

# RCE-400 Head Lock Gyro Instruction Manual

## FEATURE

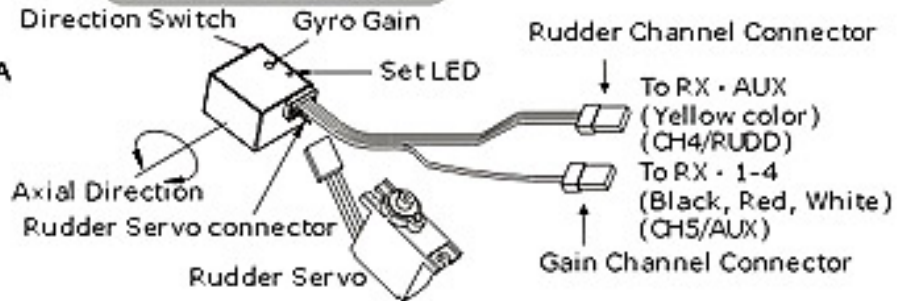
- Dual Mode: Head Lock and Standard Mode
- Built-in Drift Cancel Circuit: automatically dissipate any offset effects of tail rudder causing by the wind and helicopter movements to flight more stably
- Temperature Compensation Circuit: can reduce offset effects causing by great temperature change
- Tail Rudder Normal/Reverse Direction Switch
- Dual Gain Control: adjust the gain control and head-lock mode on transmitter
- New protection outer case design

## SPECIFICATION

- Voltage Used: DC 4.2~7V
- Power Consumption: Approx 33mA
- Operation Temp: -5°C to +60°C
- Dimension: 23.5 x 21 x 15mm
- Weight: 12g
- Accessory: Adhesive foam x 1

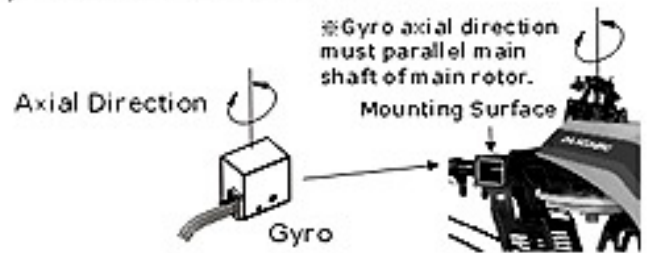
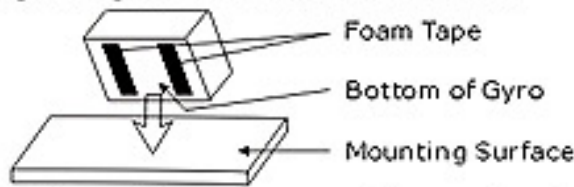
## INSTALLING THE GYRO

## ILLUSTRATION



1. Use the adhesive foam provided to fix the gyro on a stable mounting or reserve place and ensure to set in a ventilatory place, away from vent and heat source.

⊙ When installing the gyro, follow the steps regarding the use of adhesive foam.



A. Find a position at or near the center of mass of the R/C helicopter where there should be little vibration.

B. Clean the mounting surface and the bottom surface of the gyro using alcohol.

C. Using the two pieces of adhesive foam provided, attach on piece at each end of the bottom surface of the gyro, then adhere the gyro onto the mounting surface. Do not use one large piece of adhesive foam that covers the whole bottom of the gyro.

**IMPORTANT:** Do not use double-sided tape without foam padding.

2. Follow illustration for installing the gyro to receiver and rudder servo.

**Single Mode Connections:**

(Only Support "headlock Mode" when single mode connection is established.)

**Step 1:** Connect the rudder servo to the "SERVO" connection at the gyro. An extension may be necessary.

**Step 2:** For ALIGN, Futaba PPM/PCM Radio Transmitter: Connect the cable from "X · 1-4" of the gyro to the "Channel 4" of the Receiver. For JR PPM/SPCM/ZPCM Radio Transmitter: Connect the cable from "RX · 1-4" of the gyro to the "RUDD" of the Receiver.

