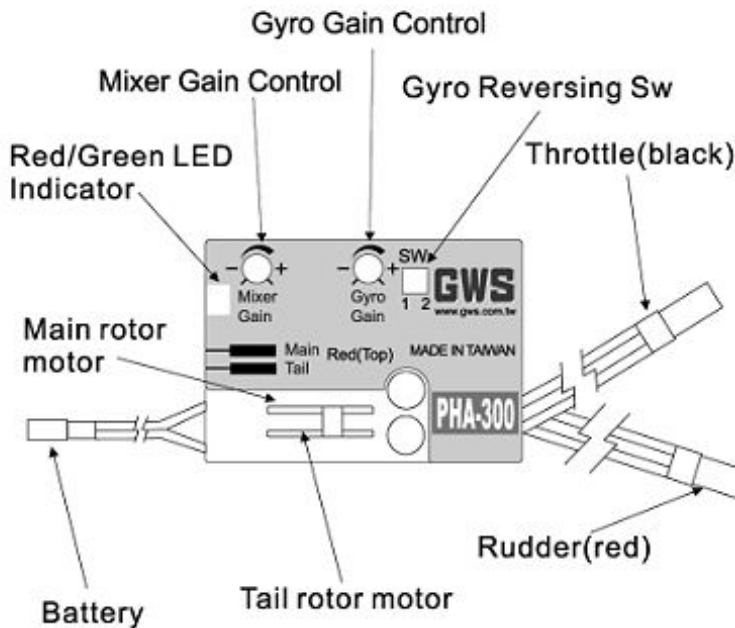




PHA-300 3 IN 1 MIXER BOARD FOR ELECTRIC HELICOPTER

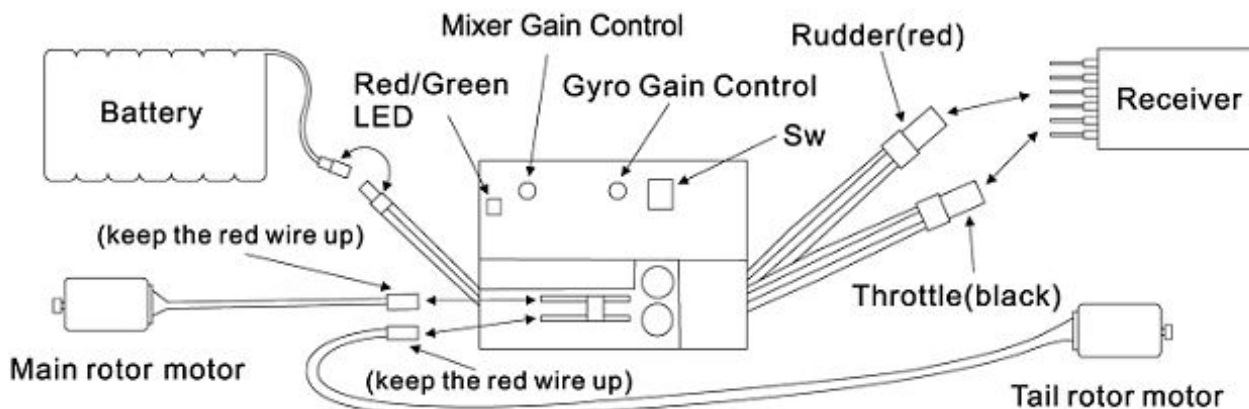


SPECIFICATION AND FUNCTION:

- SIZE: 1.5"X1"X0.37"
- WEIGHT: 0.43 oz
- CURRENT DRAIN :30mA
- OPERATING VOLTAGE: 8.4V 7 cells Ni-MH AAA
7.4V 2 cells Li-Po 1050~1500mAh
- SAFETY DESIGN: THE MOTOR CAN ONLY BE POWERED ON AT THE MINIMUM THROTTLE.
- NEUTRAL POSITION: AUTOMATIC ADJUSTMENT, LED LIGHT IN GREEN WHEN IT IS SET. (IT TAKES ABOUT 2-3 SECONDS AT A STEADY STATE.)
- GAIN VALUE ADJUSTMENT OF GYRO
- MIXER SPEED CONTROLLER FOR MAIN ROTOR AND TAIL ROTOR.
- REVERSE SWITCH OF GYRO : EASY CORRECTION OF THE GYRO.
- BEC: 5V/1.2A
- MAIN ROTOR DRIVE CURRENT: 10A/12A(MAX)
- TAIL ROTOR DRIVE CURRENT: 2A/4A(MAX)

