ST MODEL

BLAZE

INSTRUCTION MANUAL

SPECIFICATIONS

WING SPAN:	1560mm\ 61.42in
LENGTH:	1010mm\ 39.76in
WING AREA:	21dm^2 \ 325.5in^2
WEIGHT:	900g\ 31.8oz
WING LOAD:	42.9g/dm^2
RADIO:	4-channel (required)

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 14 years old must use it accompanied by an adult.
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 10 mph) and in large open areas free of trees, people, building or any other obstacles.

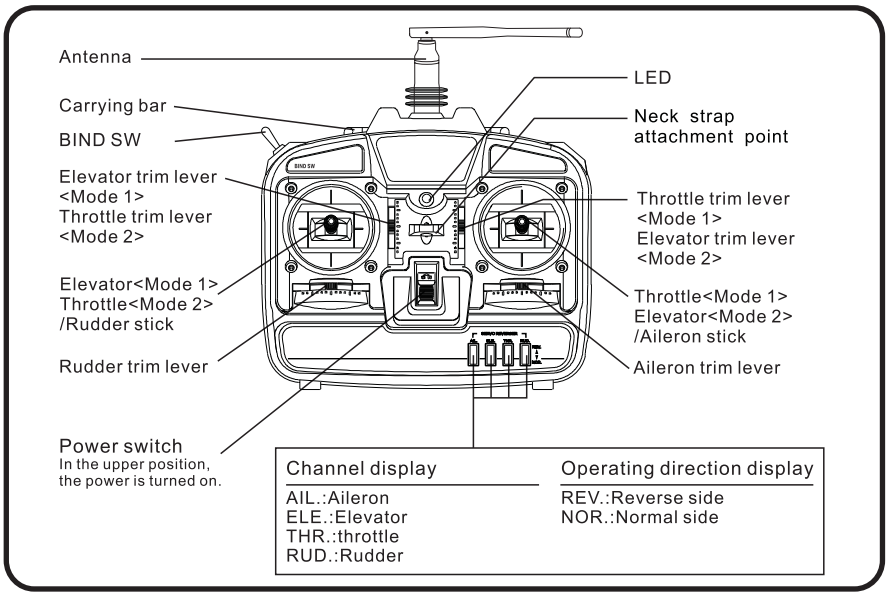
REMEMBER:
Take your time and follow the instructions to end up with a well-built model that is durable and easy to fly.

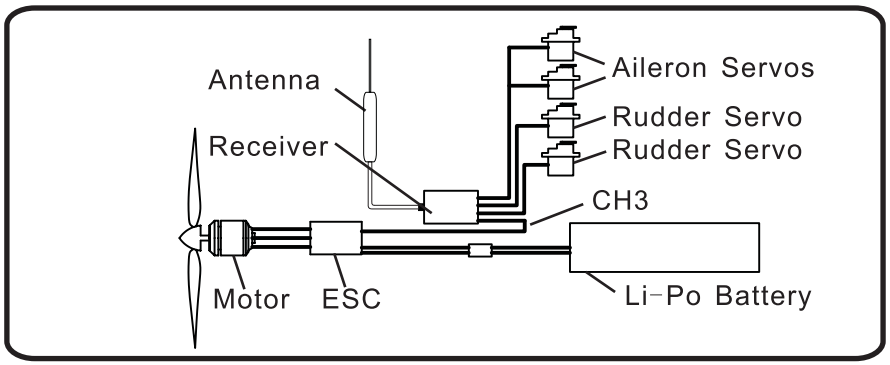
SPECIFICATIONS

Length: 1010mm\39.76in
Wingspan: 1560mm\61.42in
Wing Area: 21dm^2 \325.5in^2
Flying Weight: 900g\31.8oz
Wing Load: 42.9g/dm^2
Propeller: 10″X6″Folding propeller
Power System: Brushless motor, 1800mAh 11.1V Li-Po battery
Radio Required: 4CH transmitter & receiver, 4 Micro Servos

GLOSSARY

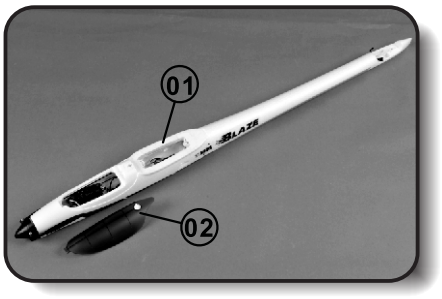
Aileron: Controls roll(right/left).
Elevator: Controls Pitch(up/down).
Rudder: Controls Yaw(right/left direction) (yaw).
*Flap: Increase the lift force of the airplane wing , slow down the flight speed.
Receiver: Provides input to the control surfaces and ESC.
Power System-ESC(Electronic Speed Concrol):Controls the speed of the motor.
Motor: Rotates the prop to provide thrust.
Transmitter (TX): The hand-held unit that sends the signal to the receiver. Moving the sticks control direction, climb/descent, roll and motor speed.
Li-Po battery: Rechargeable batteries which are used to power the airplane. Li-Po batteries are lighter and smaller than most other types of rechargeable batteries.

