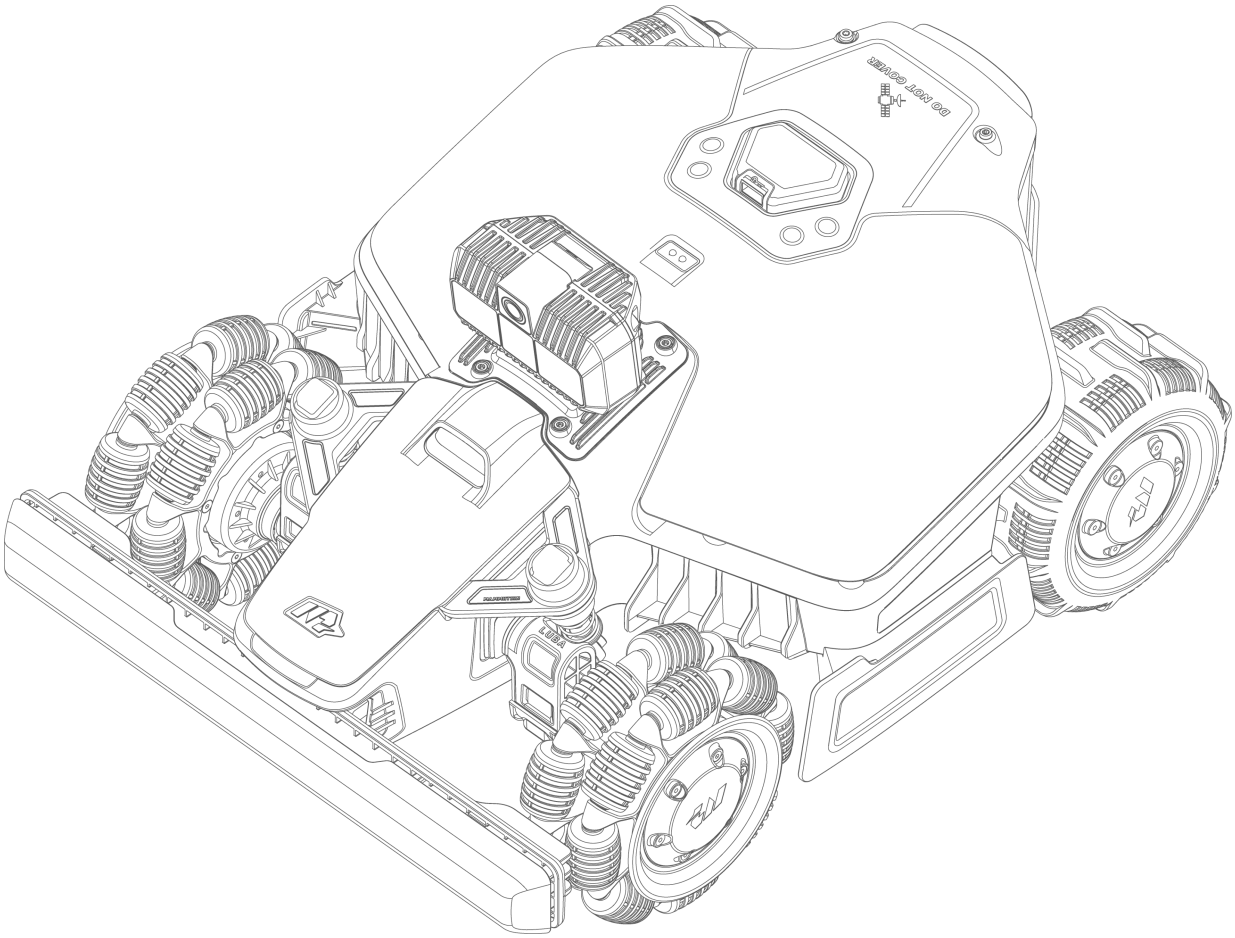
MAMMOTION

USER MANUAL

LUBA mini AWD LiDAR



Original Instructions Version 1.0

2025.05

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

Unless explicitly agreed otherwise, this manual serves solely as a usage guide, and all statements and information contained herein do not constitute any form of warranty.

Revision Log

Date	Version	Description
2025.05	V1.0	Initial version

CONTENTS

1 Safety Instructions

1.1 General Safety Instructions

- Carefully read and understand the user manual before using the robot.
- Only individuals who are legally considered adults in their state of residence are recommended to use the robot.
- Only use the equipment recommended by Mammotion with the robot. 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 robot, local restrictions may restrict the age of the operator.
- Do not allow children to be in vicinity or play with the robot when it is operating.
- Do not use the robot in areas where people are unaware of its presence.
- When manually operating the robot 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 robot when there are people, especially children or animals, in the task area.
- If operating the robot in public areas, place warning signs around the task area with the following text: "Warning! Automatic lawn mower! Keep away from the robot! Supervise children!"
- Wear sturdy footwear and long trousers when operating the robot.
- To prevent damage to the robot and accidents involving vehicles and individuals, do not set task areas or channels across public pathways.
- Seek medical aid in case of injury or accidents.
- Set the robot to **OFF** and remove the key before clearing blockages, performing maintenance, or examining the robot. If the robot vibrates abnormally, inspect it for damage before restarting. Do not

use the robot 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.
- Only use the charging station included in the package to charge the robot. 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.
- Only use original batteries recommended by Mammotion. The safety of the robot 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/screens 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.

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 robot when it is turned on.
- Do not lift or move the robot when it is turned on.
- Stop the robot when there are people, especially children or animals, in the task 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 robot, or charging station.
- Do not use the robot if the **STOP** button is not functioning.
- Avoid collisions between the robot and people or animals. If a person or animal comes in the path of the robot, stop it immediately.
- Always set the robot to **OFF** when it is not in operation.
- Do not use the robot simultaneously with a pop-up sprinkler. Utilize the Schedule function to ensure that the robot and pop-up sprinkler do not operate at the same time.
- Avoid setting a channel where pop-up sprinklers are installed.
- Do not operate the robot in the presence of standing water in the task area, such as during heavy rain or water pooling.

1.4 Safety Instructions for Maintenance

- Power off the robot when performing maintenance.
- Disconnect the plug from the charging station before cleaning or performing maintenance on the charging station.
- Do not use a high-pressure washer or solvents to clean the robot.
- After washing, ensure that the robot is placed on the ground in its normal orientation, not upside down.
- Do not reverse the robot to wash 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 leaking into 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.

- 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.
- 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.
- 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.

1.7 Intended Use

Mammotion robots are designed for residential lawn care and are not intended for commercial use.

1.8 Disposal

Dispose of this product in compliance with local electronic waste (WEEE) regulations. Do not dispose of it with regular household waste. Instead, bring it to an authorized recycling center or collection point to ensure safe handling and environmentally responsible disposal of electronic components.

2 Introduction

2.1 How do LiDAR Module Work

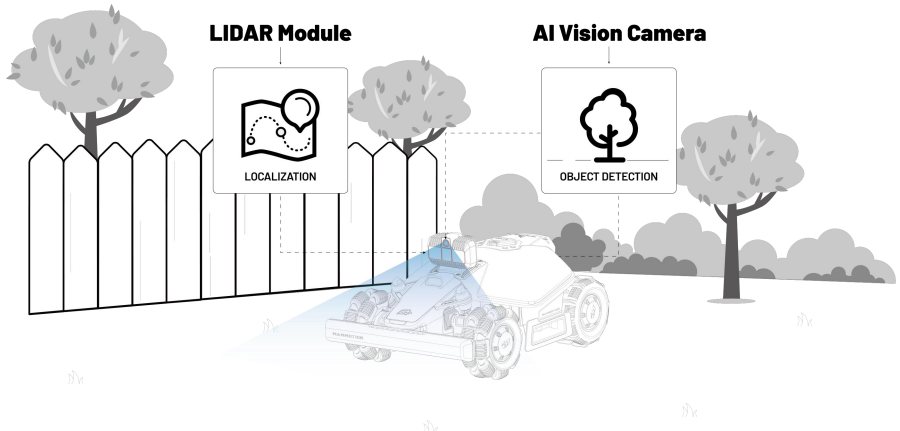
The positioning system of the robot integrates advanced LiDAR (Light Detection and Ranging) technology alongside AI vision camera, enhancing its capability to gather highly precise and real-time spatial data.

2.1.1 LiDAR Module

- The LiDAR module emits laser pulses and measures the time it takes for them to return after hitting obstacles.
- The robot builds a real-time map of the environment and estimates its position within it.
- LiDAR detects objects like trees, fences, or garden furniture, allowing the robot to navigate safely.

2.1.2 AI Vision Camera

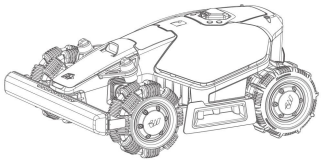
- AI-based image processing helps detect and recognize objects such as pets, toys, or specific lawn areas.
- The AI vision camera helps the robot identify grass perimeters for better navigation.



2.2 In the Box

Ensure the parts can be found in the package according to your option. If any parts are missing or damaged, contact your local dealer or our after-sales support. Mammotion recommends keeping the package for future transportation or storage.

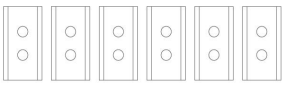
2.2.1 LUBA mini AWD Installation Kit



LUBA mini AWD LiDAR x1

LiDAR Module x1

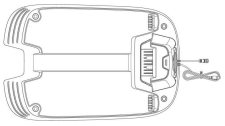
Security Key x1 (for spare use)



Blade x6 (for spare use)

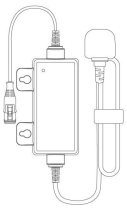
Screw x6 (for spare use)

2.2.2 Charging Station Installation Kit

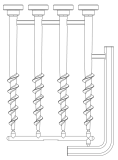


Charging Station Base x1

Rain Shade



Charging Station Power Supply x1

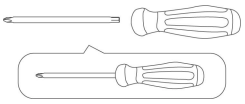


Stake Kit x1

2.2.3 Tool Kit

Cable Peg x4

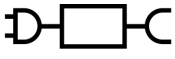
Brush x1



Screwdriver (Phillips bit+T20 hex bit) x1

2.3 Symbols on the Product

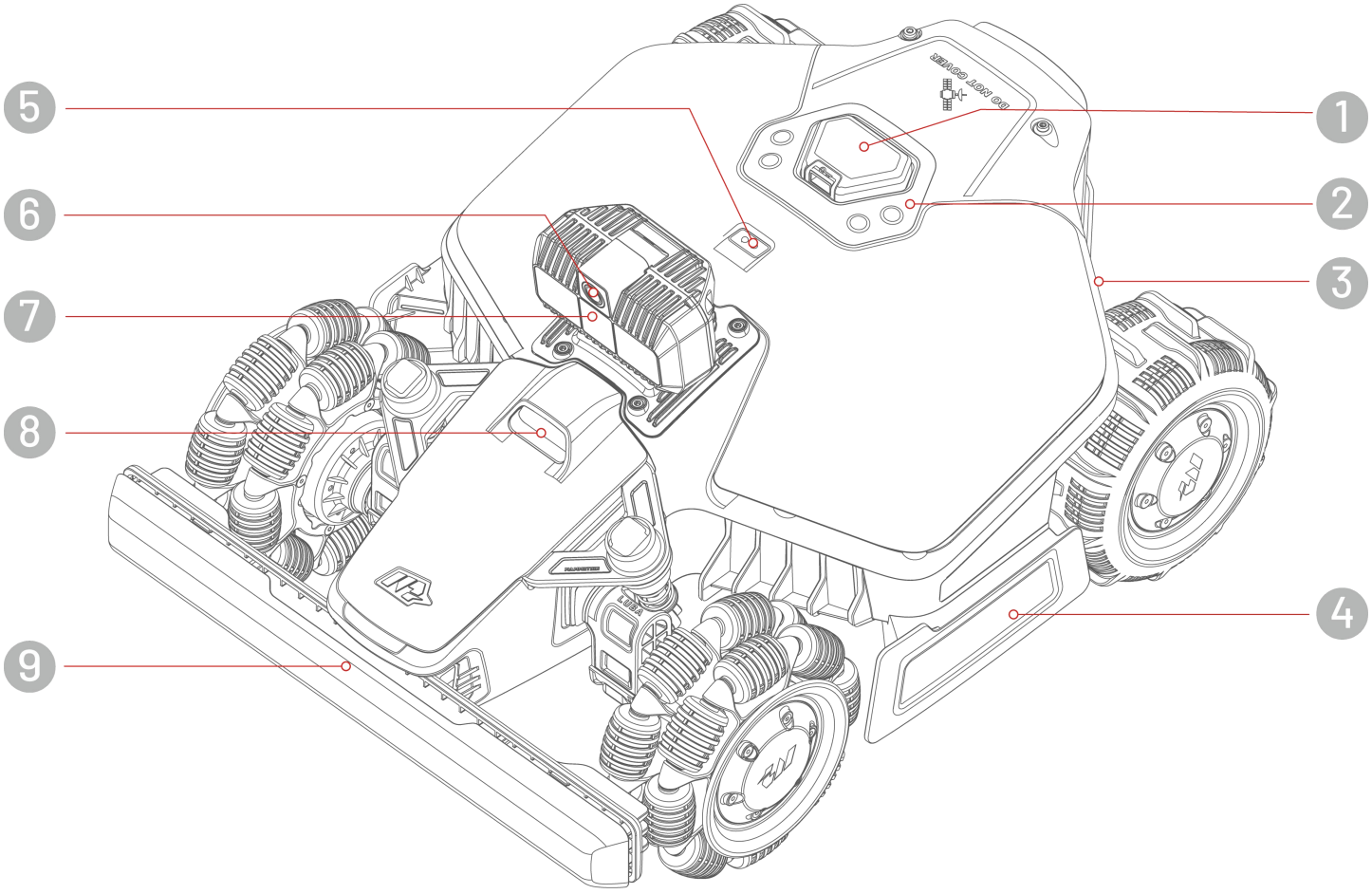
These symbols can be found on the product. Study them carefully.

Symbol	Description
	Warning.
	Read the user manual before operating the product.
	This product complies with the applicable EU Directives.
Made in China	This product is manufactured in China.
	It is not permitted to dispose of this product as normal household waste. Ensure that the product is recycled in accordance with local legal requirements.
 TS-A081-2703002	Use a detachable supply unit TS-A081-2703002.
	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.
	The pack of this product/the product should not be tread.
	Class III appliance.
	WARNING – Do not touch rotating blade.

