ROBOTí SEKAČKY

Návod k obsluze

Mammotion YUKA

Původní návod výrobce (anglicky) najdete na následujících stranách.

Je vám v návodu něco nejasné?

Zavolejte nebo napište, s nastavením i provozem robota rádi poradíme.

+420 792 325 839

info@robotisekacky.cz

Robotisekacky.cz – prodej, instalace a servis

- Instalace a nastavení robotické sekačky přímo u vás na zahradě
- Servis, zazimování, oprava obvodového drátu a náhradní díly
- Poradíme s výběrem robotické sekačky i bazénového vysavače

www.robotisekacky.cz

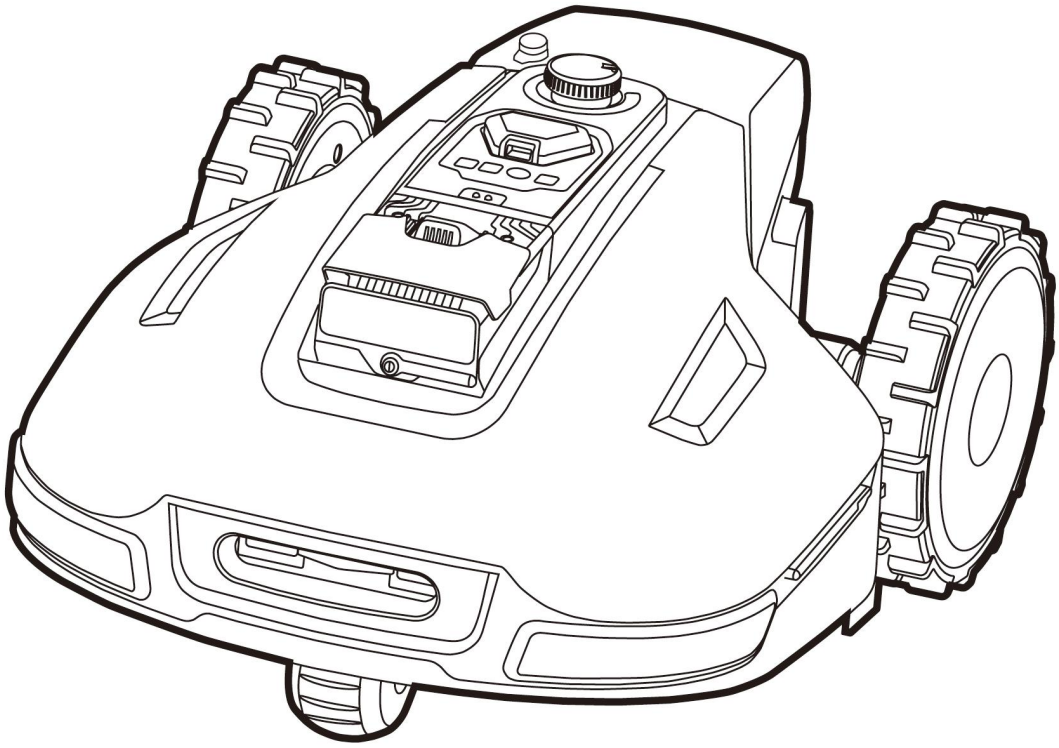
Instalace a servis: robotisekacky.cz/instalace-sekacek

Obsah návodu je původním dokumentem výrobce; Robotisekacky.cz doplnil pouze úvodní a závěrečnou stranu.

Mammotion Innovation

USER MANUAL

YUKA SERIES



Original Instructions
Version V3.0
2024.06

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

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Revision Log

Date	Version	Description
2024.03	V1.0	Initial version
2024.04	V2.0	Section 2.1.7 updated Section 2.3 updated Section 4.6.1 updated Section 4.8.1 added Chapter 5 added Section 6.1 updated Chapter 8 updated
2024.04	V2.1	Section 6.1 updated
2024.06	V3.0	Section 2.4 updated Section 3.4.1 updated Section 3.4.5 updated Section 3.4.6 updated Section 3.4.7 added Chapter 4 Operation UI updated To add a pattern added in the section 4.6.1 Create a map

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1 Safety Instructions

1.1 General Safety Instructions

- Carefully read and understand the user manual before using 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 machine, local restrictions may restrict the age of the operator.
- Do not allow children to be in vicinity or play with the machine 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 disk, until it has completely stopped.
- Avoid using the robot when there are people, especially children or animals, in the work area.
- If operating the robot in public areas, place warning signs around the work 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.

- Do not place cables in areas where the robot will cut.
- 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 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.
- 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 the 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 power off the robot 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 setting a channel where pop-up sprinklers are installed.
- Do not operate the product in the presence of standing water in the task area, such as during heavy rain or water pooling.

1.4 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.

1.5 Residual Risks

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

2 Introduction

2.1 About Mammotion Yuka

2.1.1 About 3D vision module

Yuka is equipped with a vision module that provides 3D vision positioning, 3D vision obstacle detection, and FPV mode.

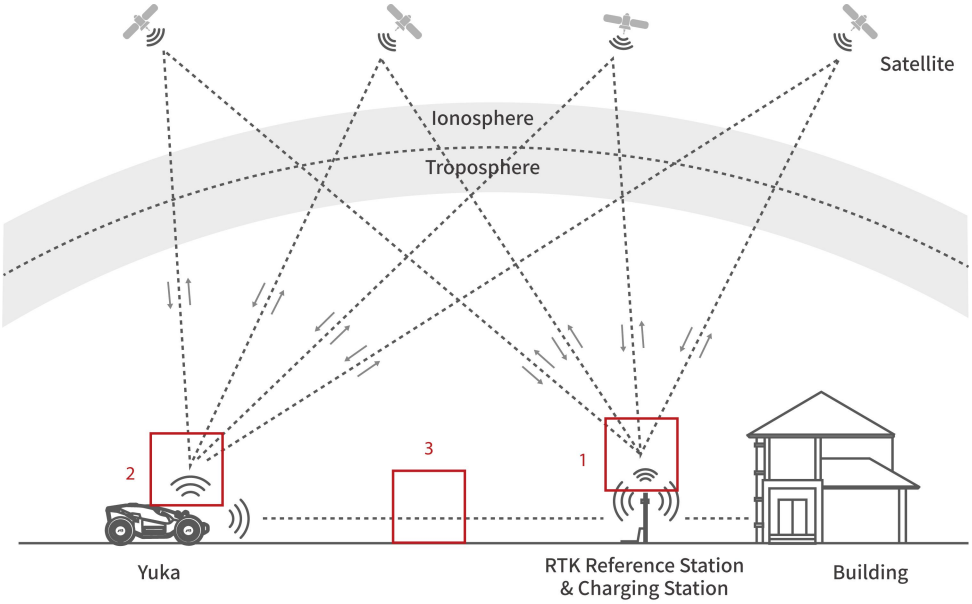
- 3D vision positioning helps to guarantee positioning accuracy when RTK positioning fails due to poor satellite signals.
- 3D vision obstacle detection identifies obstacles in the front.
- FPV mode can be used for monitoring as a security camera or as an FPV (First Person View) camera.

2.1.2 About positioning

Yuka is built in a RTK (real-time kinematic) navigation system, a multi-sensor integrated navigation system, and a 3D vision positioning system, which provide more accurate positioning data.

RTK positioning

RTK is a differential GNSS positioning technology that greatly enhances positioning accuracy to approximately 5 cm/2 in. Yuka 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. Yuka operates similarly, requiring an open sky view to receive satellite signals.
3. Data transmission from the RTK reference station to Yuka 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.

3D vision positioning

Yuka primarily uses RTK positioning to locate itself. However, in situations where satellite signals are obstructed by obstacles such as eaves or trees during mapping and mowing, Yuka can still operate effectively using the 3D vision positioning.

2.1.3 About obstacles detection

Yuka identifies obstacles through 3D vision and the U-shape bumper. The 3D vision system can identify obstacles and respond accordingly.

2.1.4 About lawn art printing

By utilizing AI algorithms to tailor the cutting path, cutting height, and angle, Yuka can create special patterns via the Mammotion app. See ***To add a pattern*** for more information.

Yuka is able to cut grass into various shapes and patterns and supports the following patterns now:

- 26 English letters and digits
- Football shape
- Heart shape
- Pentagram shape
- Four-point star shape
- Crescent shape
- Tree shape

2.1.5 About self-emptying lawn sweeper kit (sold separately)

Equipped with the self-emptying lawn sweeper kit, Yuka efficiently gathers grass clippings, leaves, and debris during mowing operations, autonomously disposing of them at the designated location.

2.1.6 About connectivity

Yuka supports three methods of connectivity, namely, Bluetooth, Wi-Fi, and 4G cellular data. Bluetooth is used to connect Yuka with your phone, while Wi-Fi and 4G cellular data are used to access the Internet.

2.1.7 About voice control

Yuka is compatible with Alexa voice control. You can easily start or stop mowing or recharging by using simple voice commands. See ***To link your Alexa account*** to link your account.

Here are some voice command examples that allow you to start working, pausing, stopping, recharging, and checking the status:

Working	Pause working	Continue working
-Alexa, ask Yuka to start working	-Alexa, ask Yuka to pause	-Alexa, ask Yuka to continue
-Alexa, ask Yuka to start task xx (xx means the name of the task you set)	-Alexa, ask Yuka to hold on -Alexa, ask Yuka to suspend	-Alexa, ask Yuka to resume
Stop working	Recharge	Check status
-Alexa, ask Yuka to stop working	-Alexa, ask Yuka to recharge	-Alexa, ask Yuka status
-Alexa, ask Yuka end the task	-Alexa, ask Yuka go home	-Alexa, ask Yuka what it is doing

2.1.8 About Auto-recharge

Yuka supports automatically return to charge when the battery is lower than 15%.

2.1.9 About anti-theft system

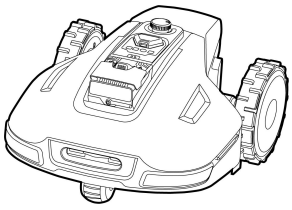
Yuka has an anti-theft system to prevent unauthorized removal.

- The alarm is triggered when Yuka is lifted.
- Users can track Yuka's location by GPS and 4G positioning through the Mammotion app, as long as it is online.
- Additionally, Yuka's structure allows for an AirTag to be attached to track its location.

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.

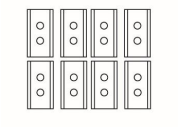
2.2.1 Yuka installation kit



Yuka x1



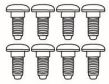
Security Key x1 (for spare use)



Replacement Blade x8 (for spare use)

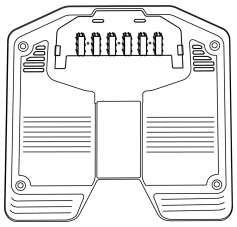


Washer x8 (for spare use)

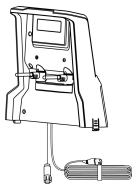


Screw x8 (for spare use)

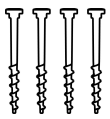
2.2.2 Charging station installation kit



Charging Base Plate x1



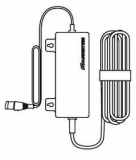
Charging Tower x1



Stake x4

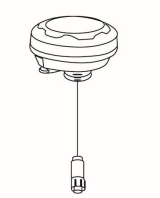


Screw x4 (1pc for spare use)



Charging Station Power Supply x1

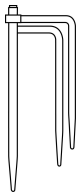
2.2.3 RTK installation kit



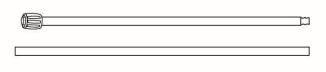
RTK Reference Station x1



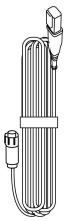
Radio Antenna x1



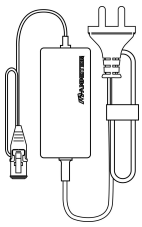
Trident Ground Stake x1



Mounting Pole x2



RTK Reference Station Extension Cable (10M) x1

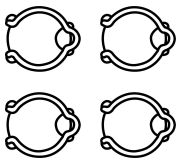


RTK Reference Station Power Supply x1

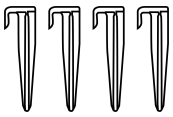
2.2.4 Tool kit



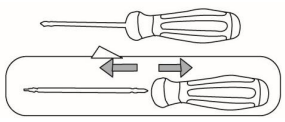
Allen Key 8mm x1



Cord Tie x4



Cable Peg x4



Screwdriver (Phillips bit+2.5mm hex bit) x1



SIM-eject Tool x1



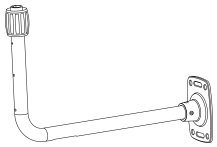
Allen Key 1.5mm x1

2.2.5 Other accessories (optional)

The following accessories are sold separately.

RTK reference station wall mount kit

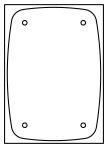
By using the wall mount kit, the RTK reference station can be securely installed on a wall, enhancing its satellite signal reception.



RTK Wall Mount x1

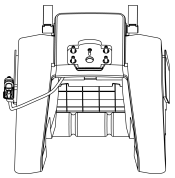


M8x50 Expansion Bolt x4

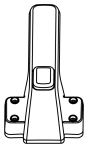


Drilling Template x1

Self-emptying Lawn Sweeper Kit



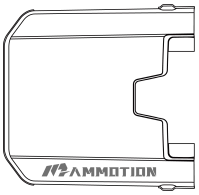
Sweeping Brush Module x1



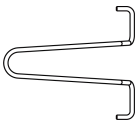
Handle Module x1



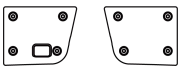
Screw x6 (2pcs for spare use)



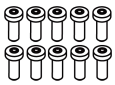
Hopper Cover x1



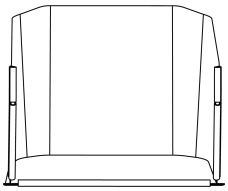
Hopper Handle x1



Hold-down Plate x2



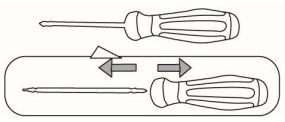
Screw x8 (2pcs for spare use)



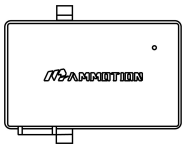
Hopper x1



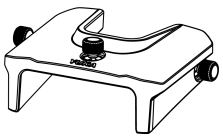
U-shaped Supporting Rod x1



Screwdriver (Phillips bit+2.5mm hex bit) x1

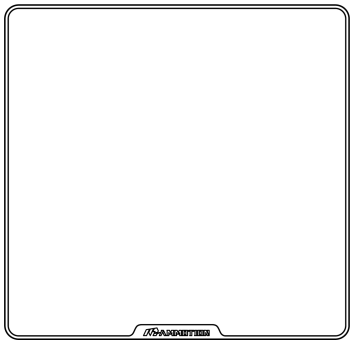


Battery x1

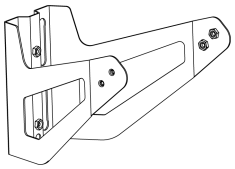


Counterweight Part x1

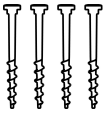
RTK solar panel kit



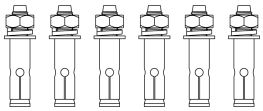
Solar Panel x1



Mounting Bracket x1

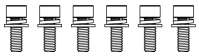


Stake x4



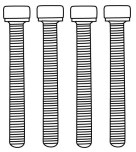
Expansion Bolt x6

(2pcs for spare use)



Screw x6

(2pcs for spare use)



M5x40 Screw x4

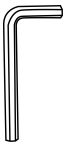
(2pcs for spare use)



Allen Key 1.5mm x1



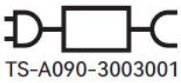
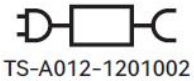
Allen Key 4mm x1

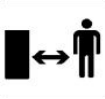


Allen Key 8mm x1

2.3 Symbols on the Product

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

Symbol	Description
	Warning.
	Read user instructions before operating the product.
	Use a detachable supply unit TS-A090-3003001.
	Use a detachable supply unit TS-A012-1201002.
	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.
	The pack of this product/the product should not be tread.

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

2.4 Product Overview

2.4.1 Yuka

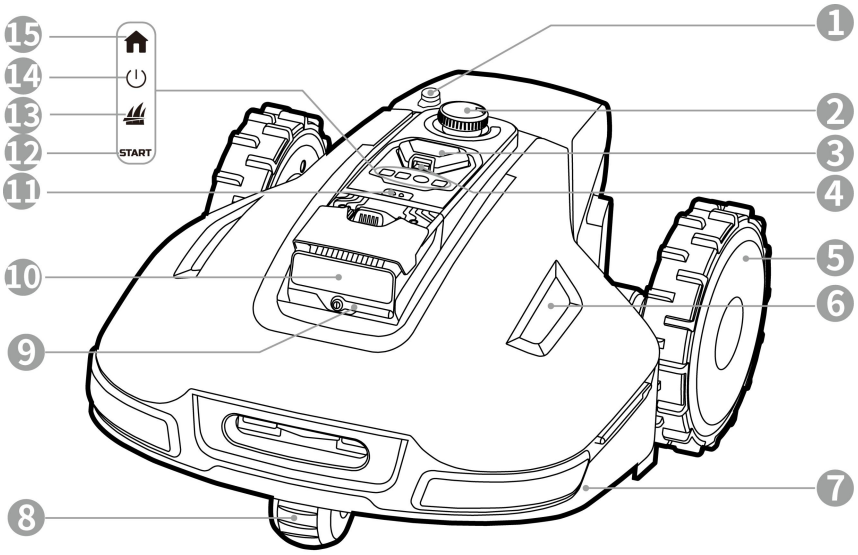


Figure 2- 1 Oblique View of Yuka

1. Port for lawn sweeper

2. Push Button — press to detach lawn sweeper or rotate to adjust cutting height[1]

3. Emergency Stop Button

4. Security Key Slot

5. Rear Wheel — one on each side

6. Side Indicator — one on each side

7. U-shape Bumper

8. Front Wheel (Omni Wheel)

9. Vision Module Wiper

10. Vision Module

11. Rain Sensor

12. Start Button

13. Grass Button — press to continue the task[2]

14. Power Button — long press to turn on/off Yuka

15. Auto-return Button — press to call back Yuka[3]

IMPORTANT

1. The cutting height can only be changed by manually pressing down and turning the **Push** button. Besides, press the **Push** button to detach the lawn sweeper.
2. To continue task: press **Grass**, then press **START**.
3. To come back to charging station: press **Auto-return**, then press **START**.