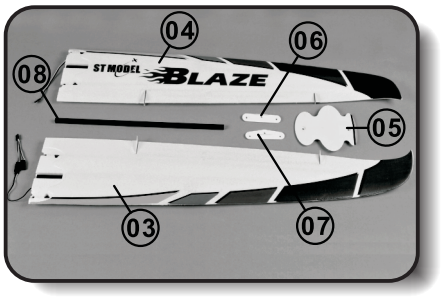


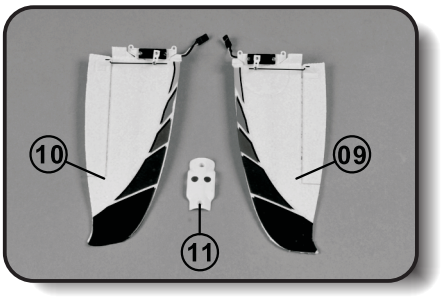


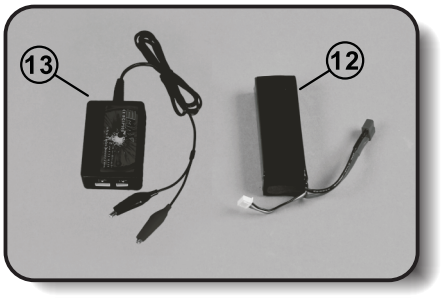
CONTENTS OF KIT

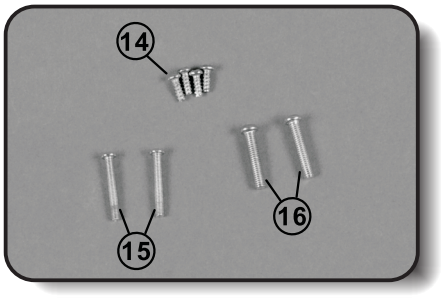
01. Fuselage x1
02. Hatch x1
03. Left Wing..... x1
04. Right Wing x1
05. Wing Cover x1
06. Wing Connector A x1
07. Wing Connector B x1
08. Carbon Rod x1
09. Left Tail x1
10. Right Tail x1
11. Rudder Servo Hatch x1
12. Battery Pack x1
13. Charger x1
14. Screw For Wing connector(M3.0x8)....x4
15. Screw For Servo Hatch(M3.0x22) x2
16. Wing Bolt(M4.0x20) x2
17. Nose For Unpowered Glider x1
18. Hanger For Unpowered Glider x1
19. Pushrod For Unpowered Glider..... x1
20. Servo Support For Unpowered Glider..x1
21. Screw For Unpowered Glider x7
22. Transmitter x1
23. Decal x2
24. Product Manual x1

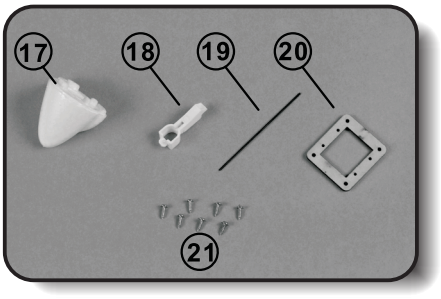












PREPARE THE TRANSMITTER

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).

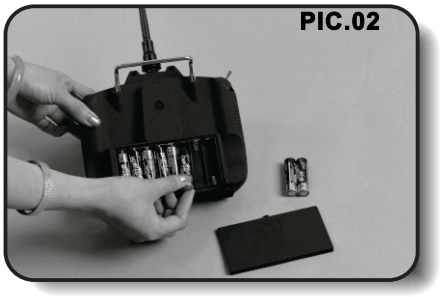
   CAUTION:

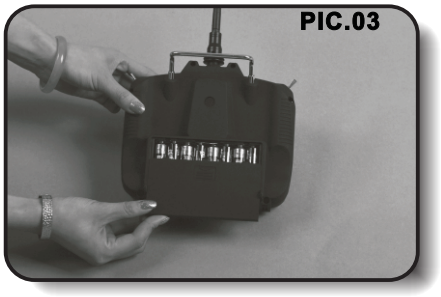
   （1）.Do not use rechargeable(NiCd & NiHy)batteries.

   （2）.Do not mix old and new batteries.

   （3）.Do not mix alkaline and standard (carbonzinc)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, installfresh batteries. Also check to make sure that the batteries are installed correctly.
4. Switch the transmitter off and stand by for later use.


PIC.01


PIC.02


PIC.03


PIC.04

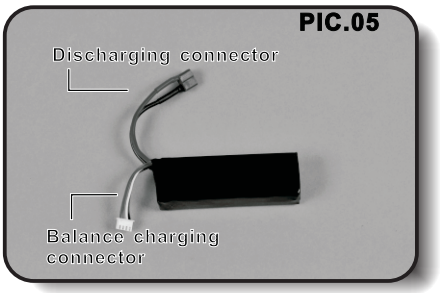
CHARGE THE BATTERY

Blaze is equipped with a 3C -11.1V Li-Po battery (PIC.05) and a Li-Po battery cell balancing charger(PIC.06). The Li-Po battery has two connectors; one is for cell balance charging and the other is for discharging. The charger has a arrel connector with alligator clips for DC input voltage and two output sockets for balance charging. One of outputs is for 2-cell Li-Po battery pack and the other for a 3-cell Li-Po battery pack.

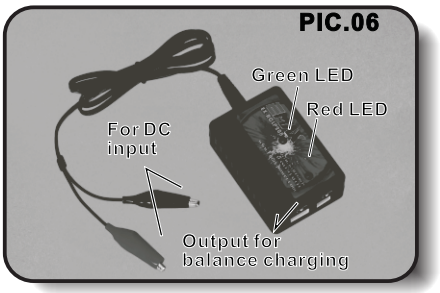
CAUTION:

（1）.Only charge the Li-Po battery with a Li-Po battery balance charger.

（2）.This is a lithium polymer battery charger. Which just matchs to the Li-Po battery installed in Blaze. Do not charge other types of batteries.



PIC.05



PIC.06

1. Connect the charger to the11-14V DC power supply and then the red LED is on (PIC.07); Ensure the current capacity of the power supply is 1A or higher.

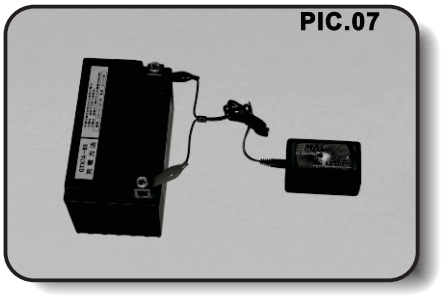
   CAUTION:

   （1）.DC power must meet the requirements above, or charger will work incorrectly and maybe damage on the charger & battery.

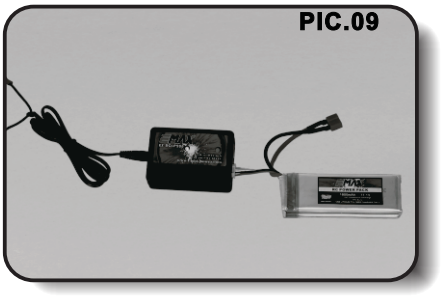
   （2）.Before charging, disconnect the battery with any power.

