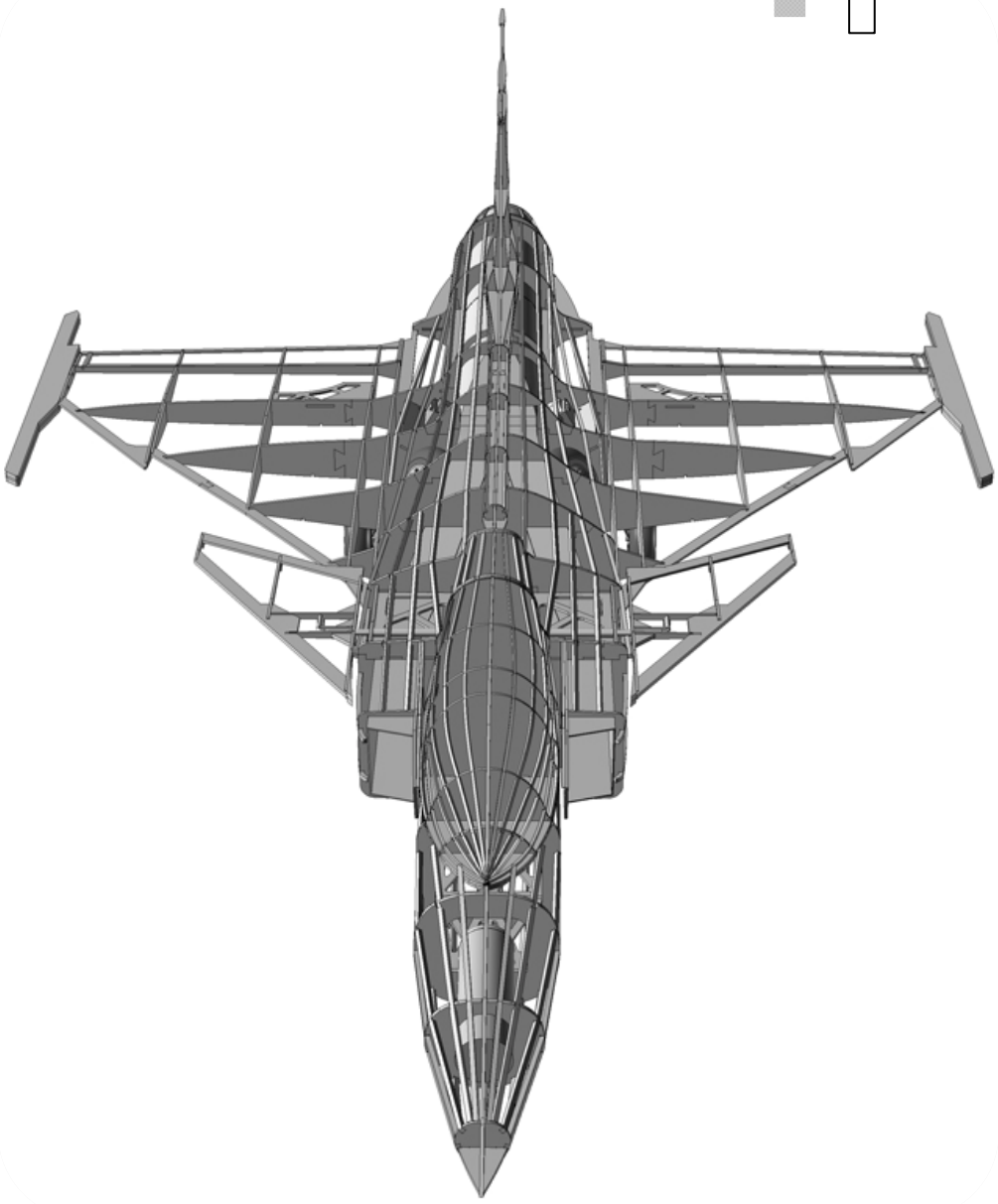
JAS 39 Gripen



1:10 Scale, 70mm Ducted fan model

Instruction Manual

Data about the model:

- ***Wingspan…….847 mm***
- ***Length……1413 mm***
- ***Weight……..xxxx gram***
- ***RC-Functions…….Elevons, Rudder, Canard, Motor, Landing Gear***

Optional equipment needed for full RC function

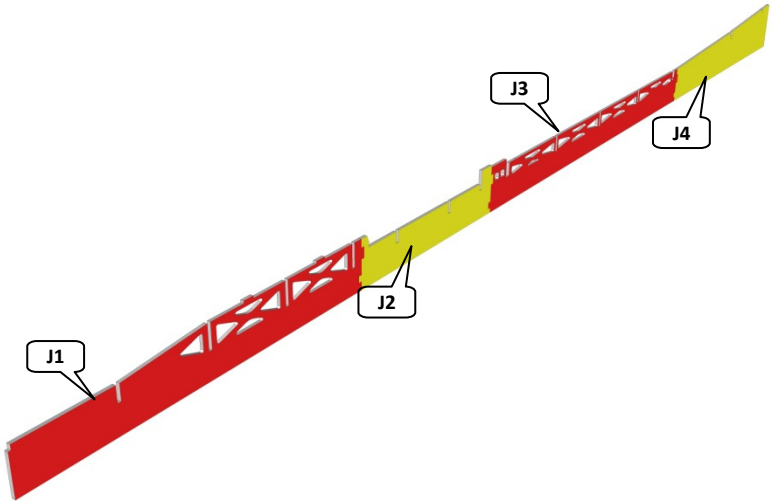
- ✓ ***4-6 ch RC transmitter***
- ✓ ***4-5 Digital mini Servo***
- ✓ ***70 mm fan (Wemotech Mini, WM400 or similar)***
- ✓ ***4 – 6 cells 2500-4500 mAh LiPo Battery***
- ✓ ***Retractable Landing gear***

STEP 01

Glue together the four parts of the building jig, J1, j2, j3, j4
Mount the jig in between two straight wood/aluminium rails or similar. **(Not included)**

Parts Used at this step:

- J1
- J2
- J3
- J4



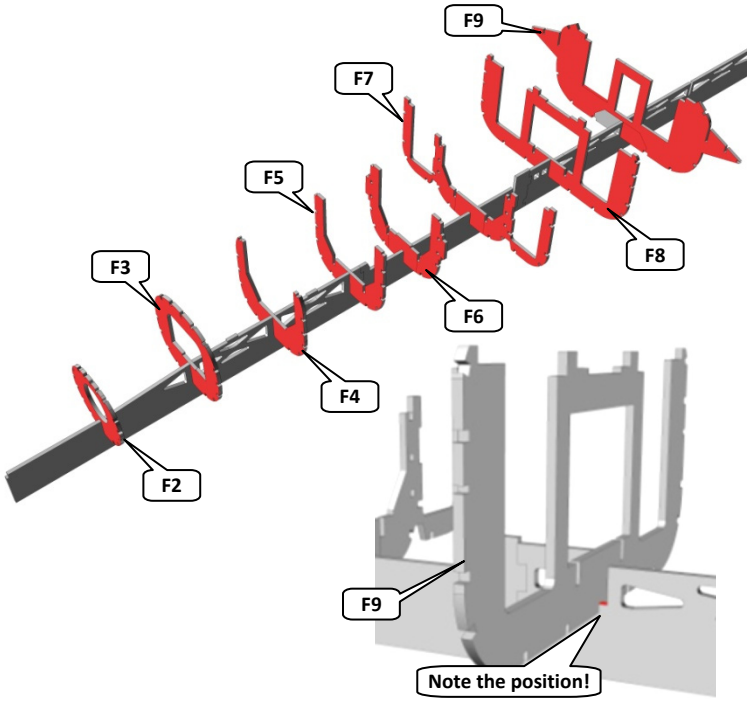
STEP 02

Mount the formers F2 to F9 in the jig. **Do NOT glue** them at this step.

Parts Used at this step:

- F5
- F4
- F3
- F2
- F6
- F7
- F8
- F9

Note: F9 should be in the forward cut-out on the jig!

