

## Basic Introduction

## 基本介绍

- The SAVS™ is a micro fixed-wing self-stabilizing flight controller, designed for fixed-wing models with a wingspan of 300-500mm.
- The SAVS™ connects between the receiver and the servos, intervening in the control of the ailerons and elevator to assist in stabilizing the flight.
- SAVS™是微型固定翼自稳飞控，适用于300-500mm翼展的固定翼模型。
- SAVS™连接在接收机与舵机之间，对副翼和升降舵介入控制，辅助飞机飞行。



- The input wires of the SAVS™ should be connected to the corresponding aileron and elevator sockets on the receiver.
- The aileron and elevator servos should be connected to the corresponding output sockets on the SAVS™.

- SAVS™的输入线接在接收机的副翼、升降插座上。
- 副翼、升降舵机接在SAVS™的对应输出插座上。

## Setting

## 设定

Switch 开关	1	2	3	4
On 上	Active Leveling 主动改平模式	Aileron + Elevator 副翼+升降	Elevator Normal 升降正	Aileron Normal 副翼正
Off 下	Stabilization Assist 增稳模式	Rudder + Elevator 方向+升降	Elevator Reverse 升降反	Aileron Reverse 副翼反

- After adjusting the switch positions, power cycle the SAVS™ to apply the changes.
- Models equipped with both ailerons and rudder can only operate in aileron mode.
- 调整开关位置后，需重新给SAVS™通电生效。
- 同时有副翼和方向舵的机型仅可使用副翼模式。

## Installation Sequence

## 安装顺序

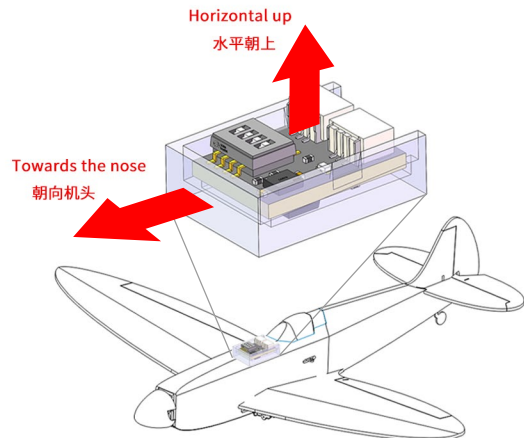
- The servos should be connected directly to the receiver. Power on the receiver and bind it with the transmitter, ensuring the servo arms rotate to their neutral positions.
- Install the servo arms. Power off the system and disconnect the elevator and aileron servos from the receiver.
- Connect the elevator and aileron servos to the SAVS™ and connect the SAVS™ to the receiver.
- Secure the SAVS™ in place and continue assembling the model. Do not power on the system again before the pushrods are fully installed, as moving servo arms could affect the accuracy of the pushrod length.

- 舵机直接连接接收机。接收机通电和遥控器对频，令舵机轴旋转到中位。
- 安装舵机臂。断开电源，断开升降、副翼舵机与接收机。
- 连接升降、副翼舵机与SAVS™，连接SAVS™与接收机。
- 固定SAVS™，并继续组装模型。模型拉杆安装完毕之前不可再次通电，以免舵机臂活动造成拉杆安装长度不准确。

## Mounting

## 固定方式

- The SAVS™ should be mounted horizontally with the front facing the aircraft's nose using the dedicated mounting bracket.
- The horizontal plane of the SAVS™ represents the aircraft's level attitude.
- Both sides/bottom of the bracket can be adhered to the fuselage.
- If the aircraft consistently pitches down or up, it indicates that the installation angle of the SAVS™ does not align with the aircraft's level attitude. Use the trim switch on the transmitter to make adjustments.
- If the attitude deviation is significant, it is necessary to adjust the installation angle of the SAVS™.
- SAVS™水平固定，前端指向机头，使用专用的支架安装。
- SAVS™固定的水平面代表飞机水平姿态。
- 支架两侧/底部均可与机身粘合。
- 如飞机持续低头/抬头，意味着SAVS™的安装角度与飞机水平姿态不一致。使用遥控器微调开关进行修正。
- 姿态偏离严重时需要调整SAVS™安装角度。



## How It Works 工作原理

### Active leveling Mode

- When the transmitter stick is centered, the aircraft automatically maintains a level attitude. Instead of directly controlling control surfaces, the pilot adjusts the aircraft's tilt angle.
- The tilt angle is capped at 40 degrees, reducing the risk of accidents.
- Releasing the stick returns the aircraft to a stable, level position.

### Stabilization Assist Mode

- SAVS™ continuously adjusts the control surfaces to counteract turbulence and external forces during manual control.
- Pilots retain full control, while SAVS™ provides real-time stabilization for smoother flights.

