

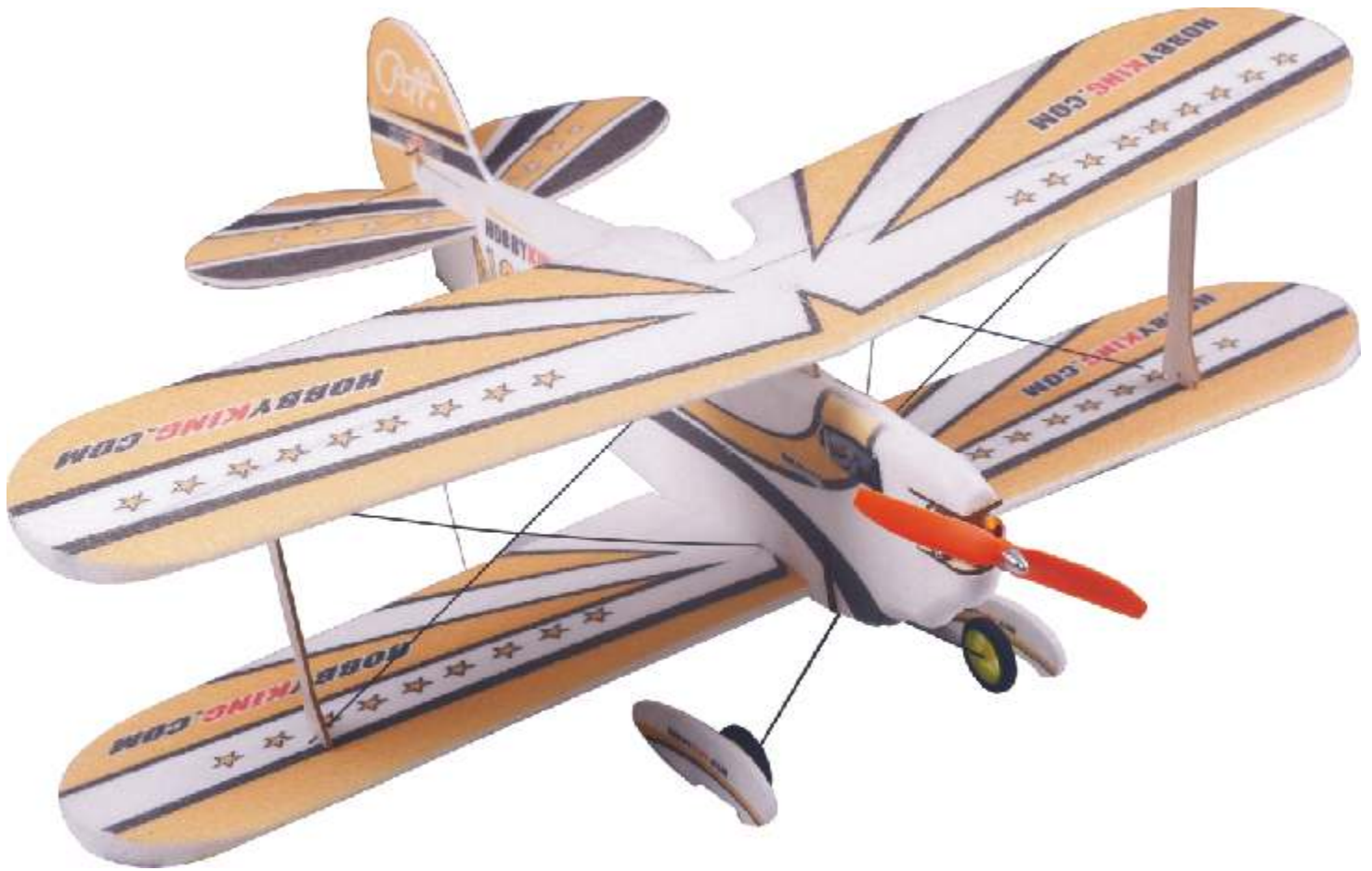
Before operating this unit, please read these instructions completely.

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**ALMOST UNBREAKABLE**

# Pitts - EPP

## INSTRUCTIONS



### Features:

Pitts Special is super aerobatic model for 3D aerobatic flying. Model is produced by modern technology on CNC machines from EPP "almost unbreakable" material. The flying time of Pitts Special is between 8 to 15 minutes, it depends on the flying figures. The model is able to "torque roll" and then after giving more "gas" to rise vertically up, looping in "knife" flight and all aerobatic figures. It is very easy to land with the model, you are able to do it into your hand if you want like with hand launch glider.

