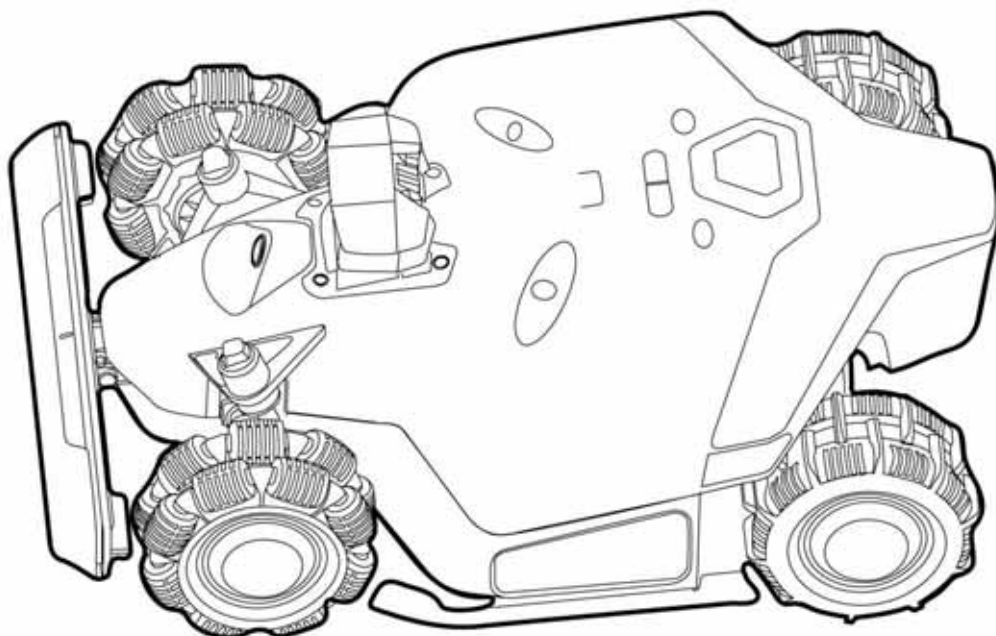




Original Instructions



LUBA 2 AWD SERIES

-User Manual-

V1.0 2023.12

Thank you for choosing Mammotion as your garden care lawn mower. This user manual will help you learn and operate Mammotion Luba, a 4-wheel-drive and perimeter-free lawn mower, to cut grass and maintain your lawn.

This manual is copyrighted by Mammotion Tech company. Without the written permission of the company, any unit or individual shall not copy, modify, reproduce, transcribe or transmit in any way or for any reason. This manual is subject to change without notice at any time.

Revision Log

Date	Version	Description
2023.12	V1.0	Initial version

CONTENTS

1	Safety Instructions	- 1 -
1.1	General Safety Instructions.....	- 1 -
1.2	Safety Instructions for Installation	- 4 -
1.3	Safety Instructions for Operation	- 5 -
1.4	Safety Instructions for Maintenance.....	- 6 -
1.5	Battery Safety.....	- 6 -
1.6	Residual Risks.....	- 7 -
2	Introduction	- 8 -
2.1	About Mammotion Luba	- 8 -
2.2	In the Box	- 10 -
2.3	Symbols on the Product.....	- 15 -
2.4	Product Overview.....	- 18 -
3	Installation and Initialization.....	- 20 -
3.1	Preparation	- 20 -
3.2	Choosing a Location for RTK Reference Station.....	- 20 -
3.3	Choosing a Location for Charging Station	- 22 -
3.4	Installing	- 24 -
3.5	Initialization	- 31 -
4	Operation.....	- 32 -
4.1	Preparation	- 32 -

4.2	Download Mammotion App.....	- 33 -
4.3	Mammotion Account Signup and Login.....	- 34 -
4.4	Add Luba 2 AWD	- 37 -
4.5	Main Page Introduction	- 41 -
4.6	Map Page Introduction	- 47 -
5	Maintenance	- 70 -
5.1	Cleaning	- 70 -
5.2	Maintenance for Motors and Cutting Blades.....	- 72 -
5.3	Battery Maintenance	- 73 -
5.4	Winter Maintenance.....	- 74 -
6	Product Specifications.....	- 94 -
6.1	Technical Specifications.....	- 94 -
6.2	LED Indicator Codes	- 98 -
7	Warranty.....	- 100 -
8	Compliance	- 103 -

1 Safety Instructions

1.1 General Safety Instructions

- Carefully read and understand the user manual before using the product.
- Only use the equipment recommended by Mammotion Tech with the product. Any other usage is incorrect.
- Never allow children, persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge or people unfamiliar with these instructions to use the machine, local regulations may restrict the age of the operator.
- Do not allow children to be in the vicinity or play with the machine when it is operating.
- Do not use the product in areas where people are unaware of its presence.
- When manually operating the product with the Mammotion App, do not run. Always walk, watch your steps on slopes, and maintain balance at all times.
- Avoid touching moving hazardous parts, such as the blade disc, until it has completely stopped.
- Avoid using the product when there are people, especially children or animals, in the work area.
- If operating the product in public areas, place warning signs around

the work area with the following text: "Warning! Automatic lawn mower! Keep away from the machine! Supervise children!"

- Wear sturdy footwear and long trousers when operating the product.
- To prevent damage to the product and accidents involving vehicles and individuals, do not set work areas or transport paths across public pathways.
- Do not touch moving hazardous parts, such as the blade disc, before it has come to a complete stop.
- Seek medical aid in case of injury or accidents.
- Set the product to **OFF** and remove the key before clearing blockages, performing maintenance, or examining the product. If the product vibrates abnormally, inspect it for damage before restarting. Do not use the product if any parts are defective.
- Do not connect or touch a damaged cable until it is disconnected from the power outlet. If the cable becomes damaged during operation, disconnect the plug from the power outlet. A worn or damaged cable increases the risk of electrical shock and should be replaced by service personnel.
- Do not install the main cable in areas where the product will cut. Follow the instructions provided for cable installation.
- Only use the charging station included in the package to charge the product. Incorrect use may result in electric shock, overheating, or corrosive liquid leakage from the battery. In case of electrolyte leakage, flush with water/neutralizing agent and seek medical aid if the corrosive liquid comes into contact with your eyes.
- When connecting the main cable to the power outlet, use a

residual-current device (RCD) with a maximum tripping current of 30 mA.

- Only use original batteries recommended by Mammotion Tech. The safety of the product cannot be guaranteed with non-original batteries. Do not use non-rechargeable batteries.
- Keep extension cords away from moving hazardous parts to avoid damage to the cords which can lead to contact with live parts.
- The illustrations used in this document are for reference only. Please refer to the actual products.

1.2 Safety Instructions for Installation

- Avoid installing the charging station in areas where people may trip over it.
- Do not install the charging station in areas where there is a risk of standing water.
- Do not install the charging station, including any accessories, within 60 cm/24 in of any combustible material. Malfunctioning or overheating of the charging station and power supply can pose a fire hazard.
- For users in the USA/Canada: If installing the power supply outdoors, there is a risk of electric shock. Only install it in a covered Class A GFCI receptacle (RCD) with a weatherproof enclosure, ensuring that the attachment plug cap is inserted or removed.

1.3 Safety Instructions for Operation

- Keep your hands and feet away from the rotating blades. Do not place your hands or feet near or below the product when it is turned on.
- Do not lift or move the product when it is turned on.
- Use the park mode or set the product to **OFF** when there are people, especially children or animals, in the work area.
- Ensure that there are no objects such as stones, branches, tools, or toys on the lawn. Otherwise, the blades may be damaged when they come into contact with an object.
- Do not put objects on top of the product, charging station or RTK reference station.
- Do not use the product if the **STOP** button is not functioning.
- Avoid collisions between the product and people or animals. If a person or animal comes in the path of the product, stop it immediately.
- Always set the product to **OFF** when it is not in operation.
- Do not use the product simultaneously with a pop-up sprinkler. Utilize the Schedule function to ensure that the product and pop-up sprinkler do not operate at the same time.
- Avoid placing a connection channel where pop-up sprinklers are installed.
- Do not operate the product in the presence of standing water in the work area, such as during heavy rain or water pooling.

1.4 Safety Instructions for Maintenance

- Set the product to **OFF** when performing maintenance.
- Disconnect the plug from the charging station or remove the disabling device before cleaning or performing maintenance on the charging station.
- Do not use a high-pressure washer or solvents to clean the product.
- After washing, ensure that the product is placed on the ground in its normal orientation, not upside down.
- Do not reverse the product to clean the chassis. If you do reverse it for cleaning purposes, make sure to restore it to its proper orientation afterward. This precaution is necessary to prevent water from entering the motor and potentially affecting normal operation.

1.5 Battery Safety

Lithium-ion batteries can explode or cause a fire if disassembled, short-circuited, exposed to water, fire, or high temperatures. Handle them with care, do not dismantle or open the battery, and avoid any form of electrical/mechanical abuse. Store them away from direct sunlight.

1. Only use the battery charger and power supply provided by the Manufacturer. The use of an inappropriate charger and power supply can cause electric shocks and / or overheating.
2. DO NOT ATTEMPT TO REPAIR OR MODIFY BATTERIES! Repair

attempts may result in severe personal injury, due to explosion or electrical shock. If a leak develops, released electrolytes are corrosive and toxic.

3. This appliance contains batteries that are only replaceable by skilled persons.

1.6 Residual Risks

To avoid injuries, wear protective gloves when replacing the blades.

2 Introduction

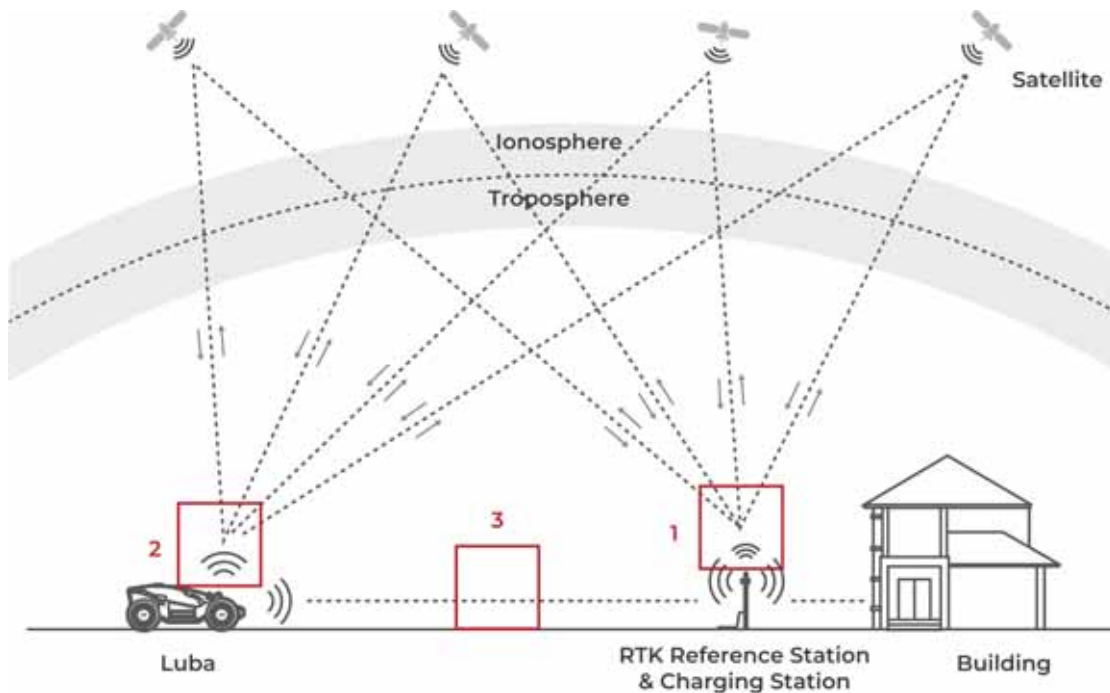
2.1 About Mammotion Luba

Mammotion Luba is a 4-wheel-drive (4WD) robotic lawnmower.

The Luba 2 AWD series features RTK GNSS navigation and virtual-mapping systems, allowing users to customize their mowing tasks with different mowing areas and schedules in the Mammotion app. It provides a picture-perfect lawn maintenance experience that is truly hands-free.

2.1.1 About Positioning

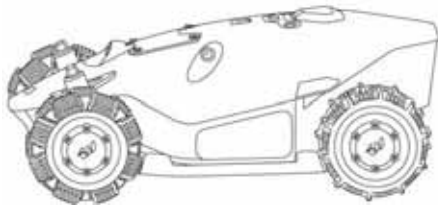
Luba 2 is equipped with RTK (real-time kinematic) and multi-sensor integrated navigation system. RTK is a differential GNSS positioning technology that greatly enhances positioning accuracy to approximately 5 cm/2 in. Luba 2 AWD accesses four global navigation systems (GPS, GLONASS, BeiDou, and Galileo) and incorporates supplementary sensors, thus, providing nearly 100 times improved accuracy than conventional GPS systems.



1. To perform its work, the RTK reference station receives satellite signals, requiring an obstruction-free environment and open-sky view.
2. Luba 2 AWD operates similarly, requiring an open sky view to receive satellite signals.
3. Data transmission from the RTK reference station to Luba 2 AWD is possible. This does not imply that there must constantly be an unobstructed view from every point on your lawn to the RTK reference station. As long as the transmission path is not completely blocked, the data can be transmitted via radio.

2.2 In the Box

2.2.1 Luba 2 AWD installation kit



Luba 2 AWD x1



Luba Bumper x1



Screw x2



Key x2



Vision Module x1



Screw x8 (4 pcs for spare use)

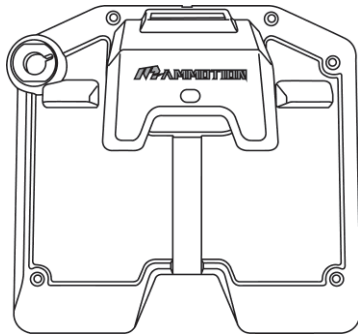


Replacement Blades x8 (for spare use)

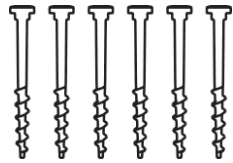


Screw x8 (for spare use)

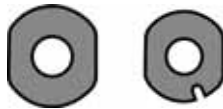
2.2.2 Charging station installation kit



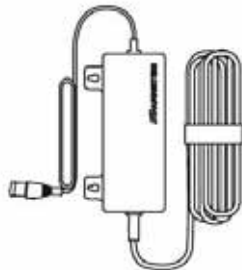
Charging Station x1



Screw x6



Gasket x2



Charging Station Power Supply x1

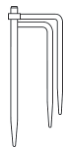
2.2.3 RTK installation kit



RTK Reference Station x1



Radio Antenna x1



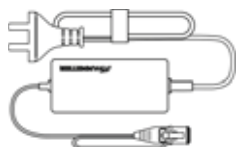
Trident Ground Stake x1



Mounting Pole x2



RTK Reference Station Extension Cable (10M) x1



RTK Reference Station Power Supply x1

NOTE: The power supply circuit for RTK reference station should be less than PS2.

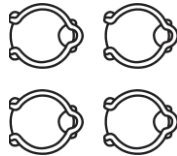
2.2.4 Tool kit



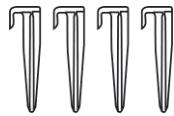
Allen Key 8mm x1



Allen Key x1



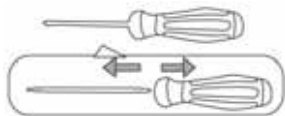
Cord Tie x4



Fastener x4



SIM-eject Tool



**Screwdriver (Phillips bit+2.5mm hex bit)
x1**

2.2.5 Other accessories (optional)

The following accessories are sold separately.

Luba 2 AWD garage



Luba Garage x1

2.3 Symbols on the Product

These symbols can be found on the product. Study them carefully.

Symbol	Description
	Warning.
	Read user manual before operating the product.
	This product complies with the applicable EU Directives.
	This product complies with the applicable UK Directives.
Made in China	This product is manufactured in China.
	It is not permitted to dispose this product as normal household waste. Ensure that the product is recycled in accordance with local legal requirements.
	This item can be recycled.
	Keep the pack of this product dry.
	The pack of this product should not be covered.
	Prohibit flipping.
	This product is fragile.

Symbol	Description
	The pack of this product / the product should not be tread.
	Class III appliance.
	Keep hands or feet away from movable blades.
	Do not ride on the product.
	Keep a safe distance from your product when operating.
	WARNING: Do not touch rotating blade.
	WARNING: Read the user instructions before operating the product.
	WARNING: Danger of projections of objects against the body. Keep an adequate safe distance from the machine while it is running.
	WARNING: Do not put hands and feet near or under the opening of the cutting means. Remove the disabling device before operating on the machine or before lifting it.

