

FIGHTERS IN RENO

HACKER
MODEL PRODUCTION

Do not try to fly an out-of-balanced model!



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

Radio control set installation
Check the function of your RC set. Layout of parts of the RC set is shown in this construction guide. Accu pack will be used for balancing the Furias. Use instruction guide for speed controller for operating with electro power set.

Flying
Check each control surface for the correct movement and adjust pushrods. Check running of motor. For taking off you need a flying field about 50m long without trees around. Put your Furias on the flying field, put „full gas“. During 8 metres get the right speed for taking off. Move elevator a little bit up and Sbach will be in the air. You can throw the model from hand.
Before the first start of transmitter see to maximum safety. During flying and any manipulation turn on initially the transmitter and then receiver. If you go to fly to the place where somebody else is flying, check the frequency of his transmitter.

Good luck with the model wish you Hacker Model Production!

Warning! This is not a toy!

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MODEL PRODUCTION

ARF No. 1352 A - Red Baron ARF No. 1352 C- Miss America
ARF No. 1352 B - Furias ARF No. 1352 D - Rare Bear

TOP FLYER
ALMOST UNBREAKABLE

Semi-Scale Model of the American Warbird in Reno

FIGHTERS IN RENO
Furias *Rare BEAR*



Miss America

Red Baron



Almost Ready to Fly

Technical data

4	1200 mm	1095 mm	from 720 g	from 250W outrunner

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Construction guide

Fighters in Reno - TOP FLYER is a semi-scale model of the American warbird in Reno. Model is produced by modern technology from EPP - "almost unbreakable" material, tough but light EPP foam construction. Assembly time only a few hours. This model has Aerobatic Performance and can fly at High Speed, it requires a 3s LiPo Battery. The model comes painted with no decals to apply.

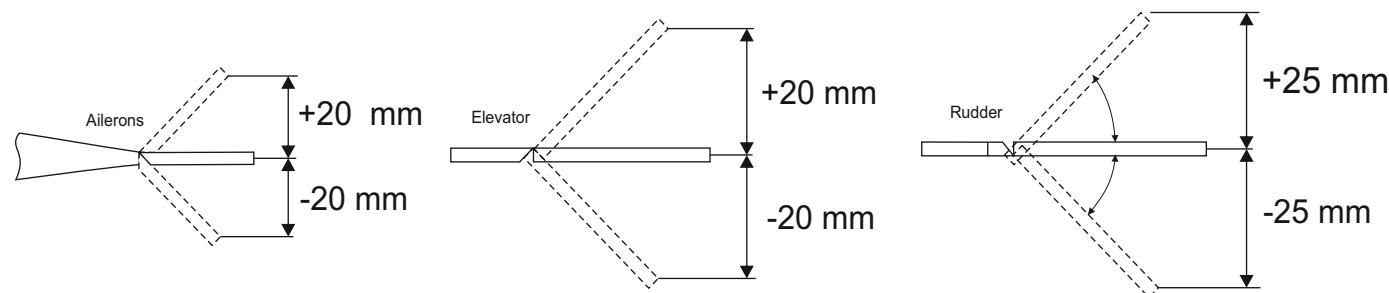
Important

Please read these instructions several times until you are familiar with each step before you begin to assemble. If the parts have a gap when fitting together, sand or trim the parts a little at a time until the parts fit.

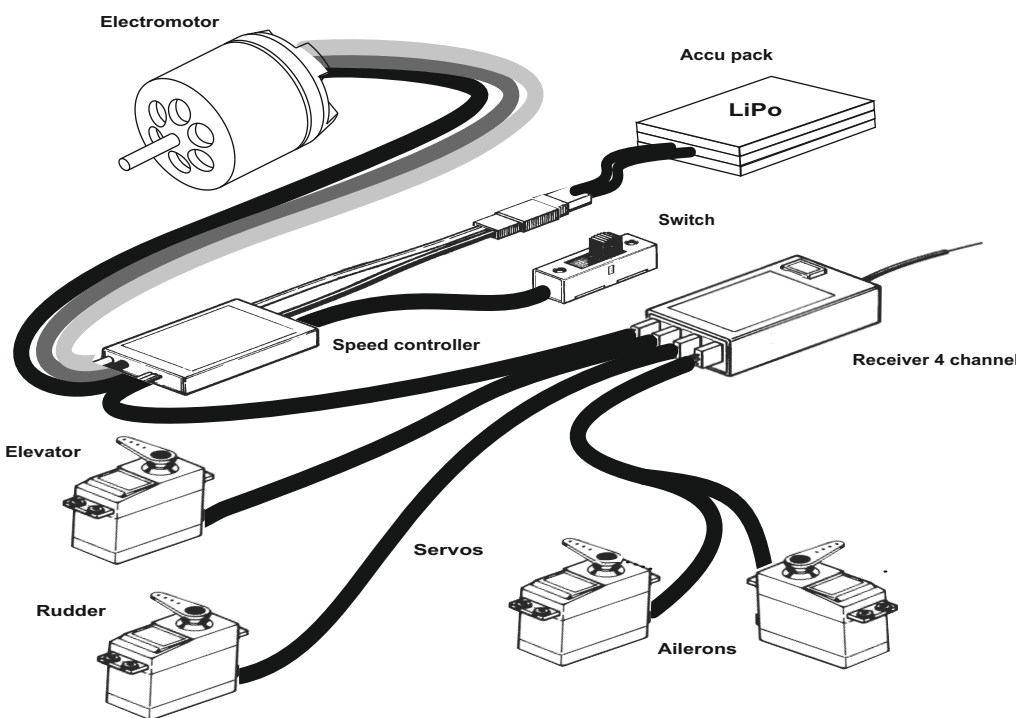
Items Needed To Complete (Not Included):

4 Channel RC Set with 4 Mini Servos, brushless electromotor from 250W outrunner, speed controller 40A , propeller 11/4,7", LiPo Battery from 1500 to 2200 mAh 3 cell, thin type Cyanoacrylate glue, CA Accelerator and 5min. epoxy.

Maximum deflection of the control surfaces - For the first flight we recommended half deflections.