### Product Specifications:

Fuselage length: 760mm (29.9in.)  
Wingspan: 850mm (33.5in.)  
Flying Weight: 350-400g (with battery)  
Motor: 2212 KV 1400  
ESC: 20Amp  
Propeller: GWS 8040-9050  
Servo: 8g micro servo \* 3pcs  
Radio: 4/more channels  
Battery: 11.1V 800-1200mAh Li-po 20C

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**Do not fly under the conditions below**

Wind strong enough to make the trees rustle  
A street with many trees or street lamps  
Close to high voltage electrical wires  
High Population density areas

**Cautions for flying**

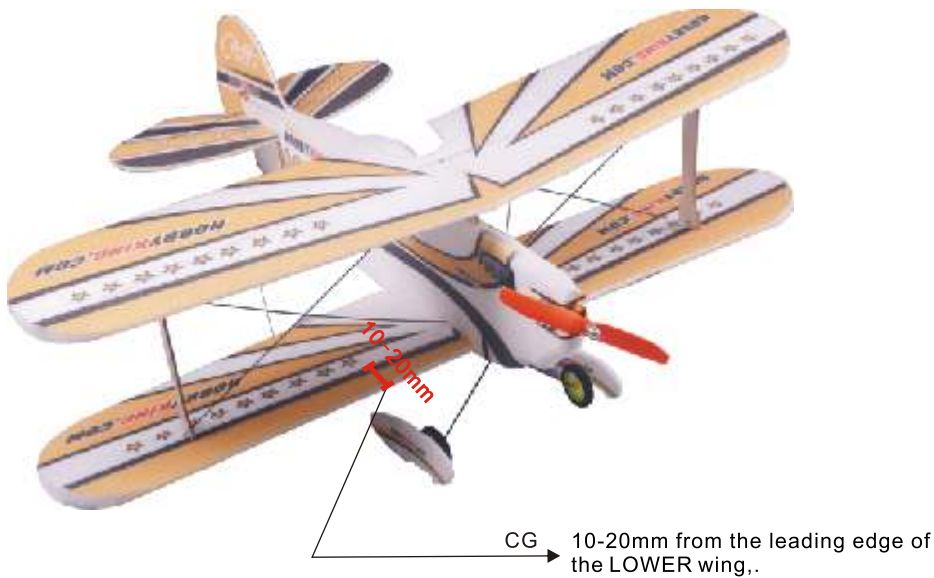
Large gyms, front lawns and parks make excellent flying areas. Make sure you have permission to fly and follow safety guidelines set by local authorities. The calmer the wind, the better!

**Note for Storage**

Please disconnect the lipo packs when finished flying  
Do not press or crush the airplane when storing  
The best way to store is to hang the airplane to keep the control surface rigid

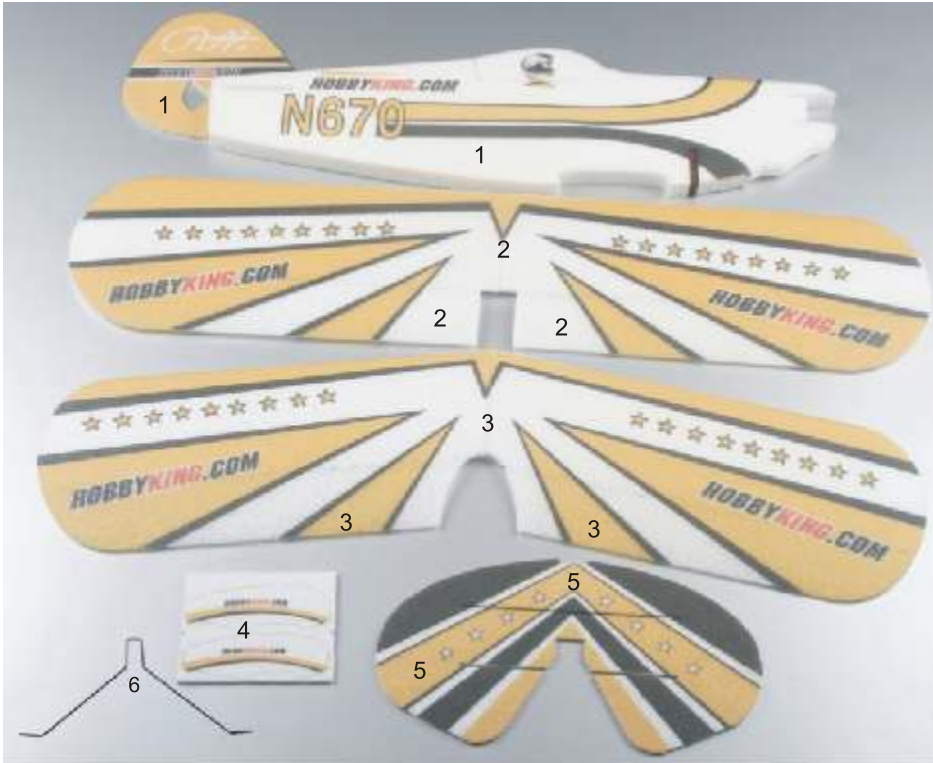
**CG Position:**

10-20mm from the leading edge of the LOWER wing,.

