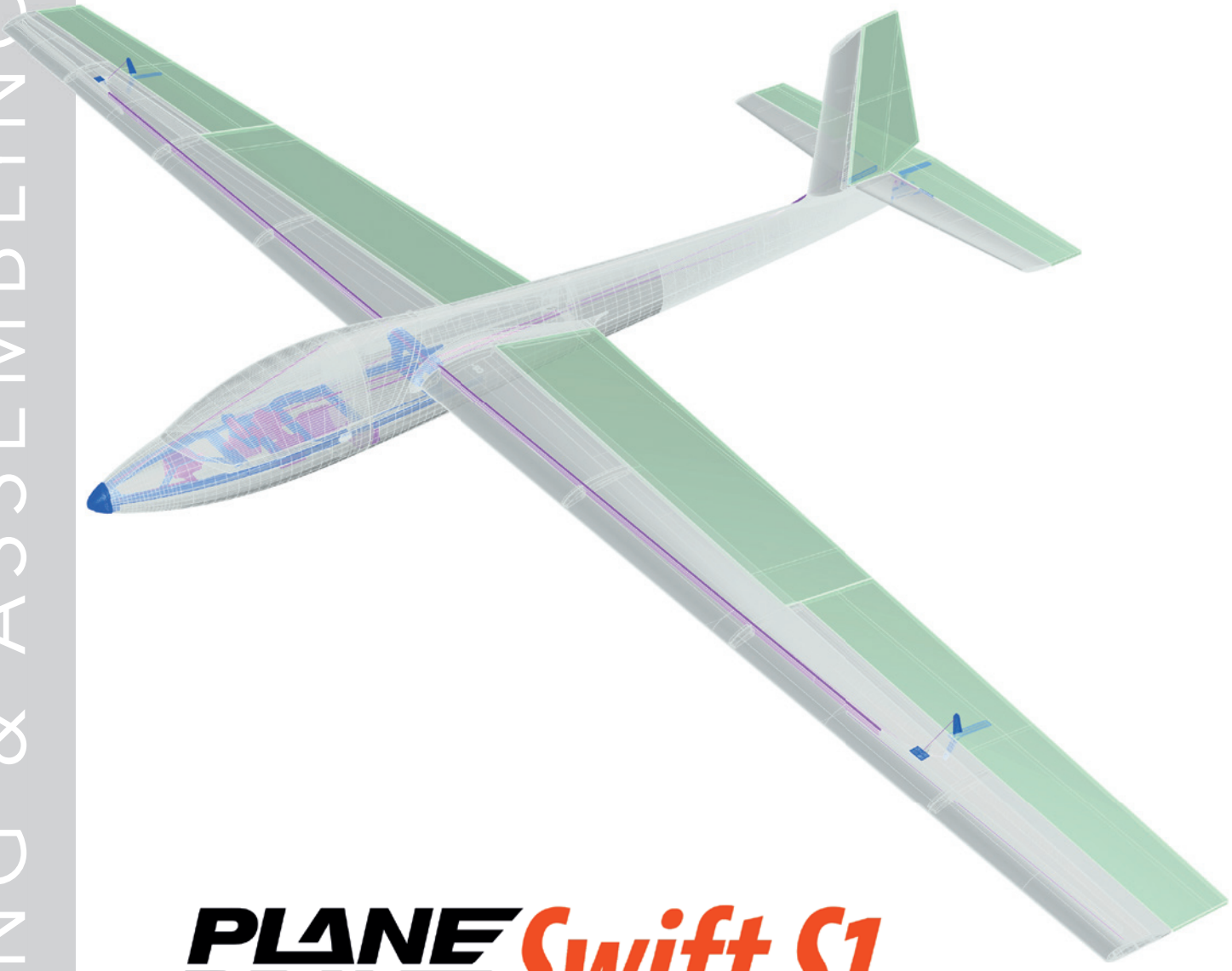
PRINTING & ASSEMBLING MANUAL

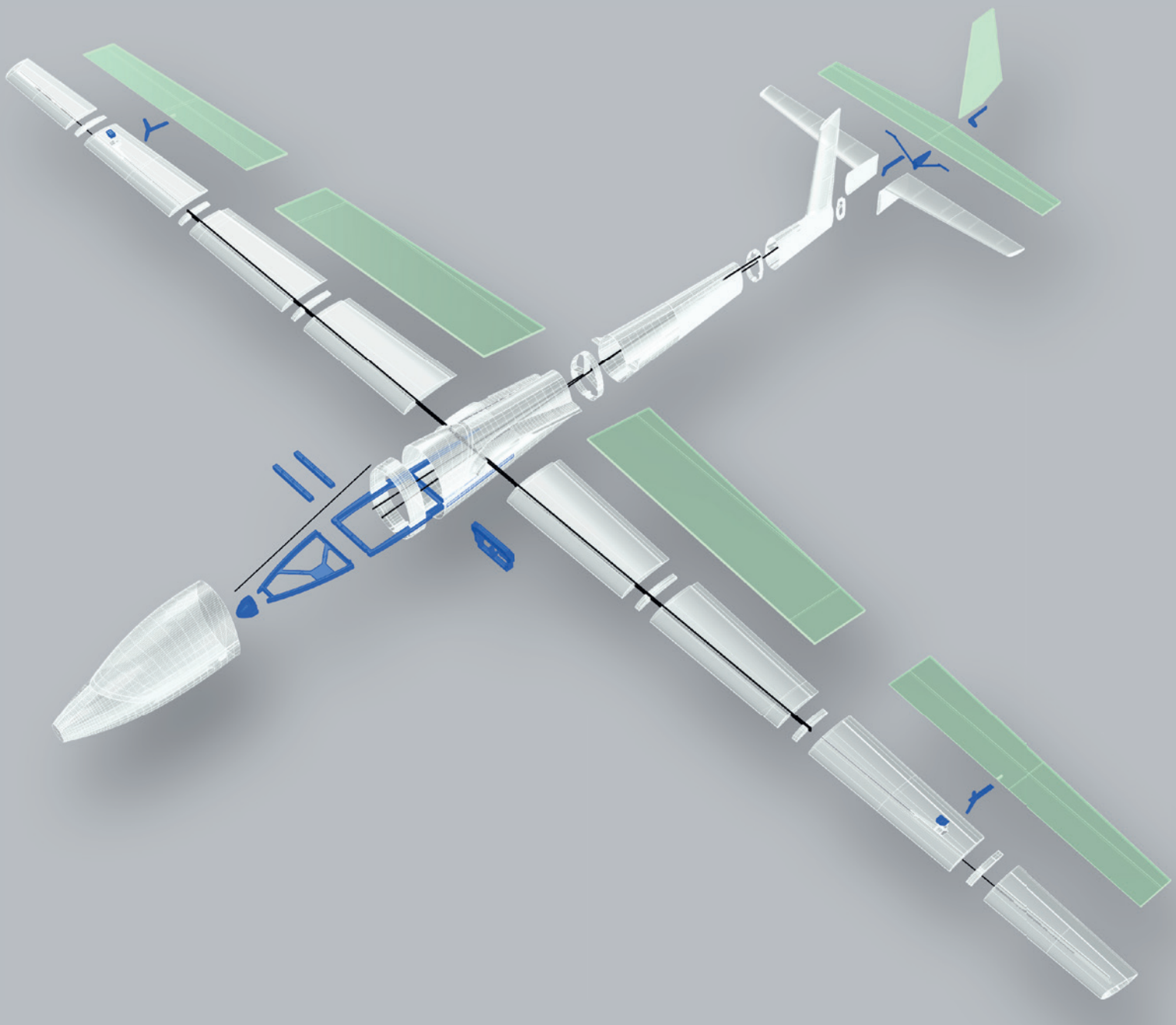
PLANE PRINT



PLANE PRINT Swift S1

Ultra-lightweight indoor and park glider

PLANE PRINT Swift S1



LW-PLA PLA CARBON FOAM

RC Components

RECEIVER **4 Channel** (light indoor receiver)

BATTERY **Micro Receiver battery** (like E-Akku Team Champion 4 Würfel 4.8/150 Graupner SJ – 18 grams)

SERVOS **4 Micro or Nano Servos** (3 without Tow Function)

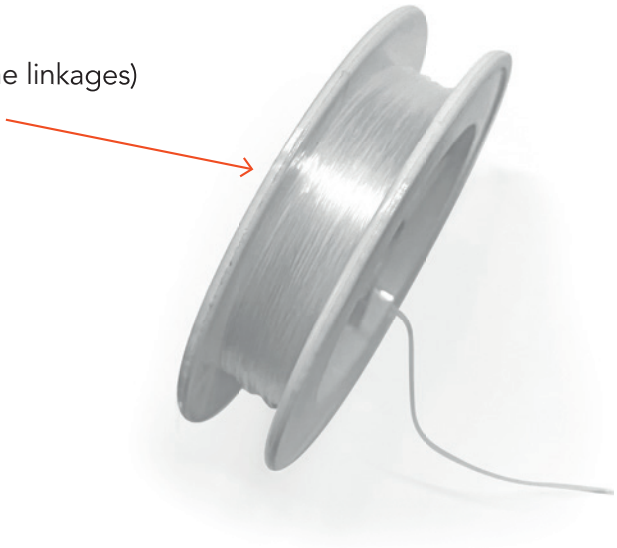
for example:
- Hitec HS 40 Eco Servo 4,8g
- Diamond D47
- PLANET-HOBBY ECO PLUS
- Stemedu Micro 3.7g Servo GH-S37D
- PICCO 8 DIGITAL SERVO

Required accessoires – basic equipment

Links to recommended accessories can be found on
www.planeprint.com/swift (scroll down)

- **LW-PLA (cannot be replaced by PLA!)**, ~100 grams
- **PLA** or **Tough PLA**, ~20 grams

- CA super glue (liquid and medium)
- CA activator
- Foam board 3 mm **uncoated!*** (or Foam like Depron, Styropor or EPP, you can see how much you need on the next page – Such boards are also available separately in model shops)
- UHU POR glue (or another glue suitable for Depron)
- Carbon rod Ø1*1000mm, 3 pieces
- Carbon fiber strip (flat profile) 1*5*1000mm, 1 piece
- a few short pieces of thin steel wire, approx. Ø0.6 mm (for the linkages)
- thin smooth nylon silk Ø approx. 0.2 to 0.3 mm (Fishing line)
- Adhesive tape
- Self adhesive velcro tape

