FJD Titan Robotic Lawn Mower User Manual

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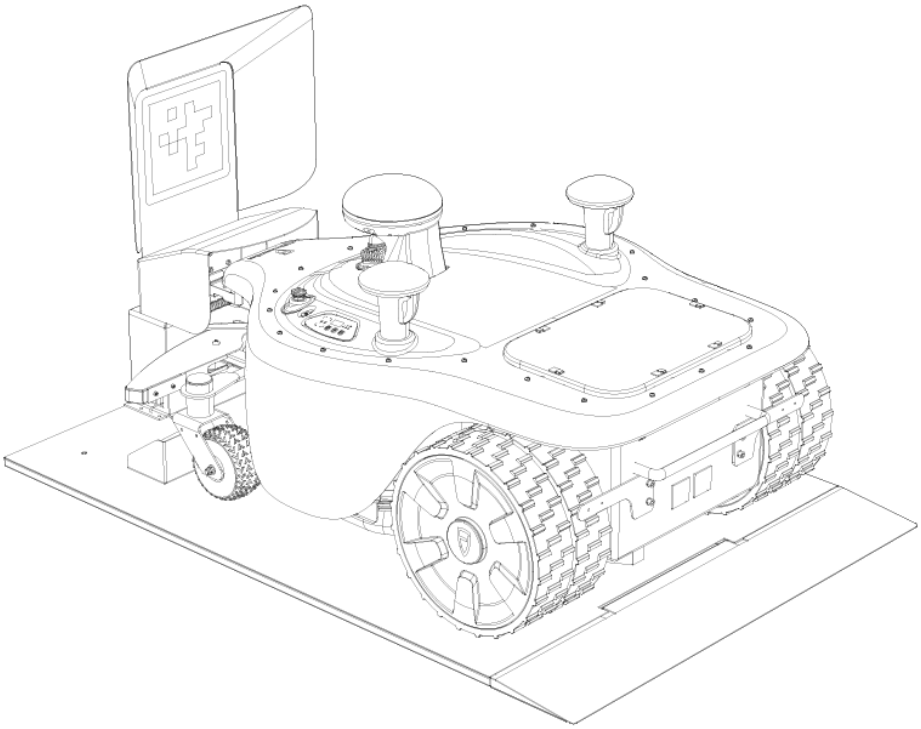
Cover Page

FJDynamics Titan

Robotic Lawn Mower



Catalog

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Revision History

Version	Date	Description
V1.0	January 14， 2026	First version

Preface

- How to Use the Manual: Instructions on how to navigate and use the manual effectively.

Legend			
 Warning	 Important	 Hints and Tips	 Reference

Introduction

Introduction

The **FJDynamics Titan** is a professional robotic lawn mower designed for efficient, fully autonomous care of large commercial turf areas. This manual explains how to set up, operate, and maintain the Titan mower safely and correctly.

Modern grounds maintenance demands precision, flexibility, and easy day-to-day management. Titan is built for these needs. Its **triple compact cutting deck**, with **six pivoting razor blades per deck**, delivers a clean, even cut in a wide range of grass and weather conditions. Combined with autonomous mowing and a practical **fleet management system**, Titan helps keep golf courses, sports fields, parks, and other public spaces looking their best.

Titan uses an advanced **three-layer guidance system** — RTK GNSS positioning, computer vision, and a 3D LiDAR sensor — to navigate complex environments, follow defined mowing patterns, and detect obstacles in time to react safely. The **cloud-based fleet management platform** lets you monitor and coordinate multiple mowers, integrate them into your existing operations, and access useful performance and usage data to support better planning and decision-making.

Key Features

Advanced Navigation

- **Dual RTK GNSS, LiDAR, and vision-based guidance** deliver precise mowing on complex sites with accurate coverage **without the need for boundary wire**.
- **Real-time obstacle detection** enables smooth operation around trees, bunkers, buildings, and other obstacles, even in dense or irregular landscapes.

Efficient Cutting Performance

- A **730 mm cutting width** allows Titan to cover more area in less time, reducing total mowing hours.
- **Adjustable cutting height from 20–100 mm** lets you match different grass types, turf conditions, and seasonal requirements.
- An **adaptive front axle and floating cutting deck** maintain consistent cutting

quality on uneven ground and handle slopes up to **20°**.

Smart Energy Management

- A **2 kWh rechargeable lithium-ion battery** delivers long runtime, fast charging, and improved sustainability.
- **Optimized path planning** reduces overlapping passes and idle time, increasing efficiency and cutting operational downtime.

Simplified Deployment

- **Wire-free installation** lowers setup costs and makes it easy to deploy or relocate Titan across large, complex, or frequently changing properties.

This manual will guide you through the initial installation, app setup, operating modes, maintenance, troubleshooting, and technical specifications of the FJDynamics Titan. Follow the instructions carefully to ensure safe operation and optimal performance of your robotic lawn mower.

1.1 Safety Information

1.1.1 Safety Definitions

The following symbols and signal words are used throughout this manual to highlight important safety and operating information:

- **WARNING**

Indicates a hazardous situation which, if not avoided, **could result in serious injury or death** to the operator or bystanders. Always follow the instructions in this manual. Improper use of the product is the responsibility of the user.

- **CAUTION**

Indicates a situation which, if not avoided, **could result in damage** to the mower, other property, or the surrounding area.

- **NOTE**

Provides helpful or additional information to ensure correct operation in a specific situation.

1.2 General Safety Instructions

1. **WARNING**:

Read the following warning instructions carefully before using the product.

2. **Do not ride or sit on the mower：**

Never stand, sit, or place objects on the mower or its charging station.

3. **Read the Operator's Manual:**

Always read and understand this manual before operating the product. Keep the manual for future reference and for any other users of the mower.

4. **Supervision and Instruction:**

This appliance is **not intended** for use by:

- children, or
- persons with reduced physical, sensory or mental capabilities, or
- persons lacking experience and knowledge,

unless they are supervised or have been instructed in the safe use of the appliance by a person responsible for their safety.

In the **EU**, this appliance may be used by children aged **8 years and above** and by persons with reduced capabilities or limited experience, **only if**:

- They have been given proper supervision or instruction in safe use, and
- They understand the hazards involved.
- Children must **not** play with the appliance.
- Cleaning and user maintenance must **not** be carried out by children without supervision.

5. **Operator responsibilities**

The operator is fully responsible for any accidents, injuries, or damage to people or property that occur while using this equipment. This includes:

- ensuring proper installation,
- operating the mower safely and according to this manual,
- keeping all safety features in place and functional,
- making sure any additional users are properly trained in safety procedures, and
- maintaining constant supervision of the work area whenever the mower is in use.

1.2.1 Work Area Safety

WARNING:

Failure to follow these work area safety instructions may result in serious injury or damage to property.

- The work area must be completely cleared of people, especially children, and all pets before operation begins. No one should enter the work area while the mower is operating. All toys, recreational equipment, garden tools, and debris must be

removed from the area before starting the mower.

- When operating the mower in dusty environments, always wear a full-face mask or an appropriate dust mask.
- Do not allow children or persons with physical or cognitive impairments to operate the mower.
- Dispose of batteries in accordance with local regulations. Do not incinerate or expose to fire.
- Never stand, sit, or place objects on the mower or its charging station.

1.2.2 Equipment Safety

The safe operation of this equipment depends on using only **FJDynamics-approved components** and **original FJDynamics batteries**. Using non-approved or incompatible parts may reduce the effectiveness of safety features and **void the product warranty**. All safety devices and warning labels must be kept in good condition and **replaced immediately** if they become damaged or unreadable.

Power supply cables require **special care** to ensure safe operation:

- Route all cables **outside the mowing area** so they cannot be cut or damaged by the mower.
- The installation must include a suitable **Residual-Current Device (RCD)** for electrical protection.
- Inspect all cables regularly for **wear, cracks, or other damage**.

If a cable is damaged during operation:

- **Immediately disconnect** it from the power outlet.
- **Do not use** the damaged cable again.
- Contact auTitanized service personnel to have the cable **replaced**.

A damaged or worn cable is a **serious electrical hazard** and must never be used.

- Before performing any form of connection (including connections for emergency charging cables or striping module accessory devices), ensure that the lawn mower is completely powered off.
- Accessory devices, including chargers or stripping modules, must only be plugged in or disconnected when the main power is off. It is strictly prohibited to connect or disconnect any ports while the charger or lawn mower is powered on.
- Safe Operating Sequence

  Disconnecting: Power OFF → Remove Power → Unplug Cable.

  Connecting: Confirm Power OFF → Connect Port → Power ON.
- Risk Warning

Violating the above operations may lead to:
✓ Damage to the port or device hardware
✓ Mower system malfunctions
✓ Safety hazards (such as short circuits, overheating)

1.2.3 Operational Safety

If you notice any **unusual vibration** or visible **damage** on the mower, **switch it off immediately**. In the event of any accident or injury, **seek medical attention at once**.

