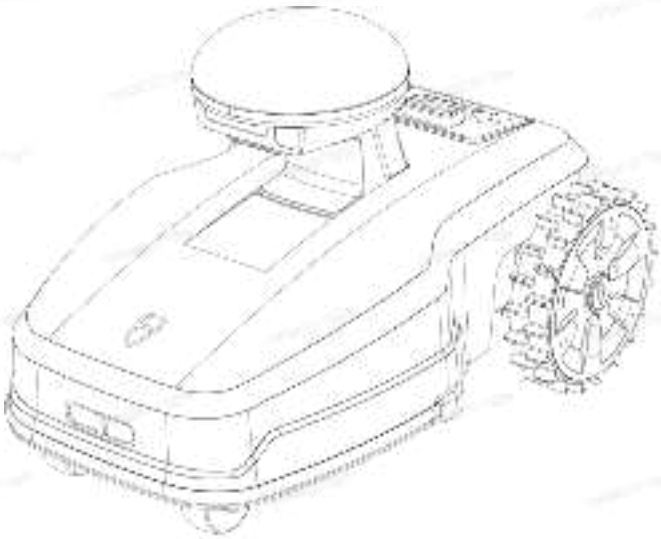
EN_FR4000 Robotic Lawn Mower_User Guide V0.4



Product: Robotic Lawn Mower Model: FR4000

Version: V0.4 / 2024-07-03

Copyright statement

Read before use

To avoid or reduce the risk of injury, users must read and understand this user manual before using this product.

Please keep this user manual properly.

Safety Tips

This symbol indicates important safety instructions. Failure to follow these instructions may endanger the personal safety or property safety of operators and other personnel. Before attempting to operate the lawnmower, please read and understand all instructions in this manual.

Revision Record

Version	Date	Description
V0.4	2024.07.03	Public Version, but not involved in the FR4000 package.

Preface

Thank you for using the product of FJDynamics. This manual provides you with instructions on the functional characteristics, installation, debugging, deployment, and the usage of Robotic Lawnmower, as well as matters needing attention during use. Before using this product, please read this manual carefully and use it according to the instructions. If you encounter any problems during the use of this product, please contact customer service or after-sales services personnel, and we will serve you wholeheartedly.

1. Safety instructions

Please read this safety statement and the safety advice and precautions in the text carefully before using this product. You must comply with the safety information in this manual and all applicable local regulations.

The safety recommendations and precautions in this manual introduce important information that must be followed to prevent personal and property damage when using and working around the product, aiming to help users:

- Detect and prevent dangerous situations
- Safe and correct use of this product and related equipment
- View the information on the safety label posted on this product
- Work in a safe working environment

1.1 Safety marking

(Will Be Updated Soon)

1.2 Notes

Operator Instructions

- Operators must be trained to use this product. Any losses or injuries caused by improper use shall be borne by the user.
- Please clean and maintain the robot when it is turned off or powered off.
- Prohibit unauthorized disassembly of robots.

Equipment usage restrictions

- The products or services you purchase are subject to commercial contracts or terms. Some of the products or services described in this manual may not be within the scope of your purchase or use, and FJDynamics will not make any other explanations.
- Do not allow children to use or operate this robot.
- Do not allow people with physical, mental, or perceptual disabilities to use or operate this robot.
- Do not put your fingers in the gaps to avoid injury.
- Do not stand or sit on the robot or its charging station, and do not place any debris above it.
- When operating a lawnmower in a dusty environment, always wear a full face mask or dust mask.
- Always wear gloves when handling blades.
- Turn off the power and wait for all parts to stop completely before cleaning the machine. After the machine is turned off, the cutting blade will continue to rotate for a few seconds. Do not place any part of your body in the blade area until you ensure that the blade stops rotating.
- Do not operate the lawn mower when tired.
- Do not operate a lawnmower when under the influence of drugs, alcohol, or other substances.

2. Product introduction

2.1 Introduction

The FJD FR4000 is an advanced robotic lawn mower designed to provide efficient, autonomous lawn care. This user guide covers the setup, operation, and maintenance of the FR4000 mower.

Powered by industrial RTK technology and a smart vision system, the FJD FR4000 robotic lawn mower defines virtual boundaries and ensures centimeter-level accuracy in positioning, eliminating the need for wires. It features obstacle avoidance, autonomous path planning, and virtual boundary mapping capabilities through the companion app.

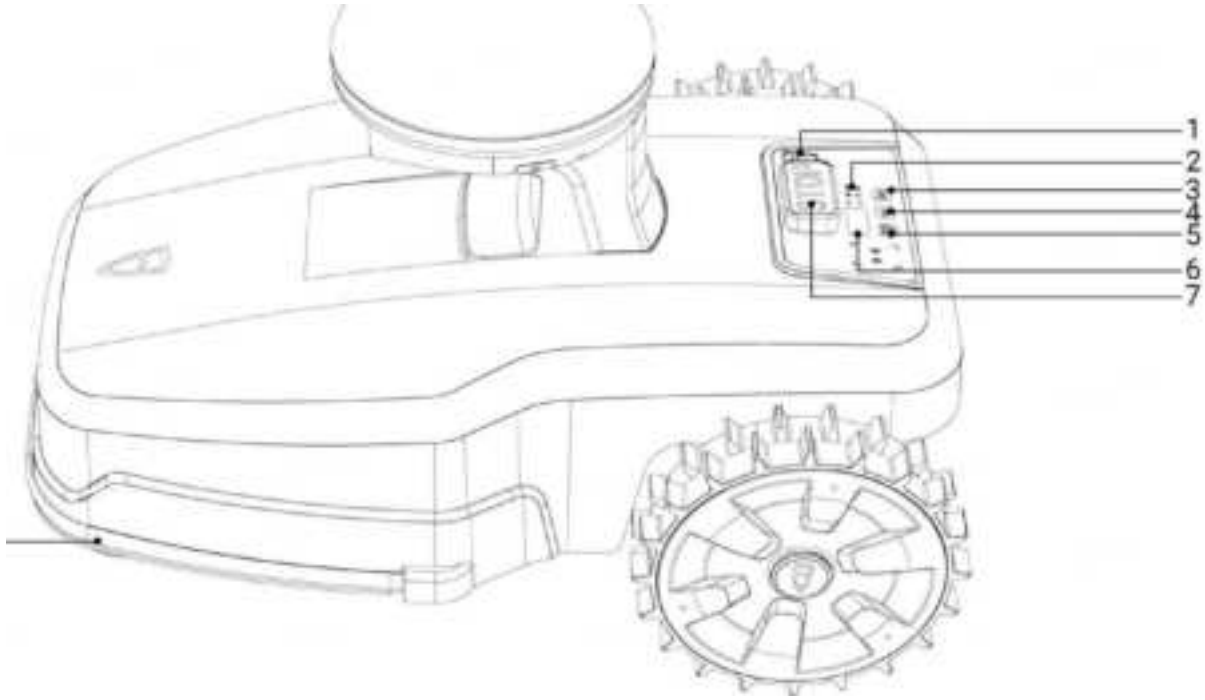
Key features include:

- Industrial RTK, at Least 1km Coverage
- No Perimeter Wires
- Mow up to 4000㎡ (1 acre)
- Max Slope Up to 33° (65%)
- Smart Vision System
- Path Planning and Auto-recharging
- Multi-zone and No-go Zone Management
- App Control and OTA Updates

This manual will guide you through the initial installation, setting up the app, operating modes, maintenance procedures, troubleshooting, and technical specifications of the FJD FR4000. Follow the instructions carefully to ensure the safe and optimal performance of your robotic lawn mower.