**Dual Mode Connections:**

**Step 1, Step 2:** same as Single Mode Connections.

**Step 3:** For ALIGN, Futaba PPM/PCM Radio Transmitter:

Connect the cable from "RX · AUX" of the gyro to "CHANNEL 5" of the receiver.

For JR PPM/PCM Radio Transmitter:

Connect the cable from "RX · AUX" of the gyro to "AUX2" + \*\* of the receiver.

**Table of Connections :**

Radio type	RX · 1-4 connect to receiver's	RX · AUX connect to receiver's
JR PPM/SPCM	"RUDD"	"AUX 2" or "AUX 3" + **
ALIGN · Futaba JR PPM/PCM	"CH4" (RUD)	"CH5"
JR ZPCM	"RUDD"	"AUX 2" + **

## SETTING UP

1. Switch on your transmitter.

2. Switch on your helicopter's receiver and DO NOT move the helicopter body until the LED on the gyro lights up. (It takes few seconds to light up.)

3. Set up your transmitter.

- ATS
- Pilot authority mixing
- Throttle to rudder mixing
- Rudder to gyro mixing
- Pitch to rudder mixing
- Revolution mixing

4. Set the direction switch A ↔ B on the gyro to make tail pitch move to the right compensation

5. Gain Control

Single mode: Adjust the gain control -- + on the gyro (by using the small screwdriver to Tune the rotary switch), to obtain maximum performance.

Dual mode: Adjust the gain control on transmitter Gyro gain channel of ATV to obtain Maximum performance.

## TRIM ADJUSTMENT OF RUDDER BEFORE FLYING

In order for the gyro to function properly, it is utmost importance to trim the gyro properly.

1. Set the rudder trim (and sub-trim if available) to neutral.
2. Identify the gyro gain switch position on your transmitter which gives the standard gain mode and the head-lock mode. This can be done by observing the rudder servo behavior by applying full rudder command followed by release: in the standard gain mode, the rudder servo will return rapidly the neutral position when the rudder stick is released, whereas in the head-lock mode, the rudder servo will creep in one direction and tend to remain at its full travel limit. (Single mode connection ignore this step)
3. Set the rudder trim (or preferably the sub-trim) so that the creep in the rudder servo is minimized. You will find that there will still be some slow residual creeping will take 10 to 20 seconds for the rudder serve to full travel.
4. Once this trim position has been found, no further adjustment should be needed. However, some slight adjustment of the tail control linkages may still be needed in order to reduce any offset effects in the standard mode. (This could only be done through flight trials).
5. Select the head-lock mode and hover the helicopter.
6. Applying short stabs to the rudder control and see whether there is any tendency for the Tail to oscillate. Reduce the gyro gain if oscillation is seen. Conversely, increase the gain if no oscillation is seen. (The aim of to use the highest possible gain without introducing Oscillation)
7. Observe, any trim offset in the tail and correct with the rudder trim.
8. Select the standard gain mode and repeat the exercise. In this case, any offset effects should be corrected by adjusting the tail rotor linkages.

### IMPORTANT

- A. If after adjusting the gyro gain with the transmitter and the tail is still hunting slightly move the control link to a different position on the rudder servo disk (the extreme outside fourth position is recommended)
- B. In order to let the gyro adapt to the temperature and humidity of the flying field, it is strongly recommended to leave the gyro and receiver in ON position for at least 5 minutes, then switch on/off to reset the receiver afterward.

### RECOMMENDED RADIO TRANSMITTER SETTINGS SET INHIBIT

SET INHIBIT	TAIL ROTOR PILOT AUTHORITY MIXING SYSTEMS, REVOLUTION, GYRO SENSE, TAIL MIXING
GAIN CHANNEL	CHANNEL 5
GAIN SWITCH	CHANNEL 5
ATV VALUE (RUDDER CHANNEL)	50%(BOTH DIRECTION)
ATV VALUE (GYRO GAIN CHANNEL)	50%(BOTH STANDARD AND HEAD LOCK MODE)
RUDDER TRIM	SUB-TRIM

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