Before carrying out **any** maintenance, clearing blockages, or inspecting the mower:

- Turn the mower **completely off**.
- Wait until **all moving parts have come to a complete stop**.

Never touch the **blade disc** or any other moving parts until they are fully stopped.

When performing maintenance—especially when **replacing blades**:

- Always wear **protective gloves**.
- Use the **correct tools** specified for the job.

This helps protect the operator from injury and prevents damage to the equipment.

1.2.4 Maintenance

> **WARNING**
> Always switch the mower **off** and make sure all moving parts have stopped **before** performing any maintenance.

1. **Regular inspections**

Carry out a basic maintenance check **at least once a week**, including:

- checking the condition and sharpness of the blades,
- verifying that all safety features (such as sensors and emergency stop) are working correctly,
- ensuring all safety and warning labels and signs are **clean, visible, and readable**.

The **emergency stop function** should be tested **before each use**.

2. **Storage**

- Store the mower **indoors** whenever it is not in use.
- The storage area must be **secure and inaccessible to children**.

- Clean the mower Titanoughly before putting it into storage to prevent grass buildup and corrosion.
- For **long-term storage**, disconnect all power connections and follow any additional storage instructions in this manual.

1.2.5 Charging Station Safety

The charging station supplied with your mower is **specifically designed for this model**. Do **not** use any other chargers or charging methods.

- Install the charging station in a location that meets all **clearance and positioning requirements** described in this manual.
- Keep the area around the charging station **clean and free of debris**, such as leaves, grass clippings, or loose objects, to avoid fire or tripping hazards.

During **thunderstorms** or severe electrical storms:

- Disconnect **all power and wiring** from the charging station to protect the electrical components from lightning or power surges.
- After the storm has passed, reconnect all cables **carefully**, making sure each wire is connected to the correct terminal and properly secured.

1.2.6 Battery Safety

> **WARNING**
> Improper handling of the battery may result in **fire, explosion, or serious injury**.

1. **Original batteries only**

Use **only original batteries** recommended by FJDynamics. Product safety and performance **cannot be guaranteed** if non-original, refurbished, or modified batteries are used. Using non-original batteries may also **void the warranty**.

2. **Approved charging method**

Charge the mower **only** with the **supplied charging station**. Do not attempt to charge the battery with any other charger, power source, or improvised method.

3. **Electrolyte leakage**

- If battery electrolyte leaks and comes into contact with skin or clothing:

Immediately rinse the affected area with **plenty of clean water** or an appropriate neutralizing agent.

- If the liquid gets into the **eyes**:
    - Rinse the eyes with clean water for several minutes, and

- **Seek medical attention immediately**.

4. **Maintenance and storage (battery and mower)**

- Perform basic safety and maintenance checks **at least once a week**, including:
  - checking the condition of the blades,
  - verifying all safety features (including the emergency stop) are functioning correctly,
  - ensuring all warning labels and safety signs are **clean, visible, and legible**.
- Test the **emergency stop function before each use**.
- When the mower is not in use, store it **indoors** in a **dry, well-ventilated, and secure area** that is **inaccessible to children**.
- Clean the mower Titanoughly before storage to remove grass, dirt, and debris that could affect cooling or battery safety.
- For **long-term storage**, disconnect all power connections as described in this manual and avoid storing the battery in high-temperature or high-humidity environments.

1.3 Understanding LiDAR Technology

1.3.1 Basic Principles

LiDAR (Light Detection and Ranging) is an advanced sensing technology that measures distance using **laser light**.

- The LiDAR sensor sends out rapid pulses of laser light.
- These pulses bounce off nearby objects and return to the sensor.
- By measuring how long each pulse takes to return, the system calculates the **exact distance** to those objects.

Using millions of these measurements, LiDAR builds a **detailed 3D map** of the mower's surroundings in real time.

1.3.2 Application in the FJDynamics Titan

On the FJDynamics Titan, the LiDAR sensor works together with **RTK GNSS** and the **vision system** to provide accurate guidance and navigation.

During the initial setup and operation:

- Titan's LiDAR **scans your work area** (golf course, sports field, or other turf).
- It creates a **high-resolution 3D map** of the surroundings.

- This allows the mower to know **exactly where it is** and to plan **efficient mowing routes**, even in complex areas with trees, buildings, uneven edges, or irregular boundaries.

1.3.3 Primary Functions

1. **Navigation and Mapping**
(in conjunction with the vision sensor and GNSS positioning)

- Creates detailed maps of the work area with **centimeter-level accuracy**.
- Identifies **boundaries, obstacles, and access paths**.
- Enables precise **position tracking** throughout the mowing cycle.

2. **Obstacle Detection**
(in conjunction with the vision sensor)

- Detects fixed obstacles such as trees, posts, furniture, and equipment.
- Recognizes **moving obstacles** (people, animals, vehicles) in real time.
- Helps Titan maintain safe distances from hazards and adjust its path to avoid collisions.

3. **Path Planning and Routing**
Using the data from LiDAR, GNSS, and vision, Titan can:

- Plan **efficient mowing patterns** to reduce overlap and missed areas.
- Calculate **optimal routes** to and from the charging station.
- Continuously **adapt its path** to avoid obstacles while still completing the mowing job effectively.

1.3.4 Technical Limitations

LiDAR performance can be affected by environmental conditions, surface types, and operating limits. For best results, avoid using the mower outside the conditions described below.

1. **Environmental Constraints**

- **Weather Conditions**
    - Performance may **degrade in heavy rain or dense fog**.
    - Heavy **dust, smoke, or pollen** in the air can reduce measurement accuracy.
- **Surface Properties**
    - **Highly reflective surfaces** (water, glass, polished metal) can cause incorrect distance readings.

- **Very dark, matte, or light-absorbing surfaces** may be harder for the sensor to detect.
- **Transparent objects** (such as clear plastic panels or glass) may not be properly identified as obstacles.

- **Operational Limits**
  - **Maximum effective range**:
    - approx. **40 m at 10% reflectivity**
    - approx. **70 m at 80% reflectivity**
  - **Field of view (FOV)**:
    - Horizontal: **360°**
    - Vertical: **-7° to +52°**

> **Note:** Operating the mower outside these limits may reduce LiDAR performance and affect navigation accuracy.

1.3.5 Safety Considerations

1.3.5.1 Laser Safety

1. Classification
- Class 1 laser system (eye-safe under all conditions)
- Wavelength: 905 nanometers (invisible infrared)
- Compliant with IEC 60825-1 safety standards
2. Operational Safety
- Do not disassemble sensor housing
- Avoid direct view into sensor aperture
- Do not operate with damaged sensor covers