2.2 Main components

2.2.1 Lawn mower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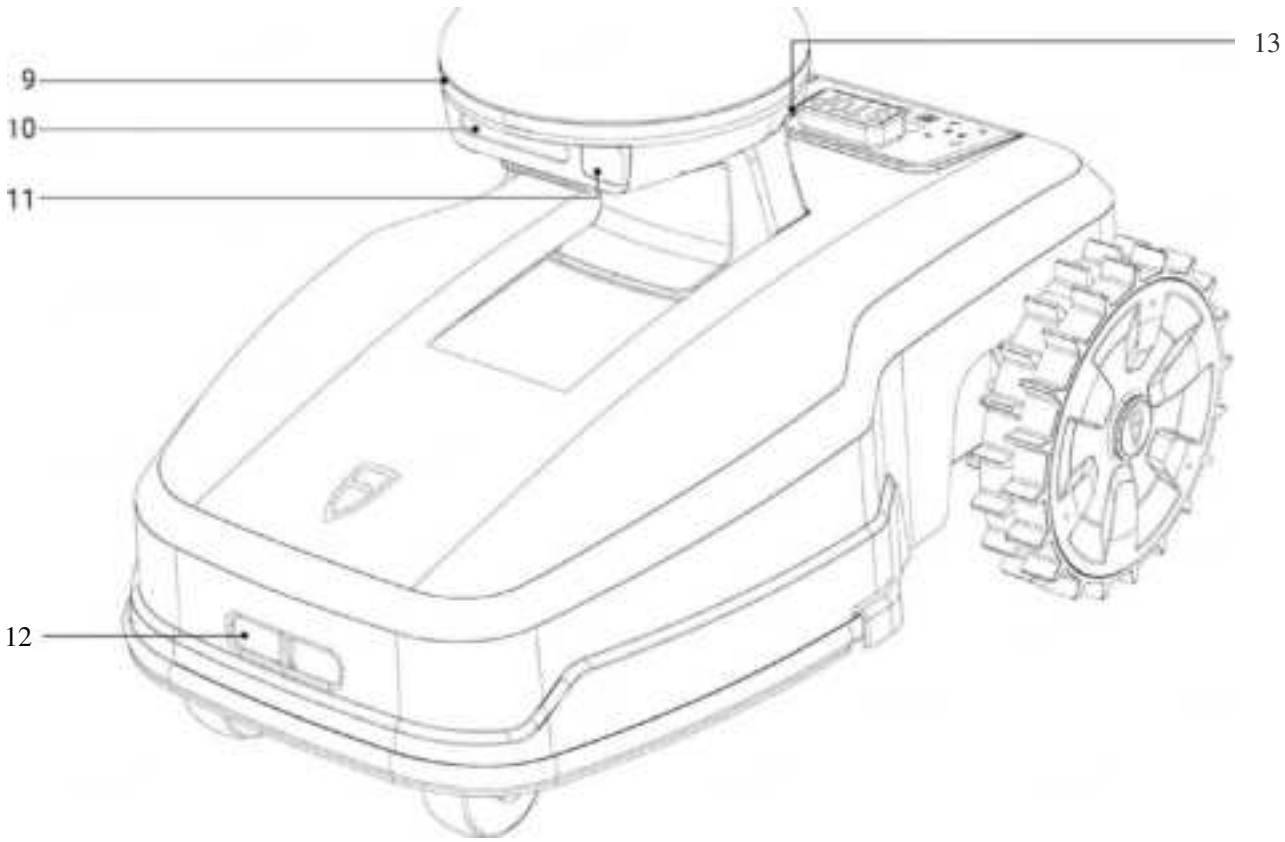
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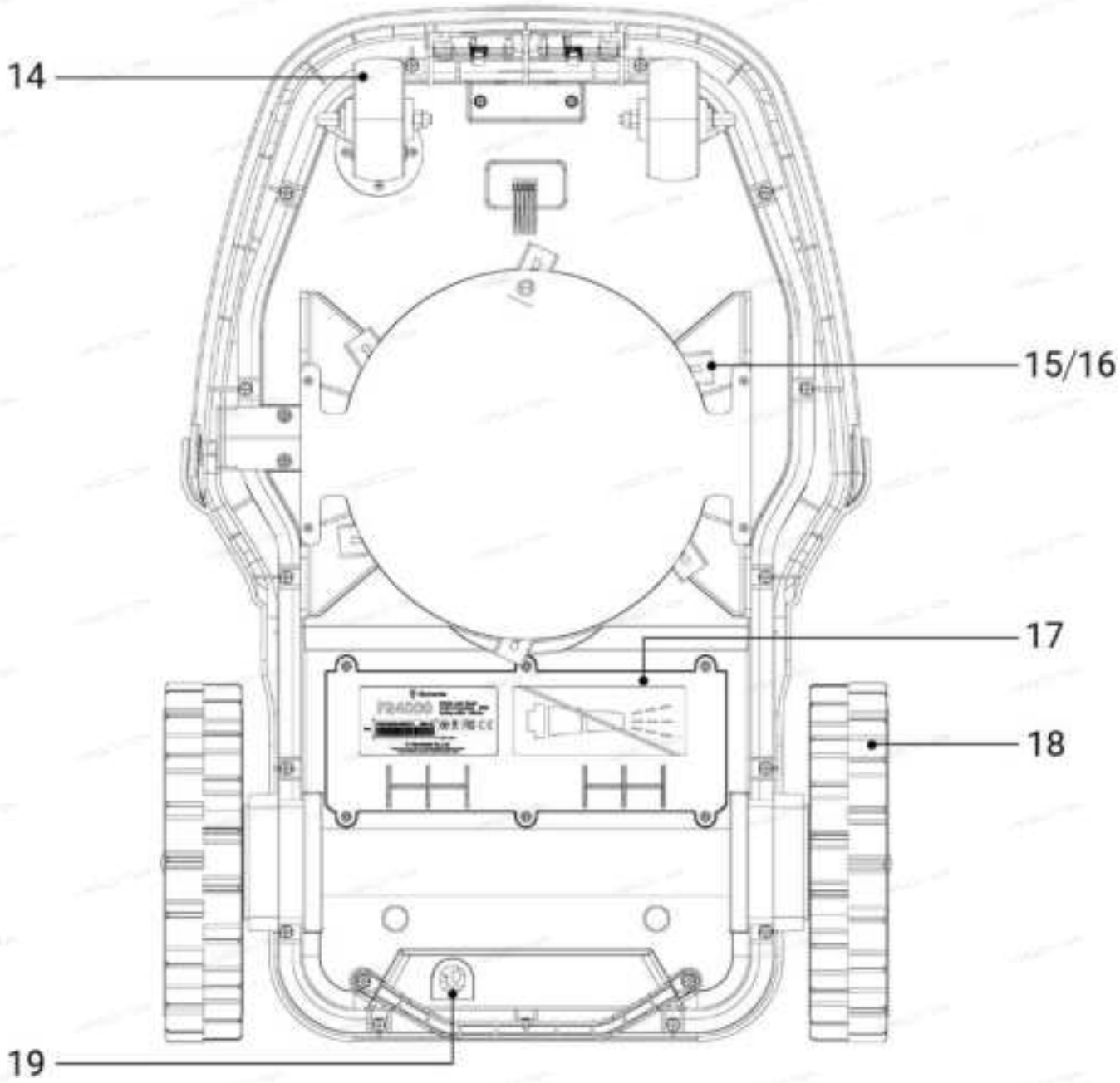
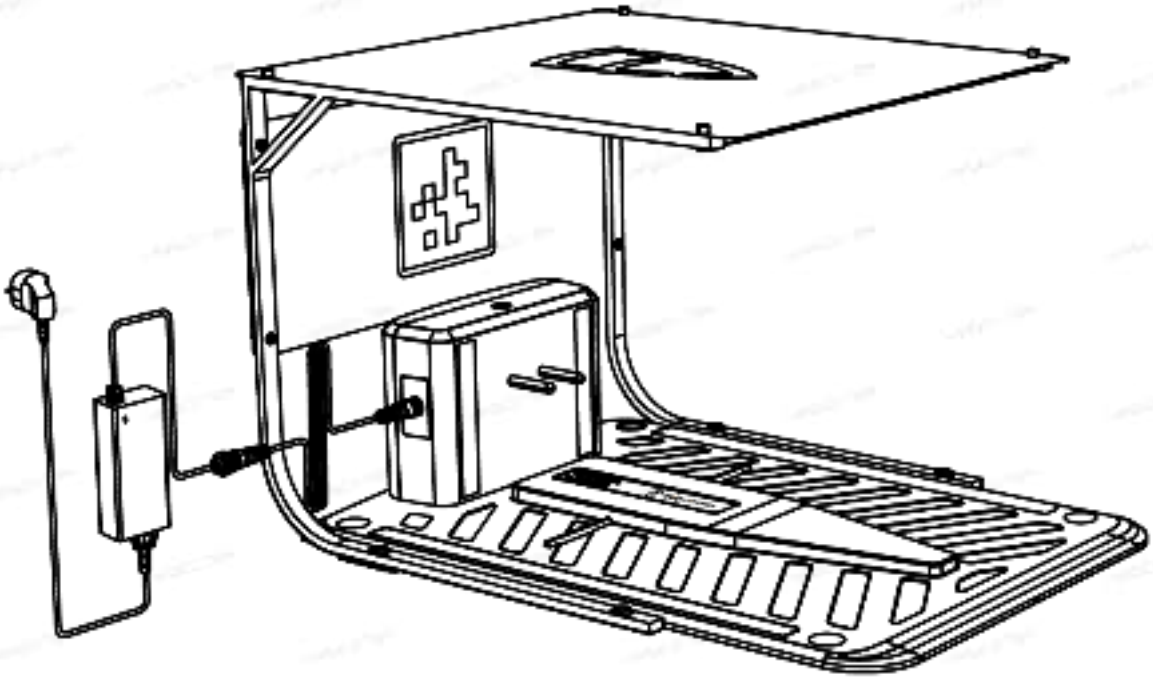


(User guide- Main Components - Lawn Mower - Front View - Number Missing)

Number	Component name
1	Rain Sensor
2	Indicator Light Area
	Wi-Fi Indicator Light
	RTK Signal Indicator Light
	Bluetooth Indicator Light
	Power Indicator light

	Lock Indicator Light
	Mower Blade Indicator Light
3	Recharge Button
4	Confirm Button
5	Mowing Button
6	Digital Display Screen
7	Emergency Stop Button
8	Bumper strip
9	Light Strip
10	Binocular camera
11	Monocular camera
12	Charging Port
13	SIM card slot
14	Universal wheel
15	Cutting Blade
16	Cutting Disk
17	Battery compartment
18	Driving wheel
19	Power Switch

2.2.2 Charging Station



Number	Component name
20	Top button
21	Status indicator light
22	Charging interface
23	Charging electrode
24	Power Supply
25	Power Adapter（Must Be Placed Indoors)

2.2.3 RTK Reference station

(Will Be Updated Soon)

