AgriDock Maintenance Manual

Keep Your System Running at Peak Performance

Version 1.0

Complete maintenance schedules, procedures, and troubleshooting guides

1. Maintenance Schedule Overview

Regular maintenance ensures your AgriDock system operates reliably and safely. Follow this schedule based on flight hours and calendar time—whichever comes first.

Interval	Flight Hours	Calendar Time	Key Tasks
After Each Flight	N/A	Daily	Visual inspection, propeller check, battery storage
Weekly	N/A	Every 7 days	System cleaning, connector inspection, software updates
Monthly	10-20 hours	Every 30 days	Deep cleaning, calibration, battery health check
Quarterly	50+ hours	Every 90 days	Professional inspection, motor assessment, bearing lubrication
Annually	200+ hours	Every 365 days	Major overhaul, component replacement, full diagnostics

💡 **Tracking:** Use AgriDock app's flight log feature to monitor flight hours automatically. Set calendar reminders for scheduled maintenance.

2. Daily Post-Flight Maintenance

After every flight, spend 5-10 minutes performing these essential checks:

Visual Inspection

- ☐ Aircraft frame for cracks, dents, or stress marks
- ☐ Propellers for chips, cracks, or imbalance
- ☐ Motors for unusual noise or burning smell
- ☐ Landing gear for damage or bent components
- ☐ Sensors and cameras for dust or water droplets
- ☐ Battery connectors for corrosion or loose fit

Battery Care

1. **Immediate cooling:** Allow battery to cool for 15-20 minutes after flight before handling.
2. **Check swelling:** Look at battery from all angles. It should be flat and rigid (any puffing indicates damage).
3. **Storage prep:** If not flying next day, discharge to 50% using AgriDock app settings.
4. **Secure storage:** Store batteries in cool, dry location (15-25°C). Never leave in direct sunlight or near heat.

Spray System (if equipped)

- Empty any remaining chemical from tank immediately after flying
- Rinse tank and all lines with clean water at least twice
- Leave system open to air dry

- Never leave chemical residue in the system overnight

3. Weekly Maintenance

System Cleaning (15 minutes)

1. **Body cleaning:** Use soft, damp cloth to wipe aircraft body. Remove dust and debris carefully (avoid joints).
2. **Sensor cleaning:** Clean camera lens and sensors with microfiber cloth. Use lens pen if available.
3. **Connector inspection:** Visually inspect all connectors. Look for bent pins, corrosion, or debris.
4. **Propeller balance:** Spin each propeller by hand. Should rotate freely without wobbling.

Station Cleaning

- Wipe station base and housing with damp cloth
- Clean dock connectors with compressed air (never water directly)
- Remove debris from air vents
- Check that all fasteners are tight

Software Updates

Check for and install updates weekly:

- Station firmware updates (auto-notification on dashboard)
- Mobile app updates via App Store/Play Store
- Controller firmware (if available)

⚠️ **Important:** Do not interrupt firmware updates. Ensure stable power during installation.

4. Monthly Maintenance

Deep Cleaning (30 minutes)

1. **Disassemble battery compartment:** Remove battery and disconnect all connectors. Note cable positions for reassembly.
2. **Clean connectors:** Use isopropyl alcohol (90%+) on cotton swab. Wipe all connector pins gently. Allow to dry completely.
3. **Inspect seals:** Check rubber seals around battery compartment. They should be flexible and not cracked.
4. **Reassemble carefully:** Reconnect all cables exactly as noted. Ensure connectors are fully seated before closing compartment.

Calibration Tasks

> **Monthly Calibrations:** Perform in open field away from buildings and metal objects.

- **Compass calibration:** In app: Settings > Calibration > Compass. Follow on-screen animation (rotate aircraft slowly).
- **Camera calibration:** Fly camera test pattern. In app: Camera > Calibration. Should take <2 minutes.
- **GPS verification:** Check GPS accuracy shows <1.5m error. If worse, recalibrate compass.

Battery Health Assessment

Indicator	Healthy	Warning	Action

Voltage under load	22.0V+ (6S)	20.5-21.9V	Monitor closely, replace soon
Charge time	55-65 min	65-75 min	Battery degrading, schedule replacement
Capacity retained	>90%	70-89%	Reduce flight time per battery
Swelling	None	Any puffing	Stop using immediately, recycle

5. Quarterly & Annual Maintenance

Quarterly Professional Inspection (1-2 hours)

Recommended: Take to authorized service center or perform detailed inspection yourself.

Motor Assessment

- Inspect motor housings for water entry or damage
- Check bearing wear by spinning motor shaft by hand (should be smooth, no grinding)
- Listen for unusual grinding or squeaking during test spin
- Test motor responsiveness under load (through app motor test function)

Frame Structural Check

- Measure frame dimensions to ensure no bending or twisting
- Inspect all welds/joints under magnification
- Check for micro-cracks in arms (common failure points)
- Verify all fasteners are tight with torque wrench if available

Annual Major Overhaul

For systems with 200+ flight hours, schedule comprehensive overhaul:

- Motor bearing replacement
- Propeller shaft inspection and replacement if needed
- Battery compartment seal replacement
- Electrical connector cleaning and dielectric grease application
- Software reimage (factory reset + latest firmware)
- Full system diagnostics and performance testing

Cost Estimate: Annual overhaul typically costs $300-500 per aircraft. Warranty may cover some services.

6. Component Replacement Guide

Commonly Replaced Parts

Component	Expected Life	Replacement Cost	Difficulty
Propellers (set of 4)	50-100 flight hours	$45-75	Easy (5 min)
Intelligent Battery	300-500 charge cycles	$180-250	Easy (1 min)
Motors (per motor)	500+ flight hours	$120-180	Moderate (30 min)
Camera Module	1000+ flight hours	$400-600	Moderate (45 min)
Landing Gear	200+ flights	$80-120	Easy (15 min)

Propeller Replacement (Easy)

1. **Remove old propeller:** Unscrew counterclockwise if right motor, clockwise if left motor.
2. **Clean shaft:** Wipe motor shaft with dry cloth. Remove any debris or corrosion.
3. **Install new propeller:** Screw on firmly until hand-tight. Do not over-tighten.
4. **Verify balance:** Spin propeller by hand. Should rotate freely without wobbling.

Battery Replacement (Easy)

Simply remove old battery from dock/aircraft and insert new battery with correct polarity (red connector toward red terminal).

7. Maintenance Log Template

Print and complete this log to track all maintenance activities:

Date	Flight Hours	Work Performed	Parts Replaced	Next Service
____/____	____	_____	_____	____/____
____/____	____	_____	_____	____/____
____/____	____	_____	_____	____/____
____/____	____	_____	_____	____/____
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