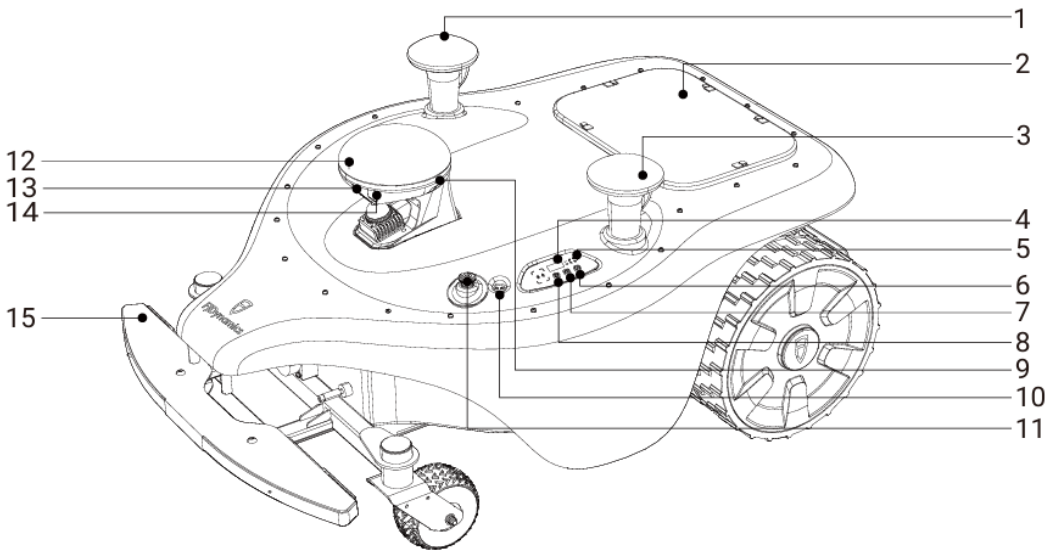
1.3.5.2 Performance Safety

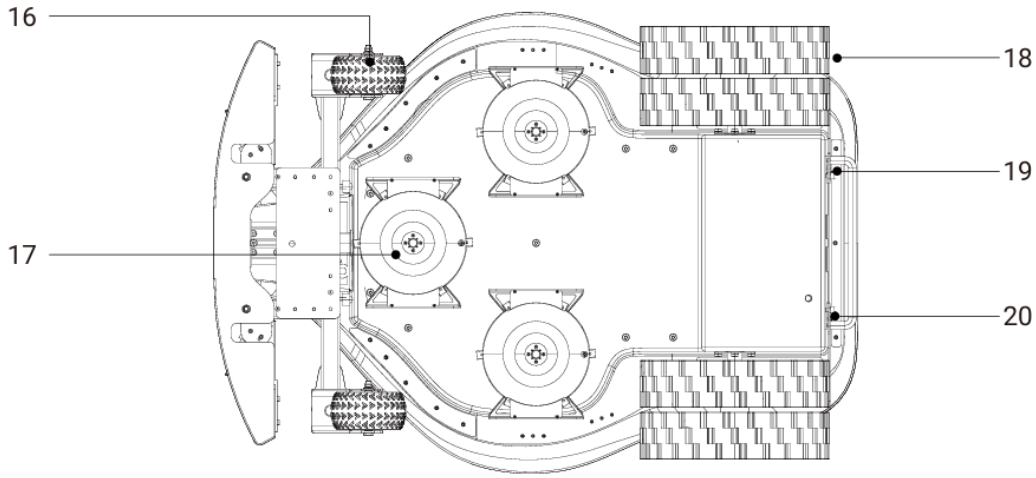
1. Regular Maintenance
- Clean sensor covers weekly with soft, dry cloth
- Check for physical damage before each use
2. Operation Guidelines
- Allow system to initialize fully before operation

- Maintain clear line of sight to charging station
- Avoid operation in severe weather conditions

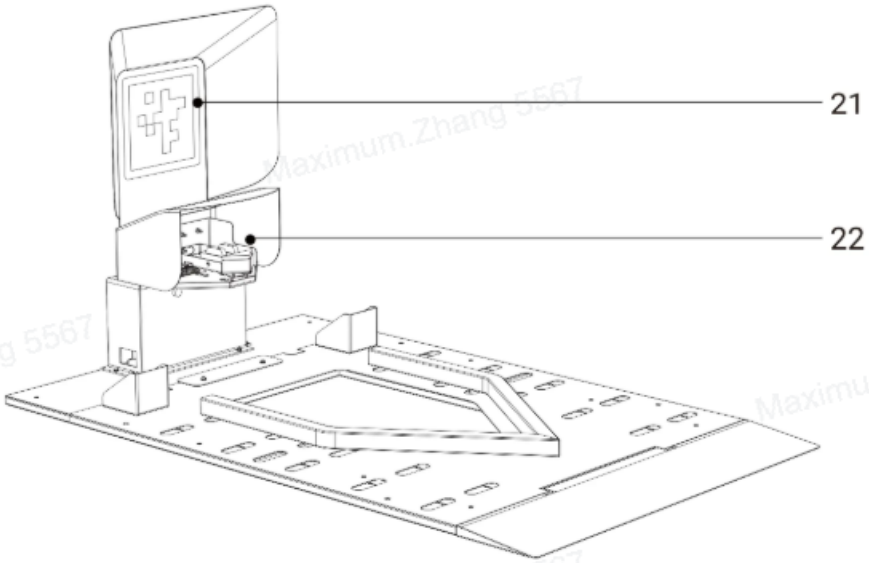
2. Technical Specifications

2.2.1 Robotic Lawn Mower





2.2.2 Charging Station



2.3 Specifications

2.3.1 FJDynamics Titan Robotic Lawn Mower

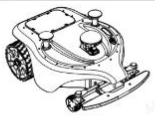
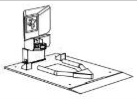
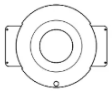
2.3.2 Charging Station

3. In the Box

FJDynamics

Packing List

* Check the materials against this packing list. In case that any item is not provided, contact Sveaverken or the local dealer.

No.	Name	Number	Illustration (for reference only)	Check
1	Robotic Lawn Mower	1		
2	Charging Station	1		
3	GNSS Receiver	1		
4	GNSS Receiver Bracket	1		
5	Emergency Charging Cable	1		
6	On-board Tools	1		
7	Battery Strap	1		
8	Magnetic Brake Lever	1		
9	Cutting Disc	1		
10	Arc-shaped Grass Pressing Plate	1		
11	M5-10-1.5 Silicone Waterproof Gasket	1		
12	Quick Start Guide	1		
13	Certification	1		
14	Warranty Card	1		

4. Installation

WARNING: Read the Safety Information chapter before you install the product.

CAUTION: Use only original products and parts.

Components to Install

1. A robotic lawn mower that automatically mows the lawn
2. A charging station that includes a charging dock that connects to the power supply, and a weather shed that protects against rain and enables correct, automatic docking
3. Power supply, including a power adapter and cables
4. A mobile phone with the FJDlandscaping app to connect, update, and set up the robotic lawn mower.

Download the FJDlandscaping App

FJDlandscaping is your go-to app for managing your FJDynamics robotic lawn mower.

- Easy Control: Pair, connect, and remotely manage your mower with a simple interface.
- Real-Time Updates: Get instant notifications on your mower's status and changes.
- Custom Schedules: Do a Quick Mow or set a mowing schedule.
- Task Analytics: Review task details for optimal lawn care.
- Fleet management: Control and monitor your robotic lawn mower fleet for ultimate mission flexibility.

Before setting up the mower, register for an account following app instructions.

Use an NTRIP-based network RTK account, acquire RTK positioning without setting up an antenna.

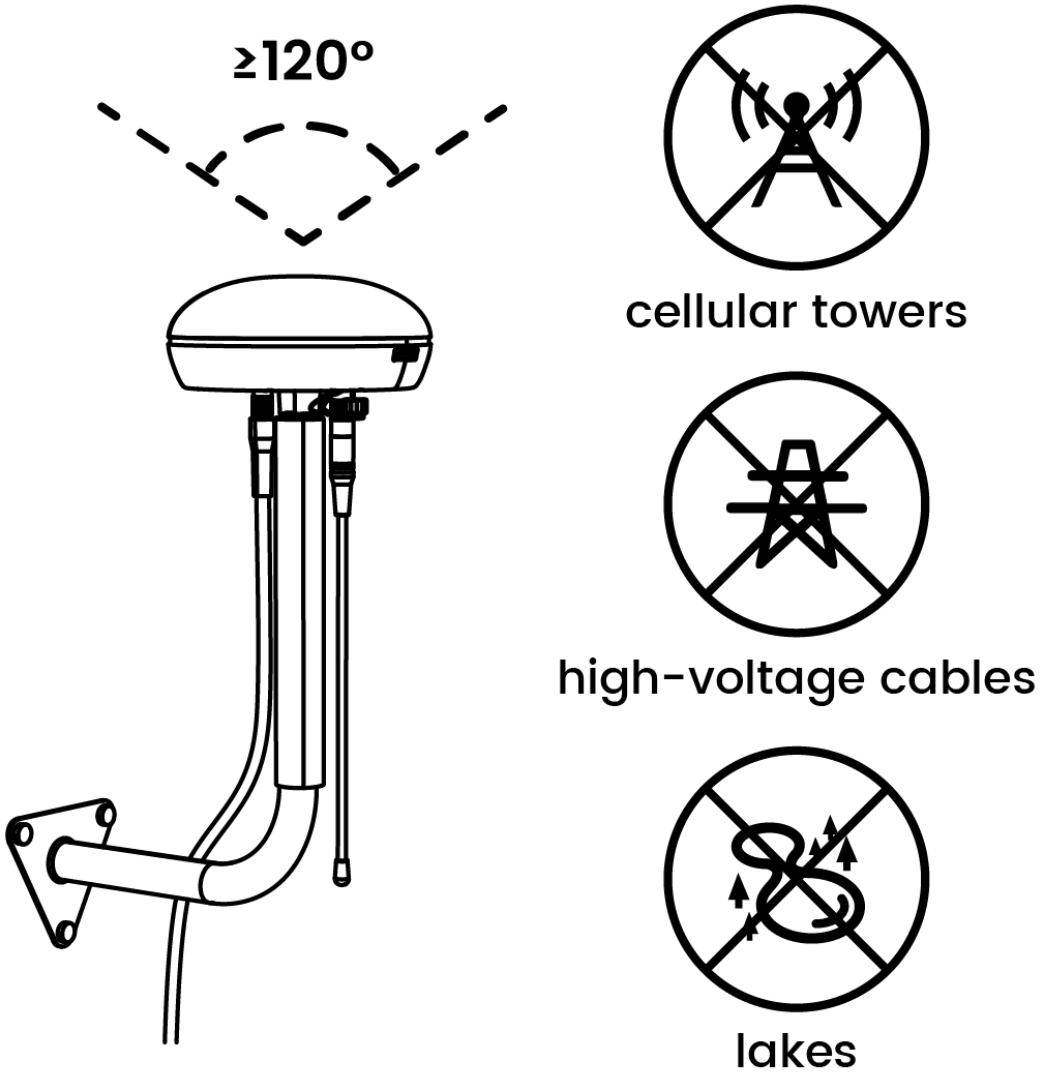
4.1 Setting up the RTK base station

For optimal performance, install the RTK base station in an open area to ensure clear satellite signal reception. Place the antenna on flat ground, a wall, or a rooftop. Ground placement is suitable for single-lawn use, but for multiple lawns, mounting on a wall or rooftop is recommended for better stability and coverage.

