

# JR G370A

## High-Frequency Aircraft Rate Gyro INSTRUCTION MANUAL

For Airplane Use Only  
JRPG370A

### NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, Inc. For up-to-date product literature, visit [www.horizonhobby.com](http://www.horizonhobby.com) and click on the support tab for this product.

### Meaning of Special Language:

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:  
**WARNING:** Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

**⚠ WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury. This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability.

Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not attempt disassembly, use with incompatible components or augment product in any way without the approval of Horizon Hobby, Inc. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

### FEATURES

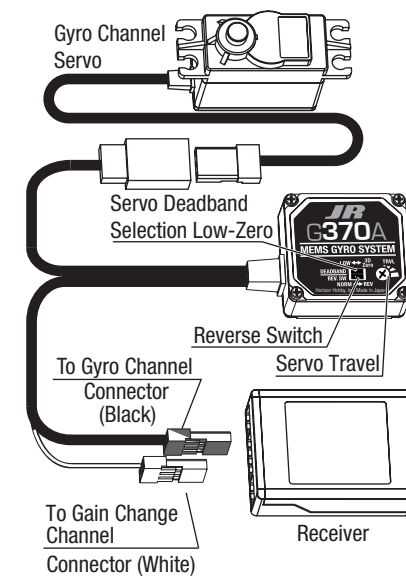
- All-in-one super compact, lightweight gyro for easier handling and installation.
- Anti-drift sensor allows high-performance flight.
- High-speed output. Capable of outputting signals to the servo in a shorter cycle, for finer control.
- Remote gain adjustment. Capable of adjusting the gain from the transmitter.
- Aluminum case for increased durability and suppressing the effects of electromagnetic noise on the MEMS sensor.

- Servo Travel Limiter for easy setup
- Compatible with JR® and most other brands of radio systems.
- **For use with digital servos only.**

### SPECIFICATIONS

Operating Voltage:	4.8 to 6.6V (Common for Receiver)
Operating Current:	70mAh
Size (mm):	10.5(H) x 27(W) x 25.5(L)
Weight:	16 g
Gyro Gain:	Remotely Adjustable
Rate Mode:	Any Primary Flight Control
Others:	Reverse Switch, Servo Deadband Selection (Low or Zero, Servo Travel)

### CONNECTION



### CONNECTION (cont.)

#### Receiver Channel Connections

Rudd—Rudder Control  
Aile—Aileron Control  
Elev—Elevator Control

#### Radio Type Polarity Connections

Please refer to the following polarity color chart when connecting the JR G370A to a brand of radio system other than JR.

**Note:** that if the system is connected incorrectly, the G370A will not function, but no damage will occur to any of the radio components. After successful connection, secure the gyro to the servo connection with a small piece of tape to prevent possible disconnection during use.

JR	Futaba/HR	Airtronics Z
red to red	red to red	red to red
brown to brown	brown to black	brown to black
orange to orange	orange to white	orange to white

#### Final Connections

**Step 1:** Insert the AUX connector (white) to the AUX channel on the receiver from which you would like the gain control to be activated.

For example, if you would like the gain to be adjustable from a rotary or 2-position switch, connect the AUX connector to the appropriate AUX channel on the receiver.

**Step 2:** Connect the desired servo to be used into the Black female connector lead. If multiple servos on the same channel are to be used (e.g., 2 aileron servos, 2 elevator servos, etc.) or the servo lead is not long enough, an optional servo extension or Y-harness can be used.

**Tip:** It is suggested that you apply some tape to the servo plug joint to prevent possible disconnection during flight.

### INSTALLATION

#### Mounting the G370A Airplane Gyro

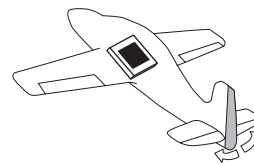
Be sure to thoroughly clean the G370A's mounting area and the aircraft's mounting location with rubbing alcohol prior to attachment.

**Note:** Never install/mount the G370A unit directly to bare wood, as it is possible for it to loosen during flight. Always seal the wood surface with paint, epoxy, or CA adhesive prior to mounting.

Refer to the following diagrams for proper gyro positioning, based on the desired control function for which the G370A is intended to be used.

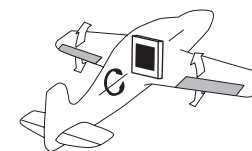
#### Rudder Channel

Mount the G370A with the label facing upward as shown in the diagram below. Please note that the unit must be mounted so the sides of the unit are 90° to the center line of the fuselage.



