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- 技术要求：
- 1. 成型尺寸：140*210mm；
 - 2. 材质：本白道林纸（封面、封底道林纸 120g，内页 80g）
 - 3. 印刷颜色：CMYK；
 - 4. 工艺：胶装；
 - 5. 开制刀模，模切公差 $\pm 1\text{mm}$ ；印刷内容以印刷稿为准，套印公差 $\pm 0.5\text{mm}$ ；
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裁切线： 

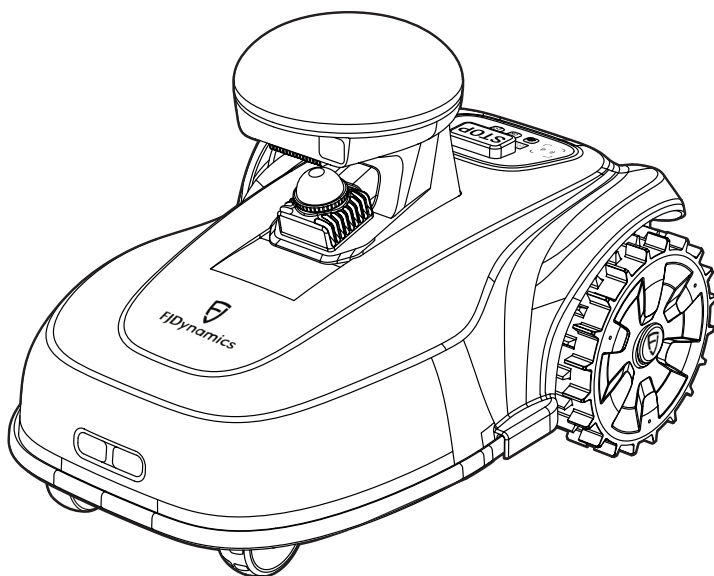
压痕线： 

齿刀线： 

刷胶区： 

比 例： 1：1

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Vela LiDAR Robotic Mower
User Manual

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Preface

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

Legend			
 Warning	 Important	 Hints and Tips	 Reference

Introduction

The FJDynamics is an advanced r designed to provide efficient, autonomous lawn care. This user manual covers the setup, operation, and maintenance of Vela. Vela utilizes cutting-edge sensor fusion technology, including LiDAR and vision sensors, to create a 3D map of your yard for precise navigation and mowing coverage. It features obstacle avoidance, autonomous path planning, and virtual boundary mapping capabilities through the companion app FJD Landscaping. Designed to mow lawns frequently, Vela removes a short amount of grass height at a time. This gentle, consistent mowing stimulates healthy grass growth, reduces weed germination, and results in a pristine, uniform lawn without the need for extensive cleanup.

Key features:

- Easy setup - drive the mower around your lawn to create VWork Zones and No-go Zones. No need for perimeter wires or GNSS reference stations
- Customizable mowing heights, patterns, and schedules
- Automatic rain sensing and terrain adaptation
- Quick blade removal and replacement
- Ability to handle slopes up to 33 degrees/65%
- App control and regular, free over-the-air updates

This manual will guide you through the initial installation, setting up the app, operating modes, maintenance procedures, troubleshooting, and technical specifications of the FJDynamics Vela. Follow the instructions carefully to ensure safe and optimal performance of your LiDAR Robotic Mower.

1 Safety Information

1. 1 Safety Information

- Warnings, cautions, and notes are used to highlight particularly important parts of the manual.
- **WARNING:** Indicates a risk of injury or death for the operator or bystanders if the instructions in the manual are not followed.
 - **CAUTION:** Indicates a risk of damage to the product, other materials, or the adjacent area if the instructions in the manual are not followed.
 - **Note:** Provides additional information that is necessary in a given situation.

1.2 General Safety Instructions

WARNING: Read the following warning instructions carefully before using the product.

Read the Operator's Manual: Ensure you understand the instructions before using the product. Keep the manual for future reference.

Supervision and Instruction: This appliance is not intended for use by children or persons with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety. EU requirements allow this appliance to be used by children aged from 8 years and above and persons with reduced physical, sensory, or mental capabilities or lack of experience and knowledge, if they have been given supervision or instruction concerning the use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be done by children without supervision.

Operator Responsibilities: The operator assumes full responsibility for all accidents or hazards that occur to people or property while using this equipment. This responsibility includes proper installation, safe operation, and maintenance of all safety features. The operator must ensure all additional users are properly trained in safety procedures and must maintain constant supervision of the work area when the equipment is in use.

1.2.1 Work Area Safety

WARNING: Failure to follow proper safety procedures may result in injury or damage to property.

When operating in public areas, warning signs must be prominently displayed at all entry points to the work area. Each sign must clearly state: "Warning! Robotic lawn mower working! Keep away and supervise children and pets!" These signs must remain clearly visible throughout the operation and should be removed when the mower is not in use.

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.

1.2.2 Equipment Safety

The safe operation of this equipment depends on using only FJDynamics-recommended components and original FJDynamics batteries. The use of unauthorized parts may compromise safety features and void warranty protection. All safety features and warning labels must be maintained in good condition and replaced if damaged or illegible.

Power supply cables require special attention for safe operation. All cables must be routed outside the mowing area to prevent damage. The installation must include an appropriate Residual-Current Device (RCD) for electrical safety. Operators must inspect cables regularly for signs of wear or damage. If any cable becomes damaged during operation, immediately disconnect it from the power outlet and contact authorized service personnel for replacement. A damaged or worn cable presents a serious electrical hazard and must never be used.