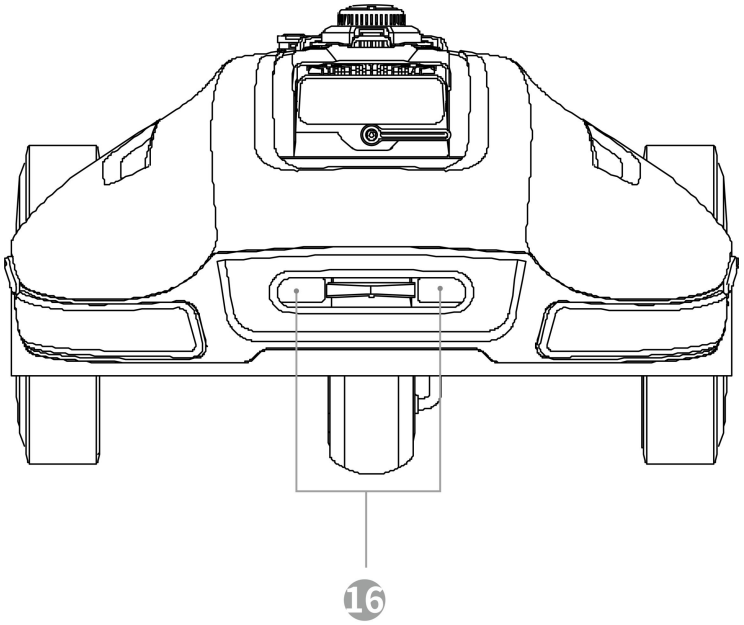


Figure 2- 2 Front View of Yuka

16. Charging Pad

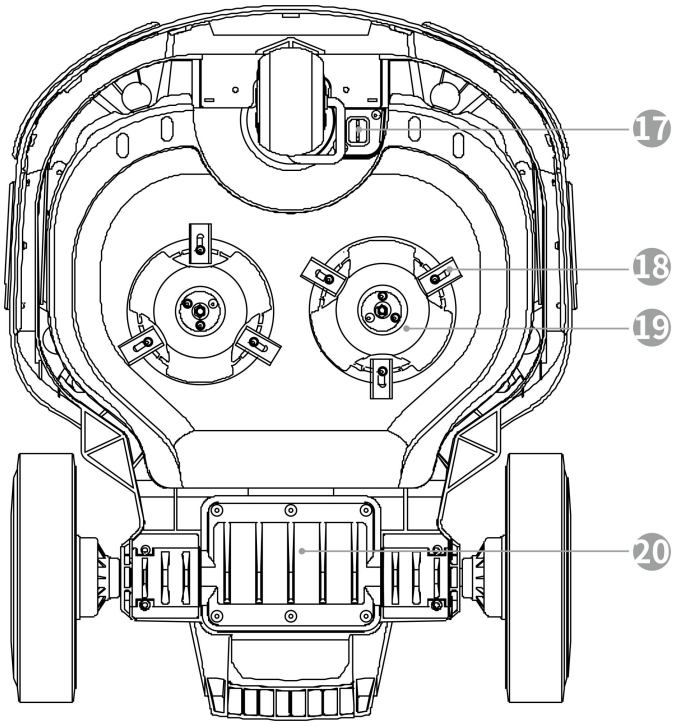


Figure 2- 3 Bottom View of Yuka

17. SIM Card Tray

18. Cutting Blade

19. Cutting Disk

20. Battery Compartment

2.4.2 RTK solar panel

1. LED
2. Power
3. Vent

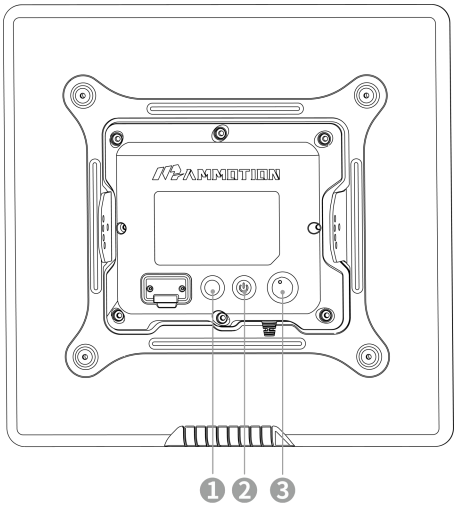


Figure 2- 4 Rear View of Solar Panel

- The solar panel unit will activate automatically when placed outdoors.
- The power button can only be available indoors or in the absence of sunlight. To turn on/off the unit, press the power button until the LED light turns on/off.
- To reset the unit, hold down the power button for 5 seconds.
- The unit will adjust its operation based on the battery level in the following manner:

Battery Level	**Status**
> 10 V	Operates normally
9.5-10 V	Dormant
< 9.5 V	Power off automatically
Battery level < 9.5V; PV charging power > 3 W	Operates normally

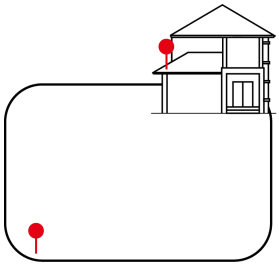
3 Installation

3.1 Preparation

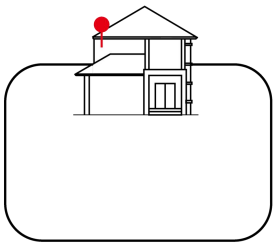
- Read and understand the safety instructions prior to installation.
- Use original parts and installation materials.
- Sketch your lawn and mark up obstacles. This will make it easier to examine where to place the charging station and RTK reference station, and to set the virtual boundaries.

3.2 Choosing a Location for RTK Reference Station

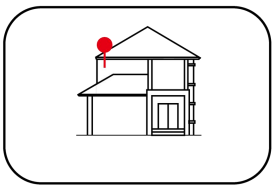
To optimize the performance of the RTK system, the RTK reference station must be in an open area to receive satellite signals. You can install the RTK reference station on flat, open ground or on an unobstructed wall or roof. In general, if your lawn is L-shaped, you can place the RTK reference station on a wall or roof or on the ground; if your lawn is O-shaped or U-shaped, or if you have multiple lawns, we recommend that you place the RTK reference station on a wall or roof.



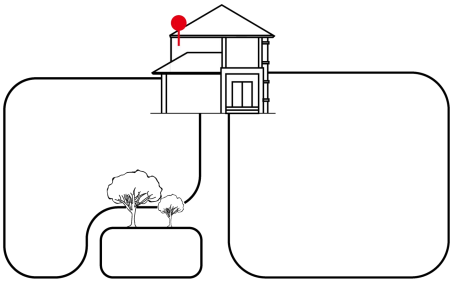
L shape



U shape



O shape



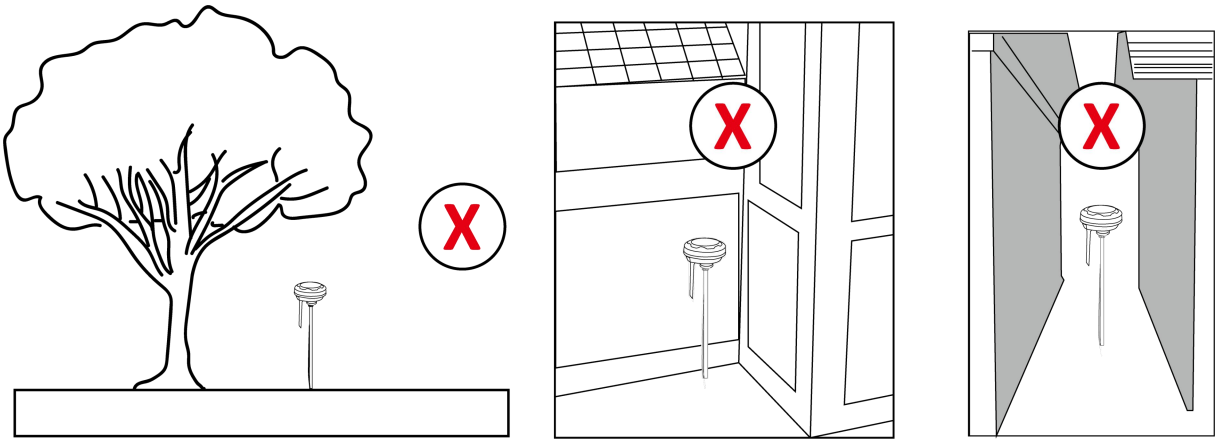
Multiple lawns

The location requirements are as follows:

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

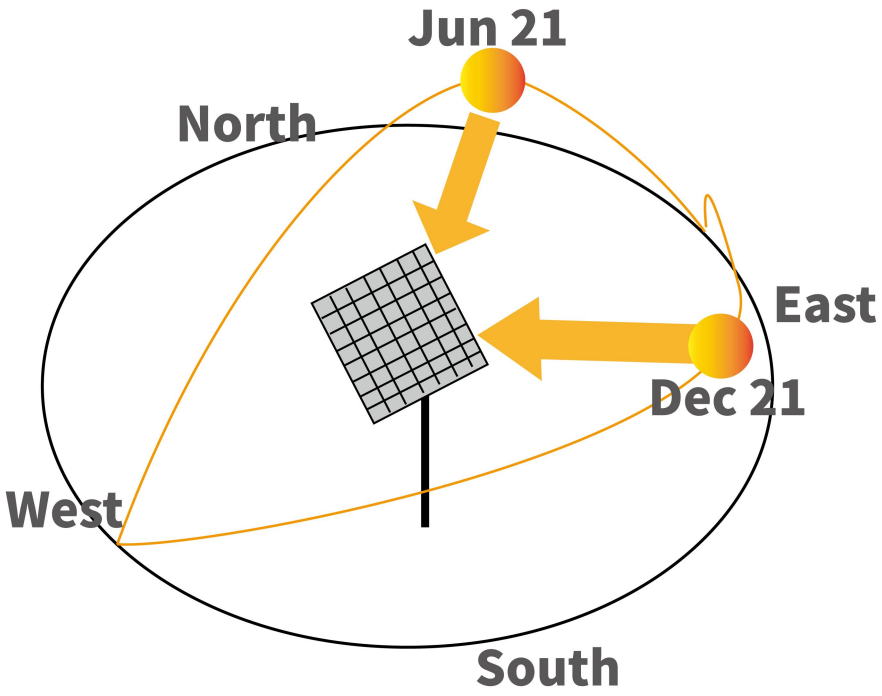


- Place the RTK reference station on a flat, open ground or on an unobstructed wall or roof. Make sure there are no roofs or trees that may obstruct the satellite signals.
- DO NOT install the RTK reference station at the corner of an L-shaped building or on a narrow path between two structures or under a tree.

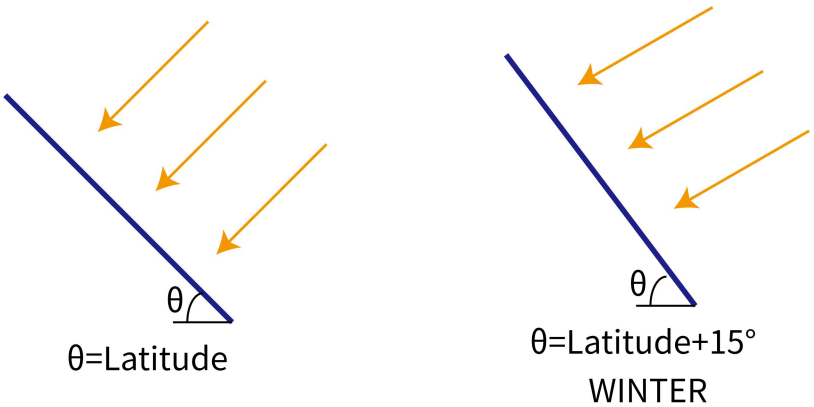


If you need to install an RTK solar panel kit, for optimal exposure to sunlight, Mammotion recommends the following locating guidelines:

- If your home is located north of the equator, place the solar panel unit facing south;
- If your home is located south of the equator, place the solar panel unit facing north;



- The ideal angle for the solar panel kit is parallel to your location's latitude.
- In winter, it is generally recommended to add 15 degrees more than your location's latitude to maximize its efficiency.

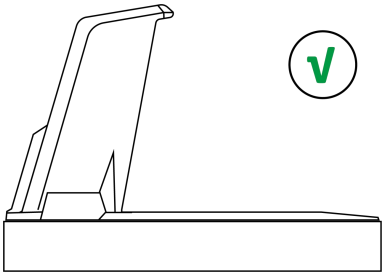


3.3 Choosing a Location for Charging Station

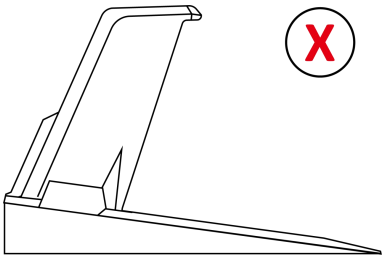
- Place the charging station on a flat ground.
- The charging area (1x1.5 m/3x5 ft. in front of the charging station) should be free from significant bumps. The slope must be less than 5°.
- DO NOT install the charging station at the corner of an L-shaped building or on a narrow path between two structures.
- 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:

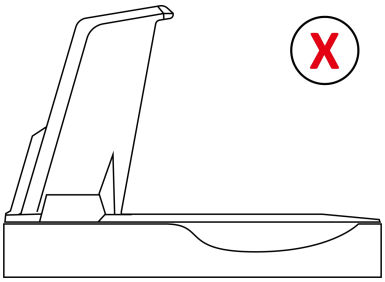
- Flat and solid ground
- Short grass



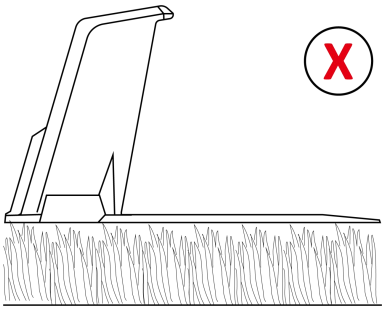
- On a slope



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



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



3.4 Installing



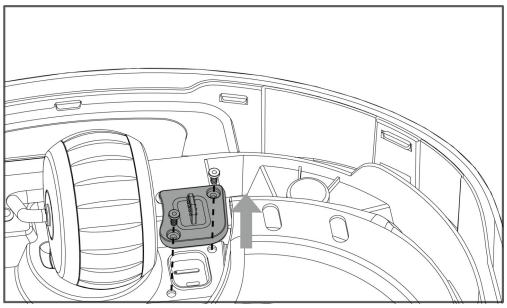
Before installing, remove the packaging foam from the bottom of the Yuka as shown in the label.

3.4.1 Yuka assembly

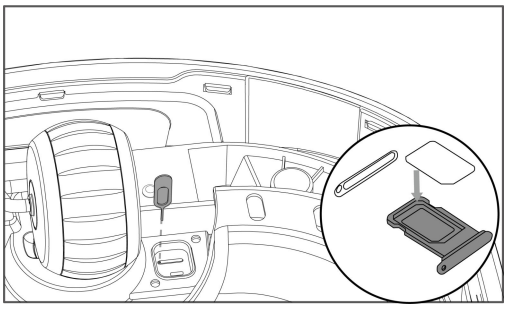
Installing the 4G sim card (optional)

IMPORTANT
Activate the SIM card on your phone before installation.

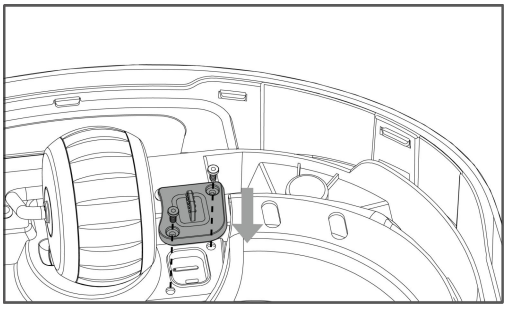
1. Use the screwdriver with 2.5mm hex bit to detach the cover.



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

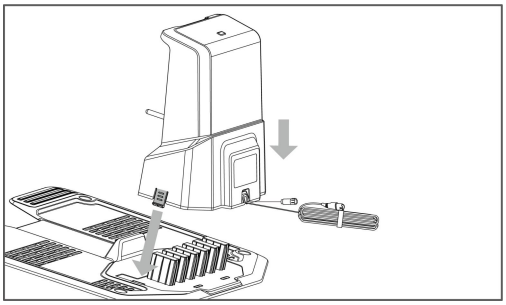


3. Reinstall the cover securely.

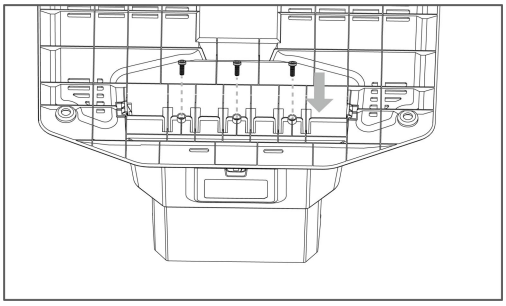


3.4.2 Installing the charging station

1. Insert the charging tower into the charging base plate.

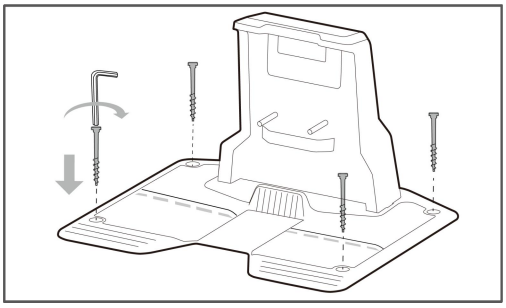


2. Install and tighten the three screws from the bottom of the charging base plate using the screwdriver with the 2.5mm hex bit.