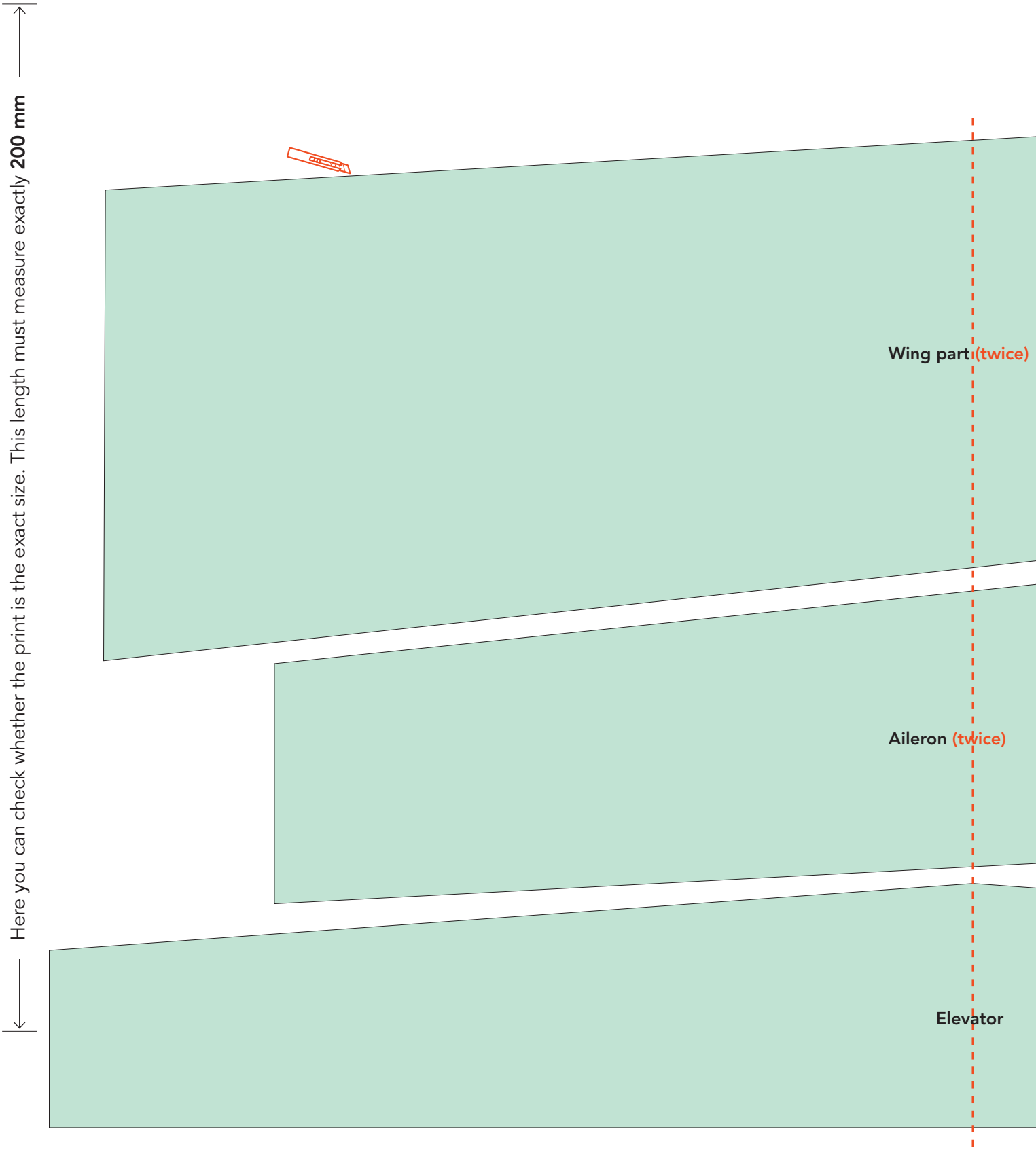


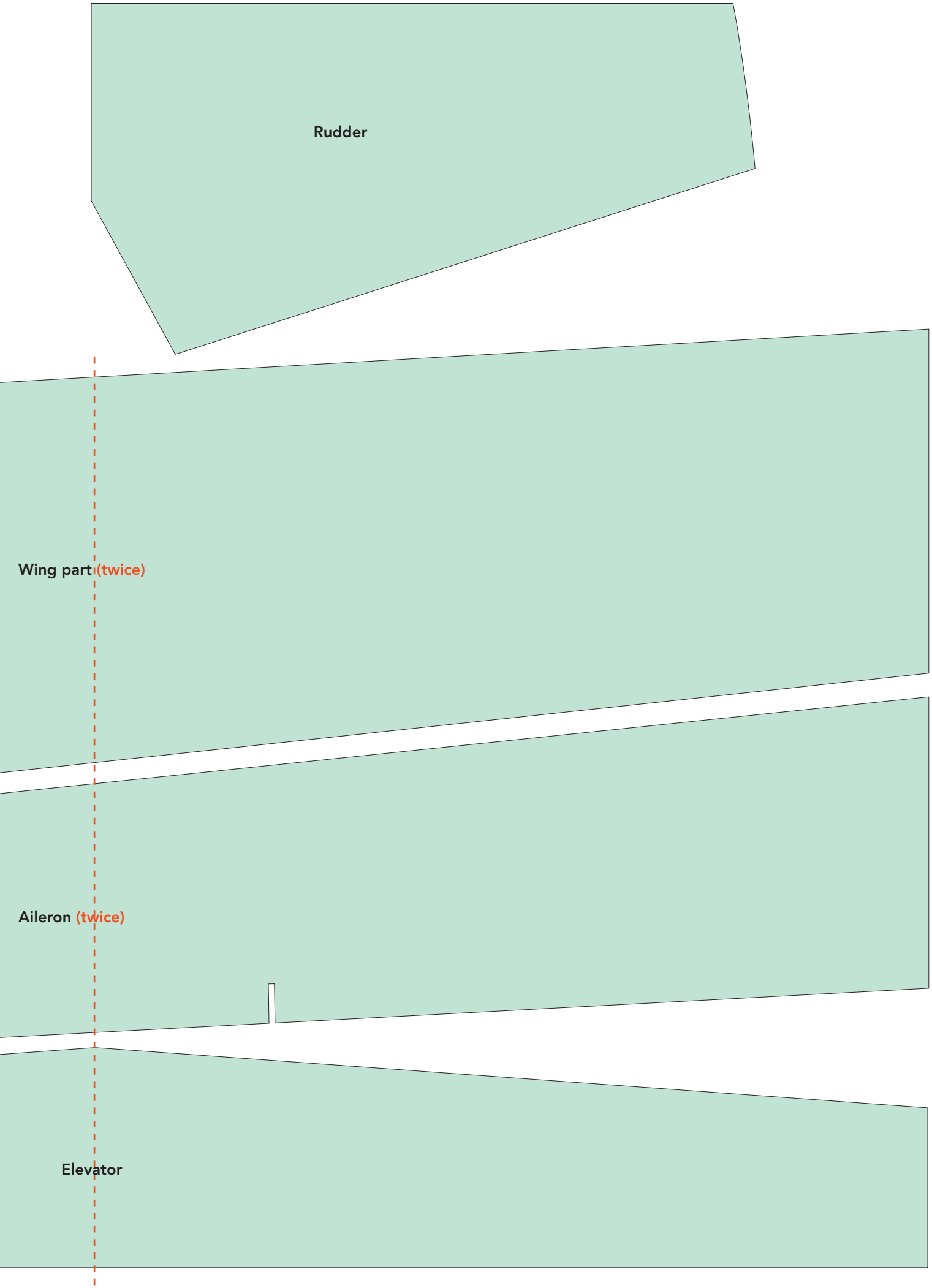
* These parts cannot be printed for weight reasons, LW PLA is much heavier than foam.

Cutting template for the Depron parts

Print out these two pages on A4 paper, cut them along the red dotted line and tape the pages together exactly. Then cut out the templates for the wing, ailerons, elevator and rudder. Fix them to the Depron board and cut **two pieces from each (aileron and wing) and one rudder and elevator**.

IMPORTANT: the print must be set to 100% page size, so that the size fits exactly!




Rudder
Wing part (twice)
Aileron (twice)
Elevator

The development of a complex, airworthy RC flight model to express on any standard 3D printer is a very extensive process. **Therefore, we appeal to your fairness not to forward the STL data you have acquired to third parties.**