Symbol	Description
	WARNING: Do not ride on the product. Never put your hands or feet close to or under the product.

2.4 Product Overview

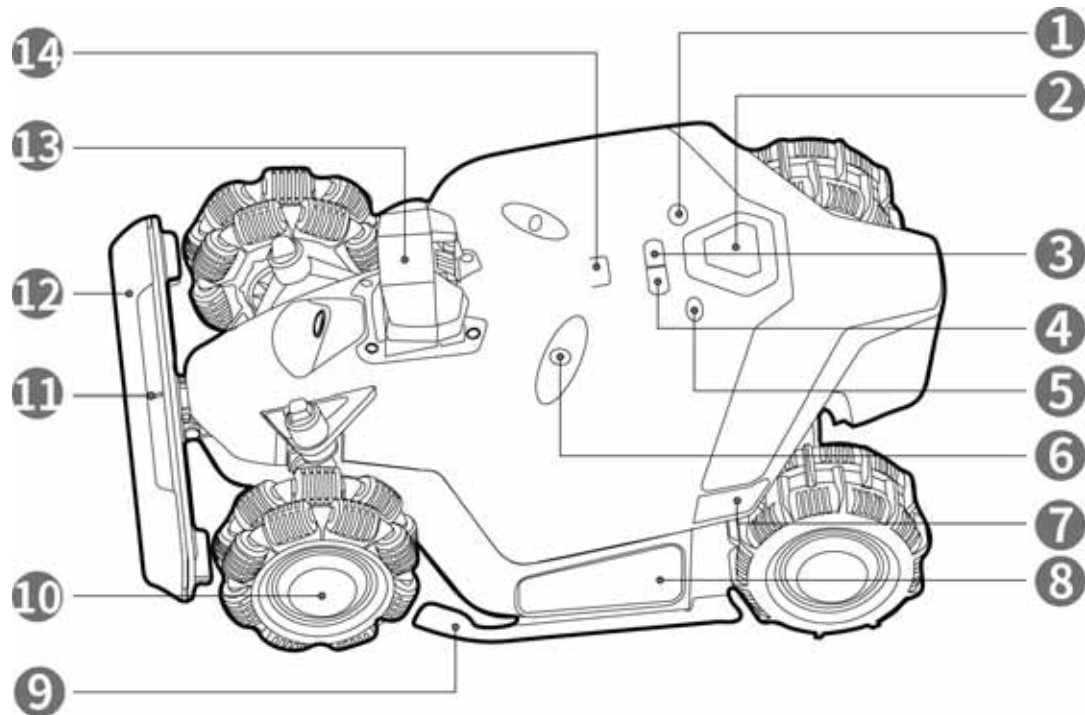


Figure 2-1 Front View of Luba 2 AWD

- | | |
|--|--|
| 1. Start Button | 2. Emergency Stop Button |
| 3. Auto-return Button — press to call back Luba 2 AWD ¹ | 4. Power Button — long press to turn on/off Luba 2 AWD |
| 5. Grass Button — press to continue the task ² | 6. Ultrasonic Sensor |
| 7. Side Indicator | 8. Cushion |
| 9. Protection Bracket | 10. Omni Wheel |
| 11. Front Indicator | 12. Front Bumper |
| 13. Vision Module | 14. Rain Sensor |

NOTE

1. To come back to charging station: press **Auto-return** 🏠, then press **Start** ⏻.
2. To continue task: press **Grass** 🌱, then press **Start** ⏻.

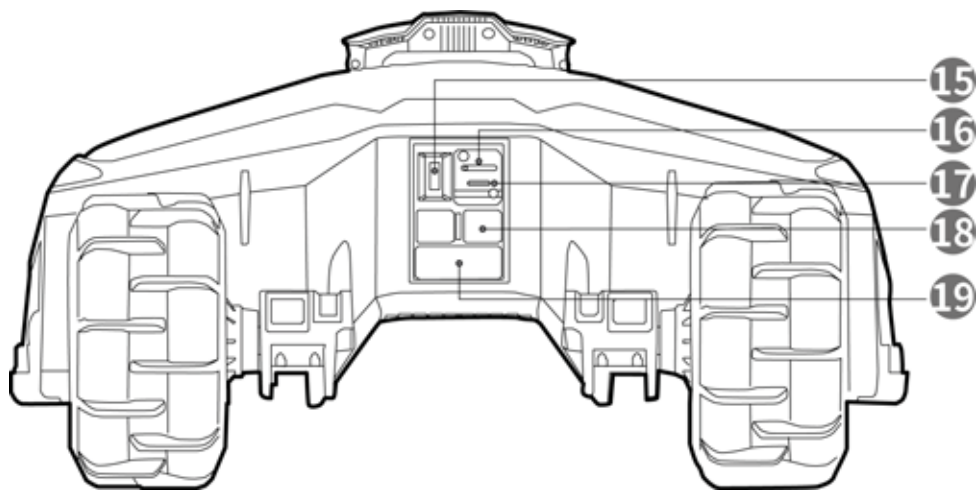


Figure 2-2 Rear View of Luba 2 AWD

- | | |
|---|--------------------------|
| 15. Key hole | 16. SIM card tray |
| 17. USB port — for troubleshooting and debugging | |
| 18. Infrared receiver | 19. Charging port |

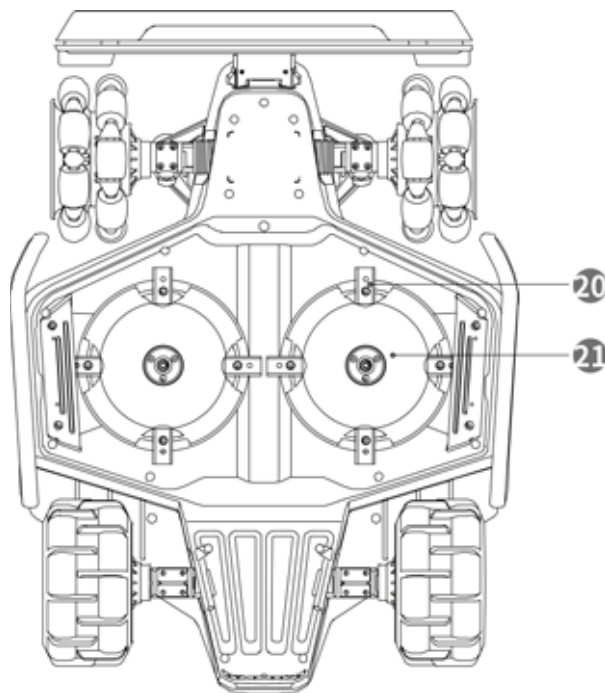


Figure 2-3 Bottom View of Luba 2 AWD

- | | |
|--------------------------|-------------------------|
| 20. Cutting blade | 21. Cutting disk |
|--------------------------|-------------------------|

3 Installation and Initialization

3.1 Preparation

- Read and understand the safety instructions prior to installation.
- Use original parts and installation materials.
- Sketch your lawn and mark up obstacles. This will make it easier to examine where to place the charging station and RTK reference station, and to set the virtual boundaries.

3.2 Choosing a Location for RTK Reference Station

To optimize the performance of the RTK system, the RTK reference station must be in an open area to receive satellite signals.

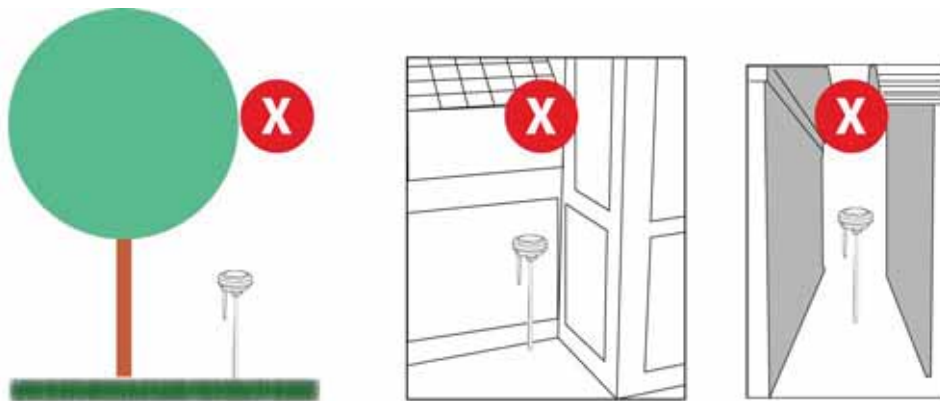
The location requirements are as follows:

- The RTK reference station should be oriented vertically, as shown below:



- DO NOT install the RTK reference station at the corner of an L-

shaped building or on a narrow path between two structures or under a tree.

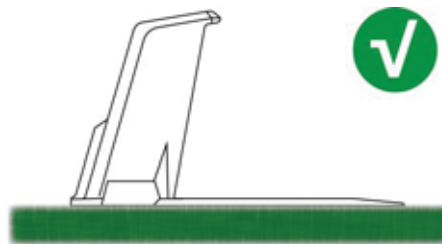


3.3 Choosing a Location for Charging Station

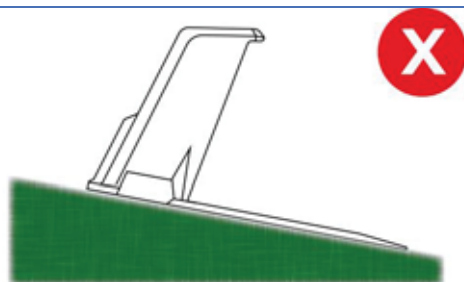
- Place the charging station on a flat and open sky ground, free from any roofs or trees that may interfere with satellite signals.
- DO NOT install the charging station at the corner of an L-shaped building or on a narrow path between two structures.
- No obstacles or other items should be between the charging station and the docking point.
- The base plate of the charging station must not be bent or tilted.

Here are some examples to clearly show correct and wrong settings:

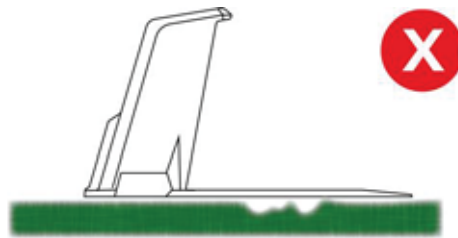
- Flat and solid ground
- Short grass



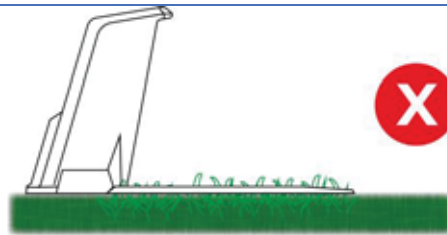
On a slope



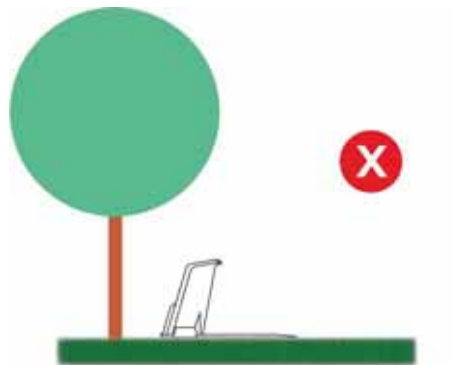
- Ground not flat
- Easy to bend when a heavy object on it, such as Luba 2 AWD.



-
- Thick grass
 - Easy to bend when a heavy object on it, such as Luba 2 AWD.



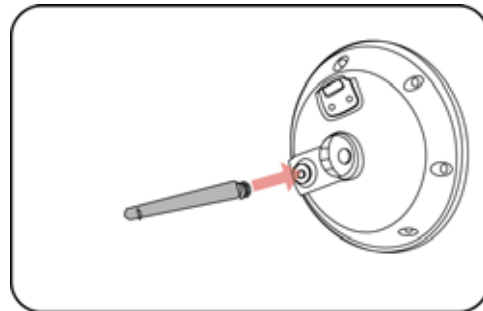
Under a tree



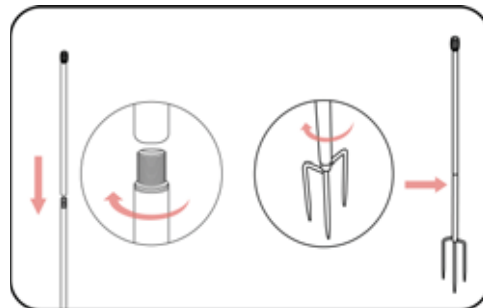
3.4 Installing

3.4.1 Installing RTK reference station and charging station

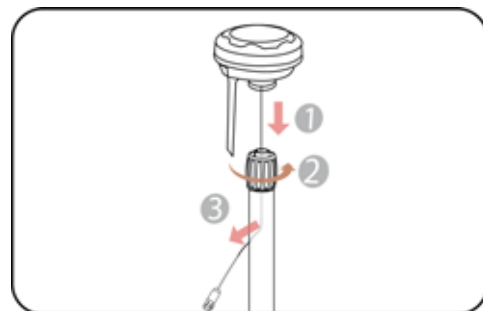
1. Attach the antenna on the RTK reference station.



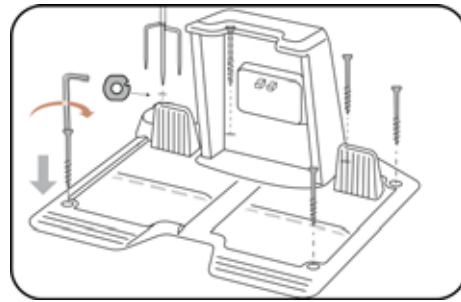
2. Assemble the two mounting poles and the trident ground stake as shown.



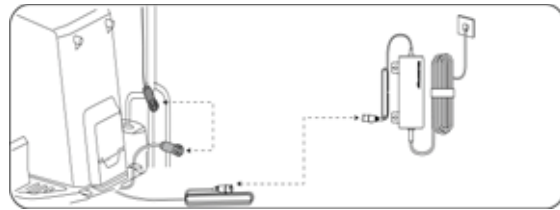
3. Route the RTK reference station cable into the mounting pole as shown.
4. Mount the RTK reference station on the mounting pole.



5. Secure the charging station on the flat surface using the five fixing screws. Place a gasket onto the inlet, then insert and fix the trident ground stake as shown in the figure and keep it upright.



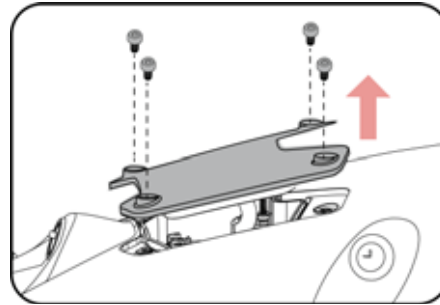
6. Connect the wires as shown in the figure.



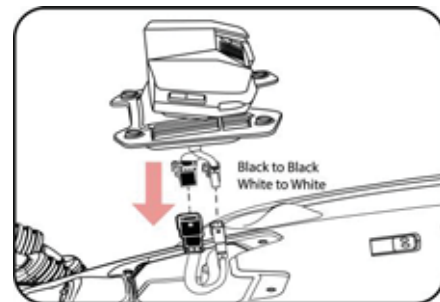
3.4.2 Luba 2 AWD Assembly

Installing the vision module

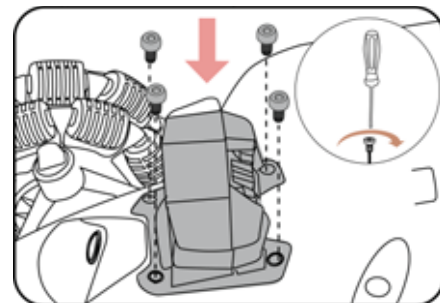
1. Loosen the four screws using a screwdriver with a 2.5mm hex bit to remove the cover.



