TL Carbon

Maintenance 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

Safety Warnings and Risk Notices

Before disassembling, assembling, modifying, or maintaining the bike, carefully read the following safety warnings and risk notices. Improper handling may result in damage to the bike or personal injury.

General Notices

- Always power off the system when performing inspection and maintenance on the bike.
- It is recommended to have an authorized retailer regularly perform inspection and maintenance on your bike to extend its lifespan and ensure 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 illustrations in this manual are for reference only. Actual products may vary.

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Disassembly and Assembly Risks

⚠
- Improper disassembly or assembly may damage components and even cause riding accidents.
- All fasteners must be tightened to the specified torque values. Refer to the relevant sections of this manual or the markings on the component.
- After reassembly, perform a thorough safety check to ensure all components are correctly installed and securely tightened before riding.
- Any unauthorized modifications to the bike may compromise the performance and safety, and may void the warranty.

Maintenance Notices

⚠
- Do not attempt to service or repair the bike unless you fully understand the correct maintenance procedures. Improper maintenance may damage the bike and lead to accidents during riding.
- When using a repair stand, never clamp the frame tubes or any carbon fiber components, as this may damage the frame.
- After any maintenance, a test ride must be performed to confirm that all functions operate normally and there are no abnormal noises before resuming regular use.

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 Specifications

1.1 Geometry

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

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

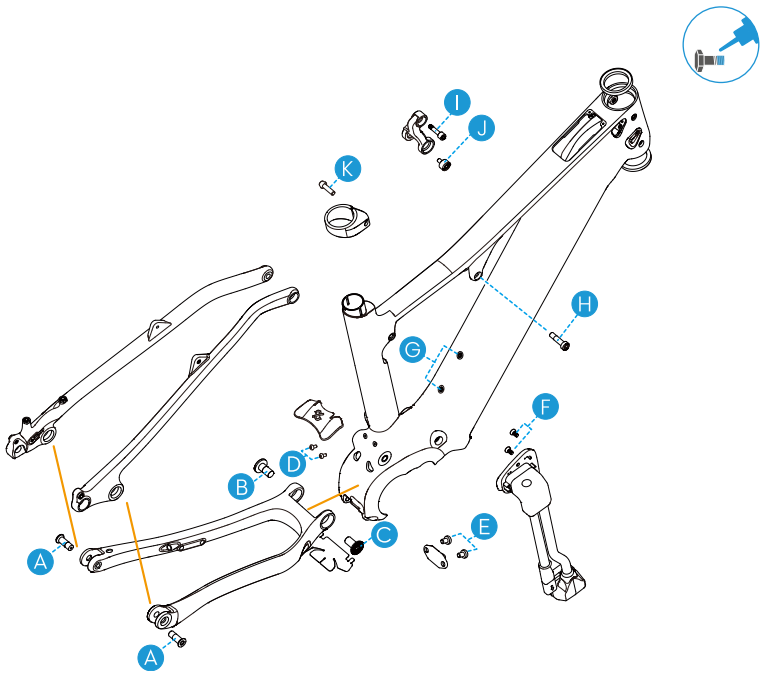
1.2 Component Compatibility

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

1.3 Bolt Specifications

The following is a summary of the specifications of the frame bolts and their required torque. Regularly check the torque of each bolt to ensure the components remain securely attached.

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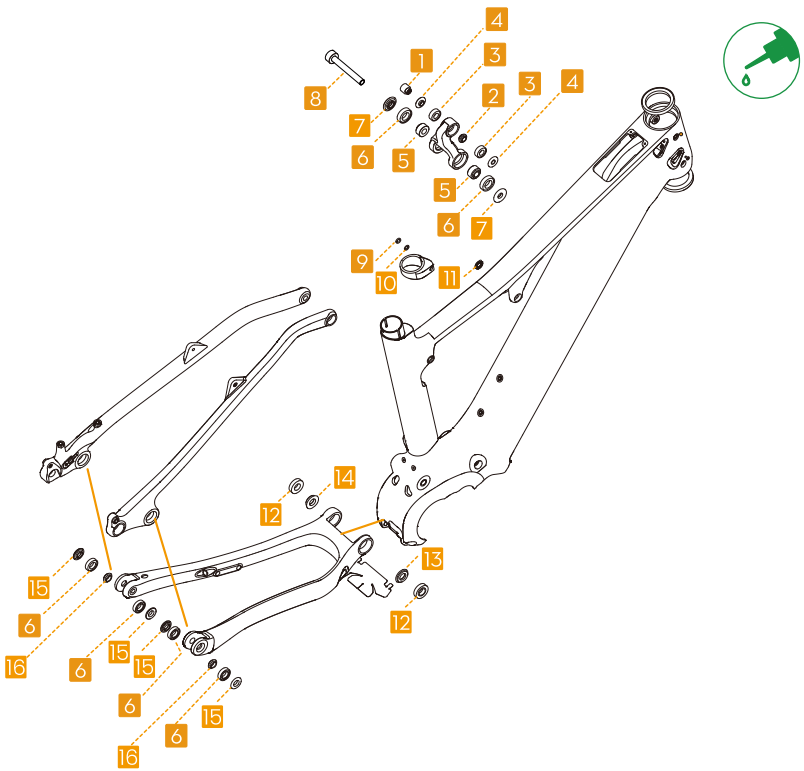
	Position	Quantity	Tool	Torque/N·m
A	Dropout pivot bolts	2	H5	15
B	Main pivot bolt (left)	1	H6	24
C	Main pivot bolt (right)	1	H6	20
D	Fender bolts	2	H2.5	1.5
E	Speed sensor cable clip bolts	2	H5	1.5
F	Y-Splitter power cable mounting bolts	2	H2.5	0.8
G	Bottle cage bolts	2	H3	1.3-1.5
H	Forward shock mounting bolts	1	H3	15-18
I	Yoke bolt (upper)	1	H6	10
J	Yoke bolt (lower)	1	H6	10-12
K	Seat clamp bolt	1	H4	5

- Before mounting, ensure that all contact surfaces are clean and apply threadlocker adhesive to the threads.

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- Ensure that each bolt is torqued to specification during mounting. Over-tightening may cause deformation of the fastener, while under-tightening may lead to loosening.
- Refer to the manufacturer's manuals for the bolt specifications of the third-party components if necessary.

1.4 Bearing and Spacer Specifications



	Position	Quantity	Dimension (ID×OD×W) /mm
1	Yoke nut (upper)	1	M6×3.75×1
2	Yoke inner spacer (upper)	1	6.1×12×6
3	688 bearings	2	/
4	Yoke outer spacer (upper)	1	6.1×16×3.5

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	Position	Quantity	Dimension (ID×OD×W) /mm
5	Yoke inner spacers (lower)	2	8.1×16.5×9.4
6	6801 bearings	6	/
7	Yoke outer spacers (lower)	2	8.1×21×3.5
8	Yoke nut (lower)	1	M6×61.1×0.5
9	Seat clamp ball washer (upper)	1	5.1×8.5×1.73
10	Seat clamp ball washer (lower)	1	5.8×8.9×1.32
11	Forward shock bolt cover	1	/
12	6901 bearings	2	/
13	Main pivot spacer (right)	1	12.1×24×3.4
14	Main pivot spacer (left)	1	12.1×24×4.9
15	Dropout pivot outer spacers	4	10×20×3.65
16	Dropout pivot inner spacers	2	10×16×5.5

1.5 Tool List

The following is a list of commonly used tools required for assembly and maintenance.

- Hex keys: H2, H2.5, H3, H4, H5, H6, H8
- Torx wrench: T25
- Open-end wrench: 17 mm (for trailer thru-axle installation/removal)
- Torque wrench (1-55 N·m)
- Air pump with pressure gauge
- Spider removal and installation tool (specialized tools)
- Crown race removal and installation tool (specialized tools)
- Chain tools
- Cable routing kit
- Threadlocker
- High-quality grease

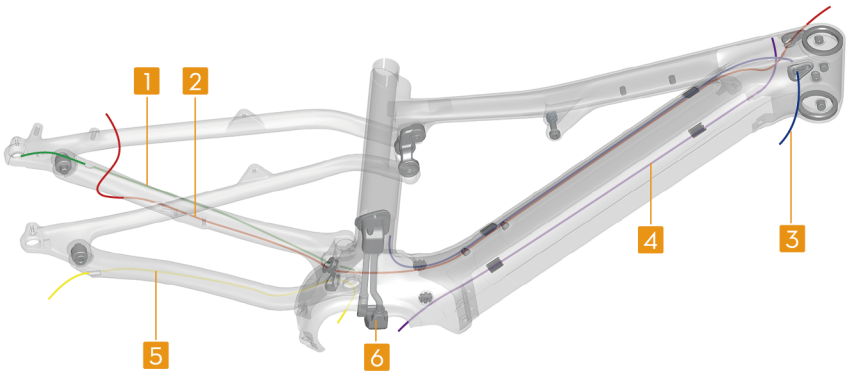
- Some of the specialized tools can be purchased from an authorized retailer or official customer service.
- For information about specialized tools for third-party accessories, please refer to the manufacturer's manual.