RC set- 4 channel and power set



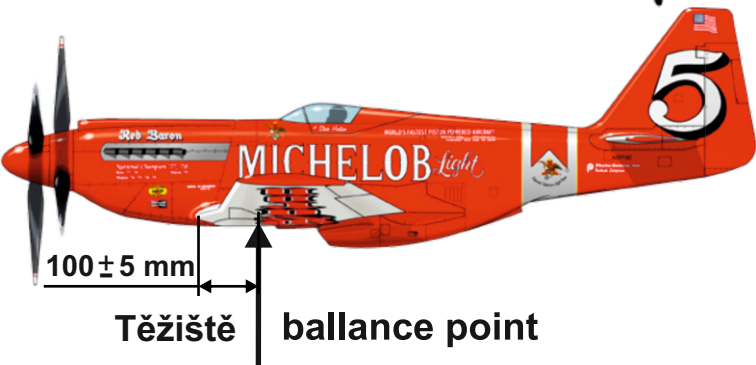
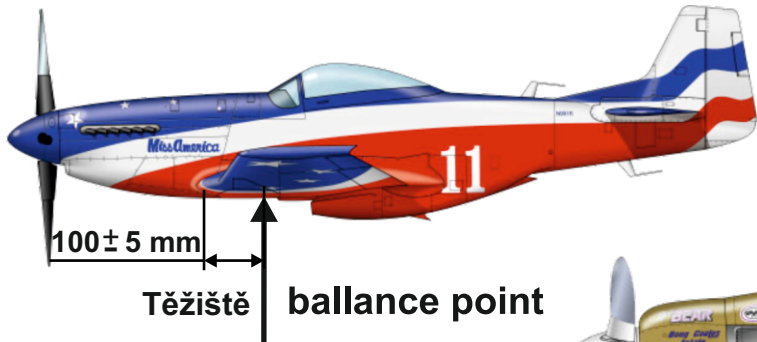
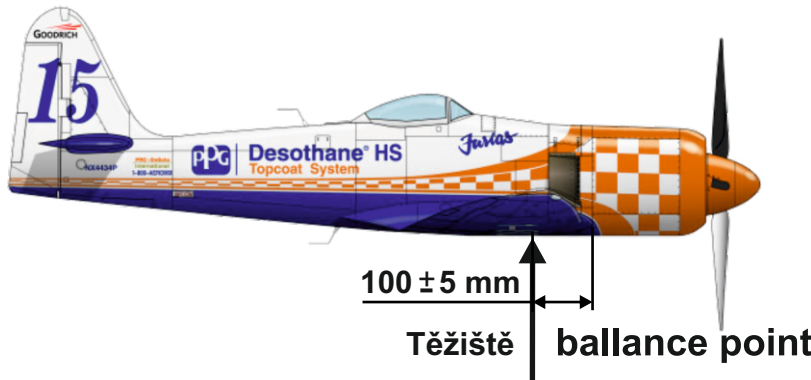
Fighters in Reno
wing span 1200 mm

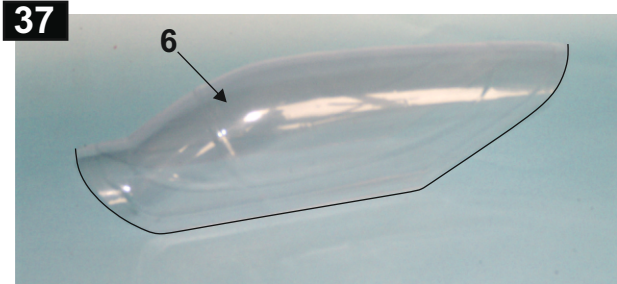
41

Support your model on your fingertips. It should balance, slightly nose down, when your finger tips are **100 mm** behind the leading edge of the wing. Move the battery to balance Strega properly. **Do not try to fly an out-of-balanced model, as it will crash!**

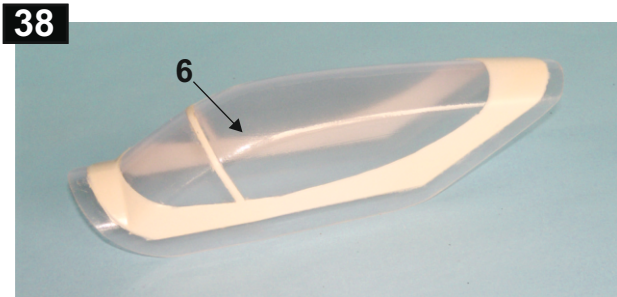
Balance point / těžiště:

Mustang „Red Baron”
Mustang „Miss America”
Hawker Sea Fury „Furias”
Grumann F8F „Rare Bear” } 100 ± 5 mm

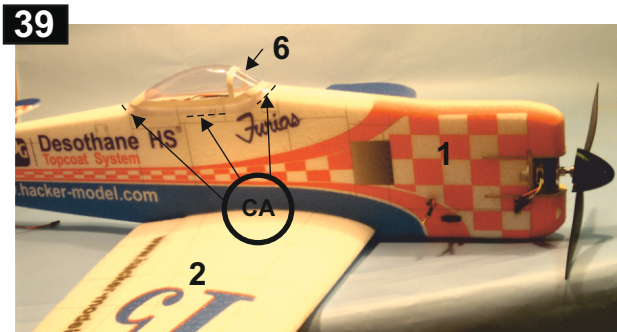




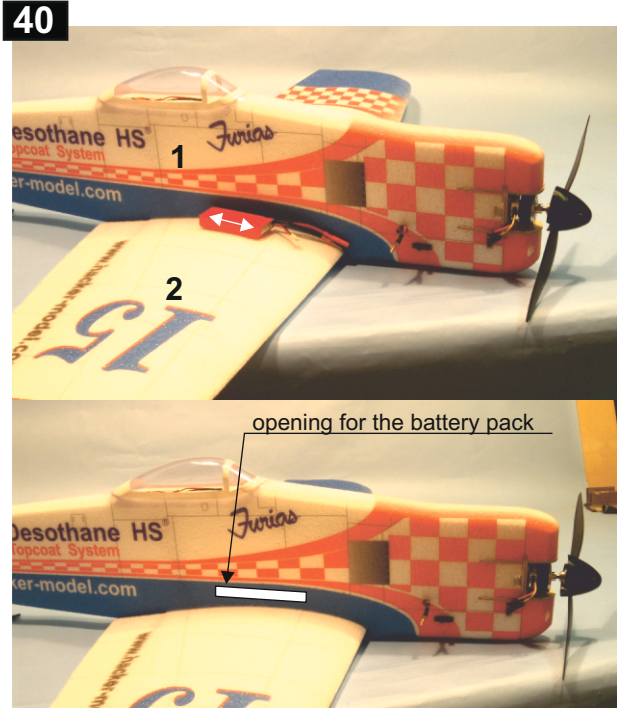
Cut the canopy **6** according to marked line.



Paint the canopy **6** on the frame as shown.