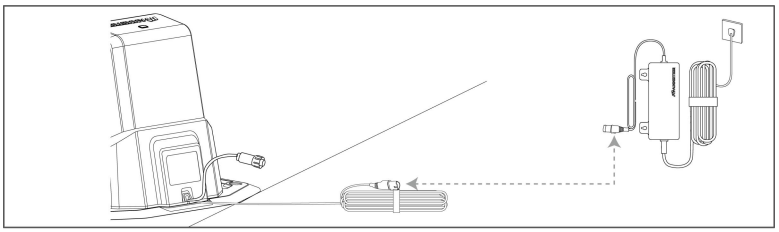


3. Select an open spot to install the charging station.

4. Use the four stakes to properly fasten the charging station in the position as shown.

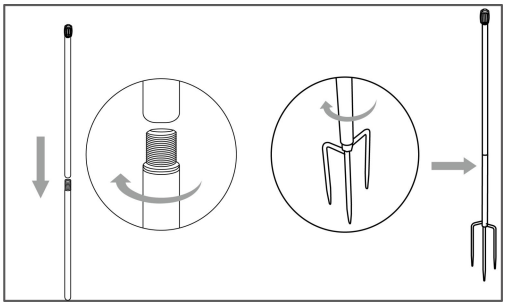


5. Connect the wires as shown in the figure.

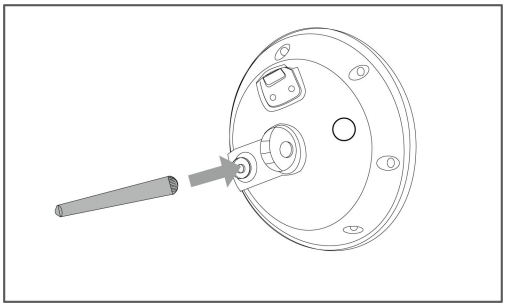


3.4.3 Installing the RTK reference station

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

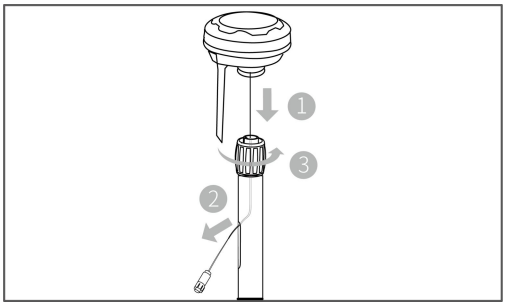


2. Fix the radio antenna to the RTK reference station.

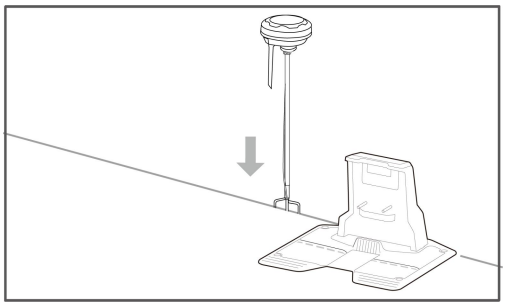


3. Route the RTK reference station cable into the mounting pole as shown.

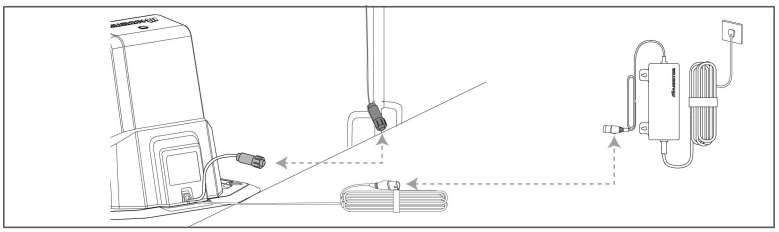
4. Mount the RTK reference station on the mounting pole.



5. Thrust the mounting pole into the ground close to the charging station.



6. Connect the wires as shown in the figure.

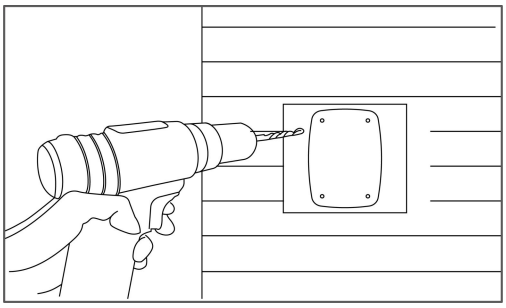


3.4.4 Installing the RTK reference station wall mount kit (optional)

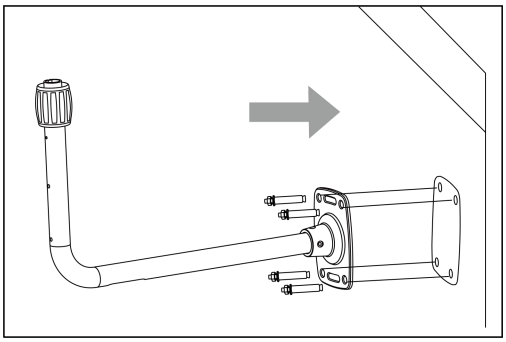
Skip the section 3.4.3 if you have ordered the RTK reference station wall mount kit.

1. Choose a suitable installation area at a high place of your house.

2. Stick the drilling template on the wall and drill four holes (10 x 40mm/0.4 x 1.6 in) at the appropriate position.



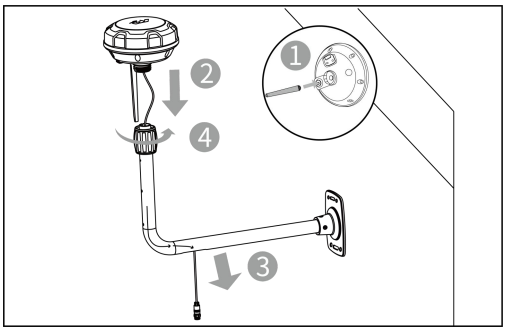
3. Attach the RTK wall mount on the wall using the four bolts (M8 x 50) and secure the bolts firmly.



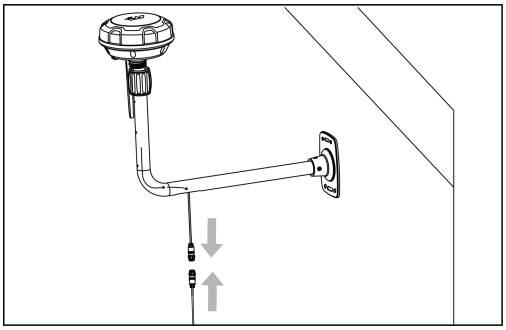
4. Fix the radio antenna to the RTK reference station.

5. Route the RTK reference station cable into the wall mount as shown.

6. Attach the RTK reference station to the wall mount.

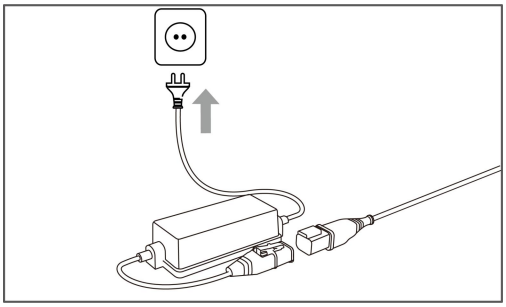


7. Connect the RTK reference station plug to the RTK reference station extension cable (10 m/33 ft.).



8. Connect the RTK reference station cable (10 m/33 ft.) to the RTK reference station power supply.

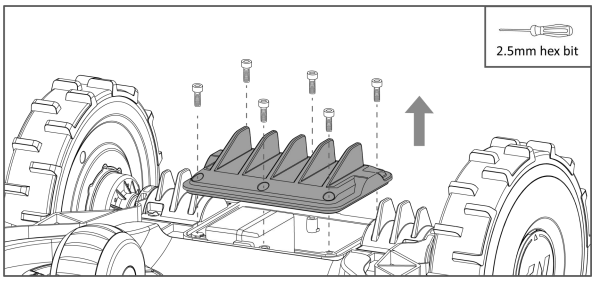
9. Plug the power supply into a wall socket.



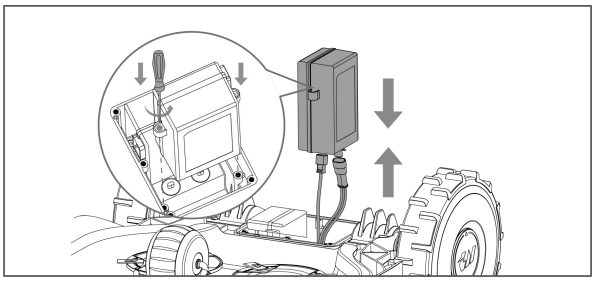
3.4.5 Installing the self-emptying lawn sweeper kit (optional)

Please follow the instructions below to install the self-emptying lawn sweeper kit if any.

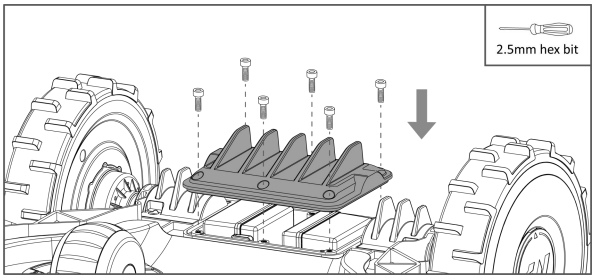
1. Use the screwdriver with the 2.5mm hex bit to loosen the 6 screws to detach the battery cover at the bottom of Yuka.



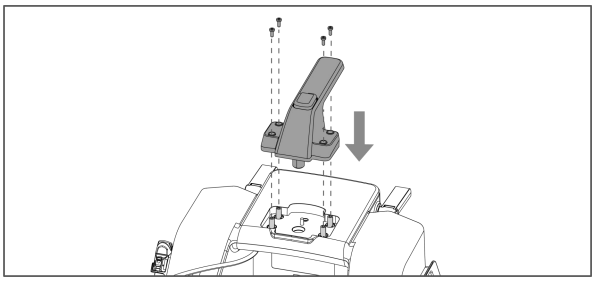
2. Connect the battery wires and use the two screws to secure the battery. Tighten the screws using the screwdriver with the 2.5mm hex bit.



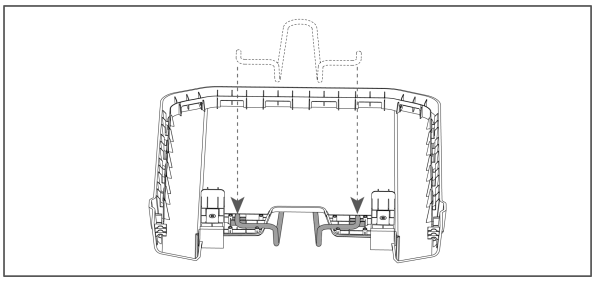
3. Reinstall the battery cover.



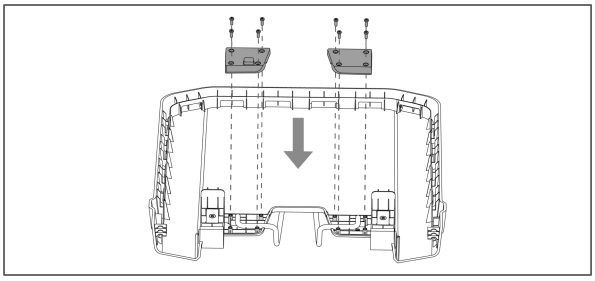
4. Install the handle module on top of the sweeping brush module and tighten the 4 screws using the screwdriver with the 2.5mm hex bit.



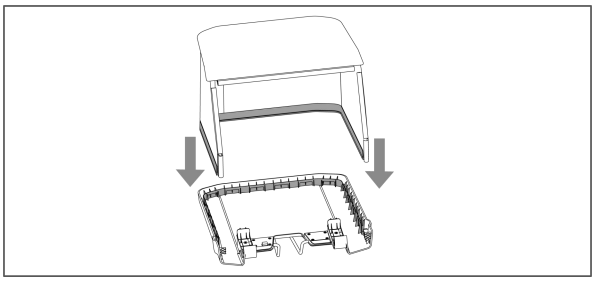
5. Mount the hopper handle as indicated in the provided picture.



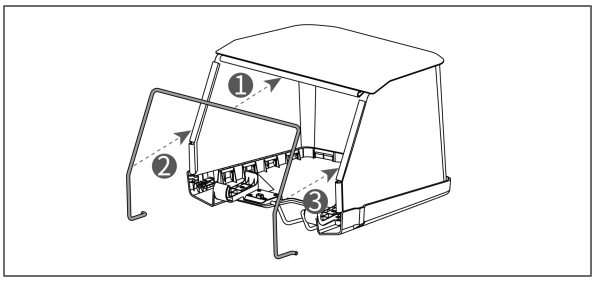
6. Attach the two hold-down plates to secure the hopper handle in place. Tighten the 8 screws using the screwdriver with the 2.5mm hex bit.



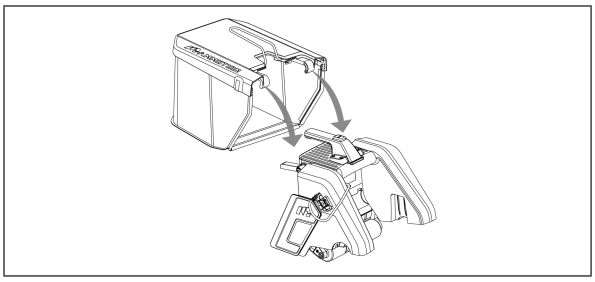
7. Embed the hopper into the hopper cover securely.



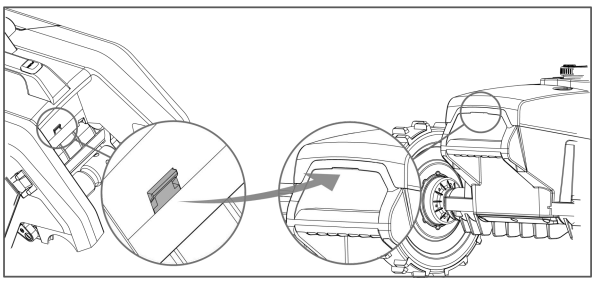
8. Insert the U-shaped supporting rod into the hopper.



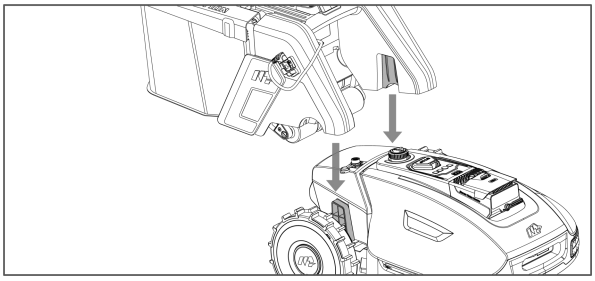
9. Assemble the sweeping brush module with the hopper module.



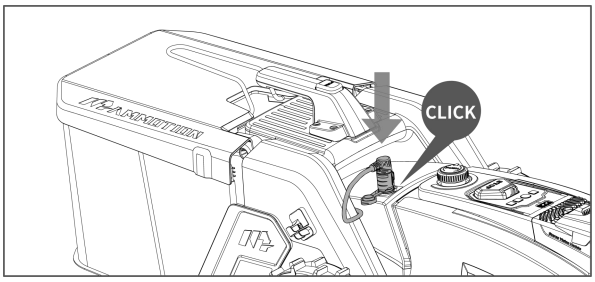
10. Insert the protrusion on the lawn sweeper into the slot on the rear of Yuka.



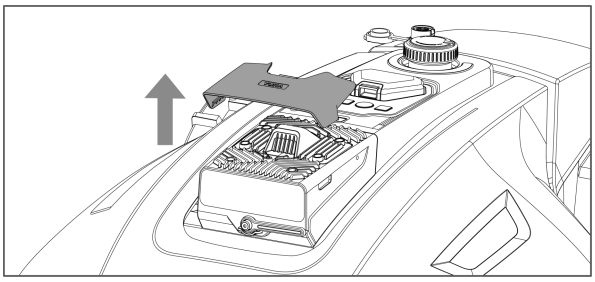
11. Mount the sweeper onto Yuka.



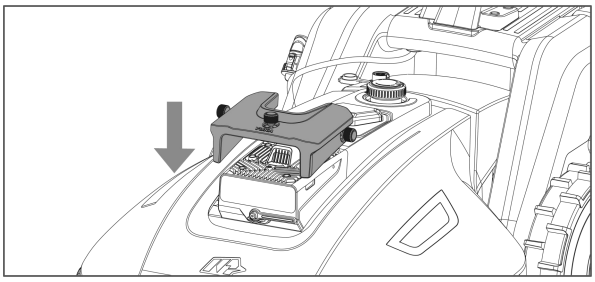
12. Connect the sweeper plug to Yuka.



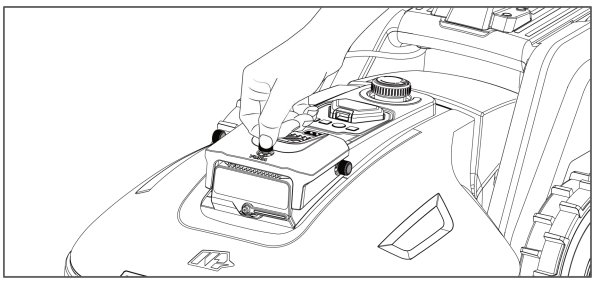
13. Detach the vision module cover carefully.



14. Attach the counterweight part onto the vision module.



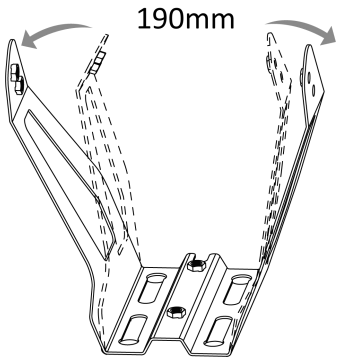
15. Tighten the screws securely.



3.4.6 Installing the RTK solar panel kit (optional)

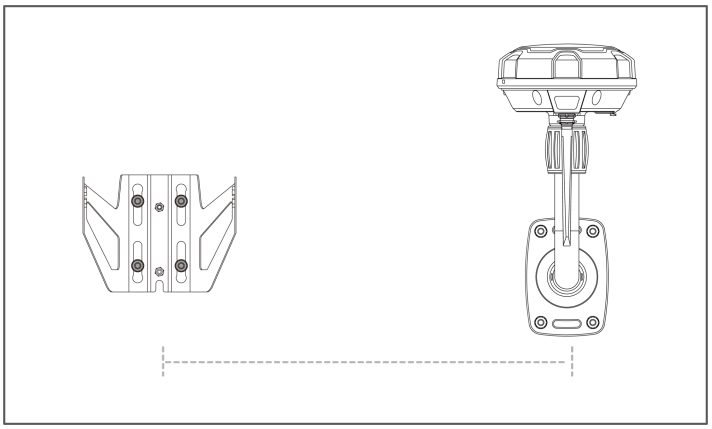
NOTE

There are three options to install the RTK solar panel kit. Please decide the optimal one to continue.

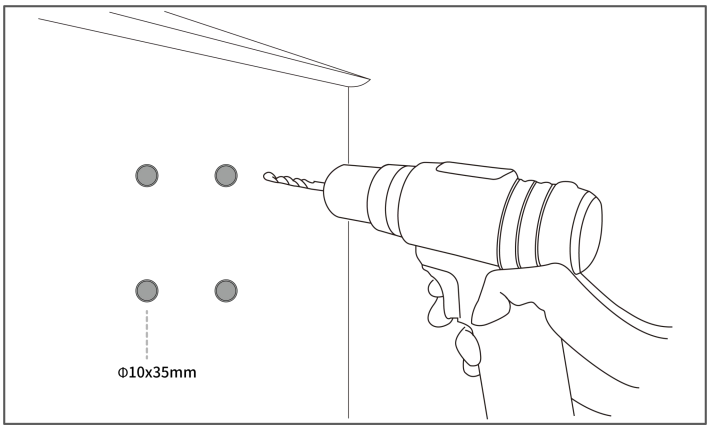


Before installing, expand the bracket outward to properly accommodate the solar panel.

