G Y-130 Piezo Gyro Instructions

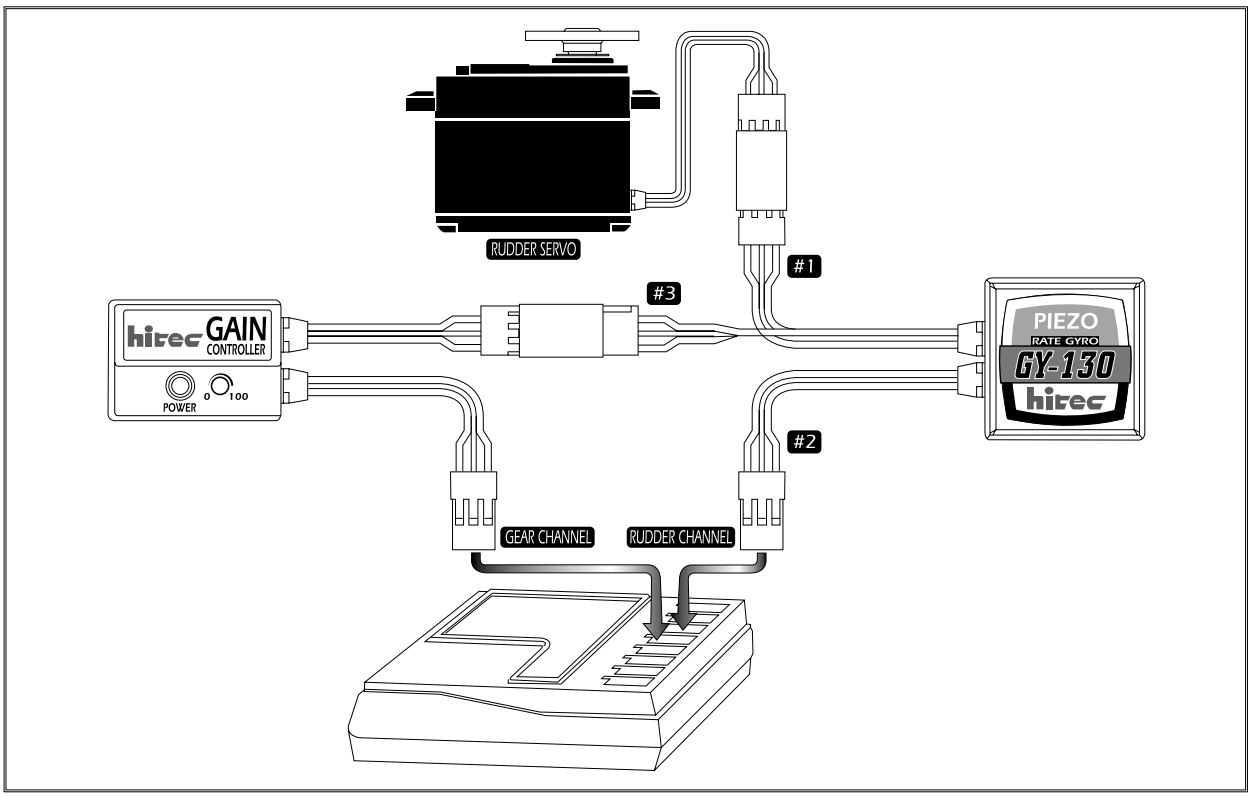
Introduction:

Congratulations on your purchase of the all new single rate, single axis, Hitec GY-130 Piezo Gyro. The GY-130 is designed with a high quality, solid state "Piezo" electric sensor found in most top level gyros. With its compact size and lightweight, the GY-130 can be used in nearly all helicopters and fixed aircrafts. With the addition of the Remote Gyro Gain Control device(part # 44340), the GY-130 becomes a dual rate capable gyro. This allows the user to switch the gyro either on or off in flight, or set the two gains differently, one high, one low then typically by using the fifth channel on most transmitters, switch between these rates while in flight. As with all Hitec products, the GY-130 offers high performance without the high price. Please refer to the instructions below for proper installation and usage.

1) Helicopter Installation:

A. Connections:

The GY-130 has three wires. #1 wire and connector mates with the servo, #2 wire mates with the receiver, #3 wire is a "J" connector that mates with the "J" connector on the optional Remote Gyro Gain Control device (part # 44340).