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

2. Plug the balance connector of the battery pack to the four-pin output socket of the charger(PIC.08). Be careful - the battery will plug in only one way. Do not force the plugs ; Observe the green LED is on solid(PIC.09).
   NOTICE:
   Please connect the charger to the power sources before connecting the battery pack.
3. **IMPORTANT!** Never leave a charging battery unattended. Please stop the charging operation if the charger appears to be performing abnormally. Please stop charging immediately if the battery temperature rises rapidly.
4. When the battery pack is fully charged, the green LED will turn off.


PIC.07

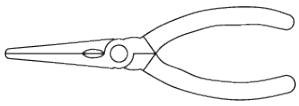

PIC.08

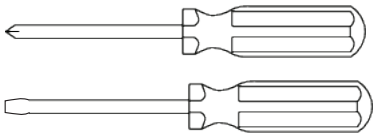

PIC.09

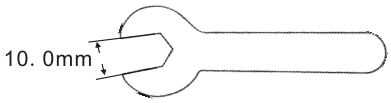
Warning:
Disconnect the battery with the charger first and then disconnect the power with the charger when it is finished.
Pls choose the power, battery and transmitter or it will reduce the longevity under the incorrect improvements.

ASSEMBLE THE AIRPLANE

Tool will be required for assembly as below


nipper pliers

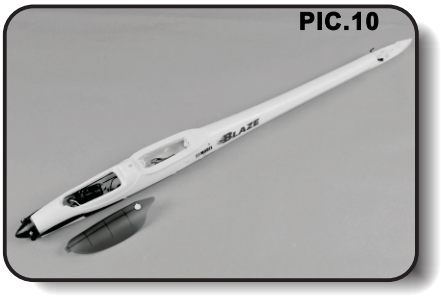

screwdriver

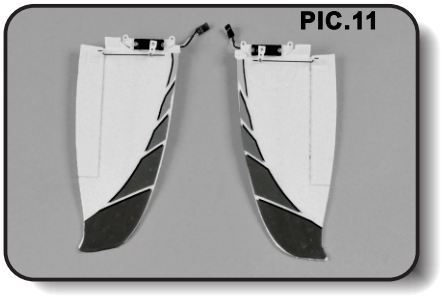


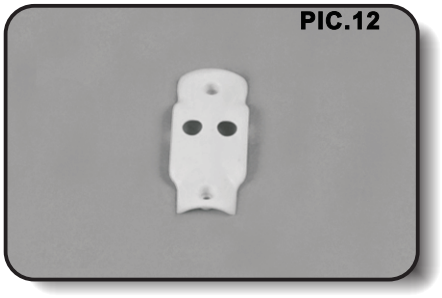
spanner

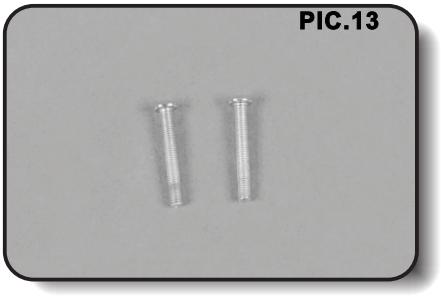
INSTALL THE FUSELAGE

1. Parts for installation:
   (1).Fuselage & Hatch(PIC.10).
   (2).Left & Right Tails(PIC.11).
   (3).Rudder Servo Hatch(PIC.12).
   (4).Screws For Servo Hatch(M3.0x22)
   (PIC.13).

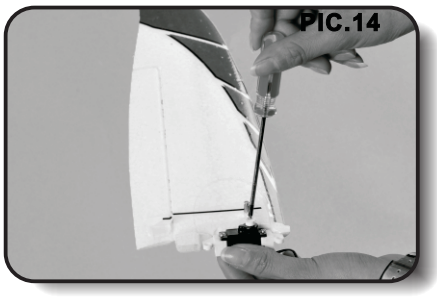

PIC.10

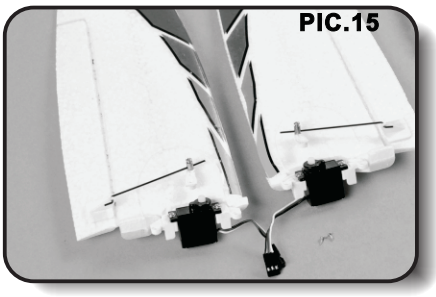

PIC.11


PIC.12

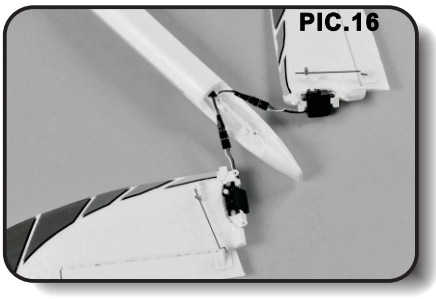

PIC.13

2. Loosen the horns by unscrew the screws from the rudder servo. (PIC.14,PIC.15).

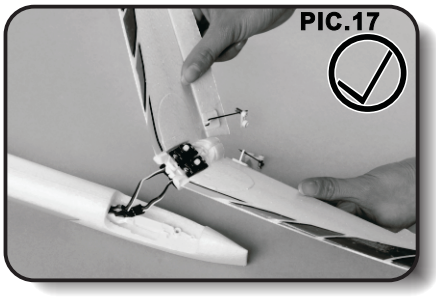

PIC.14

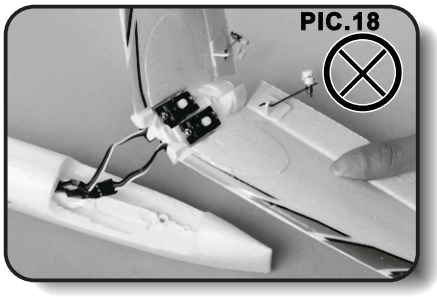

PIC.15

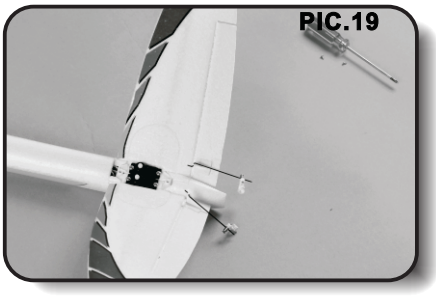
3. Take the rudder servos wires and connect to servo extension leads. Ensure the polarity should be contacted correctly(PIC.16).