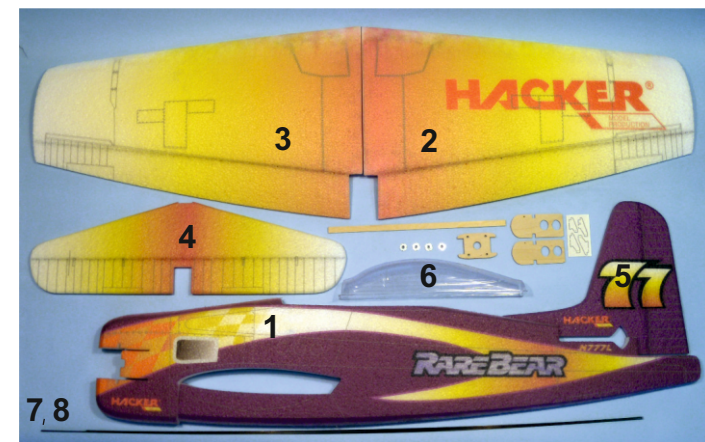
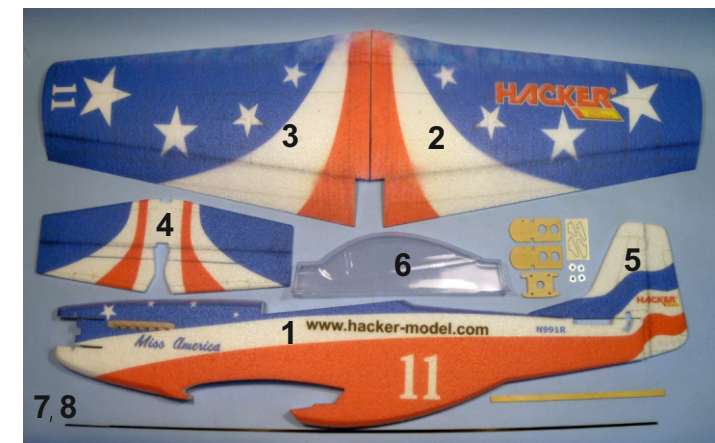


Insert the spinner, prop adapter and propeller. Glue the canopy **6** in place with few drops of CA and CAAccelerator on the fuselage **1** as shown.



Use strong double-sided tape to temporarily hold battery to fuselage **1** moving it until the model balance is at the 100mm range as shown in picture **41**. Once the battery position is decided, Velcro the battery to the side of the fuselage or cut in the fuselage an opening for the battery pack. The hole you cut should be about 1mm smaller than the battery, so that the pack is held firmly by the tension of the EPP foam during flight.

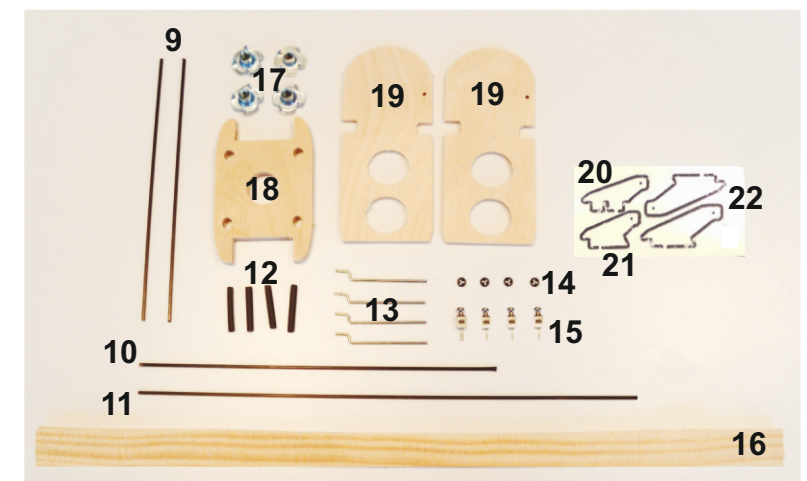
FIGHTERS IN RENO

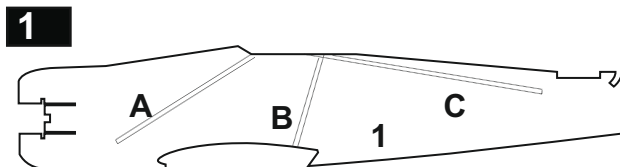


Part List

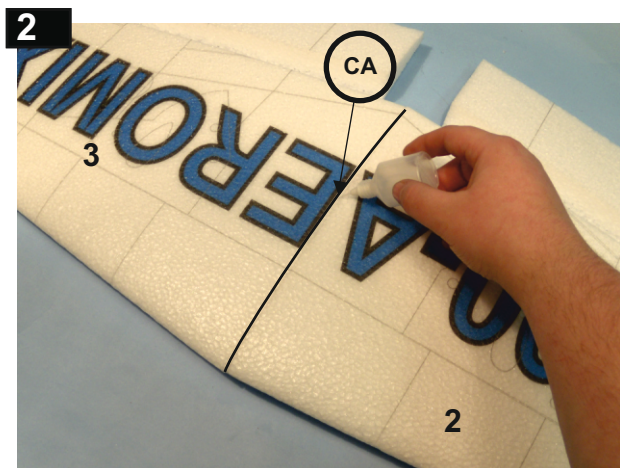
No.	Qty.	Description
1	1	Fuselage
2	1	Right wing panel
3	1	Left wing panel
4	1	Horizontal stabilizer
5	1	Vertical fin
6	1	Canopy
7	2	Carbon 1,5x1000mm
8	2	Carbon 1,5x920mm
9	2	Carbon 1,5x120mm
10	1	Carbon 1,5x120mm
11	1	Carbon 1,5x160mm
12	4	Shrinkable tube
13	4	Wire "Z" 1,2x30mm
14	4	Quicklock
15	4	Pushrod connector
16	1	Spruce 3x10x300mm
17	4	Nut M3
18	1	Engine mount
19	2	Engine mount bracket
20	1	Control horn - Elevator
21	1	Control horn - Rudder
22	2	Control horn - Ailerons

Parts in the Bag

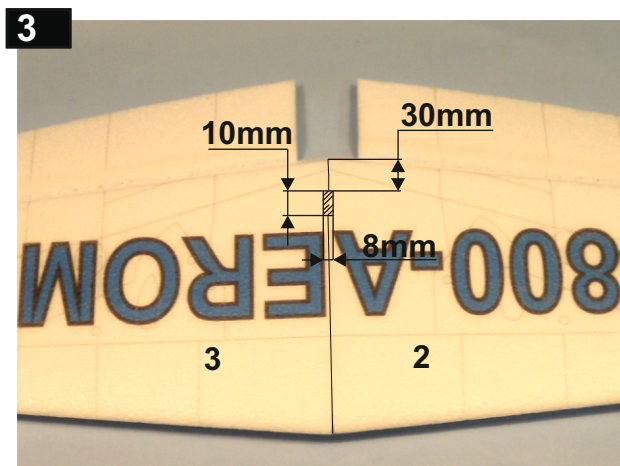




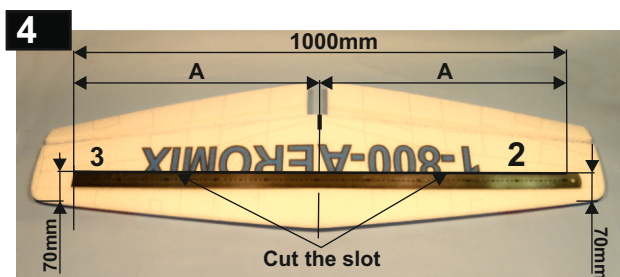
In the fuselage 1 are prepared holes A, B and C. Hole A is for ESC cable. Hole B is for aileron servo cables and hole C is for rudder and elevator servo cables.