2. Connect the vision module wires (black to black and white to white).

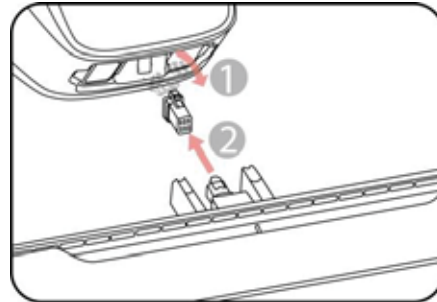


3. Attach the vision module to the Luba 2 AWD using the four screws and tighten them with a 2.5mm hex screwdriver.

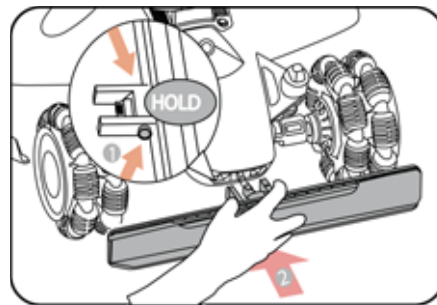


Installing the Luba bumper

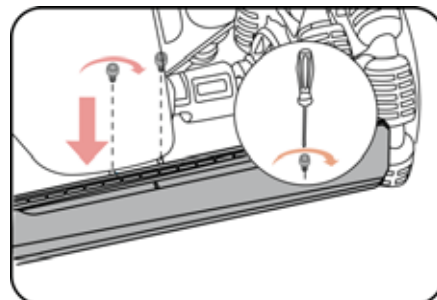
1. Gently pull the plug inside the Luba 2 AWD out and connect it to the bumper.



2. Place the bumper into position with the front indicator facing upwards by pressing and holding the buttons.

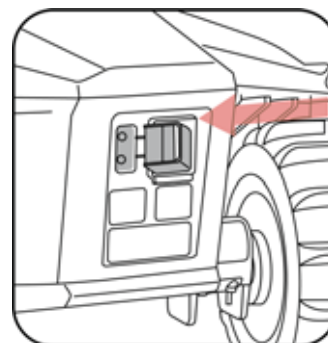


3. Install and tighten the two screws using a 2.5mm hex screwdriver.



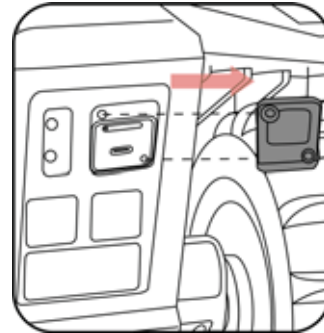
Installing the security key

Insert a key into the rear keyhole.

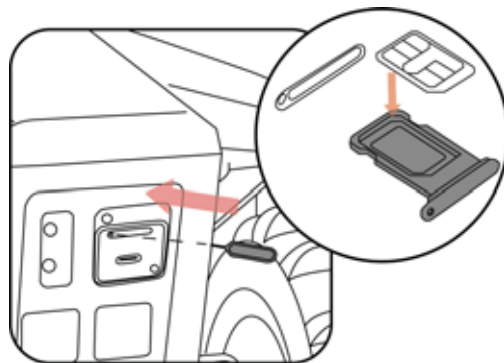


Installing the 4G sim card (optional)

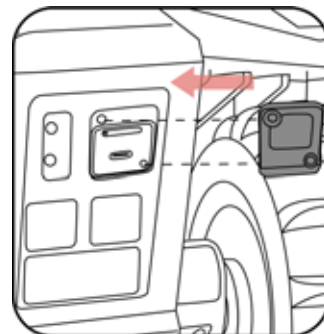
1. Use the Allen key to remove the rear cover.



2. Eject the SIM card tray using the SIM-eject tool, install the SIM card, and push the card tray into the position.



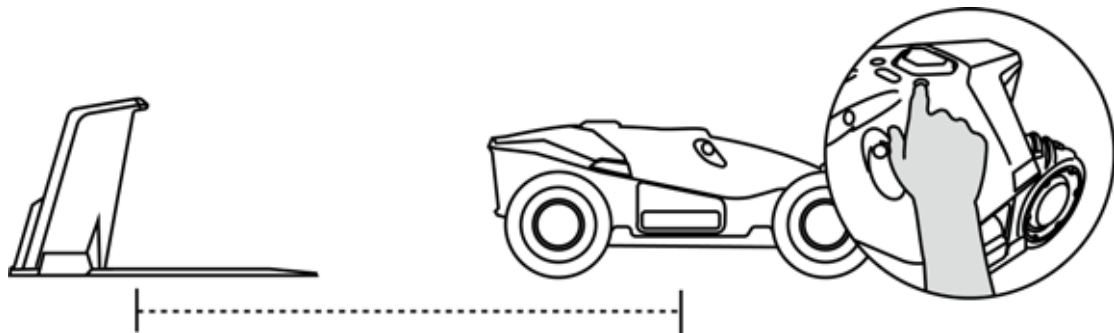
3. Reinstall the rear cover.



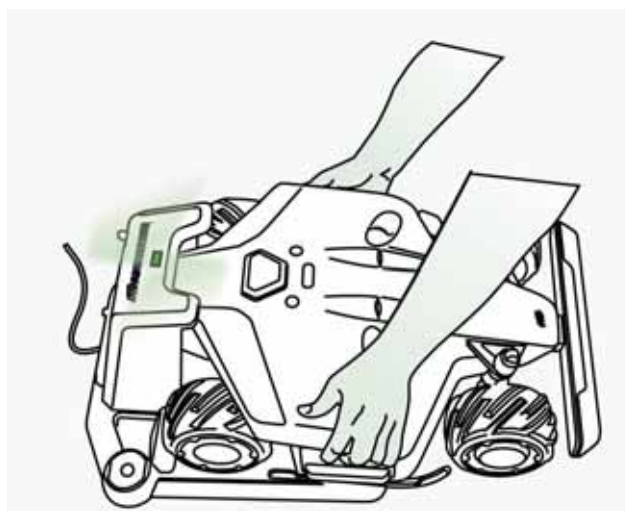
3.4.3 Docking Luba 2 AWD

After the charging station and RTK reference station have been properly installed, place Luba 2 AWD on the charging station by:

- Placing or driving Luba 2 AWD about 1.5 m/5 ft. in front of the charging station with the back of Luba 2 AWD facing the charging station. Press the **Power** button  on Luba 2 AWD to turn it on. Then press the **Auto-return** button  and the **Start** button  to return Luba 2 AWD to the charging station.

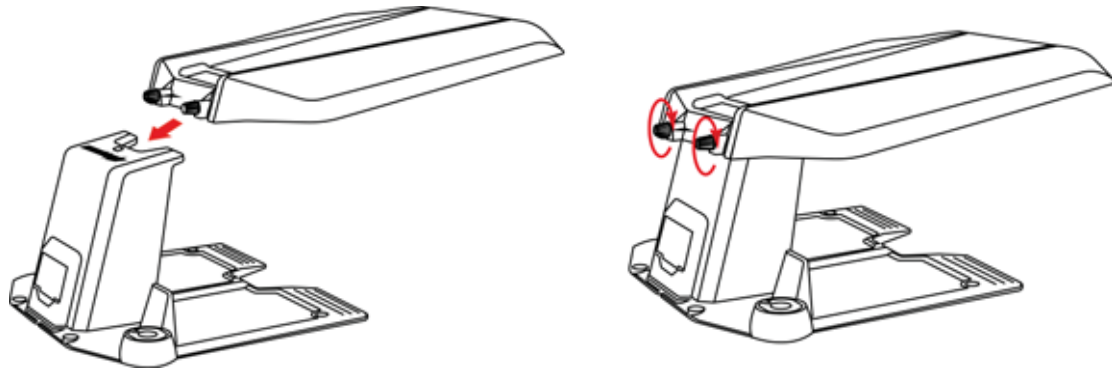


- Move Luba 2 AWD onto the charging station and wait for Luba 2 AWD to power on automatically.



3.4.4 Installing the Luba garage (optional)

Attach the garage to the top of the charging station from front to back and tighten the two screws on the back of the garage to complete the installation.



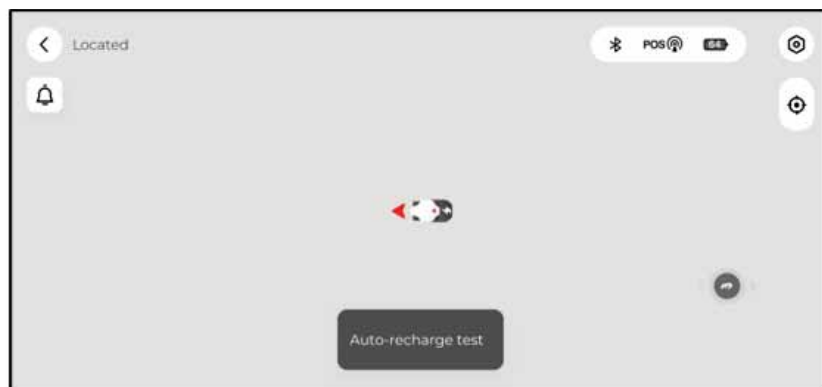
NOTE

- Do not place anything on top of the garage to avoid damage and interference with the vehicle signal.
- The garage can be lifted to a maximum angle of 30°.
- If it snows a lot in your area during the winter, it is recommended to store Luba 2 AWD indoors. If Luba 2 AWD is stored under the garage, clear the snow before starting work. Remove any ice from the shaft before lifting the garage.



3.5 Initialization

- Ensure the installation of the RTK reference station and charging station are complete. If not, please refer to [Installing](#).
- After your Luba 2 AWD is successfully added and self-check passes, check whether the firmware of your Luba 2 AWD is the latest, position it on the charging station with proper functional positioning status. If Luba 2 AWD has not at the charging station, please drive Luba 2 AWD to a distance of 2 m/7 ft. from the front of the charging station, ensuring its back faces the charging pins. Then use the App to recall Luba 2 AWD. The map should indicate the location of both the charging station and Luba 2 AWD, with the positioning shown below.
- The charging station and Luba 2 AWD's location must appear on the map. The Luba 2 AWD's status must indicate **Located**.
 - Click **Auto-recharge test** to start charging and recharge test. Then Luba 2 AWD will go back and forth once between the charging station and the docking point.



4 Operation

4.1 Preparation

- Read and understand safety instructions before operation.
- The charging station and RTK reference station have been properly installed.
- Ensure Luba 2 AWD has already docked on the charging station. If not, refer to ***Docking Luba 2 AWD***.
- Ensure there is a good Wi-Fi or hot spot signal.
- Keep your phone Bluetooth on.

4.2 Download Mammotion App

Luba 2 AWD is designed to work with the Mammotion app, please download the free Mammotion app first. You can scan the QR code below to get it from the Android or Apple app stores, or search for Mammotion in these stores.

Get it on Google Play store



Available on the Apple App Store



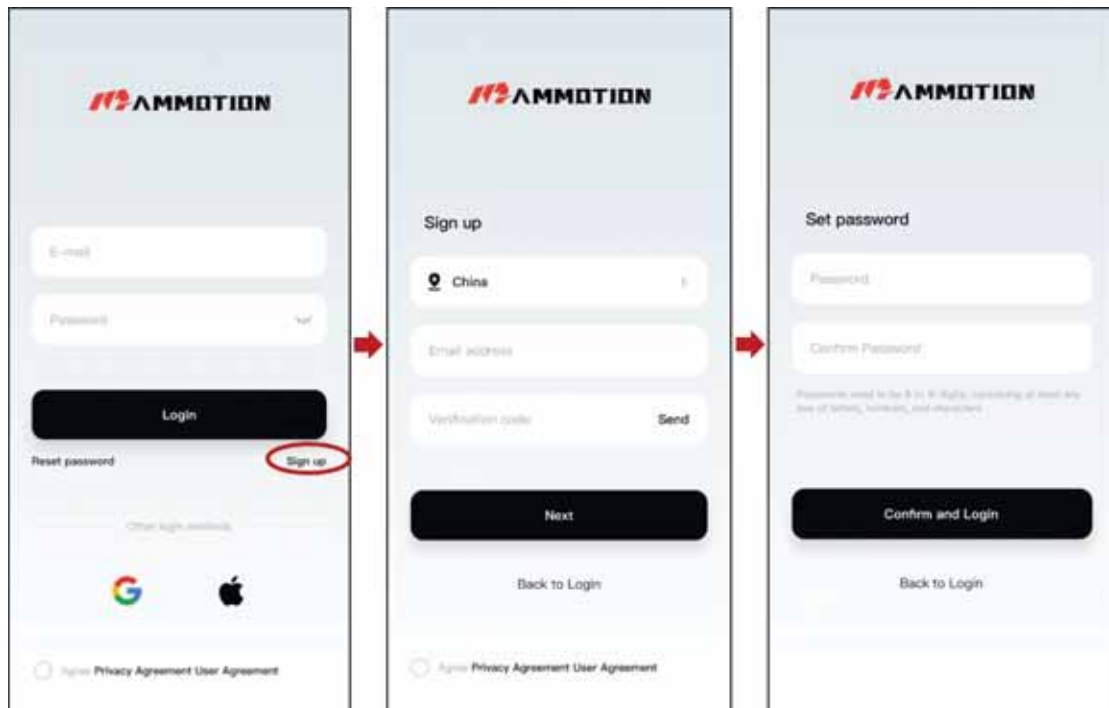
4.3 Mammotion Account Signup and Login

4.3.1 To sign up

NOTE

If you already have a Mammotion account, input your account and password to log it in.

After successfully install the Mammotion app in your phone, you are ready to create your account. Follow the below instructions to register one.



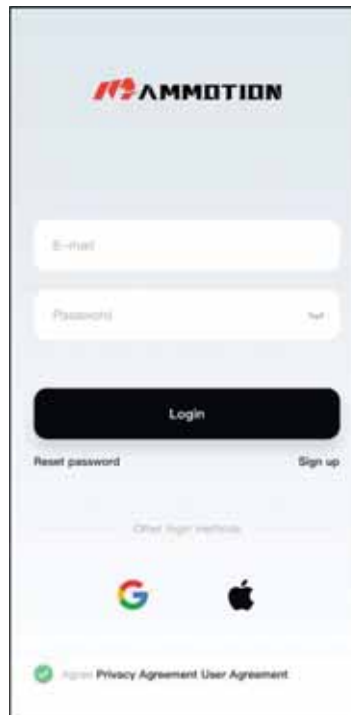
1. Click **Sign up**.
2. Select your country, input your email address.
3. Click **Send**. A verification code will be sent to your email (If you do not receive the code, please check your spam folder or the blacklist of your email).
4. Input the code (The verification code is valid for 10 minutes. If it

expires, click **Send** again to get a new one).

5. Check the Privacy Agreement User Agreement and click **Next** to set your password (Passwords must be 8 to 16 characters with at least two of the following: letters, numbers, and special characters.).
6. Click **Confirm and Login** to finish the signup.

4.3.2 To log in

Log in with a Mammotion account



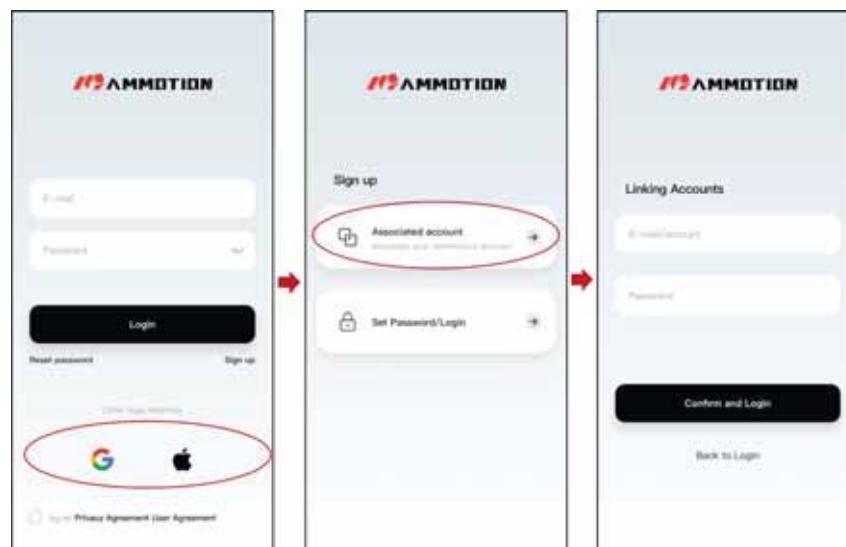
Input your email address and password, check Privacy Agreement User Agreement, then click **Login**.