1.2.3 Operational Safety

The mower must be immediately powered off if any abnormal vibration occurs or if damage is detected. In the event of an accident or injury, seek immediate medical attention. Before performing any maintenance, clearing blockages, or examining the product, the mower must be completely powered off and all moving parts must come to a complete stop.

Never touch the blade disc or other moving parts until they have completely stopped moving. When maintenance is required, particularly when changing blades, proper protective gloves must be worn and appropriate tools must be used. This ensures both operator safety and prevents damage to the equipment.

1.2.4 Maintenance

WARNING: Always power off the product before maintenance.

Regular maintenance inspections must be performed weekly. This includes checking blade condition, verifying safety features are functioning properly, and ensuring warning signs remain visible and legible. The emergency stop function should be tested before each use.

Indoor storage is required when the mower is not in use. The storage area must be inaccessible to children, and the mower must be thoroughly cleaned before storage. All power connections should be disconnected during long-term storage.

1.2.5 Charging Station Safety

The charging station provided with your mower is specifically designed for this model. No other charging methods should be used. The station must be installed in a location that meets all clearance requirements and must be kept free of debris. During thunderstorms, disconnect all power and wiring from the charging station to protect the electrical components. After the storm passes, reconnect all wires carefully, ensuring proper connections.

1.2.6 Battery Safety

WARNING: Improper battery handling may result in fire or explosion.

Original Batteries: Use only original batteries recommended by FJDynamics. Product safety cannot be guaranteed with non-original batteries.

The mower must only be charged using the included charging station. In the event of battery electrolyte leakage, immediately flush the affected area with water or an appropriate neutralizing agent. If the corrosive liquid contacts eyes, seek immediate medical attention.

1.2.6.1 Maintenance and Storage

Regular maintenance inspections must be performed weekly. This includes checking blade condition, verifying safety features are functioning properly, and ensuring warning signs remain visible and legible. The emergency stop function should be tested before each use.

Indoor storage is required when the mower is not in use. The storage area must be inaccessible to children, and the mower must be thoroughly cleaned before storage. All power connections should be disconnected during long-term storage.

1.3 Understanding LiDAR Technology

1.3.1 Basic Principles

LiDAR (Light Detection and Ranging) is an advanced sensing technology that measures distances using laser light. The sensor emits rapid pulses of laser light that bounce off surrounding objects and return to the sensor. By measuring the time it takes for each pulse to return, the system calculates precise distances to objects and creates a detailed 3D map of its surroundings.

1.3.2 Application in the FJDynamics Vela

Vela's LiDAR sensor creates a detailed 3D map of your lawn during an initial setup period. This allows the mower to precisely track its location and plan the most efficient mowing routes, even in complex environments with trees, buildings, or irregular boundaries.

1.3.3 Primary Functions

1. Navigation and Mapping (in conjunction with the vision sensor)
 - Creates detailed yard maps with centimeter-level accuracy
 - Identifies boundaries, obstacles, and pathways
 - Enables precise position tracking during operation
2. Obstacle Detection (in conjunction with the vision sensor)
 - Recognizes fixed obstacles like trees and furniture
 - Detects moving obstacles in real-time
 - Maintains safe operating distances from identified hazards
3. With this data, Vela can plan paths for:
 - Efficient mowing patterns
 - Calculating optimal routes to charging station
 - Adapting paths to avoid obstacles

1.3.4 Technical Limitations

Environmental Constraints

1. Weather Conditions
 - Performance degrades in heavy rain or fog
 - Heavy dust or pollen may affect readings
2. Surface Properties
 - Highly reflective surfaces (water, glass, polished metal) can cause incorrect readings
 - Very dark or light-absorbing surfaces may be harder to detect
 - Transparent obstacles may not be properly identified
3. Operational Limits
 - Maximum effective range: 40 m @ 10% reflectivity, 70 m @ 80% reflectivity
 - FOV: Horizontal: 360°, Vertical: -7°-52°
 - Maximum mapping duration: 30 minutes per session

1.3.5 Safety Considerations

1.3.5.1 Laser Safety

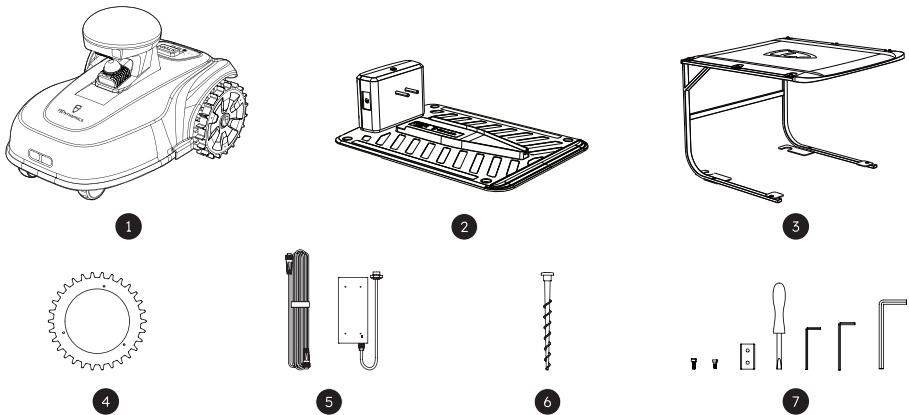
- 1. Classification
 - Class 1 laser system (eye-safe under all conditions)
 - Wavelength: 905 nanometers (invisible infrared)
 - Compliant with IEC 60825-1 safety standards
- 2. Operational Safety
 - Do not disassemble sensor housing
 - Avoid direct view into sensor aperture
 - Do not operate with damaged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

