

RLM02 robotic Line Marker User Manual V1.0



RLM02 robotic Line Marker User Manual

		2025-05 Rev. 1.0
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Revision History:

Version	Date	Revision Content
1.0	2025.05	Initial Version

Read Before Use:

	Please operate strictly according to this user manual! Improper use may lead to equipment damage and performance degradation;
	If you encounter any issues during use, please contact service personnel promptly.


Disclaimer:

- The products, services, or features you purchased are subject to commercial contracts and terms. Some products, services, or features referenced in this manual may not fall within your purchase or usage scope. Unless otherwise stipulated in the



contract, Fjdynamics makes no express or implied claims regarding the content of this manual.


- This manual may be updated due to product upgrades or other reasons; Fjdynamics reserves the right to amend this manual without prior notice.
- This manual is intended as a guide for use. Fjdynamics has made every effort to ensure the accuracy and reliability of the information in this manual, but cannot guarantee that there will be no errors or omissions. All information in this manual does not constitute any express or implied warranties.



Safety Tips

	<p>This symbol indicates important safety instructions. Failure to comply with these instructions may endanger the personal safety of operators and others, or damage property. Please read and understand all instructions in this manual before attempting to operate the line marker.</p>
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Evaluate the risks associated with this product based on the following signal words

Signal Word	Signal Word	Description
	Danger	Indicates an urgent hazard situation that, if not avoided, will result in death or serious injury.
	Warning	Indicates a potential hazard situation that, if not avoided, may result in death or serious injury.
	Notice	(without safety warning symbol): Indicates a situation that may lead to property damage.

 <p>Warning</p>	<p>Before using this machine, be sure to read and understand all safety instructions in this manual, including the content of safety warning symbols. If you do not understand the warnings and instructions in this manual, do not use this product. This machine is only to be used by individuals who have read, understood, and complied with this manual and the safety markings printed on the line marker, and who meet the age requirements set by local regulations.</p>
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 Warning	<p>Always follow basic safety precautions while using this machine to reduce the risk of explosion, electric shock, fire, and other serious personal injuries.</p>
 Warning	<p>Individuals with electronic medical devices such as pacemakers should consult a doctor before using this product. Operating electrical equipment near a pacemaker may cause interference or malfunction of the device.</p>
Notice	<p>The line-marking paint used must comply with local laws and regulations.</p>
Notice	<p>The emissions or disposal of line-marking paint must conform to local laws and regulations.</p>
Notice	<p>Repairs should only be performed by qualified service technicians. We recommend contacting the nearest dealer for repairs. Only identical parts should be used for replacements during repairs.</p>

- Read, understand, and comply with all instructions and warnings in this manual before attempting to assemble and operate the equipment.
- Familiarize yourself with all control devices and their correct operation, know how to quickly stop the equipment, and disconnect all control devices.
- Never allow children or untrained adults to operate or repair this equipment.
- Be aware that local regulations may restrict the age of operators; please comply with the age requirements set by local laws.
- If situations arise that are not covered in this manual, exercise caution and contact customer service for assistance.

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1. Overview

1.1 Introduction

This smart line marking machine is an efficient equipment specifically designed for modern sports fields. It is powered electrically, which makes it more environmentally friendly compared to traditional gasoline-powered equipment, while also reducing maintenance costs and noise pollution. Equipped with an RTK high-precision positioning system, it can achieve centimeter-level accuracy in line marking. No matter how complex the layout and line designs are, it can accurately present them, ensuring that the markings meet professional standards.

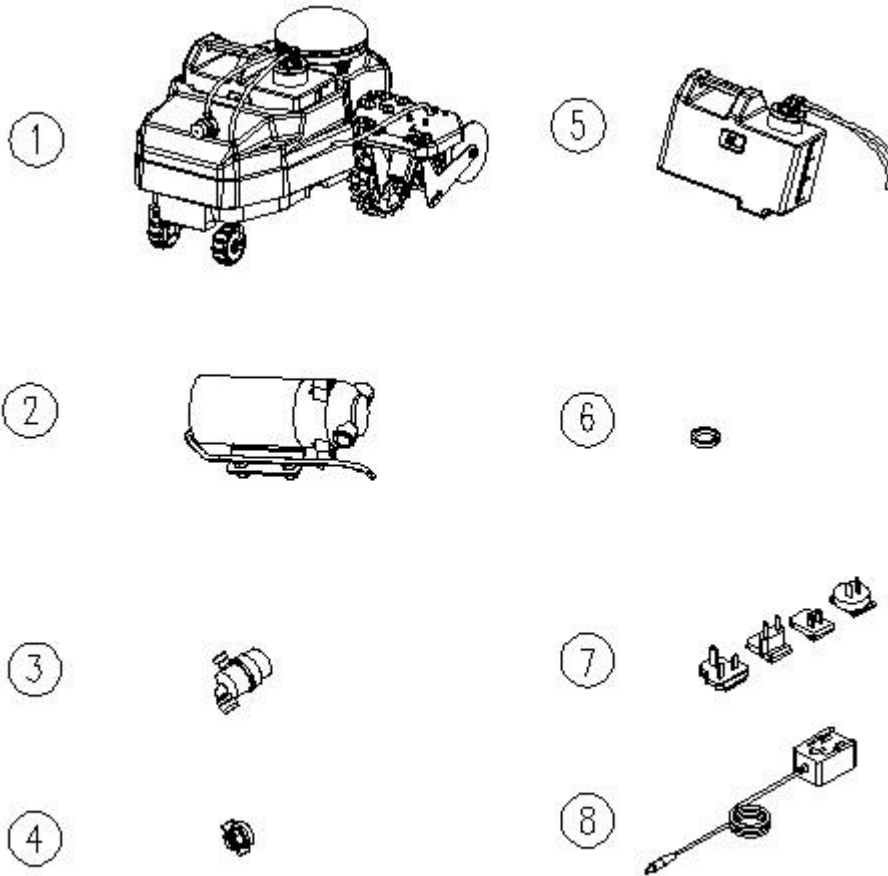
This line marking machine is suitable for various sports fields, including soccer fields, basketball courts, and athletic tracks, managing them with ease. Furthermore, it boasts high working efficiency, significantly shortening the line marking time and minimizing the impact on field usage, allowing the sports fields to be put into use more quickly.

1.2 Specifications

Dimensions	665*660*425mm
Weight	25kg
Operating Temperature Range	5~40°C
Water and Dust Protection Level	IPX5
Main Material	Q235/SPCC/ABS
Paint Bucket Volume	8 L

Line Marking Speed	(1-2) km/h
Line Width Adjustment Range	5~12cm
Nozzle Height Adjustment Range	3~8cm (relative to ground)
Rated Power	7W
Rated Voltage	14.4 V
Maximum Input Current	5 A
Full Charge Operating Time	2 h

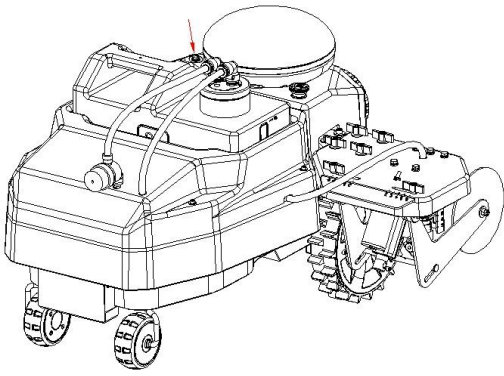
2. Structure and Installation Tools



2.1 List

1	Main Unit	8	Adapter
2	Diaphragm Pump		
3	Pre-Filter		
4	Flat Quick-Release Caps x2		
5	Paint Bucket		
6	Quick-Release Cap Seals x5		
7	Adapter Plug		

2.2 Buttons and Labels



Functionality of the Three-Position Knob Switch :

1	When the switch is turned to the left , it is for exhaust.
2	When the switch is turned to the right , it is for painting.
3	When the switch is in the middle position, it is in the off state.

3. Installation

3.1 Safety Guidelines



To avoid personal injury and equipment damage, please read the safety advice in this manual carefully before installation.

Please note that the following safety recommendations cannot cover all possible risk situations.

Installation and Dismantling Safety

1. Do not install the equipment in conditions unfavorable to operation, such as during rain or snow.
2. Installation should not be conducted in dark, damp areas.
3. Please follow the correct installation procedures as described in the manual for both installation and disassembly.
4. Ensure all power sources are turned off and the battery connection cables are

removed before installation and dismantling to prevent damage from electrical discharge.

3.2 Electrical Safety

1. Electrical operations must comply with local laws and regulations. Relevant personnel must possess the appropriate qualifications.
2. Carefully check the work area for potential hazards, such as near high-voltage lines.
3. Know the location of the emergency power switch before installation. In case of an emergency, first cut off the power switch.
4. When shutting off the power, be sure to carefully confirm that the equipment has been properly shut down.
5. Do not place the equipment in damp areas, and avoid allowing liquids to enter the line marking machine.
6. Improper or incorrect electrical operations may cause fire, electric shock, or other accidents, resulting in serious or even fatal injuries and equipment damage.
7. Ensure that all connection cables are intact. If any are damaged, stop using them and replace them with new cables before use.
8. The plugs of power tools must match the sockets. Do not modify the plugs in any way. Tools that require grounding should not use any adapters. Using original plugs with matching sockets reduces the risk of electric shock.

3.3 Personal Safety

1. Stay alert and focus on the current operation while using power tools, following basic common sense. Do not operate power tools if you are fatigued or under the influence of drugs, alcohol, or medication. A momentary lapse in attention can lead to serious personal injury.
2. Use personal protective equipment. Always wear safety goggles. Under appropriate conditions, employ protective devices such as dust masks, non-slip shoes, safety helmets, or hearing protection to reduce personal injury risks.
3. Prevent accidental starting. Ensure the switch is in the off position when connecting the power or battery pack, and when picking up or moving tools.
4. Keeping fingers on the switch while carrying tools or with the switch in the "on" position can lead to accidents.
5. Before starting power tools, remove all adjustable hex wrenches or pliers. Leaving a wrench or pliers in rotating parts of power tools can result in personal injury.
6. Do not overreach with your arms. Always maintain a stable stance and keep your body balanced. This helps to control the power tool better in case of an accident.
7. Dress appropriately. Do not wear loose clothing or jewelry. Ensure that hair and

clothing are kept away from moving parts. Loose clothing, accessories, or long hair can become entangled in moving components.

8. If there are dust extraction or collection devices, ensure they are properly connected and used. Using collection devices can reduce dust-related hazards.
9. Do not become complacent due to frequent use and familiarity with tools; always adhere to safety guidelines. Any negligence can result in serious injury in an instant.

3.4 Usage and Cautions for Power Tools

1. Do not misuse power tools. Use the appropriate power tool for its intended purpose. Operating within the designed ratings ensures that power tools complete tasks more efficiently and safely.
2. Do not use power tools with non-functional switches. Tools that cannot be controlled by switches are extremely dangerous and must be repaired.
3. Disconnect the power and/or remove the battery pack (if removable) before making adjustments, changing accessories, or storing power tools. This preventative safety measure reduces the risk of accidental starting of the power tool.
4. Store unused power tools out of reach of children and prohibit operation by individuals unfamiliar with power tools and related instructions. Using power tools without training can be hazardous.
5. Maintain power tools and their accessories. Check for misalignment or jamming of moving parts, damaged parts, and any other conditions that may affect power tool operation. Repair any damages before use. Many accidents occur due to inadequate maintenance of power tools.
6. Follow these instructions and use power tools and accessories according to work conditions and task content. Using power tools for unintended purposes may lead to hazards.
7. Keep handles and gripping surfaces dry, clean, and free of grease. Slippery handles and grips can impede safe operation and control during accidental occurrences.

3.5 Maintenance

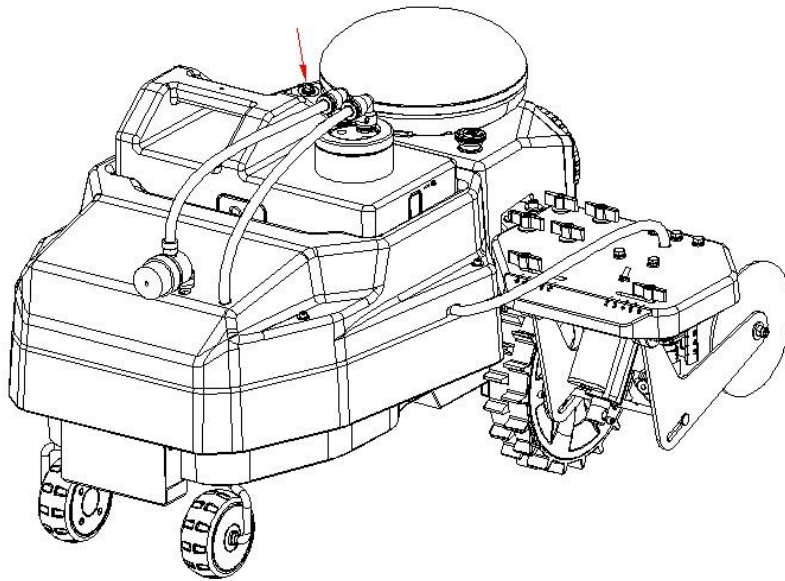
1. Repairs to power tools must be performed by qualified personnel using the same replacement parts. This ensures the continued safety of the power tools.
2. Do not attempt to repair damaged battery packs yourself. Repairs should be conducted by the manufacturer or authorized service providers.