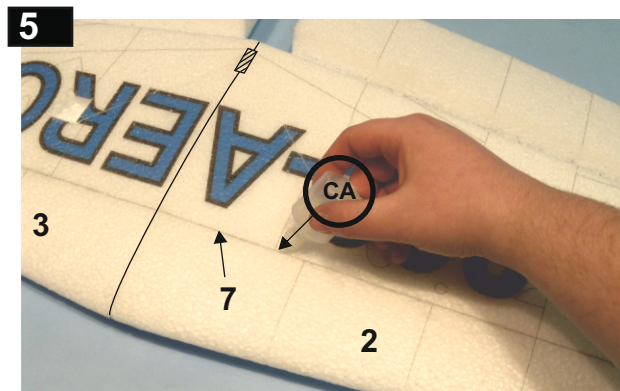
Put the wing panels 2 and 3 on the flat board, top side down. Hold together and glue it properly. Use thin type CA glue and apply CA Accelerator. Push wing panels together until the glue is dry.



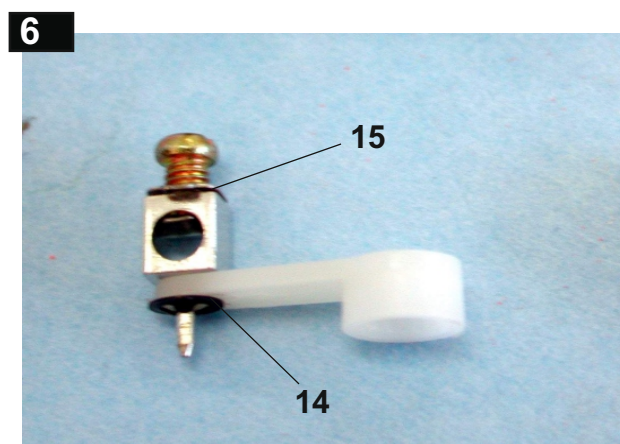
Take out the wing. Using sharp knife cut the hole 10x8mm for the servo cables into the wing as shown.



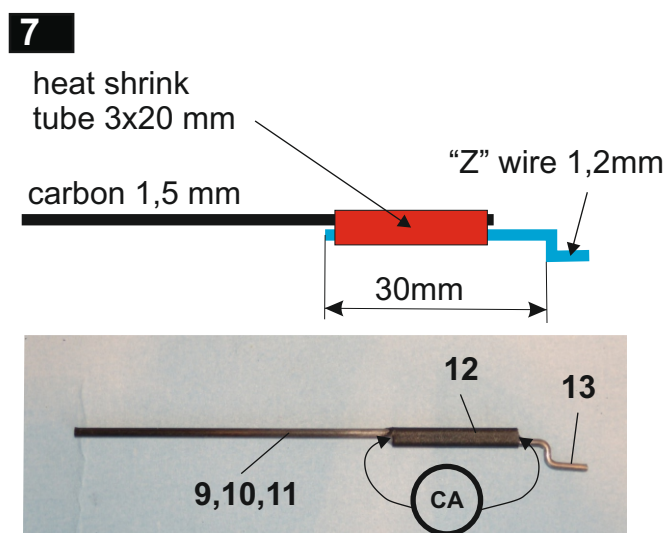
Using sharp knife cut the 3mm deep slot into the wing for carbon 7 as shown.



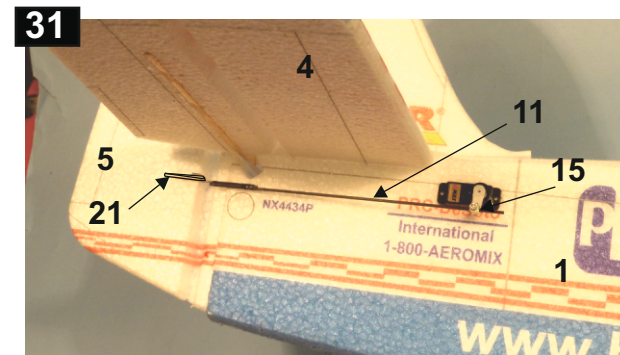
Put the wing on the flat board. Push the carbon 7 into the slot in wing. Glue the carbon 7 into the wing. Use CA glue and apply CA Accelerator. (After glue is dry, the same procedure cut slot and glue carbon 7 on top side of the wing.)



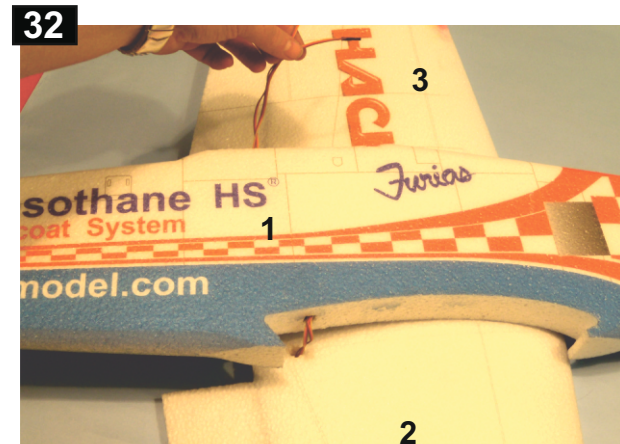
Insert connectors 15 into servo arms and insert Quicklock 14 on the opposite side as shown and press together.



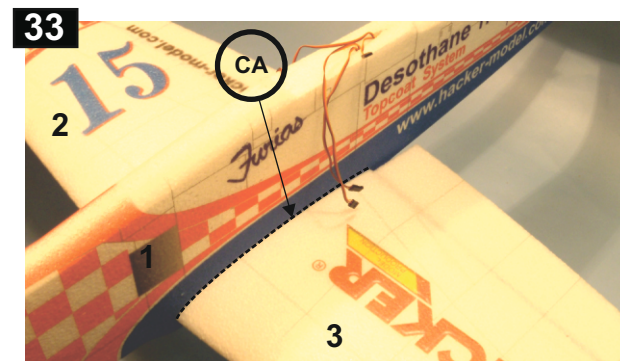
Prepare push rods for ailerons, rudder and elevator. Insert carbon and "Z" wires into the heat shrink tube and then warm up the tube with lighter. Finally, glue with CA and CA Accelerator as shown.



