Thank you for purchasing the GYC440 RC cars gyro. Compact and lightweight, the GYC440 is designed for RC cars steering control. If the transmitter has 3 or more channels (capable of 3CH adjustment) the gyro sensitivity can be adjusted from the transmitter. Features include simple set-up and S.BUS/S.BUS2 connectivity.

**GYC440 Ratings:**
- Integrated sensor type rate gyro
- Gyro sensor: MEMS vibrating structure gyro
- Operating voltage: DC4.2V to 8.4V
- Current drain: 30mA (excluding a servo)
- Operating temperature range: -10ºC to +45ºC
- Dimensions: 20.5 x 20.5 x 11.0mm (except protrusion)
- Weight: 3.7g

**Set Contents**
- GYC440
- Mini screwdriver
- Sensor tape
- Extension cord (Red)
- Extension cord (Black)
- Wiring strap
- GYC440 initialization and neutral position reading. The GYC440 is initialized when the power is turned on. In the AVCS mode, the neutral position is also read at the same time. If initialization ends normally, the operator is informed by two repetitive sensor error Red 2 flash

**WARNING**
Failure to follow these safety precautions may result in severe injury to yourself and others.
- Check that there is sufficient transmitter battery capacity.
- Analog servos cannot be used while in “digital servo” mode.
- Do not operate the model and transmitter steering wheel for about 3-5 seconds after turning on the GYC440. When shared with the receiver.
- Do not strike the gyro with a hard object. Do not drop it.
- The sensor may become damaged during strong impacts.
- Do not use the GYC440 for applications other than RC cars.
- Do not use trims or mixing in AVCS mode.
- Do not use the GYC440 for applications other than RC cars.
- Do not place gyro near heating equipment (engine, motor, ESC, battery, servo, etc.).

**Mounting to Chassis**
Use the included double-sided sponge tape to firmly attach the gyro perpendicular to the control axis, at a position where there is as little vibration as possible. Make the wiring loose and bundle it with the included magic strap so that it will not interfere with the rod.

* Degrease sensor tape
* Included sponge sensor tape
* Horizontal plane
Adjustments

Servo
Link the servo in accordance with the kit instruction manual. Adjust the linkage rod so that the trim amount is as small as possible.

Setup before a run [Remote gain use]
Gain adjustments are carried out with a transmitter. Follow this procedure when the port 2 of gyro and gain CH of the receiver are connected. (or with S.BUS connection)

1 Run the car in the gyro off and adjust the steering trim (sub trim).

2 Select the appropriate setting for the steering servo that you are using. Servo selection switch of GYC440 should be moved to digital (DG) or analog (AN). For best results, use a digital servo and set the GYC440 at (DG).

*Do not use an analog servo in the digital servo mode (DG). The servo may be damaged. Use an analog servo in the analog servo mode (AN).

3 Turn on your transmitter’s power. Set the gyro sensitivity to about 50% at the NORMAL side (minus rate side) in accordance with the transmitter instruction manual. The <GAIN CH>-graph of the next page is referred to.

4 Receiver ON → The GYC440 requires 3-5 seconds to initialize when the power is turned on. Do not move the car and do not move the steering wheel during this initialization or the gyro may not initialize properly. Once the initialization process has been completed the steering servo will move (a little) several times indicating that the GYC440 is now ready for use. If the neutral has shifted, LED will blink orange. In that case, it reboots.

5 Move the steering wheel to the left and right and perform adjustment at the limit trim so that the servo operation angle becomes the maximum value at which the servo horn does not strike the linkage.

<Limit Trimmer Adjustments>

Steering wheel to full

Limit trimmer

Adjustments

It adjusts to the maximum operation of linkage.

D/R (UP side)

*Limit is symmetrical from a trim position. Limit adjustment after a steering trim adjustment.

When remote gain function is off

Adjust the gyro sensitivity with the GYC440 trimmer. If the port 2 of gyro is not connected, remote gain is automatically set to being inhibited. (S.BUS connection is excluded)

In this case, the limit trimmer is automatically changed to gyro sensitivity setting trimmer. (Limit adjustment cannot be performed. A limit is fixed to 57 right and left.)

1 Select the appropriate setting for the steering servo that you are using. Servo selection switch of GYC440 is changed digital (DG) or analog (AN). For best results, use a digital servo and set the GYC440 at (DG).

*Do not use an analog servo in the digital servo mode (DG). The servo may be damaged. Use an analog servo in the analog servo mode (AN).

2 Gain trimmer halfway to the left from the middle point.

3 Receiver ON → The GYC440 requires 3-5 seconds to initialize when the power is turned on. Do not move the car and do not move the steering wheel during this initialization or the gyro may not initialize properly. Once the initialization process has been completed the steering servo will move (a little) several times indicating that the GYC440 is now ready for use. If the neutral has shifted, LED will blink orange. In that case, it reboots.

4 Using the gyro direction switch, adjust the gyro’s operating direction so that steering moves all the way to the right when the car is turned to the left. Be sure to set the operating direction correctly or the car will not run.

When the remote gain function is not used, the clockwise direction from the center of the sensitivity setting trimmer is the AVCS mode and the counterclockwise direction is the NORMAL mode. At the center position the sensitivity becomes zero and when the trimmer is turned fully to the left or right, the sensitivity becomes 100%.

The sensitivity setting criteria by end point is shown in the figure below.

< GAIN CH >

Gyro sensitivity zero --- LED OFF

AVCS side --- LED red

NORMAL side --- LED green

(Normal operation, but is normal.

Servo movement when the car is stopped

If steering is performed when the car is stopped, the servo will move substantially and will operate up to the limit position. In the AVCs mode, if steering is set to the neutral position, the servo will slowly return to the neutral position. This is different from ordinary operation, but is normal.

Running Adjustment

Actually drive the vehicle and adjust the gyro sensitivity.

When NORMAL mode

1 Drive the vehicle and adjust the gyro sensitivity to a position. If sensitivity is too high, a steering will vibrate. Sensitivity is lowered so that it may not vibrate.

2 The effectiveness condition of a steering is adjusted by D/R or the end point of a transmitter.

The gyro has 2 operating modes: NORMAL mode and AVCs mode. In the AVCs mode, the angle is controlled simultaneously with NORMAL mode rate control (swing speed). The AVCs mode increases straight running stability more than that of the NORMAL mode. Because the feel of operation is different, choose your favorite mode.

AVCS / NORMAL Modes

The gyro has 2 operating modes: NORMAL mode and AVCs mode. In the AVCs mode, the angle is controlled simultaneously with NORMAL mode rate control (swing speed). The AVCs mode increases straight running stability more than that of the NORMAL mode. Because the feel of operation is different, choose your favorite mode.

AVCS

Connects the skidding direction and forcefully maintains the heading.

NORMAL

Counterspins against outside force, but cannot correct the skid direction.

S.BUS System

Unlike conventional radio control systems, the S.BUS system sends operating signals from the receiver to a gyro or other S.BUS compatible device by data communications. The S.BUS compatible device executes only those parts of this data for the channels set by itself. For this reason multiple servos can be connected to the same signal line.

The S.BUS system requires a dedicated S.BUS receiver and S.BUS servo (gyro, etc.).