3.6 Installation Steps

Prepare a pair of gloves and organize all components of the robotic line marker kit along with the other installation tools. Place the robotic line marker on a level and

clean surface, and disconnect the power supply.

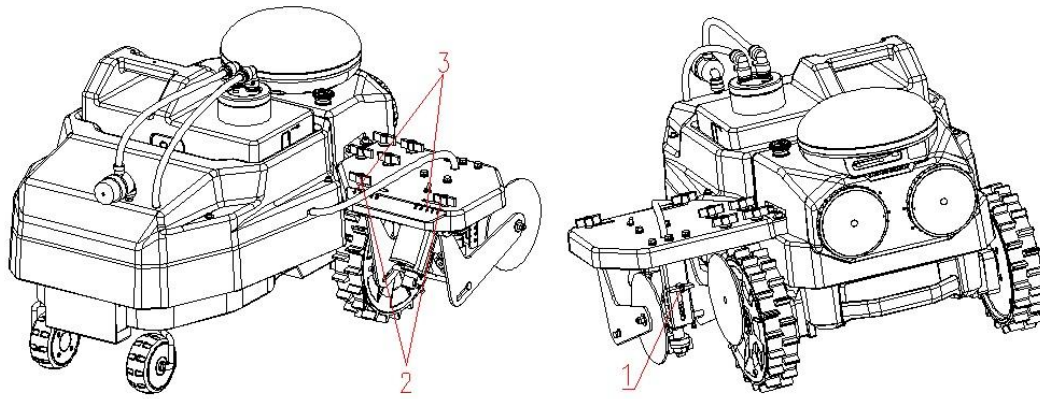
3.7 Knob Switch Test



The top of the line marking machine features a knob switch as shown in the image above. The functions of the knob switch are as follows:

- When the switch is turned to the left, it is in Discharge Air mode.
- When the switch is turned to the right, it is in Spray mode.
- When the switch is in the middle position, it is in Off state.

3.8 Adjustment of Line Width and Nozzle Height



1. The **Knob 1** is used to adjust the height of the nozzle. Release the knob to raise the height upwards and lower it downwards.
2. The **Knob 2** is used to adjust the width of the baffle. Moving the two knobs to both sides increases the line width, and adjusting to the center decreases the line width.
3. The front part of the nozzle has graduated markings that allow for rough observation of the adjusted line width.

4. Preparation Before Use

4.1 Paint Selection

1. The selected paint should be water-based and harmless to the grass on the field, and it must comply with local laws and regulations.
2. Precautions for Spraying Paint:
 - **Contact Control:** Spray the product within effective areas; provide local ventilation when heating or drying.
 - **Breathing:** When testing spray applications in enclosed spaces (indoors), a mask must be worn.
 - **Hands:** Wear gloves to prevent direct contact.
 - **Eyes:** To prevent splashes, wear safety goggles.
 - **Skin:** To prevent splashes, wear work clothing.

! **Note:**

Contact Control: Spray the product within effective areas; provide local ventilation when heating or drying.

Breathing: When testing spray applications in enclosed spaces (indoors), a

mask must be worn.

Hands: Wear gloves to prevent direct contact.

Eyes: To prevent splashes, wear safety goggles.

Skin: To prevent splashes, wear work clothing.

5. Deploy RTK

The marking machine can obtain RTK positioning data through the local NTRIP service or FJD base station.

If you have a network RTK service account based on NTRIP, we recommend that you use the NTRIP service without deploying an RTK base station. If you do not have an NTRIP service account or the local NTRIP service signal is unstable, you can refer to the following steps to deploy an RTK base station.

5.1 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.

5.1.1 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.

5.1.1.1 Site selection requirement

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

1. 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;
2. Choose the land with dense soil to ensure that the position does not move after installation;
3. The position will not be affected by collision of operating machinery;
4. Choose a location that is easy to find.

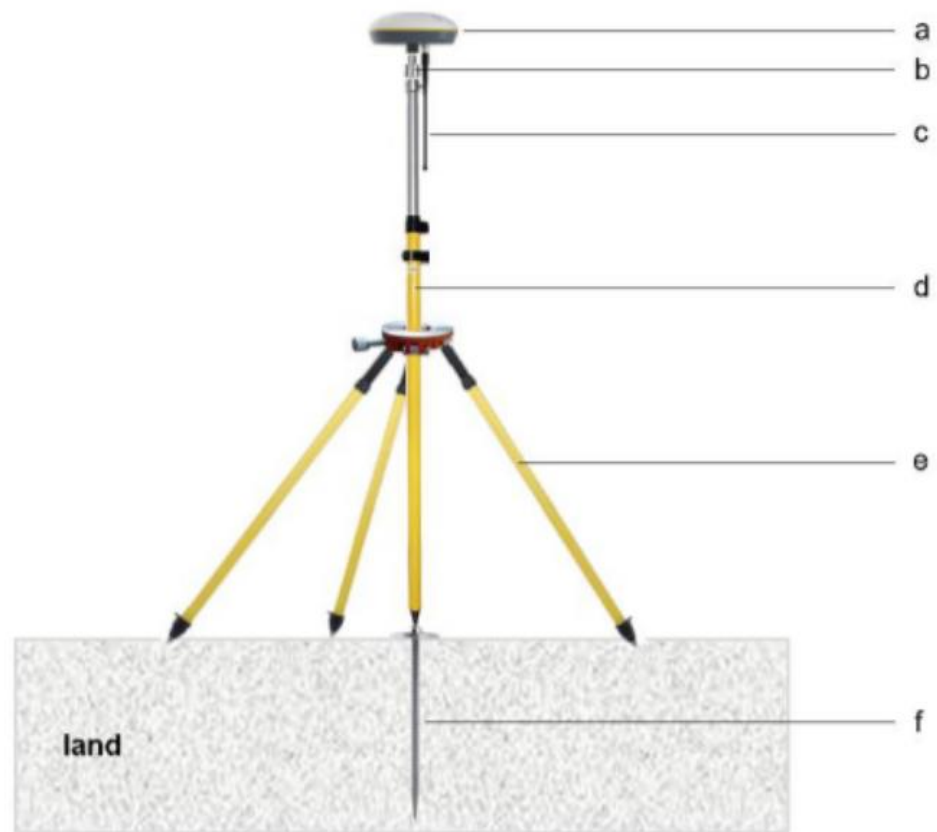
5.1.1.2 Installation Guidance

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 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.



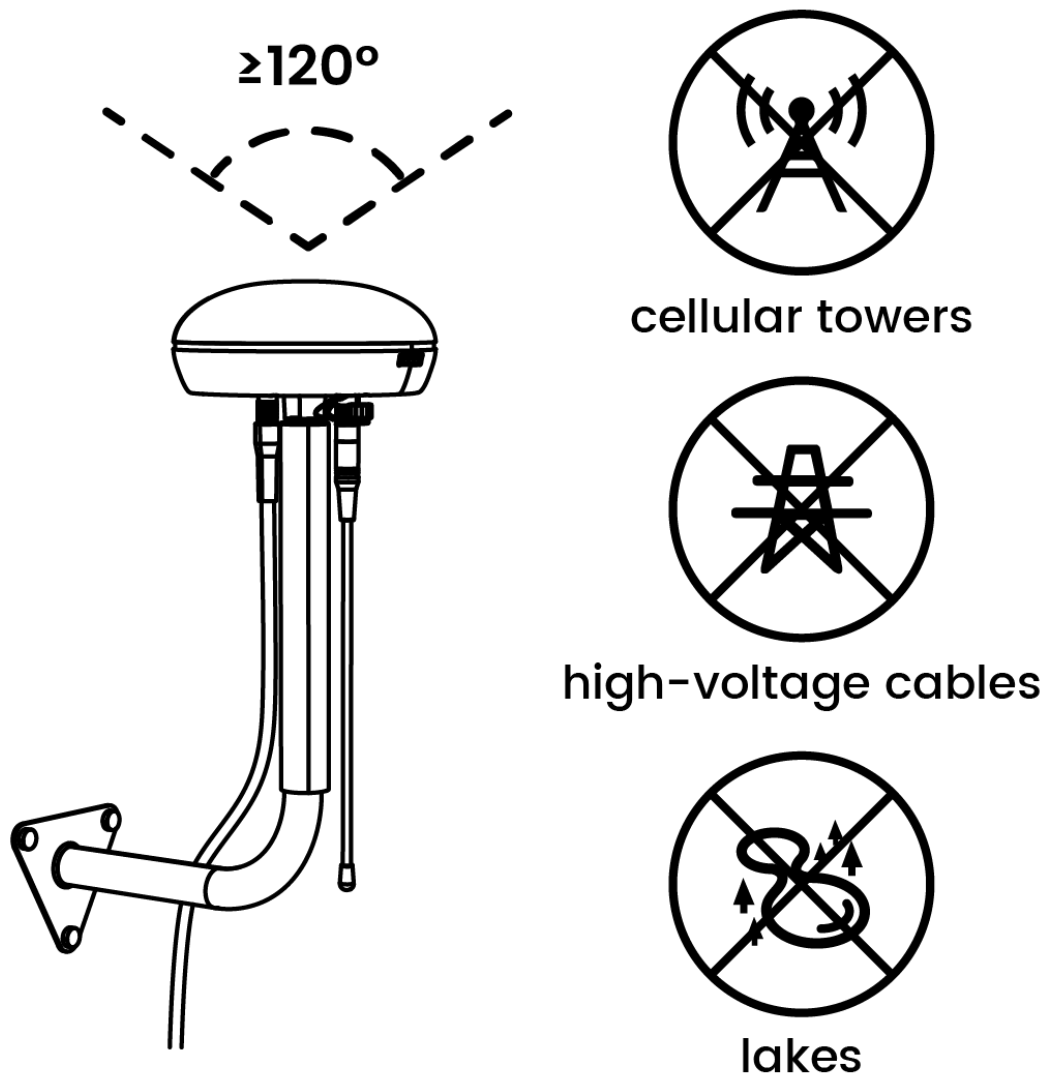
- | | | | |
|---|-----------------------------|---|----------------|
| a | V1 receiver | d | Alignment pole |
| b | Adaptor with 5/8-inch screw | e | Tripod |
| c | Radio antenna | f | Marking pin |

3. **Receiver removal steps are as follows:**

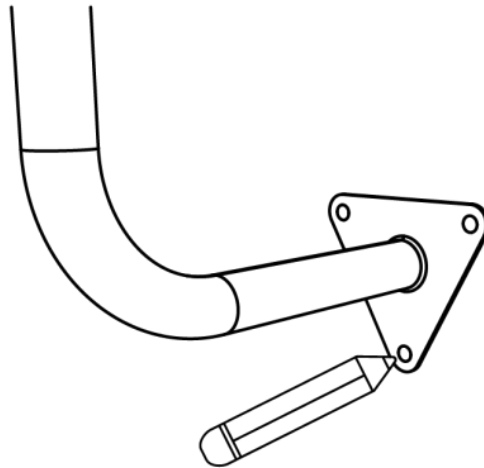
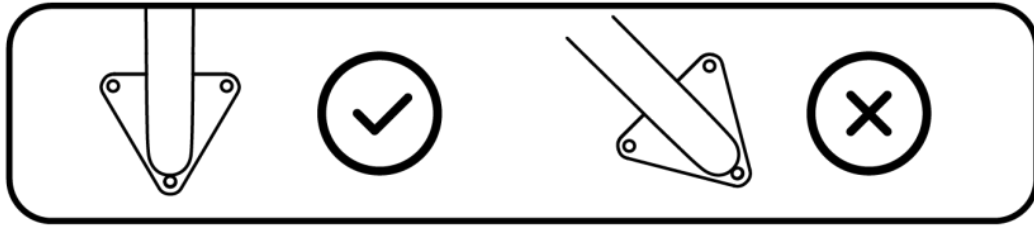
Take off the receiver and shut it down; Remove the radio antenna and antenna adapter. Folding the tripod.

5.1.2 Install RTK antennas on walls/roofs

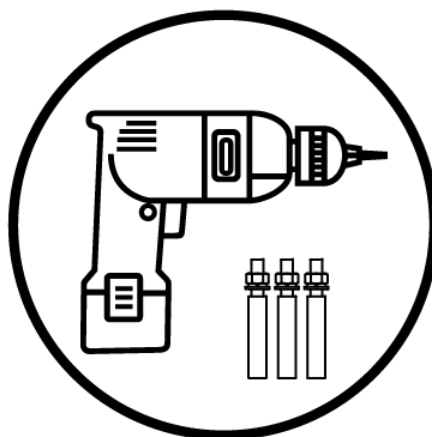
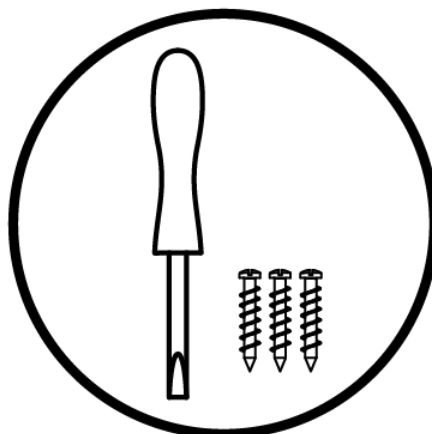
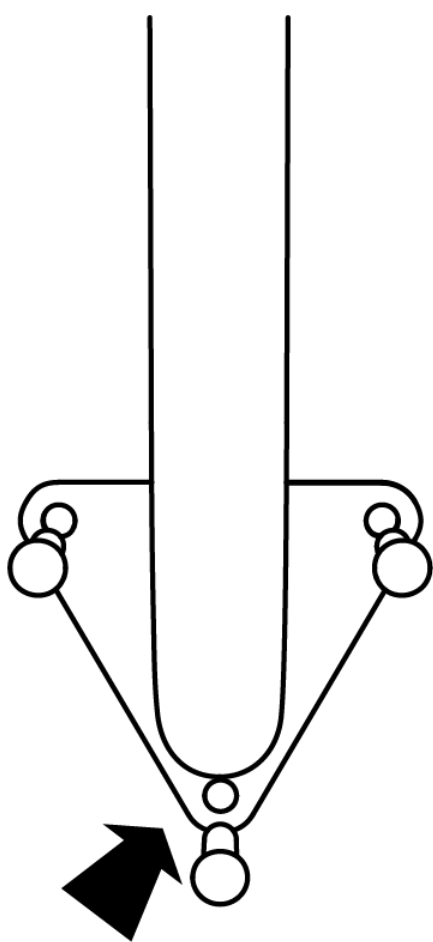
1. RTK antennas should be installed in open areas such as rooftops or walls.
2. Ensure that there is partial unobstructed sky within a 120° angle.
3. Install RTK antennas at least 500 meters away from base stations, high-voltage cables, and bodies of water like lakes.