NOTE

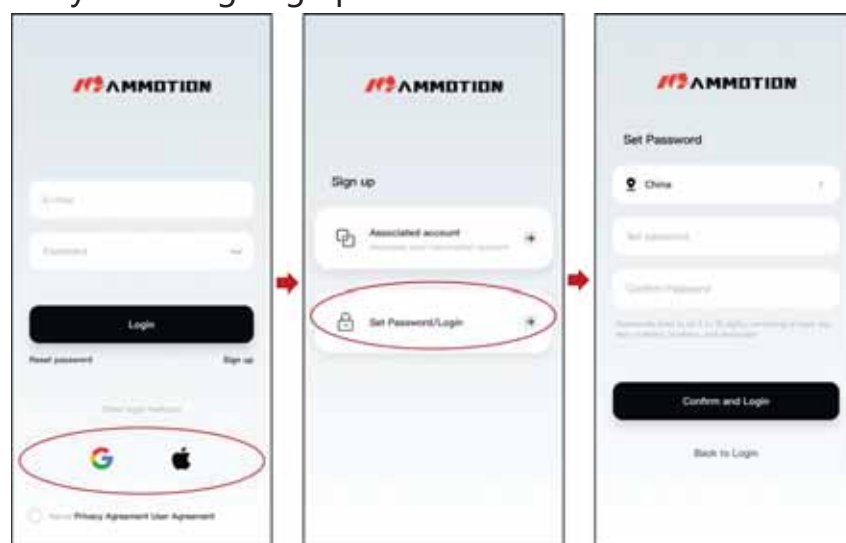
If you forget your password, click **Reset password** and follow the screen instructions to reset your password.

Log in with a third-party account

1. Click  or  (available for IOS user only) on the login page and you will be redirected to access the third-party authorization permission.
2. Select **Associated account** to link your Mammotion account if needed. Or,



3. Click **Set Password/Login** to set your password for the Mammotion account you are signing up.



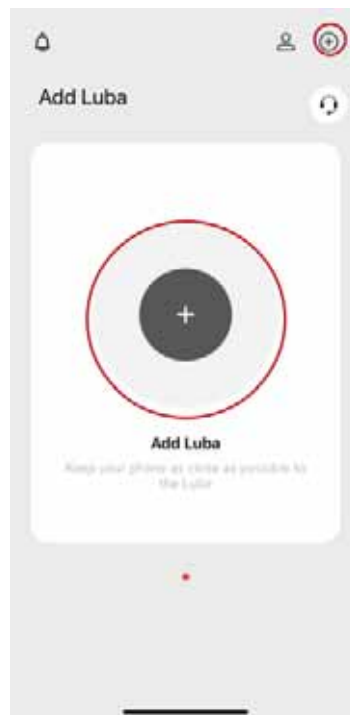
4. Click **Confirm and login** to log in.

4.4 Add Luba 2 AWD

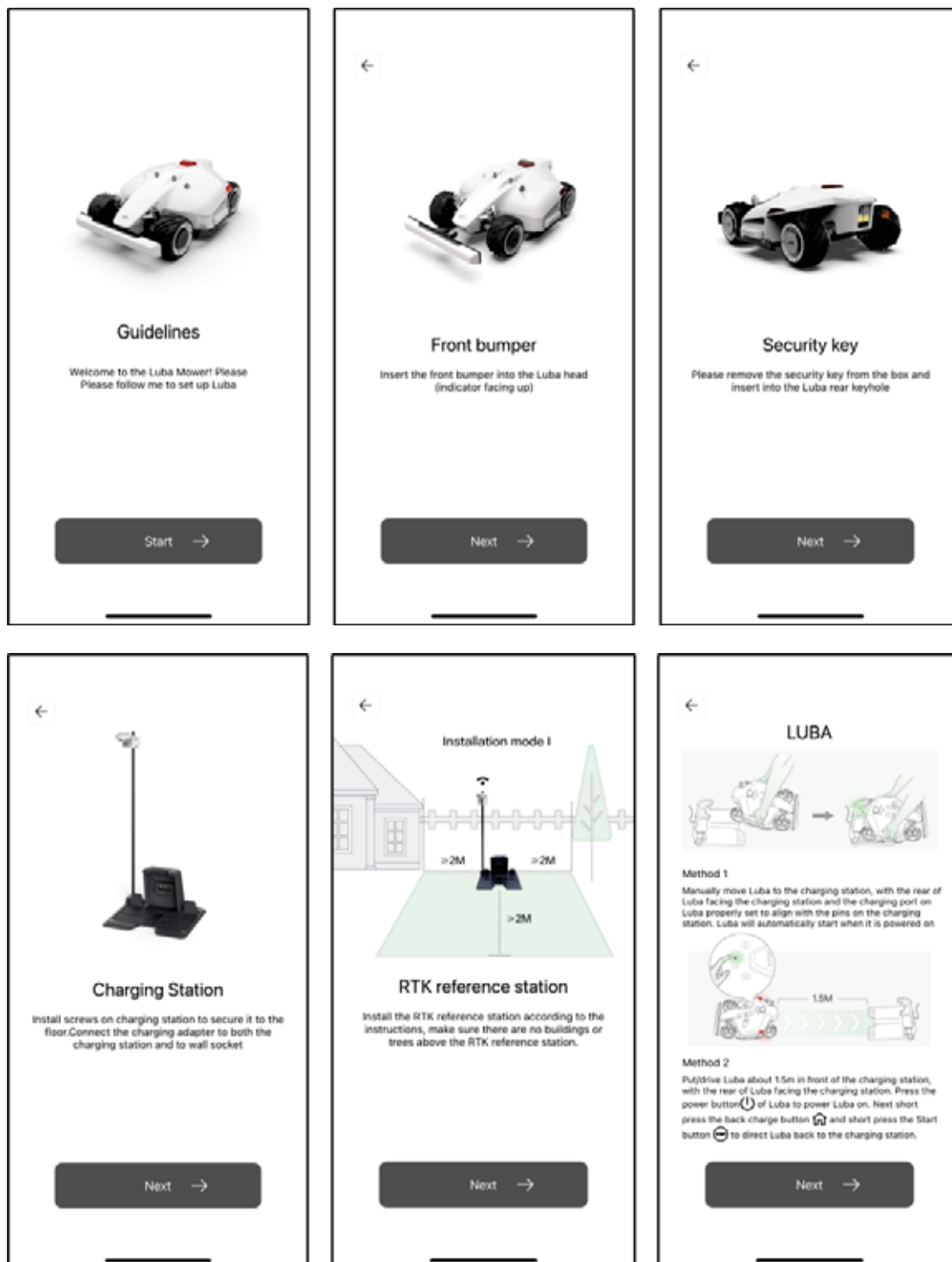
NOTE

Make sure the distance between your phone and Luba 2 AWD is less than 3 m/10 ft.

1. Click + to initiate Luba 2 AWD.

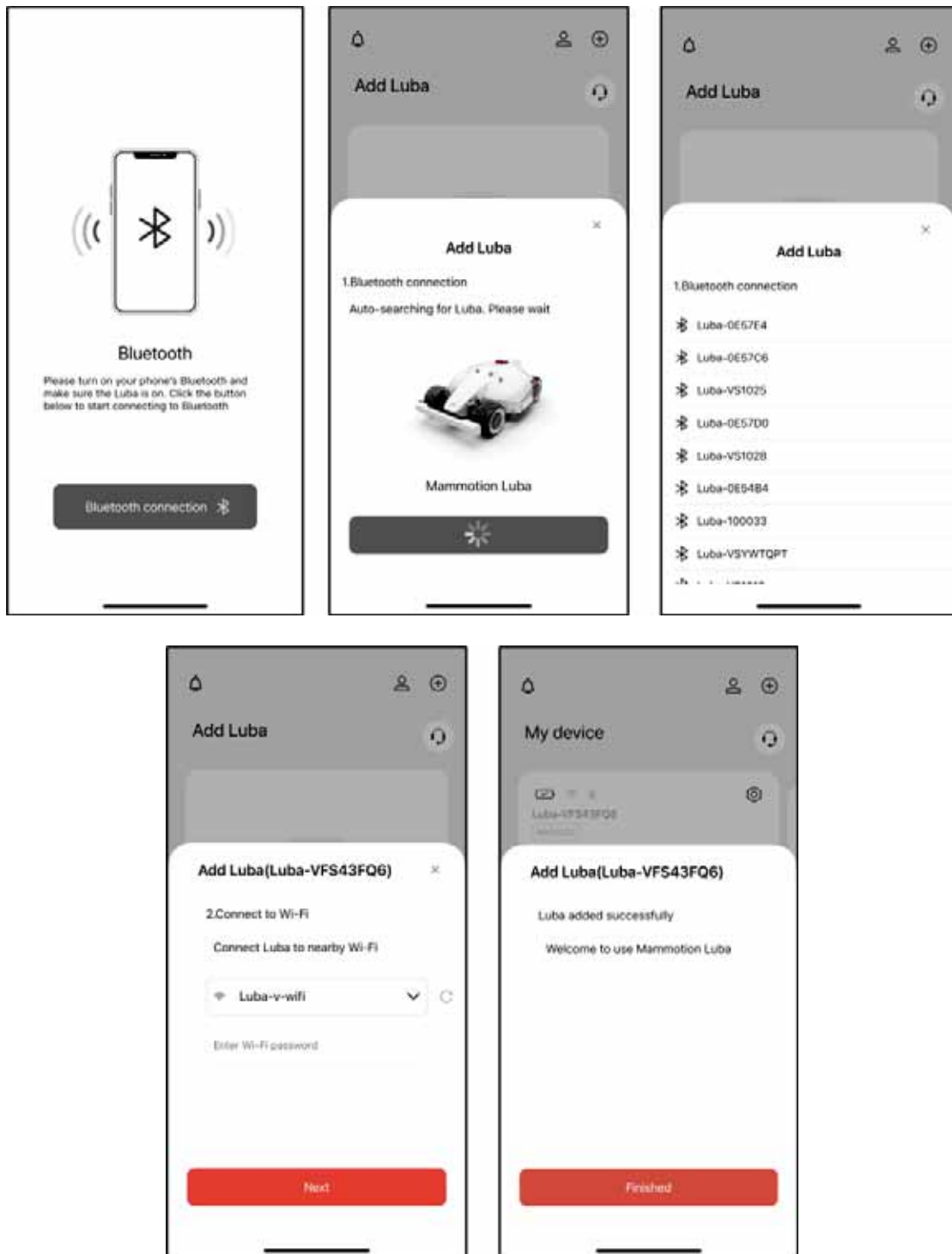


2. Follow the guidelines to set up Luba 2 AWD.

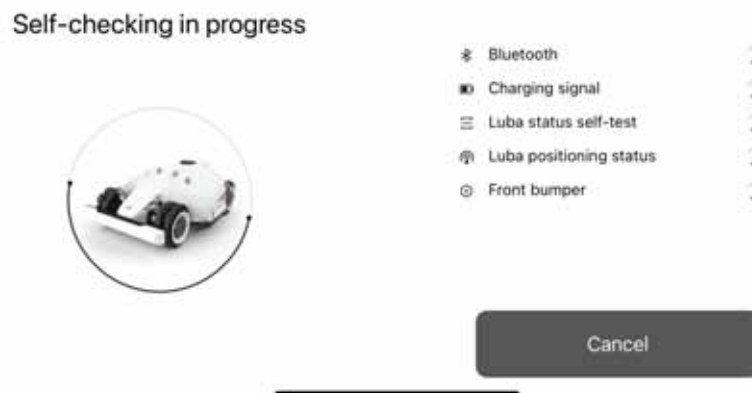


3. Long press (5 s) the power button to turn on Luba 2 AWD.

4. Follow the onscreen instructions to add Luba 2 AWD successfully.

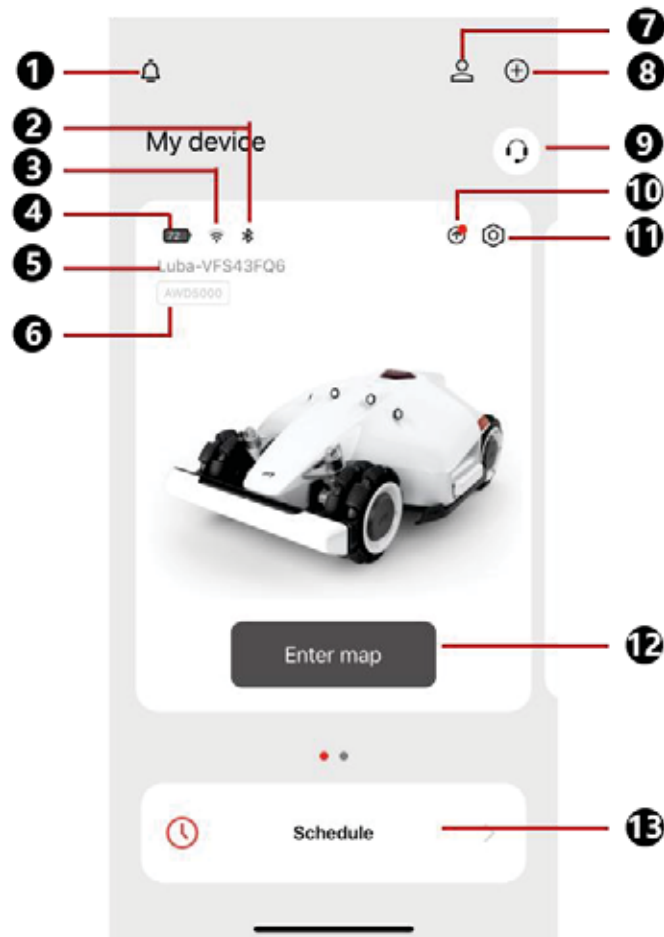


5. Once the Luba 2 AWD has been successfully added, a self-check is performed the first time it is used.



- If the Bluetooth fails, ensure that the Bluetooth feature on your phone is turned on and that the proximity between your phone and Luba 2 AWD does not exceed 5 m/16 ft.
- If Luba 2 AWD is on the charging station but not charging (charging failed), ensure that the charging station is positioned correctly, and that the charging port at the back of Luba 2 AWD is aligned with the charging pin on the charging station.
- If the status of positioning is poor due to failure of the RTK Reference Station, verify that the station is in the correct location, switched on, and operational (displayed by a consistent green light during daylight hours).
- If the front bumper fails, check whether the front bumper is properly installed.

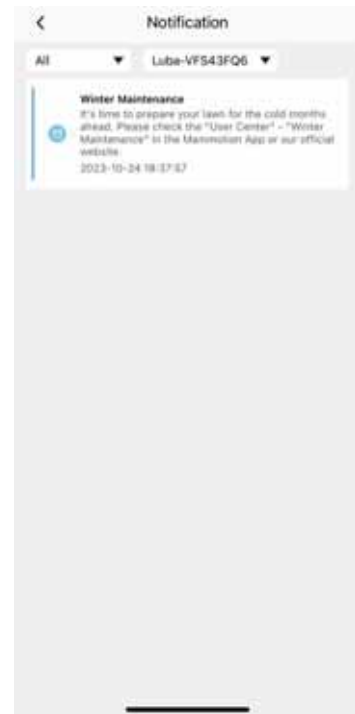
4.5 Main Page Introduction



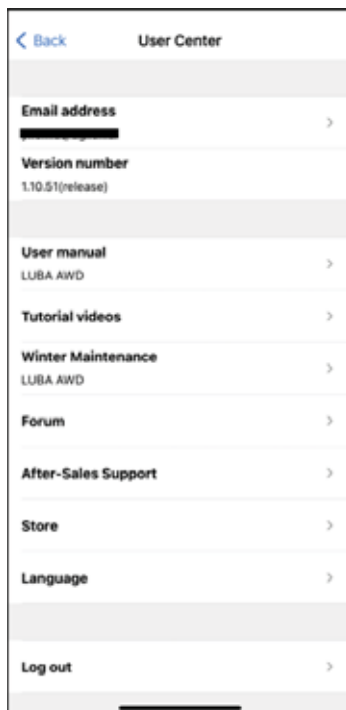
- | | | |
|---|-----------------------|-------------------------|
| 1. Notification | 2. Bluetooth | 3. Wi-Fi |
| 4. Luba 2 AWD battery status | 5. Luba 2 AWD S/N | 6. Luba 2 AWD model |
| 7. User center | 8. Add new Luba 2 AWD | 9. Customer service |
| 10. Upgrade (appears when an update is available) | | |
| 11. Settings | 12. Enter Map Page | 13. Enter Schedule Page |

4.5.1 Notification

Information regarding the status, any errors, etc. will be displayed in the notification section. Click the push notification for more details.



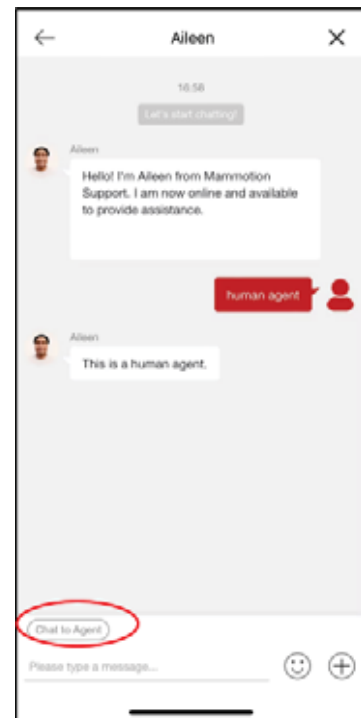
4.5.2 User Center



You can access your email address, the app version number, check user manual, tutorial videos, winter maintenance instructions, after-sales support, go to forums and stores, change the app language and log out of your account.

