PICHLER

Manual

Charisma # 15377

Wingspan 1950mm

R/C flight model for electric drives
Control via 3 channels (rudder, elevator, motor)

MADE IN GERMANY

English Instructions are available for download. Please check the product page on our website
Instructions en français disponibles en téléchargement. Visitez notre site Internet.
Istruzioni in italiano disponibili per il download. Visita il nostro sito web.

Please check the contents of the kit before starting construction. If any parts are missing or damaged, please let us know immediately by email to service@pichler.de We will help you as soon as possible.

ATTENTION - The appearance of the parts included in the kit may differ from the images.

Read these building instructions completely before you start building. Familiarize yourself with the basic structure. Please have a look at the Charisma product page in our online shop **www.pichler-modellbau.de** to see if there is a newer version of these instructions or additions.

The kit is aimed at advanced model builders who have experience in building flight models. The model was specially developed for electric drives and is not suitable for combustion engines.

Pay particular attention to good bonding and use **BINDAN propeller glue for wood bonding**. In our experience, this is the best wood glue for our purpose. Particularly stressed areas can also be glued with 5-minute epoxy. If things have to be done quickly and no major loads are to be expected, Fix It! Superglue can be used.

For optimal flight characteristics, we recommend the brushless drive set, servos and batteries that we recommend. A stronger battery and/or motor does not mean more power. On the contrary, the performance of the model can deteriorate with e.g. a larger or heavier battery / motor. The model was developed, tested and flown by us in the proposed configuration.

Special accessories:
Drive set brushless for Charisma, # 15378
LiPo battery RED POWER 2200-11.1V
MASTER Servo S2112, # C5185 /x2
Remote control system MASTER GigaProp 6, # C8802
Battery velcro strap, # C5534

For the assembly of the model we recommend the following accessories,
see also **www.extron-modellbau.de or www.pichler-modellbau.de**

Extron Building Board, Building Board 900 x 300mm, **#X5535**
Hinge Slot Set, **# C5829**
Mini balsa plane, **#C8891**
Sandpaper file, **#X5565**
Sanding Block, **#X5568**
BINDAN propeller glue, **#X3577**
Plastic Adhesive Rower L530, **#X3583**
fix it! Adhesive Set, **#C4924**
fix it! Metal clips 50mm, **#C4919**
Crimping pliers, **#C8333**
fix it! Quick release clamp, **#C4922**
Push pins (50pcs.), **#X3441**
Foil Iron, **#C9758**
Protective cover for foil iron, **# X9983**

We recommend **ORACOVER covering foil** for covering the model.

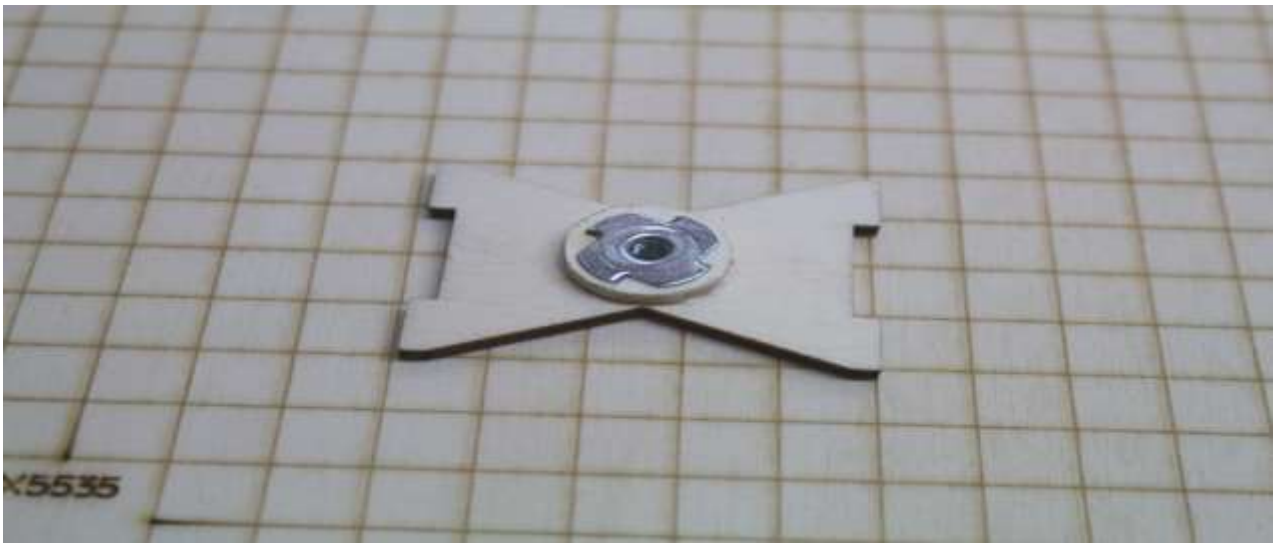
Adhesive recommendation. We generally recommend using BINDAN propeller glue. This allows you to achieve permanent, secure bonds. For gap-free connections, Fix It! Superglue can be used.
For particularly stressed areas we recommend Fix It! 5 mins epoxy.

Building Instructions Charisma

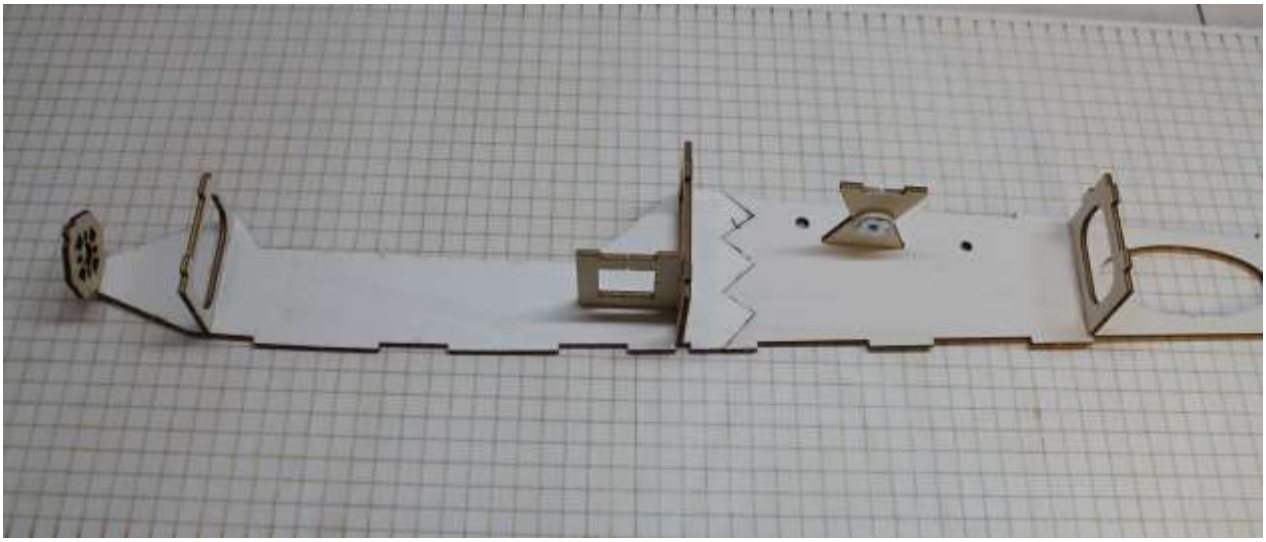
A straight board, such as the Extron Building Board 300×1200mm # X5537, is required as a building base to build the model. Protect the construction base with foil to prevent the components from sticking to the construction base. It is recommended to number the individual components before cutting them out, in order to facilitate assignment later.

Fuselage construction

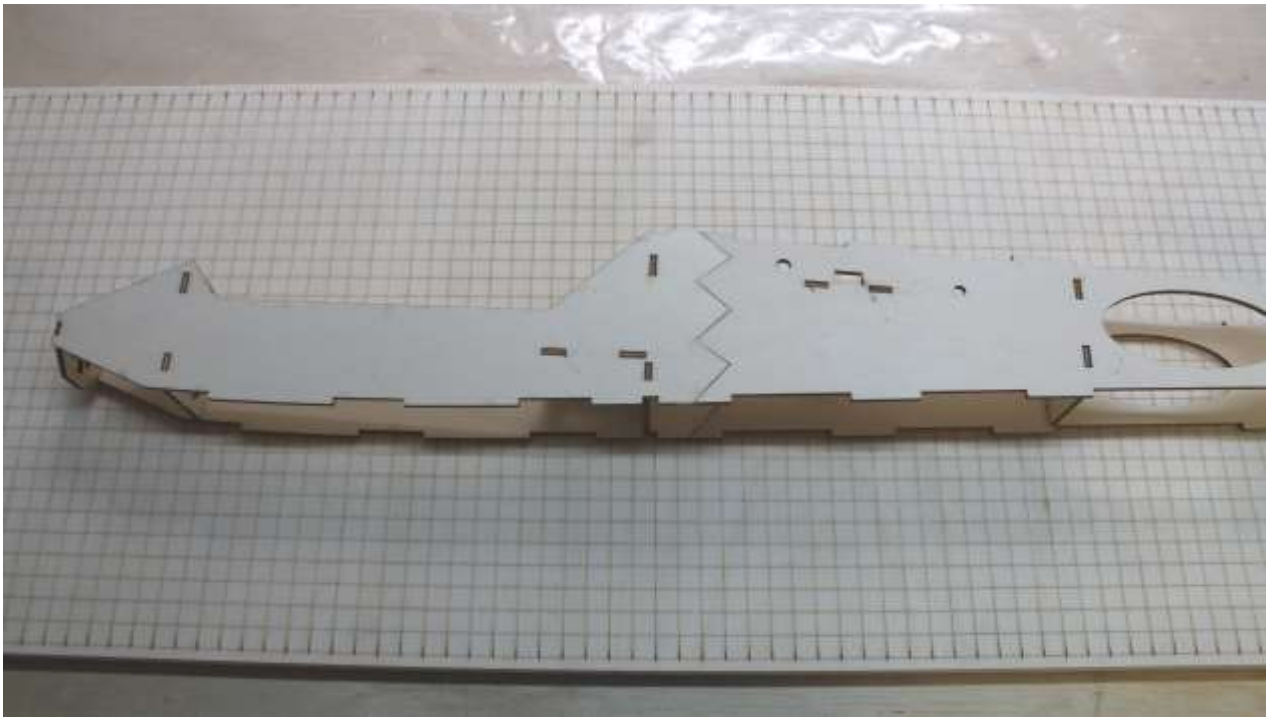
Glue the side parts (H1) and (G1) with white glue.



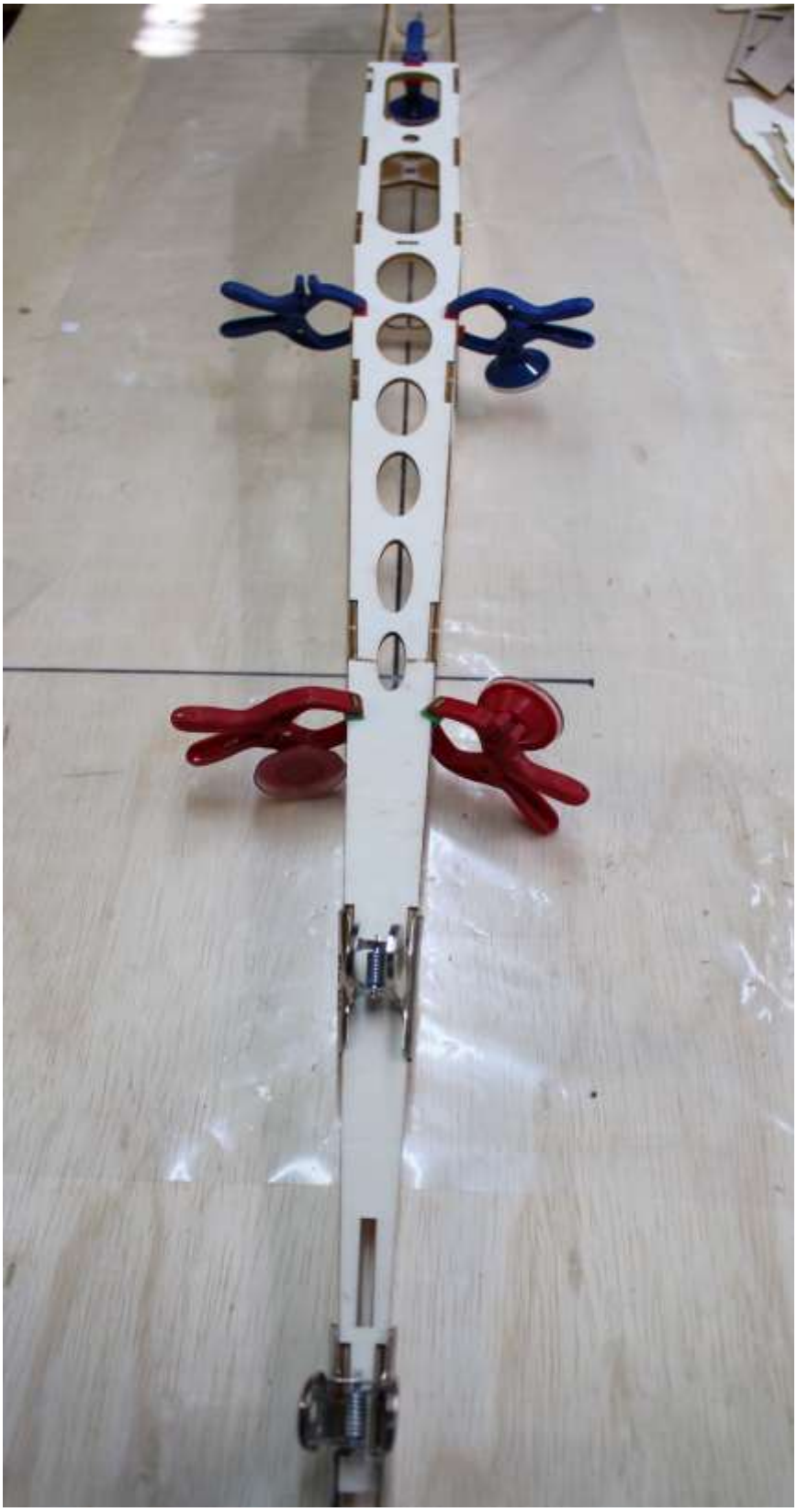
Glue the reinforcement ring (H5) to the carrier board (H4), making sure that both holes are on top of each other.
Then press in the M4 drive-in nut.



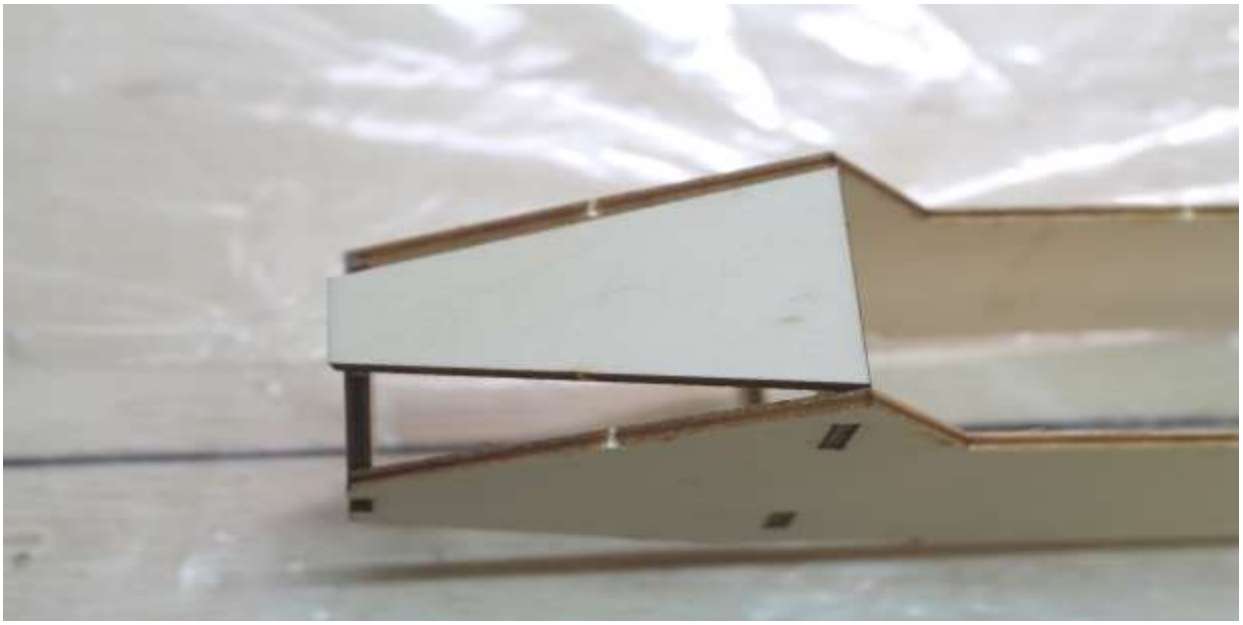
Lay the fuselage side panel flat. Glue the motor bulkhead (F1), bulkhead (H3), servo board (H6) together with bulkhead (G2), support board (H4) and bulkhead (G3) to the side panel.
Pay attention to angularity!