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2 Cable Routing

2.1 Cabling Inside the Frame

- Before assembling the bike, make sure all cables and hoses have already been routed inside the frame.
- It is recommended to leave sufficient length for the hydraulic brake hoses for future adjustments or extensions.
- Avoid bending, kinking, or pinching of the cables and hoses during routing, as this may cause damage and reduce their lifespan.

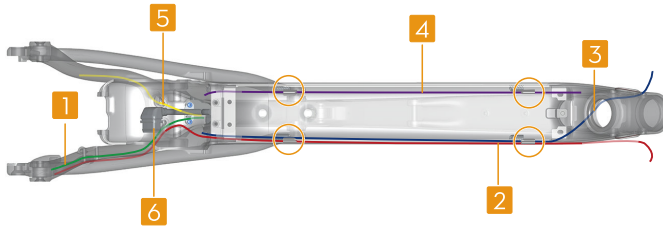


1. Speed Sensor Cable
2. Rear Hydraulic Brake Hose
3. Dropper Post Cable
4. Control Cable
5. Electronic Derailleur Power Cable
6. Y-shaped Power Cable

Ensure the cables and hoses inside the frame are routed and secured as required.

- Inside the down tube: Ensure the cables and hoses are arranged in the order shown below. Before installing the battery, check the cable routing inside the down tube to make sure the cables are tucked into the guide channels on both sides. Otherwise, the battery may not fit properly.
- Head tube outlets: Ensure the cables are routed through the corresponding outlets as shown in the illustration, and secure them in place using the cable grommets.
- Bottom bracket cable guide: Route the cables through the corresponding cable holes as shown in the illustration to avoid cables crossing or being pinched.

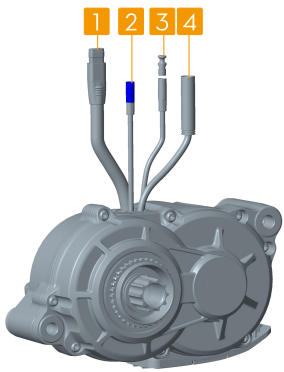
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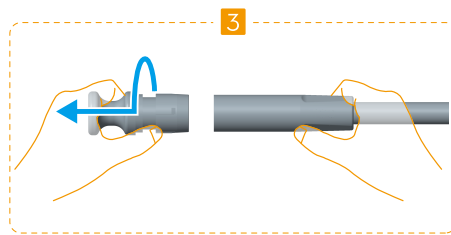


2.2 Drive System Cabling

⚠
- Ensure electrical connectors remain clean and dry. Do not apply any grease or adhesives to the connectors.
- When connecting, ensure the connectors are properly aligned. Do not force them together to avoid damage.

Drive Unit





1. Power Cable Port
2. Speed Sensor Port
3. Expansion Port
4. Control Cable Port

If you need to use the expansion port, make sure to pinch the end of the plug as shown in the illustration, then pull it out while rotating it to remove. Otherwise, the port may be damaged.

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Control Display



1. Expansion Port
2. Control Cable Port

Y-Splitter Power Cable



1. Drive Unit Connector
2. Battery Connector

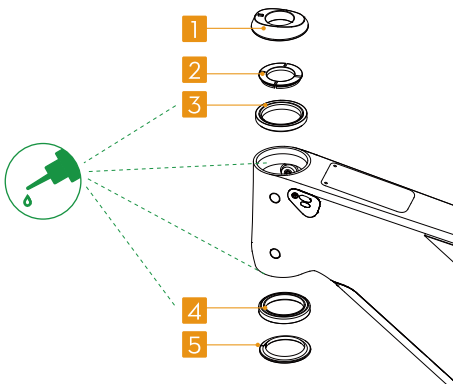
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3 Mechanical System

3.1 Steering System

Headset Assembly

The composition of the headset is shown in the illustration. If replacement is needed, ensure that the replacement components are compatible with the original headset specification.



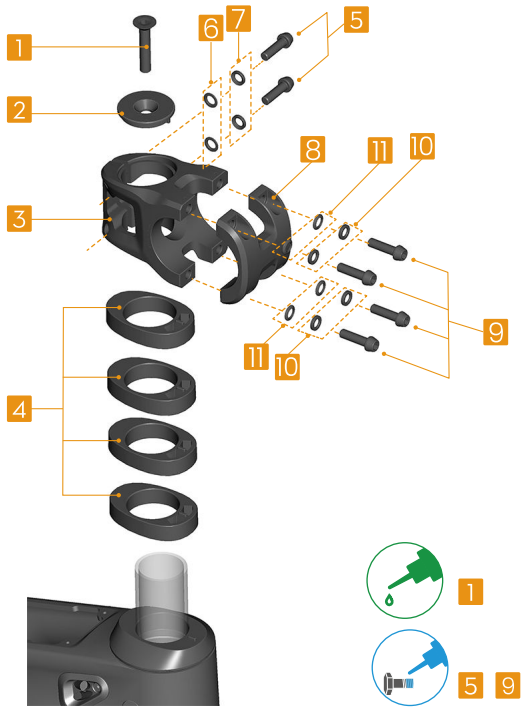
1. Headset Cup
2. Compression Ring
3. Upper Headset Bearing
4. Lower Headset Bearing
5. Crown Race

- Special tools are required to remove and mount the crown race. Please consult an authorized retailer or professional bike shop.

Stem and Handlebar

The stem components are shown in the illustration. If replacement is needed, ensure that the replacement components are compatible with the original specifications.

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1. Stem Cap Bolt
2. Stem Cap
3. Stem
4. Stem Spacer
5. Stem Bolt
6. Stem Inner Washer
7. Stem Outer Washer
8. Stem Faceplate
9. Stem Faceplate Bolt
10. Faceplate Outer Washer
11. Faceplate Inner Washer

Replacing the Stem

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.

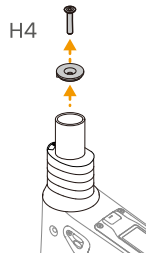
Height	Frame Size	Recommended Stem Size
155–162 cm	S	Short
162–175 cm	M	Long
175–182 cm	L	Short
182–190 cm	XL	Long

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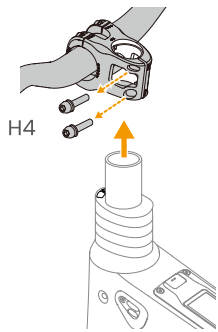
Follow the steps below to replace the stem.

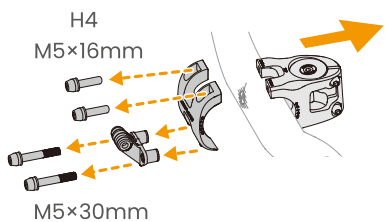
Visit https://www.amflowbikes.com/tl-carbon/video to watch the tutorial video for detailed instructions.

1. Loosen the stem cap bolt (H4), then remove the stem cap.



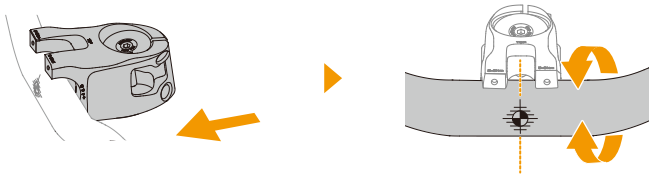
2. Loosen the stem bolts (H4), then remove the stem and handlebar assembly. Then loosen the stem faceplate bolts (H4) and remove the handlebar from the stem. Keep the washers in a safe place to avoid losing them.



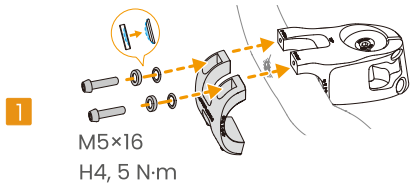


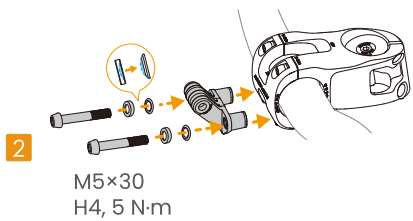
3. Center the handlebar in the new stem, aligning the handlebar's center mark with the center of the stem to ensure it is symmetrical on both sides. Rotate the handlebar to the desired position and angle.

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4. Install the stem faceplate and insert the faceplate bolts. Tighten the upper faceplate bolts first, then tighten the lower bolts together with the light adapter (H4). Do not change the tightening sequence.

