ST MODEL

DG-1000

PRODUCT MANUAL

SAFETY PRECAUTIONS

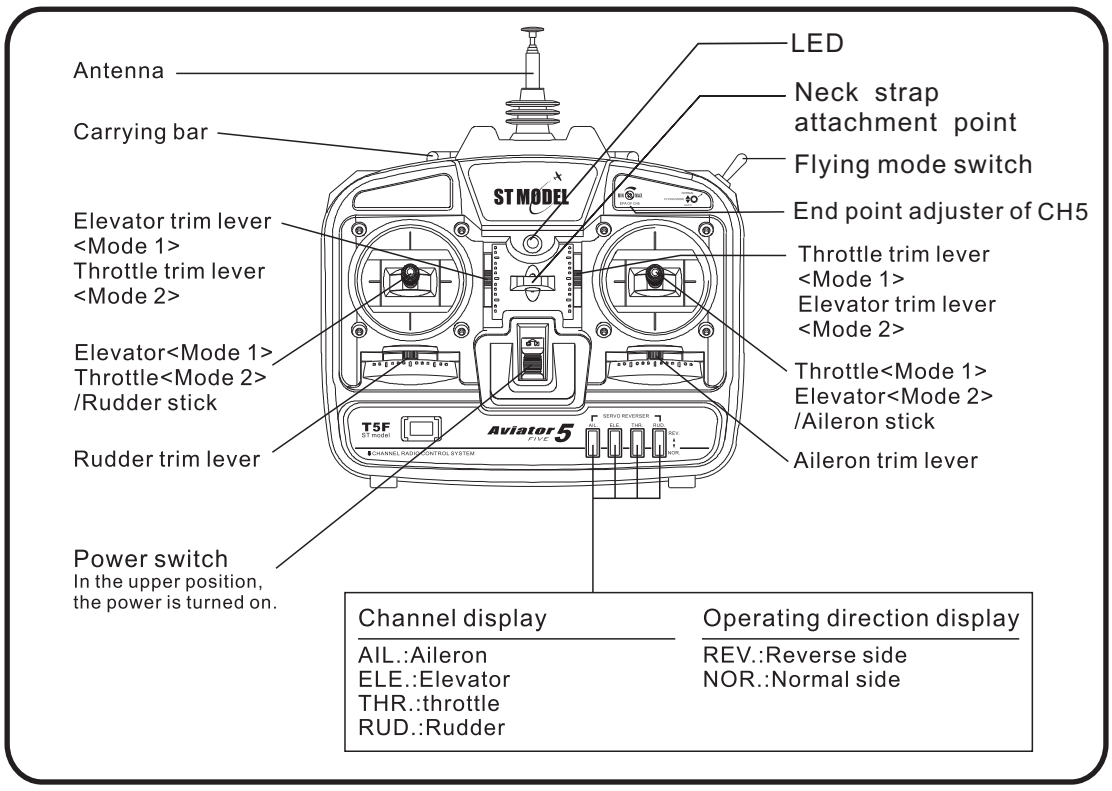
- **This electric R/C model plane is not a toy.**
- **Assemble the plane according to the instructuons,Do not alter or modify the model,If you make any modifications, you will void your warranty.**
- **Children under 12 years old must use it accompanied by an aduit.**
- **Test the operation of the model before each flight to insure that all equipment is operating properly,and that the model remains structurally sound.**
- **Fly only on calm days(with wind speeds less than 6 mph) and in large open areas free of trees,people,building or any other obsracles.**
  REMEMBER:Take your time and follow the instructions to end up with a well-built model that is durable and easy to fly.

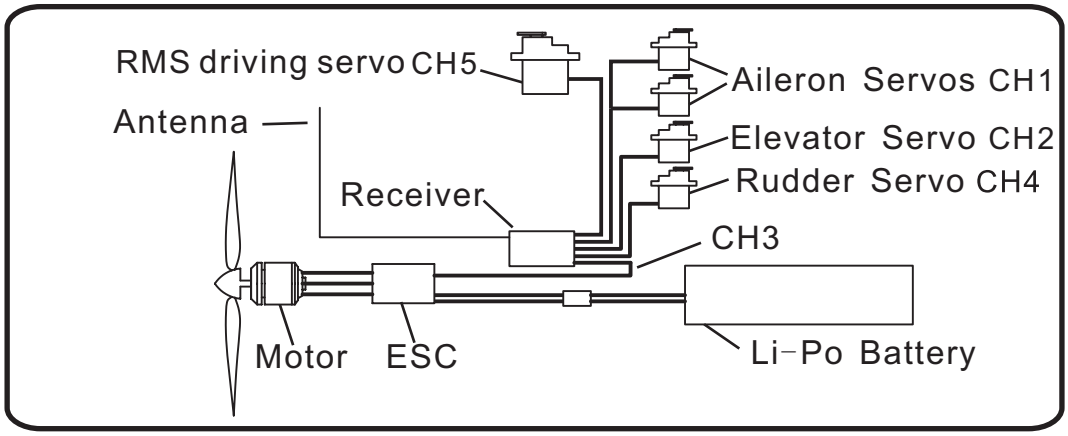
SPECIFICATIONS

Length：970mm/38.2in
Wing span：2010mm/79.1in
Wing area：22.5dm²/348.7in²
Flying weight：750g/36.5oz
Wing load：33.3g/dm²
Power system：Brushless motor ,1300mAh 11.1V Li-Po battery
Propeller：7″×5″
Radio required：5CH transmitter & 6CH receiver , 4 micro servos, and one standard servo ;

