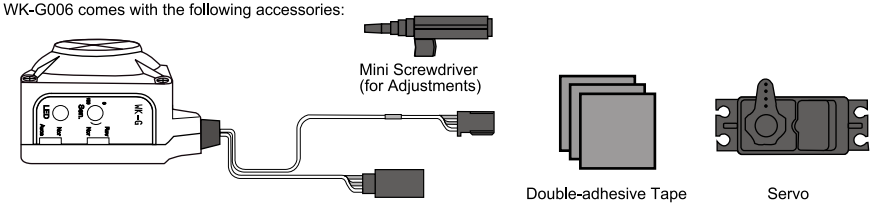
1.0 Foreword

The WK-G006 is utilized the AVCS (Angular Vector Control System) and is of high performance, compact dimension and light weight. It is specially designed for the RC helicopter. The integration of sensor section and control circuit makes the installation easy and convenient. The performance of the gyro is highly related to the servo. The prompter the reaction of the servo is, the better the sensitivity and performance of the gyro are.

2.0 Kit Contents

The WK-G006 comes with the following accessories:

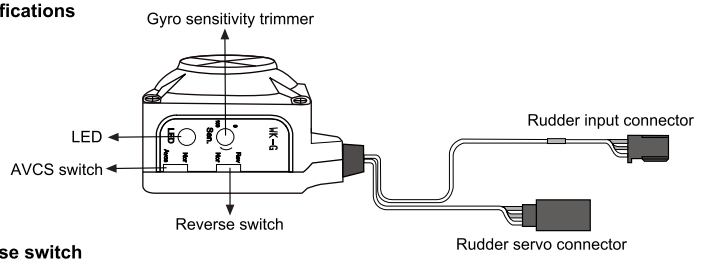


3.0 WK-G006 Technical Features

3.1 Control system: Digital advanced PI (proportional integration)
3.2 Gyro sensor: Piezoelectric sensor
3.3 Operating voltage: DC 5V
3.4 Operating temperature range: - 5 ~ +45°C
3.5 Dimension: 30 X 30 X 23 mm
3.6 Weight: 18g
3.7 Functions: reverse switch, AVCS switch, sensitivity trimmer, servo travel adjustment

4.0 WK-G006 Identifications and Functions

4.1 Identifications



4.2 Reverse switch

Reverse the control direction of the gyro.

4.3 AVCS switch

To switch the AVCS switch to AVCS position is the lock mode; to switch the AVCS switch to the Nor position is the normal mode.

4.4 Gyro sensitivity trimmer

Gyro sensitivity trimmer is used to adjust the gyro sensitivity. Clockwise tuning the trimmer increases the sensitivity, and counterclockwise tuning the trimmer decreases the sensitivity.

4.5 Rudder input connector

Rudder input connector connects to the rudder input channel of the receiver.

4.6 Rudder servo connector

Rudder servo connector connects to the rudder servo.

5.0 LED

Quick flash: the gyro is in the process of initialization when the power is turned on.

LED on: the gyro is in the AVCS mode.

Slow flash: the gyro doesn't receive the signal from the transmitter and the rudder servo is out of control.

Flash twice: in the AVCS mode, the neutral position of the rudder servo current received signal is different from the neutral position which is previously saved in the gyro. Below are the possibities of flash twice:

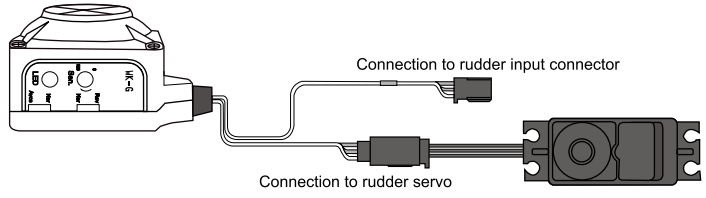
- The rudder servo bellcrank is being adjusted;
- The neutral position of the rudder servo has been drifted, and the neutral position has to be reset.

6.0 Use method

6.1 Mounting to the fuselage

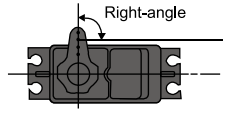
Gyro installation: Be careful when operating the switch and trimmer, because a small switch and trimmer are used. Always operate the switch and trimmer with the mini screwdriver supplied. When mounting the WK-G006 gyro to the helicopter gyro bed, please use the double adhesive tape with the WK-G006. At the same time, please check the bottom of the gyro body is perpendicular to the main shaft of your helicopter. When used with a motor helicopter, mount the WK-G006 at least 10 cm away from the drive motor.

6.2 Wiring diagram



6.3 Inspect the rudder bellcrank

Switch the gyro AVCS switch to the Nor mode. Turn on the transmitter power firstly and then turn on the receiver power. Don't move the servo bellcrank or the helicopter for about 3 seconds because the WK-G006 gyro is initializing. LED will intermittently flash. When the rudder servo is in neutral position, it must be linked at a position to which the servo bellcrank and servo push rod are perpendicular. Adjust the length of the rudder servo bellcrank in accordance with the helicopter manual. Try moving the rudder stick to the left and right, and check the direction of the rudder servo operation. If the rudder servo moves in the opposite direction, use the transmitter reverse function to reverse it.



Note: if the rudder revolution mixing function is activated, put the throttle stick at the neutral position when setting the neutral position in the process of initialization. For the safety purpose, when setting the motor, turn off the motor power or switch off the rudder revolution mixing function, and set the value to zero.

6.4 Gyro sensitivity adjustment

The gyro sensitivity depends on the rudder servo and helicopter. In principle, the faster the rudder servo speed is, the higher the gyro sensitivity has to be set. The faster the main rotor blade rotation is, the higher the rudder servo sensitivity has to be increased. So adjusting the gyro sensitivity is a must. For example, the sensitivity for the aerobatic maneuvers (ST-1, ST-2) must be lower than that at hovering flight. Set the gyro sensitivity trimmer to the approximately 60 – 70% for aerobatic maneuver, and 70 – 80% for hovering flight.

6.5 Inspection of the gyro operation direction

Lift off and hover the helicopter, and shake the helicopter head leftward. The drift direction of the rudder servo should be same with the rudder stick of the transmitter, which moves rightward. Otherwise, reverse the reverse switch in the gyro. **Note**: if setting the gyro operation direction wrong, the helicopter will auto rotate at high speed and result in serious danger!

6.6 Flying adjustment

In the AVCS mode, the WK-G006 automatically sets the rudder neutral position and stops any tail drift. For the first flight or correcting the bellcrank, turn off the AVCS function and adjust the mechanical neutral position. AVCS mode is recommended during flight.

6.7 Rudder neutral adjustment

1. Turn off the transmitter revolution mixing or set the transmitter revolution mixing (pitch or rudder) to 0%.
2. Switch the AVCS switch to Nor position. Turn on the transmitter power and receiver power in sequence. Don't move the helicopter for approximately three seconds because the WK-G006 initiates the data when the power is turned on.
3. Lift off and hover the helicopter, and then adjust the rudder neutral position with the transmitter trim.
4. Gradually adjust the gyro sensitivity just before the helicopter tail starts to hunt.

Note: after the neutral setting is finished, don't adjust the rudder trim again. Otherwise, the neutral position has to be re-adjusted.