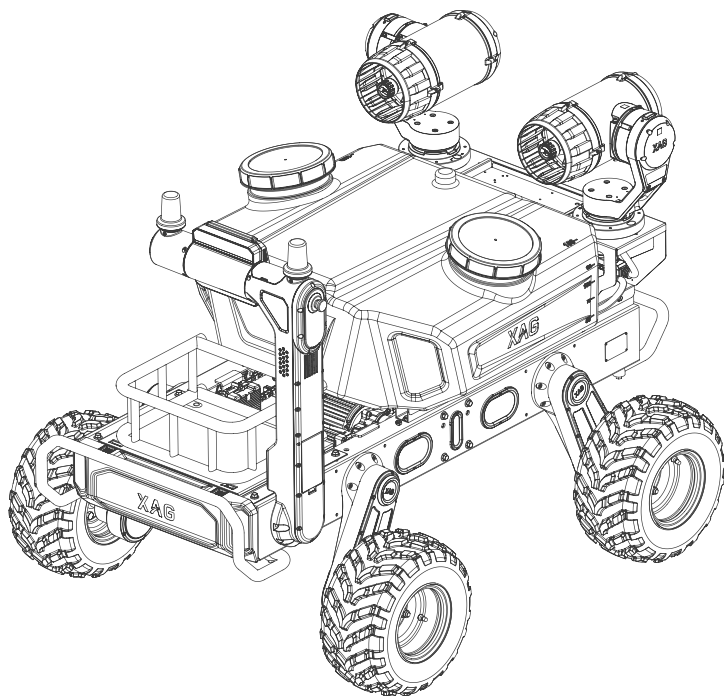


# XAG R150 2022

## Unmanned Ground Vehicle EV RevoSpray

### User Manual

Version 1.0 **EN**



## **To User**

Dear user, thank you for choosing XAG's products.

For safety purposes and better user experience, it is highly recommended that you read this manual carefully and strictly follow the instructions hereof.

## **Contact Us**

Manufacturer: Guangzhou Xaircraft Technology CO., LTD.

Add: Block C, No.115, Gaopu Road, Tianhe District, Guangzhou, Guangdong Province, China

Technical Support E-mail: support@xa.com

# Disclaimer

1. Please read this User Manual carefully before using this product, as it has much to do with both operational safety and your legitimate rights and interests, whether you are a buyer or a user. You shall be deemed to have read, understood, agreed and acknowledged all terms and conditions and information stated herein upon activation and use of the product.
2. Not being a toy, plus for certain safety risks, the product is NOT suitable for those who are under 18 years old, or those who have no or limited capacity for civil conduct, or those with mobility impairments, or those without an operator certificate, if any, accredited by XAG or existing laws, regulations and policies. Please keep the product out of reach of children and be particularly cautious while there are children present during use.
3. The product, manufactured by XAG, is an R-series agricultural unmanned ground vehicle solely for agricultural use. Please read this User Manual carefully to scrutinize your legitimate rights and interests, responsibilities and safety guidelines, or it may pose risks of property loss, accident and bodily injury.
4. You pledge to use the product within the bounds of the law only for a legitimate purpose and acknowledge this User Manual and all existing or future policies and norms formulated by XAG. You understand and accept that operation records and data will be automatically uploaded and saved to XAG's server during use. XAG assumes no responsibility for the failure to analyze the operation records and data caused by any failure to upload and save them ascribed to your reasons.
5. Please note that, as services provided by the product and its auxiliary devices may involve capture, storage and processing of the geographic information and data on the fields, the use of the product shall comply with local laws and regulations dealing with such issues. Otherwise, you shall bear the sole responsibility, both financially and legally, for any illegal acts.
6. To the maximum extent permitted by law, XAG shall not be liable for all losses incurred by your operation disobeying the instructions in this User Manual. Also, XAG shall not be liable for any indirect, consequential, punitive, accidental, special or exemplary damage, including any loss resulting from your purchase, use, or inability to use the product, even if you have been advised of the possibility of such loss.
7. To the maximum extent permitted by law, under any circumstances, the liability or compensation amount from XAG to you for all damage, losses and litigation arising therefrom will not exceed the amount that you paid to XAG for purchasing the product.
8. You understand that in the use of any products, accidents may occur due to single or combined factors, including but not limited to improper operation, surroundings and communication networks. You understand that the aforesaid accidents are reasonable and acceptable in the use of the product, and that XAG shall not be held accountable for such accidents.
9. On any account, you shall observe the laws and regulations of the country and the region where the product is used. XAG shall assume no liability arising from your violation of relevant laws and regulations.
10. As exclusion clauses may be prohibited by laws in some countries, your rights and interests in different countries may vary. However, this does not imply that the terms contained in this Disclaimer are necessarily invalid.
11. To the extent permitted by law, XAG reserves the rights for final explanation and revision of the terms and conditions hereinabove. XAG also has the right to update, modify or terminate these terms and conditions via channels including its official website, the User Manual and online App, without prior notice.

## Warning

User is required to read through the User Manual and obtain an operator certificate, if any, accredited by XAG or existing laws, regulations and policies. Otherwise, it may cause serious injury to yourself or others, or damage to the product and property loss. User should be strongly safety-conscious. This product is not suitable for those who are under 18 years old, or those who have no or limited capacity for civil conduct, or those with mobility impairments. Do NOT use the components that are not provided or suggested by XAG. Please install and use the product by strictly following XAG's instructions.

## Safety Guidelines

- Please get acquainted with the field, which should be far away from obstacles and crowds and free from unsafe conditions.
- It is necessary to inspect all components carefully and see that the product functions fully and properly before the spray.
- No persons or animals are allowed to stay within 5 meters of the vehicle in the course of preparation and spray for fear of injury caused by the spraying of pesticide or other liquids.
- It is not allowed to touch the vehicle or any other operating system while it is spraying or running.
- Please stop the spray immediately when the vehicle quits the RTK mode midway.
- Never have the vehicle run through water deep enough to touch its bottom, or the water may harm the electrical devices or components inside.
- Never have the vehicle run on a car lane, including city road, national highway and expressway, or in an area with safety hazards.
- Never park the vehicle on a slope. In the event of temporary necessity, be sure to shift to "P".
- Never drag the vehicle to avoid harming the vehicle or its components.
- The aged, the weak, the sick, children and pregnant women are not allowed to use the vehicle.
- When the vehicle is not in use, be sure to shut off all its power, shift to "P", and park it on level ground.
- Never run the vehicle while drowsy, drunk or in a poor mental state so as to prevent accidents.
- Immobilize the vehicle and chock all the wheels during transport to prevent accidents caused by unwanted movement or fall of the vehicle.
- Use dedicated measuring devices to mix the pesticide. Before that, please carefully read the instructions on the pesticide, particularly the mixing procedures and taboos. Take care to avoid splashing during mixing.
- Use clean water to mix the pesticide. Muddy or waste water is not allowed as both will lower the dispersity, wettability and permeability of the pesticide, producing precipitates and making the pesticide less effective. Or, even, the impurities in the water will decompose the active ingredients of the pesticide, reducing its effectiveness as well.
- You should properly, rather than willfully, dispose of the pesticide in strict accordance with the instructions provided by the pesticide manufacturer and local environmental protection requirements.
- Please repair or replace the nozzle clogged or leaking immediately. Never blow out the nozzle with your mouth.
- You must wear a long-sleeved shirt, long pants, protective clothing, a mask, a hat and chemical-resistant gloves when applying pesticide.