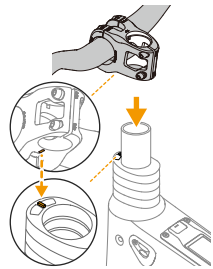




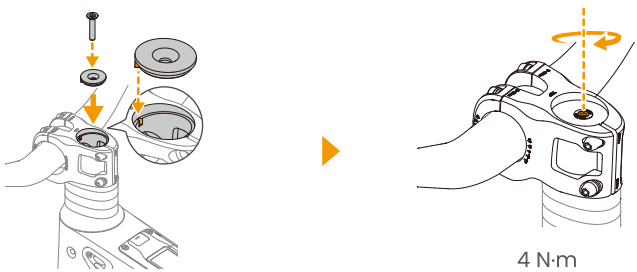
- When installing the light, the lower faceplate bolts must be M5×30 to work with the light adapter.
- When the light adapter and light are not installed, the lower faceplate bolts must be M5×16.

5. Install the pre-assembled handlebar and stem onto the steerer tube. Make sure the locating pin on the headset cup is facing forward and aligned with the locating pin on the stem. Do not tighten the stem bolts at this time.

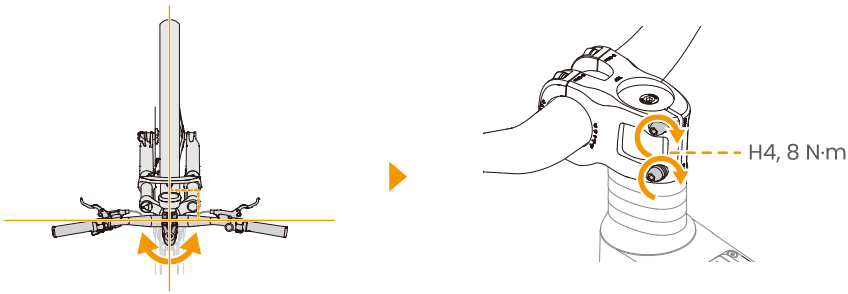
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6. Install the stem cap and tighten the stem cap bolt to the specified torque (H4). The raised mark on the stem cap must face forward; do not install it backward.



7. Hold the front wheel steady and twist the handlebar until the stem is aligned with the front wheel, then tighten the stem bolts to the specified torque (H4).



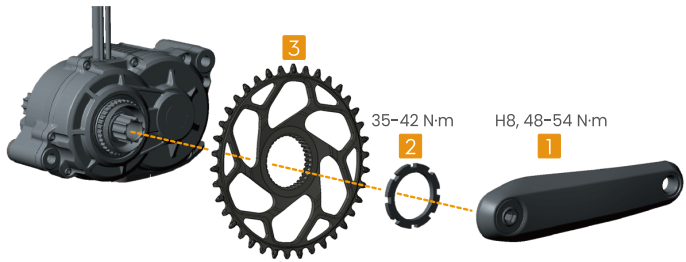
⚠ All factory-supplied stem spacers must be installed below the stem. To lower the stem height, the fork steerer tube must be cut by an authorized retailer or professional bike shop. This is an irreversible operation, so confirm the target height carefully before cutting.

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3.2 Drivetrain

Crankset

- Ensure to use a compatible chainring size and mounting interface.
- A dedicated lockring tool is required to remove and install the lockring. If you need to replace it yourself, please contact an authorized retailer or official customer service to purchase the tool.



Disassembling

Loosen the inner bolts of the cranks ① on both sides, then remove the right crank. Unscrew the lockring ② counterclockwise. Remove the chain from the chainring ③ and take off the chainring, then remove the left crank.

⚠ These are self-extracting cranks. During disassembly, do not remove the outer crank caps. Use an appropriately sized tool to loosen the inner crank bolts.

Assembling

1. Install the chainring ③ onto the drive unit spindle. Then, thread the lockring ② onto the drive unit spindle and tighten it to the specified torque.
2. Place the chain onto the chainring, then install the cranks ① and tighten them to the specified torque.

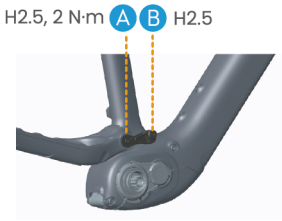
Chain Guide

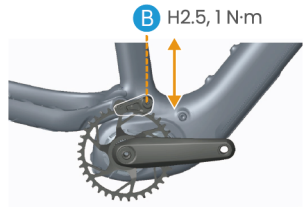
The chain guide and mounting plate have been installed on the frame by default. Follow the steps below to replace and adjust the chain guide.

The chain guide is an original component. Please contact an authorized retailer or official customer service to purchase.

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Removing

Before removing the chain guide, remove the crank and chainring according to the instructions in the Crankset section. Loosen the chain guide bolt (B), then remove the chain guide. If you need to remove both the chain guide and the chain guide mounting plate, loosen the chain guide mounting plate bolt (A), then remove them.

Installing

1. Mount the chain guide onto the hole of the chain guide mounting plate, insert the bolt (B) and tighten it slightly.
2. Install the chain guide mounting plate in the position shown in the illustration. Adjust the angle, then insert the bolt (A) and tighten it to the specified torque.
3. After installing the chainring as instructed in the corresponding section, adjust the angle of the chain guide so that its bottom arc is concentric with the chainring. Then adjust the height of the chain guide based on the chainring size, and tighten the bolt (B) to the specified torque.

Chain

Inspection

- Use a chain wear indicator to check for chain wear. If the chain is excessively worn, replace it promptly.
- Check the chain for rust, deformation, or breakage.
- Ensure the chain has proper tension and moves smoothly.

Maintenance

- Regularly clean the chain with a dedicated degreaser to remove dirt and grime.
- Once completely dry after cleaning, apply an appropriate amount of chain lubricant and wipe off any excess from the surface.

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- Clean the chain promptly after riding through mud or water to prevent accelerated wear.

Do not rotate the chainring backward when cleaning and lubricating the chain. Otherwise, the drive unit and battery may be damaged.

Electronic Shifting System

- Check that the shift controllers are working properly, and that the buttons are responsive.
- Test the shifting performance to ensure smooth gear changes without abnormal noise.
- After every 300 km of riding, check whether the derailleur mounting bolt and cassette lockring are tightened to the specified torque.
- Clean the cassette and rear derailleur using a soft-bristle brush and a bicycle-specific degreaser to remove dirt and grime.

If the rear derailleur cage becomes visibly bent due to an impact, compromising shifting accuracy, stop riding immediately, and contact an authorized retailer or component manufacturer for assistance.

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.

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

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3.3 Brake System

⚠ • The brake system is crucial to your riding safety. If you notice a decrease in braking force, abnormal noise, or any other abnormalities, stop riding immediately and inspect the system.

• Servicing the brake system requires specialized tools and expertise. Please follow the manufacturer's instructions, or have the maintenance performed by an authorized retailer or a professional bike shop.

• For new bikes, or after replacing the brake rotors or pads, the brake system must be properly bedded in. Refer to the manufacturer's instructions for detailed procedures.

Inspection

- Test the front and rear brakes in a safe, open area to check if the braking force is sufficient.
- Squeeze the brake levers to check for proper lever travel. If there is excessive lever travel or a noticeable lack of braking force, the brake pads may need to be replaced, or the hydraulic system may have a fluid leak. Refer to the manufacturer's instructions for professional repair.
- Check whether the brake levers return smoothly, with no sticking.
- Check the hydraulic brake hoses for any signs of damage, fluid leaks, or wear. Replace them promptly if any abnormalities are found.
- Check that the brake caliper mounting bolts are securely tightened, with no signs of looseness.
- Spin the wheels to check if there is an even clearance between the brake rotors and pads, and if the wheels spin freely without obvious rubbing or dragging.

Maintenance

⚠ Never apply lubricants, rust inhibitors, or other oily substances to the brake rotors or pads. If contaminated, contact an authorized retailer or a professional bike shop for cleaning or replacement.

- Regularly inspect and clean the inside of the brake calipers to remove accumulated dust and grime.
- For comprehensive service intervals and procedures for the brake system, refer to the manufacturer's instructions.

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3.4 Wheels and Tires

Replacing the Rear Wheel

Before installing a 29-inch wheel, remove the rear fender and rear rack.

Removing

1. Wrap the chain around the smallest cassette cog. Rotate the derailleur cage forward and press the cage mode button to position the cage to the open mode.
2. Remove the thru-axle (H6), then remove the rear wheel.

Installing

1. Place the chain on the smallest cassette cog and reinstall the rear wheel. Insert the thru-axle and pre-tighten it by 2 to 3 turns.
2. Rotate the derailleur cage forward to reposition it back to its original position, then tighten the thru-axle to the specified torque. (H6, 10 N·m)

Updating Device Information

After replacing the rear wheel with a different size, update the device information to ensure accurate speed calculation.

Open Avinox Ride App, tap the device details page, select the rear wheel size, and tap **Save** to update.

Maintenance

- Perform a thorough inspection and necessary maintenance on the wheelset after every long-distance ride, or after riding in harsh conditions or in the rain.
- If any abnormalities are found, have the wheelset inspected and repaired by an authorized retailer or professional bike shop.