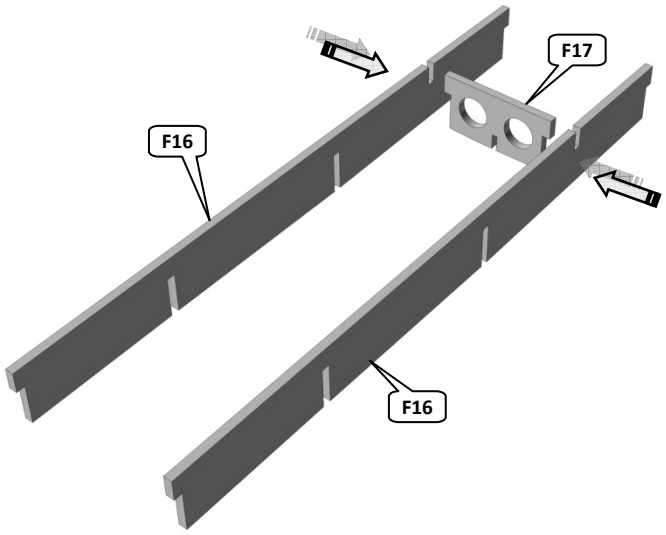


STEP 03

Glue the three parts F16 (2) & F17 for the front gear bay together

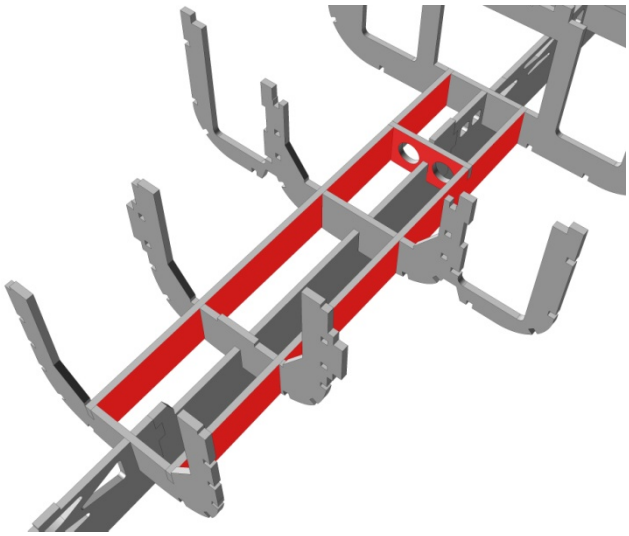
Parts Used at this step:

- F16 x2
- F17



STEP 04

Glue the completed sub-assembly s in between formers F5, F6, F7 and F8 using thin CA-glue. Make sure all formers sits level and straight.

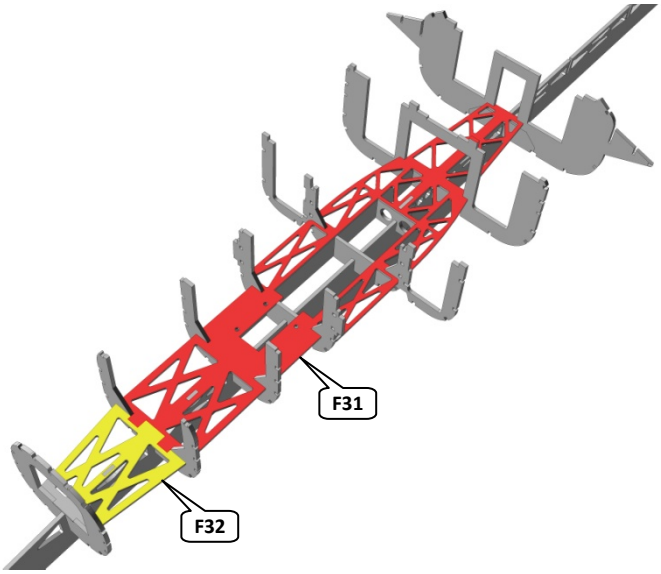


STEP 05

Glue the two plywood parts F31 & F32 together and mount them inside the fuse. Glue the completed assembly together using thin CA-glue.

Parts Used at this step:

- F31
- F32

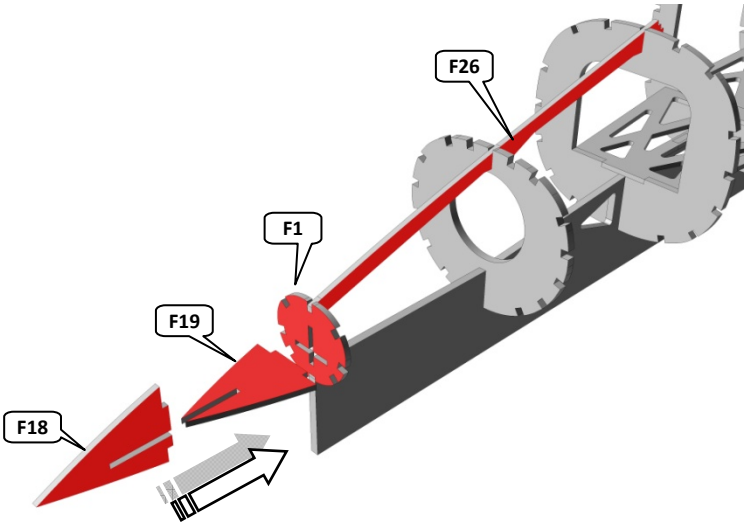


STEP 06

Glue the nose parts F18 & F19 together. Glue them to F1. Glue F26 to F1, F2 & F3

Parts Used at this step:

- F1
- F18
- F19
- F26

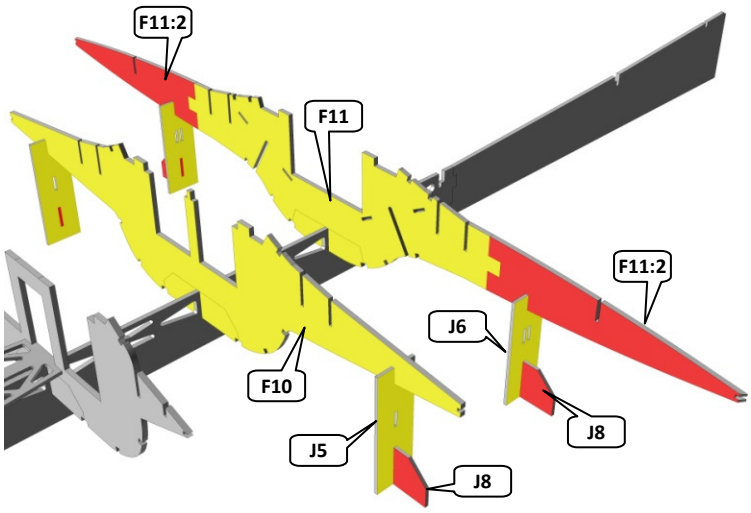


STEP 07

Glue together former F11 with 2 x F11:2 using CA-glue.
Glue J5 & J6 each with one J8. Use The completed parts to secure a level fit of F10 & F11 on the jig.
Do NOT glue them to the main-jig yet!
*Remark. J5 is marked "***I***", J6 is marked "***II***". The parts J5, J6 & J7 fits in small slots on their respective fuse-part.*

Parts Used at this step:

