

## GA510 Tail-lock Gyro Instruction Manual

The gyro series developed by ASSAN include GA410, GA420, GA510, GA620, etc. This manual is for GA510 High-Performance Tail-lock Gyro.

GA510 is a high-performance tail-lock gyro specially optimized and designed for RC 3D helicopters. Equipped with a big size LCD display, it's also with some outstanding characteristics, such as super friendly man-machine interface, practical useful default/programmable functions, wide type servos adaption and above all it's with good tail-lock performance.

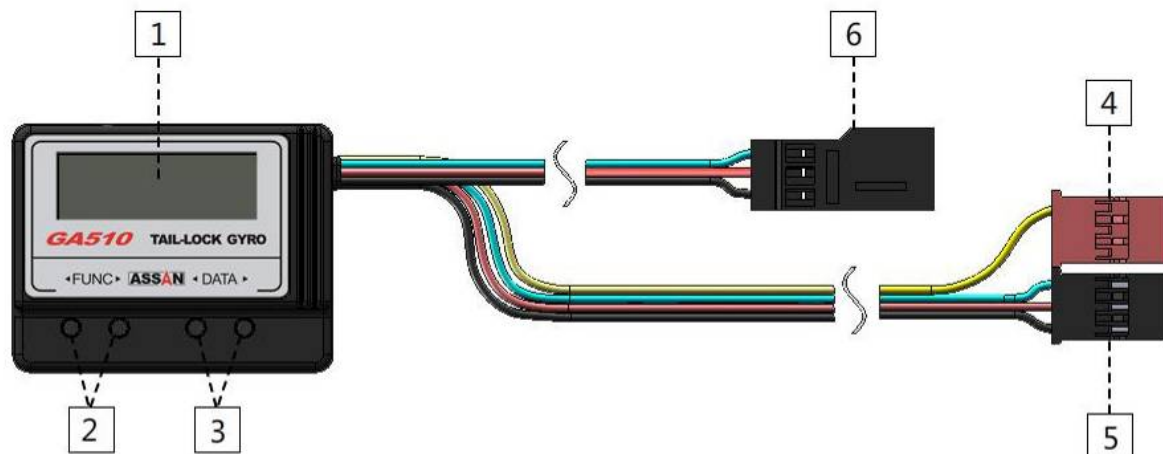
### Main Technical Characteristics

- ◇ Sensor: quartz sensor
- ◇ System control: AVCS (Angular Vector Control System)
- ◇ Dual working condition: Tail-lock mode and Normal mode
- ◇ Big size LCD display: the working status displayed on the LCD, which enables the setting all visually and easily.
- ◇ Support multiple tail servos: 1520us-pulse-width digital servos and new 760us narrow pulse-width servos.

### Specifications

1. Working voltage: DC 3.3 ~9V
2. Working current: 40 mA
3. Working temperature: -5°C ~ 60°C
4. External dimensions: 38 × 30 × 17 mm
5. Weight: 20g

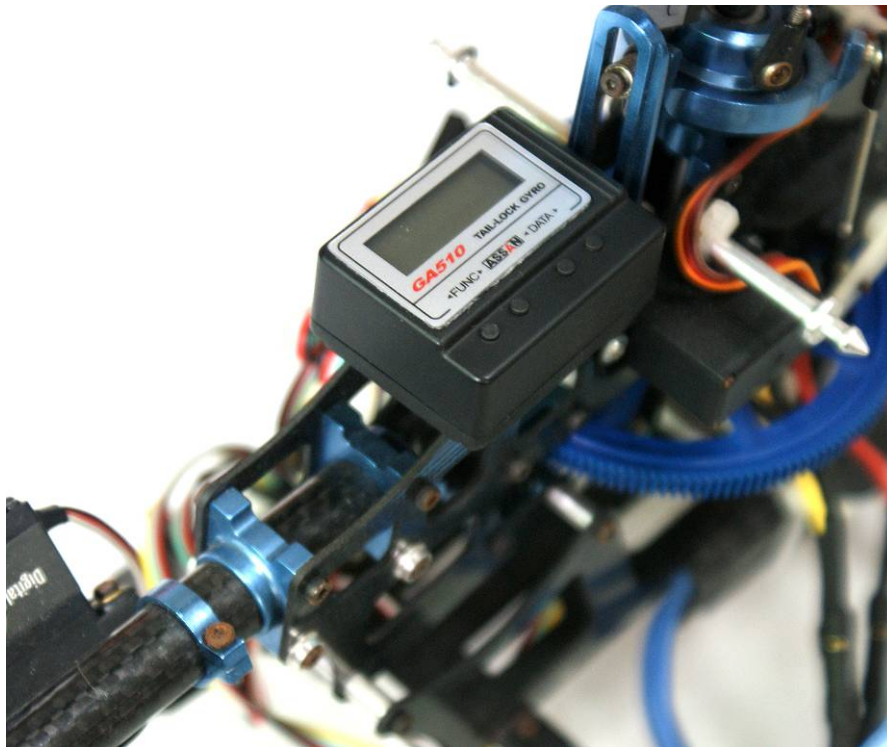
### Functions of components



1. LCD: the main interface displays the current working conditions, gain value, rudder value and receiver voltage, while the setting interface displays all the parameters.
2. “◀FUNC” and “FUNC▶” keys: keep pressing either key for 3 sec. in the main interface to enter the setting interface, and then select the parameter setting interfaces by both of the keys.
3. “◀DATA” and “DATA▶” keys: select the parameters to be set.
4. Gain channel connector: connect to the gain channel of the receiver. Set the gyro gain and switch between the working modes through the channel.
5. Rudder channel connector: connect to the rudder channel of the receiver.
6. Tail servo connector: connect to the tail servo.