Thank you for your understanding and have fun with your PLANEPRINT MODEL!

Printing the parts – Printing profiles

This manual is constantly being improved and supplemented, we recommend downloading the **latest version** from our website **before building**.

To print all **PLANEPRINT** models **you need to set some basic profiles in Cura** (If you use another slicer, please set the same parameters).

You can find the description at www.planeprint.com/print

For this model you need the following profile:

PROFILE P2_Hollowbody PLA or Tough PLA

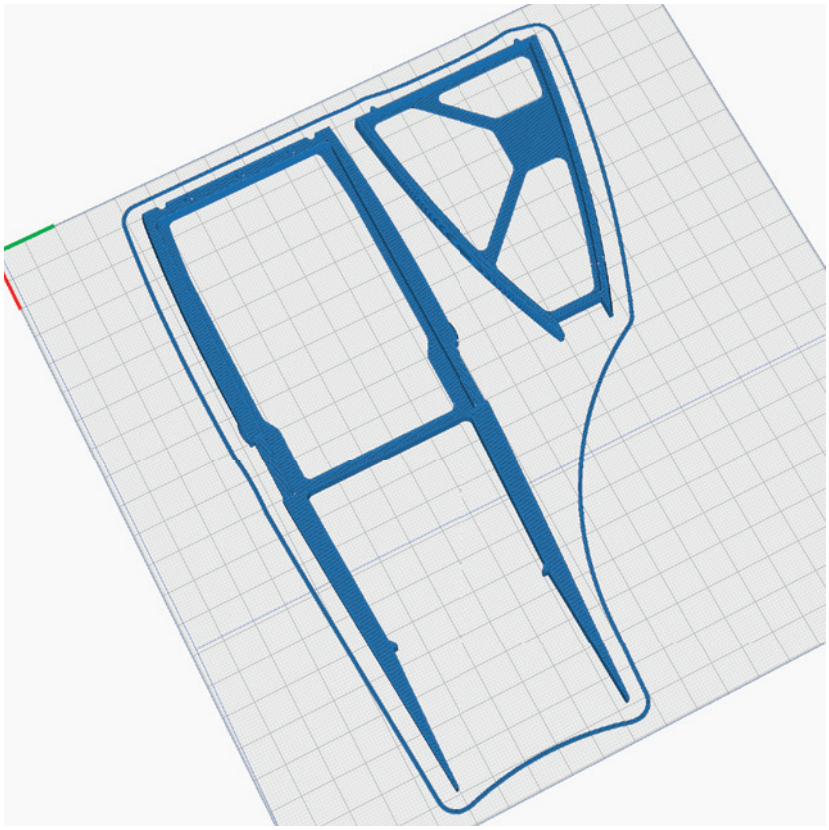
The information about the basic settings you can find on our website at PRINT.
Please note the additional settings for the individual parts!