- J5 x2
- J6 x2
- J8 x4
- F10
- F11
- F11:2 x2



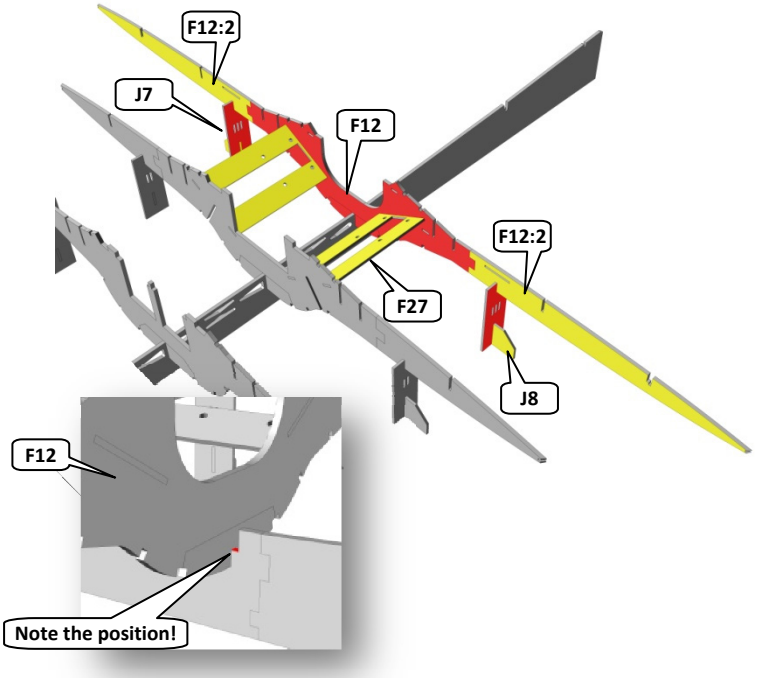
STEP 08

Glue together former F12 with 2 x F12:2.
Glue J7 (*marked "*III") with J8. Make two units. Use the completed parts to secure a level fit of F12. Also mount F27 in between formers F11 & F12. F27 is the base for the for rear landing gear.

Parts Used at this step:

- J7 x2
- J8 x2
- F12
- F12:2 x2
- F27 x2

Note: F12 should be in the forward cut-out on the jig!



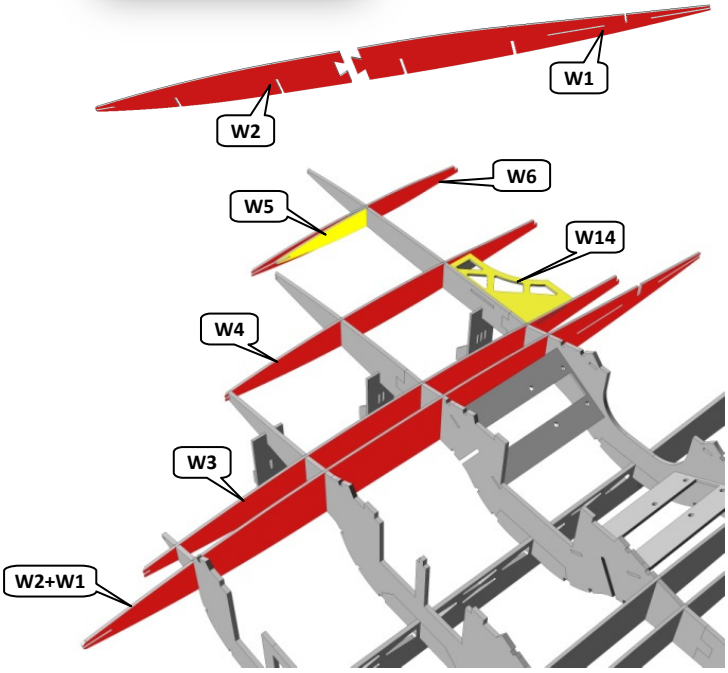
STEP 09

Glue together parts W1 and W2. Make sure they stay flat.
Mount the completed rib in between formers F9 and F12.
Mount W14 between W3 and W4.
Mount W3, W4 (with W14), W5 and W6. Repeat all the steps on the left side. When all parts are lined up correctly, including the parts from previous steps, glue everything together using thin CA-glue.

Parts Used at this step:

- W1
- W2
- W3
- W4
- W4
- W6
- W14

Note: W5 sits just inside W6 and its length its half the length of W6!



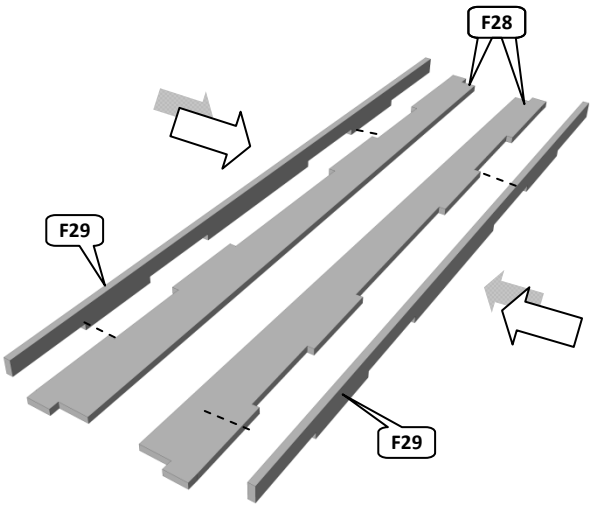
STEP 10

Glue together F28 and F29. Make two pieces. These parts will act as fan-mountings inside the fuse.

Parts Used at this step:

- F28 x2
- F29 x2

Note: Notice the direction of the parts and make sure you are building one left and one right sub-assembly.



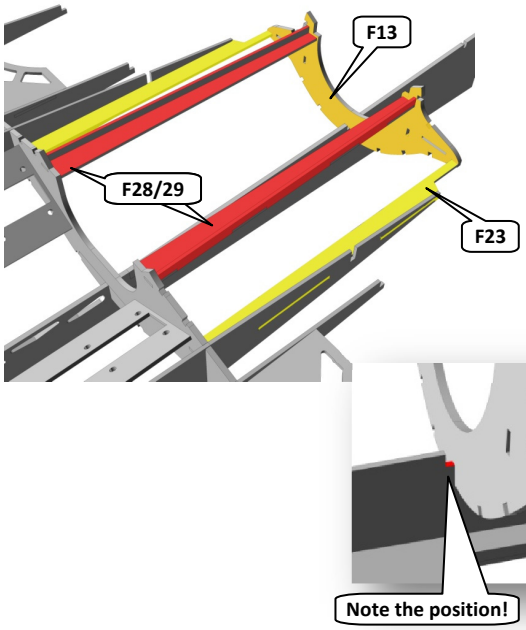
STEP 11

Glue the completed sub-assembly from step 10 (F28/29) in between the formers F12 and F13. Also glue F23. (x2)
Make sure all parts are lined up correctly before putting on thin CA-glue.

Parts Used at this step:

- F28/29 x2
- F23 x2
- F13

Note: Position F29 in the aft cut-out on the jig!



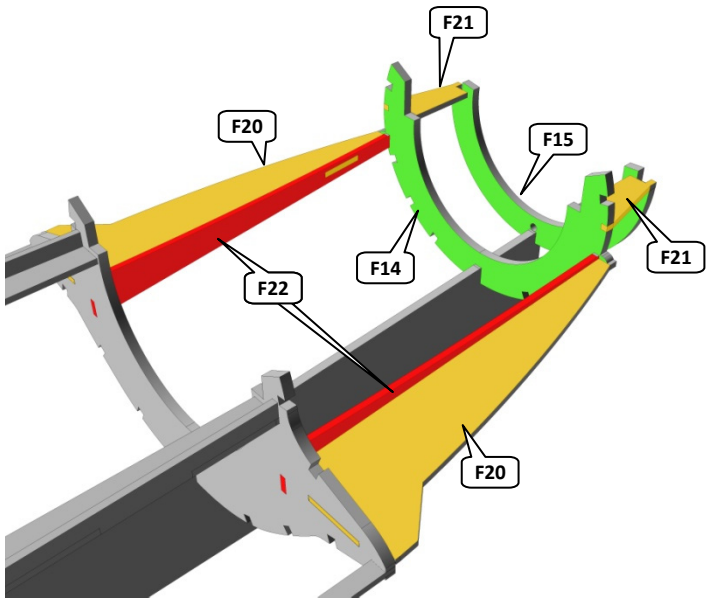
STEP 12

Mount the parts F20 and F22 together. Put the two completeted parts in between F13 and F14. Mount F15 in its slot.
Finally mount F21 between F14 and F15 and glue all parts with thin CA-glue.