PIC.16

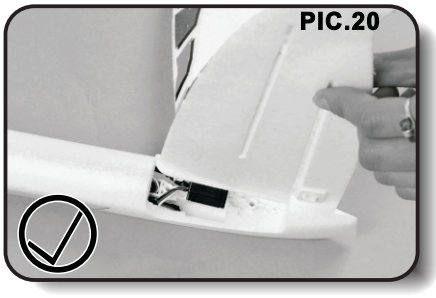
4. Fit left tail and right tail in the right way as pictures show(PIC.17,PIC.18). Then install the tail wings onto the holder on the back of fuselage(PIC.19).

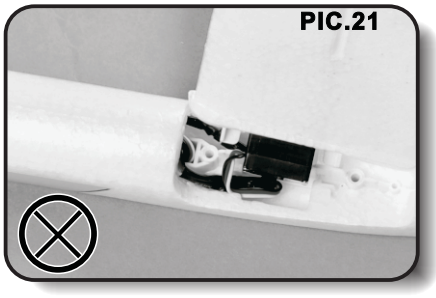

PIC.17

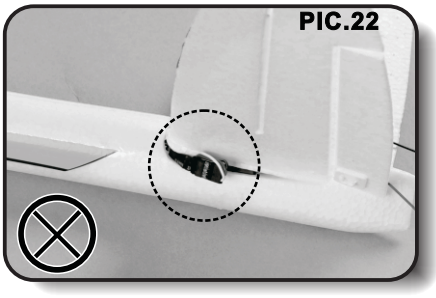

PIC.18


PIC.19

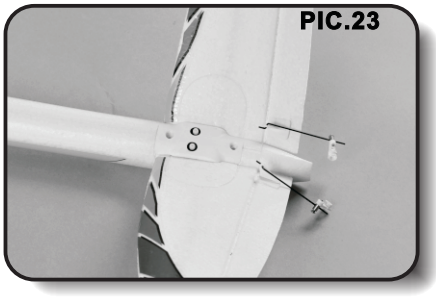
Note:
Before fit the tail wings and fuselage in place, please fold the servo wire into its place in the fuselage or it will affect the tails assembly(PIC.20-PIC.22).

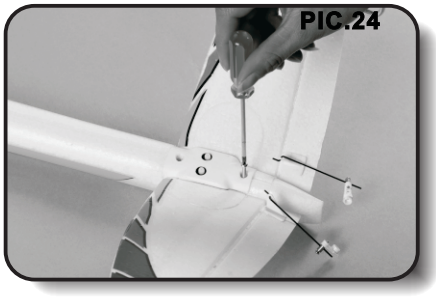

PIC.20

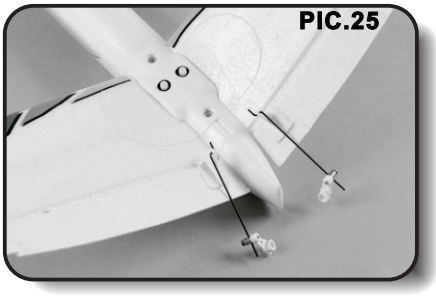

PIC.21


PIC.22

5. Install the rudder servo hatch onto the rudder servos, then tighten the screws (M3.0x22) to avoid the tail wings loosening(PIC.23-PIC.25).

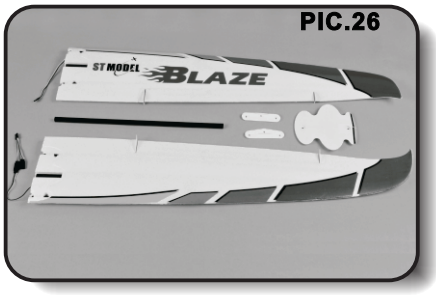

PIC.23


PIC.24

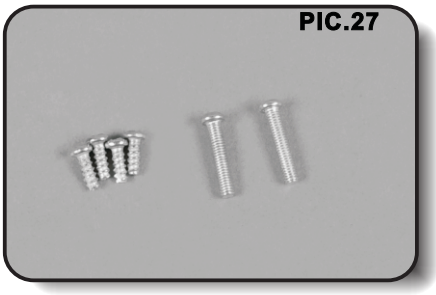

PIC.25

INSTALL THE WING

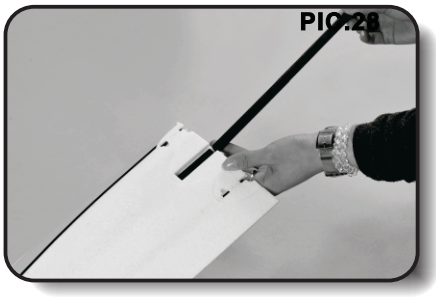
1. Parts for installation(PIC.26,PIC.27):
   (1).Left & Right Wings
   (2).Carbon Rod
   (3).Wing Cover
   (4).Wing Connector A & B
   (5).Screw For Wing Connector (M3.0x8) x4
   (6).Wing Bolt (M4.0x20) x2

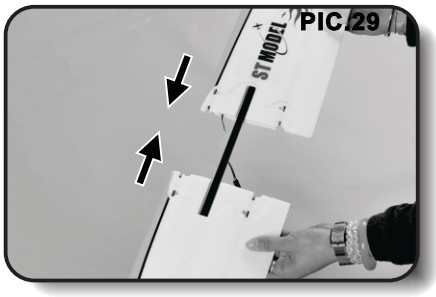


PIC.26

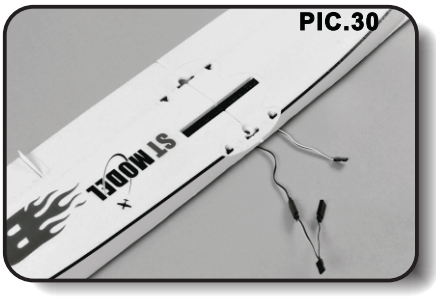

PIC.27

2. Insert the carbon rod into one of wings(PIC.28).
   Then insert it into the other wing and fit the wings in place(PIC.29,PIC.30).


