LOGICTECH

LTG-2100T High performance rate GYRO for EP model helicopter

≪ USER'S MANUAL ≫

◈ We thank you for purchasing the product, Gyro LTG- 2100T for EP model Helicopter.

◈ Please read this manual carefully to the end in order for you to use the product safely and make it work the best.

FEATURES OF PRODUCT

▶ High performance Smart Tail- Lock Gyro for EP model Helicopter which succeed to the capability of LTG- 6100T.

▶ Zero initializing time.(Tail- Lock mode)

▶ Remove the drift of tail as software solution when changing tempe circumstances.

▶ Automatic scan for Transmitter & Receiver types. (Logictech, Futaba, JR)

▶ Possible to support Digital and Analog Servo at the same time selection function SERVO SPEED.

▶ Support high speed digital Servo.(LTS- 6100G)

▶ Tail- Lock Acceleration function.(Tail- lock performance variable function)

▶ Separate set up of max. Left and right angle of Servo.(Instrumental limit)

▶ Remote Gain control by the GAIN channel.

▶ Self checkup(diagnosis) function.

▶ Provide easy setting method by using of Menu button and Rudder stick operation to left and right.

CAUTIONS

▶ Please firmly fix the connector not to move.

▶ Please be careful not to put conducting foreign substances or flammable substances such as oil, into the product.

▶ Please firmly attach this product.
 (It can be detached while it is being used when it is not surely fixed.)

▶ Please refrain using in severe circumstances.
 (recommend using temperature - 5℃ ~ 35℃)

▶ Please don't give the sudden change of temperature.
 (ex: warm indoor to cold outdoor)

▶ In case of product installation, surely reference the sticking way of double side tape.

▶ Please do not disassemble and remodel the product.

▶ Please stop the flight right away when occurrence of any malfunctions of this product.

SPECIFICATION OF THE PRODUCT

▶ Operating Voltage   : 4.5~5.5V(Operating guarantee voltage 5V)
▶ Power Consumption   : 20mA
▶ Input Signal   : 2 Channels(Rudder, Gain)
▶ Output Signal   : 1 Channel(Servo Drive)
▶ Gain Control   : Remote control by transmitter
▶ Compatibility Mode   : Logictech, Futaba, JR Transmitter and Receiver
                         (PCM, FM Type)
▶ Data Setting Method : Button press and Stick operation
▶ Data Display Method : 8 Bit LED Display
▶ Dimension   : 22(W)mm x 22(H)mm x 11(D)mm
▶ Weight   : 10g

INSTALLATION OF PRODUCT

▶ Please install this product so as to be made horizontality of the mainshaft with the rotation sensing axis of the Gyro.

▶ Please separate motor 10cm over from the installation place.
 (Noise occurred from the motor may have influence on the Gyro function)

▶ Please Install it as closer to the shaft of main rotor as possible.

▶ Please clean up any oil or dust on the installation place.

▶ Please attach it by using of double-sided tape which included.
 (Refer to the way of sticking double-sided tape)
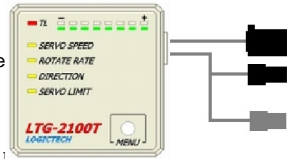
Servo connection (Black)

Connecting Rudder Channel (Black)

Connecting Gain Channel (Blue)
Futaba : Gain Channel
JR   : AUX2 Channel or AUX3 Channel

NAME & FUNCTION OF EACH COMPONENT PART

1. LED DISPLAY PART

| TL | ▷ Turn on in Tail-Lock Mode. | Lighting : status which is Continuous |
| | ▷ Turn off in Normal M | Flickering: status which is |

GAIN /DATA DISPLAY PART
▷ It is composed of 8 pieces of LED and display GAIN in nor...
▷ Display data selection at present when data setup mode.

SERVO SPEED ▷ Select Servo type.

ROTATE RATE ▷ Select Max. rotate rate

DIRECTION ▷ Select control directi

SERVO LIMIT ▷ Select Max. left and right angl... rvo.

2. DATA INPUT PART

MENU BUTTON
▷ Please press it 3 seconds over. Then Menu Mode (Data selection mode) is activated.
▷ It is used when Moving Menu and input data mixing with Rudder stick.

INSTRUCTION OF BASIC USAGE

▶ Please press Menu button for 3 seconds over, then Menu mode is activated

▶ When pressing the Menu button without moving Rudder stick, Menu is m in order of Servo Speed -> Rotate Rate -> Direction -> Servo Limit.

▶ Menu button is pressed When Rudder stick is moved to the Left and r Data is increased and decreased.(In neutral status of stick Menu mo the next)

▶ When rudder channel of transmitter is Reverse status, Data direct: increase and decrease is opposition.

THE ORDER OF SETTING

1. SELECT TRANSMITTER DATA

▷ Please select the data of rudder channel as the below(same in Futaba, JR)

D/R 100%	ATV 140%	SUB-TRIM 0	TRIM 0

2. SELECT RECEIVER TYPE

(In case of the different Transmitter and Receiver, Transmitter is first)

▷ Please select Trim value to "0" which related to the Transmitter Rudder Channel. (Important)

▷ Please turn on the power in operating rudder stick to Left or Right to the end, and waiting for 10 seconds.
And then return the stick to the neutral and again waiting for 5 seconds.