P2_Frame–S1.stl

MATERIAL PLA, Weight: ~ 9 g

ADDITIONAL SETTINGS

None required

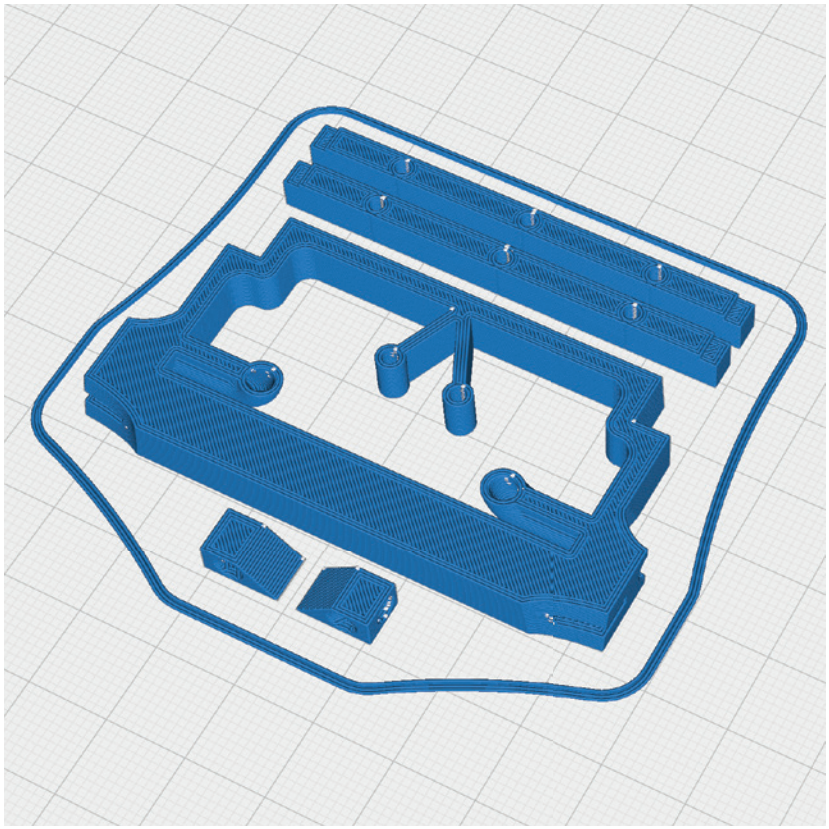


P2_Parts 1–S1.stl

MATERIAL PLA, Weight: ~ 7 g

ADDITIONAL SETTINGS

None required



PROFILE P2_Hollowbody PLA or Tough PLA

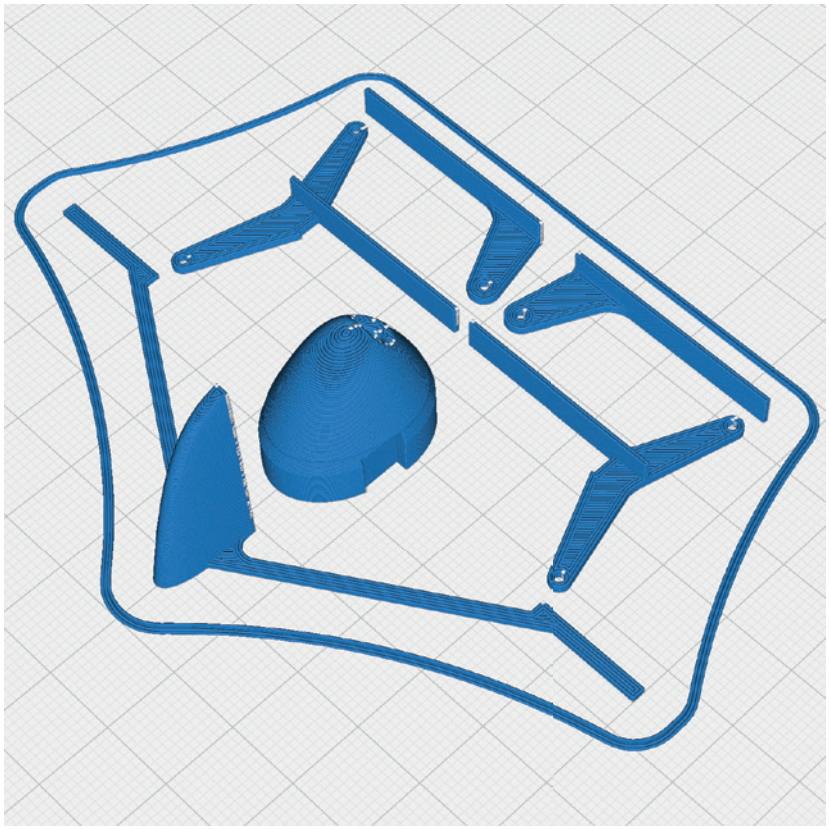
The information about the basic settings you can find on our website at PRINT.
Please note the additional settings for the individual parts!