Parts Used at this step:

- F14
- F15
- F20 x2
- F21 x2
- F22 x2

Note: The tabs on F20´s upper front side need to be chamfered a little to fit in the correct angle to F14.



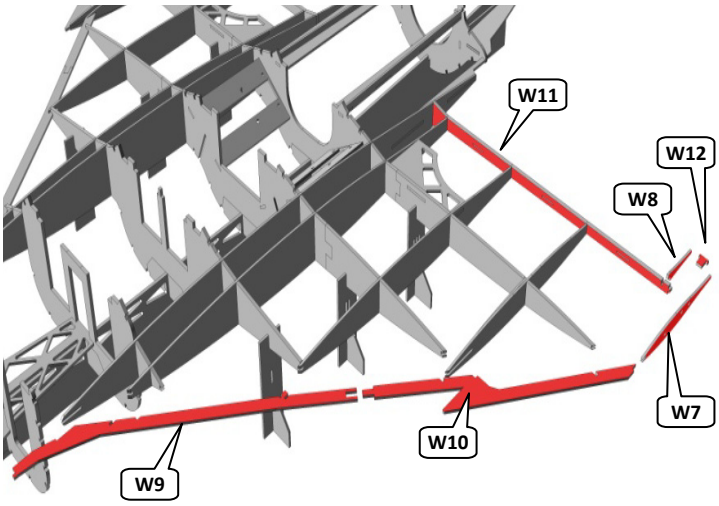
STEP 13

Mount W9 and W 10 at their positions at the front of W2, W3, W4 and W5/W6 and F8. Glue it with CA-glue. Glue W11 to the back of all the ribs and W1.
Mount and glue W7, W8 and W12 on its positions.

Parts Used at this step:

- W7
- W8
- W9
- W10
- W11
- W12

Note: The fictive centerline between the two rectangular holes in W7 shall point forward/downward!

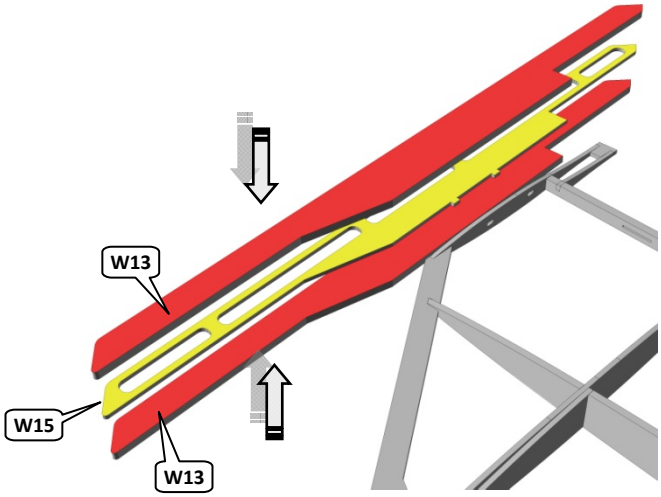


STEP 14

Glue W15 together with one W13 on each side. Make two units. This is weapon pylon *#1*.
Glue the weapon-pylon to W6 after the sheeting with 1.5 mm balsa is done on the wing.

Parts Used at this step:

- W13
- W15
- W13



STEP 15

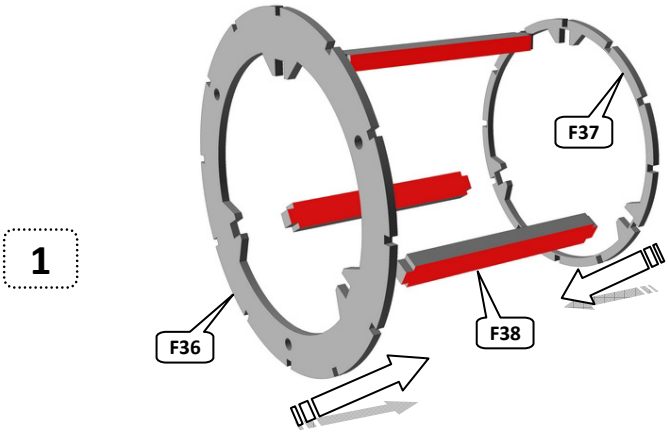
1. Glue together F36, F38 (x3) and F37. Make sure you get the alignment correct.

Parts Used at this step:

- F36
- F37
- F38 x3

2.

Put 2x2mm balsapins between F36 & F37 on all the gaps.
Finish the thrust tube by covering it with 1.5mm balsa.
The thrust-tube will later be bolted on to the fuselage. This will obtain a thrust-tube that is removable for maintenance of the fan.
When the part is completely covered, cut away the F38´s as the dotted line shows, making F36 and F37 completely round inside.

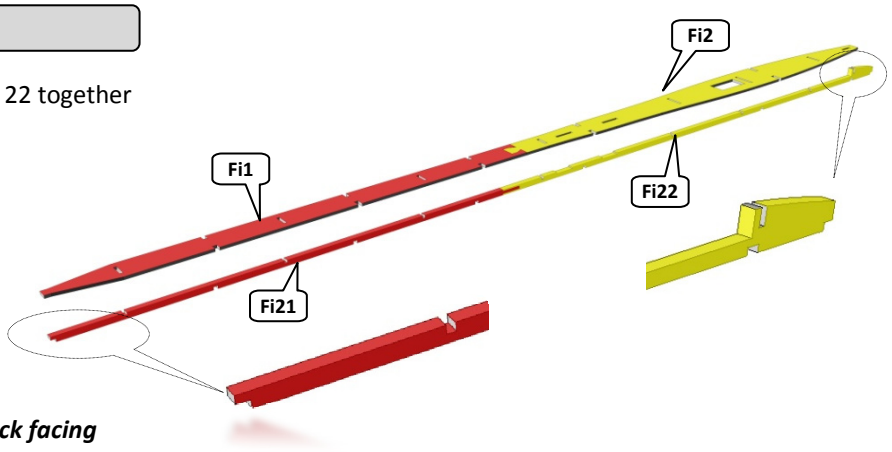


STEP 16

Glue Fi 1 and Fi 2 together. Also glue Fi 21 and Fi 22 together and glue them to the completed Fi1/Fi2.

Parts Used at this step:

- FI 1
- FI 2
- FI 21
- FI 22



Note: The big portion on Fi 21 shall be at the back facing upwards.

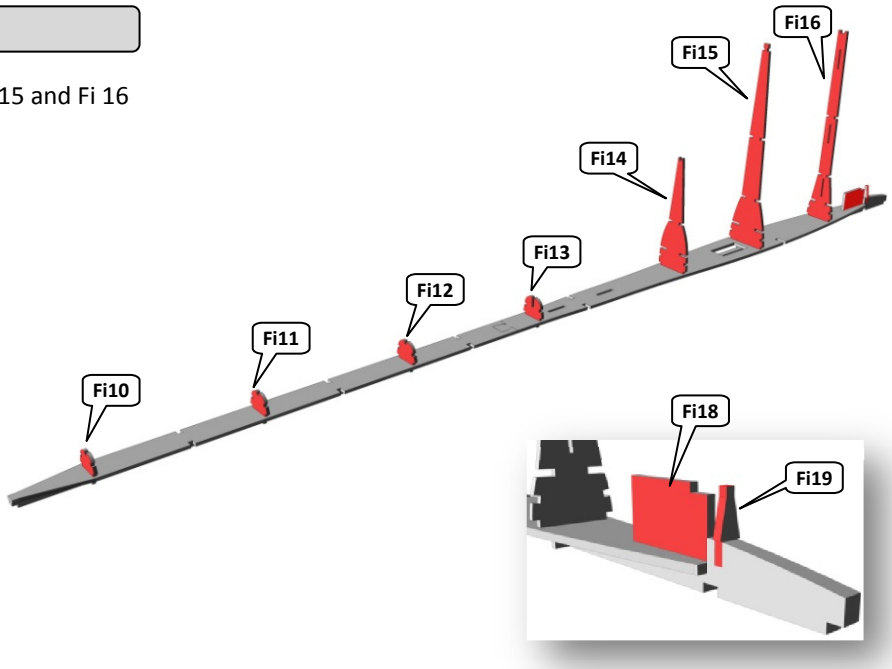
STEP 17

Mount and glue Fi 10, Fi 11, Fi 11, Fi 12, Fi 14, Fi 15 and Fi 16 according to the figure.

