

DFS Kranich 1/6

Build instructions



Specifications	
Wing Span	112 in / 3000mm
Wing Area	71.3 sq dm
Flying weight	2.1kg-2.5kg
Fuselage length	1142mm
Scale	1 / 6

Requires
RC transmitter with at least 6 channels
Air-brake: 9mm Thin servos (ES3301/ES3302)*2
Aileron: 17g Servo(ES3004/AS82MG)*2
Rudder& Elevator: 43g Standard Servo(ES3001/AS549)*2



Tony Ray's AeroModel

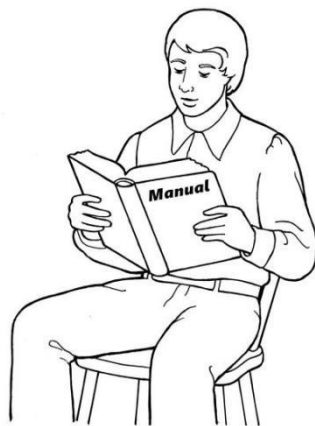
INDEX

BEFORE YOU BEGIN-----	P.3
KIT INVENTORY-----	P.4~P.5
ASSEMBLY-Fuselage I-----	P.6~P.12
ASSEMBLY-Fuselage II-----	P.12~P.19
ASSEMBLY-Canopy-----	P.20~P.22
ASSEMBLY-Vertical & Horizontal Tail-----	P.23~P.26
ASSEMBLY-Air-brake Module-----	P.27~P.28
ASSEMBLY-Centre Wing Section-----	P.29~P.31
ASSEMBLY-Outer Wing Section-----	P.32~P.37
ASSEMBLY-Wing Covering-----	P.38~P.43
ASSEMBLY-Seats And Details-----	P.44~P.46
ASSEMBLY-Eletronics-----	P.47~P.48
BEFORE YOU FLY-----	P.49~P.50

BEFORE YOU BEGIN

Attentions and Tips

1. Read through the manual before you begin, so you will have an overall idea of what to do.
2. Check all parts. If you find any serious defects or missing parts, please contact your local dealer.
3. Please build your kit in strict accordance with the sequence of the user manual.
4. Pre-Sanding: Before removing any parts from the laser-cut plywood sheet, use a sanding block loaded with 250 - 400 grit sandpaper and lightly sand the back side of the sheet. Which can significantly reduce burn marks of the wood and make the parts match better
5. Before building the model part on drawings, It is recommended to cover a layer of kitchen cling film (polyethylene film) on the drawing. This way can prevent parts from sticking to the drawing and causing damage.
6. Parts Assembly: This product's tabs and notches interlock like a 3D puzzle. We strongly suggest that when fitting parts, you "dry fit" (use no glue) the parts together first. It is advised to work 1 - 2 steps ahead in the instructions, using this dry-fit technique. This allows the opportunity to inspect the fit and location of assembled components, and shows the benefits of our construction technique. As each successive part is added, it contributes to pulling the entire assembly square. Once you arrive at the end of a major assembly sequence, square your work on a flat work surface, and bond the dry-fit joints with glue. Using the dry-fit process, you'll be able to recover from a minor build mistake, and will ultimately end up with a square and true assembly.
7. This is a precision laser-cut kit. Our lasers cut to within 0.2mm in accuracy. Yet the wood stock supplied to us by the mill may vary in thickness by up to 0.2-0.3mm. This variance in the wood stock can cause some tabs and notches to fit very tightly. With this in mind, consider lightly sanding or lightly pinching a tight-fitting tab, rather than forcing the parts together. You may break some parts in assembly, but please don't worry, after the final covering work, it will not affect the strength and appearance of your model. You will end up with a circle and true airframe.



KIT INVENTORY



Sheet Wood Inventory		
Item:	Mark	Quantity
2.0mm balsa	A series:A1-A20	20
1.5mm Balsa	B series:B1-B26	26
3.0mm balsa	C series:C1-C4	4
5.0mm balsa	D series: D1-D3 (D3 packed in strips bag)	3
1.0mm balsa	E series:E1-E3	3
3.0mm Plywood	F series: F1	1
2.0mm Plywood	G series: G1-G9 (G8, G9 packed in strips bag)	9
1.5mm Plywood	H series: H1-H2	2
1mm Plywood	J series:J1-J5	5
3.0mm Pine wood	K series:K1-K2	2

Wood Strips Inventory	
3*3mm Balsa	10
6*6mm Balsa	4
2*8mm Pine	6

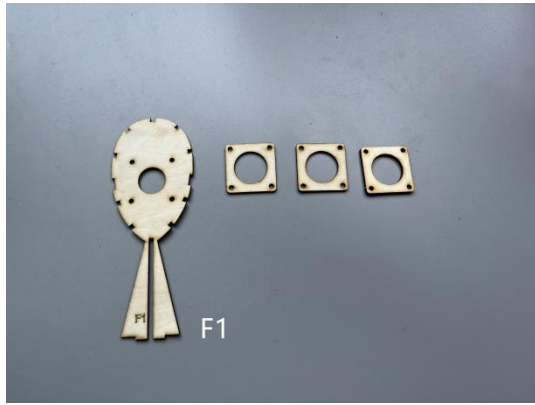
TonyRay Aero Model Co.,Ltd

Hardware	
<i>1. Hardware in Strips bag</i>	
PVC Tube (Outer diameter: 12mm, Inner diameter: 10mm)	1m
PVC Tube (Outer diameter: 3mm, Inner diameter: 2mm)	2m
Steel push rod(Diameter1.2mm)	4
<i>2. Hardware in plastic bag</i>	
Laser cut Pvc sheet	6
Paper hinge	2
Leather strips	6
<i>3. Hardware in plastic box</i>	
M2 ball joint connector	4
M2 Steel push rod (Thread at both ends Length:35mm)	2
Steel wire adapter	4
Plastic collet	2
Rudder horn	4
Plastic Hinge	6
M3*25 Screws	2
M3 Four Claws Nut	2
M2 Screw nut(black version)	20
M2 Screw nut	16
M2*10 Screws	36
M2*8 Screws (Spacer Version)	24
Copper hinge	4
M1*3 Screws	40
<i>4. Aluminum parts</i>	
Aluminum Tube (Outer diameter: 10mm, Inner diameter: 6mm)	4
Aluminum reinforcement	2
<i>5. Vacuum Formed Canopy</i>	
Canopy	2