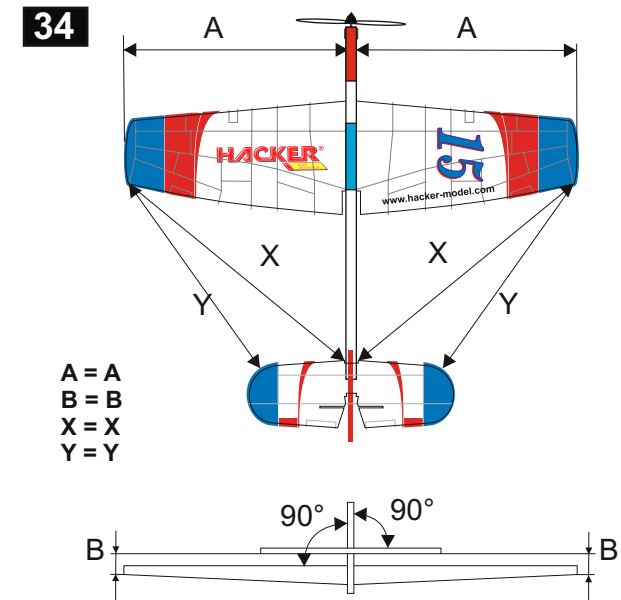
Switch on the RC system and set the servos to neutral. Insert pushrod 11 into control horn 21. Slide the servo arm on the pushrod 11. Put the servo arm onto the servo. Tighten the screw on the pushrod connector 15. Rudder must be in neutral position. Screw the servo arm onto the servo.



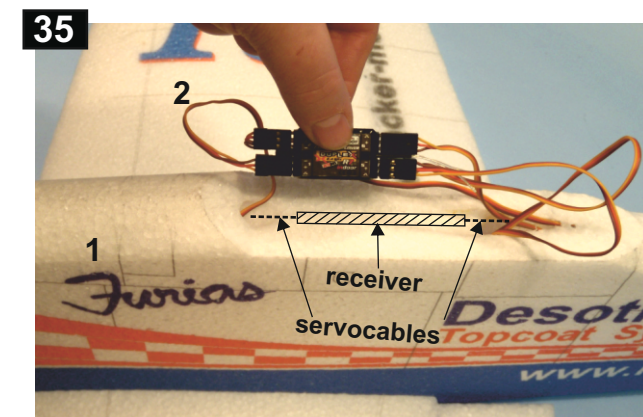
Pass the servo cables through the hole in the fuselage 1 as shown.



Glue the wing in place. Use thin type CA glue and apply CA Accelerator. Hold the parts in right position until glue is dry.



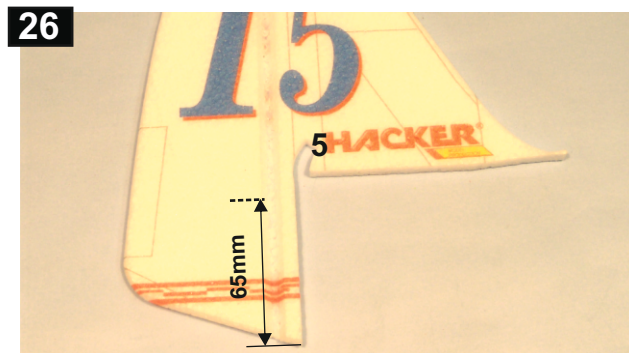
Check if the wing is in the center and in the right alignment. Also check if the wing is perpendicular to the fuselage side.



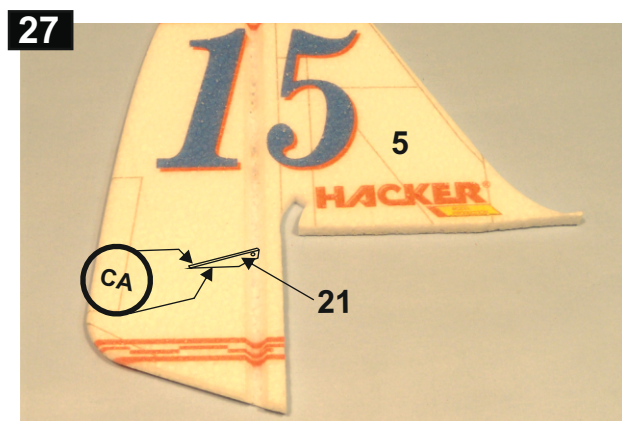
Connect all servo cables into the receiver. Using sharp knife cut the slot for servo cables and receiver into the fuselage 1 as shown.



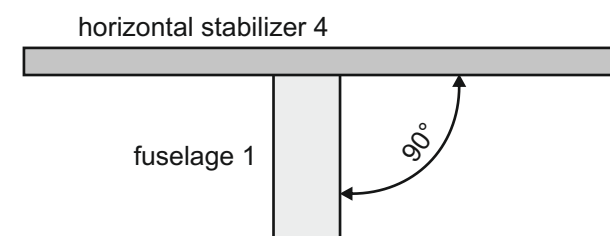
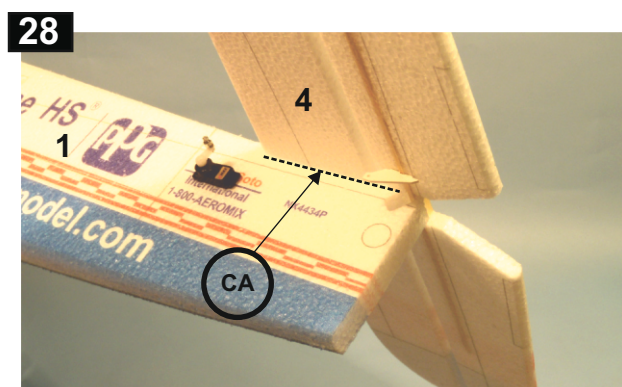
Push the receiver and servo cables into the slot in fuselage 1 as shown.



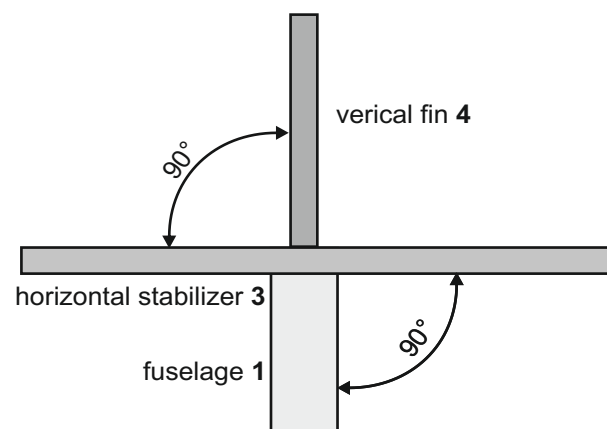
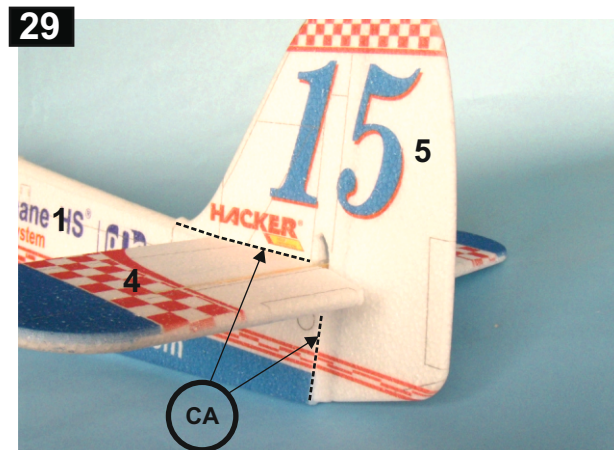
Using sharp knife cut the slot into the vertical fin 5 for the control horn 21 as shown.



