

RoboUP



EN: Access the latest User Manual (PDF) in multiple languages by scanning the QR code.
DE: Zugriff auf das neueste Benutzerhandbuch (PDF) in mehreren Sprachen durch Scannen des QR-Codes.
FR: Accédez au dernier manuel d'utilisation (PDF) dans plusieurs langues en scannant le code QR.
IT: Accedi all'ultimo Manuale utente (PDF) in varie lingue scansionando il codice QR.
SE: Få åtkomst till den senaste användarhandboken (PDF) på flera språk genom att skanna QR-koden.
NO: Få tilgang til den nyeste brukermanualen (PDF) på flere språk ved å skanne QR-koden.
FI: Pääse viimeisimpään käyttöohjeeseen (PDF) useilla kielillä skannaamalla QR-koodi.
DK: Få adgang til den seneste brugervejledning (PDF) på flere sprog ved at scanne QR-koden.



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Boundary Wire-Free **Robotic Lawn Mower** User Manual

Please go through the user manual in detail before use to understand all instructions and safety guidelines.

Version 1.2

CONTENT

Welcome

Thank you for choosing RoboUP as your garden lawn care mower. This new generation of robot mower will redefine garden lawn mowing and brings you a new life.

Using RoboUP®, you can say goodbye to boundary wire now! With the assistance of powerful DEPS system, the RoboUP® mower is capable of handling different complex terrains without boundary wire. The installation process is quite simple. The mower creates automatically a map of your lawn and starts mowing.

Using RoboUP®, you will have no more worries about the safety risk of cutting your lawn with a robotic lawn mower! Thanks to AI vision technology, RoboUP® mower can perceive obstacles with its smart eyes and avoid touching living things to ensure safety.

What's more? Through the feature-rich APP, you can remotely control the RoboUP® mower anytime, anywhere. Now, follow up the User Manual to make the mower do the nice job and start enjoying your new life with more leisure time.

Your RoboUP® Team

IMPORTANT!

Please go through the user manual in detail before use to understand all instructions and safety guidelines.

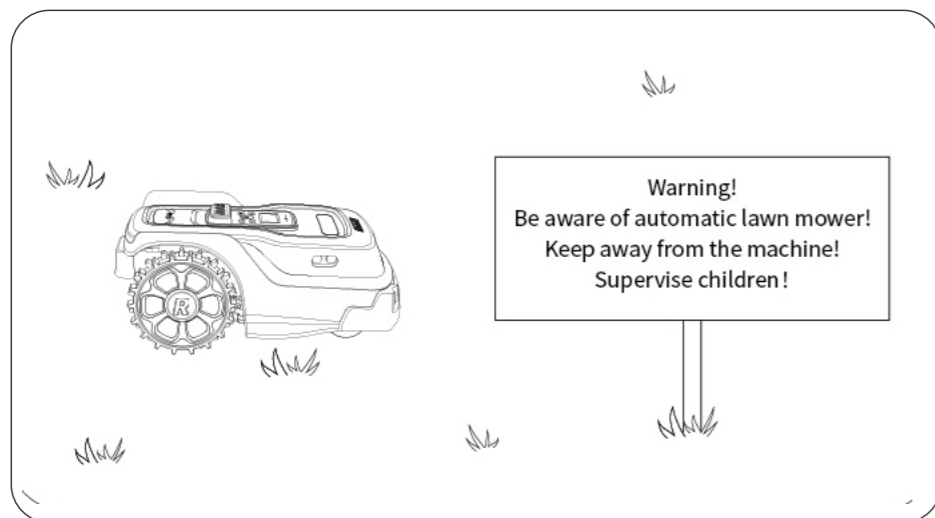
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1 Safety

1.1 General Safety Instructions

⚠ Warning: Read below warnings before using the mower!

- Read this user manual carefully and make sure you understand the instructions before you use the mower. Keep manual for future reference.
- Children should be supervised to ensure that they do not play with the mower.
- Never allow children, persons with physical, sensory or mental limitations or a lack of experience and/or knowledge and/or people unfamiliar with these instructions to use the mower. Local regulations may restrict the age of the operator.
- The mower must only be used with original equipment/accessories.
- Warning signs must be put around the work area of the product if it operates in public areas. The signs shall have the following text:
"Warning! Be aware of automatic lawn mower! Keep away from the machine! Supervise children!"



- Do not touch moving hazardous parts, such as the blade disc, before it has come to a complete stop.
- If an injury or accident occurs, get medical aid.
- If there is a risk of thunderstorm, it is recommended that the power supply and all the wires to the charging station are disconnected to avoid the risk of damaging electrical components. Re-connect power supply and all wires again if risk of thunderstorm is gone. It is important that all wires are connected correctly.
- The operator is responsible for accidents or dangers that occurs to other persons or property.
- The mower must only be operated, maintained and repaired by persons that are fully familiar with its special characteristics and safety regulations.
- It is not permitted to modify the original design of the mower. Any modifications are made at your own risk and manufacturer's warranty will expire immediately in due course.
- Obey national regulations about electrical safety.
- Operation and storage temperature range is -10...+50°C / 14...122°F. Charging temperature is 0...+50°C / 32...122°F. Over-temperatures can cause damage to the mower.
- Please do not run when operating the product manually using the RoboUP® App. Always walk, ensure stability on slopes, and maintain balance at all times.

1.2 Safety Instructions for Installation

- Do not install charging station, including any accessory, at a location that is closer than 60cm / 24in to any combustible material. In case of malfunction, over-heating of charging station and power supply may occur and create a potential risk of fire.
- Never connect the power supply to a mains AC outlet if the plug or cord is damaged. Worn or damaged cord increases the risk of electric shock.
- Do not mount power supply at a location with a risk of flooding or submersion into water. Do not put the power supply on the ground.

- Do not encapsulate the power supply. Condensed water can harm the power supply and increase the risk of electrical shock. Applicable to USA/Canada and when power supply is installed outdoors: Risk of Electric Shock! Install only to a covered Class A GFCI receptacle (RCD) that has an enclosure that is weatherproof with the attachment plug cap inserted or removed.
- Do not install power cords or extension cords in the product's cutting area. Install the power cord according to these instructions:
- Do not install the Charging Station in places where people might trip over.
- Do not connect damaged cables or plugs, and do not touch damaged cables. If a cable is damaged during operation, unplug it from the power outlet. Cable wear or damage increases the risk of electric shock. Damaged cables must be replaced by qualified personnel.

1.3 Safety Instructions for Operation

- Keep your hands and feet away from the rotating disc blades. Never put your hands or feet near or below the mower when it is set to ON.
- Stop or turn off the mower when persons, especially children or animals are in the work area. It is highly recommended to run the mower only when the work area is clear. Though the mower has AI camera to recognize Wildlife and other living animals at night, it is still recommended to set a daytime mowing schedule to protect wildlife.
- Check that there are no stones, branches, tools, toys, water pipes, small grill or other objects on the lawn that can damage the mower's blades or get damaged by mower. Objects on the lawn can also lead to the mower getting stuck. Assistance may be required to remove the object before the mower can continue mowing.
- Do not lift the mower or carry it around when powered on.
- Do not put (metal) objects on top of the mower or charging station. The GPS signal could be weakened or blocked.
- Do not use the mower if the STOP button fails to work.
- Always set the mower to OFF when it is not in operation for a longer period.
- Do not use the mower at the same time as a water sprinkler is working. Sprinkled water will activate mower's rain sensor and disrupt its working. You can use the APP to disable the rain sensor so that watering lawn and cutting grass can be done simultaneously.
- Do not allow the lawn mower to use a defective cutting blade, nor should it be used with defective screws, or cables.

1.4 Safety Instructions for Maintenance

- Always turn off the mower before you clear a blockage, do maintenance, or examine the mower, and if the mower starts to vibrate abnormally. Examine the mower for damage before you start again. Do not use the mower in case it is defective.
- Do not use a high-pressure washer to clean the mower. Do not use solvents for cleaning. After cleaning, make sure to place the RoboUP® on the ground in the correct orientation and do not invert it.
- Disconnect the mains power plug of the charging station before cleaning or maintenance of the charging station.
- Regularly inspect the blades, blade screws, and cutting components for wear or damage. Replace worn or damaged blades and screws as a set to maintain balance.

1.5 Battery Safety

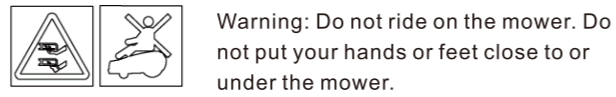
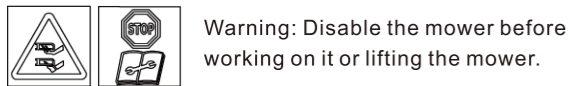
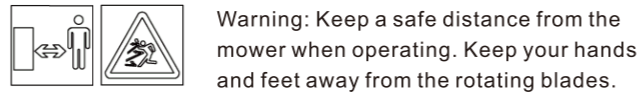
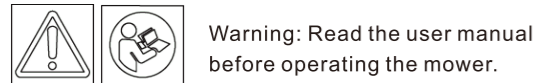
- Lithium-ion batteries can explode or cause fire if disassembled, short-circuited, exposed to water, fire, or high temperatures. Handle carefully, do not dismantle, open the battery or use any type of electrical/mechanical abuse. Avoid storage in direct sunlight.
- For recharging the battery only use the original detachable power supply provided with the mower.
- Incorrect usage may result in electric shock, overheating, or leakage of corrosive liquid from the battery. If electrolyte leakage occurs, rinse with water/neutralizing agent. If corrosive liquid gets into the eyes, seek medical attention immediately.
- Fully charge the battery before storage to avoid over-discharge and damage to the electrical components. Charge the mower every 120 days for long-time storage. Battery damage caused by over-discharge will not be covered by the Limited Warranty.
- The battery pack must be replaced by a skilled person only.
- DO NOT store the battery under extreme temperature conditions, i.e., above 50°C (122°F) or below -20°C (-4°F).

//1 Safety

1.6 Transportation Safety

- The mower must be switched OFF before lifting, moving, or transporting.
- DO NOT lift the mower when parked in the charging station. This can damage the charging station and/or the mower. Push STOP and pull the mower out of the charging station before lifting.
- Carry the mower using the handle and with the blade disc pointing away from your body.
- To protect the mower, use the original carton packaging for long-distance transportation. Handle with care and avoid violent force, such as throwing and heavy pressure.

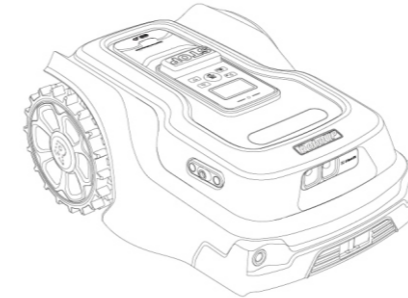
1.7 Symbols on the Product



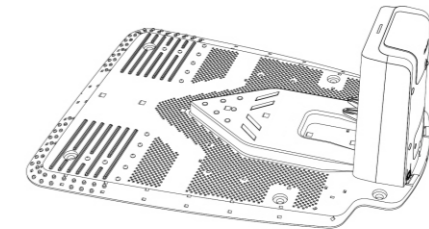
//2 Product Unboxing

What is in the box?

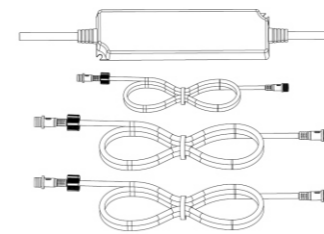
- A. RoboUP® Mower
- B. Charging Station
- C. Power Supply and Extension Cable
- D. 9 * Spare Cutting Blades & Screws
- E. User Manual & Quick Start Guide
- F. Allen Key
- G. 6 * Fixing Screws
- H. 2 * Spare QR code
- I. RTK Base Station
- J. Trident Ground Stake
- K. RTK Install Pole