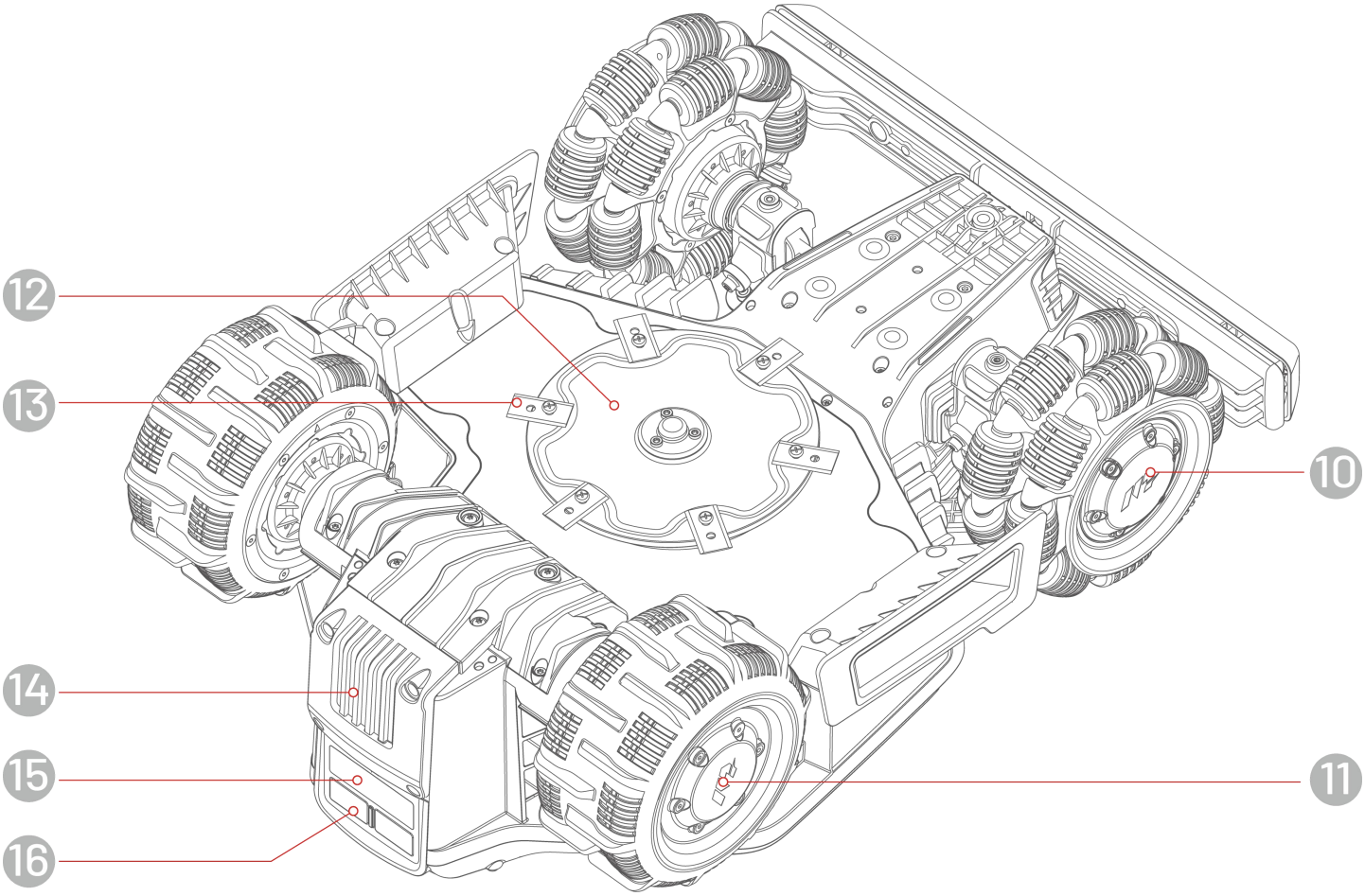
	WARNING – Read the user instructions before operating the product.
	WARNING – Keep a safe distance from the machine when operating.
	WARNING – Remove the disabling device before working on or lifting the machine.
	WARNING – Do not ride on the machine. Never put your hands or feet close to or under the product.

2.4 Product Overview

2.4.1 LUBA mini AWD LiDAR



1. Emergency Stop Button
2. Control Center
3. Side LED
4. Handle
5. Rain Sensor
6. AI Vision Camera
7. LiDAR Module
8. Supplemental Light
9. Bumper



10. Omni Wheel

11. Rear Wheel

12. Cutting Disc

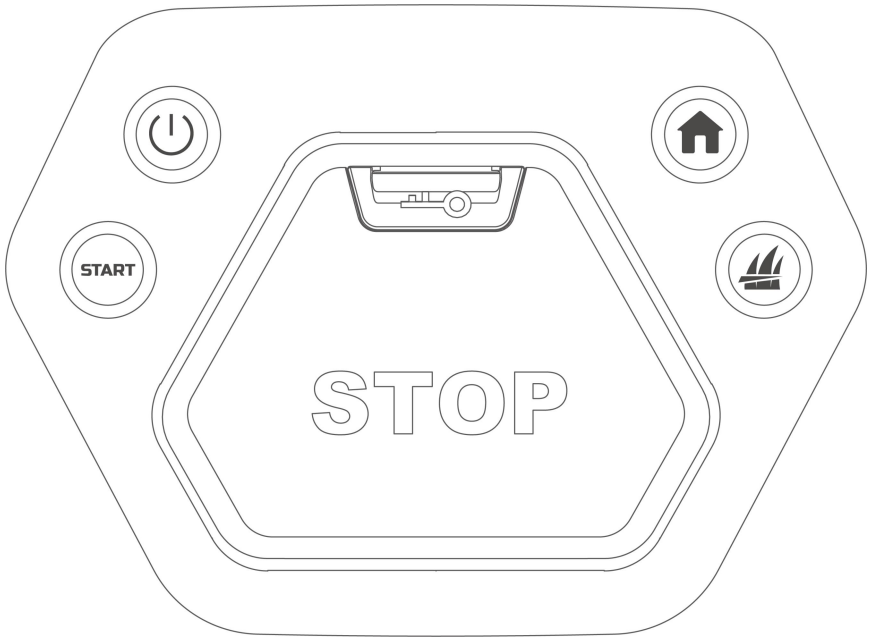
13. Cutting Blade

14. Removable Battery

15. Infrared Receiver

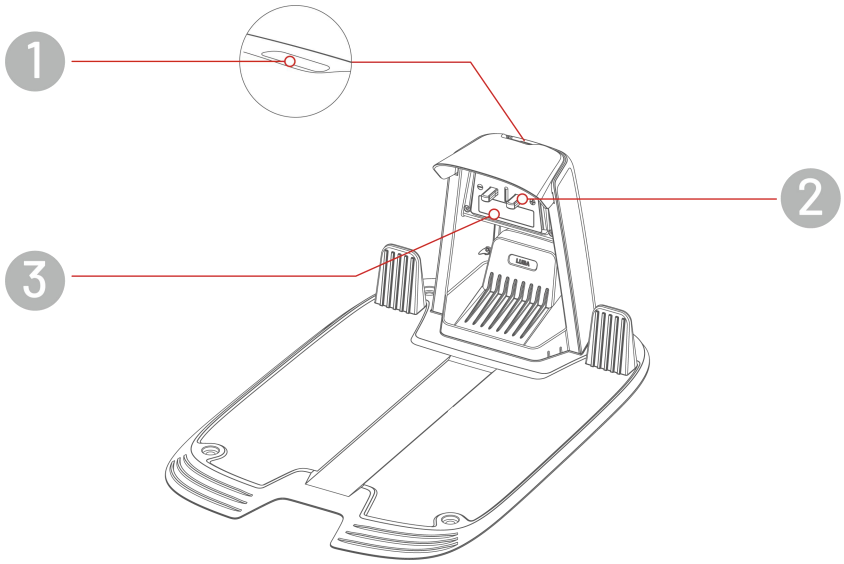
16. Charging Pad

Control Center



Button/Icon	Name	Description
	Home Button	• Press , then press START to return to the charging station. • Press , then press START to continue working/unlock the robot. • Double-press to fully lower the cutting disc for cleaning.
	Grass Button	
START	Start Button	
	Power Button	Long press the button to turn on/off the robot.
	Emergency Stop Button	If any unexpected problems arise, press the button to stop the robot immediately.

2.4.2 Charging Station



1. Charging Station LED Indicator

2. Charging Pin

3. Infrared Transmitter

2.4.3 LED Codes

Robot

Indicator	Status	Description
Side LED	Solid red	The robot is functioning properly.
	Pulsing red	• OTA upgrade in progress • The robot is charging
	Slow blinking red	• Emergency Stop Button activated • Low battery • Security key not properly installed • The robot got stuck • The robot has been lifted/tilted/flipped over
	Fast blinking red	• The robot system malfunction • The robot system upgrade failed
	Off	• The robot is turned off • The robot is sleeping • The side LED is turned off in the app • The robot is in manual control mode but is currently inactive

Charging Station

Color	Description
Blinking green	The robot is docked at the charging station.
Solid green	The robot is not at the charging station.
Solid red	The charging station malfunction
Off	No power supply

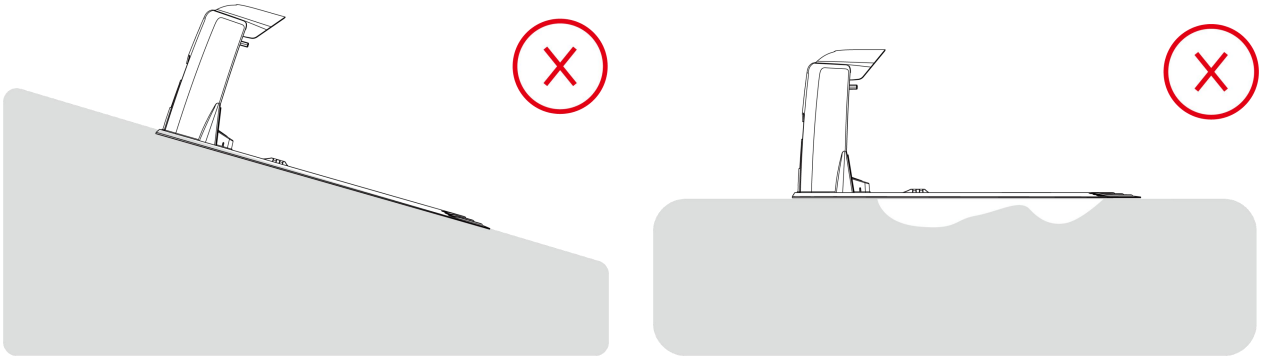
3 Installation

3.1 Preparation

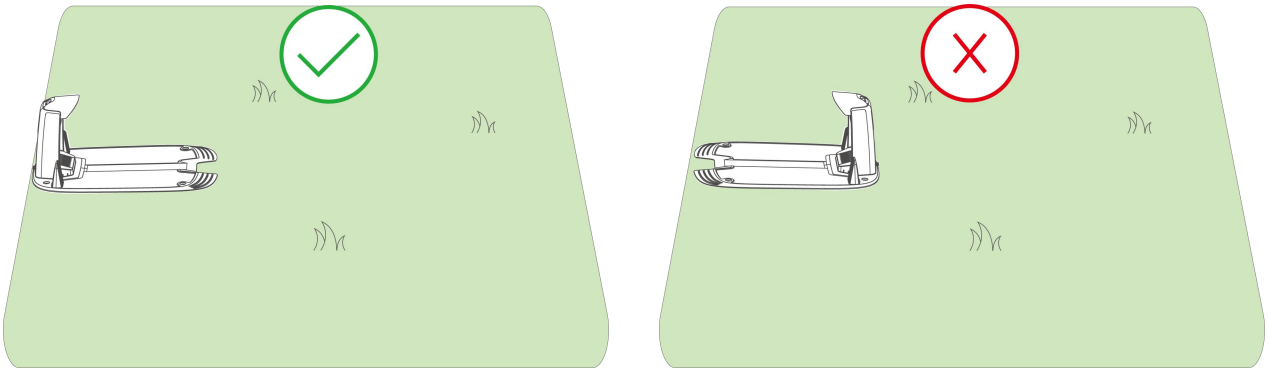
- Read and understand the safety instructions prior to installation.
- Use original parts and installation materials.
- Sketch your lawn and mark up obstacles. This will make it easier to examine where to place the charging station and to set the virtual perimeters.

3.2 Choosing a Location for Charging Station

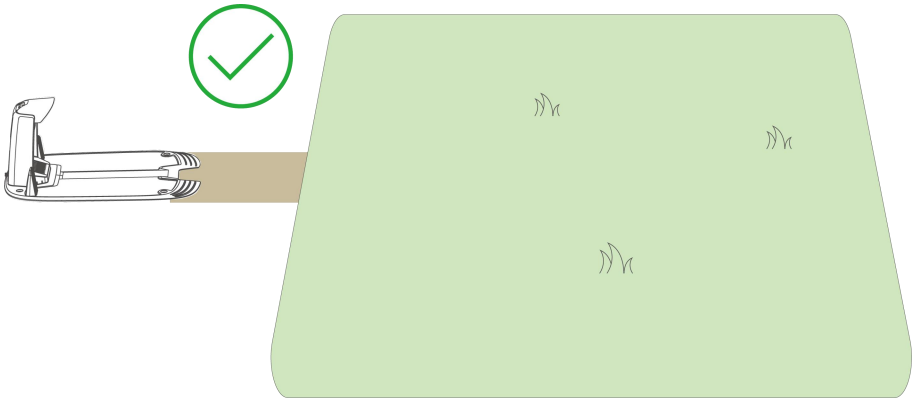
- Place the charging station on a flat ground.
- DO NOT install the charging station at the corner of an L-shaped building or on a narrow path between two structures.
- The charging area (1x1 m/3x3 ft in front of the charging station) should be free of obstacles or other items.
- The base plate of the charging station must not be bent or tilted.



- Position the charging station to face the lawn.



- If the charging station is placed outside the lawn, create a channel to connect it to the lawn.

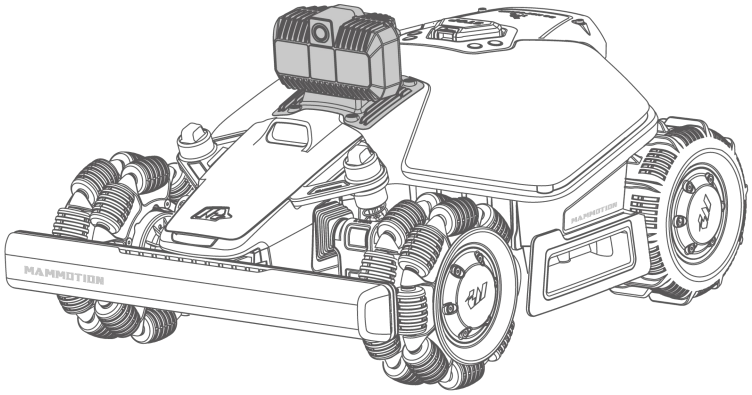


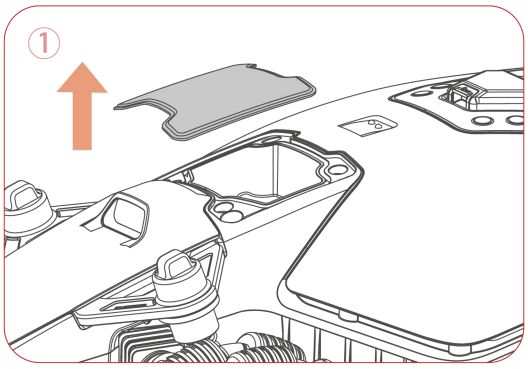
	NOTE If the charging station is installed on a concrete surface, please secure it with expansion bolts.