- Check the tires for damage or visibly worn areas.
- Check the tire pressure, and inflate it to the recommended range based on riding weight.
- Check the tires for any embedded foreign objects. Remove them promptly if found.
- Check the spokes for looseness or damage, and ensure the tension is even. If any issues are found, visit a professional bike shop for adjustments.
- Check the rims for deformation, cracks, or other damage.

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- Check whether the wheelset rotates smoothly, and if there is any noticeable wobbling or abnormal noise.
- Lubricate and maintain the hub every six months. This should be performed by an authorized retailer or professional bike shop.

3.5 Frame

Inspection

- Perform a thorough inspection of the frame after every long-distance ride, after riding in harsh conditions, or after any collision.
- If any abnormalities are found, stop riding immediately and contact an authorized retailer or professional bike shop for inspection.

External Inspection

- Check the frame for cracks, dents, or other signs of damage.
- Inspect the frame welds and connection points for cracks, deformations, or rust.
- Check the finish for any obvious scratches or peeling.

Internal Inspection

- Check the inside of the frame every six months for any cracks or abnormalities.
- Check for any abnormal noise from inside the frame.

Connection Point Inspection

- Check that the connection points between the frame and the fork, rear shock, chainstays, and other components are secure.
- Check whether the bolts in the bottom bracket area are properly tightened.
- Check whether the pivot bolts on the seatstay and chainstay are tightened to the specified torque.

Cleaning and Maintenance

- Regularly clean the frame surface to remove mud, grease, and grime. After cleaning, wipe it dry with a soft cloth to prevent residual moisture from causing rust.
- Regularly inspect and protect high-wear areas, such as the chainstay.

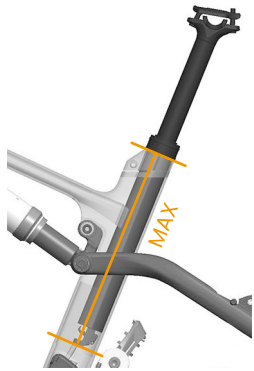
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3.6 Seat Tube System

Adjusting Dropper Post Insertion Depth

Both the frame and dropper post have insertion depth requirements. Failure to follow these requirements may result in damage to the frame and dropper post.

- **Maximum Insertion Depth**



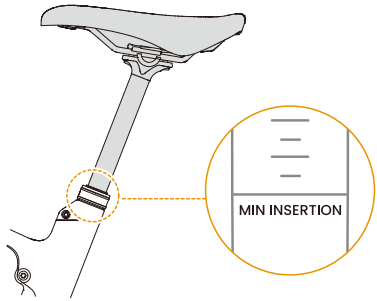
Frame Size	S/M	L/XL
Dropper Post Travel/mm	150	170
Maximum Insertion Depth/mm	250	270

⚠ When replacing the dropper post, do not force it in. Do not exceed the maximum insertion depth to avoid damaging internal frame components.

- **Minimum Insertion Depth**

  The dropper post has a minimum insertion depth requirement. It must be inserted until the minimum insertion mark is no longer visible.

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Follow the steps below to adjust the insertion depth.

Visit https://www.amflowbikes.com/tl-carbon/video to watch the tutorial video for details.



1. Loosen the seat clamp bolt.
2. Carefully lift the dropper post upward while simultaneously feeding the dropper cable into the cable outlet on the head tube to prevent disconnecting or damaging the cable.
3. After adjusting to the desired height, tighten the seat clamp bolt to the specified torque.

- If the dropper post is inserted too far, the frame and dropper post cable may be damaged and thus the dropper post cannot function properly.
- If the desired height cannot be achieved within the maximum insertion depth requirement, the dropper post should be replaced with one of a different length.
- After adjustment, twist the handlebar side to side to check whether the length of the dropper post cable is enough. If the cable is too short to prevent the handlebar from rotating, replace it with a longer one.

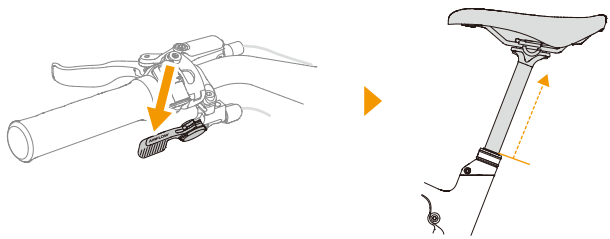
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Adjusting Dropper Post Travel

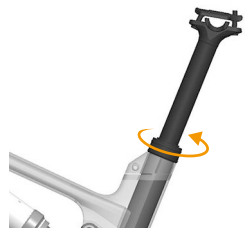
Use the included travel reduction shims to adjust the dropper post's fully extended height.

Visit https://www.amflowbikes.com/tl-carbon/video to watch the tutorial video for details.

1. Press and hold the dropper post lever to extend the dropper post from its lowest position by roughly the total height of the shims to be installed, then release the lever to lock it in place.



2. Turn the collar counterclockwise to loosen it, then slide it up along the inner tube.

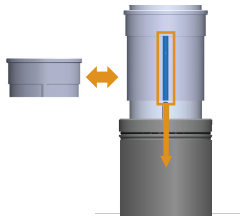


3. Gently press the dropper post lever again to raise the post slightly, pushing the nylon bushing out of the outer tube, then remove the bushing.

   ⚠ Do not press the lever forcefully, as this may cause the inner tube to fully extend.

4. Select the travel reduction shims of the desired height and slide them onto the inner tube. Shims can be stacked if needed.
5. Align the shims with the slot and push them back into the outer tube, then slide the collar back down and turn it clockwise to tighten it.

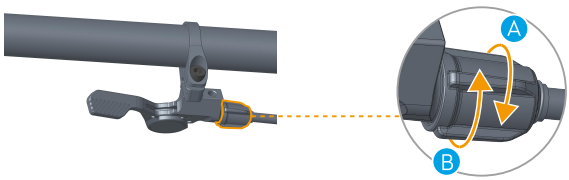
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6. Press the dropper post lever and verify that the fully extended height meets your requirements.

Adjusting Dropper Post Cable Tension

The barrel adjuster near the dropper post lever allows you to adjust the cable tension, thereby changing the actuation speed of the dropper post. Regular inspection is recommended.

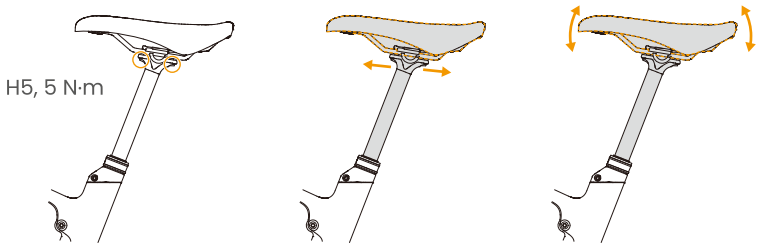


1. Check the dropper post response:
   - If the dropper post does not respond when the lever is pressed, or moves abnormally slowly, the cable tension is insufficient and should be increased.
   - If the dropper post rises on its own without lever input, or drops under the rider's weight, the cable tension is excessive and should be reduced.
2. Adjust the cable tension accordingly:
   - To increase tension: Turn the barrel adjuster counterclockwise (A).
   - To reduce tension: Turn the barrel adjuster clockwise (B).
3. After adjustment, cycle the dropper post through its full travel several times by pressing the lever. Confirm that the dropper post responds immediately when the lever is pressed, and holds its position firmly at any point when the lever is released. If the response is not as expected, continue fine-tuning the barrel adjuster until proper operation is achieved.

If the dropper post still does not work properly after the adjustment, consult a professional bike shop for assistance.

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Adjusting Saddle Position and Tilt

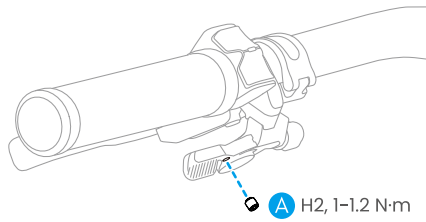


1. Press and hold the dropper post lever to raise the dropper post to a suitable height.
2. Loosen the front and rear saddle clamp bolts by several turns.
3. **Adjust fore-aft position**: Slide the saddle forward or backward to the desired position.
4. **Adjust tilt**: Alternately loosen one bolt and tighten the other to tilt the saddle to the desired angle.
   - Loosen the front bolt and tighten the rear bolt: saddle nose tilts up.
   - Loosen the rear bolt and tighten the front bolt: saddle nose tilts down.
5. After adjustment, confirm the saddle rails are fully seated in the rail grooves of the upper and lower clamp plates. Then tighten the front and rear bolts alternately to the specified torque.

3.7 Replacing Internal Cables

- It is recommended that internal cable replacement be performed by an authorized retailer or a professional bike shop. Improper routing may cause cable wear or compromise handling.
- If the drive unit or battery must be removed during internal cable replacement, refer to the Drive System section for detailed instructions.
- When replacing the internal cables, strictly follow the layout specified in the Cabling Inside the Frame section to prevent cables from tangling inside the frame.
- For instructions on replacing and adjusting hydraulic brake hoses and dropper cable, refer to the component manufacturer's manuals.
- To replace the dropper post cable, loosen the pinch bolt (A) on the dropper post lever. After replacement, tighten the bolt to the specified torque as shown in the diagram.