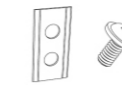
A:RoboUP® Mower



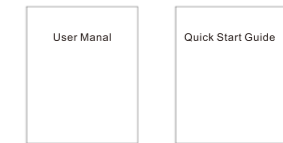
B:Charging Station



C:Power Supply & Extension Cable



D:9* Spare Cutting Blades & Screws



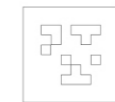
E:User Manal & Quick Start Guide



F:Allen Key



G:6*Fixing Screws



H:2*Spare QR code



I:RTK Base Station



J:Trident Ground Stake

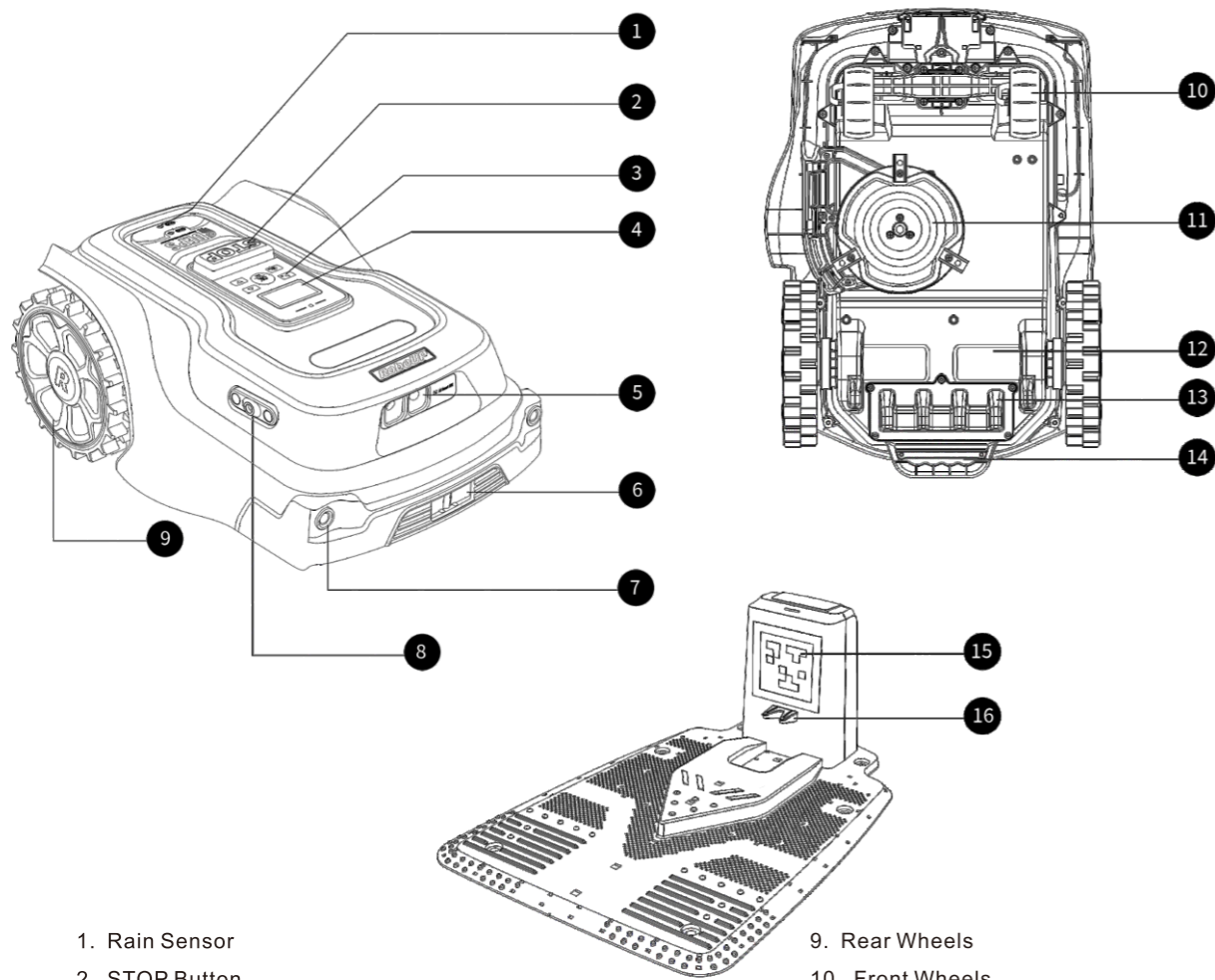


K:RTK Install Pole

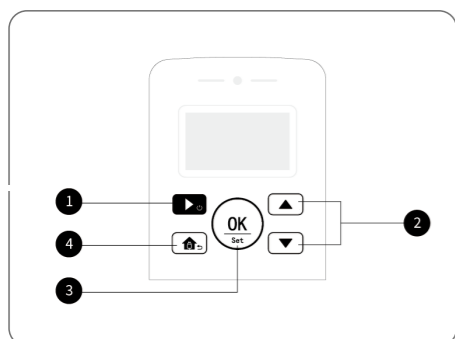
Note:

If there are missing or defective parts, contact RoboUP® after-sales service team. It is recommended to retain the original carton for future transportation and shipping.

3 Parts and Functions



- | | |
|------------------------------------|--|
| 1. Rain Sensor | 9. Rear Wheels |
| 2. STOP Button | 10. Front Wheels |
| 3. Control Panel | 11. Off-set Blade Disc (with 3 blades) |
| 4. LC Display | 12. Brushless DC Motor (1 per wheel) |
| 5. AI and VSLAM Cameras | 13. Battery Compartment Cover |
| 6. Mower Battery Charging Contacts | 14. Lifting Handle |
| 7. LED Headlights | 15. QR Code |
| 8. Ultrasonic Sensor | 16. Charging Station Contacts |



Control Panel (Keys & LC Display)

1. Long press the button to turn the mower ON/OFF. The buttons also triggers quick start mowing.
2. Use the and arrow buttons to navigate in the menu or enter digits like PIN code, date and time.
3. Press the OK button to quick access the settings menu or to confirm the chosen settings in the menu.
4. Use the button to return the mower back to charging station. It can be triggered only when you are in the "Welcome to use" page (top line).

4 APP Installation

1. Scan the QR code to download the RoboUP® APP.

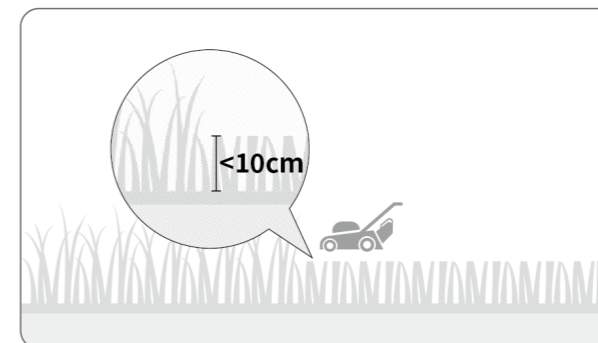


2. Launch RoboUP® APP after installation, register your account and log in.
3. Connect your smart phone with your home Wi-Fi network, which you want RoboUP® mower to connect with.

5 Installation Guide

5.1 Cut your lawn to required maximum height

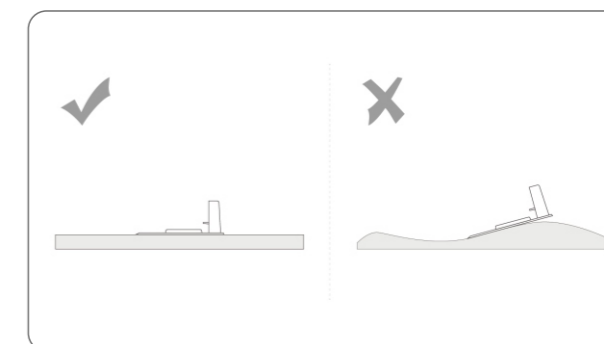
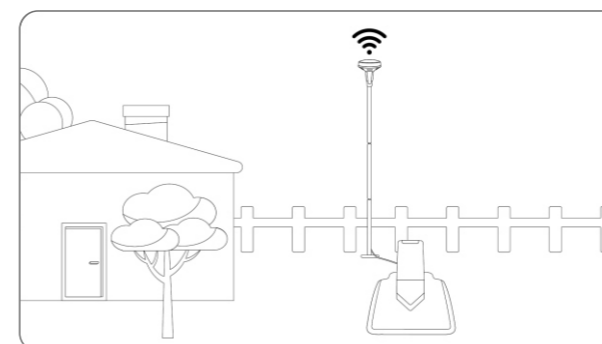
Before using RoboUP for the first time, please cut your lawn under height of 10 cm so that RoboUP can easily mow your lawn in high frequency to make it look always fresh.



5.2 Find a good spot for charging station

You can find a place that meets the following criteria:

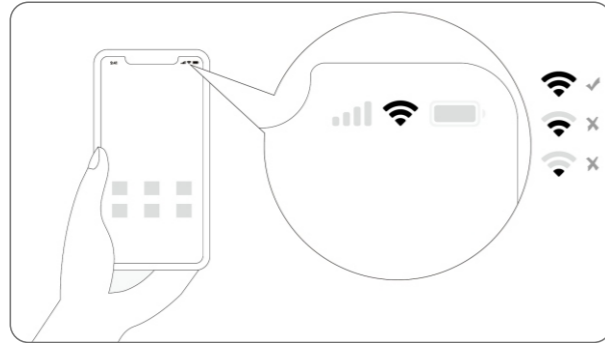
1. Open area with good GPS signal, far away from house, trees, etc.
2. Flat ground



5 Installation Guide

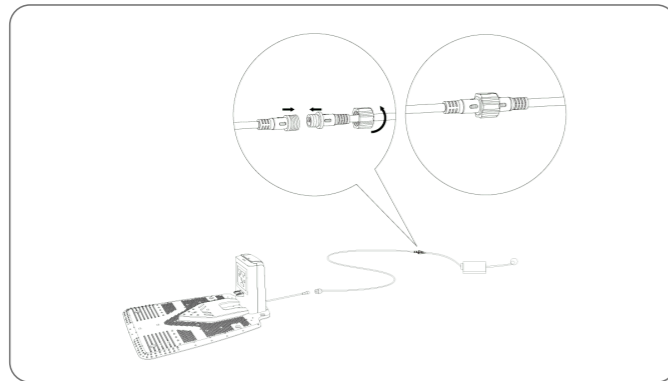
3. No obstacle within 2 meters of the Charging Station

Note: Strong Wi-Fi signal is needed for Wi-Fi connection and firmware upgrades

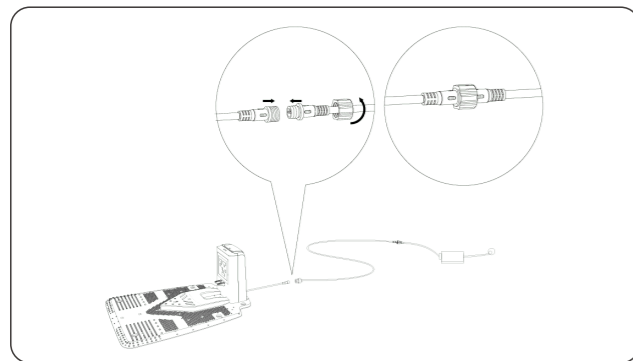


5.3 Power On" the charging station

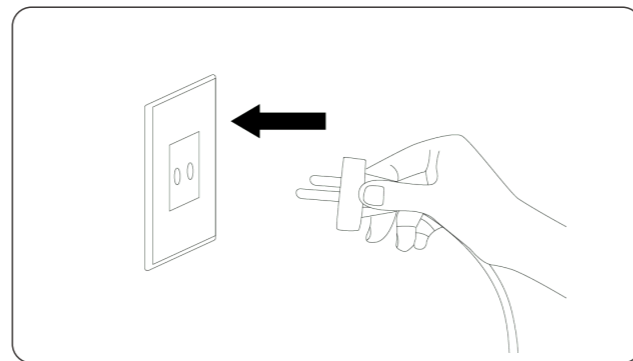
1. Place the charging station on the target spot.
2. Connect extension cable to power supply DC outlet connector.



3. Connect extension cable to charging station power connector.



4. Plug power supply into a mains AC power socket.

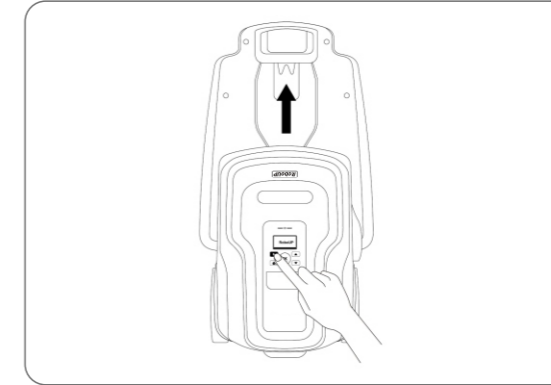


⚠ Warning:

- When connecting the power supply to mains power socket, use a residual-current device (RCD) with a tripping current of maximum 30 mA.

5. Turn On The Mower

- 1) Switch on the mower
- 2) Put the mower into the Charging Station
- 3) Ensure the red light is flashing on the RTK indicator

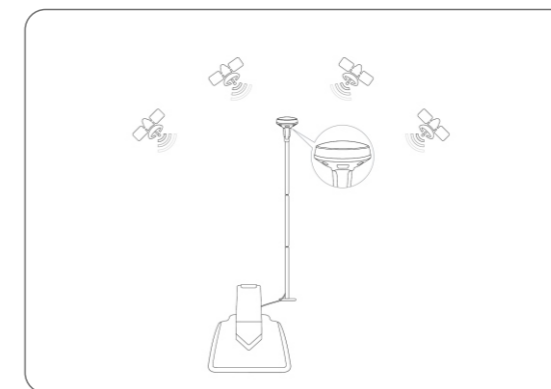


5.4 RTK Positioning Base Station: Introduction, Installation, and Troubleshooting

1. RoboUP Localization System

RoboUP utilizes a comprehensive navigation system with multiple sensors including RTK, VSLAM, IMU, and odometry for navigation. RTK is a satellite navigation system that significantly enhances equipment positioning accuracy, offering access to all global navigation systems and additional sensors. Its robust satellite signals can provide accuracy nearly 100 times higher than traditional GPS systems.

2. Wait for approx. 3 minutes till RTK base station receives a stable GPS signal.
3. Check the LED status indicator of Real Time Kinematic (RTK) base station module.

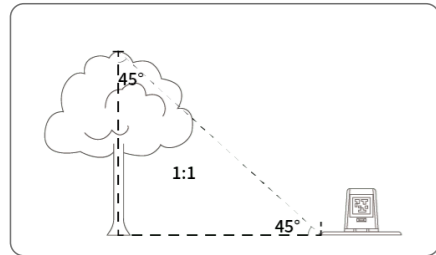


LED Status Indication of RTK Base Station Module	
Flashing Red	RTK base station is searching for GPS signal
Solid Blue	GPS signal is strong
Flashing Blue	GPS signal is poor
Solid Red	No GPS signal
No indication	RTK base station is not powered on

5 Installation Guide

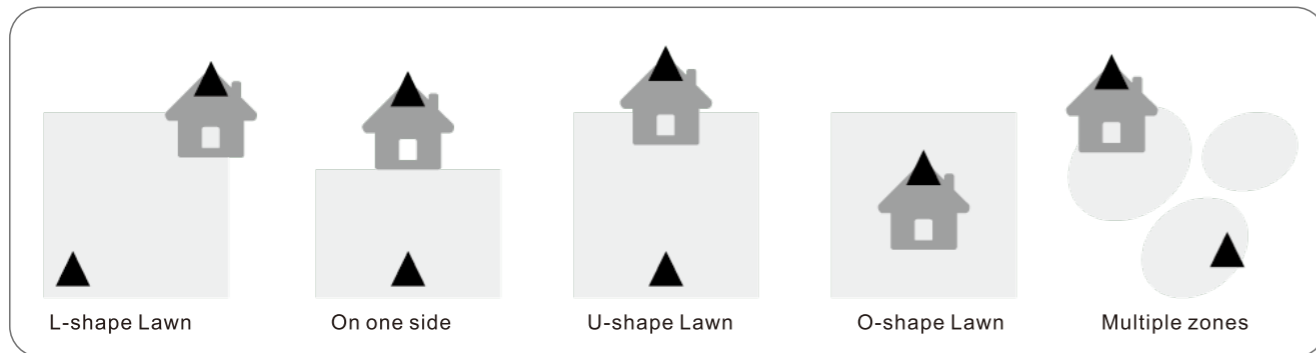
Note:

- Don not put (metal) object like mobile phone or metal garage roof upon the RTK base station as they could block the GPS signal. You can follow the next step to install RTK base station separately if you want to install a metal garage roof on the charging station.
- For best positioning accuracy and mowing performance, it is strongly recommended to keep the RTK base station module at a distance that equals or exceeds the height of nearby buildings or tall trees. Trees or buildings close to the charging station, can weaken, or block the GPS signal going into the RTK base station.