Paper parts	
1:1 drawings	2

ASSEMBLY-Fuselage I

Step1



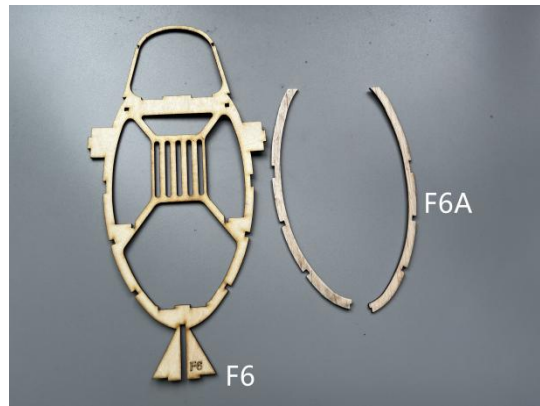
Step2



Step3



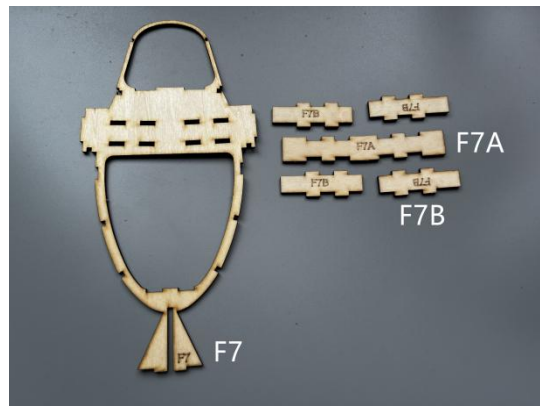
Step4



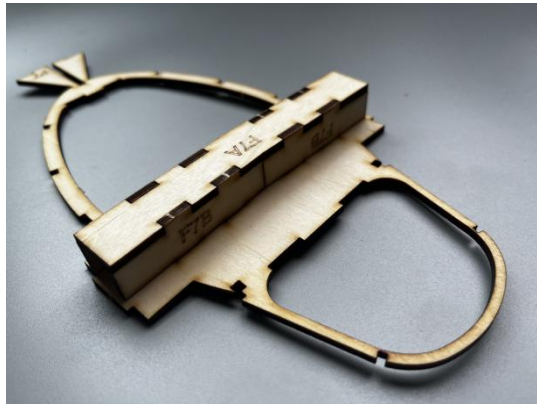
Step5



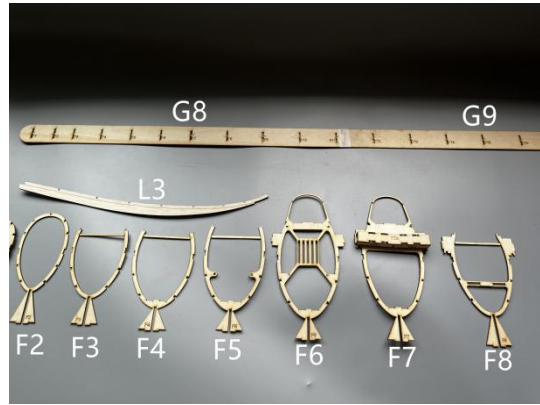
Step6



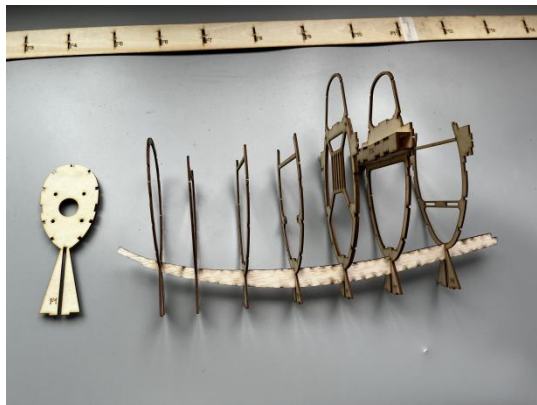
Step7



Step8



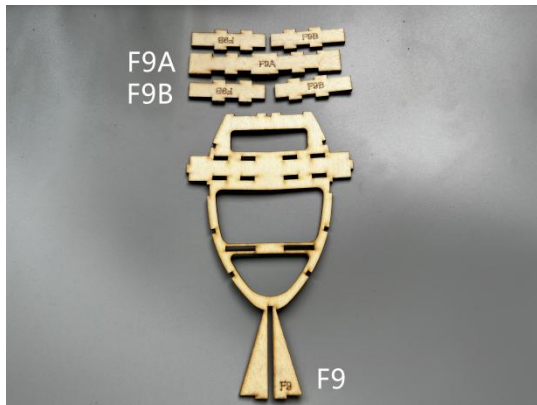
Step9



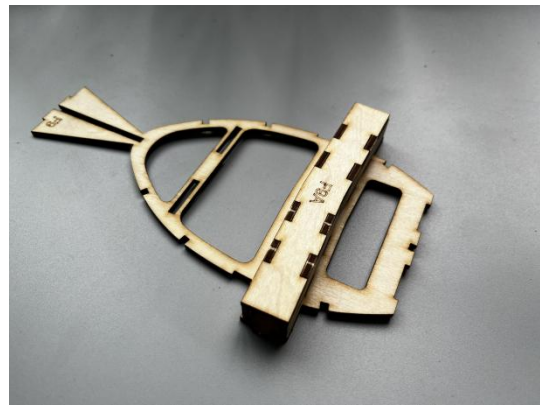
Step10



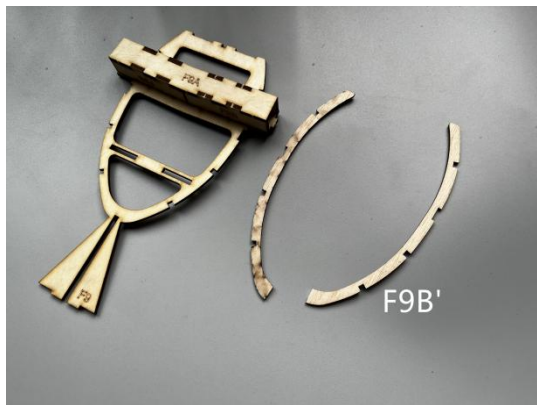
Step11



Step12



Step13



Step14



Step15



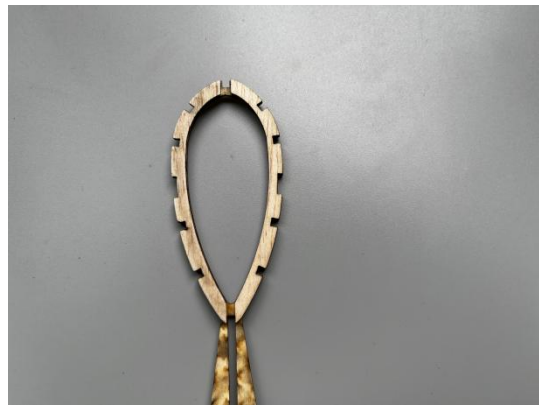
Step16



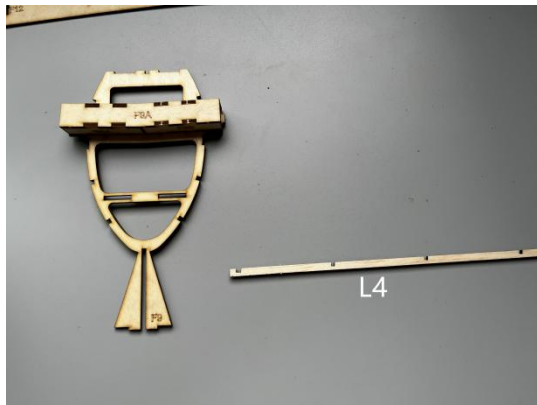
Step17



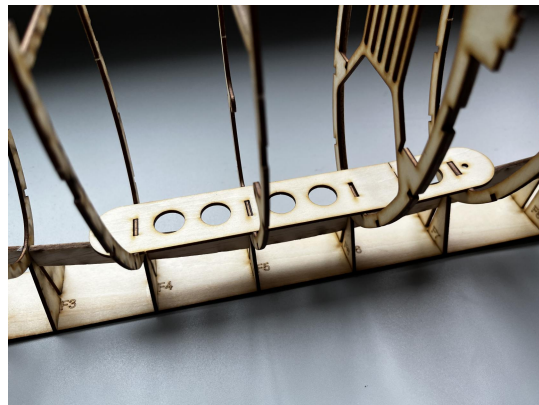
Step18



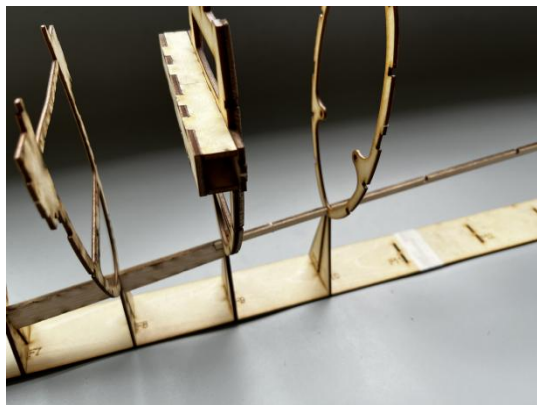
Step19



Step20



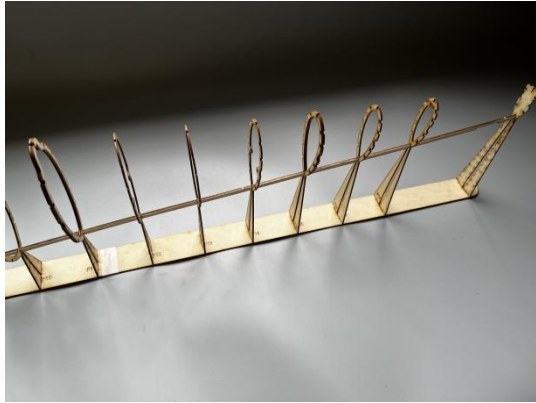
Step21



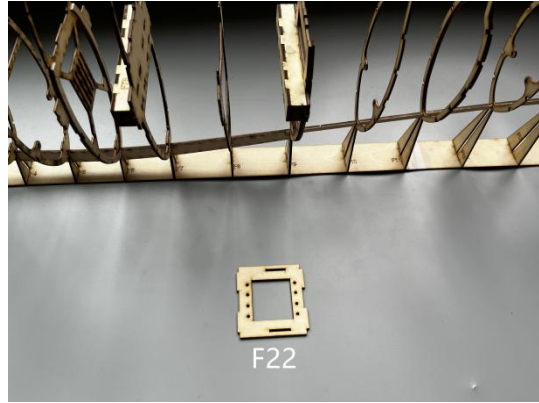
Step22



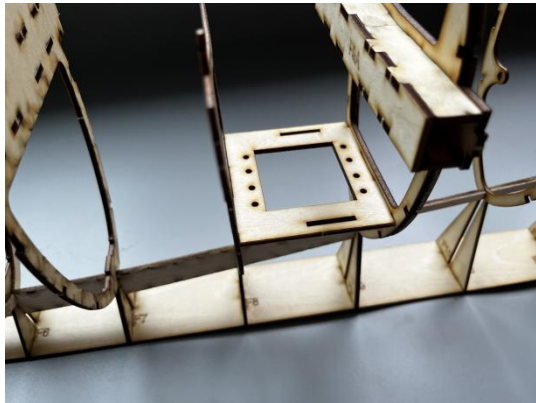
Step23



Step24



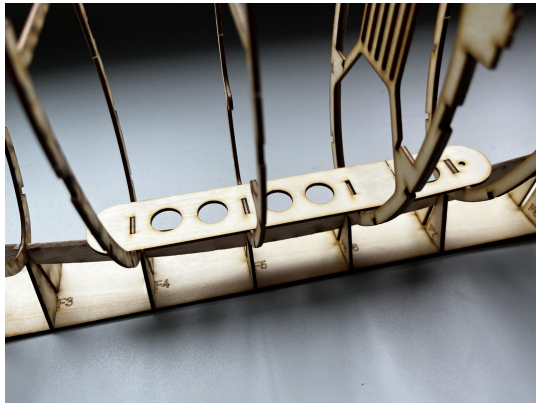
Step25



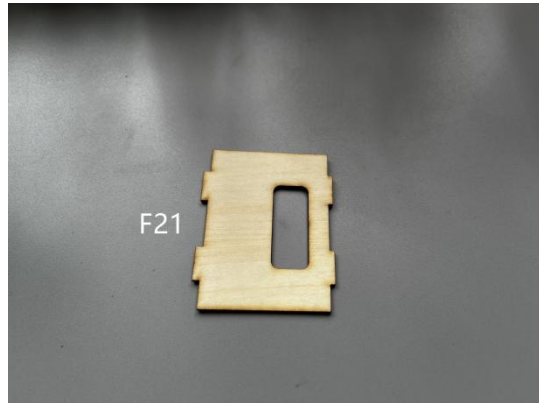
Step26



Step27



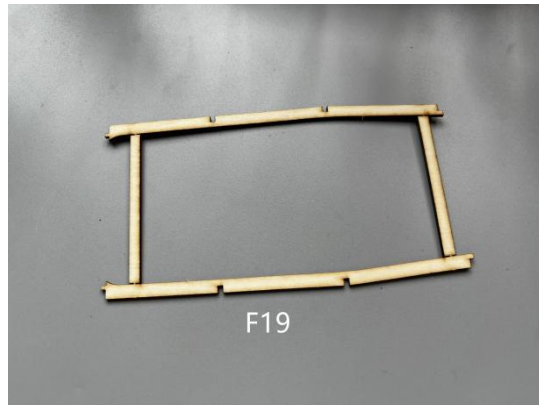
Step28



Step29



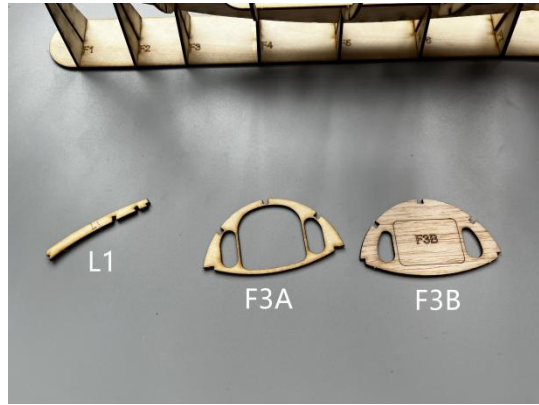
Step30



Step31



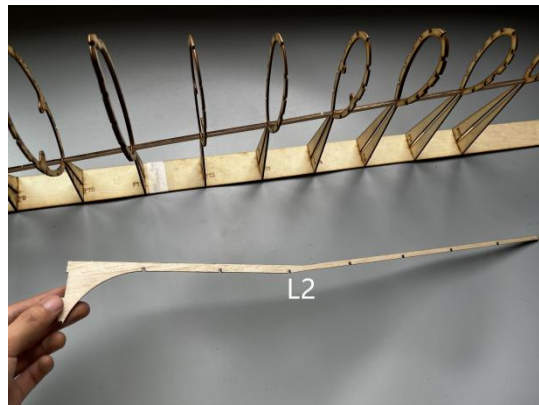
Step32



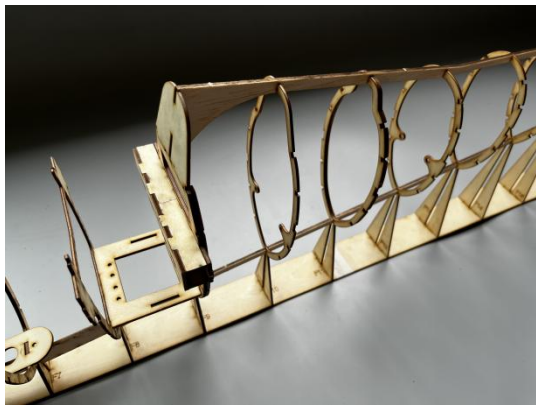
Step33



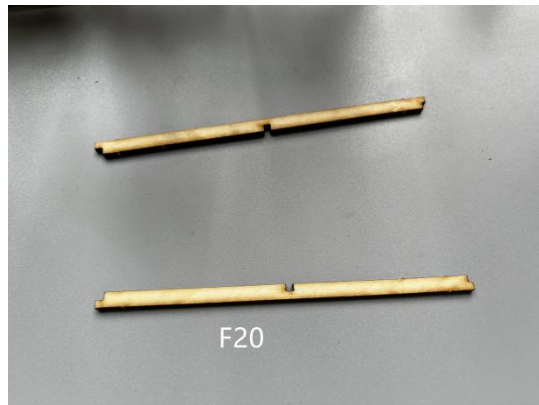
Step34



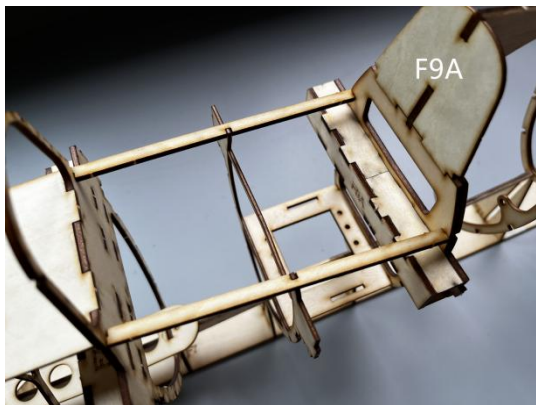
Step35



Step36



Step37



Step38



Step39



Step40



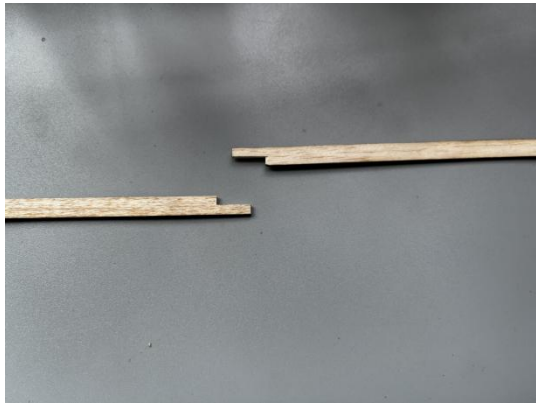
Step41



Step42



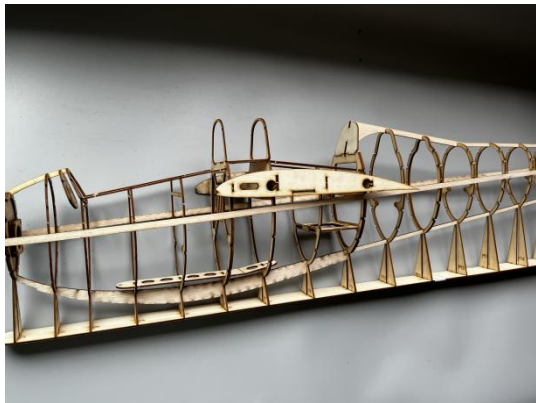
Step43



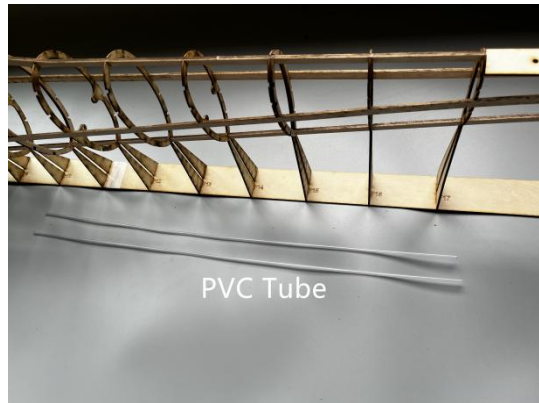
Step44



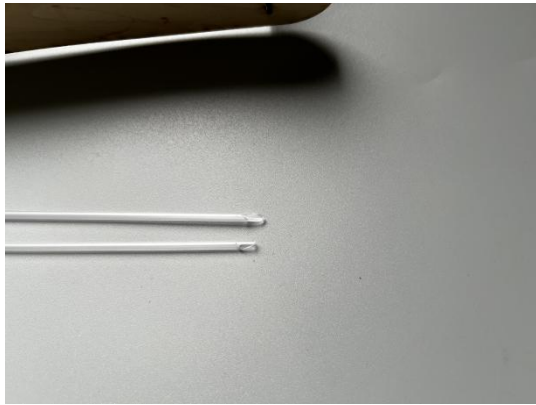
