

## KRG-2 Twin Gyro Manual for KHR-1

- Small and light gyro sensor unit
- 2 servo motors are controlled by this unit. The motion is optimized for biped robot.
- Easy connection for control servo motors.
- It can control servo motors only connection. Program doesn't need to use.

**[What is gyro?]**

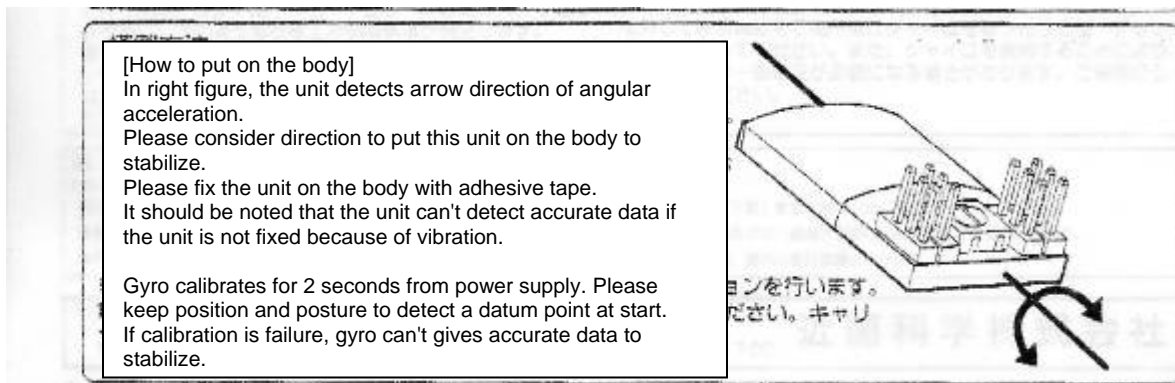
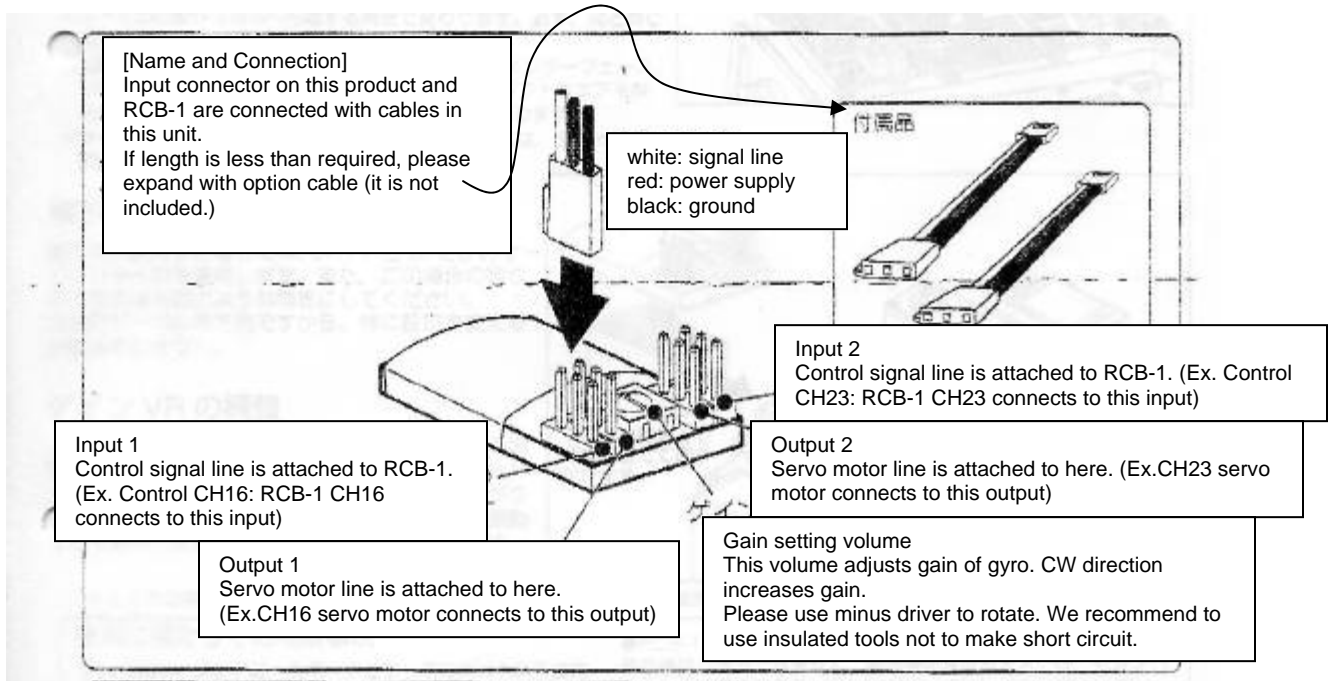
Gyro is famous to control stabilization of helicopters. The unit detects angular acceleration of the body. For robot, the unit is used for balanced standing.

**[Warning]**

This product "Twin Gyro" is classified as the cargo of special note (strategic material strains) by Article 48, 1 of the Foreign Exchange and Foreign Trade Law. If you carry out or export without permission from Japan, you have risk to arrest.