2.3 Specifications

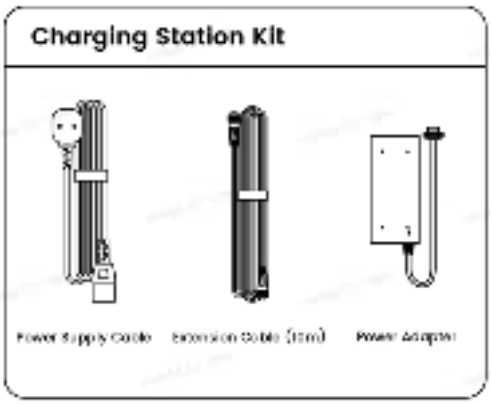
Specs		
Capacity	Max mowing size	4000㎡ (1 acre)
	Boundary type	Virtual boundaries (No perimeter wire)

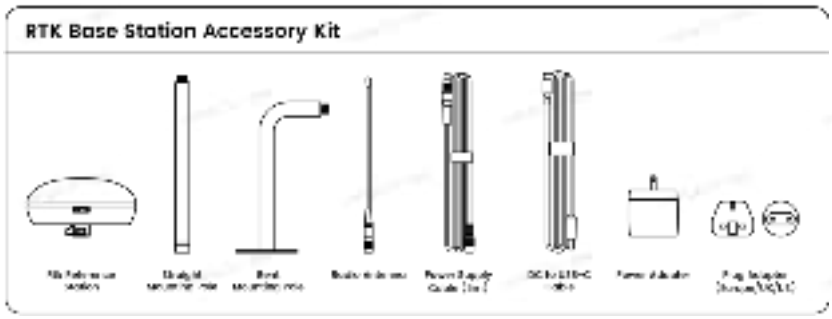
	Net weight	13.3kg
	Dimension	645mm×444mm×420mm25.4in ×17.5in×16.5in
	Max climbing ability	33° (65%)
	Max mowing size	4000㎡ (1 acre)
	Boundary type	Virtual boundaries (No perimeter wire)
	Net weight	13.3kg
	Dimension	645mm×444mm×420mm 25.4in×17.5in×16.5in
	Max climbing ability	33° (65%)
	Waterproof level (mower, charging station, RTK reference station)	IPX5, IP65, IP67
Positioning & Navigation	Industrial RTK & enhanced vision	Supported
	Radio RTK mode & network RTK mode	Supported
	User interface	Keyboard & APP control
	Firmware update	APP update through OTA
	Connectivity	4G & Wi-Fi & Bluetooth
Cutting System	Cutting width	255mm 10in
	Cutting height range	10-50mm 0.4-2in
	Mowing speed range	0.3–0.5m/s
	Blade speed range	high, middle, and low
	Blade type	6 pivoting stainless steel blades
	Cutting mode	

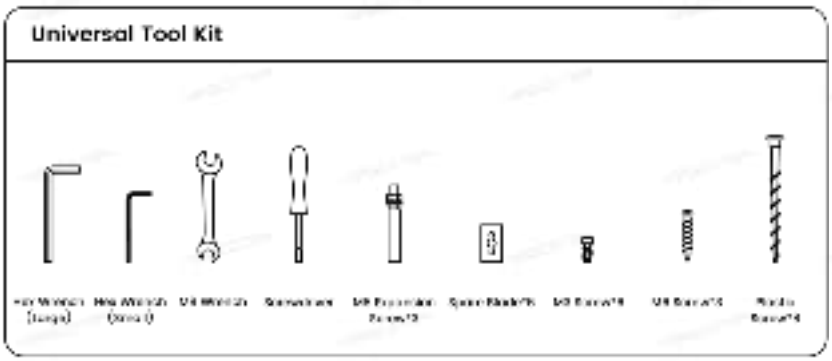
		parallel stripes with a specific angle
Product Safety	Object detection & avoidance system	Stereo camera & RGB camera & physical bumper
	Lift sensor	Yes
	Security System	PIN access, alarm, charging station pairing, GPS theft tracking
	Tilt sensor	Yes
Battery & Charging	Dual battery capacity	190Wh
	Battery type	Lithium-ion battery
	Charging mode	Automatic & manual
	Auto-recharging	Yes
	Mowing time per full charge	180 min
	Charging time	120 min

3. Preparation before use

3.1 Packing List







4. Deploy and install

If you have a network RTK service account based on Ntrip, you can use the network RTK positioning solution without deploying an RTK antenna.

4.1 Deploy RTK antennas

In order to optimize the performance of the RTK system, the RTK antenna must be located in an open area to receive satellite signals. You can install the RTK reference station on a flat and open ground, or on a wall or roof. Generally, you can place the RTK antenna on the ground, but if you have multiple lawns, we recommend placing the RTK antenna on a wall or roof to improve stability and coverage.

4.1.1 Install RTK on the ground

If the RTK antennas installed on walls/roofs are not available for your using scenarios, you can choose to purchase our [Tripod Kit] accessories. You can check the detailed instructions below.

Site selection requirement

Select the appropriate position to install the reference station. The requirements are as follows:

- Choose a place with no trees or power towers nearby. Also locate your RTK antenna with the tripod on an open field & a terrain as high as possible;
- Choose the land with dense soil to ensure that the position does not move after installation;
- The position will not be affected by collision of operating machinery;
- Choose a location that is easy to find.

Installation Guidance

1. Suggesting finishing the first installation of the receiver in the following sequence:

a. On the selected plot, bury and compact the reference station measuring stake in the ground; The top of the marking pin is at the same level as ground. Mark the location of the marking pin for the convenience of next use.

b. Take out the receiver, antenna adapter and radio antenna. Then connect the radio antenna & antenna adapter of the receiver. The receiver needs to be mounted on the center bar of the tripod; then just turn it on.

c. Place the bottom of the center pole of the tripod on the marking pin, and step the three legs of the adjusting tripod firmly; Adjust the length of the three legs so that the horizontal bubble above the tripod is centered.

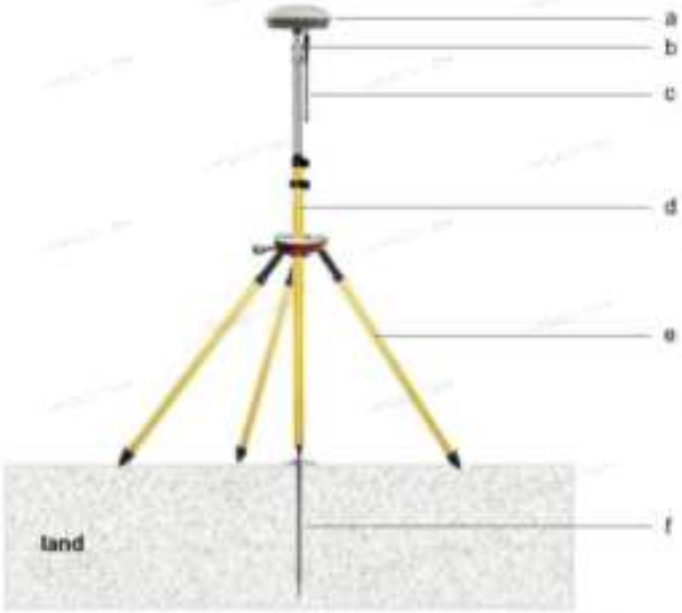
d. Set the middle pole of the tripod to the proper height: 1.5~1.7 meters (Make sure the same height is set up each time)

e. Configure the coordinates of the starting reference station through the software app, and record the starting coordinate value of the current position.

f. Start your mowing tasks.

2. Secondary Operation

Firstly, find the marking pin point of the first operation, repeat steps b and c, and then start up the receiver of the reference station using the coordinate value of the first start, and start the operation.



a	V1 receiver	d	Alignment pole
b	Adaptor with 5/8-inch screw	e	Tripod
c	Radio antenna	f	Marking pin

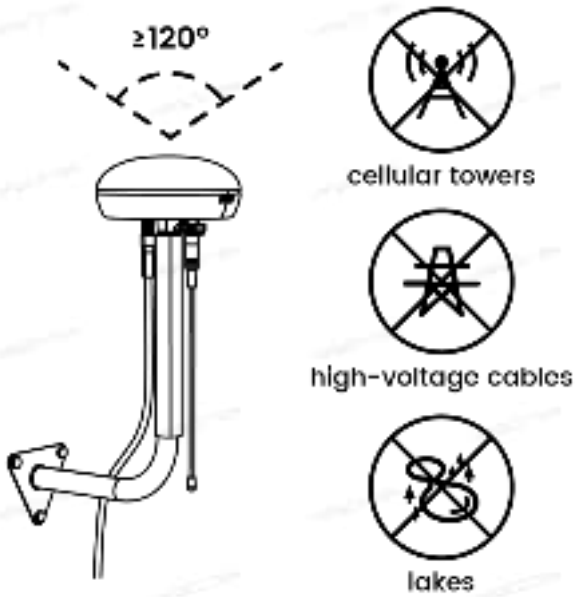
3. Receiver removal steps are as follows:

a. Take off the receiver and shut it down; Remove the radio antenna and antenna adapter;

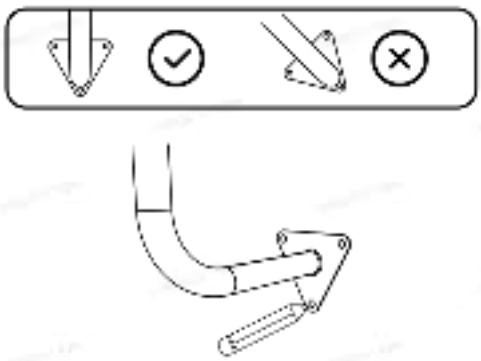
b. Folding the tripod;

4.1.2 Install RTK antennas on walls/roofs

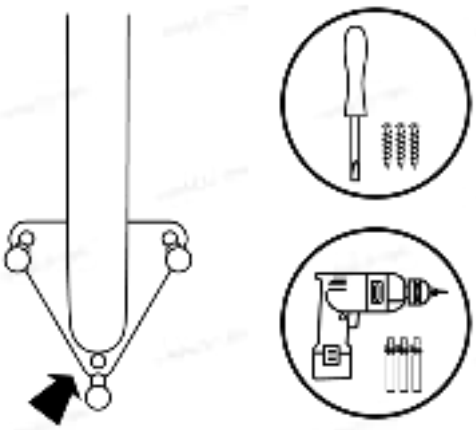
1. RTK antennas should be installed in open areas such as rooftops or walls.
2. Ensure that there is partial unobstructed sky within a 120° angle.
3. Install RTK antennas at least 500 meters away from base stations, high-voltage cables, and bodies of water like lakes.