No.① LED : LOGICTECH (Prearrangement of its sale)
No.② LED : FUTABA
No.③ LED : JR
※ After finishing of automatic scan, corresponding LED is flickering continuously. (Power off-on)

3. SELECT A KIND OF SERVO

▷ Press Menu button so as to light servo Speed LED.

▷ Select a kind of Servo you want to use.
(Refer to the Instruction of basic usage)

No.① LED : Dedicated Digital Servo(LTS-6100G)
No.② LED : Matched Mini Servo
No.③ LED : Mini Servo for general

※ When LTG-2100T is used with the dedicated Digital Servo LTS-6100G. it is shown to the limits performance.
(LTS-6100G : Speed 0.05 sec/60° , Torque 4.5kg.cm[at 4.8V])

※ Matched Servo is the most appropriated one to the LTG-2100T Gyro and show its superior performance than that of general Mini Servo.

⚠Caution – Separate the Gyro Servo Connector when select kinds of Servo.
 – When a kind of servo selection is wrong, It can be the reason of a Helicopter crash by the out of order of Servo or stru trouble.

4. SELECT GAIN OF THE GY

▷ There is a relation as the below between the Gyro Gain of the Transmitter and the real Gain of Gyro.

Real Gain 100% —NORMAL— 0% TAIL LOCK 100%
Gain of Transmitter 0% 50% 100%
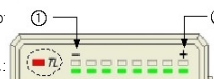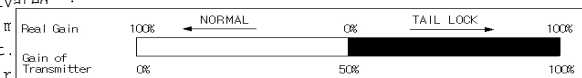
TL: Light when Tail-Lock mode
No.① LED : Gain 0-30%
No.⑧ LED : Gain 91-100%

⚠Caution – Some high class controller may could be different with the above way of display, Please select by the way of correspond to its display.

5. SELECT DIRECTION OF MOVEMENT

▷ Press Menu button so as to light Direction LED

Transmitter Please check the creation of Tail Roter angle so as to moving of Helicopter nose to the direction of the Rudder stick control, If when it is made opposite direction angle, change the moving direction of the servo by using of Reverse function of the Rudder channel in transmitter.

GYRO At the normal situation in direction of control of the Transmitter as the above. If the moving direction of Servo when Rudder stick is moved to right and Helicopter is turned to the clockwise rotation with the center of the main shaft is opposite with each other it is normal control status. If moving of Servo is not normal Please change the moving direction of Servo in Direction Menu.
(Refer to Instruction of basic usage)

No. ① LED : NORMAL
No. ② LED : REVERSE
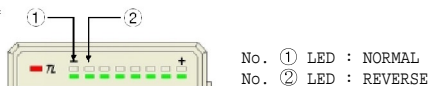
6. SELECT SERVO HORN

▷ Please Select SUB TRIM and TRIM of the Rudder Channel to 0.
▷ Please confirm of NORMAL MODE in Gyro Gain
▷ Please place servo horn vertically by rotation to the control rod.
▷ Please use as Servo horn length as that of Helicopter instruction

CONTROL ROD
SERVO WIRE
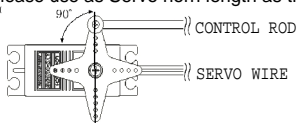
⚠Caution – There is in case of selecting SUB Trim of transmitter so as to make vertical of Servo horn.
In this case neutral signal of some maker's transmitter, when ATV value is changed in flying, is changed in proportion to the quantity of SUB Trim selection so the tail may could be rotated slowly.
Please increase and decrease of the pirouette speed by using of D/R.
– If select SUB TRIM in transmitter, it transmit (output) the signal as stick is moved so Menu selection is impossible.
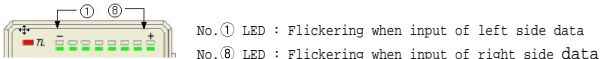(If Gyro power is turned off- on, the above phenomenon is disappeared)

7. ADJUSTING LINKAGE NEUTRAL (IMPLEMENTAL NEUTRAL ADJUSTMENT)

▷ Please checking of selection Gyro Gain of transmitter as 35% .
(Normal mode, Gain 30%)
▷ Please take the helicopter off slowly.
▷ Please land it after checking of helicopter slow rotation to left and right.
▷ Please adjust the linkage till the helicopter is not rotate.

8. SELECT MAX. OPERATING RANGE OF SERVO (EXECUTION IN NORMAL MODE)
(LIMIT value is applied after MENU MODE finishing)

▷ Press Menu button so as to light Servo Limit LED.
▷ Maximize the value of left and right D/R and ATV of Rudder Channel of transmitter.
▷ Please move rudder stick until the tail roter operation part is not bump against instrument and in such status save data by pressing Menu button.
▷ Please change the value of D/R and ATV of rudder channel to 100% and 140% after selection.