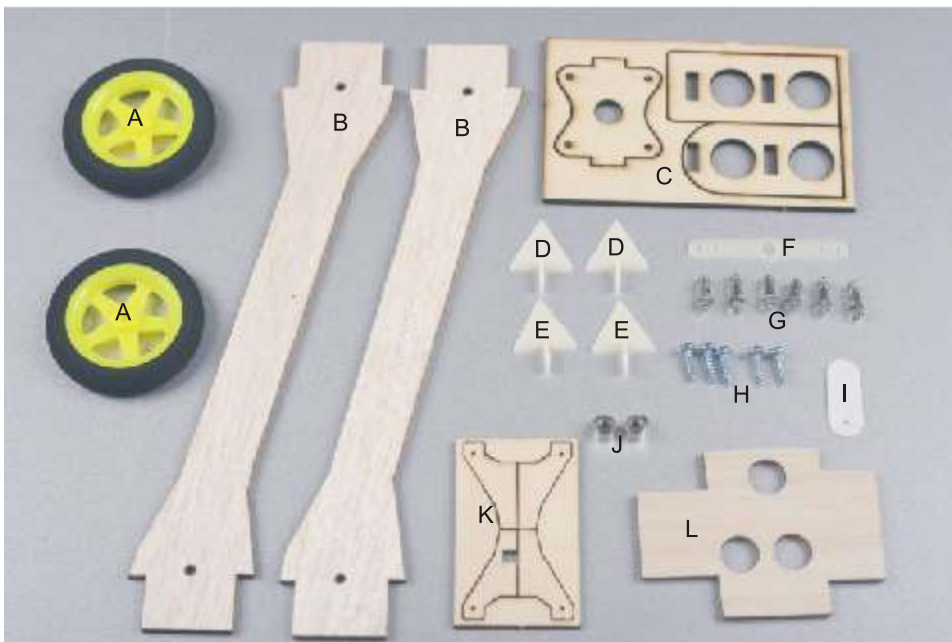
**Recommended Flying Setup**

Max servo travel of aileron: 40 degrees up and 40degrees down (48mm)  
Max servo travel of elevator: 50 degrees up and 50 degrees down (60mm)  
Max servo travel of rudder: 45 degrees left and 45 degrees right (50mm)

## Body parts included in the packing



1 Fuselage+Rudder(vertical tail)	1pcs
2 Lower Wing with aileron (right and left)	2pcs
3 Upper Wing with aileron (right and left)	2pcs
4 Wheel pant	2pcs
5 Elevator (stabilizer)	1pcs
6 Landing gear	1pcs



### Parts included in the packing

A wheel 46mm	2 pcs
B wing strut	2pcs
C motor mount	1pcs
D aileron control arm 1mm	2pcs
E aileron control arm 1.6mm	2pcs
F extension of the arm	1pcs
G pushrod connector	6pcs
H screw	5pcs
I PVC	1pcs
J Wheel adapters	2pcs
K Control arm	4pcs
L Baldachin	1pcs

## Fittings



Glass fiber rod	6pcs	diameter1.5 mm*800mm(L)
Plastic tube	2pcs	2*200mm
Z wire	2pcs	0.8mm*360mm
Z wire	4pcs	1.2 mm *220mm

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## The items below are required for assembly





1. Cut a straight slot on the fuselage to 580mm by knife as picture shown. The slot must be 3mm deep and ensure the 1.5mm glass fiber rod inset.



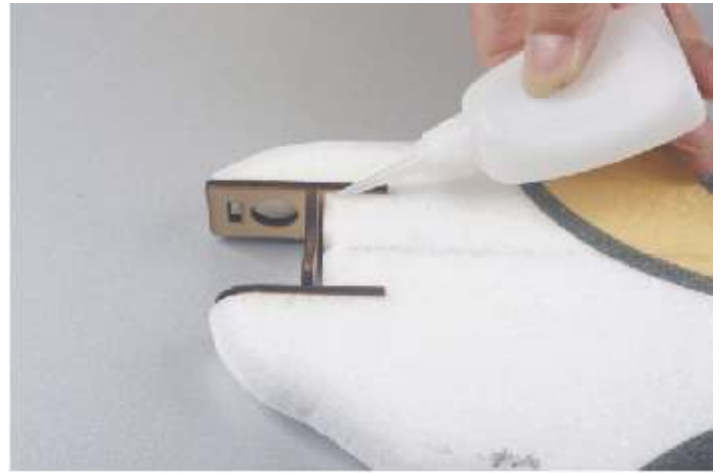
2. Cut a glass fiber rod (Dia 1.5mm) to the length of 580mm..press the rod into the slot which was cut last step.



3. On the flat board glue the carbon rod into fuselage using CA glue.



4. Glue the motor mount as shown .use CA glue .



5. Insert motor mount into the fuselage .use CA glue.



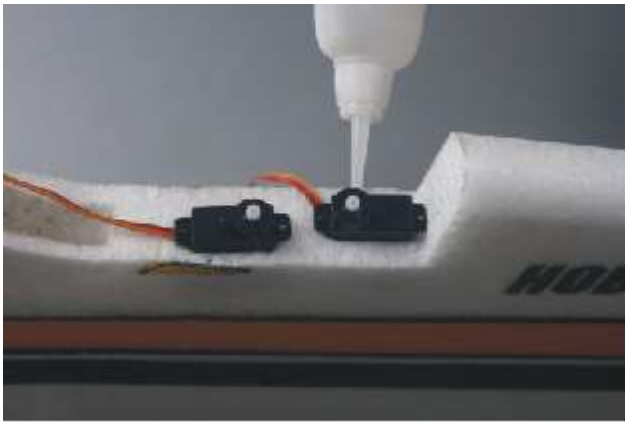
6. Screw motor into the motor mount , using 4pcs screws.