P2_Parts 2–S1.stl

MATERIAL PLA, Weight: ~ 4 g

ADDITIONAL SETTINGS

None required

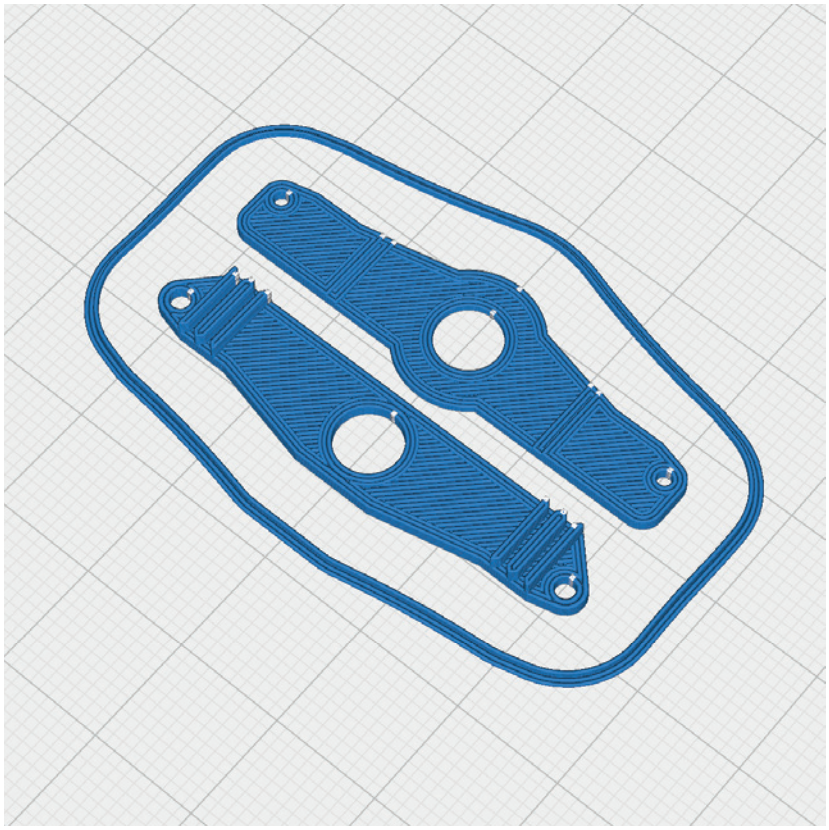


P2_Servo lever.stl

MATERIAL PLA, Weight: ~ 1 g

ADDITIONAL SETTINGS

None required



SPIRALIZE/VASE MODE – Light-Weight LW-PLA!

The following parts must be sliced with the Funktion **Spiralize Outer Contour** (Cura) or **Spiral Vase** (Prusa Slicer). For these parts, only the outer wall (1 line/perimeter) is printed without Z-seam, no top and bottom layers.
It is essential to print these parts with LW-PLA!

Basic settings for LW-PLA: Please follow the instructions in our **WINGTEST AND CALIBRATION TOOL** on our website for correct adjustment!