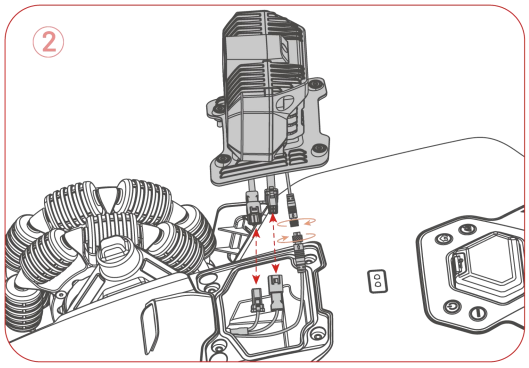
3.3 Install

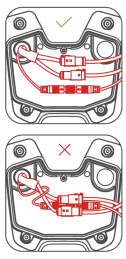
3.3.1 Install the LiDAR Module

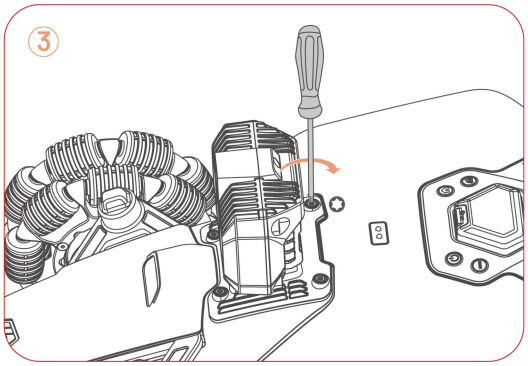
1. Remove the cover.
2. Connect the LiDAR module wires, matching the corresponding three wires by both color and shape.
3. Properly organize the wires, then secure the LiDAR module in place and tighten the screws using a hex-bit screwdriver.
4. Peel off the sticker.

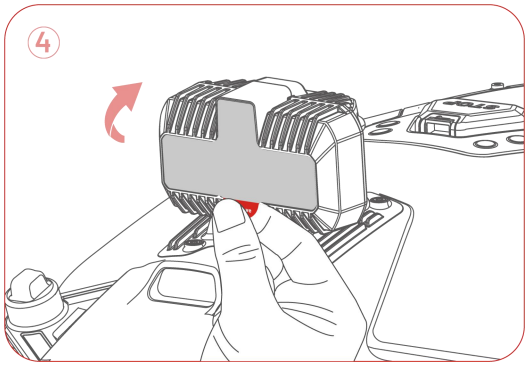






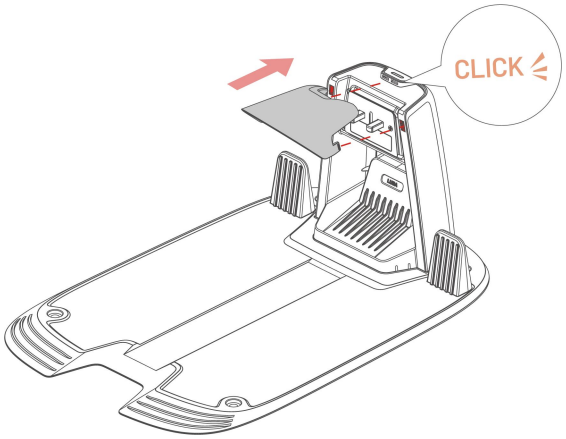




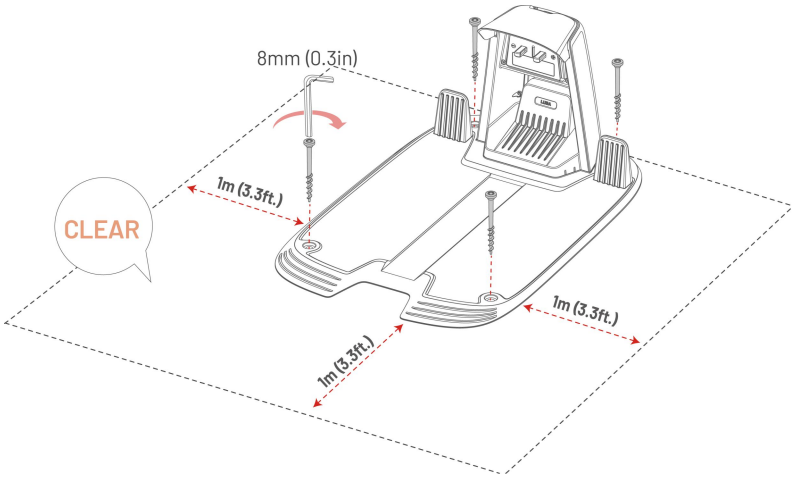


3.3.2 Install the Charging Station

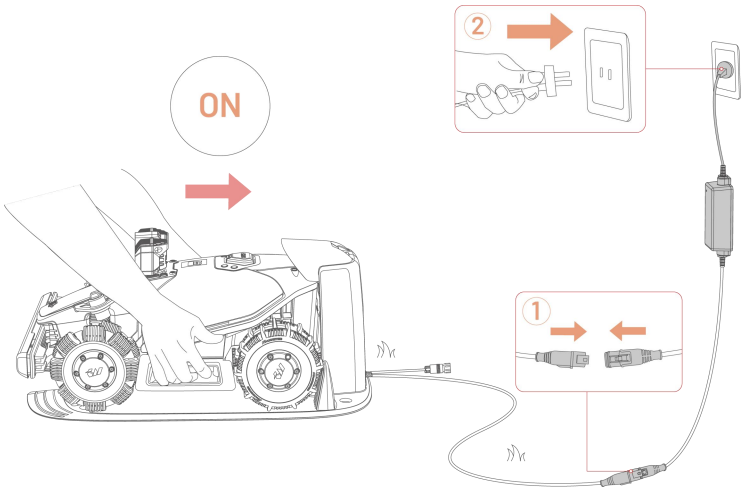
1. Assemble the charging station.



2. Select an open spot to install the charging station, ensuring its front area is clear of obstacles.
3. Secure the charging station in place using the 4 stakes and the Allen key.



4. Connect the charging station cable (the longer one) with the charging station power supply.
5. Plug the charging station power supply into the wall socket.
6. Place the robot on the charging station to begin charging.



ⓘ	**NOTE** Charge the robot for initial use to activate it.

4 Operation

ⓘ	**NOTE** The screens are for reference only. Please refer to actual user interfaces.

4.1 Preparation

- Read and understand safety instructions before operation.
- The charging station has been properly installed.
- Ensure the robot has already docked on the charging station.
- Ensure there is a stable network and keep your phone Bluetooth on.

4.2 Download Mammotion App

The robot 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.

After installing the app, please sign up and log in. During use, the app may ask you for Bluetooth, Location, and local network access when necessary. For optimal use, it is recommended to allow the above access. For more information, please refer to our Privacy Agreement. Go to Mammotion app > **Me** > **About Mammotion** > **Privacy Agreement**.

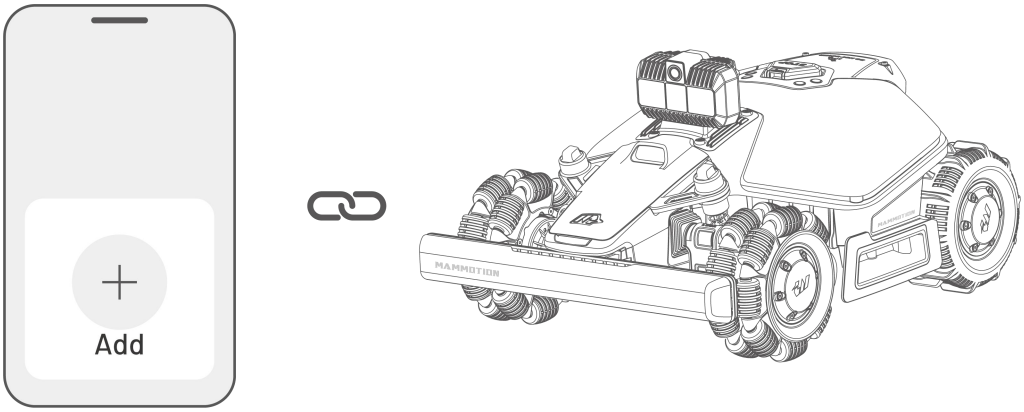
If you want to log in with a third-party account, tap or on the login page to continue. Mammotion app now supports logging in with Google and Apple accounts.

4.3 Add Your Product

	NOTE • Make sure the distance between your phone and the robot is less than 3 m (10 ft). • You can skip the Wi-Fi setup if you are using 4G cellular data. It is advisable to also establish a connection to a Wi-Fi network for optimal performance.

4.3.1 Add Devices

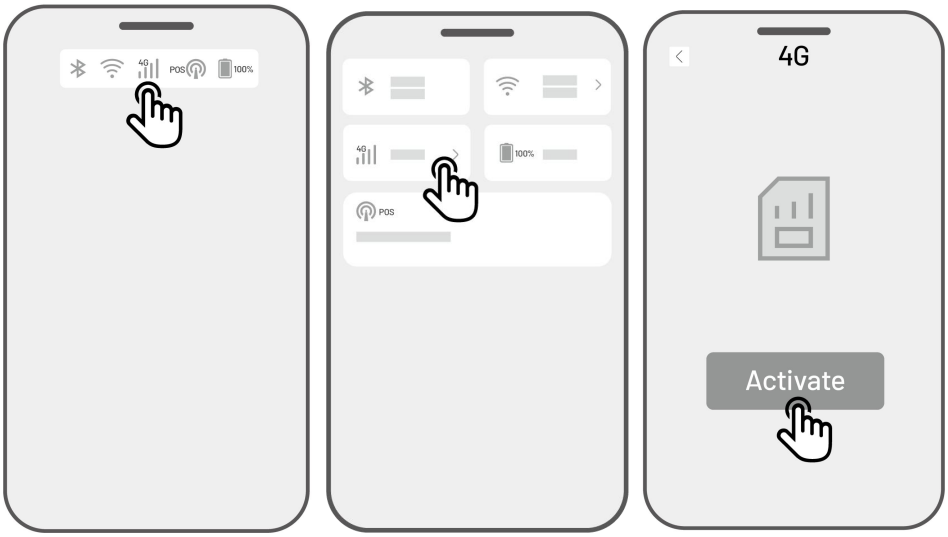
1. Tap **+** to add your robot.
2. Select **Add**.
3. Follow the onscreen guidelines to set up the device.
4. Follow the onscreen instructions to connect the device and set network successfully.
5. Follow the onscreen instructions to activate the built-in SIM card.



4.4 Activate SIM Card

If you didn't activate the SIM card during the device binding process, you can do so by tapping the Status Bar on the Home page:

1. Tap the **Status Bar** on the Home page.
2. Tap the **4G status** button.
3. Tap **Activate** and wait for the activation to complete successfully.



4.5 Update Firmware

For optimal experience, ensure your robot is updated to the latest firmware version.

➢ **To update the firmware**

1. Go to **Settings** > **Device information** > **Robot version** to update the firmware.
2. Ensure the robot is connected to a stable network.

During the update, please avoid exiting the app, performing other operations, or turning off the robot.

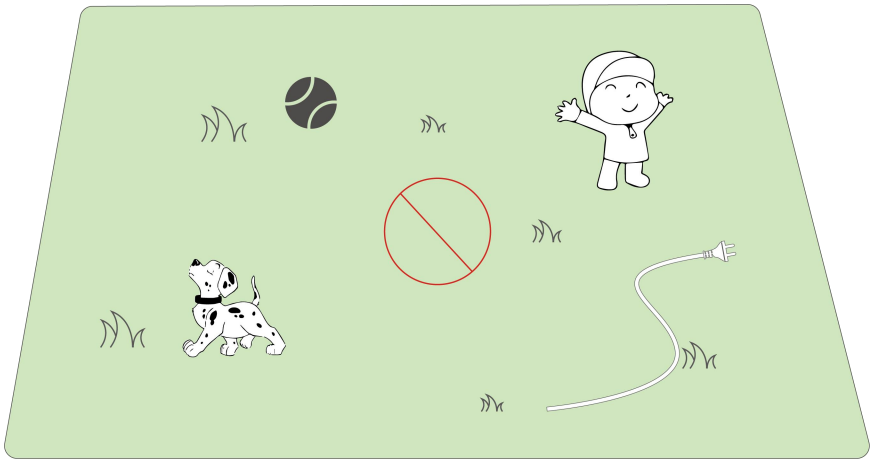
4.6 Create a Map

4.6.1 Map out the Task Area

Before mapping

Before mapping, 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.

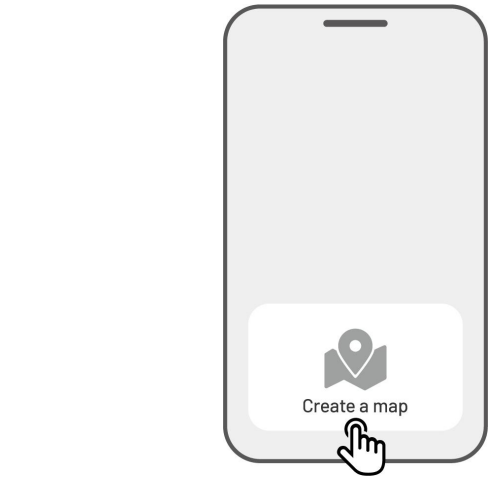


- LiDAR module performance may be affected by heavy rain, fog, or dense dust. Avoid using the robot in extreme weather conditions.
- Remove any reflective surfaces (e.g., mirrors, glass) from the lawn, as they may interfere with LiDAR module signals.