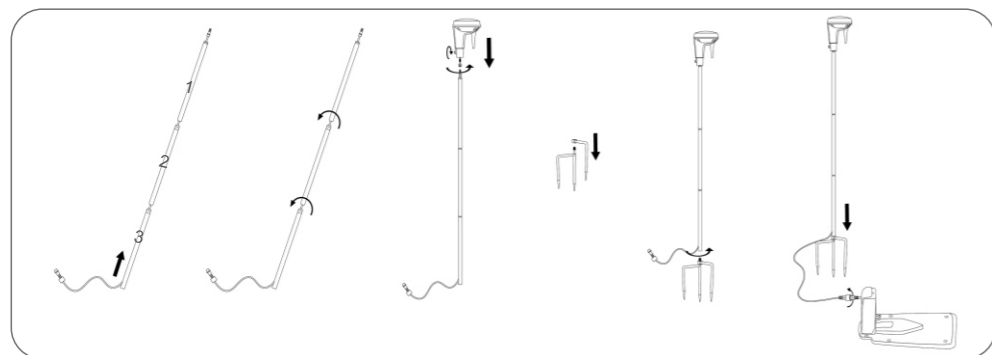
Height of the building or obstacle	Distance between the charging station and the building or obstacle
1m	1m
2m	2m
3m	3m
4m	4m

4. GPS signal is weak when the RTK base station module status LED is flashing blue or is solid red. You can relocate the entire charging station or use the extension cable to only move the RTK base station module separately to another open or higher spot. Make sure the RTK base station module is not installed under large objects like roof extension or tree, that could block or weaken the GPS signal. You can find the recommended location (triangle mark) for RTK base station.

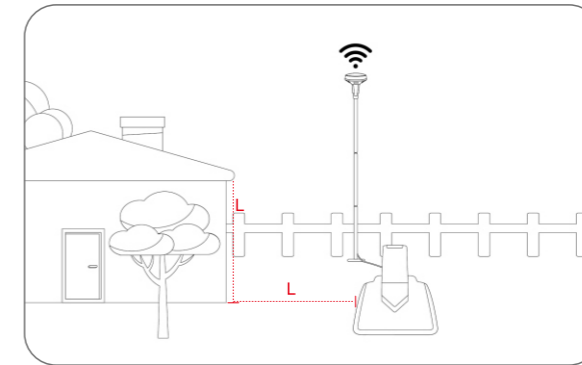


Follow instructions below to relocate the RTK base station separately.

A: Install the RTK installation components and use the RTK connection cable to connect the RTK base station to the power connector in the Charging Station.



B: We do not recommend placing RoboUP in "U" or "L" shaped corners with tall walls, under large trees, or under substantial eaves. These locations can significantly weaken the satellite signals.



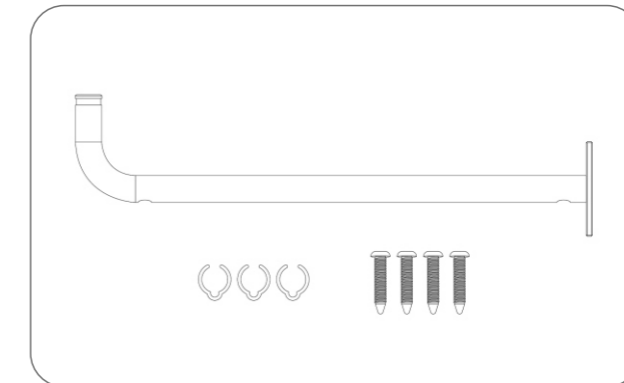
Warning:

It takes up to 3 minutes. Check if the RTK Indicator LED is solid blue.

Note 1:

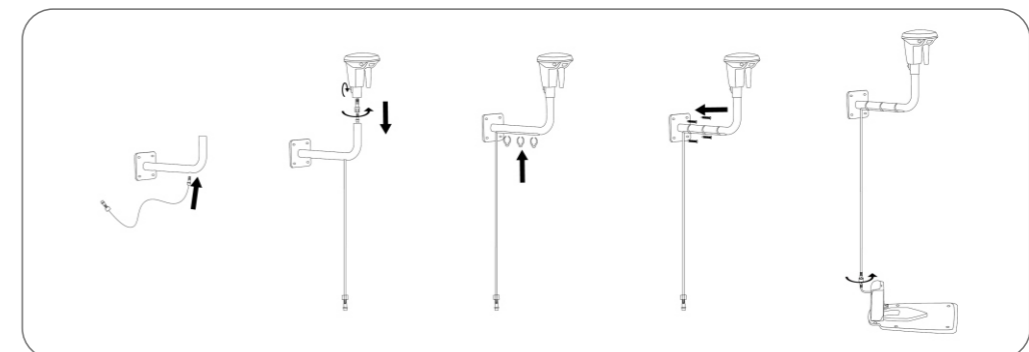
For optimal positioning accuracy and mowing performance, it is strongly recommended to maintain a distance equal to or greater than the height of nearby buildings or tall trees for the RTK base station. Trees or buildings near the Charging Station can weaken or obstruct the GPS signals entering the RTK base station.

We also provide compatible wall mounting components for your convenience, which you can choose to purchase and install.



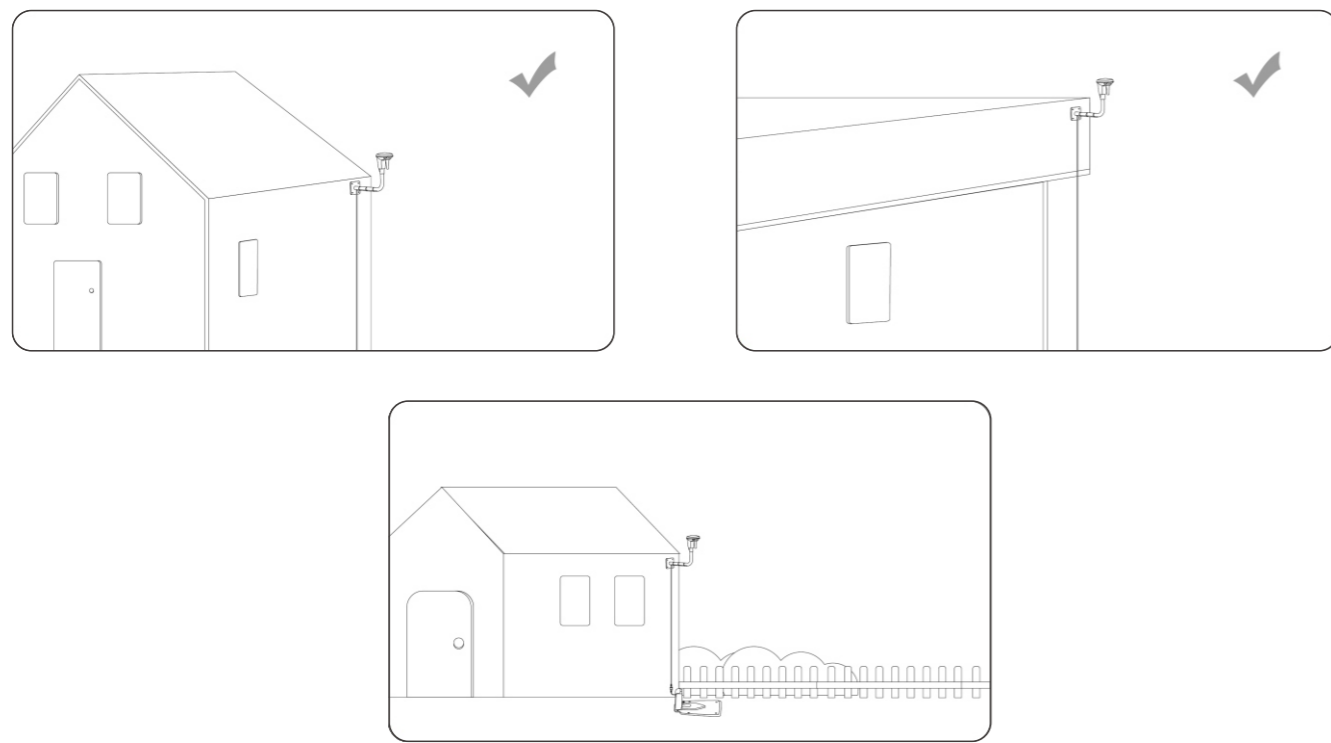
Installation Steps:

- 1) Remove the fixing screws of the RTK base station module and detach it from the RTK tripod.
- 2) Use a 10m extension cable to connect the RTK base station module to the power connector in the Charging Station.
- 3) Install the RTK wall mounting components. Secure the wall mounting rod onto the corresponding wall, and lock the cables using fasteners.



5 Installation Guide

C. When installing RTK base station module on roof or wall of your house, make sure it has a clear view of the sky above it. Install the module as high above ground as possible on walls without roof extens



Detach the RTK base station module from the Charging Station.

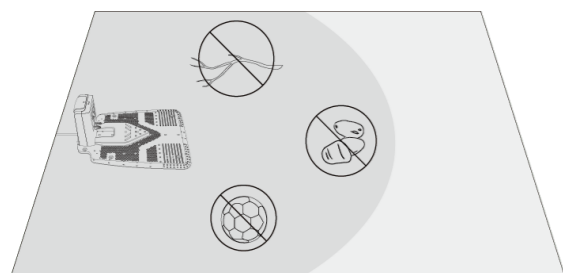
- Find a suitable location to install it.
- Use extension cable to connect RTK base station module and Charging Station.

Note2:

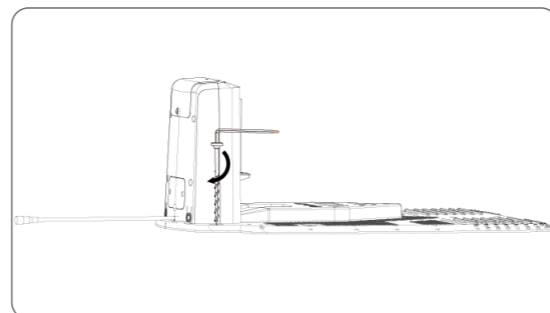
You can tap the RTK icon on the App's home screen to access the following information:

- Mower RTK Status
- RTK Transmission Status
- Mower Satellite Number
- RTK Station Satellite Number

5. Remove obstacles within 2m radius in front of the charging station so that RoboUP® mower can come out of the charging station smoothly.

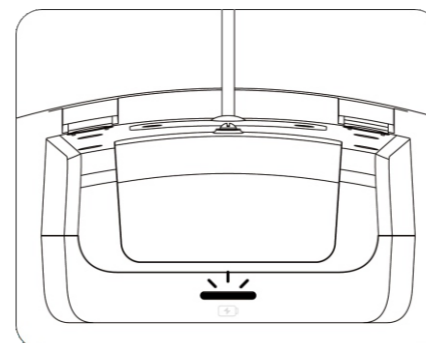


6. To secure the charging station to the ground use the supplied long anchor screws and Allen key.




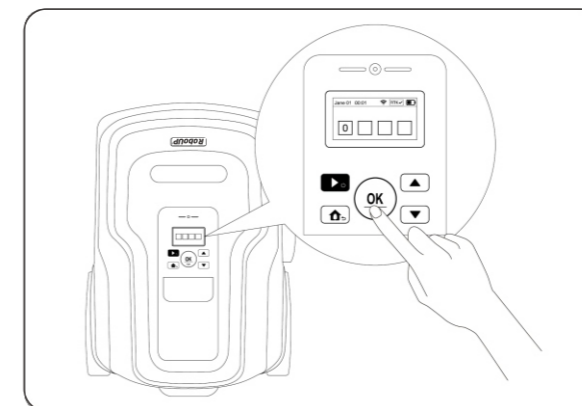
6 Turn On and Pair the Mower

1. A new mower may have a low battery after long storage. Push the mower into the charging station. Make sure the mower's charging contacts and the contact blades on the charging station are in good contact.
2. When the light of the charging station is breathing the mower's battery is charging. When the light turns into solid green the mower's battery is fully charged and not charging any longer.



LED Indication of Charging station	
Breathing Green	The mower is charging
Solid Green	The mower is fully charged / Mower is not charging
No indication	Charging station is not power on

3. Press  button for 3 seconds to start mower, input default PIN "0000" (Default action: Press the OK button four times in a row with OK button to unlock mower).