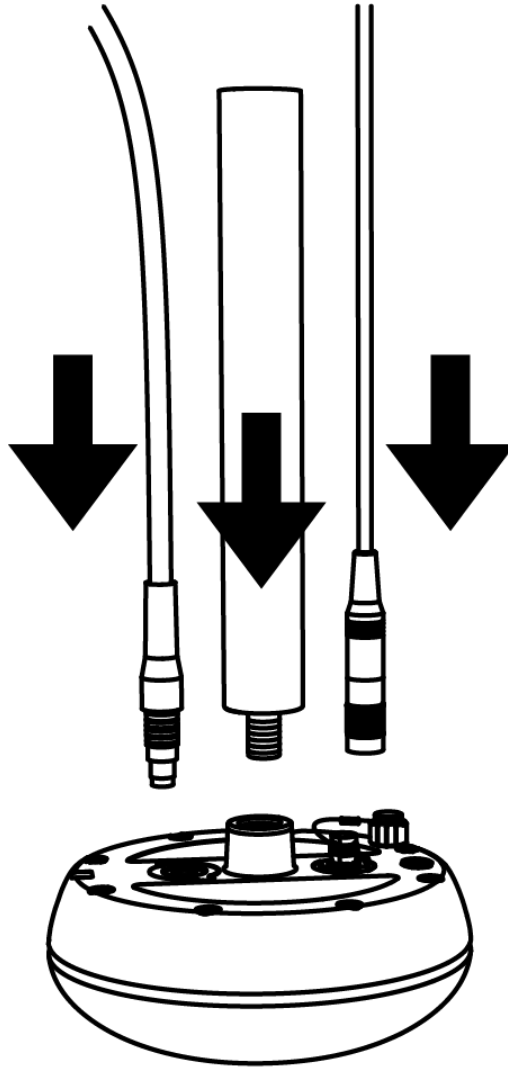
4. Mark the installation position of the curved mounting rod on the wall.
5. The mounting rod must be positioned vertically upwards.



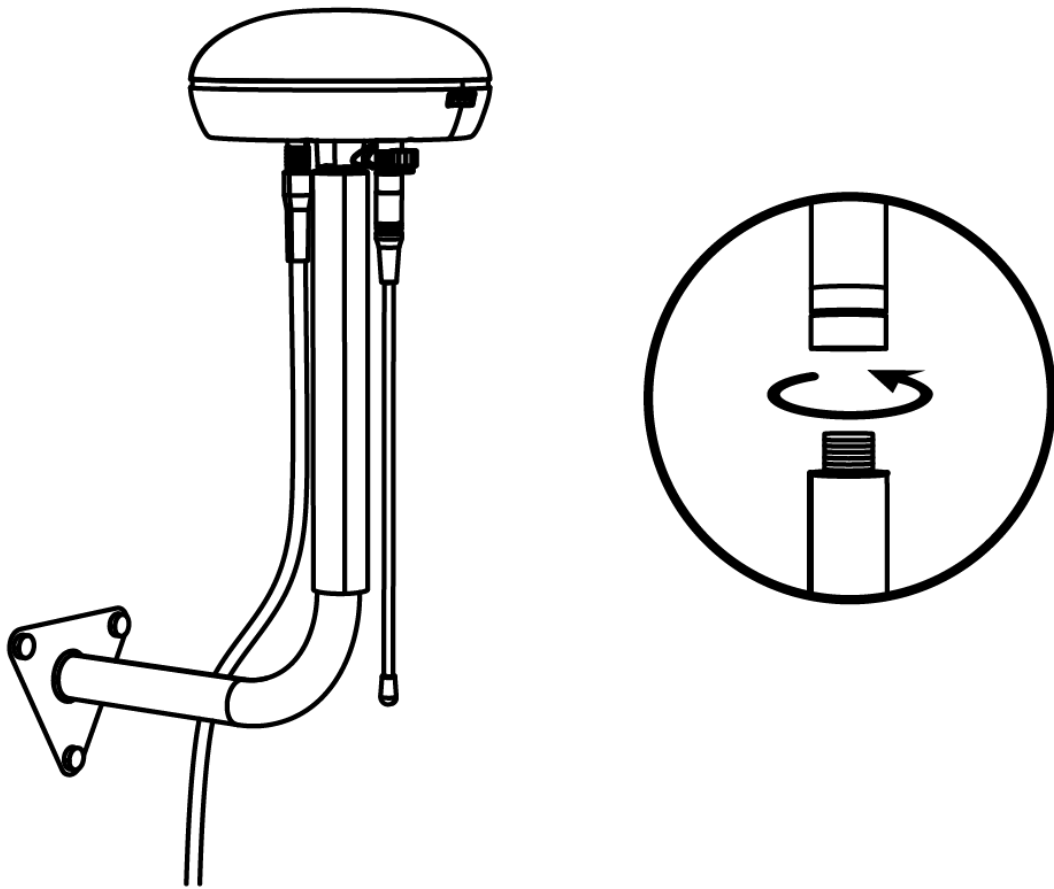
6. Choose the appropriate screws according to the wall material and drill holes at the marked positions.
7. For wooden walls: Use M6 screws and screwdrivers.
For concrete walls: Use M8 expansion bolts and power tools (bring your own).



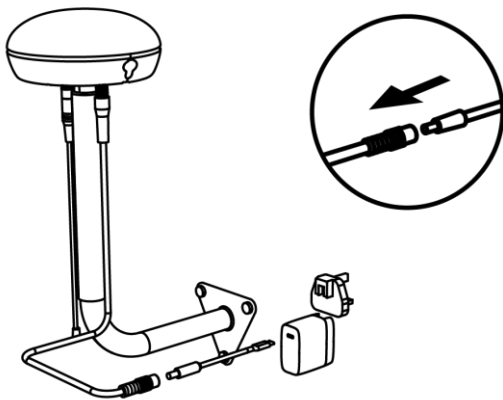
8. Install a direct hanging pole, RF antenna, and power cord (5m) on the RTK base station.



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.



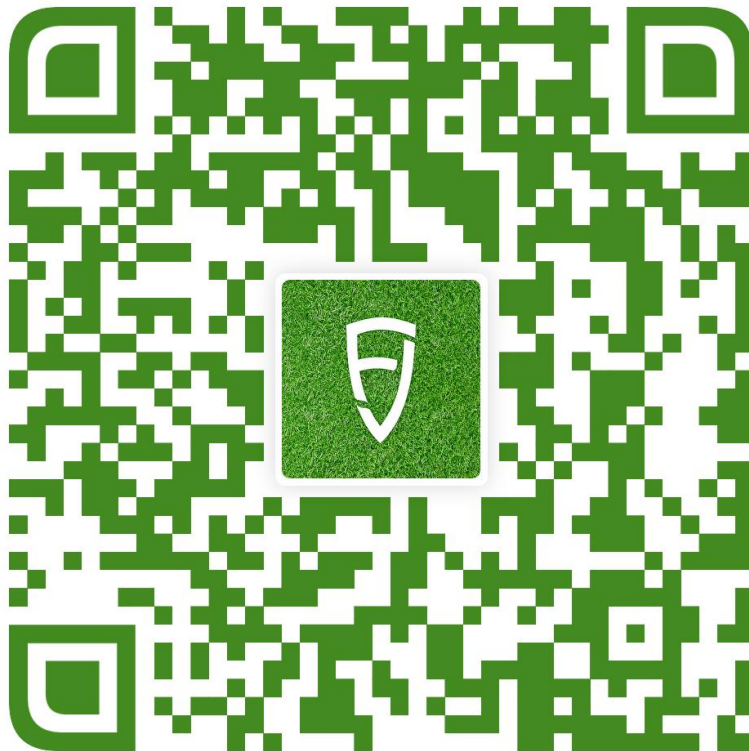
6. Instructions for use

6.1 Preparations

- Read and understand the safety instructions before use.
- Make sure that the RTK antenna array is fully operational.
- Make sure there is a good Wi-Fi or mobile hotspot signal available nearby.
- Make sure your FJD tablet is fully charged.
- Make sure your FJD tablet is connected to the internet, either by connecting to wifi or inserting a SIM card.
- Make sure that the Bluetooth function on your FJD tablet is enabled.

6.2 Download the FJD Robotic Line Marker Application

FJDynamics robotic devices are designed to work with our APP. Please download the app first. You can obtain the app by scanning the QR code below or by searching for {FJD Landscaping} on Android or iOS App Store.



6.3 Register FJDynamics account and log in

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

6.3.1 Register and log in

After downloading the app, you can create an account according to the instructions below. Mobile phone number registration is currently only supported in mainland

China.

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.

6.3.2 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.



Log in with password

Phone number | **Email**

[Forgot Password](#)

Log in

[Sign up now](#) | [Log in with verification code](#)

I have read and accepted [User Agreement](#) and [Privacy Policy](#)

6.4 Devices Management

10:53



All ▾



No devices available

Add device

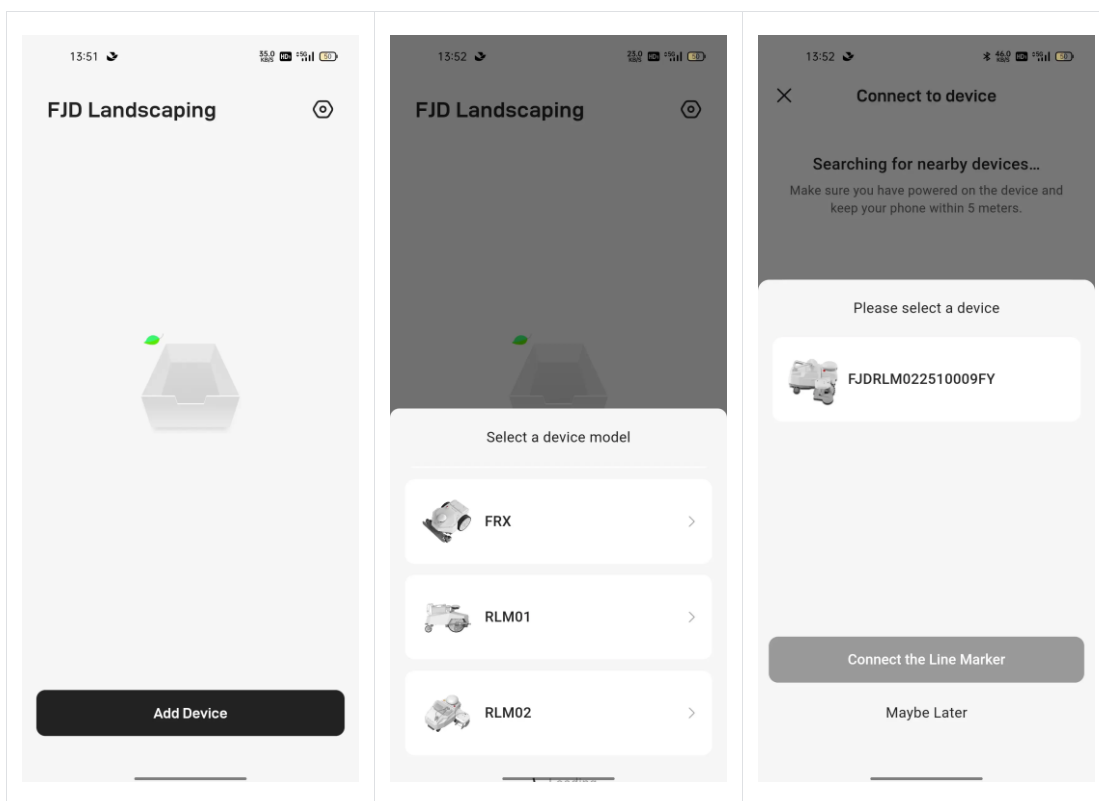
6.4.1 Add a Robotic Line Marker



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 marker is less than 3m.