PIC.28

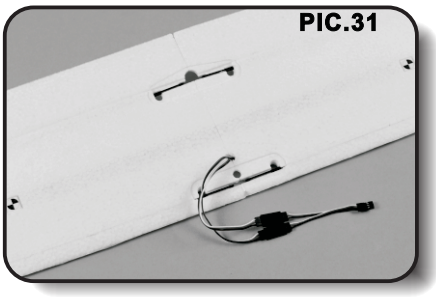


PIC.29

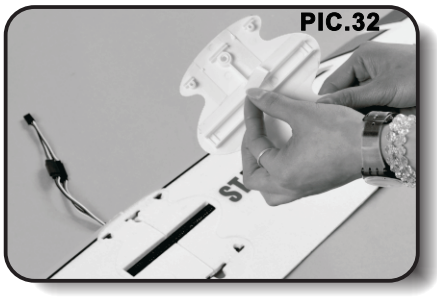


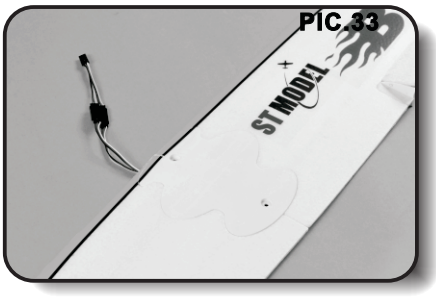
PIC.30

3. Connect the aileron servo wires to servo “Y” extension leads(PIC.31).
   Ensure the polarity should be contacted correctly.


PIC.31

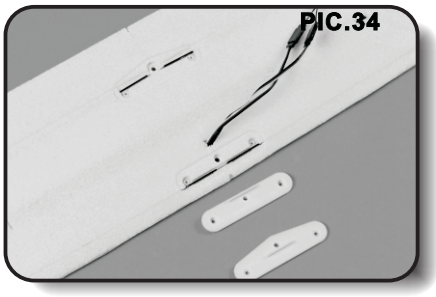
4. Take the wing cover and tear off the cover coat on the double pastern. And fit the wing cover onto the wing in its place (PIC.32,PIC.33).

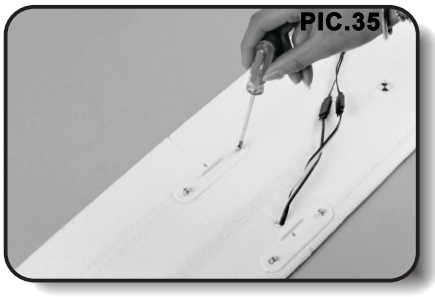

PIC.32

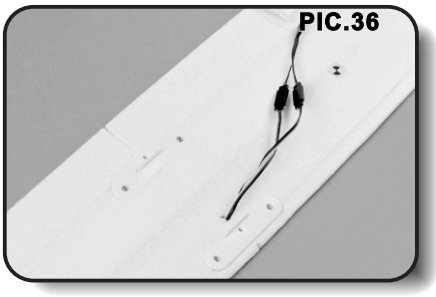


PIC.33

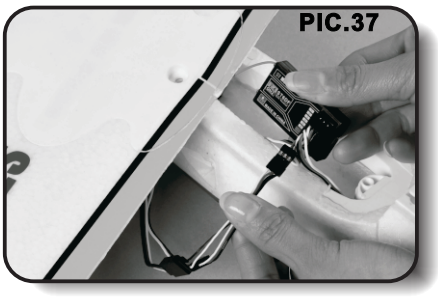
5. Take the wing connector A/B(PIC.34). And fix them with screws(M3.0x8) to avoid loosening (PIC.35,PIC.36).


PIC.34


PIC.35

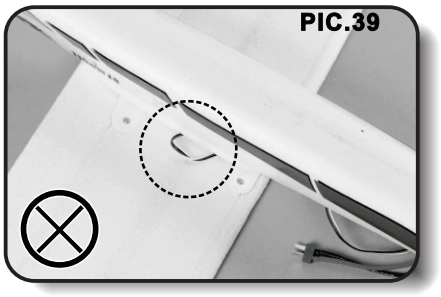

PIC.36

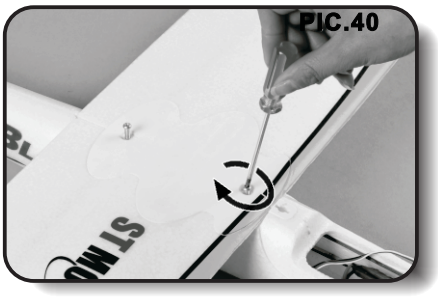
6. Connect the aileron servo extension to the receiver in fuselage(PIC.37).


PIC.37

7. Put the wing onto the fuselage(PIC.38,PIC.39), and switch the wing bolt with screwdriver to avoid the wing loosening(PIC.40).

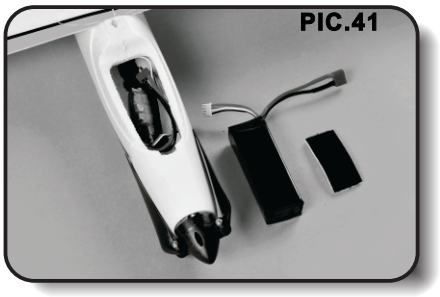

PIC.38


PIC.39

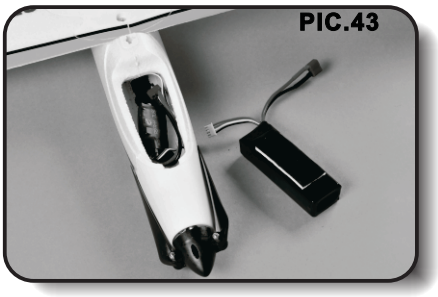

PIC.40

INSTALL THE BATTERY

1. Preparation of battery: Stick the loop tape to battery by the double pastern(PIC.41-PIC.43). Ensure the battery has been charged and has enough power before next step.


PIC.41


PIC.42


PIC.43

2. Switch on the transmitter(PIC.44). Attach the battery connector to the power plug of the fuselage (PIC.45). 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.

