular inspection of the bike helps prevent accidents caused by components damage.

- Refer to the component manufacturer's instructions for detailed service and maintenance.
- The maintenance intervals in this manual are for reference only. Inspect your bike as needed based on the riding conditions and frequency.
- Make sure to perform a complete inspection and maintenance after a long-distance ride, or after riding in harsh conditions or in the rain.

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You can perform the routine maintenance explicitly listed in the table below by yourself. Any advanced service requiring special tools and skills must be performed by a professional.

	User Task		**Professional Service**	
Maintenance / Inspection Items	After Every Ride	As Needed / Monthly	Every Six Months	Every Year
Clean dust, debris, and stains from the bike frame.	●			
Check the tires for any embedded foreign objects.	●			
Clean and lubricate the drivetrain.		●		
Clean the debris accumulated on the surface of the speed sensor ring and the speed sensor.		●		
Check whether the handlebar grips are still secure.		●		
Check whether the drivetrain is working normally.		●		
Check whether the critical fasteners are tightened to the specified torque.		●		
Check the brake rotors and pads for wear.		●		
Check the tires for damage or any worn area.		●		
Check the spokes for looseness or damage.		●		
Check the rack mounting screws for looseness.		●		
Check the fender mounting points for looseness or deformation.		●		
Check whether the lights are working normally.		●		
Check whether the kickstand is secure and springs back smoothly.		●		
Check the trailer connection point (if a trailer thru-axle is installed)		●		

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	User Task		Professional Service	
Use professional tools to check for chain stretch.			●	
Check the frame for any cracks or other signs of damage.			●	
Check and lubricate the hub, headset, and other components that are subject to friction.			●	
Thoroughly clean and re-torque the cranks, chainring, and cassette.			●	
Perform a complete service on the headset.				●
Replace brake fluid to ensure braking performance.				●

Critical Fastener Torque Check

Use a torque wrench to regularly check critical fasteners, preventing component loosening that could result in loss of control.

Fastener	Torque /N·m	Tool
Stem faceplate bolt	5	H4
Stem bolt	8	H4
Bike light adapter bolt	3	H4
Brake lever bolt	5–7	T25
Seatpost clamp bolt	5	H4
Pedals	30–35	H6
Crank bolts	53–54	H8
Derailleur mounting bolt	10–12	H8
Front thru-axle	9	H6
Rear thru-axle	10	H6
Kickstand mounting bolt	7	H4
Front fender-to-fork mounting bolt	5	H4
Front fender cap bolt	0.5–0.6	H2.5
Front fender support rod bolt	4	H4
Rear fender support rod bolt	4	H4
Rear rack-to-frame mounting bolt	5	H4
Front rack-to-frame mounting bolt	5	H4

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Fastener	Torque /N·m	Tool
Front rack tray mounting bolt	4	H3

7.4 After an Impact

If you accidentally fall off or sustain an impact during riding, ensure your own safety first. Before continuing to ride, check your bike condition as follows:

1. Check the whole bike for any deformation, damage or cracks. If any issues are detected, do not continue riding the bike. Take it to an authorized retailer for a thorough inspection.
2. If you hear any unusual noise, check if the bolts, bearings, and any other connecting parts are loose.
3. Check the battery: If the battery charging port is damaged or the battery is no longer securely fixed in the down tube, do not continue to use.
4. Check if there are any error messages displayed on the control display. Follow the instructions to troubleshoot before continuing to use.
5. Check if the wheels are securely attached to the frame and whether the rims are centered with respect to the frame or fork.
6. Check if the handlebar and stem are bent or damaged and whether the stem is firmly fixed.
7. Check if the handlebar and saddle are centered. If necessary, realign and re-tighten the bolts.
8. Check whether the drivetrain still functions normally. If any issues are detected, do not continue to operate the drivetrain and perform necessary maintenance and repair.
9. Inspect the rack and fenders for deformation, cracks, or loose mounting screws. If damaged, do not continue using until repaired.

7.5 Replacing Wearable Components

Replace the components if there are any cracks, scratches, wear, or abnormal noise. Consult the authorized retailer or official customer service if you have any doubt about the degree of wear on the components.

- Refer to the *Maintenance Manual* for detailed instructions on replacing genuine components.

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- It may be necessary to remove the drive unit or battery when replacing the components. If you cannot perform the operation by yourself, it is recommended to have the authorized retailer or a professional bike shop perform the operation to prevent damage to the bike from improper handling.
- Contact the authorized retailer or official customer service to purchase the genuine components if replacement is needed.
- Some parts listed in the table may not be equipped on your specific model. Please refer to the actual product.

Components	When to Replace
Bearings	When the bearings do not rotate smoothly or have excessive play.
Spacers	When surface wear is visible.
Chain guide and chain guide mounting plate	When deformed, bent, or broken.
Drive unit guard	When there are signs of cracks or breakage.
Hoses and cables	When there are signs of breakage, wear, rust, or kinking.
Tires	When there is excessive tread wear, cracks, or other damage.
Chain	When links are broken, the chain is stretched, shifting performance drops, or a specific mileage is reached.
Handlebar grips	When the grips are damaged.
Brake	When the brake rotors and pads are worn and become thinner.
UDH hanger	When deformed, bent, or broken.
Drive unit casing	When the casing is deformed or damaged.
Spider	When deformation or damage occurs. If switching to a spider-mount chainring, the spider must be BCD104.
Front fender	When deformation, cracks, or irreparable fastener damage occurs.
Rear fender	When deformation, cracks, or irreparable fastener damage occurs.
Rack Accessories (Cargo Net, Tray, etc.)	When broken or can no longer be securely tightened.

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7.6 Storage and Transportation

Storage

- Make sure to power off the drive system when storing the bike for an extended period.
- Before long-term storage, thoroughly inspect, clean, and lubricate the bike, and reduce the tire pressure to half of the normal level.
- For long-term storage, store the bike and battery in a dry, cool, well-ventilated place, and keep them away from flammable materials.

Transportation

- Make sure to inform yourself of all applicable laws and legal regulations regarding electric bikes in the destination country or region if you need to transport the bike.
- Be aware that the electric bike is heavier than a regular bike. Be careful when carrying or lifting it. Refer to the tutorial video for how to pack the bike: https://www.amflowbikes.com/tl-carbon/video.
- Make sure to remove removable accessories such as the rack and fenders before transporting the bike. Make sure to protect the ports to prevent the ingress of moisture and dust when transporting the battery separately.
- Transporting the battery may be subject to restrictions and require special packaging. Make sure to inform yourself of all applicable local laws and legal regulations or consult the authorized retailer or official customer service for more information.
- Before transporting the battery, make sure the battery level is below 30%.

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