Step45



Step46



Step47



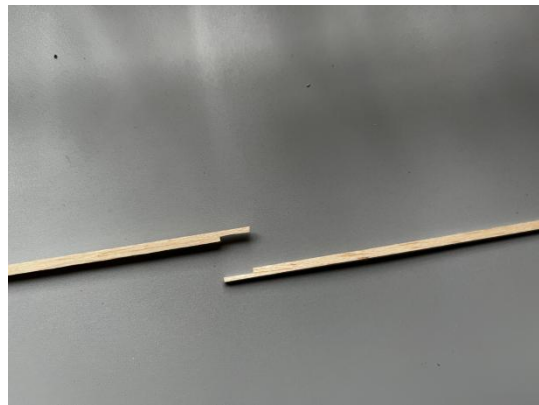
Step48



Step49



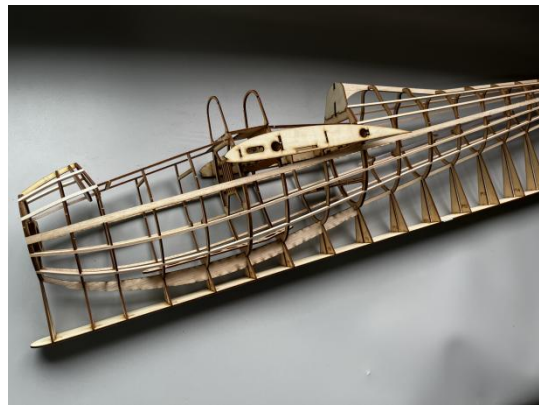
Step50



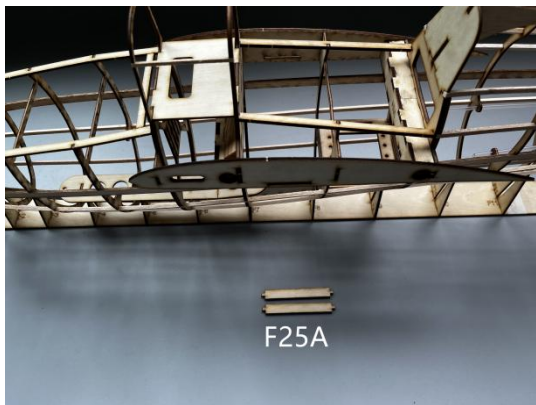
Step51



Step52



Step53

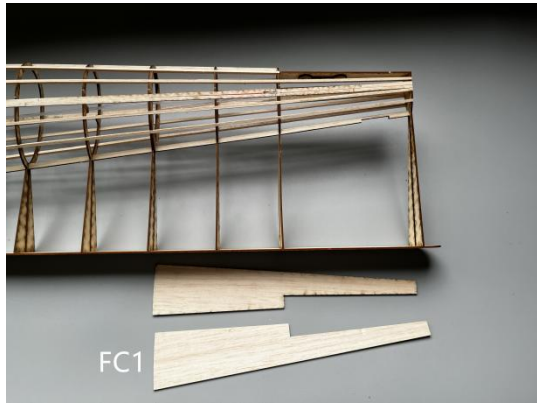


Step54



ASSEMBLY-Fuselage II

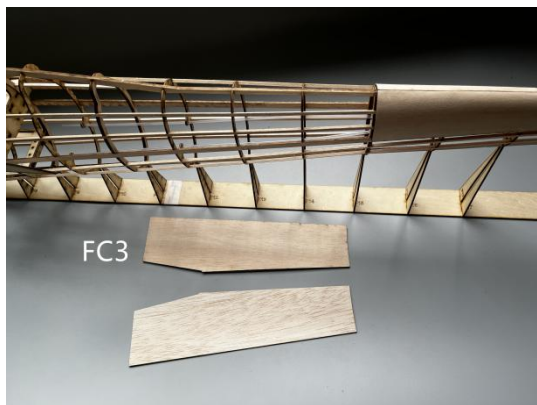
Step1



Step2



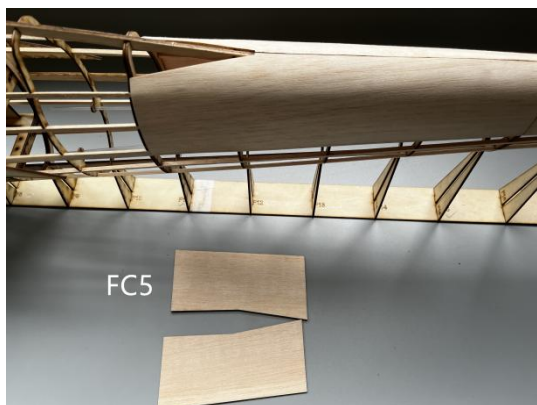
Step3



Step4



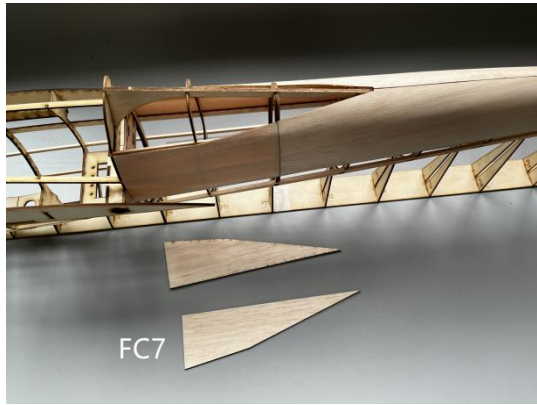
Step5



Step6



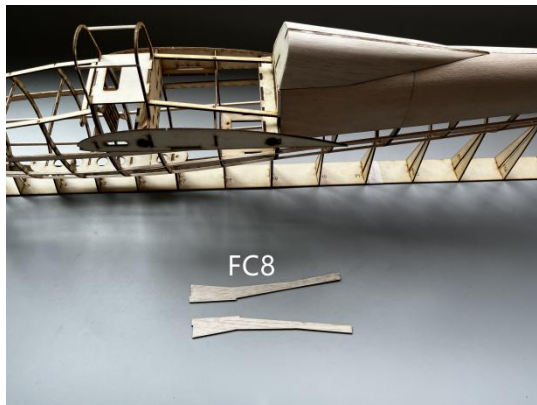
Step7



Step8



Step9



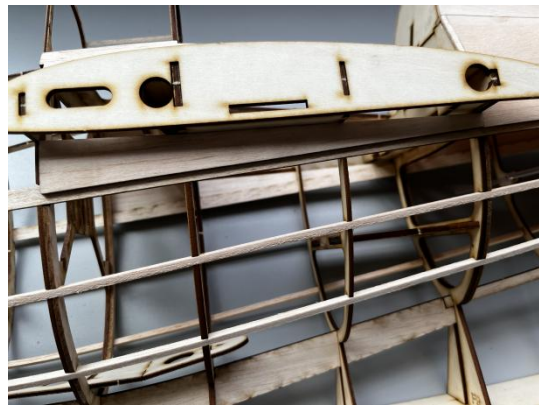
Step10



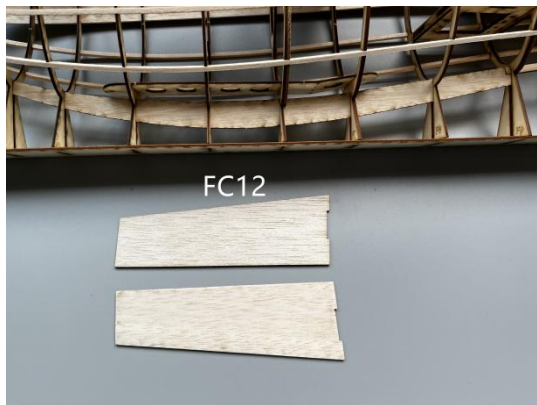
Step11



Step12



Step13



Step14



Step15



Step16



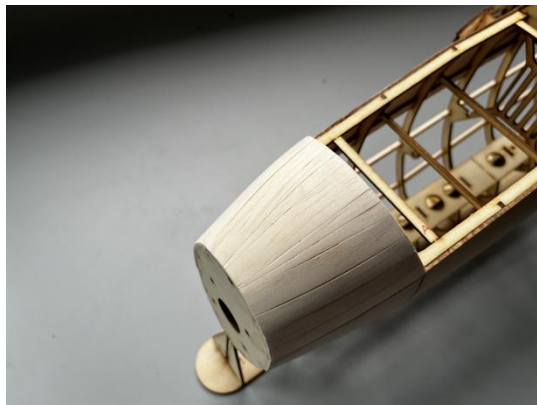
Step17



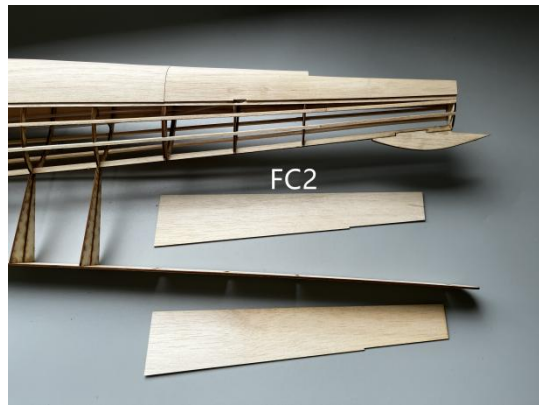
Step18



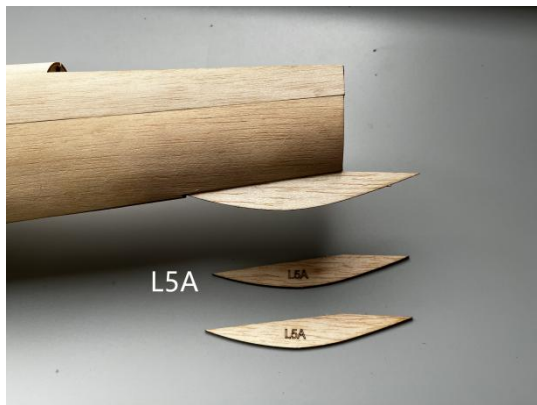
Step19



Step20



Step21



Step22



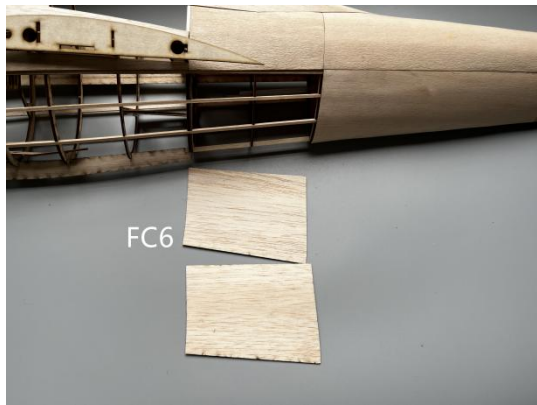
Step23



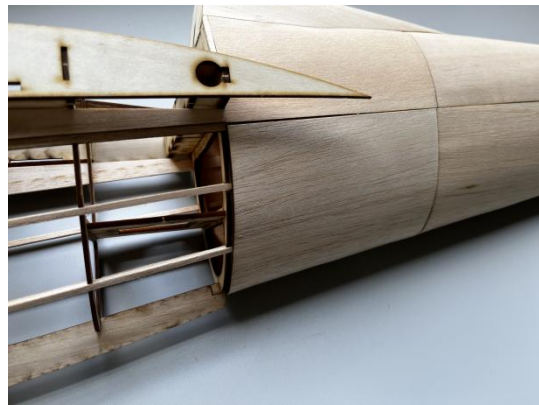
Step24



Step25



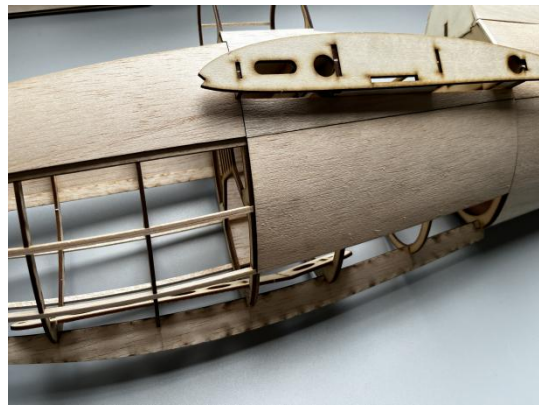
Step26



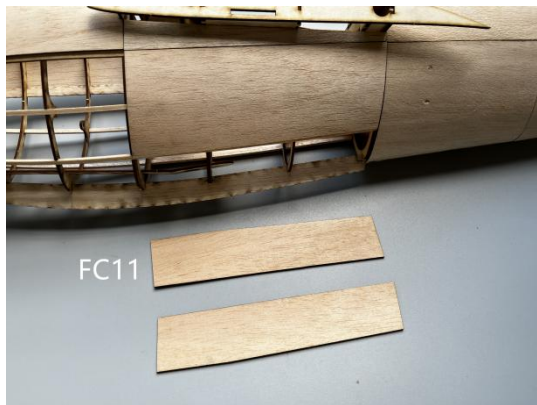
Step27



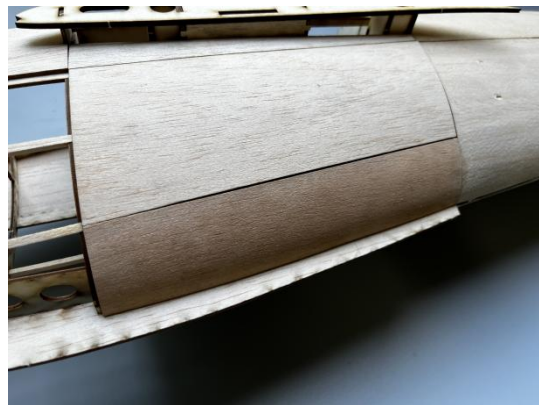
Step28



Step29



Step30



Step31



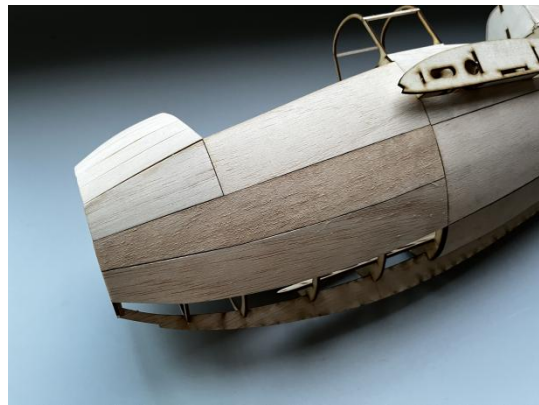
Step32



Step33



Step34



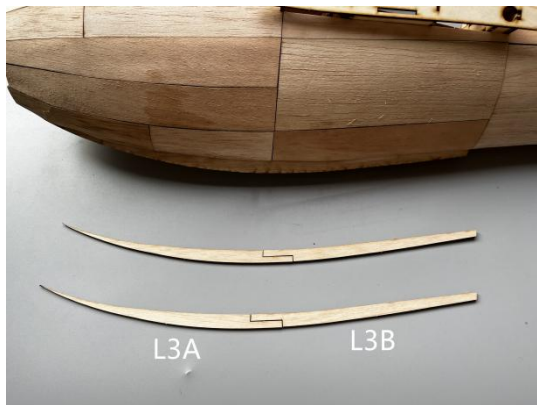
Step35



Step36



Step37



Step38



Step39



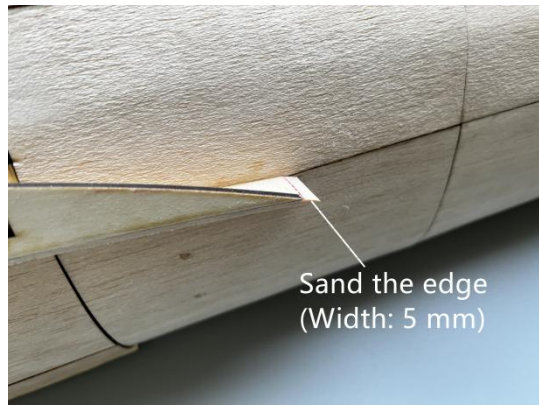
Step40



Step41



Step42



Step43



Step44



Step45



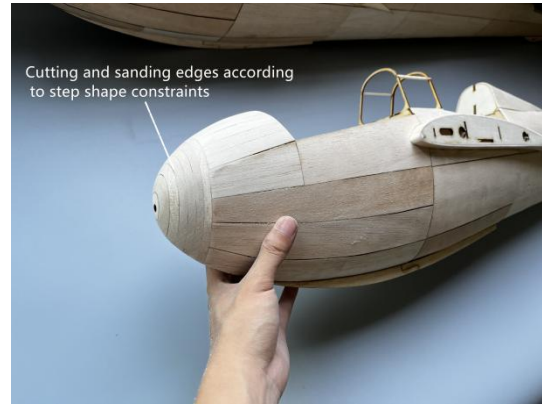
Step46



Step47



Step48



Step49



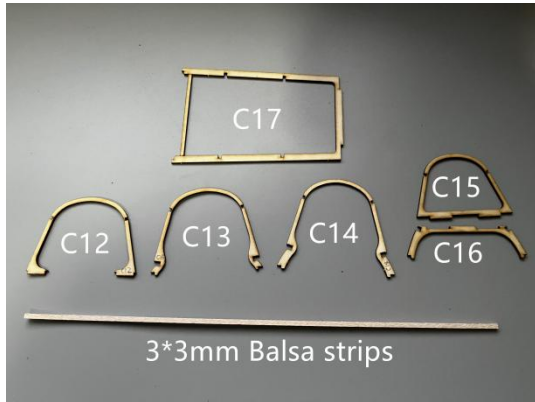
Step50



Builder's note:

ASSEMBLY-Canopy

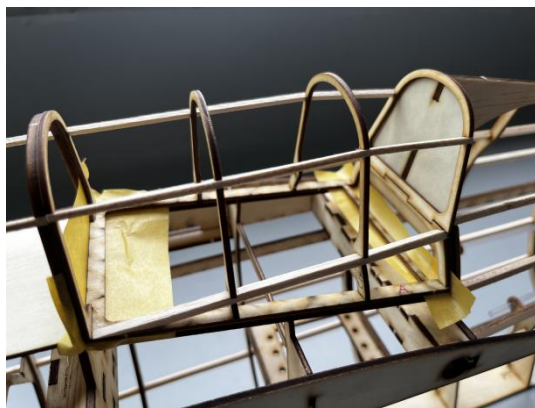
Step1



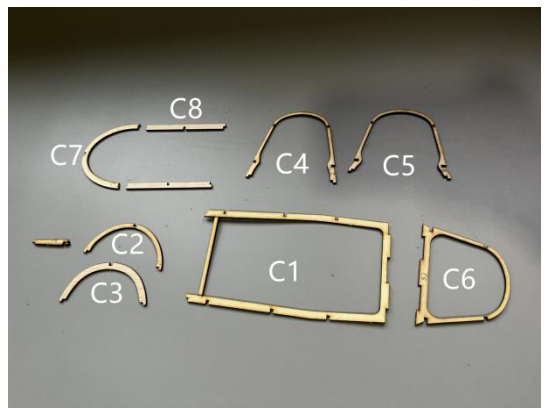
Step2



Step3



Step4



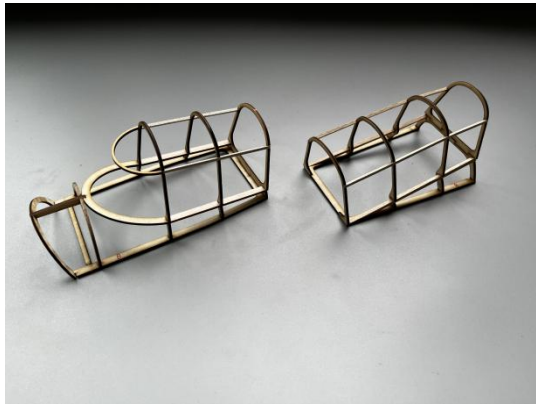
Step5



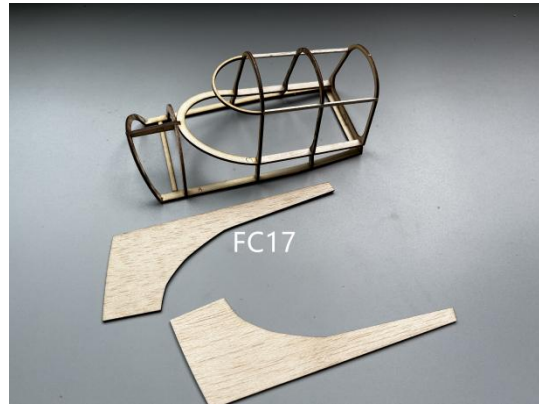
Step6



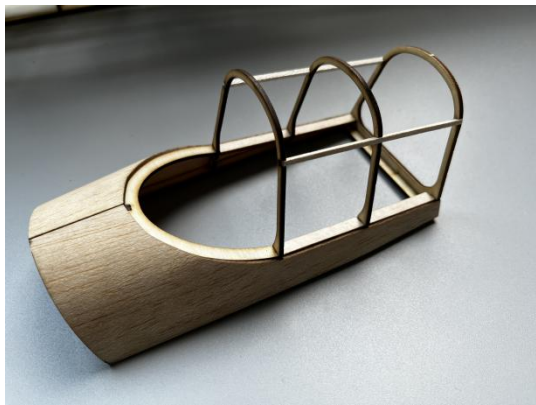
Step7



Step8



Step9



Step10



Step11



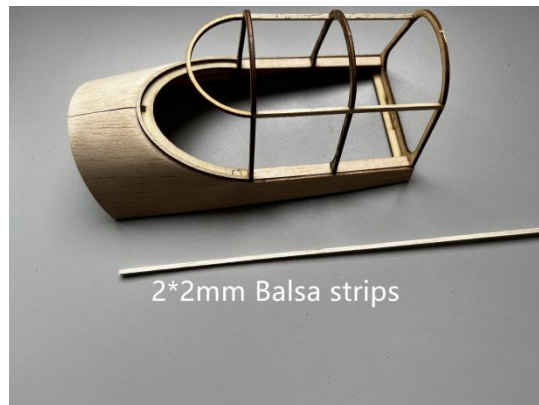
Step12



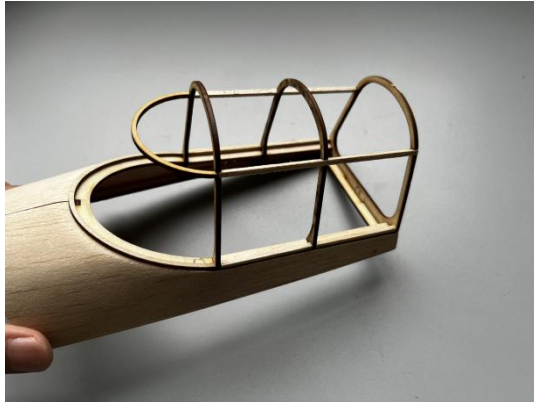
Step13



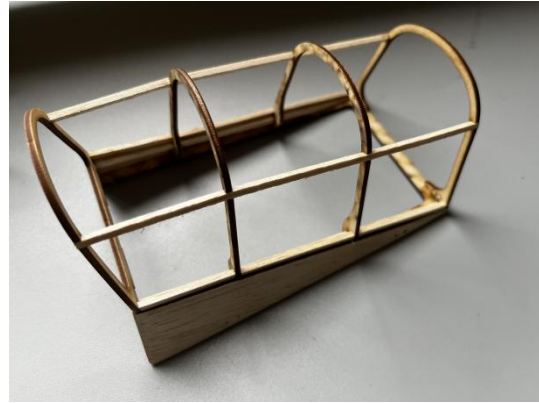
Step14



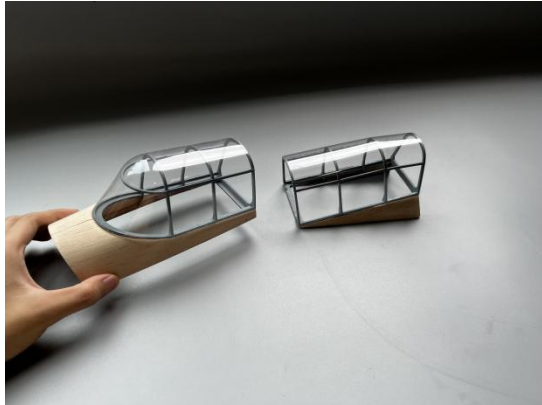
Step15



Step16



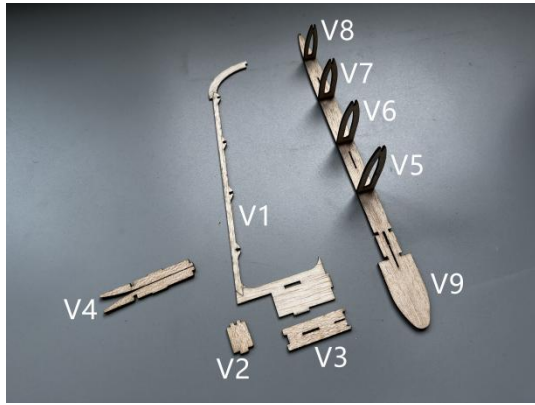
Step17



Builder's note:

ASSEMBLY-Vertical & Horizontal Tail

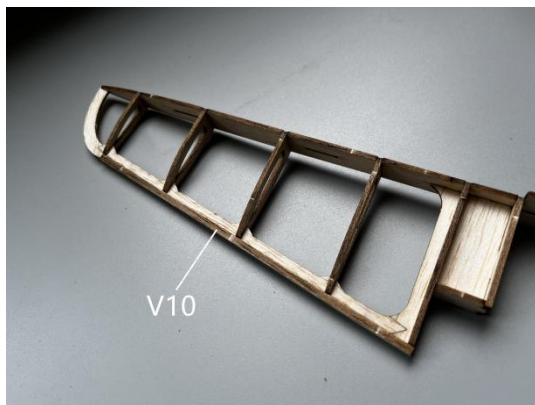
Step1



Step2



Step3



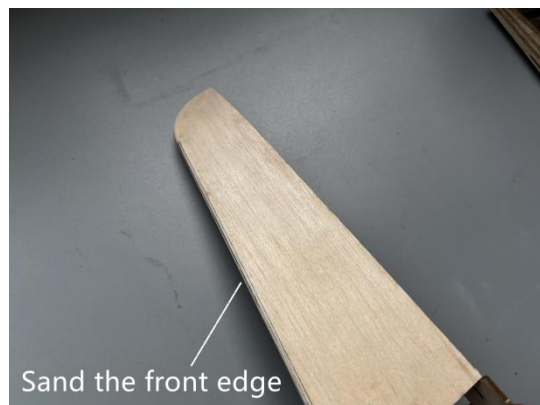
Step4



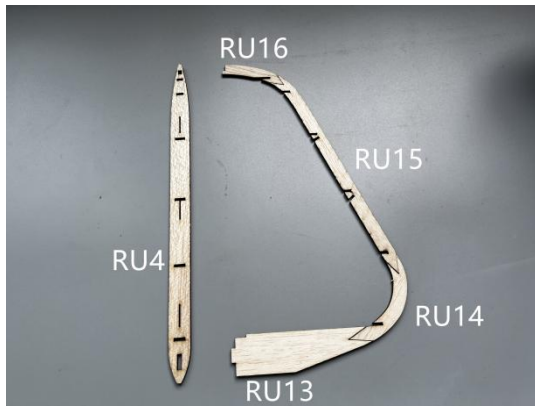
Step5



Step6



Step7



Step8



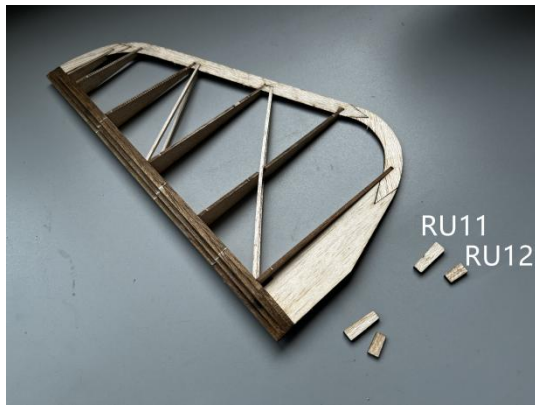
Step9



Step10



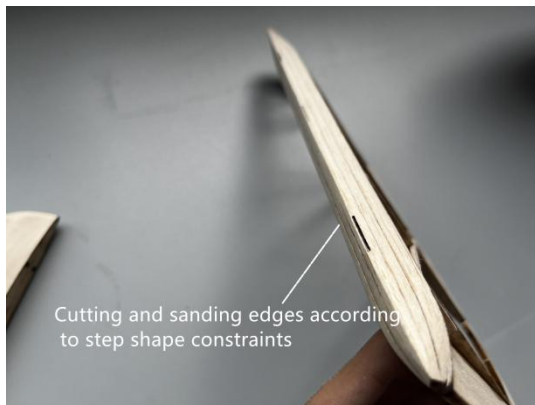
Step11



Step12



Step13



Step14



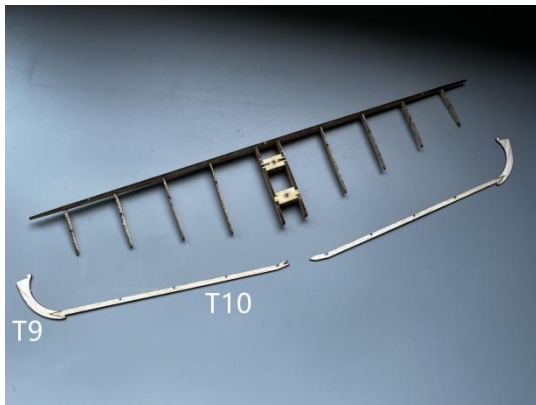
Step15



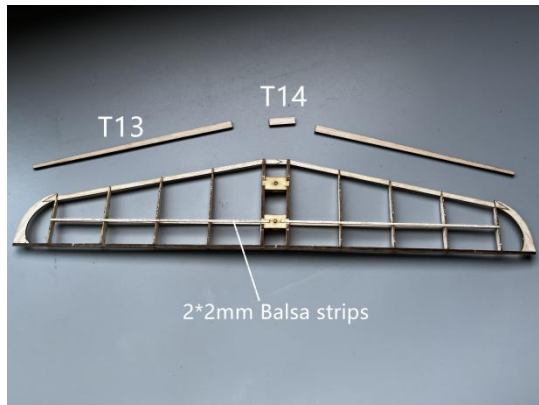
Step16



Step17



Step18



Step19



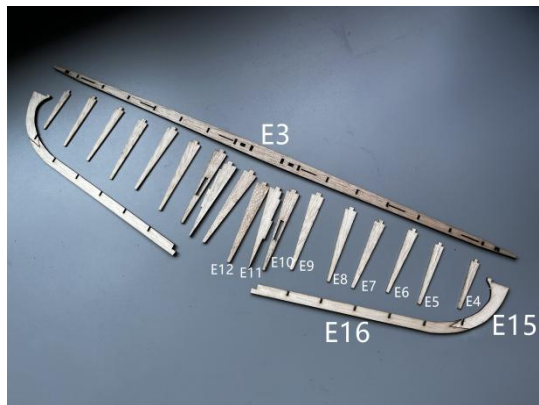
Step20



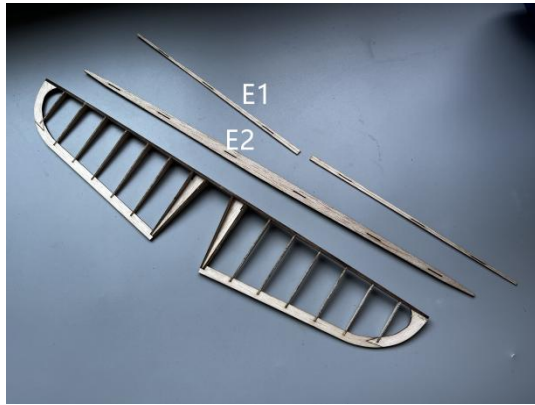
Step21



Step22



Step23



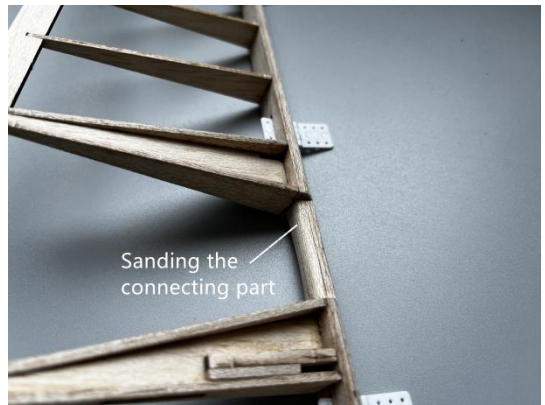
Step24



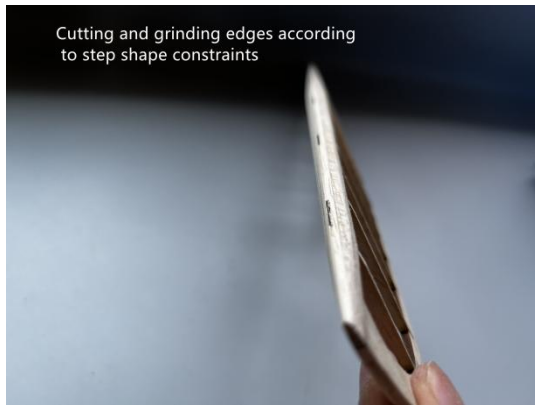
Step25



Step26



Step27



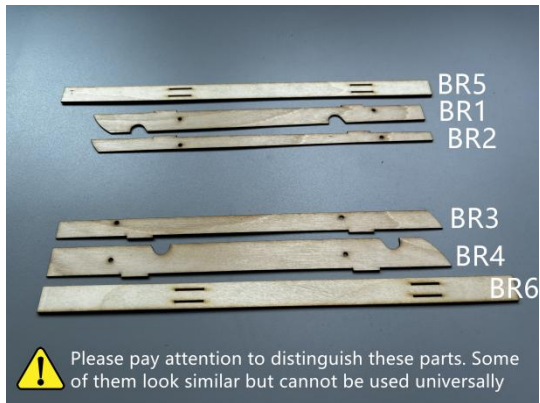
Step28



Builder's note:

ASSEMBLY-Air-brake Module

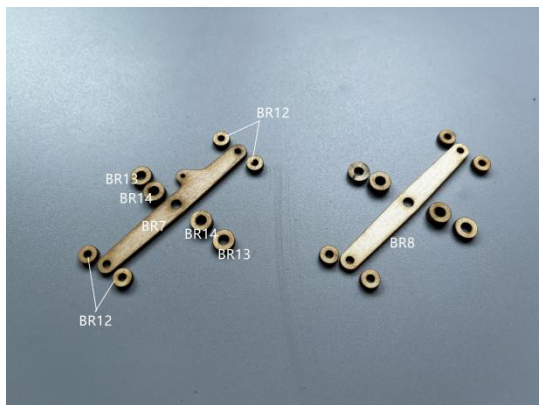
Step1



Step2



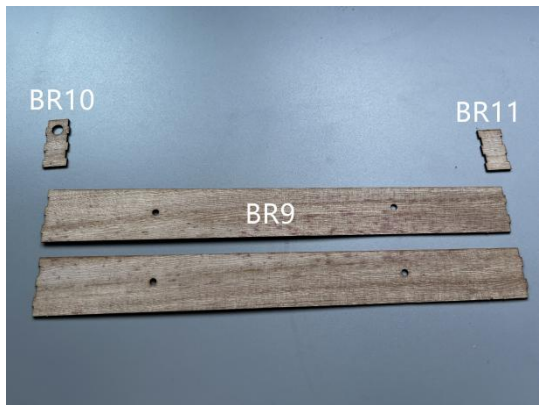
Step3



Step4



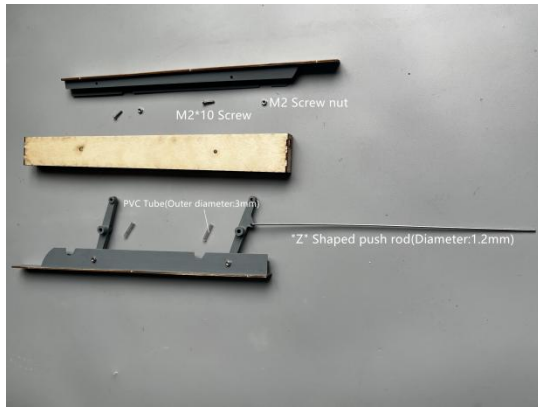
Step5



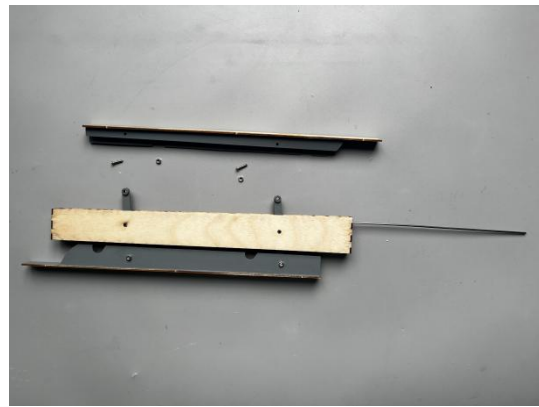
Step6



Step7



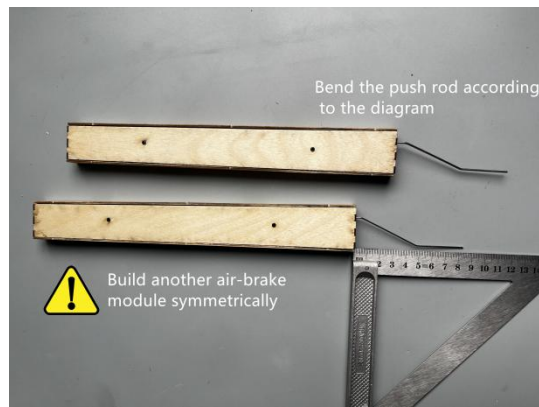
Step8



Step9



Step10



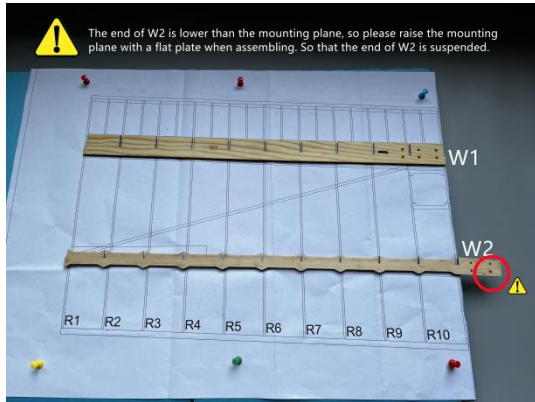
Step11



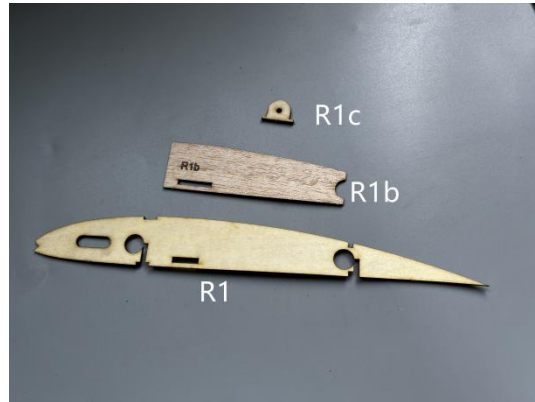
Builder's note:

ASSEMBLY-Center Wing Section

Step1



Step2



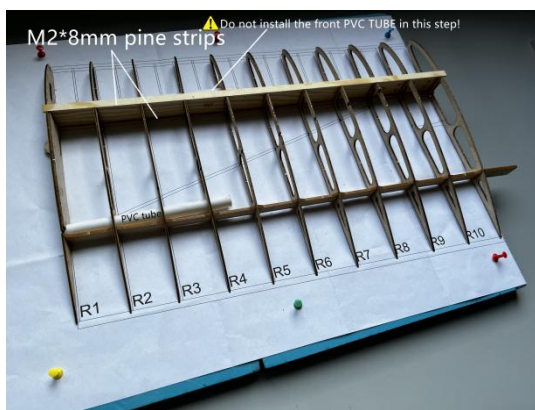
Step3



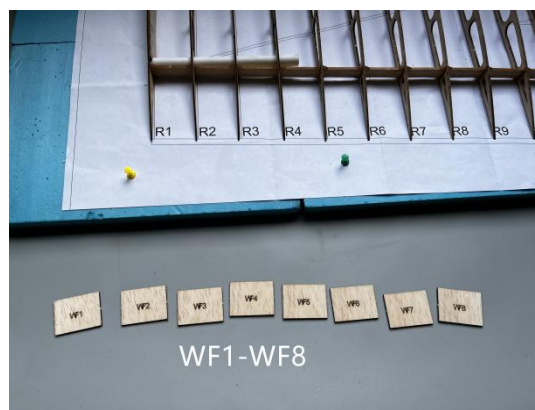
Step4



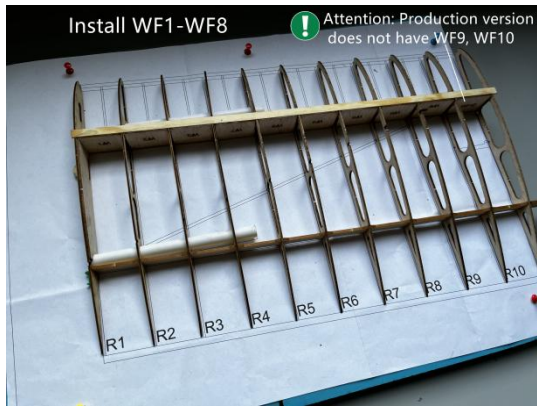
Step5



Step6



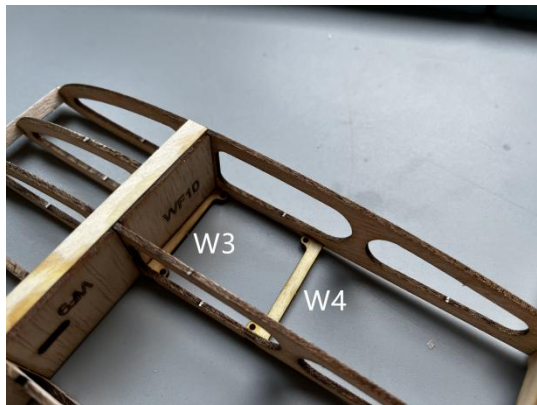
Step7



Step8



Step9



Step10



Step11



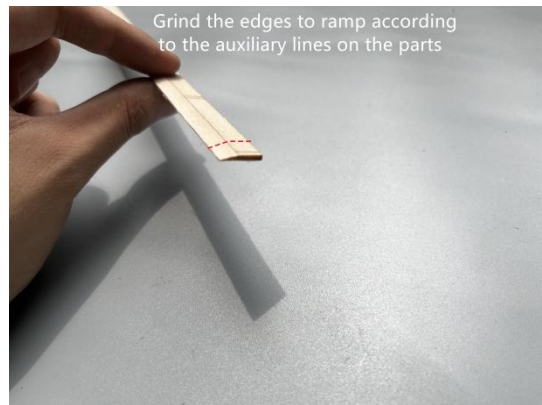
Step12



Step13



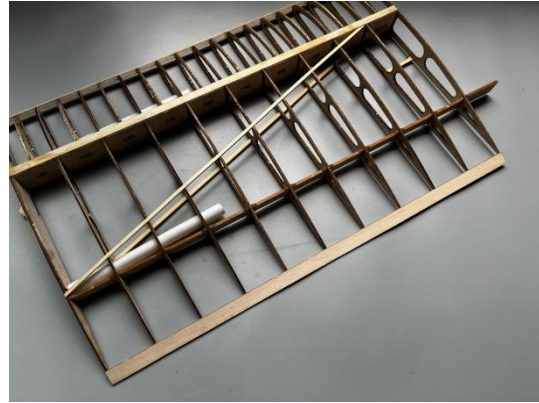
Step14



Step15



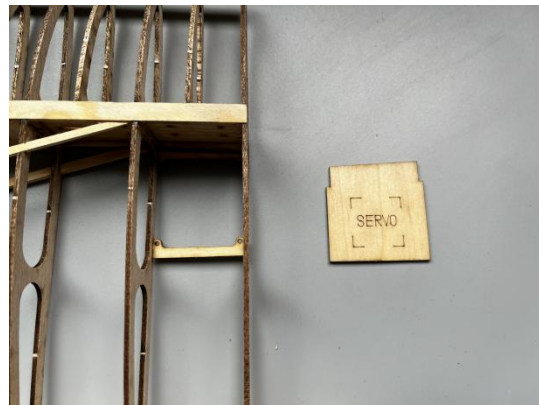
Step16



Step17



Step18



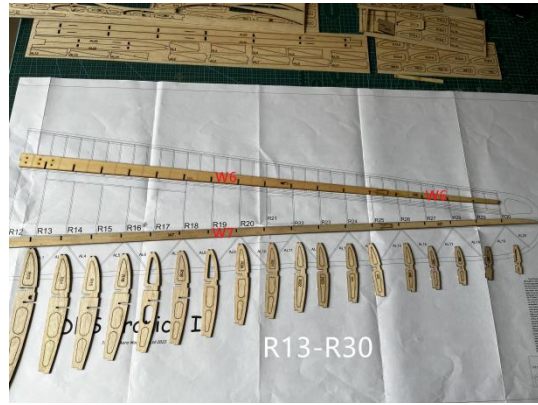
Step19



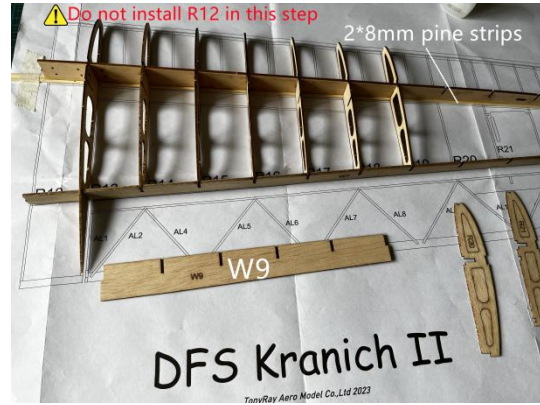
Builder's note:

ASSEMBLY-Outer Wing Section

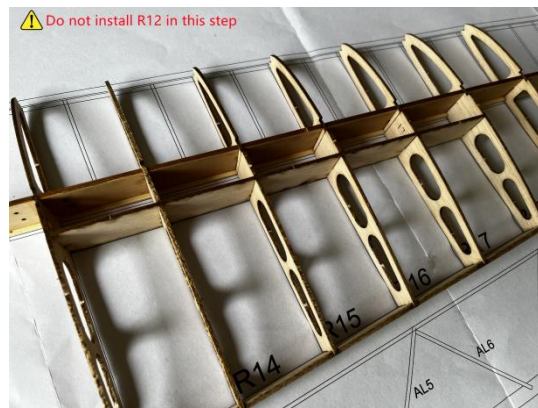
Step1



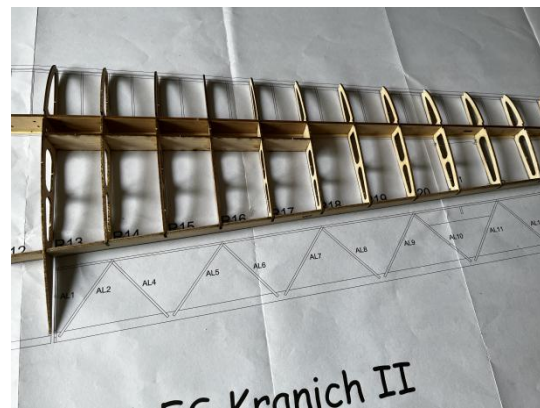
Step2



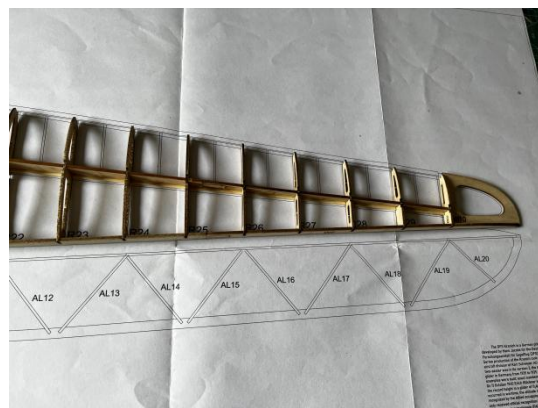
Step3



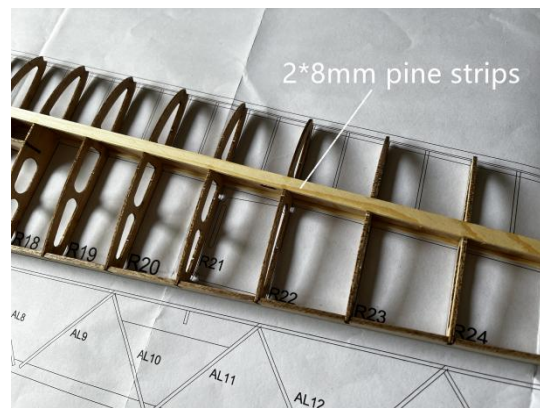
Step4



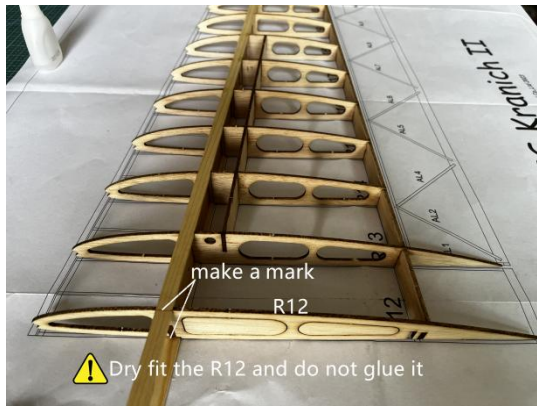
Step5



Step6



Step7



Step8



Step9



Step10



Step11



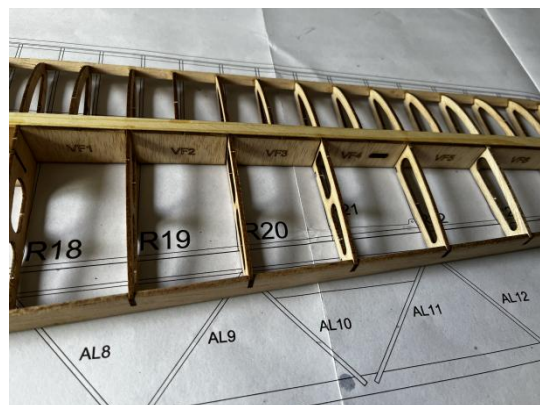
Step12



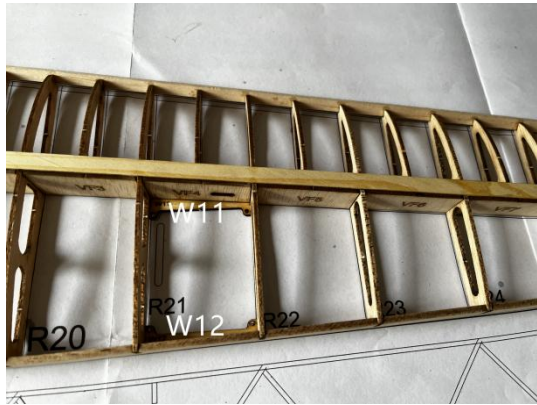
Step13



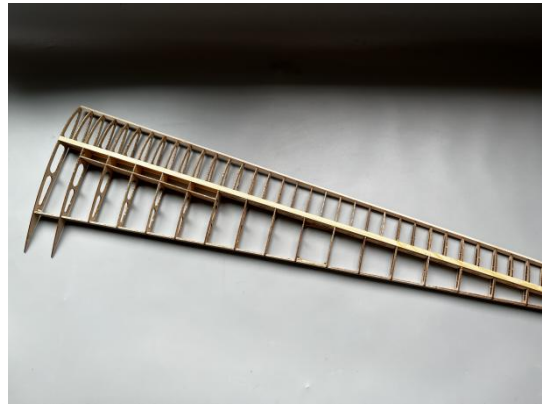
Step14



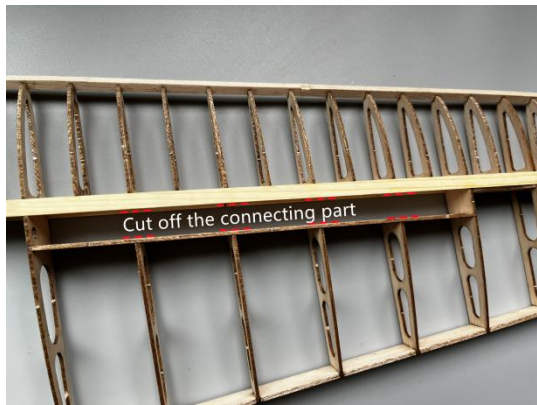
Step15



Step16



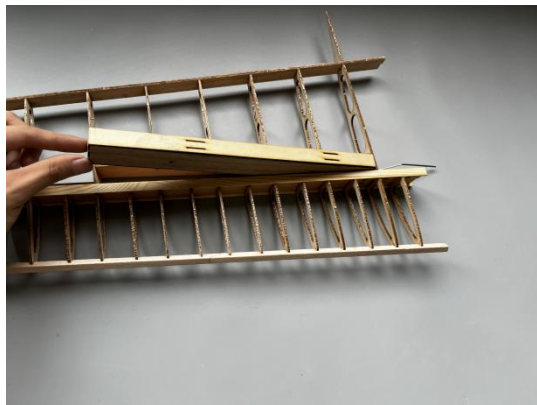
Step17



Step18



Step19



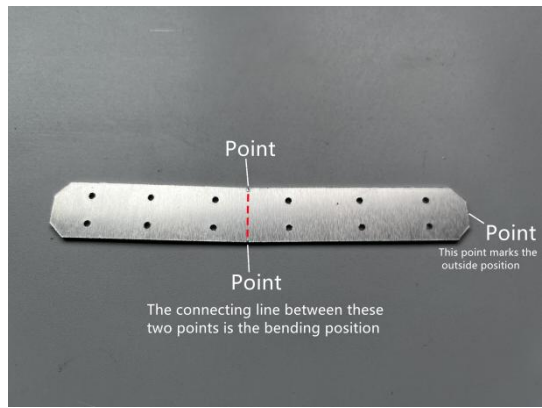
Step20



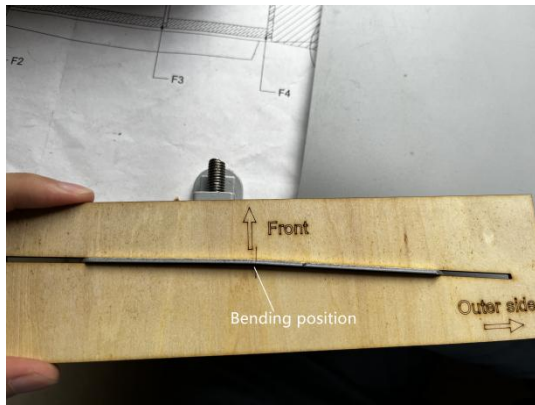
Step21



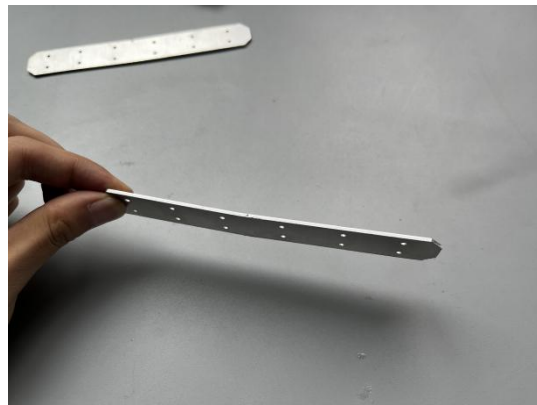
Step22



Step23



Step24



Step25



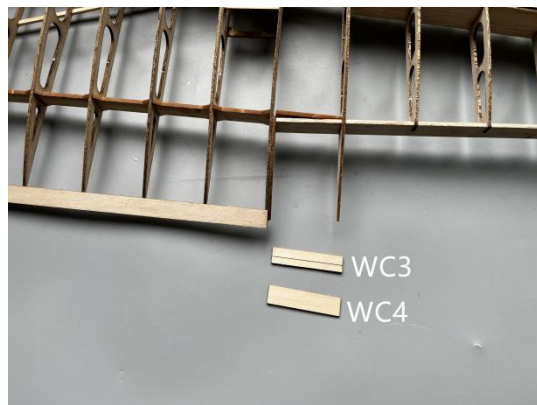
Step26



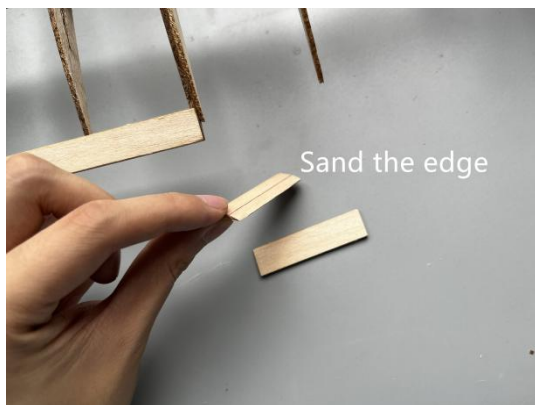
Step27



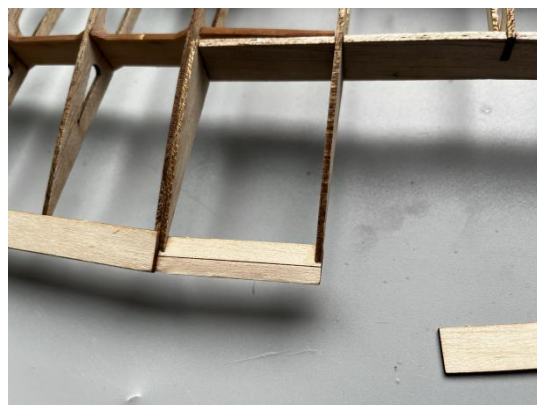
Step28



Step29



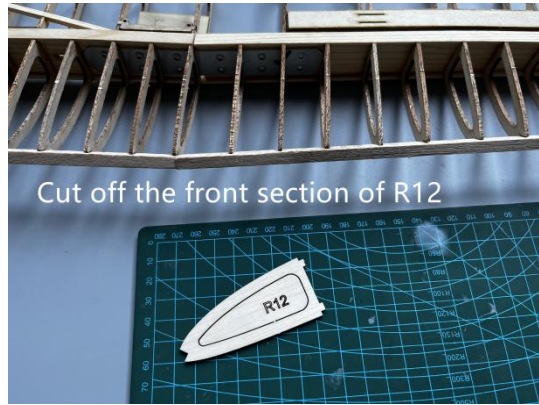
Step30



Step31



Step32



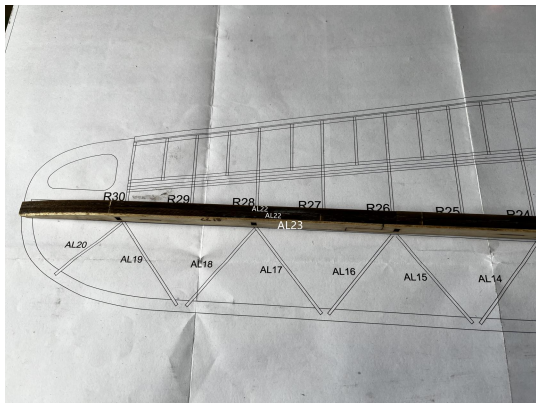
Step33



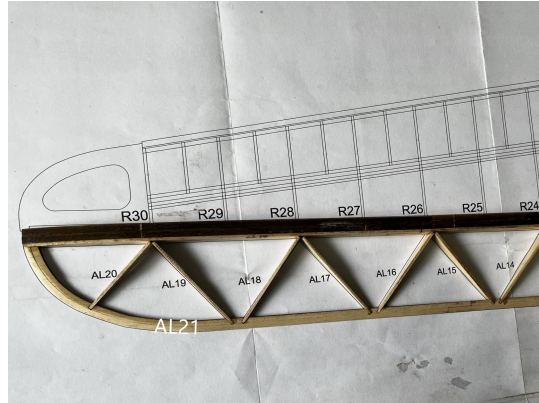
Step34



Step35



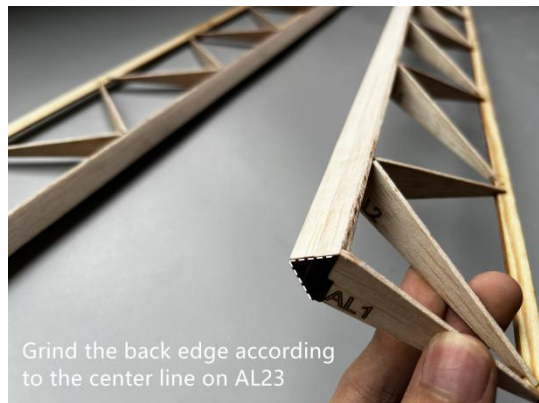
Step36



Step37



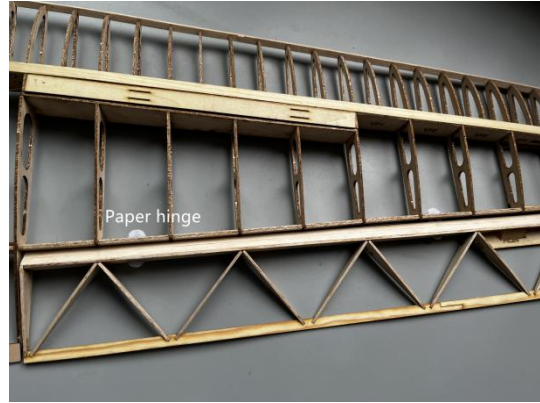
Step38



Step39



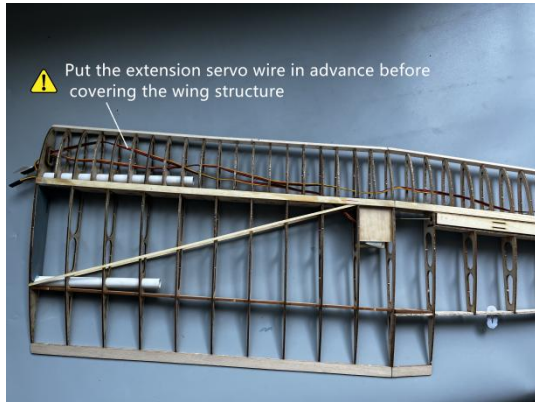
Step40



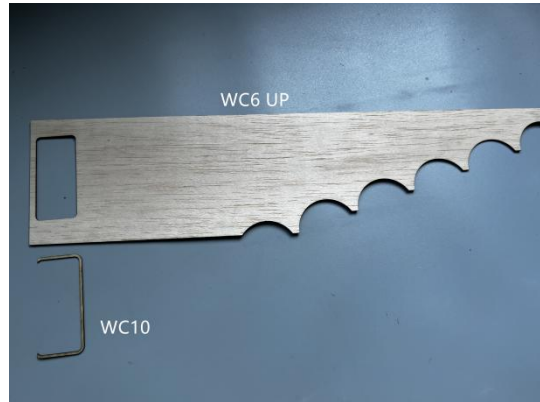
Builder's note:

ASSEMBLY-Wing Covering

Step1



Step2



Step3



Step4



Step5



Step6



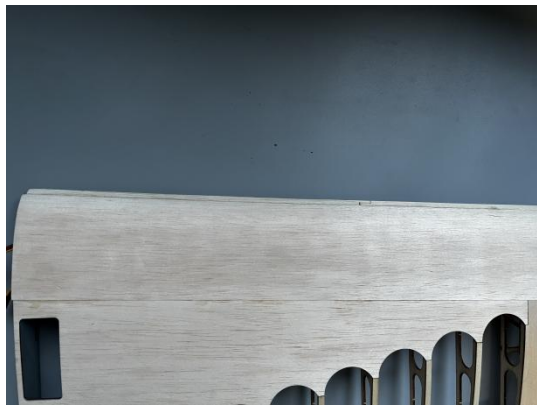
Step7



Step8



Step9



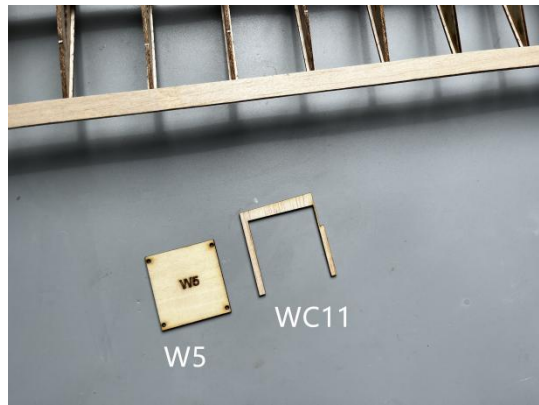
Step10



Step11



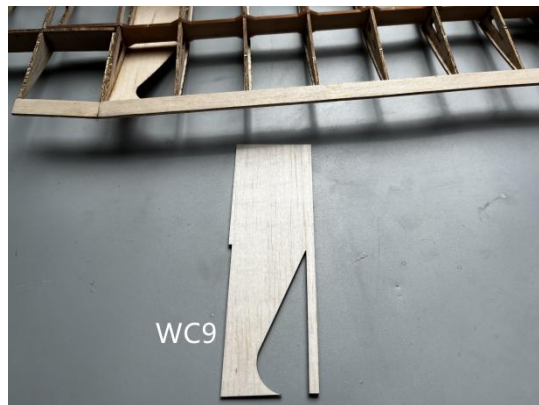
Step12



Step13



Step14



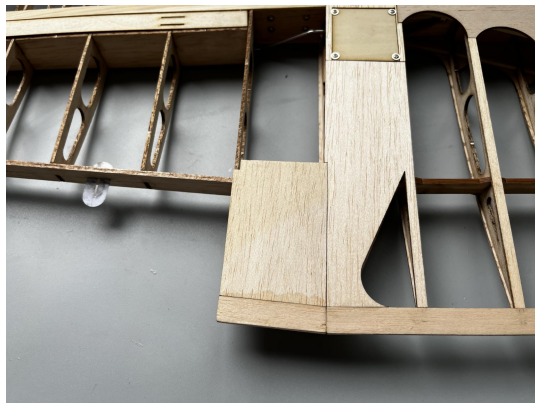
Step15



Step16



Step17



Step18



Step19



Step20



Step21



Step22



Step23



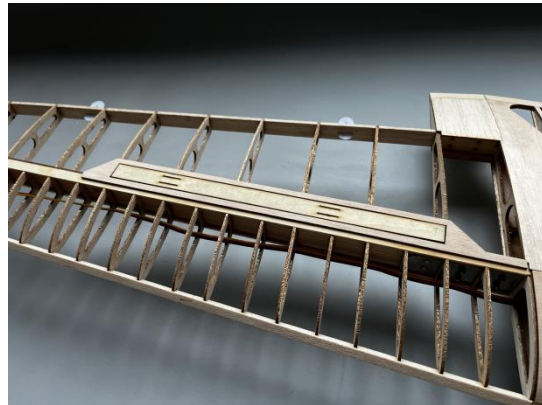
Step24



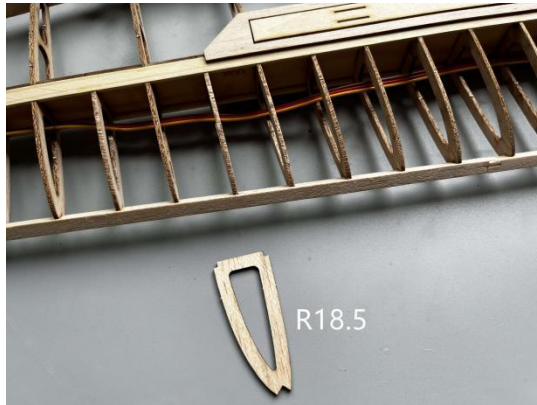
Step25



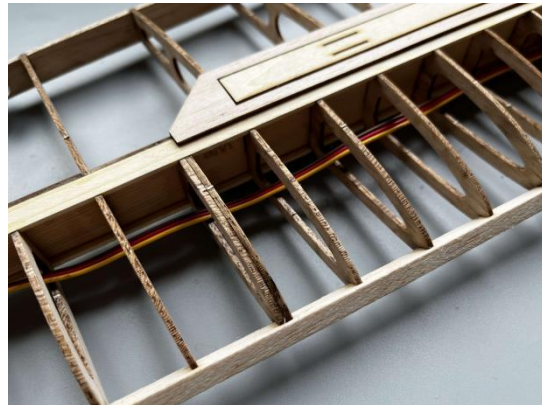
Step26



Step27



Step28



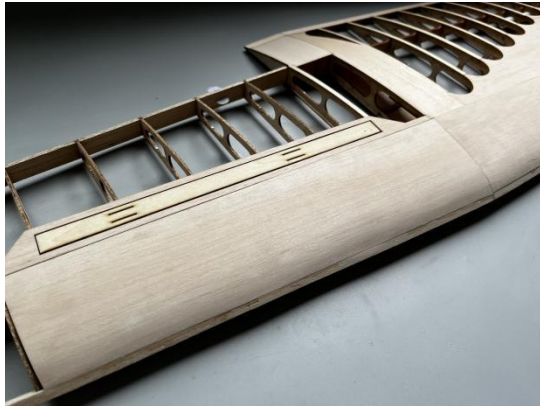
Step29



Step30



Step31



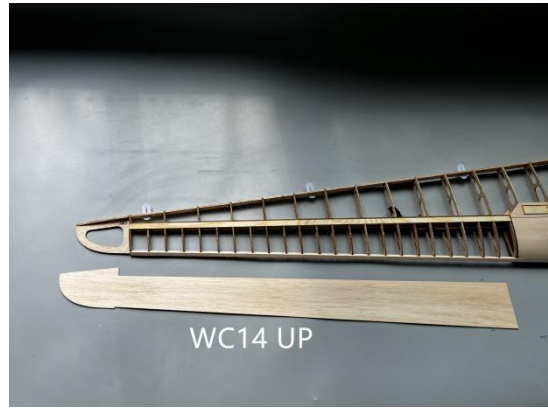
Step32



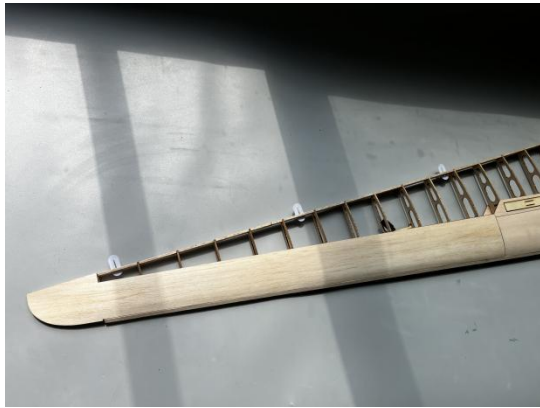
Step33



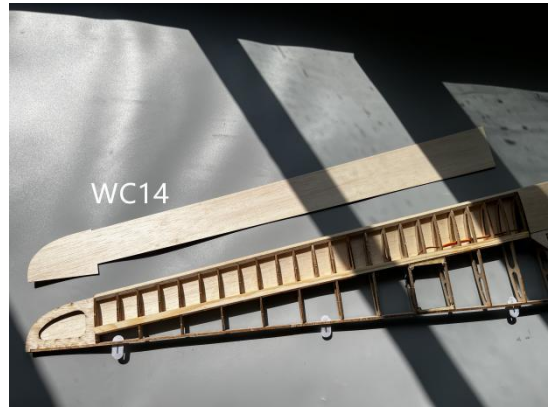
Step34



Step35



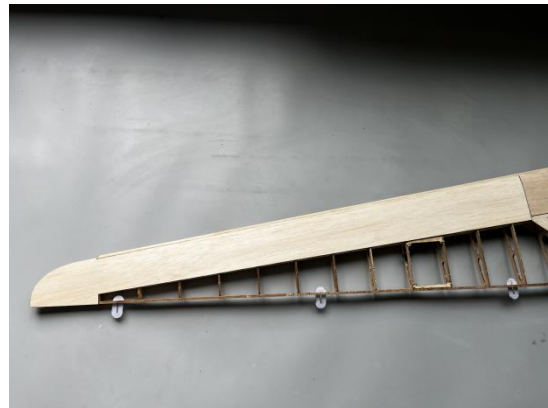
Step36



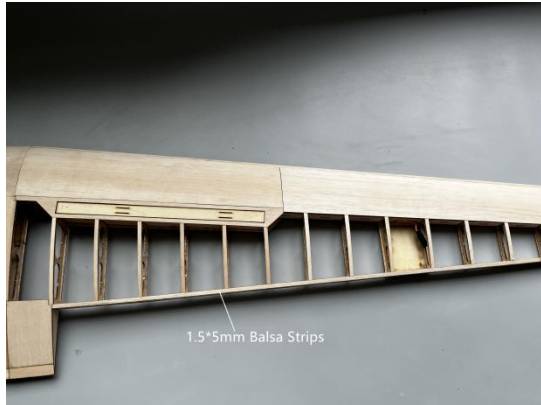
Step37



Step38



Step39



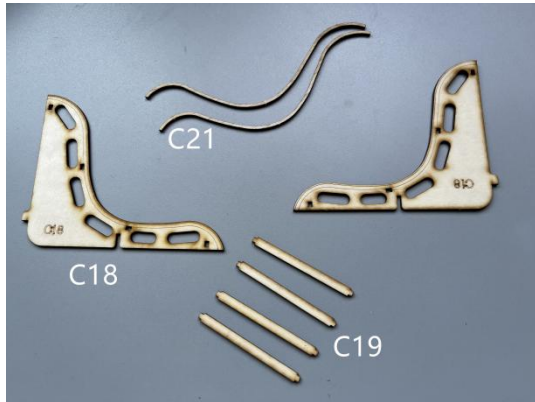
Step40



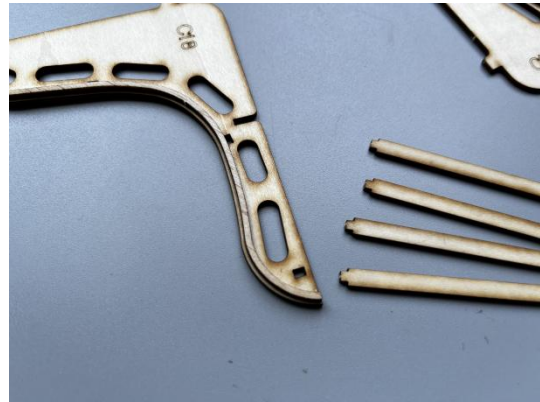
Builder's note:

ASSEMBLY-Seats And Details

Step1



Step2



Step3



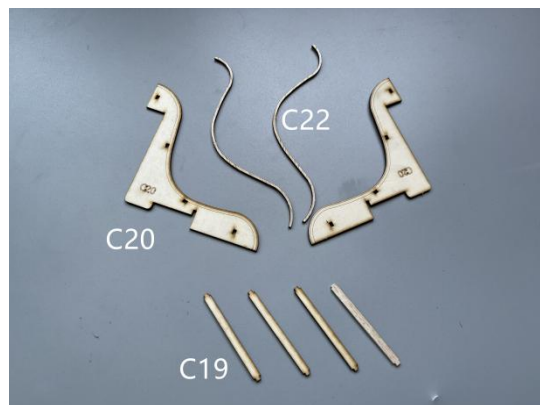
Step4



Step5



Step6



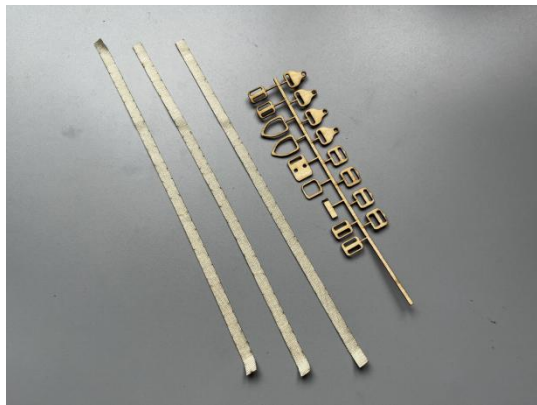
Step7



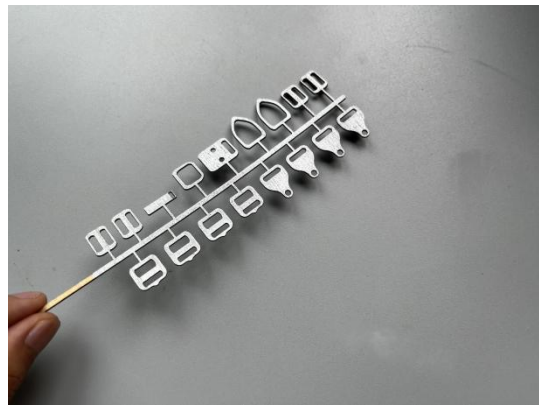
Step8



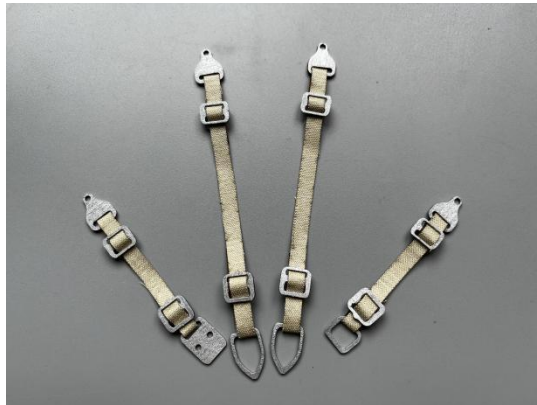
Step9



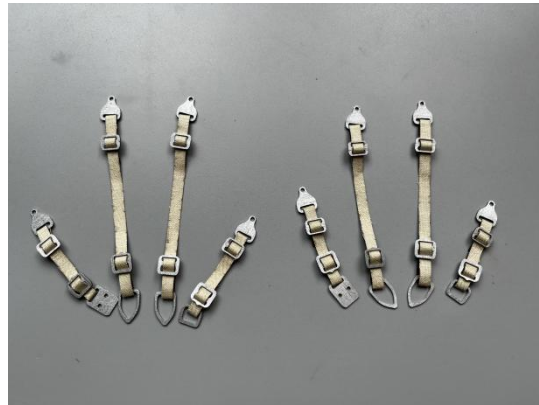
Step10



Step11



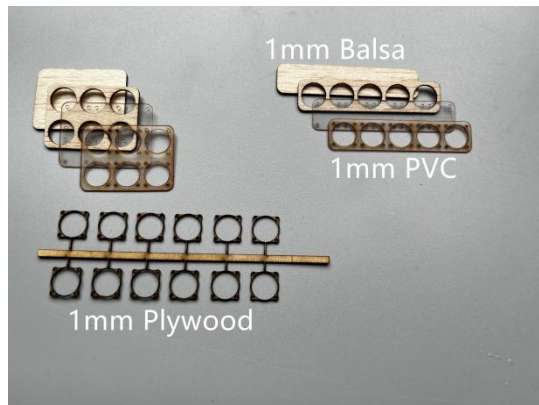
Step12



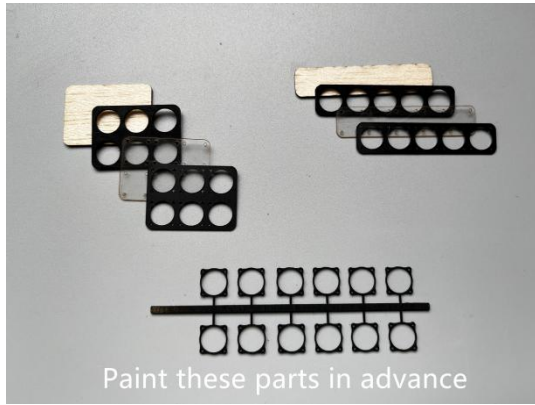
Step13



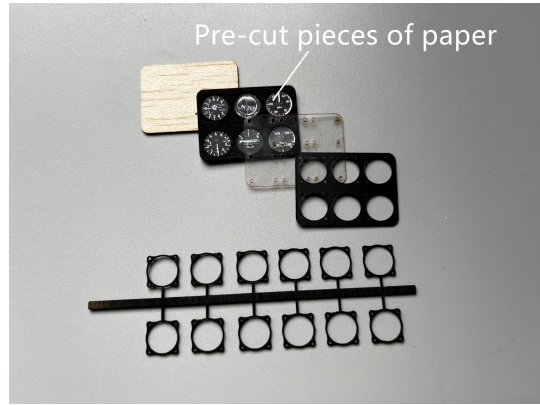
Step14



Step15



Step16

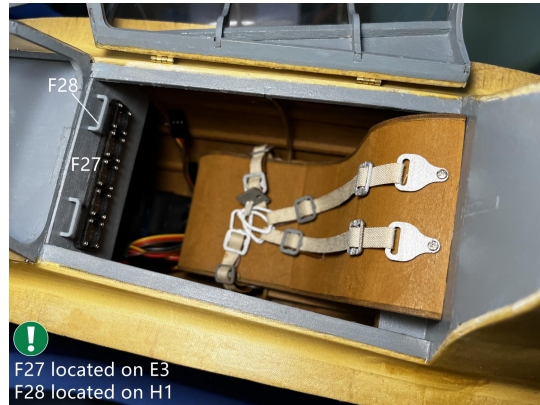


Step17



Do not use CA glue when assembling parts containing transparent PVC material

Step18



F27 located on E3
F28 located on H1

Builder's note:

ASSEMBLY-Eletronics

(Reference example is motored version)

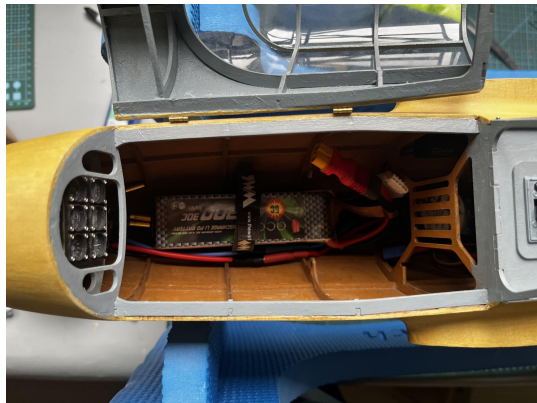
Step1



Step2



Step3



Step4



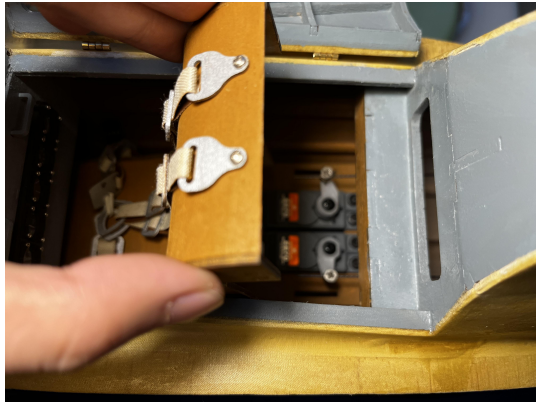
Step5



Step6



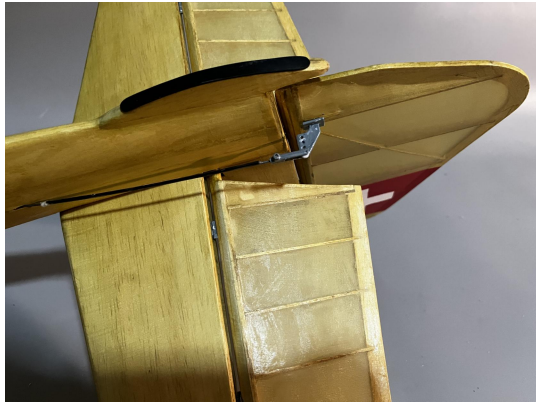
Step7



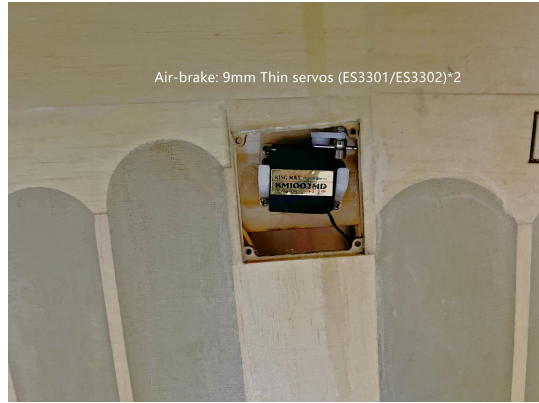
Step8



Step9



Step10



Step11



Step12



BEFORE YOU FLY

1. CG:

CG : 82-88mm from the leading edge



2. Horizontal stabilizer mounting angle:

Horizontal stabilizer mounting adjustment:
Add 1-1.5mm spacers to the rear screw position



3.Control Travel	
ELEVATOR	$\pm 15^\circ$
RUDDER	$\pm 15^\circ$
AILERON	$+25^\circ -10^\circ$

Thank you!



Tony Ray's AeroModel