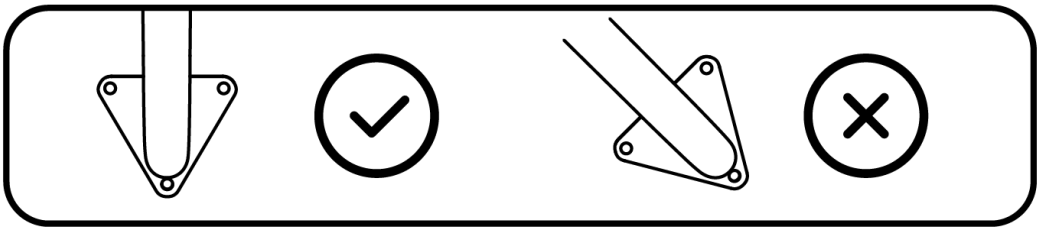
4.1.1 Installing the RTK antenna on a wall or a roof

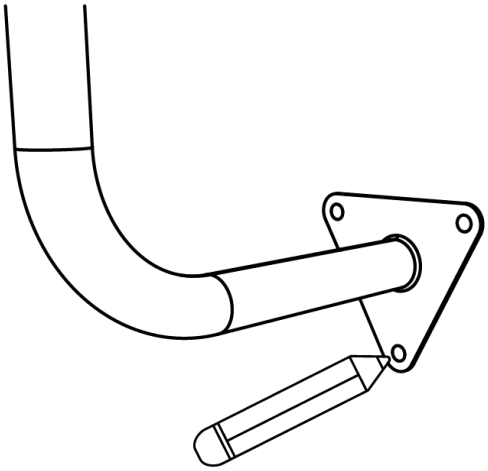
1. **Find an ideal location for the RTK base station**

- A flat spot with a 120 degree clearance above the RTK base station, free of any obstruction.
- Keep the antenna away (at least 500 meters/1600 ft) from cell towers, high-voltage cables, and bodies of water like lakes, as they may affect satellite signal reception.
- Install the RTK base station at least 500 meters away from cell towers, high-voltage cables, and lakes.



2. Mark the location of the wall mount.
    a. Ensure the mount is securely installed. The RTK antenna should point vertically upward for best reception.

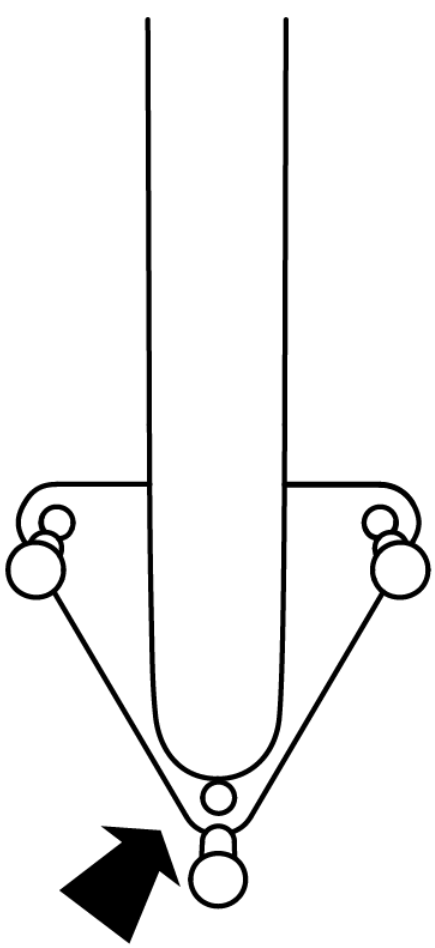


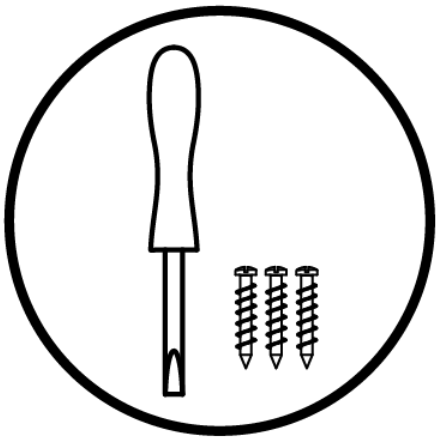


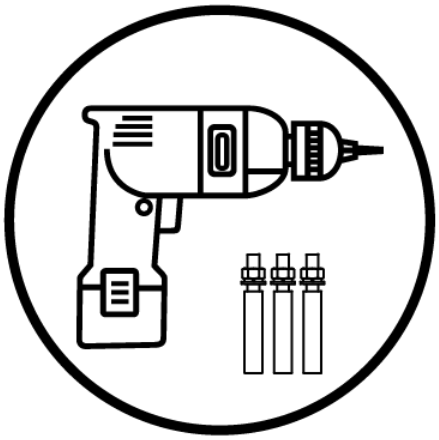
3. Select the appropriate screws based on the wall material and drill holes at the marked positions:

    a. **Wooden Wall:** Use M6 screws and a screwdriver.

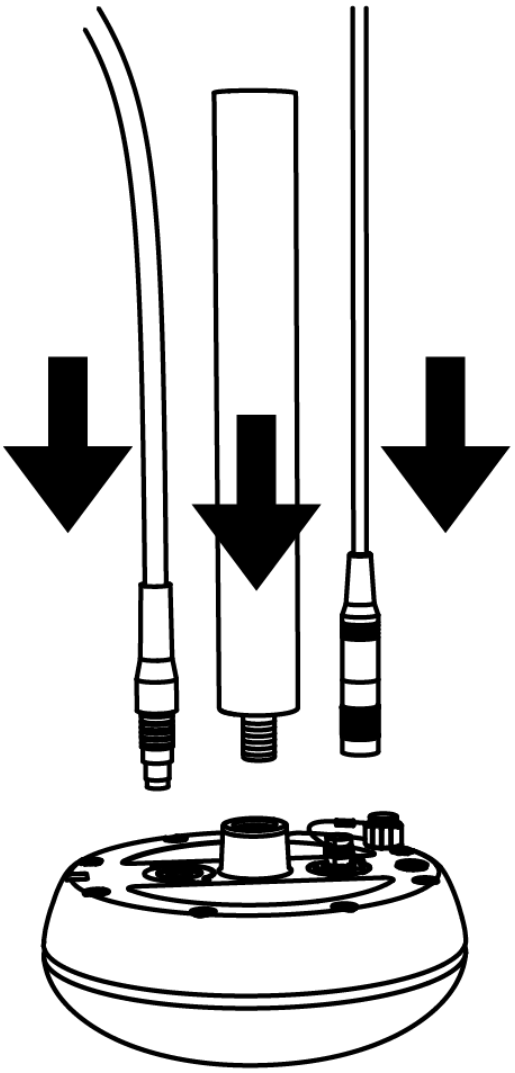
    b. **Concrete Wall:** Use M8 expansion screws and power tools (not included in the package).