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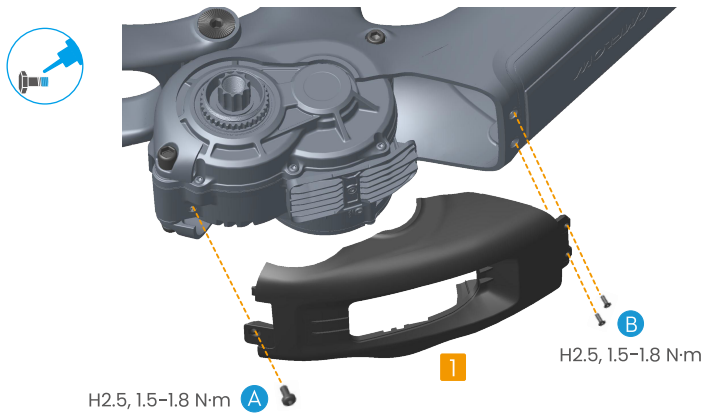
4 Drive System

4.1 Drive Unit

Drive Unit Guard

Follow the steps below to replace the drive unit guard if necessary.

1. Loosen the bolts (A,B) and remove the drive unit guard ①.
2. Mount the new guard on the frame and then insert and tighten the bolts (A,B) to the specified torque.

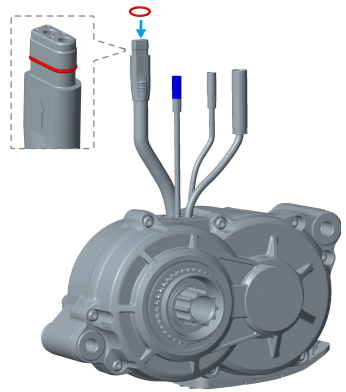


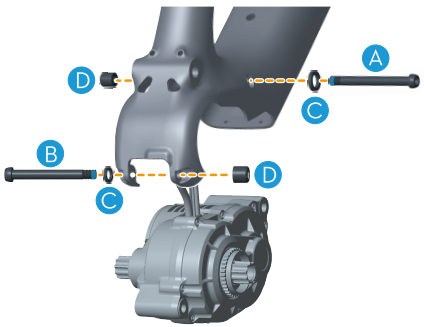
Drive Unit

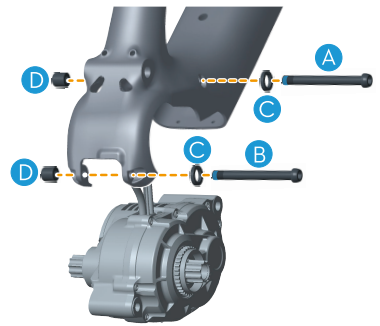
Before you begin, make sure the following components have been removed:

- Drive Unit Guard

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	Position	Quantity	Tool	Torque/N·m
A	Drive unit mounting bolt (long)	1	H6	/
B	Drive unit mounting bolt (short)	1	H6	/
C	Drive unit mounting spacers	4	/	/
D	Drive unit mounting nuts	2	H8	20-22

- The lower mounting bolt (B) can be inserted and tightened from either side of the frame to mount the drive unit.
- Before installation, make sure to distinguish the mounting positions for the long and short bolts. Inserting the bolts incorrectly will prevent installation.

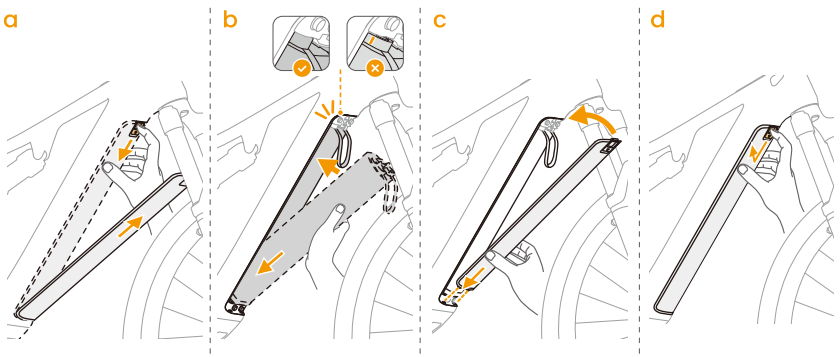
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- A set of drive unit mounting spacers (C) includes two serrated spacers. Attach the spacers by aligning the large serrations as shown in the illustration and then install them on the bolt.
- After inserting the bolts, make sure to apply the threadlocker to the exposed threads and then install the drive unit mounting nuts and tighten.
- When removing or installing the drive unit, use one wrench to counter-hold the bolt while using a second wrench to turn the nut.

4.2 Battery

Main Battery Installation and Removal

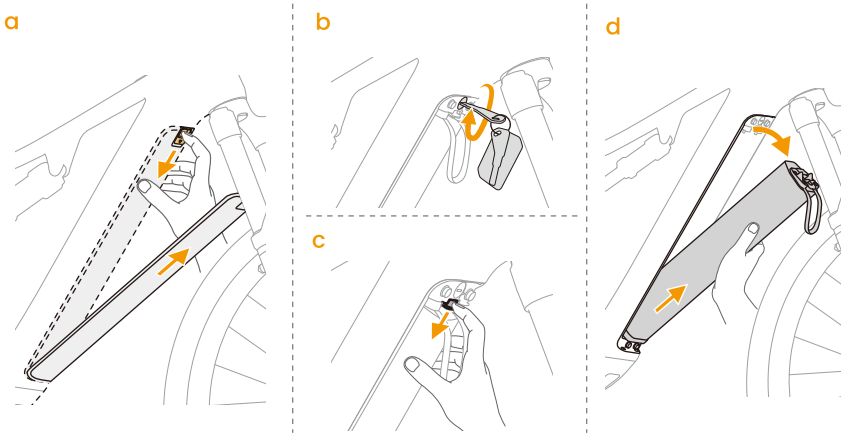
Installation



- 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.

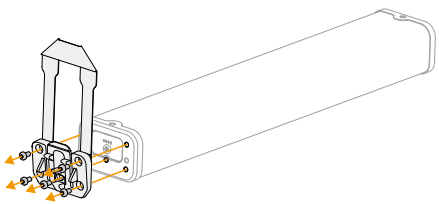
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Removal



Secondary Battery Installation and Removal (Avinox RS480 battery)

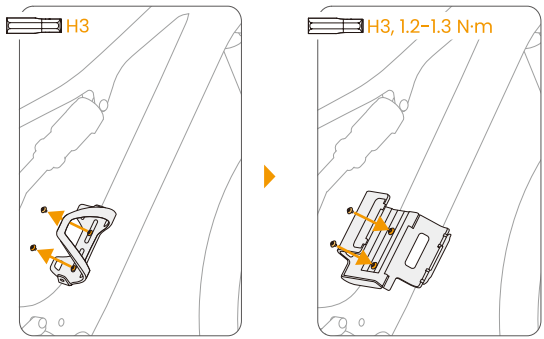
- Activation is required when using the secondary battery for the first time. After installing the battery, power on the control display and follow the instructions in the app to complete activation.
- Before installing the Avinox RS480 battery as a secondary battery, remove the five bolts to detach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



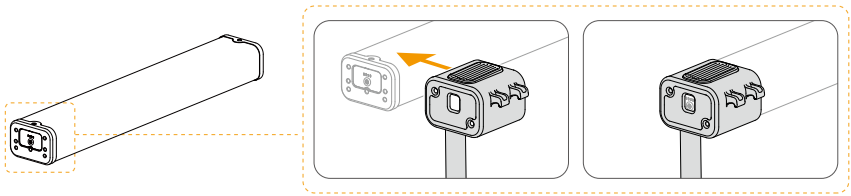
- The mounting kit and connection cable shown are for illustration purposes only. Actual products may vary.

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

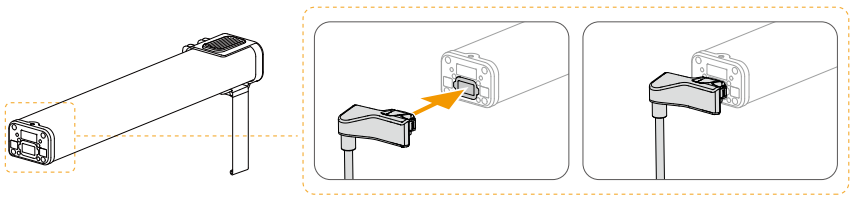
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2. Install the retention band on the power button end of the battery.