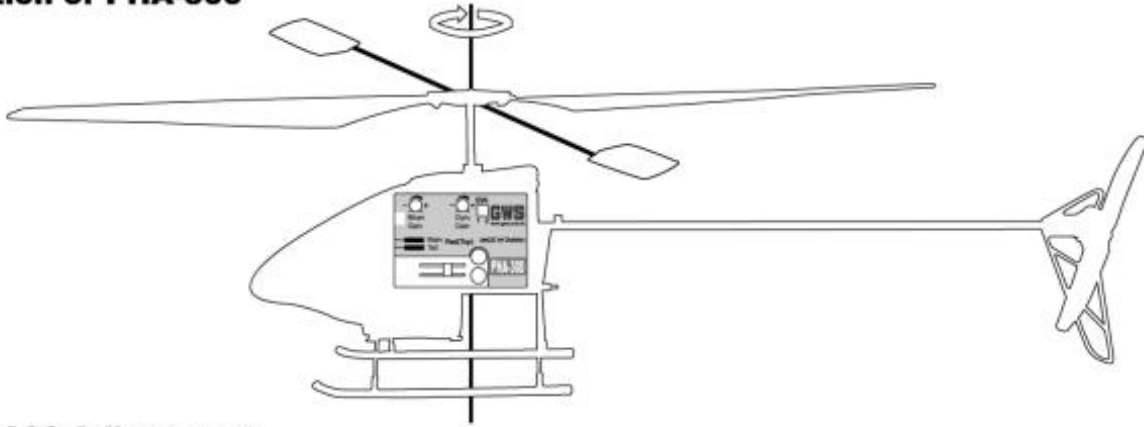
Thank for choosing the GWS PHA-300. This 3 in One mixerboard PHA-300 with 3 functions in one piece is designed for micro electric helicopter. It provides the feature of Gyro, Mixer and the Speed Controller. With the latest technology and new design, GWS integrates these features onto one compact size of PHA-300. It lightens the weight and also eliminates the hassle of complicated wiring for helicopters. Please read this instruction manual thoroughly before you use GWS PHA-300.

Installation



1. Before you use PHA-300, please make sure all your components on the helicopter are working properly, especially the radio, receiver, and servos.
2. Before you connect the battery, please connect the wires as the wiring diagram above. Connect the main rotor motor and the tail rotor motor. Also connect the 2 signal wires of PHA-300. The red connector on the right connects to the rudder channel of the receiver. The black connector on the right connects to the throttle channel of the receiver.
3. Please check and make sure that the connectors of PHA-300 are compatible to your radio system (e.g. Futaba, JR, Sanwa etc). You may damage your product if your receiver is not compatible to PHA-300. The difference in polarity of the wire connection will cause the damaged of the products.

Position of PHA-300



PHA-300 Adjustment

1. Please make sure the all the wire connections are correct before you connect the battery. PHA-300 with safety design will not arm the power system to run the motors if you leave the throttle open. You only can arm the power system when the throttle is fully closed. To operate the PHA-300, keep the throttle fully closed and also keep all trims centered, Next turn on the transmitter power, then connect the battery and leave the helicopter stay still until PHA-300 armed. Normally after 2 to 3 second, the green LED light will be on which indicates that PHA-300 just to initialize and the power system is armed. If the green LED light stays off, please check your transmitter, you may need to adjust the reversing switch of the throttle channel.
2. There are two major trim pots on the PHA-300: Mixer Gain and Gyro Gain, as show in the diagram. When you increase the mixer gain (turn the pot clockwise), you increase the output of the tail rotor to off set the torque from the main rotor. By turning the mixer gain pot counter-clockwise, you decrease the output of tail rotor.
3. When you are hovering the helicopter and the nose of the helicopter tend to the right, which indicates the output of the tail rotor exceeds the torque of the main rotor, you will need to turn down the mixer gain by turning the pot counter-clockwise. If the nose of the helicopter tend to the left, you will need to increase the mixer gain by turning the pot clockwise.
4. For Gyro Gain: Gyro, with the ability to keep the helicopter stable, will tend to keep the helicopter in the position of the way it is to ensure you have a smooth flight. To increase the gyro gain (turn the pot clockwise) is to increase the control of gyro to the helicopter. This will make the helicopter stable but less active. To decrease the gyro gain (turn the pot counter-clockwise) is to decrease the control of gyro to the helicopter. This will make the helicopter active but less stable. Please base on your flying skills and preference to adjust the gyro gain.
5. Gyro Reversing Switch (SW1): There are two small switches on the PHA-300. SW1 is Gyro Reversing Switch. SW2 is spare with no function. If you position the PHA-300 as shown in the diagram, you will not need to adjust the SW1 (stay in the "off" position). If the position you install the PHA-300 is different, you may need to adjust the SW1 switch.
6. Battery Low Warning Light: When the battery voltage drops to around 5.6V, the red LED light will be on. To avoiding crashing your helicopter, please try to land the helicopter in a short period of time.



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