Option 1: Install the RTK solar panel kit on a wall

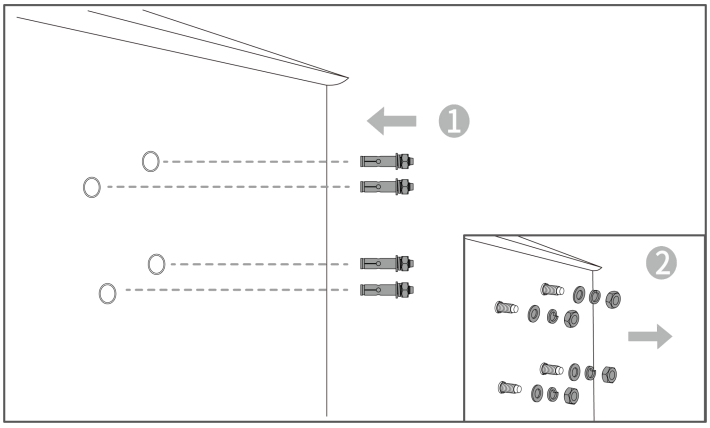


1. Place the mounting bracket on the wall and mark four holes with a pencil, ensuring the distance is within the cable's reach.

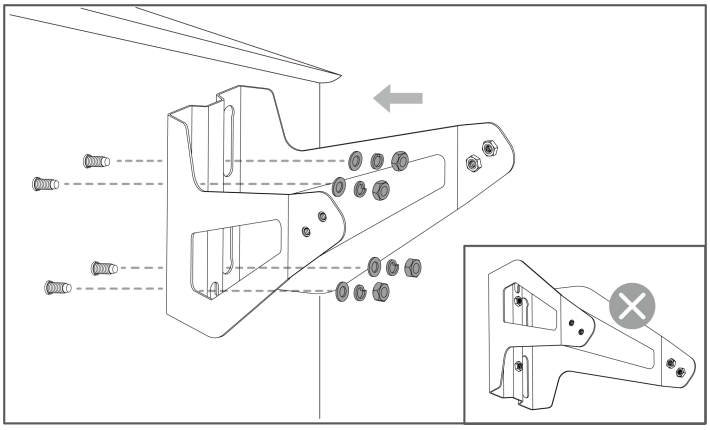


2. Drill 10mm/0.4 in. diameter, 35mm/1.4 in. depth holes.

3. Tap the expansion bolts into the holes and remove the nuts, spring and flat washers when the expansion bolts are stuck.

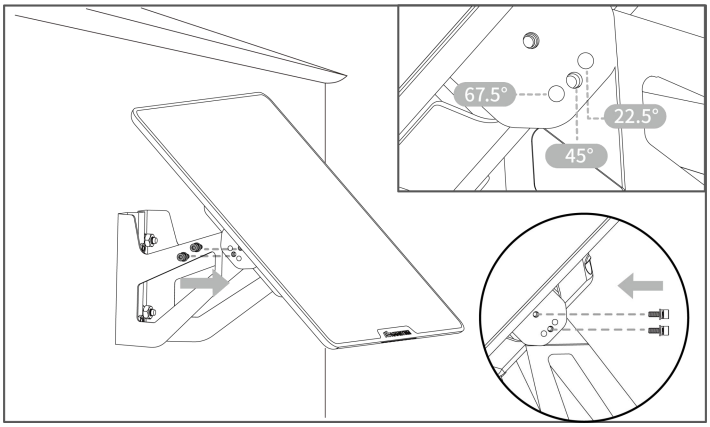


4. Attach the bracket to the wall without reversing it. Reinsert washers, spring washers, nuts, and tighten with a 13mm/0.5 in. socket wrench.

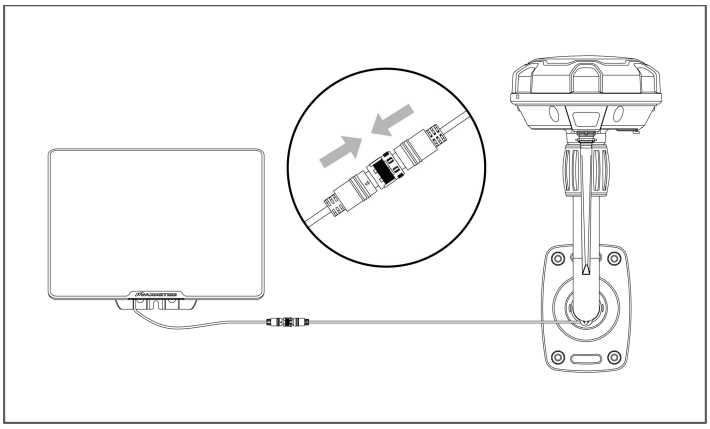


5. Secure the solar panel to the bracket with four screws and tighten using a 4mm/1.5 in. Allen key.

6. Adjust the angle by shifting the screw to another hole if needed.

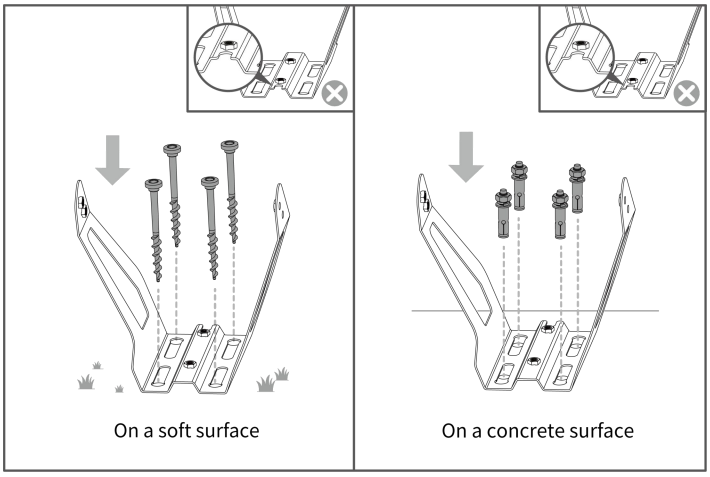


7. Connect the solar panel cable to the RTK reference station cable.



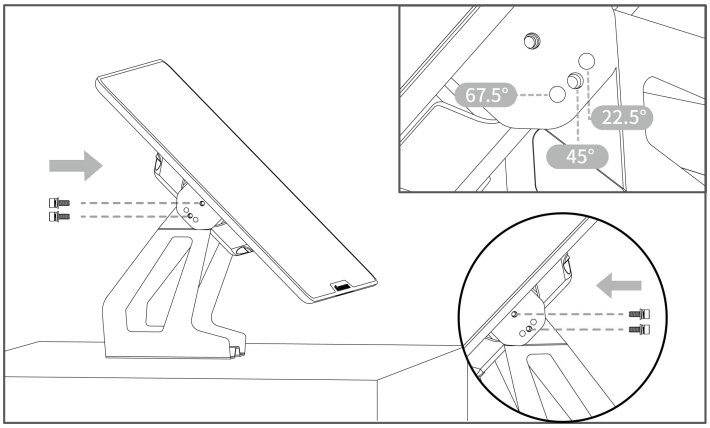
Option 2: Install the RTK solar panel kit on a flat ground/roof

1. Reverse and place the mounting bracket on the surface, secure with stakes or expansion bolts, ensuring the cable's reach.

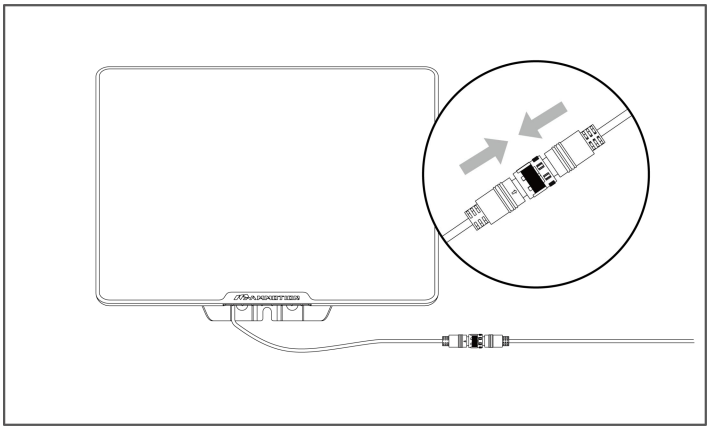


2. Secure the solar panel to the bracket with four screws and tighten using a 4mm/1.5 in. Allen key.

3. Adjust the angle by shifting the screw to another hole if needed.

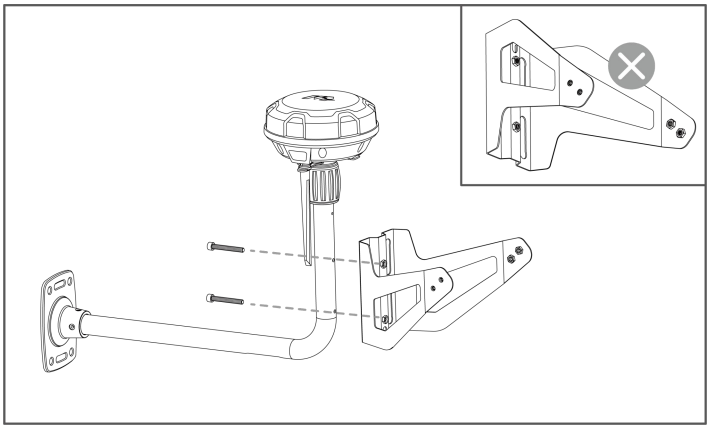


4. Connect the solar panel cable to the RTK reference station cable.



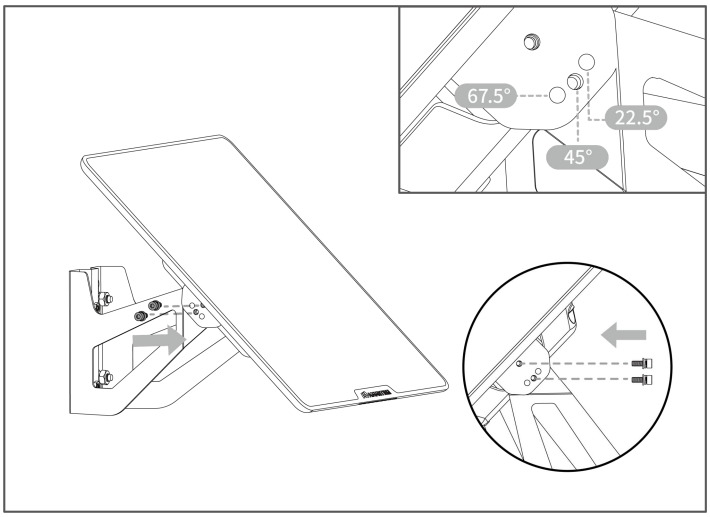
Option 3: Install the RTK solar panel kit on a RTK wall mount

1. Mount the bracket onto the RTK wall mount with two screws (M5x40). Tighten the screws using a 4mm/1.5 in. Allen key. Avoid reversing the mounting bracket during installation.

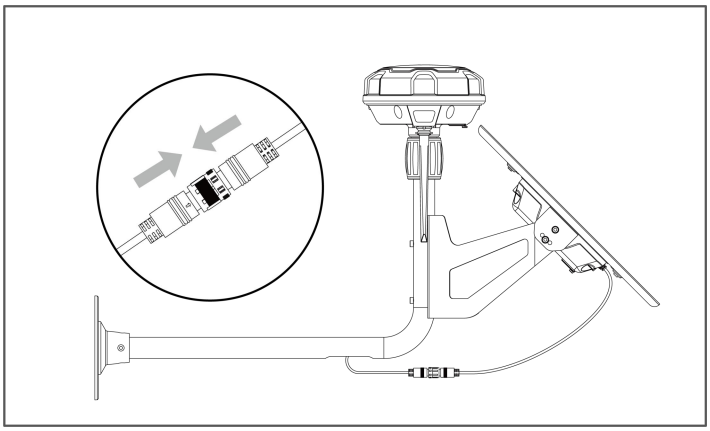


2. Secure the solar panel to the bracket with four screws and tighten using a 4mm/1.5 in. Allen key.

3. Adjust the angle by shifting the screw to another hole if needed.



4. Connect the solar panel cable to the RTK reference station cable.

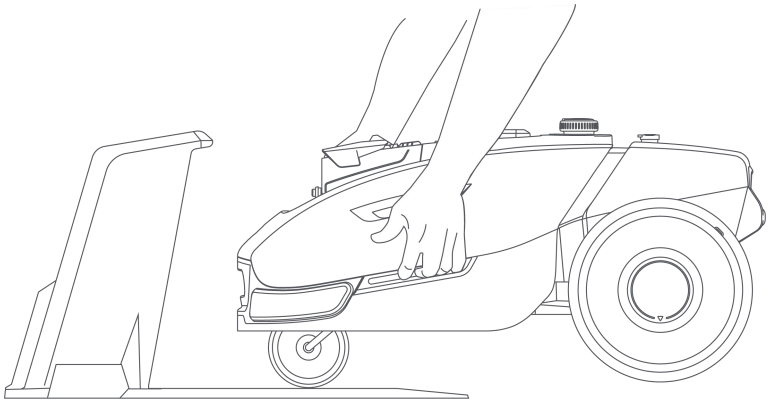


3.4.7 Activating Yuka

Yuka comes factory-set in 'transportation mode'. After the charging station and RTK reference station have been properly installed and connected to the power supply, please charge Yuka before use.

1. Connect the charger of the charging station to the power supply; the LED should display a constant green light.
2. Place Yuka on the charging station, ensuring the charging pad on the front is connected to the pin of the charging station, and the side LED lights up.
3. Continue charging Yuka until the LED on the charging station flashes green and the side LED on Yuka flashes green.

Once these steps are completed, Yuka will be activated and ready for use.



4 Operation

NOTE

The screens are only for reference. Please refer to the actual ones.

4.1 Preparation

- Read and understand safety instructions before operation.
- The charging station and RTK reference station have been properly installed.
- Ensure Yuka has already docked on the charging station.
- Ensure there is a good Wi-Fi or hot spot signal.
- Keep your phone Bluetooth on.

4.2 Download Mammotion App

Yuka 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

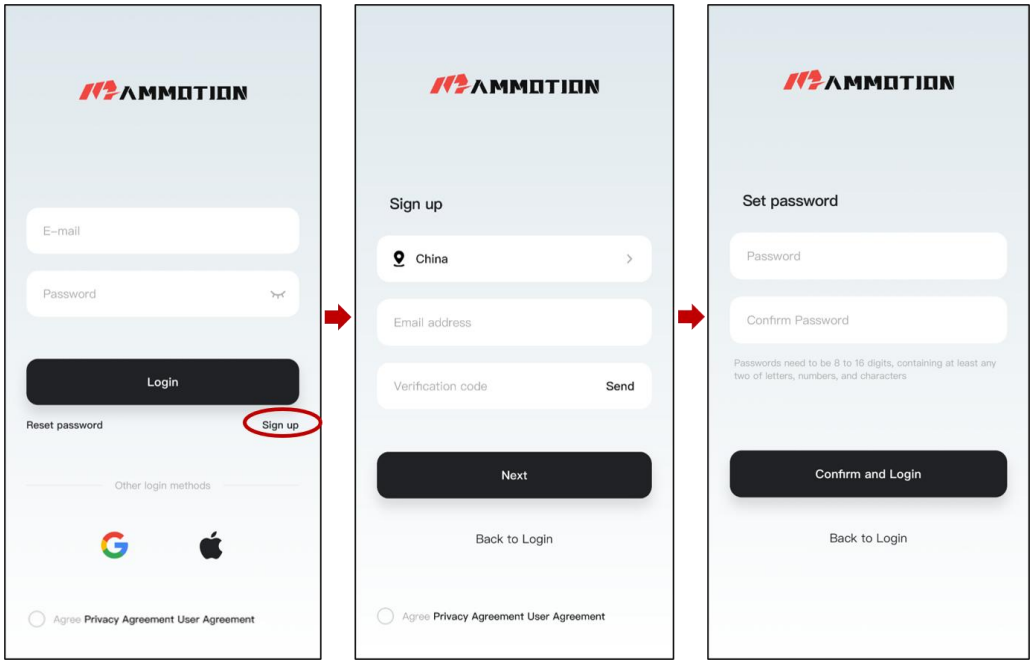
4.3 Mammotion Account Signup and Login

4.3.1 To sign up

NOTE

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

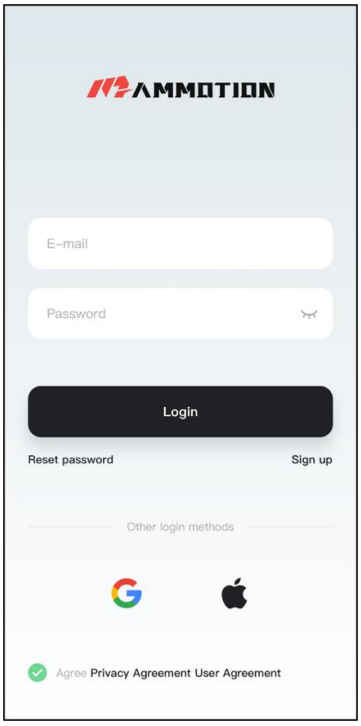
After successfully install the Mammotion app in your phone, you are ready to create your account. Follow the below instructions to register one.



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**.

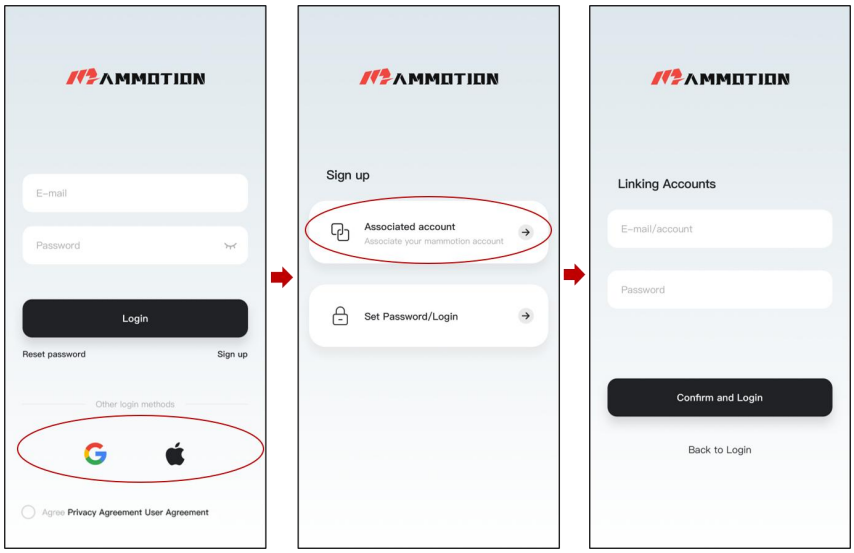
NOTE

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

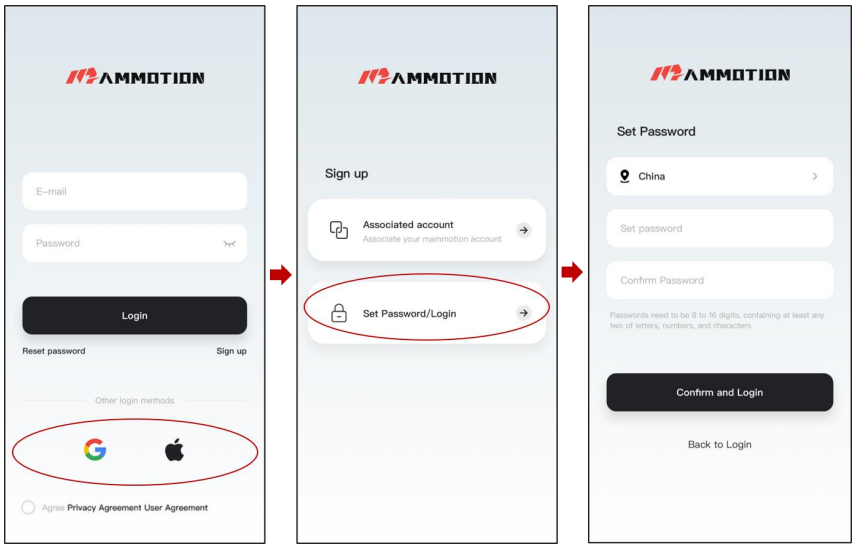
Log in with a third-party account

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 you already have a Mammotion account.

