

JR REMOTE CONTROL

# JR GYROSENSOR NEJ-700

FOR R.C. HELICOPTERS  
FIXED WING AIRCRAFT

## GYROSENSOR OPERATING INSTRUCTIONS

### I. THE GYROSENSOR-WHAT AND WHY IS IT?

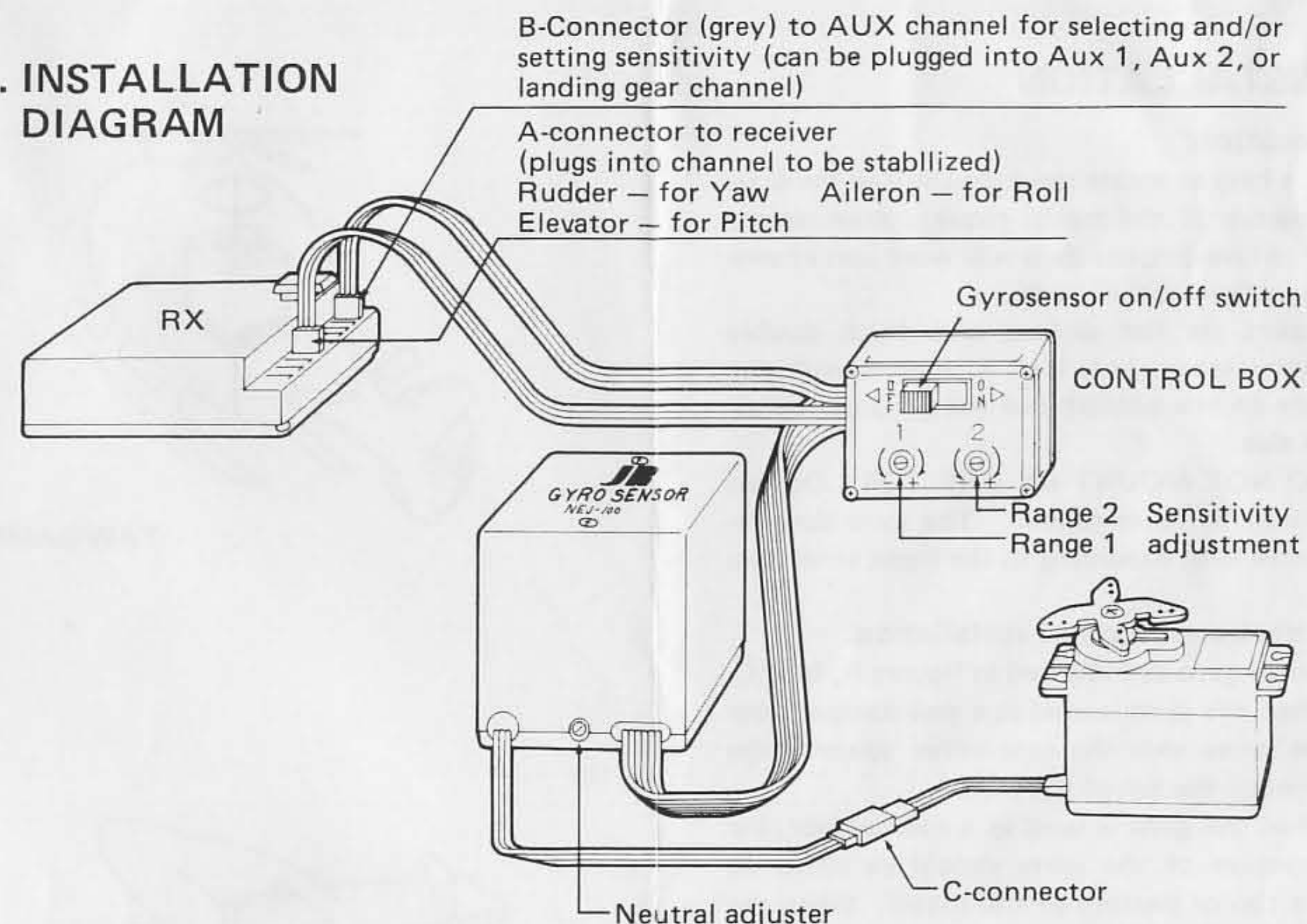
The "Gyrosensor" is an automatic stabilization system for your models radio control system. This device will not fly your model but will stabilize it to the point that flying becomes much easier to do.