In the Box



Number	Item name	Quantity
1	LiDAR Robotic Mower	1
2	Charging station	1
3	Weather shed	1
4	Wheel spikes	2
5	Power cables and adapter	1 set
6	Plastic pegs	8
7	Tool set: Parker screws *6, Extra blades *6, Anti-slide screws * 10 Allen wrench (small *1, large *1), Wrench *1, Phillips screwdriver *1	1 set

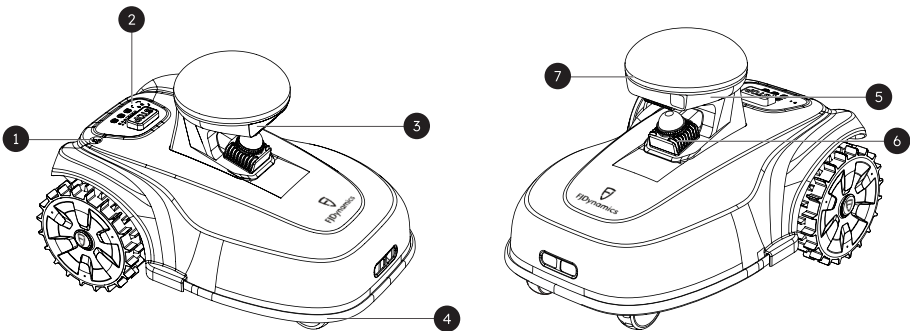
2.1 LiDAR Robotic Mower

Specifications	Vela
Lawn Size	4000 m ² /day
Sensors	LiDAR *1, RGB camera *1
Weight	13.5 kg
Dimensions (L*W*H)	632 mm*440 mm*412 mm
Battery Capacity	0.095 kWh*2
Work Time per Charge	4 h
Cutting height (min-max)	20-60 mm
Cutting Width	260 mm
Max. Slope	65° or 33°
Ingress Protection Rating	LiDAR Robotic Mower: IPX5 Charging Station: IP65
Noise Level	<60dB
Rain Sensor	Yes
4G Module	Contains a 4G WWAN module with MIC ID: 081-190011
Connectivity	WiFi, Bluetooth, 4G
Firmware update	OTA

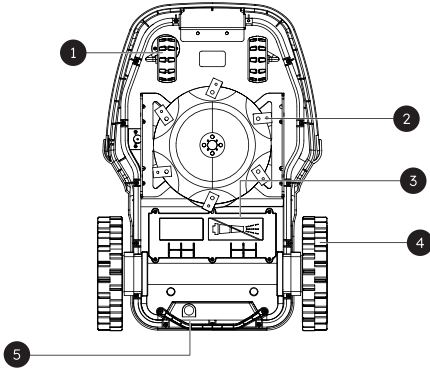
2.2 LiDAR Sensor

Laser Wavelength	905 nm
Laser Safety	Class I (IEC 60825-1:2014) (safe for eyes)
Detection Range (@100 klx)	40 m @ 10% reflectivity 70 m @ 80% reflectivity
Point Rate	200,000 points/s
Operating Temperature	20°to 55°C (-4°to 131°F)
Power Supply Voltage Range	9-27 V DC
IP Rating	IP67

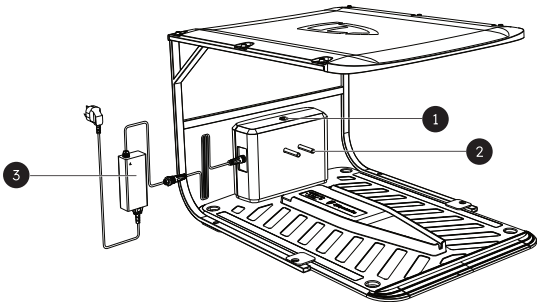
2.3 Parts



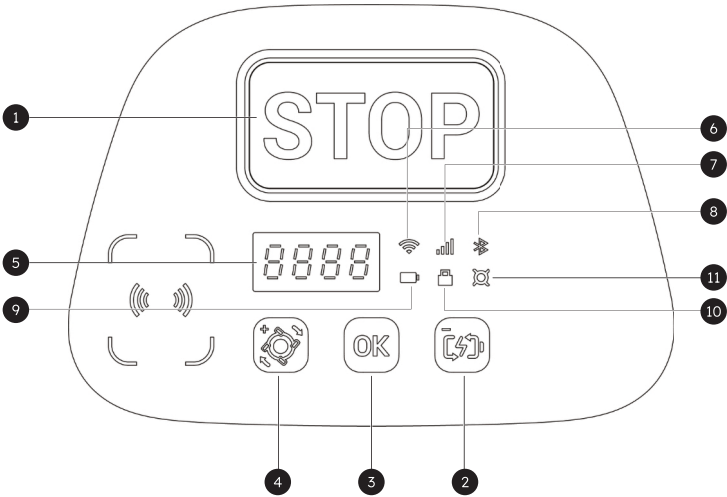
Number	Part name	Number	Part name
1	Rain sensor	5	SIM card slot
2	Control panel	6	LiDAR sensor
3	RGB vision sensor	7	LED ring light
4	Collision sensor		



