PL Carbon & PL Carbon Pro

Maintenance Manual

2025.10



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Using this Manual

Legend

⚠ Important ☼ Hints and Tips 🕮 Reference

Important Information

- Refer to the manufacturer's instructions and official website to learn 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.
- Do not make any unauthorized modifications to the drive unit. Otherwise, the warranty may become void.
- This manual is subject to update. Please check the latest version from https://www.amflowbikes.com/pl-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.



This symbol means that grease should be applied as illustrated.

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This symbol means that threadlocker should be applied to the threads as illustrated.

Video Tutorials

Consult official customer service for the tutorial videos, which demonstrate how to assemble and disassemble the product properly and safely.

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Contents

Using this Manual 2

Legend 2
Important Information 2
Video Tutorials 3

1 Product Information 6

1.1 Specifications 6
Component Specifications 6
Bolt Specifications 6
Bearing and Spacer Specifications 7
1.2 Cable Routing 8
Cabling Overview 8
Drive Unit 10
Control Display 10

2 Maintenance 12

2.1 Bike Maintenance 12
Cleaning 12
Lubrication 13
2.2 Regular Inspection 13
2.3 Replacing Wearable Components 14
Replacing the Cables 15
Cable Guide 16
Rear Brake Cable 16
Rear Derailleur Cable 16
Seatpost Cable 17
Drive Unit to Display Cable 17
Power Cable and Charge Port Cover 18
2.4 Link Maintenance 18
2.5 Battery Maintenance 19
2.6 Disposal 20

3 Assembly 21

3.1 Headset 21
3.2 Stem and Handlebar 22
3.3 Seatpost 23
Seatpost Insertion Requirement 23
Adjusting the Seatpost 24
3.4 Chainring 26
Chain Guide 27

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3.5	Wheels	27
	Adjusting Rear Wheel Size	27
	Speed Sensor Ring	28
	Speed Sensor	29
3.6	UDH Hanger	30
3.7	Drive Unit	31
	Drive Unit Guard	33
	Heat Sink	33
	Drive Unit Upper Housing	34
	One-Way Clutch	36
	Planetary Gear Set	37
3.8	Control Display	38
3.9	Wireless Controller	38
	Replacing Battery of Controller	39
	Replacing the Controller	39
3.10	Battery	40
3.11	Frame	41

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1 Product Information

1.1 Specifications

Component Specifications

It is supported to change the transmission, seatpost, wheels, rear shock, fork, and brake to other models. Before modification, ensure to consult the authorized retailer and component manufacturer about the compatibility.

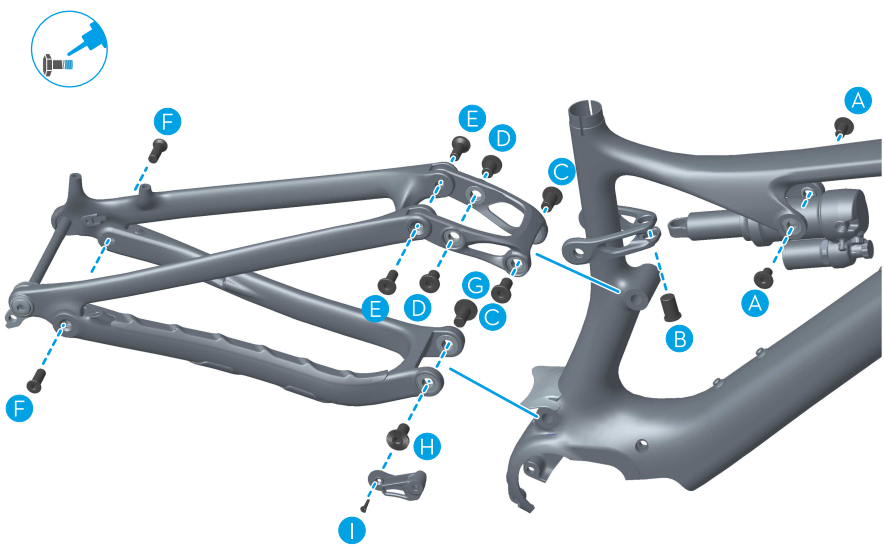
Visit the following website for specifications:

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

⚠
- Make sure to select the models that are compatible with the frame if you are changing the shocks. Use incompatible shock may cause damage to the frame and result in loss of control.
- The speed sensor ring needs to be mounted on the replaced rear brake rotor and only supports to mount on a 6-bolt disc rotor.

Bolt Specifications

The following is a summary of the specifications of the bolts on the frame. Make sure to regularly check the torque of each bolt to ensure attachment of the components.

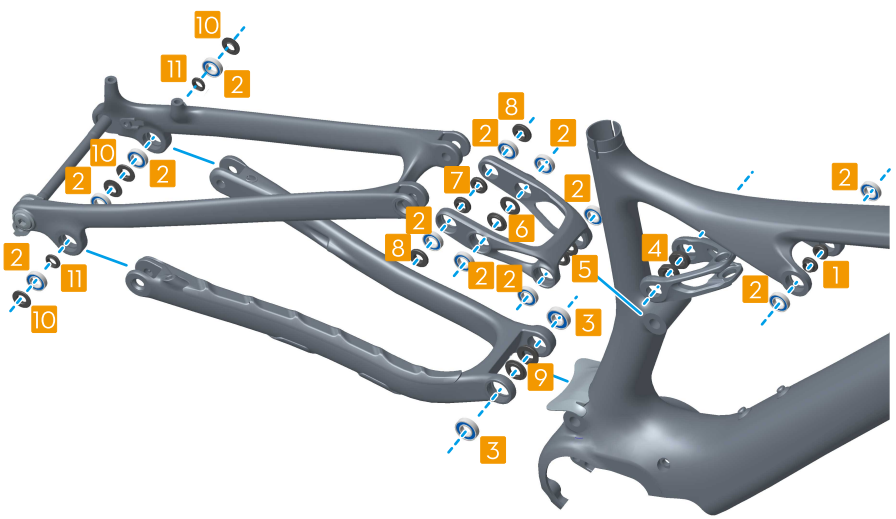


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	Location	Quantity	Tools	Torque/N·m
A	Shock forward mounting bolts	2	H5	15
B	Shock rear mounting bolt	1	H8	20
C	Seat tube pivot bolts	2	H6	20
D	Yoke at shock link bolts	2	H6	24
E	Seatstay pivot bolts	2	H5	20
F	Swingarm pivot bolts	2	H5	15
G	Main pivot bolt-left	1	H6	24
H	Main pivot bolt-right	1	H6	24
I	Chain guide mounting plate bolt	1	H2.5	2

- Before mounting, ensure that all contact surfaces are clean and apply threadlocker to the threads.
- Ensure that each bolt is torqued to specification during mounting. Too much torque may cause deformation of the fastener, while insufficient torque may lead to loosening.
- Refer to the manufacturer's manuals for the bolt specifications of the third-party components if necessary.