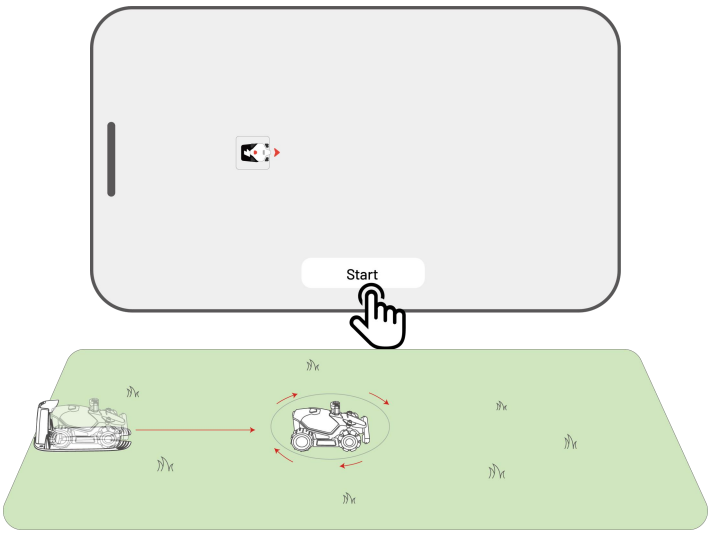
Map your lawn

1. Make sure the robot is powered on and your phone Bluetooth is on. Your phone will connect to the robot automatically with a Bluetooth connection.

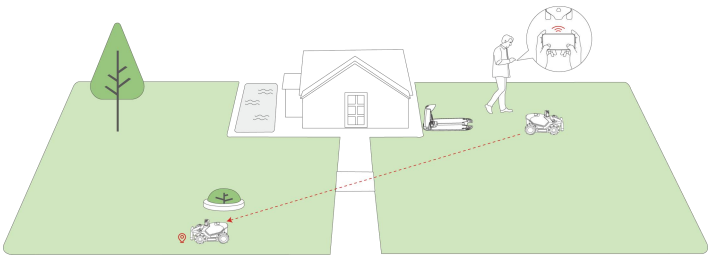
2. Tap **Create a Map** to start.



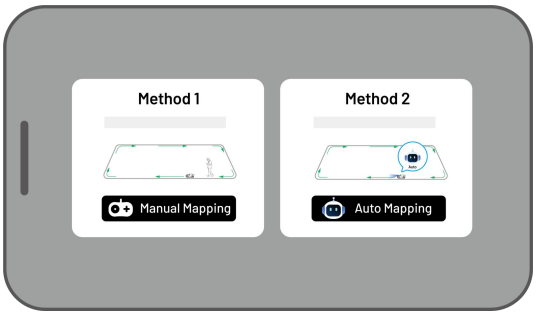
3. You will be prompted to calibrate the charging station.
4. Ensure the robot is docked at the charging station.
5. Tap **Start** to begin. The robot will automatically undock and rotate 360 degrees to achieve more accurate positioning.



6. After the processing is complete, control the robot to to a proper starting point of the perimeter to start mapping.
   - Move the virtual joystick up or down to control the robot's forward or backward movement.
   - Move the virtual joystick left or right to turn the robot left or right.

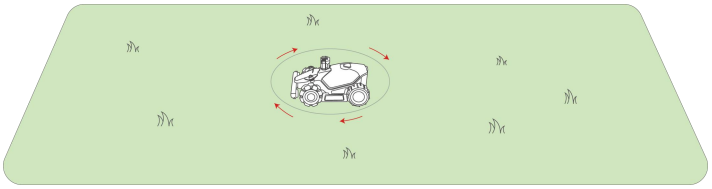


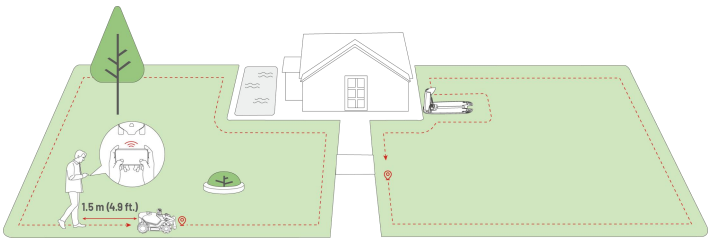
7. Select **Manual Mapping** or **Auto Mapping** to continue.



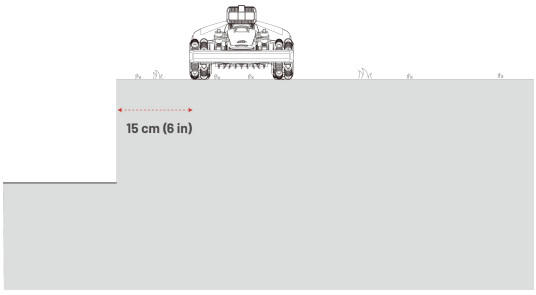
Manual Mapping

1. Before starting, the robot will perform a 360-degree scan to check if the environment is suitable for LiDAR operation.
2. Tap **Start** to begin the scanning process.
3. Guide the robot along the perimeter. Keep the controller within 1.5 meters (4.9 feet) of the robot to maintain a stable Bluetooth connection.

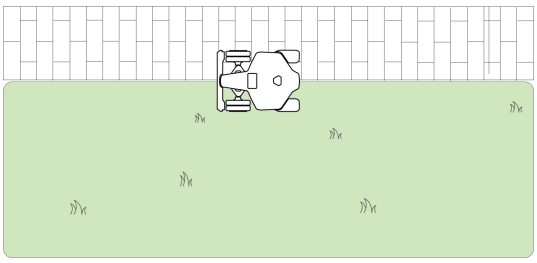


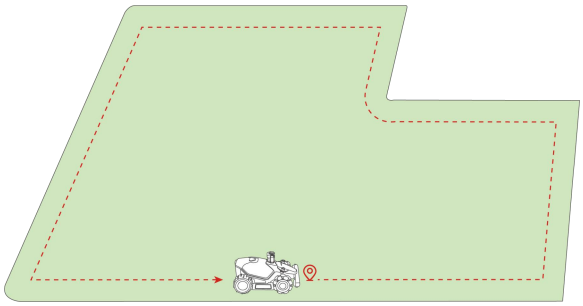


a) If the perimeter meets an obstacle such as a wall, fence, ditch, or uneven pathway, maintain a distance of at least 15 cm (6 in) from the perimeter while guiding the robot.

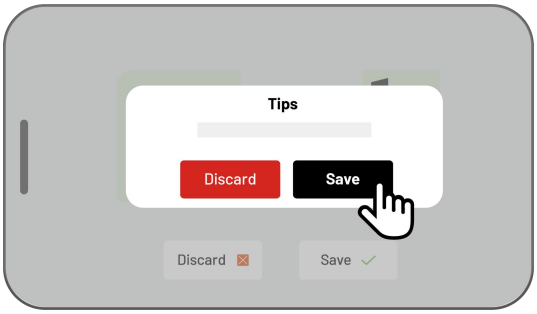


b) If the perimeter meets a level, even pathway, it is recommended to guide the robot on the pathway for more efficient cutting.





4. Tap **Discard** to clear all unsaved data and remap during the mapping process if needed.
5. Control the robot back to the starting point and tap **Save** to finish mapping.

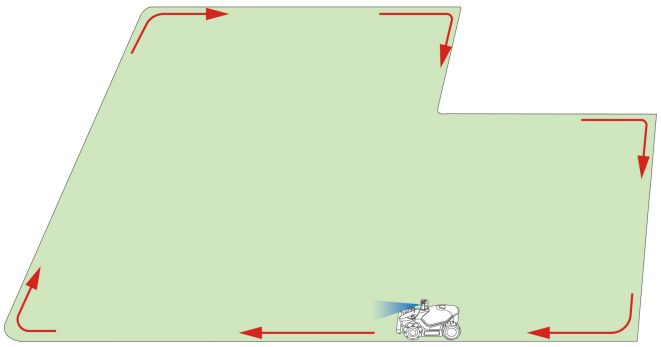


Auto Mapping

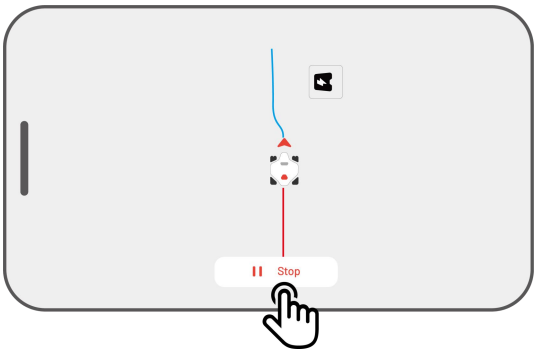
ⓘ	**NOTE** ● Remove any obstacles before starting auto mapping. ● Keep your phone active and do not switch to other apps. ● Follow the robot during the mapping process. ● Ensure the Bluetooth connection between the robot and your phone remains uninterrupted. ● Please do not use Auto Mapping in scenes with steps, cliffs, ponds, or similar obstacles.

The Auto Mapping feature uses the robot's AI vision camera to detect the physical perimeter of the lawn. When the camera identifies a clear perimeter, Auto Mapping is activated, allowing the robot to autonomously map the lawn's perimeters.

Tap **Auto Mapping** to initiate this feature.



If the robot malfunctions, tap the **Stop** button and then manually control it to continue mapping.



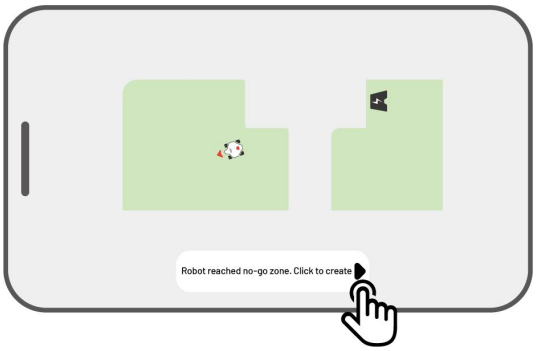
ⓘ	**NOTE** ● When mapping, the system will estimate the area. Please ensure that the area is not more than the upper limit (See ***Technical Specifications*** for more information), or the task area mapping will fail. ● Drive the robot out of the task area or no-go zone first if a new area is created.

4.6.2 Map out a No-go Zone

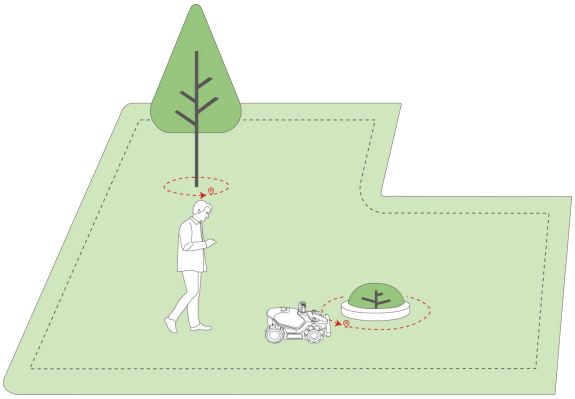
No-go zones are created for pools, flowerbeds, trees, roots, ditches, and any other obstructions present in the lawn. The robot will avoid mowing inside these designated areas.

1. Tap **Create** > **No-go zone** on the Map page.

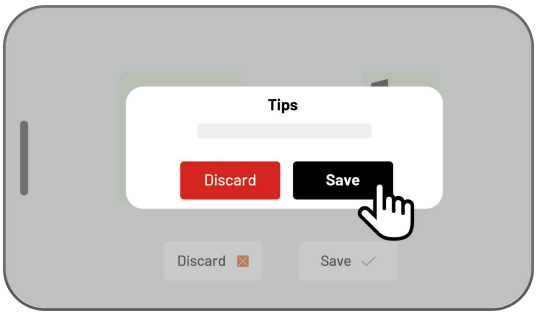
2. Guide the robot around the perimeter of a no-go zone, then tap ▶ to start mapping.



3. Control the robot along the perimeter of the no-go zone and back to the start point to complete mapping the no-go zone.



4. Tap **Save** to finish the setting.

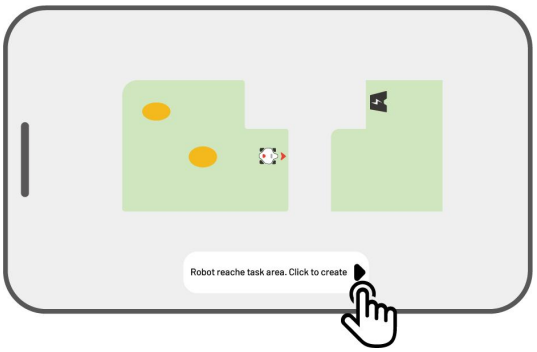


4.6.3 Map out a Channel

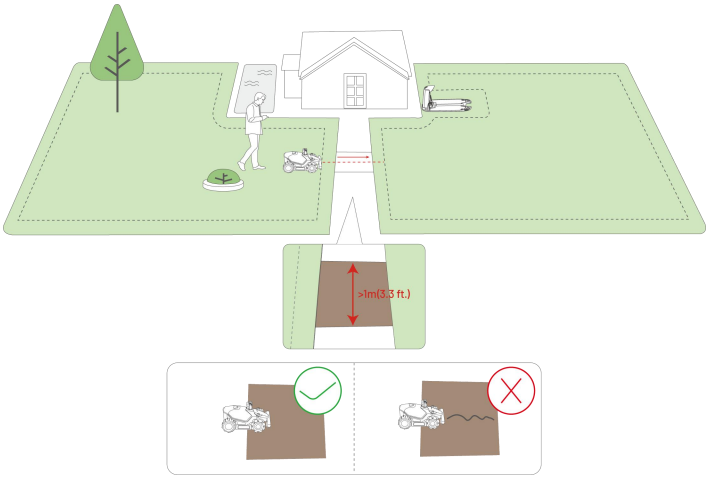
The channel is intended to connect various task areas or link the task area with the charging station.

1. Tap **Create** > **Channel** on the Map page.

2. Control the robot into a task area. Tap ▶ to start mapping.

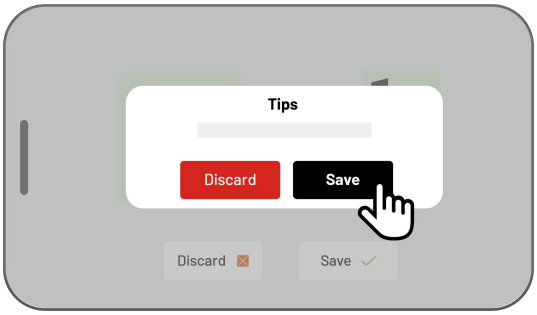


3. Manually control the robot from a task area to another task area or to the charging station.



ⓘ	**NOTE** ● The channel should be wider than 1 m (3.3 feet). ● The channel should be free from significant bumps.