Number	Part name	Number	Part name
1	Front wheels	4	Rear drive wheels
2	Blades and screws	5	Power button
3	Battery compartment		

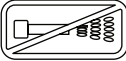


Number	Part name
1	Charging station power button
2	Charging rods
3	Power cables and adapter



Number	Part name	Number	Part name
1	Emergency Stop	7	Cellular Connection
2	Return to Charge	8	Bluetooth
3	Confirm	9	Battery Level
4	Start Mowing	10	Lock
5	Display Screen	11	Blades
6	WiFi		

2.4 Symbols

	WARNING – robotic lawnmowers can be dangerous if incorrectly used. Read through the Operator’s manual carefully and understand the content before using your robotic lawnmower.
	WARNING – power off the mower before working on or lifting it.
	WARNING - keep a safe distance away from the mower when it’s in operation. Keep hands and feet away from rotating blades.
	WARNING - do not ride on the mower.
	Do not wash the mower with pressure washers.
	Only authorized service providers may disassemble the mower.

3. Installation

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

CAUTION: Use only original products and parts.

3.1 Components to Install

1. A LiDAR Robotic 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 FJD Landscaping app to connect, update, and set up the LiDAR Robotic Mower.

3.1.1 Download the FJD Landscaping App



FJD Landscaping is your go-to app for managing your FJDynamics LiDAR Robotic 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.

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

3.2 Charging Station and Weather Shed

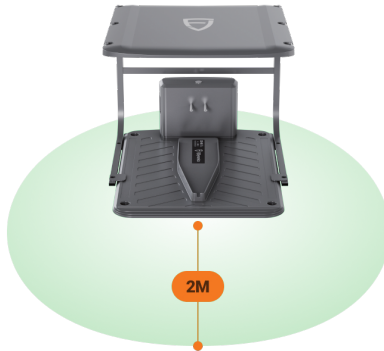
CAUTION: uneven ground conditions that give rise to standing water will damage the mower.

CAUTION: both the original weather shed and charging deck are needed for the mower's correct docking and navigation.

NOTE: place Vela's charging station on level ground (avoid areas with exposed tree roots). Trees themselves won't impact Vela's operation if adequate clearance exists around the charging station.

3.2.1 Charging Station Placement

1. The charging station should be positioned in an area with good ground clearance on a flat, level surface. This ensures the mower can accurately dock and recharge.
2. The immediate environment around the charging station should be clear of any vegetation or obstructions. Overgrown grass or excessive vegetation in this area can confuse the mower's navigation and docking algorithms over time.
3. A 2-meter (6.6 ft) clearance radius around the charging station is mandatory to provide sufficient space for the mower to reliably return and dock.



4. The charging station should not be placed in a corner, as this can also confuse the mower's current position algorithms and make docking more difficult. It can, however, lean against a wall.
5. The charging station should be placed in a shaded area, if possible, to avoid direct sunlight which can impact the mower's sensor performance.
6. The power supply for the charging station should be weatherproof and properly grounded to ensure safe outdoor operation.

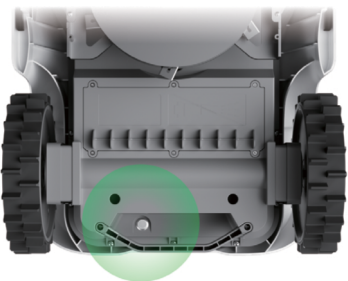
3.2.2 Secure the Charging Station and Weather Shed

- Use the provided pegs to anchor both the charging station and weather shed into the ground or a solid surface.
- Proper installation of these two components is critical for the mower to accurately recognize and return to the home base.



3.3 Connect the Mower

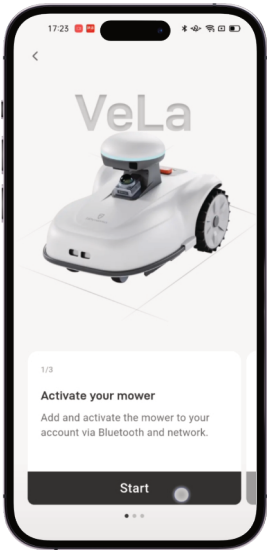
1. Press the button at the bottom of the mower to turn it on.



2. Press the STOP button down. Roll the mower onto the charging deck.



3. You will be prompted to connect your mower on FJD Landscaping. Make sure Bluetooth is turned on on your phone. The blinking battery light on the mower's control panel indicates the mower is charging.



4. To connect to the internet:

- a. Make sure the mower is set up in a location with strong WiFi coverage. Alternatively, use an unlocked SIM card with **no PIN code** following app instructions.
- b. WiFi indicator and ring light: Blinking while connecting, solid when ready.
- c. Mower status will change to **Standby** when it's online.