Glue FI 18 and FI 19 as the instruction shows.

Parts Used at this step:

- FI 10
- FI 11
- FI 12
- FI 13
- FI 14
- FI 15
- FI 16
- FI 18
- FI 19

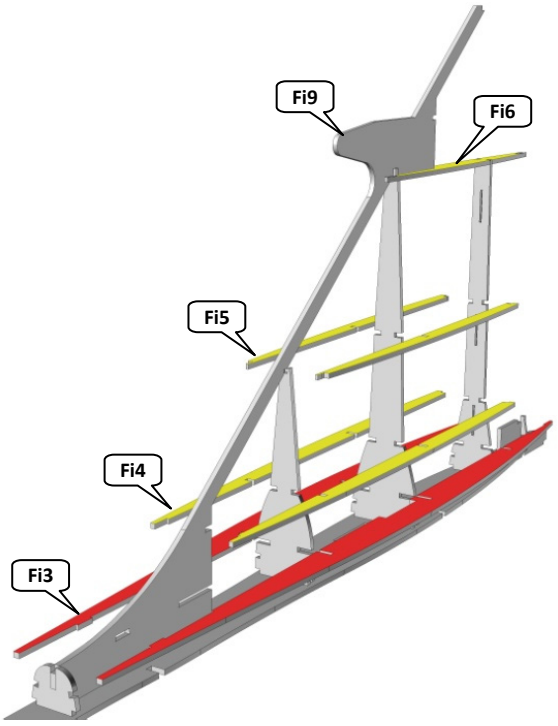


STEP 18

Mount Fi 9, then put on all the ribs for the fin. Start with the two Fi3, then both Fi4 and both Fi5. Finish with Fi6.
Glue all parts with thin CA-glue. Make sure it is straight before glueing!

Parts Used at this step:

- FI 9
- FI 3 x2
- FI 4 x2
- FI 5 x2
- FI 6

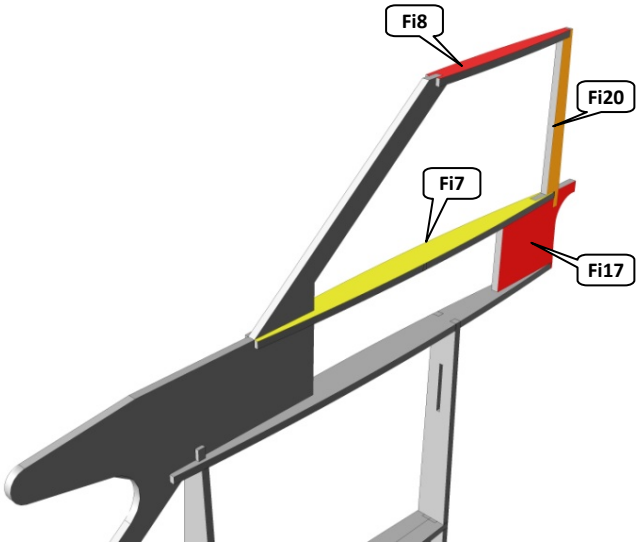


STEP 19

Mount and glue the top parts of the fin.

Parts Used at this step:

- Fl 7
- Fl 8
- Fl 17
- Fl 20

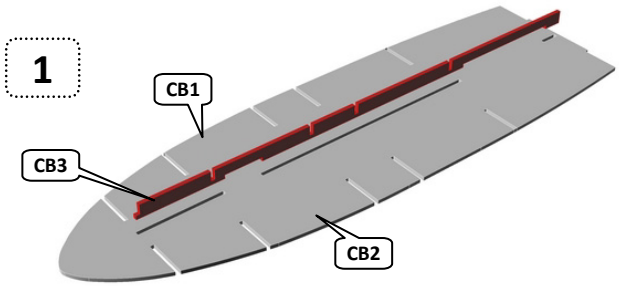


STEP 20 (Not with clear canopy)

1. Glue together CB1, CB2 and CB3.

Parts Used at this step:

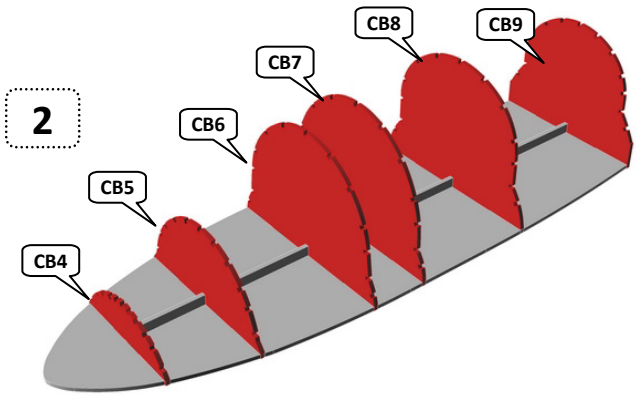
- CB1
- CB2
- CB3



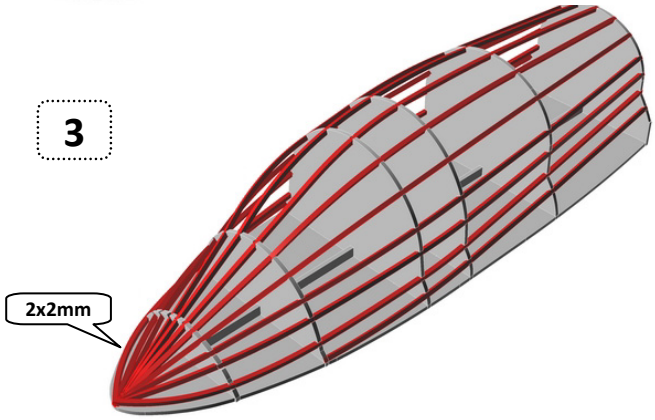
2. Glue on the formers for the canopy.

Parts Used at this step:

- CB4
- CB5
- CB6
- CB7
- CB8
- CB9



3. Glue 2x2mm balsa-stringers between all the canopy formers.



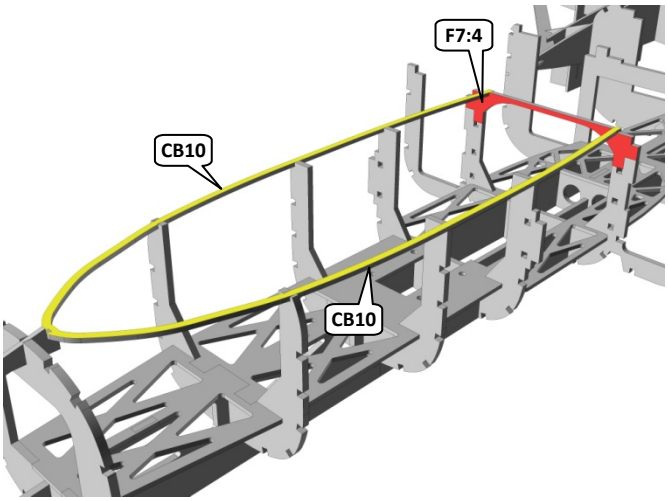
4. Sheet the completed canopy with 1.5mm balsa.

STEP 21

Glue the top F7:4 on to F7. Then, glue the two CB 10 on to the formers starting on F26.