1. Click on the "+ Add Device" button.
2. Select "RLM02" from the options.
3. Follow the instructions to complete the setup of the robotic line marker



6.4.2 Connect the marker to the Network



Note:

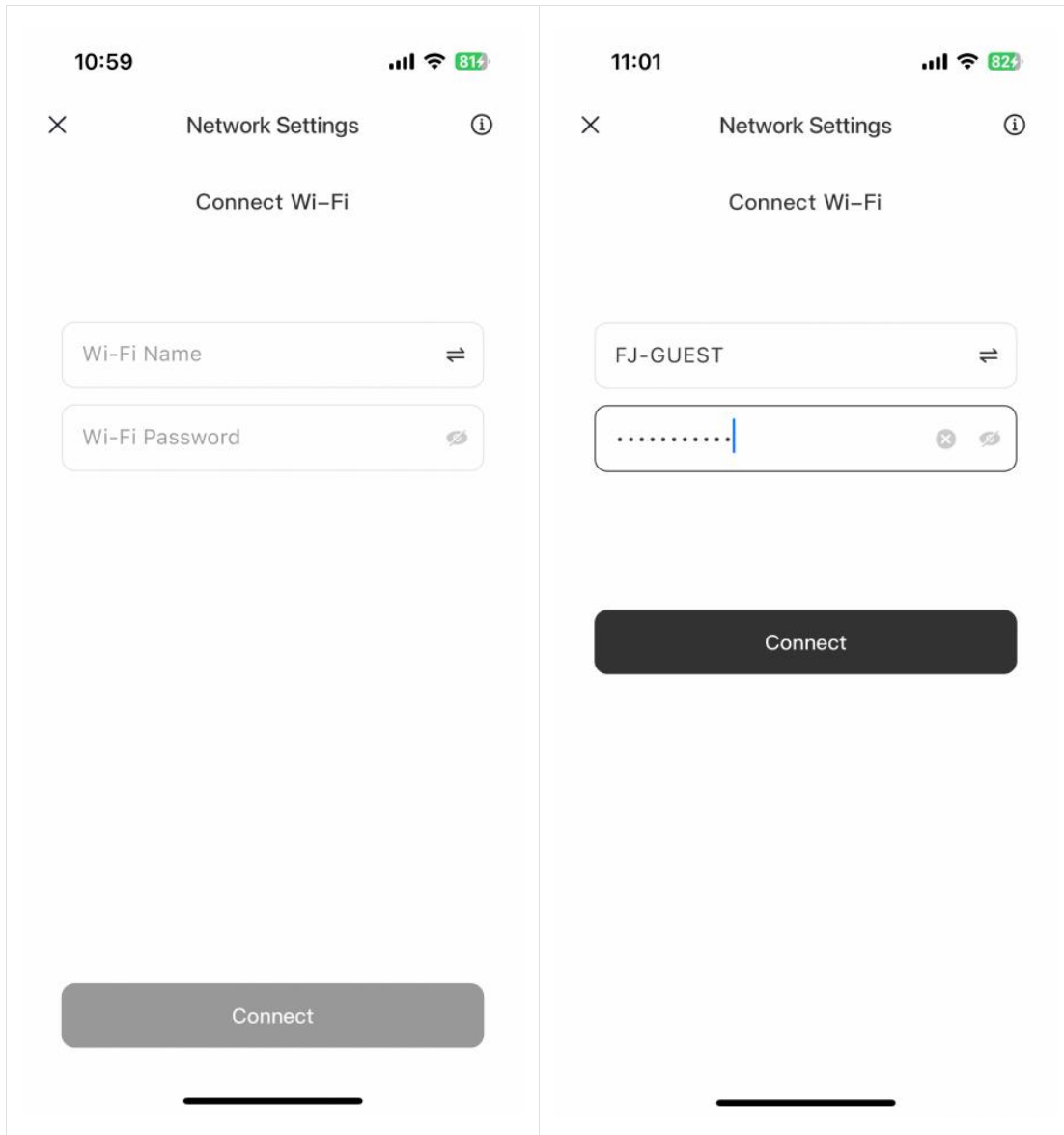
RLM02 only supports 2.4GHz Wi-Fi networks.

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 marker 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.



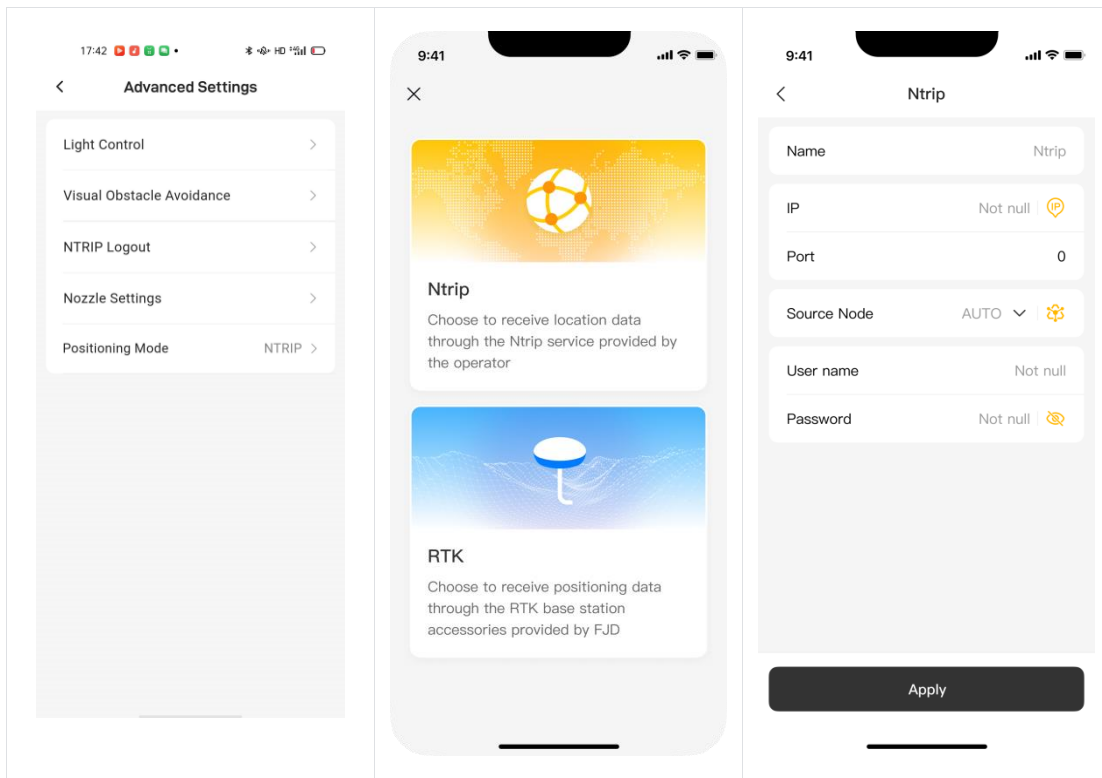
6.5 Deploy the RTK reference station

The marker supports two options for RTK base station deployment: Ntrip network RTK base station or local RTK base station.

6.5.1 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.

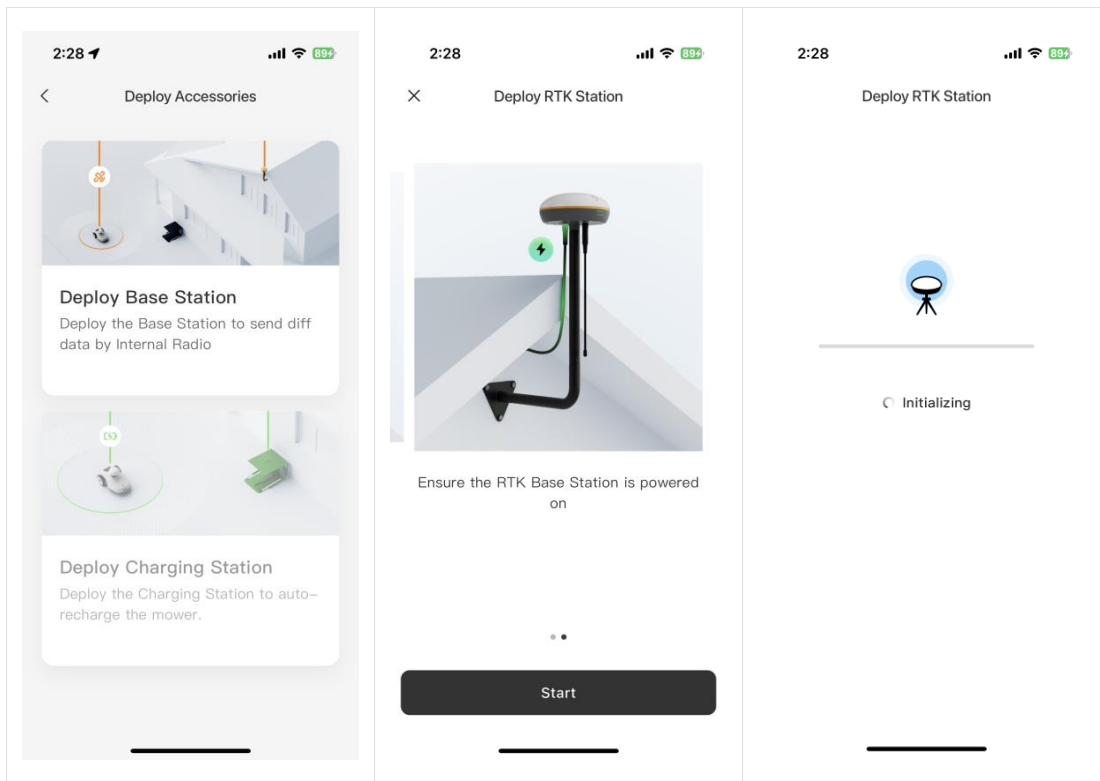
4. Wait for the base station functionality deployment to complete.



6.5.1.1 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 marker 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.



6.5.1.2 RTK Reference 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)

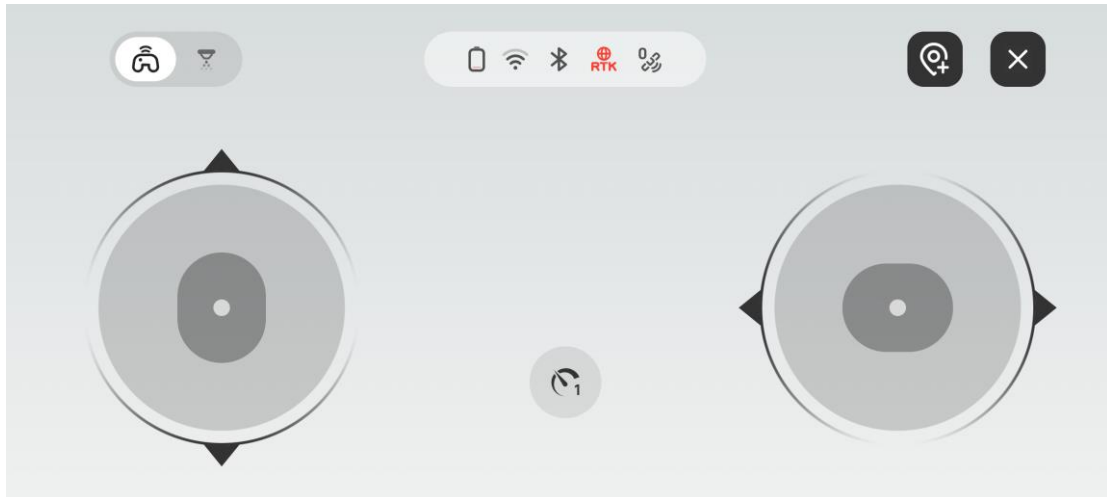
Driven by industrial RTK technology, our RTK reference station adopts built-in radio mode, perfectly realize the enhancement of data delivery from satellite-based positioning system. The RTK reference station will finish the connection automatically by FM without the need for manual operation.

6.6 Build Coordinates of Fields

Before creating a map, you need to build the coordinates of the field. If you use the cloud platform to create a map, you can build the coordinates in the following two ways of points placement. If you use the APP to create a map, you can skip the following two steps.

6.6.1 Remote-controlled precision point placement

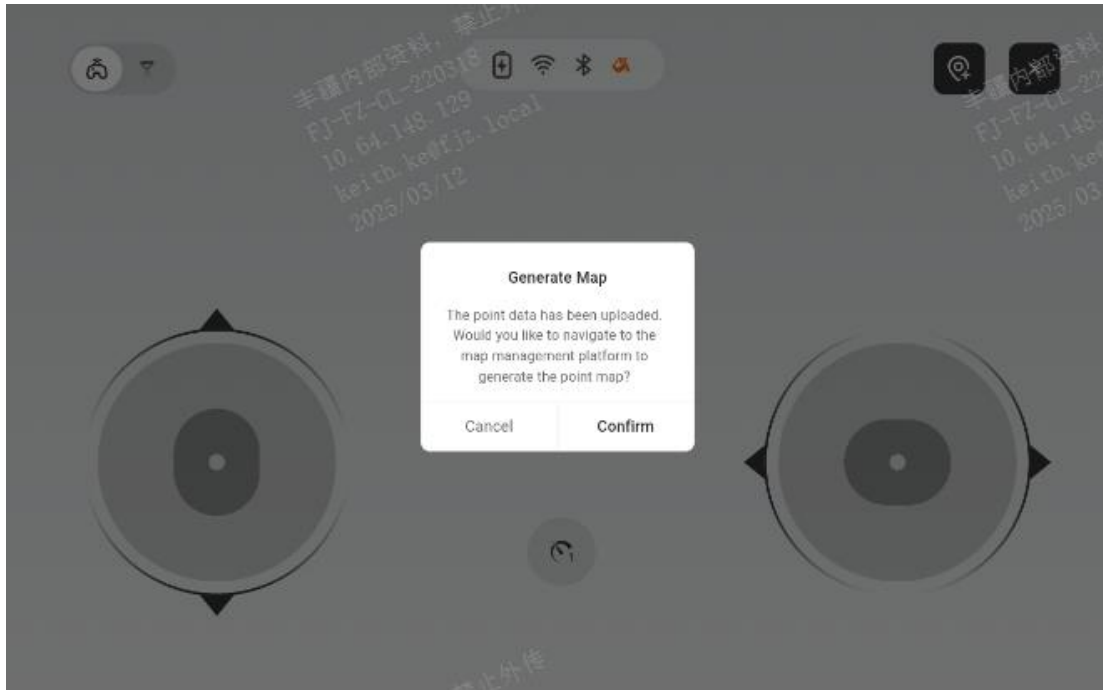
- Engage remote control mode.