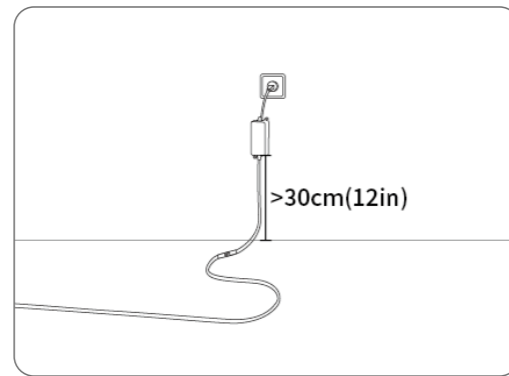


4. Wait for approx. 10 minutes to allow the mower to search/find as many satellites as possible for the best GPS signal. The mower will prompt RTK√ when completing search.
5. Enable Bluetooth on your smart phone, start RoboUP® APP and follow instructions to pair RoboUP® mower.

Warning:

- Do not put power supply cable and extension cable into the work area. After confirming the mower is normally charged, secure the extension cable on the ground or hedge with the attached pegs or nylon zip ties to prevent the mower cutting the cable. Keep the power adapter at least 30cm (12in) above floor level to avoid possible damages caused by rain or water flooding.
- Do not connect a damaged cable or plug, or touch a damaged cable, before it is disconnected from the power outlet. Disconnect the plug from the power outlet if the cable becomes damaged while in operation. A worn or damaged cable increases the risk of electrical shock. A damaged cable must be replaced by authorized service personnel.

6 Turn On and Pair the Mower



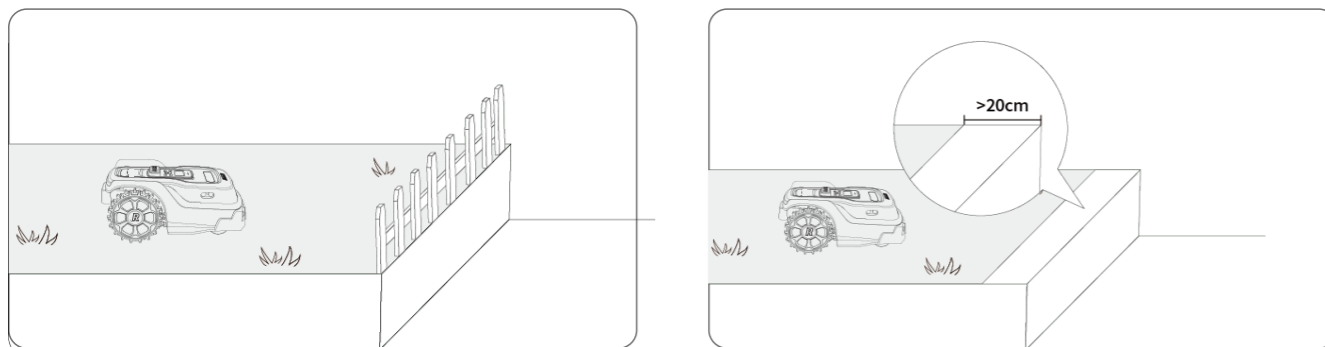
⚠ Warning:

- DO NOT charge if mower, power supply, charging station, or power socket is wet or damaged.
- DO NOT charge mower when ambient temperature is above +50°C (122°F), or below 0°C (32°F).
- When there is an abnormal smell, sound, or light display, stop charging immediately and contact RoboUP® after-sales service team.
- Keep away from inflammable and explosive materials when charging.

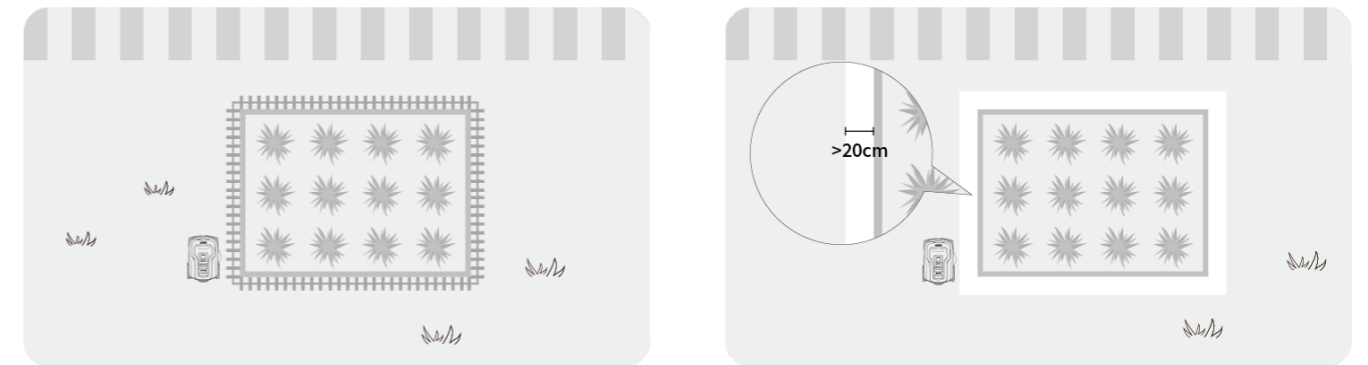
7 Create Virtual Map

7.1 Preparation

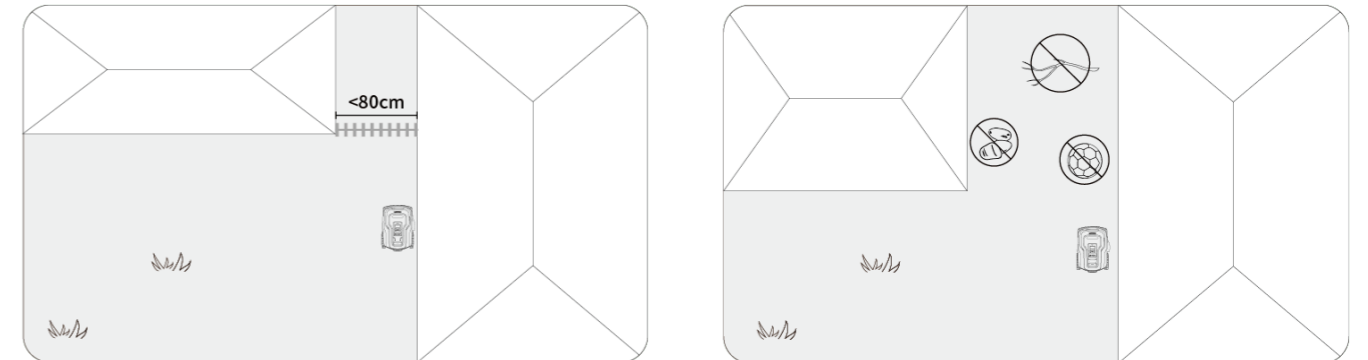
- Make sure children and pets are off the lawn and some temporary obstacles like garden hose, debris, toys, stones, clothes are removed to avoid any damage.
- Fill hollows dug by wild animals and cover the drain outlet with drain cover in your lawn to make sure the mower won't get trapped.
- Put a fence or a protective wall along the ditches or cliffs (depth exceeds 5cm) and the boundary along the edge is not visible clearly to prevent the mower from getting stuck or falling. You can also cut the long grass covered on the edge to create a visible and horizontal boundary with least width of 20cm so that RoboUP® can recognize it and won't pass by. Putting a fence or a protective wall around the edge of cliffs is necessary when it is impossible to set a visible boundary in such a situation.



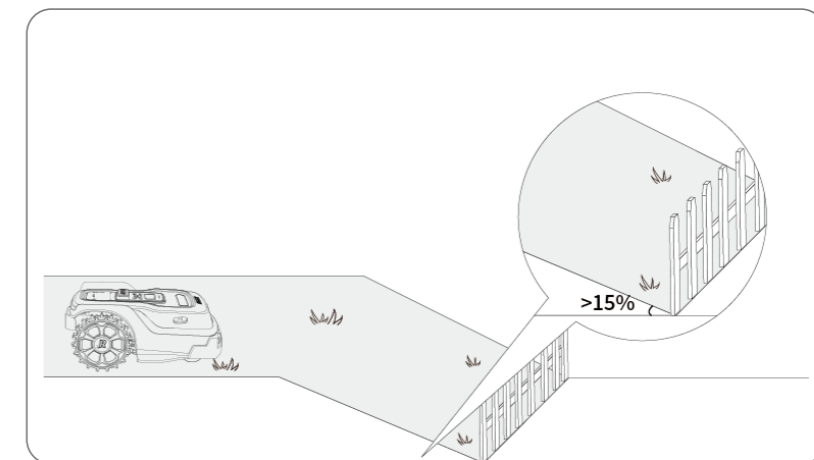
- For short flower beds that look similar to grass, it is recommended to put a physical boundary around (e.g. bamboo fence) for protection from being cut by accident. You can also dig out the grass covering the edge to create a clearly visible boundary (min. width of 20cm) so that RoboUP® can detect the edge.



- RoboUP® mower can handle narrow passages with a minimum width of 80cm, so please lay physical boundary to exclude those small narrow passage within 80cm. In addition, please remove the obstacles in the narrow passage to ensure the mower can pass smoothly.



- Make sure the mower is powered ON and connected with your smart phone.
- For slopes larger than 15% and adjacent to open area like a public road, put a fence or a protective wall along the outer edge of the slope to ensure the mower won't slip out of the lawn.



7 Create Virtual Map

7.2 Map Out the Boundary

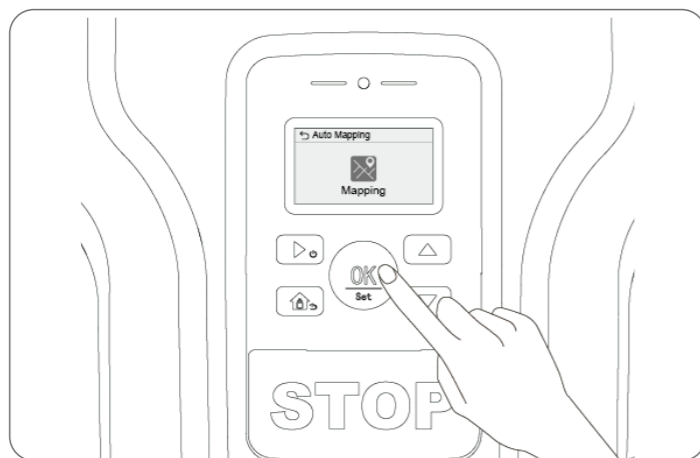
Before proceeding, please note the following matters:

- Place your mower in an open area
- Wait for 1-5 minutes. Check the RTK status (✓)

There are two ways to create a virtual boundary for your lawn.

A. Automatic Mapping (Suitable for one single zone with visible border):

1. Place the mower in charging station.
2. Use arrow buttons on control panel to select Mapping on LCD Display.



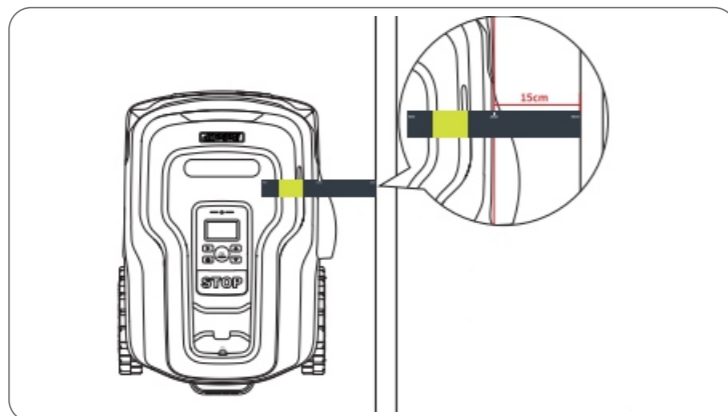
3. Click OK button to start mapping. Then RoboUP® will automatically detect edges of your lawn and create a virtual lawn map.
4. After RoboUP® return back to the charging station, its LCD display will prompt you to confirm the map. Click OK button to save the map.
5. After saving the map, set the mowing schedule and cutting height you want on the mower.
6. Press OK button to start mowing.

Notes:

When your lawn is seamlessly connected with your neighbor's lawn, it's required to create a temporary visible border to separate the two lawns before using automatic mapping. You can review the map in the RoboUP® APP after the map is saved.

B. Manual Mapping (suitable for all situations):

1. Place the mower in charging station.
2. Attach ruler to measure correct distance to edge.
Take the ruler from the box. Fix the ruler on top of mower to ensure the distance from mower to the edge of lawn is at least 15cm. The outer side of the ruler should not exceed the edge of the lawn.