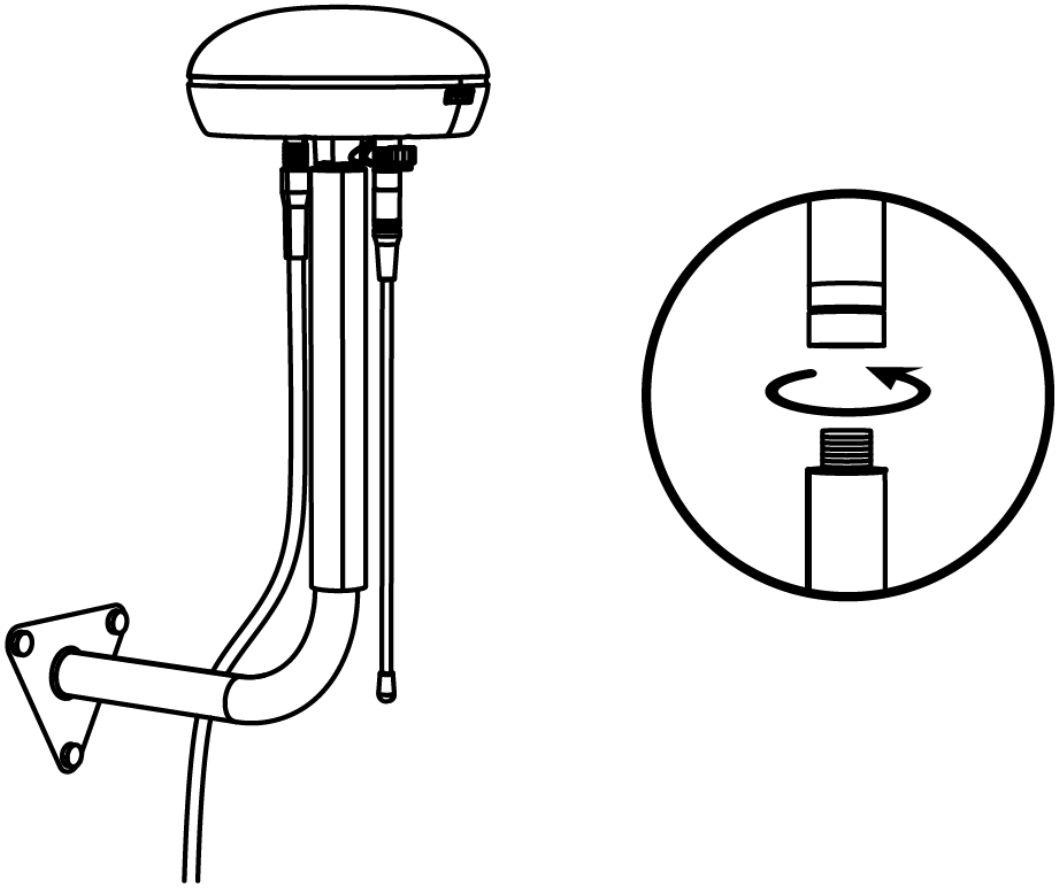




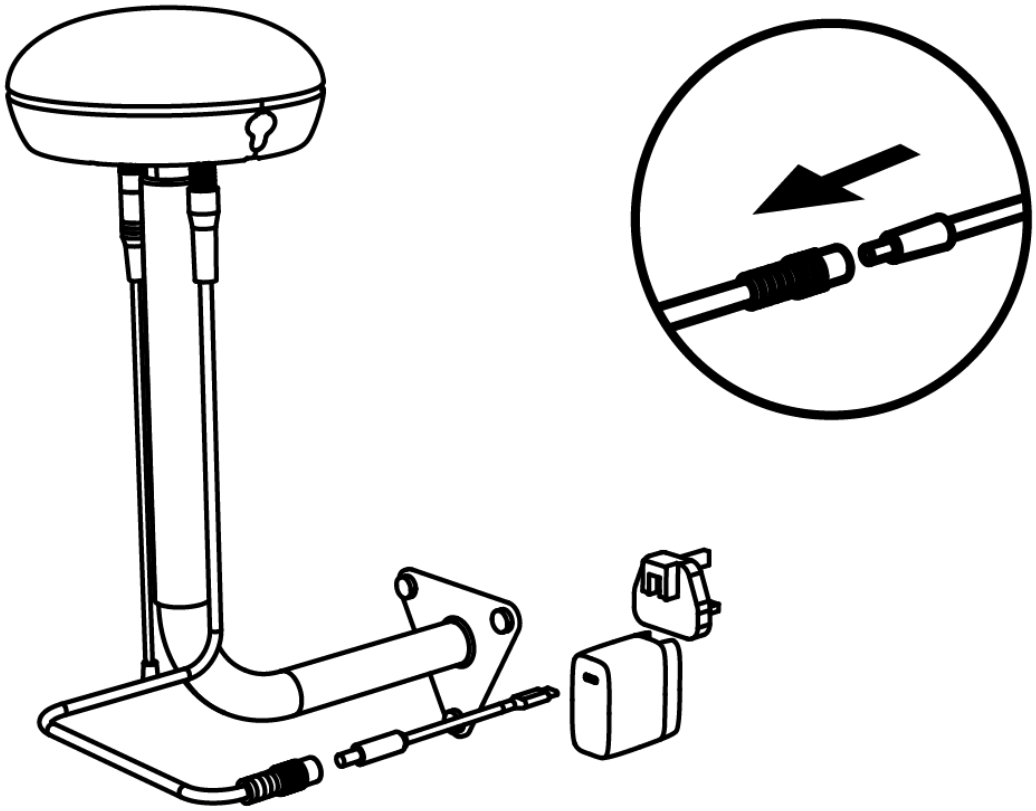
4. Attach the mounting pole, RF antenna, and 5 m power cable to the RTK base station.



5. Secure the mounting pole firmly.

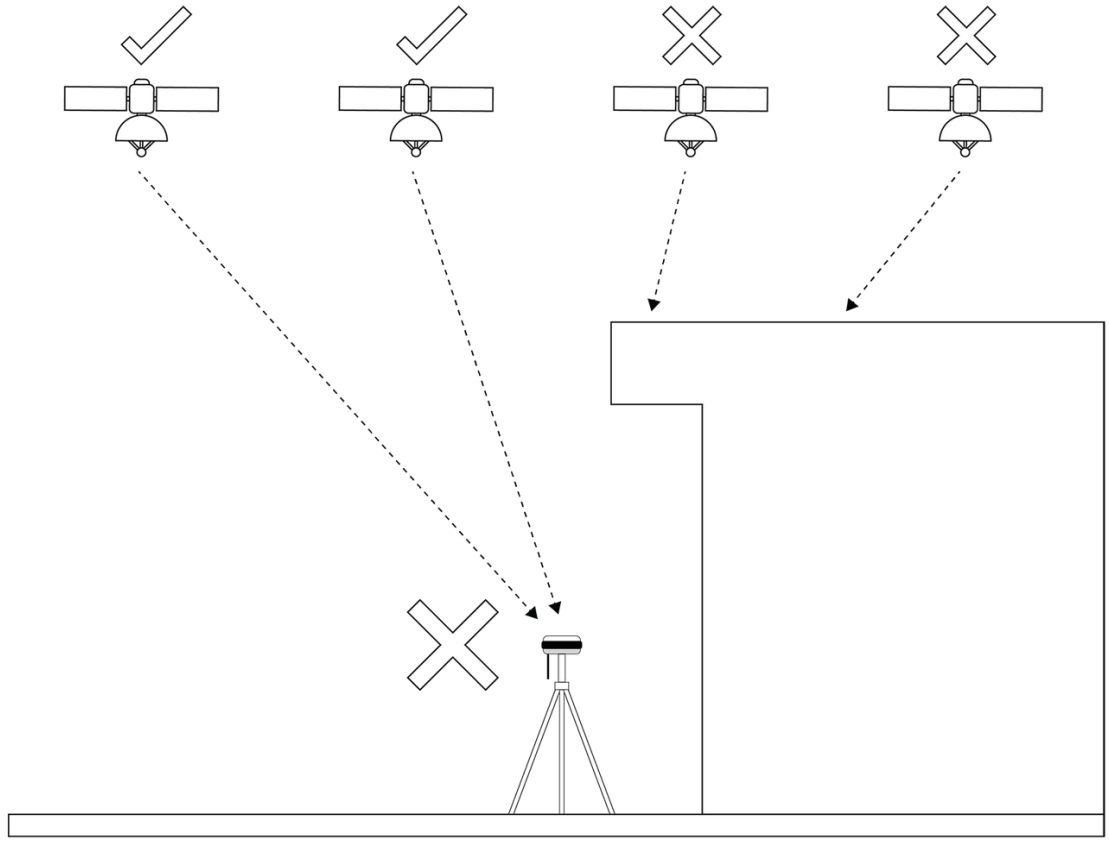


6. Connect the DC to USB-C cable, adapter, and power plug to an outlet, then power on the RTK base station.



4.1.2 Incorrect Example

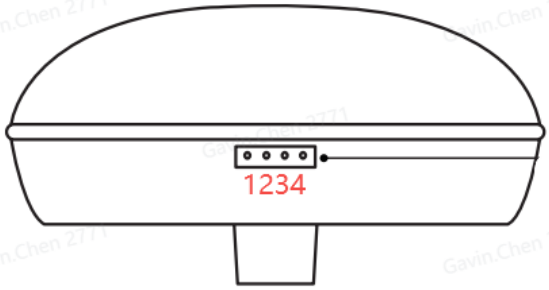
In this case, the building is obstructing the satellite.



4.1.3 Base Station Indicator Light Description

- Power on, follow the steps in 5.5.2 Setting Up RTK to configure positioning.