- Click the button situated in the upper-right corner, and await the color to change from black to yellow to activate the point placement mode.
- Navigate the vehicle to the designated position, click the placement actuator below to record the coordinate point, and there is a counter on the placement actuator to show the number of points already recorded.
- Navigate the vehicle to the subsequent point position, click the placement actuator, and the counter will change from 1 to 2.
- You can continue to add multiple points in this way, based on the requirement of maps. At least two points are required.



- Click the "Confirm" button to complete the marking.

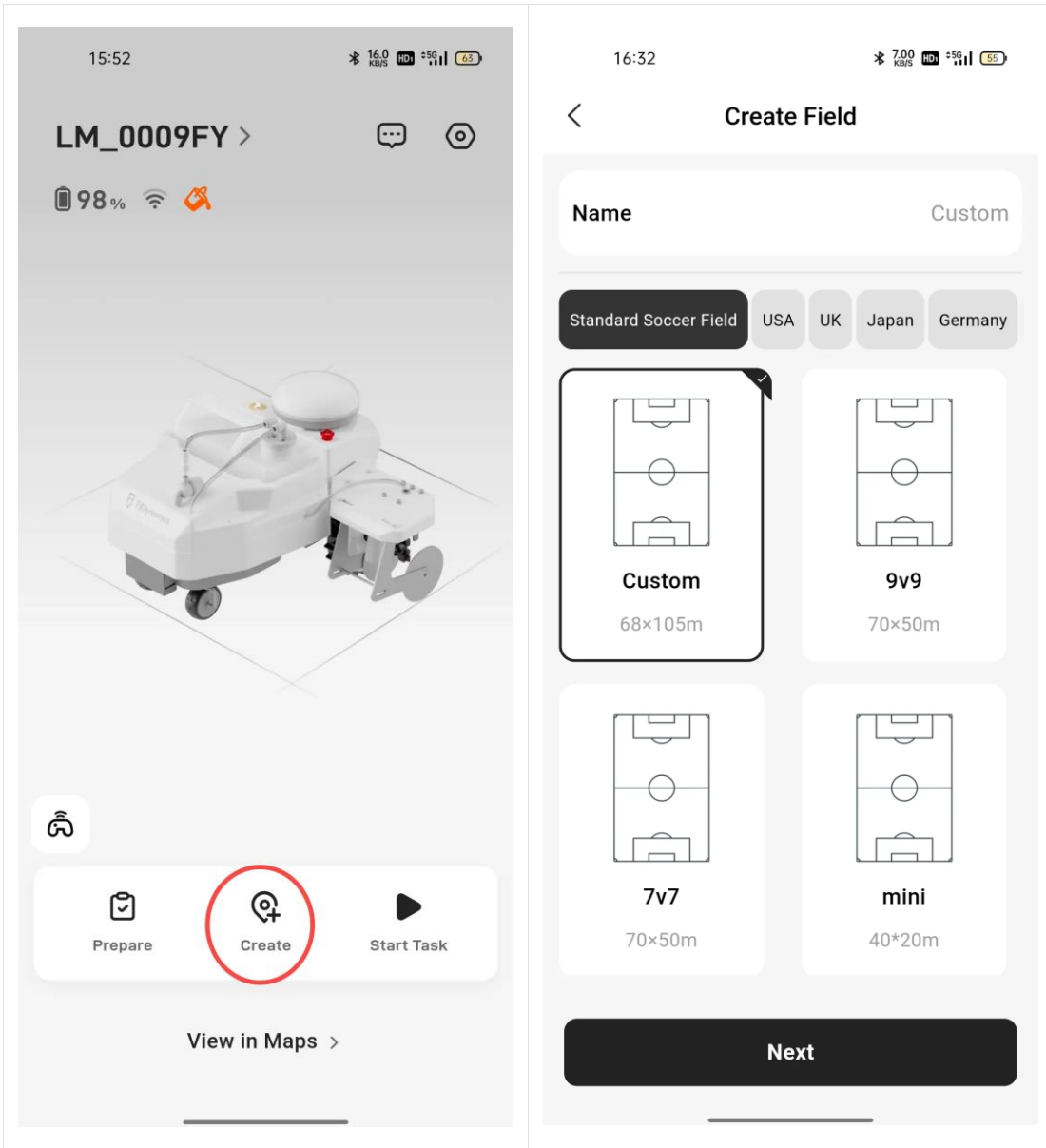


6.7 Map Management

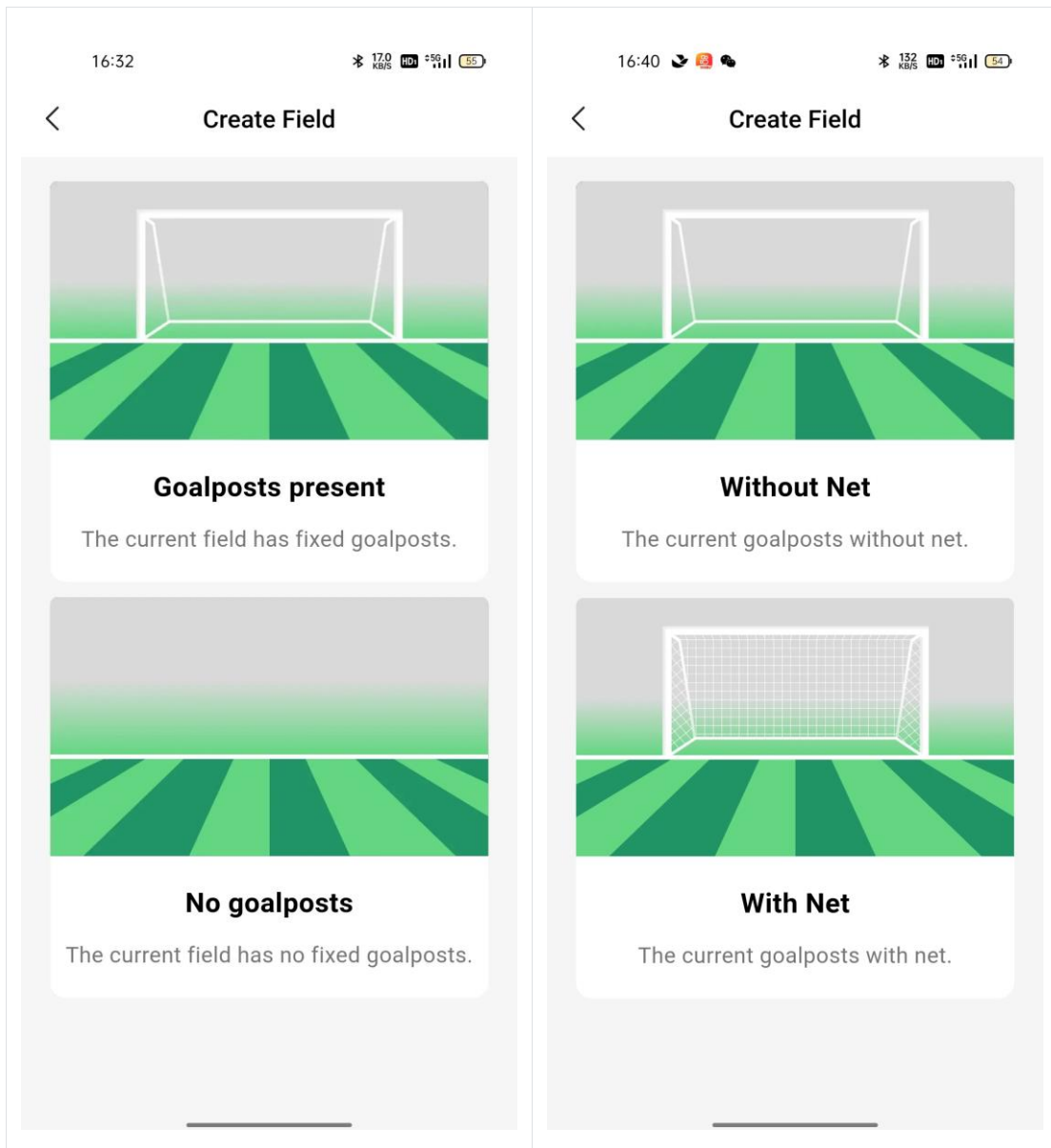
There are two ways to create a map: create a map through the APP or create a map in the cloud.

6.7.1 Creating a Map From APP

- Make sure the RTK is connected properly, the tablet is connected to the network, and the tablet is connected to the marking machine. Click the "create" button to start creating the map.
- Select the map you want to create, enter a name, and click Next.



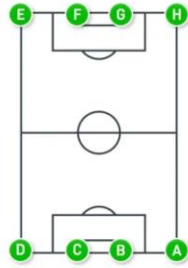
- Select whether there are fixed goalposts.



Select the marking method based on different number of points.



Create Field

**Eight-point marking**

Used for scenarios where all four corners and four goalposts are marked. Based on the previous spray traces and the goalposts are fixed...

**Goalpost marking**

Used for scenarios with goalposts at both ends of the field. No spray traces currently, but goalposts are fixed.

- Follow the prompts to mark the coordinates on the court one by one, and click Done when you are done.



- Once the marking is complete, the court layout is generated.

11:11

HD 4G



选择区域



1242.72m



闽侯县青少

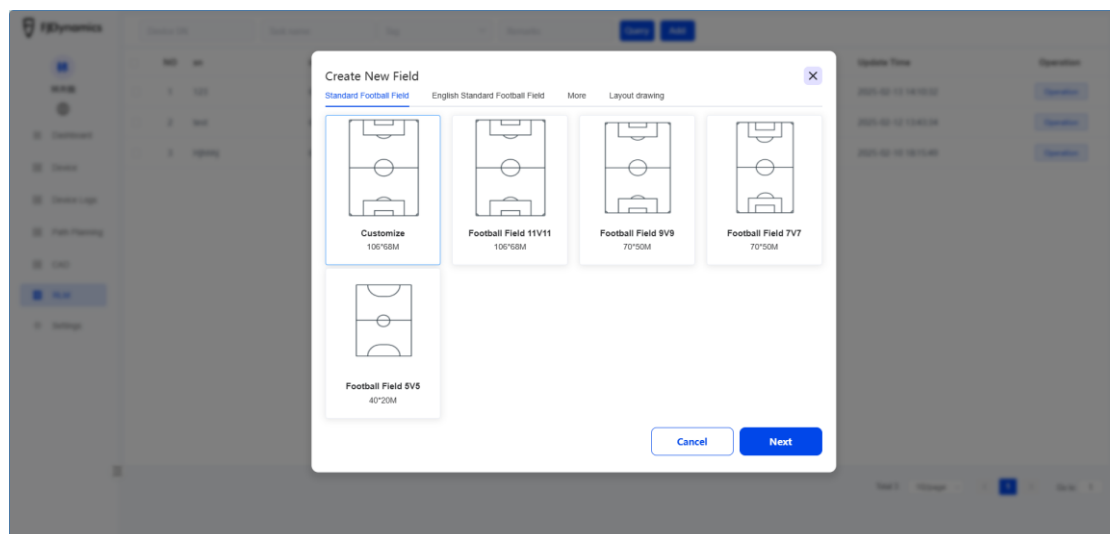
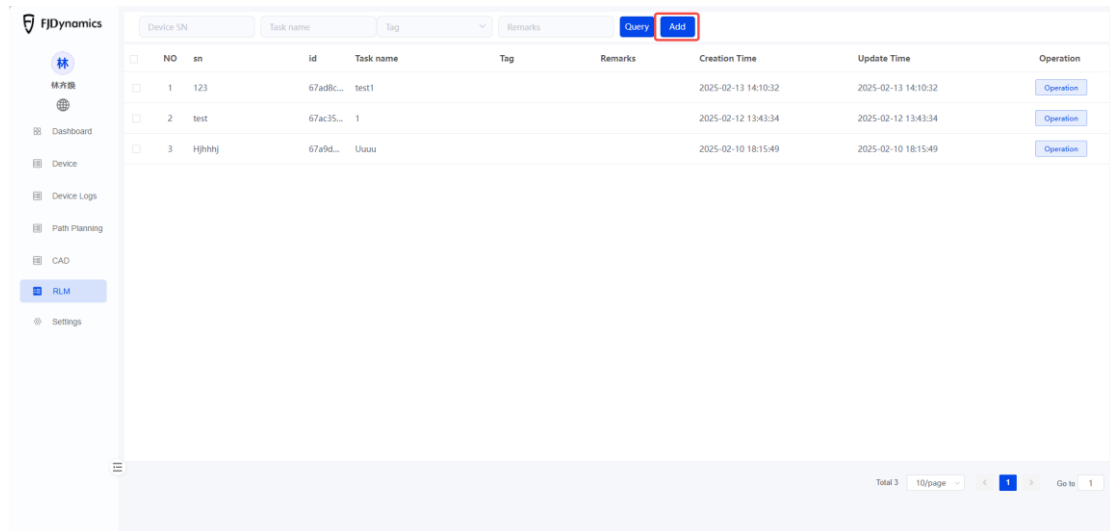


