

Jingzhe SLK-5 Electric Multi-rotor agricultural drone

User Manual



Xi'an Wideworldz Aviation Technology Co., Ltd

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Disclaimer

Before using this SLK-5 Multi-Rotor Electric Unmanned Plant Protection drone (hereinafter referred to as SLK-5), please read this disclaimer carefully and, once used, is deemed to be the recognition and acceptance of the entire contents of this disclaimer. The SLK-5 is an excellent multi-rotor pesticide spray system that provides excellent flight characteristics in the case of an autopilot system. Although the autopilot system has tried to keep the aircraft in a safe state when it is energized, it is prohibited to install the propeller during the calibration and parameters setting. Please keep the child away. In addition, when the drone is operated, all personnel must stay 25 meters away from the drone. Xi'an Wideworldz Aviation Technology Co., Ltd is not responsible for any direct or indirect loss or damage caused by the use of this product.

1. Product Overview

1.1. Introduction

SLK-5 Multi-Rotor Electric Unmanned Plant Protection drone is developed by Xi'an Wideworldz Aviation Technology Co., Ltd, and its agricultural spraying system is co-developed with Guangxi Tianyuan Biochemical Co., Ltd. This drone is a highly specialized, integrated and intelligent low-altitude flight agricultural spraying system, mainly used for the pests and diseases control of rice, wheat, corn, soybeans, cotton, major field crops and economic crops. It can effectively solve the current farmland spraying's disadvantage of inefficient spraying, poor quality, labor shortage and operating personnel by pesticide damage and other prominent issues. It is estimated that with the same cost of expenditure, this spraying drone's efficiency is thirty times higher than the traditional artificial spraying efficiency.

2. Functional highlights

This product adopts highly integrated and modular hardware design, which greatly simplifies the assembly, disassembly and transportation work and reduces the difficulty of debugging and

maintenance. Equipped with the our independently developed Orion[®] intelligent flight control system, this drone can realize autonomous takeoff and landing, one-key return, out of control protection, electronic fence and other advanced features, all these significantly enhance the use security and stability, so people who have never operate this kind of drone can operate it skillfully after a simple training. With intelligent flow meter it can achieve precision spray flow control and remote data real-time return.

This is a really professional applicable and easy-operating pesticide spraying drone, Its main features are:

Patented technology highly intelligent Security and stability

Powerful Durable Continuous operation

One-key take-off and landing One-key return Easy-charging

Easy using convenient maintenance

2. Components and description





- 1. Drone body shield 2. Propeller 3. Motor 4. Arm 5. Folding mechanism
- 6. Centrifugal nozzle 7. Pesticide tank fixing screw 8.pesticide tank
- 9. Landing gear 10. Positioning unlock indicator 11--14 Spray pipe line
- 15. Pressure pump 16. Battery connection plugs 17. Anti-ignition power plug
- 18. Battery fastener 19. Intelligent flow meter 20. Intelligent flight control
- 21. GPS module 22. Number sticker

3. Remote control





2. Match the number on the propeller and arms one by one, install the propeller on motors accordingly. (This installation must be gentle without much force)

3. Fill the pesticide tank with needed dosed pesticide and fasten the tank cap.

(Use the funnel with filter screen during filling)

4. Connect the battery to the voltage warner and read the voltage value to ensure that the battery is full and voltage keeps at 25v.

5. Open the drone body shield and put the battery in the middle and fasten with battery fastening belt insert the battery connector plug, but don't connect Anti-ignition power plug, and turn off the drone body shield.



6. Pls make sure that now all levers and switches on remote control are turn off, especially red lever is turn off. (GPS position), then start the remote control power supply. During normal spraying work, GPS / manual mode switch (red lever in picture) must be always kept on GPS position, no any touching.



Remote control power off



Remote control power on

Remarks: GPS / manual mode switch button status as following:



GPS position



Manual position

7. After remote control is turned on, connect it with the ignition power plug and connect the main power supply to the drone and ensure that **all personnel stand 25 meters away from the drone**. After the drone is started, red and green lights will flash alternately for a few seconds then flash together, when the green light is always bright, it means the GPS positioning ok.



8. Wait for the intelligent flow meter registration, after the successful registration centrifugal nozzle began to rotate;

9. Unlocking: push the left lever of the remote control from center the maximum right, push the right lever from center to the downward lowest, keep the levers' position, then the propellers begin to rotate (which means drone is unlocked); Slowly release the left lever back to the center position and slowly release the right lever back to the central location;



10. Takeoff: keep left lever still, push the right lever upward, drone will take off.



11. Operate the drone to the target spraying area and start the spraying work.



12. After takeoff, the drone needs to enter the spraying mode quickly; stopover or hover should be avoided during flight to save the power consumption.

13. After the completion of single spraying operation, turn off the spray system switch, fly the drone to a flat ground and fly down to 1-2 meters high, turn on the "one-key landing" switch, the drone will be landed and locked, turn off the "one key landing" after the propeller stopped rotating. **Disconnect the Anti-ignition power plug first, and then turn off the remote control power supply.**

If you need to start new spraying operation, you can repeat the above steps; (repeat above steps from step 3.)