**[Technical remarks]**

This product is examined servo motor and accessories by our products. Combination of third party product is NOT guaranteed.



**[[Examples of Setting]]**

In examples, we assume that KHR-1 is assembled according to hardware manual without options.

**\*\* Forward and Backward**

In this case, we use CH16 and CH22.

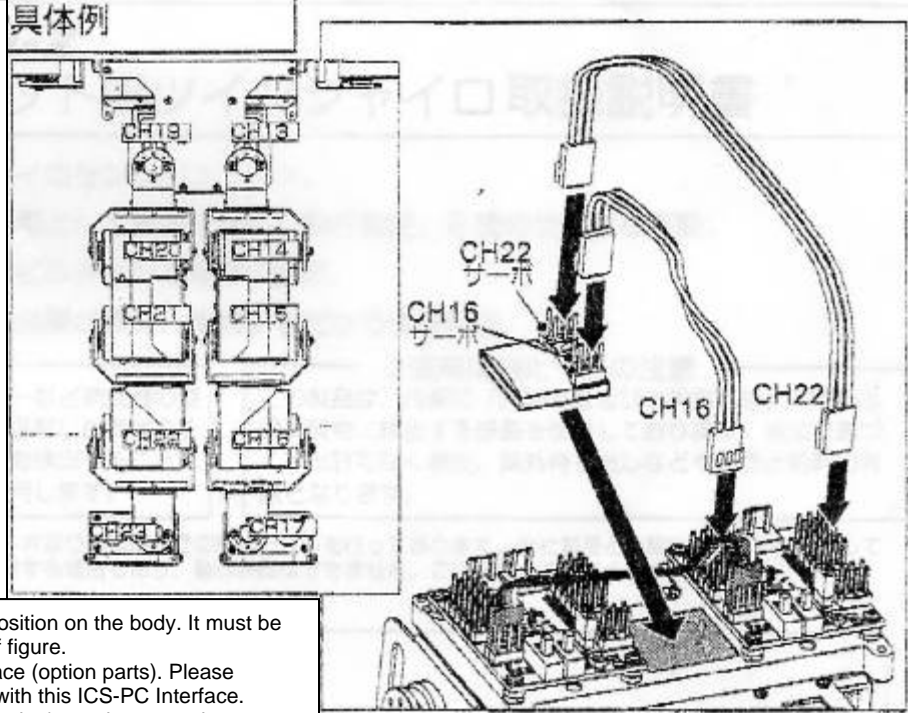
If you move servos same direction on pitch axis which are attached on right and left leg, servos should be moved opposite direction each other.

Therefore pitch axis rotation servos on left leg and right leg should be controled opposite direction when you attach the gyro.

The case of attaching a gyro on a robot such as the figure, you should change the condition of the CH16 servo.

You can change it direction mode to "reverse" by ICS-PC Interface. (Model number: 01018 ICS-PC Interface)

**具体例**



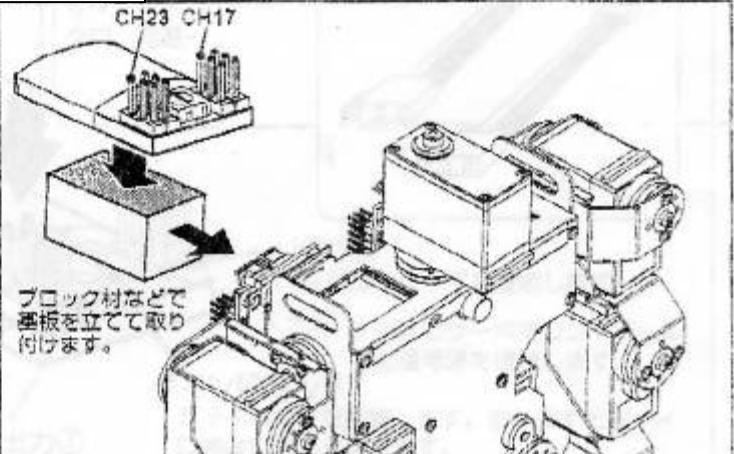
\*Gyro behavior is changed by direction and position on the body. It must be attached to the same position and direction of figure.

\*Setting of ICS requires to use ICS-PC Interface (option parts). Please download control software from our web site with this ICS-PC Interface.

\*If you set servo motor mode to "reverse", you don't need to procedure to change gyro setting to "reverse".

**\*\*Right and Left Direction\*\***

In this case, CH17 and CH23 are used. Please see direction and position in right figure. It is not required to change mode to "reverse" gyro, because left and right servo motor axis are the same.



**\*\*How to adjust gain volume\*\***

In any direction, gain volume must be adjusted to use. Gyro doesn't work if gain volume knob is turned to left end. Right turn increases gain of gyro. Please adjust gain using knob.

It is noted that gyro detects little vibration. Gyro unit works with much current depending on detection.

These examples are reference. You can put the unit on another position, direction and servo motor channels.

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**Restriction of use**

Gyro unit is inserted to RCB-1 and servo motor. Therefore, RCB-1 can't read data from servo motor. It means that KHR-1 can't use teaching function when the gyro unit is attached to channels.

If you want to use teaching function, please remove gyro unit from channels.