The gyrosensor is a rate type gyro. This form of gyro is normally only sensitive to changes in movement. The normal application for this gyro is for yaw stabilization in helicopters. However, it is also applicable for pitch or roll stabilization or any combination of the above. One gyro is required for each axis to be stabilized. Due to the fact that setting gyro sensitivity is very difficult to do while flying, the J.R. Gyrosensor was designed so sensitivity can be adjusted from the transmitter while flying. This is unique feature found only in the J.R. Gyrosensor.

### II. GYROSENSOR FEATURES

1. Hall effect displacement detector — This results in a highly accurate, long life, wear-free detector system.
2. Integrated design — The complete gyro is self contained. All mechanics and electronics are located within the gyro assembly. No modification is required to servos.
3. Sensitivity can be selected and adjusted during flight from the transmitter.
4. Completely compatible with all J.R. equipment. (Some functions are not available if transmitter lacks channels to operate them).
5. Single power source (Uses receiver power supply).
6. Highly sophisticated IC design offers high stability and very flexible mixing of controls.

### III. INSTALLATION DIAGRAM



### IV. ADJUSTMENT

#### 1. For sensitivity set from transmitter:

B connector should be placed in Aux 2 position. In this mode the sensitivity is adjustable between range 1 and range 2 during flight by the Aux 2 control.

Please note that with Range 1 set to maximum and Range 2 set to minimum, the gyrosensor is usable over the entire range capable of the gyrosensor. Range 1 and 2 Pots have no effect on each other. If it is desirable to select a range of sensitivity, setting Range 1 and Range 2 to some intermediate, sensitivity will yield a variable sensitivity range between the two settings allowing very fine adjustments to be made.

#### 2. Dual sense selected from transmitter:

B connector should be placed in landing gear or switched channel position. In this mode two separate sensitivities are selectable with a switched channel on the transmitter.

Range 1 and Range 2 can be set individually to any desired sensitivity. Again Range 1 and 2 Pots have no effect on each other.

One interesting application for fixed wing models by setting the gyro up on the retract channel, steering can be stabilized while the landing gear is down.

This can be very useful on some models for landing and taking off.

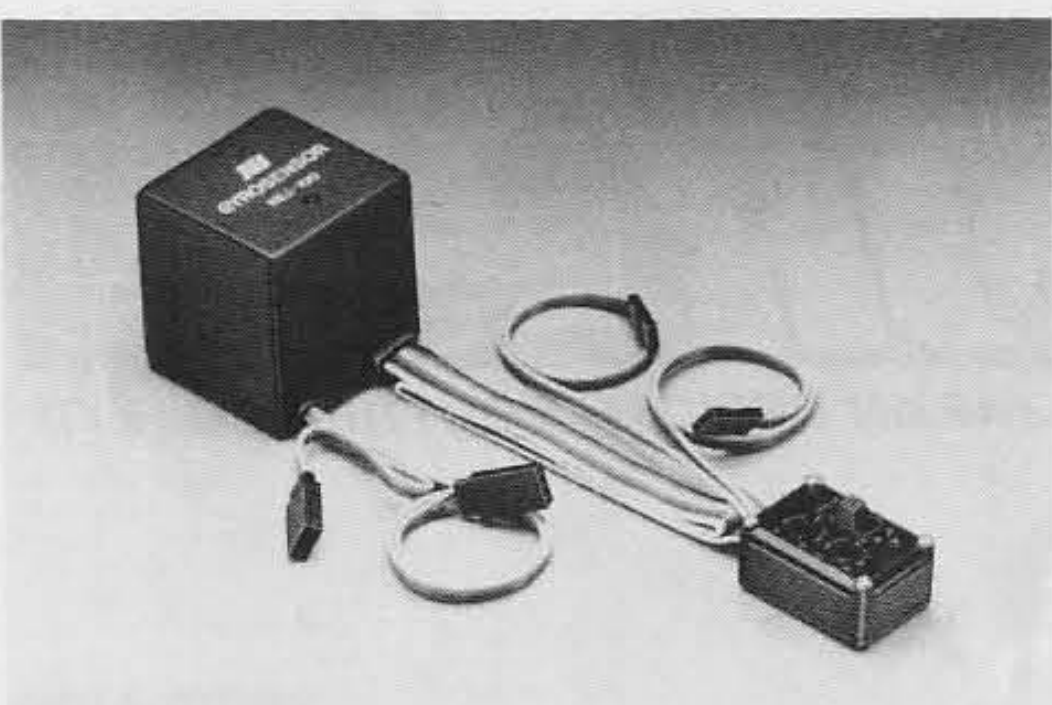
A Y-harness is needed to connect gyro's B connector and retract servo together on the same channel.