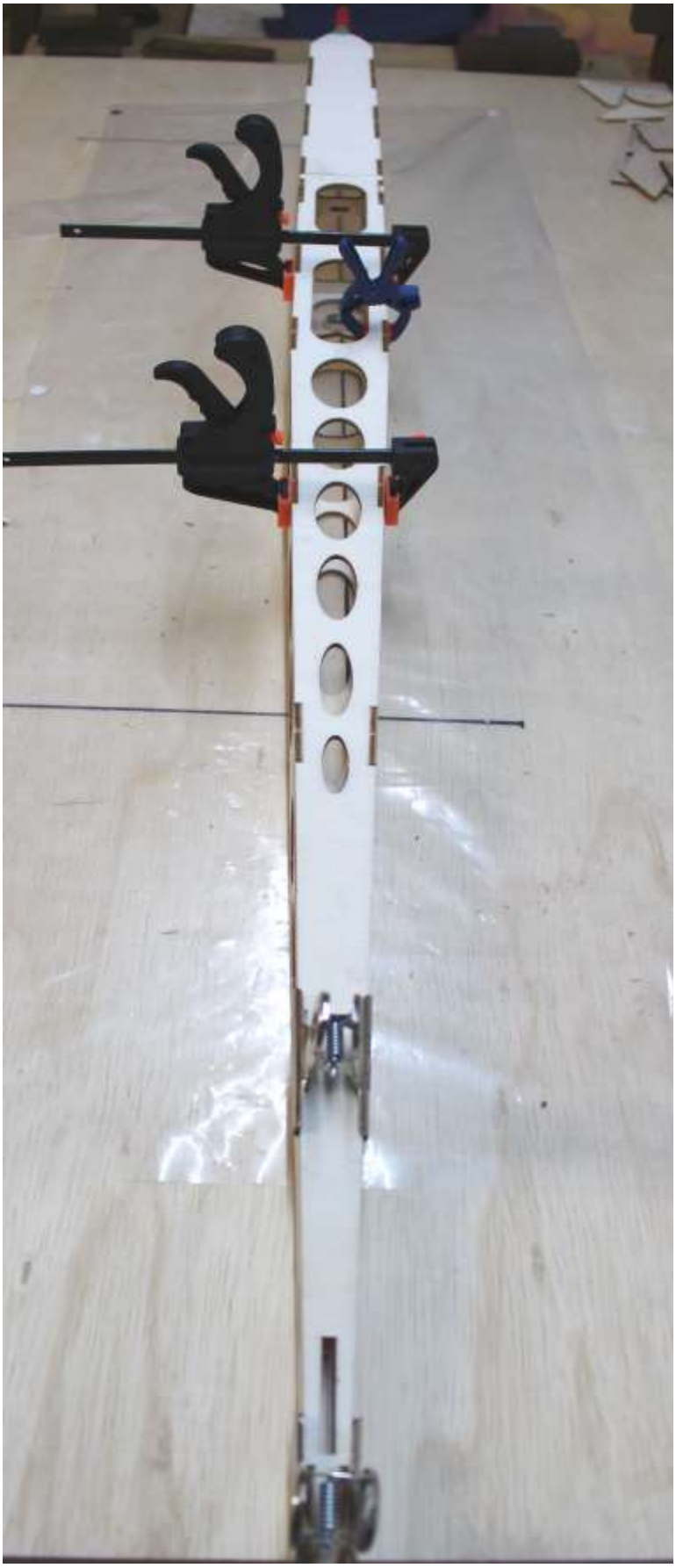
Place the second fuselage side panel (H1, G1) on the frames and glue



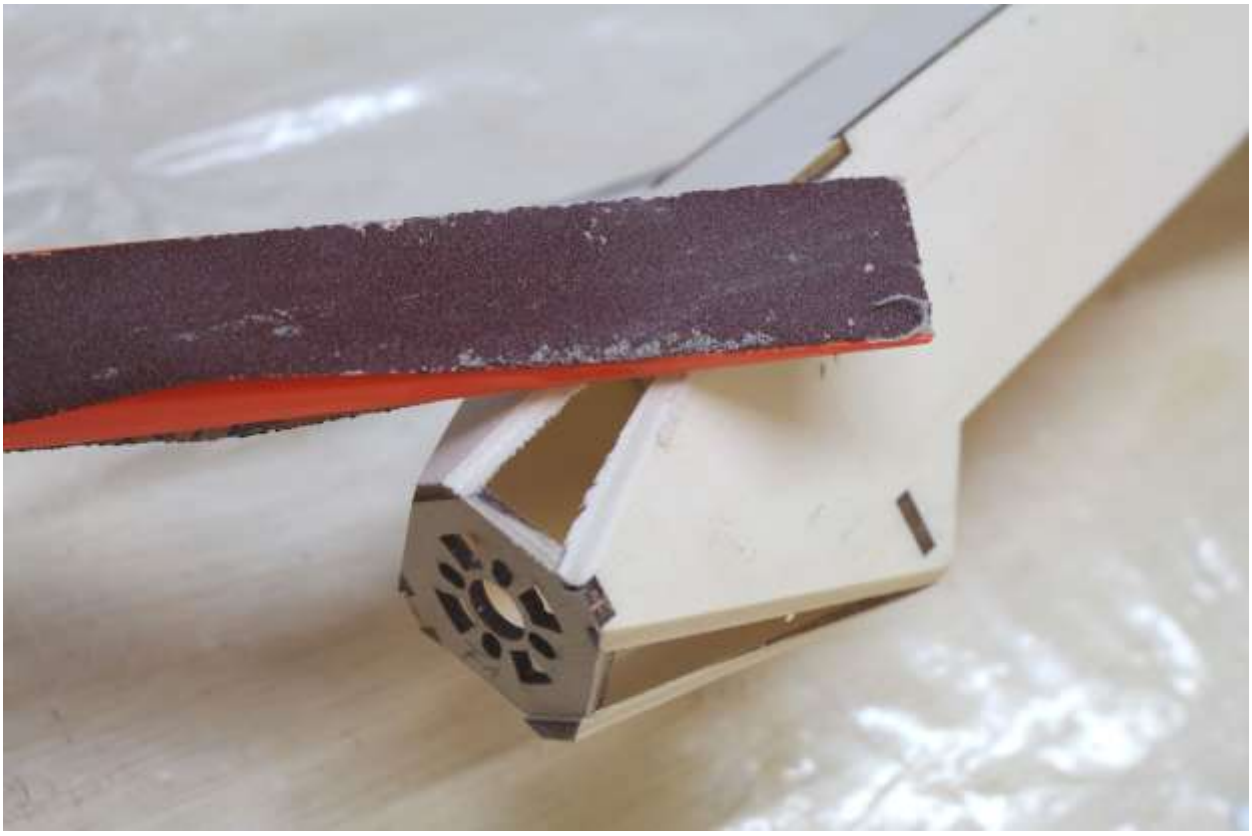
Glue the upper fuselage planking (L1). Pay attention to the symmetry of the torso
The markings on the Extron build board are of great help here



Glue the upper planking of the nose of the fuselage (H8).

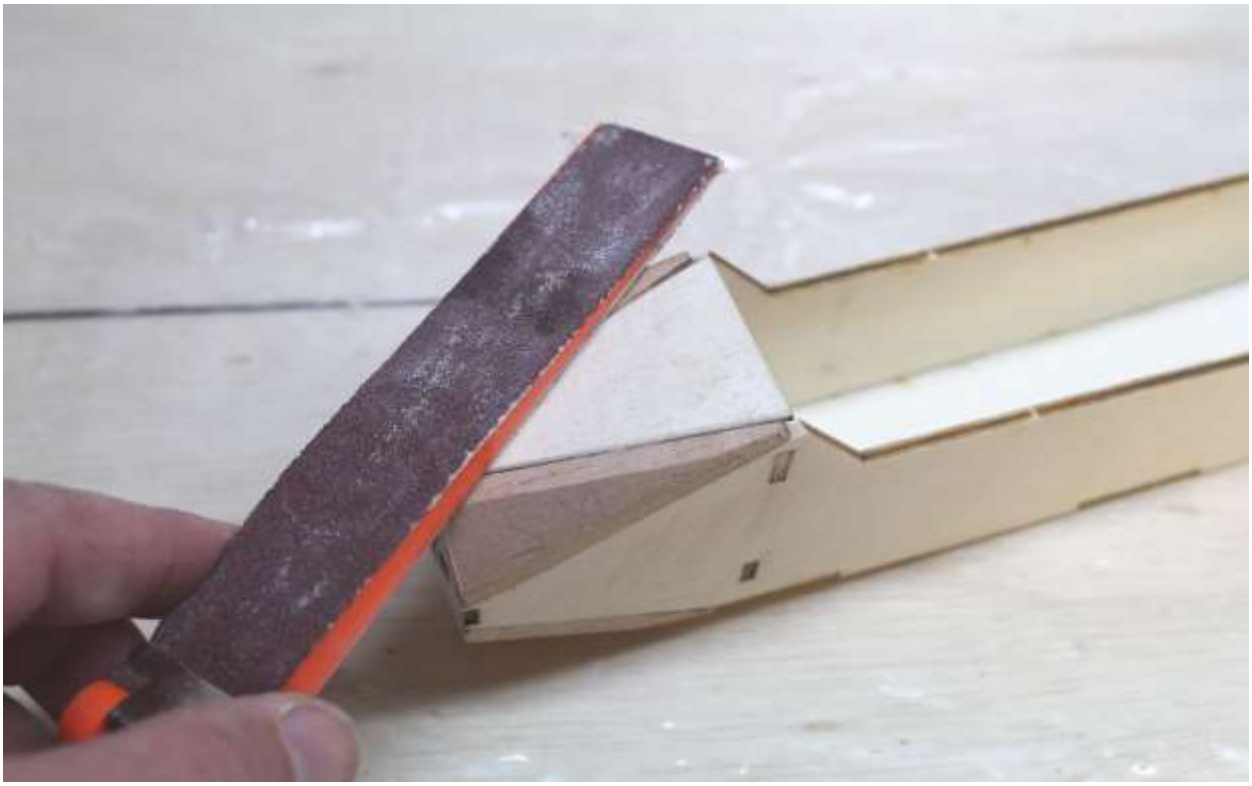


Glue the lower fuselage planking (L2 and L3). Make sure that the tip of (L3) is glued well to the motor bulkhead (F1). The PICHLER mini clamps and metal clamps do a good job here.

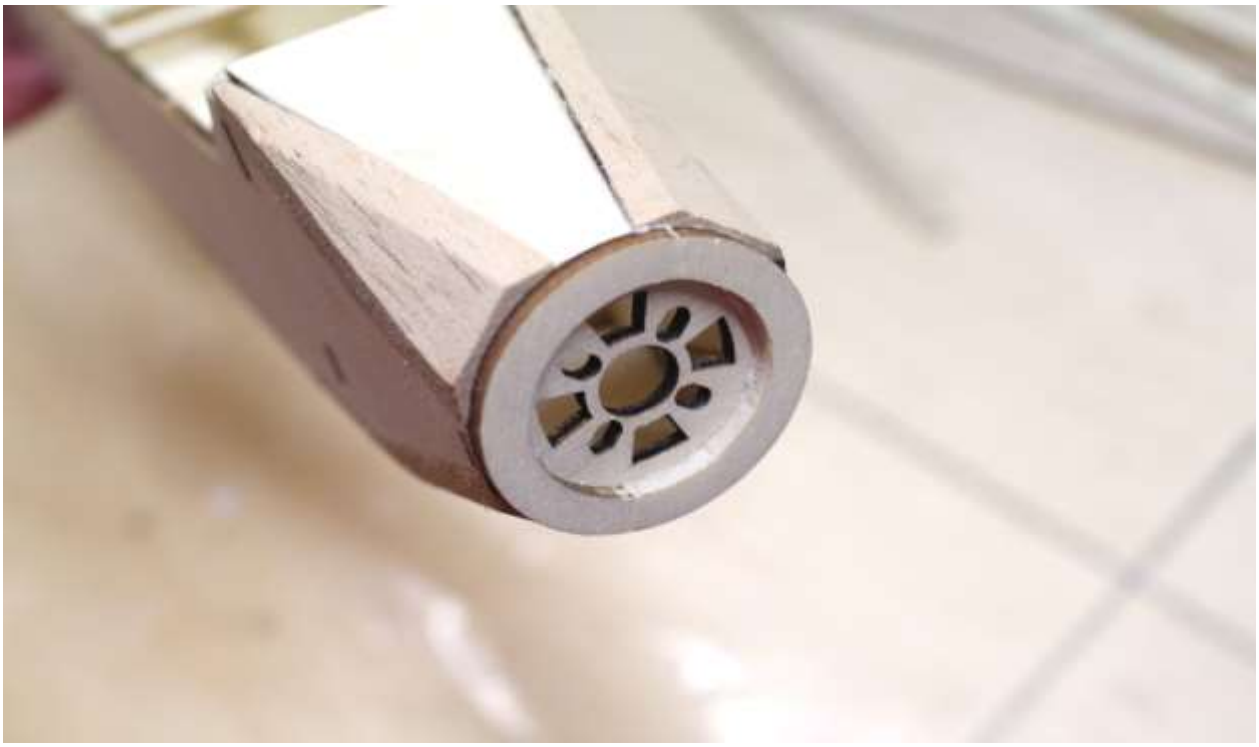


Sand fuselage side panels + upper + lower planking at an angle on fuselage tip
The **Extron Sandpaper File # X5565** comes in handy here

Glue the molded parts (4× K5) to the nose of the fuselage.



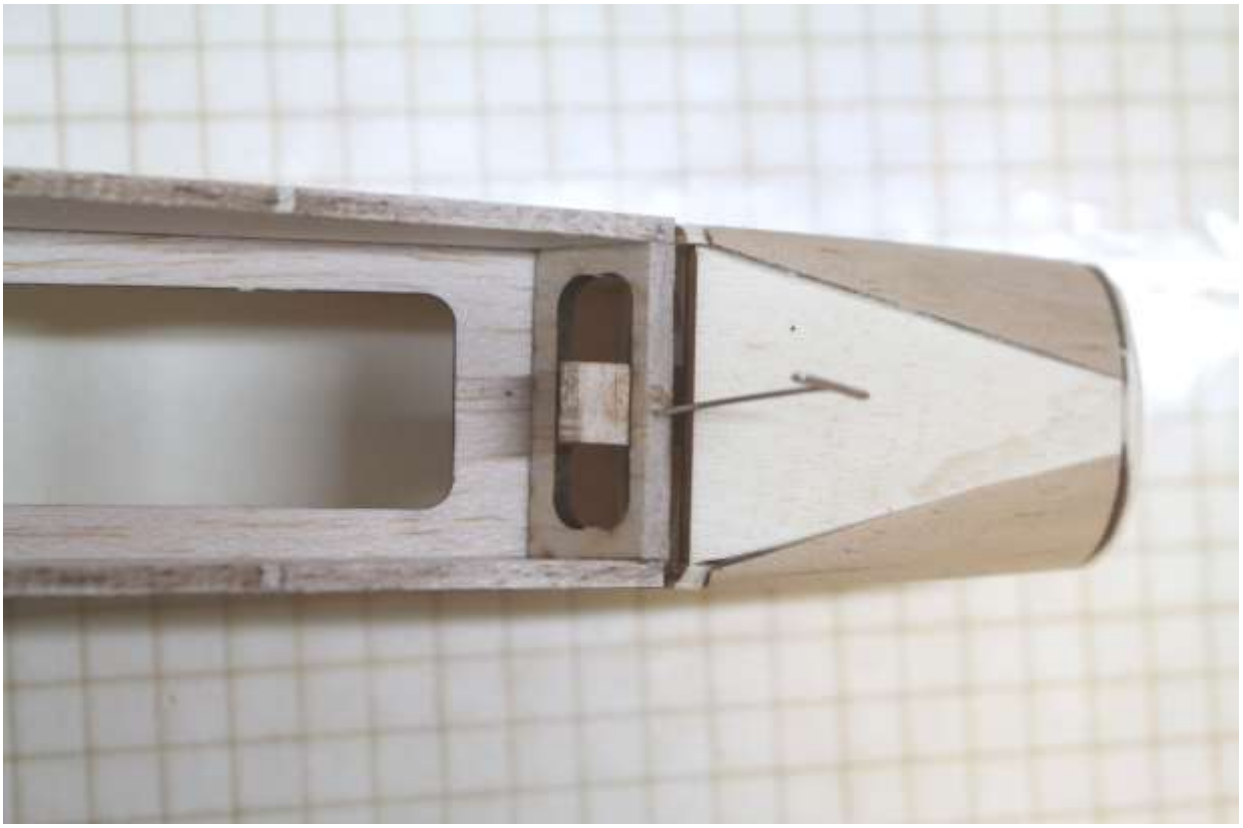
Sand molded parts (K5) flat to the side parts + top and bottom.



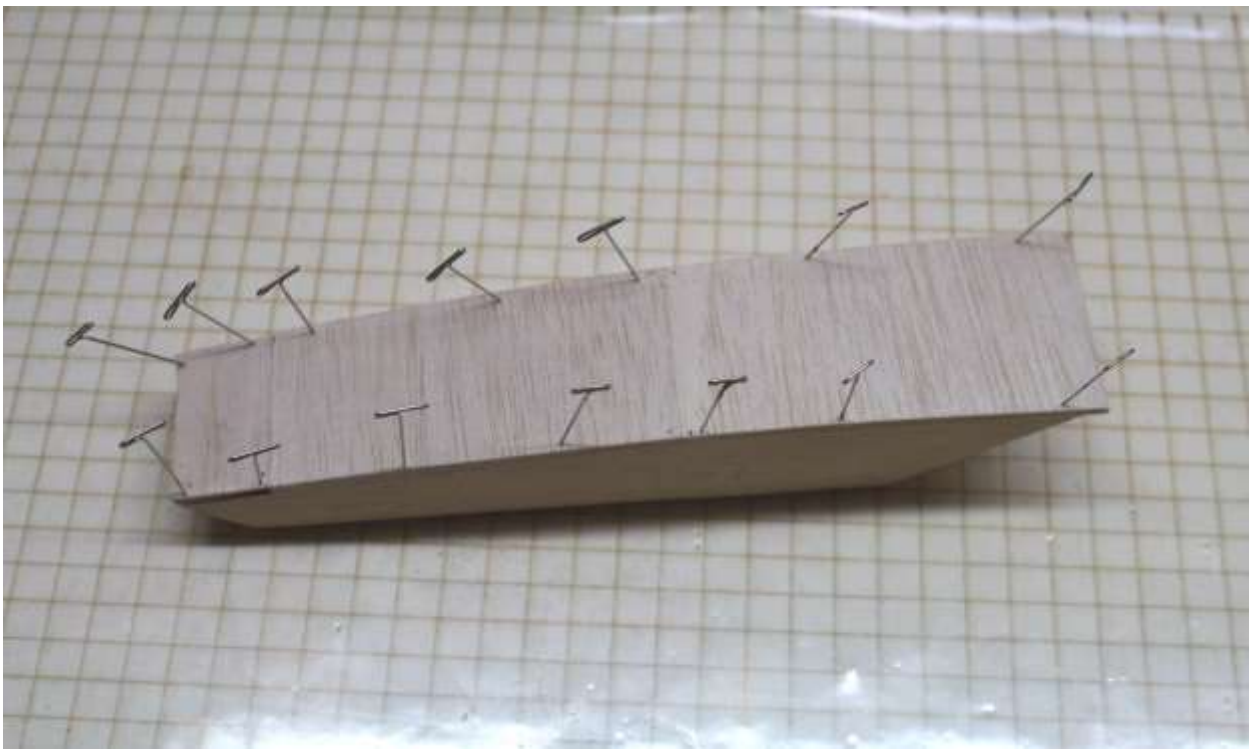
Glue the front ring (H7) exactly in the middle of the motor bulkhead (F1).