3. Use APP to create virtual boundary

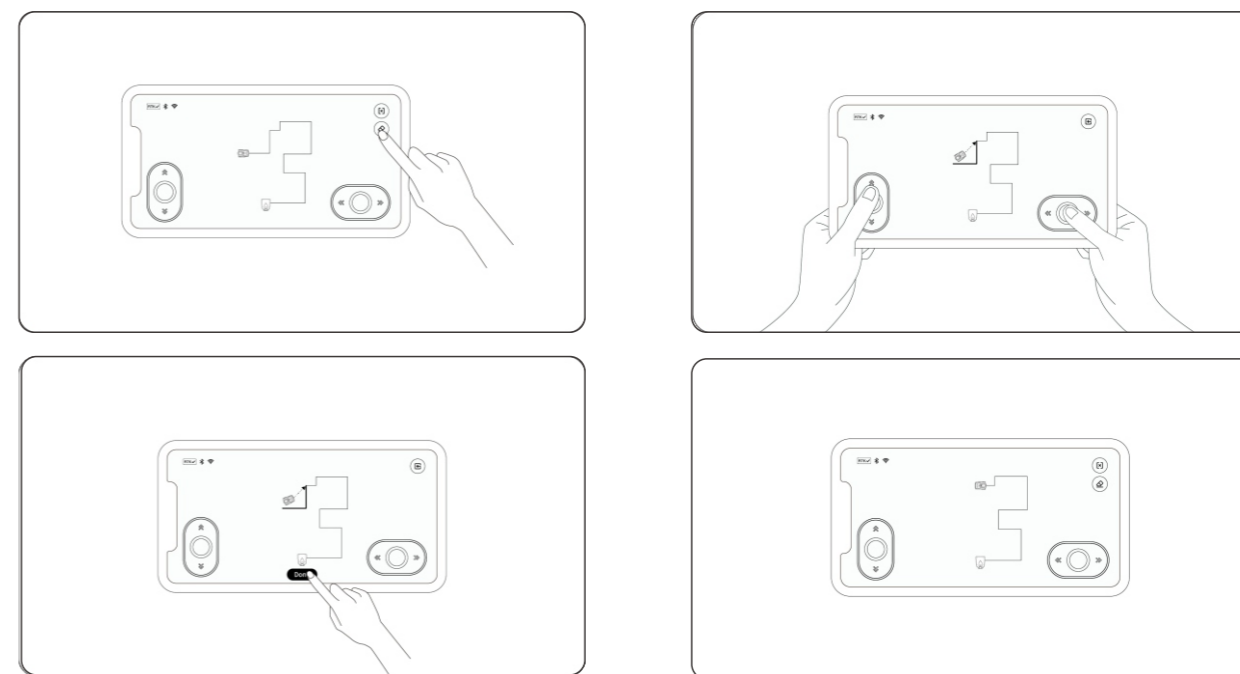
Tap "Boundary" button in the APP and follow the instructions to walk behind and remotely control the mower while following the edges to create virtual map of single zone or multiple zones.

Notes:

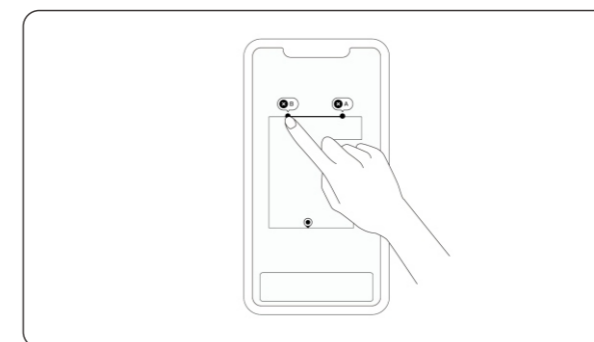
Stay within 5m to the mower when using the APP to remote control RoboUP® mower.

Map Modification Function:

When you enter Map Modification, navigate the remote-controlled device to the desired path point. Select the grayed-out modify path, tap the delete icon to remove the corresponding path. You can manually resume mapping after you exit Map Modification.



If the map boundary is a cliff or slope, it is recommended to set this boundary as a dangerous boundary. The mower will keep a distance from the dangerous boundary when mowing, to avoid falling or going outside the working area.

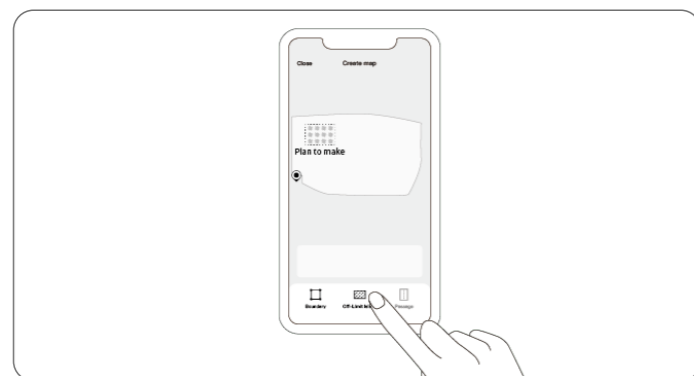


//7 Create Virtual Map

7.3 Create No-Go Zone

Though RoboUP® has an AI camera to detect and bypass obstacles with height of over 10cm, it is recommended to set up a permanent no-go zone for areas you want RoboUP to stay out (flowerbeds, small trees, lawn decorations, pond, sprinkler heads, emerged roots, etc). When there is a trampoline, grill or other objects RoboUP® might run into, set up a no-go zone to avoid accidents.

A. You can tap the “No-go Zones” button in RoboUP® APP and follow instructions to set the no-go zones.



Control the mower to go along the edges of the area which you don't want the mower to go.

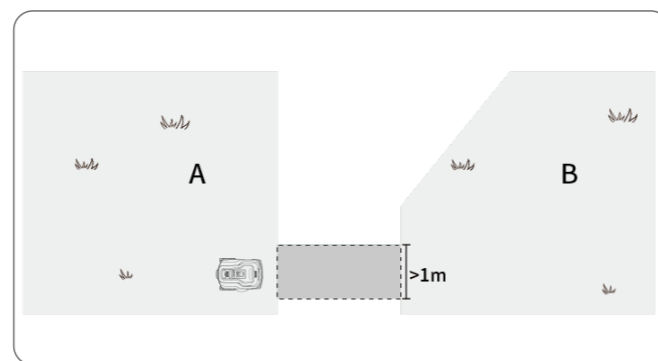
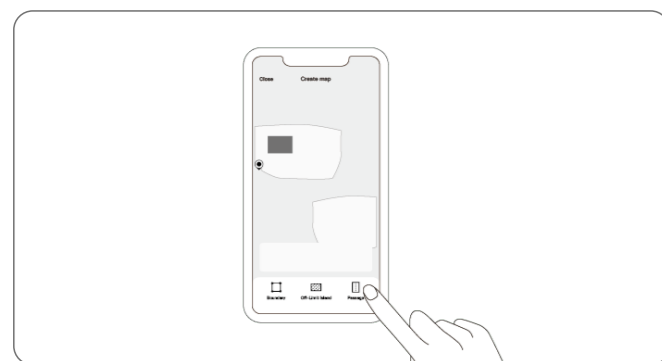
B. RoboUP® can also automatically record temporary no-go zones for big obstacles in your lawn and slow down before reaching them again during new cuttings.

C. If you want to delete a no-go zone (e.g. when you remove the trampoline from the lawn), just delete it on the APP.

7.4 Create Passage

You can create passage to link different zones after mapping out boundary of more than 2 zones.

1. Find a proper passage to link two mapped lawn zones. Make sure the passage is as short as possible and ideally straight, flat and with a width of over 1m. Keep the passage clean from obstacles.
2. Tap the “Passage” button in RoboUP® APP and follow instructions to remotely control the mower when walking through the selected passage to create the virtual passage path.



//8 Mower Settings

When lawn mapping mode is completed successfully, follow instructions in APP to personalize the mowing schedule and cutting height as wanted.

A. Mowing Schedule

Set mowing schedule in APP (or use control panel) and mower will cut your lawn accordingly with a proper frequency to keep your lawn fresh and neat.

B. Cutting Height

Choose the desired grass cutting height in APP (or use control panel). Mower will adjust the blade disc automatically to that height when it starts mowing your lawn.

C. Mowing path control

In the app, you can choose to set the entire area or individual zones as "Single Bow" or "Partition Bow".

D. Mowing angle setting

In the app, you can choose to set the entire area or individual zones for "Mowing Angle: -90 to 90 degrees".


Notes:

You can set the cutting height while the mower sits in the charging station. Blade disc height adjustment will be executed when RoboUP® is leaving the charging station.

9 Operation

1. Start mowing


There are three methods to start mowing.

- RoboUP® mower will automatically start mowing in preset mowing schedule after the above installation steps are done.
- Tap the "Automatic" button in the APP to manually start RoboUP® mowing job.
- Press the  button on the mower control panel and confirm with "OK" to start mowing.


2. Pause mowing

- Simply push the "STOP" button on the mower.
- Tap the "Pause" button in the APP.
- The mower will pause and show error code when it encounters issues that need to be fixed manually.

3. Resume mowing

- Continue mowing by tapping the "Mow" button in the APP.
- Press  button and then "OK" button on the control panel to continue mowing.

4. Return to the charging station

- The mower will return to the charging station automatically when the battery is low, or it has completed work on the current mowing zone.
- You can also send the mower back to the charging station manually:
 - Tap the "Charge" button in the APP.
 - Press  button and then "OK" button on the control panel when the mower is in standby mode.

5. Turn off the mower

Long press  button on mower control panel to turn off RoboUP® mower.

Note:

- The mower cannot be turned off when it is in the charging station for charging.
- The anti-theft feature will not work when the mower is turned off.
- It is recommended to turn off the mower only for transportation or long-term storage.

10 Features Introduction

1. CW/CCW

The blade disc will rotate in clockwise (CW) and counterclockwise (CCW) directions alternatively to use both cutting blade edges. This will reduce the frequency of replacing worn out blades.

2. Route Planning

Instead of cutting randomly, the mower can plan the most efficient path to mow your lawn and cut it in neat parallel lines, leaving awesome carpet stripes on your lawn!

3. AI Vision

The mower has two cameras, one used for VSLAM driven by AI deep learning algorithm, another one used for obstacle recognition system, which enables the mower to create virtual borders of your lawn and work within. Once it recognizes human body, pets and wild animal, it will stop cutting immediately to avoid any injuries and move to other areas to continue cutting.

4. OTA

Mower's firmware can be easily updated Over-The-Air (OTA) if mower is connected to the Internet through your Wi-Fi home network.

5. Rain Sensor

Cutting wet grass can lead to plant fungal diseases and soil damage. Mower's rain sensor is enabled by default. As such mower will return to charging station once it detects rain. Rain sensor also can be disabled in APP when cutting grass in rain is required.

6. Anti-Theft

Enhanced with lift and tilt sensors, when the mower is lifted or tilted, an immediate high-pitched alarm will be triggered to alert the user.

When the mower is outside the defined safety zone, the owner will also receive an alert message.

7. Night Emergency Stoppage

By enabling "Night Forced Parking" on the App and selecting a time period, the mower will not operate at night, to avoid any accidents or harm to wild animals.

8. Spiral Cutting

You can select "Spiral Cutting" on the App, tap to enter remote control mode, and control the mower to the area where the grass needs to be cut.

Please position RoboUP in the area that requires spiral cutting.

After you start spiral cutting, RoboUP will execute a spiral cut around the starting point with a radius of 1.2 meters.

9. Schedule Mowing

In the app, select "Schedule Mowing" to set the start and end time for single or recurring sessions. Depending on the size of the mowing area you've defined, the App can automatically estimate the mowing time. The estimated time is calculated based on lawn size and charging time. If the garden is complex (with many obstacles, complicated, or with multiple zones), it might require more time.

10. Blade Replacement

Supports automatic detection of the blade's life. When the remaining blade life is 1%, it is recommended to replace the blade. You can follow the "Replacement Steps" instructions in the app to replace the blade.

Note 2:

We recommend:

Inspect blade wear and replace worn out blades every 200 hours or two weeks.

Replace the entire set of blades every 400 hours or four weeks.

11. Temporary Obstacle Zones

RoboUP will automatically create temporary forbidden zones for large obstacles on the lawn. This allows it to slow down before reaching these zones in a new cutting cycle to avoid collisions.

12. Area Selection Mowing

Supports mowing of selected whole or individual areas, and allows for setting cutting height, mowing path control, and mowing angle."

11 Specifications

	Model	T500	T600
Basic Information	Dimensions L*W*H (mm)	620*445*250	
	Net Weight (kg)	10.9	10.9
Mower Parameters	Working Capacity (m ²)	500	600
	Charging Time (min)	50	105
	Typical Mow Time on One Charge (min)	45	100
	Noise Sound Level (dBA)	≤56	≤56
	Information Panel	LCD	LCD
Working Conditions	Max. Slope (%)	45%	
	IP Rating	IPX6, hose washable	
	Working Temperature (°C)	-10...+50	
	Charging Temperature (°C)	±0...+45	
	Storage Temperature (°C)	-20...+50	
Battery Pack	Battery Type	Lithium-Ion	
	Nominal Capacity (Ah)	2.5	5
	Nominal Voltage (Vdc)	18.0Vdc	
	Battery Management System	Over-heating, short circuit, over-current and over-charge protection.	
Power Supply	Mains Input Voltage (Vac)	100...240Vac	100...240Vac
	Output Voltage (Vdc)	24V±0.2Vdc	
	Output Current (A)	2.0	2.0
	Model	FY2402000 / T2420WE T2420US / T2420UK	FY2402000 / T2420WE T2420US / T2420UK
Charging Station	Input Voltage (V)	24V±0.2Vdc	
	Input Current (A)	2.0	2.0
	Output Voltage (V)	24V±0.2Vdc	
	Output Current (A)	2.0	2.0
Driving Motor	Top Speed (m/s)	0.45	

	Model	T1000 PLUS	T1200 Pro	T1500 Pro
Basic Information	Dimensions L*W*H (mm)	620*445*250		
	Net Weight (kg)	10.9	10.9	10.9
Mower Parameters	Working Capacity (m ²)	1000	1200	1500
	Charging Time (min)	105	70	70
	Typical Mow Time on One Charge (min)	100	100	100
	Noise Sound Level (dBA)	≤56	≤56	≤56
	Information Panel	LCD	LCD	LCD
Working Conditions	Max. Slope (%)	45%		
	IP Rating	IPX6, hose washable		
	Working Temperature (°C)	-10...+50		
	Charging Temperature (°C)	±0...+45		
	Storage Temperature (°C)	-20...+50		
Battery Pack	Battery Type	Lithium-Ion		
	Nominal Capacity (Ah)	5.0	5.0	5.0
	Nominal Voltage (Vdc)	18.0Vdc		
	Battery Management System	Over-heating, short circuit, over-current and over-charge protection.		
Power Supply	Mains Input Voltage (Vac)	100...240Vac	100...240Vac	100...240Vac
	Output Voltage (Vdc)	24V±0.2Vdc		
	Output Current (A)	2.0	3.0	
	Model	FY2402000 / T2420WE T2420US / T2420UK	FY2403000 / T2430WE T2430US / T2430UK	
Charging Station	Input Voltage (V)	24V±0.2Vdc		
	Input Current (A)	2.0	3.0	3.0
	Output Voltage (V)	24V±0.2Vdc		
	Output Current (A)	2.0	3.0	3.0
Driving Motor	Top Speed (m/s)	0.45		