Parts Used at this step:

- F7:4
- CB 10 x2

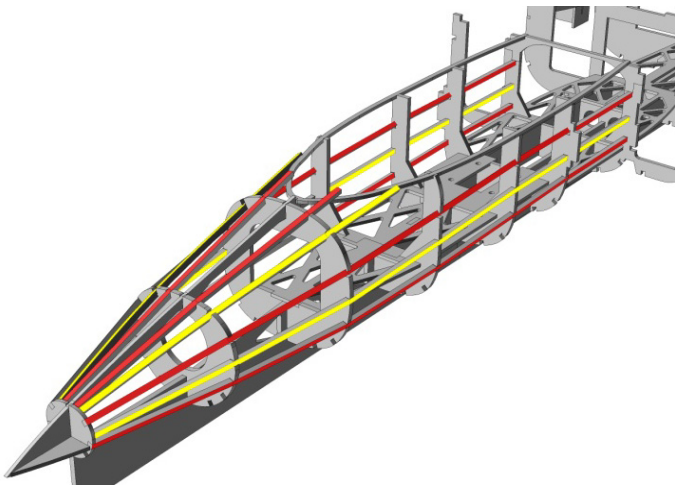


STEP 22

Put the 3x3mm stringers on to the nosesection. Start with the three touching former F7 and work your way forward. Do it equally on both sides to prevent the fuse from twisting when the glue sets. Use thin CA-glue to secure the stringers to the formers.
Continue with the strigers going from the nose to the cabinborder. These should end flush with the edging.

Use the picture as reference.

Note: After all stringers are glued, sheet the area with 1.5 mm balsa.



STEP 23

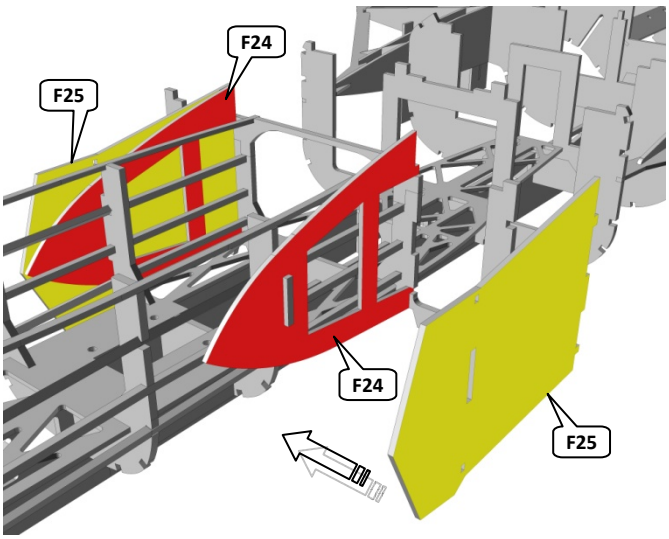
Mount and glue the two air-dividers F24 (red) and the two inner-walls for the air-intake F25 (yellow).

Remarks: The sheeting in STEP 22 must have been done prior to this step

Parts Used at this step:

- F7:4
- CB 10 x2

Note: The sheeting is NOT pictured!

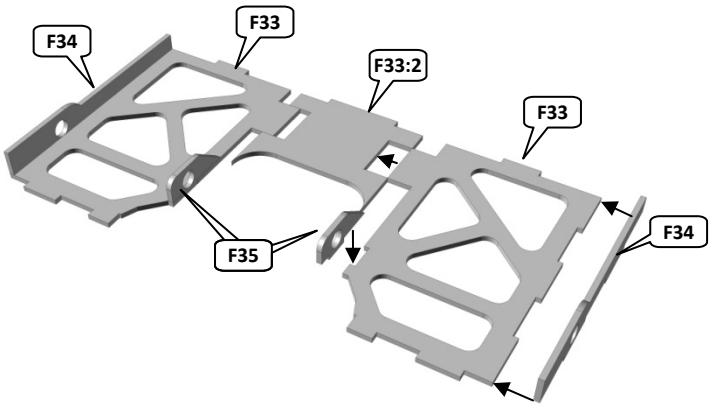


STEP 24

Glue together the parts as the picture illustrates.

Parts Used at this step:

- F33 x2
- F33:2
- F34 x2
- F35 x2

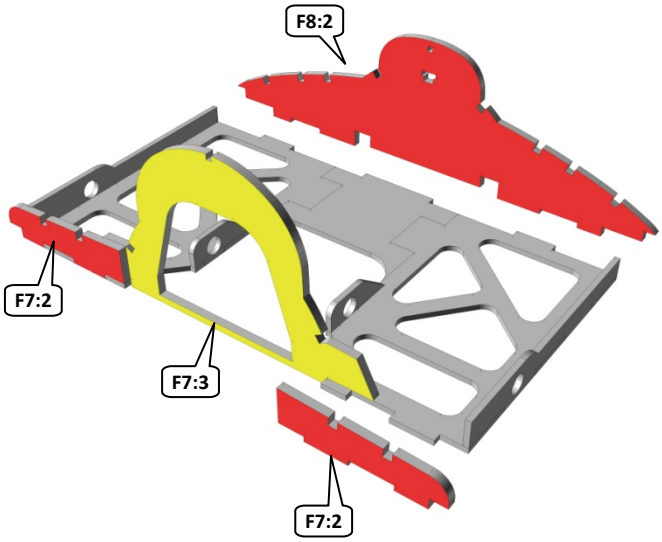


STEP 25

Glue on the balsaparts to the canard-box. Make sure the plywood stays flat.

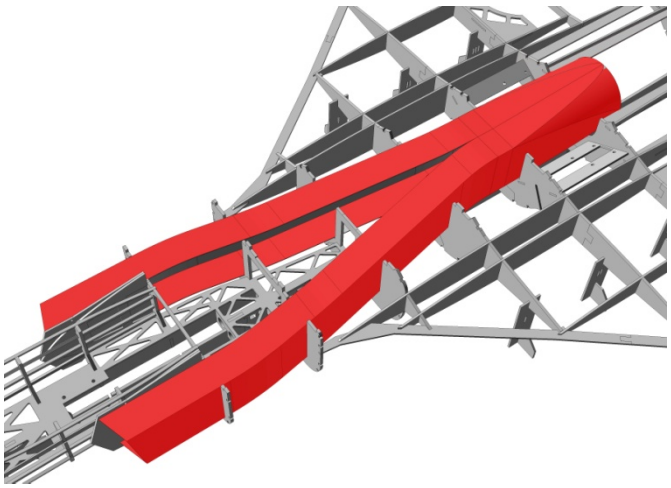
Parts Used at this step:

- F7:2 x2
- F7:3
- F8:2



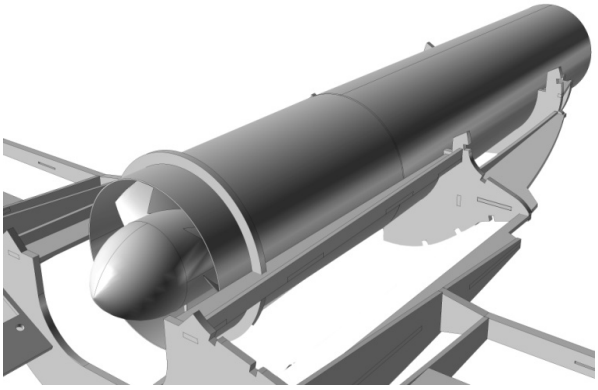
STEP 26

Trim all the parts for the intakes and glue them together.
Trim the collector so it fits the fan of your choice.
Mount the intakes in the fuse and check the fitment.



STEP 27

Mount your fan and exitduct. Bolt the fan to the plywood-mountings. The exit duct is made from the clear plastic and rolled to fit your fan. Tape the exitduct to the fan before mounting.