Sand the tip of the fuselage. To do this, adapt the molded parts (K5) to the curve of the front ring (H7).

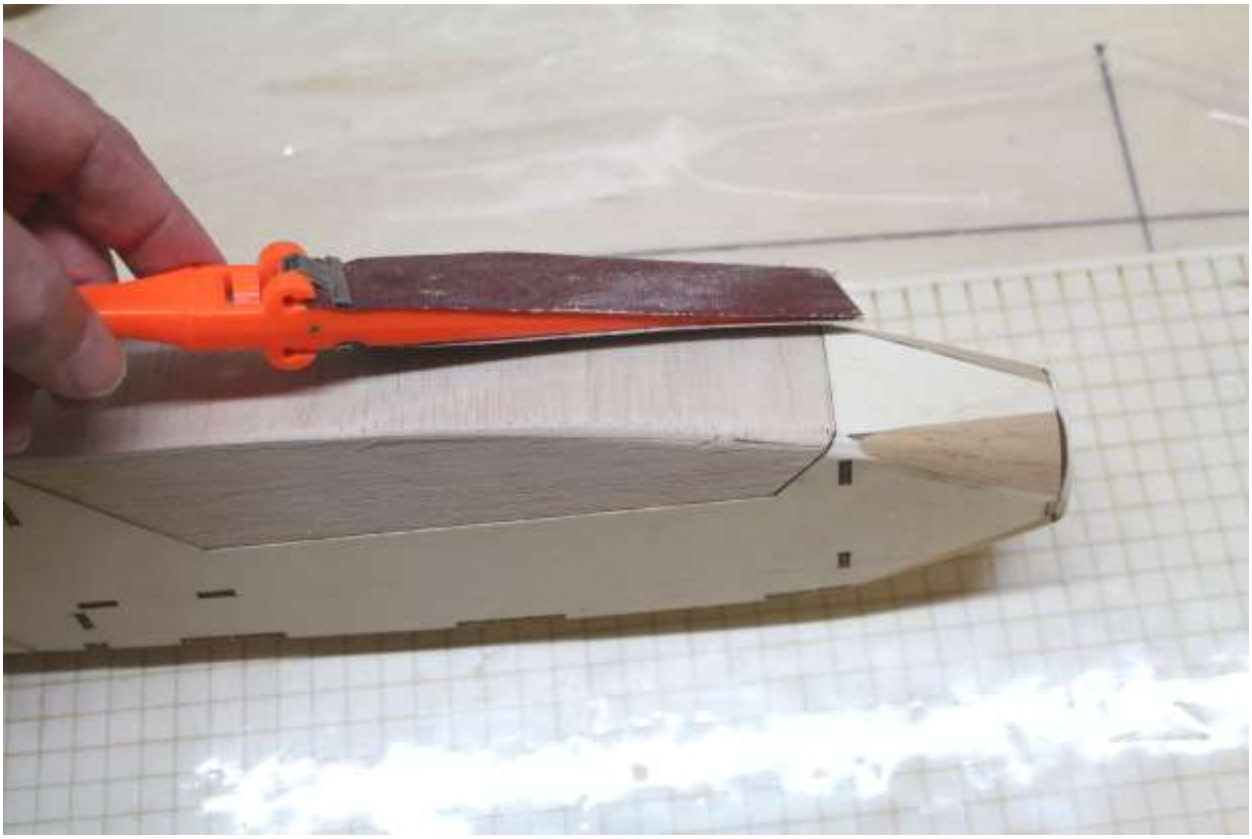
Glue the canopy from the parts base plate (N2), side parts (2×N1), front part (N4) and rear part (N3).
Danger! The narrower side of the base plate (N2) must point towards the nose of the fuselage



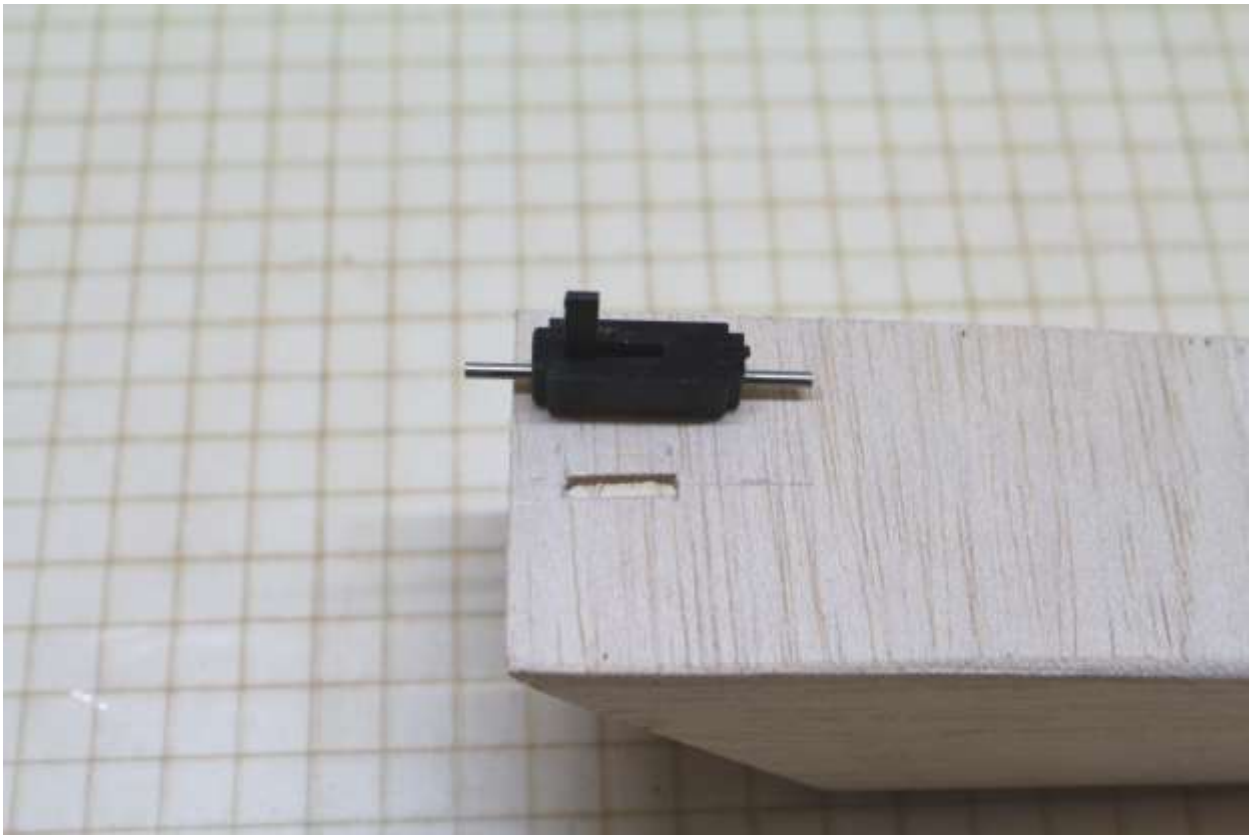
Make the front catch for the canopy from a piece of leftover wood (balsa 3 mm) approx. 15×10 mm and glue it to the front part (N4). The lock must rest against the inside edge of the frame (N3).



Glue the upper planking parts for the canopy.

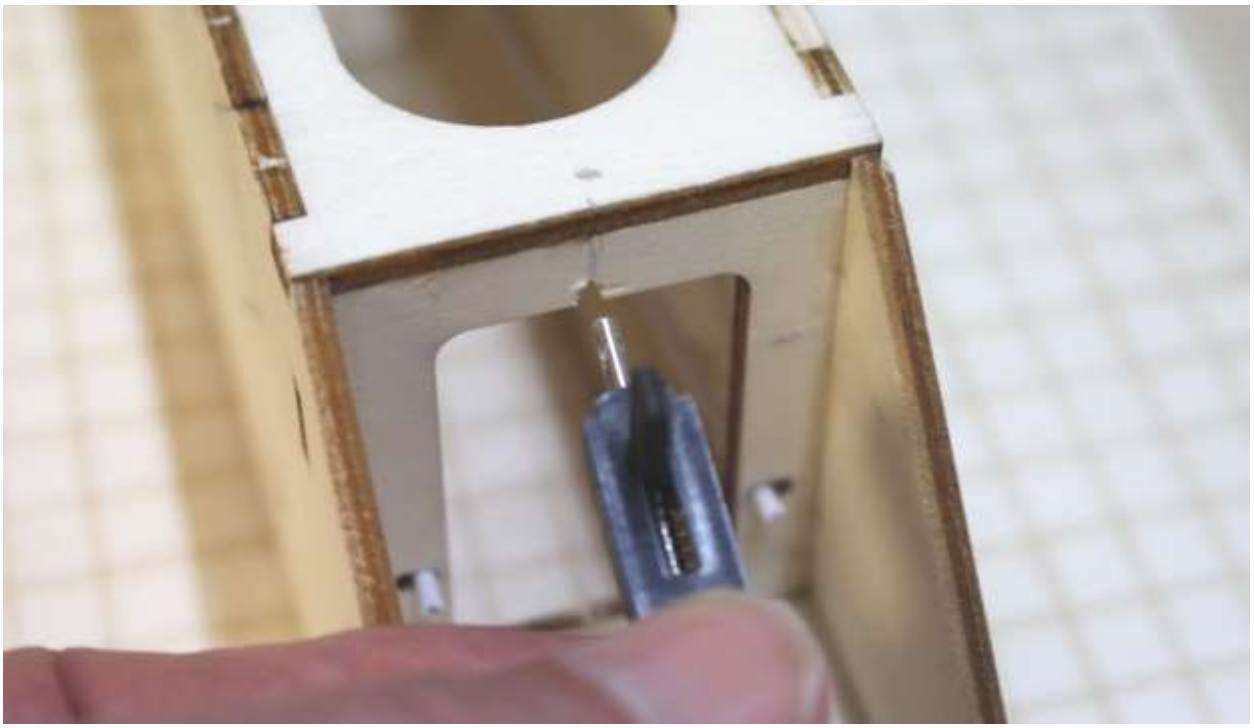


Place the canopy on the fuselage and sand the shape of the fuselage



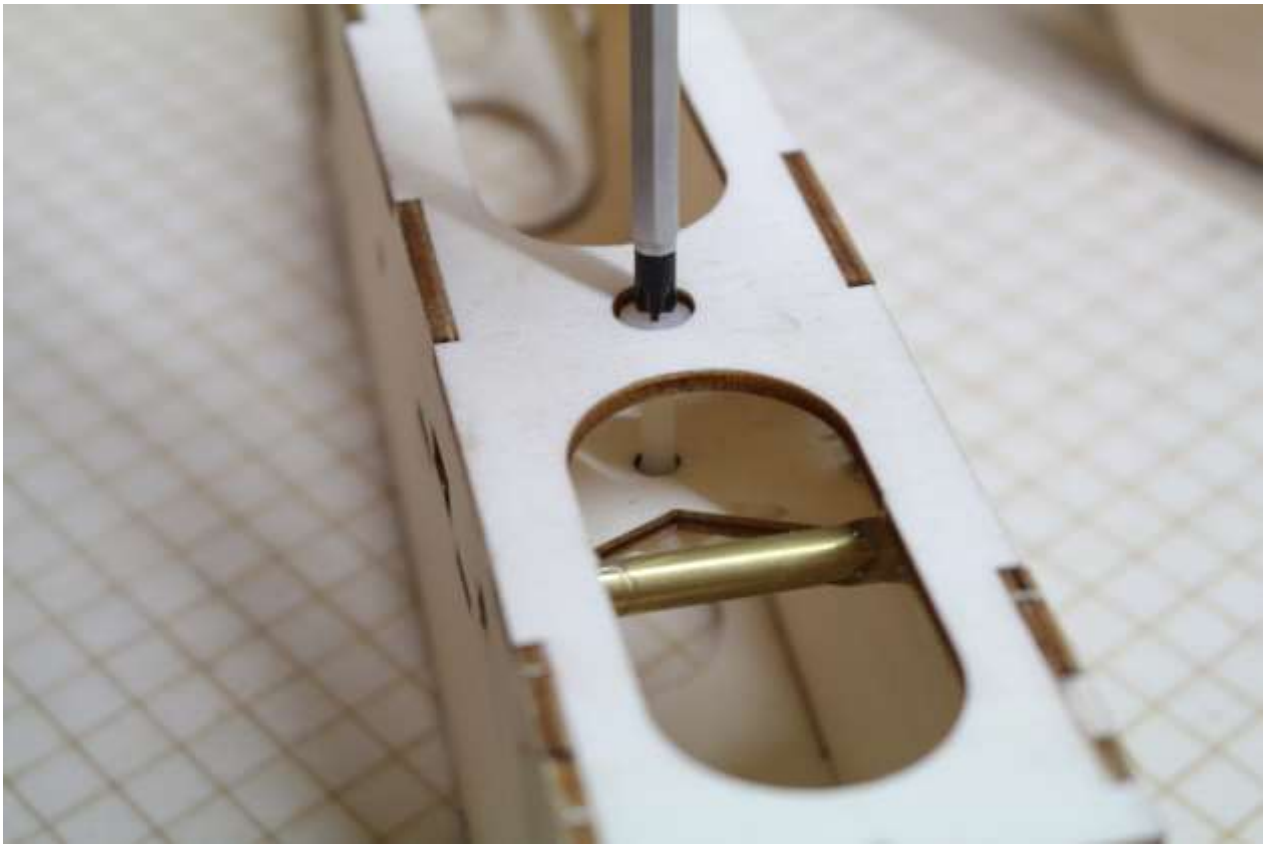
File the slot for the canopy latch latch to a width of 2mm.
ATTENTION: The shape and design of the canopy latch may vary.

Prepare glue point for canopy closure, plus tail section (N3)
remove approx. 10 mm wide
Glue in canopy latch with 5min epoxy

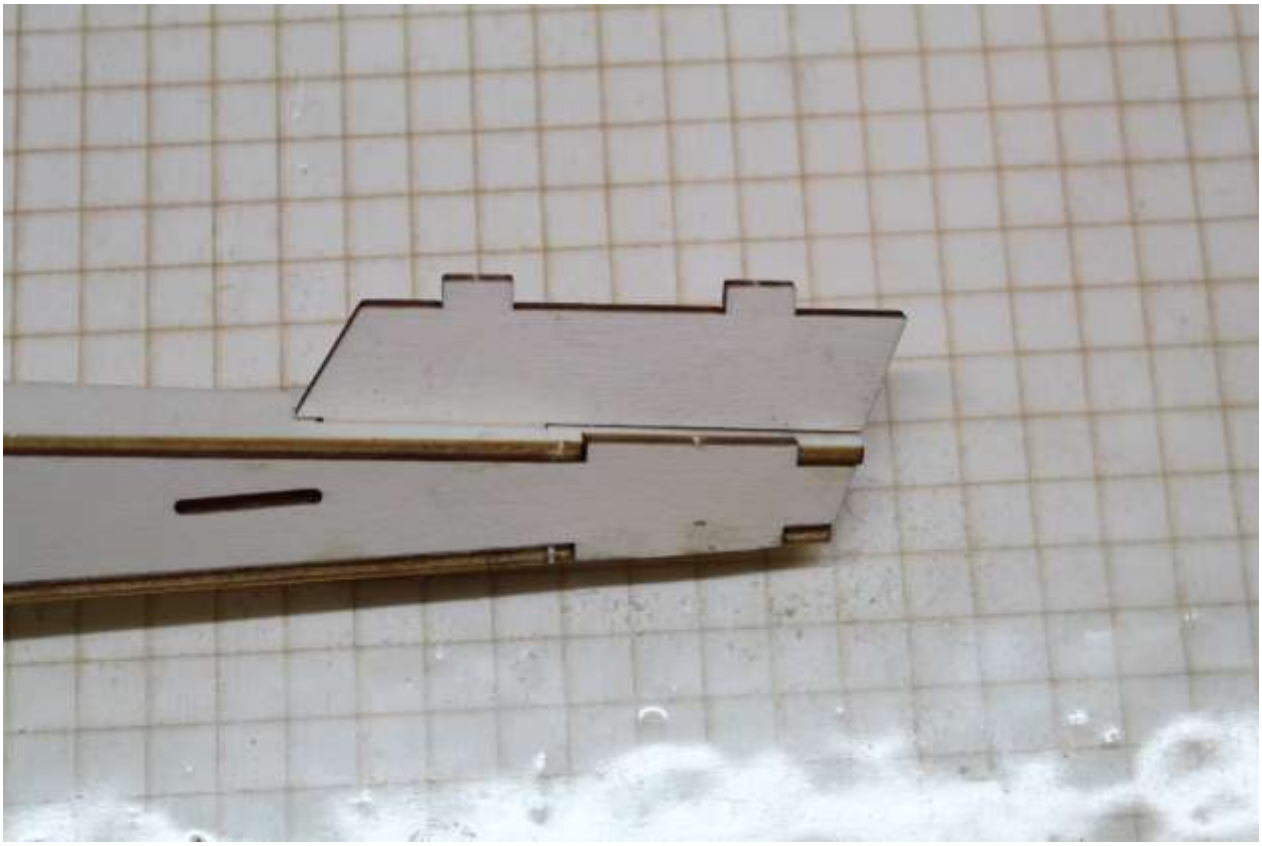


File a small semicircle in the middle of the frame (G2) for the locking bar

Glue brass tube (Ø6×5, 51mm long) into fuselage with 5min epoxy



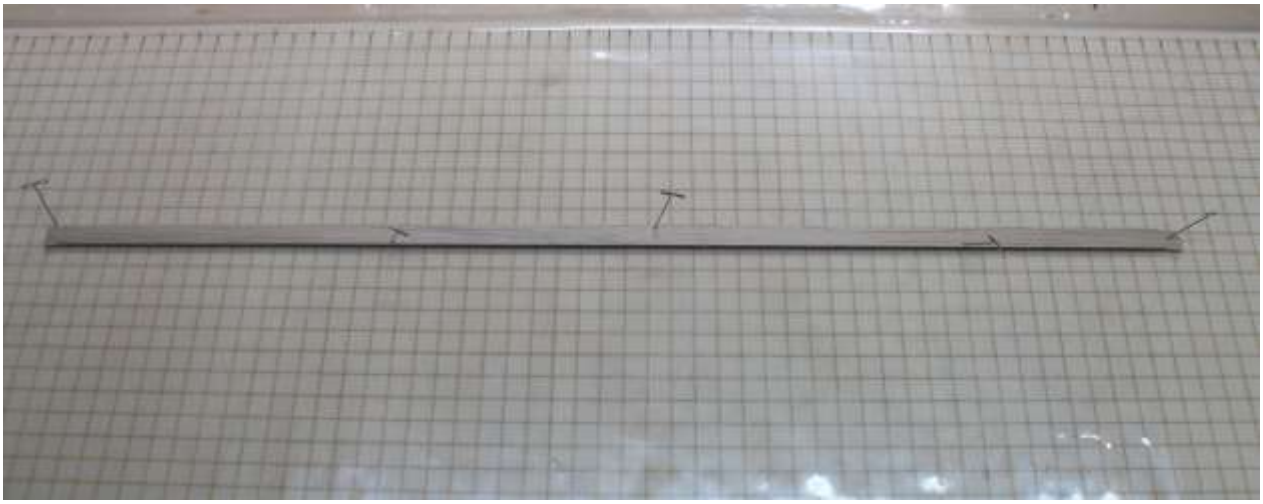
Screw in the clamping screw (plastic M4) for the wing lock