Bearing and Spacer Specifications



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	Location	Quantity	Dimension (ID×OD×W) /mm
1	Shock mounting spacers	2	10×16.5×6.9
2	6801 bearings	12	/
3	6901 bearings	2	/
4	Flip chips	2	M12×21.8×7.6
5	Seat tube pivot spacers	2	12×21.5×3.4
6	Yoke at shock link spacers	2	12×22×2.9
7	Seatstay pivot spacers (φ18)	2	10×18×5.4
8	Seatstay pivot spacers (φ20)	2	10×20.5×5.4
9	Main pivot spacers	2	12.2×24×4.9 (left) 12.2×24×3.4 (right)
10	Swingarm pivot outer spacers	4	10.1×20.5×3.7
11	Swingarm pivot center spacers	2	10.1×16×5.5

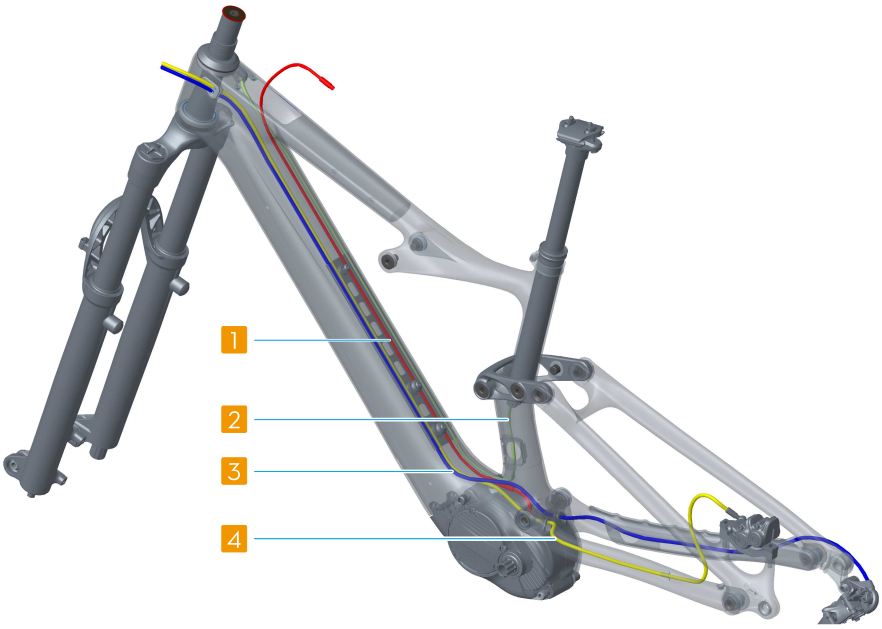
1.2 Cable Routing

- Make sure to route the cables through the frame before assembly.
- It is recommended to reserve a certain length of the rear brake cable and rear derailleur cable for potential extensions.

Cabling Overview

Place the cables into the corresponding positions of the cable guide and outlets as shown in the illustration:

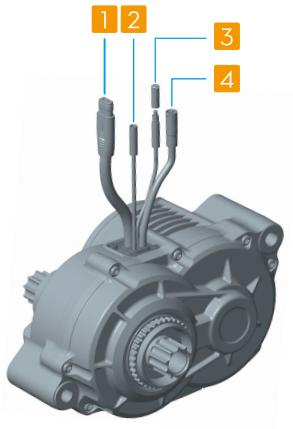
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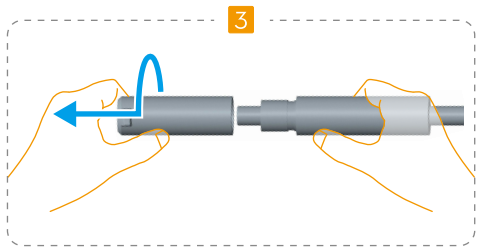


1. Drive Unit to Display Cable
2. Seatpost Cable
3. Rear Derailleur Cable
4. Rear Brake Cable

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Drive Unit





1. Power Cable Port
2. Speed Sensor Port
3. Expansion Port
4. Drive Unit to Display 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.

Control Display



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1. Expansion Port
2. Drive Unit to Display Cable Port

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2 Maintenance

2.1 Bike Maintenance

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

- Fixing and maintaining the bike requires professional skills and specialty tools. For the safety, ask the authorized retailer or profession bike shop to perform the maintenance and repairs not specifically described in this manual.
- The lifespan of the components depends on riding conditions and frequency. Regularly have the authorized retailer inspect the bike and components for wear.

⚠
- Do not attempt any maintenance or repairs until you fully 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 placing the bike in a repair stand, do not clamp the stand to the frame, as this may cause damage to the frame and result in accidents during riding.

Cleaning

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

- Use a damp cloth with a neutral detergent to clean your bike. Do not use harsh chemicals or alcohol.
- Refer to the manufacturer's instructions for details on cleaning the transmission and derailleur.

⚠
- Make sure to close the covers of the ports before cleaning.
- Do not use a high pressure water spray to clean the electrical components, bearings and seals.

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Lubrication

Once you have cleaned your bike, lubricate the transmission and moving parts according to the manufacturer's instructions if necessary. Consult the authorized retailer about the appropriate lubricants and the recommended lubrication frequency for your bike.

- Regularly lubricate the thru-axle. The maintenance frequency depends on how often the wheels are detached.

- 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 damage.

2.2 Regular Inspection

The mechanical components on the bike have limited service life. Continuing use beyond the lifespan may cause sudden damage. Regularly inspect your bike to avoid the accidents caused by the components damage.

Professional tools and skills are not required for the inspection and maintenance of certain components, which can be performed by yourself. For other components, the service must be performed by the authorized retailer or professional bike shop according to the manufacturer's instructions.

- Refer to the manufacturer's instructions to learn more about the service of the components.
- Regularly maintain the rear shock and fork according to the manufacturer's instructions.
- The maintenance periods in this manual are for reference only. Please inspect your bike in time according to the riding conditions and frequency.
- Make sure to perform a complete inspection and maintenance to your bike after riding for a long-distance or riding in adverse conditions and in the rain.

First Inspection

It is recommended to have the authorized retailer inspect your new bike after using for a while.

Every Month

- Check whether the handlebar grips are still secure.
- Check whether the transmission is working normally. Use professional tools or ask a bike shop to check if the chain is stretched.

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- Check the speed sensor and speed sensor of the accumulation of dirt or foreign matter.
- Check the brake rotors and pads for wear. Replace the brake components if necessary.
- Check the tires for damage or any worn area.
- Check the spoke for being loose or damage.
- Check whether the cranks are loose. If so, tighten them according to the specified torque.
- Inspect the welding and connection points of the frame for cracks, deformations, or rust.

Every Six Months

- 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.
- Clean and tighten the cranks, chainring, and cassette.
- Check the frame for any internal cracks.

Every Year

- Inspect and service the headset.
- Regularly replace the brake fluid according to the manufacturer's instruction to ensure the brake performance.

2.3 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 Assembly section to replace the genuine components.
- It may be necessary to remove the drive unit, battery, and cable guide when replacing the components. If you cannot operate by yourself, it is recommended to have the authorized retailer or professional bike shop perform the replacement to prevent damage from improper handling.
- Contact the authorized retailer or official customer service to purchase the genuine components if replacement is needed.

