# Arrows Vector Gyro Stabilization System

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The Arrows Vector is a standalone stabilization module (3-axis rate gyro with recovery mode) that can be configured with most aircraft receivers. The Vector is installed in many Arrows aircraft and is programmed specifically for each aircraft. No further programming is needed. Using the Vector in an aircraft other than Arrows aircraft is at the pilot's discretion.

**The Vector System has three available modes: Stability Mode (recovery mode), where the plane rights itself by the pilot releasing the sticks; Off Mode (Vector disengaged); and Optimized Mode (to smooth out flight in windy conditions).**

## Installation Instructions

When installing the Vector, it is placed lengthwise, with the wiring going to the receiver pointed toward the nose of the aircraft, and with the Vector centered (front to back) in the equipment area (under the wing) against the inside side where the fuselage side intersects with the fuselage bottom. The unit must be secured to the plane, the gyro will report nonsense information if it is rattling around the compartment. This is already done for RTF versions.

## Vector Input Wiring Configurations

There are three possible Vector input wiring configurations for three receiver types: PPM (Futaba), PPM Sbus, and PWM “pulse width configuration” (Spektrum). Please refer to the wiring configuration for your application and observe proper connector polarity when plugging into the receiver.

- **Vector PPM (Futaba type) - Wiring configuration inputs**

  Utilizing the wiring coming out of the front of the Vector, follow the standard PPM wiring configuration: Ch1 Aileron, Ch2 Elevator, Ch3 Throttle, Ch4 Rudder, Ch5 Sbus.

- **Vector PPM Sbus – Wiring configuration inputs**

  For the Sbus configuration, use a single wire from the Vector into the Sbus channel of the receiver if your receiver is Sbus-enabled.

- **Vector PWM (Spektrum type) - Wiring configuration inputs**

  Utilizing the wiring coming from the front of the Vector routed to the PWM receiver, the inputs follow the Standard Spektrum sequence: Battery bind, Ch1 Throttle, Ch2 Aileron, Ch3 Elevator, Ch4 rudder, Ch5 Sbus, Ch6 Flaps.

IMPORTANT VECTOR INPUT INFORMATION - The three-wire throttle connector lead coming from the ESC may be plugged directly into the throttle position specified for your receiver type. Arrows RTF versions may have the throttle wired through the Vector.

## Vector Output Wiring Configuration

The wiring outputs from the Vector to the servos, etc. are the same for both PWM and PPM types. Ailerons, Elevator and Rudder servo connectors are plugged into the leads coming from the rearward facing end (output end) of the Vector that provides the stability functions available from the Vector.

## Prepping the Vector for Flight

When the plane powers up, the Vector will power up. Its default mode will be either Optimized Mode or Stability Mode depending on your radio. The control surfaces will move back and forth and the Vector light will come on.

It is important that the airplane is right-side up and stationary when the aircraft is powered up. That position will be recorded in the Vector as “Straight and Level” flight attitude, which determines flight recovery in Stability Mode and neutral attitude in Optimized Mode. You must have the plane right-side up level and stationary, every time you power up the plane.

## Selecting a 3-Position Switch PWM (Spektrum type) Transmitter Switch for your Vector

The Arrows Bigfoot RTF is equipped with a transmitter with a 3-position switch for all three Vector modes. On other Arrows planes, the default is 2-positions. If left on a 2-position switch the Vector will provide both the Stability Mode and the Optimized Mode as the two positions capable of being selected, without an OFF Mode position. In order to have all three Vector Mode positions, including OFF, you must select a 3-position switch through Transmitter Programming on your computerized PWM transmitter.

## Before Flying

Always do a control check to see that the controls are operating in the correct position. Refer to your Model’s manual.

With the Vector activated, test the Vector on each of the available modes, and confirm that the Vector’s response is in the correct direction.

For example:

1) If you raise the right wing the Vector response will be to move the right aileron up to counteract the raising of the wing.
2) In Stability Mode, the right aileron will stay in the up position when the right wing is raised.
3) In Optimized Mode, the right aileron will go back down towards a neutral position if the wing is still raised.
4) In the Off Mode, the Ailerons will not react if the right wing is raised indicating the Vector is not engaged.
5) Test the Rudder and Elevator correction responses with a similar method. Just because they move does not mean they are moving in the right direction. Verify.

Note: The flaps and LEDs are not at all part of the Vector system. The flaps are plugged right into the receiver with the included Y-harness.