   Or,



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



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

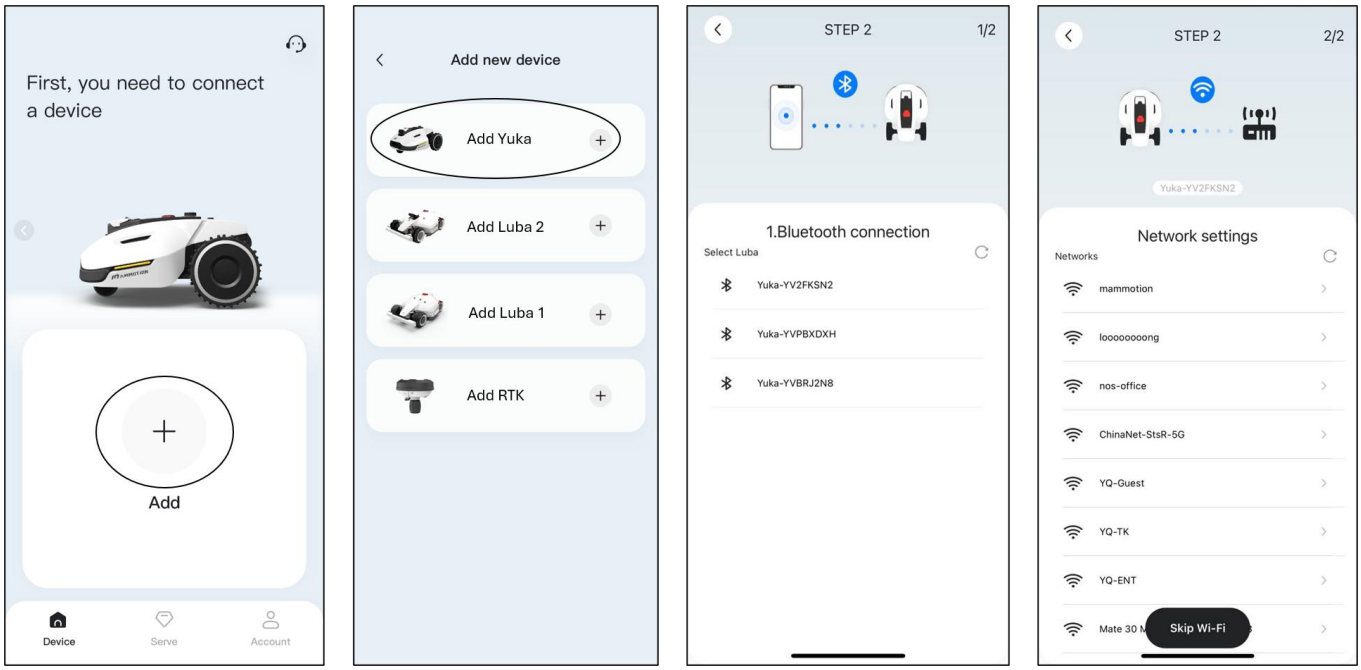
4.4 Add Your Product

NOTE

- Make sure the distance between your phone and product 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.

4.4.1 Add Yuka

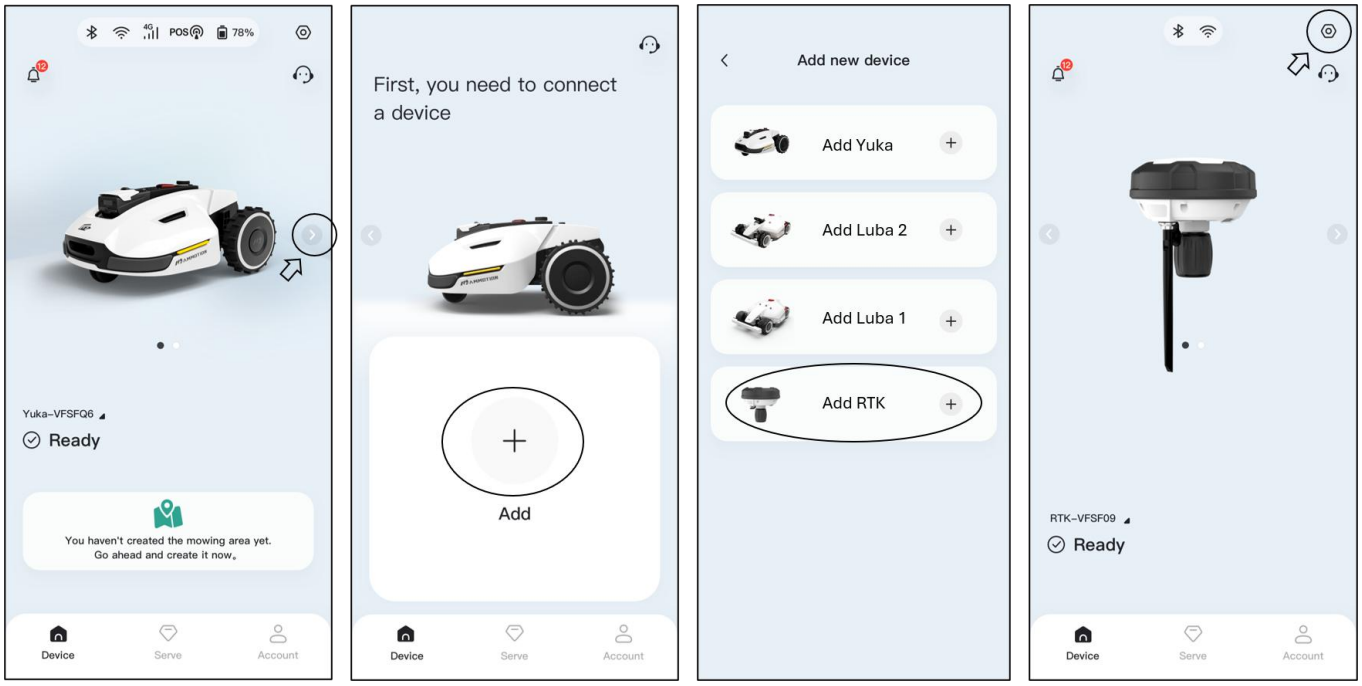
1. Click **+** to add your Yuka.
2. Select **Add Yuka**.
3. Follow the onscreen guidelines to set up Yuka.
4. Long press (5 s) the power button to turn on Yuka.
5. Follow the onscreen instructions to connect Yuka via Bluetooth and set network successfully.



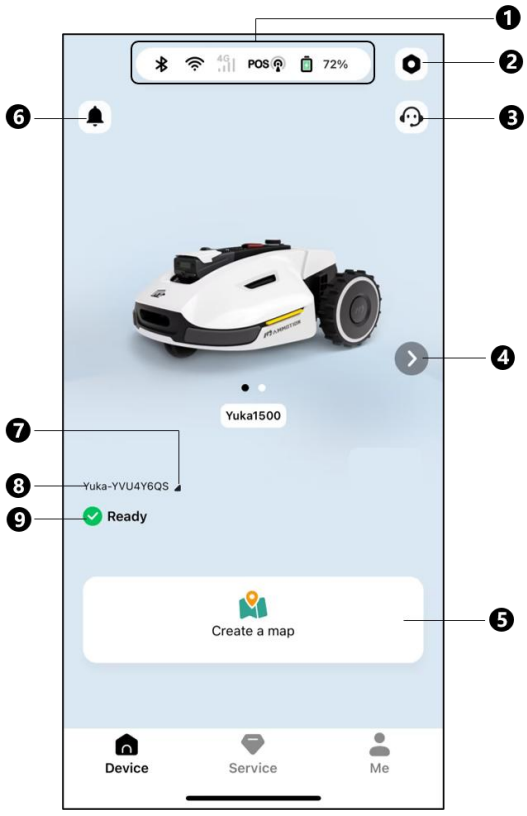
4.4.2 Add RTK

The RTK reference station can also be added to check its data such as the number of satellites received, signals, etc. Click **Add RTK** to continue if needed.

1. Supply power to the RTK reference station and it will turn on automatically.
2. Switch to the last page to add device.
3. Select **Add RTK**.
4. Follow the onscreen instructions to connect RTK refence station via Bluetooth and set network successfully.
5. Go to **Settings** > **Device information** on the RTK reference station page to check its data if necessary.



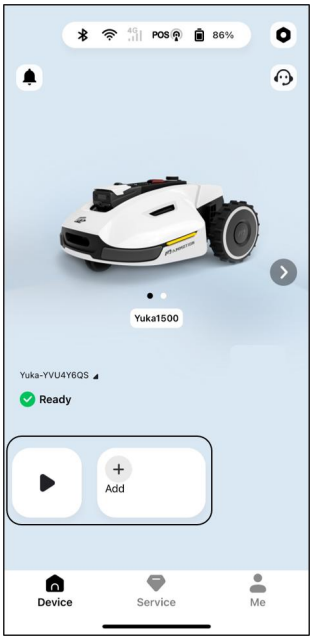
4.5 Main Page Introduction



1. Status bar[1]
2. Settings[2]
3. Customer service[3]
4. Switch device
5. Create
6. Notification[4]
7. Drop-down button
8. Device serial number
9. Device status[5]

NOTE

1. See ***Status Bar*** for further information.
2. See ***Settings*** for further information.
3. See ***Customer service*** for further information.
4. See ***Notification*** for further information.
5. Tap to open the Rename and Device information menu.
6. The *Device status* will vary according to the actual conditions.



After a task area is created, you can start working or set a task schedule.

- Tap ▶ to quickly start mowing.
- Tap ＋ to set a task schedule.

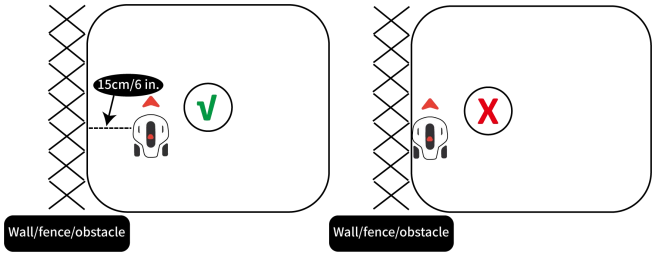
4.6 Map Page Introduction

4.6.1 Create a Map

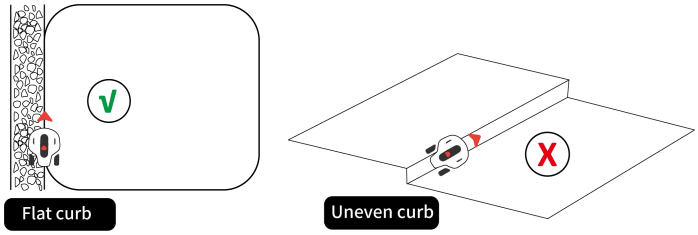
Preparation

Before mapping, it is important to be aware of key considerations.

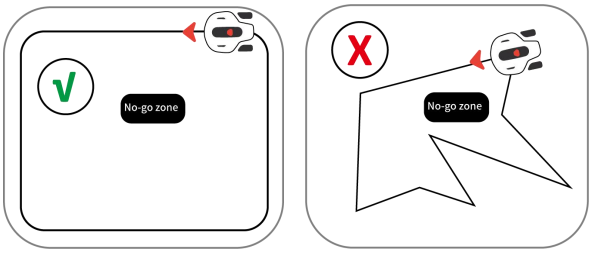
- Remove debris, piles of leaves, toys, wires, stones, and other obstacles from the lawn. Make sure no children or animals are on the lawn.
- Yuka's status shows **Ready** and the positioning status is good.
- We highly recommend you leave 15 cm/6 in distance if you drive Yuka along the edge of a wall/fence/obstacles/ditches.



- The controller should follow Yuka within 3 m/10 ft to ensure a good Bluetooth connection and for safety reasons.
- Do not drive Yuka cross over uneven curbs. However, for improved cutting, guide Yuka along the lawn's boundary on the flat and open curb.

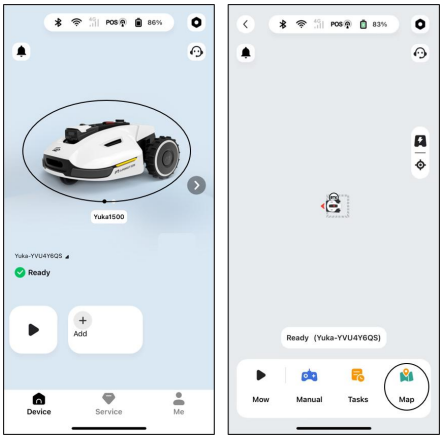


- Please map the task area along the perimeter of the lawn.

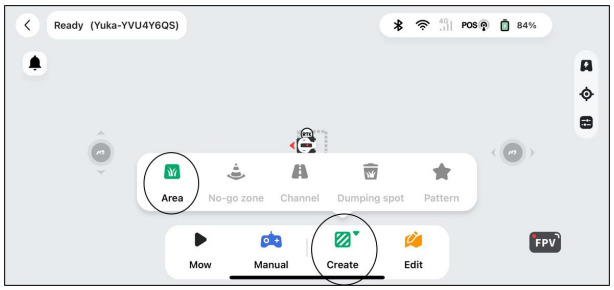


To map your lawn

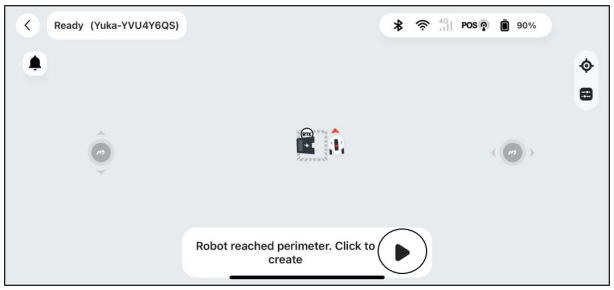
1. Tap the Yuka image to access the Map page in portrait mode.
2. Tap **Map** to access the Map page in landscape mode.



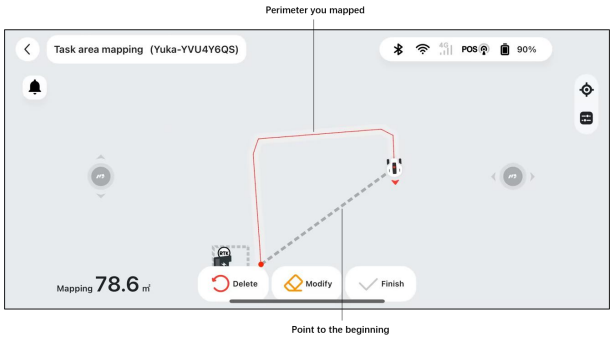
3. Click **Create** > **Area** on the Map page.



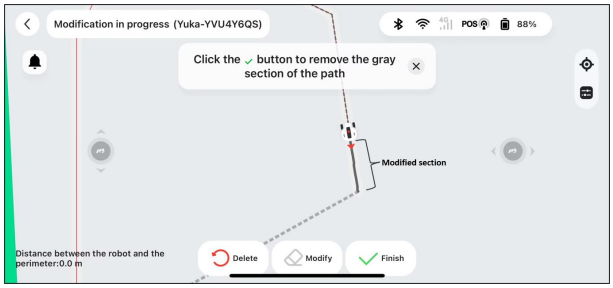
4. Click ▶ to start drawing. Manually control Yuka to draw the perimeter of your lawn.



5. The solid line marks the perimeter that you have set, while the dotted line will help you to get back to the starting point. The lawn map will not be created until you control Yuka to the starting point.

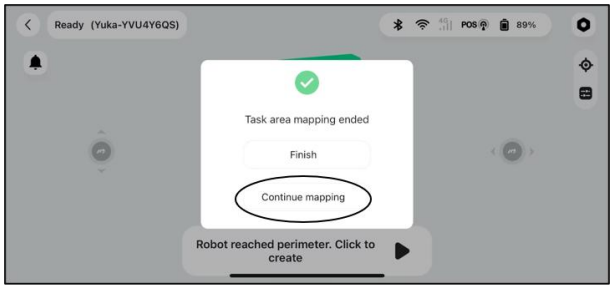


6. Click  to modify the perimeter that has been set if needed. Guide Yuka back along the path to the intended location.

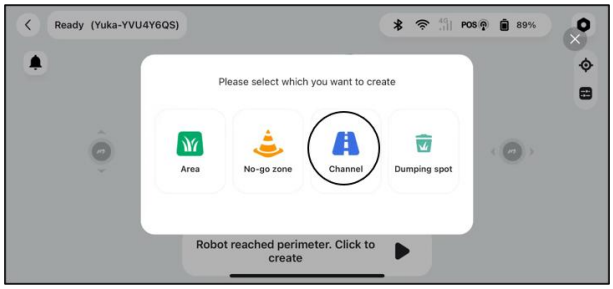


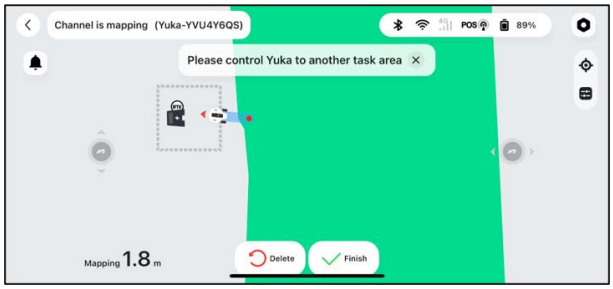
7. Control Yuka to the start point and click to save the setting.