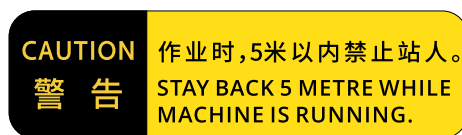
- Pay attention to the change in wind speed, direction and weather conditions when applying pesticide. Weather with no rain and winds below force 3 would be highly recommended.
- Never eat, drink and smoke when applying pesticide to prevent pesticide poisoning.
- In case of accidental exposure to pesticide splashes, immediately flush with large amounts of water. Should you have symptoms like dizziness, headache, nausea and vomiting, please stop the spray, take the packaging of the pesticide and seek medical attention at the nearest hospital.
- In case of a fault during the spray, be sure to shift to "P", park the vehicle and shut off the power before inspection. Otherwise, under-vehicle inspection, repair or maintenance is not allowed.
- Please rotate the inlet valve to "OFF" before removing the liquid tube for inspection.
- Refrain from sudden braking to prevent vehicle instability caused by sloshing liquid within the liquid tank.
- Immediately wash off the pesticide residue from the liquid tank, liquid tubes, nozzles and the vehicle with soapy water after the spray. Also, the operator should immediately rinse himself/herself and change the contaminated clothing to lower the risk.
- Never modify the power system, motors, reduction box and operation module. Other modifications should comply with local laws and regulations and safety standards.
- Keep the product away from heat to prevent damage to its electronic devices or other components.
- The vehicle is designed for plant protection in agricultural scenarios like cropland and orchard. Anyone who applies it in non-agricultural scenarios or beyond agricultural purposes shall solely assume the responsibilities for all the damage arising therefrom.
- The vehicle can only be used with good 4G/5G network or good Wi-Fi signal of remote controller in an unobstructed environment.
- Never use the vehicle for any legally prohibited purpose.

## Safety Signs

### 1. Disconnect Power Warning Sign



### 2. Machine Is Running Warning Sign



### 3. Wear Protective Equipment Sign

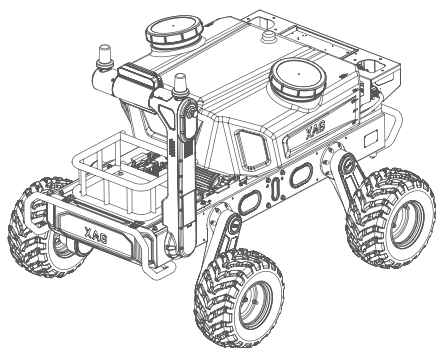


# Introduction

XAG R150 2022 Unmanned Ground Vehicle EV RevoSpray (hereinafter referred to as "vehicle"), is geared towards various scenarios with its high-precision and adjustable 360-degree atomizing spray. Thanks to the SuperX 4 pro Intelligent Control System, its ultra-strong computing power contributes to fully autonomous operation through RTK centimeter-level navigation and smart route planning. Besides, the new-generation ARC3 Remote Controller with flexible joysticks and a wide range of function buttons enables you to finish the work much more easily.

## List of Items

Please see that all of the following items are present when unpacking the box. Should there be any item missing, please contact your seller immediately.



R150 2022 Agricultural Unmanned Ground Vehicle EV  
×1



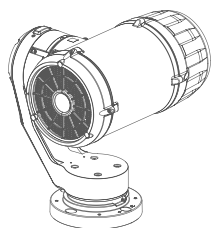
Agricultural Remote Controller 3  
×1



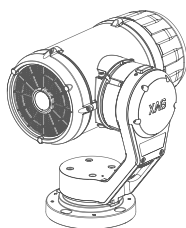
Fan-shaped Nozzle  
×2



Cap  
×2



JetSprayer (Left)  
×1



JetSprayer (Right)  
×1

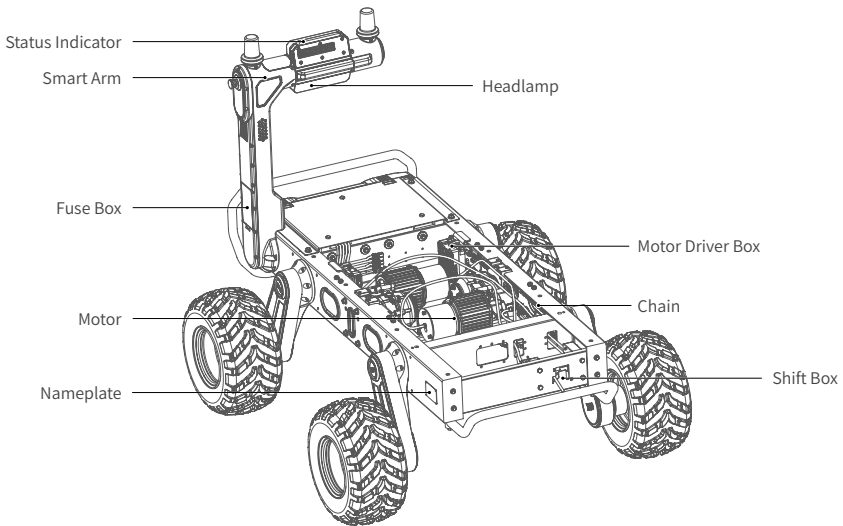
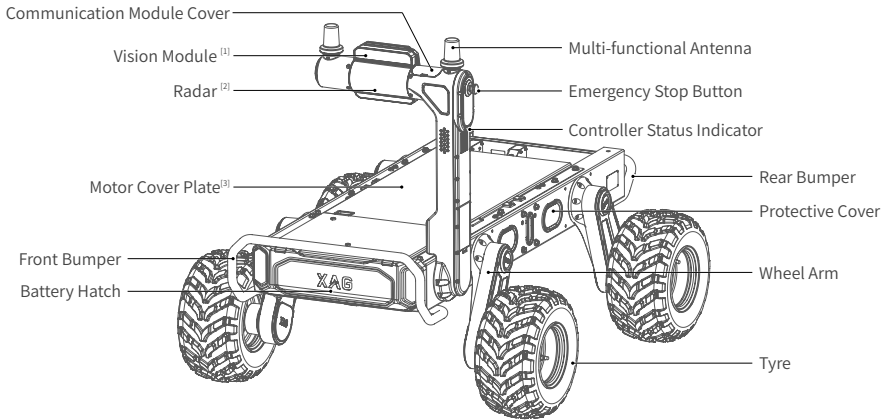