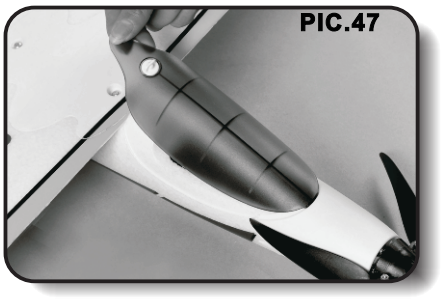

PIC.44


PIC.45

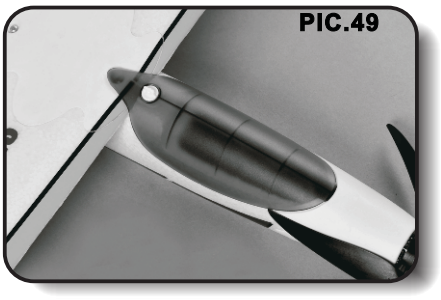
3. Locate the battery inside the battery location as illustration(PIC.46).
Notice:
(1).Before connecting the battery, make sure the LED on the transmitter is on.
(2).Fit the battery in its place as shown. Otherwise, the plane will lose its balance potentially because of the movement of the battery.


PIC.46

4. Test fit the canopy to the fuselage(PIC.47). Lock the canopy in place by turning the locker on canopy 90°(PIC.48,PIC.49).


PIC.47


PIC.48

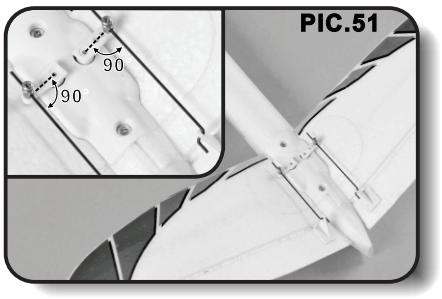

PIC.49

CENTER THE CONTROL SURFACE

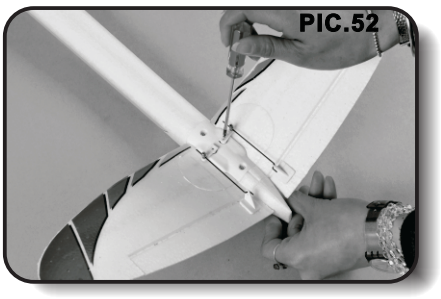
1. Ensere the transmitter is switched on, and the electronic system is powered. Also center the trims of rudder, elevator and aileron on transmitter(PIC.50).


PIC.50

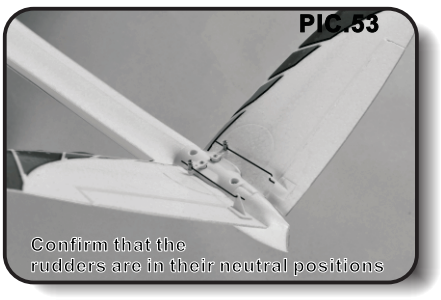
2. Fit the rudder servo horns to rudder servos with the screw to avoid loosening as illustration (PIC.51,PIC.52).



PIC.51


PIC.52

3. Confirm that the rudders are in their neutral positions adjusting the length of the pushrod as necessary(PIC.53).



PIC.53

4. Confirm that the ailerons are in their neutral positions adjusting the length of the pushrod as necessary (PIC.54,PIC.55).
   NOTE:
   Tighten the screws of pushrod adjuster to avoid loosening.
   If not, control of the model may be lost and a crash may result .

PIC.54


PIC.55

TEST THE RADIO CONTROL SYSTEM

1. Make sure the transmitter is switched on. Adjust all the trim levers to their neutral positions.
2. According to the following instructions, set up the power system (ESC)propeller function, meanwhile the ESC brake function is optional to customers !

NOTE:

The BLAZE RTF version includes a power system(ESC) with a brake function, which can be programmed to make the propeller stop rotating, reducing wind resistance during glide when the throttle is cut off for landing. Meanwhile, the brake function " ON & OFF " can be swapped out according to your requirements. But we recommend that the brake function should be on for the blaze.

(1).● Ensure that the throttle control stick is fully backward(to its lowest position).

NOTE:

If the battery is connected to the plane at this time, disconnect it for 5 seconds.

- Connect the battery to the plane's electronics. The power system(ESC) will immediately respond and remind the user if the propeller brake is " off " (single beep) or " on " (tow beeps).
- If there is one single, it shows that the brake is in the off position. Then the prop will still turn under power off. This causes drag and reduces the plane's ability to maintain glide speed during landings. Do it as the step(2) below if you want to get the brake on.
- If there are two beeps, the propeller brake is on and the propeller will come to a stop quickly when the throttle stick is in the off or down position, reducing drag. Do it as the step(3) below if you switch to brake off.

(2).Switch from without brake mode to with brake mode: Disconnect the battery with the airplane before operation switch.

- Move the throttle control stick forward (at the top).
- Plug the battery to the fuselage.
- Wait for 5 seconds, there are two beeps.
- Move the throttle control stick backward (to its lowest place).
- There are two beeps, the power system will work with brake. And move down the throttle to the lowest, ESC will have a " beep ", indicating prop brake off, and now the ESC is activiated to motive the prop.

(3).Switch from the brake mode to the mode without brake Disconnect the battery with the airplane before operation switch.

- Move the throttle control stick forward (at the top).
- Plug the battery to the fuselage.
- Wait for 5 seconds, there is a beep.
- Move the throttle control stick backward (to its lowest place).
- There is a beep; the power system will work without brake.

3. Test the power system:

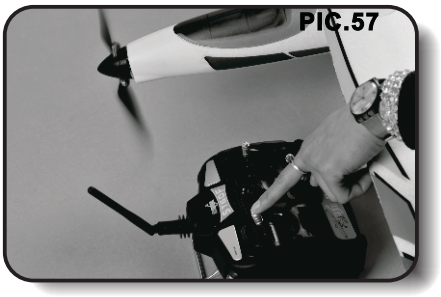
(1).The transmitter power should be on now and the throttle at minimum position. Pls make sure that the ESC brake function is either " on "or" off "and the prop should be held still(PIC.56), if the prop is turning slowly, then ensure that the throttle control stick is at minimum position, if not, then trimmed to the throttle at minimum.

(2).Move the throttle control stick forward slowly; check if the motor rotates faster gradually(PIC.57).

NOTE:

If the motor doesn't react with the throttleincreasing, please check the power supply or the battery capacity.


PIC.56


PIC.57

WARNING:

Keep everything clear of the propeller once the battery is plugged in.

Do not try to stop the propeller by hand or anything else.

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.58).

（2）.Move the stick to the right, the left aileron moves down and the right one moves up(PIC.59).