4. Basic Operations

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, maintain a minimum clearance of 10 cm (5 inches) between the mower and any:
 - a. Walls
 - b. Fences
 - c. Ditches
 - d. 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.
- Confirm the LiDAR sensor is clear of any dirt or debris.
- During mapping, remain within 3 meters (10 feet) of the mower to:
 - a. Maintain Bluetooth connectivity
 - b. Monitor operation
 - c. Respond quickly to any issues

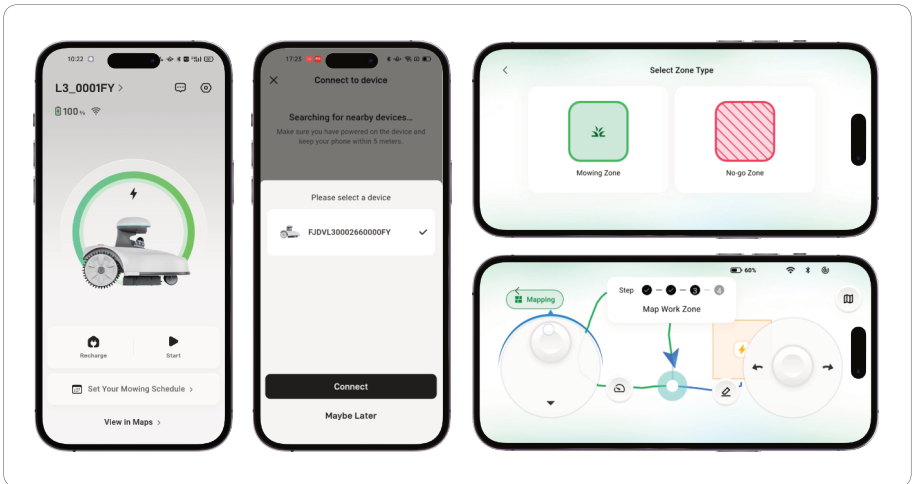
4. Check for firmware and software updates

- 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.

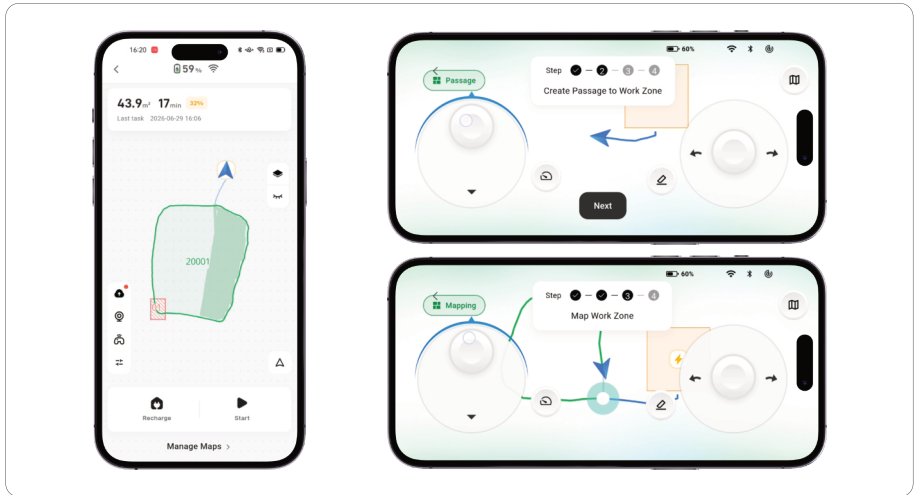
4.1 Map your yard

1. **Manage Mower** → Tap to manage your map.
2. Tap on **Map Lawn/Create New** and select the type of the zone you want to map.
3. The mower will automatically back out of the charging station.
4. Use the virtual joystick in the app to drive the mower along the edge of your Work Zone.
5. Tap **Complete** to name and save the Work Zone.
6. Tap **Recharge** or manually drive the mower back to the charging station. Repeat the process to create multiple Work Zones.



4.1.1 Passage

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.

4.1.2 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 LiDAR Robotic Mower during the mapping process
6. Tap Complete and name the Work Zone

4.1.3 Create a Work Zone without a Passage

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. Drive the mower along the edge of the Work Zone
4. Tap Complete and name the Work Zone

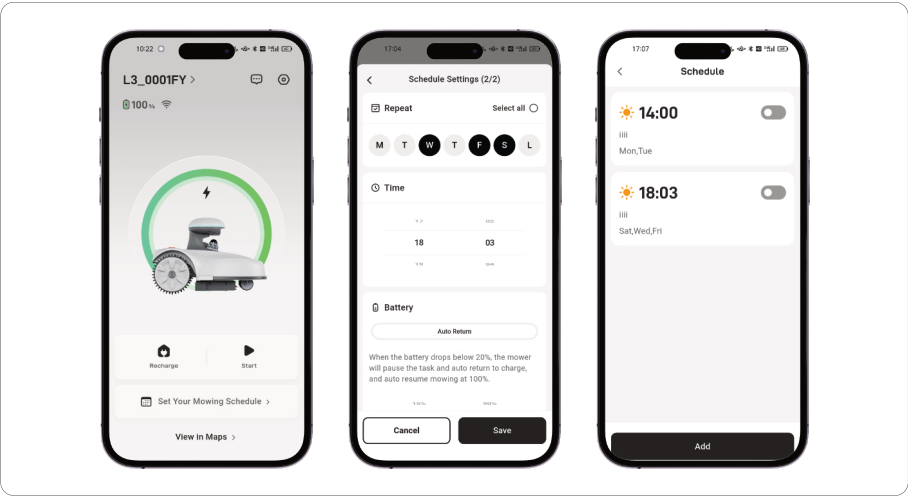
4.1.4 Create a No-go Zone

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

4.2 Schedule Mowing Tasks

- 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. Save



4.3 Quick Mow

You can start a Quick Mow task in two ways:

Method 1:

- 1. Tap **Quick Mow** on the homepage
- 2. The mower will work on the last selected Work Zone

Method 2:

- 1. Tap on **Manage Mower** to choose a Work Zone
- 2. Tap **Quick Mow** to start

4.4 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

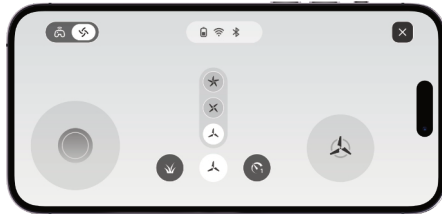
5. Manual Remote Control Function

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 LiDAR Robotic Mower.
2. Make sure the LiDAR Robotic Mower is powered on and the emergency stop switch is not pressed down.