Liquid Tank  
×1



Tool Kit  
×1

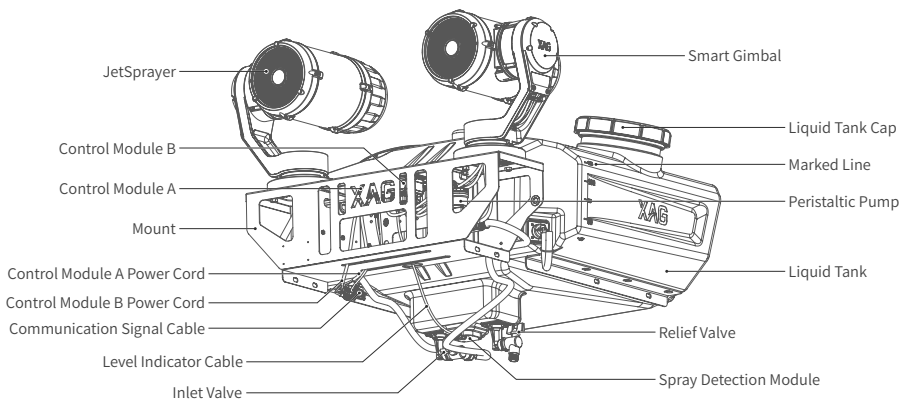
# Main Components



[1]: Vision Module is optional and subject to the model you order.

[2]: Radar only comes with the high-end version, rather than the mid-end and low-end version, subject to the model you order.

[3]: Motor Cover Plate does not come with the XAG R150 2022 Unmanned Ground Vehicle EV RevoSpray and XAG R150 2022 Unmanned Ground Vehicle EV HydraulicSpray, subject to the model you order.

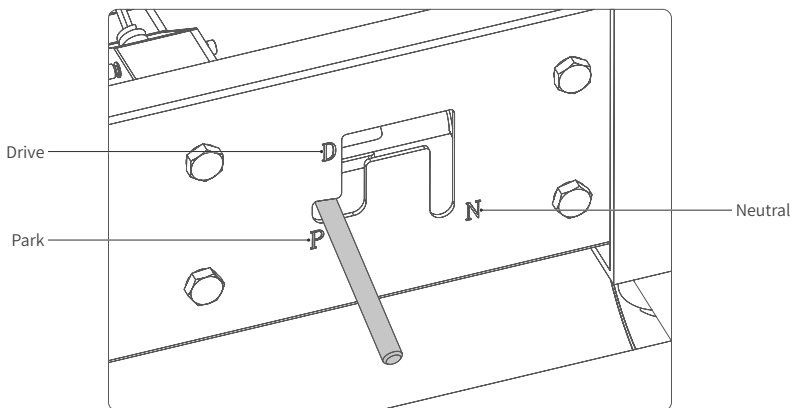


## Shift Box

D: Drive - shift to "D" to have the vehicle go, applicable to remote operation and route-based operation.

P: Park - shift to "P" to lock the motor and immobilize the vehicle, applicable to parking and preventing unwanted movement during transport.

N: Neutral - shift to "N" to move the vehicle without powering on, applicable to pushing the vehicle with power off or when it breaks down.



### **Note**

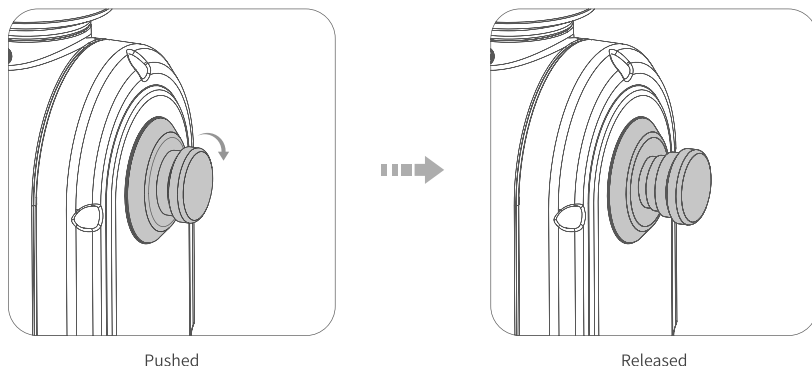
- ⚠ Please make sure that the vehicle stops moving before shifting into drive.
- ⚠ Never shift gears when the vehicle is moving.
- ⚠ Never park the vehicle on a slope. In the event of temporary necessity, be sure to shift to "P", rather than "D" or "N".
- ⚠ Never move the vehicle without shifting to "N".

## Emergency Stop Button

While the vehicle is running on level ground, in case of emergency, you can push the emergency stop button to shut it off and stop the operation.

**Pushed:** Push the button and the brake equipment will force power off and stop the vehicle.

**Released:** Rotate clockwise to release the button and get the vehicle back to normal.

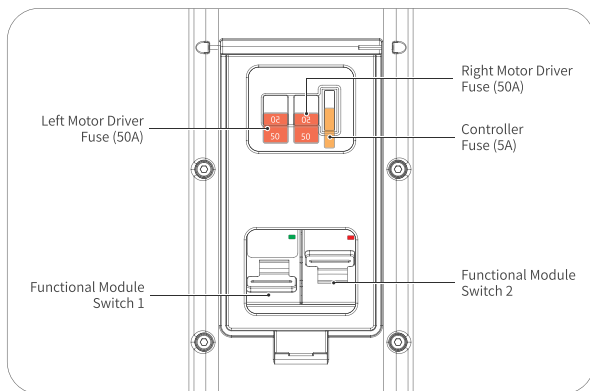


### **Note**

- ⚠ Pushing the emergency stop button will only shut off the powertrain without affecting other modules. Be sure to power off the smart battery before attempting any wiring practice in other modules.
- ⚠ NEVER press the emergency stop button while the vehicle is running on a slope.
- ⚠ See that the emergency stop button is released before powering on the vehicle, or the power-on will fail.

## Fuse Box

Open the fuse box, push down the functional module switch to power it off, and the switch mark is green (as shown in the figure below, functional module 1 is powered off); push up the functional module switch to power it on, and the switch mark is red (as shown in the figure below, functional module 2 is powered on).