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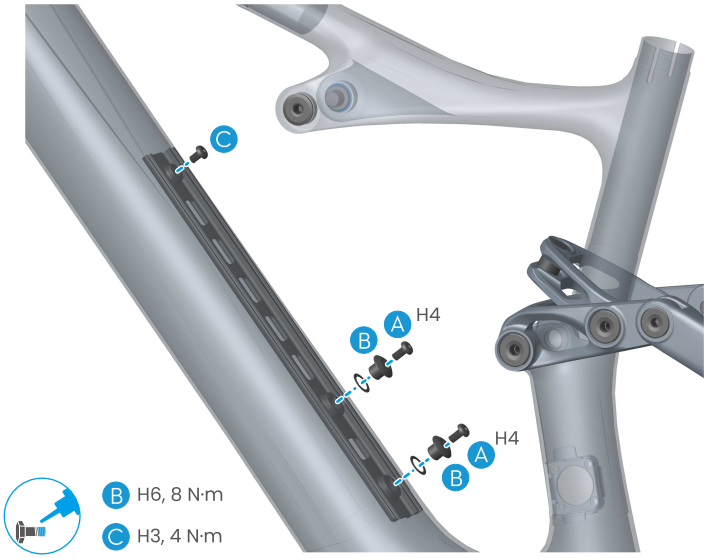
Components	When to Replace
Bearings	When the bearings are not turning smoothly or have excessive play.
Spacers	When the surface shows worn.
Chain guide and chain guide mounting plate	When there have deformation or damage.
Drive unit guard	When there have any cracks or damage.
Cables	When there have fracture, wear, rust, or kinks.
Tires	When there have worn areas or cracks.
Chain	When the chain is broken or stretched, or the shifting performance declines after riding a certain distance.
Handlebar grips	When the grips are damaged.
Brake	When the brake rotors and pads are worn and become thinner.
Down tube/Chainstay protectors	When the protector is damaged and can no longer protect the frame.
UDH Hanger	When there have deformation or damage.
Drive unit housing	When there have deformation or damage.
Spider	When there have deformation or damage.

Replacing the Cables

If replacement is needed, it is necessary to loosen the cable guide bolts and then follow the steps to replace different types of cables.

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Cable Guide



- Before loosen the cable guide bolts (B), it is necessary to remove the water bottle cage bolts (A) first. Tighten the bolts (A) to the required torque according to the specifications of the water bottle cage when assembling.
- Follow the instructions to loosen the cable guide bolts. The recommended number of turns for loosening is based on the premise that the bolts are tightened to the specified torque. Excessive loosening may cause the cable guide to become loose. Refer to the Cable Routing section to place the cables into the corresponding position before re-tightening the cable guide.

Rear Brake Cable

After removing the drive unit, remove the rear brake cable from the frame. Route the new brake cable through the corresponding position of the cable guide and the outlet of the head tube. Ensure to reserve enough length and then install the cable. Refer to the manufacturer's manual to learn the details about installing the cables.

Rear Derailleur Cable

After removing the drive unit and loosening the cable guide bolts by 2 turns, remove the rear derailleur cable from the frame. Route the new cable through the corresponding

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position of the cable guide and the outlet of the head tube. Ensure to reserve enough length and then install the cable. Refer to the manufacturer's manual to learn the details about installing the cables.

Seatpost Cable

1. Remove the drive unit and then loosen the cable guide bolts by 2 turns.
2. Loosen the pinch bolt (A) on the seatpost lever and remove the cable from the lever.* Refer to the Adjusting the Seatpost section to loosen the seatpost clamp bolt, then remove the seatpost and the cable from the frame.



* For PL Carbon, the seatpost cable must be cut to remove.

3. Route the new cable through the corresponding position of the cable guide and the outlet of the head tube. Ensure to reserve enough length. Install the seatpost cable to the seatpost and the lever according to the manufacturer's instruction.
4. Tighten the cable guide bolts and the pinch bolt (A) to the specified torque.

Drive Unit to Display Cable

Remove the drive unit, battery, and control display first and detach the drive unit to display cable from the drive unit and control display. Then follow the steps below.

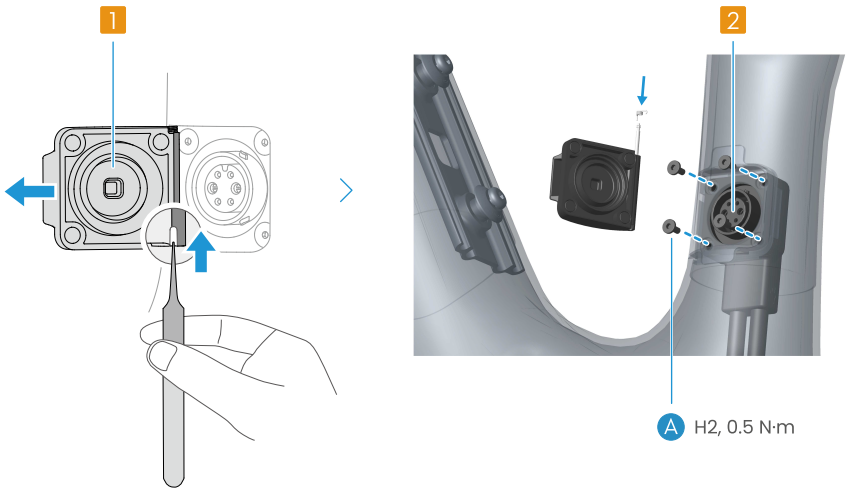
1. Remove the cable guide bolts and the cable guide, then remove the drive unit to display cable from the frame.
2. Route the new cable through the down tube from the mounting position of control display. Secure the upper end of the cable to the top tube.
3. Place the cables into the corresponding positions of the cable guide, then push the cable guide into the down tube and pre-tighten the bolts. Pull all the cables to ensure there are no displacements and then tighten the bolts to the specified torque.

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4. Reinstall the battery, control display, and drive unit.

Power Cable and Charge Port Cover

To replace the power cable, remove the drive unit and disconnect the power cable from the drive unit and battery. Then follow the steps below.

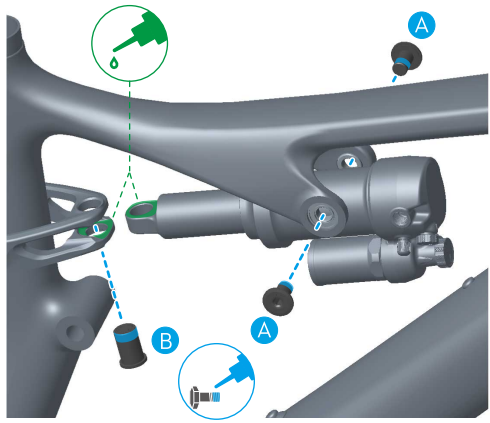


1. Open the charge port cover ①. Insert the tool into the slot and push upward until the spring disengages, then remove the cover.
2. Loosen the bolts (A) and remove the power cable ②.
3. Mount the new power cable onto the frame and tighten the bolts to the specified torque. Insert the spring and spring pin into the cover, then mount the cover onto the frame.
4. Connect the power cable to the battery and drive unit, then reinstall the drive unit.

2.4 Link Maintenance

It is necessary to maintain the connection between the yoke and rear shock when there are abnormal noises during riding. Follow the steps below to perform the maintenance.

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1. Remove the forward shock mounting bolts (A) and then the rear shock mounting bolt (B).
2. Remove the rear shock, then clean and lubricate the contact surfaces between the shock and yoke. Ensure not to apply the grease to the bolt mounting holes.
3. Apply the threadlocker to the thread of the bolts and mount the rear shock. Insert and tighten the rear shock mounting bolt to the specified torque, then insert and tighten the forward mounting bolts.