7. Cut opening for ESC .insert ESC into opening –the hole must be about 1mm smaller,  
The fuselage foam will hold the ESC in the left position.



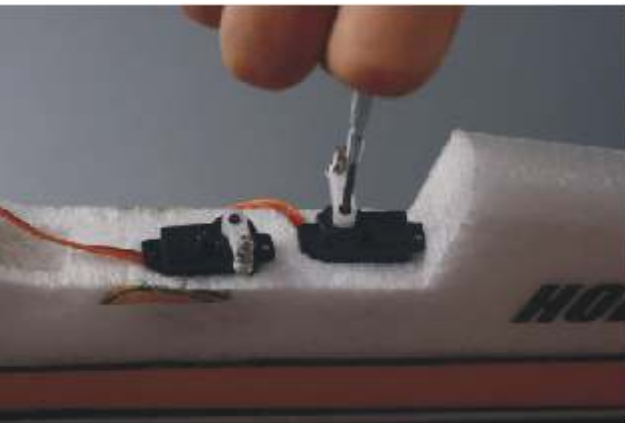
8. Using sharp knife cut an opening for rudder and elevator servos and for receiver .  
The opening for servos must be 1mm smaller from each side .



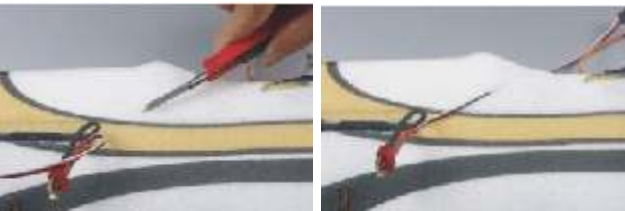
9. Insert the servos into the hole as shown .use CA glue .



10. Install the pushrod connector to the servo arm, insert the quick lock onto the pushrod connector .



11. Use your radio system and determine which hole in the servo arms will give the desired control throw. Install the servo arms on the servos.



12. Into the fuselage drill 8mm deep slot for servo cable of the ESC . Install the servo cable into this slot for receiver.



13. Using sharp knife cut the slot for the tube at left side of the fuselage .the slot must Be 3mm deep .position slot as shown.



14. Press the tube into the slot in fuselage as shown .glue it using CA glue .



Axis of pushrod connector for rudder



15. In the same manner install the tube into the right side of fuselage .



16. Insert the horizontal stabilizer into the fuselage as shown.



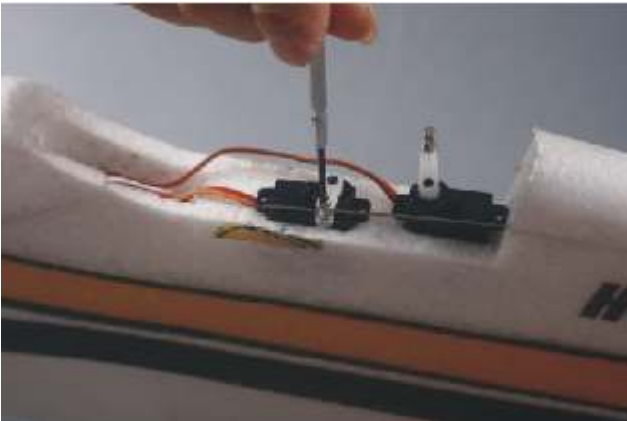
17. The horizontal stabilizer into the fuselage glue around the edge with CA glue. check the perpendicularity as shown.



18. Using the sharp knife cut the slots for control horn (elevator).



19. Connect the Z wire 0.8\*360mm to the horn (with slot) for elevator pushrod, and ensure the wire through the tube in the fuselage. Press the horn into the slot for the elevator, using CA glue.



20. The Z wire 0.8\*360 mm insert into the pushrod connector on the horn of servo for elevator.



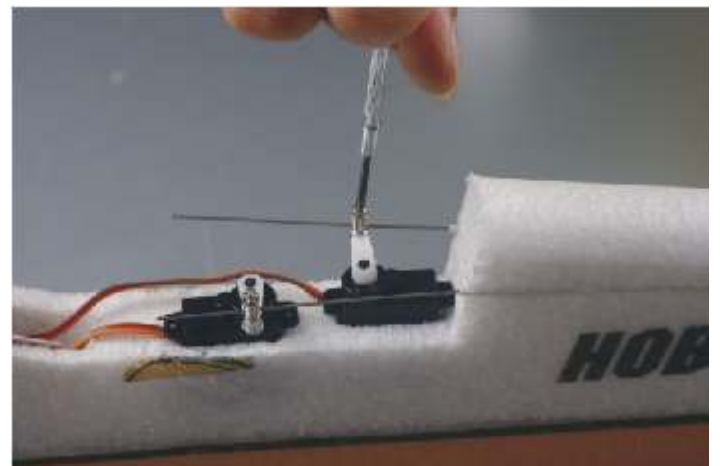
21. Glue vertical fin on the fuselage using CA glue. check the perpendicularity and alignment as shown.