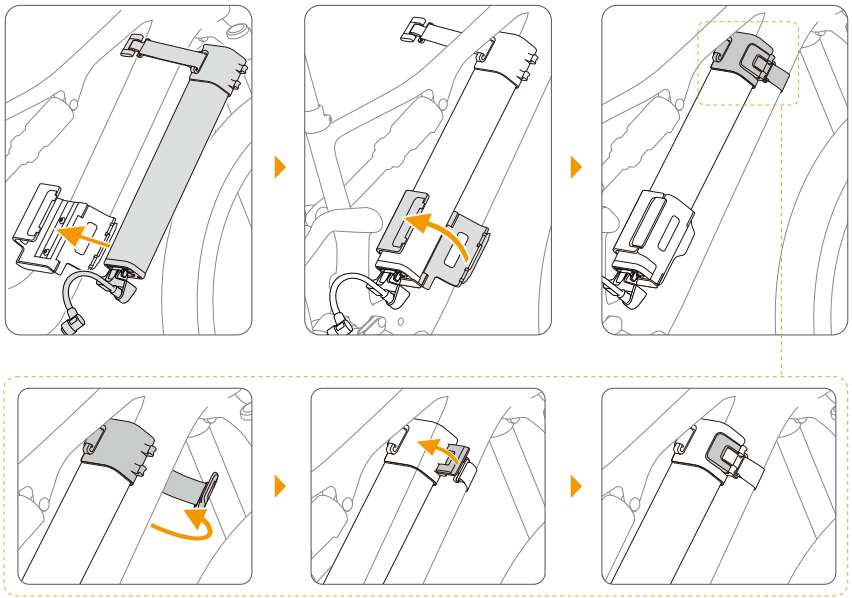


3. Connect the connection cable to the charging port of the battery.

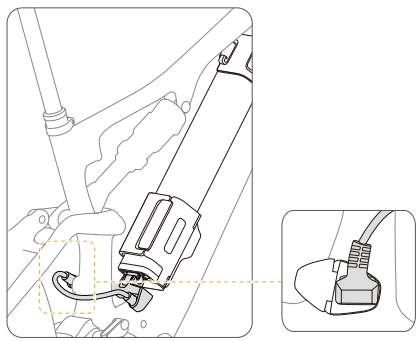


4. Slide the secondary battery into the cage from the drive side of the frame, then close the cage until the latch snaps into place. Pull the retention band around the down tube and secure it in place.

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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.

Y-Splitter Power Cable

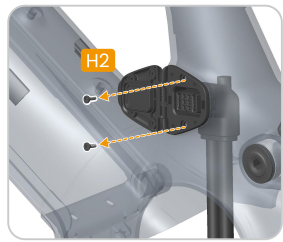
Before you begin, make sure the following components have been removed:

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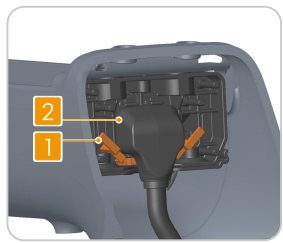
- Battery
- Drive Unit Guard
- Drive Unit

Removal

1. Remove the screws securing the power cable.



2. Use a tool to pry open both sides of the orange clip ① securing the battery connector, and then remove the battery connector ②.



3. Pull the Y-splitter power cable out from the charging port opening in the frame.

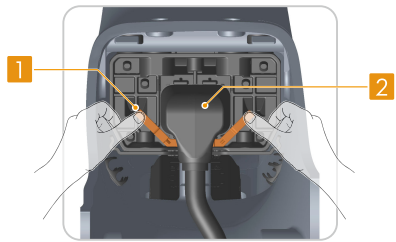
Installation

1. Route the new power cable through the charging port opening in the frame, align it with the positioning holes, and then tighten the screws to the specified torque.



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2. Position the orange clip ① without snapping it in. Press the battery connector ② until it is fully seated, then snap both sides of the orange clip down to lock the battery in place.



3. Before connecting the Y-splitter power cable to the drive unit port, install the sleeve (B) onto the Y-splitter power cable connector (A). Ensure that the arrow markings on connector (A) and the drive unit connector (C) are properly aligned on the same side. Insert connector (C) into the sleeve (B).



Battery Lock

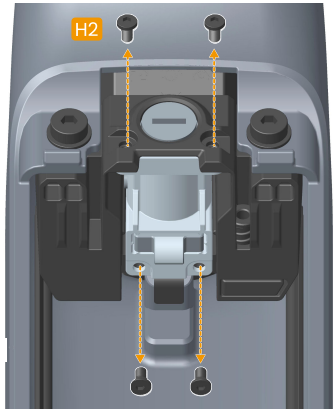
Before you begin, make sure the following components have been removed:

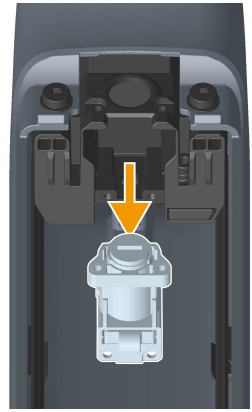
- Battery

Removal

Remove the screws securing the lock, then remove the lock.

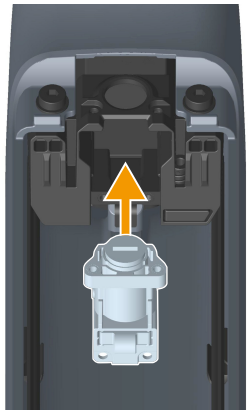
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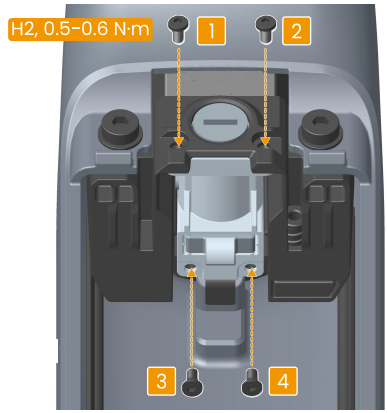




Installation

Install the new lock into the corresponding position within the battery holder, and then tighten the screws to the specified torque in the sequence shown in the figure.





Battery Holder

Before you begin, make sure the following components have been removed:

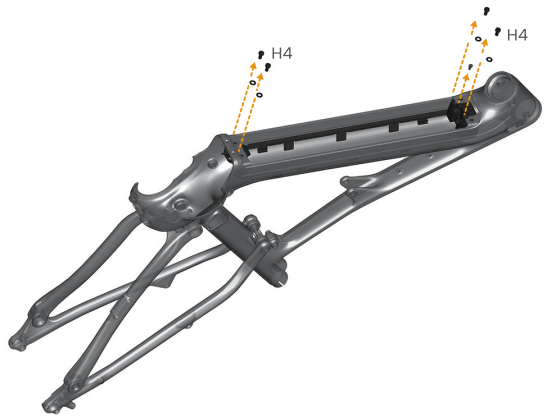
- Battery
- Drive Unit Guard
- Drive Unit
- Y-Splitter Power Cable

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- Battery Lock

Removal

1. Remove the screws and washers securing the battery holder.



2. Remove the battery holder from the drive unit installation position.



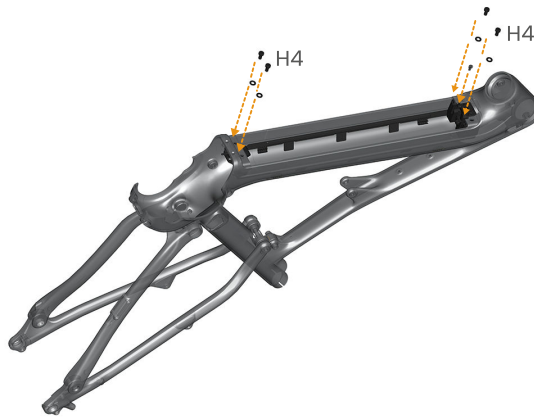
Installation

1. Insert the new battery holder into the down tube from the drive unit installation position.

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2. Align the battery holder with the positioning holes on the frame, and then tighten the screws to the specified torque in the sequence shown in the figure.

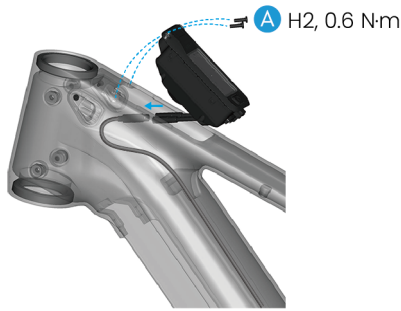


4.3 Control Display

Control Display

Remove/install the control display as shown in the illustration.