11 Specifications

	Model	T500	T600
Cutting System	Blade QTY	3	3
	Cutting Height (mm)	30...60	30...60
	Cutting Width (mm)	200	200
	Cut-to-Edge	●	●
	Manually Spot Cutting	●	●
	Floating Cutting Disc	●	●
	Electric Cutting Height Adjustment	●	●
	CW/CCW Rotating Blade	●	●
Navigation	IMU Navigation	●	●
	RTK Navigation	Normal	Normal
	VSLAM Navigation	○	○
	Smart Route Planning	●	●
Obstacles Avoidance	AI Camera Recognition	●	●
	AI Camera Anti-bump	●	●
	Ultrasonic Sensor	●	●
Smart Control	APP Smart Control	●	●
	Force Stop Option at Night	●	●
Connectivity	APP Connection Options	WiFi + BT	
	Bluetooth Frequency Range	2.4GHz	
	Wi-Fi Frequency Range	2.4GHz	
Safety and Easy Use	GPS Location Tracking (4G module required)	○	○
	Photosensitive Sensor	●	●
	Night Lighting	●	●
	Rain Sensor	●	●
	Update Option	OTA	OTA

	Model	T1000 PLUS	T1200 Pro	T1500 Pro
Cutting System	Blade QTY	3	3	3
	Cutting Height (mm)	30...60	30...60	30...60
	Cutting Width (mm)	200	200	200
	Cut-to-Edge	●	●	●
	Manually Spot Cutting	●	●	●
	Floating Cutting Disc	●	●	●
	Electric Cutting Height Adjustment	●	●	●
	CW/CCW Rotating Blade	●	●	●
Navigation	IMU Navigation	●	●	●
	RTK Navigation	Normal	High	High
	VSLAM Navigation	●	●	●
	Smart Route Planning	●	●	●
Obstacles Avoidance	AI Camera Recognition	●	●	●
	AI Camera Anti-bump	●	●	●
	Ultrasonic Sensor	●	●	●
Smart Control	APP Smart Control	●	●	●
	Force Stop Option at Night	●	●	●
Connectivity	APP Connection Options	WiFi + BT		WiFi + BT+4G LTE
	Bluetooth Frequency Range	2.4GHz		
	Wi-Fi Frequency Range	2.4GHz		
Safety and Easy Use	GPS Location Tracking (4G module required)	○	○	●
	Photosensitive Sensor	●	●	●
	Night Lighting	●	●	●
	Rain Sensor	●	●	●
	Update Option	OTA	OTA	OTA

12 Maintenance

To achieve better mowing results and increase service life, be sure to keep the mower clean and the blades in good condition. Inspection and maintenance should be carried out by an adult every week during continuous use. Any damaged or worn-out parts should be replaced. DO NOT perform maintenance when wearing open sandals or barefoot. Always wear long trousers and work shoes when servicing the mower.

12.1 Cleaning

Use a soft brush or cloth to clean the exterior of the mower thoroughly. DO NOT clean with alcohol, gasoline, acetone, or other corrosive/volatile solvents. These substances may damage the appearance and internal structure of your mower. For proper docking, periodically inspect and clean the charging station from debris and mud. Make sure all connecting parts of the charging station, the extension cable, and the power supply are not blocked.

A. Cameras

The AI camera requires regular cleaning to maintain a clear sight. The frequency of cleaning will vary from your mowing settings and conditions of your lawn. Check cameras weekly. Use a soft brush to clean dust on the camera first and use soft cloth with windshield washer fluid to clean the camera thoroughly.

B. Chassis and blade disc

If the chassis and blade disc is dirty, use a brush or a water hose to clean. DO NOT use a high-pressure washer. At the same time make sure that the blade disc rotates freely, and the blades can pivot freely.

CAUTION: High pressure water can leak into the sealings and damage electronic and mechanical parts.

C. Wheels

Grass or mud on the wheels can affect the mower performance when climbing slopes. Keep wheels clean to ensure strong grip.

D. Rain sensor

Check once a week and make sure the rain sensor is not covered by mud, grass or other objects. You can either wash it clean or clean with a soft brush.

E. Photosensitive Sensor

Check once a week and make sure the photosensitive sensor is not covered by mud, grass or other objects. You can either wash it clean or clean with a soft brush.

⚠ Warning:

- Before cleaning, make sure the mower is powered OFF.
- When the mower is upside down, it must be powered OFF.

12.2 Replacing Blades

If the mower is used on a regular basis, it is recommended to replace the blades and screws every 1-2 months to ensure safety and better mowing results. Replace all three blades and their screws at the same time for a safe cutting system.

⚠ Warning:

- Wear heavy gloves when you inspect or service the blades.
- Only use the right type of screws and original blades as provided by RoboUP®.
- DO NOT reuse the screws. Doing so can cause serious injury.

How to replace the blades:

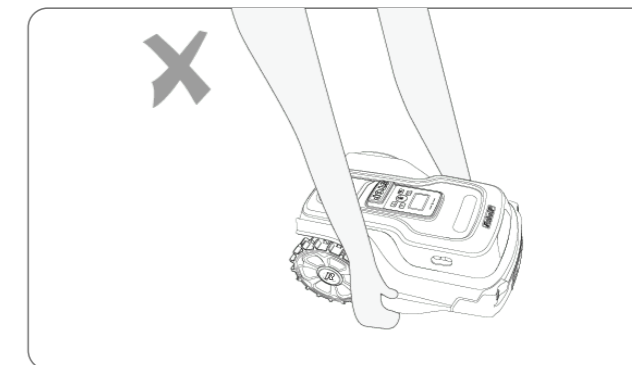
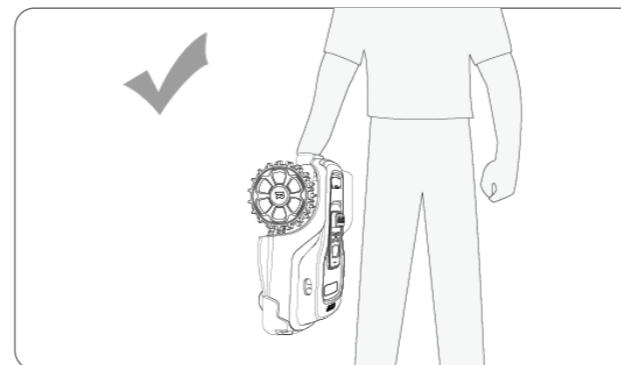
1. Turn OFF the mower.
2. To avoid scratching, place the mower on a soft and clean surface in an upside-down position.
3. Use a cross-tip/Phillips head screwdriver to loosen the three screws.
4. Remove the screws and blades.
5. Fasten the new blades and screws (Torque: 1 Nm). Make sure the blades can pivot freely.

12.3 Transportation

To protect the mower, use the original carton packaging for long-distance transportation. Before lifting, moving, or otherwise transporting the product, turn it OFF. Handle with care and avoid violent force, such as throwing and heavy pressure. Never pick up or carry the mower while the motor is running.

How to move or lift properly:

Carry the mower by the handle, with the blade disc facing away from your body.



CAUTION:

To avoid damage to the mower and/or the charging station, DO NOT lift the product when it is parked in the charging station.

12.4 Battery

Fully charge the battery before storage to avoid over-discharge and damage to the electrical components. Charge the mower every 120 days for long-time storage. Battery damage caused by over-discharge will not be covered by the Limited Warranty. DO NOT store the battery under extreme temperature conditions, i.e., above +50°C (122°F) or below -20°C (-4°F).

Note:

- The battery life depends on how often the product operates and the total working hours.
- When the operation time is shorter than usual per full charge or the lawn is not well-cut, consider replacing the battery. You can contact the local dealer for battery replacement.

How to remove the battery?

1. Place the mower on a flat and soft surface upside down.
2. Remove the screws from the cover on the battery area with a Torx 20 screwdriver.
3. Remove the battery cover and disconnect the cable from the main circuit board.
4. Take out the battery and replace it with a new one.

⚠ Warning:

- Obey the local recycling requirements and applicable regulations.
- Only charge the product in the included charging station. Incorrect use may result in electric shock, overheating or leaking of corrosive liquid from the battery. In the event of leakage of electrolyte, flush with water/neutralizing agent. Get medical aid if corrosive liquid comes in your eyes.
- Use only original batteries. Product safety cannot be guaranteed with other than original batteries. Do not use non-rechargeable batteries.

12.5 Winter Storage

Unplug the power supply from the power socket and disconnect from the charging station. Protect the power supply from moisture and keep it in a well-ventilated place. Take the charging station indoors and keep it away from direct sunlight.

Turn off mower and fully charge it to avoid over-discharge, which will cause permanent damage. Clean mower thoroughly before storage. Check components subject to wear such as the blades. Repair or replace them when needed. Store mower in a dry and frost-free place, while standing on all wheels, preferably in the original packaging.

Keep the mower, charging station and power supply away from heat sources (such as stoves, radiators, etc.) or chemicals. Store them in a cool and dry place indoors. Exposure to sunlight and temperature extremes (both hot and cold) will accelerate the aging process of the components and may permanently damage the battery.

12 Maintenance

12.6 QR Code Replacement

When the QR code sticker on the station is damaged and RoboUP cannot find its way back you can use the spare QR code sticker for replacement. Make sure the location for the new sticker strictly matches the original one.

13 Service Guide

13.1 Frequently Asked Questions

Q1: How does RoboUP mower map or mow my garden without laying physical perimeter?

RoboUP mower creates a virtual boundary of the garden based on its high-precision positioning system, including RTK, IMU, and VSLAM. It will mow grass in the area defined by the virtual boundary. In addition, the RoboUP mower is enhanced by an AI camera that can identify the lawn and ensure that the mower only works on your garden, avoiding going out of the boundary.

Q2: What is RTK and how does it work?

RTK (Real Time Kinematic) is a centimeter-level high-precision satellite positioning technology. RoboUP's RTK includes an RTK base station installed on the charging station and an RTK mobile station built-in in the mower. The RTK base station sends the GPS signals from the satellite to the RTK mobile station. The RTK mobile station analyzes and calculates the GPS signals sent from the RTK base station and the GPS data it receives from the satellites to obtain centimeter-level positioning accuracy.

Q3: What is IMU and how does it work?

IMU (Inertial Measurement Unit), including accelerometer and gyrometer, can measure the relative position and pose of the object it attached to. RoboUP has a IMU that contains 3-axis accelerometer and 3-axis gyrometer, together with the odometer of the robotic mower, it can estimate the position and pose of the mower accurately.

Q4: What is VSLAM and how does it work?

VSLAM (Vision Simultaneous Localization and Mapping), is a technology that the robot creates the map of its surroundings and finds its position in the map based on vision information captured by its camera (or cameras). VSLAM can achieve good positioning accuracy in narrow or obstructed environment, and the positioning performance is relatively poor in open areas. RoboUP combines the VSLAM technology and RTK, IMU and odometer to achieve good position accuracy in all kinds of environment.

Q5: Will RoboUP mower still work if there is no or poor RTK signal?

RoboUP RTK technology doesn't require the mower to work in constant visual contact with the RTK antenna. In addition, thanks to the IMU and VSLAM, if the RTK signal is blocked in some areas, the lawn mower can generally still work.

Q6: How does RoboUP mower avoid obstacles in my garden?

RoboUP AI camera can recognize obstacles and avoid them intelligently. If the obstacles are small or invisible partly that are hard for AI camera to recognize, and cannot be easily removed either, a no-go zone function is recommended to be set to prevent them from being cut or bumped. For the related tutorial, please visit www.iroboup.com

Q7: Does RoboUP mower require Wi-Fi network all the time when working?

RoboUP mowers don't require a permanent Wi-Fi connection to the internet when mowing the garden. Once the map has been created and the mowing schedule has been set, RoboUP mowers will do mowing automatically. But when you want to control the mower remotely by the APP, it requires the mower to be covered by Wi-Fi (can access the internet) range.

Q8: Can RoboUP mower handle multiple zones if my garden is sperated into different parts by physical path or fence?

Yes, RoboUP can handle multiple zones only if a passage can be created for the mower to walk through between the two areas.

Q9: Where can I buy accessories, like blades?

Welcome to our online store in www.iroboup.com or contact sales@iroboup.com.

For more or other info you are welcome to visit www.iroboup.com

13.2 Warranty Policy

These RoboUP After-Sales Policies (these "Policies") only apply to RoboUP products you purchased from RoboUP authorized retailers or RoboUP official stores directly for your own use and not for resale.

These Policies are available in other languages at <https://www.iroboup.comWarranty/index.html>. In the event of a conflict between different translations or forms of these terms, the English version at <https://www.iroboup.comWarranty/index.html> shall prevail. By using your RoboUP product, you agree to be bound by these Policies. If you are not eligible or do not agree to any of the Terms, do not use your RoboUP product.

To the extent permitted by law, these Policies and the remedies set forth are exclusive and in lieu of all other warranties, remedies and conditions, whether oral, written, statutory, express or implied.

1. What Is Covered By This Warranty?

RoboUP warrants the RoboUP-branded hardware product and RoboUP-branded accessories contained in the original packaging ("RoboUP Product") against defects in materials and workmanship when used normally in accordance with RoboUP's published guidelines during warranty period. RoboUP's published guidelines include but are not limited to information contained in technical specifications, user manuals and service communications.

The warranty period for the main body of RoboUP Products is three (3) years available with app registration, starting on the day you receive the product (Please note that the warranty period varies for different products and parts. Please check in the table of Part II Warranty Period to verify the duration of the warranty for your particular product or parts.). If you are unable to provide proof of purchase, the warranty start date will be calculated as 90 days after the device's factory production date, that is, the warranty of the main body of RoboUP Products will end 39 months with app registration after the factory date (unless otherwise specified by RoboUP).