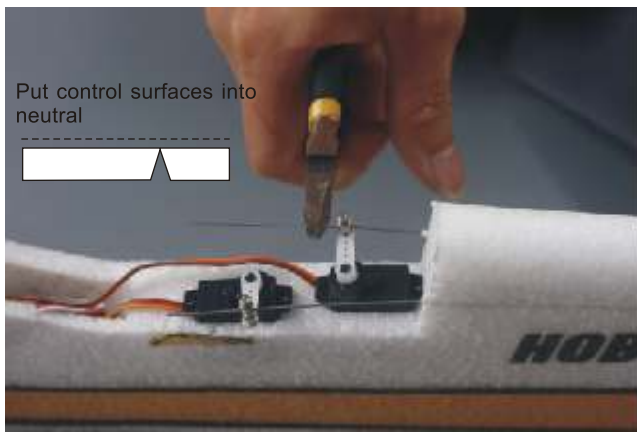
22. Using the sharp knife cut the slots for control horn (rudder).



23. Connect another Z wire 0.8\*360mm to the horn for rudder pushrod, put the wire through the tube in the fuselage. Press the horn into the slot in the rudder, using CA glue.

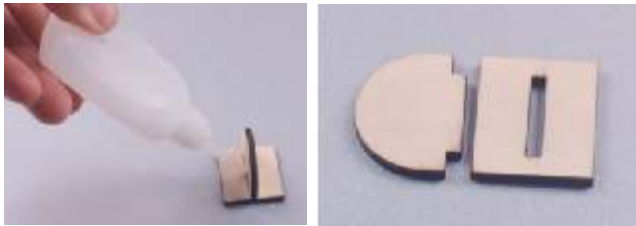


24. Install the other end of the Z wire (rudder pushrod) to the rudder servo arm



Put control surfaces into neutral

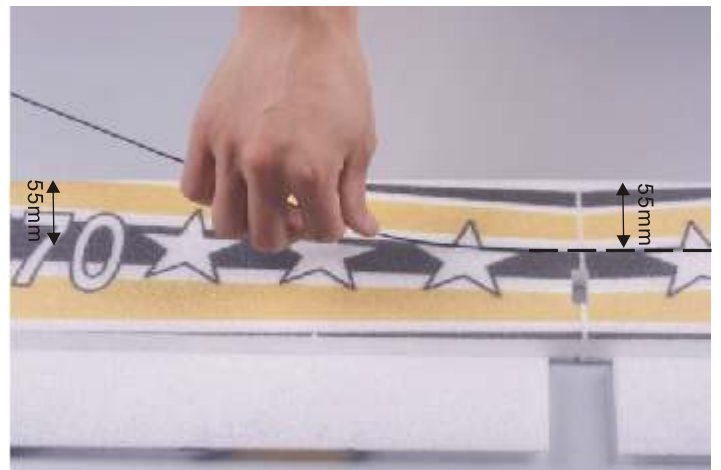
25. Switch on the RC set . put the control surfaces to the neutral as shown .  
Tighten the connector screws.  
Cut the excess pushrod as shown .



26. Fix the tail skid, using CA glue.



27. On the flat board glue the lower wing panels left and right using CA glue .



28. Put the rule on the lower wing left and right as shown .  
Cut the slot in the lower side of the lower wing using sharp knife .  
The slot must be 3mm deep and 640mm length  
Press the 640mm glass fiber rod into the slot of the wing .

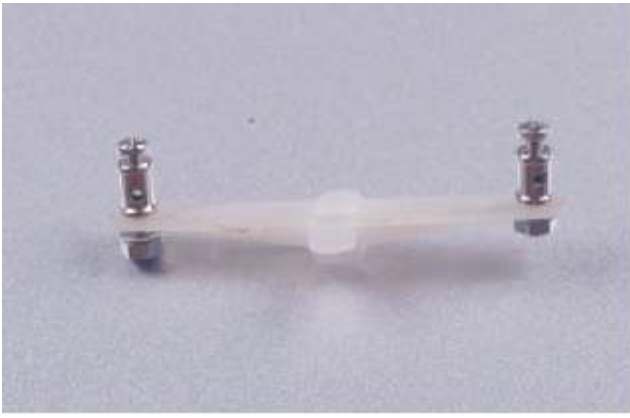


29. On the flat board glue the glass fiber rod into bottom side of the lower wing using CA glue and apply activator spray.

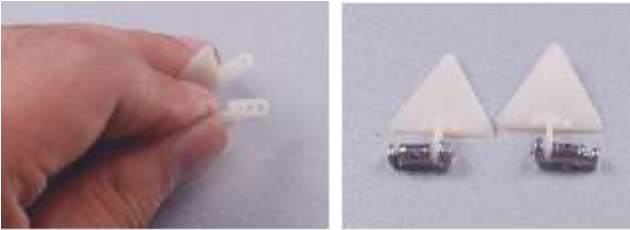


30. Glue the extension of the servo arm onto the ailerons servo arm using CA glue.  
Before gluing rough the arm and extension.