- Indicator Light Description



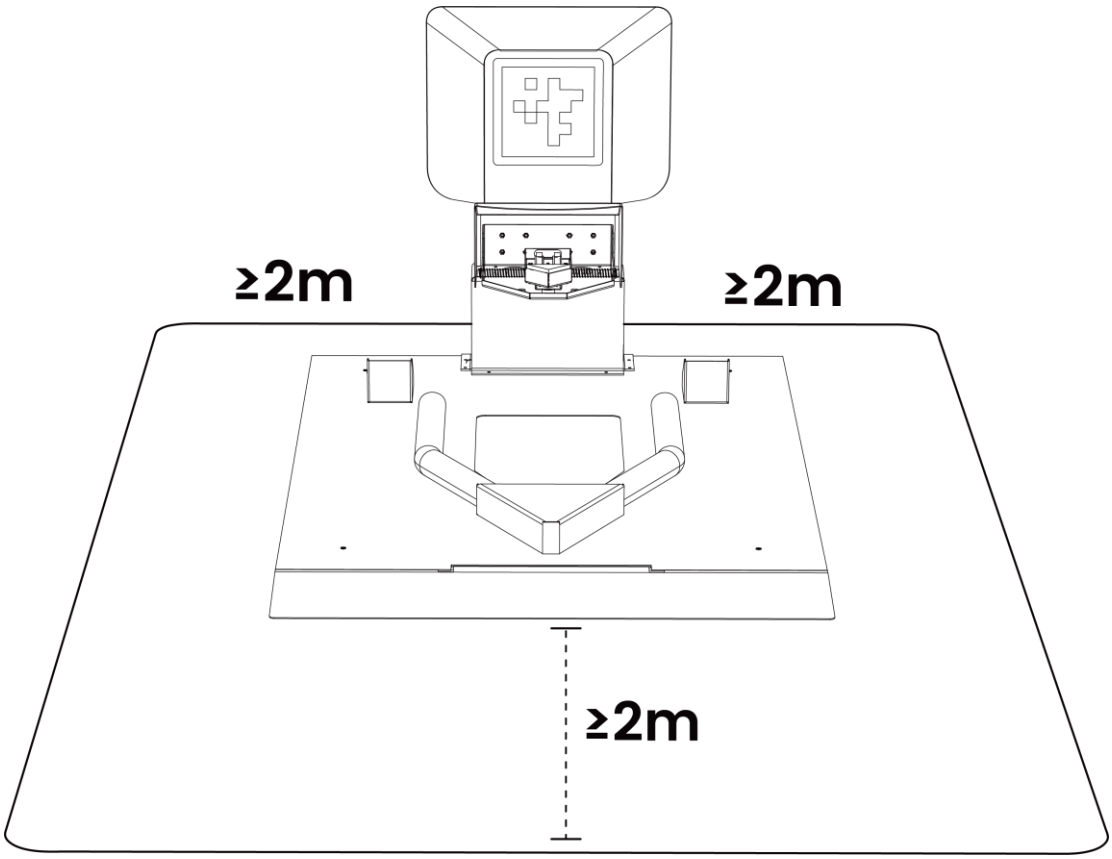
1. Power Indicator Light	• Solid Green: Indicates the device is powered on.
2. Data Indicator Light	• Off: The base station is not transmitting differential data, or static data acquisition has not started. • Solid Green: A data link is established after initial setup. The light flashes at the current data transmission frequency. • Blinking Green: Differential data is being transmitted. • Blinking Blue (Static Mode): Flashes according to the data acquisition interval. ◦ If the interval is ≥1 second, the blink rate matches the interval. ◦ If the interval is <1 second, the light blinks at a fixed 1-second rate.
3. Satellite Indicator Light	• Off: No satellites are being tracked. • Solid Green: A fixed solution is obtained, indicating normal base station operation. • Blinking Green: Positioning is active, but a fixed solution has not been achieved. • Blinking Red: Satellites are being tracked, but positioning is not active. • Alternating Green & Red: Indicates a malfunction with the GNSS board.
4. Bluetooth Indicator Light	• Off: No Bluetooth connection is active. • Solid Blue: A Bluetooth or Wi-Fi connection is

	established.

4.2 Setting Up the Mower and Charging Station

1. Place the charging station on a flat, level surface with a clear, open area extending at least 2 meters in all directions. Ensure this zone is free of slopes, depressions, holes, and other obstacles.

    a. Ensure the grass under the charging station is no taller than 5 cm (about 2 inches).



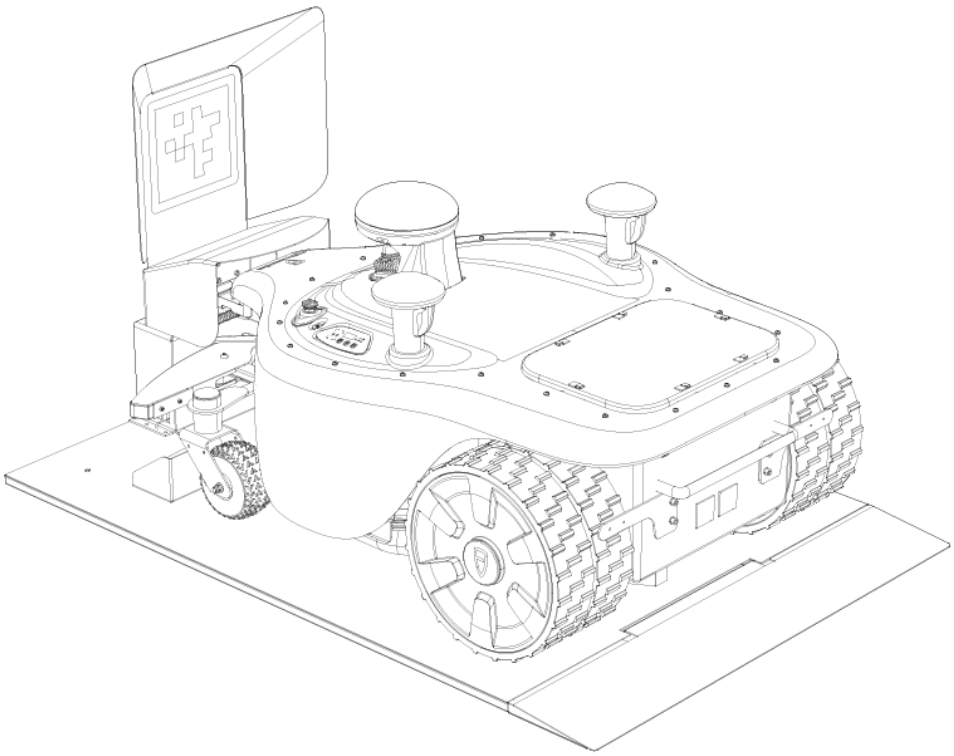
2. Secure the Charging Station to the ground.
3. Connect the power adapter and the power cord, then plug them into an outlet.

4.3 Docking the Mower

Once the charging station and RTK antenna are set up, dock the mower as follows:

- If the battery is disconnected or depleted, use the manual brake release lever to disengage the rear magnetic brake. This allows the mower to be pushed into the charging station.
- Press the button on the charging station and wait for the indicator light to flash green rapidly, indicating direct charging mode.

- Align the mower with the charging station as shown in the diagram and wait for it to power on.
- Once the mower is powered, turn on its main switch.



5. Basic Operations

5.1 Preparation

- Read and understand safety instructions before use
- Ensure the charging station and RTK base station or NTRIP are set up
- Verify the mower is docked and charging
- Ensure a stable Wi-Fi or mobile hotspot signal is available
- Ensure your phone's Bluetooth is turned on

5.2 Creating a FJDlandscaping Account

5.2.1 Register and Log In

Once the app is downloaded, follow these steps to create an account.

5.2.1.1 Registering with Email

1. Tap **Sign Up**.
2. Enter your email address.
3. Tap **Send Verification Code** to receive a confirmation email (check your spam folder if not received).
4. Enter the verification code (valid for 10 minutes; if expired, request a new one).
5. Set a password (8-22 characters, including at least one lowercase letter and one number).
6. Agree to the Terms of Service and Privacy Policy.
7. Tap **Complete Registration** to log in.

5.3.2 Logging In

You can log in using:

- **Username (email) + password**, or
- **Username (email) + verification code**

After agreeing to the Terms of Service and Privacy Policy, tap **Log In** to access the main interface.
To change the app language, tap the language switch in the top right corner of the login screen.

5.4 Manage Mower

5.5 Adding a Mower

> ***Note:***
> Ensure Bluetooth is enabled on your phone and that the mower is within 3 meters.

1. Tap **+ Add Device**.
2. Select **Titan**.

3. Follow the setup instructions.

5.5.1 Connecting the Mower to Wi-Fi

Important:

- **The mower is compatible exclusively with 2.4 GHz Wi-Fi networks.**
- **For iOS devices, the mower must connect to the same Wi-Fi network as your phone. Ensure your phone is connected to the desired Wi-Fi before pairing.**

When adding a mower for the first time, the app will guide you through Bluetooth pairing, followed by Wi-Fi setup:

1. Enter or select the Wi-Fi name.
2. Enter the Wi-Fi password.
3. Tap **Finish**.

5.5.2 Setting Up RTK

Titan supports both NTRIP/network RTK and local RTK base stations.