4. Tap **Save** to finish the setting.

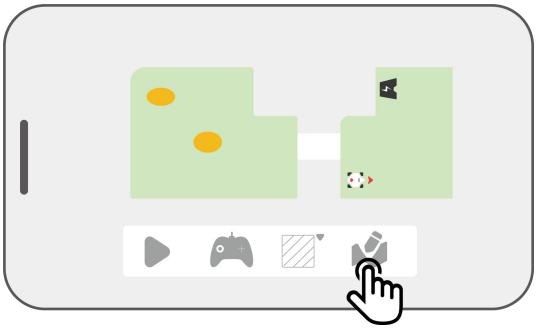


4.6.4 Edit Your Map

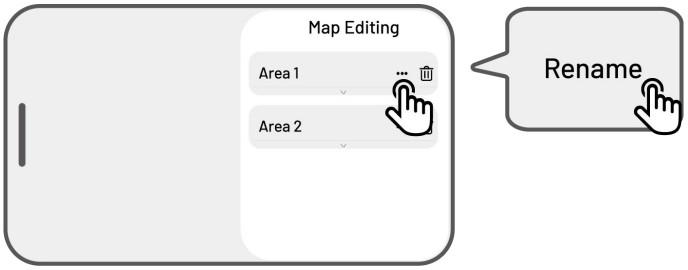
Rename the area

Mammotion allows you to create multiple areas. For easy management, you can rename the area.

1. Tap **Edit** > ●●● to open the popup.



2. Tap **Rename** to set a name for the area.

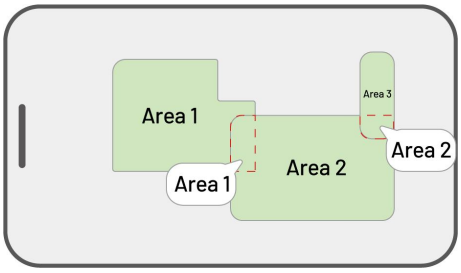


Delete the area/no-go zone/channel

To delete an area, no-go zone, or channel, tap **Edit** > 🗑. Deleting an area will also remove all items within it.

Multiple task areas with overlapping

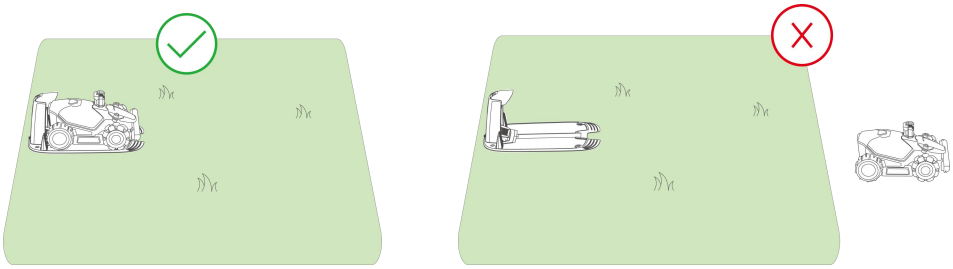
If you have several lawns that overlap, the shared section will be assigned to the task area that was created first. No channel is necessary for two task areas with overlapping sections.



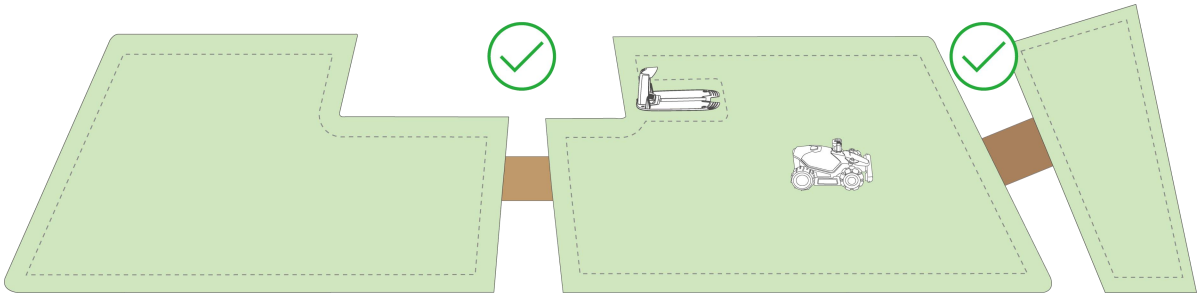
4.7 Mow

4.7.1 Preparation

- If any unexpected problems arise, please press the **STOP** button and secure the robot. The STOP button holds top priority among all commands.
- If the lift sensor is activated, the robot will come to a halt. Please press the **Grass** button followed by the **START** button to unlock it.
- Please mow the task area no more than once a day as doing so may be harmful to your lawn.
- Ensure the robot is at the charging station or within the task area before mowing. If not, manually move or guide the robot to the charging station or task area.

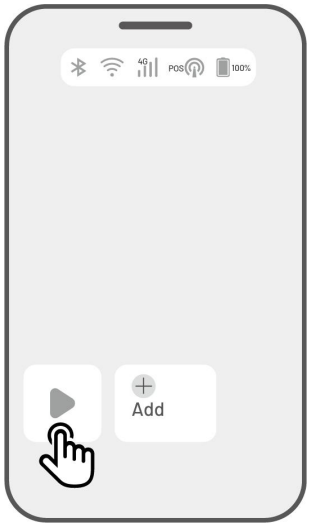


- Ensure a channel is created between task areas or between a task area and the charging station. Without it, the robot will not be able to automatically return for charging when the battery is low.



4.7.2 Start mowing

If you prefer not to set parameters, simply tap ▶ on the Home page to quickly start mowing.



If you prefer to customize settings before working:

1. Tap the robot image to enter the Map page.
2. Tap **Mow** ▶ to access the task page.
3. Select the area that you want to mow.
4. Tap ⚙ to configure the parameters.
5. Tap **Save** to apply the settings.
6. Tap **Start** to commence mowing, or tap **Save** to create a task schedule.

Task settings

Frequency

You can set the working frequency here.

- ✧ **Now** — The robot will commence work promptly upon configuration.
- ✧ **Weekly** — The robot will repeat the task every week based on your preferences.
- ✧ **Periodicity** — specify non-working days. For example, if you input 3 days, the robot will operate once every 4 days as per your settings.

Cutting height

You can adjust the cutting height via the app.

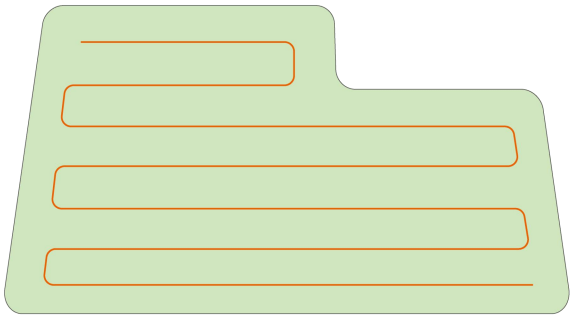
Task speed

You can adjust the working speed of the robot here.

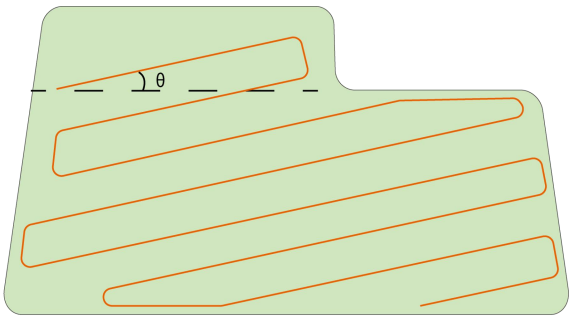
Cutting path angle (°)

- **Optimal**

  Take the most efficient path recommended by the algorithm as the 0-degree direction.



Before setting



After setting

- **Random**

  The mowing direction will change each time the robot starts a new task.

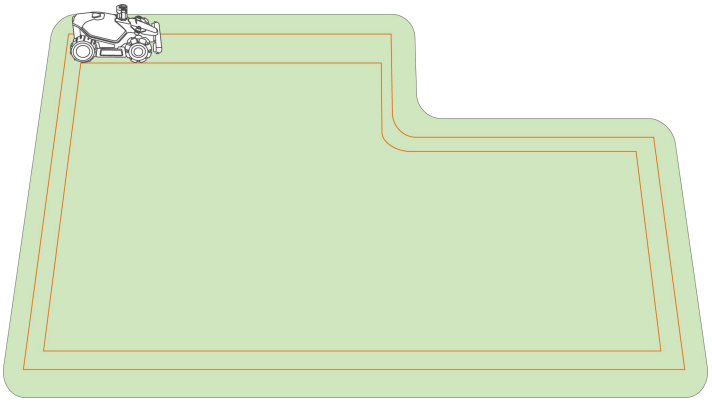
- **Customize**

  The adjustment angle range is 0 to 180°.

Cutting path mode

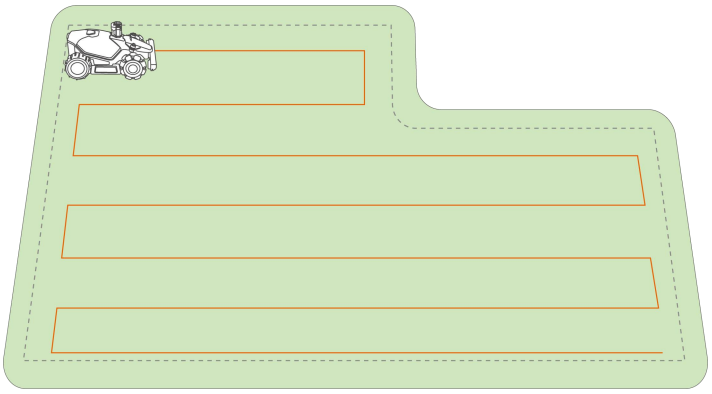
- **Perimeter laps only**

  The robot will mow the grass at the perimeters only.



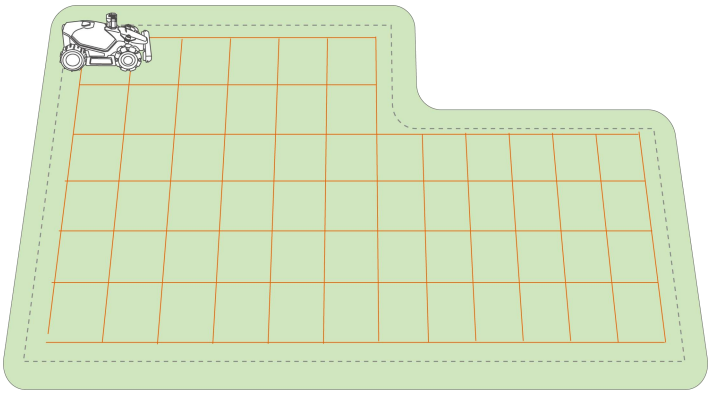
- **Zigzag path**

  The robot will mow in straight and single rows.



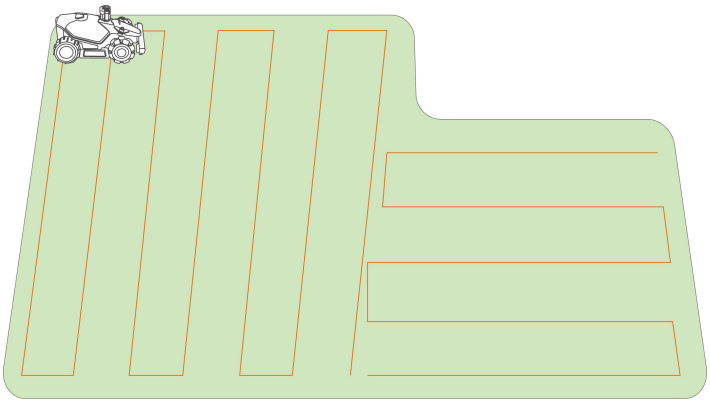
- **Chess board path**

  The robot will work in straight rows both horizontally and vertically.



- **Adaptive zigzag path**

  The task area will be divided into zones for more efficiency.



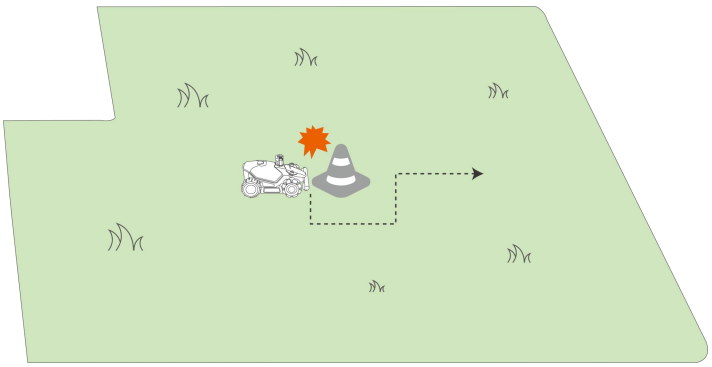
Perimeter mowing

When enabled, the robot will work along the perimeter. When disabled, the robot will avoid working at the perimeter.

Obstacle detection mode

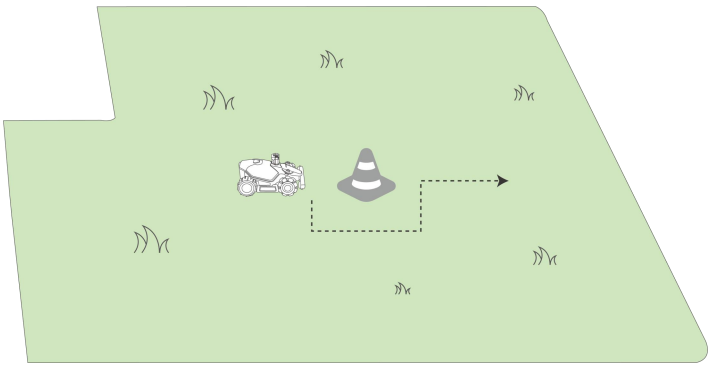
✧ **Off**

The robot will attempt to reach every spot of the selected areas. When encountering an obstacle, it will gently bump into it and then navigate around, ensuring a cleaner trim along walls and obstacles.



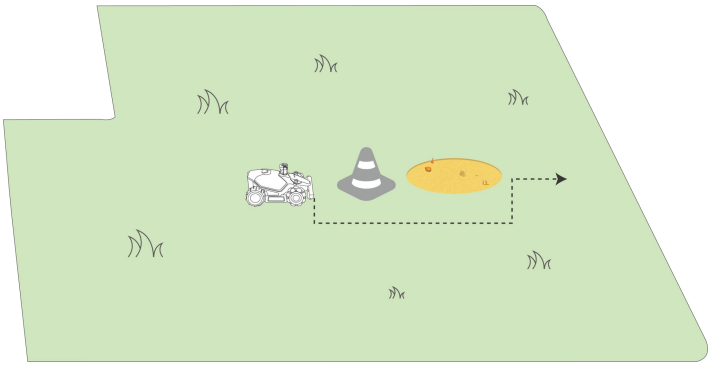
✧ **Standard**

The robot will proactively avoid obstacles to prevent collisions, which reduces damage and improves efficiency.