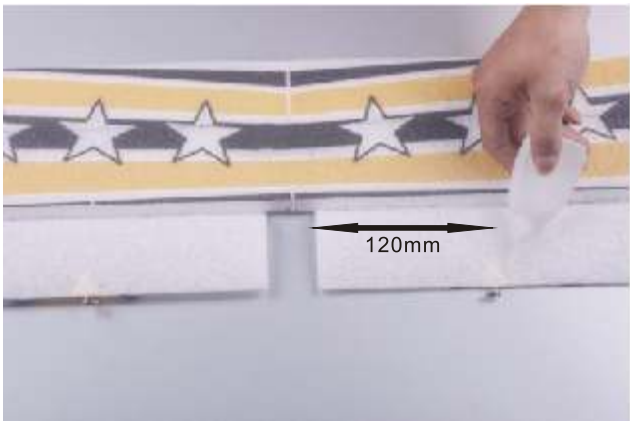




31. Insert connectors into extension of the servo horn .



32. E aileron control arm 1.6mm 2pcs  
Install the pushrod connector to the aileron horns .



33. Glue the control arms into the ailerons using CA glue .



34. Insert wing left and right into the fuselage as shown .check if the wing is in the centre and alignment .  
Also check if the wings is perpendicular to the fuselage side.



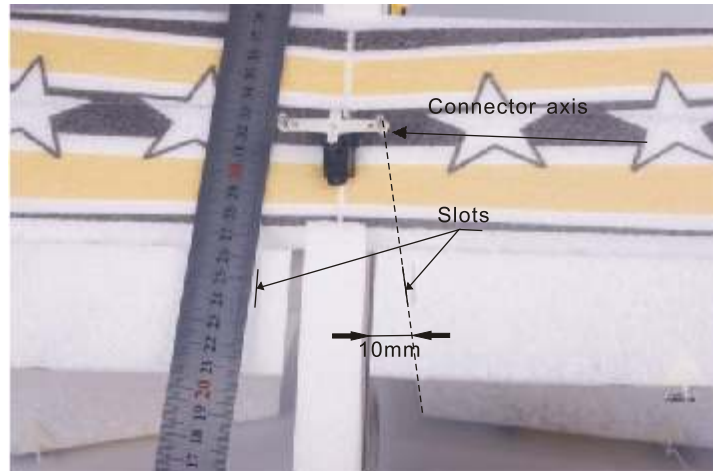
35. Glue the wing in place using CA glue .  
Apply some glue on the top and the bottom (as shown)



36. Cut a 8mm deep hole on the lower wing for aileron servo.



37. Insert the aileron servo into the hole and the servo cable through the opening for receiver.  
Switch on the RC -SET to have the servo in neutral .  
Install the servo arm on the servo .  
Using CA glue .



38. Cut slots in the ailerons for the control horns as shown .



39. Glue the control horns into the ailerons with CA glue as shown .



40. Insert the control wire into the ailerons horns and into aileron servo arms as shown . Switch on the rc-system to have the servo in neutral . Put the ailerons in neutral . Now the pushrod connectors screws must be tightened.



41. Insert the receiver into right place . The fuselage foam will hold it in place . plug the elevator , rudder and aileron servos and ESC connectors into receiver.



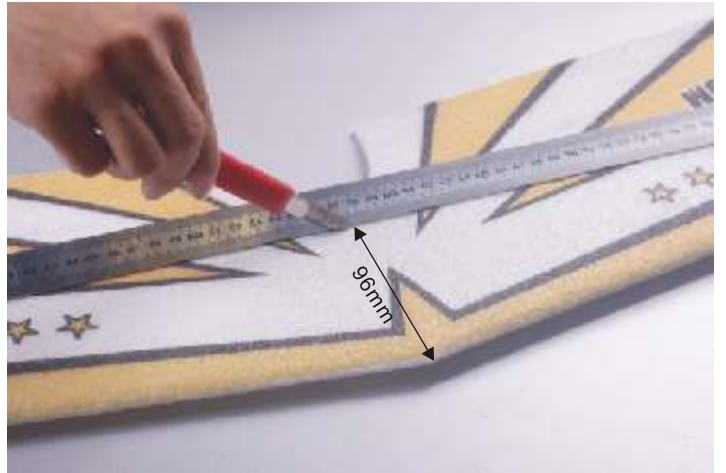
42. Insert the baldachin into the fuselage as shown .