自定义

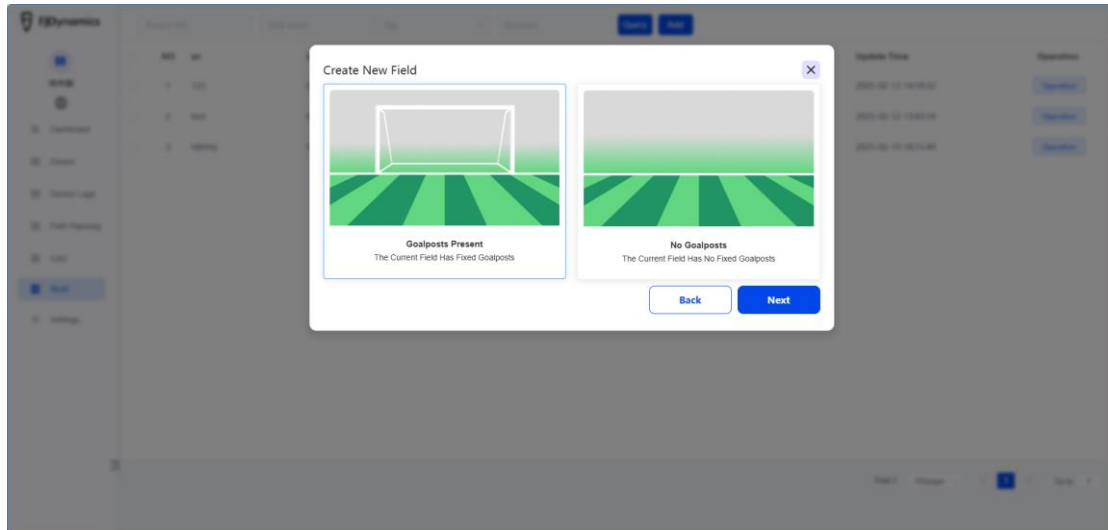


6.7.2 Create a Map From the Cloud Platform

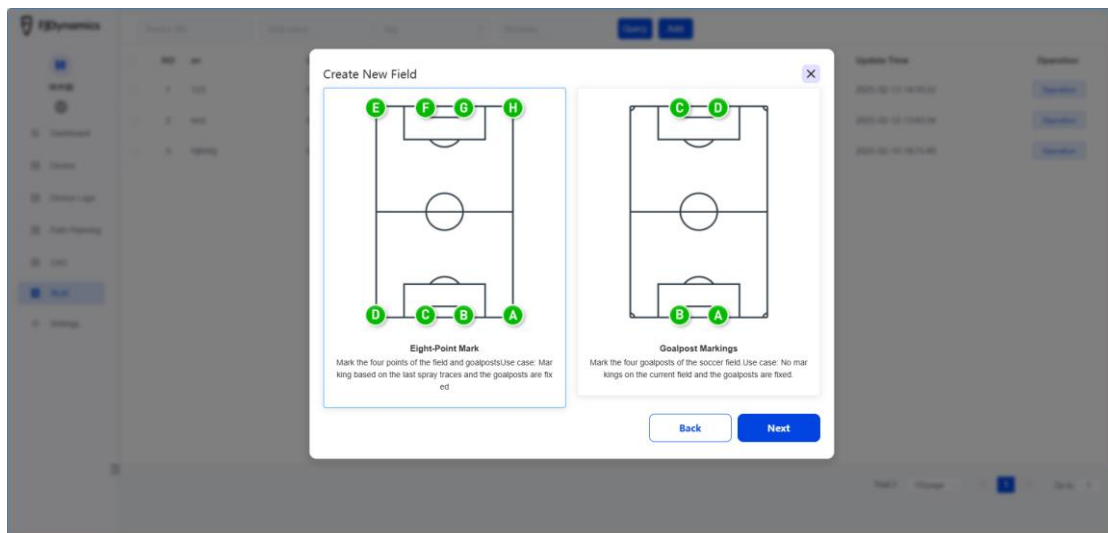
- Log in to the map management platform, click "RLM" on the sidebar of the main page, and click the "Add" button at the top to enter the [Create New Field] page. We have prepared and categorized many standard field drawings for you. You can select the field you want to use in the "Standard Football Field/British Standard Football Field/More" categories and click the "Next" button.



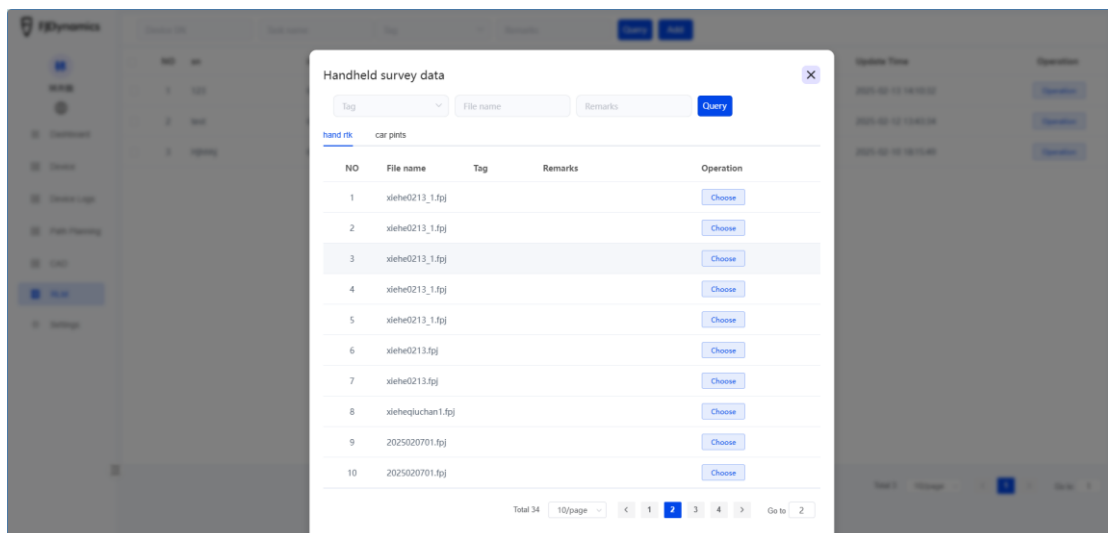
- Select whether there are fixed goalposts.

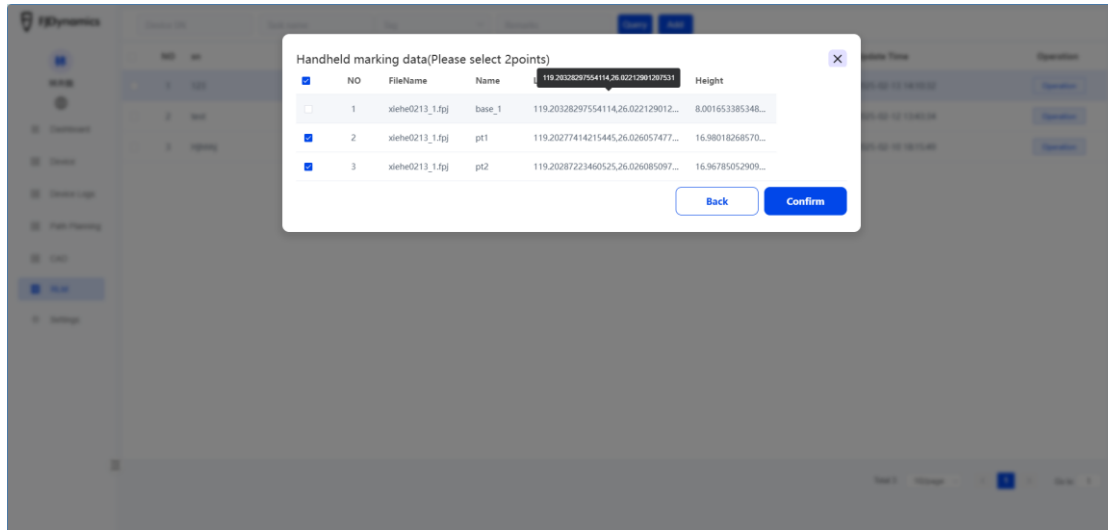


- Select the marking method based on different number of points.

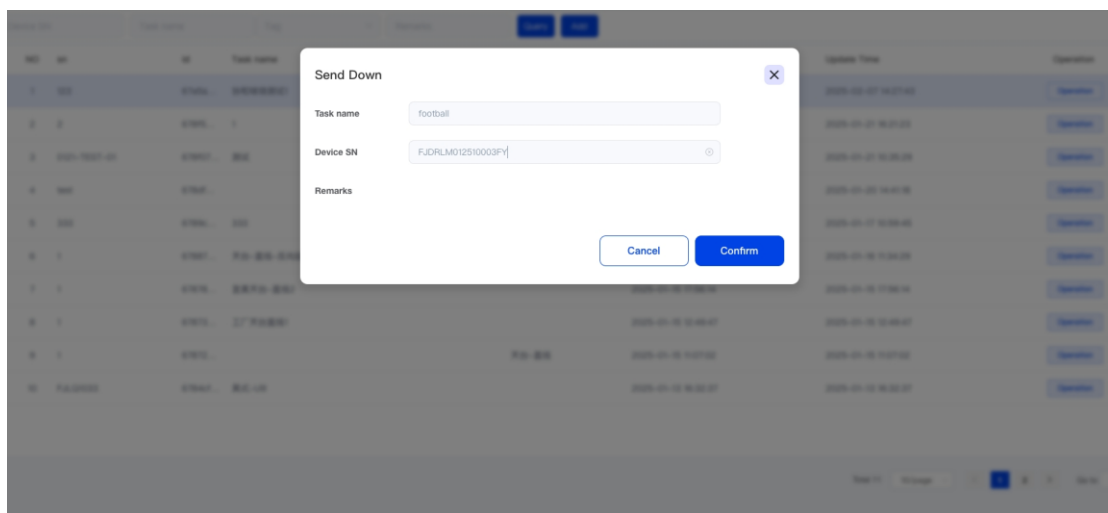


- Select the coordinate data collected by the pointing device or the marker.





- Generate the map and send it to the robotic line marker. You can view the information on the mobile APP.





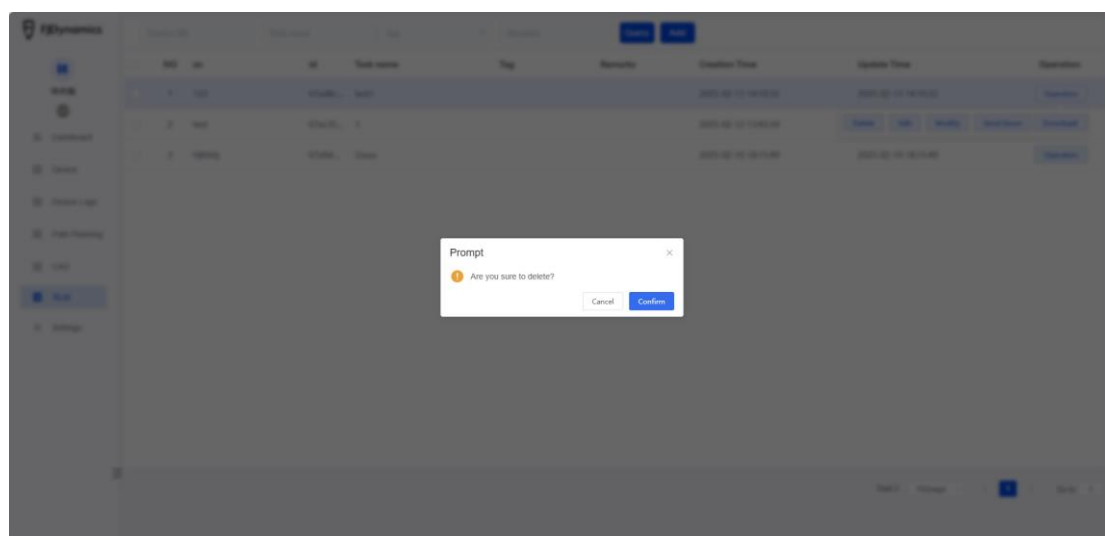
6.7.3 Delete maps

- To delete a map: On the map management page, Click the map you want to delete, then click "Delete" and "Confirm".

The screenshot shows the FJDynamics RLM interface. At the top, there are search filters for Device SN, Task name, Tag, and Remarks, along with 'Query' and 'Add' buttons. Below the filters is a table with the following columns: NO, sn, id, Task name, Tag, Remarks, Creation Time, Update Time, and Operation. The table contains three rows of data:

NO	sn	id	Task name	Tag	Remarks	Creation Time	Update Time	Operation
1	123	67ad8c...	test1			2025-02-13 14:10:32	2025-02-13 14:10:32	Operation
2	test	67ac35...	1			2025-02-12 13:43:34		Delete Edit Modify Send Down Download
3	Hjhjhj	67a9d...	Ukxuu			2025-02-10 18:15:49	2025-02-10 18:15:49	Operation

At the bottom right of the table, there is a pagination control showing 'Total 3', '10/page', and 'Go to 1'.



Note: The RTK base station cannot be moved after creating a map.

After creating a map, do not move the RTK base station, otherwise, it may cause deviation between the actual work area and the mapped work area.