2.5 Battery Maintenance

- Charge the battery at a temperature range of 0° to 40° C (32° to 104° F). Charging at the ideal temperature range can prolong battery life.
- 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.
- When the battery level is less than 10%, charge promptly as it will affect battery life.
- Battery life may be reduced if not used for an extended period. Fully charge and discharge the battery at least once every three months to ensure the performance of the battery.

⚠
- DO NOT continue to use if the charger port or cable shows signs of wear or other damage.

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- 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.
- Remove the battery from the frame when stored for an extended period and keep it out of the reach of children.
- If the battery needs to be stored for a long time, it is recommended to discharge the battery to 30%. Storing with a high battery level will shorten the battery life, and storing with a low battery level may lead to over-discharge.
- 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.

2.6 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, and be sure the power has run out completely.

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3 Assembly

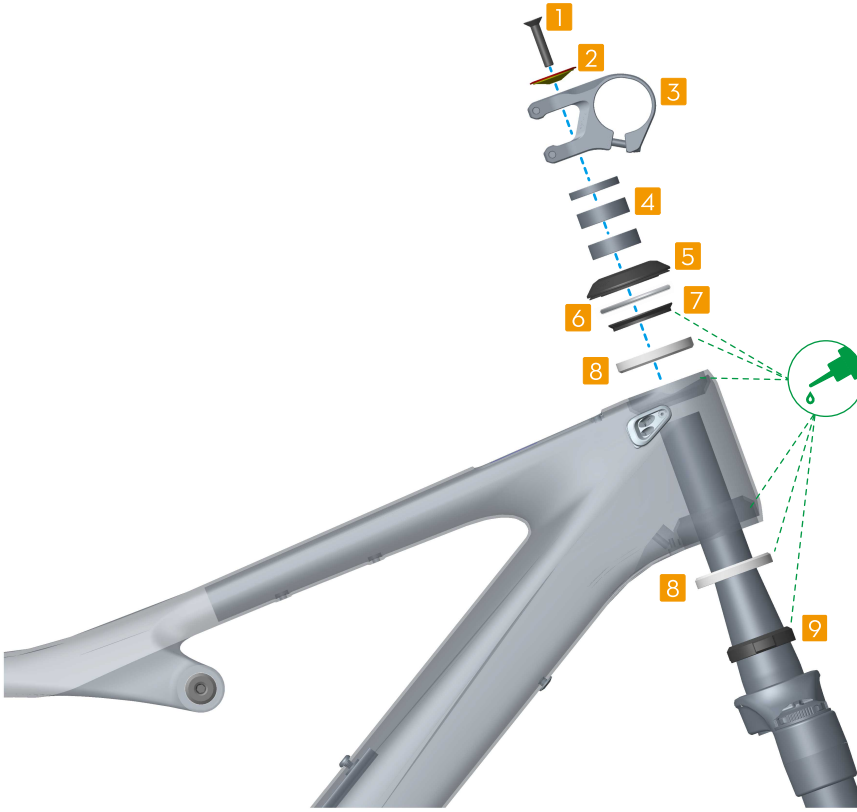
Make sure that the components are assembled in accordance with the instructions before using. Consult the authorized retailer or professional bike shop if you encounter any problems that cannot be resolved by yourself during assembly.

- Make sure to power off the drive system before assembling or disassembling.
- Before riding, make sure that all the components are assembled and adjusted according to the manufacturer's instructions and are functioning properly.
- Certain components and hardware parts on the bike are dedicated to AMFLOW. Make sure to only use genuine components for assembly. Otherwise, the bike may be damaged. Contact the authorized retailer or official customer service to purchase the genuine components if necessary.

3.1 Headset

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

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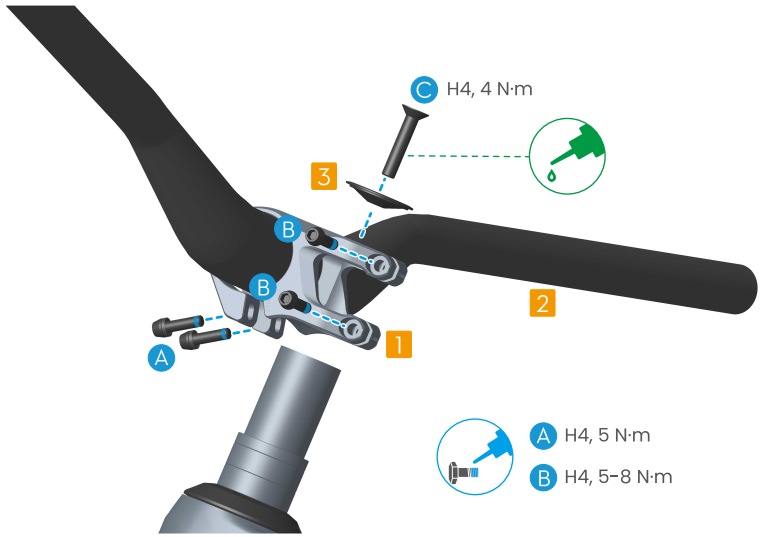
1. Stem Cap Bolt
2. Stem Cap
3. Stem
4. Stem Washer
5. Top Cover
6. Top Cover Seal
7. Compression Ring
8. Headset Bearing
9. Crown Race

A specialty tool is required to mount the crown race ⑨ onto the fork steerer tube. Please have an authorized retailer perform this operation.

3.2 Stem and Handlebar

Follow the steps below to assemble or disassemble the handlebar.

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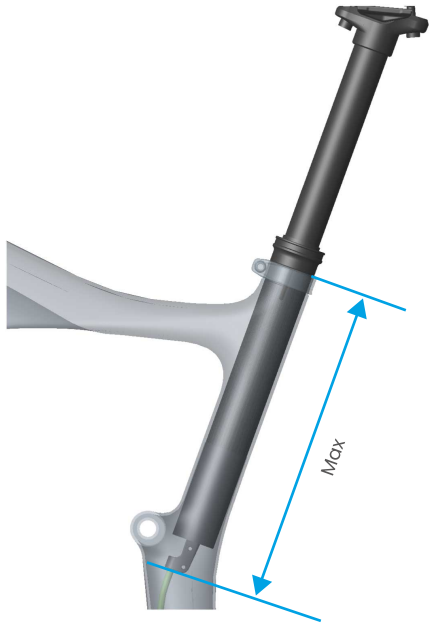
1. Attach the handlebar ② into the stem ①. Rotate the handlebar to the desired position, and tighten the bolts (A) to the specified torque. Then install the stem and handlebar to the head tube.
2. Place the stem cap ③ on the stem and tighten the stem cap bolt (C) to the specified torque.
3. Hold the front wheel and twist the handlebar until the stem is lined up with the wheel. Then tighten the stem bolts (B) to the specified torque.

3.3 Seatpost

Seatpost Insertion Requirement

Both the frame and seatpost have the insertion requirements. Failure to follow the requirements may result in damage to the frame and seatpost.

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Frame Size	M	L	XL	XXL
Maximum Insertion/mm	250	270	290	320

⚠
- The seatpost should be inserted into the frame deep enough so that the minimum insertion mark on the seatpost is invisible.
- If the seatpost is inserted too much, the frame and seatpost cable may be damaged, causing the seatpost to malfunction.

Adjusting the Seatpost

Follow the steps below to adjust the seatpost.