5.5.2.1 Setting Up NTRIP

1. Select **NTRIP** as the RTK option.
2. Review the setup instructions.
3. Enter the required NTRIP account details.
4. Wait for the setup to complete.

5.5.3 Setting Up the Charging Station

Before proceeding, ensure:

- The RTK base station is installed, powered on, and configured.
- Your phone is connected to the mower via Bluetooth.
- The mower is docked at the charging station.

Steps:

1. Select the charging station location.
2. Confirm readiness and tap **Start Setup**.
3. Wait for the setup to complete.

5.6 Map Management

5.6.1 Mapping

Things to Know Before Mapping

Before mapping your lawn, ensure your work area is properly prepared:

1. Clear the Lawn
    - Remove all debris, including toys, wires, and stones
    - Ensure no children or pets are present in the work area
    - Remove any other obstacles that could interfere with operation
    - Fill any muddy spots or holes in the lawn, or use anti-slip mats to improve traction and prevent the mower from getting stuck.
2. Safety Clearances
    - During mapping, please draw the boundary along the edge of the lawn. Maintain a clearance of at least 30 cm (12 inches) between the mower and any:
        - Walls
        - Fences
        - Ditches
        - Other fixed obstacles
3. Operation Guidelines
    - Verify all mower components are in working order, ensure all blades, bolts, and mower components are secure, not worn or damaged.
    - Remove the LiDAR sensor cover and confirm the LiDAR sensor is clear of any dirt or debris.
    - During mapping, remain within 3 meters (10 feet) of the mower to:

- Maintain Bluetooth connectivity
- Monitor operation
- Respond quickly to any issues

- If needed, tap the *Eraser* button. The mower will retrace its path to remove the drawn boundary of the work area.

4. Check for firmware and software updates

Go to Manage Mower → 3 dots on the top right corner → Mower Information → Firmware Version and run the latest update before mapping.

⚠️ NOTE: Always inspect the mower and work area before each use to ensure safe operation.

5.6.1.0 Setting Up the Charging Station and Work Zone

Note:

- If the charging station is placed **outside** the intended work zone, refer to the **External Charging Station Setup** section.
- If the charging station is placed **outer the edge of the work zone**, refer to the **Outer the edge of the zone Setup** section.
- If the charging station location has not been marked yet, it will be recorded during the initial work area setup.
- Before mapping, the mower should have a fixed GNSS solution as indicated by an app icon, the emergency stop button should be disengaged, and the battery level should be above 50%.

Tap to manage maps and then tap the **{new} button** to proceed.

5.6.1.1 Passage

- Create a passage from the charging station to the work area.Select strat from the charging station , choose the option to enter the passage mapping mode, and after reaching the designated area, click the "Complete" button to save the passage.

- To connect multiple work zones, create a Passage between them. Important: When selecting the zones, start with the zone containing the mower and end with the target zone you wish to connect.

- Establish a passage from the charging station to the work site. If the charging station is **outside** the intended work zone, a passage will be created to help the mower recognize its way from the charging station to the work zone.

*This process creates a virtual passage that helps the mower understand where it needs to return to for charging. The mower needs to face the charging station while it’s backing out to be able to return to the station accurately.

5.6.1.2 Create a Passage + Work Zone

1. Choose where your Charging Station is set up in relation to the Work Zone
2. Drive the mower out of the Charging Station
3. Create a passage from the charging station to the starting point of the Work Zone
4. Drive the mower along the edge of the Work Zone
5. Make sure Bluetooth is on and the phone is within **3 meters / 10 ft** of the robotic lawn mower during the mapping process
6. Tap Complete and name the Work Zone

5.6.1.3 Create a No-go Zone

For best mowing results, mark large permanent obstacles (trampolines, flower beds, swings) as No-go Zones. While the mower will avoid obstacles automatically, marking them improves path planning and edge coverage.

1. Select No-go Zone
2. Drive the mower out of the Charging Station
3. Drive the mower toward the No-go Zone, tap Start
4. Drive the mower around the zone where you don't want mowed.
5. Tap Complete and name the No-go Zone

5.6.2 Delete Map

- To delete a map: In the Manage Maps page, tap on the work zone, no-go zone, or charging station you wish to delete, then tap delete and confirm.
- Warning: Deleting the charging station will clear all saved maps of the current mower.

5.6.3 Do not move the RTK base station after creating zones

Moving the RTK base station after map creation will cause misalignment between the mapped and operational areas.

If relocation is necessary:

1. Delete the existing Charging Station point

2. Remap all zones

5.7 Schedule Mowing Tasks

Note:

Task scheduling is only possible after map creation is complete

Modifications to scheduled tasks during operation will not affect tasks already in progress

1. Tap **Set a mowing schedule**
2. Tap **Add**
3. Choose if you want the schedule to apply to all zones or select zones
4. Set the start time, repeats, and mowing parameters
5. Tap **Save**

5.7.2 Modify scheduled tasks

1. Tap the scheduled task on the homepage
2. Tap the scheduled task item you want to modify
3. Edit the start time, repetition frequency, work zone, mowing configurations, and task intervals
4. Tap the {OK button} to save the scheduled task

5.7.3 Delete scheduled tasks

1. Tap Schedule on the homepage
2. Slide left to delete schedule
3. Confirm the deletion

5.8 Manual Remote Control Function

For your safety:

- Users must be 18 years or older.
- Always supervise children, pets, and valuable items to prevent accidents.
- Use the manual remote control with caution to avoid injury.
- Activating the manual remote control will interrupt any ongoing mowing task.

5.8.1 Before using the manual remote control function:

1. Ensure your phone's Bluetooth is turned on and that the phone is within **3 meters / 10 ft** of the robotic lawn mower.
2. Make sure the robotic lawn mower is powered on and the emergency stop switch is disengaged.

5.8.2 To use the manual remote control function:

1. Open the app and tap the **remote control icon**.
2. The app will activate Bluetooth and connect to the robotic lawn mower. Once connected, you will enter the remote control page.
3. Use the virtual joystick to control the robotic lawn mower forward, backward, left, and right.
4. Tap the Speed Button to adjust the driving speed in manual remote control mode.

Note: Adjusting the speed in this mode **will not** affect the driving speed of the robotic lawn mower during automatic mowing.

5.8.3 Exiting Manual Remote Control

Tap the **{X button}** in the top right corner to exit the manual remote control mode.

5.9 Mowing tasks

- Ensure the mower is docked at the charging station and has sufficient battery.
- In case of any unexpected incidents during mowing, press the emergency stop button on the mower. The mower will immediately respond, pause the task, and shut off the blades.
- It is not recommended to mow the same area more than once per day, as this

may damage the lawn.

- The mower supports a cutting height range of **20 mm to 100 mm**. It is recommended to set the cutting height to **two-thirds of the current grass height.**
- Avoid mowing the same area more than once per day, as this may damage the lawn.
- The mower supports a cutting height range of 20 mm–100 mm. For best results, set the cutting height to no less than two-thirds of the current grass height. If the grass exceeds 60 mm (2 inches), set the minimum cutting height to at least 40 mm (1.6 inches).

5.9.1 Quick Mow

Via control panel

Note:
Starting a Quick Mow task using the control panel will initiate mowing for all mapped areas in the order they were created.

1. Enter the PIN code to unlock the control panel functions.
2. Tap the **[Mower]** button, then tap **[OK]**.
3. The mower will emit a "beep-beep" sound to confirm the command is received.
4. The mower will begin the mowing task.

Via FJDlandscaping

Note:

Quick Mow tasks will send the mower to automatically mow all mapped areas in

the order they were created.

You can start a Quick Mow task in two ways:

Method 1:

1. Long-tap **Quick Mow** on the homepage for 5 seconds
2. The mower will work on the last selected Work Zone

Method 2:

1. Tap on **Manage Mower** to choose a Work Zone
2. Long-tap **Quick Mow** for 5 seconds to start

5.9.2 Pause and end task

1. To pause a task, tap the pause button
2. Long-press the stop button to end
3. Tap **Recharge** to return the mower to the charging station
4. Pause or stop the recharge process with the pause and stop button

5.9.3 Resume task

- Using the {Blade Button} and {OK Button} on the mower's control panel

- Tapping the Continue button in FJDlandscaping

5.9.4 NOTES：

If the battery drops below 10% during mowing, the mower will:

1. Automatically stop mowing
2. Return to the charging station
3. Resume mowing at the previous break point when the battery reaches 80% (default setting)

5.10 Return to Charge

5.10.1 Auto-return to charge

Mower automatically returns to the charging station after:

- Completing a mowing task
- Mower under the command to resume mowing later

Mower must be within mapped work zones and outside restricted zones

5.10.2 Manual Return

Via Control Panel

1. Unlock by entering the PIN
2. Press {Battery Button}, then {OK Button}
3. "Beep" confirms command receipt
4. Mower returns to charging station

Via FJDlandscaping

1. Tap {ReCharge} on homepage
2. Confirm action
3. Mower returns to the charging station

5.11 Resume Mowing:

- If battery drops below 10%, mower auto-stops and returns to charge
- At 80% charge (default), mower returns to previous breakpoint and resumes mowing
- During recharge, status shows "waiting to resume"

App Controls:

- {STOP button}: Terminates resumption, preventing task recovery
- {START button}: Immediately restart mowing, even before full charge

Toggle Resume Mowing on/off (default: on)

Set battery percentage for resuming work (default: 90%)

5.12 Message Center

Mower notifications and error messages appear here. Tap for detailed information.