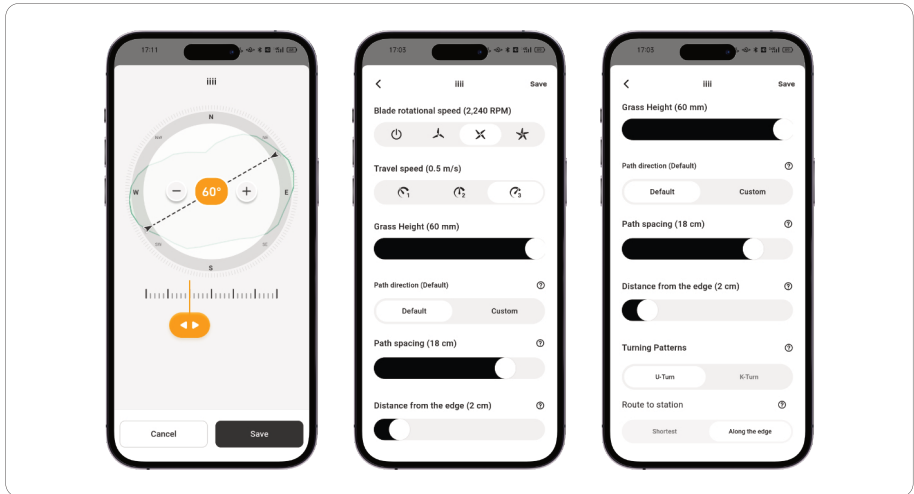
To use the manual remote control function:

1. Open the app and tap the **remote control icon**.
2. The app will activate Bluetooth and connect to the LiDAR Robotic Mower. Once connected, you will enter the remote control page.
3. Use the virtual to control the LiDAR Robotic Mower forward, backward, left, and right.
4. Tap the Speed Button to adjust the driving speed in manual remote control mode.
 - a. **Note:** Adjusting the speed in this mode **will not** affect the driving speed of the LiDAR Robotic Mower during automatic mowing.
5. Tap X in the upper left corner to exit the manual remote control function.



6. Customize Mowing Settings

- Adjust cutting height for the perfect grass length - we recommend cutting **no more than 1/3** of the grass each task.
- Choose from three blade rotational speeds: standard, fast, or super.
- **NOTE:** Control mower travel speed for different quality cuts, the slower the moving speed, the finer the cut quality.
- Set custom mowing path angles to avoid exerting stress on your lawn.
- Customize spacing between paths to adjust the mowing overlap.



NOTE: FJDynamics LiDAR Robotic Mowers are not designed to cut long or overgrown grass. Cutting long grass will pose a higher risk of clogging the cutting deck and diminishing Vela's performance.

Tips for optimizing performance:

- If your lawn is overgrown, use a larger mower to bring the length of the grass down before using Vela.
- If your grass is long, set the Vela to the highest cutting height for its first mowing task, then mow the same work zone again at a lower height.

7. Settings

1. Check mowing history and logs.
2. Change the name of your mower.
3. Update to the latest firmware and software versions.
4. Set up guide.
5. Configure mowing preferences such as light, path planning, obstacle sensing and safety options.

8. Maintenance and Care

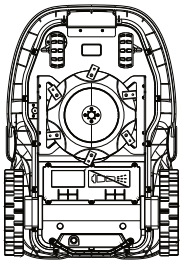
WARNING: always power off the mower before doing any type of maintenance work.

WARNING: use protective gloves.

8.1 Routine Maintenance Schedule

Component	Frequency	Action
Blades	Bi-weekly (new product), then adjust based on wear	Inspect and replace if worn
Blade disc	Weekly (new machine), then adjust based on wear	Inspect for damage
Front wheels	Monthly	Check for free rotation and wear
Body and chassis	Weekly	Clean and inspect
Charging contacts	Monthly	Clean and check connections
Safety sensors (lift, bumper)	Monthly	Test functionality
Firmware updates	Immediately after activation and then monthly	Run the latest firmware update when available

8.2 Blade Replacement



WARNING: Always wear protective gloves when handling blades.

1. Power off the Vela completely
2. Turn the mower upside down on a soft, clean surface
3. Remove the six mounting screws securing each blade using a screwdriver
4. Remove the worn blades
5. Install new original FJDynamics blades
6. Install new mounting screws (always use new screws when replacing blades)
7. Ensure blades can rotate freely

NOTE: replace blades every 4-8 weeks depending on lawn size and operating hours. Only use original FJDynamics replacement blades to ensure proper cutting performance and balance.

8.3 Front Wheel Replacement

1. Power off the Vela
2. Stand the mower up on its back wheels
3. Remove the mounting screws for the wheel
4. Remove the wheel assembly, keeping track of the washer
5. Install the new wheel, ensuring:
 - The washer is properly positioned
 - The wheel orientation matches the original position
 - The wheel rotates freely
6. Tighten the mounting screw securely

NOTE: check wheel bearings monthly for smooth operation.

8.4 Regular Cleaning

WARNING: Always switch off Vela before cleaning or maintenance.