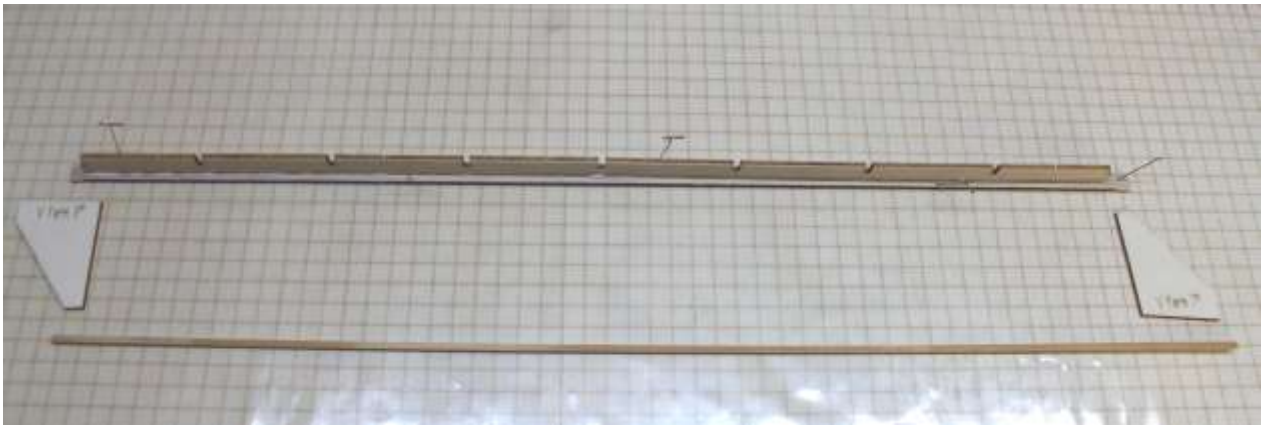
Glue the tail unit mount (M1).

Construction of the inner wing

Shown is the construction of the **right wing half**

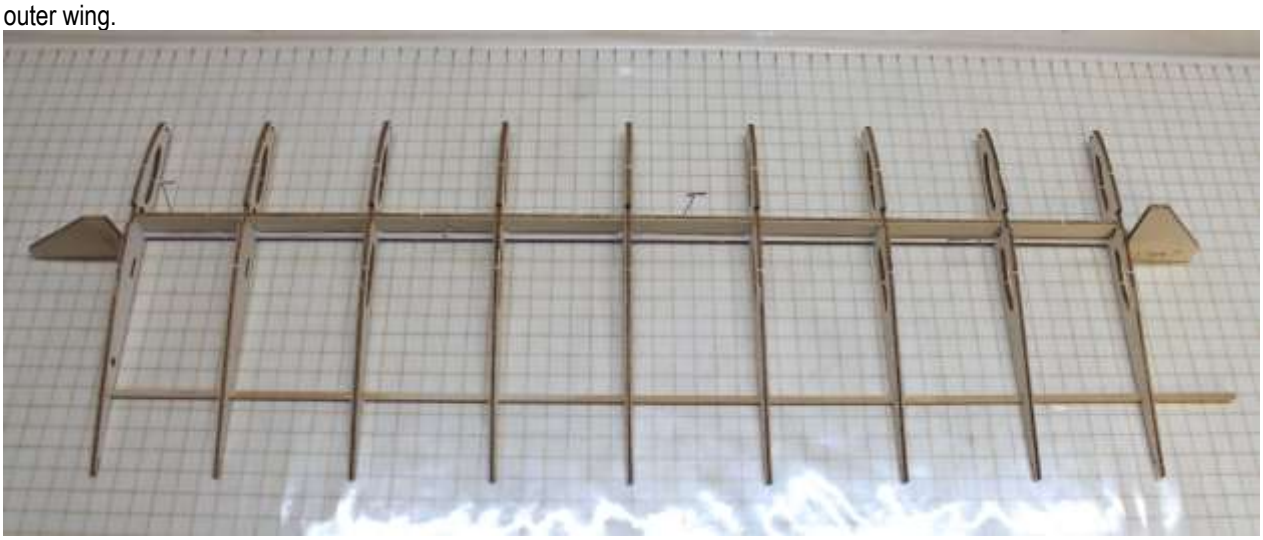


Staple the lower main spar (balsa 10×3×510mm) straight onto the construction base

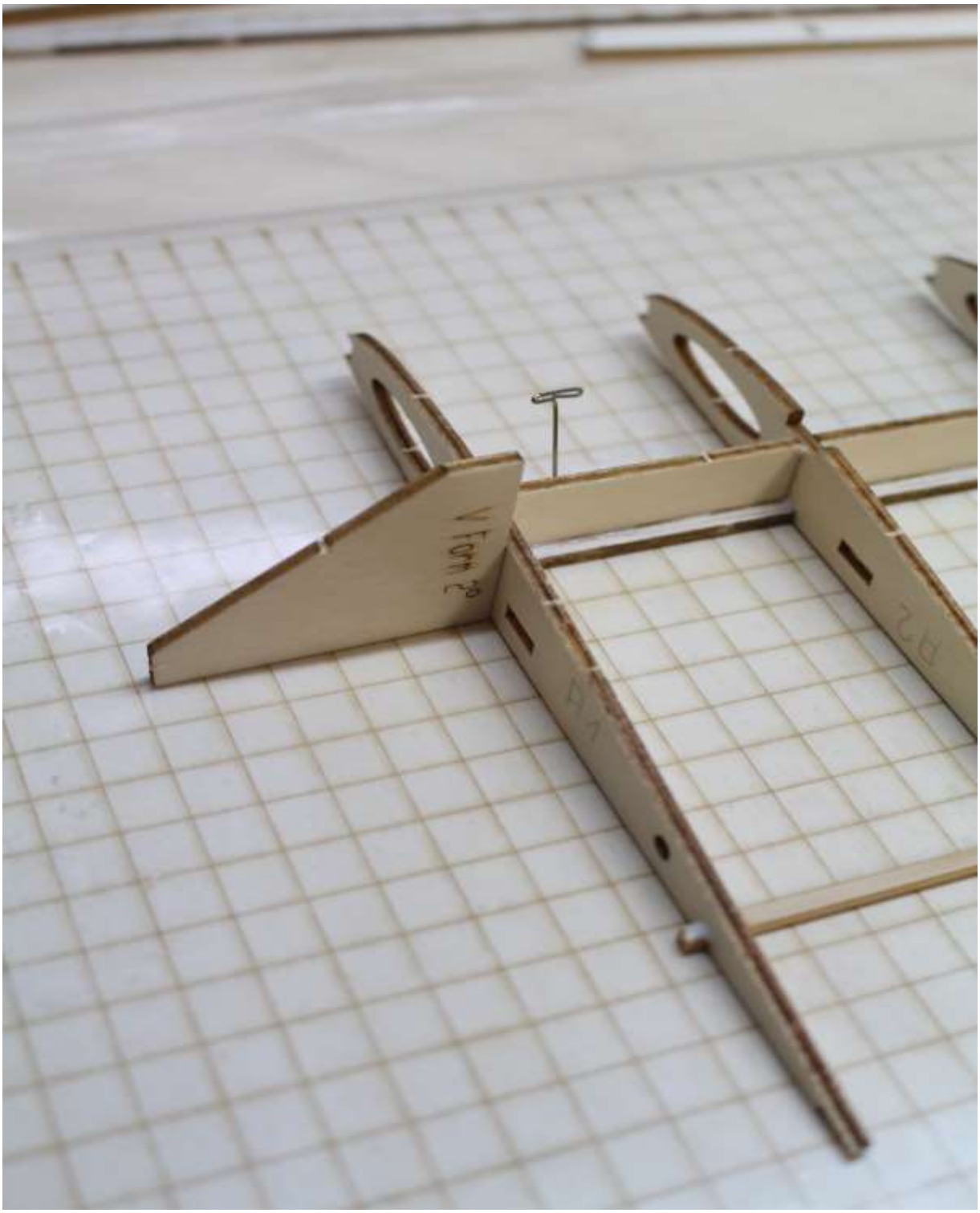


Glue on the rib comb (B2) in the middle
Have the auxiliary spar (3×3×540) ready

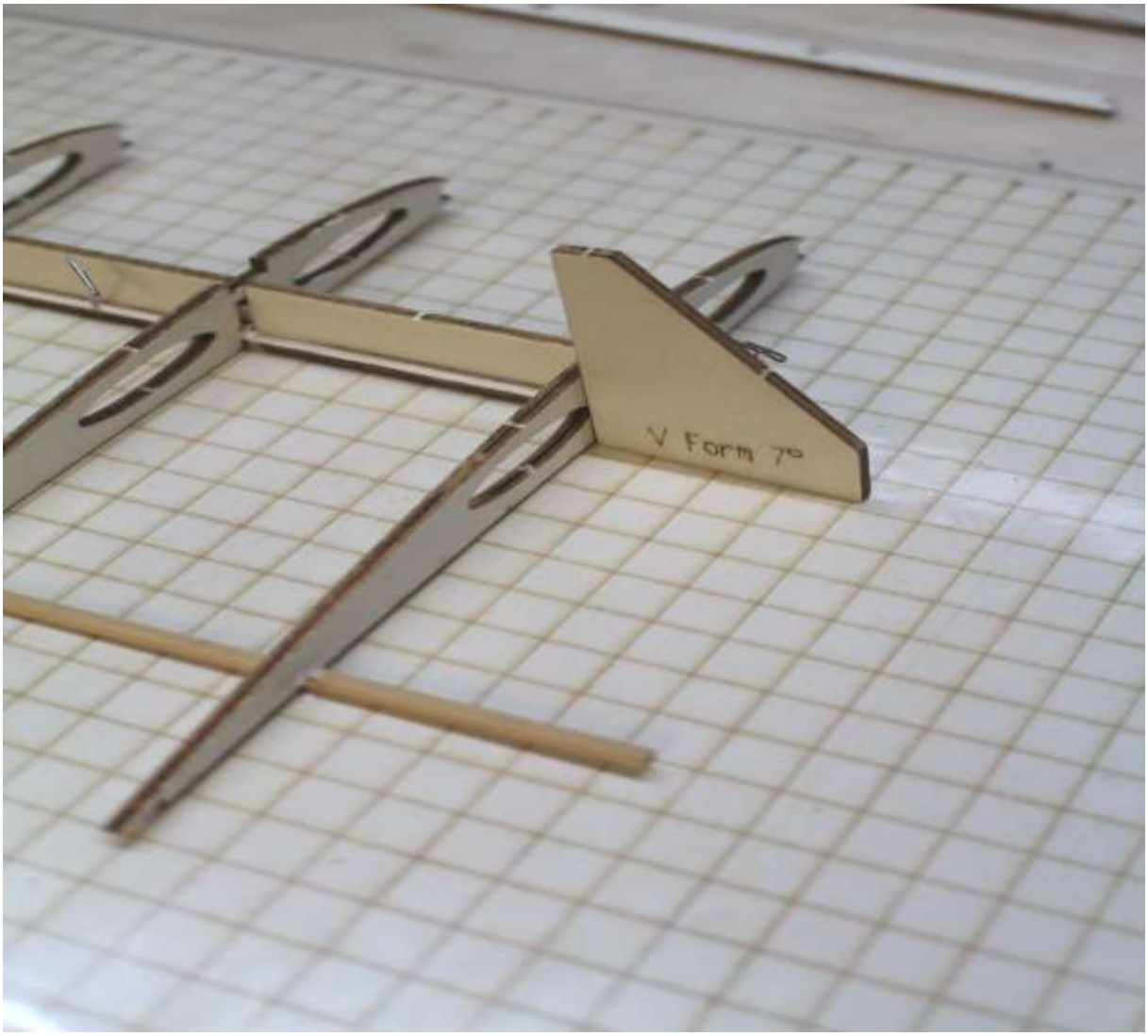
ATTENTION! The rib crest has different angles at the ends. The smaller angle (2°) must point towards the fuselage. There the ribs are also glued to the mounting holes for the wing connectors. The larger angle (7°) points towards the outer wing.



Glue the ribs (A1), (A2), (A3), (4×A4), (2×A5) in the rib crest and auxiliary spar.



Glue the root rib with a slope of 2°.

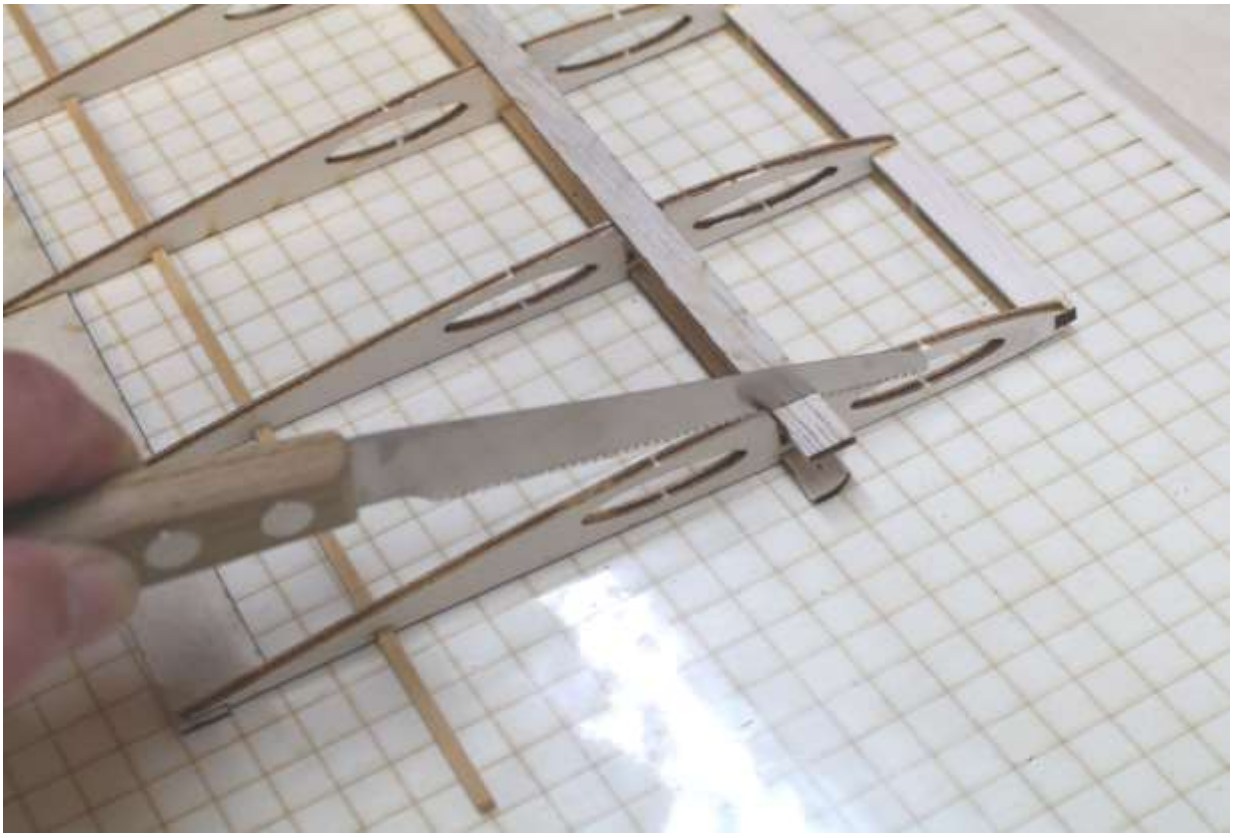


Glue the connection rib to the outer wing with 7°

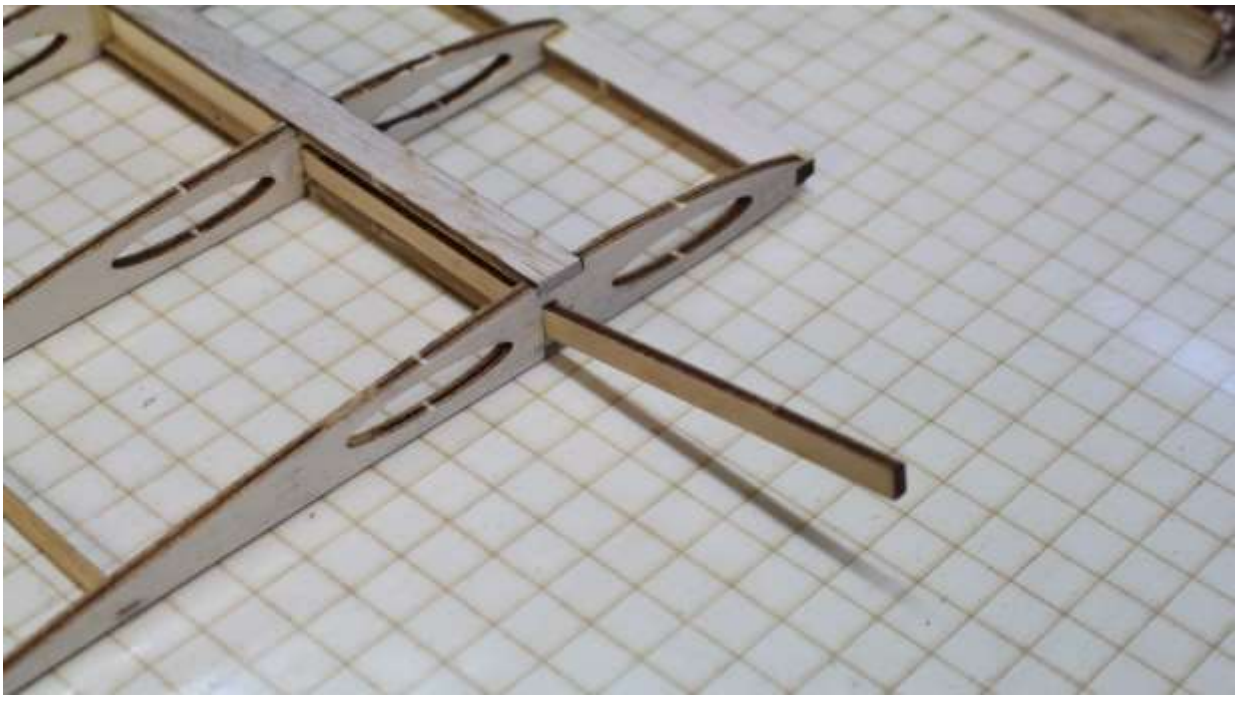
Slide and glue the trailing edge (C1) to the rib ends.