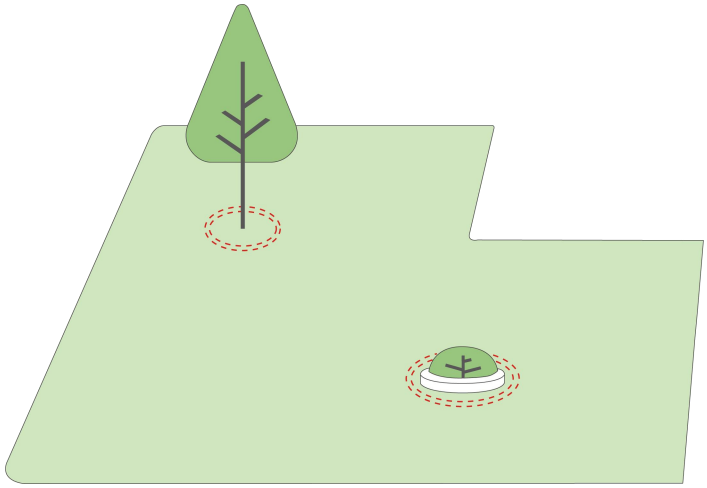
✧ **Sensitive**

The robot will proactively avoid obstacles and non-grassy areas, reducing the risk of falling or leaving the lawn. However, some dried-out patches may be missed and could also block the returning path.



No-go zone mowing

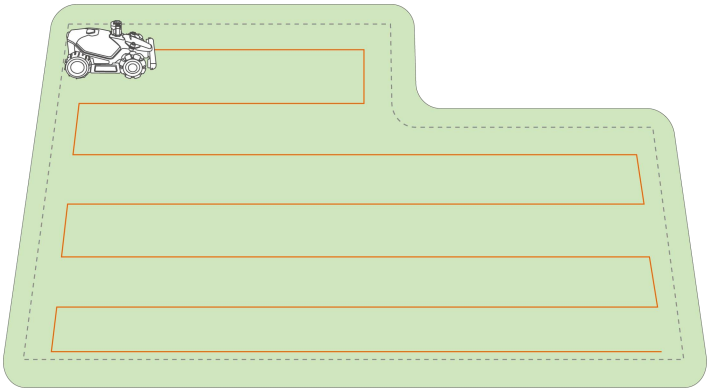
The robot will mow the no-go zone perimeters two circles when enabled.



Path order

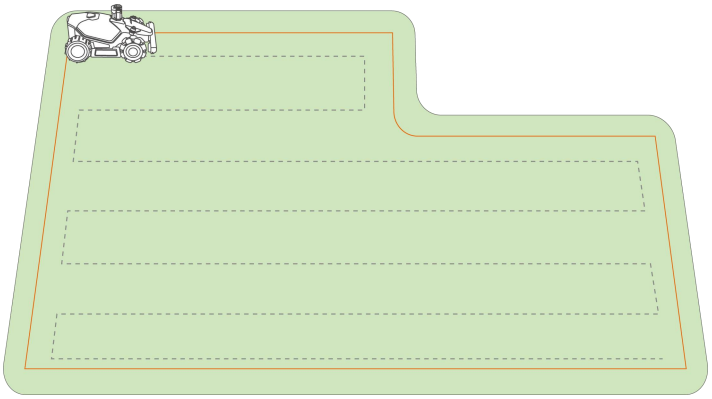
- **Zigzag first**

  The robot will start from zigzag paths.



- **Perimeter first**

  The robot will start mowing from perimeters.



Start progress

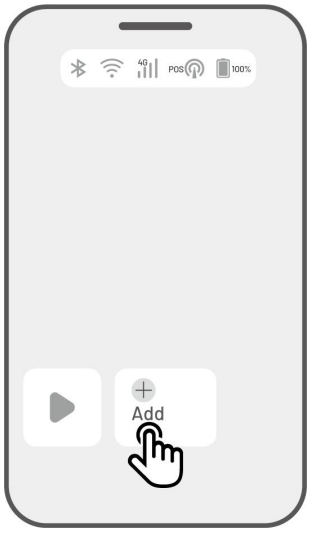
The robot will start working from the set percentage.

4.8 Task Schedule

With the Schedule function, you can set a regular task and the robot will automatically do its work according to your setting.

4.8.1 Set a schedule

1. Tap **Add** on the Home page or tap **Tasks** on the Map page to enter the Task page.
2. Select the area that you want to mow.
3. Tap ⚙ to configure the parameters.
4. Tap **Save** to apply the settings.
5. Tap **Start** to commence working, or tap **Save** to create a task schedule.



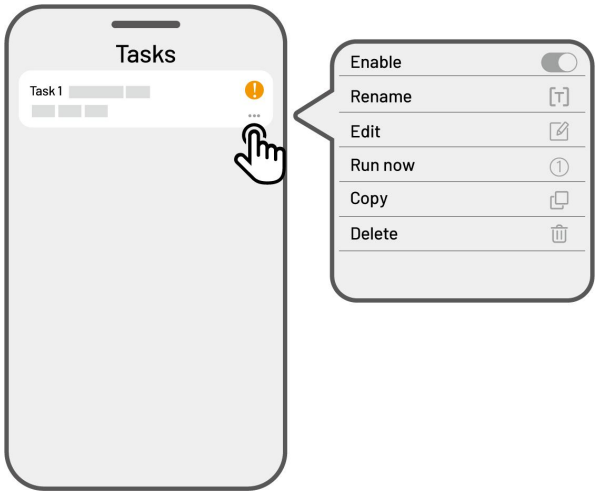
ⓘ	**NOTE** ● The task schedule adding is temporarily disabled when the robot is working. ● A schedule can be set after a task area has been created. ● See ***Task settings*** for detailed information on parameters.

4.8.2 Edit a schedule

Tap Tasks on the Map page to access the schedule list. Tap ••• on the schedule you set to open the drop-down menu.

- **Enable** – toggle the button to off to inactivate the schedule if needed.
- **Rename** – tap to change the name of the schedule.
- **Edit** – tap to change the schedule.
- **Run now** – tap to run this schedule immediately.
- **Copy** – tap to create a new schedule with the same settings while keeping the original schedule, then choose one to edit.
- **Delete** – tap to delete the schedule.

If the exclamation mark appears, it indicates that the task schedule cannot be performed due to errors. Tap the exclamation mark for more details.



4.9 Manual Mowing

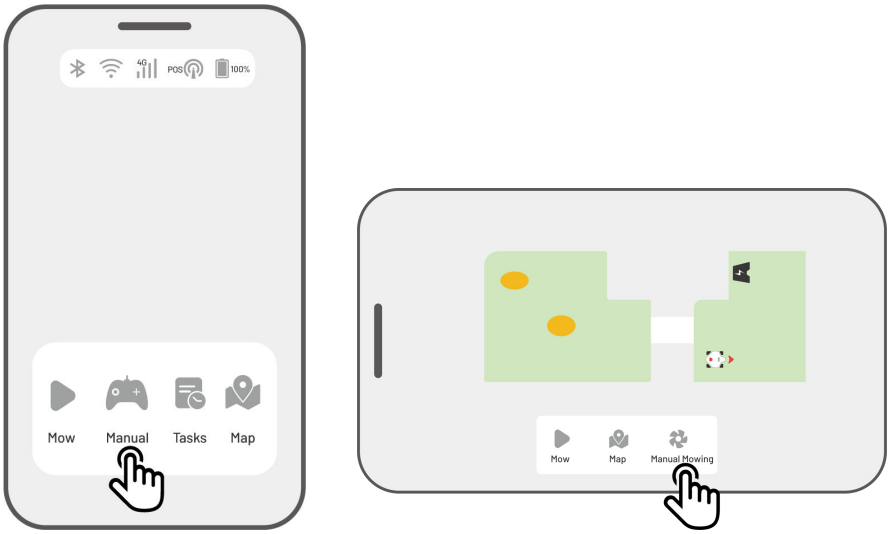
If you prefer to mow your lawn manually, the Manual Mowing feature is available for your use.

To ensure your safety, please use the **Manual Mowing** function with care and observe the following:

- Minors are not permitted to use this function;
- Please always supervise your children, pets, and important belongings to prevent accidents;
- Take extra care when using the manual lawn mower function to avoid injury.

4.9.1 Activate manual mowing

1. Tap the robot image to enter the Map page.
2. On the Map page, select **Manual**.
3. Tap **Manual mowing**, then drag the button to the right to start the cutting disc.
4. Maneuver forwards/backward or turn left/right to start working.



	NOTE ● The cutting disc will automatically stop after 5 seconds of inactivity. ● Drag to the right as prompted by the app to start the cutting disc after each stop.

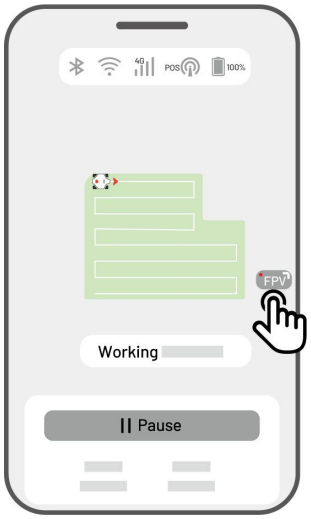
4.10 Activate FPV Mode

FPV Mode (First-Person View Mode) provides an immersive way to control and monitor your robot. By activating this mode, the robot's onboard camera streams live video, allowing you to see directly from the robot's perspective for enhanced control and navigation.

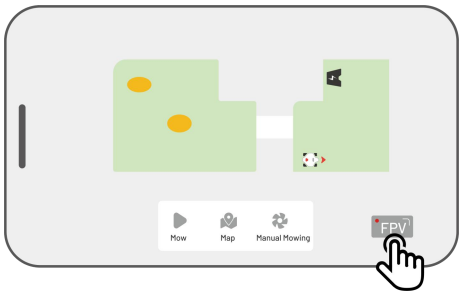
Additionally, FPV mode can turn your robot into a mobile security camera, providing real-time video surveillance and enabling you to monitor various locations remotely from the robot's viewpoint.

➢ **To activate FPV mode**

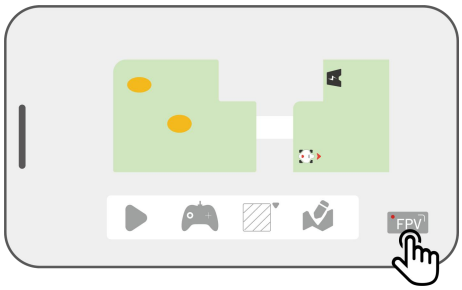
- When the robot is working, tap the **FPV icon** on the working page.



- On the Manual Mowing page, tap the **FPV icon**.

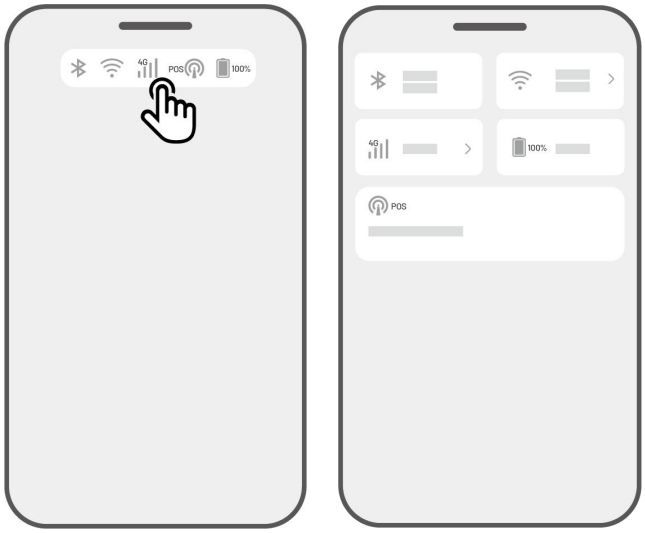


- On the Landscape Map page, tap the **FPV icon**.



4.11 View Status

Tap the **Status Bar** to view the device status.

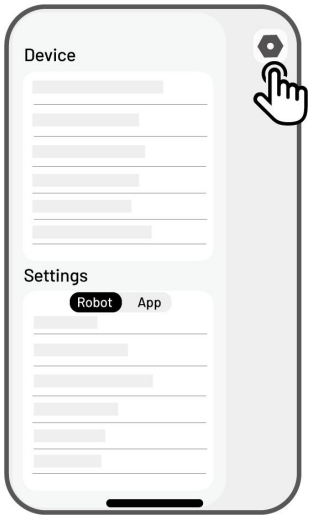


Icon	Name	Description
	Bluetooth	Indicates the Bluetooth signal.
	Wi-Fi Connectivity	Indicates the connected Wi-Fi signal strength.
4G	4G Connectivity	Indicates the cellular signal strength.
100%	Battery Level	Indicates the remaining battery level.
POS	Positioning	Indicates the positioning status.

- **Positioning status** — shows the strength of LiDAR module positioning.
  - ✧ **Good** — fine positioning status.
  - ✧ **None** — no positioning status.

4.12 Settings

Tap to enter the Settings page.



4.12.1 Device settings

- **Device Information**

✧ **Device Name** — change the name of the robot.

✧ **Sharing Management** — tap to view your sharing history and share your device with your family.

✧ **Robot Version** — check the firmware version of the robot.

✧ **Firmware Version History** — shows a log of updates and changes made to the device's firmware.

✧ **Network Settings** — set the robot network.

✧ **Upload Logs** — tap to send your issues and logs to Mammotion to target. You can attach a maximum of 5 images and 1 video.

✧ **Factory Reset** — tap to perform factory reset. All the logs and Wi-Fi passwords will be clear.

✧ **Maintenance** — shows the information on total mileage, mowing duration, battery cycle, and activation time.

✧ **Unbind** — tap to unbind the current robot. A set of the robot can only be associated with one account and cannot be operated until it is bound. If you wish to transfer ownership of the robot, you must unbind it before proceeding.

- **Network Settings** — set robot network.
- **Task Record** — shows the historical tasks which were completed and uncompleted.
- **Upload Logs** — tap to send your issues and logs to Mammotion to target. You can attach a maximum of 5 images and 1 video.