CAUTION: Never use high-pressure washers or solvents for cleaning.

1. Clean the charging station regularly:
 - Remove grass, leaves, twigs, and other debris that may hinder docking.
 - Trim around the charging station frequently or lay down landscaping fabric or anti-slipping mats to prevent overgrowth.
2. Clean Vela:
 - Wipe down the body with a damp cloth.
 - Spray Vela down with a garden hose to clean off mud and debris from the wheels.
3. Maintain charging contacts:
 - Clean the charging plates on the mower and the rods on the charging station with a fine cloth.
4. Routine checks:
 - Inspect blades monthly and replace if damaged.
 - Check for software and firmware updates in the FJD Landscaping® app.

8.5 Storage

8.5.1 Preparing the Charging Station

1. Power off the charging station
2. Unplug from mains power
3. Clean thoroughly with a soft, damp cloth
4. Store in a dry, frost-free location if removing for winter

8.5.2 Preparing the Vela for Storage

1. Battery Removal:
 - Remove batteries if storing for winter or periods longer than 1 month
 - Store batteries in a dry environment between 5°C and 25°C (41°F-77°F)
 - Charge batteries between 50% to 70% before storage
 - Recharge the batteries once every 3-6 months to maintain optimal performance if not in regular use.

2. Cleaning:

- Use a brush to thoroughly clean:
 - a. Body and chassis
 - b. Wheels and wheel wells
 - c. Cutting deck and blade area
 - d. Sensors and charging contacts
- Remove all grass clippings and debris
- Wipe down with a slightly damp cloth if needed

3. Storage Location:

- Store in a dry, frost-free location
- Keep away from direct sunlight
- Store on all wheels or upright on its back
- Maintain storage temperature between 5°C and 25°C (41°F-77°F)

4. Pre-Storage Inspection:

- Check for damaged or worn parts
- Note any repairs needed before next season
- Remove any corrosion from charging contacts
- Apply light coating of contact cleaner to charging pins

9. Troubleshooting

NOTE: Install the latest firmware updates when they become available for optimal performance.

9.1 Common Issues

1. Navigation Errors

- Cause: Sensor obstruction or environmental interference
- Solution: Clean sensors, check for obstacles, remap if necessary

2. Mapping Inconsistencies

- Cause: Accumulated position error or environmental changes
- Solution: Reset map and create new zones, ensure optimal conditions

3. Detection Problems

- Cause: Reflective surfaces or poor visibility
- Solution: Adjust layout, mark problematic areas, operate in better conditions

* When to Contact Customer Service: Guidance on when to seek professional help.

9.2 Error Messages

Message	Explanation	Suggested next steps
Couldn't start scheduled task.		
Scheduled mow has started.	Ready to mow!	
Mowing paused for a quick recharge.		
Position lost.	Drive the mower back to charge.	
I can't find my way back.		1. LiDAR signal issue, mower position unavailable. 2. Move the mower or drive it back to the Charging Station. 3. Ensure mower is charging properly. 4. Restart the mowing task.
All done! Going back to recharge.	Check out the new log entry!	1. LiDAR signal issue, mower position unavailable. 2. Move the mower or drive it back to the Charging Station. 3. Ensure mower is charging properly. 4. Restart the mowing task.
Firmware updated!	Mower is updated and ready to work!	
Help me get back to flat ground.	Mower lifted, return it to a flat place.	
I'm stuck!	Something's blocking the path. Vela can't keep going.	1. Front wheels are off the ground. 2. Mower stopped for safety. 3. Return mower to level ground manually or via app. 4. Flatten the lawn or keep the mower from this area to avoid issues. 5. If there is no actual fall risk, disable lift sensor in 'Mower Control.'
I'm stuck!	Something's blocking the path. Vela can't keep going.	1. Bumper sensor triggered by something that blocked the mower's path. 2. Resume task manually. 3. To prevent this, clear the mower's path during tasks.
Can't find where I'm going.	The Work Zone is deleted, check your maps and try again.	1. Obstacle blocking mower's path. 2. Return mower to Charging Station to restart task. 3. Ensure the Passage connecting the Charging Station and Work Zones is clear of obstructions. 4. Do not block mower's movement directions during a task.

I'm lost!	Drive the mower back to the Charging Station and try again.	
I'm having trouble with path planning.	Restart the task.	
I'm stuck!	Mower is in a No-go Zone. Drive the mower back to the Charging Station.	
I'm lost!	Drive the mower back to the Charging Station and try again.	
My map is broken, I can't start a task.	Delete the Work Zone and re-map.	
It's raining, I'm taking a break!	Rain detected, task paused.	
Mower not at Charging Station.	Vela needs to be at the Charging Station before starting a task.	1. Rain detected, task paused, returning to Charging Station. 2. When break time's over, mower will resume task automatically. 3. Mowing is paused during rain to protect your lawn. 4. Dry the rain sensor to resume task immediately. 5. Disable rain sensor in 'Mower Control' if needed.
Heads up! We can't find your mower nearby.	Vela might be taken! Take a look now.	
Battery low (10%)	Bring me back to recharge.	
Battery low (5%)	Bring me back to recharge.	
Stopped!	Release the stop button to continue working.	
I'm stuck!	Get me back to flat ground.	
I can't charge.	Check the mower and charging station and try again.	1. Mower is stuck and can't self-rescue. 2. Please assist mower back to the Charging Station. 3. For slopes, install anti-slip wheel spikes for better traction.
Something's wrong with the vision sensor.	Restart mower. Contact support if issue persists.	
Battery error.	Restart mower. Contact support if issue persists.	

