



**FOR  
HELICOPTER  
USE ONLY**

**JRPG7000T**

**JR<sup>®</sup>**

**G7000T**  
**Extreme**  
**Tail Lock Gyro**  
**Instructions**

For PCM use only with JR 8700G servo

## Features

- No moving parts for a nearly unlimited service life
- New Silicone Ring Sensor for drift-free operation and extreme holding power
- Extreme Tail Lock and Rate modes
- Auto Trim function automatically sets the rudder trim position for zero drift when the gyro has completed the 3-second power up test.
- Manual dual gain control for easy setup
- Adjustable Tail Lock Holding Gain values for the ultimate in fine-tuning
- Dual Direction Servo Travel Limiters for easy setup
- High Frame Rate design for use with Digital/Super Servos only
- Silver/chrome sensor case finish to isolate RF & dissipate heat
- Battery voltage indicating LED makes checking the battery voltage easy
- Compatible with JR® and most other brands of radio systems
- Designed for use with PCM receivers and JR S8700G Servo only

## Specifications

Operating Voltage:	..... 4.8V–5.1V (regulated) only
Dimensions:	
Sensor:	..... 18 x 30.5 x 30.5mm
Amplifier:	..... 19 x 40 x 52mm
Weight:	..... 50 g
Gyro Gain:	..... Remote adjustable
Gyro Modes:	..... Remote Tail Lock/ Rate Mode selection
Servo Travel Limiter:	..... Dual Left/Right Manual Pots

## Introduction

JR's latest gyro, the G7000T, utilizes a new state-of-the-art Silicone Ring Sensor for outstanding holding power and drift-free operation.

The G7000T offers extreme tail lock holding power, and is designed specifically for helicopter use on the yaw (rudder/tail rotor) axis only.

The G7000T offers an additional and unique tail lock gain adjustment feature that allows the pilot to fine-tune the strength of the tail lock holding gain to match the pilot's individual flying style and equipment.

The G7000T's multi case design provides easy installation in a wide variety of models.

It is important to note that the operational features of the G7000T are very different from those of other gyro systems. Many current settings, including the travel volume, exponential, dual and rates must all be changed from their previous normal settings in order to achieve the desired tail rotor/response and maximum performance that the G7000T has to offer.

Carefully read these instructions so you will fully understand and become comfortable with the functions and operating characteristics of the G7000T prior to installation and initial test flights.

## G7000T Indicator LEDs

### \*BATT indicating lamp

Green is indicated when the battery voltage is over 4.7V.  
Orange is indicated when the battery voltage is between 4.7V – 4.3V.

Red is indicated when the battery voltage is below 4.3V.

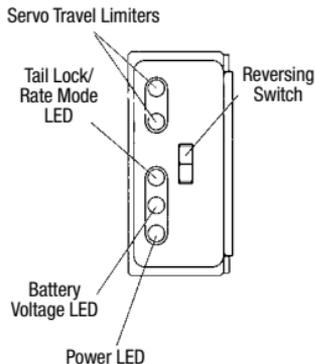
### \*Mode indicating lamp

Green is displayed when Tail Lock mode is selected.

Red is displayed when Rate mode is selected.

### \*Power indicating lamp

The Red LED is on for approximately 3 seconds after the power turns on and then it changes to green, indicating that it is ready for use. Please do not move the helicopter (gyro sensor) or the stick of the transmitter while the gyro is in initialization (red) mode to avoid a neutral offset condition.



## Mounting the G700T

Be sure to thoroughly clean the G700T's mounting area and the helicopter's mounting location with rubbing alcohol prior to attachment.

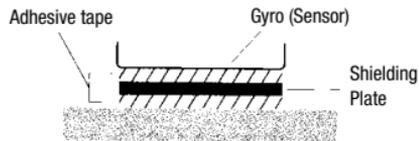
**Note:** Never install/mount the G700T sensor directly to bare wood as it is possible for it to loosen during flight. Always seal the wood surface with paint, epoxy, or CA adhesive prior to mounting.