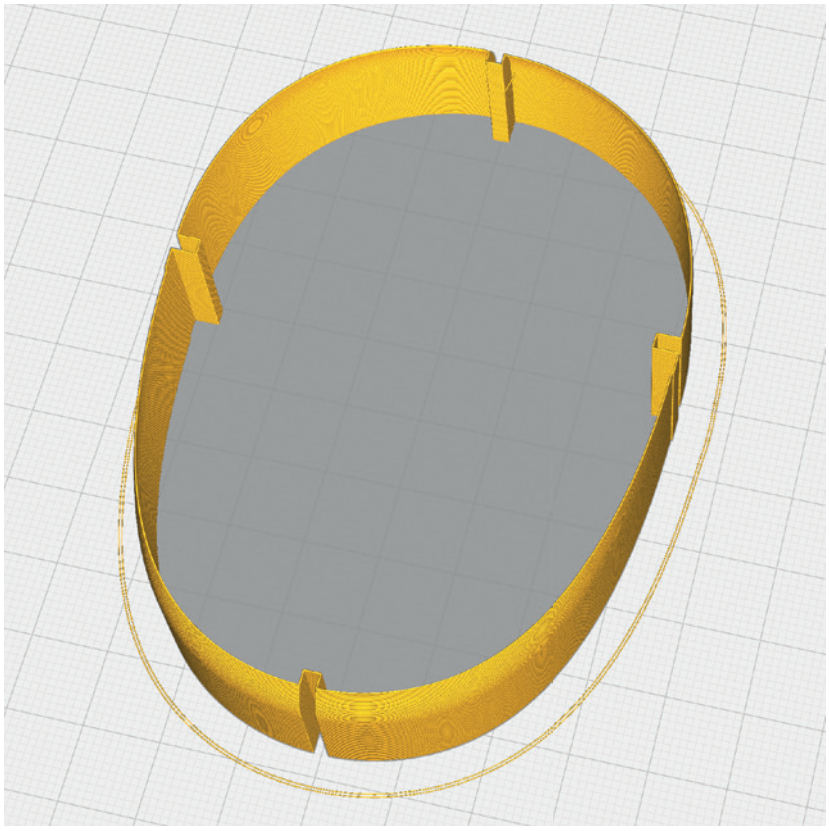
V_C1-2–S1.stl

MATERIAL **LW-PLA**, ~ 1 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



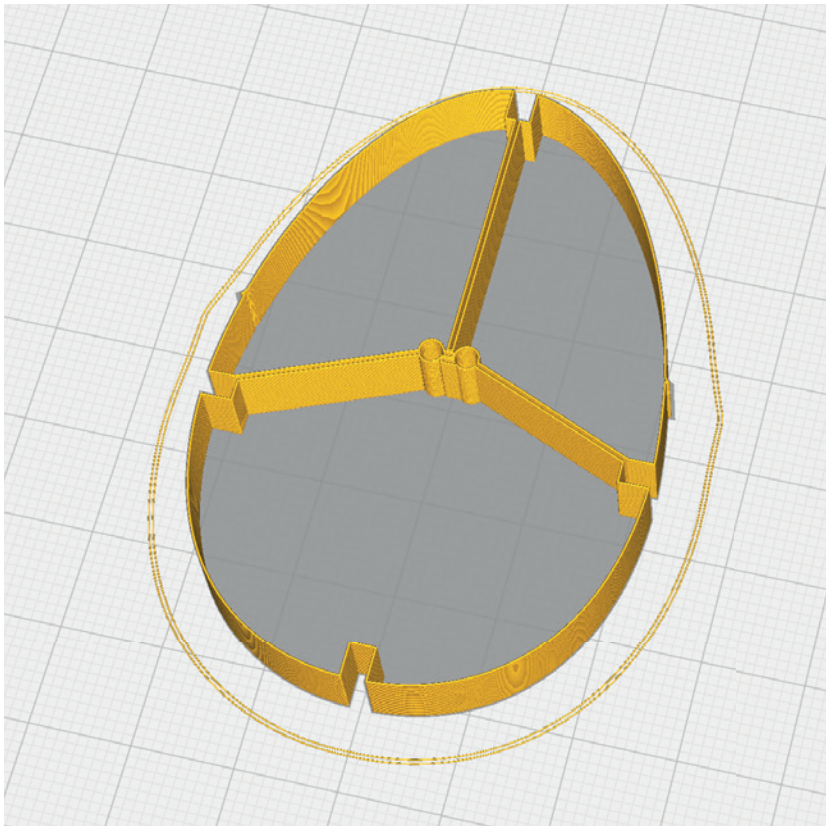
V_C2-3–S1.stl

MATERIAL **LW-PLA**, ~ 1 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



SPIRALIZE/VASE MODE – Light-Weight LW-PLA!

The following parts must be sliced with the Funktion **Spiralize Outer Contour** (Cura) or **Spiral Vase** (Prusa Slicer). For these parts, only the outer wall (1 line/perimeter) is printed without Z-seam, no top and bottom layers.
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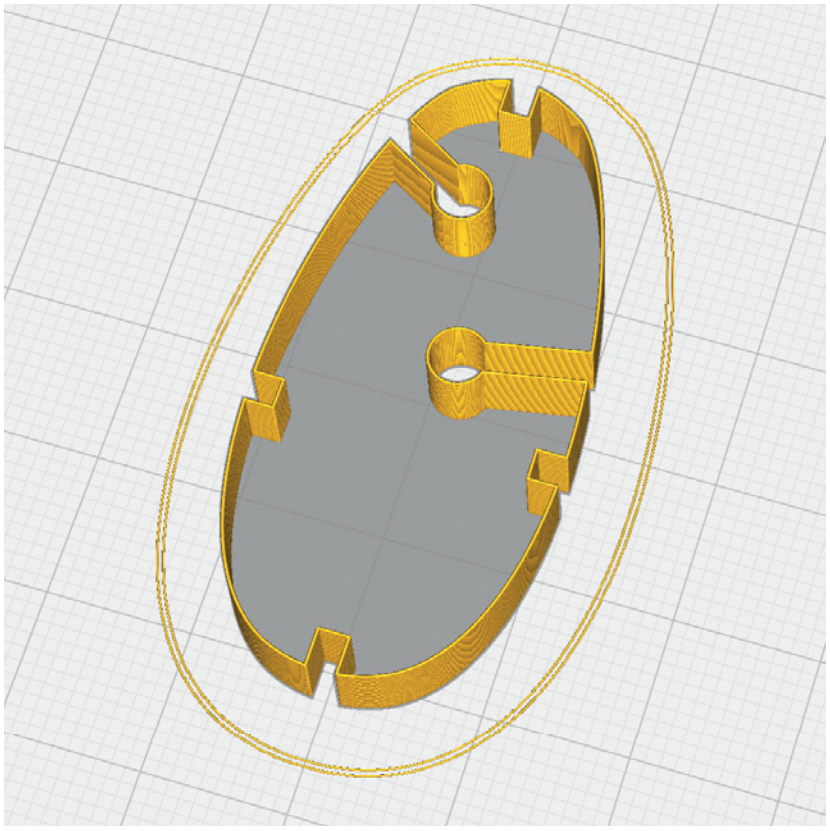
V_C3-4–S1.stl