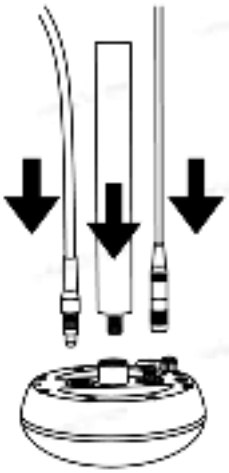
4. Mark the installation position of the curved mounting rod on the wall.
5. The mounting rod must be positioned vertically upwards.



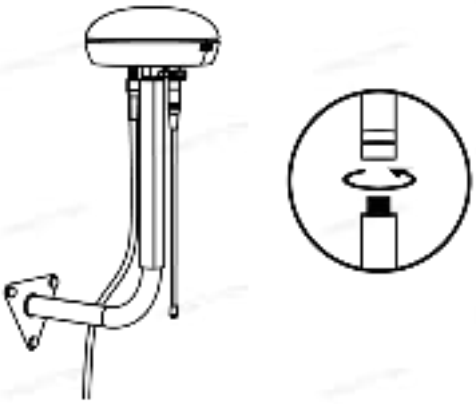
6. Choose the appropriate screws according to the wall material and drill holes at the marked positions.
   a. For wooden walls: Use M6 screws and screwdrivers.
7. For concrete walls: Use M8 expansion bolts and power tools (bring your own).



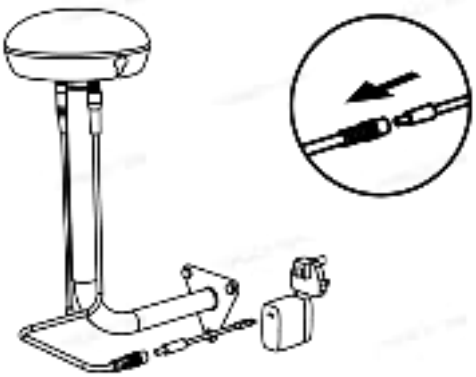
8. Install a direct hanging pole, RF antenna, and power cord (5m) on the RTK base station.



9. Securely fasten the two mounting rods.

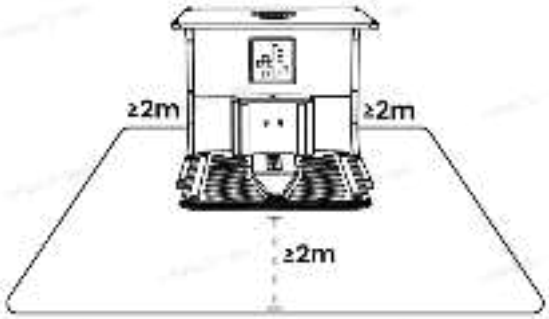


10. Insert the DC to USB-C cable, adapter, and power adapter plug into the power outlet to activate the RTK base station.

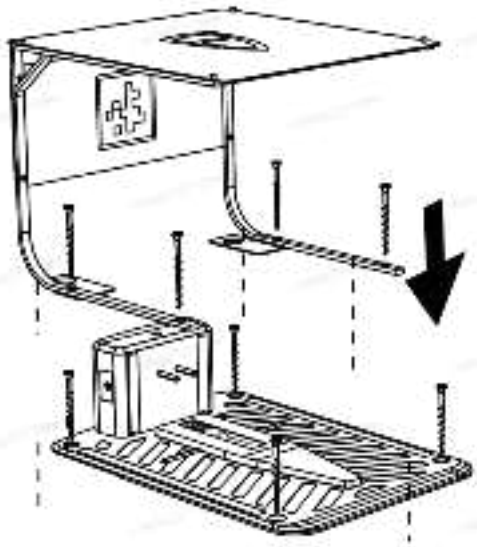


4.2 Deploy lawn mowers and charging stations

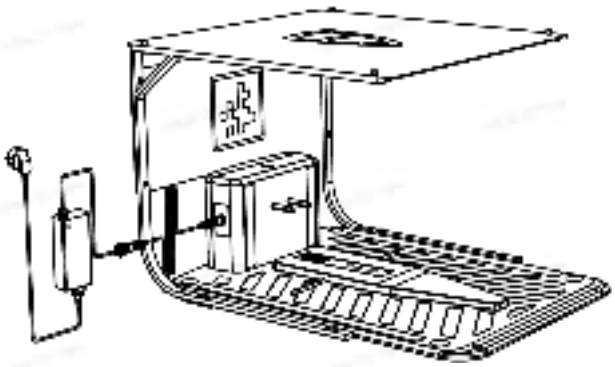
1. Select a flat and level place to place the charging station. Ensure there is a clear, unobstructed horizontal area extending at least 2 meters in front of the station, devoid of hills, slopes, indentations, potholes, or obstacles.
   a. Confirm that the grass beneath the charging station board does not exceed a height of 5cm (about 2 inches).



2. Fix the charging station and garage to the ground with bolts.



3. Connect the power adapter, 10-meter extension cord, and power cord, and plug them into the power outlet.



4.3 Docking the robotic lawn mower

After the deployment of the charging station and RTK antenna is completed, take out the robotic lawn mower and dock it with the charging station as follows:

- Press the button on the charging station to ensure the indicator light turns green and blinks rapidly, indicating it has entered direct charging mode.

- Connect the robotic lawn mower with the charging station as shown in the diagram, and wait for it to power on.
- Once the robotic lawn mower is powered on, turn on the switch of the robotic lawn mower.

5. Instructions for use

5.1 Preparations

- Read and understand the safety instructions before use.
- Ensure both the charging station and RTK antenna have been deployed.
- Verify that the robotic lawn mower has been docked with the charging station and is charging. If not completed, refer to the docking instructions for the robotic lawn mower.
- Ensure there is a good Wi-Fi or mobile hotspot signal available nearby.
- Confirm that the Bluetooth function on your phone is enabled.

5.2 Download the robotic lawn mower App

FJDynamics robotic lawn mower is designed to be used in conjunction with an app. Please download the app first. You can obtain the app by scanning the QR code below or by searching for {App Name} on Android or iOS app store.

5.3 Register a FJDynamics account and log in

If you already have a FJDynamics account, please refer to Log in only.

Mobile phone number registration is currently only supported in mainland China.

5.3.1 Register and log in

After downloading the app, you can create an account according to the instructions below.

5.3.1.1 Register with an email

1. Click Register Now.
2. Enter an email address.
3. Click the Send Verification Code button, and a verification email will be sent to your email address (if not received, please check your spam folder).

4. Enter the verification code (the valid period of the verification code is 10 minutes, please click the send button again to get a new verification email).
5. Set a password (the password needs to be between 8 and 22 characters, with at least lowercase letters and numbers).
6. Check the User Agreement and Privacy Policy.
7. Click to complete registration and login.

5.3.2 Log in only

You can log in directly by entering your username (i.e., email) + password, or username (i.e., email) + verification code. After that, check the User Agreement and Privacy Policy, and click Log in to access the main interface of the system.

To switch the language of the app, click on the upper right corner of the login page.

5.4 Facility Management

5.5 Add a robotic lawn mower

Note:

To ensure that the Bluetooth function is normal, please make sure that the phone has turned on the Bluetooth function and that the distance between the phone and the robotic lawn mower is less than 3m.

1. Click on the "+ Add Device" button.
2. Select "FR4000" from the options.
3. Follow the instructions to complete the setup of the robotic lawn mower.

5.5.1 Connect the robotic lawn mower to the Network

Note:

FR4000 robotic lawn mower only supports 2.4GHz Wi-Fi networks.

If you're using an iOS device, the mower can only connect to the Wi-Fi network your mobile phone is connected to. First, connect your mobile phone to Wi-Fi, then connect the mower to the same Wi-Fi network.

When adding the device for the first time, after guiding the phone to connect to the vehicle via Bluetooth, the network configuration process will be initiated.

- Enter or select the Wi-Fi network name.
- Enter the Wi-Fi password.

- Click Finish.

5.5.2 Deploy the RTK reference station

The robotic lawn mower supports two options for RTK base station deployment: Ntrip network RTK base station or local RTK base station.

5.5.2.1 Deploy the Ntrip network RTK reference station

1. Select Ntrip when deploying RTK.
2. Read the deployment instructions.
3. Input the required Ntrip network RTK configurations.
4. Wait for the base station functionality deployment to complete.



5.5.2.2 Deploy the local RTK base station

Ensure that the RTK base station has been installed and powered on. Make sure that the phone is connected to the robotic lawn mower via Bluetooth.