## Metal Shield Plate for SRV Gyro (Option)

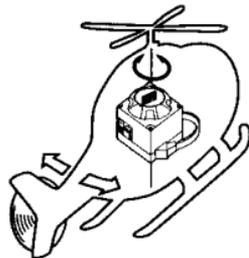
This Shield Plate alleviates the potential for electro-magnetic noise caused by devices such as servos, electric motors, ESCs, etc.

### Installation

Set the Shielding Plate between the Gyro (Sensor) and the mounting surface of the helicopter using the included adhesive tapes. Please follow the mounting suggestions below for additional mounting information.



Mount the G700T's sensor and amplifier with the labels facing upward. Please note that the sensor unit must be mounted so the sides of the unit are 90° to the center line of the fuselage.



# Connections

(1) JR 8700G "Digital" Servo

(2) Connection Port

(3) PCM Receiver

(4) G7000t Gyro Sensor

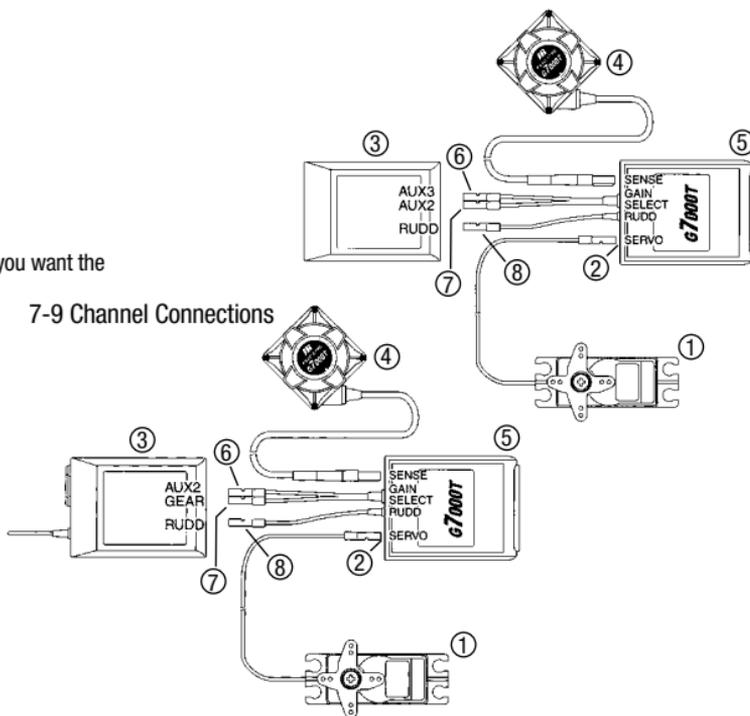
(5) Amplifier

(6) White Connector –  
Connect to AUX channel from which you want the  
gain to be adjusted.

(7) Connect SELECT to channel  
to which you would like the modes  
(Tail Lock/Rate) to be adjusted from.

(8) Receiver Rudder –  
Connect to the Rudder  
(Tail Rotor) channel of your receiver.

## PCM 10 Connections



## Radio Type Polarity Connections

Please refer to the following polarity color chart when connecting the JR® G7000T to a brand of radio system other than JR. Please note that if the system is connected incorrectly, the G7000T 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.

### Radio Type Polarity Connections

JR	Futaba/HRC	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

Connect the JR G7000T Gyro to your radio system.

**Step 1:** Insert the AUX connector (white) to the AUX channel on the receiver as follows:

**PCM 10 Series: AUX 3 Channel**

**7-to 9-Channel Systems: AUX 2 Channel**

**Step 2:** Connect the desired servo to be used into the Black female connector lead labeled "Servo."

**Step 3:** Connect the black connector labeled "Select" to the AUX channel on the receiver as follows:

**PCM 10 Series: Aux 2 Channel**

**7-to 9-Channel Systems: Gear Channel (CH5)**

## Setup

### Initial Gain, Travel Adjust, Dual Rate, and Expo Settings

Please use the following settings as a starting point for initial test flights. After some experience and flight time is gained, these values can be adjusted to suit your preference.