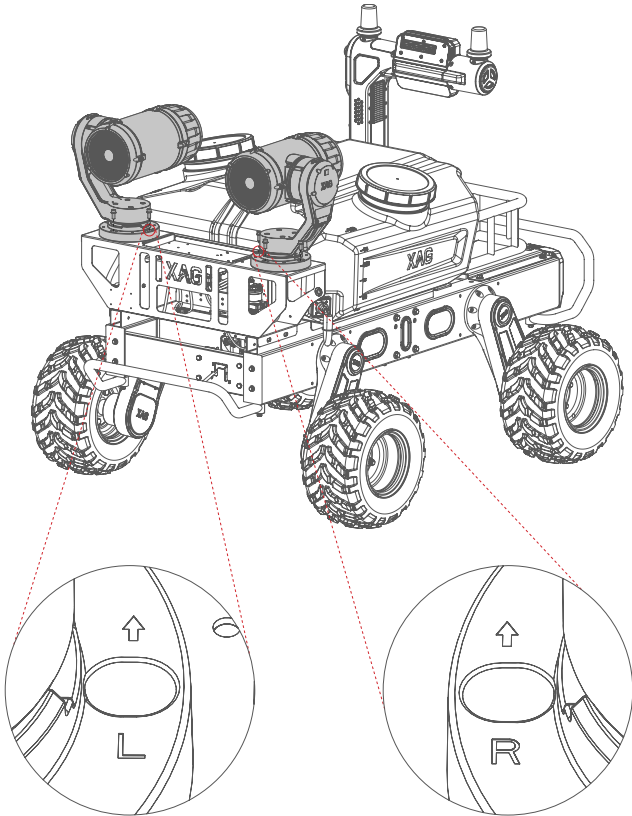
### **Note**

- ⚠ While the vehicle becomes unresponsive and makes a voice prompt "Motor Driver Offline", please shut it off and check whether the motor driver fuse is blown, which looks obviously blackened.
- ⚠ While power-on fails (all indicators on the controller are off), please check whether the controller fuse is blown.
- ⚠ While having a functional module on the vehicle, please make sure it is powered on, or it cannot work properly.

## Preparation

### Install JetSprayers

Run the liquid tubes and cables of both JetSprayers through the holes on the mount, then secure both JetSprayers on the mount with screws.

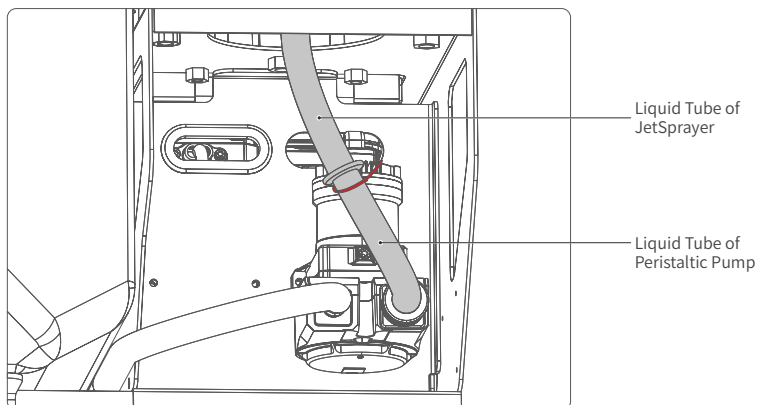


### **Note**

- ⚠ You can tell the difference between both JetSprayers by the mark on the base. See below: the arrow is pointing toward the nose; L for Left, R for Right.

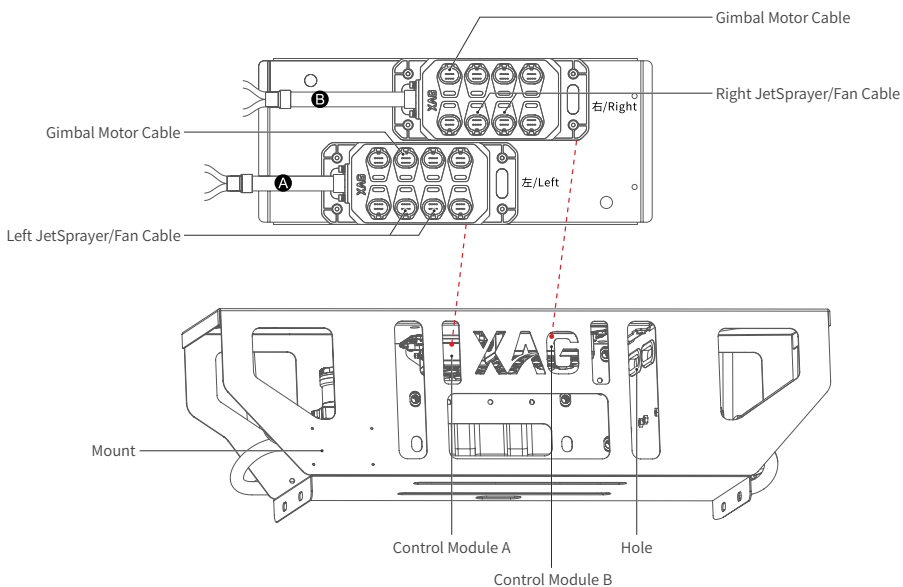
## Connect Liquid Tubes

Connect the liquid tubes on the bottom of the liquid tank with the inlets of both peristaltic pumps, and strap them with cable ties.