To qualify under the free warranty service, the following conditions must be met:

- ✓ The RoboUP products may only be used in compliance with the instructions in the RoboUP User Manual.
- ✓ The RoboUP products have been used normally within the specified warranty period and have no signs of man-made or external damage.
- ✓ The RoboUP products have not undergone unauthorized disassembly, modification or addition outside of advice given in the official product guide.
- ✓ The RoboUP products have not experienced any accidental damage.
- ✓ You are able to provide valid proof of purchase.

2. Whatnot Covered Bythis Warranty?

This warranty does not apply to any non-RoboUP branded hardware products or any software, even if packaged or sold with RoboUP hardware. Software distributed by RoboUP with or without the RoboUP brand (including, but not limited to system software) is not covered by this warranty. RoboUP does not warrant that the operation of the RobouP Product will be uninterrupted or error-free. RoboUP is not responsible for damage arising from failure to follow instructions relating to the RoboUP Product's use. For any situations not covered by the warranty (see below list), you will be required to pay a fee to access officially authorized RoboUP maintenance services.

The warranty does not apply:

- * To damage caused by incorrect installation, use and or operation of product not in accordance with the official product manual.
- * To damage caused by unauthorized (not included in the official product manual) modification, disassembly, opening of the product and or attempted repairs;
- * To consumable parts, such as batteries or protective coatings, that may naturally diminish over time, unless failure has occurred due to a defect in materials or workmanship;
- * To cosmetic damage, including but not limited to scratches, dents and broken plastic, unless failure has occurred due to a defect in materials or workmanship;

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- * To damage caused by the use of third-party components or products;
- * To accidental damage, for example, which the product is dropped or suffers improper water damage, such as water seepage from using a high-pressure washer, or from being submerged under water, for example when heavy rain forms pools of water;
- * To product failure or damage caused by major incident or natural disaster (for example, fire, earthquake, lightning etc.)
- * To damage during upgrade/repair services carried out by anyone other than RoboUP's representatives;
- * To defects caused by normal wear or aging;
- * To damage caused by improper use or storage of battery packs and chargers;
- * If the product's serial number has been removed or smeared manually;
- * If you are unable to provide the PIN/security codes to prevent unauthorized use of RoboUP products, unless you can prove that you are an authorized user of the product (for example, by presenting proof of purchase);
- * If after contacting RoboUP to confirm the warranty service, the corresponding item is not sent within 7 days.

3. How To Obtain Warranty Service?

If a product does not function as warranted during the warranty period, you may obtain after-sales service by contacting RoboUP's online service as provided in www.iroboup.com/Warranty/index.html. Please note that before receiving warranty service, RoboUP or its agents may require that you furnish proof of purchase details, respond to questions designed to assist with diagnosing potential issues and follow RoboUP's procedures for obtaining warranty service.

4. What Will RoboUP Do?

When you experience an issue with your product, please contact RoboUP and explain in as much detail as possible what the problem is. RoboUP will attempt to diagnose and resolve your problem by email or remote assistance, and possibly direct you to download and install particular software updates. If the issue cannot be solved remotely, you will obtain an RMA number and need to return the product to RoboUP for further testing and inspection.

If the problem is due to an issue covered under the warranty, RoboUP will be responsible for the repair costs.

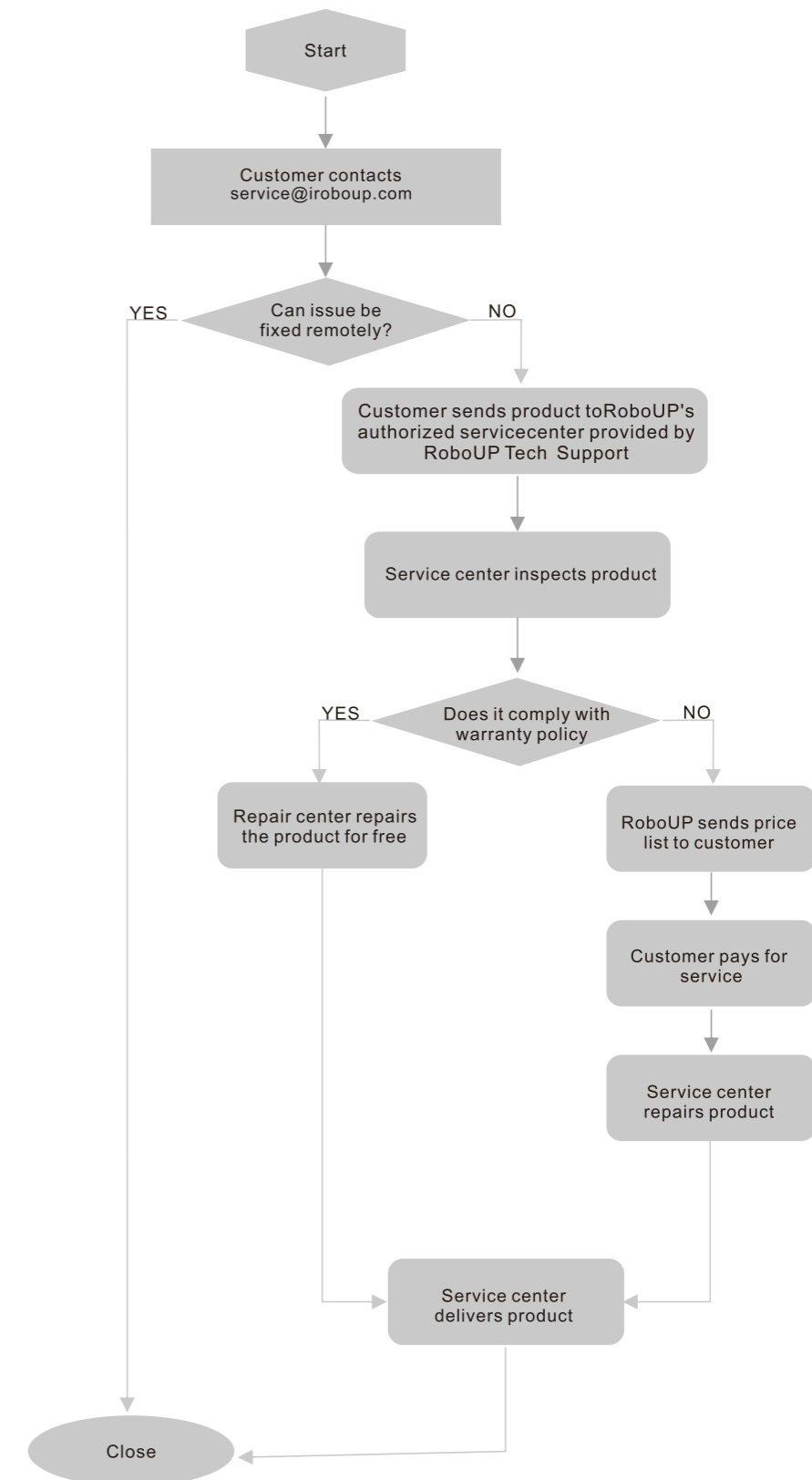
If the product does not meet the conditions for free repair, RoboUP will charge a fee for testing, replacement parts, labor and courier costs, according to the specific case. Customers can choose to pay for the repair or have the original device returned without repair. The replacement of products or parts provided by RoboUP may not be brand new or packaged, but will be in perfect working order and at least equivalent in performance to the replaced part. The replaced product will still be covered under the warranty of the original product. Please note that the replaced product or part becomes RoboUP's property and the replacement product or part becomes your property. Only unaltered RoboUP products and parts are eligible for replacement.

RoboUP may not be able to provide after-sales service in all locations, and the content of the after-sales service policy varies with location. Services outside the regular service range may incur a charge. For local information, please contact RoboUP.

5. Warranty Period

Main body	3 years warranty available with app registration.
RTK Antenna	2 years
Charging Station	2 years
Battery	2 years
Power Adapter	2 years
Blades	No warranty, consumables
Wheels	No warranty, consumables
Other Accessories	Nowarranty

6. General After-Sales Service Flow



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7. Limitation Of Liability

When receiving service, RoboUP is responsible for loss or damage to your product only while it is in RoboUP's possession or transit if RoboUP is responsible for transportation.

RoboUP is not responsible for the loss or disclosure of any data, including confidential information, proprietary information, or personal information, contained in a product.

Under no circumstances, and notwithstanding the failure of the essential purpose of any remedy set forth herein, shall RoboUP, its affiliates suppliers, resellers, or service providers be liable for any of the following even if informed of their possibility and regardless of whether the claim is based in contract, warranty, negligence, strict liability or other theory of liability: (1) third party claims against you for damages; 2) Loss, damage or disclosure of your data; 3) Special, incidental, punitive, indirect or consequential damages including but not limited to lost profits, business revenue, goodwill or anticipated savings. In no case shall the total liability of RoboUP, its affiliates, suppliers, resellers, or service providers for damages from any cause exceed the amount of actual direct damages, not to exceed the amount paid for the product.

The foregoing limitation does not apply to damages for bodily injury (including death), damage to real property, or damage to tangible personal property for which RoboUP is liable under the law.

As some states or jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, the above limitation or exclusion may not apply to you.

8. Important Info

Please contact the RoboUP technical support team or submit an after-sales request before sending back any product. RoboUP may reject or return products without an assigned RMA number.

Due to differences between product versions, your product will be designated a specific, regional maintenance center by RoboUP. If you have any questions about the after-sales service policy, please contact the RoboUP after-sales service team.

Please note that product repair may cause data loss; please back up your data first if necessary.

If the recipient address you provide is wrong, or the recipient refuses to receive the delivery, any resulting loss shall be borne by the recipient.

If the product cannot be delivered or is rejected, it will be returned to RoboUP. RoboUP will retain the product and calculate a storage fee from the date of return. The standard storage fee is US\$10/day or EURO€10/day. If/when the storage fee becomes equivalent to the remaining value of the product, RoboUP has the right to dispose of the product. The calculation method for product value is equal to the original selling price minus the cost of repair.

If you want to send products across different countries/regions, you need to obtain RoboUP's consent, and you will be responsible for paying the resulting tariffs and customs clearance costs.

When you sign for the product please check it is in good condition. Ensure no damage has occurred during delivery, or for any other reason. Damage to items during transportation must be reported to the RoboUP after-sales service center within 24 hours. For other issues with your returned product, please inform RoboUP within 48 hours from the date of receipt. After this period RoboUP will assume that the product is not damaged and performance is normal.

9. Additional Legal Rights For Consumers

For consumers who are covered by consumer protection laws or regulations in their country of purchase or, if different, their country of residence, the benefits conferred by RoboUP's Limited Warranty are in addition to all rights and remedies conveyed by such consumer protection laws and regulations, including but not limited to these additional rights.

13.3 Error Messages

Below is a list of error messages, what they mean and how to fix the issue. If the issue cannot be fixed by reboot, please contact service@iroboup.com for further support.

Error Message	Cause	Action
Left wheel motor blocked	Left wheel motor is stuck by grass or other objects.	Check drive wheel and remove grass or other objects. After that, if shutdown and restart don't fix it, contact customer service.
Right wheel motor blocked	Right wheel motor is stuck by grass or other objects.	Check drive wheel and remove grass or other objects. After that, if shutdown and restart don't fix it, contact customer service.
Cutting motor blocked	Blade disc is stuck by grass or other objects.	Check blade disc and remove grass or other objects. After that, if shutdown and restart don't fix it, contact customer service.
Cutting height blocked	Cutting height adjustment malfunction, or blade disc is stuck by grass or other objects.	Check blade disc and remove grass or other objects. After that, if shutdown and restart don't fix it, contact customer service.
Left wheel motor overload	Left wheel motor malfunction because of over-current.	Check drive wheel and remove grass or other objects. After that, if shutdown and restart after relocating don't fix it, contact customer service.
Right wheel motor overload	Right wheel motor malfunction because of over-current.	Check drive wheel and remove grass or other objects. After that, if the shutdown and restart after relocating don't fix it, contact customer service.
Cutting motor overload	Cutting motor malfunction because of over-current.	Check blade disc and remove grass or other objects. After that, if the shutdown and restart after relocating don't fix it, contact customer service.
Cutting motor high temperature	Ambient temperature is too high	Let mower cool down before restart.
Motor problem: M11	Left wheel motor disconnected	Shut down and restart mower. If it doesn't work, contact customer service.
Motor problem: M21	Right wheel motor disconnected	Shut down and restart mower. If it doesn't work, contact customer service.
Motor problem: M31	Cutting motor disconnected	Shut down and restart mower. If it doesn't work, contact customer service.
Motor problem: M12	Left wheel motor hall sensor fault	Shut down and restart mower. If it doesn't work, contact customer service.
Motor problem: M22	Right wheel motor hall sensor fault	Shut down and restart mower. If it doesn't work, contact customer service.
Motor problem: M32	Cutting motor hall sensor malfunction	Shut down and restart mower. If it doesn't work, contact customer service.
Battery low temperature	Ambient temperature is too low	Let battery warm up and restart mower.
Battery high temperature	Ambient temperature is too high	Let battery cool down and restart mower.
Battery discharging current too high	Battery discharge overcurrent	Pause mowing before restart. If fault is repeating, contact customer service.
Battery charging current too high	Battery charge overcurrent	Use correct mains adapter. Pause charging for 30 mins before restart. If fault is repeating, contact customer service.
Battery problem: B01	Battery voltage is low	Charge mower and try again. If fault is repeating, contact customer service for replacing battery pack.
Battery problem: B02	Battery is defective	Charge mower and try again. If fault is repeating, contact customer service for replacing battery pack.