1. Select the base station site.
2. After confirming that the preparation steps have been completed, click Start.
3. Waiting for base station functionality deployment to complete.

5.5.2.3 RTKReference Station Connections

- Wi-Fi

Our RTK reference station supports Bluetooth connection with mobile devices. Just make sure the Bluetooth connection stability & feasibility of mobile devices for successful deploying.

- Bluetooth

Our RTK reference station supports Bluetooth connection with mobile devices. Just make sure the Bluetooth connection stability & feasibility of mobile devices for successful deploying.

- Note On RTK FM(=frequency modulation)

Driven by industrial RTK technology, our RTK reference station adopts built-in radio mode, perfectly realize the enhancement of data delivery from satellite-based positioning system. The RTK reference station will finish the connection automatically by FM without the need for manual operation.

5.5.3 Deploy the charging station

Ensure that the RTK base station has been installed and powered on, and that the base station site configuration has been completed.

Ensure that the phone is connected to the robotic lawn mower via Bluetooth.

Ensure that the robotic lawn mower is positioned at the deployed charging station location and has been docked.

1. Select the charging point.
2. After confirming that the preparation steps have been completed, click Deploy Charging Station.
3. Waiting for base station functionality deployment to complete.

5.6 Map management

(Map management interface diagram and illustration to add)

5.6.1 Build maps

Notes before mapping

Before creating a map, there are some points that need to be aware of:

- Clean up debris, piles of fallen leaves, toys, wires, stones, and other obstacles on the lawn before creating a map. Make sure there are no children or animals on the lawn.
- Ensure the robotic lawn mower is in good condition and its positioning function is working properly.
- It is still recommended to leave a distance of 15cm when the robotic lawn mower is moving along walls, fences, ditches, and other obstacles.
- During the mapping process, to ensure better Bluetooth connection and timely handling of on-site conditions, please follow the mowing robot and keep within 3m distance.
- Draw lines along the edges of the lawn.

Building charging station and working zones

Note:

If the deployed charging station is outside the expected working area, please refer to the External Charging Station Mapping;

If the deployed charging station is inside the expected working area, please refer to the Internal Charging Station Mapping;

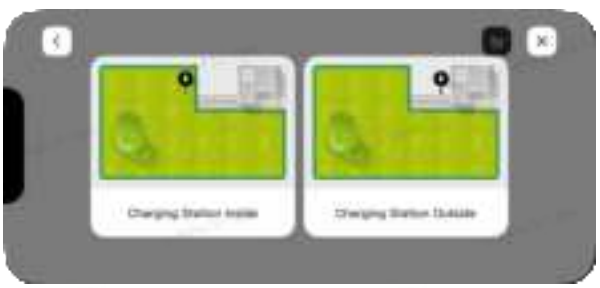
If the charging station has not been marked, it will be marked during the process of building the working area.

External charging station mapping

1. Ensure the robotic lawn mower is powered on, positioned on the charging station, and in normal working condition with a fixed solution, the emergency stop button closed, and the battery level above 50%.
2. Click the + button on the Map Management page.

3. If the charging station location has not been marked, a prompt indicating no charging station will appear, asking if you wish to deploy.
   a. Click Deploy, and the app will initiate Bluetooth connection to the robotic lawn mower.
   b. After the app successfully connects to the robotic lawn mower via Bluetooth, read and confirm the requirements for charging station deployment. The robotic lawn mower will autonomously leave the station, mark the position of the charging station, and return to it.
3. After deployment, the charging station icon will appear on the map.
4. Click on the Work Zone.

5. Choose Charging Station Outside



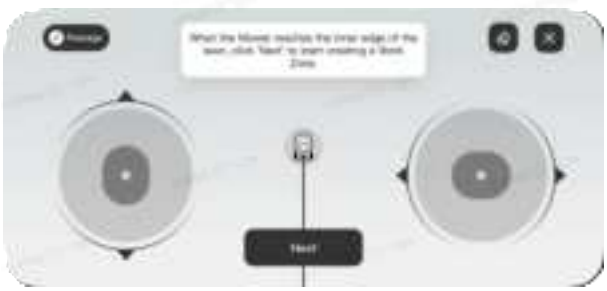
6. The robotic lawn mower will autonomously leave the station.

7. Once the robotic lawn mower stops, you can establish the passage via the app.

1. The passage refers to the path the robotic lawn mower takes from the charging station to the working area. This path will be followed during actual operation to ensure it is a drivable path.

2. Click Start to use the joystick to remotely control the robotic lawn mower to the edge of the intended working area.

3. Click Next to save the passage and proceed to establish the mowing area.



8. After the passage is saved, the mowing area can be established through the app.
   a. Click the Start button, then use the joystick to remotely control the robotic lawn mower along the desired lawn edge to draw your lawn boundary.

2. Solid lines indicate the boundaries you have drawn, while dashed lines will help guide you back to the starting point.

3. The mowing area will not be created until you control the robotic lawn mower back to the starting point and click Finish.

9. If needed, click the Erase icon, and the robotic lawn mower will retreat along the drawn path to erase the boundaries of the retraced mowing area.

10. Control the robotic lawn mower to return to the starting point and then click the Finish button to save the working area.

11. Name the work zone.

12. Select the default mowing configurations for this area, including blade speed, travel speed, grass height, and path planning settings.

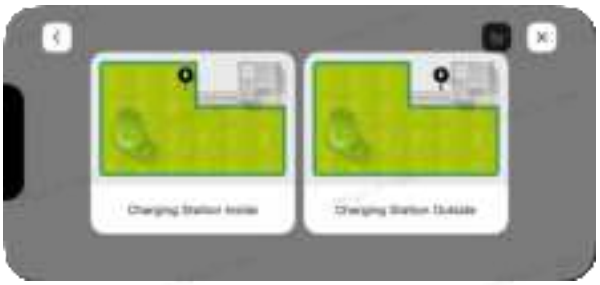
13. Complete the mapping process for the mowing area.

Internal charging station mapping

1. Ensure the robotic lawn mower is powered on, positioned on the charging station, and in normal working condition with a fixed solution, the emergency stop button closed, and the battery level above 50%.
2. Click the + button on the Map Management page.

3. If the charging station location has not been marked, a prompt indicating no charging station will appear, asking if you wish to deploy.
   a. Click Deploy, and the app will initiate Bluetooth connection to the robotic lawn mower.
   b. After the app successfully connects to the robotic lawn mower via Bluetooth, read and confirm the requirements for charging station deployment. The robotic lawn mower will autonomously leave the station, mark the position of the charging station, and return to it.
   c. After deployment, the charging station icon will appear on the map.
4. Click on the Work Zone.

5. Choose Charging Station Inside



6. The lawn mower will autonomously leave the station.

7. Once the robotic lawn mower stops, you can establish the passage via the app.

- Click Start to use the joystick to remotely control the robotic lawn mower to the edge of the intended working area.

- Solid lines indicate the boundaries you have drawn, while dashed lines will help guide you back to the starting point.

- The mowing area is only created when you steer the robotic lawnmower back to the starting point and click on Finish.

8. If needed, click the Erase icon, and the robotic lawn mower will retreat along the drawn path to erase the boundaries of the retraced mowing area.

9. Control the robotic lawn mower to return to the starting point and then click the Finish button to save the working area.

10. Name the work zone.
11. Select the default mowing configurations for this area, including grass height, blade speed, travel speed, and path planning settings.

12. Complete the mapping process for the mowing area.

No-go Zone mapping

No-go zones include areas such as swimming pools, flower beds, trees, tree roots, ditches, and any other obstacles on the lawn. The robotic lawn mower will avoid mowing within these designated areas.

1. Ensure the robotic lawn mower is powered on, positioned on the charging station, and in normal working condition with a fixed solution, the emergency stop button closed, and the battery level above 50%.
2. Click the + button on the Map Management page.

- Click on the No-go Zone, and remotely control the robotic lawn mower via the app to draw the no-go zone.
- Use the app to guide the robotic lawn mower to the edge of the intended no-go area.

- Click the Start button, then use the joystick to remotely control the robotic lawn mower to draw the boundary of the no-go zone.

3. Solid lines indicate the boundaries you have drawn, while dashed lines will help guide you back to the starting point.

The no-go zone will not be created until you control the robotic lawn mower back to the starting point.

4. If needed, click the Erase icon, and the robotic lawn mower will retreat along the drawn path to erase the boundaries of the retraced no-go zone.
5. Control the robotic lawn mower to return to the starting point, then click the Finish button to save the no-go zone.

After completing the mapping

5.6.2 Delete maps

- To delete a map: On the map management page, click on the desired working area, no-go zone, or charging station, then click Delete and confirm.
- Warning: Deleting the charging station will empty all saved maps of the current robotic lawn mower.

5.6.3 The RTK antenna cannot be moved after mapping

After the map is drawn, do not move the RTK antenna, otherwise, it may cause deviation between the actual working area and the mapped work zone.

If there is a genuine need to relocate the RTK antenna, after relocation, delete and rebuild the base station, then redraw all plot data.

5.7 Mowing schedule

Through the scheduled task function, you can set up a task schedule, and the robotic lawn mower will automatically complete its work according to your task settings.

(Operation interface diagram and illustration to add)

Note:

The mowing schedule can only be set after the mapping is completed.

Modifications to scheduled tasks during the robotic lawn mower's task execution will not affect tasks that have already been executed.