GLOSSARY

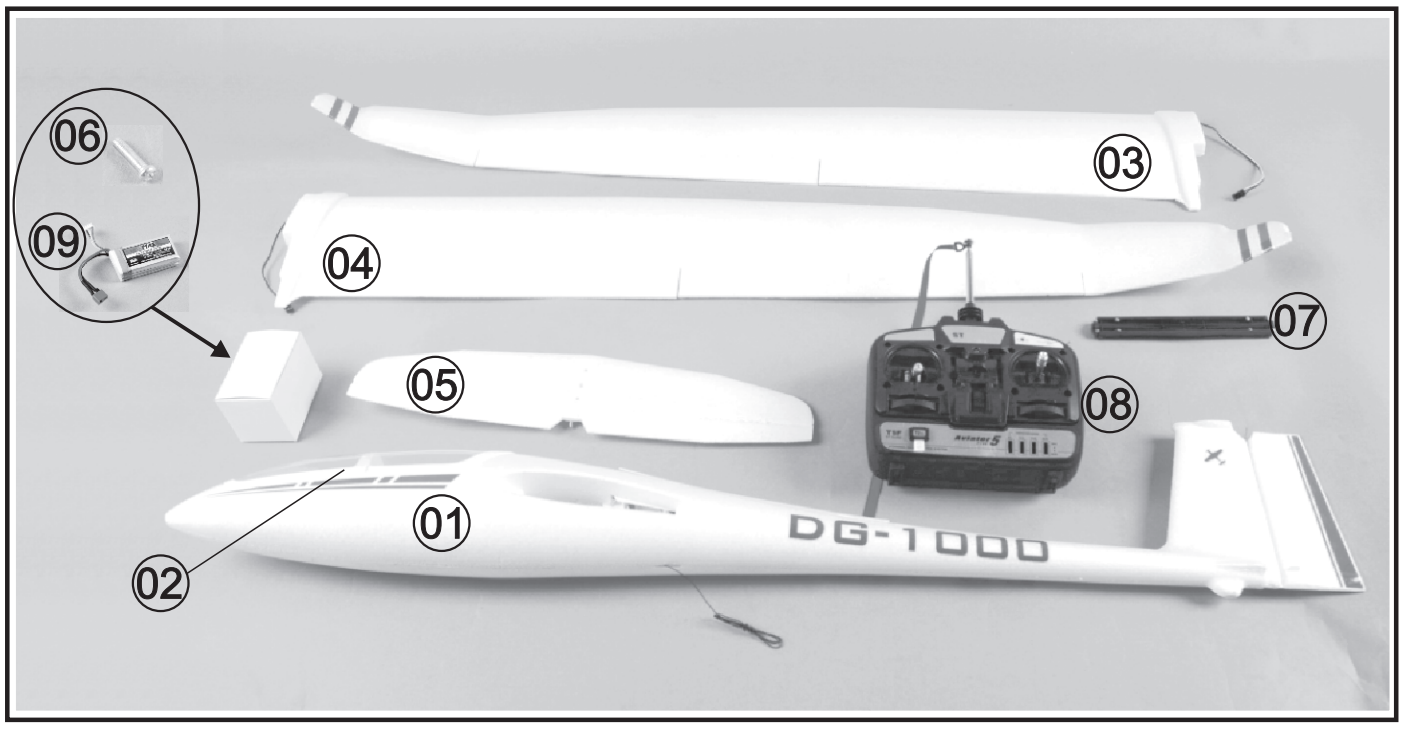
Aileron : Controls roll (right/left) ;
Elevator : Controls pitch (up/down) ;
Rudder : Controls yaw (right/left direction) ;
Receiver (RX) : provides input to the control surfaces and ESC ;
Power system-ESC(Electronic Speed control) : Controls the speed of motor ;
Retractable motor system (RMS) : The Motor is installed on the retractable gear! Motor system will be unfolded from the fuselage when the plane needs to climb, and the motor runs the propeller to provide thrust .When the plane is in the situation of glide, the motor system will be retracted into the fuselage to reduce the drag.
Li-Po battery : Rechargeable batteries which are used to power the airplane .Li-Po batteries are lighter and smaller than the most other types of rechargeable batteries ;
Transmitter (TX) : The hand-held unit that sends signal to the receiver. Moving the sticks control direction, climb/descent, roll , motor speed and the RMS for folding / unfolding ;
Flying mode switch : There are two flying mode of DG 1000: “NORMAL” mode and the “AUTO” mode, it is switched by a selector switch on the transmitter. The RMS is always unfolded when the “NORMAL” mode is on, The throttle stick (CH3) just control the motor speed; When you choose the “AUTO” model, The folding / unfolding of RMS will be controlled by the throttle stick in special process, while the throttle stick will control the motor speed.





CONTENTS OF KIT

01、Fuselage X1
02、Hatch X1
03、Left Wing X1
04、Right Wing X1
05、Stabilizer X1
06、Screw X1
07、Wing Connecter X1
08、Transmitter X1
09、Battery park X1
10、Decals X1
11、Product Manual X1



PREPARE THE TRANSMITTER

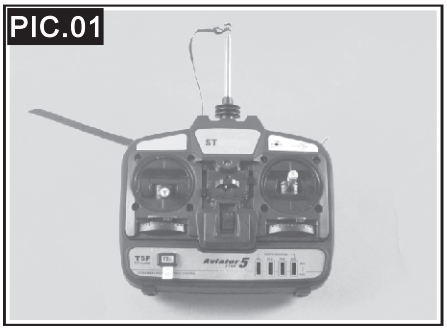
1、Locate the transmitter**(PIC.01)** ;
2、The transmitter requires eight alkaline “AA” batteries. To install the batteries, remove the battery hatch by sliding it down and inserting them into place(PIC.02). Be sure to follow the polarity diagram inside the battery compartment. Reinstall the battery hatch(PIC.03).

CAUTION:(1)、Don't use rechargeable batteries (NiCd & NiMh) ;
(2)、Don't mix old and new batteries;
(3)、Don't mix alkaline and standard (carbon-zinc)batteries;

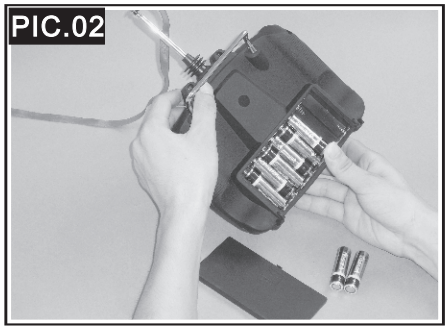
3、Switch the transmitter on and check the LED on the front of the transmitter(PIC.04). If the green LED is on it is safe to fly.If the red LED is flashing, install fresh batteries. Also check to make sure that the batteries are installed correctly.

4、We suggests that the Flying mode should be on the "NORMAL" mode, while the throttle trim will be at min.
5、Switch the transmitter off and stand by for later use.

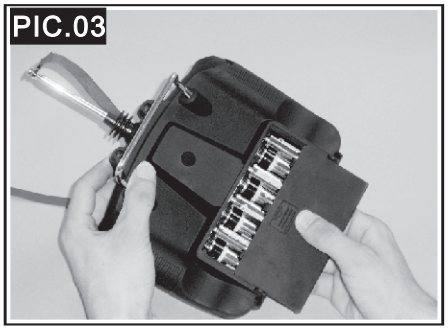
PIC.01



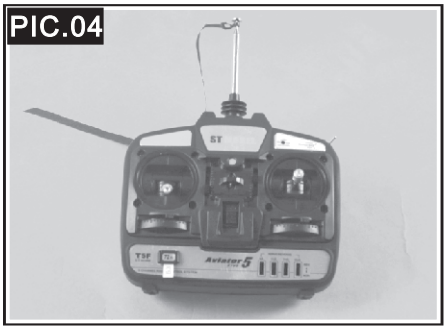
PIC.02



PIC.03



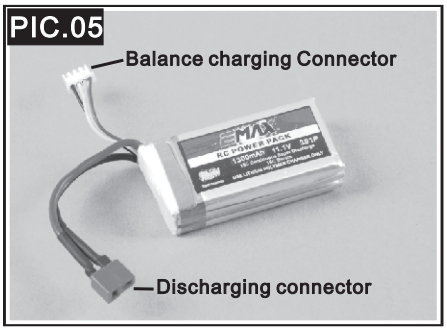
PIC.04



CHARGE THE BATTERY

Dg1000 is equipped with a 3cell-11.1V Li-Po battery pack(PIC.05).The Li-Po battery has two connectors. One is for cell balance charging and the other is for discharging.

PIC.05



CAETION： (1)、Only charge the Li-Po battery with Li-Po battery balance charger. Or use a conforming charger which can ensure the Li-Po battery safety during charging.

(2)、Before charging, disconnect the battery with any power. After each flight ,remove the pack from the airplane and allow it to cool completely before recharging.