#### Travel Adjust

Left Rudder .....150%

Right Rudder .....150%

Dual Rates.....Low Rate 60% /High Rate 100%

Exponential Values .....30%–60%

Gyro Gain Values .....Hover: 65%–80% Stunt: 40%–55%

## Transmitter Neutral Settings

Before turning on the power to the G7000T, please first make sure that all Rudder and Sub Trim settings in the transmitter software have been reset to a 0 default. Please also make sure that all Revolution mixing has been removed, unless you will be using the G7000T in Rate mode.

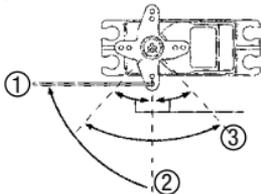
**Note:** No Revolution mixing can be present while using the G7000T in Tail Lock mode, as severe neutral changes will occur.

## Servo Arm Position

- ① Rudder Servo Rod
- ② 90°
- ③ Servo Travel = Same servo travel

### Rudder Servo Linkage

Adjust the rudder servo linkage. Remove the servo arm and replace it so it is exactly 90 degrees to the tail rotor pushrod. Ensure the tail rotor has the proper pitch value when the linkages are connected. Also make sure to adjust the length of the servo arms and LIMIT volume to prevent an excess travel of the linkages. There are 2 limiter pots that can be adjusted separately, left and right, however, please try to make these adjustments as symmetrical as possible to avoid a potential control balance condition.

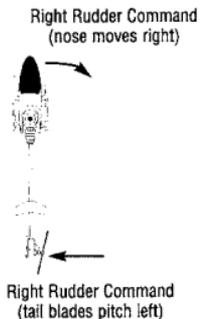
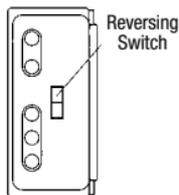


## Gyro/Servo Direction and Compensation

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

**Step 1:** Confirm that 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 servo reversing function if necessary.

**Step 2:** Now pick up the helicopter and quickly move the nose to the left. The rudder should move to the right as shown. If it moves in the opposite direction, move the small Reverse Switch located on the end panel of the G7000T Amplifier.

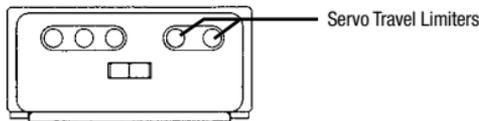


**Note:** When the reversing switch on the gyro is changed, this could also reverse the direction of the servo. If the gyro reversing switch is changed, it will be necessary to retest to confirm proper operation.

## Servo Travel Adjustment with the Travel Limiter Pot

The G7000T features both Left and Right manual servo travel limiter pots located on the end of the Amplifier unit 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 in each direction to remove any tail linkage binding.

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 tail pitch control slider on the back of the model. If there is visible clearance at maximum travel in each direction, increase the respective servo travel limiter pot until maximum travel in each direction is achieved. If binding is occurring in either direction, reduce the travel limit pot for the desired direction as needed until binding is removed.



## Tail Lock/Rate Mode Selection via AUX Channel

### Channel Selection

**PCM 10 Series:** Aux 2 Channel

**7-to 9-Channel Systems:** Gear Channel (CH5)

Unlike most gyro systems, the G7000T's design utilizes a separate AUX channel for activation and adjustment of the 2 modes of operation: Tail Lock and Rate mode. The second AUX channel for the Mode selection must be connected to an auxiliary channel of the receiver and adjusted to insure proper operation of the G7000T.

## Tail Lock/Rate Mode Selection via AUX Channel (continued)

### TAIL LOCK Indicating Lamp

Green: Tail Lock Mode

Red: Rate Mode

### TAIL LOCK Mode and Strength

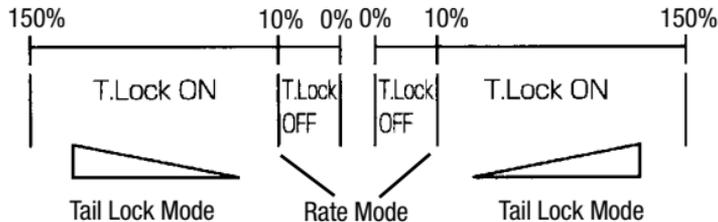
As you can see from the diagram below, the G7000T is designed so that if assigned a Travel Adjust value of 11–150, the G7000T will be in Tail Lock Mode (Green LED). The value within this range can be altered, and will increase/decrease the strength of the Tail Lock function. A value of 25 would give a very low Tail Lock strength, allowing the model to “weathervane.” A value of 150 would be the maximum Tail Lock strength, and would prevent any “weathervaning” of the model in flight. When accessing the AUX channel from a 2-position switch, the pilot can choose to have 2 different percentages of Tail Lock gain that can be accessed during flight. If using a rotary switch, the pilot can have a proportional Tail Lock gain adjustment during flight.