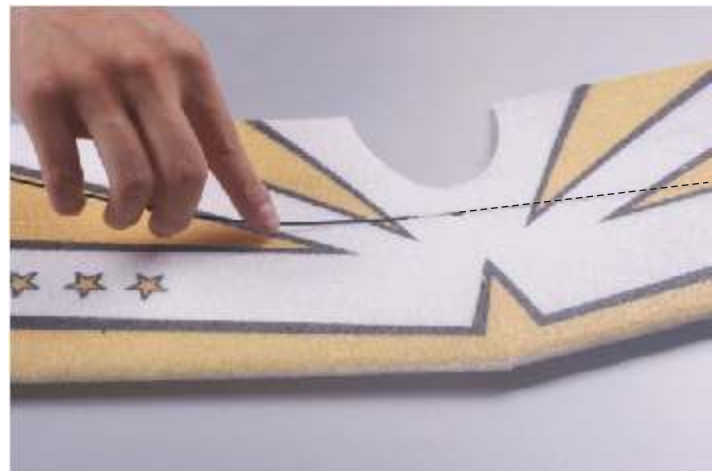
43. Insert the wing struts into the lower wing as shown., (left and right)



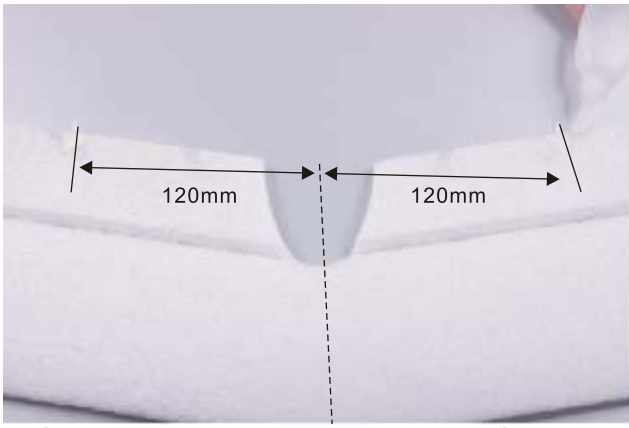
44. On the flat board glue the up wing panels together using CA glue and activator spray.



45. Put the rule on the upper wing as shown . Cut the slot in the lower side of the upper wing using sharp knife . The slot must be 3mm deep and 640mm length



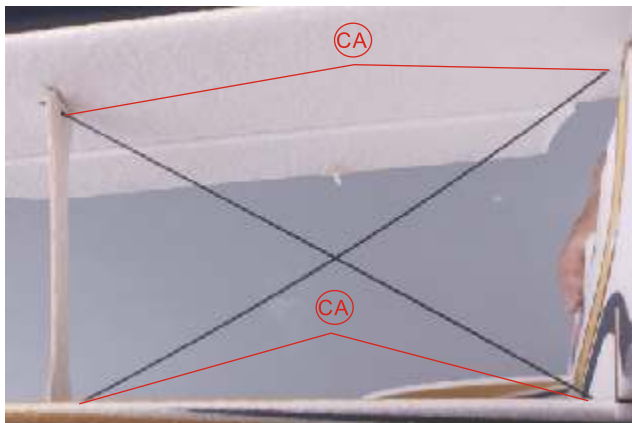
46. Press the glass fiber rod (640mm) into slot in the wing . On the flat board glue the rod into bottom side of the upper wing using CA glue and apply activator spray.



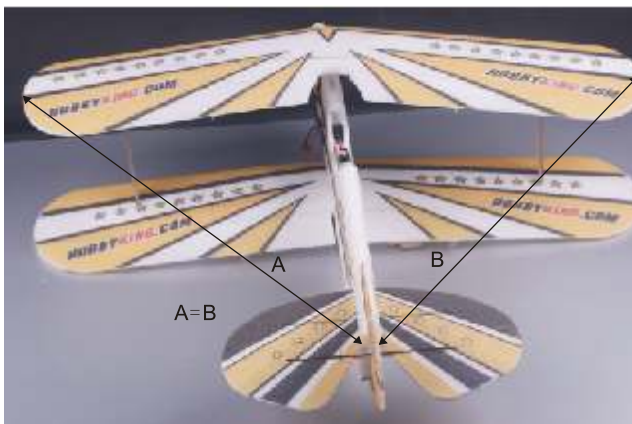
47. Glue the control arms into the ailerons using CA glue .



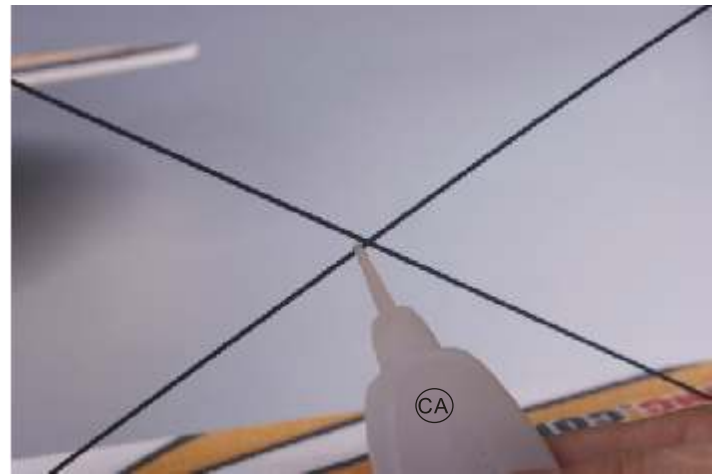
48. Insert the upper wing on the baldachin and the wing struts as shown.