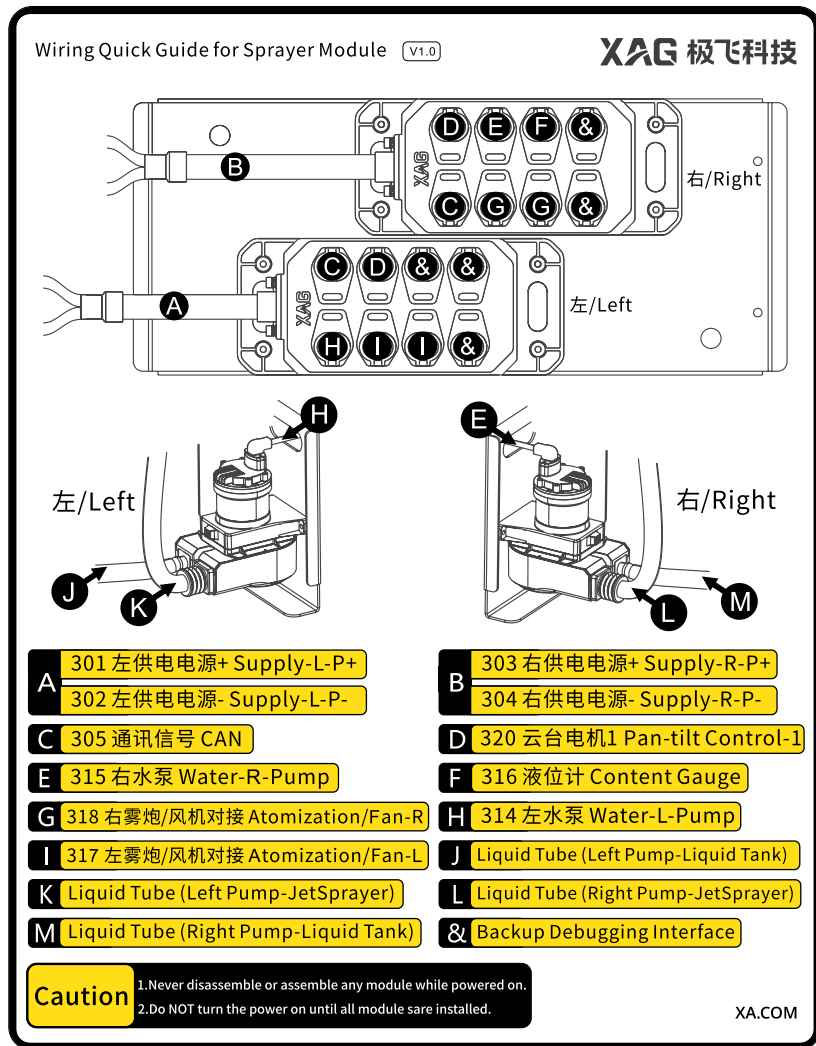
## Wire Cables

Run the gimbal motor cable (Pan-tilt control) of the left JetSprayer and the JetSprayer/Fan Cable (Atomization/fan-L) through the hole, and wire them to the Control Module A; Run the gimbal motor cable (Pan-tilt control) of the Right JetSprayer and the JetSprayer/Fan Cable (Atomization/fan-R) through the hole, and wire them to the Control Module B.



# Wiring Quick Guide

The diagram below will guide you through the process of wiring the sprayer module.





## Replace Nozzle

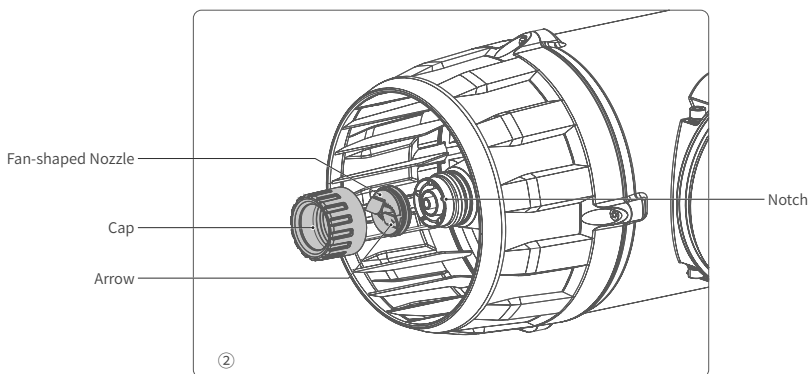
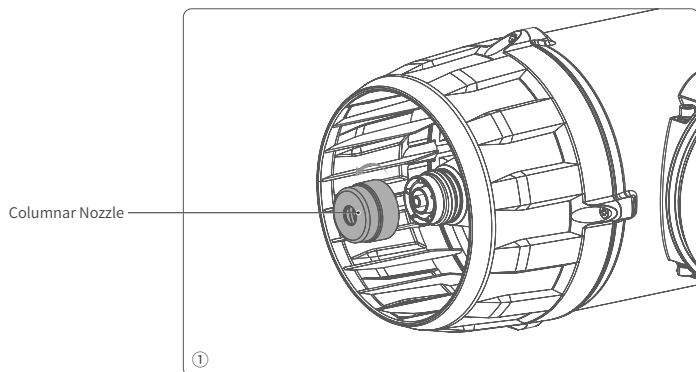
Choose an appropriate nozzle based on your needs.

**Columnar Nozzle:** Applicable to scenarios involving long-range spraying, such as tall fruit trees with wide spacing, premises disinfection and spraying on farms


**Fan-shaped Nozzle:** Applicable to crops requiring efficient short-range spraying, like vegetables, greenhouse-grown dragon fruits, grapes and wheat.

**Below are the steps for replacement (take fan-shaped nozzle as an example):**

- ① Rotate the columnar nozzle counterclockwise to remove it.
- ② Align the fan-shaped nozzle with the notches and tighten the cap clockwise.



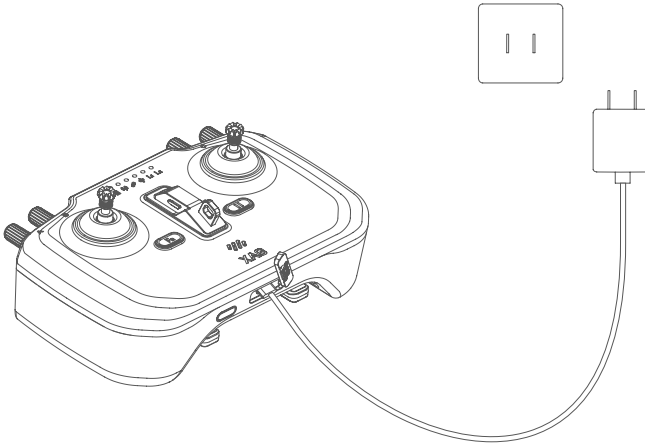
### Note

 The horizontally pointing arrow on the fan-shaped nozzle means a horizontal fan-shaped spray pattern, while the vertically pointing arrow means a vertical fan-shaped spray pattern. Please choose a proper one based on your actual needs.

# Prepare ARC3

## Charging

Put the Type-C cable end into the charging port of the XAG Agricultural Remote Controller 3 (hereinafter referred to as ARC3) and the USB end into the adapter before plugging it in. While charging the ARC3 with a fast-charging adapter, the power indicator will flash rapidly with the buzzer sounding. When the ARC3 is fully charged (the ARC3 will switch itself off if it is not connected to any device such as a vehicle), the power indicator turns solid green.



## ON/OFF












**ON:** Press and hold the power button until all 6 indicators flash simultaneously. Then release the power button and long press it again until you hear a prompt indicating that it is powered on successfully.

**OFF:** Press and hold the power button until all 6 indicators flash simultaneously. Then release the power button and long press it again until all 6 indicators are off indicating that it is powered off successfully.

### **⚠ Warning**

- ⚠ You must charge the ARC3 with the charging device provided by XAG, otherwise, you shall be held liable for any product failure or damage arising from charging with non-XAG devices.
- ⚠ The ARC3 is designed for XAG products only and there is a strong possibility that this device is incompatible with non-XAG products. Any loss or legal liability arising from such incompatibility shall be borne by you.
- ⚠ Keep the ARC3 away from water while it is being charged or in use as it is not waterproof. You shall be responsible for any product failure or damage caused by the device's exposure to water.
- ⚠ The ARC3 has a single LTE antenna and is designed for applications that do not need much low data transfer rates.
- ⚠ There is already a SIM card in the SIM1 card slot as the ARC3 leaves the factory. Please do NOT remove this SIM card, or the ARC3 might not work properly.
- ⚠ As required by the service provider, an eSIM card (embedded SIM card) may have been inserted in the SIM2 card slot as the ARC3 leaves the factory. If you find the SIM2 card slot sealed, do NOT take the seal off or insert other SIM cards or foreign objects. Otherwise, you will be held responsible for any damage caused to the ARC3 arising therefrom.