Thread in the leading edge (D1) and glue

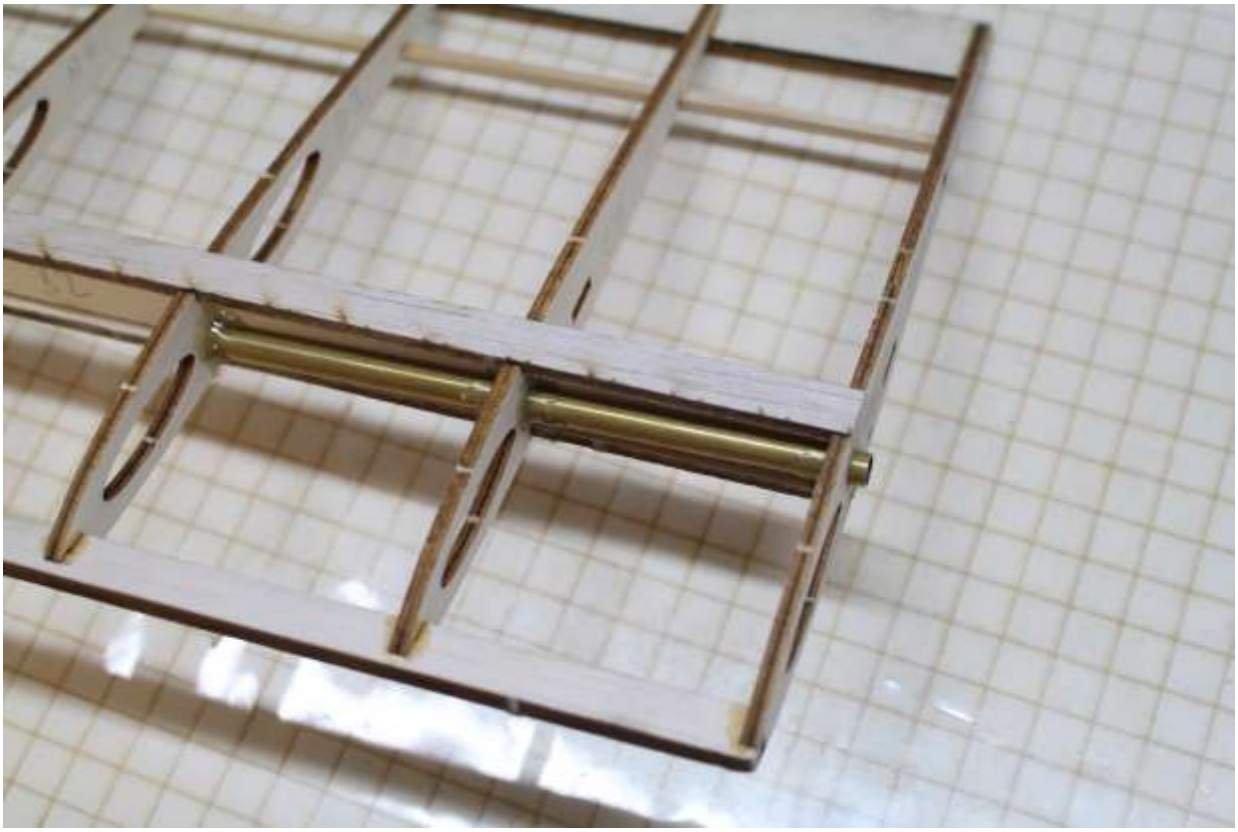
Glue in the upper main spar (balsa 10×3×510mm).



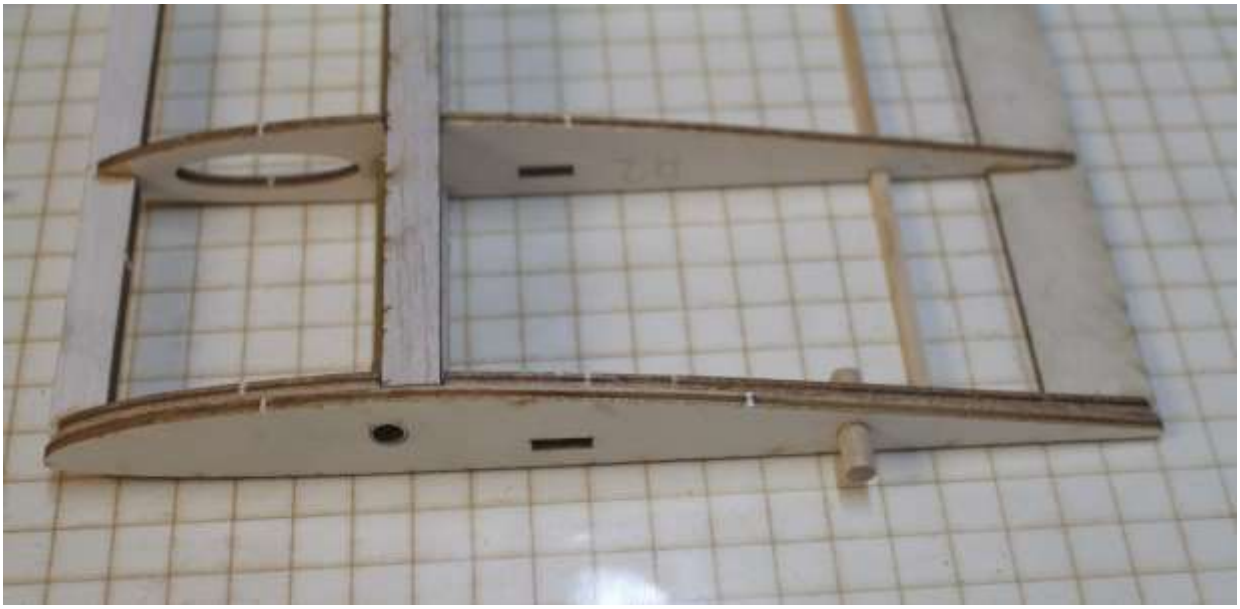
After the glue has dried, remove the excess on both sides and sand flat



Glue the connector (F1) into the ribs (A5)

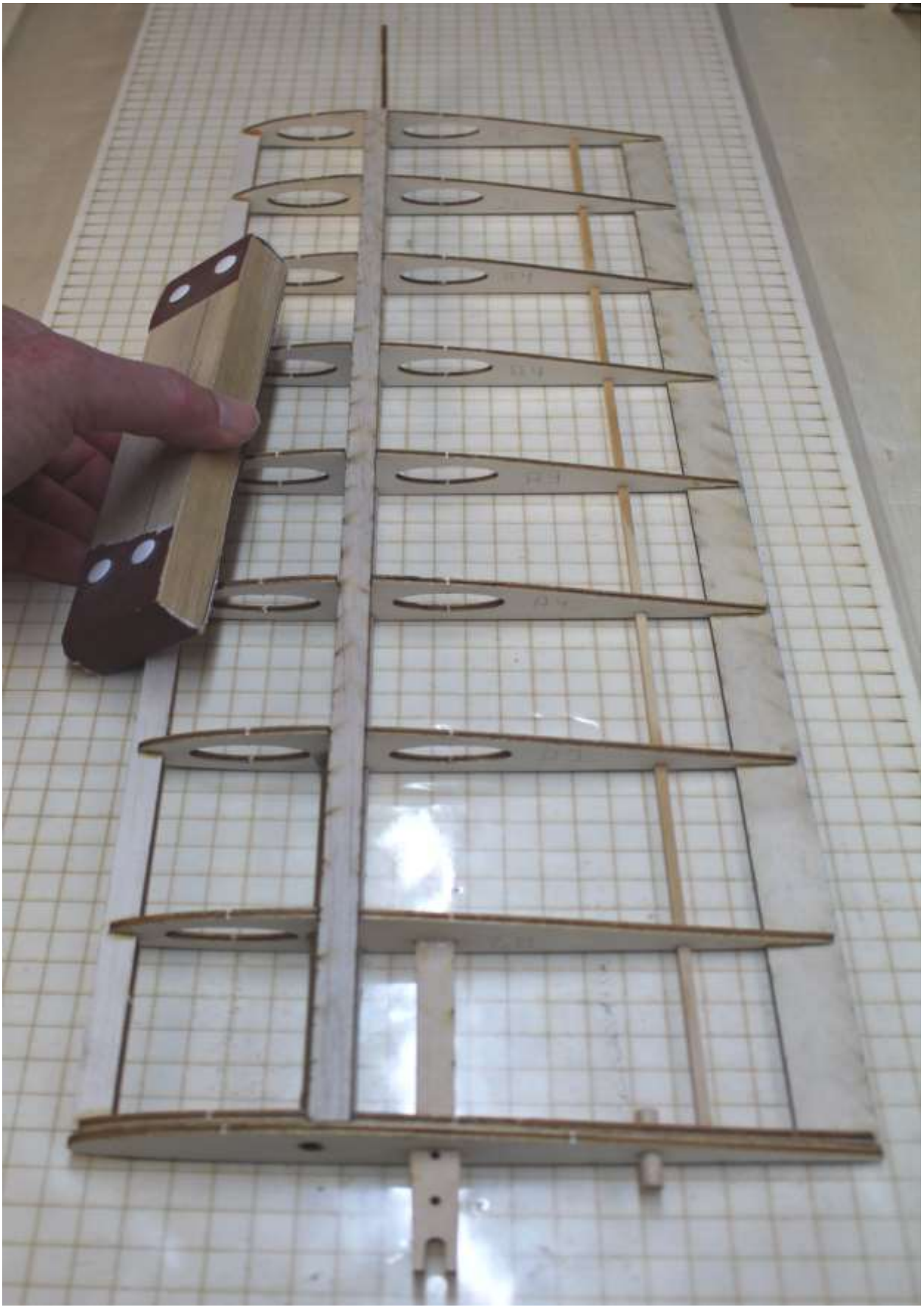


Glue brass tube (Ø6×5) into fins (A1 to A3) with 5min epoxy. Allow the tube to protrude 3 mm over the rib (A1).



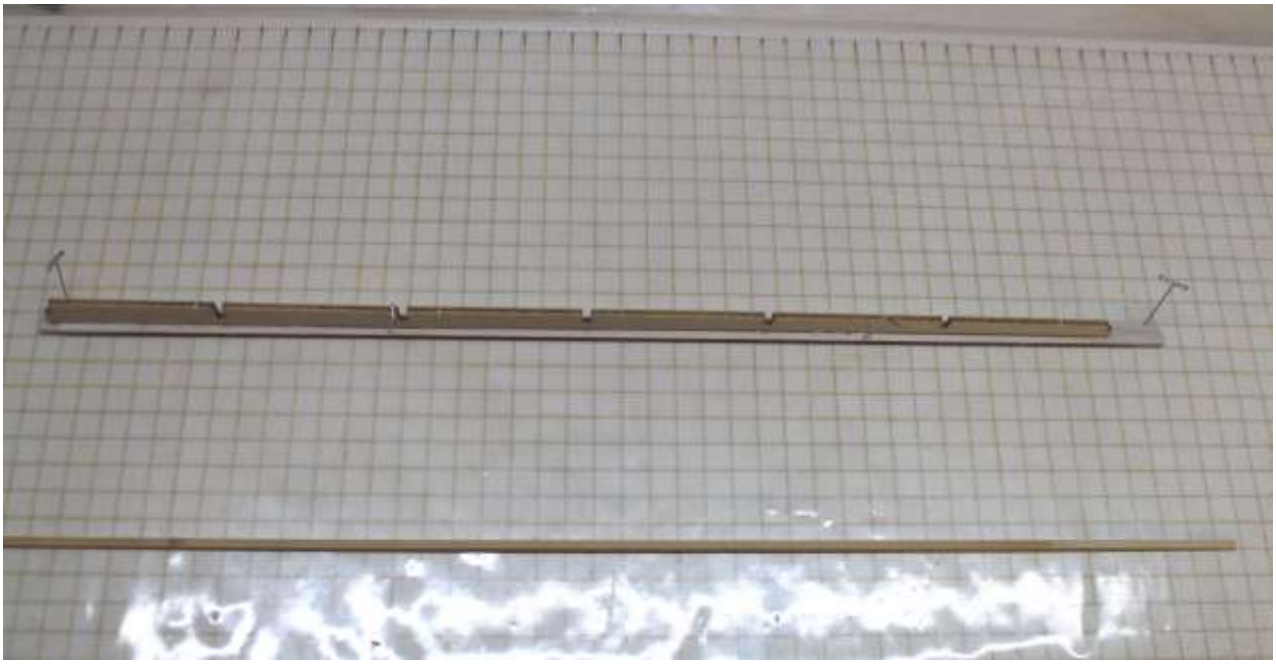
Glue the cover rib (B4). At the same time, insert and glue the anti-twist device (beech Ø6 mm).

Glue the wing lock from (F4) and (F3). Then slide into cover rib (B4) up to rib (A2) and glue.
The counterpart to the wing lock (F2) will later be installed in the left wing half

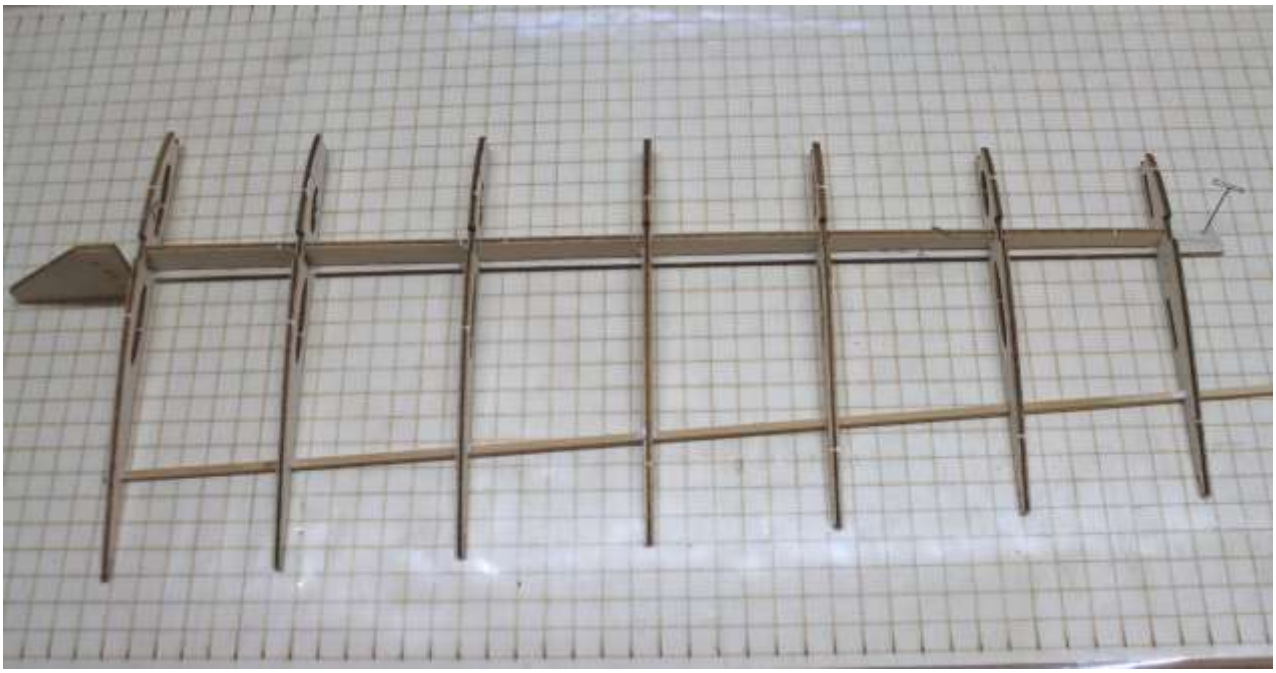


Round off the leading edge with a long sanding lath, carefully sand the wing overall