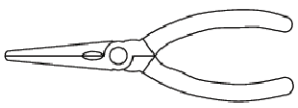
3、During the charging process, keep the charger or battery pack in a normal temperature area and away from source of ignition. Do not cover the charger or battery pack with carpet, clothe or anything else. Air circulation is necessary for proper cooling.

4、Important: Never leave a charging battery unattended. Please stop charging immediately of the battery temperature rise rapidly.

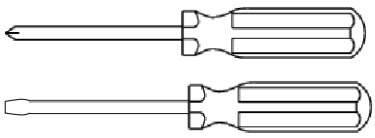
Please choose the proper power, battery and transmitter or it will reduce the longevity under the incorrect improvements.

ASSEMBLE THE AIRPLANE

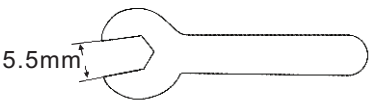
Tool will be required for assembly as below



Nipper pliers



Screw driver



Spanner

INSTALL THE FUSELAGE

1、Parts for installation:

(1)、Fuselage&Hatch (PIC.06);

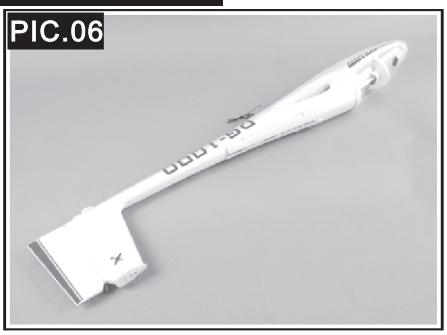
(2)、Horizontal Stabilizer (PIC.07);

(3)、Screw(PIC.08);

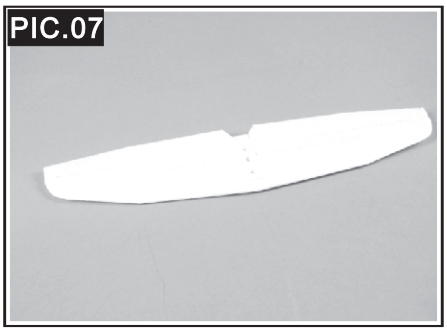
(4)、Left Wing & Right Wing (PIC.09);

(5)、Wing Connecter(PIC.10);

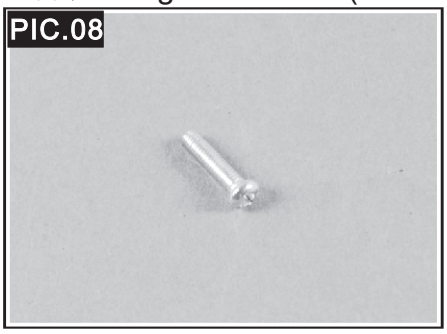
PIC.06



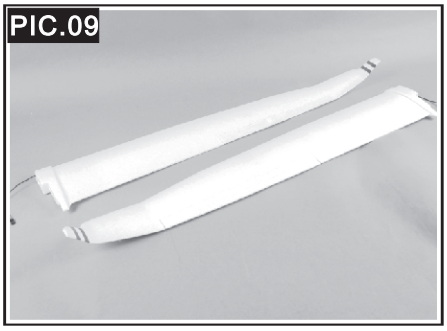
PIC.07



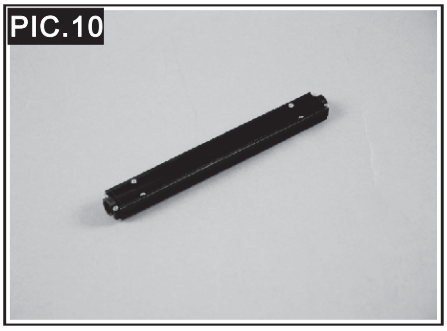
PIC.08



PIC.09



PIC.10



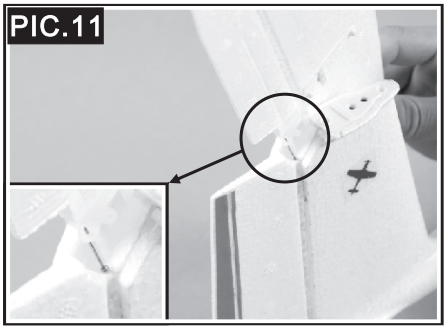
2、Install the “Z” end of push rod to the horns of elevator(PIC.11);

3、Install the horizontal stabilizer onto the holder on fin as picture shows(PIC.12,PIC.13);

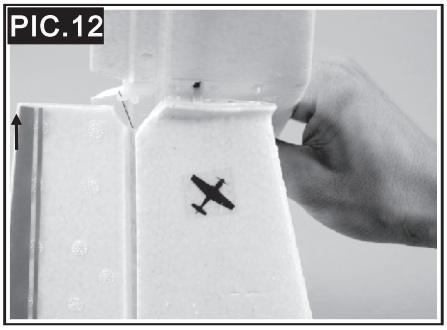
4、Fix the horizontal stabilizer with the screw to avoid loosening(PIC.14);

5、Insert the wing connector into one of the wings correctly as the picture shows (PIC.15-PIC.17),and put the aileron servo wire through the fuselage into the canopy as picture shows (PIC.18,PIC.19).