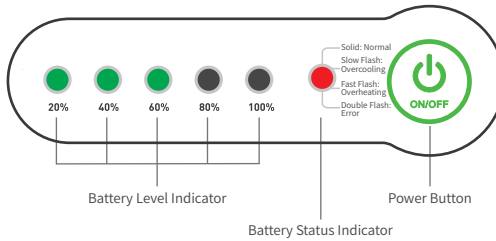
## Use of ARC3

Remote Controller	Action	Description
	Forward (Left Stick)	Go forward
	Backward (Left Stick)	Go backward
	Left (Left Stick)	Turn left
	Right (Left Stick)	Turn right
	Forward Left (Left Stick)	Go forward left
	Forward Right (Left Stick)	Go forward right
	Backward Left (Left Stick)	Go backward right
	Backward Right (Left Stick)	Go backward left
	Release (Left Stick)	Stop
	Short Press	Short press the Stop button - light L1 will be on - to unlock the vehicle and enable joystick control. Short press the Stop button - light L1 will be off - to lock the vehicle and disable joystick control.
	Short Press	In manual mode with the vehicle unlocked, short press button F3 to start Cruise Control. Press button F3 with the left stick released, and the vehicle will cruise at 10% of full speed by default. Press button F3 with the left stick pushed forward more than 10% of its full range, and the vehicle will cruise at a corresponding speed. When in Cruise Control, push the left stick backward to exit Cruise Control.
	Long Press	Press and hold the Fn button to enter/exit mapping mode. In mapping mode, short press button F1/F3 to mark the current position; short press button F2/F4 to undo the last marking. In mapping mode, the use of remote controller is confined to mapping rather than controlling the vehicle.
	Turn	Turn knob A clockwise/counterclockwise to accelerate/decelerate the vehicle.
	Short Press	Short press button F1 to turn on/off spraying mode.
	Turn	Turn knob D clockwise/counterclockwise to increase/decrease spray flow rate.

# Prepare Smart Battery

## Indicators/Buttons

There is one power button and six indicators on the smart battery panel.



## Power ON/OFF

**ON:** Press and hold the power button until all battery level indicators flash simultaneously. Then release the power button and long press it again until you hear a beep with the status indicator on.

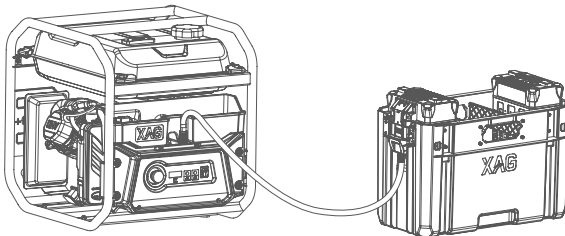
**OFF:** Press and hold the power button until all battery level indicators flash simultaneously. Then release the power button and long press it again until the status indicator is off.

## Charge Battery

Charge the battery with the Auto SuperCharge Station or Intelligent SuperCharger. Once the battery reaches a full charge, the Auto SuperCharge Station or Intelligent SuperCharger will stop charging automatically and the battery will turn itself off.

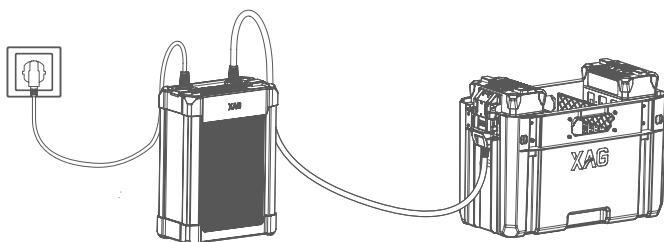
## Charge with Auto SuperCharge Station

### GC4000+ Auto SuperCharge Station



## Charge with Intelligent SuperCharger

CM12500P, CM13300 Intelligent SuperCharger








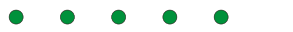
### Note

⚠ Before removing a charging battery, please power off the battery or the Auto SuperCharge Station. Otherwise, overvoltage protection might be triggered and the Auto SuperCharge Station will come to a dead halt.

## Check Battery Level




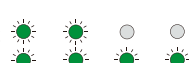
When the battery is OFF, short press the power button once to check its charge level.



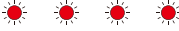
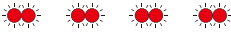

When the battery is ON, the battery level indicators are always on.

LED Behavior	Battery Level
1 Single Flashing Light 	1%~10%
1 Solid Green Light 	11%~30%
2 Solid Green Lights 	31%~50%
3 Solid Green Lights 	51%~70%
4 Solid Green Lights 	71%~90%
5 Solid Green Lights 	91%~100%

## Check Battery Status

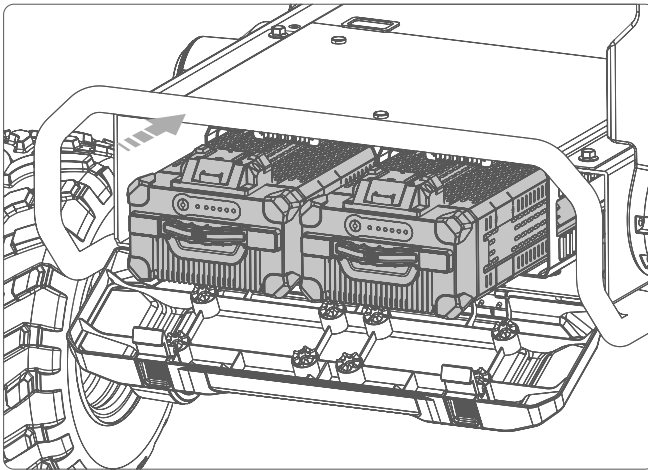
When the battery is on, check its panel for its charge level and status.

Battery Level Indicator	Status	Description
2 Double Flashing Lights 	Fault Lock	Locked automatically for low battery or large voltage variance, please contact tech support
3 Double Flashing Lights 	Remote Lock	Battery locked remotely, please contact tech support to unlock it
4 Double Flashing Lights 	Anti-dismantling Lock	Cell authentication failed, please contact tech support
Group Flashing (2+4) 	Dual-battery Power-on Disabled	Dual-battery power-on disabled; voltages of both batteries should be roughly equal before use

Battery Level Indicator	Status	Description
Solid Red 	Normal	Normal
Flashing Red (Fast) 	Overheated	Protection triggered; charging/discharging not allowed
Flashing Red (Slow) 	Overcooled	Charging protection triggered by low temperature, please keep the battery above 10°C
Double Flashing Red 	Failure	Stop using immediately
Triple Flashing Red 	Abnormal Battery Plug Temperature	Abnormal battery plug temperature, please contact tech support

## Install Battery

Open the battery hatch on the front of the vehicle, insert the batteries into the battery compartment until you hear a click, make sure that they are in place, and then close the hatch.