8. Click  to re-draw the perimeter if needed.



9. Select **Continue mapping** in the pop-up then click **Channel** to add a connection path between your lawn and charging station. It is a must to set a channel between them if the charging station is located outside the lawn.





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 Yuka out of the task area or no-go zone first if a new area is created.

To add a no-go zone

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

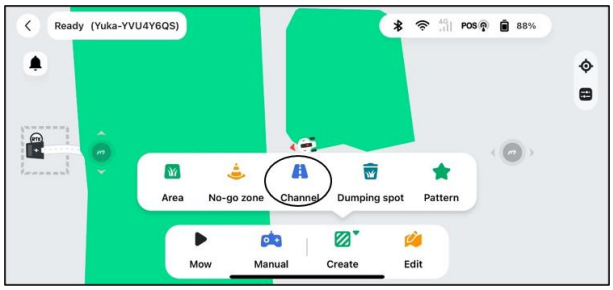


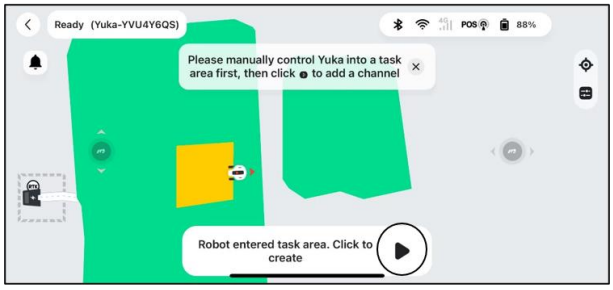
1. Tap **Create** > **No-go zone** on the Map page.
2. Guide Yuka around the perimeter of a no-go zone, then tap to start drawing.
3. Keep controlling Yuka along the perimeter of the no-go zone and back to the start point to complete mapping the no-go zone.
4. Tap Finish to save the setting.

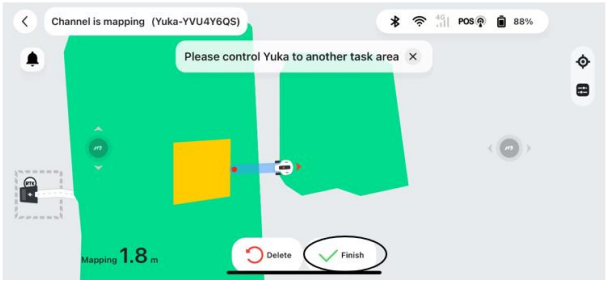
NOTE

- Ensure that Yuka has been transported to the appropriate task location when creating a no-go zone.
- Delete the current no-go zone and create a new one if a change is required. To do so, go to **Edit** > **Delete**.

To add a channel







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

1. Tap **Create** > **Channel** on the map page.
2. Tap ▶ to start and manually control Yuka from a task area to another task area or to the charging station.
3. Tap ✓ Finish to finish mapping the channel.

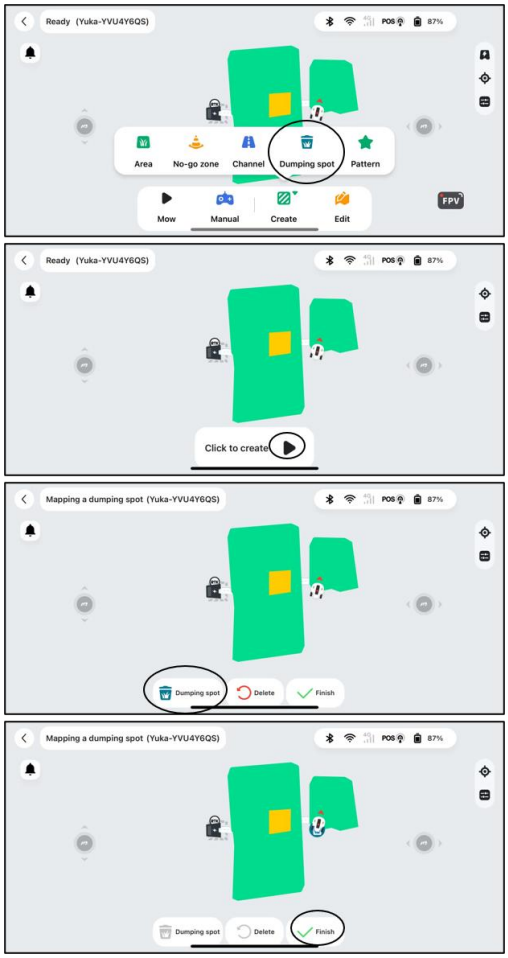
NOTE

- Ensure that Yuka has been transported to the appropriate task location when adding a channel.
- Delete the current channel and create a new one if a change is required. To do so, go to **Edit** > **Delete**.

To add a dumping spot (optional)

After the self-emptying lawn sweeping kit is successfully installed, you are ready to set it up in the Mammotion app.

A dumping spot is where Yuka sends collected grass clippings, leaves, and debris. Once a task area is created, you can define the dumping spot either inside or outside the task area.

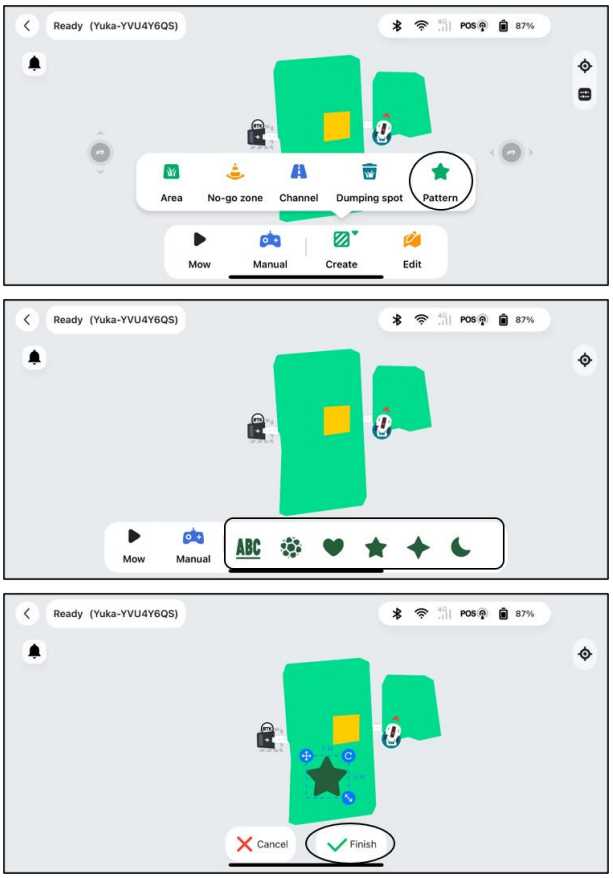


1. Tap **Create** > **Dumping spot** on the Map page.
2. You can place the dumping spot either inside or outside the task area. Manually drive Yuka to the designated spot, then click Dumping spot to mark this spot as the dumping area. You can set multiple dumping spots.
3. Drive Yuka a short distance and tap Finish to finish the mapping if the dumping spot is within the task area.
4. Drive Yuka back to the task area and tap Finish to finalize the mapping process if the dumping spot is located outside the task area.

NOTE

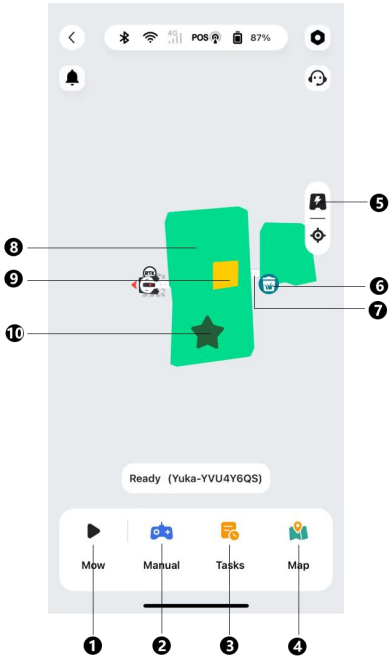
- Ensure that Yuka has been transported to the task area before setting a dumping spot.
- Ensure that there are no objects within a 2-meter diameter of the dumping spot.
- The distance between two dumping spots should not be less than 1m/3 ft.
- If the dumping area is located outside the task area, a channel will be created automatically while manually driving Yuka back to the task area.

To add a pattern



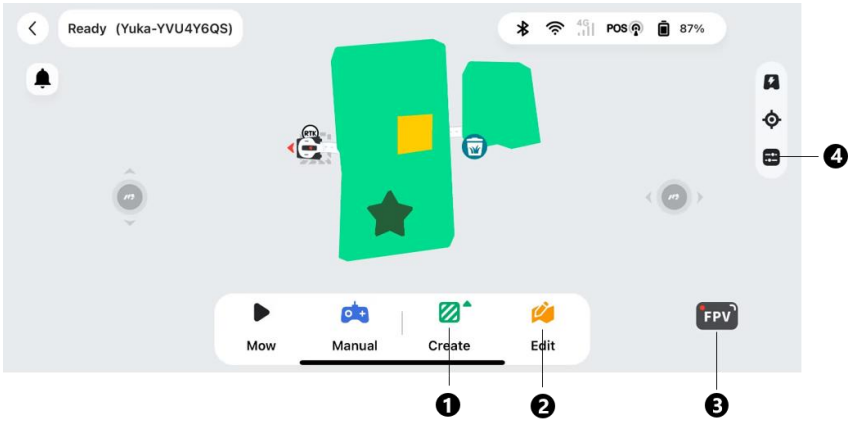
1. Tap **Create** > **Pattern** on the Map page.
2. Choose the pattern that you want to create.
3. Drag and zoom in/out the pattern to adjust its location and size.
4. Tap Finish to finish the setup.

After mapping



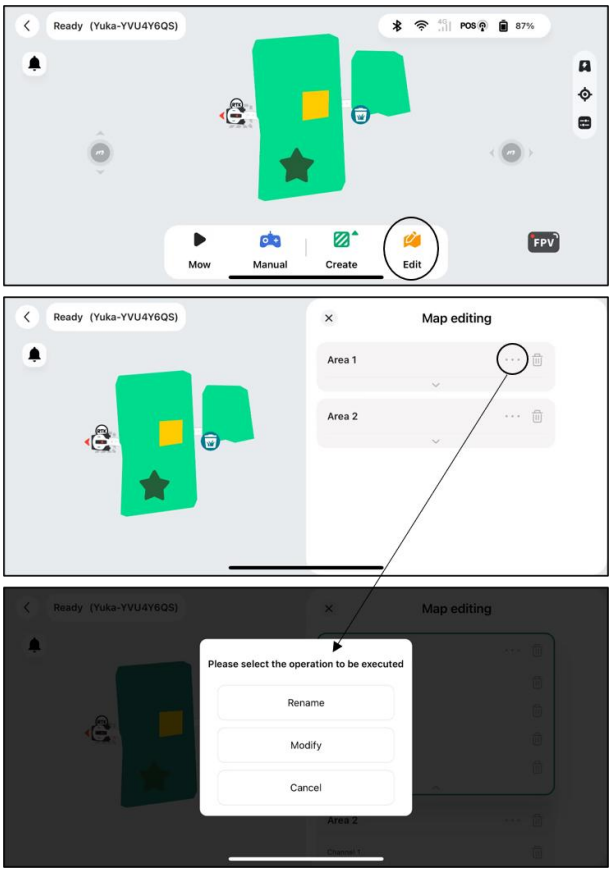
1. Automatic mowing
2. Manual mowing
3. Task schedule
4. Map management
5. Recharge
6. Dumping spot
7. Channel
8. Task area
9. No-go zone
10. Pattern

Map management



1. Tap to create task area/no-go zone/channel/dumping spot/pattern
2. Tap to edit task area/no-go zone/channel/dumping spot/pattern
3. Tap to enter FPV mode
4. Upper limit speed for manual control

To edit or delete the current task area/channel/no-go zone/dumping spot/pattern



- To edit the current task area, tap **Edit** to enter the Map editing page
  - Tap **Modify** to re-draw the perimeter.
  - Tap **Rename** to edit the name of the task area.

- To delete a task area/channel/no-go zone/dumping spot/pattern, tap **Edit** > **Delete** to continue.

Multiple task areas with overlapping

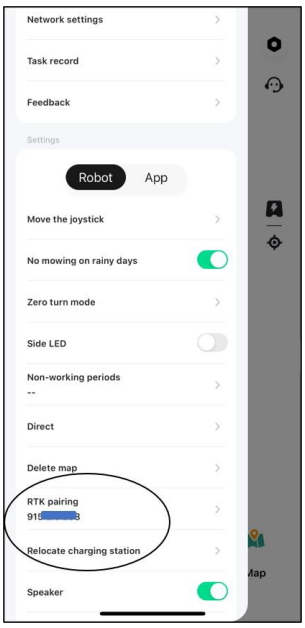
If you have several lawns that overlap, the shared section will be assigned to the task area that was created first. No channel is necessary for two task areas with overlapping sections.

RTK reference station cannot be moved once your lawn mapping is finished

Do not move the RTK reference station after the map is created or the resulting working area will diverge from the designated task area.

In the event of a RTK reference station relocation, you have two options:

- Go to **Settings** > **Robot settings** > **Delete map** to delete the current map, then remap.
- Alternatively, go to **Settings** > **Robot settings** > **Relocate the charging station** to finalize the reconfiguration process.



4.6.2 Mow

Preparation

- Ensure Yuka is in the task area before mowing.
- If any unexpected problems arise, please press the **STOP** button and secure Yuka. The STOP button holds top priority among all commands.
- If the lift sensor is activated, Yuka will come to a halt. Please press the **Grass** button followed by the **START** button to activate Yuka.
- Please mow the task area no more than once a day as doing so may be harmful to your lawn.
- Yuka supports a maximum grass height of 130 mm/5 in for the US version and 120 mm/4.7 in for other versions. It is recommended to adjust the cutting height according to the grass height for each mowing as follows:

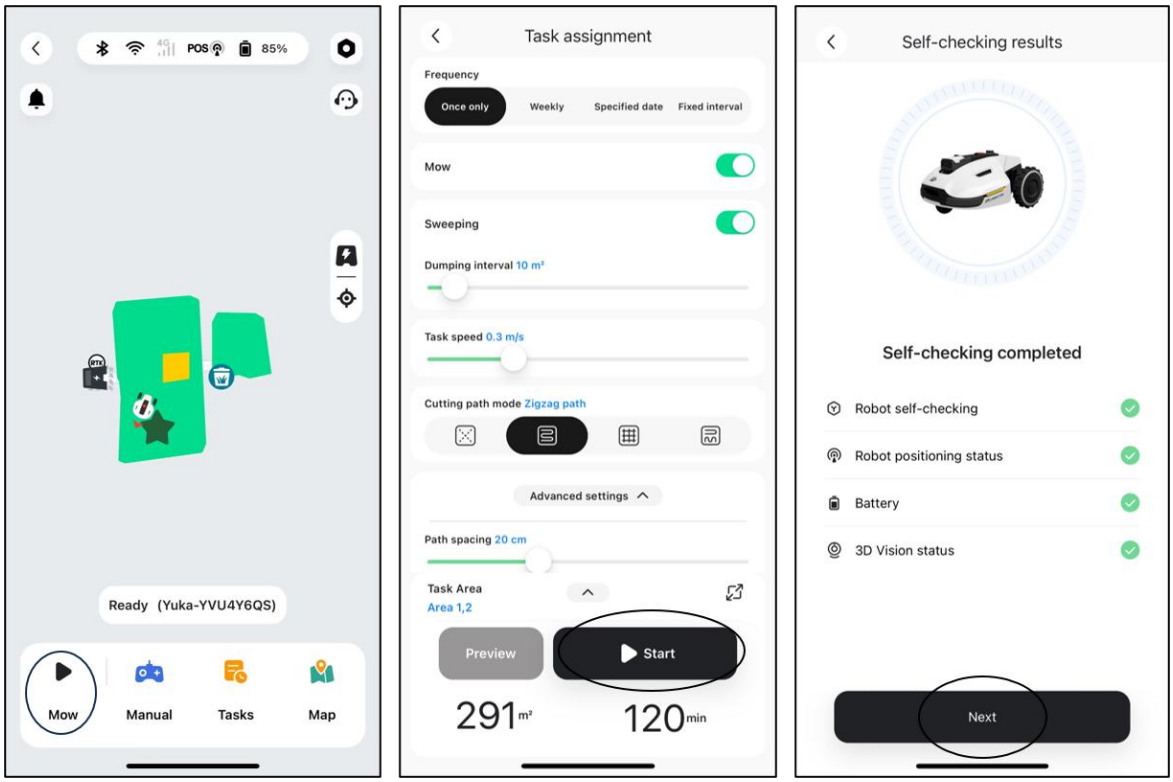
Grass Height	Cutting Height
100-130 mm/4-5 in	Set to 100 mm/4 in
100-120 mm/4-4.7 in	Set to 90 mm/3.5 in
60-100 mm/2.4-4 in	Cut by 20 mm/0.8 in
20-60 mm/0.8-2.4 in	Cut by 10 mm/0.4 in

IMPORTANT

- For initial use of Yuka, we strongly advise setting the cutting height to above 50 mm/2 in.
- **Adjust the cutting height by manually pressing down and turning the PUSH button on Yuka before mowing.**

To start mowing

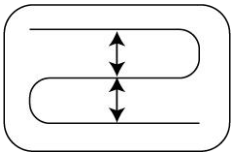
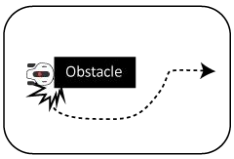
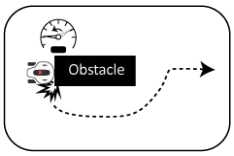
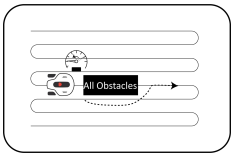
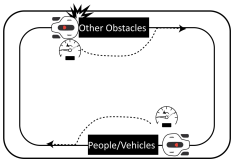
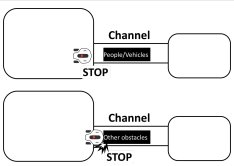
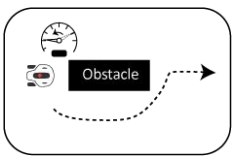
1. Select **Mow** to start mowing settings.
2. Follow the onscreen information to finish the settings and start mowing.