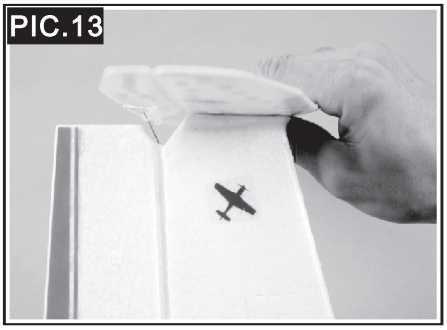
PIC.11



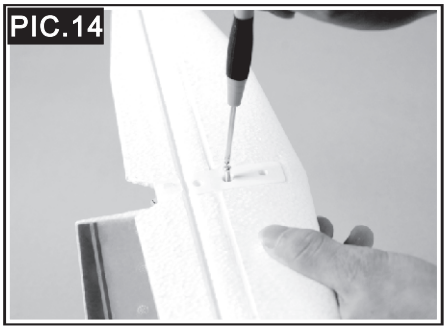
PIC.12



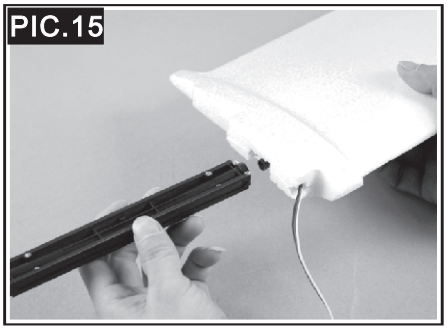
PIC.13



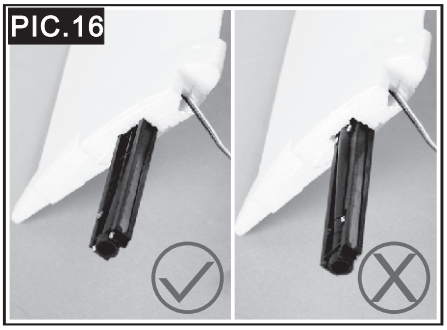
PIC.14



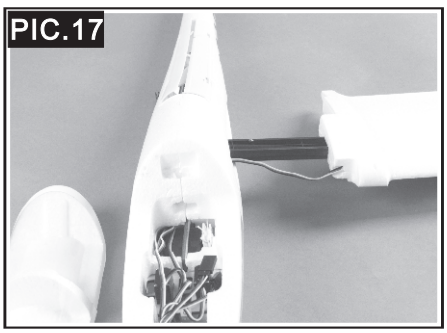
PIC.15



PIC.16

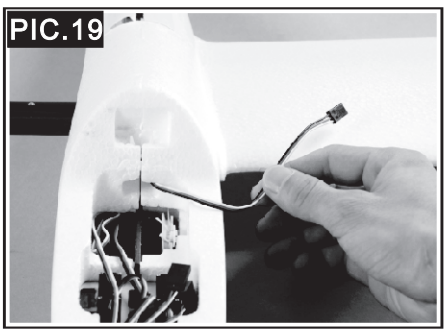


PIC.17



PIC.18

PIC.19

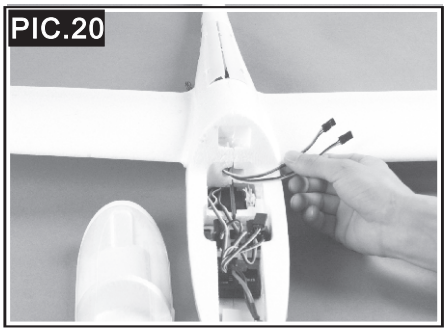


6、Please put the wing connector through the fuselage and insert to the other wing, and put the aileron servo wire through the fuselage into the canopy as above step (PIC.20).

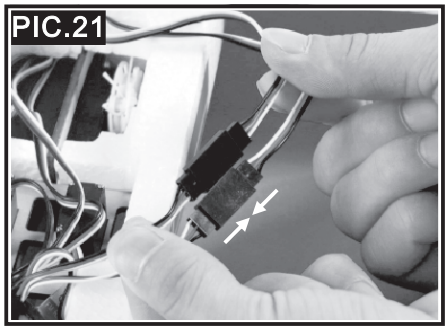
7、Take the aileron servo wires and connect to the servo extension leads. Ensure the polarity should be contacted correctly(PIC.21).

8、Fit the wings and the fuselage in place(PIC.22). And check if the wings installment right or not again Then tighten the screws under the wings(PIC.23), to avoid the wings loosening.

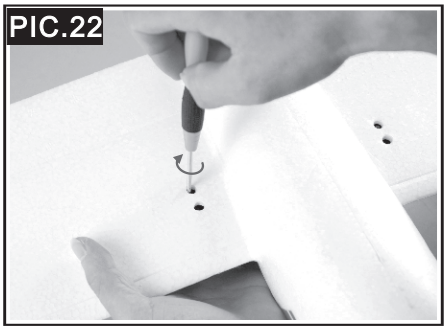
PIC.20



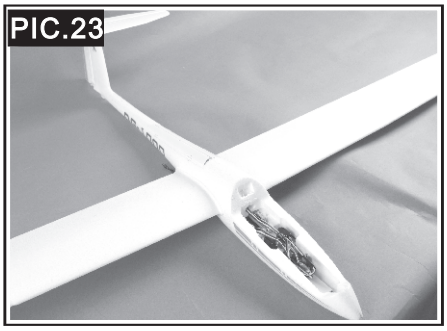
PIC.21



PIC.22



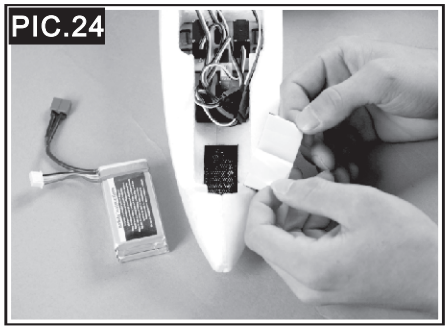
PIC.23



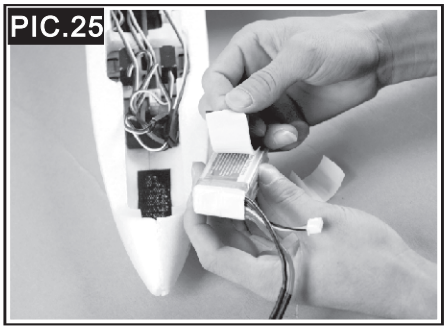
INSTALL THE BATTERY

1、Preparation of battery: Stick the loop tape (with the hook tape together) which is inside of the fuselage, to the battery by the double pastern(PIC.24-26).

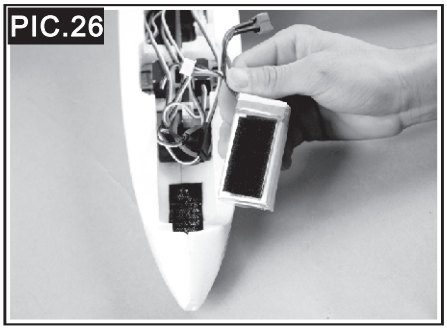
PIC.24



PIC.25



PIC.26



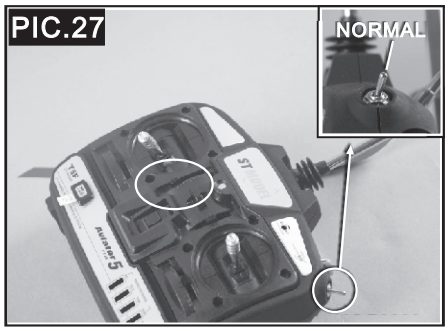
Ensure the battery has been charged and has enough power before next step.

2、Switch on the transmitter, ensure that the flying mode is on the “NORMAL” mode and throttle trim is at the min position(PIC.27).

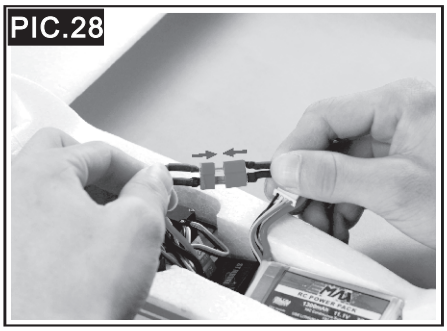
3、Attach the battery connector to the power plug of the fuselage(PIC.28).The RMS will be unfolded from fuselage(PIC.29) The ESC will respond with one beep.

WARNING: The ESC is now armed and the propeller will turn if the throttle stick is moved, possibly resulting in damage or injury.

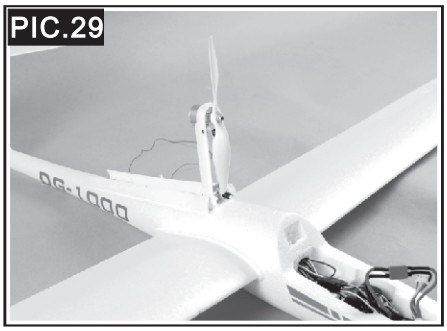
PIC.27



PIC.28



PIC.29



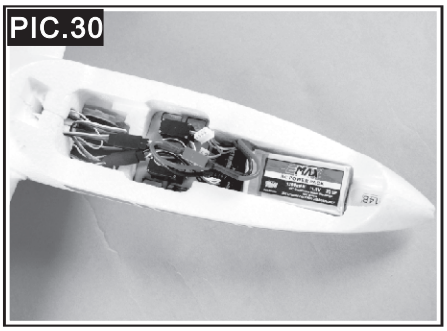
4、 Locate the battery inside the battery location as illustration(PIC.30).