4.5.3 Customer Service

The Customer Service provides an internet-based chat service for any inquiries you may have and receive prompt responses from our technical support team. Simply click on **Chat to Agent** to start a conversation with one of our representatives.



4.5.4 Settings



Unbind — click to unbind the current Luba 2 AWD. A Luba 2 AWD can only be associated with one account and cannot be operated until it is bound. If you wish to transfer ownership of a Luba 2 AWD, you must unbind the Luba 2 AWD before proceeding.

Feedback — click to send your issues and logs to Mamotion to target. You can attach a maximum of 5 images and 1 video.

Luba version — click to check the firmware version of Luba 2 AWD.

Network settings — click to set Luba 2 AWD network.

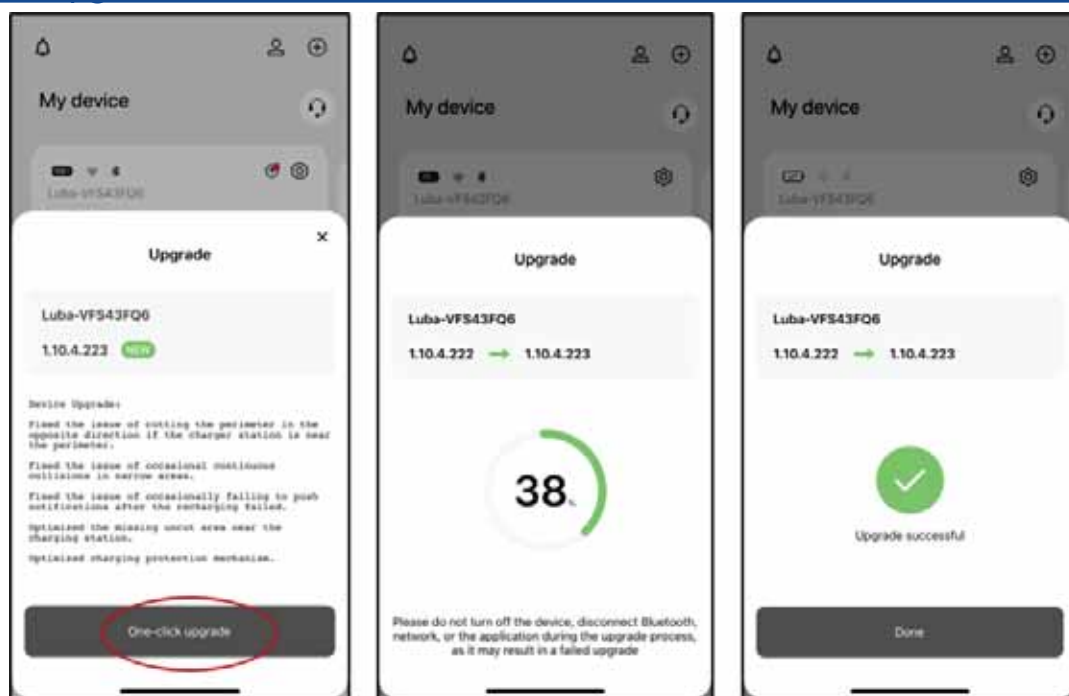
Upgrade — click to upgrade the Luba 2 AWD firmware. See [Upgrade](#) for more details.

4.5.5 Upgrade

This icon indicates the availability of an update for the Luba 2 AWD firmware. Click on it to begin the upgrade process.

NOTE

- Make sure the distance between your phone and Luba 2 AWD is less than 3 m/10 ft.
- Make sure that there is a good and stable Wi-Fi or hot spot signal.
- DO NOT turn off the Luba 2 AWD or disconnect the Wi-Fi and hotspot connection during the upgrade, as this could cause the upgrade to fail.



4.5.6 Schedule

With the Schedule function, you can set a weekly task and Luba 2 AWD will automatically do its work once a week according to your schedule.

To set a schedule

NOTE

- The Schedule function is disabled when Luba 2 AWD is in the middle of automatic mowing.
- A schedule can be set after a task map has been created.

1. Click **Schedule** on the main page or on the map page.
2. Click **+** on the bottom-right corner.
3. Choose task areas, then click **Confirm** to continue.
4. Set Task mode, Time, and Cutting height. Click **Save** to complete the setup.

NOTE

For initial use of Luba 2 AWD, we strongly advise setting the cutting height to above 50 mm/2 in.

5. The set schedule will appear on the schedule sheet.
6. Toggle the button  to off  to inactivate the schedule if needed.

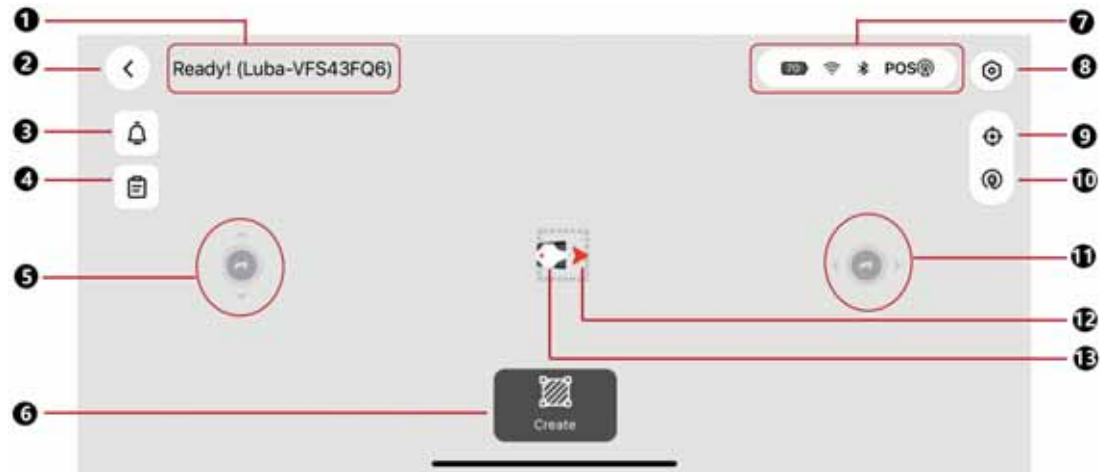


To change/delete a schedule

1. Click the schedule you want to change or delete.
2. Click **Edit** to continue change.
3. Click **Delete** to delete the schedule.



4.6 Map Page Introduction



- 1. Luba 2 AWD 2. Return to previous page 3. Notification² status¹
- 4. Task record 5. Manually drive forward/backward
- 6. Create task 7. Status bar 8. Settings
- 9. View returns to the center of the map 10. Auto recharge
- 11. Manually turn Luba 2 AWD clockwise or anti-clockwise
- 12. Point to direction 13. Luba 2 AWD

NOTE

- 1. The status will vary according to the actual conditions.
- 2. See **4.5.1** for more information.

4.6.1 Create a Task

Before creating a task

Before creating a task area, it is important to be aware of key considerations.

- Remove debris, piles of leaves, toys, wires, stones, and other obstacles from the lawn. Make sure no children or animals are on the lawn.
- Luba 2 AWD's status shows **Ready** and the positioning status is good.
- We highly recommend you leave 15 cm/6 in distance if you drive Luba 2 AWD along the edge of a wall/fence/obstacles/ditches.
- The controller should follow Luba 2 AWD within 3 m/10 ft to ensure a good Bluetooth connection and for safety reasons.
- Do not operate Luba 2 AWD in areas with severe obstructions to avoid missing signals.
- Do not drive Luba 2 AWD on uneven curbs. However, for improved cutting, guide Luba 2 AWD along the lawn's boundary on the flat and open curb.



- Please mark the line along the edge of the lawn.



To create a task area

1. Click **Create** on the Map page.
2. Follow the guidelines to ensure you are well-prepared.

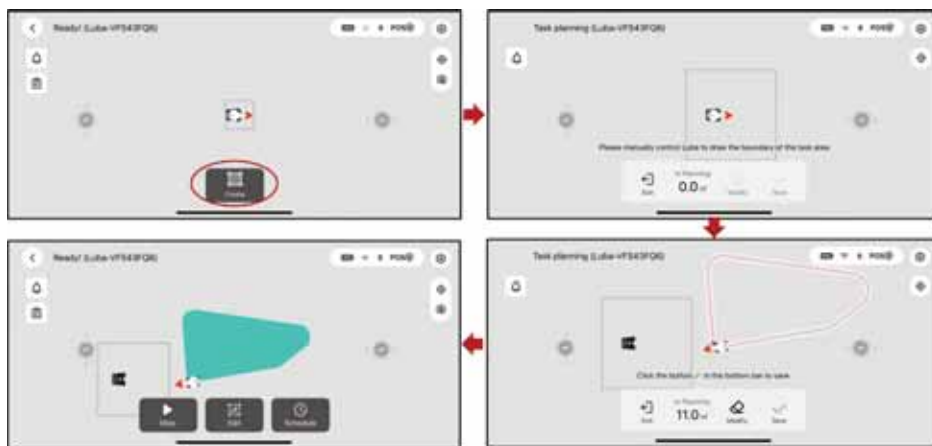


3. Manually control Luba 2 AWD to draw the boundary of task area. The solid line marks the boundary that you have set, while the dotted line will help you to get back to the starting point. The task area will not be created until you control Luba 2 AWD to the starting point.
4. Click **Modify** to adjust the boundary if Luba 2 AWD enters an area without RTK signals. Guide Luba 2 AWD back along the path to the intended location.
5. Control Luba 2 AWD to the start point and click ✓ to save the setting.
6. Click **Exit** to cancel the task planning if necessary.
7. Add a channel to the charging area. See [To add a channel](#) for further information.

NOTE

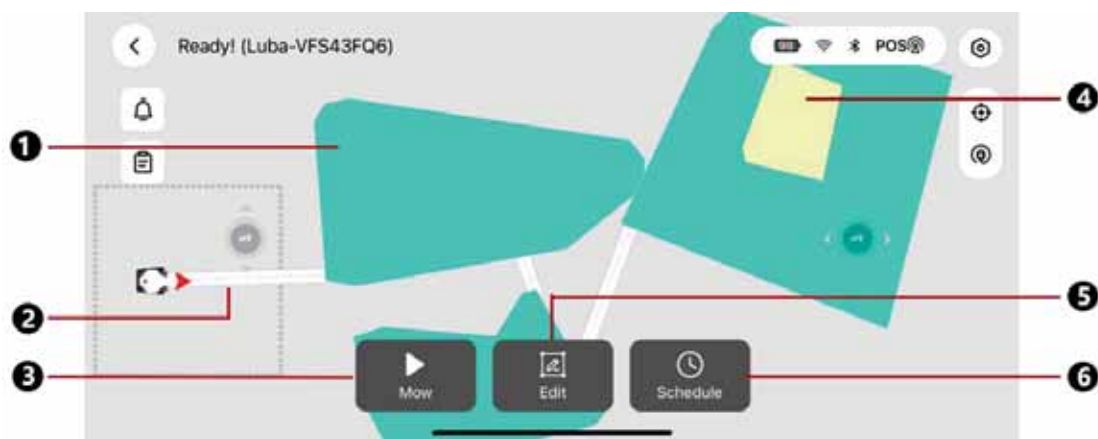
- When planning a task, the system will estimate the area. Please ensure that the area is not more than the upper limit (See [Technical Specifications](#) for more information), or the task planning will fail.
- Drive Luba 2 AWD out of the task area or no-go zone first if a new

task area is created.



After a task is created

When a task area is finished, a prompt appears on the screen to either Go to work or Continue planning. Click **Go to work** to start mowing. Click **Continue planning** to create another task area, add No-go zone, add a channel or change the boundary. The last three functions are explained in the following sections.



1. Task area
2. Channel
3. Start mowing
4. No-go zone
5. Add another task area, channel, no-go zone, and modify boundary
6. Schedule (See [4.5.6](#) for additional information)

To add a no-go zone

NOTE

- Ensure that Luba 2 AWD has been transported to the appropriate task location when creating a no-go zone.
 - No-go areas cannot be modified once they have been set.
-

No-go zones are created for pools, flowerbeds, trees, roots, ditches, and any other obstructions present in the lawn. Luba 2 AWD will avoid mowing inside these designated areas.

- Click **Edit** > **Add no-go zone**

To add a channel

NOTE

- Channel cannot be modified once it has been set.
 - Ensure that Luba 2 AWD has been transported to the appropriate task location when adding a channel.
-

The channel is intended to connect various task areas or link the task area with charging station.

- Click **Edit** > **Add channel**

To modify boundary

NOTE

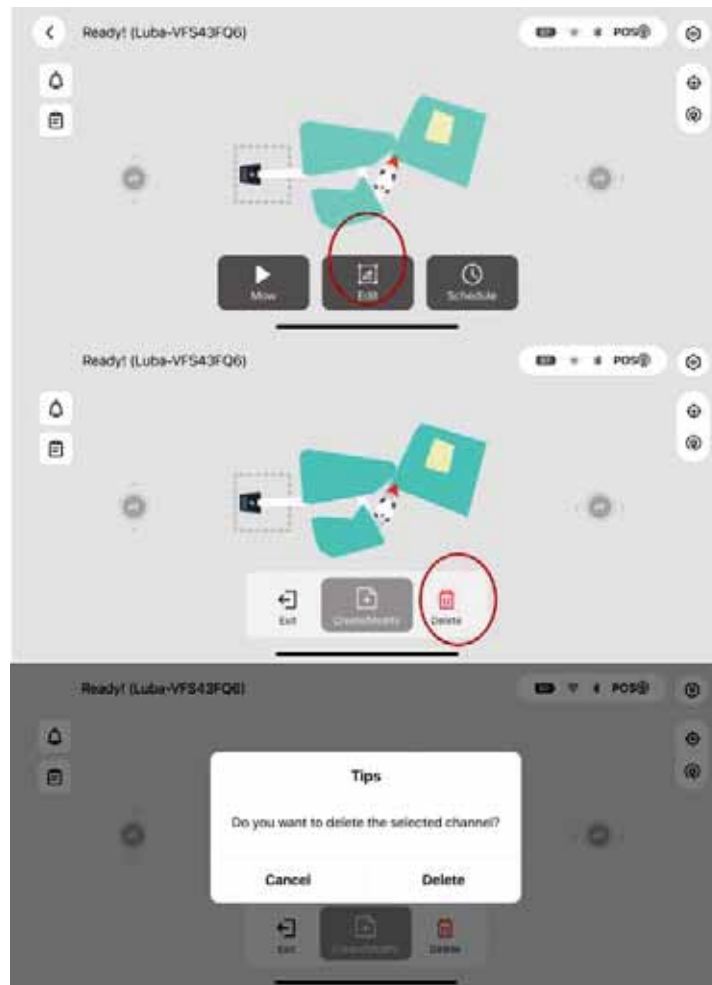
- The boundary modification will fail if the remaining area is less than 5 m².
 - To edit a current task boundary, first ensure that Luba 2 AWD is within the designated area.
-

Boundary modification is applied for reediting the current task area.

- Click **Edit** > **Modify boundary**

To delete a task area, no-go zone, and channel

1. Navigate Luba 2 AWD to the desired area for deletion.
2. Click **Edit** > **Delete**.
3. Select **Delete** on the pop-up to confirm your option.



Multiple task areas with overlapping

If you have several lawns that overlap, the shared section will be assigned to the task area that was created first. No channel is necessary for two task areas with overlapping sections.

RTK reference station cannot move once the task area is created

Do not move the RTK reference station after the task area is created or the resulting cutting area will diverge from the designated task area. In the event of a RTK reference station relocation, please delete the map and create a new task area.