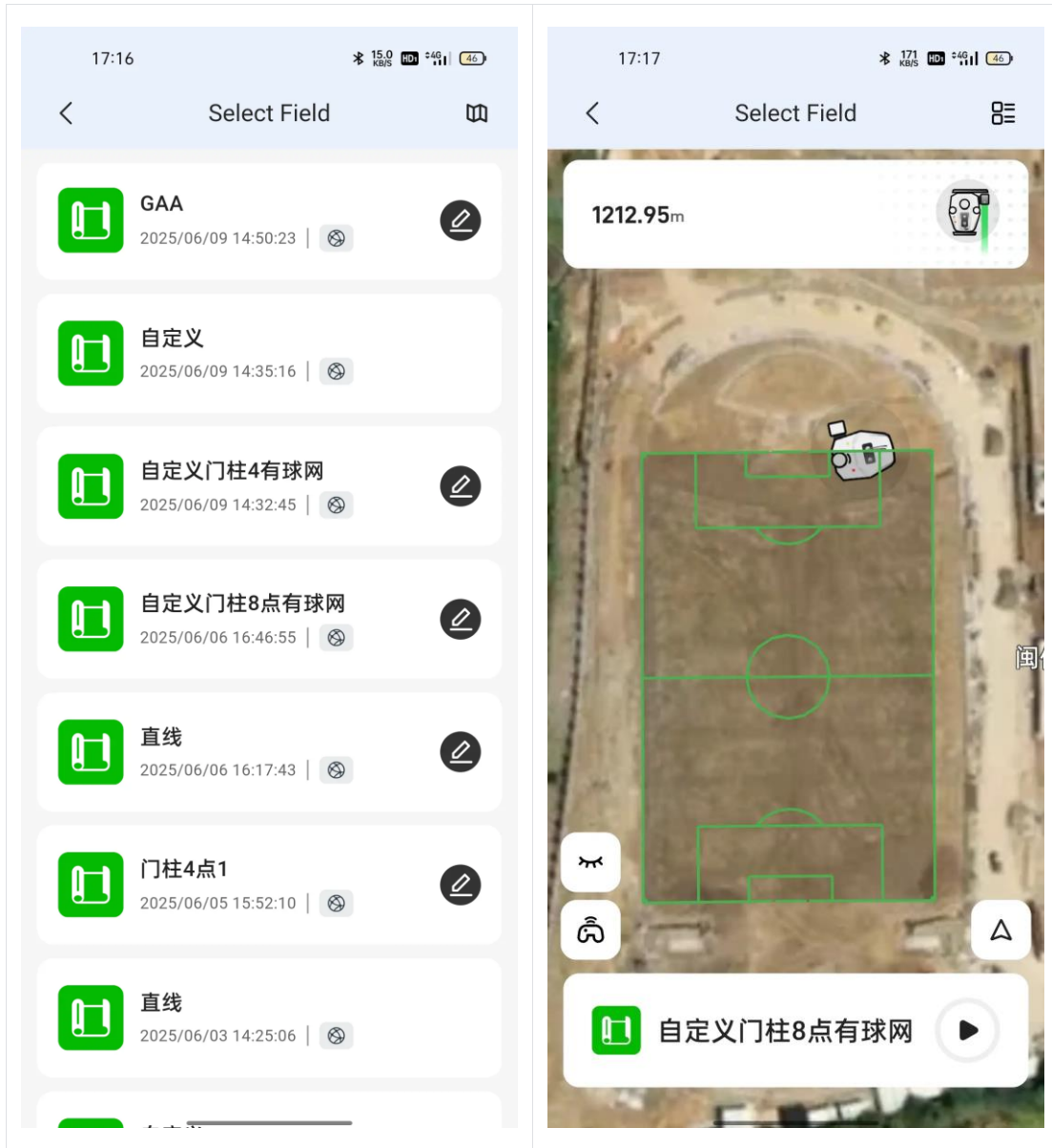
If there is an RTK base station that really needs to be repositioned, after repositioning, delete and rebuild the base station, and then recreate all the maps.

6.8 Line Marking Operation

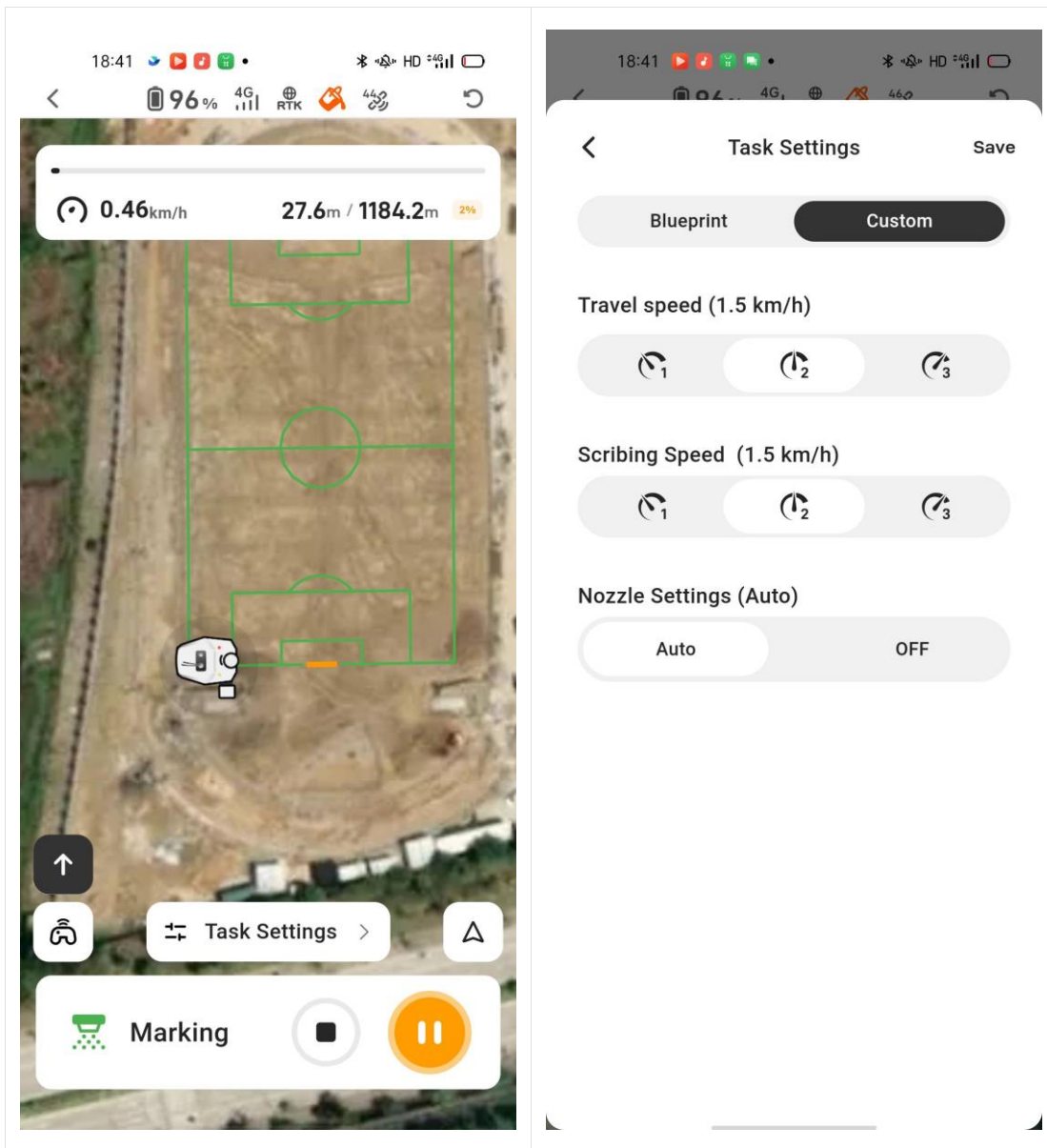
- On your tablet, tap "start task" to open the map list.



- Select the map.



- During the marking process, you can adjust the travel speed, turn on or off the obstacle avoidance function, and adjust the sprayer.



7. Precautions for Operation

7.1 Precautions Before Line Marking Operation

- Please read the user manual before starting the operation.
- Plan the operation time carefully, avoiding adverse weather such as rainy days, snowy days, windy days, cold days (environmental temperature $\leq 5^{\circ}\text{C}$), hot days (environmental temperature $\geq 35^{\circ}\text{C}$), and humid days (environmental humidity $> 85\%$).
- Before starting the operation, ensure that all obstacles on the lawn are cleared and that non-operational personnel are kept out of the work area.
- Prepare the paint and thinner (water) according to the required mixing ratio, measuring the appropriate amount and stirring it evenly before use.

- Press the knob switch on the front of the line marking machine's control box, to activate the exhaust and painting functions. Ensure all gas is expelled during exhaust; when switching to painting, check if the angle and shape of the sprayed liquid meet the requirements.

7.2 Precautions During Line Marking Operation

- Continuously monitor the line marking machine's operation, checking for any significant deviation in the straightness of the lines. If noticeable changes occur, stop marking immediately and investigate the cause.
- Keep a close watch on the paint usage in the line marking machine. A 20-liter bucket theoretically covers two full-sized soccer fields. When refilling, only add an appropriate amount; however, the piping is equipped with a liquid sensor that will pause the operation automatically if there is no liquid in the pipeline, and the system will notify the user to replenish paint.
- Observe the various conditions of the field during the operation. Non-staff personnel are not allowed to enter the work area during the operation to avoid impacting the progress of the line marking and to prevent potential injuries.

7.3 Precautions After Line Marking Operation

- After completing the line marking operation, promptly clean the spray system to prevent residual paint from sticking to the inner walls of the spray pipes.
- Use a dedicated container to store any leftover paint from the spray bucket. Do not leave residual paint in the spray bucket overnight to prevent sedimentation and buildup, and ensure it is cleaned according to the cleaning procedure.

8. Maintenance and Care

8.1 Maintenance Schedule

Maintenance Task/Frequency	Each time	Every 200 hours	Every 2 years
Clean the spraying system			
Check buttons			
Replace the spray system hoses and			

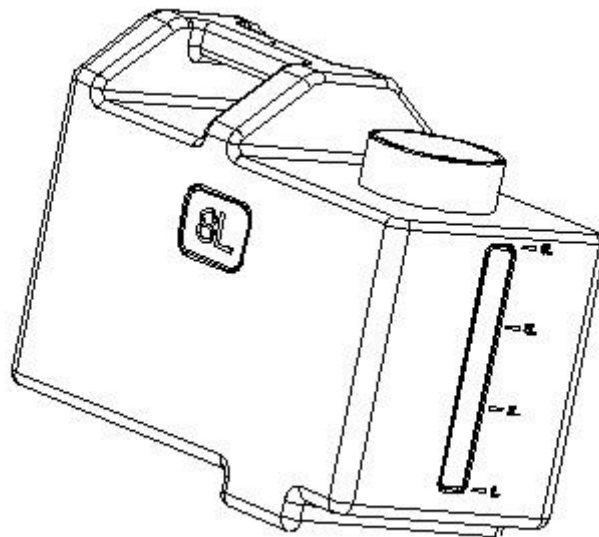
joints			
Replace the nozzle			
Replace the three-stage filter			

8.2 Cleaning the Spraying System Process

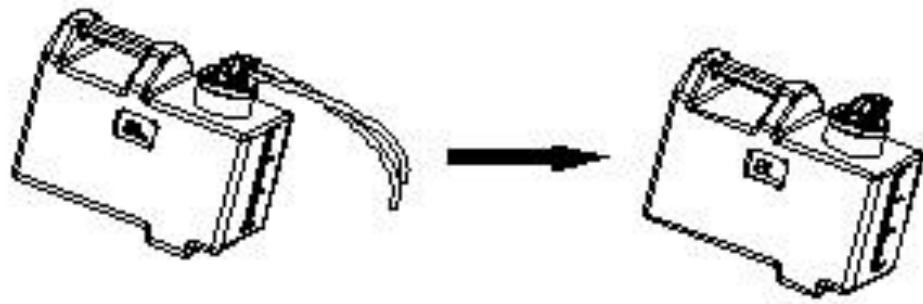
8.2.1 Rinsing the Paint Bucket

Required Items: Spare empty paint bucket or regular bucket (at least 8 liters, with an opening matching the size of the paint buckets supplied by our company), warm water, and dish soap (optional).

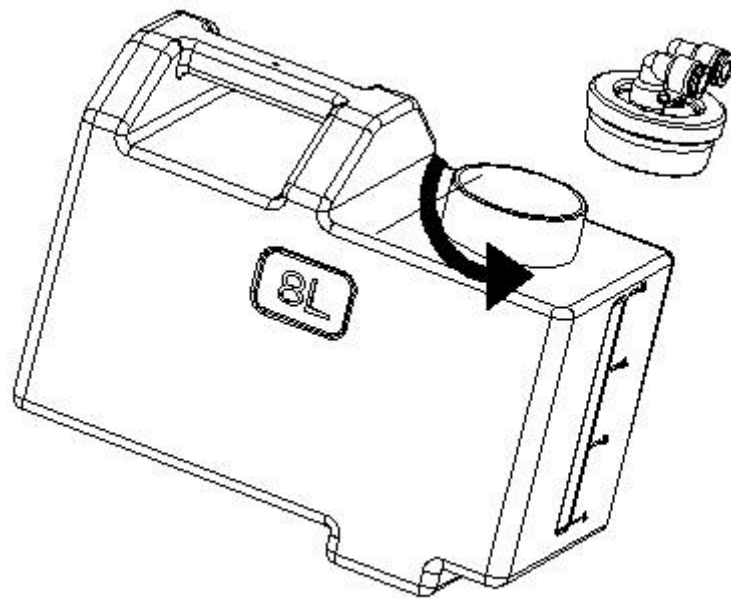
1. Add 8 liters of warm water to the spare empty bucket and place it near the equipment.



