

HG-5000/HSG-5083MG Gyro Combo Quick Start up Guide.  
By Brian Tucker

Thank you for choosing the Hitec HG-5000 high performance micro gyro. Following this guide will help you fully understand all the features of this gyro and allow you to achieve a rock solid tail just like the pros.

1. Connecting the gyro to the servo & receiver

- A. Plug the tail rotor servo into the female connector coming from the gyro (Make sure to connect it in the proper orientation with the black wire matching on both sides).
- B. Plug the connector coming out of the gyro that has 3 wires into the receiver rudder channel slot (Normally Ch 4).
- C. Plug the connector coming out of the gyro that has 1 wire into the receiver gyro gain slot (Normally Ch 5).

2. Calibrating the gyro to your transmitter

When using the HG-5000 for the first time, you'll need to do this simple procedure to calibrate the gyro to your particular transmitter type. Start with the receiver turned off. Turn your transmitter on. Hold the rudder stick all the way to one side in either direction **while turning the receiver power on**. You will see the first 3 LED's light up in succession. Hold it there for 10 seconds. Return the rudder stick to its neutral position (No lights are lit in this phase) and leave it there for 5 seconds, then turn the power to your receiver off then back on again. Calibration is done!

3. Set your Transmitter rudder data as follows. Make sure to set the EPA values the same for both directions.

- A. D/R set to 100%
- B. EPA set to the highest setting. 125% to 150% depending on radio used.
- C. Sub Trim and Trim set to 0% (**Always leave these set to 0%**)

4. The gyro gain setting is done in the transmitter, normally on channel 5. Consult your transmitter's manual for the channel used on your radio type. The light at the top left hand corner of the gyro marked TL (Tail Lock) will light when in heading hold mode. This occurs with 50% to 100% gain set in the transmitter with the higher percentage being the higher gain. Normal Gyro Rate mode (TL light off) will occur from 50% to 0% with the lower percentage being a higher gain. While the gyro is in normal operation the LED that is lit indicates the approximate value of gyro gain the transmitter is currently set too. First LED is 0 ~ 30%, Second LED is 31 ~ 50%, Third through Eighth LED's are ~ 51 - 100%. The scale is not linear.

5. Basic Menu Structure

- A. Push and hold the menu button down for more then 3 seconds to get into menu mode.
- B. Each time you push the menu button it will go to the next menu function.
- C. If nothing is touched for 5 seconds it will reset with the light off. Simply push the menu button again to get to the function you want to set.
- D. Pressing the menu button after moving and holding the rudder stick will increase/decrease data values.
- E. Left will decrease and right will increase values unless the rudder channel in the transmitter has been reversed.

## 6. Servo Type Selection (Servo Speed)

Push the menu button to select the “Servo Speed” LED. Hold the rudder stick over and push the menu button to select the servo type you’re using.

First LED: Hitec’s Gyro Servo Only (HSG-5083MG)  
Second LED: General Fast Digital Servos  
Third LED: Analog Mini Servos

**\*Caution:** Never use the Hitec Gyro servo mode (First LED) with any servo other than Hitec’s optimized HSG-5083MG. This mode of the HG-5000 gyro uses a different signal pulse width incompatible with any other servo product.

## 7. Gyro compensation direction (Direction)

First, make sure the rudder servo moves the correct direction to the stick input. When you move the rudder stick to the right, the rudder servo moves in the direction that would increase the tail rotor pitch to make the nose of the helicopter turn to the right. If it is not correct then reverse the servo direction in the transmitter. Now, pick up the helicopter and rotate the nose to the left and see which way the servo moves. The servo should move in the direction that would increase tail rotor pitch to make the helicopter turn to the right (compensate for the helicopter turning left). If the servo moves the wrong direction then go to the “Direction” function on the gyro with the menu button and change the LED for the correct compensation direction.

**\* To gain optimum performance from the HG-5000 Gyro perform step 8 thoroughly!**

## 8. Servo linkage set up

- A. Activate the standard rate mode (25% gain in the TX recommended).
- B. With the rudder stick at neutral connect the linkage so that the servo horn and control rod are perpendicular (90 Degrees to each other).
- C. Prepare the helicopter for flight and hover it to check if it rotates with the rudder stick in the neutral position. Adjust the linkage of the control rod until the helicopter does not rotate at all.  
**(This mechanical linkage set up is important for proper operation. Do not skip!)**

**\*Caution:** Do not adjust the servo horn using Sub-Trim or Transmitter trim. Always adjust the mechanical linkage, the control rod or servo horn. If you adjust the sub-trim the gyro will recognize the trim change as a signal input. Then the helicopter will rotate even if the rudder stick is at the neutral position.

## 9. Tail Rotor Limit Setting (Servo Limit)

- A. Turn on the “Servo Limit” function using the menu button.
- B. Move the rudder stick until the tail rotor locates at the end of its travel without binding and press the menu button to lock it in. Do this with both left and right end points.

## 10. Pirouette Rate (Rotate Rate)

- A. Activate the “Rotate Rate” using the menu button.
- B. Select TL mode with the transmitter gain around 70% to 80%.
- C. Lift off slowly into a hover and check the pirouette rate.
- D. Adjust the pirouette speed by setting the “Rotate Rate” value from 1 to 8 by holding the rudder stick and pressing the menu button.

First LED:      Slow Pirouette

Eighth LED:    Fast Pirouette

### Gyro Default settings:

- A. Servo Speed:      Third LED
- B. Rotate Rate:      First LED (Slow Pirouette)
- C. Direction:        First LED
- D. Servo Limit:      Left -25%, Right 25%

### Error codes:

First LED Blinks:    Disorder with built in sensor or abnormal input signal.

Second LED Blinks:  No rudder input signal or abnormal input signal.

Third LED Blinks:    No gain input signal or abnormal input signal.