4.6.2 Status Bar

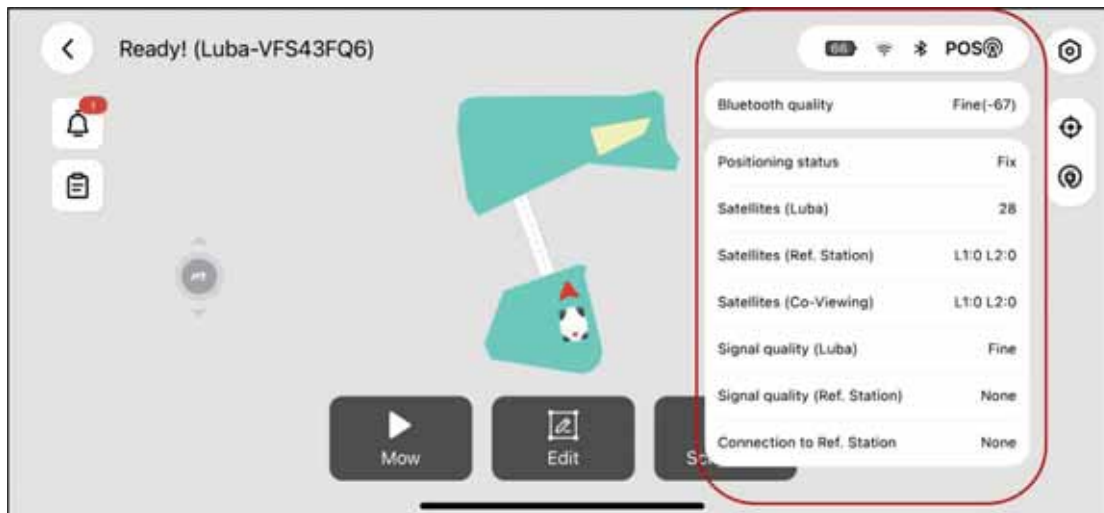
From left to the right:

- Luba 2 AWD battery status
- Luba 2 AWD's Wi-Fi
- Bluetooth
- Positioning status

POS  Fine positioning

POS  Positioning unavailable

Click the status bar to show the following details.



- **Bluetooth quality** — shows the strength of Bluetooth connection.
- **Positioning status** — shows the strength of positioning.
 - ✧ **Fix** — fine positioning status with an accuracy of less than 10 cm/4 in, up to 2 cm/1 in with a good open-sky area.
 - ✧ **Float** — poor positioning status with an accuracy about 50-200 cm/20-79 in.
 - ✧ **Single** — bad positioning status with a meter-level accuracy.
 - ✧ **None** — no positioning status.

*Only Fix status enables automatic mowing.
- **Satellites (Luba)** — refers to the total number of satellites received by Luba 2 AWD.
- **Satellites (Ref. Station)** — refers to the number of satellites that RTK reference station can receive. L1 and L2 respectively indicate the satellites operating at L1 and L2 frequencies.
- **Satellites (Co-Viewing)** — refers to the satellites received by both Luba 2 AWD and RTK reference station. Generally, having more than 20 L1 and L2 satellites with fine signal quality each is ideal for stable RTK positioning.

- **Signal quality (Luba)** — refers to satellite signal strength of Luba 2 AWD.
- **Signal quality (Ref. Station)** — refers to satellite signal strength of RTK reference station.

*The accuracy of positioning is affected by the quality of the satellite signal and the number of Co-Viewing satellites. Objects such as trees, leaves, walls, and fences can weaken the signal and lead to positioning errors. Despite detection of more than 20 satellites by both the Luba 2 AWD and RTK reference station, the signal quality can still be deemed as Weak or Bad.

- **Connection to Ref. Station** — refers to the connection status between the Luba 2 AWD and the RTK reference station.

✧ **Weak or Bad** — indicates that the Luba 2 AWD is too far from the RTK reference station or that there are thick walls or buildings obstructing the signal.

✧ **None** — indicates there is no connection between the RTK reference station and Luba 2 AWD. Without the data from the RTK reference station, RTK positioning cannot be accomplished. Please check whether the RTK reference station has been powered off or has any defects or whether the radio antenna has not been installed or the RTK pairing code is wrong (See [*To reset/change the RTK pairing code*](#) to correct the pairing code).

What to do when the Luba 2 AWD' s positioning is not Fix.

- Satellite (Ref. Station): L1 < 20, L2 < 20
- Satellite (Co-viewing): L1 < 20, L2 < 20
- Positioning status: Float

Measures:

Place the RTK reference station in an area with unobstructed views of the sky, without any physical obstructions within at least 5 m/16 ft. Alternatively, position the RTK reference station on a wall or roof.

- Signal quality (Ref. Station): Bad or Weak
- Positioning status: Float

Measures:

Place the RTK reference station in an area with unobstructed views of the sky, without any physical obstructions within at least 5 m/16 ft. Alternatively, position the RTK reference station on a wall or roof.

- Satellite (Ref. Station): L1:0, L2:0
- Satellite (Co-viewing): L1:0; L2:0
- Positioning status: Single
- Connection to Ref. Station: None or Weak

Measures:

- ✓ Ensure the power supply to the RTK reference station is functioning normally.
 - ✓ Verify that the indicator on the RTK reference station remains a constant green between the hours of 8:00-18:00 local time.
 - ✓ Check for any defects within the RTK reference station, such as water leaks.
 - ✓ Confirm that the radio antenna has been installed.
 - ✓ Re-pair the RTK reference station and Luba 2 AWD to see if it can be fixed.
 - ✓ If you replace the RTK reference station, pair the new station with Luba 2 AWD on the Mammotion app. For more details, visit <https://mammotion3006.zendesk.com/hc/en->
-

- Satellite (Luba) < 25
- Satellite (Co-viewing): L1 < 20, L2 < 20
- Positioning status: Float

Measures:

Check if the area where the Luba 2 AWD is situated, particularly when the Luba 2 AWD is being charged, has tall trees/walls/metal barriers, etc.

-
- Signal quality (Luba): Bad or Weak
 - Positioning status: Float

Measures:

- ✓ Check if Luba 2 AWD's current location is fully or partially covered.
- ✓ If the Luba 2 AWD is positioned on the charging station, relocate it to a less obstructed area.
- ✓ If the Luba 2 AWD is located on the perimeter/corner of the task area, adjust the boundary/corner to ensure it is not covered.
- ✓ If Luba 2 AWD is located within the task area and has lost its positioning due to obstacles such as trees, iron tables or chairs, mark those obstacles as no-go zones.

-
- Satellite (Luba): 0
 - Satellite (Co-viewing): L1:0, L2:0
 - Positioning status: None

Measures:

Check whether the Luba 2 AWD is inside or if its rear is covered with metal. If the Luba 2 AWD is faulty, please contact our after-sales team at https://mammotion3006.zendesk.com/hc/en-us/requests/new?ticket_form_id=13773144519703

-
- Satellite (Ref. Station): L1:0, L2:0
 - Satellite (Co-viewing): L1:0; L2:0
 - Positioning status: Float
 - Signal quality (Ref. Station): None
 - Connection to Ref. Station: None

Measures:

- ✓ Check if the RTK reference station has powered off.
 - ✓ If the Luba 2 AWD is too far from the RTK reference station, narrow the distance between the RTK reference station and Luba 2 AWD and retry.
 - ✓ Verify if there are any malfunctions with the antenna, RTK reference station, or Luba 2 AWD receiver. If so, please contact our after-sales team at https://mammotion3006.zendesk.com/hc/en-us/requests/new?ticket_form_id=13773144519703
-

4.6.3 Mow

Preparation

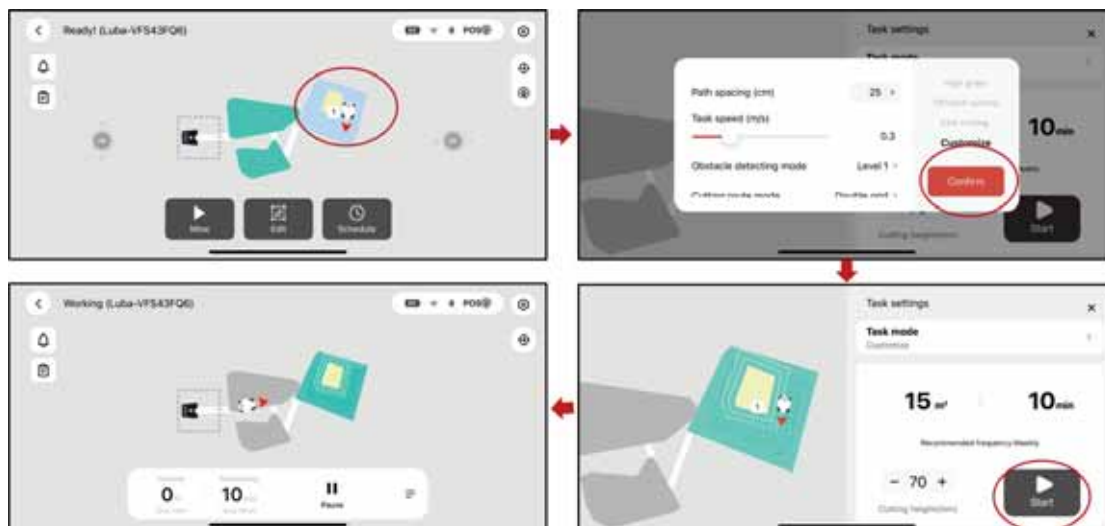
- Ensure Luba 2 AWD is in the task area before mowing.
- If any unexpected problems arise, please press the **STOP** button and secure Luba 2 AWD. The button labelled STOP holds top priority among all commands.
- If the lift sensor is activated, Luba 2 AWD will come to a halt. Please press the **Grass** button followed by the **Start** button to activate Luba 2 AWD.
- Please mow the task area no more than once a day as doing so may

be harmful to your lawn.

- If the grass height exceeds 60 mm/2 in, it is advisable to raise the cutting height to at least 40 mm/1.6 in. When mowing, it is important to only trim a third of the grass height each time. For example, if the initial grass height is 60 mm/2 in, the cutting height of Luba 2 AWD should be set to 40 or 45 mm/1.6 or 1.8 in. Similarly, if the grass is between 90-100 mm/3.5-4 in, the cutting height of Luba 2 AWD should be set to 60 mm/2 in.

To start mowing

1. Click a task area to select.
2. Click **Mow** to enter task settings screen.
3. Select a task mode, then click Confirm.
4. Set the cutting height.
5. Click **Start**.



Task settings

When you click on Mow, you are taken to the Task settings screen. There are several parameters to set. Finally click **Confirm** to finish the settings.

There are four task modes to select:

- High grass
- Efficient cutting
- Fine cutting
- Customize

Table 4-1 Task Mode Description

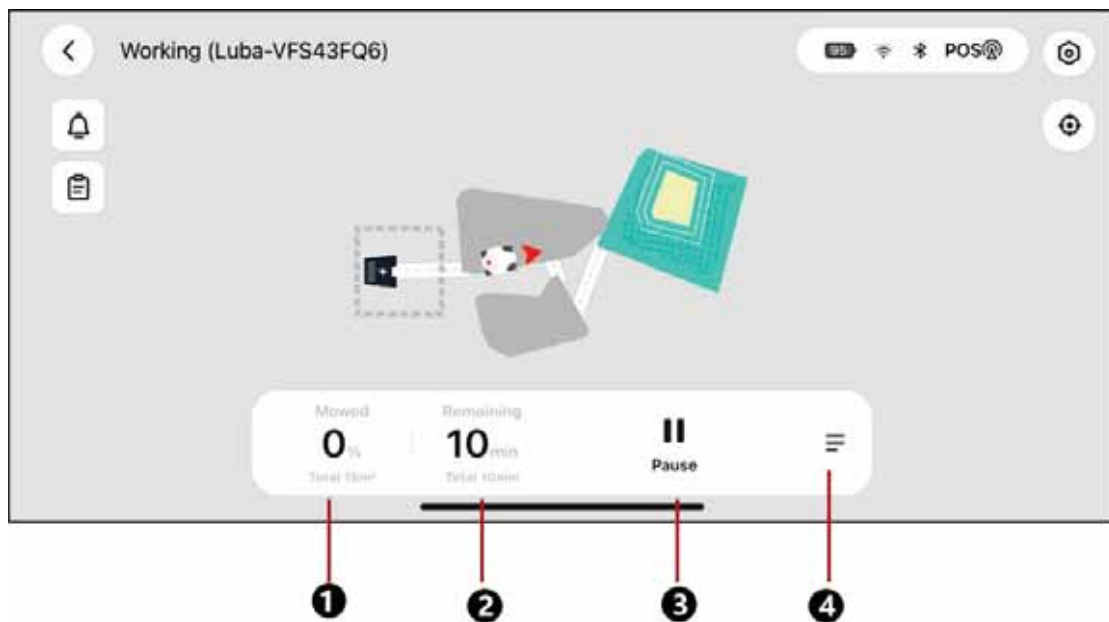
Mode	Description	Use Cases
High grass	Only use the bumper to detect the obstacle, as too much tall grass can interfere with the ultrasonic sensor. Mowing path with double grid.	For lawns that have not been mowed for an extended period, the grass height typically exceeds 12 cm/4.7 in. The objective of cutting the grass is simply to bring its height down.
Efficient cutting	Cut the grass at a higher speed than fine mode, using wider path spacing and a single grid mowing path. This may result in some grass being left uncut, particularly for thick and dense grass.	For typical domestic lawns, the cutting result may not be as refined for lawns with sturdy and dense grass. However, the efficiency is still greater than that of the Fine cutting mode.
Fine cutting	Cut at a lower speed (0.3 m/s) and reduce the spacing between each mowing pass using a double grid pattern.	For typical domestic lawns, cut the grass short but with reduced efficiency.
Customize	Customer can define every task parameter. The parameters are explained in the <i>Table 4-2 Parameters Description</i> .	For more customized use.

Table 4-2 Parameters Description

Parameters	Description	Recommended Value
Path spacing (cm)	The spacing between 2 mowing paths. Can be adjusted between 20 to 35.	20-30
Task speed (m/s)	The speed of Luba 2 AWD when mowing. Lower speed produces better results for dense and thick grass at the cost of efficiency.	0.3-0.5
Obstacle detecting mode	Off: Bypass the obstacle at a fixed distance after the collision sensor is triggered. Level 1: Bypass the obstacle at a dynamic distance after the collision is triggered. Level 2: Avoid side obstacles before touching.	Off: for an overgrown lawn. Level 1: for a lawn with uneven terrain and long grass. Level 2: for a well-maintained and level lawn.
Cutting route mode	Mowing path mode: No grid, single grid, double grid, and segment grid	No grid: suitable for lawns with only perimeter grass to be cut. Single grid: provides more efficient cutting. Double grid: provides finer cutting. Segment grid: suitable for lawns with complex shapes.

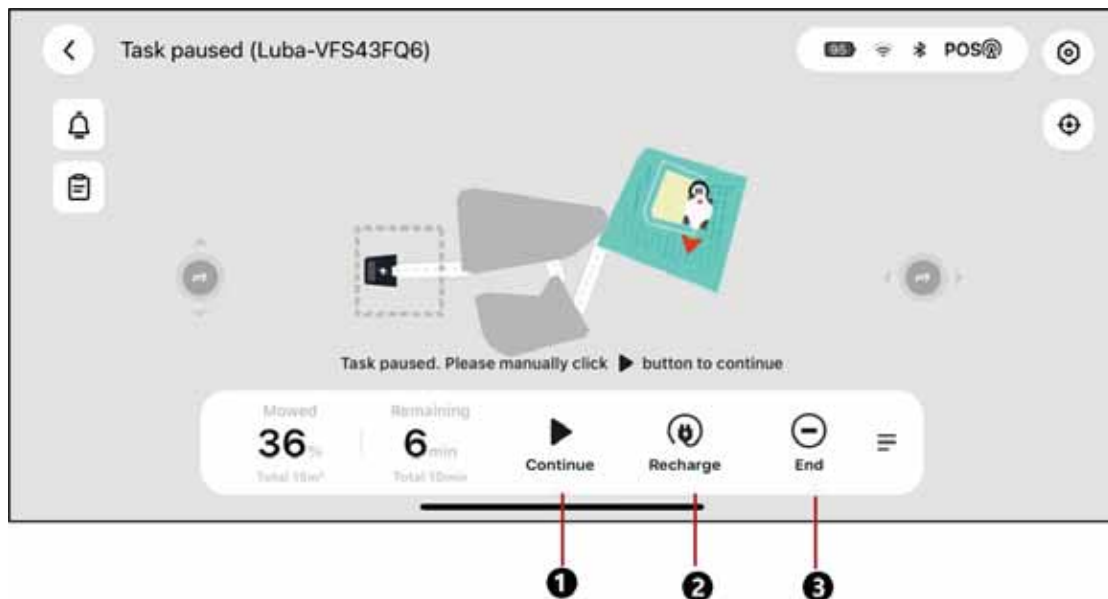
Parameters	Description	Recommended Value
Perimeter mowing laps	The mowing circles at the perimeter. *Under the No grid mode, the perimeter mowing laps cannot be set 0.	2-3
No-go zone mowing laps	The grass-cutting circles surrounding the boundary of the restricted area.	2-3
Border patrol first/ Execute gridlines first	Cutting path execution order. *Available for single and double grid modes.	/
Cutting route angle (°)	The direction of the cutting path can be changed. The angle is determined by the north direction. *Available for single and double grid modes.	/
Start progress	The starting point for mowing.	/

Working page introduction



1. Indicates the overall area of the task and the progress of the mowing.
2. Indicates the total time required and the time remaining.
3. Click to pause working (Once Pause button is clicked, it will change to Continue.)
4. Click to set cutting height.