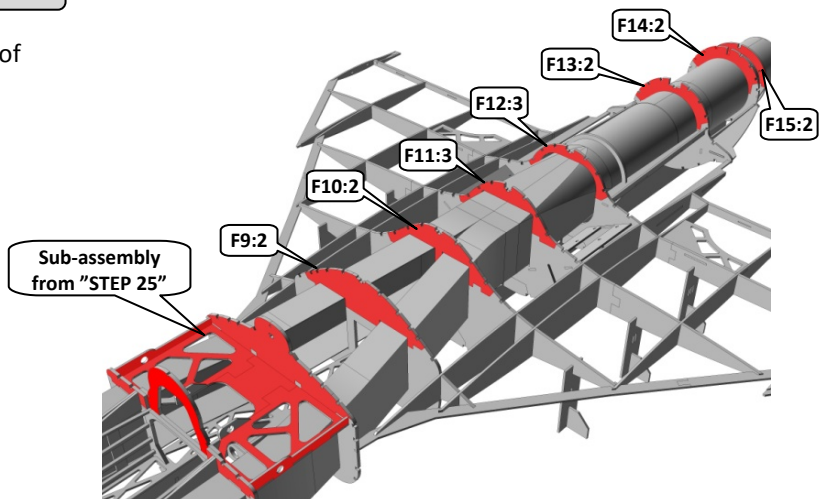


STEP 28

When the fan and intake is fitted, glue all the top parts of the fuses and the sub-assembly made at “step 25”

Parts Used at this step:

- F9:2
- F10:2
- F11:3
- F12:3
- F13:2
- F14:2
- F15:2

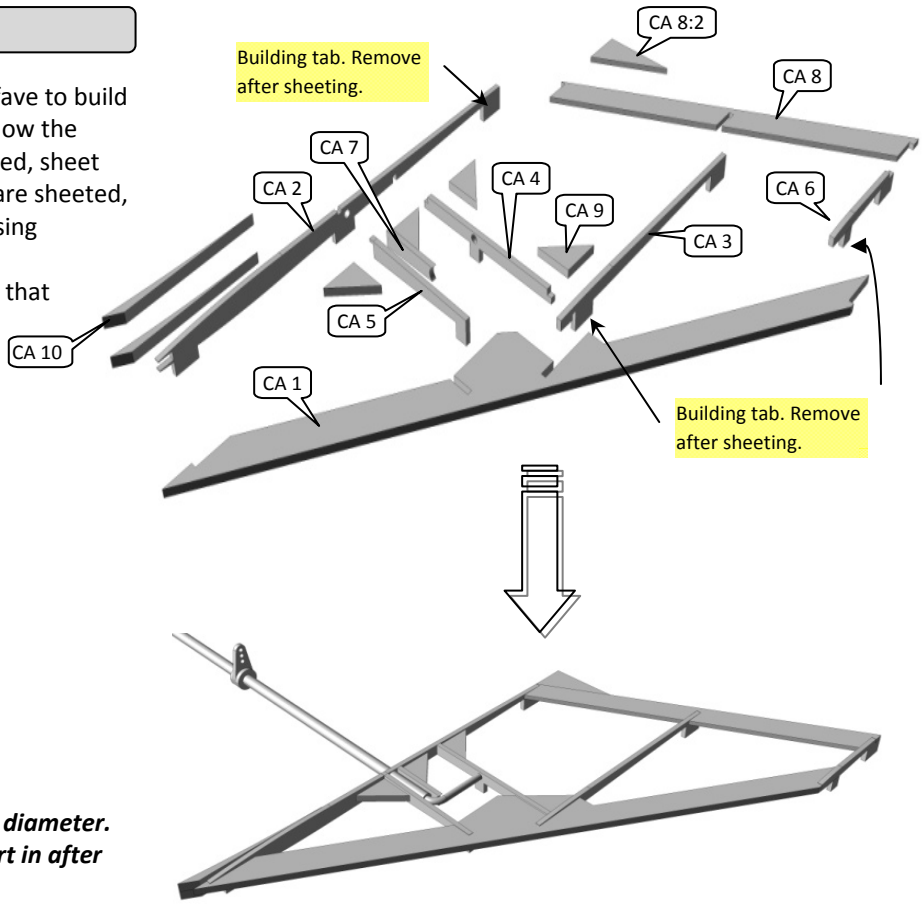


Note: Secure the intake to all formers with gorilla-glue.

STEP 29

Mount all the parts for the canard. Use a flat surfave to build on. Put thin CA-glue on all joints. Sand CA8 to follow the lines of CA2, CA3 and CA6. After everything is glued, sheet the topside with 1.5mm balsa. When both sides are sheeted, glue CA8:2 to the end of CA8 and shape it with using sandpaper.
After the top-side is sheeted, remove all the tabs that supports the build.
Parts Used at this step:

- CA 1
- CA 2
- CA 3
- CA 4
- CA 5
- CA 6
- CA 7
- CA 8
- CA 8:2
- CA 9 x3
- CA 10 x2



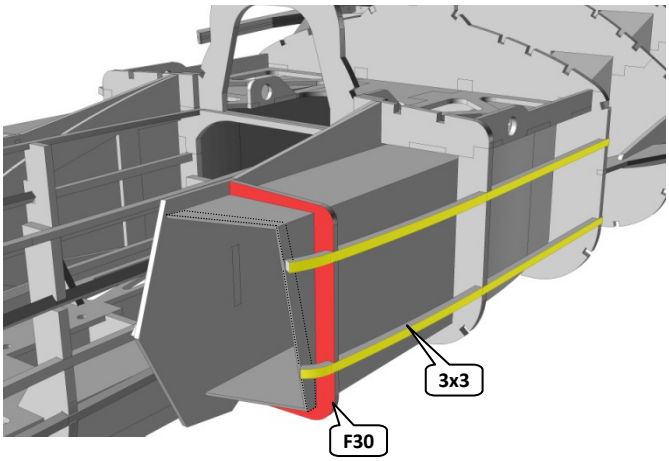
Note: Enlarge the holes in CA2 & CA4 to 4mm in diameter. CA 7 is a support for the pianowire. Glue this part in after the pianowire is in place.

STEP 30

Glue F30 in place over the inakes. Glue two 3x3mm stringers as the picture shows. To make the radius for the intake better you can put some 5mm wide 1.5mm balsa on the intakes outside as the dotted black lines shows. Then forming the intake-radius after the sheeting is done will be much easier.

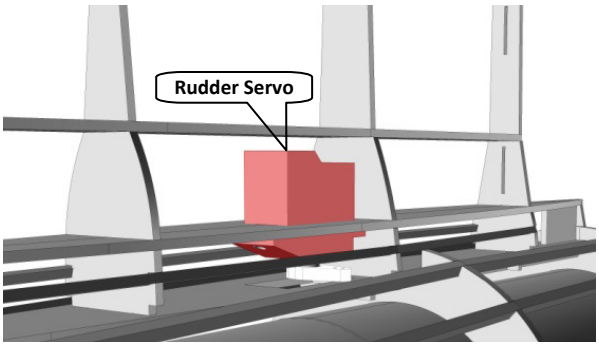
Parts Used at this step:

- F30
- 3x3 mm stringer

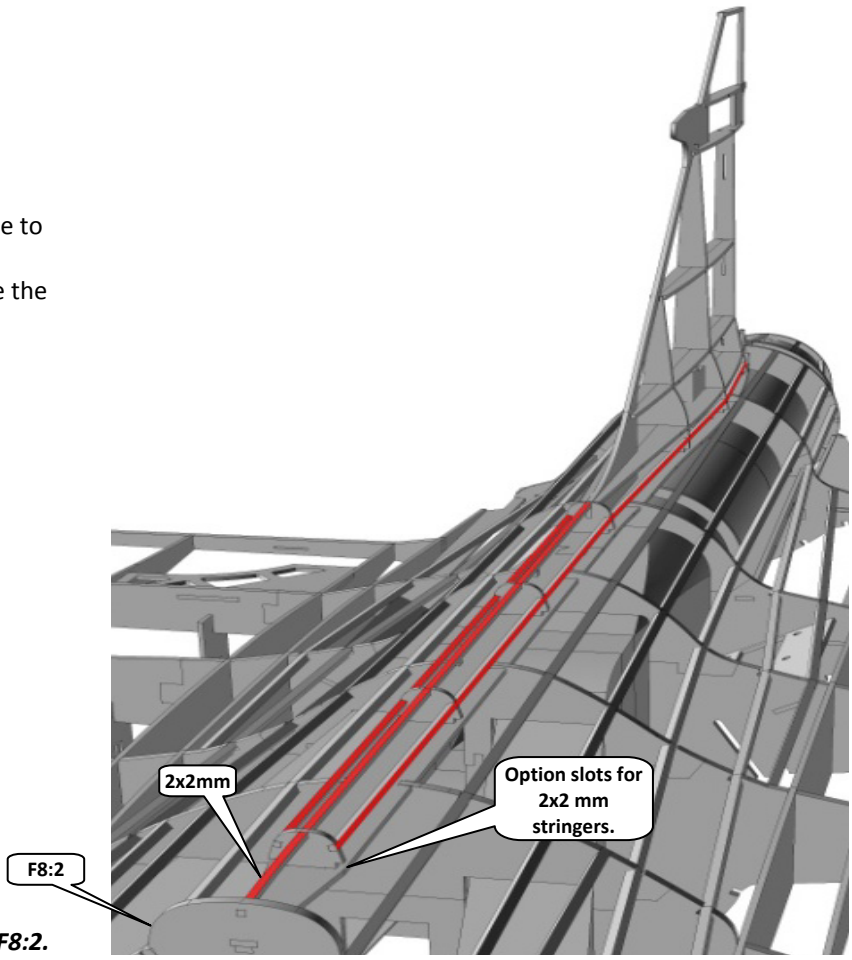


STEP 31

Start by mounting a rudder-servo of your choice in to the fin. Also do the linkage to the rudder.
Make the hole for the servo as big as your servo and also cut away Fi22 that is crossing the hole.



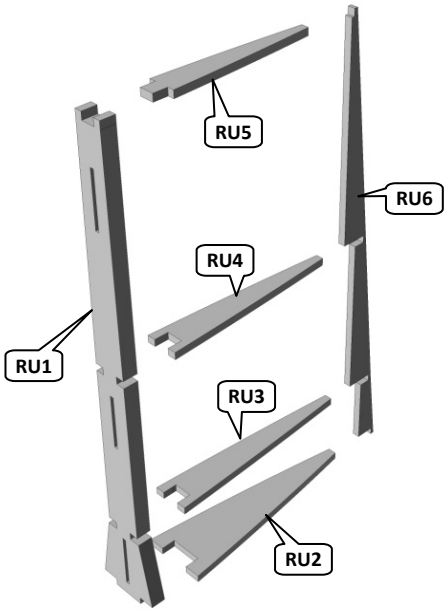
Mount and glue the completed fin-assembly.
Mount 3 stringer, 2x2mm as illustrated. It is possible to mount two more stringers at the bottom of the fin-assembly. Those are if you later finds it hard to glue the sheeting.



Note: The top stringer shall start at the cut-out in F8:2.

STEP 32

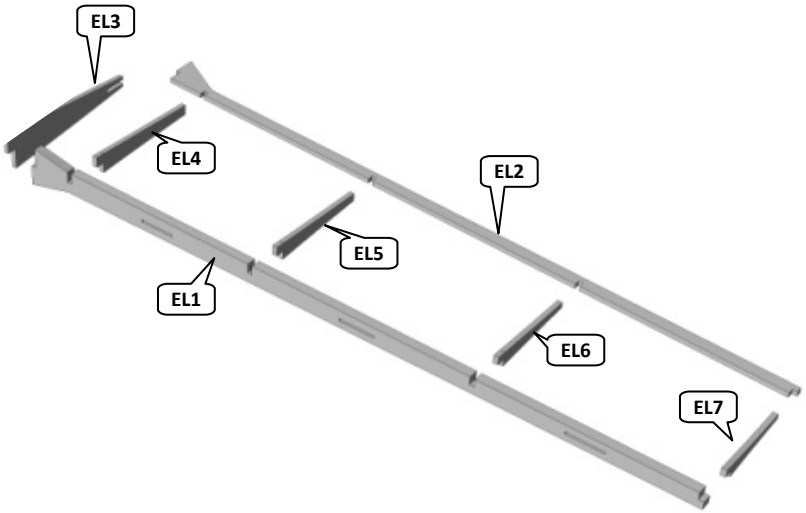
Glue together the part for the rudder. Make sure it is straight.
Chamfer the rudder leading edge at 45 degree angle.
Mount and glue the hinges. If needed put some scrap balsa to support the hinges to the RU1.
Sheet the rudder with 1.5mm balsa



Parts Used at this step:

- RU1
- RU2
- RU3
- RU4
- RU5
- RU6

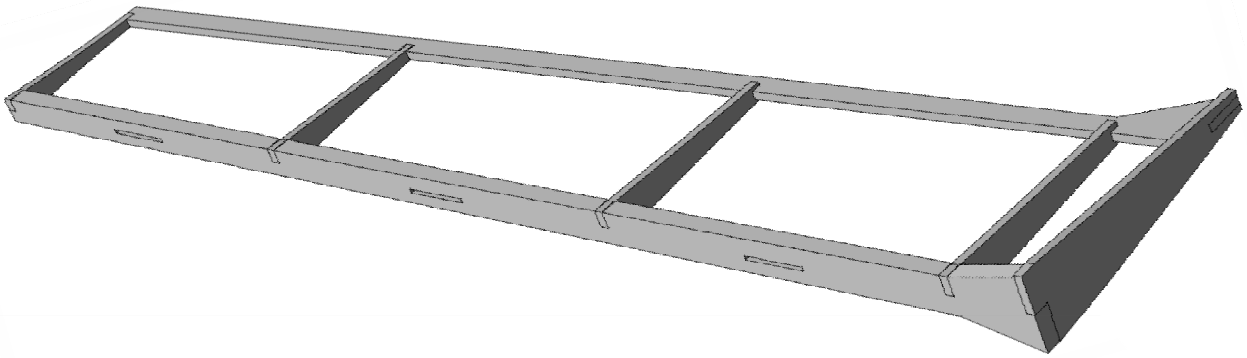
Do both ailerons in the sam manner as the rudder. Sheet them with 1.5mm balsa.
Note: Make one left and one right aileron!



Parts Used at this step:

- EL1
- EL2
- EL3
- EL4
- EL5
- EL6
- EL7

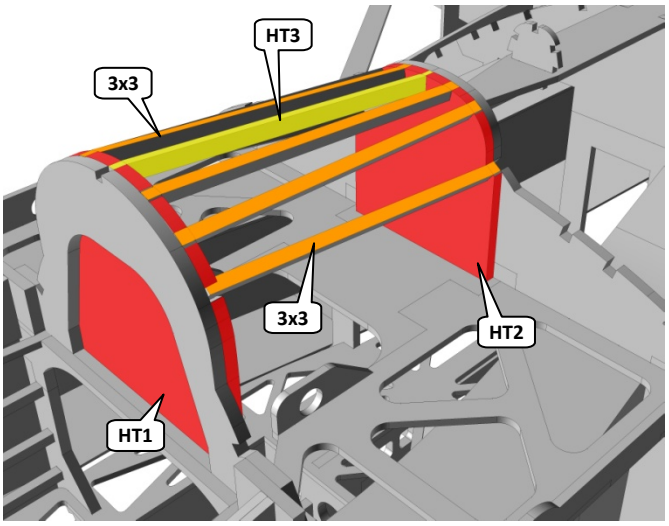
The completed aileron should look like this.



STEP 33

Övre serviceluckan

Cover the already glued parts with thin plastic than carefully use needles to hold HT1 and HT2 in place. Mount and glue HT3 and 3x3 mm stringers in between HT1 and HT2. This assembly will act as a service hatch for the canardservo. When you sheet the part, let the sheeting protrude over F7:3 and F8:2.



STEP 34

Mount the four ball-bearings (4x7x2.5mm) in their respective holes. Mount the two canards and check the alignment.
Sheet all areas on the upper part of the aircraft using 1.5mm balsa.

STEP 35

Turn the model around to have the bottom facing upwards. Remove the center-jig by carefully cutting along the markings. Sand the rest of the part until it is flush with the formers.