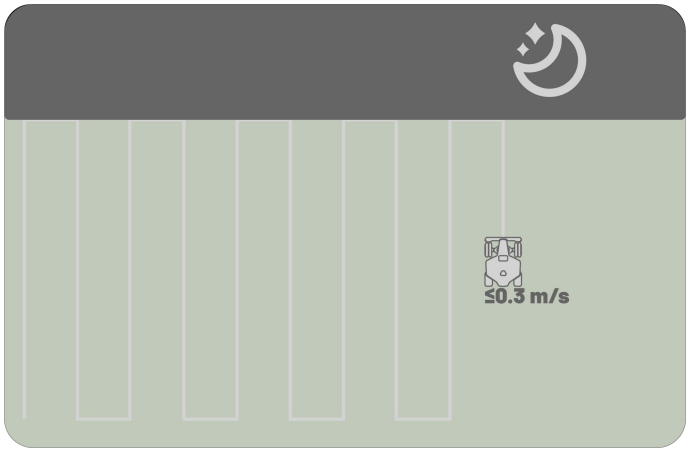
4.12.2 Robot settings

- ✧ **No mowing on rainy days** — when you enable this function, the robot will not mow if it rains.
- ✧ **Wildlife Safe Mode** — tailored to minimize the risk to wildlife at night.
- ✧ **Side LED** — tap to turn on/off the side indicator of the robot.
- ✧ **Auto Lighting** — when enabled, the robot's supplemental light will automatically activate in low ambient light conditions.
- ✧ **Non-working Periods** — tap to set non-working period.
- ✧ **Delete Map** — tap to delete the existing map.
- ✧ **Relocate Charging Station** — tap to relocate the charging station. See ***Relocate the charging station*** for additional information.
- ✧ **Voice Settings** — tap to switch male and female voice.

Wildlife Safe Mode

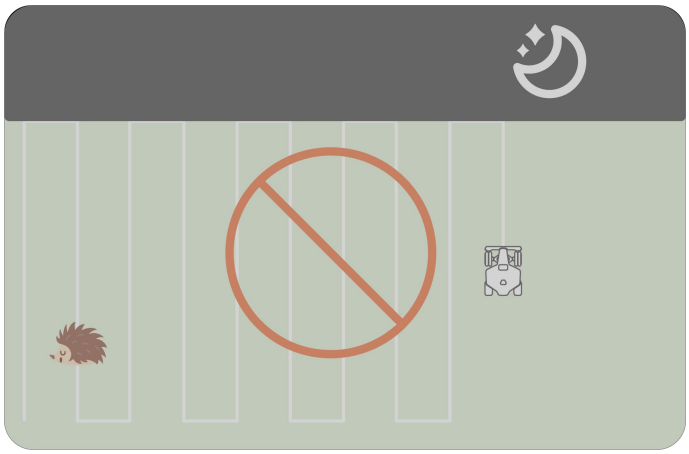
Nighttime Safety Speed

When enabled, the robot's maximum speed in automatic mode at night is limited to below 0.3 m/s.



No Nighttime Task

When enabled, the robot will not perform any tasks at night. Active tasks will also pause and the robot will return to the charging station.

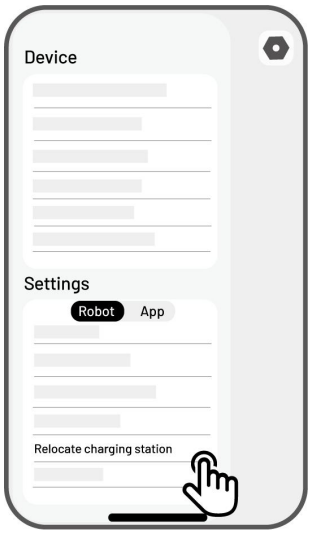


Relocate the charging station

	NOTE Please use the Relocate Charging Station feature while the robot is charging.

Generally, the charging station should be relocated if

- The charging station is moved.
- The charging station is replaced.
- The docking path has a significant incline.
- The recharge process consistently fails.



1. Install the charging station in a proper place.
2. Place the robot on the charging station and ensure the positioning status is fine.
3. Select **Settings** > **Relocate charging station**.

4.12.3 Recharge

	NOTE When performing the recharge function, the robot must be in the task area.

To perform recharge

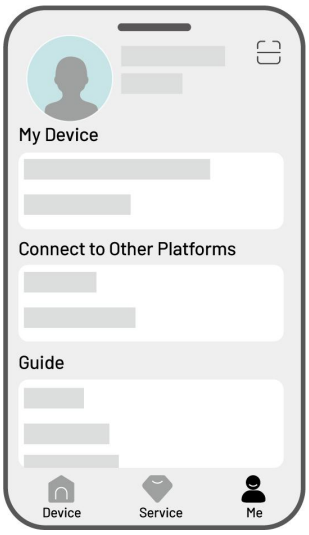
- Tap on the map page in Mammotion app, or
- Press the button on the robot, then press START to guide the robot to the charging station.

4.13 Service Page

- **Help** – tap to access our customer service.
- **Store** – tap to go to Mammotion mall.
- **Academy** –tap to access user instructions.
- **Tutorial Videos** – tap to access tutorial videos.
- **User Manual** – tap to access the user manual.
- **Winter Maintenance** – tap to access the winter maintenance details.
- **FAQ** – shows common questions and answers.
- **About Us** – tap to access more information about Mammotion.

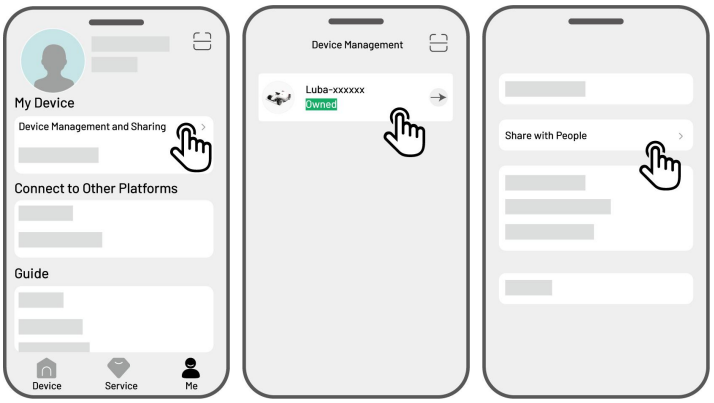
4.14 Me Page

- **Device Management and Sharing** – tap to share your devices.
- **Find My Device** – tap to track your device.
- **Alexa** – tap to link your Alexa account.
- **Google Home** – tap to link your Google Home account.
- **Guide** – toggle to on/off to show/hide guidelines.
- **Language** – switch language.
- **Upload Logs** – submit your issues and logs to Mammotion to target.
- **About Mammotion** – tap to view the app version, User Agreement, and Privacy Agreement.

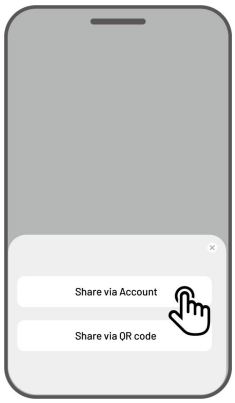


4.14.1 Share Your Device

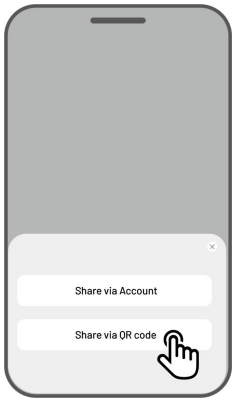
Sharing your device allows the recipient to control and access device information, but they cannot share it further or use its anti-theft feature.



1. Go to the Me page and tap **Device management and sharing**.
2. Select your own device to share.
3. Tap **Share with people** to go on.

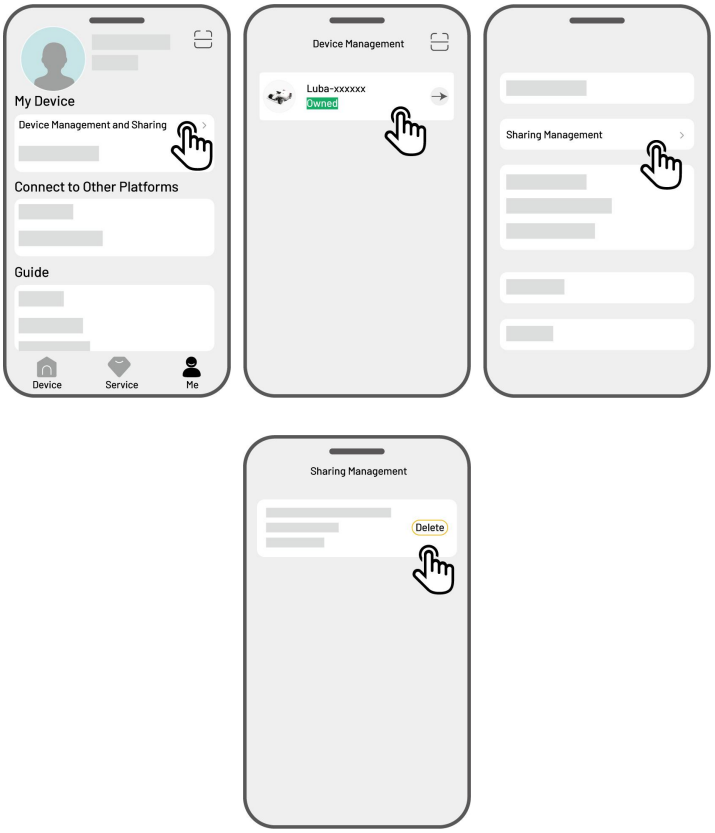


4. Select **Share via account** or **Share via QR code** to share your device.
   - **Share via account**
     a. Tap **Share via account**.
     b. Enter the account number that you want to share, then tap **Share**.
     c. In the recipient's Mammotion app, tap **Agree** in the popup.
   - **Share via QR code**
     a. Tap **Share via QR code** and a code will appear.
     b. Use the recipient's Mammotion app to scan the QR code and tap **Agree** in the popup.



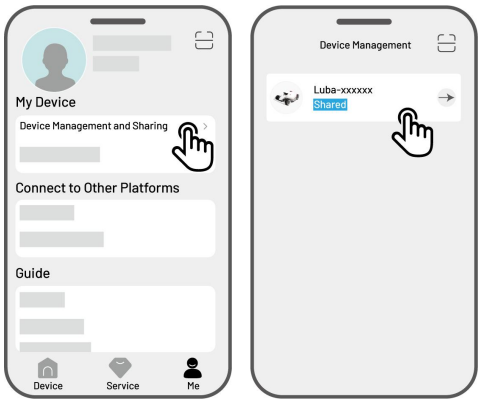
4.14.2 Stop Sharing Your Device

For owner



1. Go to the Me page and tap **Device management and sharing**.
2. Select the device that you have shared.
3. Tap **Sharing management** to continue.
4. Select the corresponding sharing history and tap **Delete**.
5. Tap **Confirm** to revoke the recipient's access to the device.

For recipient



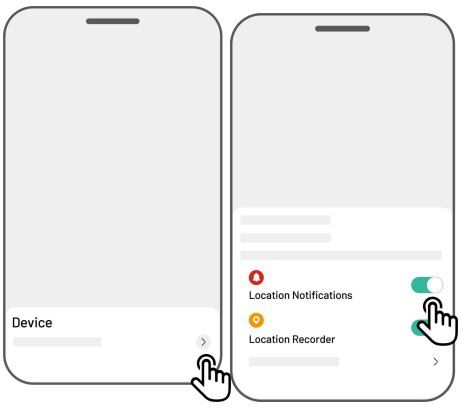
1. Go to the Me page and tap **Device management and sharing**.
2. Select the device that has been shared with you.

3. Tap **Delete**.
4. Tap **Confirm** to stop using the device. This action will not affect the owner's data.

4.14.3 Find My Device

In the case that your robot that has been bound with the Mammotion app is missing, go to **Me** > **Find my Device** page to track your device.

Tap the device to enter the next page where you can enable/disable **Location Notifications** and **Location Recorder**.



- **Location Notifications** — You will receive a push notification when the robot is more than 50 meters (164 feet) away from the task area after enabling it.
- **Location Recorder** — Record the location history of the robot after enabling it.

4.14.4 Link Your Alexa Account

ⓘ	**NOTE** ● Prior to starting a job using voice control, it is necessary to have created at least one task beforehand. ● In cases where more than 2 sets of robots are linked to the same Mammotion account, the voice command will be directed to the most recently bound robot by default. ● The robot now supports voice commands in English, German, and French.

1. Go to the **Me** page and tap on **Alexa**.
2. Select **LUBA 2 (Mammotion Robot)** to proceed.
3. Tap **Link Alexa** to go to the authorization page.
4. Finally, tap **Link** to complete the operation.

Once the linking is successful, you can control the robot with voice commands. Here are some examples for starting, pausing, stopping, recharging, and checking the status:

Start working

-Alexa, ask Mammotion robot to start working

-Alexa, ask Mammotion robot to start task xx (xx means the name of the task you set)

Pause working

-Alexa, ask Mammotion robot to pause

-Alexa, ask Mammotion robot to hold on

Continue working

-Alexa, ask Mammotion robot to continue

Stop working

-Alexa, ask Mammotion robot to stop working

Return to the charging station

-Alexa, ask Mammotion robot to recharge

-Alexa, ask Mammotion robot go home

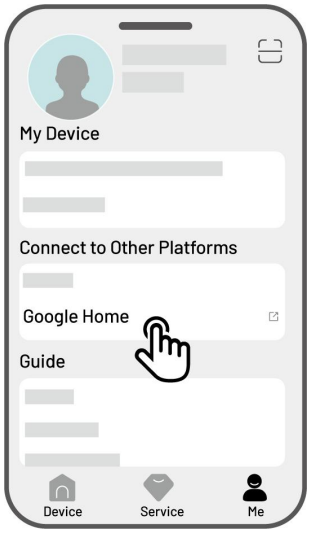
Check status

-Alexa, ask Mammotion robot status

4.14.5 Link Your Google Home Account

ⓘ	**NOTE** ● Prior to starting a job using voice control, it is necessary to have created at least one task beforehand. ● The robot now supports voice commands in English, German, and French.

1. Go to the **Me** page and tap on **Google Home**.
2. Tap **Link Google Home** to go to the authorization page.
3. Follow the instructions to complete the setup.



After linking succeeds, you can control the robot using voice commands, try the following commands:

Start working

-Hey Google, start mowing

-Hey Google, start the LUBA now

-Hey Google, let the LUBA start running

-Hey Google, make the LUBA start running

Pause working

-Hey Google, pause mowing

-Hey Google, pause the LUBA now

-Hey Google, let the LUBA pause

-Hey Google, make the LUBA pause

Continue working

-Hey Google, continue mowing

-Hey Google, let the LUBA continue

-Hey Google, make the LUBA continue

Stop working

-Hey Google, stop mowing

-Hey Google, stop the LUBA

-Hey Google, let the LUBA stop

-Hey Google, make the LUBA stop

Recharge LUBA

-Hey Google, dock the LUBA

-Hey Google, let the LUBA go home

-Hey Google, make the LUBA go home

Check status

-Hey Google, is the LUBA running?