Task paused page introduction



1. Click to continue working. You will be asked to choose whether to continue or start the task from the breakpoint or from the front of the breakpoint.
 - ✧ **Breakpoint** — resume the task from the paused point.
 - ✧ **Front of the breakpoint** — about 1 m/3 ft. away from the pause point and typically used for scenes where there is an obstruction in the cutting path.
2. Click to return Luba 2 AWD to charge.
3. Click to finish the current task.

4.6.4 Settings

There are two modules in the settings:



- **App**

- ✧ Guide — a guideline for newcomers, click to turn on/off.
- ✧ Upper limit speed for manual control (m/s) — set the upper limit speed for manual control.
- ✧ Unit — provides two units: Metric or Imperial.

- **Luba**

- ✧ No mowing on rainy days — when you enable this function, the Luba 2 AWD will not mow if it rains.
- ✧ Turnaround mode — provides two ways to turn: **Multi-point turn** or **Zero turn**. Multi-point turn is selected by default as it is more turf friendly; while zero turn is typically designed for a channel that requires turns.
- ✧ Side light — click to turn on/off the side indicator of the Luba 2 AWD
- ✧ Manual mowing — Click to enter manual mowing mode. See [*Error! Reference source not found.*](#) for details.
- ✧ Recharge route — provides two ways to recharge: **Direct route**

or **Follow the boundary; Direct route** means that the Luba 2 AWD takes the shortest route to return to the charging station; **Follow the boundary** means that the Luba 2 AWD drives down the border to the charging station without leaving any tracks on the lawn.

- ✧ Delete map — click to delete the task area you create.
- ✧ RTK pairing code — you can select to reset or change the RTK pairing code. See for additional information.
- ✧ Relocate charging station — click to relocate the charging station. See [To reset/change the RTK pairing code](#)

The first RTK pairing code is read from the Luba 2 AWD. To link a different RTK reference station, access **Settings**, go to **RTK pairing code**, select **Change**, then enter the LoRa number found on the RTK reference station sticker and click **Confirm** to update it. Clicking and confirming the **Reset** button will delete the current pairing code, so be sure to back it up before proceeding.

- ✧ To relocate the charging station for additional information.

To reset/change the RTK pairing code

The first RTK pairing code is read from the Luba 2 AWD. To link a different RTK reference station, access **Settings**, go to **RTK pairing code**, select **Change**, then enter the LoRa number found on the RTK reference station sticker and click **Confirm** to update it. Clicking and confirming the **Reset** button will delete the current pairing code, so be sure to back

it up before proceeding.

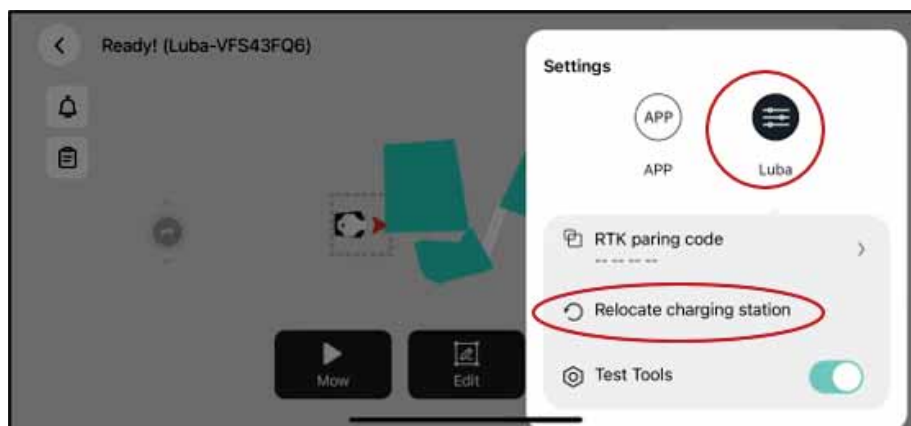
To relocate the charging station

NOTE

Please relocate the charging station while Luba 2 AWD is charging.

Generally, the charging station should be relocated if

- The charging station and RTK reference station are moved.
 - The docking path has a significant incline.
 - The docking process is consistently off track.
1. Install the RTK reference station/charging station in a proper place.
 2. Place Luba 2 AWD on the charging station and ensure the positioning status is fine.
 3. Select **Settings > Relocate charging station**.
 4. Any existing task areas and schedules will be deleted as the entire system will be changed.



4.6.5 Auto-recharge

NOTE

When performing auto-recharge function, Luba 2 AWD must be in the task area.

Auto-recharge allows Luba 2 AWD to automatically return to charge when the battery is lower than 15%.

To perform auto-recharge

- Click  on the map page in Mammotion app, or
- Press the button  on the Luba 2 AWD, then press  to guide Luba 2 AWD to the charging station.

5 Maintenance

NOTE

Familiarize yourself with safety instructions for maintenance before you do the maintenance work.

5.1 Cleaning

In order to have your Luba in a good condition at all time, please clean it after mowing. The cleaning process in this user manual will instruct you to get rid of the clippings, twigs, leaves or dust and keep the mower in good condition.

When cleaning your Luba, keep in mind the precautions:

- Do not clean Luba when the front bumper is not installed.
- Do not turn upside down to clean the bottom of Luba.
- After washing, do not turn upside down to dry Luba to prevent

water leaks into the motor.

How to clean Luba:

1. Make sure Luba is on.
2. Make sure the front bumper is installed and cannot be pulled out.
3. Make sure the USB cover is tight.
4. Press the power button to turn off Luba.
5. Remove the key.
6. Lift left or right side up to clean Luba's bottom.
7. Lift front side up to clean Luba's bottom thoroughly.
8. Clean the surface and rear part of Luba.
9. Wait for 30 mins till Luba is dry

NOTE

Ensure that Luba is placed on the ground in its normal orientation and not upside down.

10. Insert the key back to Luba.
11. Turn on Luba and the cleaning is done.

5.2 Maintenance for Motors and Cutting Blades

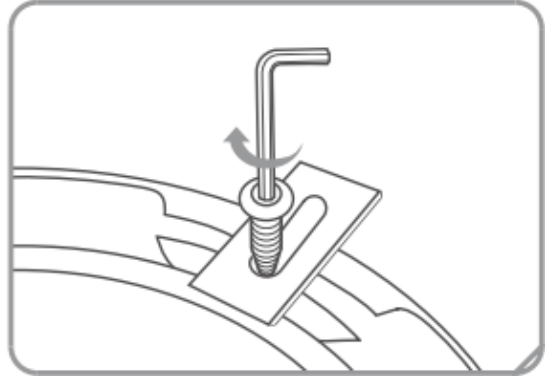
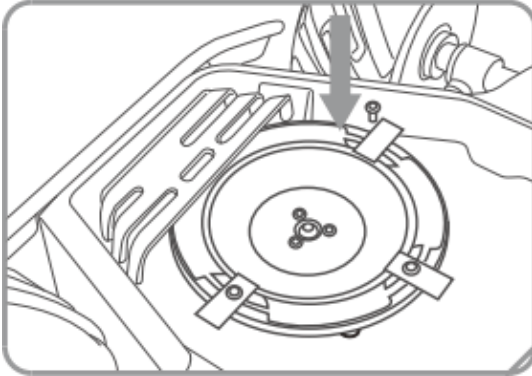
CAUTION

1. Wear protective gloves when you inspect, clean or replace the cutting blade.
 2. Only use the right type of screws and original blades as approved by Mammotion.
 3. All the cutting blades and their screws should be replaced at the same time for a safe cutting system.
 4. DO NOT reuse the screws, which may cause serious injury.
-

- After mowing task is finished, turn off Luba and flip it over on a relatively soft surface. Then use a brush or faucet to clean the clippings, twigs or leaves from the bottom. Make sure the cutting blade discs are clean and will not get struck.
- If Luba is stored for a long time, it will be better to add anti-rust oil on the cutting blades after cleaning.
- Keep the hub motors shaft dry and clean for long-term storage.
- The cutting blades are recommended to replace every 3 months or after 150-hour mowing. For thick grass, the cutting blade may need to be changed more frequently.

How to replace a cutting blade:

Tool needed: 2.5mm/0.1 in Allen Key



5.3 Battery Maintenance

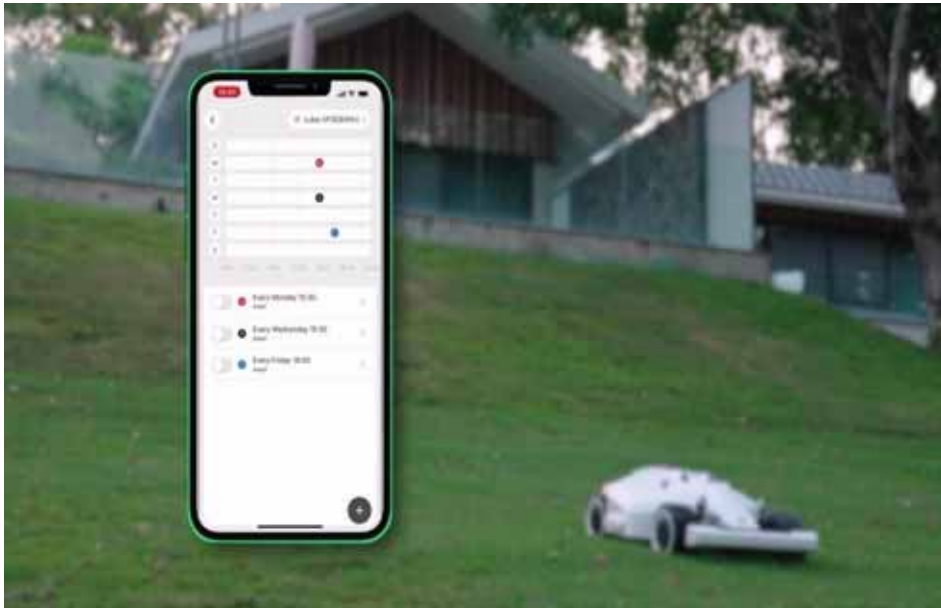
- Keep 50% to 60% battery level before long term storage.
- Charge fully every 90 days.
- Clean and make sure the charging ports on Luba are dry and clean after mowing.

5.4 Winter Maintenance

To make sure your Luba will be in perfect condition for the next mowing season, please follow these instructions.

1. Preparation before winter storage

- Turn off all task schedules in Mammotion App.



- Charge the battery power of Luba to 40%-70%.



Charge battery power of Luba to 40%-70%

2. Remove the charging station

- Disconnect the charging station.



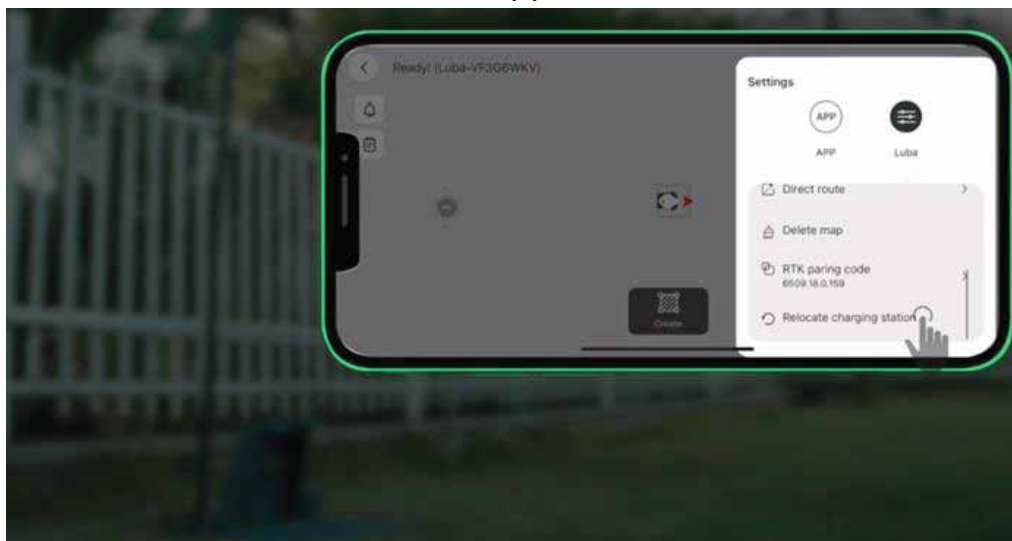
- Loosen and remove the screws.



- Take away the charging station.



- When the next mowing season comes, reinstall the charging station and relocate it in the App.



3. Select one method to take care of the RTK reference station:

NOTE

No need to delete and recreate a task map when the next mowing season comes if the RTK reference station is not removed.

A. Cover the RTK reference station with plastic cover from Mammotion

- The ambient temperature should be higher than $-20^{\circ}\text{C}/-4^{\circ}\text{F}$.
- Disconnect the RTK reference station extension cord.



- Cover the RTK reference station with plastic cover.



B. Cover the RTK reference station with other materials like plastic bags.

- The ambient temperature should be higher than $-20^{\circ}\text{C}/-4^{\circ}\text{F}$.

- Disconnect the RTK reference station extension cord.



- Hang the cable over the RTK reference station.



- Remove the black antenna.



- Add desiccant to keep it dry.



- Cover the RTK reference station with a plastic bag and tie knots. Make sure the knot is under the station.



C. Remove the RTK reference station installed on the wall

- Cut off the power.



- Remove the RTK reference station from the wall and mark the position.

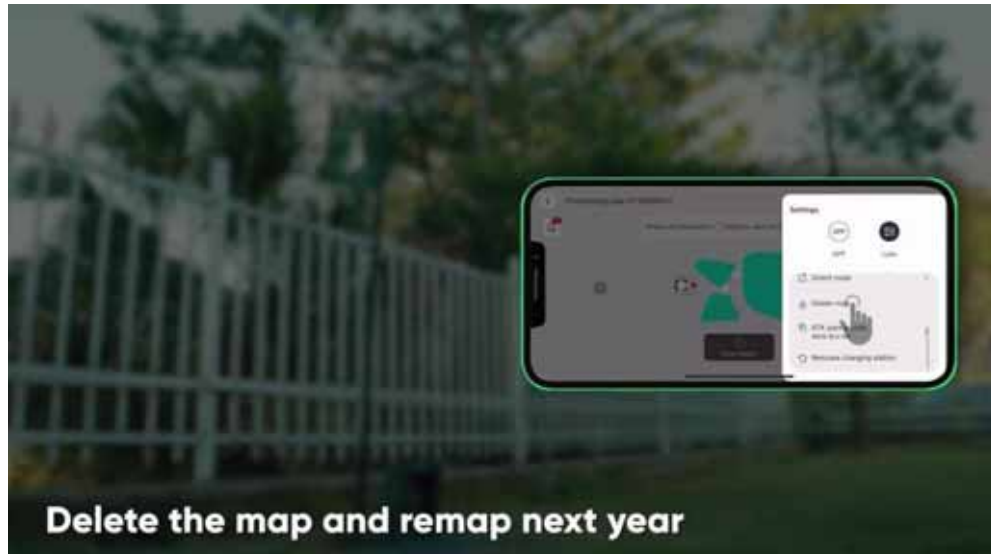


- Reinstall the RTK reference station on the original position when the next mowing season comes.



D. Remove the RTK reference station installed on the pole

- Delete the map and remap it next year.



- Remove the RTK reference station from the pole.





4. Clean Luba

Clean Luba's housing:

- Make sure your Luba is in normal orientation, the front bumper is steadily installed and the USB cover on the rear is tight.
- Ensure your Luba is powered off with battery power of 40-70%.
- Clean Luba (the housing, wheels, chassis, etc.) with a wet towel or soft brush. You can wash Luba if you think it is too dirty.



- DO NOT turn Luba upside down and wash the bottom of Luba.



- Wait for 30 mins till Luba gets dry.

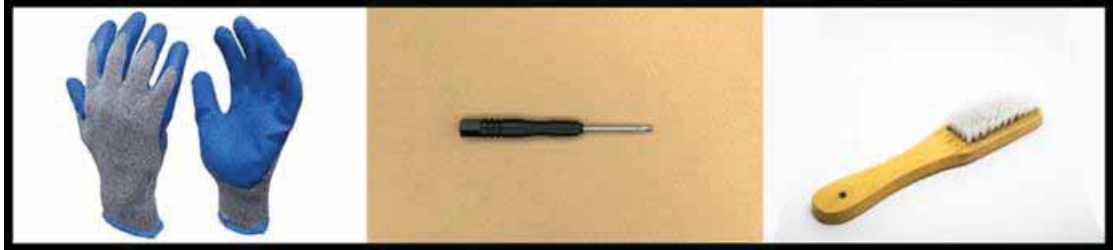


Clean Luba's bottom:

NOTE

If you use water to clean Luba's housing in the previous steps, please guarantee that Luba is dry when you clean the cutting blades in the following process.