NOTICE:(1)、Before connecting the battery, make sure the LED on the transmitter is on.

(2)、Fit the battery in its place as shown. Otherwise, The plane will lose its balance potentially because of the movement of the battery.

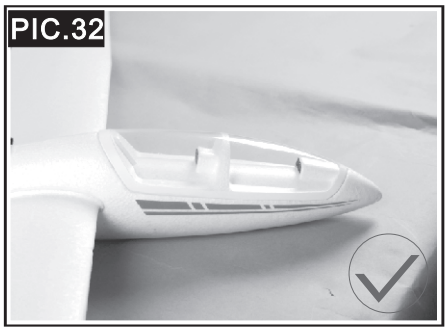
5、Test fit the canopy hatch into the fuselage as picture show (PIC.31). It is important to make sure the battery hatch attached tightly to avoid falling off during the flight (PIC.32,PIC.33).

PIC.30

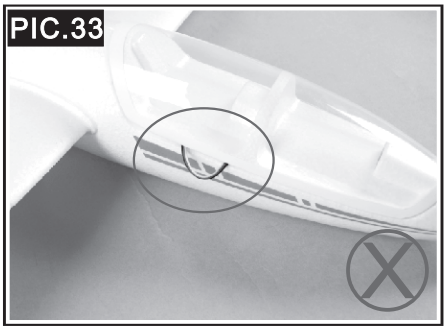


PIC.31

PIC.32



PIC.33



TEST THE RADIO CONTROL SYSTEM

1、Switch on the transmitter and connect the battery to airplane as above steps.

2、Test the power system and the RMS:

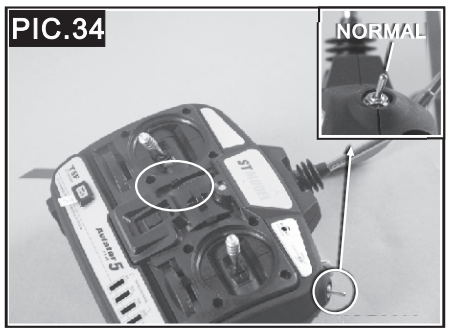
NORMAL mode:RMS will unfold from the fuselage if the transmitter mode is on the " NORMAL" mode (PIC.34,PIC.35).

(1)、Push the throttle stick and its trim to the min(PIC.36),propeller should be stopped completely(PIC.37).

(2)、Upward the throttle stick slowly(PIC.38), the speed of prop will faster gradually (PIC.39).

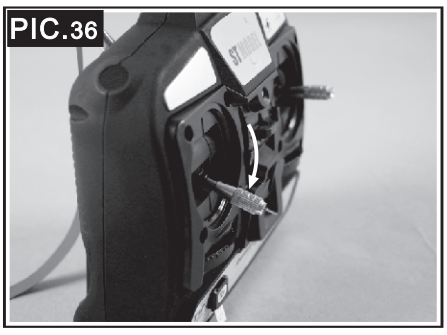
NOTE : If the motor doesn't work when you upward the throttle,please check the battery capacity.

PIC.34



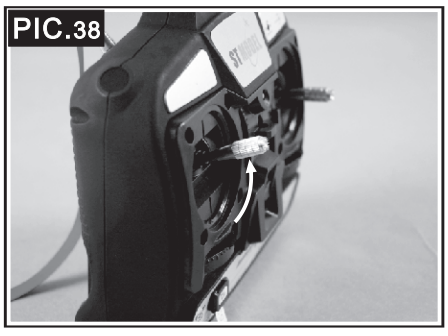
PIC.35

PIC.36

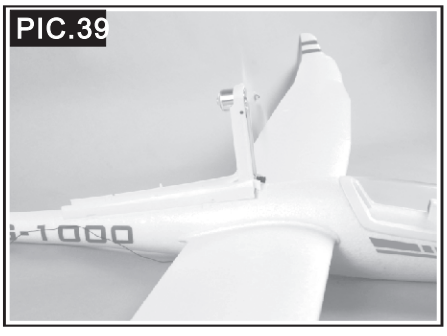


PIC.37

PIC.38



PIC.39



WARNING : Keep everything clear of the propeller once the battery is plugged in. Do not try to stop the propeller or the movement of RMS by hand or anything else.

“AUTO”mode:the transmitter mode is on “NORMAL”(PIC.40).

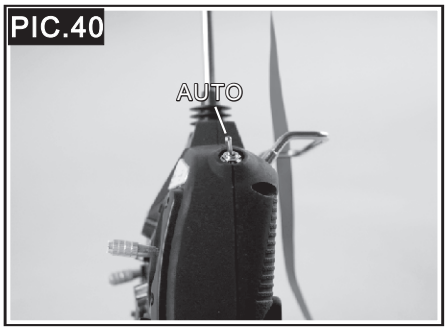
(1)、Downwards the throttle stick to the min(PIC.41), and the RMS will be retracted into the fuselage as the following steps.

A、The ESC stop to offer power to motor, and the RMS starts to fold(PIC.42).

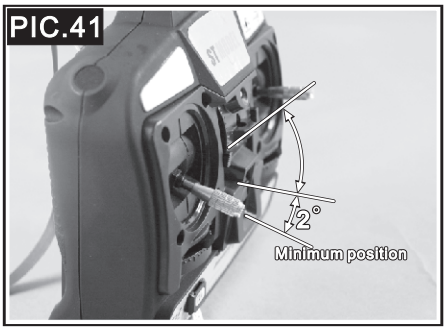
B、The RMS is retracted to“propeller stop” and keep waiting 3 sec. on this position.The stopgear will stop the propeller(PIC.43).

NOTE : When test the RMS on the ground, as there is no airstream , so it cant assure that the prop will stop upright automaticlly(PIC.44), then you can set the propeller upright by tools(PIC.45).

