

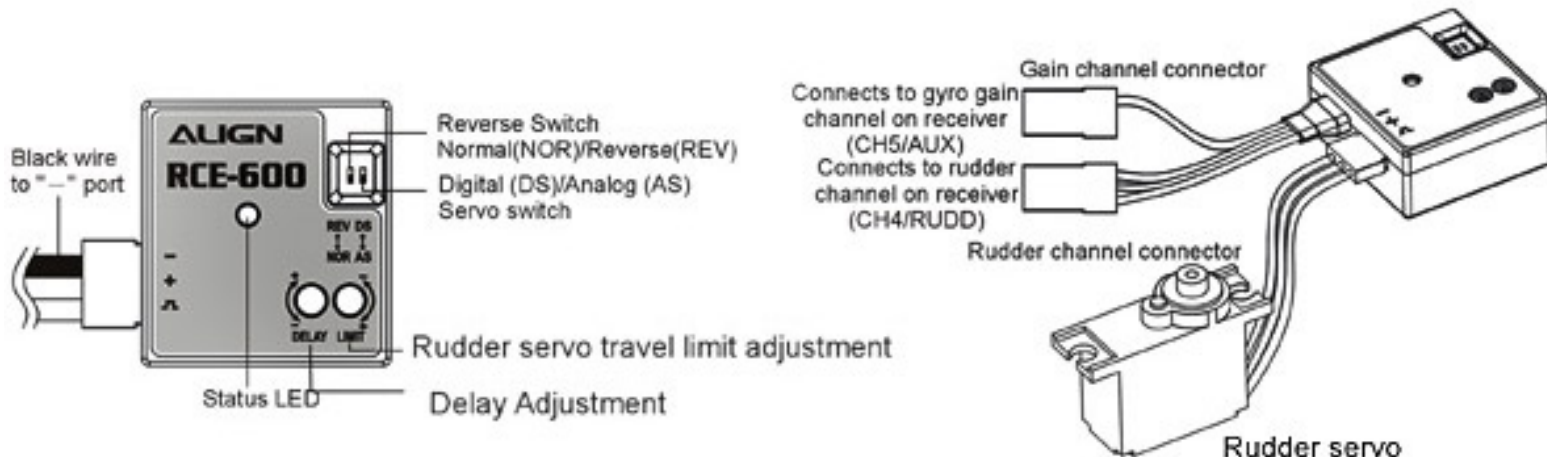
RCE-600 Head Lock Gyro Instruction Manual

Features

- Utilizes AHTCS (Active Helicopter Tail Control System) to compensate any drift caused by wind direction and force, as well as unintended yaw induced by helicopter itself during flight maneuvers.
- Tailor made specifically for use with high speed digital rudder servos. This gyro features high sensitivity and minimal reaction time, fully utilizing the potential of modern high speed digital rudder servos.
- Gyro locking mode and gain can be adjusted remotely from the transmitter.
- Digital/Analog servo switchable.
- Reverse switch.
- Rudder servo travel limit adjustment (ATV).
- Delay adjustment.
- Rudder servo neutral setup mode.

Specifications

- Operating Voltage : DC 4.5~6V .
- Current Consumption : <20mA @ 4.8V .
- Angular Detection Speed : 1600 degrees/sec
- Operating Temperature : 0°C~65°C.
- Operating Humidity : 0%~95%.
- Size : 27.6x26x14.5mm.
- Weight : 9g.
- RoHS certification.

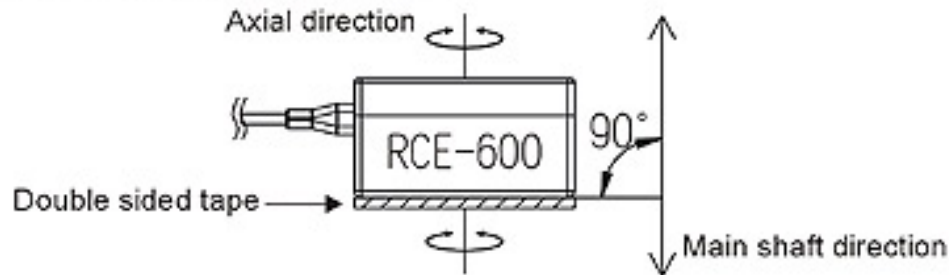


Gain and Rudder channel mapping diagram

Transmitter type	Rudder channel on Receiver	Gain channel on Receiver
JR PPM/SPCM	"RUDD"	"AUX 2" or "AUX 3"
Hitec 、 Futaba PPM/PCM	"CH4"(RUD)	"CH5"
JR ZPCM	"RUDD"	"AUX 2"

Gyro Installation

1. Mount the gyro body on a rigid platform of the heli using the included double sided tape. The ideal mounting area should have good ventilation and away from heat sources.

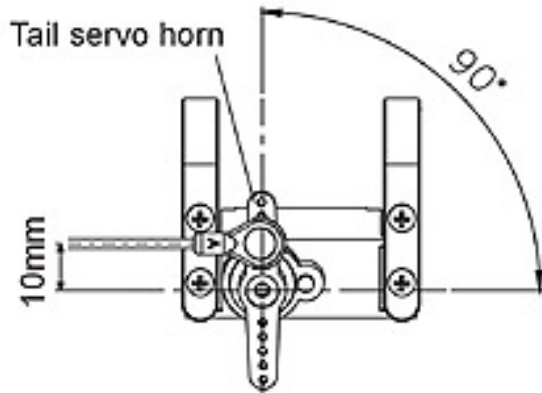


2. To avoid drift induced by erroneous yaw detection, the bottom surface of gyro must be perpendicular (90 degrees) relative to the main shaft.
3. For installation on electric powered helicopters, the gyro should be installed as far away (over 5cm) from the motor and the electronic speed controller (ESC) as possible to avoid interference.