Control panel error.	Restart mower. Contact support if issue persists.	1. Restart the mower. 2. Try starting the task again; if issues persist, contact support. 3. Provide error code: [EC9111].
Something's wrong with the Cutting disc.	Restart mower. Contact support if issue persists.	1. Restart the mower. 2. Try starting the task again; if issues persist, contact support. 3. Provide error code: [EC9112].
Cutting disc error.	Press the STOP button, wait a few seconds, then release and try again.	1. Restart the mower. 2. Try starting the task again; if issues persist, contact support. 3. Provide error code: [EC9113].
Mower can't communicate with the left drive wheel.	Restart mower. Contact support if issue persists.	1. Press the 'Emergency Stop' button. 2. Release 'Emergency Stop' after 5s and check if mower resumes. 3. If issues persist, try restarting the mower. 4. Retry mowing; if issues persist, contact support. 5. Provide error code: [EC9114].
Left drive wheel error.	Press the STOP button, wait a few seconds, then release and try again.	1. Restart the mower. 2. Try starting the task again; if issues persist, contact support. 3. Provide error code: [EC9115].
Mower can't communicate with the right drive wheel.	Restart mower. Contact support if issue persists.	1. Press the 'Emergency Stop' button. 2. Release 'Emergency Stop' after 5s and check if mower resumes. 3. If issues persist, try restarting the mower. 4. Retry mowing; if issues persist, contact support. 5. Provide error code: [EC9116].
Right drive wheel error.	Press the STOP button, wait a few seconds, then release and try again.	1. Restart the mower. 2. Try starting the task again; if issues persist, contact support. 3. Provide error code: [EC9117].
Mower taking longer than expected to communicate with the VCU.	Give Vela 5 minutes. Restart if issue persists.	1. Press the 'Emergency Stop' button. 2. Release 'Emergency Stop' after 5s and check if mower resumes. 3. If issues persist, try restarting the mower. 4. Retry mowing; if issues persist, contact support. 5. Provide error code: [EC9118].
Mower taking longer than expected to communicate with the IMU.	Give Vela 5 minutes. Restart if issue persists.	1. If not resumed in 5 min, restart the mower. 2. Retry mowing; if issues persist, contact support. 3. Provide error code: [EC9119].

It's getting too hot here!	Vela will keep charging when it cools down. Keep the Charging Station away from direct sunlight.	1. If not resumed in 5 min, restart the mower. 2. Retry mowing; if issues persist, contact support. 3. Provide error code: [EC9120].
It's getting too hot here!	Beat the heat! Mow when it's cooler outside.	1. Mower too hot, charging disabled to protect batteries. 2. Keep the Charging Station away from direct sunlight. 3. Give the mower a few minutes to cool down. 4. Mow in cooler hours of the day to prevent heat stress on your grass.
Cutting disc is stuck	Press the STOP button and clean the cutting disc.	1. Mower too hot, charging disabled to protect batteries. 2. Keep the Charging Station away from direct sunlight. 3. Give the mower a few minutes to cool down. 4. Mow in cooler hours of the day to prevent heat stress on your grass.
Mower can't communicate with the LiDAR sensor.	Power off the mower, then restart and try again.	1. Power off the mower and clean the cutting deck. 2. Check for grass clogs on the cutting deck. 3. Clean regularly for optimal mowing results.
Something's wrong with the mower's Bluetooth connection.	Power off the mower, then restart and try again.	1. Remove mower from the Charging Station and restart it. 2. Push mower back to the Charging Station and retry mowing; if issues persist, contact support. 3. Provide error code: [EC9124].
Charging Station connection error	Power off the mower and charging station, then restart and try again.	1. Restart the mower. 2. Try starting the task again; if issues persist, contact support. 3. Provide error code: [EC9125].
		1. Restart the mower and the Charging Station. 2. Try starting the task again; if issues persist, contact support. 3. Provide error code: [EC9126].

10 Warranty and Service

For End Users

- Two (2) year warranty on the LiDAR Robotic Mower and charging station
- One (1) year warranty on batteries
- The following components are not covered under warranty:
 - a. Front wheels
 - b. Back wheels
 - c. Cutting blades
 - d. Optional accessories
- Service and Repair Instructions
 - a. For routine maintenance, see Section 8 Maintenance and Care for more information.
 - b. Contact your FJDynamics authorized dealer for additional support.
- FJDynamics support can be reached at support@FJDynamics.com

11. Regulatory Compliance and Certifications

Federal Communications Commission (FCC) Compliance 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
2. This device must accept any interference received, including interference that may cause undesired operation

The FJDynamics Vela LiDAR Robotic Mower 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.

FCC ID: 2A3NS-Vela

European Union (CE) Compliance Statement

The FJDynamics Vela LiDAR Robotic Mower bears the CE mark in accordance with the following EU directives:

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Radio Equipment Directive (RED) 2014/53/EU

Australian Regulatory Compliance Mark (RCM)

This product complies with applicable ACMA technical standards (Ref No.: RCMC24121203D) for electromagnetic compatibility, radio communications, and electrical safety requirements.

Warning

Any changes or modifications not expressly approved by FJDynamics for compliance could void the user's authority to operate the equipment.

Note: Keep this user manual for future reference. The certifications listed above indicate that the product meets the essential requirements and other relevant provisions of the applicable directives.