#### 3. Fixed sensitivity (when no Aux channel is available):

The B connector is left unconnected. It should be tied back and not allowed to flop around freely in the model.

The sensitivity is adjusted with Range 1 Pot only.

Range 2 inactive in this mode.



## V. INSTALLATION

### 1. Location:

It is best to locate the gyro close to the C.G. However if the model requires nose weight or tail weight, the gyro will work just as well any where in the model.

Mount on flat surface with thick double sticky tape. It is best to mount with the tape on the bottom but the sides can be used also.

DO NOT MOUNT BY THE TOP. Do not mount in foam rubber. The gyro does require firm mounting to the flight structure.

### 2. Directional lines of installation:

Install gyro as indicated in figures A, B or C. When the gyro is used as a yaw damper note the wires exit the case either towards the front or the tail of the model.

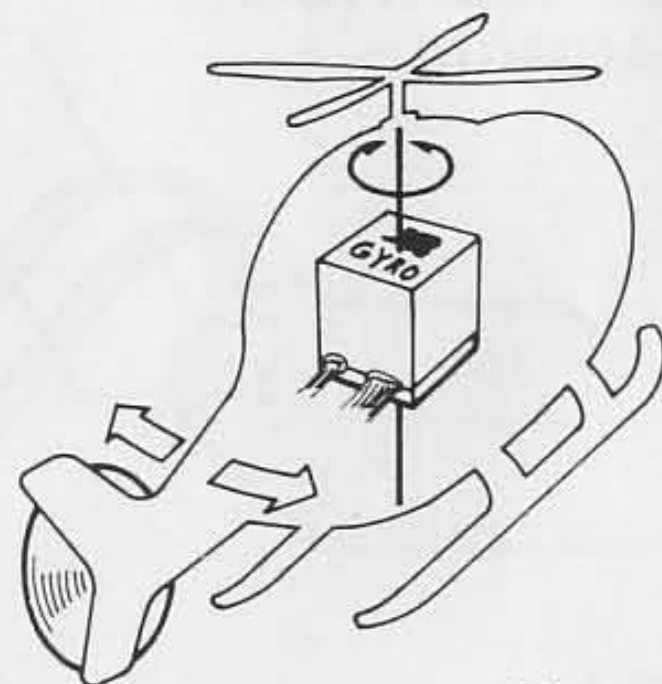
When the gyro is used as a roll damper, the direction of the wires should be either to the top or bottom of the model. When the gyro is used as a pitch damper, the wires should face down and the bottom of the gyro should be in a line with the center line of the fuselage or direction on travel. Note that the gyro should be mounted in the exact axis it is to be used in and mounting the gyro out of line will result in poor or inadequate operation of the gyro.

When using non standard transmitters, it is possible the direction of the gyrosensor will be backwards. In this case the axis of the gyro must be rotated 180°. Installing a reversed servo will not correct the problem if it is used in yaw and is backwards. The gyro will have to be turned over top to bottom, The same is true for all other modes of operation.

### 3. Control box installation.

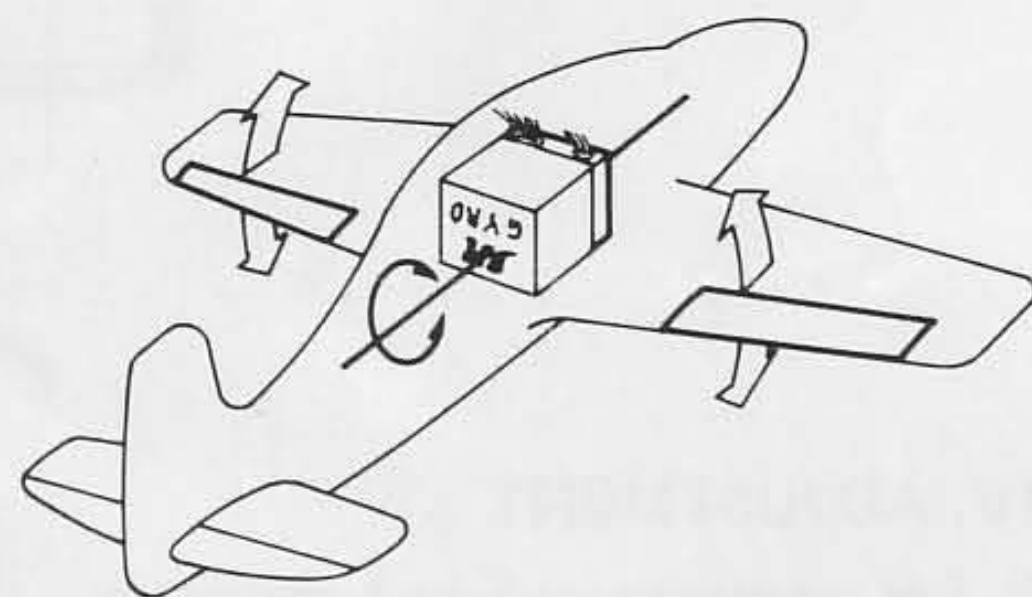
Locate and install the control box away from engine exhaust. Make the box adjustments accessible from the outside of the model.