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1. Loosen the seatpost clamp bolt (A) and then loosen the cable guide bolts (B) and (C) by 2 to 3 turns.
2. After inserting a length of the seatpost cable into the down tube, lift the seatpost up carefully to prevent the cable from being detached.
3. When the adjustment is complete, tighten the seatpost clamp bolt (A) and then the cable guide bolts to the specified torque.

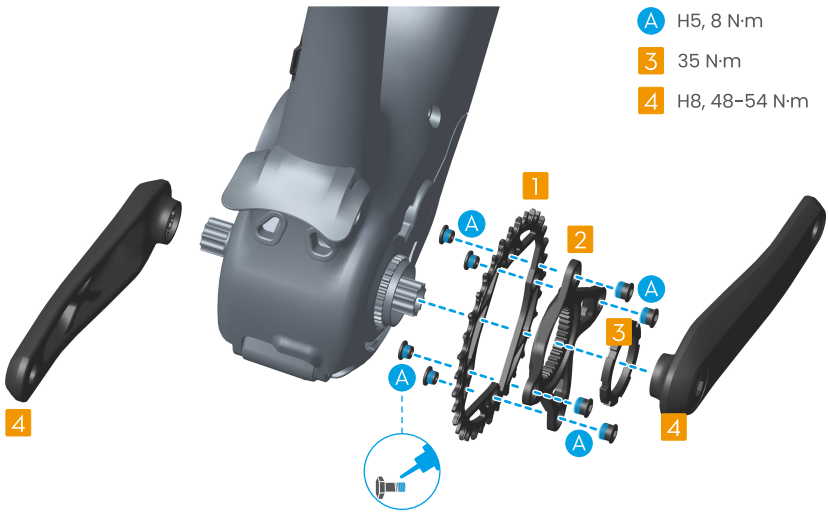
⚠
- Refer to the Cable Guide section to learn more about how to remove the cable guide.
- If the desired height cannot be achieved within the minimum and maximum insertion requirements, the seatpost should be replaced with one of a different length.
- After adjustment, twist the handlebar side to side to check whether the length of the seatpost cable is enough. If the cable is too short to prevent the handlebar from rotating, refer to the Replacing the Cables section to replace the cable with a longer one.

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3.4 Chainring

- Visit the official website to check the supported chainring sizes and mounting interface.
- A dedicated spider removal and installation tool is required to mount the spider lockring ③. Contact the authorized retailer or official customer service to purchase.
- Apply the threadlocker to the threads inside the cranks ④ before installing.

Follow the steps below to assemble and disassemble the chainring.



Disassembly

Remove the chain guide and loosen the cranks ④ on both sides, then remove the right crank. Use the spider removal and installation tool to loosen the spider lockring ③ counter-clockwise. Remove the chainring ① after removing the chain from the chainring, then remove the left crank.

Assembly

1. Insert the chainring bolts (A) through the chainring ① and the spider ②, and then tighten to specified torque. Then assemble the chainring and spider onto the motor spindle.
2. Mount the lockring ③ onto the spider, then use the tool to tighten the lockring ③ clockwise to the specified torque.

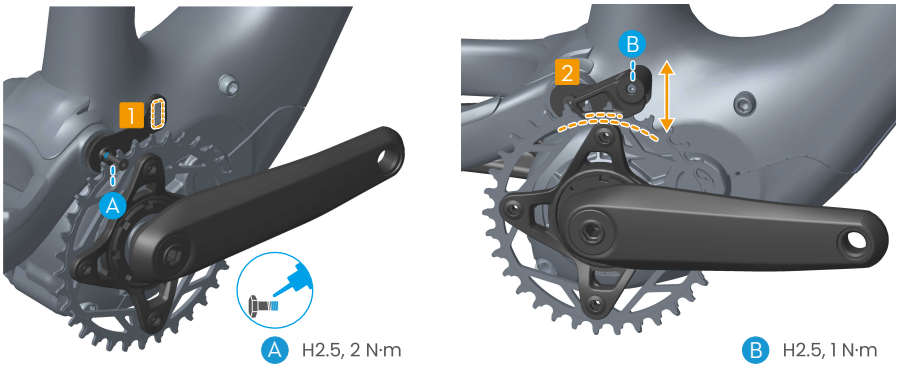
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3. Place the chain onto the chainring and then mount the cranks ④ and tighten to the specified torque.
4. Refer to the Chain Guide section to mount and adjust the chain guide.

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 a genuine component. Please contact the authorized retailer or official customer service to purchase.



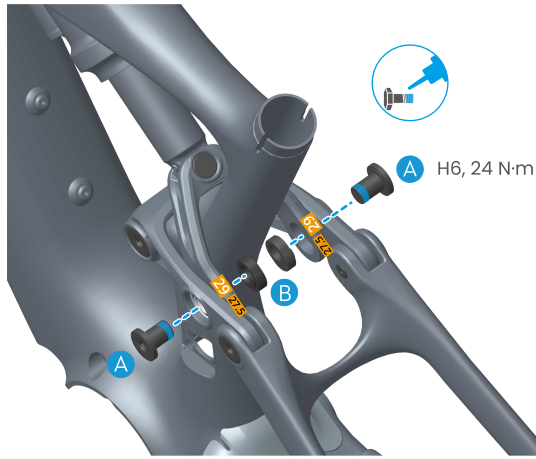
1. Mount the chain guide mounting plate ① to the position shown in the illustration. Adjust the plate until the direction of the hole on it is vertical. Then insert the bolt (A) and tighten it to the specified torque.
2. Mount the chain guide ② onto the hole of the mounting plate ①. Rotate the chain guide until the bottom arc of it is concentric with the chainring, and adjust the chain guide up and down according to the size of the chainring. Then insert and tighten the bolt (B) to the specified torque.

3.5 Wheels

Adjusting Rear Wheel Size

Follow the steps below to replace the rear wheel with different size.

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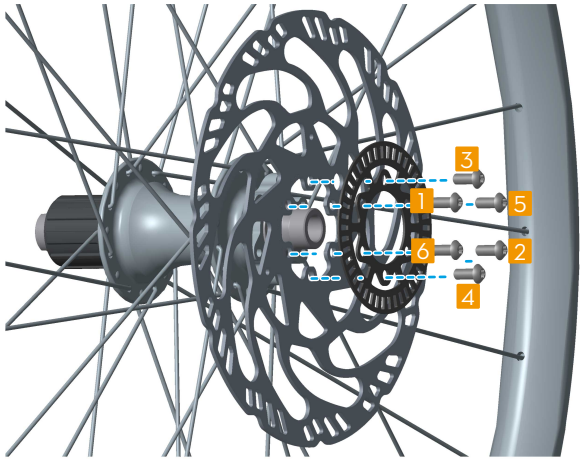


1. Wrap the chain around the smallest cassette cog and then remove the rear wheel and insert the transport spacers into the brake caliper.
2. Remove the shock link bolts (A) and flip chips (B).
3. Align the flip chips (B) with the mark on the yoke and then re-attach them onto the frame. Then insert and tighten the bolts (A) to specified torque.
4. Mount the rear wheel and thru-axle. Ensure that the chain, derailleur, and brakes are correctly positioned, and then tighten the thru-axle to the specified torque.
5. Open the Avinox Ride App and enter the device page, then select the wheel size and tap **Save** to update.

