

AgriDock Station

User Manual & Installation Guide

Version 2.0

Complete guide to setup, operation, and maintenance

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1. Safety Information

Important Safety Notice

Read all instructions before operating AgriDock Station. Improper use can result in equipment damage or injury.

Safety Guidelines

- Never operate the station without proper training
- Keep bystanders at least 10 meters away during operation
- Check all safety features before each use
- Ensure proper ventilation around the station
- Do not modify any components without authorization
- Keep the area free of obstacles and debris
- Always wear appropriate safety equipment when performing maintenance

2. Getting Started

What's in the Box

- AgriDock Station main unit
- Power cables and connectors (220V and 3-phase adapters)
- Installation hardware kit (bolts, brackets, fasteners)
- User manual and quick start guide
- Calibration tools and diagnostic equipment
- Warranty documentation and support contact information

Initial Inspection

Upon delivery, carefully inspect the unit for any signs of shipping damage. Check all external components, connections, and seals. Document any issues with photographs and contact customer support within 48 hours of delivery to arrange replacement or repair.

Before You Begin

Estimated setup time: 4-6 hours with professional assistance

Required tools: Basic hand tools, level, measuring tape, multimeter

Experience needed: Intermediate technical knowledge recommended

3. Installation & Setup

Site Preparation

Location Requirements:

- Level concrete or compacted gravel base (minimum 5m²)
- Tolerance: ± 2 cm for optimal performance
- Clear 10m radius from obstacles and structures
- Access to 220V AC or 380V 3-phase power supply
- Clear sky view for GPS reception (no dense overhead structures)
- Adequate drainage to prevent water pooling

Installation Steps

- 1 Prepare the location:** Clear the area of debris. Use a level to ensure the surface is within ± 2 cm tolerance. Mark the footprint using chalk or tape for reference during installation.
- 2 Connect power supply:** Route appropriate power cables to the station location. Use 220V AC for standard installations or 380V 3-phase for larger operations. Install a dedicated circuit breaker for safety.
- 3 Mount the station:** Position the unit at the prepared location. Use provided anchoring hardware to secure the unit. Ensure all bolts are torqued to specification (contact support for exact torque values).
- 4 Install chemical system:** Connect the main tank, inlet/outlet hoses, filters, and refill connector according to the included system diagram. Verify all connections are secure and leak-free.
- 5 Configure electronics:** Set up RTK base station, cellular modem connectivity, and cloud account. Verify all sensors are responding correctly through the diagnostic menu.

- 6 Calibrate sensors:** Run the automated calibration sequence from the AgriDock mobile app. This typically takes 15-30 minutes and is essential for accurate operation.

4. Operation

Daily Startup Checklist

- Check chemical tank levels (should be 80% full or higher)
- Verify battery inventory and charge status
- Confirm GPS signal strength (minimum 12 satellites)
- Run system diagnostics from the app
- Check weather conditions (no storms or excessive wind)
- Verify landing platform is clean and clear

Autonomous Operation

Once properly configured, the AgriDock Station operates completely autonomously. Drones will automatically land, dock with the station, have their batteries swapped, chemical tanks refilled, and be prepared for the next mission without human intervention. Monitor operations via the mobile app or web dashboard.

Manual Controls

Access manual controls through the physical control panel or via the AgriDock mobile app for emergency operations or maintenance tasks. Manual mode allows you to:

- Open/close the docking bay doors
- Manually swap batteries
- Trigger chemical refill
- Run system diagnostics
- Emergency power down procedures

5. Maintenance

Maintenance Schedule

Frequency	Task	Estimated Time
Weekly	Clean landing platform, inspect battery contacts	30 min
Monthly	Replace filters, inspect hoses, test safety systems	1-2 hrs
Quarterly	Professional inspection, sensor calibration	2-3 hrs
Annually	Comprehensive service, replace consumables	4-6 hrs

Common Maintenance Tasks

Cleaning the Landing Platform

Use a soft brush and water to remove debris weekly. Do not use abrasive materials that could damage the precision landing surface. After cleaning, verify the surface is level and dry before operation.

Battery Contact Maintenance

Inspect battery contacts monthly for corrosion or buildup. Clean using a soft, dry cloth or contact cleaner. Ensure contacts are completely dry before inserting batteries.

Filter Replacement

Replace inline chemical filters monthly or when pressure gauge indicates restriction. Always have spare filters on hand for emergency replacement.

6. Troubleshooting

Drone Won't Dock

Symptoms: Drone hovers above the station or lands away from the docking area

Solutions:

- Verify GPS signal strength (minimum 12 satellites needed)
- Ensure RTK base station is active and connected
- Check that landing platform is clear of debris
- Calibrate drone compass if recently moved to new location
- Verify drone firmware is up to date

Battery Not Charging

Symptoms: Battery remains at same charge level after docking

Solutions:

- Clean battery contacts and charging connectors with dry cloth
- Verify main power supply to station (check circuit breakers)
- Inspect battery for physical damage or swelling (replace if damaged)
- Check battery temperature sensors (should not be too hot or cold)
- Review charging logs in the app for error codes

Chemical System Not Refilling

Symptoms: Drone tank remains empty after docking

Solutions:

- Check main chemical tank level (must be at least 50% full)
- Verify inlet and outlet valves are fully open

- Clean inline filter (located near pump housing)
- Inspect all hoses and connectors for leaks or blockages
- Run pump test sequence from maintenance menu

System Offline

Symptoms: Cannot connect to station via mobile app

Solutions:

- Check cellular signal strength (minimum 2 bars required)
- Verify SIM card is properly inserted and activated
- Restart the communication module (power cycle the station)
- Check firewall settings if using WiFi connection
- Verify cloud account login credentials are correct

7. Technical Specifications

Physical Specifications

Specification	Value
Dimensions (L×W×H)	2.5m × 2.0m × 2.2m
Weight	450 kg
Landing Platform	1.5m × 1.5m
Footprint	5 m ²

Power & Battery

Specification	Value
Power Input	220V AC / 380V 3-phase
Power Consumption	3.5 kW (peak), 1.2 kW (idle)
Battery Capacity	8 × 30,000 mAh
Charging Time	60 minutes (full charge)

Environmental

Specification	Value
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Operating Temperature	-20°C to 55°C
Protection Rating	IP67 (waterproof, dustproof)
Wind Resistance	Up to 45 km/h
Humidity Range	10% - 95%

For technical support: support@agridock.com | Phone: +1 (555) 123-4567

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