**Installation**

When installing GA510 Tail-lock Gyro, please stick the gyro to the stable place of the helicopter with the double-sided tape inside the packing box. The bottom of the gyro shall be perpendicular to the main axis of the helicopter (see the figure below). The G510 Tail-lock Gyro used on the RC electric helicopter shall be at least 10cm away from the motor. Do not install the gyro at the exhaust outlet or any places of heat to avoid the possible disturbance.



**Display and setting**

**1. Power on**

When the gyro's powered on (the transmitter must powered on first), GA510 will display the following interfaces in sequence. Pay attention that before the main interface appeared, don't move the stickers, the gyro and the helicopter anyway.



## 2. Error prompt

If there is any failure during the power-on process, the following error prompt will appear:



The rudder channel is not connected properly or transmitter power wasn't turned on. Please check the connection of the signal wire between the gyro and the rudder channel of the receiver or turn on transmitter power.



The gain channel is not connected properly. Please check the connection of the signal wire between the gyro and the gain channel in the receiver.



Internal error in gyro. If the problem cannot be fixed after turn off the power and restart, please return the gyro to the manufacturer for repair.

## 3. Main interface



Gain value  
Rudder value  
Receiver battery voltage

Working Mode

Two working mode as the follows:



Tail-lock mode



Normal mode

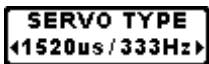
## 4. Function

Press “◀FUNC” or “FUNC▶” for 3 sec. to enter the setting interface, then selected by the two keys.

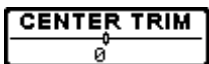
GA510 gyro's functions include:



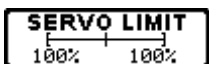
Gyro control directions



Servo types



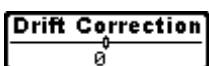
Servo center trim



Two-direction servo limit adjustment



Adjustment of rudder stick response smoothness



Static drift correction

**5. Setting**

**1) Gyro control directions**



The gyro has two movement directions, namely NOR and REV. Lift the helicopter and turn the head of the helicopter left. If the sway of the tail servo is in the same direction when turning right the rudder controller on the transmitter, the control direction of the gyro is corrected set. If the direction is not correct, press “◀DATA” or “DATA▶” key to change the setting value of the control directions. The step above is most important. If the control direction of the gyro is wrong , the helicopter may have the danger of rotating at high speed when taking off, therefore please check it again whether the control direction of the gyro is in correctly set.

**2) Selection of servo types**



The typical marketed tail servos can be classified into 3 different types according to the frame rate / pulse width, see the table below. If you used is not included in the table, please select the type according to the applicable frame rate / pulse width provided by the manufacturer. Be careful that the incorrect selection may cause the damage or decrease the performance or life of the servo.

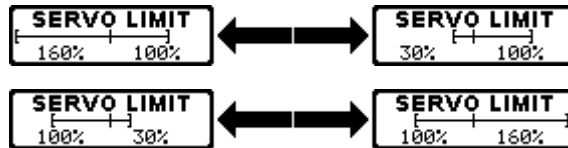
<b>1520us / 250Hz</b>	<b>1520us / 333Hz</b>	<b>760us / 333Hz</b>
JR 810G	Airtionics 94758	Futaba BLS251
JR 2700G	Airtionics 94761	Futaba S9251
JR 8700G	Futaba S3153	Futaba S9256
Sky HDS-577	Futaba S3154	LogicTech 6100G
Sky HDS-877	Futaba S9253	MKS DS8910
	Futaba S9254	
	Futaba S9257	
	Futaba S9650	
	JR 3400G	
	JR 8900G	
	Hitec HS-5925MG	
	Hitec HS-6965HB	
	LogicTech 2100G	
	Robbe FS61BB	
	Sanwa ERG-WRX	

**3) Servo center trim**



Press “◀DATA” or “DATA▶” key to adjust the center value of the servo between -100 and 100. It is recommended to adjust the rocker arm position of the servo at first. After the center position is basically appropriate, trim the center position with this function. Try to avoid the large-scale adjustment on the center of the servo.

**4) Two-direction servo limit adjustment**



Turn the rudder stick full rudder to one direction, then press “◀DATA” or “DATA▶” to adjust the limit to make the servo reach the maximum movement limit of the tail pitch sliding sleeve in this direction, and ensure that no over limit occurs in the process. Set the other direction with the same method. The adjustable range of the two-direction limits is 30% - 160%.

**5) Adjustment of rudder stick response smoothness**



Press “◀DATA” or “DATA▶” to adjust the response smoothness of the rudder stick within the range of 0% - 25%. This function adjusts the “hard” and “soft” feel in the response of the gyro to the rudder stick. The user may adjust the smoothness according to his own control feeling.

**6) Static drift correction**



In Tail-lock mode, if the tail is slowly drifting when the helicopter in hovering, make correction with this function. Adjust with the small setting value for several times to reach the satisfactory hovering static state.

**Have fun!!**