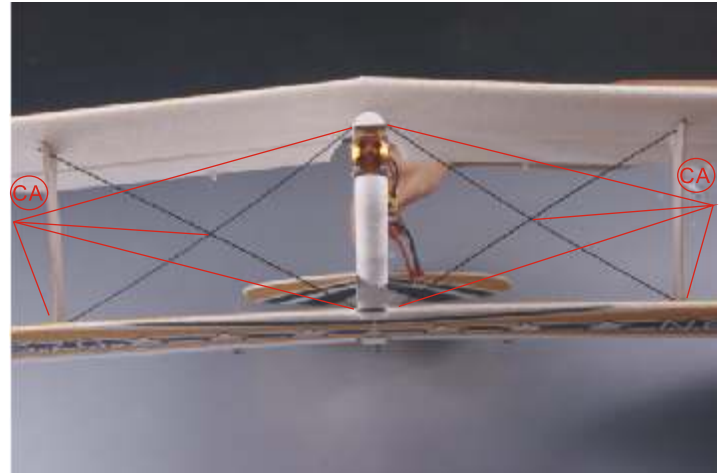
49. Install the wing brace glass fiber rod as picture shown



50. Align the upper wing as shown



51. Fix the rod junction with some CA glue



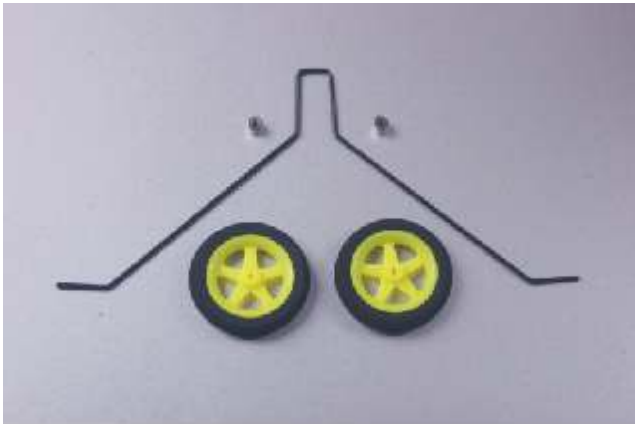
52. Hollow out the canopy with sharp knife and make enough space for servo arm working



53. Fix the end of PVC without hole to the front of the canopy with glue.



54. Install the canopy to the fuselage with screw and connector



55. Fix the wheel with wheel adapters.



56. Insert the landing gear into the fuselage. Fix the wheel covers with some CA glue.



57. Insert the end of the Z wire into the ailerons control horns in the upper wing . Insert the other end of Z wire into the pushrod connectors in the lower wing.



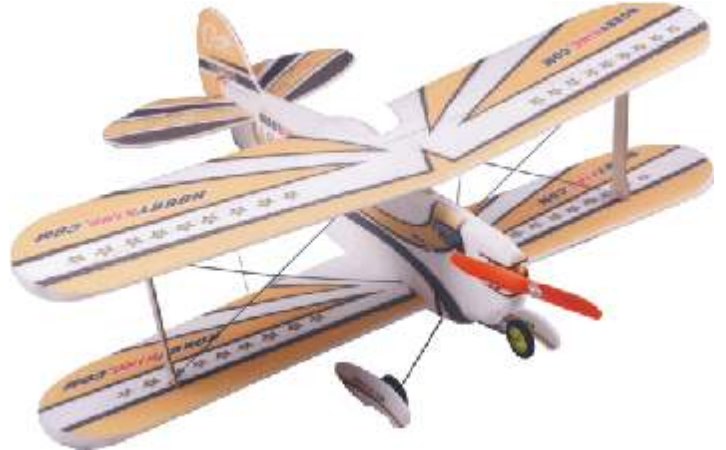
58. Install the the propeller and spinner to the motor .tighten properly.



59. Moving the accu pack make the model balance . cut opening In the fuselage for accu pack –the hole must be about 1mm smaller of each side ,the fuselage foam will hold the accu pack in the right position.



60. The accu pack press into the hole in fuselage .



#### Final Check

Check the model. It must be symmetrical and not twisted.

#### Radio control set installation

review top and side view, showing a basic radio installation. Put accu pack in fuselage as shown. Accu pack will be used for balancing the Pitts Special. Use instruction guide for speed controller for operating with electro power set.

#### Centre of gravity

Support your model with your fingertips. It should balance, slightly nose down, when your finger tips are 10-20mm behind the leading edge of the lower wing. Move the battery to balance Pitts Special properly. Do not try to fly an out-of balanced model, as it will crash!

#### Flying

Check each control surface for the correct movement and adjust pushrods. Checking running of the motor. For taking of you need a flying field about 50m long without trees around. Put your Pitts Special on the flying field, put "full gas". During 8 metres get the right speed for taking off. Move elevator a little bit up and Pitts Special will be in the air. Model you can take off also from your hand.