Speed Sensor Ring

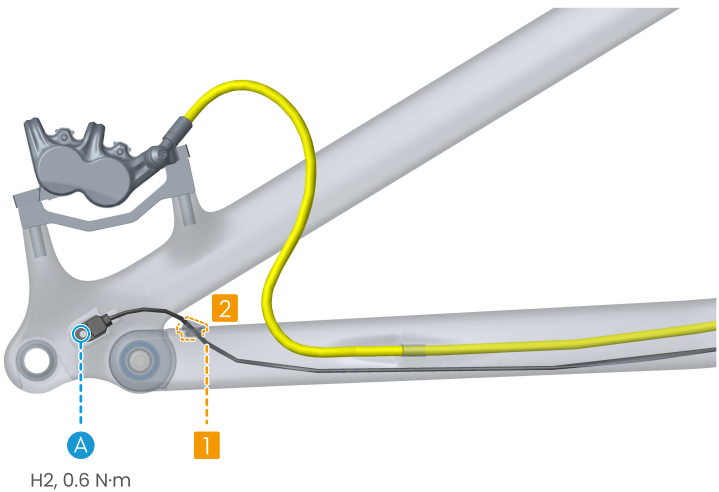
The speed sensor ring is mounted on the rear brake rotor. When replacing the rear wheel or rear brake rotor, ensure to detach the speed sensor ring and mount it onto the new rear wheel. Tighten the bolts in the order shown in the illustration.

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Speed Sensor

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



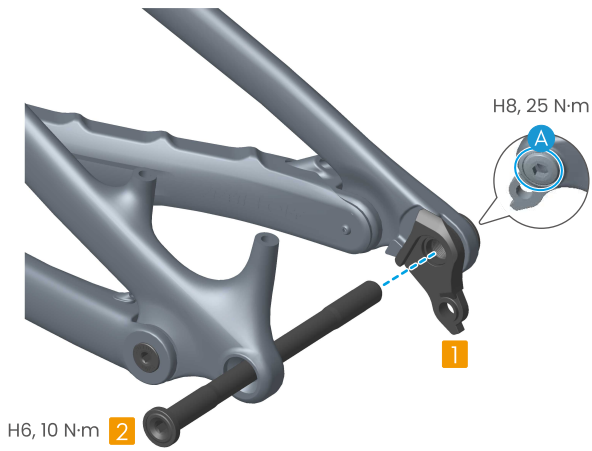
1. Use the cable routing kit to thread the speed sensor cable ① through the chainstay to the bottom bracket.

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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 chainring.

3.6 UDH Hanger

The universal UDH hanger is mounted on the rear dropout of the bike. Follow the steps below to replace.



1. Remove the rear wheel. Loosen the UDH hanger bolt (A) clockwise, and then remove the bolt and the UDH hanger.
2. Install the new UDH hanger ① into the frame dropout and rotate it until it completely contacts the stop tab.
3. Install the UDH washer and the bolt (A), then tighten it counter-clockwise to the specified torque. Then mount the rear wheel and thru-axle ②.

- Refer to the Adjusting Rear Wheel Size section to assemble and disassemble the rear wheel.
- Refer to the manufacturer's manual for more installation instructions of the UDH hanger.

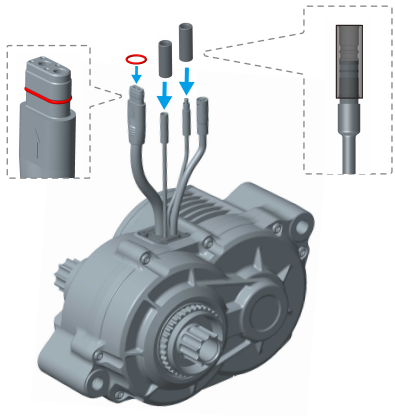
- Regularly check and confirm the UDH hanger is tight and has not moved before and after riding.

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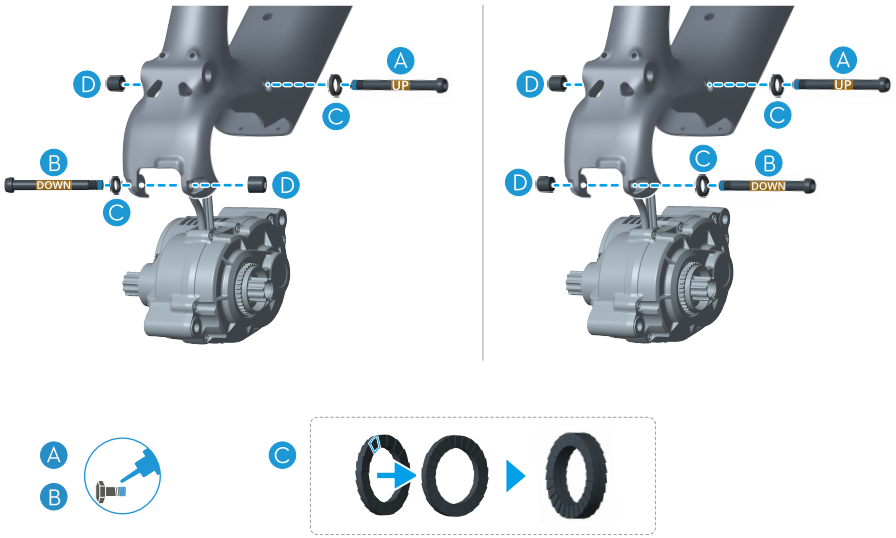
- Do not apply grease to the UDH hanger and UDH hanger bolt.
- If the rear derailleur of PL Carbon Pro is loose, refer to the manufacturer's manual for installation or ask a professional bike shop for help.

3.7 Drive Unit

The drive unit has been installed on the frame. Remove and install the drive unit as shown in the illustration when it is necessary to replace the cables or remove the battery.



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	Location	Quantity	Tool	Torque/N·m
A	Motor mounting bolt (up)	1	H6	/
B	Motor mounting bolt (down)	1	H6	/
C	Motor mounting spacers	4	/	/
D	Motor mounting nuts	2	H8	20-22

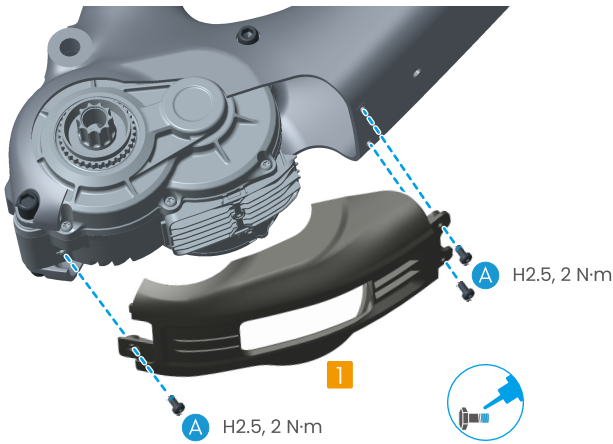
- The lower motor mounting bolt (B) can be inserted and tightened from either side of the frame to mount the motor.
- The upper and lower motor mounting bolts of different lengths should be distinguished by the mark. The motor cannot be installed if inserting the bolts incorrectly.
- A set of motor mounting 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, ensure to apply the threadlocker to the exposed threads and then install the motor mounting nuts and tighten.
- Use a wrench to secure the bolts and then rotate the nuts when removing or installing the motor.