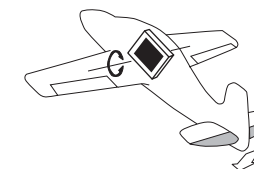
#### Aileron Channel

Mount the G370A so that the label faces either the front or back of the model as shown below. Be sure to attach the servo mounting tape to the side of the unit opposite that of the setting switches.



#### Elevator Channel

Mount the G370A so the label faces either the left or right side of the model as shown below. Be sure to attach the servo mounting tape to the side of the unit opposite that of the setting switch.



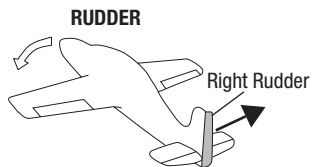
## GYRO/SERVO DIRECTION AND COMPENSATION

It is extremely important to make sure that the gyro is compensating in the desired direction prior to the first flight.

**NOTE:** Be sure the servo is moving in the proper direction. A right rudder command should move the rudder to the right (if you're unsure, seek help from someone more experienced). Reverse the servo direction in the transmitter if necessary.

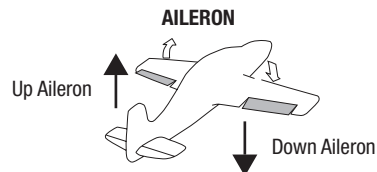
### Rudder

Pick up the airplane and quickly move the nose to the left. The rudder should move to the right as shown. If it moves in the opposite direction, switch the small reverse switch located on the side of the G370A to the opposite direction.



### Aileron

Pick up the airplane and quickly move the right wing panel downward. The right aileron should move in the same direction (down). If it moves in the opposite direction, switch the small reverse switch located on the side of the G370A to the opposite direction.



### Elevator

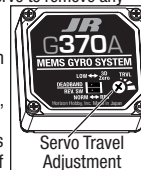
Pick up the airplane and quickly move the Nose of the airplane downward. The elevator should move in the up direction. If it moves in the opposite direction, switch the small reverse switch located on the side of the G370A to the opposite direction.



## SERVO TRAVEL ADJUSTMENT

The G370A features a manual servo travel limiter located on the face of the gyro as shown in the diagram. This manual setting allows you to use a full 150% travel value in your radio setup for the best resolution, while being able to reduce the physical travel of the servo to remove any linkage binding.

The travel adjustment pot increases or decreases the travel of the servo in both directions equally. To set the physical travel of the servo, move the servo via the transmitter stick to its extreme left/right positions while looking at the control surface of the model. If there is visible clearance at maximum travel in each direction, increase the servo travel with the limiter pot. If binding is occurs in one or both directions, reduce the travel limit pot as needed until binding is removed.



Servo Travel Adjustment

## GYRO GAIN SETTING

The G370A features a dual remote gain adjustment that also allows for mode selection between high and low Rate modes based on the gain value selected. The recommended gain setting procedure for airplane use is such that you will be using one gain position for the actual flight gain required (ON), and the second gain position will be set to 0 so the gyro will not provide any compensation (OFF). With this setup method, it is possible to turn the gyro compensation on or off during flight. This is a helpful

safety feature, in that if the gyro compensation is too high, or in the wrong direction, the pilot can turn the gyro off quickly in-flight and resume control of the model. Please refer to the information below for proper gain channel/function selection and suggested starting gain values.

## PRO TIPS

1. It is very important to not have too much gain when first installing your gyro. Start with a low gain setting then slowly increase the gain, gradually approaching the correct amount of gain to suit your model. Using the gyro system menu in the JR X9503, 11X and 12X systems, you can have up to three different rates. A good starting place would be 0%, 20% and 30% gain. The amount of gain you can have is directly related to the speed of your aircraft. The slower your aircraft flies, the more gain you can use. You will need to have either AUX2 or AUX3 available as the gyro gain channel to use the gyro system menu.
2. Once you have established your gyro gain, a good switch to use for gyro sensitivity is the flap switch. This can be assigned through the gyro system menu in X9503, 11X and 12X JR radio systems. As your flaps typically have three positions, you can assign your gyro gain to these positions. Assigning the gyro gain to the flap position will automatically compensate for variations in speed. With the flaps retracted, your aircraft will fly the fastest so the gain needs to be low. Takeoff flap is a mid-speed setting therefore your aircraft will be able to use slightly higher gain, and of course with landing flaps set you can use your highest gain setting as your aircraft is flying much slower.
3. When mounting your gyro make sure it is oriented in the

correct position (see diagram). Make a small mounting bracket and make sure the surface is completely clean to ensure the double-sided mounting tape supplied has good adhesion. Often gyros are used in gasoline and kerosene powered models. The vapors of these fuels can affect the adhesive on the mounting tape. We recommend periodically checking your gyro to make sure it is mounted properly and secure. If your gyro comes loose in flight the results can be quite catastrophic.