- Prepare the tools: protective gloves, brush, and Phillips screwdriver.



- Remove the key.



- Turn Luba upside down and use the Phillips screwdriver to loosen the blade screw. Do wear protective gloves.



- Use the brush to clean the blade and the cutting plate.



- Use the Phillips screwdriver to tighten the screw.



- Hold still the cutting plate and use the Phillips screwdriver to loosen the cutting plate screws.



- Use the brush to clean the bottom of Luba.

WARNING

Do not use sharp objects to clean the bottom of Luba.



- After finishing the cleaning, install the cutting plate.



- Remove the front bumper and clean its connection hole and the metal axles.



- Clean the rear charging area of Luba.



- Clean the front bumper and the joint of the front bumper carefully.



- Add anti-rust lubricant on the joint part if necessary.

NOTE

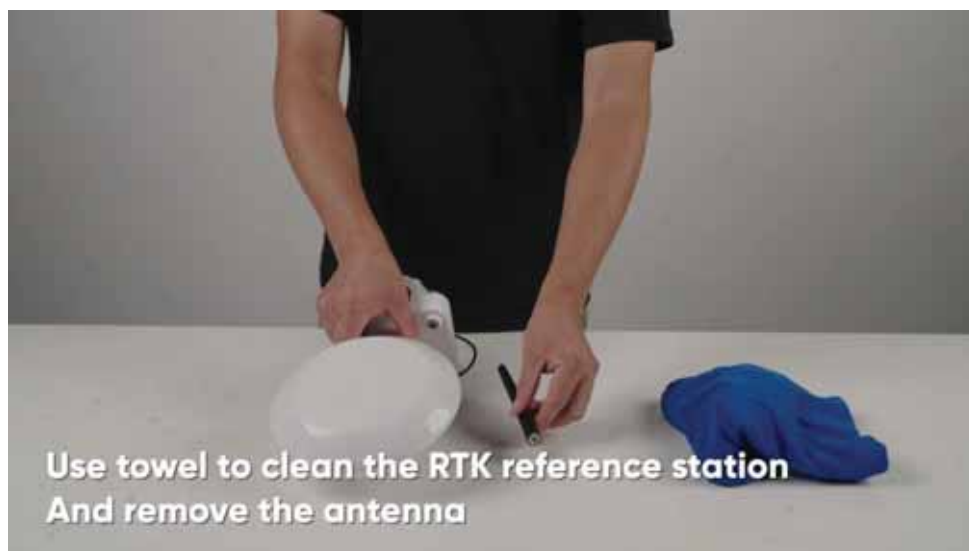
Do not apply chemical agent on another part of Luba except for the joint part, especially the metal contact part.





5. Clean the charging station and RTK reference station

- **Clean the removed RTK Reference Station:** Use a towel to clean the RTK reference station and remove the black antenna.



- **Clean the charging station:** Use a brush and towel to clean the charging station, especially the IR part, the charging pin, and the interface.

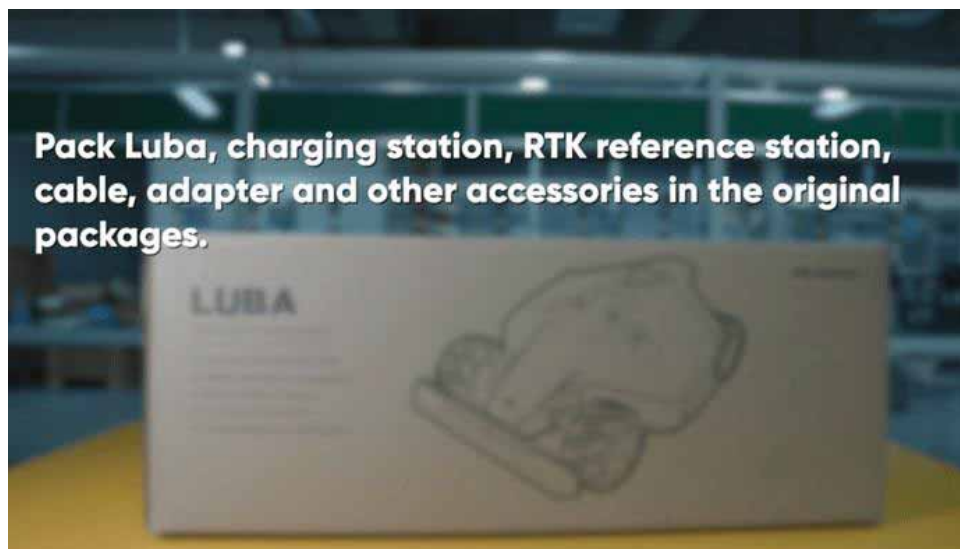


- Clean the bottom of the charging station.



6. Storage

- Pack Luba, charging station, removed RTK reference station, cable, adapter, and other accessories in their original packages.



Keep the package in a dry condition with temperature of **-10 to 25°C/14 to 77°F**.

6 Product Specifications

6.1 Technical Specifications

Standard Version (Cutting Height: 30-70 mm/1.2-2.7 inches)				
Specifications	LUBA 2 AWD			
	10000	5000	3000	1000
Max. Mowing Size	10000 m ² / 2.5 acres	5000 m ² / 1.25 acres	3000 m ² / 0.75 acres	1000 m ² / 0.25 acres
In-App Area Storage Capacity	12000 m ² / 3 acres	6000 m ² / 1.5 acres	3600 m ² / 0.9 acres	1200 m ² / 0.3 acres
Max. multi-zone Management	60	30	20	10
Engine	All-wheel Drive (AWD)			
Max. Climbing Ability	80% (38.6°)			
Max. Slope at the Edge	45% (24°)			
Vertical Obstacle Passing Ability	50 mm/2 in.			
Cutting Width	40 cm/15.7 in.			
In-App Cutting	30-70 mm/1.2-2.7 inches			

Standard Version (Cutting Height: 30-70 mm/1.2-2.7 inches)		
Height Adjustment		
Charging Time	150 min	
Mowing Time per Charge	180 min	120 min
Auto-recharge	YES	
Positioning & Navigation	• Binocular Vision • Ultrasonic Radar • Physical Bumper	
Voice Control	Alexa & Google Home	
Vision Monitoring	YES	
Connectivity	4G & Bluetooth & Wi-Fi	
A weighted sound power	$L_{WA}=64\text{dB}$, $K_{WA}=3\text{dB}$	
A weighted sound pressure	$L_{PA}=56\text{dB}$, $K_{PA}=3\text{dB}$	
Waterproof	LUBA Machine: IPX6 Charging Station: IPX6 RTK Station: IPX7	
Rain Detection	YES	
Weight	18 kg/38.9 lbs.	

H Version (Cutting Height: 60-100 mm/2.4-4 inches)				
Specifications	LUBA 2 AWD			
	10000H	5000H	3000H	1000H
Max. Mowing Size	10000 m ² / 2.5 acres	5000 m ² / 1.25 acres	3000 m ² / 0.75 acres	1000 m ² / 0.25 acres
In-App Area Storage Capacity	12000 m ² / 3 acres	6000 m ² / 1.5 acres	3600 m ² / 0.9 acres	1200 m ² / 0.3 acres
Max. multi-zone Management	60	30	20	10
Engine	All-wheel Drive (AWD)			
Max. Climbing Ability	80% (38.6°)			
Max. Slope at the Edge	45% (24°)			
Vertical Obstacle Passing Ability	80 mm/3.1 in.			
Cutting Width	40 cm/15.7 in.			
In-App Cutting Height Adjustment	60-100 mm/2.4-4 in.			
Charging Time	150 min			
Mowing Time per Charge	180 min			120 min
Auto-recharge	YES			
Positioning & Navigation	● Binocular Vision ● Ultrasonic Radar ● Physical Bumper			
Voice Control	Alexa & Google Home			

H Version (Cutting Height: 60-100 mm/2.4-4 inches)	
Vision Monitoring	YES
Connectivity	4G & Bluetooth & Wi-Fi
A weighted sound power	$L_{WA}=66\text{dB}$, $K_{WA}=3\text{dB}$
A weighted sound pressure	$L_{PA}=58\text{dB}$, $K_{PA}=3\text{dB}$
Waterproof	LUBA Machine: IPX6 Charging Station: IPX6 RTK Station: IPX7
Rain Detection	YES
Weight	18 kg/38.9 lbs.
Size (L x W x H)	70 x 51 x 30 cm/27.2 x 20.2 x 12 in.

Battery charger	GQ180-250700-E4 Input:100-240V~ 50/60Hz,2.5A Output:25.2VDC, 7.0A, 176.4W
Battery pack	Battery pack for 10000, 5000, 3000, 10000H, 5000H, 3000H, 21.6Vdc, 9.6Ah Battery pack for 1000, 1000H, 21.6Vdc, 4.5Ah
Temperature range for charging is 4-45 °C / 39-113 °F	
WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance.	

6.2 LED Indicator Codes

Table 6-1 Luba 2 AWD's Indicator Description

Indicator	Status	Description
Side Indicator	Constant red	● System initialization ● Manual control mode ● Automatic work mode ● Charging finished (Luba 2 AWD still on the charging station)
	Breathing red	OTA upgrade in progress
	Slow flash red	● RTK positioning failed ● Emergency stop activated ● Charging in progress
	Fast flash red	● Low battery ● Luba 2 AWD being powered off
	Very fast flash red	● System upgrade failed ● OTA upgrade failed
	Off	● Pause ● Standby ● Sleeping
Front Indicator	Constant green	Power on
	Off	Power off

Table 6-2 Charging Station's Indicator Description

Indicator	Status	Description
Charging station indicator	Flash green	Luba 2 AWD is being charging.
	Constant green	Luba 2 AWD is fully charged or uncharged.
	Constant red	An error has occurred.

Table 6-3 RTK Reference Station Indicator Description

Indicator	Status	Description
RTK reference station indicator	Flash blue	The reference station is powering on.
	Flash green	The reference station is initializing.
	Constant green	The initialization is finished.
	Off	The initialization is finished and the local time is between 18:00 and 8:00.
	Constant red	An error has occurred.

7 Warranty

Mammotion Technology Co., Ltd warrants that this product will be free from material and workmanship defects under normal use in accordance with the product materials published by Mammotion during the warranty period. The published product materials include but not limited to user manual, quick start guide, maintenance, specifications, disclaimer, in-app notifications, etc. The warranty period varies among different products and parts. Check the table below:

Component	Warranty
Main Body	2 Years
Battery	2 Years
Charging Station & RTK Antenna	1 Year
Tire	No warranty
Decoration/Appearance	No warranty
Cutting blade	No warranty

NOTE

Tire, decoration/appearance, and cutting blade are wearing parts, which are excluded from warranty.

If the product does not function as warranted during the warranty period, please contact Mammotion customer service for instructions. Please provide receipt and product' s serial number when contacting customer service.

- The warranty period for the product starts from the day when the product is delivered.

- If you cannot provide an invoice or other valid proof of purchase, then the warranty period will begin 90 days after the production date shown on the product, unless otherwise agreed upon between you and Mammotion.
- Mammotion will need users to arrange the shipment by themselves if users would like to send the products to local service center or Mammotion factory for further diagnosis. Mammotion will repair or replace and send back to users at no cost if the problem falls under the warranty. If not, Mammotion or designated service center may charge a fee accordingly.
- Mammotion guarantees that, subject to the following conditions, Warranty Repair Service can be requested. Please contact Mammotion or your authorized Mammotion dealer for more details. You will be required to fill out a repair form or RMA (Return Material Approval), which should be sent to us along with the to-be-repaired unit.
- DOA (dead-on-arrival, defective-on-arrival, and/or damaged-on-arrival), refers to goods that are defective on arrival. After receiving goods from Mammotion, or the authorized dealer, if the product appears to be damaged or has performance failure(s), please contact Mammotion or your authorized Mammotion dealer to identify and confirm if a replacement is needed.
- Replacement applies to DOA cases. It should be requested within 7 calendar days of receiving the goods. The replacement will be completed within 30 calendar days upon receipt of the completed goods, including all original accessories, attachments and packaging.

- RMA (Return Material Approval), please fill out the form provided by Mammotion, scan, and email to support@mammotion.com.

Here puts some examples of faults that warranty will not cover:

All the damages caused by misuse or not following the user manual and below:

1. Third party claims against you for damages
2. Loss, damage or disclosure of your data
3. Special, incidental, punitive, indirect or consequential damages, including but not limited to lost profits, business revenue, goodwill or anticipated savings. In no case should the total liability of Mammotion, its affiliates, suppliers, resellers, or service providers for damages from any cause exceed the amount of actual direct damages, not to exceed the amount paid for the product.

8 Compliance

FCC Compliance Statements

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

ISED Compliance Statements

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

(1) L'appareil ne doit pas produire de brouillage;

(2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet équipement est conforme aux limites d'exposition aux radiations IC CNR-102 établies pour un environnement non contrôlé.

RF Exposure Compliance

This equipment complies with FCC/IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

Cet équipement est conforme aux limites d'exposition aux radiations IC CNR-102 établies pour un environnement non contrôlé.

Cet émetteur ne doit pas être colocalisé ou fonctionner en conjonction avec une autre antenne ou un autre émetteur. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

This radio transmitter [IC: 29682-RTK0002] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Cet émetteur de radio [IC: 29682-RTK0002] a été approuvé par innovation, sciences et développement économique Canada pour l'utilisation des types d'antennes énumérés ci - dessous avec les gains maximaux admissibles indiqués. Les types d'antennes qui ne sont pas inclus dans cette liste et dont le gain est supérieur au gain maximal de l'un des types énumérés sont strictement interdits pour une utilisation avec cet appareil.

Dipole Antenna 3.26dBi, 50Ω
Luba 2 AWD RTK Reference Station

DECLARATION OF CONFORMITY

We,

Mammotion Technology Co., Limited

UNIT 89 3/F YAU LEE CENTRE NO. 45 HOI YUEN ROAD, KWUN TONG KL

On behalf of Mammotion declare that the product

Robotic Lawnmower

Product Name: LUBA 2 AWD

Type: 10000/10000H/5000/5000H/3000/3000H/1000/1000H

Function Cutting grass

Complies with the following Directives,

2006/42/EC

2014/53/EU

ROHS 2.0

Standards conform to,

EN 60335-

1:2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019+A15:2021,

EN 50636-2-107:2015+A1:2018+A2:2020+A3:2021

Article 3.1a:

EN IEC 62311:2020

EN IEC 62368-1:2020+A11:2020

Article 3.1b:

EN IEC 61000-6-1:2019

EN IEC 61000-6-3:2021

EN 61000-3-3: 2013+ A1:2019+A2:2021

EN IEC 61000-3-2: 2019+A1:2021

EN 301 489-1 V2.2.3

EN 301 489-3 V2.3.2

EN 301 489-17 V3.2.4

EN 301 489-19 V2.2.1

EN 301 489-52 V1.2.1

Article 3.2:

EN 300 220-1 V3.1.1

EN 300 220-2 V3.2.1

EN 300 328 V2.2.2

EN 303 413 V1.2.1

EN 301 893 V2.1.1

EN 300 440 V2.2.1

EN 301 511 V12.5.1

EN 301 908-1 V15.2.1

EN 301 908-2 V13.1.1

EN 301 908-13 V13.2.1

IEC 62321-3-1:2013

IEC 62321-5:2013

IEC 62321-4:2013+A1:2017

IEC 62321-7-1:2015

IEC 62321-7-2:2017

IEC 62321-6:2015

IEC 62321-8:2017

ISO 18219:2015

Furthermore, The Notified Body [SGS North America, Inc.], with
Notified Body number [2906] performed Modules B in Annex III of
Directive [2014/53/EU]

The person authorized to compile the technical file,



2023/12/06

Roland Huang

Product Manager

Mammotion Technology Co., Limited

UNIT 89 3/F YAU LEE CENTRE NO. 45 HOI YUEN ROAD, KWUN TONG KL



MAMMOTION TECHNOLOGY CO., LTD

UNIT 89 3/F YAU LEE CENTRE NO. 45 HOI YUEN ROAD, KWUN TONG KL

www.mammotion.com

Copyright © 2023, MAMMOTION All Rights Reserved.