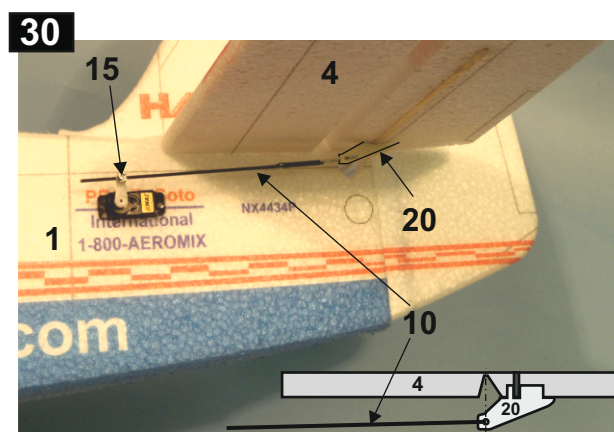
Push control horn 21 in place and glue with CA and CA Accelerator.



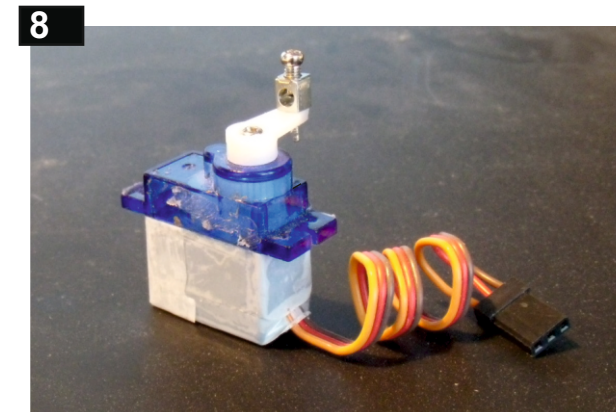
Insert horizontal stabilizer 4 to the fuselage 1. Glue around the edge with thin type CA glue and apply the CA Accelerator. Check that it is perpendicular as shown.



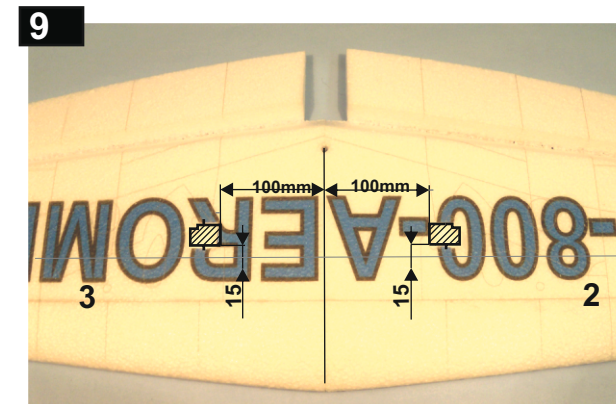
Glue the vertical fin 4 in place. Use thin type CA glue and apply the CA accelerator. Check that fin is perpendicular.



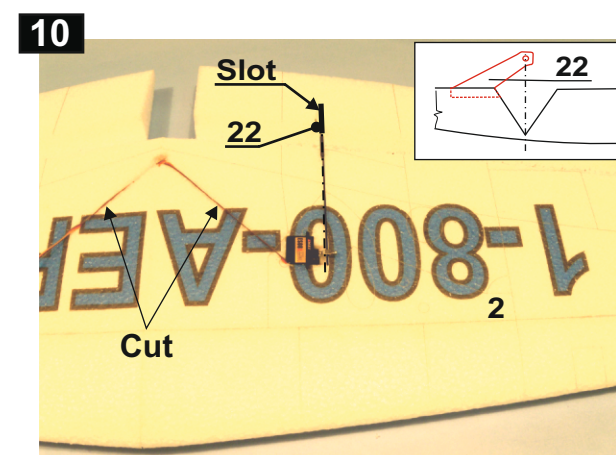
Switch on the RC system and set the servos to neutral. Insert pushrod 10 into control horn 20. Slide the servo arm on the pushrod 10. Put the servo arm onto the servo. Tighten the screw on the pushrod connector 15. The elevator must be in neutral as shown. Screw the servo arm onto the servo.



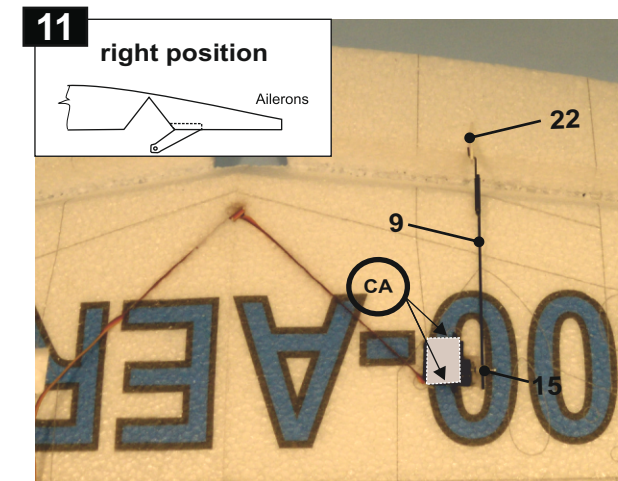
Cover the servos with self-adhesive tape. The tape protects servo when gluing into wing and fuselage.



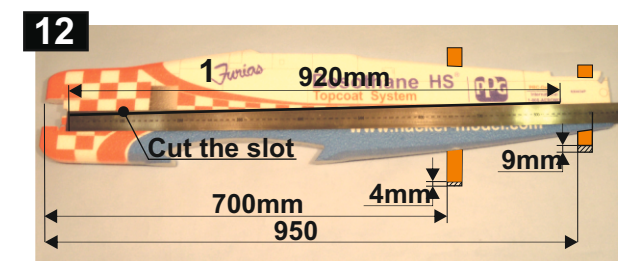
Using sharp knife cut an opening for the aileron servo into the wing panels 2 and 3. The opening must be 1mm smaller from each side.