### Note

⚠ Before removing a charging battery, please power off the battery or the Auto SuperCharge Station. Otherwise, overvoltage protection might be triggered and the Auto SuperCharge Station will come to a dead halt.

## Battery Safety Precautions

- Do NOT install or remove the battery while it is on. Otherwise, the battery connector might be damaged.
- Check battery firmware and software versions and make sure that they are up to date before each operation, or you shall bear all losses as a result of failing to do so.
- You should charge the battery using XAG's designated charging device. Otherwise, you shall assume all financial and legal liability arising therefrom.

- When charging with Auto SuperCharge Station, the distance between the battery and Auto SuperCharge Station should be above 60cm, and the side with silencer is prohibited to face the battery, so as not to cause battery failure due to concentrated heat and even serious consequences such as fire.
- The optimal ambient temperature for the battery is between 10 °C and 45 °C . It might catch fire or even explode at temperatures over 45°C .
- NEVER connect wires or other metals between the battery's cathode and anode, as this will cause a short circuit.
- NEVER immerse the battery in corrosive liquids. For heat dissipation, the battery should only be immersed in clean and room temperature water, which should be kept between the maximum and minimum marks on the battery housing, for no more than 60 minutes. Otherwise, damage might be caused in the case of water penetration.
- Make sure that the battery connector is clean and dry and wipe liquid or foreign matters from it in time. Otherwise, poor contacts could happen, causing energy loss or charging failure.
- Please handle the battery with care. NEVER take it apart, pierce its housing or apply pressure to it, including but not limited to behaviors such as sitting/standing on the battery, placing heavy items on it and the like.
- Check the battery connector, plug and other parts regularly before use. Never clean the charging device with combustible liquids. Never use a damaged charging device.
- Place the battery and the charging device on even ground free of combustible materials while charging. NEVER charge the battery in small enclosed spaces or on vehicles. Never leave the battery unattended while charging.
- For safety purposes, keep a distance of at least 30cm between the battery and charger as well as between two batteries while charging, as too much heat could cause charger or battery failure, or even serious consequences like fires.
- NEVER use non-XAG batteries, or dismantle/replace the battery. For repair or replacement, please contact XAG or a designated after-sales service outlet. For battery accidents, technical failures or other accidents caused by using non-XAG batteries or parts, you shall assume all liability arising therefrom, both financially and legally.
- If the battery is showing single flashing green after operation, charge it to 40%-60% for storage, or the battery might be damaged or have a shortened lifespan. Fully discharge and recharge unused batteries every 90 days to keep them active, or their service life will be affected.
- The battery should be stored in a dry place with an even temperature between 10°C and 30°C as big temperature difference will affect the battery's lifespan. Never expose the battery to water, humidity or harsh sunlight during charging or storage.
- Avoid humidity while charging the battery. Our warranty does NOT cover any damage to the product resulting from water penetration caused by a damaged battery housing or other reasons not related to product quality.
- Please immediately stop using any swollen, leaking, or deformed battery or those with a damaged exterior, and contact XAG or our after-sales service outlet as soon as possible. Please stop using the battery at once in the event of serious swelling, leaking, deformation or a severely damaged exterior and dispose of it in accordance with safety regulations.
- The warranty does not cover any damage caused by not following the user manual or misuse.
- Tests in controlled conditions show that the battery is splashproof and water-resistant. However, the protection is not permanent and might get weaker due to daily wear and tear.
- The liquid inside the battery is highly corrosive. In case of contact with skin or eyes, flush it out with clean water and seek medical attention instantly.
- To protect our environment, please dispose of the battery as required by local laws and regulations.

# App Screens

## Fields (Main Screen)



Device List: View all devices.

Operator: Current location of the operator's phone.

Vehicle: Vehicle's current location.

Fields: Tap to get to the Fields screen.

Functions: Tap to create new fields, field groups, HD maps, import data and add devices.

Layers: Tap to switch map types.

Vehicle's Location: Get the vehicle's current location.

Operator's Location: Get the operator's current location.

Scale: Tap to measure distance.

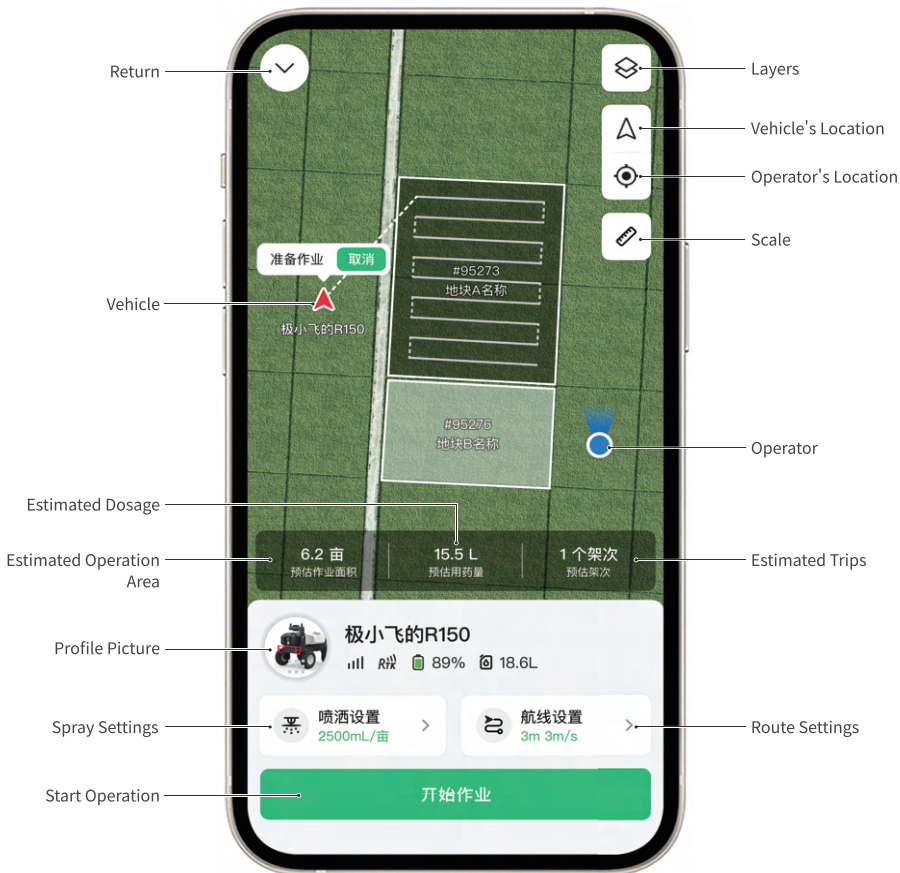
Operation: Tap to get to the operation screen.