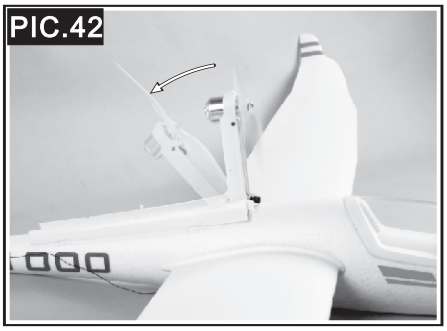
PIC.40



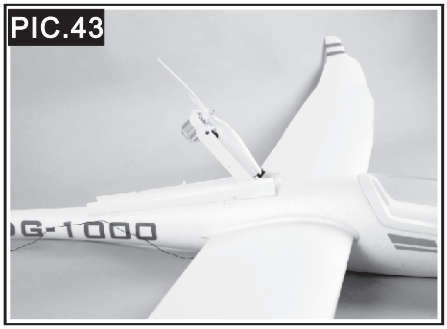
PIC.41



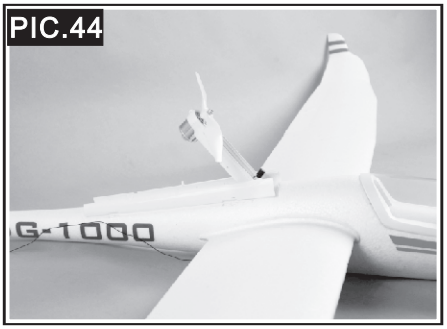
PIC.42



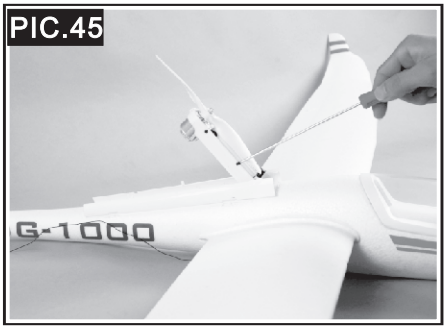
PIC.43



PIC.44



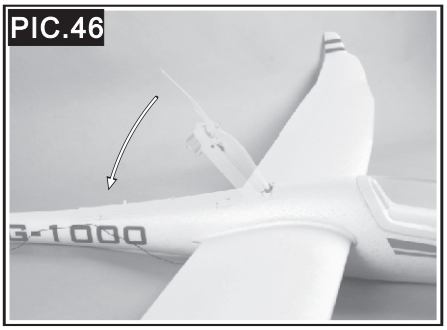
PIC.45



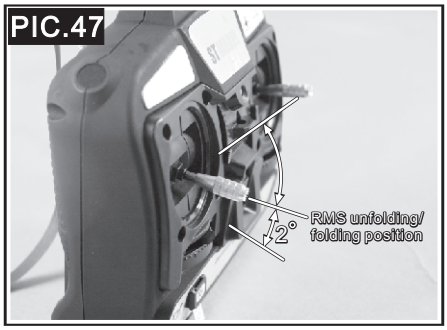
C、RMS is folded inside of the fuselage completely(PIC.46).

(2)、Push the throttle stick to the position of unfolding / folding as the illustration (PIC.47)the RMS will unfold(PIC.48).

PIC.46

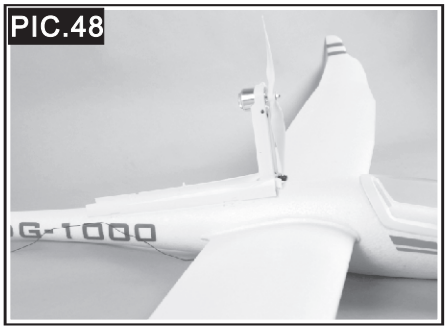


PIC.47

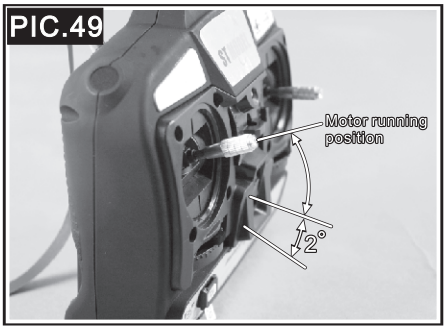


(3)、Upward the throttle stick slowly(PIC.49), the speed of prop will faster gradually (PIC.50).

PIC.48



PIC.49



PIC.50

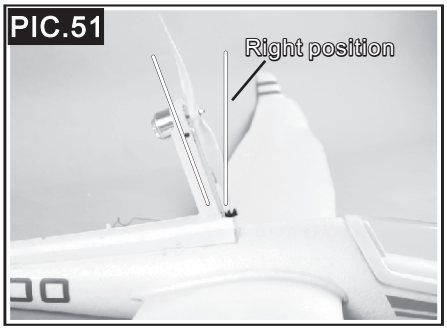
3、Adjustment of RMS :

After many times of motor system's work , maybe the transmission strap which control the RMS folding /unfolding will get loose. And it will lead the RMS not work right (PIC.51), then, you can adjust the strap and the end point of driving servo.

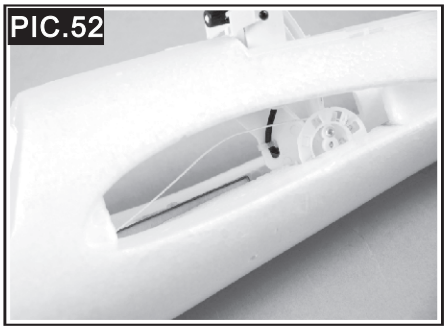
(1)、Please tighten the transmission strap as picture shows if the strap is getting loose (PIC.52-54).

(2)、Pls adjust the “EPA OF CH5” on the corner of transmitter to have the RMS unfolded completely if the RMS still cant be unfolded totally after you tighten the transmission strap(PIC.55). But don't keep the driving servo in long-time load with the sizzle, it will be very easily to damage the servo.

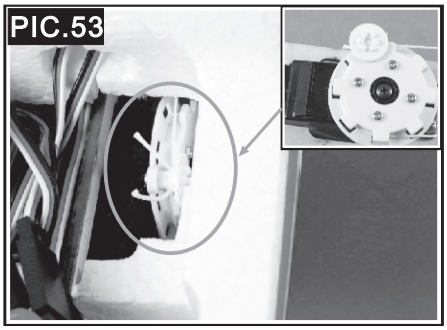
PIC.51



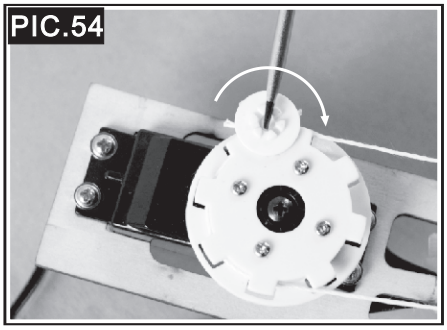
PIC.52



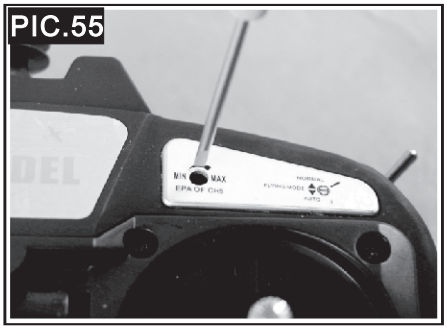
PIC.53



PIC.54



PIC.55



4、Test the aileron:

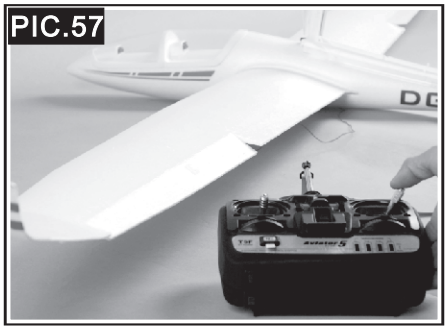
(1)、Move the aileron control stick to the left, the left aileron moves up and the right one moves down(PIC.56).

(2)、Move the aileron control stick to the right, the right aileron moves up and the left one moves down(PIC.57).

(3)、Moves the stick to its neutral position, the aileron returns its neutral position(PIC.58).

PIC.56

PIC.57



PIC.58

NOTE: If the movement of aileron works in opposite position, please check the aileron reverse switch on the transmitter and make necessary alignment.