No.① LED : Flickering when input of left side data
No.⑧ LED : Flickering when input of right side data

⚠Caution – In case wrong doing of selection Max. operation range of Servo, it can be the reason of breakage of tail control rod and crash of helicopter
– When setting, please don't make stick control by constraint.It may could be occurred to damage of Tail control rod and Servo Gear by moving of Servo to max angle.

9. A Flight

▷ Initial value or same value of Transmitter Rudder Trim should be selected When you want to flight as Tail-Lock mode in each flying.
▷ If not, Helicopter may could be rotated slow or fast when control the flight switch.
▷ For getting the best tail stability, raise the gyro gain till the right before of occurrence Hunting of tail.(Vibrating status to left and right side

■ HIGH CLASS FUNCTION

1. ROTATION RATE

▷ Select menu button so as to light Rotate Rate LED.
▷ Please check the D/R and ATV value of transmitter rudder channel to 100% and 140%.
▷ Please select transmitter gain to 65%.(Tail-Lock Mode, gain 30%)
▷ Please taking off slowly and make hovering.
▷ When Rudder stick is operated or returned to the maximum in an instant, select the "Rotate Rate" value as addition or subtraction so that Tail

① ⑧
No.① LED : Lowest speed rotation
No.⑧ LED : Greatest speed rotation
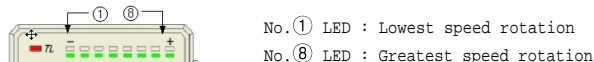
■ FACTORY INITIAL DATA

▶ SERVO SPEED   No.③ LED Mini Servo for General
▶ ROTATE RATE   No.① LED (Minimum acceleration speed)
▶ DIRECTION   No.① LED (Normal)
▶ SERVO LIMIT   Left : 25%   Right : 25%

■ THE ORDER OF SETTING

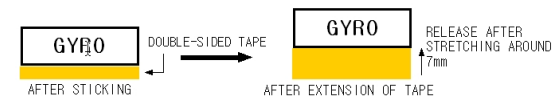|	
SELECTION OF TRANSMITTER DATA	D/R (100%), ATV (140%), SUB TRIM (0), TRIM(0)
SELECTION RECEIVER TYPE	LOGICTECH, FUTABA, JR
SELECTION KINDS OF SERVOS	Dedicated Digital Servo(LTS- 6100G) Matched Mini Servo Analog Mini Servo for general use
SELECTION GYRO GAIN	Normal Mode / Gain 30%
SELECTION MOVING DIRECTION OF SERVO	Select Direction menu of Gyro After selection of transmitter
SELECT SERVO HORN	Select vertically Servo Horn and Tail Control rod
ADJUSTMENT OF LINKAGE NEUTRAL	Adjust linkage till model helicopter not to rotate in Normal mode, Gain 30%
SELECT MAX. MOVING RANGE OF SERVO	Input data till tail rotor operation part not to bump against instrument
FLIGHT	Select with the initial value or same value of Rudder Trim in flight as Tail-Lock mode

■ SELF-DIAGNOSIS FUNCTION

▶ LTG-2100T has self-diagnosis function so communicate with users on the existence of disorder.
▷ In case of disorder of built in sensor or lowering of performance
 >> No.1 LED flickering
▷ In case of non-input signal of stick control or abnormal input
 >> No.2 LED flickering
▷ In case of non input signal of Gain or abnormal input
 >> No.3 LED flickering

No.① ~ No.⑧ LED

※ FM(PPM) Transmitter output unstable signal when a radio wave sending is not exist so it may could not check stick operation and gain signal normally.

■ THE METHOD OF STICKING DOUBLE-SIDED TAPE

▶ Please stick firmly double sided tape after cutting to Gyro size. Please pull the Gyro body slightly and stretch tape around 7mm and release it.
▶ This is to enhance vibration elimination effect by soften the formation of double sided tape.
(enclosed double sided tape is specially developed for Gyro fixation)

GYRO   DOUBLE-SIDED TAPE   GYRO
AFTER STICKING   RELEASE AFTER STRETCHING AROUND 7mm
                           AFTER EXTENSION OF TAPE

⚠Caution – Too strong pulling of gyro may could be the reason of damage of double sided tape.

■ REPAIR PRODUCT

▶ In case of the failure during the normal use of the product, it will be repaired without any charges.
However when it is failed under abnormal uses, such as falls by misplacing and misuse, the repair work will be charged.
Please be aware some cases which it is impossible to be repaired according to its extent of the damage.

▶ When the customer requests the repairs, this company will inspect all the parts and repair the found damages after receiving it and then it will have the final test to check whether it has any malfunctions or not to be returned to the customer.
Since the repair works are don through that complicated process above mentioned, please send only defective products to us when you request repairs.(Even for a normal product. Some testing charge can be imposed)

▶ The repair time is various according to the extents of the damages. When you request the repairs please write down the conditions and symptoms of the product in details and also inform us with some writing if you need special wish or needs of this product.

▶ PLACE TO SEND.
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