Me: Tap to get to the account settings screen.



## Operation

Tap "Operation" on the "Fields" screen (main screen) to get to the operation screen.



**Return:** Tap to return to the Fields screen (main screen).

**Vehicle:** Vehicle's current location.

**Estimated Dosage:** Spray volume needed for current operation.

**Estimated Operation Area:** Area of the fields needed to be sprayed.

**Profile Picture:** Tap to get to the "Device Details" screen.

**Spray Settings:** Tap to set spray parameters.

**Start Operation:** Tap to start current operation.

**Layers:** Tap to switch map types.

**Vehicle's Location:** Get the vehicle's current location.

**Operator's Location:** Get the operator's current location.

**Scale:** Tap to measure distance.

**Operator:** Current location of the operator's phone.

**Estimated Trips:** Trips needed for the vehicle to spray.

**Route Settings:** Tap to set route parameters.

# Maintenance

After operation, clean the parts and surface of the vehicle in a timely manner to prevent any damage caused by residual pesticides and extend the device's lifespan.

## Cleaning After Operation

Pesticides are caustic and could corrode the device, shortening its lifespan. Clean the device timely after each operation. The cleaning steps are as follows:

Detergent: soapy water or laundry powder/water mixture

A. Liquid Tank: Clean the interior and wipe the surface of the liquid tank with a rag.

B. Vehicle:

- ① Fill the liquid tank with soapy water or the laundry powder/water mixture. Start spraying to clean pesticide residues in the sprayer.
- ② Fill the liquid tank with clean water and start spraying to wash off residual soapy water or the laundry powder/water mixture in the sprayer.
- ③ Place the empty liquid tank on the vehicle and start spraying until all tubes are drained, avoiding damage to other objects during transportation or storage.
- ④ Wring out the damp rag and wipe the surface of the vehicle to remove pesticide stains and mud. Empty the liquid tank and drain the tubes if you need to transfer the vehicle to another place or expect the vehicle to sit unused for an extended period.

## Regular Maintenance








Wear and tear as well as malfunctions in/of the vehicle could occur as a result of ordinary use. Regular maintenance ensures that the vehicle performs at its best in future operations with fewer malfunctions and improved efficiency. The maintenance steps are as follows:





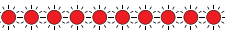
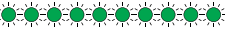
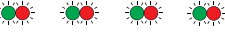

- ① Check if any screw on the vehicle is loosening or missing.
- ② Check if the connectors of each component are firmly in position.
- ③ Check if the antennas are deformed.
- ④ Grease the chains and motors regularly.
- ⑤ Clean the device regularly and thoroughly.

# Appendix





## Indicator Description

Get to know the vehicle's current status by checking the indicators on its smart arms and the vehicle controller. Details are as follows.






Status Indicator	Description
Solid Green 	In operation (route, following, under SDK control)
Breathing Green 	Operation paused
Flashing White (Fast) 	Updating firmware
Solid Blue 	Under remote control
Breathing Blue 	On standby/operation completed
Solid Yellow 	Warning
Solid Red 	Failure

Vehicle Controller RTK Indicator 	Description
Solid Red 	Not searching for satellites, not positioning, no output from board
Flashing Red (Slow) 	RTK timeout over 10s
Flashing Green (Slow) 	Normal
Flashing Red (Fast) 	Exited RTK; no differential signal; no heading
Flashing Green (Fast) 	Satellites less than 16; heading accuracy lower than 2°
Flashing Red & Green 	Initializing/configuring
Flashing Red & Green (Fast) 	Updating firmware

Vehicle Controller 4G Indicator 	Description
Flashing Red (Slow) 	Disconnected from IoT
Flashing Green (Slow) 	Connected to IoT

Vehicle Controller Wi-Fi Indicator 	Description
Flashing Red (Slow) 	Disconnected from Wi-Fi module
Flashing Green (Slow) 	Connected to Wi-Fi module
Flashing Orange (Slow) 	Vehicle controller's Wi-Fi hotspot enabled

## Vehicle Control System Status Indicator ⚡

		Description
Solid Red		Major failure; cannot drive
Solid Green		Vehicle controller working properly
Solid Blue		Under remote control
Flashing Green (Slow)		Vehicle controller in auto (route) mode
Flashing Red (Slow)		Fault warning; driving allowed

## Specifications

### Basic Parameters

Model	3WDFZ-150A2
Control System	SuperX 4 Pro
Net Weight	188 kg
Overall Dimensions	1695×1205×1205 mm
Load Capacity	200kg (excluding payload system)
Protection Rating	IP54
Max. Speed	1.2 m/s
Max. Climbing Angle	15°
Min. Turning Diameter	1 m
Tyre	16" TL rubber tyre
Power Motor Quantity	2

### JetSprayer™

Model	M4RS-150A-R
Rated Capacity of Liquid Tank	150 L
Material of Liquid Tank	PE
Max. Spray Width per Side	6 m
Max. Speed of High-Pressure Atomizing Jet Engine	80000 RPM
Outlet Air Velocity of Atomizing Jet Engine	160 m/s
Max. Speed of Air-Assisted Jet Engine	8000 RPM
Outlet Air Velocity of Air-Assisted Jet Engine	16 m/s

Flow Rate of Dual Pump	4.8 L/min
Atomization Level	60~200 $\mu$ m
Outlet Pressure	1.013 kPa

## Power System

### B13960S Smart Battery

Battery Type	Lithium polymer battery
Rated Capacity	20000 mAh (962 Wh)
Rated Output	48.1V/120A
Max. Charging Current	100 A (5C)

## Communication & Control System

### Agricultural Remote Controller 3

Model	M3ARC3
Effective Isotropic Radiated Power (EIRP)	2.4 GHz SRRC: $\leq$ 20 dBm
Operating Frequency	SRRC: 2.4000 GHz to 2.4835 GHz
Signal Range (no interference/obstruction) <sup>[1]</sup>	800m
Charging Voltage/Current	5V/2A, 9V/1.5A, 12V/1.5A
Ambient Temperature for Operating <sup>[2]</sup>	-20°C to 55°C
Ambient Temperature for Charging	0°C to 45°C
Positioning Accuracy (with good RTK signal)	Horizontal: < 5cm+1ppm (RMS) Vertical: < 7.5cm+1ppm (RMS)
RTK Frequency Band	GPS: L1C/A, L2C; GLONASS: G1, G2; BDS-2: B1I, B2I, B3I; 2, BDS-3: B1I, B3I; Galileo: E1, E5bI; QZSS: L1C/A, L2C

[1]: This is the result of tests conducted outdoors (with no obstruction or interference) in line with FCC standards. It is not necessarily the actual effective range and is for reference only.

[2]: The remote controller's battery performance might be affected when the operating temperature is lower than -5°C .

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