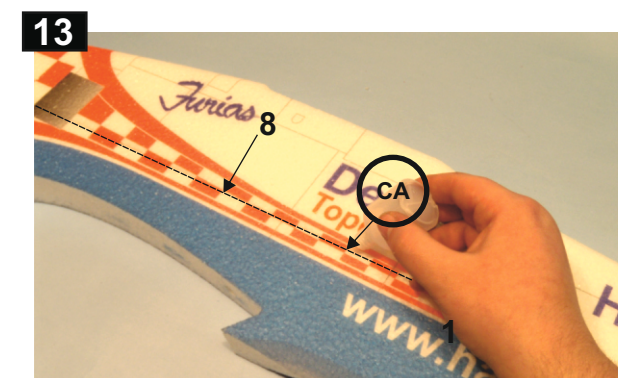
Switch on the RC system and set the servos to neutral. Push the servos into the holes in the wing panels 2 and 3. Mark positions and cut slots for control horns 22 using sharp knife as shown. Insert control horns into the slots and glue with CA glue and CA Accelerator. Using sharp knife cut the 3mm deep slot into the wing for servo cables as shown. Connect extension cables (250mm) onto the servo cables. Push servo cables into the slot. Pass the servo cables through the hole in the wing as shown.



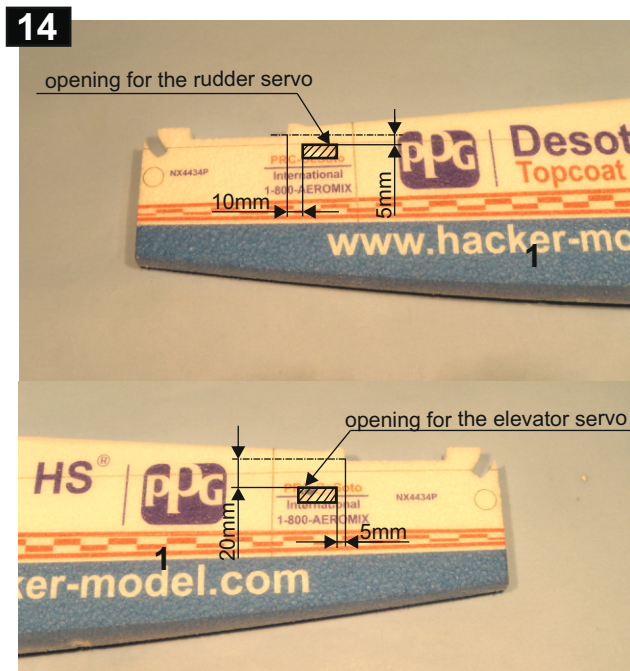
Glue servos in place with a few drops of CA and CA Accelerator. Insert pushrod 9 into control horn 22 and then to the connector 15 and tighten the screw.



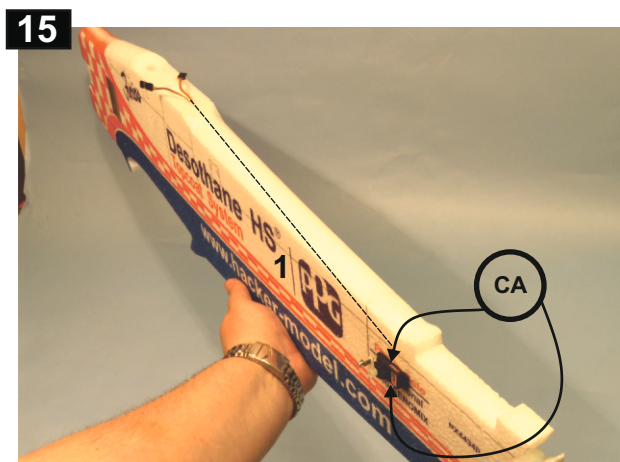
On a flat board put the spruce pieces under the fuselage 1 as shown. Using sharp knife cut the 3mm deep slot into the fuselage 1 for carbon 8 as shown.



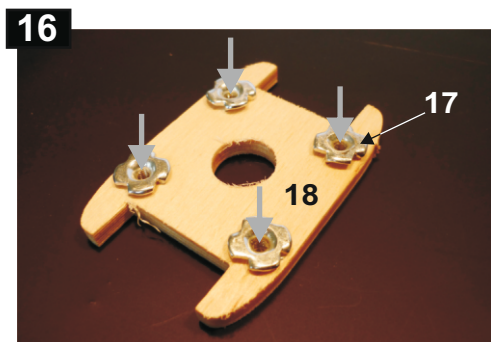
Push in carbon 8 into the slot. Glue the carbon 8 properly with CA glue and apply CA Accelerator. (When glue is dry, use same procedure on the opposite side of the fuselage 1.)



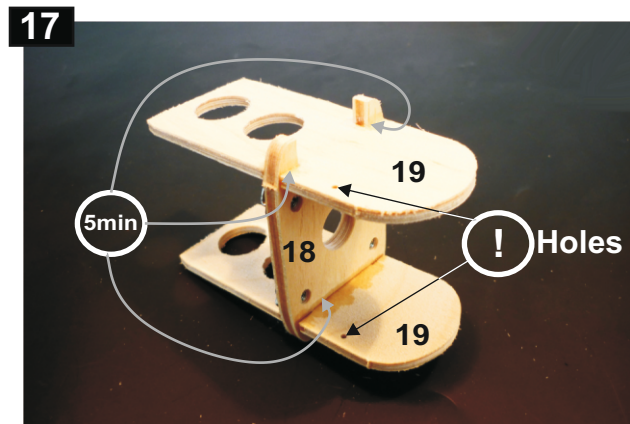
Using a sharp knife cut openings into the fuselage 1 for the rudder and the elevator servos. The openings must be 1/16" smaller in both directions.



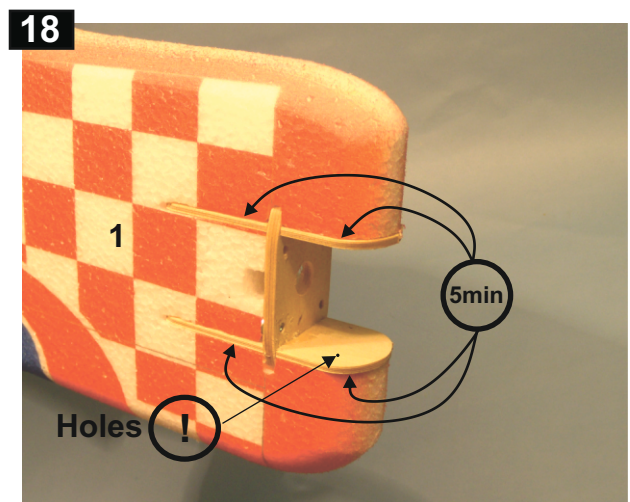
Connect extension cables (200mm) onto the servo cables. Pass the servo cables through the hole in the fuselage 1. Push elevator and rudder servos into the openings in the fuselage 1. Fix servos in place with a few drops of CA and CAAccelerator.