### 主动改平模式

- 当遥控器控制杆处于中立位置时，飞行器会自动维持水平姿态。飞行员不直接控制舵面，而是控制飞行器的倾斜角度。
- 倾斜角度被限制在40度以内，以减少事故风险。
- 松开操纵杆后，飞行器会自动恢复至稳定的水平姿态。

### 稳定辅助模式

- SAVS™在飞行员手动操控时，持续调节舵面以抵消湍流和外界干扰力。控制舵面，而是控制飞行器的倾斜角度。
- 飞行员仍然保持完全控制权，而SAVS™则实时提供稳定性辅助，使飞行更平稳。

## Model Testing 模型测试

- Once the model is fully assembled, power on the system and bind it with the transmitter. Place the model on a flat surface, and the SAVS™ will perform a self-check and start up, taking about 1 second.
- The indicator light remaining on and the automatic movement of the control surfaces when the model is moved are signs that the SAVS™ has successfully started.

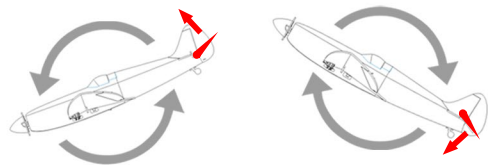
- 模型组装完毕，通电并与遥控器对频。将模型静置在平面上，SAVS™会自检并启动，耗时1秒钟。
- SAVS™启动的标志是指示灯长亮、移动模型时舵面自动活动。

Test the SAVS™ response as follows. Incorrect responses can directly cause the model to crash.

按以下方式测试SAVS™的响应，错误的响应将直接导致模型坠毁。

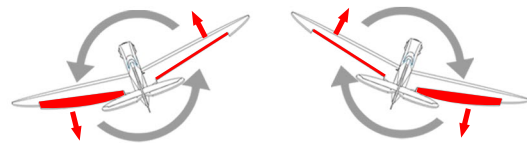
- Tilt the nose of the model downward, and the elevator should automatically deflect upward.

将模型机头向下倾斜，升降舵自动向上翻转。



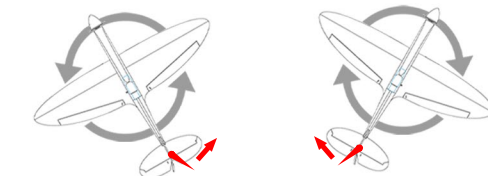
- Tilt the left wing of the model downward, and the left aileron should deflect downward automatically.

将模型左翼向下倾斜，左副翼应当向下翻转。



- (For rudder-equipped models) Rotate the model to the left, and the rudder should deflect to the right.

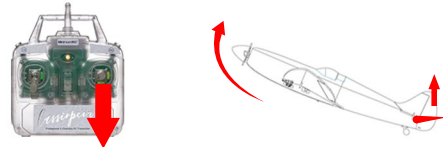
(方向舵机型) 将模型向左旋转，方向舵应当向右翻转。



## Transmitter Test 遥控器测试

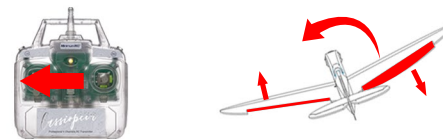
- Pull the elevator stick down on the transmitter, and the aircraft's elevator should deflect upward, causing the aircraft to pitch up and climb.

下拉遥控器升降杆，飞机升降舵向上翻转，此时飞机抬头爬升。



- Push the aileron stick to the left on the transmitter, and the left aileron should deflect upward (the right aileron will deflect downward), causing the aircraft to roll to the left.

向左推遥控器副翼杆，飞机左侧副翼向上翻转（右侧反向），此时飞机向左滚转。



- Push the rudder stick to the left on the transmitter, and the rudder should deflect left, causing the aircraft to yaw to the left.

向左推遥控器方向杆，飞机方向舵向左翻转，此时飞机向左偏航。



- On the Cassiopeia transmitter, you can simultaneously press the LB and RB buttons and adjust the trim switch on any channel to toggle between normal and reverse directions.

在Cassiopeia遥控器上，可同时按住LB和RB按钮并拨动任一通道的微调开关以切换正反。

## Model Test Flight 模型试飞

- After completing all the tests, proceed with the test flight.
- Power on the system and bind with the transmitter, then place the model on a flat surface to allow the SAVS™ to perform its self-check.
- The self-check is complete when the LED remains on, and the control surfaces move automatically.
- The SAVS™ must be completely stationary to perform the self-check—holding the model will prevent the self-check from completing.
- Flying the model before the self-check is finished will result in a crash.**
- To initiate the flight: Push the throttle to 80%, release the model horizontally, and gently pull the elevator stick to initiate takeoff.
- If the model consistently deviates from its intended attitude, use the transmitter's trim adjustments to correct the issue or adjust the SAVS installation angle.
- If the model experiences oscillations or jitters, consider using shorter servo arms (or different mounting holes) or longer control horns.

- 完成所有测试后进行试飞。
- 通电并与遥控器对频，静置模型完成SAVS™自检。
- 自检完成标志：指示灯常亮，舵面自动活动。
- SAVS™必须在完全静止的状态下自检，手持时无法自检。
- 自检完成前进行飞行将导致模型坠毁。**
- 将油门推至80%，模型水平抛出，轻拉升降杆即可完成起飞。
- 如出现持续姿态偏离，可通过遥控器微调修正，或调整SAVS™安装角度。
- 如模型出现抖动现象，可使用较短的舵机臂（孔位）/较长的舵角。