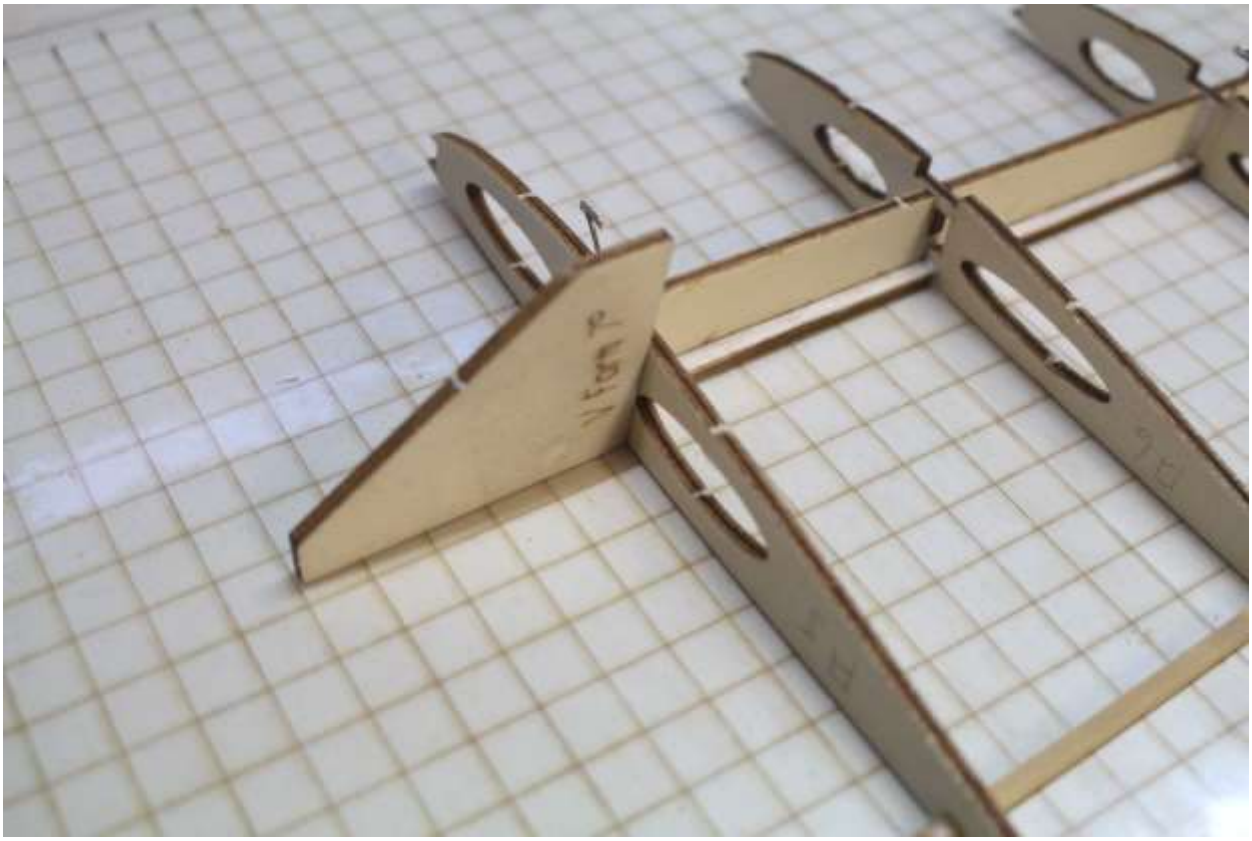
Construction of the outer wing



Staple the lower main spar (Balsa 10×3×410) to the construction sheet
Glue on the rib comb (B1) in the middle
Have the auxiliary spar (3×3×440) ready.



Glue the ribs (A5 to A11) in the rib crest and auxiliary spar

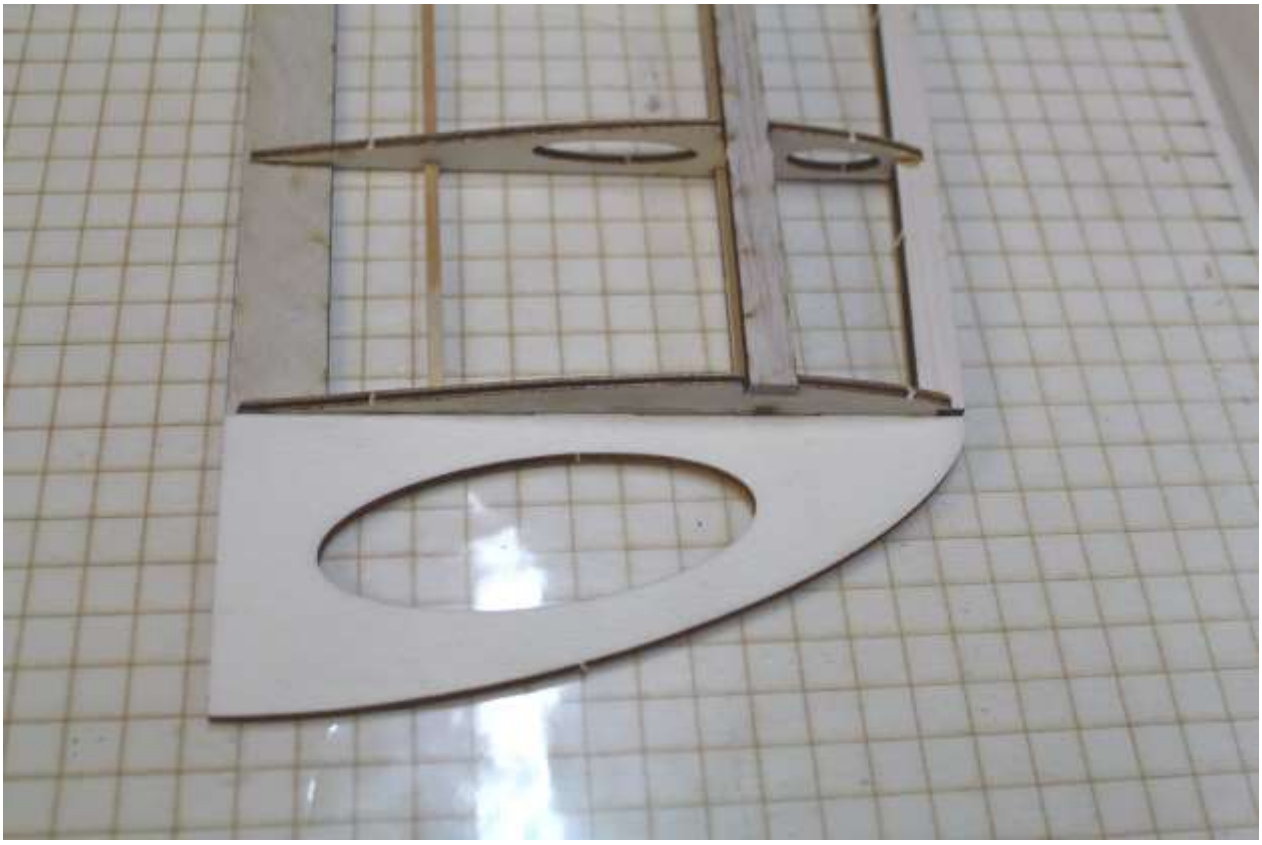


The connecting rib (A5) is glued in at an angle of 7°.

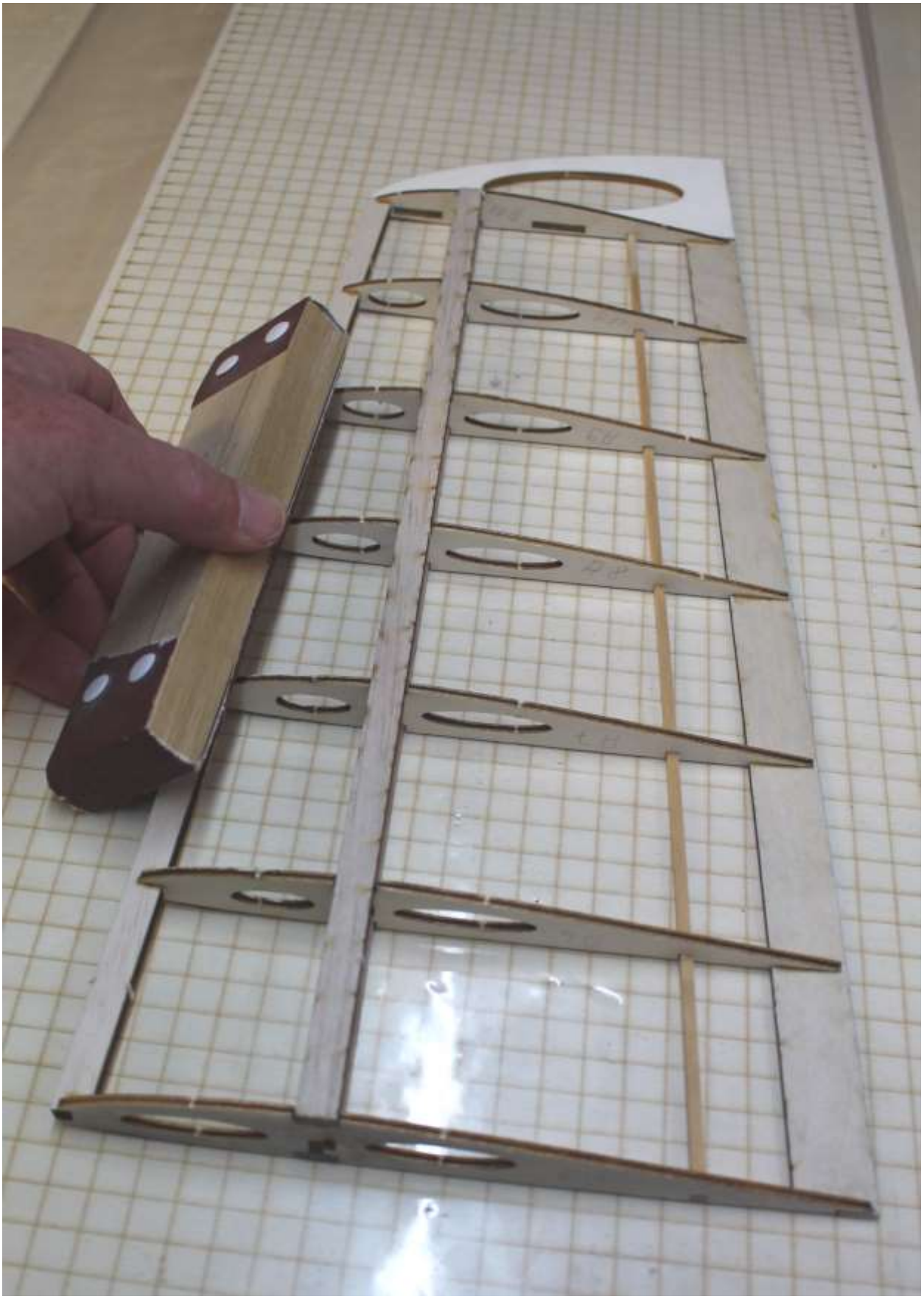
Slide and glue the trailing edge (C2) to the ends of the ribs
Attach and glue the leading edge (D2).

Glue in the upper main spar (balsa 10×3×410).

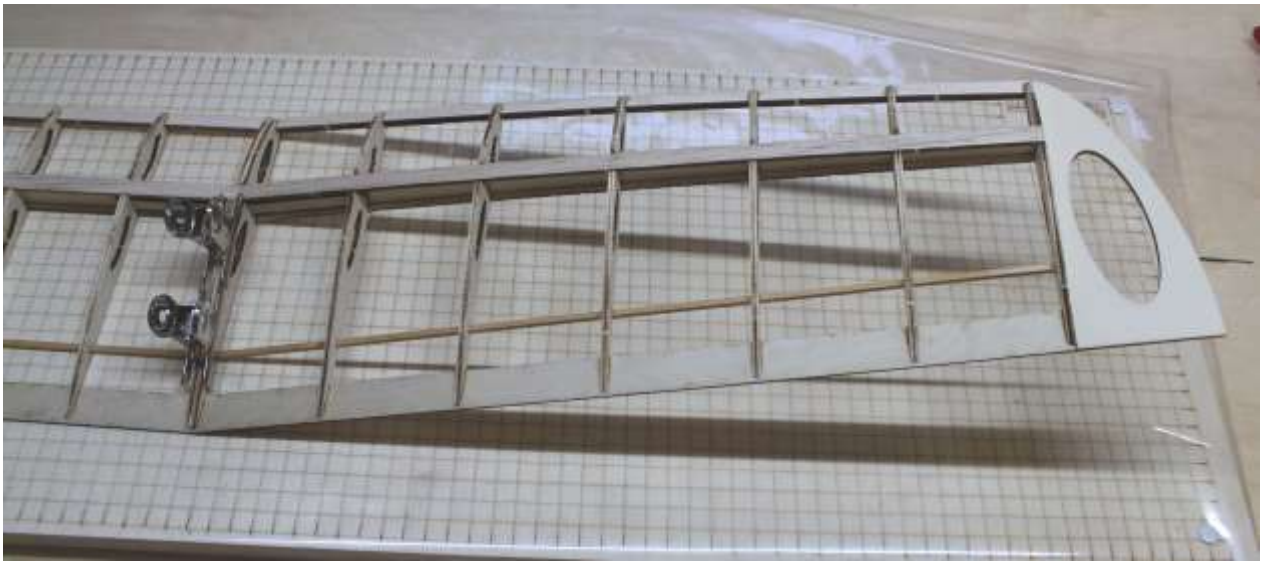
After the glue has dried, remove the excess on both sides and sand flat.



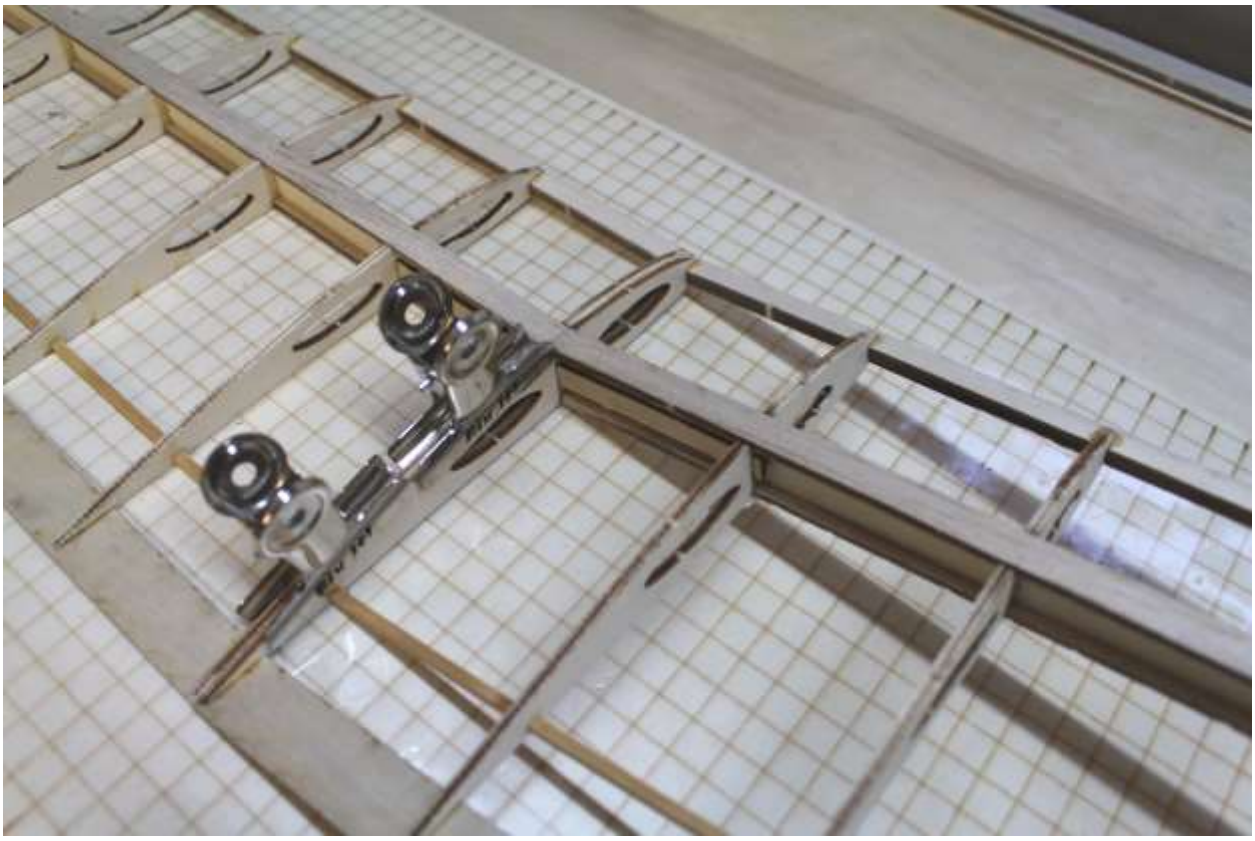
Glue the edge sheet (B3) to the rib (A11).



Round off the leading edge with a long sanding lath, carefully sand the wing overall.