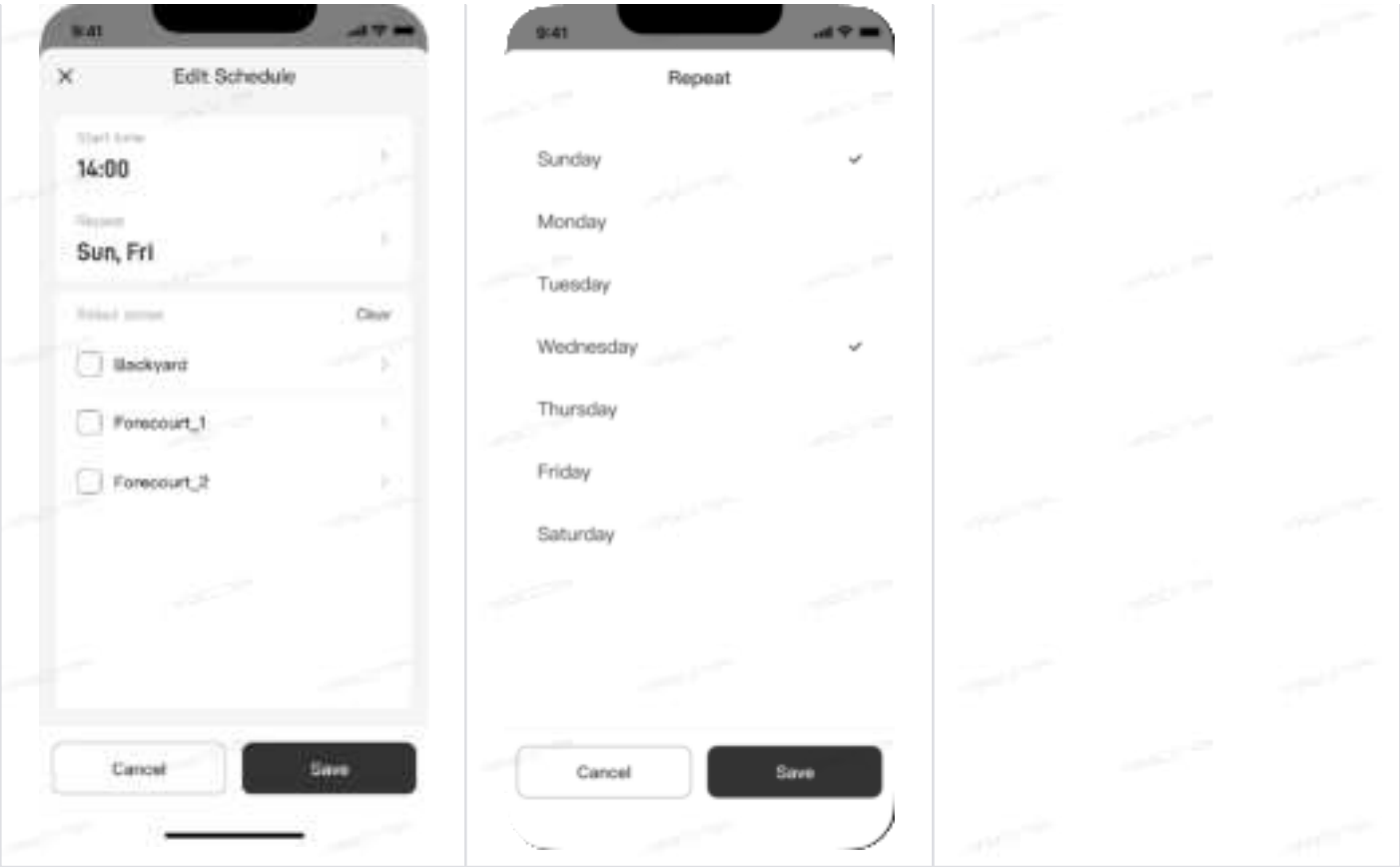
5.7.1 Add a new scheduled task

1. Click Mowing Schedule on the product homepage.

(illustrations to add)

2. Press the Add button below to create a new scheduled task.

3. Follow the prompts on the operational interface to select and set the start time, repeat frequency, and working zones for the scheduled task.



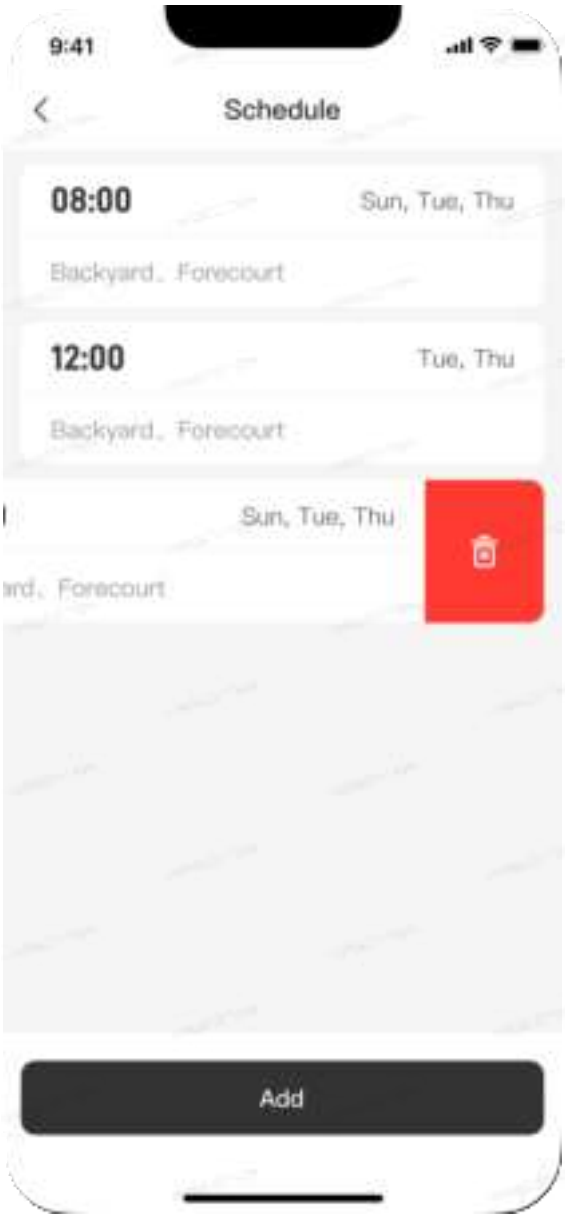
4. You can individually configure mowing settings for each plot, including blade speed, travel speed, grass height, and path planning. The default settings are those configured during mapping.

5. Click the Save button to save the scheduled task.

5.7.2 Modify scheduled tasks

1. Click Mowing Schedule on the product homepage.

2. Click on the scheduled task item you want to modify.



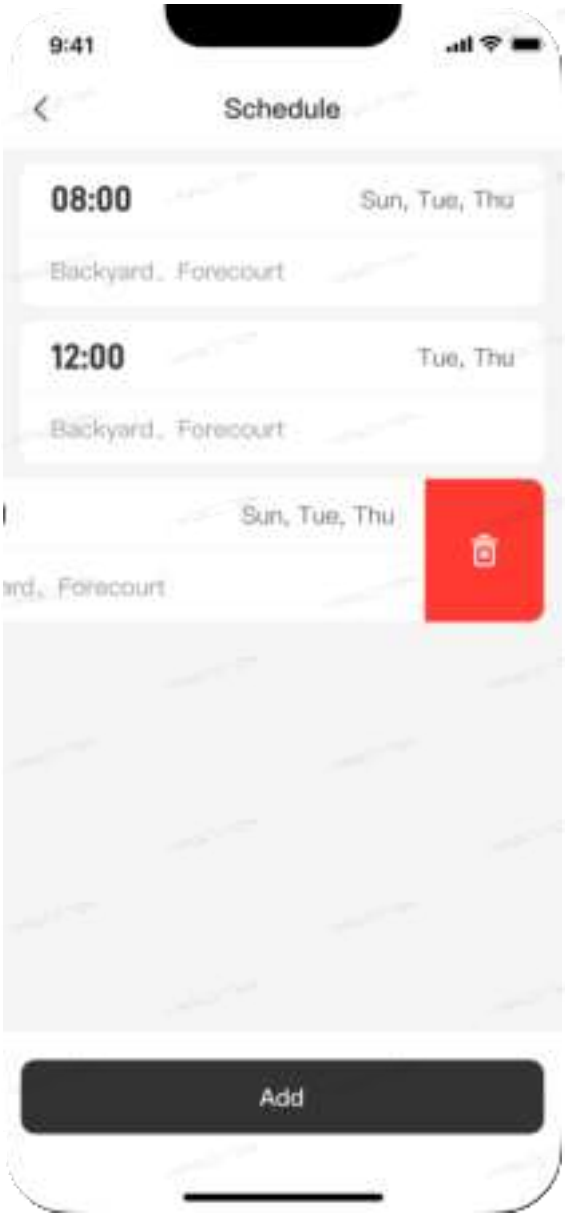
3. Modify the start time, repeat frequency, work zone, mowing configuration of the plot, and other parameters of the scheduled task.
4. Click the Confirm button to save the scheduled task.

5.7.3 Delete a scheduled task

1. Click Mowing Schedule on the product homepage.

(illustrations to add)

2. Swipe left on the scheduled task item you want to delete.



3. Click the Delete icon that appears and confirm.

5.8 Remote manual mode

For your safety, please note the following before using the remote manual mode function:

- Users under 18 years old should not be allowed to use this function.
- Always keep an eye on your children, pets, and important items to prevent accidents.
- Be extra careful when using the remote manual mode to avoid injury.
- Activating the remote manual mode while the robotic lawn mower is executing a task will interrupt that task.