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Control Cable

Before you begin, make sure the following components have been removed:

- Battery
- Control Display
- Drive Unit
- Y-Splitter Power Cable
- Battery Lock
- Battery Holder



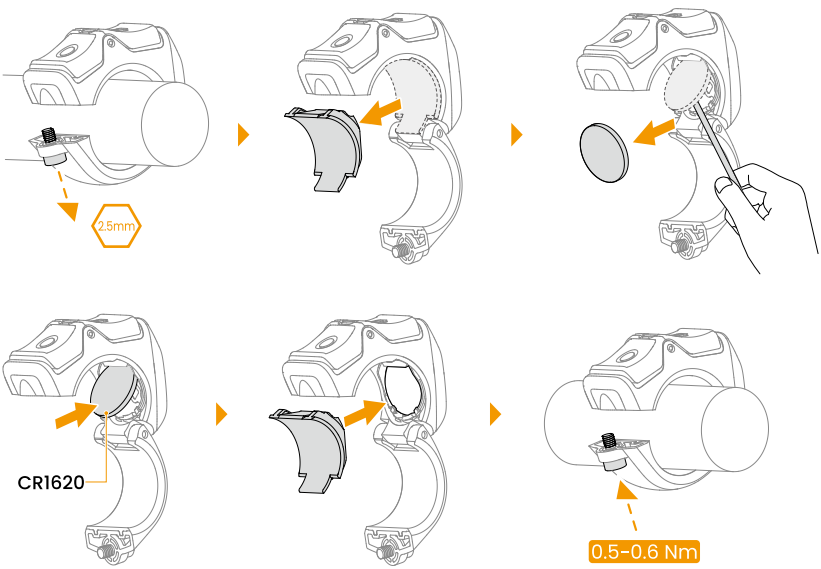
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1. Pull the control cable out of the frame.
2. As shown in the illustration, route the new control cable into the down tube through the control display mounting position. The cable must be tucked into the cable guide.
3. Reinstall all removed components in reverse order, and make sure the control cable is properly connected to the control display and the drive unit.
4. After installation is complete, check that the control display powers on properly.

4.4 Wireless Controller

Replacing Controller Battery

The indicator of the wireless controller will flash red when the battery level is too low. Follow the illustrations to replace the battery.



⚠
- Do not use metal tools to remove the battery as it may cause a short circuit.
- After repeated removal and reinstallation of the wireless controller, make sure to clean the mounting area and the bolts to prevent abnormal noise during installation or removal.

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Replacing the Controller

If you need to replace the wireless controller, it is necessary to pair the new device with the drive system after installation.

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

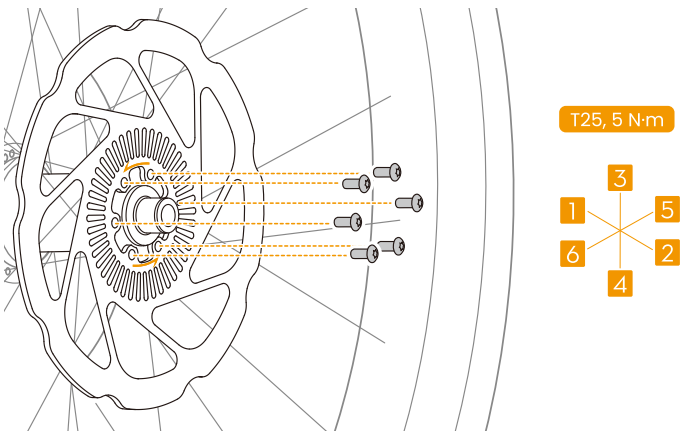
1. Press and hold the power button of the control display to power on, and then power on the accessory.
2. Swipe up to enter Settings. Tap **Accessories** > **Add** and the system will start searching for nearby devices.
3. Tap the device name displayed on the control display to start pairing. Follow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

4.5 Speed Sensor

Speed Sensor Ring

Integrated Sensor Rotor

When replacing the rear wheel, detach the sensor rotor and mount it onto the new rear wheel. Tighten the bolts alternately in the sequence shown in the figure.

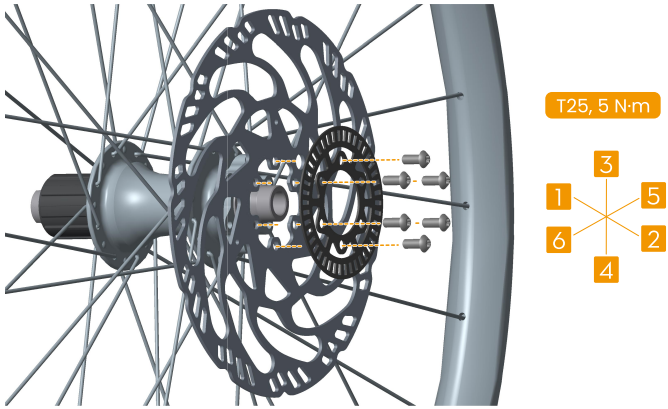


Separate Speed Sensor Ring

The speed sensor ring must be purchased separately.

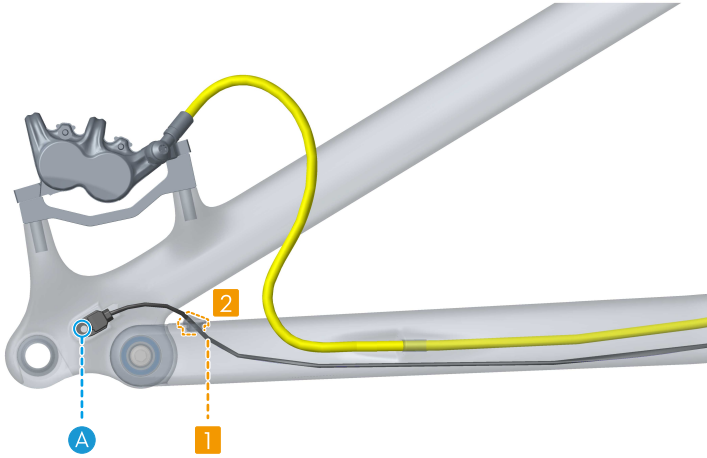
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The speed sensor ring supports only 6-bolt disc rotors. When replacing the rear wheel or rear brake rotor, make sure to detach the speed sensor ring and mount it onto the new brake rotor. Tighten the bolts alternately in the sequence shown in the figure.



Speed Sensor

The speed sensor is mounted on the chainstay. If replacement is needed, disassemble the crankset, drive unit, and rear wheel first. Disconnect the speed sensor from the drive unit and remove the cable from the chainstay. Then follow the steps below to replace.



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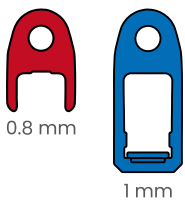
1. Use the cable routing kit to route the speed sensor cable ① through the left chainstay, then pull it out from the reserved cable port at the bottom bracket.
2. Insert and tighten the bolt (A) to secure the speed sensor, and then mount the cable grommet ②.
3. Mount the rear wheel and thru-axle and then tighten the thru-axle. Connect the cables to the corresponding ports of the drive unit, then install the drive unit and crankset.

Adjusting the Clearance

After replacing the speed sensor, rear wheel, or brake rotor, you must verify the clearance between the speed sensor and the speed sensor ring. The specified clearance range is 0.5 to 1.6 mm. Any clearance outside this range may affect speed measurement accuracy.

If a specialized measuring tool is unavailable, use a standard hex key and insert it into the gap to help estimate the clearance.

Two shims are pre-installed on the back of the speed sensor at the factory. You can adjust the clearance by adding or removing the shims.





- To increase the clearance: Remove the shim(s) from the back of the sensor as needed.
- To reduce the clearance: If there are no shims on the back of the sensor, apply shims as needed. If two shims are required, strictly follow the stacking order: first attach the red shim to the back of the sensor, then attach the blue shim on top of it.

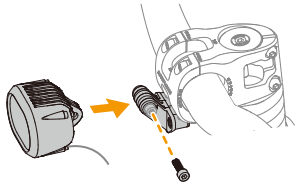
If the clearance remains outside the specified range even with no shims or with both shims installed, it indicates that the current rear hub is not compatible with the frame.

4.6 Bike Light

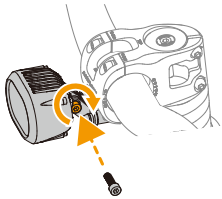
The Avinox front bike light can be mounted onto the bike using the dedicated mounting kit. Install the bike light on the stem as shown in the illustration. After adjusting the angle, tighten the mounting bolts to the specified torque.

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a



b



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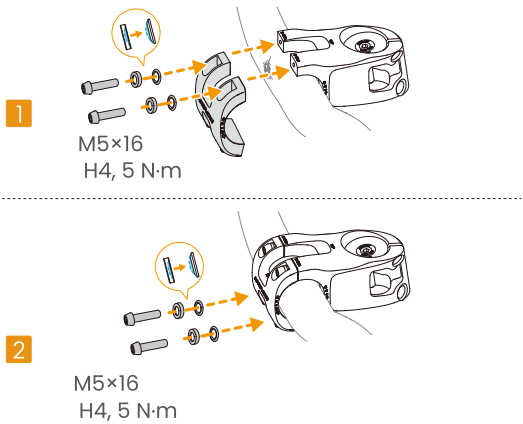
5 Accessories

5.1 Installing the Front Rack

Visit https://www.amflowbikes.com/tl-carbon/video to watch the tutorial video for detailed instructions.