B. Mounting:

Provided with the GY-130 is a piece of foam mounting tape, attach this to the bottom of the gyro making sure it is secure. Next, mount the unit in the position recommended by the helicopters manufacturer. If there is no mention of this in the instructions, mount the unit in the front part of the radio tray close to the receiver, in a low vibration area. Be sure to leave the neutral, gain and reversing switched accessible for future adjustments.

C. Control Linkage set-up:

Refer to your helicopter s instructions for the correct mounting position. The optimum distance from the center of the servo output shaft to the linkage point is 16 -18mm.

D. Servo arm adjustment:

To obtain maximum performance the servo arm should be at 90 degrees to the helicopters longitudinal axis. If the horn is centered in conjunction with the transmitter trim and the tail rotor is not, the linkage to the tail rotor must be adjusted properly.

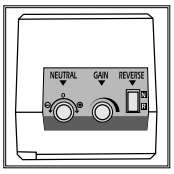
2) Set up and Adjustment:

A. System power up:

To activate the GY-130 turn your transmitter on first, followed by the receiver. (Note: Always perform this procedure in this order. Failure to do so may result in damage to the Gyro and or servos.) The red LED light will light indicating it is active and ready to use.

B. Servo neutral adjustment:
Now that the system is powered up you will need to adjust the neutral point. This is done with the small flat blade screwdriver (included) by rotating the pot in either direction until the servo arm returns to the neutral position established in step 1D. Next adjust the gain adjustment to each extreme. If the neutral position changes, re-adjust. You should be able to get full gain adjustment without the neutral point changing.

C. Gain adjustment:
This setting will need to be fine-tuned for maximum performance by test flying the helicopter. It is recommended you set it to approximately 60% to start and adjust up or down from there.



D. Gyro direction/Reversing switch:
To determine if the gyro s direction is set properly, move the stick on the transmitter to the right and note the deflection. Then pick up the helicopter and quickly move the nose to the left and note the deflection of the tail rotor, it should move the same direction as when the stick was moved to the right. If it is not, change the reversing switch located next to the gain adjustment. (Refer to the diagram below for clarification)

3) Flight trimming and adjustment:

A. Gain value adjustment: Hover
It will be necessary to adjust the tail rotor to maintain neutral heading in hover. This can be done via your transmitter s trim switch. If it is beyond the maximum limits of the trims the linkage will have to be adjusted mechanically to compensate.

Once this setting is achieved, adjust the gain value up 5% at a time until the helicopter begins to "hunt" for center and oscillates from side to side. Once this occurs, reduce the gain value slightly until this symptom goes away. This is your maximum gain setting.

B. Gain value adjustment: Forward flight (Optional)
When transitioning into forward flight if the helicopter starts to "hunt" or oscillate back and forth the gain setting needs to be reduced.

4) Aircraft Installation:

Installation of the GY-130 gyro into a fixed wing aircraft is relatively straightforward. The gyro can be used to help control the elevator for pitch control, rudder for yaw control or ailerons for roll control.

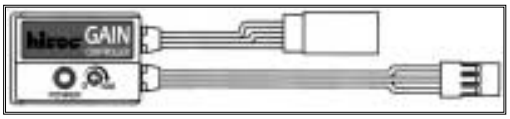
A. Mounting directions
The Axis of gyroscopic influence exists as a function of how the gyro is mounted within an aircraft.
Elevator (Pitch)
Mount the gyro with the bottom of the gyro facing either side of the aircraft.
Rudder (Yaw)
Mount the gyro with the bottom of the gyro on the bottom of the fuselage, as in a helicopter.
Ailerons (Roll)
Mount the gyro so the top of the gyro is facing the tail or nose of the airplane.

Try to mount the gyro so the neutral, gain and reversing switch is accessible.

Please refer to the helicopter installation directions for set-up and operation.

5) Remote Gain Control Accessory

Hitec also offers the optional Remote Gyro Gain Control device(part # 44340). This device will allow the in-flight remote selection of two different gain values (helicopters) or the selection of one gain value and an "off" setting (fixed wing aircraft).



A. Set-up and Adjustment
The wiring of the servo and receiver is the same as the other installations with the GY-130 except the #3 wire (red, black and white) mates to the Remote Gyro Gain Control device and the other wire plugs into the #5 slot in the receiver. Typically this is the "gear" channel and will allow the user to use the "gear" switch to switch between rates or switch the gyro on and off.

In one position, the gear switch accesses the gyros gain adjustment and in the other gear switch position it accesses the Remote Gyro Gain Control device gain adjustment.