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Error Message	Cause	Action
Mower tilted	Mower is tilted	Put mower down on new position before restart.
Mower lifted	Mower is lifted	Put mower down on new position before restart.
Mower upside down	Mower is upside down	Put mower down on new position before restart.
Mower trapped	Mower is trapped	Put mower down on new position before restart.
Camera malfunction	Camera malfunction	Check out and clean camera.
Outside working area	Mower is moved out of boundary.	Carry mower within mapped boundary and restart.
Outside Geo-fence	Mower is moved out of Geo-fence	Carry mower within mapped boundary or enter correct PIN code.
Charging station blocked	Charging station is blocked by some objects.	Remove obstacles and enable mower returning to charging station freely.
Cannot find charging station	Charging station is power off or the QR code gets dirty.	1. Check if charging station is powered up or relocated. 2. Check if QR code plate is dirty.
Invalid map, map creation failure	Hasn't followed instructions to create map.	Please strictly follow the instructions of this manual to re-create the map.
End point not near start point, map creation failure	Hasn't followed instructions to create map.	Please strictly follow the instructions of this manual to re-create the map.
Electronic problem: H11	AI camera disconnected	Shut down and restart mower. If it doesn't work, contact customer service.
Electronic problem: H21	VSLAM camera disconnected	Shut down and restart mower. If it doesn't work, contact customer service.
Electronic problem: H31	AI module disconnected	Shut down and restart mower. If it doesn't work, contact customer service.
Electronic problem: H41	Navi module disconnected	Shut down and restart mower. If it doesn't work, contact customer service.
Electronic problem: H52	IMU malfunction	Shut down and restart mower. If it doesn't work, contact customer service.
Electronic problem: H62	IMU malfunction	Shut down and restart mower. If it doesn't work, contact customer service.
Electronic problem: H72	Electronic malfunction	Shut down and restart mower. If it doesn't work, contact customer service.
GPS problem: R01	GPS signal interference	Shut down and restart mower. If it doesn't work, contact customer service.
GPS problem: R02	GPS module malfunction	Shut down and restart mower. If it doesn't work, contact customer service.
GPS problem: R03	Data transmission module malfunction	Shut down and restart mower. If it doesn't work, contact customer service.

13.4 Troubleshooting

The following chart offers a guide to help identify an issue, and if possible, repair by yourself. If the issue cannot be solved, please visit the official website www.irobot.com for more FAQs or contact service@irobot.com for further support.

Issue	Possible Cause	Action
APP cannot connect to the mower	1. Weak Wi-Fi Signal. Perhaps mower is too far away from Wi-Fi router.	1. Move the mower and the mobile phone closer to the router to get a good and stable Wi-Fi signal, then try again.
	2. Your Wi-Fi router is dual-band (5GHz and 2.4GHz) and only 5GHz is enabled.	2. Check the router manual and enable 2.4GHz frequency.
Connection between smart phone APP and mower is interrupted/ disturbed occasionally	Mower is too far away from router. Probably too many blocking objects (walls, sheet metal roof, trees) between router and mower, causing unstable and weak Wi-Fi signal strength.	Find better location for router and enhance Wi-Fi signal coverage to ensure a stable Wi-Fi signal to prevent disconnecting.
Mower does not turn on	1. The battery is out of power.	1. Put the mower in the charging station with the power supply connected, wait for the mower to charge, then try to turn it on.
	2. The ambient temperature is too high, and the battery cannot work.	2. Move the mower to a place with a suitable temperature of 5°C-35°C to cool down or warm up until it automatically exits the protection mode and try again.
Mower does not respond to the APP during mapping.	Weak Bluetooth signal. Perhaps mower is too far away from the smart phone	To avoid disconnection, keep the distance between the smart phone APP and the mower to be 2-3 meters.
The map shown in the APP is not updated in real-time or in time when mapping or mowing.	1. It is affected by network latency.	1. If the APP doesn't update with the new info in time, it may be affected by network latency. Wait patiently and check if it stays the same for a longer time. If so exit to refresh.
	2. The mower disconnects from the router's network.	2. Before refreshing the map in the APP, ensure that the mower is connected to the router's network well.
Failed to create a boundary	1. The size of the map is invalid.	a. Ensure the boundary loop is more than 7.5m and less than 500m. b. Ensure the map area is not too large or too small. c. Ensure the mower doesn't stop mapping and return to the charging station before finishing. d. Ensure the mower doesn't keep going around when mapping. e. Ensure the right wheel of the mower faces the boundary when running along the garden's edge.
	2. The endpoint is not near the starting point.	a. Ensure the distance between the starting and end points is within 2m. b. Ensure the mower doesn't stop mapping and return to the charging station before finishing mapping. c. Ensure the mower doesn't keep going around when mapping.

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Issue	Possible Cause	Action
Failed to create a no-go zone.	The size of the no-go zone is invalid.	a. Ensure the loop is more than 1.8m or the no-go zone is not too small. b. Ensure the no-go zone is more than 80cm from the boundary or more than 2m from the charging station. c. Ensure the mower runs clockwise.
Failed to create a passage.	1. The end point is invalid.	Ensure the endpoint of the passage is on the target map.
	2. The length of passage length is invalid.	Ensure the length of the passage is more than 0.6m and less than 20m.
	3. The passage is crossed the dangerous boundary.	Ensure that the dangerous boundary does not cover the passage.
	4. The wheel slipped while creating the passage.	Ensure the mower is not trapped in the passage. If yes, move it to a new position to start.
Mower cannot charge after returning to the charging station.	1. The charging station has no power.	1. Check the power indicator of the charging station to ensure that the charging station can provide power.
	2. The charging pins of the charging station and the mower are dirty.	2. Check the four charging pins on the mower and the charging station. If they are dirty, please wipe them with a clean paper, towel or cloth.
	3. The ambient temperature is too high and the battery cannot work.	3. Move the mower to a place with a suitable temperature to cool down until it automatically exits the high-temperature protection mode after the temperature is restored and try again.
	4. The charging current is overloaded.	4. Make sure the original charging adapter is used for charging the mower.
Although mower is low power it does not return to charging station automatically.	1. The GPS signal is unstable.	1. Observe the GPS signal indicator to identify the GPS signal strength. If it is not good, please find a good location for the RTK base station to obtain a stable GPS signal and then try again.
	2. There are obstacles around the charging station that cause interference.	2. Remove the obstacles blocking the mower's route to the charging station.
	3. The mower is trapped.	3. Check whether the mower has been trapped in a narrow road. If YES: remove obstacle or trap. Check whether any obstacles block wheels or other chassis parts of the mower. Remove any obstacles and try again to recharge.
	4. No map created.	4. The mower cannot find the map of the lawn, or it cannot find the path to go back to the charging station as there is no passage that links the different zones.
The actual location of the mower doesn't match its icon on the map	1. The mower is blocked.	1. Remove the obstacles around or above the mower to avoid affecting the GPS signal.
	2. The RTK base station is blocked.	2. Remove the obstacles around the RTK base station or find a good location for the RTK base station to ensure that the GPS signal is good enough.
	3. The mower has been moved manually.	3. Please move the mower to the charging station or an open area for repositioning.

Issue	Possible Cause	Action
Mower's mowing path is not straight enough.	1. The mower is avoiding obstacles.	1. Remove obstacles from the work area to avoid the mower is running in anti-collision pattern and not moving straight.
	2. The lawn is uneven.	2. If the mowing effect is seriously affected, please fill in the depression or deal with the raised terrain if necessary.
	3. The GPS signal is unstable.	3. Observe the GPS signal indicator to identify the GPS signal strength. If it is not good, please find a good location for the RTK base station to obtain a stable GPS signal and then try again.
Mower does not properly avoid living objects.	1. The front lens of the camera is blocked, or lens cover is dirty.	1. Check whether there are obstacles or dirt in the front of the camera. If YES: remove objects and wipe lens cover it with a clean tissue or cloth.
	2. Obstacles are too low or obscured by grass, which affects the mower's object recognition skills.	2. Remove obstacles (such as objects with an area of less than 0.3 square meters) being too low profile for recognition by the mower's camera or blocked by grass.
Mower is not mowing according to schedule.	1. Mower's STOP button was pushed, or mower encountered a failure and was not unlocked in time.	1. Restart mower and enter correct PIN code.
	2. Mower is powered off.	2. Long press power button to ensure mower turns on.
	3. Mower ran out of power and did not recharge properly.	3. Refer to Item 7 and Item 8 for further inspection.
	4. Mower's rain sensor is enabled, raindrops hit the sensor and disabled mowing per schedule.	4. With no rain, wipe off any water droplets from rain sensor and try again.
Mower moves out of area/crosses boundaries.	1. Wheels are stuck with mud or grass debris, resulting in insufficient grip and slippage.	1. Check the wheels and clean them if necessary.
	2. Edge terrain has a slope of more than 15% and the boundary wire is arranged too close to the edge.	2. If the edge terrain has a slope of more than 15%, set the virtual boundary wire with a distance of at least 30cm from the edge of the slope.
	3. The GPS signal is unstable.	3. Observe the GPS signal indicator to identify the GPS signal strength. If it is not good, please find a good location for the RTK base station to obtain a stable GPS signal and then try again.
Mowing result is uneven.	1. Blades are not sharp enough.	1. After mower is powered off, check blades for chipping or dulling. If any, replace the entire set of blades including screws.
	2. Part of the grass is too long.	2. Height of the grass due for mowing must not exceed 10cm. If the grass is relatively long, adjust the mowing height of the mower from high to low or mow two times to obtain a better mowing effect.
	3. Blade disc is stuck.	3. After mower has shut off, carefully check if mowing disc is stuck due to foreign objects. Remove any objects carefully.
A large area of the lawn was not mowed well.	Mowing time settings are set insufficiently.	Set the appropriate mowing time according to the area to be mowed as suggested.

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Issue	Possible Cause	Action
Small area with grass was not mowed.	1.Uncut grass is probably too long.	1.The height of the grass to be mowed should not exceed 10cm. If grass is rather long, adjust mower's mowing height step wise from high to low or set mower to repetitive mowing (2x, 3x) the lawn to obtain a better mowing result.
	2.Mower stops mowing when avoiding obstacles.	2.Remove any obstacles from lawn area due for mowing.
Mower vibrates	1.The damaged blades lead to an imbalance in the cutting system.	1.After the mower is powered off, check the blades and the screws for chipping or dulling. If any, replace the entire set of blades with the screws.
	2.The damaged blade disc leads to an imbalance in the cutting system.	2.Inspect the blade disc. If it is broken, please contact the after-sales team.
Mower lingers in place.	1.There are many obstacles, or there is dirt left in the front baffle of the camera, which will affect the navigation path of the mower.	1.Remove objects and clean the camera
	2.A person is standing near the mower, which triggers liveness recognition.	2.When in action stay clear from the mower.
Mower is trapped	1.Wheels, blade disc or other chassis parts are blocked by foreign objects.	1.After mower is powered off, check blade disc. Remove objects and clean blade disc if necessary.
	2.Mower is stuck in low-lying or loose soil, causing wheels to slip.	2.Help the mower get out of trouble and create no-go zones if necessary.
	3.Mower is stuck in the pit and cannot get out.	3.Get mower out of trouble. Create no-go zones or directly fill the pothole area if necessary.
	4.Mower gets into a narrow lane or blind alley/dead end and cannot get out.	4.Get mower out of trouble. If necessary, create no-go zones in front of narrow road or dead end.

14 Trademark and Legal Statement

RoboUP® and the logo design are registered trademarks of RoboUP® Co., Ltd.. Android, Google Play are trademarks of Google Inc. App Store is a service mark of Apple Inc.. The respective owners reserve the rights of their trademarks referred to in this manual.

15 Environmental Protection



This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.



Separate collection of used machine and packaging let you recycle materials and use them again. Use of the recycled materials helps prevent environmental pollution and decreases the requirements for raw materials.



At the end of their useful life, discard batteries with a precaution for our environment. The battery contains material that is dangerous to you and the environment. You must remove and discard these materials separately at an equipment that accepts lithium-ion batteries.



Warning: This product can expose you to chemicals including Lead (Pb), which is known to the State of California to cause cancer. For more information go to www.p65Warning.ca.gov

16 Certifications

RED

868MHz module	Frequency	863MHz-870MHz
	Max. Power	20dBm

This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and a human body.

2.4GHz	Frequency	2412MHz-2472MHz
	Max. Power	20dBm

Bluetooth module	Frequency	2402-2480 MHz
	Max. Power	9dBm

This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and a human body.

IC

This device may not cause interference; (2) This device must accept any interference, including interference that may cause undesired operation of the device.

// 16 Certifications

Le présent appareil est conforme aux CNR d'Industrie 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, et (2) l'utilisateur de l'appareil doit

accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement. Cet équipement est conforme à l'exposition aux rayonnements Industry Canada limites établies pour un environnement non contrôlé.

This radio transmitter [Contains IC ID: 23804-BT241 for 2.4GHz&Bluetooth module, 23804-RF915 for 868MHz module] has been approved by innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated, Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device

These modules are approved for installation into mobile or/and portable host platforms at least 20cm away from the human body
Caution: Any changes or modifications to this device not expressly approved by Shenzhen Kaiqi Technology Co., Ltd. For compliance could void the user's authority to operate the equipment.

Innovation, Science and Economic Development Canada ICES-003 Compliance Label:
CAN ICES-3 (B)/NMB-3(B)

FCC SDOC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

FC

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.

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.

These modules are approved for installation into mobile or/and portable host platforms at least 20cm away from the human body.

Caution:

Any changes or modifications to this device not expressly approved by Shenzhen Kaiqi Technology Co., Ltd. For compliance could void the user's authority to operate the equipment.

Contains FCC ID: 2ADDW-BT241

Contains FCC ID: 2ADDW-RF915

CE

This product conforms to the applicable EC Directives.

RoboUP



Scan QR code to discover more about RoboUP®