14. After daily spraying work is completed, **cut off the drone power supply, disassembly the propellers according to the direction arrows.** Clean the propellers and put inside the box.

15. Fill the pesticide tank with clean water, and then turn on the remote control power supply. After the intelligent flow meter is registered successfully, set the intelligent flow meter to "manual mode" and open the "spray". After the pipeline is cleaned and, turns off the "spray" system switch, disconnect the main power, take out the battery, turn off the remote control, and clean the drone surface;

intelligent flow meter setting:

click "set" → "-" (+-select "manual") → "set" → "set" →

16. Pls charge the remote control each day after spraying work.

17. Open the box, put the remote control inside, put the drone on the foam holder, folds the arms, and fastens the drone with belt and store inside the box.

6. Charger operation

1. Connect 220V AC power cable, the charger's LED red light flashes, which means that the

power cord has been connected, the charger standby;

2. Connect the battery balance interface;

3. Connect the main line of the battery; (positive -red line, negative -black line)

4. Press the charging button over 2 seconds to enter the charging mode;

- The red light is always on indicating that it is charging;
- The green light is always on with music, indicating that the charge is finished;

5. Press any key to stop charging and connect to the power supply.

7. Frequently Asked Questions

No.	Problem	Reason	Solution
1	After power is supplied, the electron speed regulator's sound is not same, several electron speed regulator sounds Di-Di-Di or Di-----Di...	Malfunction of electron speed regulator	1 cut offer drone poser supply, retry later.; 2.consult producer
2	After power supplied of drone, GPS positioning costs over 1 minute	New location positioning cost too much time	Re-position or move the drone to nearby place and retry
3	After positioning, remote control cannot unlock	1.remote control is not set to takeoff status; 2.unlocking operation does not last enough time; 3.one-key landing is started	1.check if remote control power supply is normal 2.prolong the unlocking operation time; 3. Turn off one-key landing, then unlock.
4	After positioning, after unlocking, the drone flying faster and faster	1 the accelerator (the right lever) is loosed too fast.; 2. GPS / manual mode	1. Loose the accelerator(the right lever) slowly; 2. switch to GPS

		switch is not at GPS.	
5	After positioning, drone can be unlocked by remote control, when it is GPS mode, drone will fly faster and faster, but only 1 meter high to ground, after accelerator(the right lever) lever is back to middle, drone is still 1 meter high to ground	Overloading of the pesticide tank	Reduce the pesticide weight below the limit
6	drone falls suddenly during flight	Violent lever operation	Operate gently
7	drone loses control, remote control cannot control it	Drone enters the mode of out of control protection	The drone will return to starting point automatically once it flies to set height
8	The drone starts yawing	The direction of the magnetic compass is not parallel to the drone	Contact producer or after-sales
9	during flight, red light is always on, green light flashes	GPS signal is not normal	Land and check
10	No spraying during flight	1.pesticide tank is damaged 2.pipeline is blocked 3.nozzle is damaged	1.change pesticide tank 2.check pipeline 3.change the centrifugal nozzle
11	After power is supplied to remote control, it vibrates and sounds Di-Di- Di- Di- Di	Low battery	1.replace the battery; 2.cahrge the remote control
12	one-key landing repeats	Ground effect	1.keep waiting, do not

			touch the lever of the remote control, keep away from drone; 2. find flat ground for next landing
13	Unlocking can not be done after one-key landing, propeller still rotate	Flight control does not confirm landing	Keep waiting , keep away from drone until it unlocks

Special Note: If drone crashed on the ground, and cannot be locked, the motor is always rotating, how to deal with this extreme situation?

Push the accelerator(the right lever) to the lowest, push the GPS / manual mode switch (red lever) to the manual and then unlock the drone, cut off the power supply until the motor stops after the drone is locked, it is forbidden to approach the drone before the drone is locked.



Appendix

Technical Parameters

Item	Parameters	SLK-5
Basic Indicators	(mm) Dimensions	1160×1160×520
	Max. Unit spraying area	0.67acre/unit
	Daily spraying area	10-13.3 acre
	Maximum pesticide load	≤5.0kg
	Maximum take - off weight	≤13kg
	Relative height range	1-50meter
	Maximum climb rate	1meter/S
	Single battery full load lifetime	12minute
	Cruising speed range	0—10meter/S
control accuracy	Speed control accuracy	±0.5 meter/S
	Relative height control accuracy	±0.5meter
	Relative yaw accuracy	±1meter
	Heading accuracy	±5
	Relative position accuracy	±2meter
Use of the	temperature range	0—60℃

environment	Overload range	$\pm 1g$
Equipment life	Rack life	10 years
	Motor life	≥ 2000 hours
	Battery Life	100~150 cycles
	Electronic equipment life	≥ 2000 hours

Xi'an Wideworldz Aviation Technology Co., Ltd

After-sales [Tel:+86-29-89196083](tel:+86-29-89196083)

Technical consulting: Fax: +86-29-84163989

Add: Hongyuan Building, No.66, 2nd Keji Road, Hi-Tech Industrial Zone, Xi'an China