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Drive Unit Guard

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

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

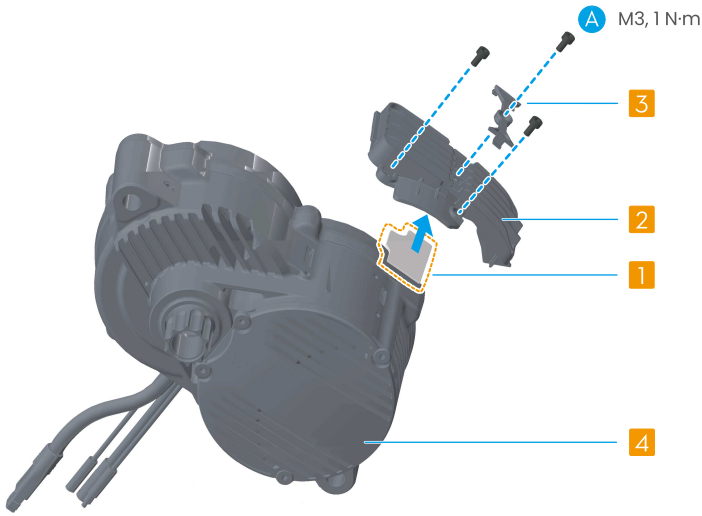


Heat Sink

If the heat sink at the bottom of the drive unit is damaged, follow the steps below for disassembly and replacement.

1. Loosen the heat sink mounting bolts (A), then remove the heat sink.
2. Attach the cooling pad ① to the corresponding slot of the heat sink ②.
3. Install the heat sink to the drive unit and attach the plastic strip ③ to the heat sink. Then insert and tighten the bolts (A) to specified torque.

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When replacing the drive unit end cover ④, use a tool to pry off and remove the cover. Align the new cover with the drive unit, then assemble and press it into place manually.

Drive Unit Upper Housing

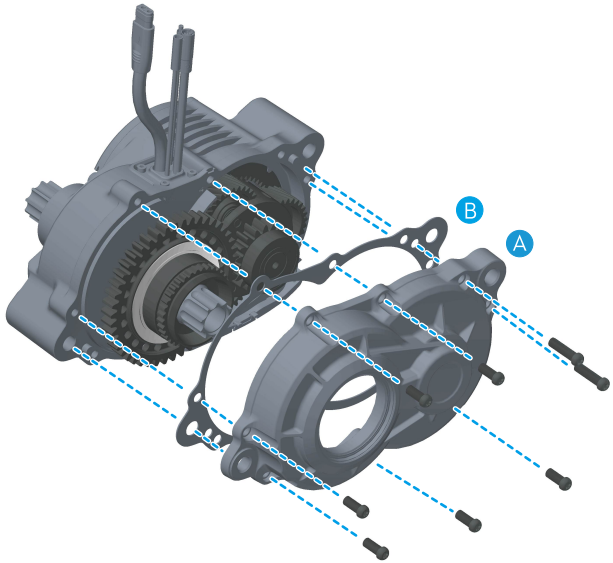
To replace the upper housing, remove the drive unit from the frame and follow the steps below for disassembly and replacement.

It is recommended to remove the heat sink before disassembly.

Disassembly

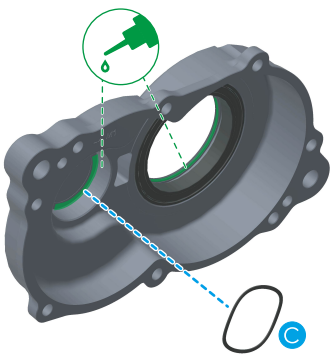
Loosen the bolts, then remove the upper housing (A) and the sealing gasket (B).

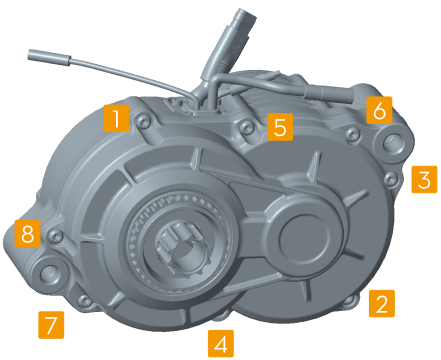
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Assembly

1. Take out the wave spring (C) from the removed upper housing, install it inside the new housing, and apply grease.
2. Align and install the new sealing gasket onto the drive unit.
3. Install the upper housing onto the drive unit. Tighten the bolts in the order shown in the illustration.



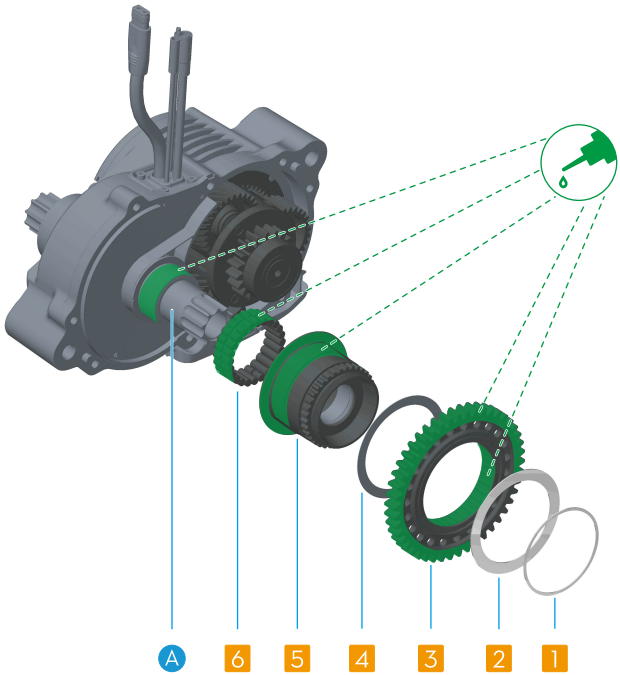


1 — 8 M5, 3.2 N·m

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One-Way Clutch

To replace the one-way clutch, follow the steps below for disassembly and replacement.



Disassembly

1. Disassemble the upper housing according to the instructions in the Drive Unit Upper Housing section.
2. Remove the spacers ① and ②.
3. Hold the sprocket sleeve ⑤, then rotate the output gear ③ counterclockwise to remove it.
4. Hold the shaft (A), then rotate the sprocket sleeve ⑤ clockwise to remove both the sleeve and the gasket ④. Then remove the small one-way clutch ⑥.

Assembly

Before installation, apply grease to the designated positions as shown in the illustration. Install each component onto the shaft in the reverse order of disassembly.

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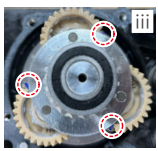
- The small one-way clutch is equipped with a support frame for securing. While installing, ensure the side with the support frame faces outward. After installing onto the shaft, remove the support frame.
- When installing the sprocket sleeve, hold the shaft, then rotate the sprocket sleeve clockwise and press down to fit it into the small one-way clutch. After reaching the limit, rotate counterclockwise to complete the installation.
- When installing the output gear ③, ensure the arrow-marked side faces outward. Hold the sprocket sleeve ⑤, then rotate the output gear counterclockwise to install it.