5.8.1 Introduction to the remote manual mode

5.8.2 Activate the manual mode

1. Please ensure that the Bluetooth function of your phone is turned on and that the distance between your phone and the robotic lawn mower is less than 3m.
2. Make sure the robotic lawn mower is working properly and the emergency stop switch is turned off.
3. Click Manual Mode on the product function homepage.
4. The app will activate Bluetooth connection to the robotic lawn mower, and after a successful connection, it will enter the Manual Mode page.
5. Operate the forward/backward, left/right joystick to remotely control the robotic lawn mower.
6. Click Speed icon to adjust the driving speed in remote manual mode.

Note: Adjusting this speed will not affect the speed of the robotic lawn mower during automatic operation.

9:41 ,Ill?

FR3000

Idle

[i] 82%

RTK

Mowing Hist ory •

Latest (10 hours ago)

Schedule

Next (MON 14:00)

后

Map Management

None

Manual mode

9:41 ,Ill ':;:'

X Connect Mower

Please keep your phone as close to the device as possible

Device connected

Device information obtained

aam

Coonectmg to FR4000 ,:, Bloetooth
Please keep yo"phone w,thm 5 melecs

5.8.3 Exit remote manual mode

Click the X icon in the top left corner to exit the remote manual mode.

5.9 Mowing operations

Preparation

Ensure that the robotic lawn mower is at the charging station within the working area and has sufficient battery.

In case of any accidents during mowing, press the emergency stop button on the robotic lawn mower. It will prioritize the command from the emergency stop button, pause the task, and stop cutting.

It is not recommended to mow the same area more than once a day as it may damage your lawn.

The recommended cutting height for each mowing session is approximately 2/3 of the current grass height. If the grass height exceeds 60mm (2 inches), it is recommended to set the lowest grass height to 40mm (1.6 inches).

Activate immediate operation

Execute through the top panel button

> Note:
>
> When activated via the top panel button, the robotic lawn mower will execute mowing operations for all mapped plots in the order they were mapped.

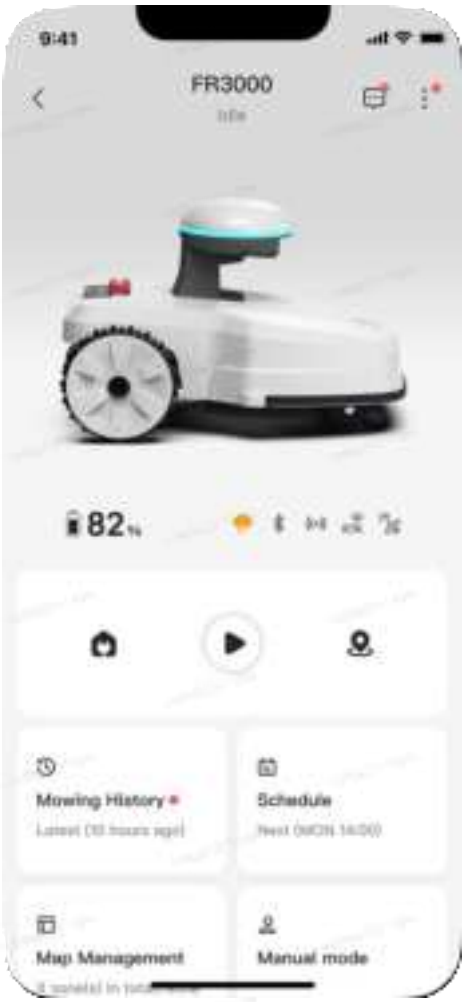
1. Enter the PIN code to unlock the command function on the top panel.
2. Click the Mow button, then click the OK.
3. The robotic lawn mower will make a "beep" sound, indicating that the task instruction has been received.
4. The robotic lawn mower will execute the mowing operation.

Activate one-touch operation via the app

Note:

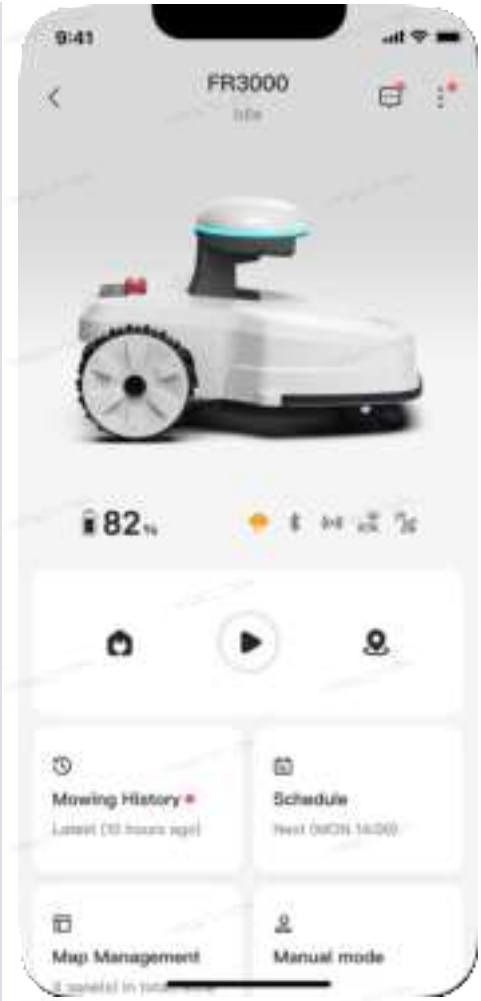
When activated via the app, the robotic lawn mower will execute mowing operations for all mapped plots in the order they were mapped.

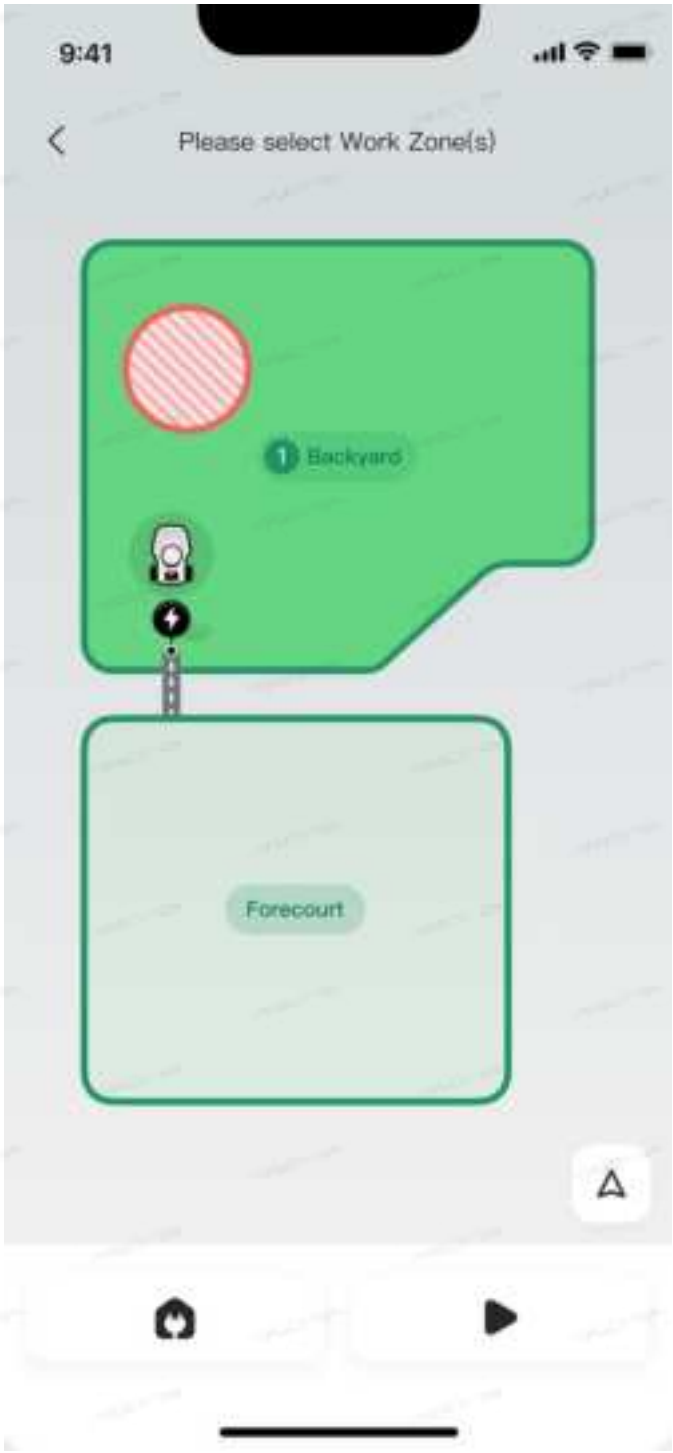
1. Press and hold the Start button for 5 seconds on the homepage of the robotic lawn mower app.
2. The robotic lawn mower will execute one-touch operation.



Execute selected operations via the app

1. Click the Device Location icon on the homepage of the robotic lawn mower app homepage.
2. Select the desired plot for mowing.
3. Press and hold the Start icon for 5 seconds.
4. The robotic lawn mower will execute the mowing operation.





Set scheduled tasks

1. Set the schedule through the APP.
2. The robotic lawn mower will automatically activate operations according to your scheduled task settings.