4. When first turning on power to your aircraft, make sure to not move the aircraft until the gyro has initialized. This can be determined when the controls which have gyro function move momentarily in the first few seconds after turning both Tx and Rx on.
5. If you have not flown with a gyro before, the feeling may seem a little different than flying without. It is common when using a gyro to have a softer feel around center stick position, similar to using a lot of exponential. To regain the original desired feel we recommend reducing the exponential to regain a positive feel around center stick, and in some cases using negative exponential depending on the gyro gain and feel.
6. When first setting up your aircraft to be used with gyros understand that if you are using multiple channels for a flight control, you will need a separate gyro for each servo. Assuming you are using two channels mixed for ailerons, you will also need two gyros otherwise only one servo will be active with the gyro. We suggest where possible using a Y-lead or MatchBox™ to consolidate each control function to a single receiver input. This will make your installations much simpler when setting up your gyro.

## PRECAUTIONS

- If the gyro is used in an area subject to oil, fuel, or exhaust from the engine, cover the openings for the switches and the pot with tape. Should a foreign substance or water enter the gyro, stop using it immediately and send the gyro to the Horizon Service Center.
- Do not fly in the rain, fog, or in an environment which may cause condensation.
- Do not leave the gyro in a place exposed to extreme high/low temperature or high humidity.
- The gyro controlled surface servo may jitter slightly while sitting on the ground, this is normal.
- To adjust Servo Travel, use the supplied plastic screwdriver. Use of a metallic screwdriver could damage the gyro.
- Install the gyro with some slack in the leads so they are not strained during flight. If the wires are strained it may cause the gyro body to move or fall off during flight, making the model uncontrollable, resulting in a crash.
- If the gyro is dropped, DO NOT use the gyro, send the gyro to the Horizon Service Center.
- Check the airframe and voltage of battery packs prior to every flight. Their failure may result in a serious accident.

## WARRANTY AND REPAIRS

### 3 Year Limited Warranty

#### What this Warranty Covers

Horizon Hobby, Inc., (Horizon) warrants that the Products purchased (the "Product") will be free from defects in materials and workmanship for a period of 3 years from the date of purchase by the Purchaser.

#### What is Not Covered

This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, or (v) Products not purchased from an authorized Horizon dealer.

OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

#### Purchaser's Remedy

Horizon's sole obligation and purchaser's sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole

discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.

#### Limitation of Liability

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

#### Law

These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

#### WARRANTY SERVICES

##### Questions, Assistance, and Services

Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact Horizon directly. This will enable Horizon to better answer your questions and service you in

the event that you may need any assistance. For questions or assistance, please direct your email to [productsupport@horizonhobby.com](mailto:productsupport@horizonhobby.com), or call 877.504.0233 toll free to speak to a Product Support representative. You may also find information on our website at [www.horizonhobby.com](http://www.horizonhobby.com).

#### Inspection or Services

If this Product needs to be inspected or serviced, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at [www.horizonhobby.com](http://www.horizonhobby.com) under the Support tab. If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

**Notice: Do not ship LiPo batteries to Horizon. If you have any issue with a LiPo battery, please contact the appropriate Horizon Product Support office.**

#### Warranty Requirements

**For Warranty consideration, you must include your original**

**sales receipt verifying the proof-of-purchase date.** Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

#### Non-Warranty Service

**Should your service not be covered by warranty service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost.** By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website [www.horizonhobby.com/Service/Request](http://www.horizonhobby.com/Service/Request).

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Champaign, Illinois  
61822 USA  
Online Repair Request visit:  
[www.horizonhobby.com/repairs](http://www.horizonhobby.com/repairs)

Horizon Product Support  
(All other products)  
877-504-0233  
4105 Fieldstone Rd  
Champaign, Illinois  
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[productsupport@horizonhobby.com](mailto:productsupport@horizonhobby.com)

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