（3）.Move the stick to its neutral position, the aileron returns its neutral position(PIC.60).


PIC.58


PIC.59


PIC.60

NOTE:

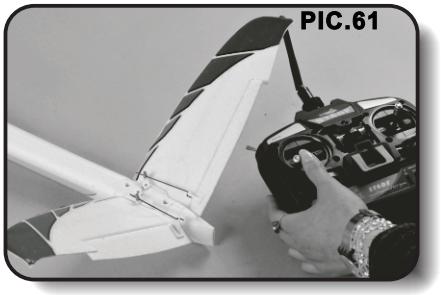
If the movement of aileron works in opposite position, please check the aileron reverse switch on the transmitter and make necessary alignment.

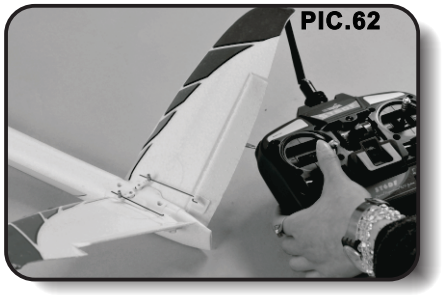
5. Test the rudder:

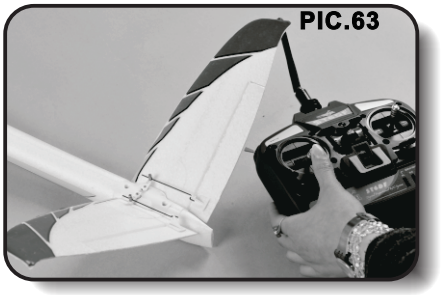
（1）.Move the rudder control stick to the left, the rudders turn to the left(PIC.61).

（2）.Move the stick to the right, the rudders turn to the right(PIC.62).

（3）.Move the stick to its neutral position, the rudders return theirs neutral position(PIC.63).


PIC.61


PIC.62


PIC.63

NOTE:

If the movement of aileron work opposite position, please check the aileron reverse switch on the transmitter and make necessary alignment.

6. Test the elevator:

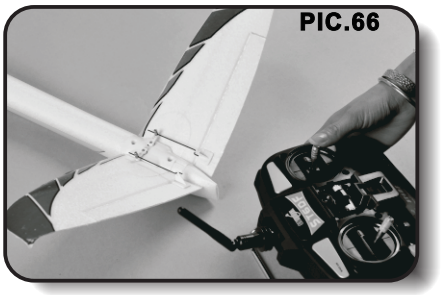
（1）.Move the elevator control stick backward, the elevator will be up(PIC.64).

（2）.Move the stick forward, the elevator will be down(PIC.65).

（3）.Move the stick to its neutral position, the elevator returns its neutral position(PIC.66).


PIC.64


PIC.65

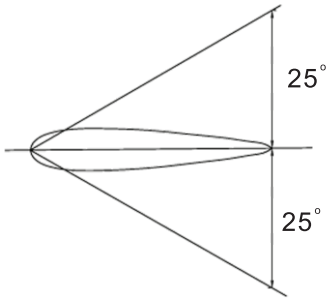

PIC.66

NOTE:

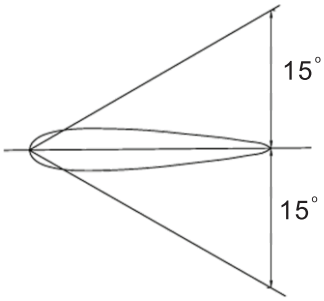
If the movement of elevator works in opposite position, please check the elevator reverse switch and make necessary alignment.

7. Movement of all control surfaces:

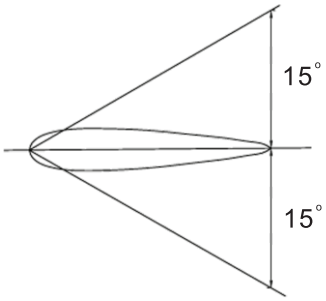
（1）.Aileron



（2）.Rudder



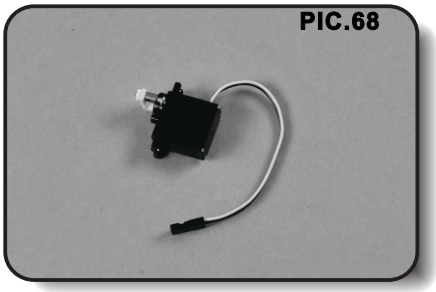
（3）.Elevator



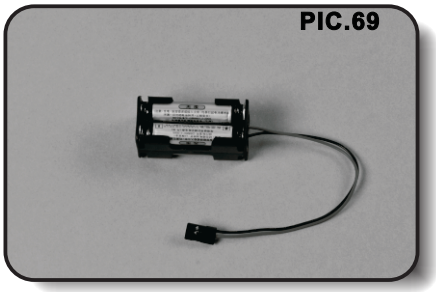
ASSEMBLE UNPOWERED GLIDER

1. Prepare a micro servo which has the pushrod adjuster on it horn(PIC.68).
   Also prepare a 4.8V ~ 6.0V DC power supply such as a battery pack powered by four alkaline “AA” or “AAA” batteries(PIC.69).
2. Remove the motor and ESC form the plane(PIC.70).

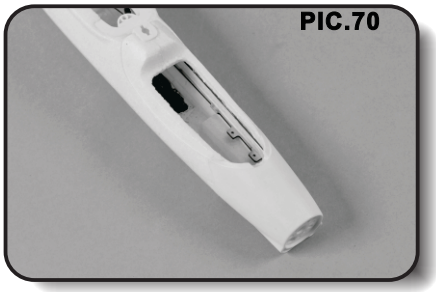
PIC.68



PIC.69

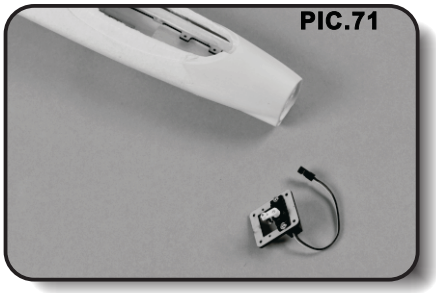


PIC.70



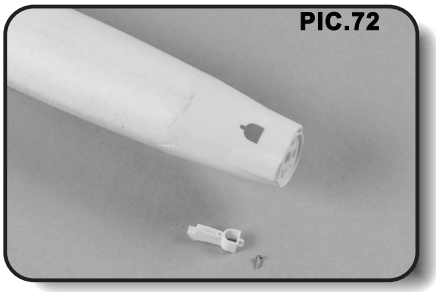
3. Fit the micro servo and servo support by the two screws(M2.5x8) (PIC.71).