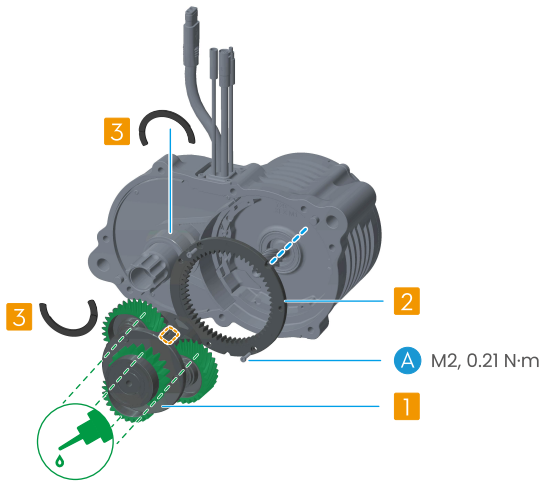
Planetary Gear Set

Follow the steps below for disassembly and replacement.









1. Disassemble the Drive Unit Upper Housing and One-Way Clutch according to the instructions in the corresponding sections. Then remove the circlip ③ from the shaft.
2. Use a tool to secure the grooves on the planetary carrier set ①, then pry it up to remove. (i)
3. Loosen the bolts (A), then use the removal tool to remove the ring gear ②. (ii)
4. Align the new ring gear with the alignment point, and press it flat using the installation tool. Then tighten the bolts to the specified torque.
5. Rotate the compound planetary gears to show the marked tooth (iii), and assemble the planetary carrier set into the ring gear. Rotate the set counterclockwise to align with the teeth of the ring gear.

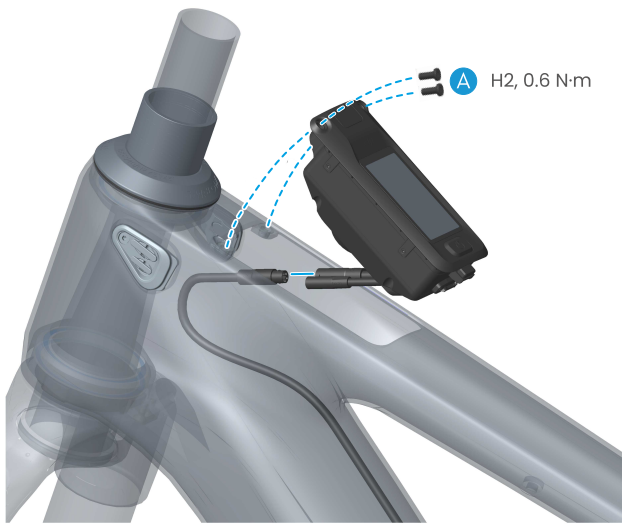
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6. After completing the gear alignment, if the planetary carrier set can rotate smoothly, press down firmly to complete the installation.

⚠
- Specialty tools are required for disassembly and assembly. Contact the authorized retailer or official customer service if you cannot perform the operation yourself.
- Before reinstalling the drive unit upper housing, apply grease for plastic gear to the compound planetary gears and grease for metal gear to the output pinion.

3.8 Control Display

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



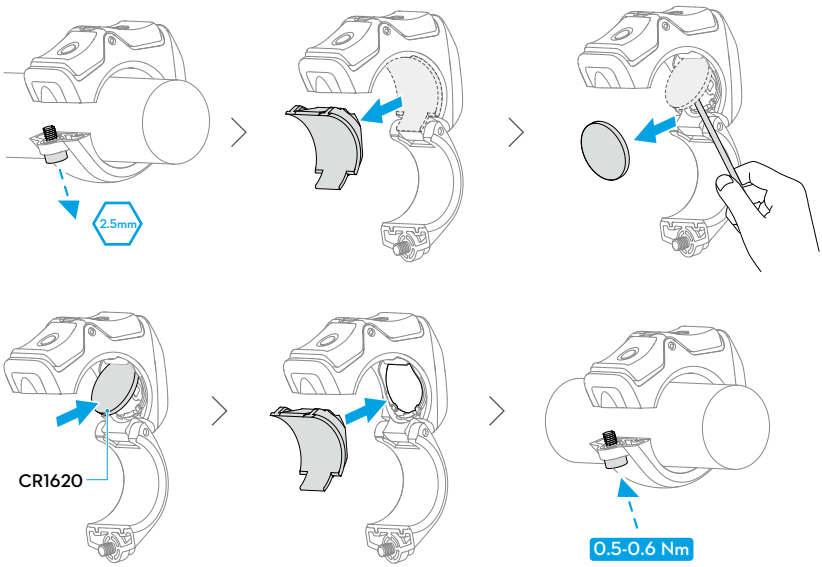
3.9 Wireless Controller

The wireless controllers have been installed on the handlebar. Follow the steps below to remove and install the wireless controllers if replacement is needed.

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Replacing Battery of Controller

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.
- Make sure to clean the installation area and the bolts after multiple disassembly. Otherwise, it may cause abnormal noise during attaching and detaching.

Replacing the Controller

If you need to replace a new 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 the bike screen to enter Settings. Tap **Accessories > Add** and the system will start searching for nearby devices.

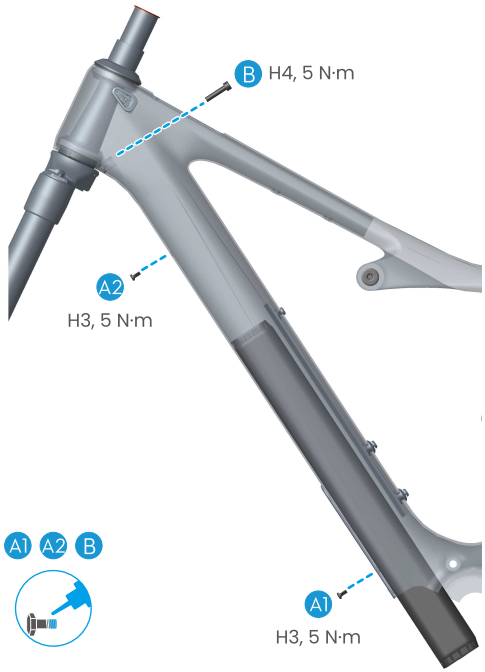
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3. Tap the device name displayed on the bike screen to start pairing. Follow the on-screen instructions to complete the connection.

3.10 Battery

After removing the drive unit, follow the illustration to remove or install the battery.

- The 600Wh battery is secured using the bolts (A1) and (A2), while the 800Wh battery is secured using the bolts (A1) and (B). Ensure to tighten the upper bolt first when installing.
- To install/remove the 800Wh battery, remove the control display first and insert/remove the bolt (B) from the mounting position of the control display. It is recommended to use a flat-head hex key to tighten the bolt (B).
- Disconnect the power cable first before removing the battery.



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3.11 Frame

If the frame has cracks, structural deformation, broken welds, or frequent abnormal noises, it needs to be replaced to avoid affecting normal operation.

1. Before replacement, disconnect the cables and remove attached components from the frame as specified in this manual and the component manufacturer's guidelines. Carefully keep the bolts, headset, spacers, and other parts.
2. During installation, reattach all components and cables to their original position of the frame following the reverse sequence of disassembly. Make sure to tighten the bolts to the specified torque in the Bolt Specifications section.
3. After installation, check and ensure that the brakes, transmission, and fork are installed correctly and functioning properly.

⚠ Replacing the frame requires professional skills and specialty tools. Operate with caution. Contact the authorized retailer or professional bike shop if you cannot perform the operation yourself.

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