

Surveying UAV

English technical reference prepared from the Chinese product document. Legacy contact details have been removed. Numeric values marked [verify] require confirmation before ordering or operation.

****Product Manual – SV-S Surveying UAV********1. Product Overview****

This document provides product description and operating instructions for the SV-S Surveying UAV.

****2. Aircraft Specifications****

No.	Item	Content
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1	Power System	Motor
2	Electronic Speed Controller (ESC)	
3	Propeller	
4	Wheelbase	570 mm
5	Open Dimensions	570 mm × 620 mm × 220 mm
6	Folded Dimensions	510 mm × 270 mm × 130 mm
7	Weight	2800 g
8	Number of Motors	4
9	Maximum Output Power (per motor)	430 W
10	Maximum Thrust (per motor)	2.5 kg
11	Rated Payload	[verify]
12	Rated Current	6 A
13	Rated Voltage	24 V
14	Material	Carbon fiber composite
15	Diameter / Pitch	15 × 5.5 inch

****3. Remote Controller – Stick Definitions (SV-S Tethering Remote Controller)****

- **Control Sticks** (Yaw, Throttle, Roll, Pitch): Default left-hand throttle (throttle auto-centers), Mode 2 (American hand).
- **Power Switch**: Press and hold both switches simultaneously for 2 seconds to turn the remote controller on/off.
- **Flight Mode Switch**: 2-position, self-locking (non-return), long lever. Up/Down correspond to: GPS Position Mode (default), Attitude Mode.
- **Return-to-Home (RTH) Mode Switch**: 2-position, self-locking (non-return), long lever. Up/Down correspond to: RTH Off (default), RTH On.
- **Carrying Handle**: For convenient portability.
- **Battery Cover**: Prevents battery from sliding out.
- **D-Ring**: For securing mobile device holder and connecting remote controller strap.
- **Touchscreen**: [function described in original text]

4. Arm and Disarm (Unlock and Lock)

The SV-S has only one arming method. Regardless of Mode 1 (Japanese hand) or Mode 2 (American hand), perform the operation shown in Figure 2-12 to arm, and Figure 2-13 to disarm.

After landing, hold the throttle stick at the lowest position for at least 3 seconds; the aircraft will automatically disarm. After the flight controller calibrates the ESCs, when arming, the motors will start sequentially. Once motor 1 starts spinning, pushing the throttle will cause all motors to spin simultaneously.

- Figure 2-12: Arm (stick movement pattern)
- Figure 2-13: Disarm (stick movement pattern)

5. Compass Calibration

Procedure:

1. Push the throttle stick to the lowest position.

2. Quickly toggle the flight mode switch between the lowest and highest positions approximately 6–10 times until the status LED glows solid blue.
3. Point the aircraft nose forward, hold it level, and slowly rotate it clockwise at least one full turn until the status LED glows solid green.
4. Point the aircraft nose downward, hold the fuselage vertical, and slowly rotate it clockwise at least one full turn until the status LED glows solid white for 4 seconds.

If the status LED glows solid red for 4 seconds, calibration has failed. Repeat steps 2–4 until successful.

(Refer to Figure 2-15 for illustration: throttle stick at lowest, flight mode switch toggled 6–10 times, horizontal clockwise rotation, nose-down clockwise rotation, calibration success/failure indication.)

****6. Level Calibration****

Procedure:

1. Place the aircraft on a level surface, ensuring the fuselage is horizontal and free from vibration.
2. On the remote controller, perform the outward "figure-eight" disarm stick movement and hold for at least 10 seconds until the status LED alternates between blue and green.
3. Release the control sticks. After approximately 10 seconds, the status LED will flash blue once. After approximately 15 seconds, the status LED will flash normally.

(Refer to Figure 2-16 for illustration: aircraft placed level, outward figure-eight disarm held for 10+ seconds, then release sticks.)

If during subsequent flights the aircraft still tilts severely after taking off in Attitude Mode, it is recommended to repeat the level calibration.

****7. Flight Modes and Corresponding Responses****

The SV-S has multiple operating modes. Aircraft behavior varies by mode. Stick input and aircraft response are described below:

| Control Mode | Roll / Pitch | Yaw | Throttle |

|-----|-----|----|-----|

| GPS Mode | Roll/pitch tilt angle is proportional to stick input magnitude. | Yaw rate corresponds to yaw stick input magnitude. | Motor average output corresponds to current throttle value; throttle input has highest priority. |

| Attitude Mode | Roll/pitch tilt angle is proportional to stick input magnitude, but horizontal flight speed is limited to a maximum of 12 m/s. | Yaw rate corresponds to yaw stick input magnitude. | Throttle neutral position maintains altitude; throttle up/down corresponds to ascent/descent speed. |

****8. Disclaimer****

If you have any doubts about the safety of this product, please contact the manufacturer for a technical inspection.

Users must read this manual carefully before using the product. Use of this product constitutes acceptance of all terms in this disclaimer.

This product is intended for users aged 18 years and above. Under normal power supply and correct connections, it provides an excellent flight experience. When adjusting parameters or performing firmware updates, it is strongly recommended to remove the propellers and ensure proper power supply and correct wiring of relevant modules. Always operate away from crowds, hazardous materials, and fragile items.

Shuangjie Technology shall not be held liable for any personal injury or property damage caused directly or indirectly by the following:

1. Failure to assemble or use the product according to this manual.

2. Operating the aircraft while under the influence of alcohol, drugs, fatigue, or in any impaired physical or mental state.

3. Intentionally or deliberately causing harm with the aircraft.

4. Disassembling the product or modifying it with non-Shuangjie accessories, rendering it inoperable.

5. Injury caused by operator error or misjudgment.

6. Injury caused by abnormal operation due to natural wear, circuit aging, or other deterioration.

7. Injury caused by operating the aircraft while knowingly it is in an abnormal condition.

8. Flying in severe weather conditions such as typhoons, hail, or heavy fog.

9. Flying in areas with magnetic interference, radio interference, or government no-fly zones.

10. Flying in low visibility or when line of sight is obstructed.

11. Infringement arising from data, images, or other materials captured using the product.

12. Any other losses not within Shuangjie Technology's scope of responsibility.

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SV-S



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