PIC.71

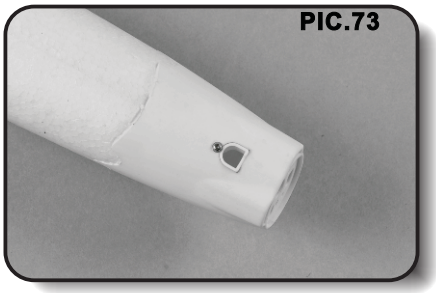


4. Screw the hanger into the fuselage(PIC.72-PIC.74).

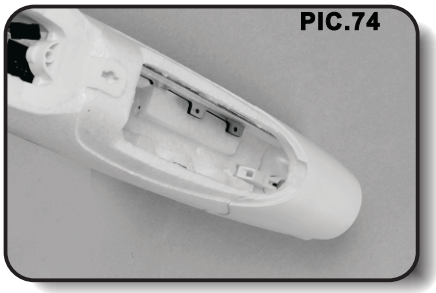
PIC.72



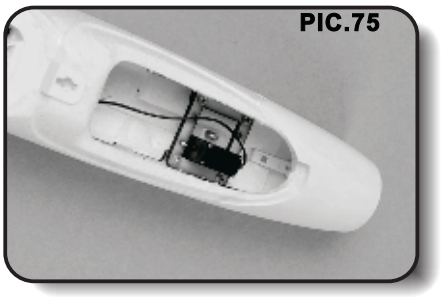
PIC.73

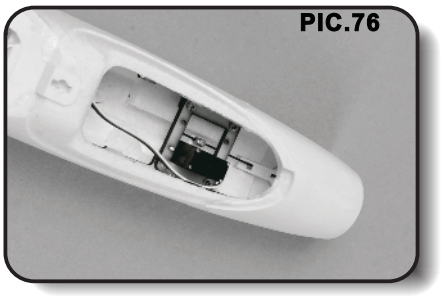


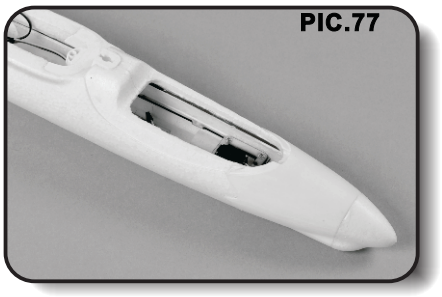
PIC.74



5. Assemble the servo with the support into cockpit(PIC.75).
6. Insert the pushrod through the pushrod adjuster and the hanger(PIC.76).
7. Assemble the nose onto the fuselage by the double pastern(PIC.77).


PIC.75

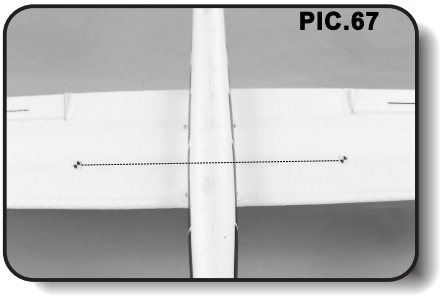

PIC.76


PIC.77

8. Insert the servo wire into the socket of the receiver throttle(CH3).
9. Power the receiver and other electronic system by the 4.8V ~6.0V battery pack.

CG(Center of Gravity)POSITION

1. The standard CG is positioned the line as the picture shows(PIC.67).
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±5mm; otherwise, it will have an effect on flying performance and cause a crash!
3. We recommend only use the battery pack intended for Blaze, 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.


PIC.67

PRECAUTIONS BEFORE FLIGHT

1. The Blaze should be flown only when the wind speed is 15mph or less. It will be easy to control if the wind is calm or very light. Only fly the Blaze when the wind speed is less than 5mph if you have no experience of flying; if you are an experienced pilot, please fly it when the wind speed is 15mph or less; if fly it in stronger winds, the plane would be blown down wind and couldn't recover due to lack of power.
2. Choose a large open flying site. It would be better if there is a flat, long and wide enough ground(such as concrete ground) as runway. In a calm day, the ideal size of runway for Blaze should not be less than 40m×5m. The site should be free of power line, trees and away from railway, highway, parking lot and building. Don't fly around groups of people, especially children. Lawn is not a good site for Blaze to take off and land. The plane cannot achieve its normal speed when take off and would be reduce its speed suddenly and loop when landing.It would be better if flown in a site for flying RC planes.
3. Don't fly in aviation control areas or military bases.
4. 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.
5. The Blaze 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 Blaze RTF packaging includes a power system with " Auto Cut-Off " feature providing 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 and servos. Then the plane goes into a glide and stays in control till 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 plane into the air:

1. First, turn you transmitter power switch " ON ". Ensure the power control stick is at the lowest position and the trim lever is at the neutral position.
2. Connect the battery with the plane. The propeller will rotate fast if pull you the power control stick to a higher position.

CAUTION:

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

3. Make a range check before each flight. Have an assistant hold the plane. With the antenna point to sky, walk 300 feet (about 100m) 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 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 of plane.
4. 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 (0-10degrees).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.
5. 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 smallamount of up elevator is needed here.

6. 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.
7. 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 position and the throttle stick moved fully up.
8. 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.
9. 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.
10. 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.
11. 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 BLAZE 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. 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 BLAZE, 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 0.5m 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. Please don't force it to stop by your body or anything else.

   CAUTION:

   Just before the plane touching down, pull the throttle control stick to its lowest position. Because during a rough landing, the propeller should become jammed and cannot rotate with the throttle in the run position, the battery, speed control and the motor will become very hot. Immediately move the throttle lever down to stop the motor. If you fail to do this, the motor, speed control or the battery would be damaged.

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

ELECTRIC R/C MODEL PLANE CO.,LTD

ST MODEL

www.sheng-teng.com

E-mail:shengteng@263.net.cn