5.13 Settings

Navigate to {My - Settings} to access the settings page.

5.13.1 Mower Name

View or edit the name of the mower.

5.13.2 Mower Information

Check details such as device type, serial number, and firmware version.

5.13.3 Accessory Maintenance

View information and details about the mower's accessories.

5.13.4 Network Information

Check the mower's network connection status.

5.13.5 Firmware Update

- View the current firmware version and check for updates.
- If a new version is available, run it.

- It is recommended to always keep the firmware up to date.

Updating the Firmware:

1. Ensure the mower has sufficient battery and is not scheduled for a task in the next 30 minutes.
2. Confirm a stable Wi-Fi connection.
3. Go to the firmware update section and tap **Update Now**.
4. Wait for the update to complete.

5.13.7 Mini RTK Receiver Mapping

5.13.7.1 Device Operation

As shown in the figure below, Long press the power button for 3s to turn on or off the device.

The satellite indicator flashes blue during operation, indicating that the device is not connected to the APP. After launching the app and connecting the device, a flashing red satellite indicator means the device has not yet achieved a fixed solution. Once you log into an NTRIP account or connects to a base station and obtains a fixed solution, the satellite indicator will turn solid green. The power indicator shows red while charging, when fully charged, the indicator turns blue.

5.13.7.2 Mobile App Operation

In Ntrip mode, you can quickly create map information using a Mini RTK Receiver

1. Establish a connection between the app and the Mini RTK Receiver

2. Configure Ntrip information for the docking device

3. Create a map using the Mini RTK Receiver

4. Synchronize map data to the vehicle computer

6. Care and Maintenance

6.1 Mowing Guidelines

- Choose flat ground for initial use
- Mow slowly and adapt technique to terrain size/shape
- Consider obstacles like trees, fences, and buildings

Recommendations:

- Optimal grass height for most scenarios: 50-80 mm (1.97-3.15 inches)
- Never cut more than 1/3 of plant height or 25 mm (0.98 inches)
- For tall grass:
  - Increase cutting height
  - Perform multiple passes
- Best time to mow: dry afternoons or evenings

6.2 Cleaning the cutting deck

For your safety, always wear heavy-duty gloves, long trousers, and work shoes when cleaning the cutter deck.

Be sure to follow the operating instructions and ensure the mower is completely powered off before cleaning. This prevents accidental startup and potential injury.

Clean the mower's exterior Titanoughly using a soft brush or cloth. Do not use alcohol, gasoline, acetone, or other corrosive/volatile solvents for cleaning, as they may cause permanent damage to the product.

These substances can damage the mower's finish and internal components.

Chassis and Blade Disc

If the chassis and blade disc become dirty, clean them with a brush or hose. Do *not* use a pressure washer, as high-pressure water can penetrate the seals and damage electronic and mechanical components. Ensure the blade disc rotates freely and the blades can swing without obstruction.

Blade Mudguards

Periodically inspect the blade mudguards. If mud, grass clippings, or other debris accumulates on them, remove it with a dry brush or scraper.

Clearing a Jammed Cutting Deck

If you suspect the cutter deck is jammed, use the deck lift function to inspect and clear it:

1. With the mower powered on and the mobile app open, navigate to Settings > Accessories > Cutting Deck and tap the "Jammed" button.
2. Once the Bluetooth connection is established, the cutter deck will extend to its maximum position.
3. After extension, power off the mower, lift the mower body, and check the cutter deck for obstructions.
4. Once cleared, lower the mower and power it on. The cutter deck will automatically return to its starting position.

Caution: Always wear heavy-duty gloves, long trousers, and work shoes when cleaning the cutter deck.

6.3 Installing and changing the cutting disc

1. Wear gloves before handling blade.
2. Remove screw and relocate to blade's alternate hole.
3. Reinstall and tighten securely.
4. Ensure blade mobility and repeat for other blades.

6.4 How to Replace the Cutting Disc

1. Remove the disc cover by unscrewing its four Phillips-head screws.
2. Remove the four hex screws securing the cutting disc, using the provided M3

hex key or an electric screwdriver.

3. Replace the old disc with the new one, then securely fasten all screws in reverse order.

7. Error

7.1 Error Messagses

8. Warranty and Service

Warranty Coverage:

- Guarantees product free from material/workmanship defects under normal use
- Please refer to the latest documentation: user manual, quick start guide, maintenance info, specifications

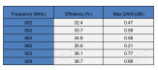
For End Users

- Two (2) year warranty on the robotic lawn mower and charging station
- One (1) year warranty on batteries
- The following components are not covered under warranty:
  - Front wheels
  - Back wheels
  - Cutting blades
  - Optional accessories
- Service and Repair Instructions
  - For routine maintenance, see Section 6 Maintenance and Care for more information.
  - Contact your FJDynamics auTitanized dealer for additional support.

- FJDynamics support can be reached at support@FJDynamics.com

8.1 Antenna Information

Name	Model	Antenna Type	Antenna Gain	Center Frequency	**Manufacturer**	**Address**
4G Antenna	YF0006BA	FPC On-Board Antenna	6 dBi	690–960 MHz; 1710–2170 MHz; 2300–2690 MHz	Quectel Wireless Solutions Co., Ltd.	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
Wi-Fi Antenna	2.4G and 5G/L=200mm/The first generation of IPEX	FPC On-Board Antenna	3dBi	2400---2500MHz/5150---5850MHz	Shenzhen Kexin Wireless Technology Co., Ltd	Building H, Hongyongli Industrial Zone, Shabeili, Baolong Street, Longgang District, Shenzhen
Bluetooth	2.4G WLAN	PCB On-Board	1.74dBi	2400---250	Shenzhen Ai-Thinker	3-4/F, Building A, Dongfang Industrial

Antenna	Antenna	Antenna		0MHz	Technology Co., Ltd	Park, Nanlang Town, Zhongshan City, Guangdong Province, China
RTK Antenna	Full-range built-in antenna/SZY4N12A	Ceramic Antenna		GPS L1/L2/L5 BDS B1/B2/B3 GLONASS L1/L2 GALILEO E1/E2/E5a/E5b	SHENZHEN SKY CONNECT SATELITE TECHNOLOGY CO.,LTD	Unit 308, No. 2, Huamei Industrial Zone, Dongfang Community, Songgang Street, Bao'an District, Shenzhen, Guangdong Province
Radio Antenna	HYX0014-R2119-（902-928MHz）-V3	FPC On-Board Antenna		902-928MHz	Shenzhen Heyixun Technology Co., LTD	Room 1903-1905, Building 2, Jiufang Square, Tiezi Road, Gongle Community, Xixiang Sub-district, Bao 'an District, Shenzhen City, Guangdong Province, China

8.2 FCC Statement

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.

9. Working frequency

Model	Frequency
Wi-Fi	2.4GHz-2.4835GHz
Blue tooth	2.402GHz-2.480GHz
4G	LTE-TDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/ B19/B20/B25/B26/B28 LTE-TDD: B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: B2/B3/B5/B8
Radio	902-928Mhz
Adapt	50/60Hz

10. Warning

1. For the cleaning or maintenance of the blade, please make sure to cut off the power supply before proceeding.

2. Please keep your hands and feet away when running. Turn off the machine and make sure the blade has completely stopped before approaching.

3. Please keep a safe distance during operation, especially paying attention to children and pets.

4. Make sure to turn off the machine before moving or maintaining it.

5. Charging stations should be installed in stable, level, dry and well-ventilated places.

6. Do not touch the metal contacts of the charging station as there is a risk of electric shock.

11. Federal Communications Commission(FCC)

FCC Statement

Warning:

This device complies with Part 15 of the FCC Rules.

1.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 unauTitanized modifications to this equipment. Such modifications could void the user’s auTitanity 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

12. ISED Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply

with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s).

Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause

undesired operation of the device.

Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm

entre le radiateur et votre corps.

This equipment should be installed and operated with a minimum distance of 20 cm

between the radiator and your body.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme

aux CNR d'innovation, sciences et Développement économique Canada applicables

aux

appareils radio exempts de licence, L'exploitation est autorisee auxdeux conditions suiva

ntes:

3. Lappareil ne doit pas produire de brouillage;

4. L'appareil doit accepter tout brouilage radioélectrique subi, méme si le brouillage est s

usceptible d'en compromettre lefonctionnement.