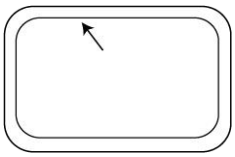
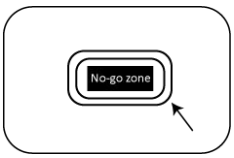
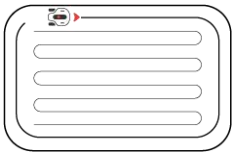
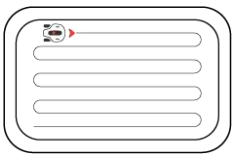
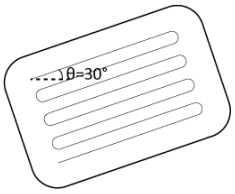
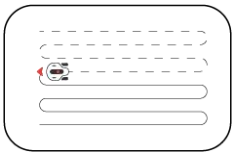


Cutting path mode

	Perimeter laps only	Yuka will mow/sweep the perimeter grass only.
	Zigzag path	Yuka will work in straight rows.
	Chess board path	Yuka will work in straight rows both horizontally and vertically.
	Adaptive zigzag path	The task area will be divided into segments for efficient working.

Task settings

<table>
<tr><td>Mow</td><td colspan="2">Toggle the button to on/off to enable/disable the mowing function.</td><td>/</td></tr>
<tr><td>Sweeping</td><td colspan="2">Toggle the button to on/off to enable/disable the sweeping function.</td><td>/</td></tr>
<tr><td>Dumping interval</td><td colspan="2">Yuka will dump once based on the setting.</td><td>/</td></tr>
<tr><td>Task speed</td><td colspan="2">The speed of Yuka when mowing.</td><td>/</td></tr>
<tr><td>Path spacing (cm)</td><td colspan="2">The spacing between 2 mowing paths.</td><td></td></tr>
<tr><td rowspan="5">Obstacle detecting mode</td><td>Direct touch</td><td>Bypass the obstacle after a collision of front bumper.</td><td>
</td></tr>
<tr><td>Slow touch</td><td>Yuka will slow down after detecting obstacles and bypass them after a collision of front bumper.</td><td>
</td></tr>
<tr><td rowspan="3">Less touch</td><td>Zigzag path: Yuka will slow down and bypass the obstacles after detecting them.</td><td>
</td></tr>
<tr><td>Perimeter: Yuka will slow down and bypass people and vehicles after detection; For other obstacles, Luba will perform Slow touch strategy.</td><td>
</td></tr>
<tr><td>Channel: Yuka will stop after detecting people or vehicles; For other obstacles, Yuka will stop after collision of front bumper.</td><td>
</td></tr>
<tr><td>No touch</td><td>Yuka will slow down and bypass the obstacles after detecting them.</td><td>
</td></tr>
</table>

Perimeter mowing laps	The mowing circles at the perimeter. *In the perimeter laps only mode, the perimeter mowing laps cannot be set 0.	
No-go zone mowing laps	The grass-cutting circles surrounding the boundary of the restricted area.	
Path order	**Perimeter first**: Yuka starts working from perimeter.	
	Zigzag first: Yuka starts working from zigzag path. *Available for zigzag path and chess board path modes.	
Cutting path angle (°)	The direction of the cutting path can be changed. *Available for zigzag path and chess board path modes.	E.g. set cutting path angle 30° 
Start progress	Yuka will start working from the percentage you set.	E.g. set 50% for start progress 

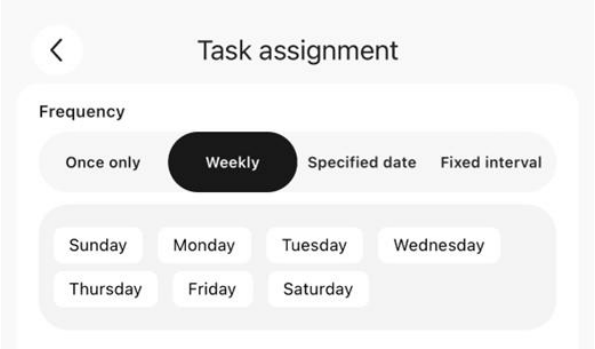
When Yuka enters an area where RTK signals are weak while mowing

If Yuka enters an area where RTK signals are weak while mowing, the multi-sensor fusion positioning system will assist Yuka in continuing to operate through the vision module. The vision navigation can last for 50 meters/164 feet. Yuka should return to an area covered by RTK signals before the vision navigation reaches its limit, otherwise, Yuka will come to a stop.

4.6.3 Task Schedule

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

- **Once only** — Yuka will commence work promptly upon configuration.
- **Weekly** — Yuka will repeat the task every week based on your preferences.
- **Specified date** — Yuka is scheduled to commence work on the specified date.
- **Fixed interval** — specify non-working days. For example, if you input 3 days, Yuka will operate once every 3 days as per your settings.



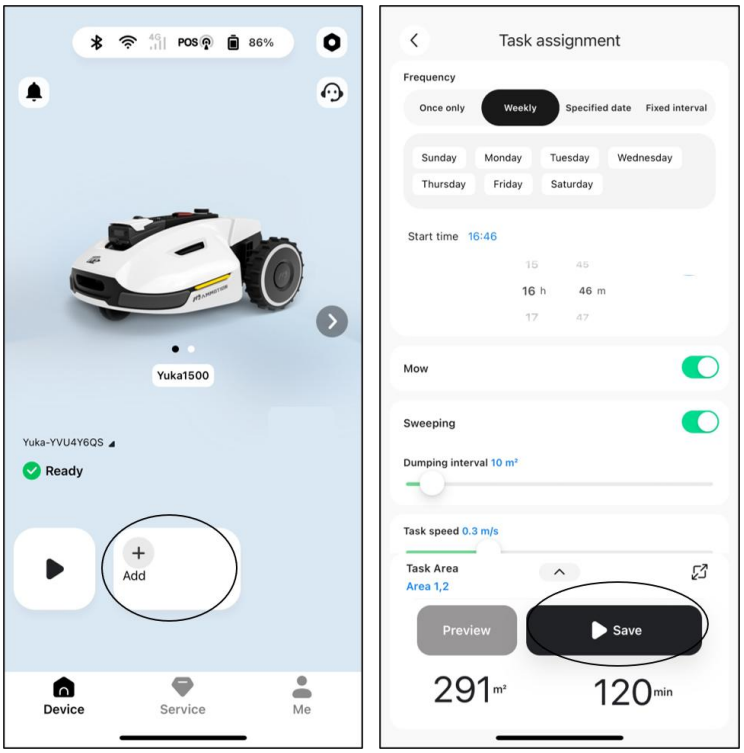
To set a schedule

NOTE

- The task schedule adding is temporarily disabled when Yuka is working.
- A schedule can be set after a task area has been created.

1. Click **+** on the main page.

2. Follow the onscreen information to set time, frequency, work area, and advanced settings. Tap **Start/Save** to complete the setup. Or click **Preview** to preview the results if needed.



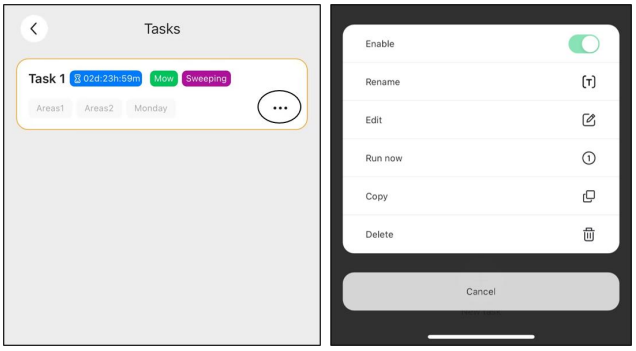
NOTE

- Toggle the **Mow**/**Sweeping** button to off if you want to perform mowing/sweeping only.
- The task schedule adding is temporarily disabled when Yuka is working.
- A schedule can be set after a task area has been created.

To change/delete a schedule

Click ••• 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.



4.6.4 Manual operation



1. Automatic mowing
2. Map management
3. Start manual mowing
4. Switch to FPV mode

Manual mowing

To ensure your safety, please use this function with care and observe the following:

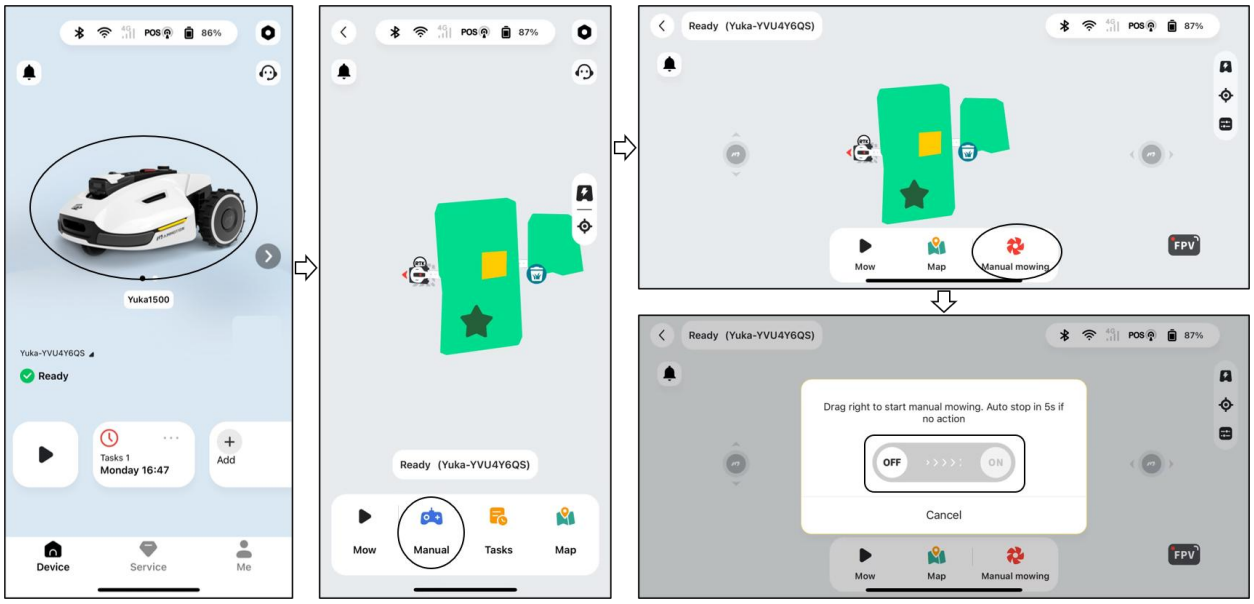
- Minors are not permitted to use this function;
- Please always supervise your children, pets and important belongings to prevent accidents;
- Take extra care when using the manual lawn mower function to avoid injury.

To activate Manual mowing

1. Tap the Yuka 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 disk.
4. Maneuver forwards/backwards or turn left/right to start working.

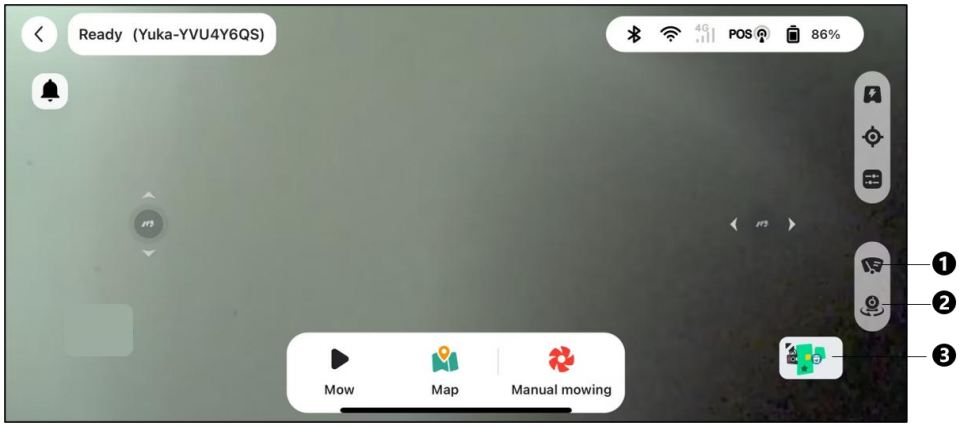
NOTE

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



FPV mode

This mode allows Yuka to activate the camera.



1. Clean the vision camera
2. Switch camera
3. Switch to map page

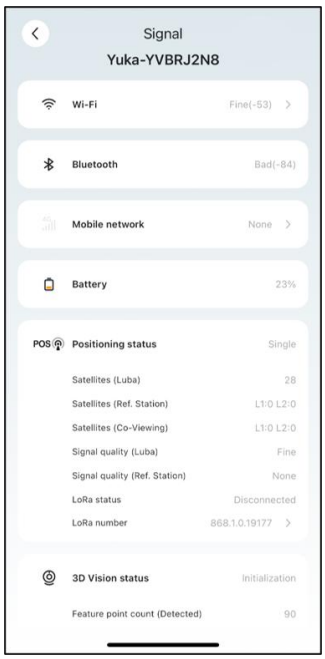
4.6.5 Status Bar



From left to the right:

- Bluetooth
- Yuka's Wi-Fi
- Cellular strength
- Positioning status
- Yuka battery status

Click the status bar to show the following details.



- **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 (Yuka)** — refers to the total number of satellites received by Yuka.

- **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 Yuka 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 (Yuka)** — refers to satellite signal strength of Yuka.
- **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 Yuka 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 Yuka and the RTK reference station.
  - ✧ **Weak or Bad** — indicates that the Yuka 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 Yuka. 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 Yuka'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 Yuka to see if it can be fixed.
- ✓ If you replace the RTK reference station, pair the new station with Yuka on the Mammotion app. For more details, visit https://mammotion3006.zendesk.com/hc/en-us/articles/16503733641367

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

Measures:

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

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

Measures:

- ✓ Check if Yuka's current location is fully or partially covered.
- ✓ If the Yuka is positioned on the charging station, relocate it to a less obstructed area.
- ✓ If the Yuka is located on the perimeter/corner of the task area, adjust the boundary/corner to ensure it is not covered by obstacles.
- ✓ If Yuka 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 (Yuka): 0
- Satellite (Co-viewing): L1:0, L2:0
- Positioning status: None

Measures:

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

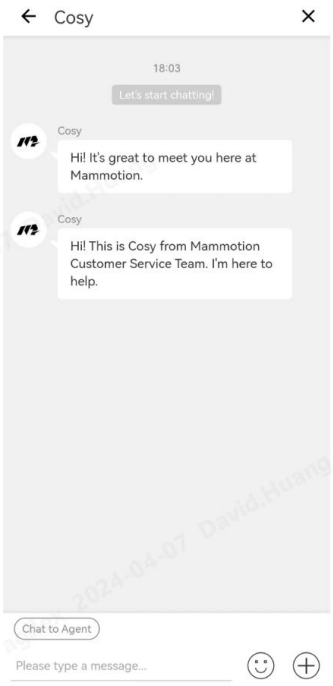
- Satellite (Ref. Station): L1:0, L2:0
- Satellite (Co-viewing): L1:0; L2:0
- Positioning status: Float
- Signal quality (Ref. Station): None
- Connection to Ref. Station: None

Measures:

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

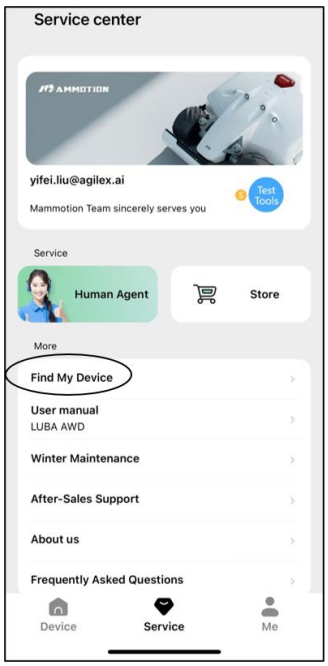
4.6.6 Customer service

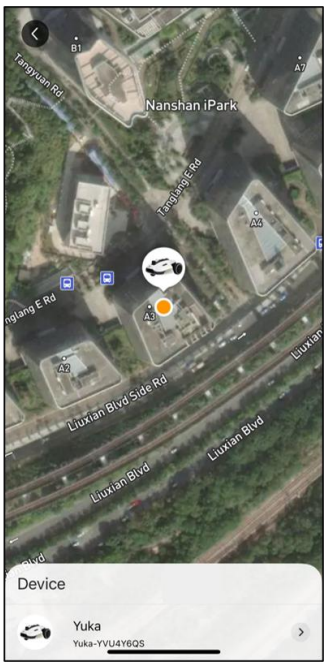
The Customer Service provides an internet-based chat service for any inquiries you may have and receive prompt responses from our technical support team. Simply click on **Chat to Agent** to start a conversation with one of our representatives.



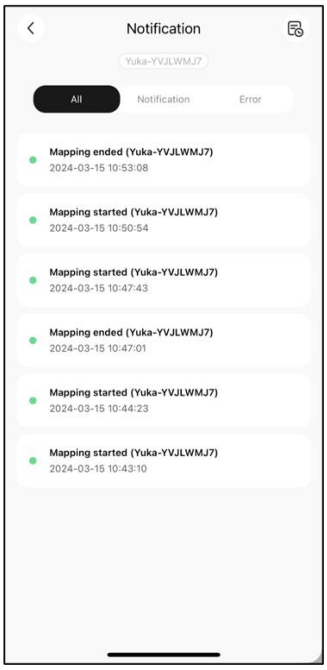
4.6.7 Track your devices

In the case that your Mammotion robot or RTK reference station is missing, go to **Service > Find my Device** to track your equipment.





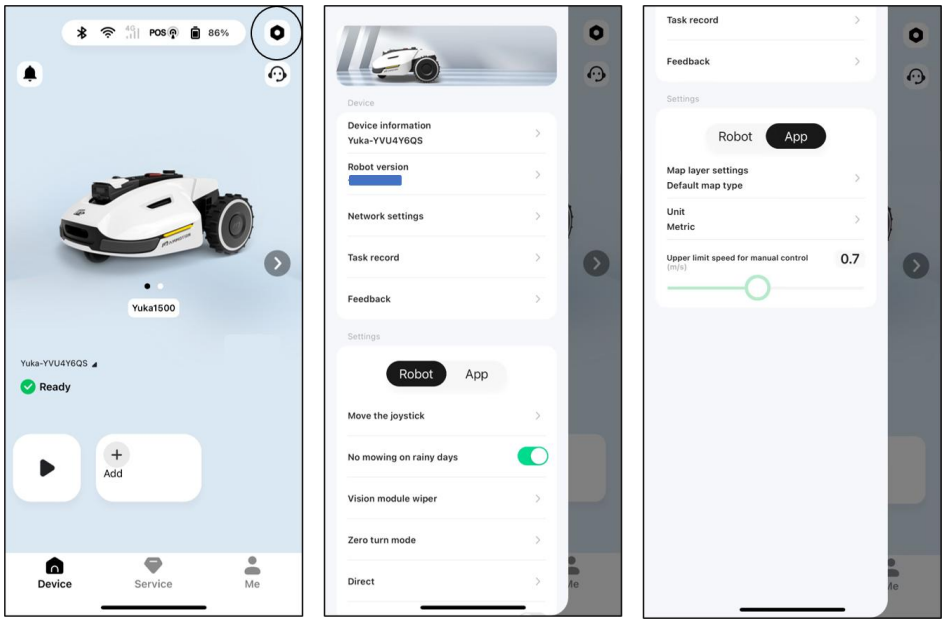
4.6.8 Notification



Information regarding the status, any errors, etc. will be displayed in the notification section. Click in the upper-right corner to check the historical records.