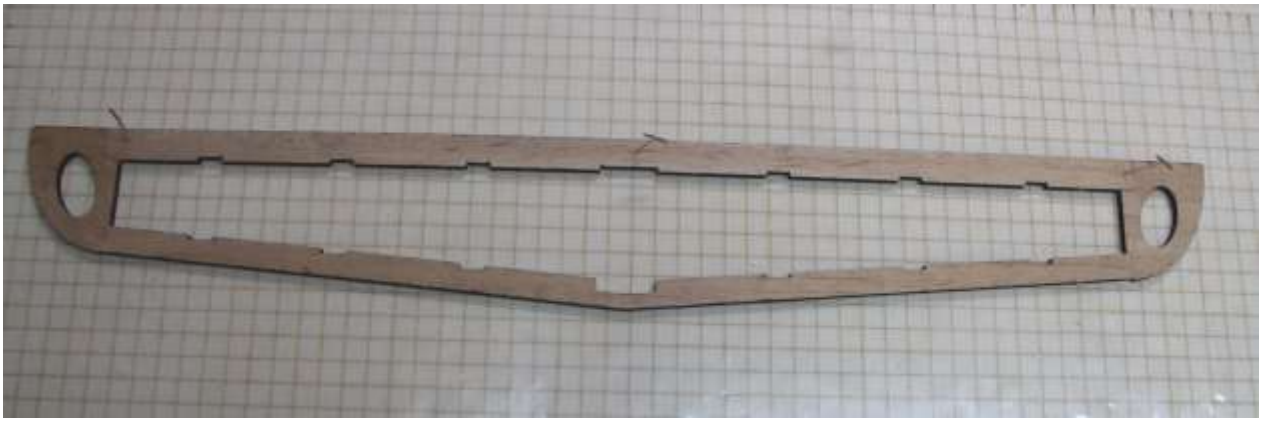


Glue the inner and outer surfaces together.

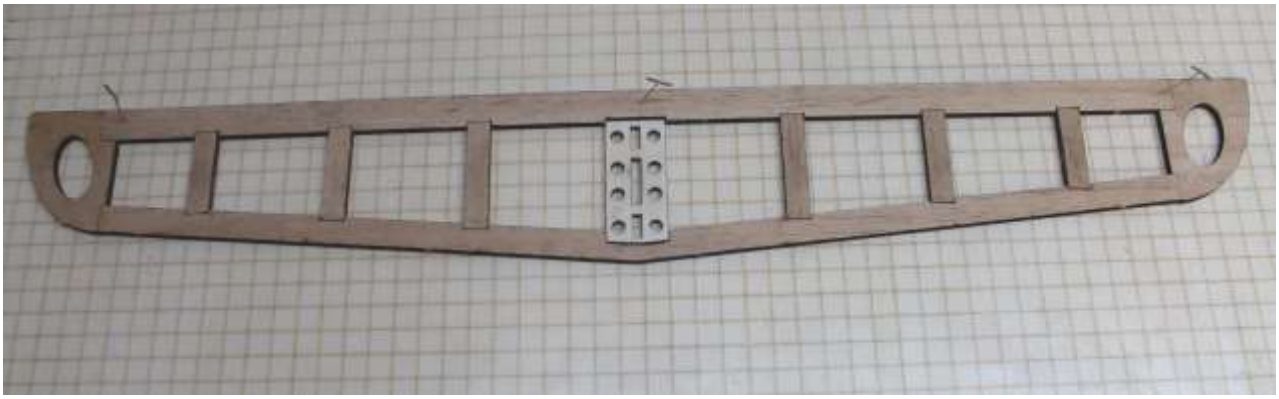


The outer ribs of the inner and outer surface must lie flat on the construction base, do not twist against each other!
Glue the connector in fully, it must lie completely against the rib crest.

Construction of the control panels



Tack and glue the trailing edge, leading edge and tip edges of the tailplane to the construction base.

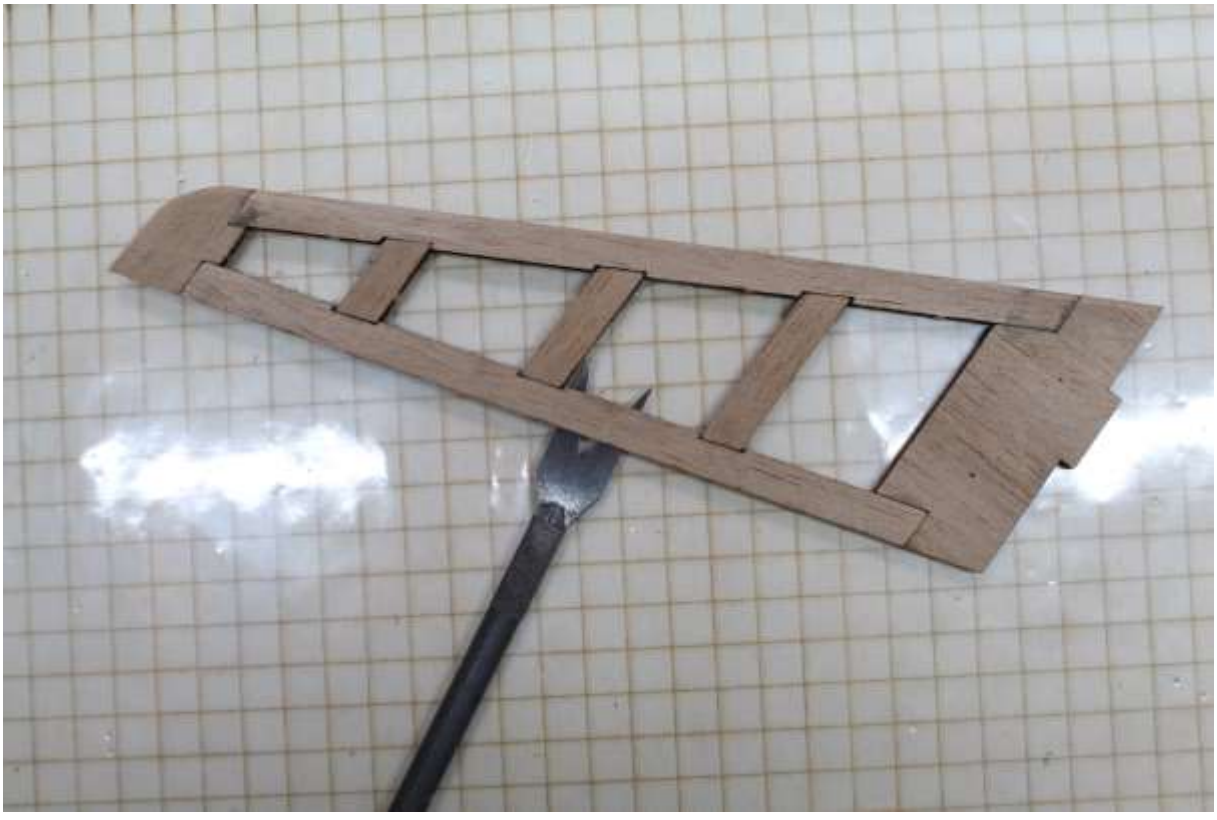


Glue in the bridges and middle part (M1).

Assemble and glue the rudder frame from the parts (K6, K9, K8, K7) and glue in the webs.

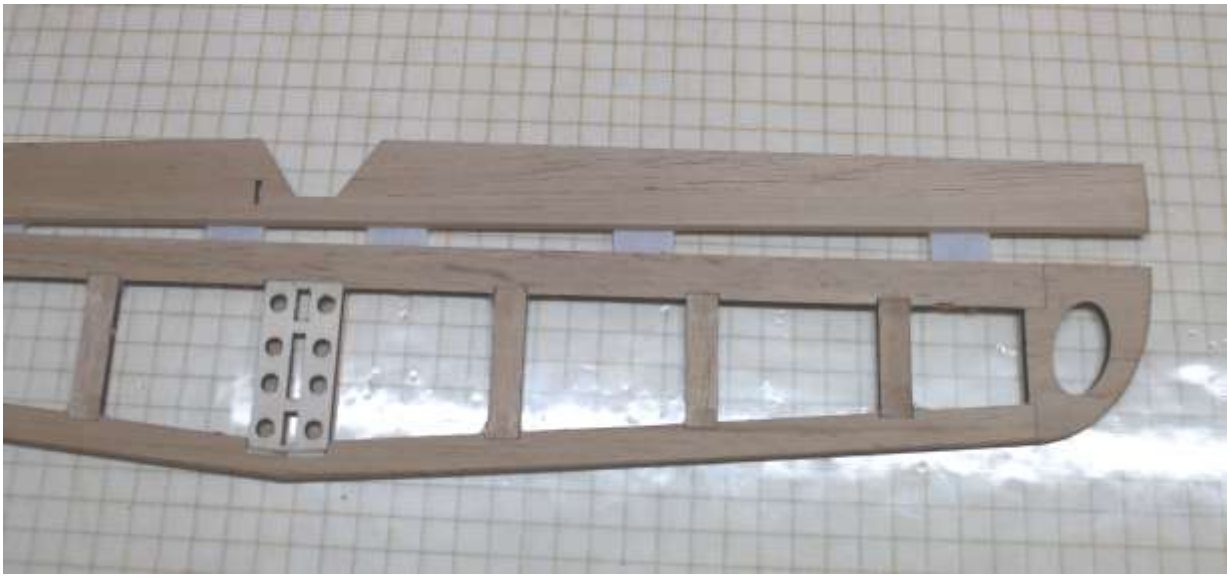
Assemble the frame of the damping surface from the parts (K1, K3, K2, K4), glue & glue in the bars

Draw a center line on the trailing edges of the damping surfaces and on the front edges of the rudder blades (elevator in the picture).

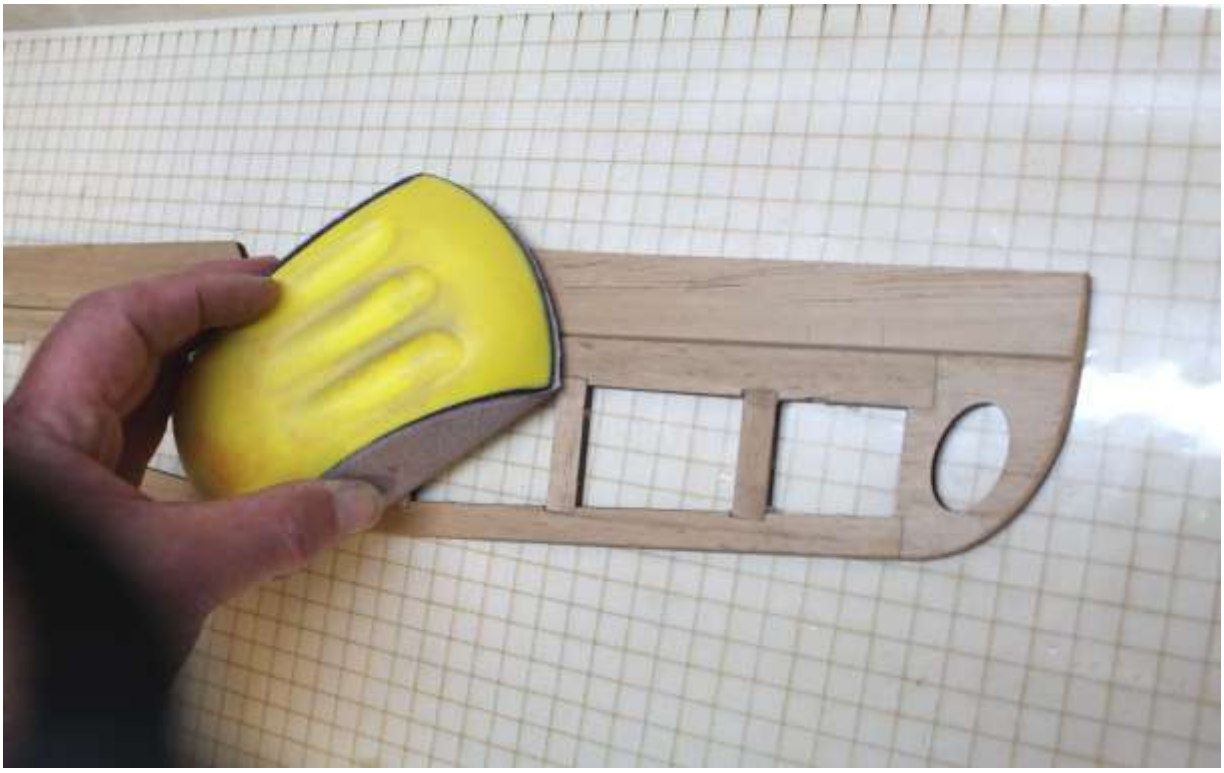


Using a hinge slitting knife # C5829, cut the slits for the flow hinges in the trailing and leading rails (in the picture the damping surface of the rudder)

Grind the front strips of the rudder blades to a point on both sides at an angle of 45°



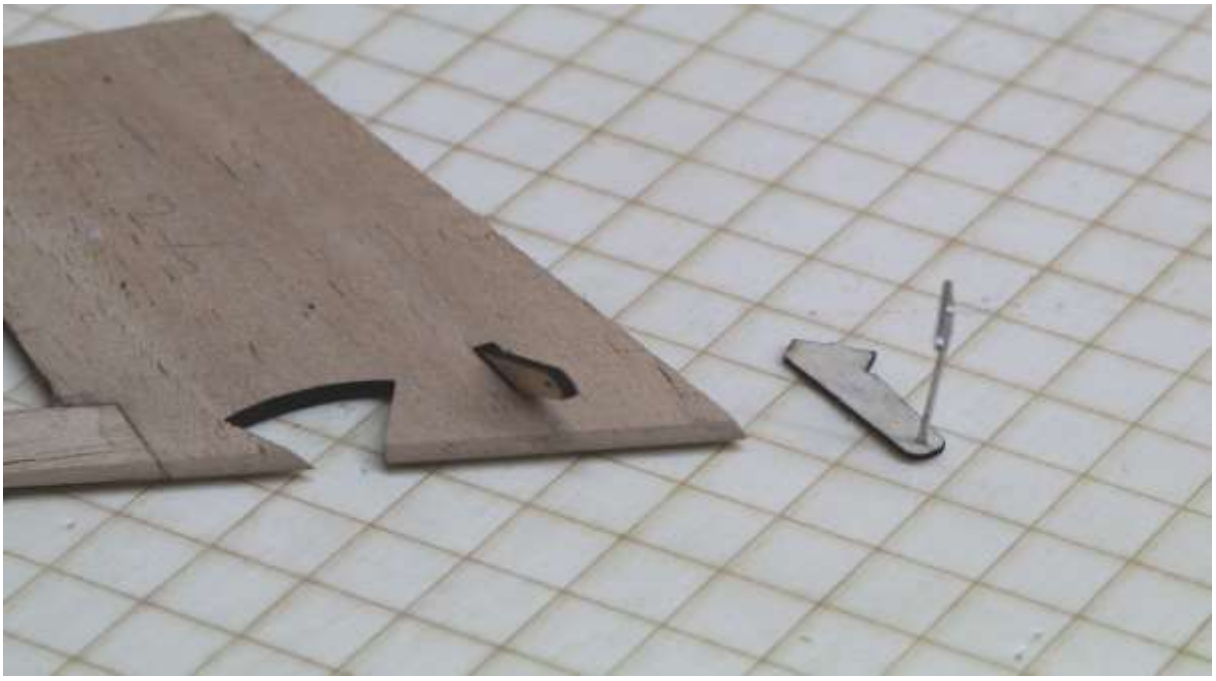
Insert hinges on both tail units, attach rudder flaps
Danger! The hinges are only glued in after the covering.



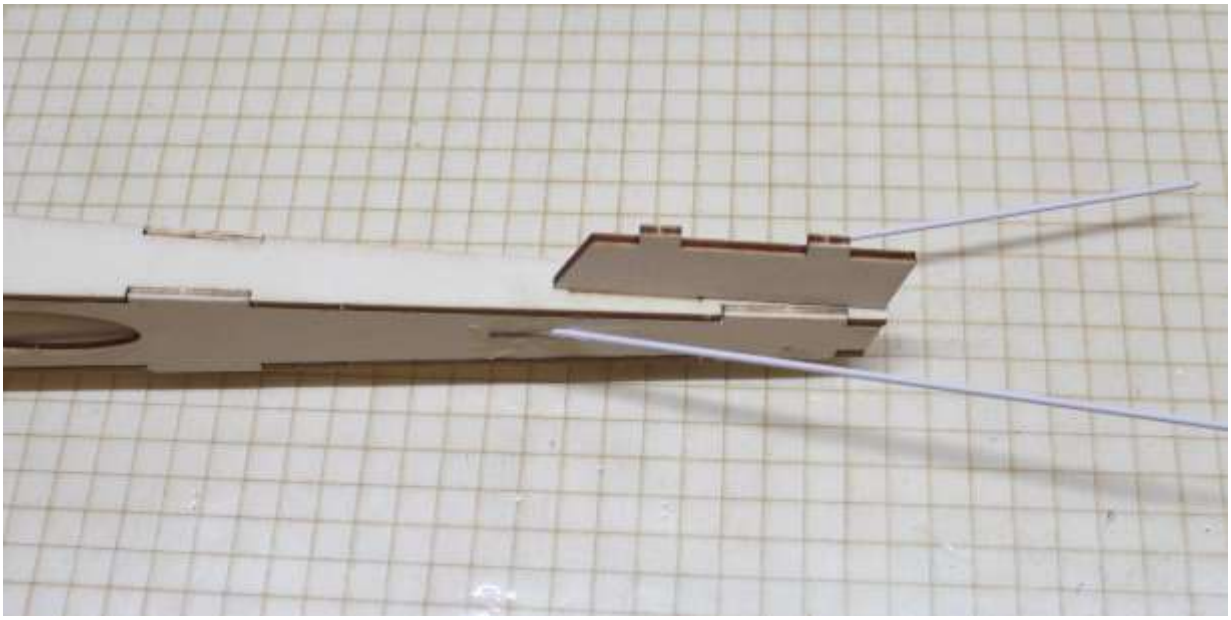
Round the leading edges and tip edges of the tail unit.
Carefully grind the fins flat and level out any overhangs
Danger! The rear edges of the rudder blades remain sharp, not rounded!