Preparation

1. Power off the system before installing.
2. Remove the bike light and its adapter from the stem. Keep the washers in a safe place.
3. Re-secure the stem using the short bolts (M5×16) and washers, and tighten them.

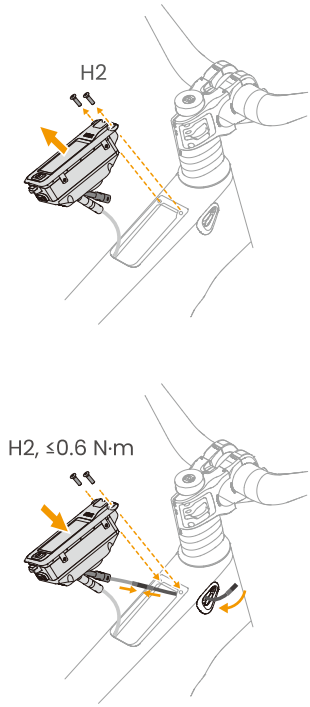


Short bolts (M5×16) are required for this step. Do not mix them up with long bolts, as this may cause structural damage.

Installing the Bike Light and Front Rack Mounting Plate

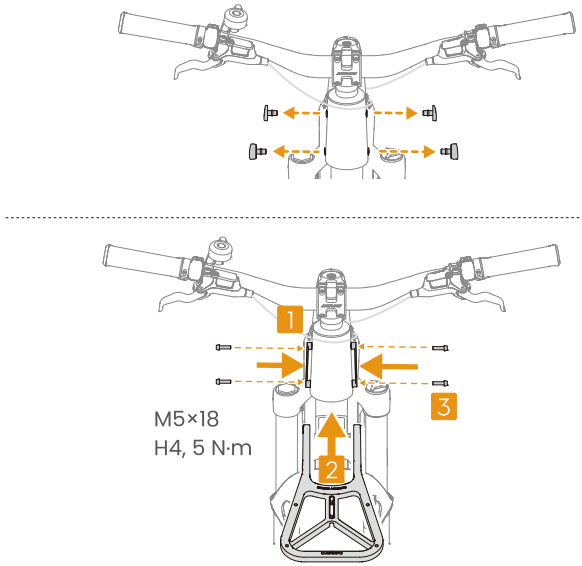
1. Remove the control display mounting screws and disconnect the bike light cable. Connect the bike light extension cable to the inside connector of the control display, then reposition the control display.

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2. Remove the rubber plug from the head tube hole. Align the support rod with the designated hole on the head tube and secure it. Snap the front rack mounting plate into the support rod holes and tighten the bolts.

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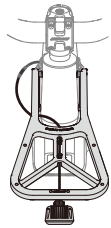


3. Install the light adapter and bike light onto the mounting plate and tighten the bolts.



4. Route the bike light cable through the cable channel in the mounting plate, then connect the extension cable to the bike light cable.

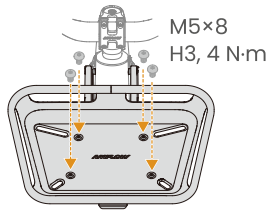
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⚠ The bike light cable must be seated in the cable channel to prevent it from moving during riding.

Installing the Tray

1. Align the four holes on the tray and tighten the bolts.



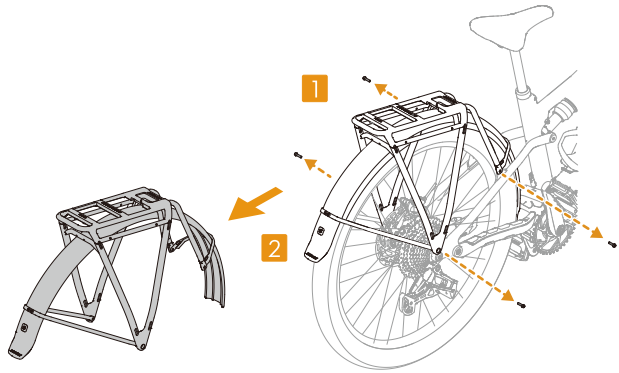
2. After installation, shake the rack to confirm there is no looseness before use.

5.2 Rear Rack

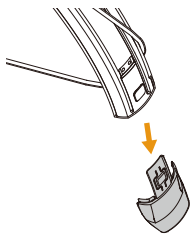
The rear rack is installed on the frame at the factory. For removal, follow the steps below.

1. Power off the system. Loosen all bolts connecting the rack to the frame, and remove the rear rack together with the rear fender.

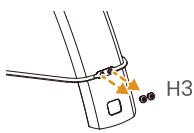
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2. After removing the rear rack, use the included support rods to re-secure the fender.
   a. Remove the tail plate from the fender.

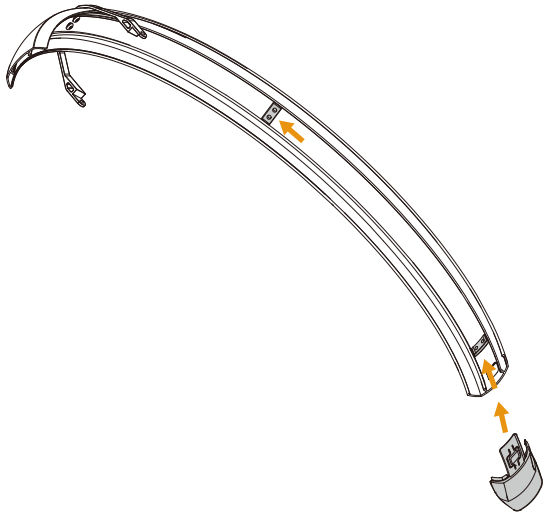


   b. Loosen the bolts on the mounting bracket (H3), slide it rearward along the rail, and remove the support rod.



   c. Slide in the included new mounting bracket. Reinstall the tail plate.

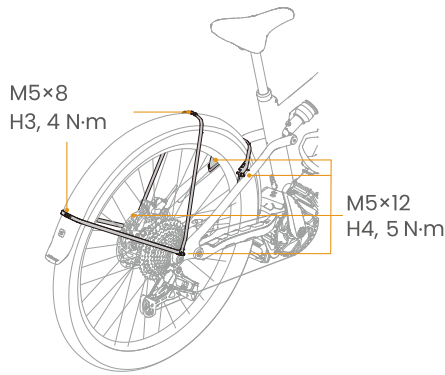
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d. Take the included bolts, align the support rod with the mounting bracket bolt holes, and tighten.

> It is recommended to use the included new bolts. If reusing the original bolts, reapply threadlocker to the threads before reinstalling.

e. Shake the fender to confirm both support rods are securely installed. Reinstall the fender assembly onto the frame.



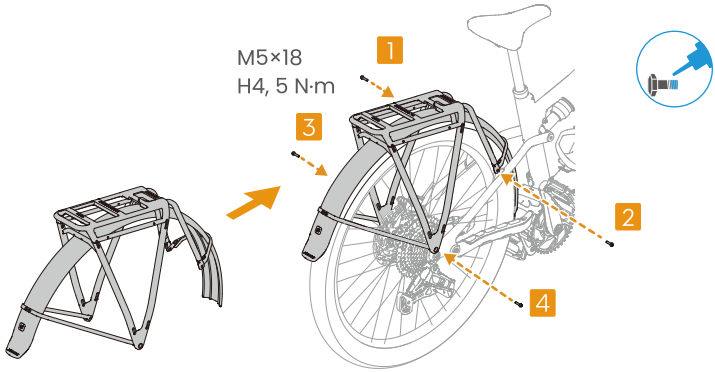
Reinstalling the Rear Rack

⚠ • Before mounting, ensure that all contact surfaces are clean and apply threadlocker adhesive to the threads.

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- To reinstall the rear rack, tighten the bolts strictly in the numbered order shown. Failure to do so may result in an unstable rack.

1. Align the rear rack with the mounting position on the frame, and confirm it sits flush against the frame.
2. Tighten all bolts in the numbered order shown.



3. Shake the rack to confirm there is no looseness before use.

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6 After-Sales Service

6.1 Warranty Policy

Warranty period may vary according to local laws and regulations.

Visit https://www.amflowbikes.com/support/policy to view the product warranty period and warranty policy.

6.2 Support Channels

The following support channels are available, choose according to your situation:

1. **Contact Local Retailer for Assistance**

   Contact an authorized retailer, describe the service type you need, and they will help you complete the service. Visit the following website to find an authorized retailer:

   https://www.amflowbikes.com/test-ride

2. **Contact Official Customer Service**

   Visit the following website to contact online support, and describe the service type you need:

   https://www.amflowbikes.com/support

3. **Official Support Hotline Service**

   Contact official support to describe the product issue and service type, such as a repair or return, and then ship the product back according to the guidelines.

   Visit the following website to view phone support options for the hotline service:

   https://www.amflowbikes.com/support

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