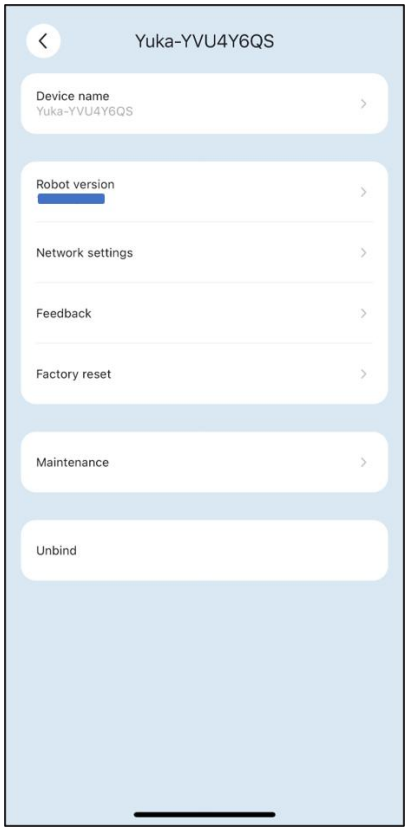
4.6.9 Settings

Click to enter the Settings page.



Device settings

- **Device information**
  - ✧ **Device name** — change the name of Yuka.
  - ✧ **Robot version** — check the firmware version of Yuka and upgrade it if any.
  - ✧ **Network settings** — set Yuka network.
  - ✧ **Feedback** — 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 of total mileage, mowing duration, battery cycle, and activation time.
  - ✧ **Unbind —** tap to unbind the current Yuka. A Yuka can only be associated with one account and cannot be operated until it is bound. If you wish to transfer ownership of a Yuka, you must unbind it before proceeding.

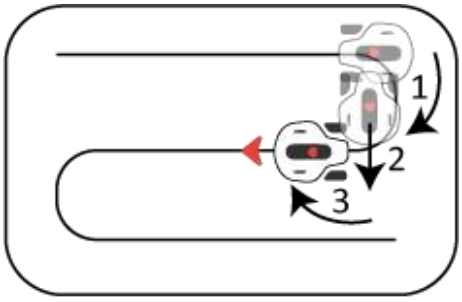


- **Robot version —** check the firmware version of Yuka and upgrade it if any.
- **Network settings** — set Yuka network.
- **Task record** — shows the historical tasks which were completed and uncompleted.
- **Feedback** — tap to send your issues and logs to Mammotion to target. You can attach a maximum of 5 images and 1 video.

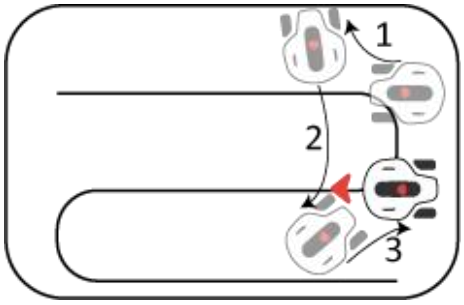
Robot settings

- ✧ **Manual operation** — tap to enter manual mowing mode. See ***Manual operation*** for details.
- ✧ **No mowing on rainy days** — when you enable this function, the Yuka will not mow if it rains.
- ✧ **Vision module wiper** — click to clean the vision module.
- ✧ **Turnaround mode —** Zero turn and Multi-point turn.

Zero turn

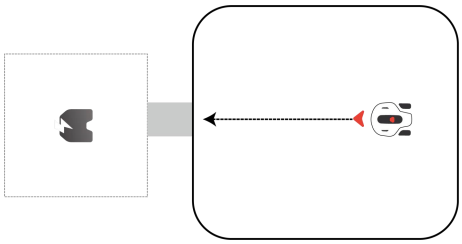


Multi-point turn

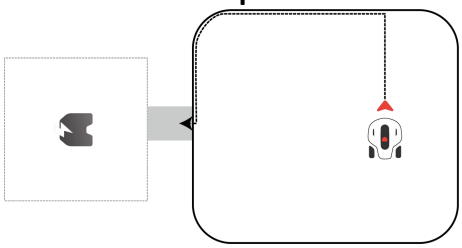


- ✧ **Side LED** — click to turn on/off the side indicator of the Yuka.
- ✧ **Delete map** — click to delete the task area you create.
- ✧ **Recharge route** — provides two ways to recharge: **Direct** or **Follow the perimeter**; **Direct** means that the Yuka takes the shortest route to return to the charging station; **Follow the perimeter** means that the Yuka drives down the border to the charging station.

Direct



Follow the perimeter

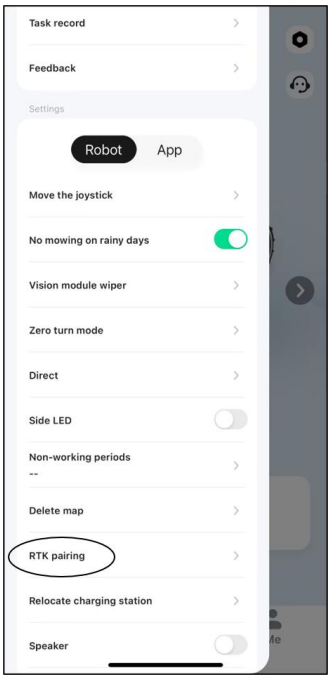


- ✧ **Non-working periods** — tap to set non-working period.
- ✧ **RTK paring** — you can select to reset or change the RTK paring code. See ***To reset/change the RTK pairing code*** for additional information.
- ✧ **Relocate charging station** — tap to relocate the charging station. See ***To relocate the charging station*** for additional information.
- ✧ **Speaker** — tap to turn on/off the voice prompt.

To reset/change the RTK pairing code



The first RTK pairing code is read from the Yuka. To link a different RTK reference station, access **Settings** ⬢, go to **RTK pairing**, select **Change**, then enter the LoRa number found on the RTK reference station nameplate 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.



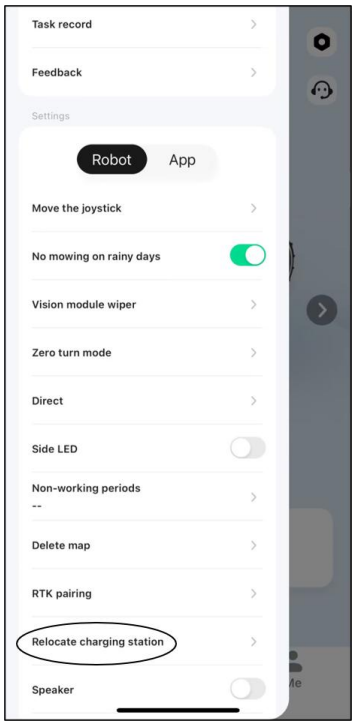
To relocate the charging station

NOTE

Please relocate the charging station while Yuka 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 recharge process consistently fails.



1. Install the RTK reference station/charging station in a proper place.
2. Place Yuka 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.

4.6.10 Recharge

NOTE

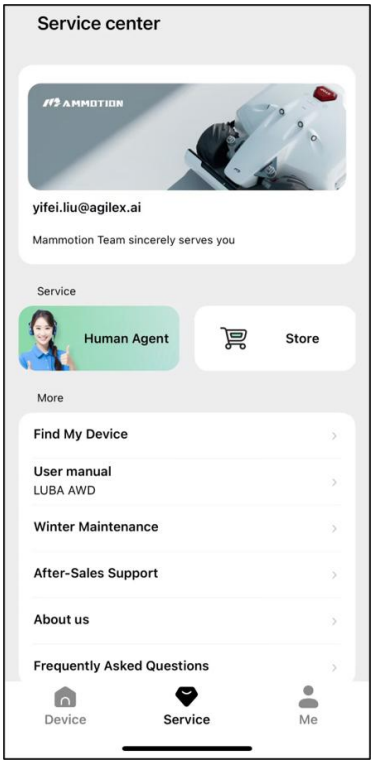
When performing recharge function, Yuka must be in the task area.

The Recharge button allows Yuka to return to charge.

To perform recharge

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

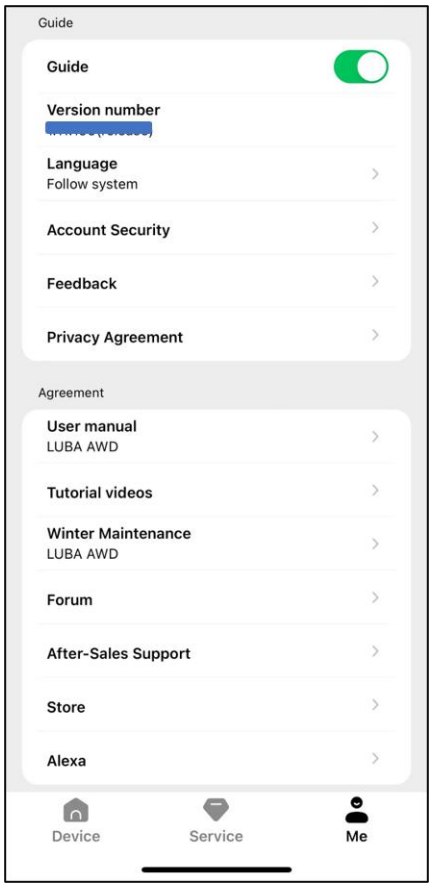
4.7 Service



- **Find My Device** — tap to track your missing device.
- **User Manual** — tap to access the user manual.
- **Winter Maintenance** — tap to access the winter maintenance details.
- **After-sales Support** — tap to submit your request.
- **About Us** — tap to access more information about Mammotion.
- **Frequently Asked Questions** — shows common questions and answers.

4.8 Me

- **Guide** — toggle to on/off to show/hide guidelines.
- **Version Number** — shows the app version.
- **Language** — switch language.
- **Account Security** — shows the account, reset password or log out the current account.
- **Feedback** — submit your issues and logs to Mammotion to target.
- **Privacy Agreement** — tap to access the full details.
- **User Manual** — tap to access the user manual.
- **Tutorial Videos** — tap to access installation and operation videos.
- **Winter Maintenance** — tap to access winter maintenance tips.
- **Forum** — tap to go to forums.
- **After-sales Support** — tap to submit your request.
- **Store —** tap to go to Mammotion mall.
- **Alexa —** tap to link your Alexa account.



4.8.1 To 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 Yuka are linked to the same Mammotion account, the voice command will be directed to the most recently bound Yuka by default.

1. Go to the **Me** page and tap on **Alexa**.
2. Select **Yuka** to proceed.
3. Click on **Link Alexa** to go to the authorization page.
4. Finally, click on **Link** to complete the operation.



5 Maintenance

5.1 Maintenance for Motors and Cutting Blades

CAUTION

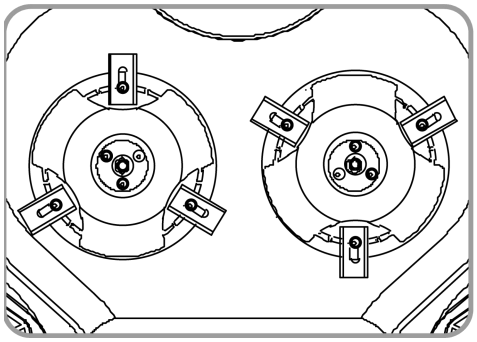
1. Wear protective gloves when you inspect, clean or replace the cutting blade.
2. Only use the right type of screws and original blades as approved by Mammotion.
3. All the cutting blades and their screws should be replaced at the same time for a safe cutting system.
4. DO NOT reuse the screws, which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

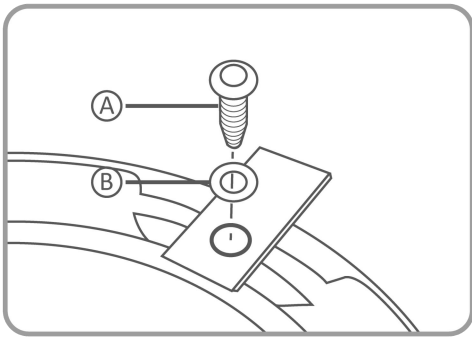
- After mowing task is finished, turn off Yuka and flip it over on a relatively soft surface. Then use a brush or faucet to clean the clippings, twigs or leaves from the bottom. Make sure the cutting blade discs are clean and will not get struck.
- If Yuka is stored for a long time, it will be better 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

Secure the blade with the included washer (B) and screw (A).

Tool needed: 2.5mm/0.1 in Allen Key





6 Product Specifications

6.1 Technical Specifications

Table 6- 1 Technical Specifications

Parameters	YUKA	
	1500	**2000**
Max. Mowing Size	1,500 m^2/0.37 acres	2,000 m^2/ 0.5 acres
In-App Area Storage Capacity	1,800 m^2/0.44 acres	2,400 m^2/ 0.6 acres
Max. multi-zone Management	10	20
Engine	Powerful in-hub motor	
Max. Climbing Ability	Without sweeper: 45% (24°) With sweeper: 18% (10°)	
Max. Slope at the Edge	Without sweeper: 25% (14°)	
Vertical Obstacle Passing Ability	50 mm/2 in.	
Cutting Width	32 cm/12.6 in.	
Cutting Height Adjustment	For US: 30-100 mm/1.18-3.94 in. For EU/UK/AU: 20-90 mm/0.78-3.54 in.	
Charging Time	Single battery: 150 min Dual batteries: 300 min	
Mowing Time per Charge	150 min (dual batteries and mowing only)	
Auto-recharge	YES	
Positioning & Navigation	3D Vision & RTK	
Obstacle Avoidance	3D Vision & Physical Bumper	
Voice Control	Alexa & Google Assistant	

Parameters	YUKA	
	1500	2000
Vision Monitoring	YES	
Connectivity	4G & Bluetooth & Wi-Fi	
Noise Level	60 dB	
A weighted sound power	L_{WA}=66dB, K_{WA}=3dB	
A weighted sound pressure	L_{PA}=58dB, K_{PA}=3dB	
Waterproof	YUKA Robot: IPX6 Charging Station: IPX6 RTK Station: IPX7	
Rain Detection	YES	
Weight	15.6 kg/34.4 lbs.	
Dimensions (L x W x H)	YUKA robot: 648 x 519 x 330 mm/25.5 x 20.4 x 13 in.	
Warranty	2 years	

Table 6- 2 Sweeper Specifications

Parameters	Specifications
Dimensions (L x W x H)	650 x 420 x 390 mm/25.6 x 16.5 x 15.4 in.
Container Capacity	22 Liters
Sweeper Width	250 mm/9.8 in.
Operating Temperature	0-40°C (32-104°F)
Storage Temperature	-10-50°C (14-122°F)

Table 6- 3 Battery Specifications

Parameters	YUKA	
	1500	**2000**
Battery charger	TS-A090-3003001 Input: 100-240V~, 50/60Hz, 2.0A Output: 30Vdc, 3.0A, 90W	
Battery pack	21.6Vdc, 4.5Ah	
Battery capacity	4.5Ah	
Temperature range for charging is 4-45 °C / 39-113 °F. Too high temperatures might cause damage to the product.		
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- 4 Yuka's Indicator Description

Indicator	Status	Description
Side Indicator	Constant green	● System initialization ● Manual control mode ● Automatic work mode ● Charging finished (Yuka still on the charging station)
	Breathing green	● OTA upgrade in progress
	Slow flash green	● Charging in progress
	Slow flash red	● Emergency stop activated
	Fast flash red	● Low battery ● Bumper triggered ● Yuka got stuck ● RTK positioning failed ● Yuka has been lifted/tilted/flipped over
	Very fast flash red	● System upgrade failed ● Systematic error
	Off	● Pause ● Standby ● Sleeping
Vision Module Indicator	Constant green	RTK positioning is working well.
	Flash green	The RTK positioning has failed, but the vision positioning is working well.
	Constant red	Both RTK and vision positioning have failed.
	Flash blue	Yuka's firmware is being upgrading.
	Contant blue	Yuka powered on successfully.

Table 6- 5 Charging Station's Indicator Description

Indicator	Status	Description
Charging Station Indicator	Flash green	Yuka is being charged.
	Constant green	Yuka is fully charged or uncharged.
	Constant red	An error has occurred.

Table 6- 6 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 and the reference station works well.
	Off	The initialization is finished and the local time is between 18:00 and 8:00.
	Constant red	An error has occurred.
	Slow flash green	Low power consumption.

Table 6- 7 Solar Panel's Indicator Description

Indicator	Status	Description
Solar Panel Indicator	Constant red	An error has occurred.
	Constant green	The battery level is over 50%.
	Flash green	The battery level is less than 50% but over 20%.
	Flash red	The battery level is less than 20%.

6.3 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 disk motor is overheating.	The machine will return to normal once the motor has cooled down. This process may take several minutes.
318	The sensor for the left cutting disk motor has failed.	Restart Yuka. If the issue persists after a few times of restart, contact the after-sale team.
323	The right cutting disk motor is overloaded.	Check if the cutting disk is jammed and clear it if necessary. Alternatively, raise the cutting height.
325	The right cutting disk motor fails to start.	Check whether the cutting disk is jammed. If not, restart Yuka. If the issue persists after a few times of restart, contact the after-sale team.
326	The right cutting disk motor is overheating.	Restart Yuka. If the issue persists after a few times of restart, contact the after-sale team.
328	The sensor for the right cutting disk motor has failed.	Restart Yuka. If the issue persists after a few times of restart, contact the after-sale team.
1005	Low battery	Yuka will continue working after the battery is charged to 80%.
1300	The positioning status is poor.	Await Yuka's repositioning.
1301	The charging station has been moved.	Relocate the charging station.
1420	Timeout occurred while retrieving wheel speed data.	Restart Yuka. If the issue persists, contact the after-sale team.

Fault Codes	Causes	Solutions
2713	Charging has been stopped due to low battery voltage.	Restart Yuka. 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 Yuka.

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
Battery	2 Years
Wheel Hub Motor	
GPS Kit	
Vision Module	
PCBA	
RTK Reference Station	
Charging Station	
Sweeping Brush Module	
Decoration Parts	Consumable Parts No warranty
Cutting Blade	
Tire	
Cutting Disk	
Grass Collection Bag	
Rotating Roller Brush	

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 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.



SHENZHEN MAMMOTION INNOVATION CO., LTD

www.mammotion.com

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Instalace a servis: robotisekacky.cz/instalace-sekacek

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