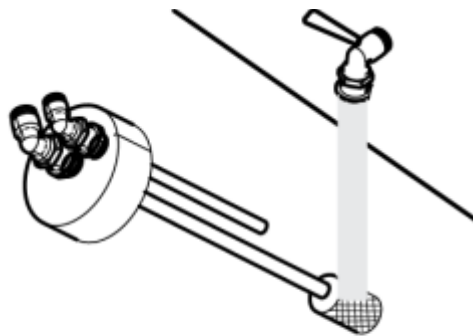
2. Press the pneumatic connector sleeve with one hand and pull out the PU tube from the paint bucket.



1. Rotate counterclockwise to remove the paint bucket lid.



2. Clean the primary filter at the suction port under the faucet (preferably with warm water) to remove paint residue.

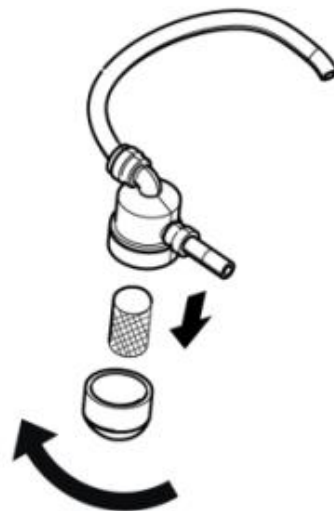


3. After cleaning, turn back the lid of the spare paint bucket and reconnect the water inlet PU pipe (a 12mm PU pipe).
6. Place the exhaust pipe (a 10mm PU pipe on the barrel cover) of the marking machine towards the sewer or other container, select the exhaust mode on the app or turn the rotary switch on the electrical control box to the exhaust mode until the liquid discharged from the exhaust pipe is clear and transparent.
7. Switch the spray painting mode on the app or turn the rotary switch on the control box to spray painting mode until the nozzle sprays clear and transparent liquid, completing the cleaning of the spray painting system.

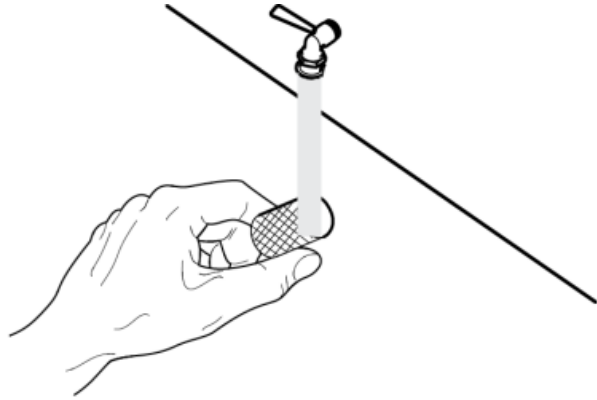
8.2.2 Rinsing the Secondary Filter

Required Items: warm water.

1. Unscrew the filter cup of the secondary filter by turning it counterclockwise and remove the filter element of the secondary filter.



2. Rinse the secondary filter element with warm water to remove paint residues.

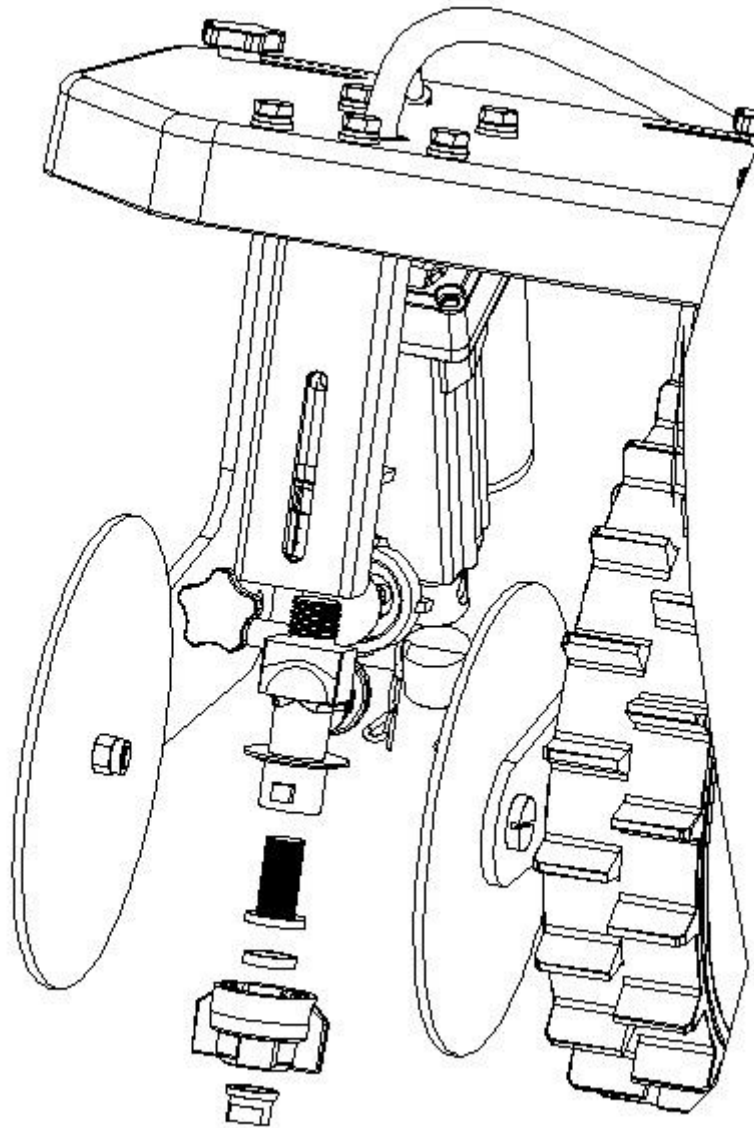


3. Reinstall the cleaned filter element and tighten the filter cup.

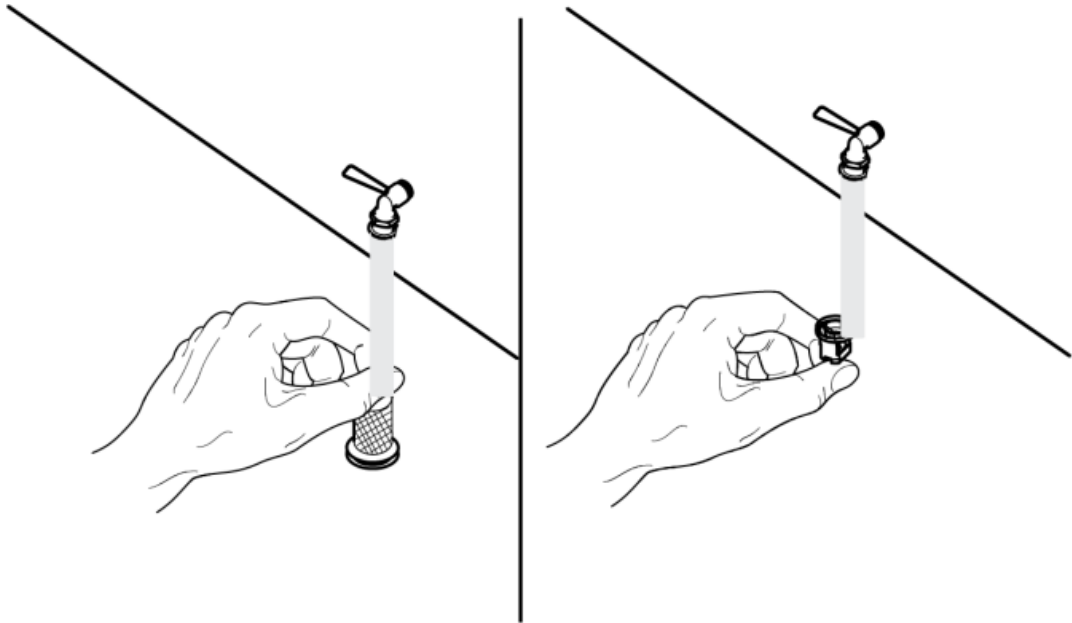
8.2.3 Cleaning the Nozzle

Required Items: Warm water, a cup, and dish soap (optional).

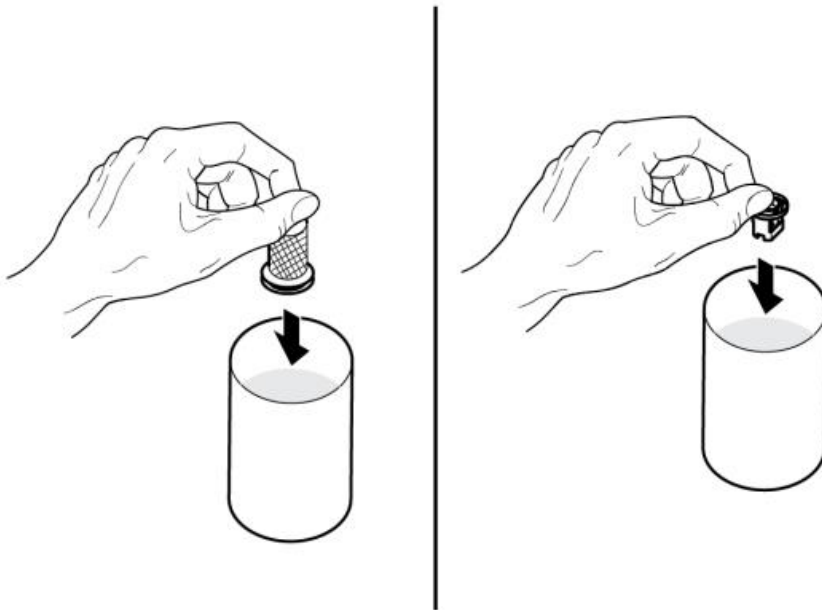
1. Rotate the nozzle quick-release cap counterclockwise, pull off the nozzle quick-release cap, then push the nozzle out of the housing, remove the nozzle, three-stage filter and gasket.



2. Rinse the nozzle and three-stage filter with warm water to remove any paint residue.



3. Place the nozzle and three-stage filter in a cup of water to soak. It's best to leave them soaking in water until you use the nozzle again.



9. Troubleshooting

Fault Description	Possible Causes	Solutions
Spray	Paint is too thick	Add appropriate thinner to dilute.

Painting Not Forming Properly	Loose connection at the quick connector of the diaphragm pump suction pipe	Check the sealing condition at the connector and secure it properly.
	Aging or damage to the diaphragm pump suction pipe	Replace the suction pipe.
	Diaphragm inside the pump is aging, damaged, or paint-coated	Replace with a new pump.
	Nozzle is clogged or damaged	Replace the nozzle.
	Insufficient exhaust from the spraying system	Fully exhaust the system and then proceed with spraying.
	Primary/Secondary/Tertiary filter is clogged	Clean or replace the primary/secondary/tertiary filter.
Diaphragm Pump Not Dispensing Paint	Motor is damaged	Replace with a new pump.
	Suction pipe of the diaphragm pump is damaged and leaking	Replace the suction pipe.
	Loose connection at the quick connector of the diaphragm pump suction pipe	Check the pipeline and secure it properly.
	Primary/Secondary/Tertiary filter is clogged	Clean or replace the primary/secondary/tertiary filter.
	Nozzle is completely clogged	Replace the nozzle.
Insufficient exhaust from the spraying	Fully exhaust the system and then proceed with spraying.	

	system	
	Severe blockage or diaphragm damage inside the pump	Replace with a new pump.
	Pump is empty, causing “air locking”	Fill the suction pipe with clean water, restore the pipeline, and restart the pump.

Note: The above are common faults. If the issue persists, please contact customer service for assistance.

10. Waste Disposal

The disposal of waste paints and other materials should comply with local laws and regulations.

This product contains metallic materials and electronic components. Waste disposal should prioritize environmental protection and adhere to local laws and regulations. Discarded materials (including packaging materials, metal parts, and electronic components) should be handed over to local certified recycling companies for proper disposal.

11. Storage

Proper storage is essential to maintain the performance of the line marking equipment and extend its service life. Here are some points to pay attention to when storing the line marking equipment:

1. Dry and Ventilated:

The line marking equipment should be stored in a dry environment to prevent moisture from affecting its electrical system and mechanical parts. Additionally, good ventilation can prevent internal components from becoming damp or corroded due to prolonged closure.

2. Avoid Direct Sunlight and Rain:

Exposure to direct sunlight and rain can cause the exterior of the line marking equipment to fade, deform, and lead to rapid aging of the paint spray pipes, which could even impact the performance of internal electronic components and mechanical parts. Therefore, choose a storage location that avoids direct exposure to sunlight and rain.

3. Non-Corrosive Gas Environment:

The environment for storing line marking equipment should avoid the presence of corrosive gases, as these gases can corrode the metallic components of the equipment, affecting its lifespan.

4. Regular Inspection and Maintenance:

Even in a proper storage environment, it is recommended to regularly inspect and maintain the line marking equipment to ensure it remains in optimal condition. This includes checking for wear on mechanical components, leaks at pipe joints, and promptly performing repairs and replacements as needed.

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