Pause operations

Press the emergency stop button on the top control panel of the lawn mower or click the pause icon on the APP

Resume operations

Press the Mow button and OK button on the top control panel of the lawn mower or click the Continue icon on the APP

NOTES：

During the mowing process, if the battery is too low (below 20%), the robotic lawn mower will automatically stop mowing and return to recharge. Once the battery level reaches the resumed mowing threshold (default 80%), the robotic lawn mower will automatically return to the last mowing point and resume mowing operations.

5.10 Return to charge

5.10.1 Automatic recharge

When the robotic lawn mower completes mowing tasks normally or triggers the resume mowing condition, it will attempt to return to the charging station and recharge.

To trigger the recharge function, the robotic lawn mower needs to be within the established working zones and not within any no-go zones.

5.10.2 Manual recharge

By operating the top panel button or issuing instructions through the APP, the robotic lawn mower can return to the charging station.

Execute via the top panel button

1. Unlock the PIN code on the top panel.
2. Click the home icon, then click OK.
3. The robotic lawn mower will make a "beep" sound, indicating that the task instruction has been received.
4. The robotic lawn mower will activate the return to charge function.

Execute via the app

1. Click the recharge icon on the homepage of the robotic lawn mower app.
2. Click the Confirm button.
3. The robotic lawn mower will activate the return to charge function.

5.11 Resume Mowing

During mowing operations, if the battery level is low (below 20%), the robotic lawn mower will automatically stop mowing and return to recharge. When the battery level reaches the resume mowing threshold (default 80%), the robotic lawn mower will automatically return to the last mowing point and resume mowing operations.

When the robotic lawn mower is recharging due to resume mowing, its reported status will be "To be continued".

Users can terminate the waiting for resume mowing status via the stop icon on the app, and the subsequent cutting task will not be able to be restored.

Users can initiate the resume mowing task immediately by clicking the start icon on the app, even if the battery level of the robotic lawn mower has not reached the threshold for resuming from the charging station.

Resume Mowing Configuration

Users can configure resume mowing functions in the device settings.

Users can enable or disable the resume mowing function (default is enabled).

Users can set the battery trigger value for resuming mowing operations (default 80%).

5.12 Device message

Information about device anomalies, errors, etc., will be displayed in the device message section. Click on the message icon to get more detailed information.

(Picture to add)

5.13 Settings

Click on ME - Settings to enter the settings page.

5.13.1 Device name

You can view or modify the name of the robotic lawn mower.

5.13.2 Device information

You can view information such as device type, serial number, firmware version, etc.

5.13.3 Accessory maintenance

You can view the accessory information and details of the robotic lawn mower.

5.13.4 App version

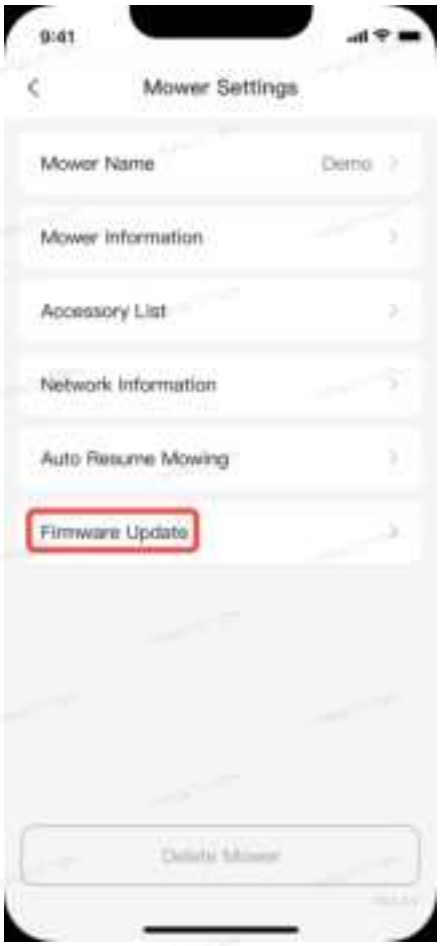
You can check the current version and check for updated firmware versions.

When a new version is available, upgrade the firmware here.

It is recommended to keep the firmware up to date.

Upgrade firmware

1. It is recommended to upgrade when the robotic lawn mower has sufficient battery and has not been in operation for a certain period.
2. Ensure that the robotic lawn mower is connected to a good Wi-Fi signal.
3. Enter firmware upgrade and click Upgrade Now.
4. Wait for the upgrade to complete.



6. Maintenance and care

6.1 Precautions

When using it for the first time, please choose a flat ground and mow slowly. The mowing method depends on the size and shape of the area. Please consider obstacles such as trees, fences, and buildings.

Before mowing, it is recommended that the grass height be within the range of 50-80 mm (1.97-3.15 inches). Do not cut more than 1/3 or 25mm (0.98 inches) above the grass height in one mowing session. In cases of high grass, to avoid grass clippings not being discharged well, increase the cutting height and mow multiple times. For aesthetically pleasing mowing traces, it is best to operate in the afternoon or evening when there is less moisture.

6.2 Cutting Deck Cleaning

Note:

- Please remember: To ensure safety, always wear heavy duty gloves, long pants and work shoes to clean the cutting table.
- Please follow the instructions, start cutting deck cleaning after the machine switched off.
- Thoroughly clean the exterior of the mower with a soft brush or cloth. Do not clean with alcohol, gasoline, acetone or other caustic/volatile solvents. These substances may damage the exterior and interior structure of the mower.

Chassis & Cutting Blades

If the chassis and cutting blades are dirty, clean them with a brush or water hose. Do not use a pressure washer. Also, make sure that the blade disk rotates freely and that the blades can turn freely.

CAUTION:High-pressure water may penetrate seals and damage electronic and mechanical parts!

Blade Fenders

Inspect the blade fenders periodically. If mud, grass clippings or other objects collect on the blade fenders, remove them with a dry brush or scraper.

Cutting Deck Jams

When a grass jam inside the mower deck is suspected, use the mower lift function to view and clear it.

1. Keep the mower on and open the mobile app, go to Settings, Accessories, Mowers, and click the {Grass Blocked} button.

2. After successful Bluetooth connection, the mowing disk will extend outward to the maximum.

3. After the extension is finished, please turn off the power of the mower and lift up the mower body to check whether the mower disk is stuck with grass.

4. After the treatment, put down the mower and turn on the power, the cutter disc lifting and lowering will return to the initial state by itself.

NOTE: Please always wear heavy duty gloves, long pants and work shoes when cleaning the cutting deck.

7. Troubleshooting

7.1 Common Problems and Solutions: Will be displayed on Applications

You can finish the self-check by checking these parts to confirm the source of faults.↓↓

Emergency Stops

Battery Abnormality

Positioning Abnormality

Collision

Front-Wheels Abnormality

Driving Wheels Abnormality

Elevator Motor Abnormality

Cutter Motor Abnormality

7.2 Error Codes List

You can finish the quick self-check if the mower doesn't work properly by checking the error codes revealed on "Notification".

(To Add Notification Diagram）

8. Warranty Policy

FJDynamic warrants this product to be free from defects in material and workmanship under normal use in accordance with the product literature during the warranty period. Published product literature includes, but is not limited to, user manuals, quick start guides, maintenance, specifications, disclaimers, and in-application notices. Warranty periods vary by product and component. View the following table.

Components	Under Warranty
Mower	2 years
Batteries	2 years
Charging Station & RTK	1 year
Wheels	Not Warranted
Decorations	Not Warranted
Mower Blades	Not Warranted

*Tires, trim/appearance, and cutting blades are wear parts and are not covered under warranty.

If the product is not working properly under warranty, contact FJDynamics Customer Service for instructions. Please provide your receipt and product serial number when contacting customer service.

- The warranty period for this product begins on the date of product delivery.
- If you are unable to provide an invoice or other valid proof of purchase, the warranty period will begin 90 days after the date of manufacture shown on the product, unless otherwise agreed between you and FJDynamics.
- If the user wishes to send the product to a local service center or FJDynamics facility for further diagnostics, the user will need to arrange for shipment. If the problem is under warranty, FJDynamics will repair or replace it and return it to the user free of charge. If not, FJDynamics or the designated service center may charge accordingly.

9. Important Information

9.1 Trademark and Legal Statement

9.2 Certifications

Federal Communications Commission (FCC)

FCC Statement

1. 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.

2.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.

3. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

4. Install and operate radiators at least 20 cm away from the human body in compliance with the FCC's radiation exposure limits for uncontrolled environments

9.3 Antenna Information

(1) Manufacturer: Shenzhen Helixun Technology Co., Ltd

Address: No. 1905, Building 2, Jiufang Plaza, Tiezi Road, Gongle Community, Xixiang Street, Bao'an District, Shenzhen, Guangdong Province

Antenna Gain: ≤0.77dBi Antenna Type: Internal Antenna, FPC Antenna

Model: A1

(2) Manufacturer: Shenzhen Ai-Thinker Technology Co.,Ltd

Address: 410, Building C, Gushu Huafeng Smart Innovation Port, Xixiang, Bao'an District, Shenzhen

Antenna Gain: ≤1.74dBi Antenna Type: Internal Antenna, PCB Antenna

Model: TB-02

(3) Manufacturer: Shenzhen Kexin Wireless Technology Co., Ltd

Address: Building H, Hongyongli Industrial Zone, Shabeili, Baolong Street, Longgang District, Shenzhen

Antenna Gain: ≤3.5dBi Antenna Type: Internal Antenna, FPC Antenna

Model: Dual-band 3511