(A)



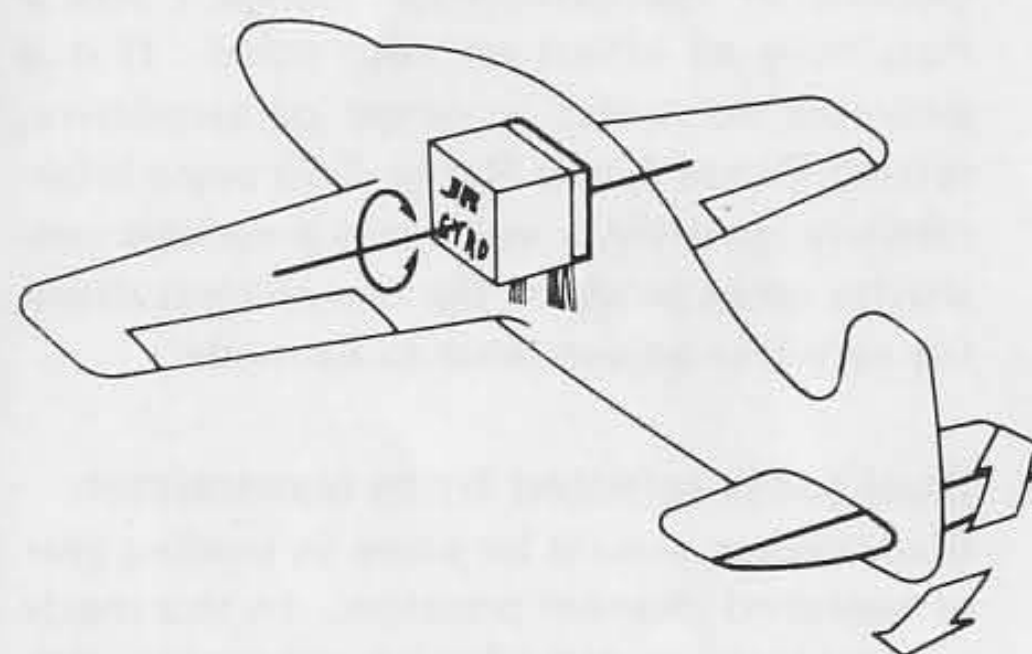
YAW DAMPER

(B)



ROLL DAMPER

(C)



PITCH DAMPER

## VI. NEUTRAL ADJUSTMENT

Set up the control system in a working configuration. Note the position of the servo to be stabilized (system turned on).

1. Set range 1 to minimum (full counter clockwise).
2. Set range 2 to maximum (full clockwise).
3. Switch transmitter between Range 1 and Range 2.

Adjust gyro neutral (on gyro case) until no change is noted at the servo when switching between ranges.

## VII. OPERATIONAL NOTES

1. When flying with the gyrosensor active, the power consumption of the total system is increased 50 to 100% and the available flying time is decreased proportionally. For this reason it is recommended that a higher capacity receiver battery be used with the flight pack (JRN-600 or JRN-1000)
2. When using the gyro in helicopters it is absolutely necessary that the model be trimmed out as close as possible before using the gyro. The better the model is trimmed the better the gyro will work. Do not expect the gyro to compensate for a badly trimmed model.
3. Antitorque mixing and acceleration mixing is necessary on any collective pitch type helicopter and again the gyro should only be set up and used after model is trimmed as well as possible.
4. When the gyro sensitivity is set to maximum the servo may chatter. This is normal and only indicates that the gyro is too sensitive and needs to be adjusted down.
5. The "Gyrosensor" is designed to operate only on JR equipment. No warranties or guarantees are offered if used on other type equipment.  
Do not subject the gyro to excessive temperature changes or high vibration.

CAUTION: Do not attempt to repair the gyro by yourself. It is delicate and complicated and possibly irreparable damage can be done. If service is required, please send entire system to authorized repair facilities listed below:

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