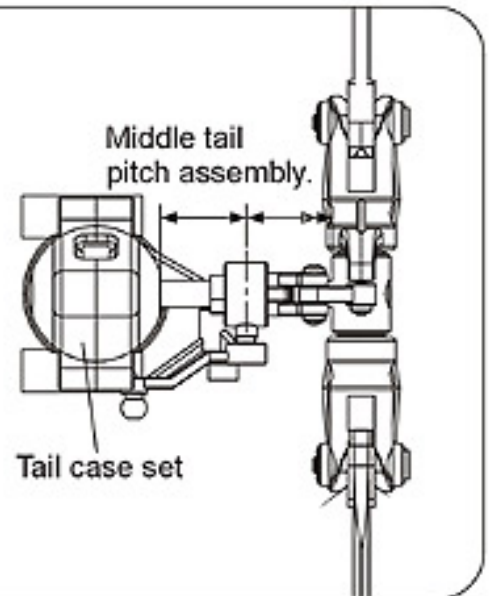
Usage Setting Instructions

1. **Servo Selection:** Servo speed is of paramount importance in maximizing the gyro's performance. Fast servos are able to respond to gyro commands quickly, resulting in the speed and precision of overall system. Due to the high sensitivity of RCE-600 gyro, high speed digital servos such as Hitec HSG-5084MG · Futaba S9257, S9253/9254 are recommended. Select "DS" when digital servos are used, and "AS" when analog servos are used.
Warning: The use of analog servo under "DS" mode will result in servo failure. As a preventive measure, the gyro is set to "AS" as default setting. Please set the proper servo type based on servo used.
2. **Transmitter Settings:** After powering up transmitter, make sure rudder subtrim is zeroed. Then power on the receiver and gyro. The gyro will go through initializing process indicated by flashing LED. Do not touch the heli or transmitter sticks until initializing is complete, as indicated by a steady lit LED. A green LED indicates gyro is in AHTCS locking mode, while red LED indicates gyro is in normal mode.
 Please ensure the following mixing functions (if available) are disabled or zeroed on the transmitter.

● ATS	● Rudder to gyro mixing
● Pilot authority mixing	● Pitch to rudder mixing
● Throttle to rudder mixing	● Revolution mixing
3. **Check the direction of rudder:** move the rudder stick on transmitter left/right and check the helicopter's instruction manual for correct rudder direction. Servo reverse function on the transmitter can be used for reversed rudder.
RCE-600 built-in rudder servo neutral setup mode. Move the rudder stick quickly between full right and left for more than six times. Then release the rudder stick, it will cause the rudder servo to center. Adjust the servo horn so it is perpendicular (90 degrees) relative to the tail rudder control rod. After that, adjust the length of the control rod to middle the tail pitch assembly. After the setting is completed, move the rudder stick to leave the neutral setup mode.



For example, when using S9257 for rudder servo, the second hole counted from the inside is recommended for fixing the linkage ball on the servo horn. Setting the control rod and servo parallel to each other at a distance of 10mm is the best setting.



4. **Setting of gyro direction nor/rev:** Check the gyro direction by moving the heli on the yaw axis while holding by hand. Observe the direction gyro is moving the rudder servo. If direction is incorrect, switch the direction switch on the gyro to correct.
Warning: Flying with reversed gyro will cause the heli to spin out of control. Please double check the direction before attempting to fly the heli.
5. **Rudder Servo Travel Limit Adjustment:** Begin by turning the LIMIT adjustment on the gyro to minimum. Push the rudder stick on transmitter all the way to left or right, and observe the rudder servo. Increase the LIMIT adjustment until full travel of rudder servo is achieved without binding.
 Insufficient rudder servo travel limit will result in decreased rudder performance, while excessive rudder servo travel will overload the rudder servo and cause failures.
6. **Gyro Gain Adjustments:** For radio with GYRO function, gain can be adjusted using this function. The AHTCS (heading lock) gain is set by adjusting the GYRO setting between 50% to 100%, while the normal mode gain is set by adjusting the GYRO setting between 0 to 49%. Actual gain settings will differ amongst different helis and/or servo. The goal is to achieve as high of gain as possible without the tail oscillating (wagging), therefore such adjustment can only be done under actual flight conditions. Suggested initial settings are 70-80% during hover, and 60-70% during idle-up conditions. Gyro gain can be increased or decreased after observing the presence of tail oscillation during flights.
NOTE: For the transmitter with Head lock gain setting value 0 to 100% such as Futaba, the gain setting between 37 to 40% is recommended. For the transmitter with Head lock gain setting value 50 to 100% such as JR or Hitec, the gain setting approx. 80% is recommended.
7. **Delay Adjustment:** Slow rudder servos may cause tail oscillation as it receives the faster signal from gyro. If tail oscillation occurs after hard stop from stationary pirouette, increase the delay value setting until such oscillation stops. Generally the delay value should be as low as possible, and used only to compensate for slower servos. When high speed digital servos are used, the delay function should be set to minimum (no delays).

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