5 Maintenance

To maintain optimal mowing performance and extend the lifespan of your robot, Mammotion advises performing regular inspections and maintenance weekly. For safety and effectiveness, always wear protective clothing such as trousers and work shoes; avoid wearing open sandals or going barefoot during maintenance.

5.1 Cleaning

	**WARNING** ● Ensure the robot is completely powered off before beginning any cleaning work. ● Always power off the robot before turning it upside down. ● When turning the robot upside down, handle it with care to avoid damaging the LiDAR module.

5.1.1 Clean Robot

Housing

Use a soft brush or a damp cloth to clean the robot's housing. Avoid using alcohol, gasoline, acetone, or other corrosive or volatile solvents, as they may damage the robot’s appearance and internal components.

Bottom

Wear protective gloves while cleaning the chassis and cutting discs. Use a brush to remove debris. Check for blade damage and ensure that the blades and cutting discs can rotate freely. DO NOT use sharp objects to clean the bottom.

Front wheels (Omni wheels)

Clean the front wheels using a brush or water hose. Remove the mud if any. Replace the wheels if they are severely worn.

Rear wheels

Regularly clean the rear wheels with a brush or water hose if they become too dirty.

LiDAR module

Wipe the LiDAR module and AI Vision camera with a microfiber cloth to remove any dirt or smudges. Keeping the lens clean is essential for optimal performance.

Rear part

Regularly clean the rear charging pads and infrared receiver with a cloth to remove grass clippings and dirt. Keeping these parts clean ensures proper charging and prevents recharging failures.

5.1.2 Clean Charging Station

Use a brush and cloth to clean the infrared transmitter and the charging pin.

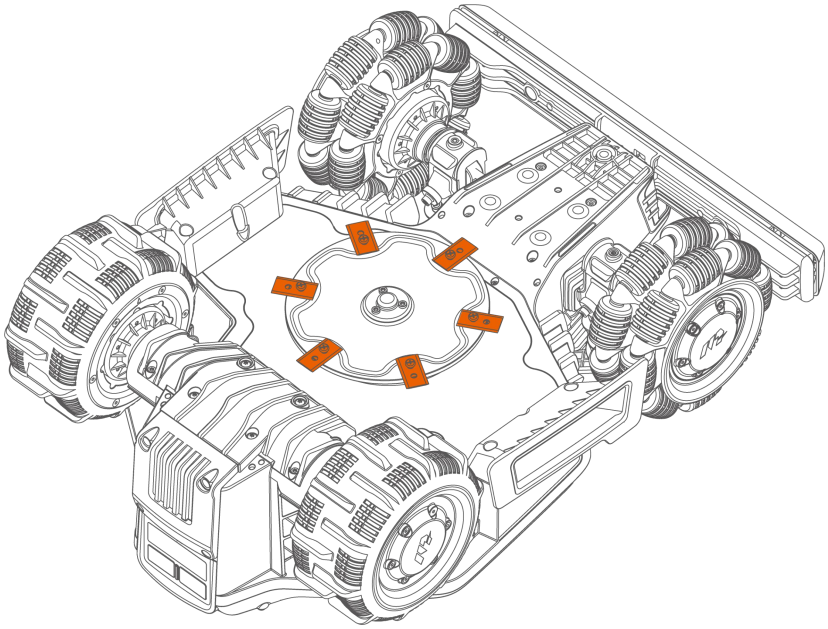
5.2 Maintenance for Cutting Blades and Motor

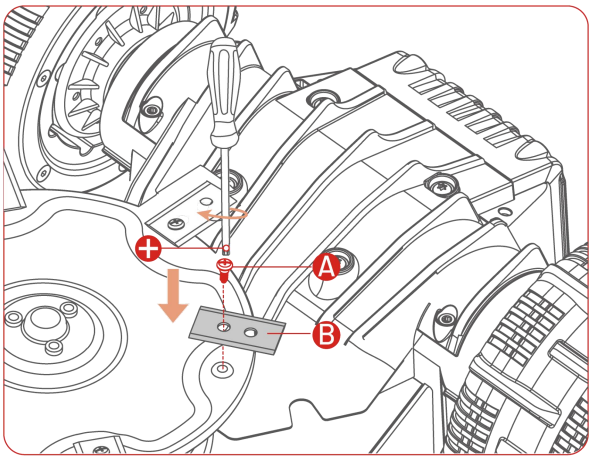
	**WARNING** ● Always wear protective gloves when inspecting, cleaning, or replacing the cutting blade. ● DO NOT use an electrical screwdriver to tighten or loosen the cutting disc. Always use the correct screws and original blades approved by Mammotion. ● Replace all cutting blades and their screws simultaneously to ensure a safe and effective cutting system. ● DO NOT reuse the screws, which may cause serious injury.

- To ensure optimal performance during long-term storage, keep the hub motor shaft dry and clean. Regular maintenance of the motor shaft helps prevent dirt and moisture buildup, which can affect the motor's function. The motor has an expected lifespan of 1500 hours of operation.
- Blades are considered wear parts and should be replaced if they become severely worn. It is recommended to replace the cutting blades every 3 months or after 100 hours of use. For thicker grass, more frequent blade replacement may be necessary.
- Wet grass is more likely to stick to the blades and bottom of the robot, which can impair performance and lead to the need for more frequent cleaning. For optimal performance and long-term lawn health, it is recommended to avoid mowing during heavy rain or when the grass is excessively wet.

How to replace a cutting blade

1. Turn off the robot.
2. Place the robot on a soft, clean surface, ensuring it is in an upside-down position. Please take care not to press on the LiDAR module.
3. Remove the old cutting blades with a Phillips screwdriver.
4. Install the new cutting blades using screws. Ensure that the blades can rotate freely and are securely installed.





5.3 Battery Maintenance

- Maintain the battery fully charged before long-term storage to prevent over-discharge.
- Charge fully every 90 days, even if it is not in use.
- Ensure the charging ports on the robot are clean and dry before storing or charging.

5.4 Winter Storage

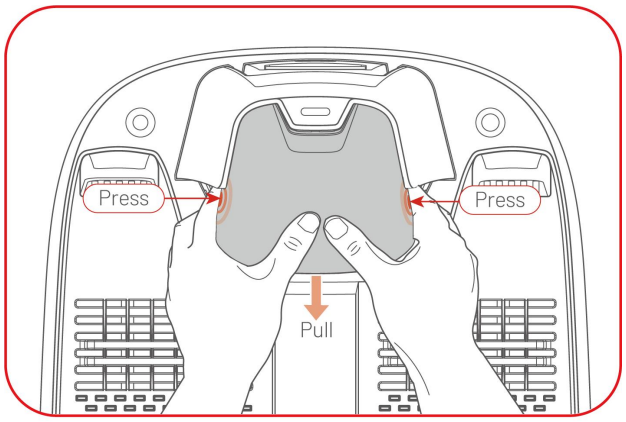
To ensure your robot is in optimal condition for the next mowing season, store the robot and charging station properly. If the ambient temperature drops below -20°C (-4°F) during winter, keep the robot and charging station indoors.

5.4.1 Store Robot

- Control the robot off the charging station, ensuring the robot has been fully charged.
- Power off the robot.
- Clean the robot (the housing, wheels, chassis, LiDAR module, etc.) with a damp cloth or soft brush. You can wash the robot if necessary. DO NOT turn the robot upside down to clean its chassis with water.
- Leave the robot to get dry. DO NOT turn it upside down during this process.
- Apply anti-corrosion lubricant to the charging pads. DO NOT apply the chemicals to any other parts of the robot, especially metal contact areas, except for the connectors.
- Store the robot indoors.

5.4.2 Store Charging Station

- Disconnect the power supply.
- Remove the rain shade if needed.



- Remove the stakes.
- Use a brush and cloth to clean the charging station thoroughly.
- Remove the charging station and the power supply.

In the next mowing season, reinstall the charging station, then relocate it (See Relocate the charging station for more information) and remap a channel between the charging station and the task area using the Mammotion app.

6 Product Specifications

6.1 Technical Specifications

Table 6-1 General Specifications

Specifications	LUBA mini AWD LiDAR 1500
Recommended Mowing Area	1,500 m^2 (0.37 acre)
Max. Mowing Area	1,600 m^2 (0.39 acre)
Max. multi-zone Management	20
Engine	All-wheel Drive (AWD)
Max. Climbing Ability	80% (38.6°)
Vertical Obstacle Passing Ability	50 mm (2 in)
Cutting Width	200 mm (7.8 in)
Cutting Height	20-65 mm (0.8-2.6 in)
Charging Time	200 min
Mowing Time per Charge	140 min
LiDAR Detection Range	30 m (99 ft)
Auto-recharge	YES
GPS Theft Tracking	YES
Geo-Alarm	YES
Vision GeoFence	YES
Lift Sensor	YES
Tilt Sensor	YES
Charging Station	CHG4310

Specifications	LUBA mini AWD LiDAR
	1500
Positioning & Navigation	LiDAR & AI Vision
Obstacle Avoidance	LiDAR & AI Vision & Physical Bumper
Voice Control	Alexa & Google Home
Vision Monitoring	YES
Connectivity	4G & Bluetooth & Wi-Fi
A weighted sound power	L_{WA}=64dB, K_{WA}=3dB
A weighted sound pressure	L_{PA}=56dB, K_{PA}=3dB
Waterproof	Robot: IPX6 Charging Station: IPX6
Rain Detection	YES
Net Weight	16.5 kg (36.4 lbs.)
Size (L x W x H)	584 x 430 x 307 mm (23 x 17 x 12 in)

Table 6-2 LUBA mini AWD LiDAR Onboard Operating Bands Specifications (EU)

Operating Frequency		**Maximum Transmitter Power**
LORA	863.1.-869.85MHz	<13.98dBm
Bluetooth	2400-2483.5MHz	<20dBm
Wi-Fi	2400-2483.5MHz	<20dBm
	5500-5700MHz	<20dBm
	5745-5825MHz	<13.98dBm
GSM900	880-915MHz(Tx); 925-960MHz (Rx)	35dBm
GSM1800	1710-1785MHz(Tx); 1805-1880MHz	32dBm
WCDMA Band I	1920-1980MHz(Tx); 2110-2170MHz (Rx)	25dBm
WCDMA Band VIII	880-915MHz(Tx); 925-960MHz (Rx)	25dBm
LTE Band 1	1920-1980MHz(Tx); 2110-2170MHz (Rx)	25dBm
LTE Band 3	1710-1785MHz(Tx); 1805-1880MHz (Rx)	25dBm
LTE Band 7	2500-2570MHz(Tx); 2620-2690MHz (Rx)	25dBm
LTE Band 8	880-915MHz(Tx); 925-960MHz (Rx)	25dBm

Operating Frequency		Maximum Transmitter Power
LTE Band 20	832-862MHz(Tx)； 791-821MHz (Rx)	25dBm
LTE Band 28	703-748MHz(Tx)； 758-803MHz (Rx)	25dBm
LTE Band 38	2570-2620MHz(Tx)； 2570-2620MHz (Rx)	25dBm
LTE Band 40	2300-2400MHz(Tx)； 2300-2400MHz (Rx)	25dBm
GNSS	1559-1610MHz	N/A

Table 6-3 Battery Specifications

Parameters	Specifications
	1500
Battery charger	TS-A081-2703002 Input: 100-240V~, 50/60Hz, 2A Output: 27Vdc, 3A, 81W
Battery pack	21.6Vdc, 6.1Ah
The 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 Fault Codes

The app notification displays common fault codes along with their causes and troubleshooting steps. Here lists the most common issues.

Fault Codes	Causes	Solutions
316	The left cutting disc motor is overheating.	The robot will return to normal once the motor has cooled down. This process may take several minutes.
318	The sensor for the left cutting disc motor has failed.	Restart the robot. If the issue persists after a few times of restart, contact the after-sale team.
323	The right cutting disc motor is overloaded.	Check if the cutting disc is jammed and clear it if necessary. Alternatively, raise the cutting height.
325	The right cutting disc motor fails to start.	Check whether the cutting disc is jammed. If not, restart the robot. If the issue persists after a few times of restart, contact the after-sale team.
326	The right cutting disc motor is overheating.	Restart the robot. If the issue persists after a few times of restart, contact the after-sale team.
328	The sensor for the right cutting disc motor has failed.	Restart the robot. If the issue persists after a few times of restart, contact the after-sale team.
1005	Low battery	The robot will continue working after the battery is charged to 80%.
1300	The positioning status is poor.	Await the robot's repositioning.

1301	The charging station has been moved.	Relocate the charging station.
1420	Timeout occurred while retrieving wheel speed data.	Restart the robot. If the issue persists, contact the after-sale team.
2713	Charging has been stopped due to low battery voltage.	Restart the robot. If the issue persists after a few times of restart, contact the after-sale team.
2726	The battery is overcharged.	Stop charging immediately. If overcharging occurs frequently, contact the after-sale team.
2727	The battery is over discharged.	Recharge the robot.

7 Warranty

Shenzhen Mammotion Innovation 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
Host and Core	3 Years
Battery	
Charging station	

If the product does not function as warranted during the warranty period, please contact Mammotion customer service for instructions.

- For products purchased from a local dealer, kindly reach out to the dealer first.
- Users must present a valid proof of purchase, receipt, or order number (for Mammotion Direct Sales). The Serial Number of the product is crucial for initiating warranty service.
- Mammotion will make every effort to address concerns through phone calls, email, or online chat.
- In some cases, Mammotion may advise you to download or install specific software updates.
- If issues persist, you may need to send the product to Mammotion for further assessment or to a local Mammotion-appointed service center.
- The warranty period for the product commences from the original date of purchase indicated on the sales receipt or invoice.
- For pre-ordered products, the warranty period begins from the shipping date from the local warehouse.

- 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.

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

- Failure to follow the instructions outlined in the user manual.
- If the product arrives damaged during shipment and is not rejected upon delivery, or if no official documentation confirming the damages is provided by the shipping company. Inability to provide evidence of damage occurring during transit.
- Product malfunction due to accidents, misuse, abuse, natural disasters like floods, fires, earthquakes, exposure to food or liquid spills, incorrect electrical charging, or other external factors.
- Damage resulting from using the product in ways not permitted or intended as specified by Mammotion.
- Modification of the product or its components that significantly alters functionality or capabilities without obtaining written permission from Mammotion.
- Loss, damage, or unauthorized access to your data.
- Signs of tampering or alteration on product labels, serial numbers, etc.

Failure to provide a valid proof of purchase from Mammotion, such as a receipt or invoice, or if there are suspicions of forgery or tampering with the documentation.

8 Simplified EU Declaration of Conformity

Hereby, Shenzhen Mammotion Innovation Co., Limited declares that the radio equipment type [Model:1500] is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: https://mammotion.com/pages/eu-declaration-of-conformity.

SHENZHEN MAMMOTION INNOVATION CO., LTD

www.mammotion.com