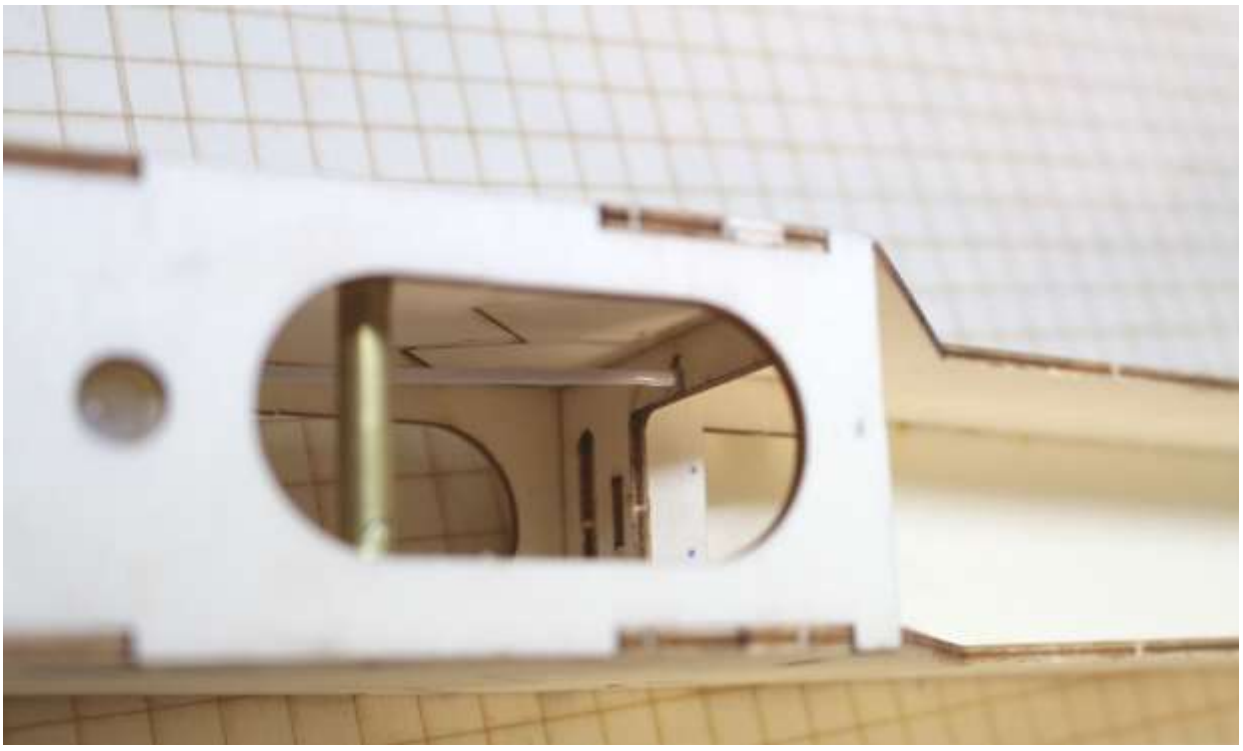
ATTENTION! It is recommended to glue the fins to the fuselage only after the model has been covered.

Installation of the RC linkages

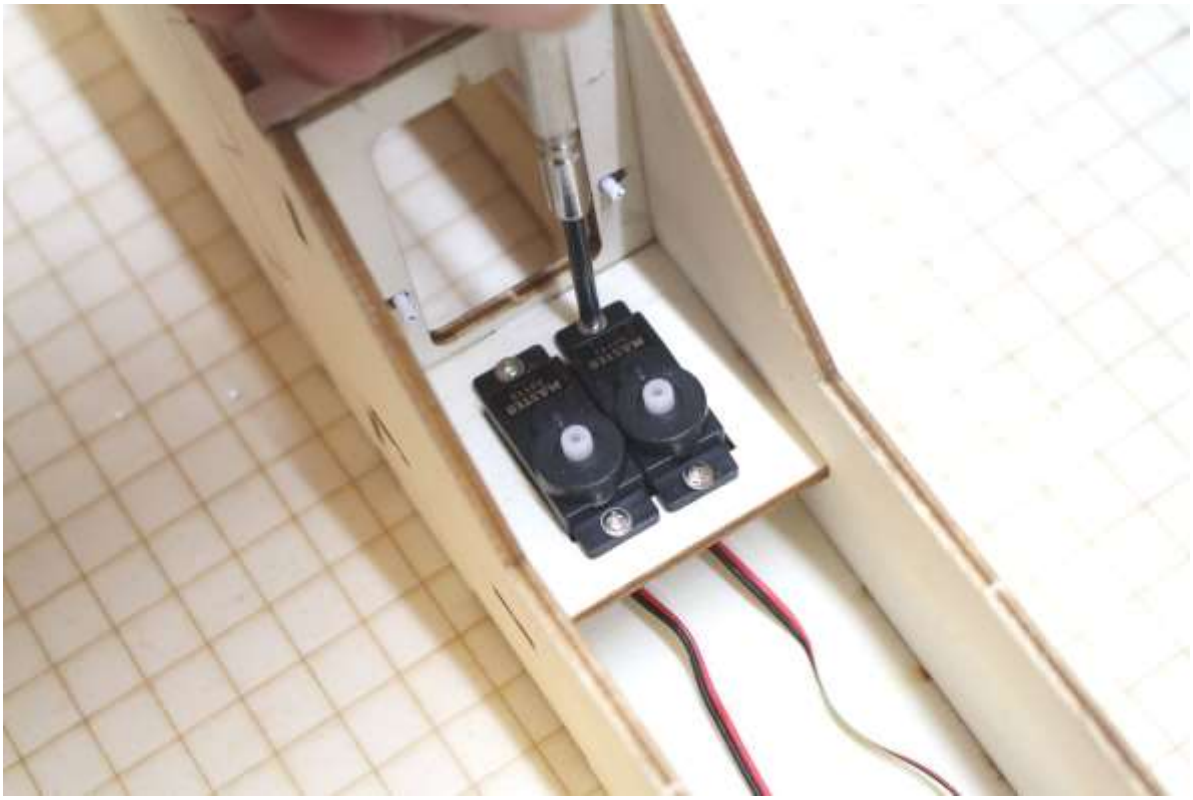


Prepare control horns (C3) for installation. To do this, prick the holes with a pin.
Check the seat in the rudder and elevator.
Only glue in the control horns (C3) after the model has been covered.

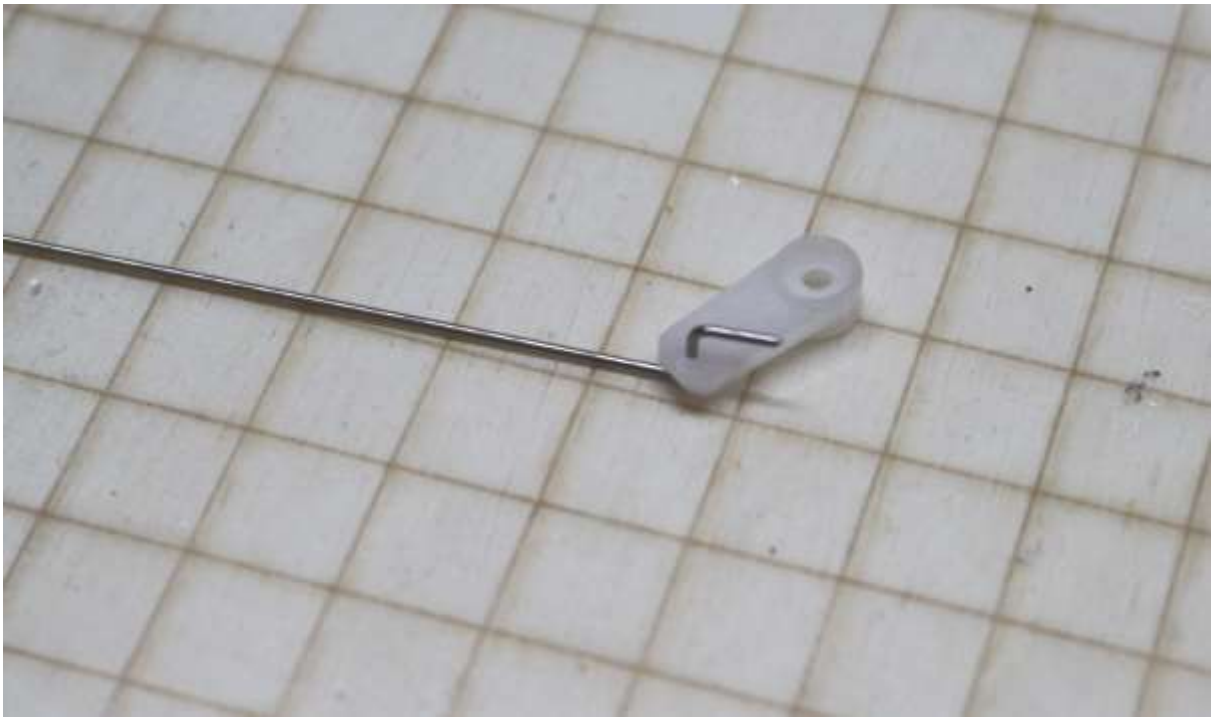




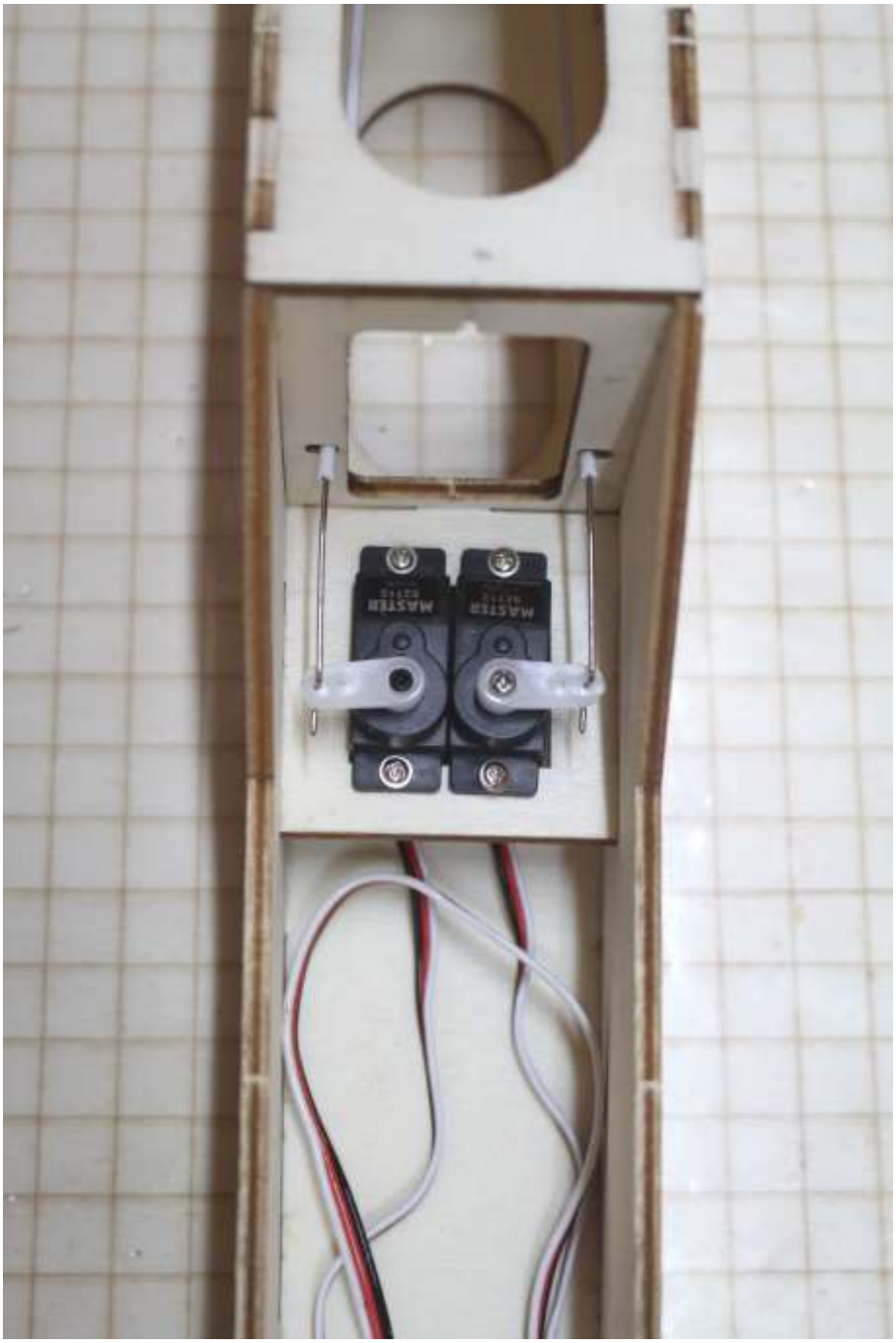
Pull the Bowden cables for the rudder and elevator into the fuselage. Lay without kinks!
Use 5-minute epoxy to glue the guide tubes to the frames and at certain points to the bottom of the fuselage, as well as to the side walls of the rear of the fuselage.



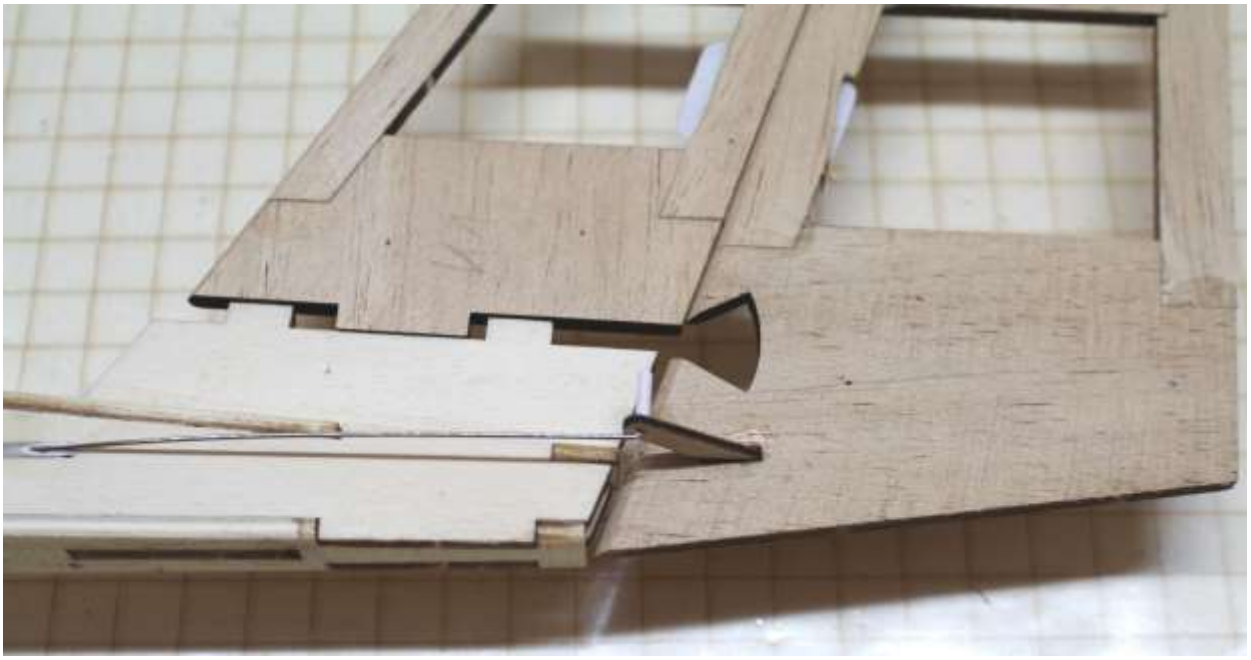
Insert servos into servo board (H6) and secure with screws included with servo.



Bend the linkage wire (steel wire Ø0.8 mm) at one end in a Z-shape and attach it to the servo arm.



Bring the servos into the neutral position using the transmitter/receiver
Thread the linkage wire with the servo lever into the Bowdenzu tube
Put the servo arm on the servo and screw it.



Since the tail units and control horns are only glued after the model has been covered, the photo is intended to illustrate the linkage to the rudders for demonstration purposes. Shown without elevator.
Bend the linkage wire by 90° at the height of the hole in the control horn.
Shorten the linkage wire to a leg length of approx. 10 mm.
Push the linkage wire through the hole in the control horn
Cut off a part approx. 6 mm long from the Bowden cable cover
Push this section onto the leg of the linkage wire and secure with a small (!!) drop of superglue. This prevents the guide wire from accidentally slipping out.

Installation of the electric drive

Push the engine forwards from the cabin cut-out into the fuselage and fasten it to the engine bulkhead (F1) with 4 screws M4×10

Complete the folding propeller and fasten it to the motor shaft.

Secure controller and battery with Velcro.
The final position of the battery is only determined when the center of gravity is set.

After completion of the shell, the model can be covered. We recommend Oracover covering film.

The model should first be completely cleaned of dust residue. Carefully grind off sooted interfaces from laser cutting. For best results, use the **Extron Foil Iron # C9758**. Be sure to use an **Extron protective sheet # X9983** to prevent scratching the film while ironing.

The flight battery can be securely attached to the battery board with **PICHLER Velcro # C5534**. The optimal center of gravity of the model should be adjustable by moving the flight battery. If necessary, additional **ballast # C9830** must be used.

Rudder deflections (recommended)
Rudder = 15mm up and down
Elevator = 6mm up and down

Center of gravity (recommended)
The optimal center of gravity is measured 57mm backwards from the leading edge of the wing.

Before every flight
The operation of model aircraft is subject to different regulations depending on the country. Please contact your state authority for information on the current legal regulations. You may need proof of proficiency and insurance to operate model aircraft. If you are a beginner, please contact a local model making association and ask for support. They will be happy to help you there.

You can get all the information you need from the **German Model Flight Association (DMFV) or the German Aeroclub (DAeC)**. The respective addresses and contacts can be found on the Internet.

first flight
Before each flight, check the model, drive and remote control for functionality. Conduct a range test.

Disclaimer
Our liability is limited to the value of the model kit. Since we cannot monitor the proper construction and operation of the flight model, we assume no liability for consequential damage.

spare Parts
Spare parts are available for the Charisma. Further information at www.pichler-modellbau.de or in the online shop.

Questions, suggestions & technical support
Please send us an email to service@pichler.de

IMPORTANT NOTE

Please check on the Charisma product page in our online shop whether a newer version of these instructions or supplements to them are available.

Building instructions Charisma, version 1.1

Changes and errors excepted