The recommended starting value for the Tail Lock gain is between 80–100%. Adjustment can be made during flight to achieve the desired feel.

Please also note that an increase in Tail Lock gain can also at times cause a “hunting” condition, requiring the need for the actual gain value to be adjusted.

### Rate Mode

As you can see from the diagram below, when given a Travel Adjust value of between 0–10%, the G7000T will be placed in the “Rate” mode (Red LED) position, and will function as a pure Rate gyro. When using the G7000T in Rate mode, Tail Rotor Mixing (or Revolution Mixing) is suggested to achieve the best performance. Please refer to your radio instruction manual for more information on Revolution Mixing.



## Gyro Gain Adjustment

As mentioned, please use the following gain values as a starting point, and adjust these values as needed during test flights for best performance:

Hover: 65%–80%

Stunt: 40%–55%

Please note that if you can run more than 95% gyro gain in Hover mode, it is suggested that the servo arm control ball position be moved out 1 hole position for improved performance. Please note that the values above are just starting ranges, and your final values may vary from this due to your model's mechanical specifications, as well as your desired style of flying.

### Channel Selection

**PCM 10 Series: AUX 3 Channel:** Gain values can be set using the Travel Adjust values, or the Code 44 Gyro Sens function.

**7-to 9-Channel Systems:** AUX 2 Channel: Gain values can be set using the Travel Adjust values, or the Gyro Sens function.

## Additional Notes

\* The G7000T will not develop a stable neutral on power up if subjected to a sudden temperature change. Please place it outside of the car/house for 10 minutes before initial power up so that the sensor has time to adjust to the current outside temperature.

\* After turning on the transmitter and the receiver, please make sure the helicopter and the rudder switch remain totally motionless for 3 seconds. This is to store the exact neutral position digitally. If the gyro is moved accidentally within 3 seconds, please turn off the receiver SW and try it again.

\* On static (bench) tests, the rudder servo will reach its full travel position when the stick is 1/2 way through its full travel. This action is normal, and the servo will react in a linear fashion with no dead spots during flight.

\* Too much tail lock may reduce yaw rate and cause a reduction in pirouette rate and response.

\* Please check the sensor adhesive tape regularly and replace it as needed if any deterioration or cracking is noted.

## 3-Year Warranty

Your new equipment is warranted to the original purchaser against manufacturer defects in material and workmanship for 3 years from the date of purchase. During this period, Horizon Service Center will repair or replace, at our discretion, any component that is found to be factory defective at no cost to the purchaser. This warranty is limited to the original purchaser of the unit and is not transferable. This warranty does not apply to any unit which has been improperly installed, mishandled, abused, or damaged in a crash, or to any unit which has been repaired or altered by any unauthorized agencies. Under no circumstances will the buyer be entitled to consequential or incidental damages. This limited warranty gives you specific legal rights; you also have other rights which may vary from state to state. As with all fine electronic equipment, do not subject your unit to extreme temperatures, humidity or moisture. Do not leave it in direct sunlight for long periods of time.

**Warranty Repairs.** To receive warranty service you must include a legible photocopy of your original dated sales receipt to verify your proof-of-purchase date. Providing that warranty conditions have been met, your equipment will be repaired without charge.

**Normal Non-Warranty Repairs.** Should your repair cost exceed 50% of the retail purchase cost, you will be provided with an estimate advising you of your options. Within your letter, advise us of the payment method you prefer to use. Horizon Service Center accepts VISA or MasterCard. Please include your card number and expiration date. Mail your system to:

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4105 Fieldstone Road  
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