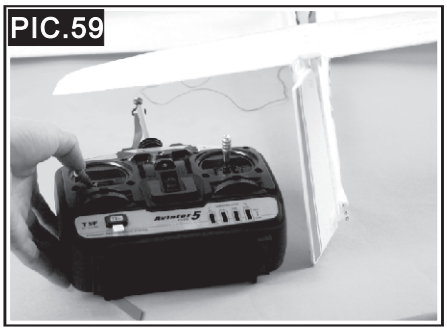
5、Test the rudder:

(1)、Move the rudder control stick to the left, the rudder turns to the left(PIC.59).

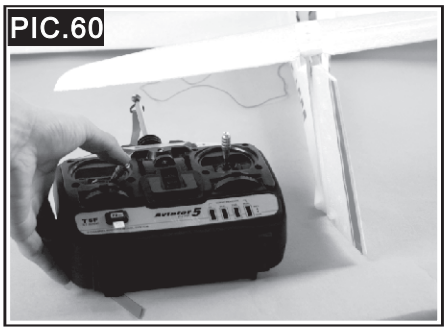
(2)、Move the rudder control stick to the right, the rudder turns to the right(PIC.60).

(3)、Move the rudder control stick to its neutral position, the rudder returns its neutral position(PIC.61).

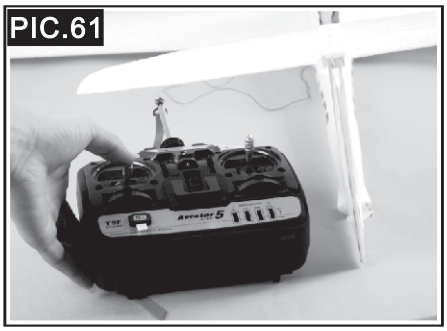
PIC.59



PIC.60



PIC.61



NOTE: If the movement of rudder works in opposite position, please check the rudder reverse switch on the transmitter and make necessary alignment.

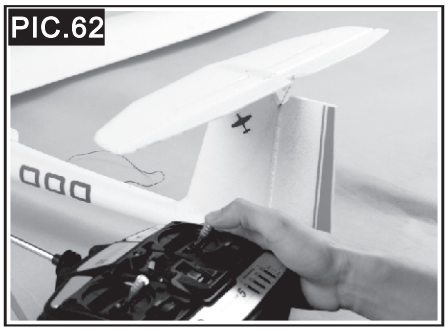
6、Test the elevator:

(1)、Move the elevator control stick backward, the elevator will be up(PIC.62).

(2)、Move the stick forward, the elevator will be down(PIC.63).

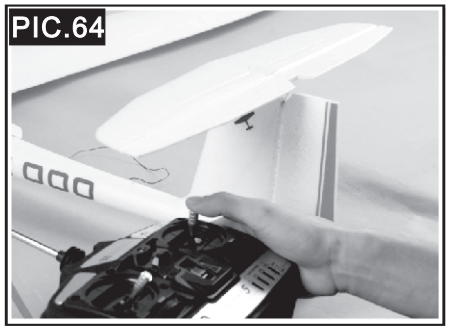
(3)、Move the stick to its neutral position, the elevator returns its neutral position(PIC.64).

PIC.62



PIC.63

PIC.64



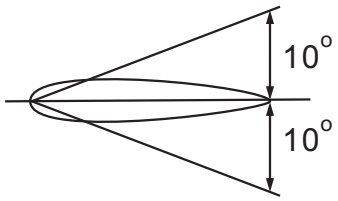
NOTE: If the movement of elevator works in opposite position, please check the elevator reverse switch on the transmitter and make necessary alignment.

WARMNING: Please check if the aileron, rudder, elevator can be neutral position while the stick & trim is at the neutral. If not, then, untie each adjuster screw of the servo horns, adjust the length of the pushrod, and then tighten the screws to avoid the pushrod loose.

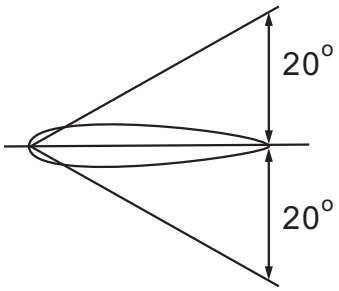
If loose of the pushrod, then lead the airplane to unstable, and result in crash.

7、Movement of all control surfaces:

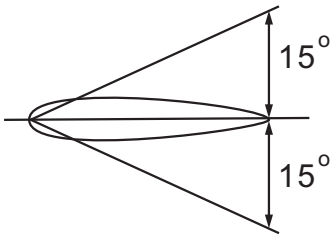
(1)、Aileron



(2)、Rudder



(3)、Elevator

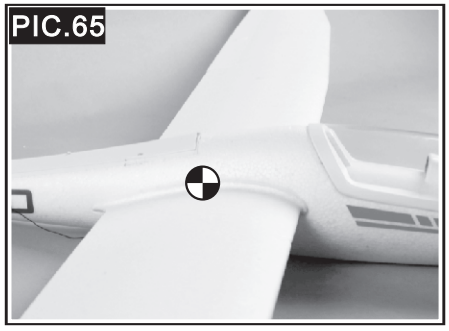


CG(Center of Gravity)POSITION

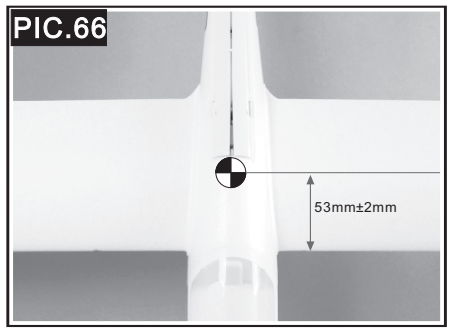
1、The standard CG will be changed according to the RMS folding / unfolding situation

Recommended CG is positioned at the 53mm behind the leading edge of wing when the RMS is completely folded(PIC.65, PIC.66).

PIC.65

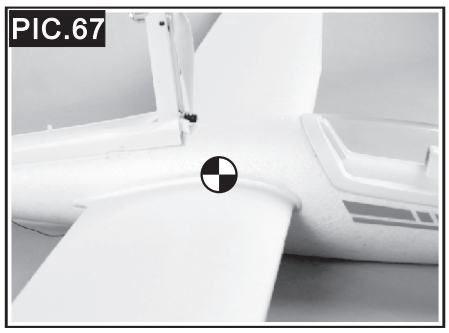


PIC.66

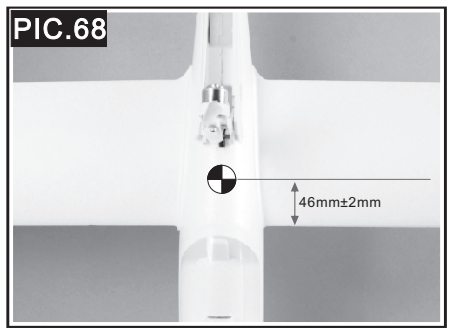


Recommended CG positioned at the 46mm behind the leading edge of wing when the RMS is completely unfolded (PIC.67,PIC.68).

PIC.67



PIC.68



2、Move the CG forward, the flying performance is stable; move backward, the flying performance is sensitive.

NOTE: The movement of the CG should not exceed±2mm;

3、We recommend only use the battery pack intended for DG1000, or use the same weight and performance battery packs. If the battery pack or other accessories have changes, please adjust the CG position according to the content above.