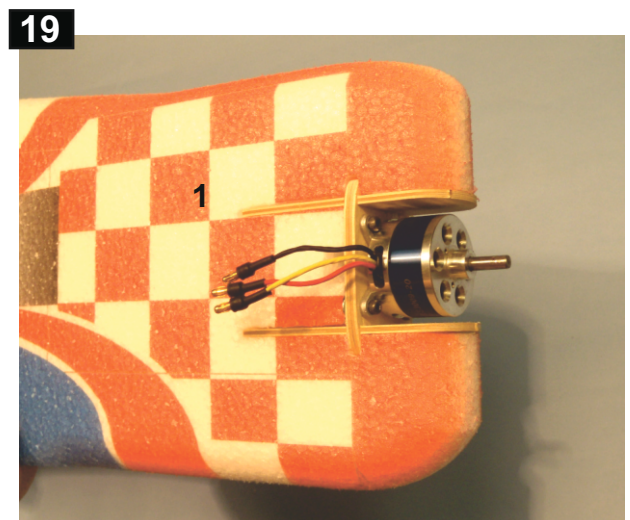
Press the nuts 17 into the engine mount 18.



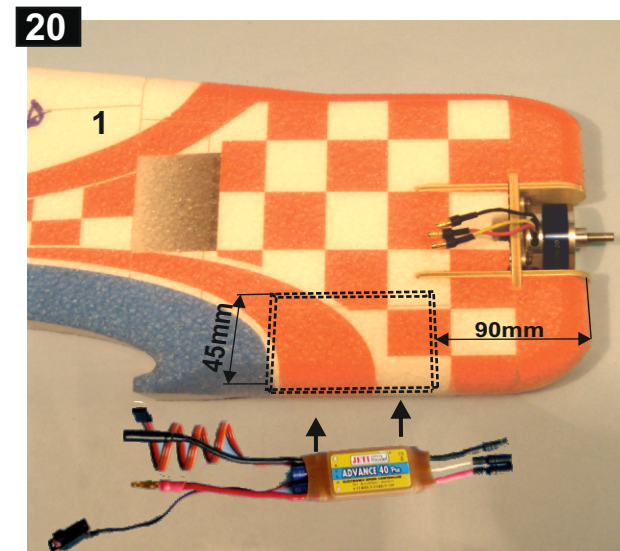
Complete the engine mount as shown. Glue it together with 5min epoxy. The holes in the engine mount brackets 19 must be on the right side of the fuselage for proper offset of the motor.



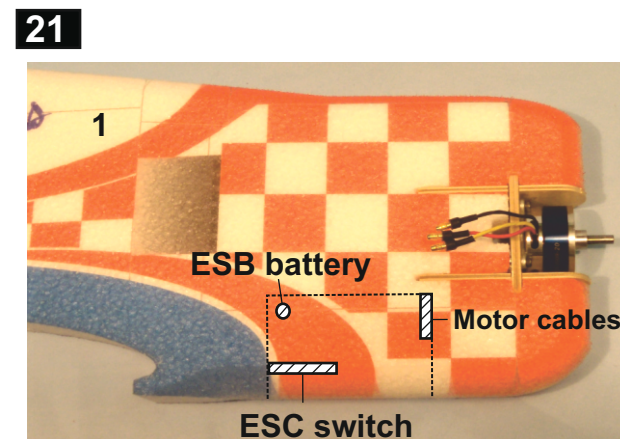
Insert the engine mount into the fuselage 1. Be sure that engine mount is parallel with the fuselage 1. The holes in engine mount brackets 19 must be on right side in flight direction! Glue engine mount in place using 5min epoxy. Hold the fuselage 1 with engine mount in right position until glue is dry.



Screw the electromotor onto the engine mount. Screws M3 are not part of kit



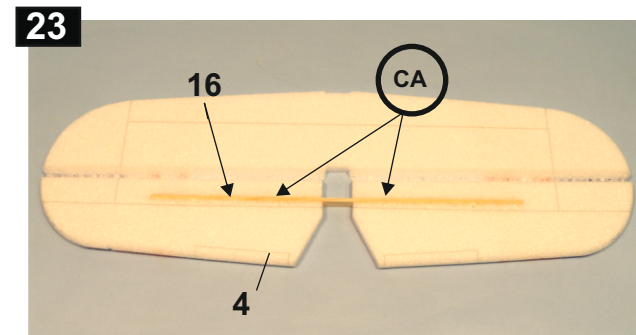
Cut a slot for a ESC in the bottom side of the fuselage 1 as shown. The slot for the ESC must be 1mm smaller then the thickness and 5mm longer than length of the ESC.



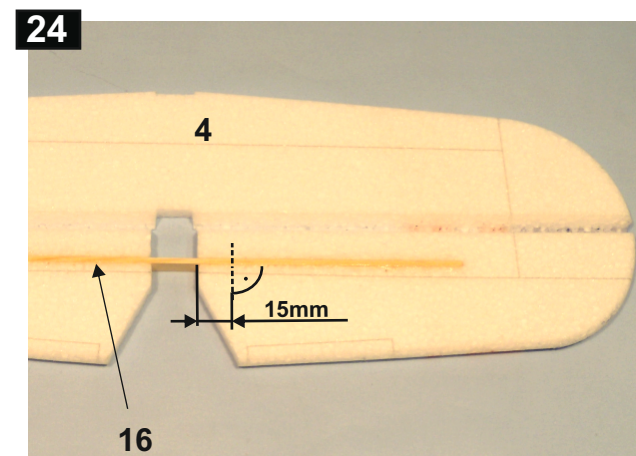
Using sharp knife cut the hole for the motor cables, the switch of ESC and the ESC battery cables as shown.



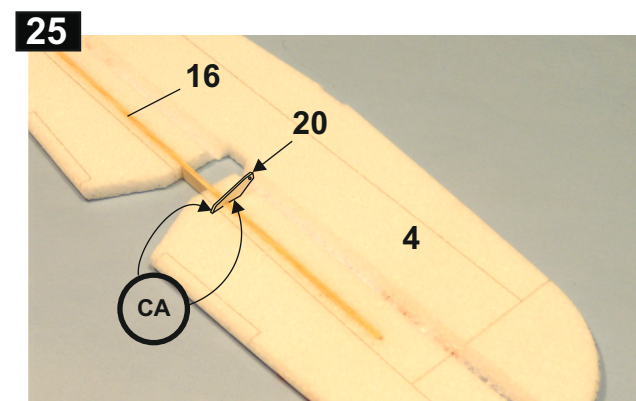
Connect extension cables (200mm) on the ESC cable. Pass the ESC cable through the hole in the fuselage 1. Pass the ESC motor cables, the switch ESC and ESC battery cables through the hole in the fuselage 1 as shown.



Put the horizontal stabilizer 4 on a flat board place the spruce 16 on the horizontal stabilizer 4 as shown. Using sharp knife cut the slot in the elevator. Insert the spruce into the slot. Glue spruce 16 in place with CA and CAAccelerator.



Put the horizontal stabilizer on a flat board. Using a sharp knife cut the slot for control horn 20 as shown.



Push control horn 20 in place and glue with CA and CA Accelerator.