PRECAUTIONS BEFORE FLIGHT

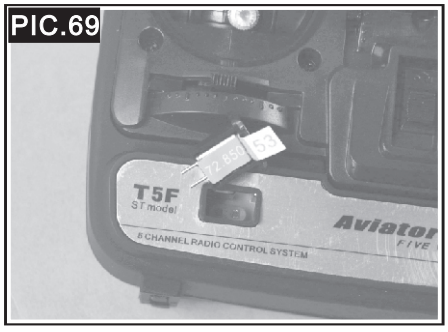
1、The DG1000 should be flown only when the wind speed is 16 mph or less. If the wind is calm or very light, the DG1000 will be docile and easy to control. If you have few flight, fly only when the wind speed is 5 mph or less. After you have enough flight, you can fly in winds that are no more than 16 mph per hour. If flown in stronger winds, the plane may be blown down wind and not have enough power to get back. The visibility range should not less than 1000m. Do not fly in rain or fog. Please check the direction of wind before your flying.

2、Also, Choose a large open area free of trees, power lines ,railway, road, parking lot, buildings or any other obstacles. Do not fly around groups of people, especially children. We recommend that the lawn or links are good flying field.

3、Don't fly in aviation control areas or military bases.

4、Make sure no one use the same radio frequency as you do in the same area to avoid frequency interference. There is a frequency label on the transmitter crystal, which shows the frequency band you use(PIC.69); if someone in your area use the same frequency, do not switch on the transmitter until their flight finished.

PIC.69



5、Always switch on the transmitter before supplying power for the plane to avoid interference; make sure the battery is charged and fresh AA batteries are installed in the transmitter.

6、The Cessna 182 is for pilots who graduate to a more complex airplane. Have an experienced pilots instructed how to test and fly for pilots without any experience.

FLIGHT

The DG1000 RTF version includes the “Auto Cut-Off” feature of the speed control provides an extra degree of insurance when the battery runs low. It reacts to low power by decelerating the rotate speed of motor even cut the power supply to the motor, in effect saving power for the receiver. That way your airplane goes into a glide and you stay in control as you land.

If you have never flown an R/C airplane before, we recommend that you get help from an experienced R/C pilot. Most R/C clubs have training programs that will help you learn to fly quickly. If you cannot find an experienced pilot to help you learn, the following will help you get your airplane into the air.

1、We strongly recommend you to choose the “NORMAL” mode for your first flight of DG 1000, and then switch to the “AUTO” mode after you adjust the airplane.

2、Switch your transmitter on , and assure that the throttle stick and its trim is at the min position.

3、Connect the battery with the plane. The propeller will rotate fast if you pull the throttle stick to a higher position.

CAUTION: Stay clear of the propeller. Always keep your hands behind the propeller.

4、Make a range check before each flight. Have an assistant hold the plane. With the antenna folded, walk 100 feet (about 30m) away from the plane and then hold the transmitter with the antenna pointing up to test the responses of each control surface by moving the control sticks. Also, turn the motor on and check the range. If you still have control of the airplane, it is safe to extend the transmitter antenna and fly the plane; if not, check if there are fresh batteries installed in the transmitter and if the battery in the plane is charged; also make sure the wire antenna is extending out the back of plane.

5、Please Check the direction of wind. The plane should take-off against the wind. With the throttle stick moved fully to the top, the propeller rotates fast. Then hand launch the plane into the wind, at a slight upward angle (0-10 degrees). Pull the stick toward you so that the plane climbs at a 10 to 30 degree angle. Allow the airplane to climb a few seconds before turning it.

6、When the plane is moving away from you, move the aileron control stick to the left, combined with a small amount of up elevator, your plane will turn left; move the aileron control stick to the right, your plane will turn right. To stop the turn, move the stick the opposite direction until the plane is flying level and return the elevator to center.

CAUTION: ONLY A SMALL AMOUNT OF UP ELEVATOR IS NEEDED HERE.

7、When the plane is coming toward you, move the aileron control stick to the left. But the plane flies to your right. That is to say, you have to reverse the way to control ailerons when the plane flies toward you. Here's a good way for you, you can turn your body when the plane flies toward you so that you are facing the same direction the plane is flying to; you can look at the plane over your shoulder. Now when you move the aileron control stick to left the plane will fly to your left.

8、When the plane climbs to a high enough altitude, you can adjust the trim lever to maintain straight and level flight. When loose the elevator control stick, if the plane tends to nose up, you can push the elevator trim lever to the direction away from you; if the plane tends to nose down, you can push the elevator trim lever to the direction towards you. Only a small amount of adjustment should be OK. If the plane doesn't go as you adjusted, you can adjust twice or more. Your goal is to get the plane fly level or climb at a very small angle (like 0-5 degrees) with the elevator, throttle control stick at their neutral positions.

9、For beginners, rudder is mainly used for take off and landing. During take off and landing, it is necessary to control the plane turn to left or right by controlling the rudder, instead of controlling the aileron. Move the rudder control stick to the left will make the plane turn to left; move this stick to the right will make the plane turn to right. If the plane tends to turn with the left stick centered, move the rudder trim lever opposite the direction the plane is turning.

10、With the plane flying level, check to see if the plane is flying straight. Move the aileron control stick in neutral position, if the plane wants to turn, move the aileron control trim lever opposite the direction the plane is turning. Then the plane is trimmed OK. If you take your hands off the sticks, the plane will fly straight and level on its own. Having the plane trimmed properly makes flying much easier and more enjoyable.

11、Don't let the plane get too far away from you. The farther away it is, the harder it is to see what the airplane is doing. Especially when the battery runs low, you should control the plane back to you immediately.

12、When learning to fly, it is best to keep the plane high enough so that you have enough altitude to correct it if you make a mistake.

LANDING

It's time to land the plane now. The problems you are facing are where and how to land it.

1、For the sake of safety, you should land the plane before the battery exhausted if you are a beginner. The power system of Cessna 182 comes with “Auto Cut Off” feature which reserves battery power for safe landing.

2、During the first flight, while at a high altitude, turn the motor off and retract the flaps (move it at position “1” or “2”), Then notice how the plane reacts. This will give you an idea of how the plane will react during a landing.

3、To land the Cessna 182, fly down wind, past the landing area. Gently turn into the wind and reduce the speed so that the plane starts to come down. Adjust the throttle when needed to reach the landing area, but not fly past it. Get the plane 1m or 2m above the ground when it is closed to the landing area.

4、Just before landing, at about 0.3m above the ground, apply a little up elevator to make the plane nose up (not to make it climb). This will cause the plane to slow and settle to the ground. When the plane is sliding on the ground, you can control the plane to run straightly by moving the rudder control stick till it stops. Please don't force it to stop by your body or anything else.

COUTION: Just before the plane touching down, pull the throttle control stick to its lowest position. Because after landing, the propeller cannot rotate with the throttle in the run position. Immediately move the throttle stick down to stop the motor. If you fail to do this, the propeller will be damaged because of hard landing. And the motor, speed control or the battery will become very hot and be dangerous.

AFTER THE FLIGHT

Unplug the battery with the plane and switch off the transmitter. Allow enough time for the motor and battery to cool before recharging. Check the plane carefully and make sure no parts have gotten loose or damaged.

SHENG TENG

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ST MODEL

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