MATERIAL **LW-PLA**, ~ 1 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



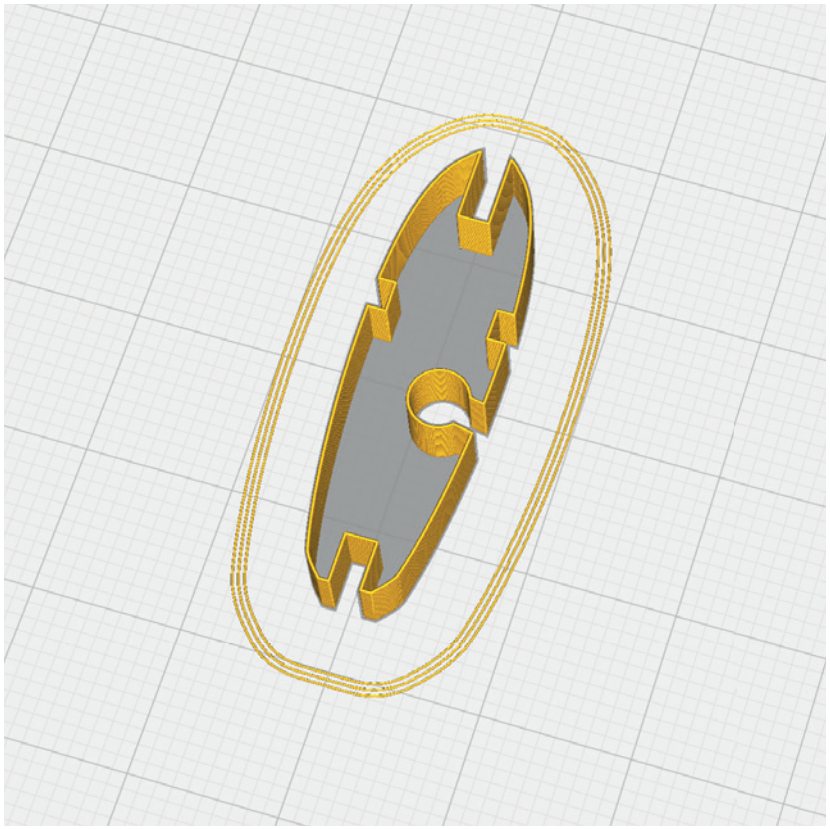
V_C4-5–S1.stl

MATERIAL **LW-PLA**, ~ 1 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



SPIRALIZE/VASE MODE – Light-Weight LW-PLA!

The following parts must be sliced with the Funktion **Spiralize Outer Contour** (Cura) or **Spiral Vase** (Prusa Slicer). For these parts, only the outer wall (1 line/perimeter) is printed without Z-seam, no top and bottom layers.
It is essential to print these parts with LW-PLA!

Basic settings for LW-PLA: Please follow the instructions in our **WINGTEST AND CALIBRATION TOOL** on our website for correct adjustment!

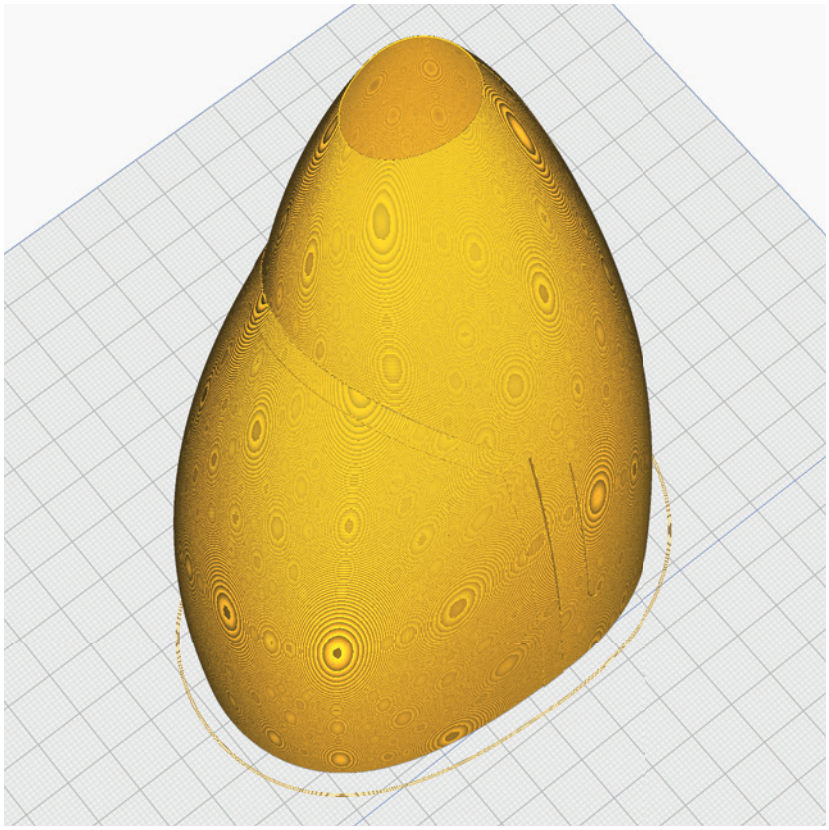
V_Fuselage 1–S1.stl

MATERIAL **LW-PLA**, ~ 10 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



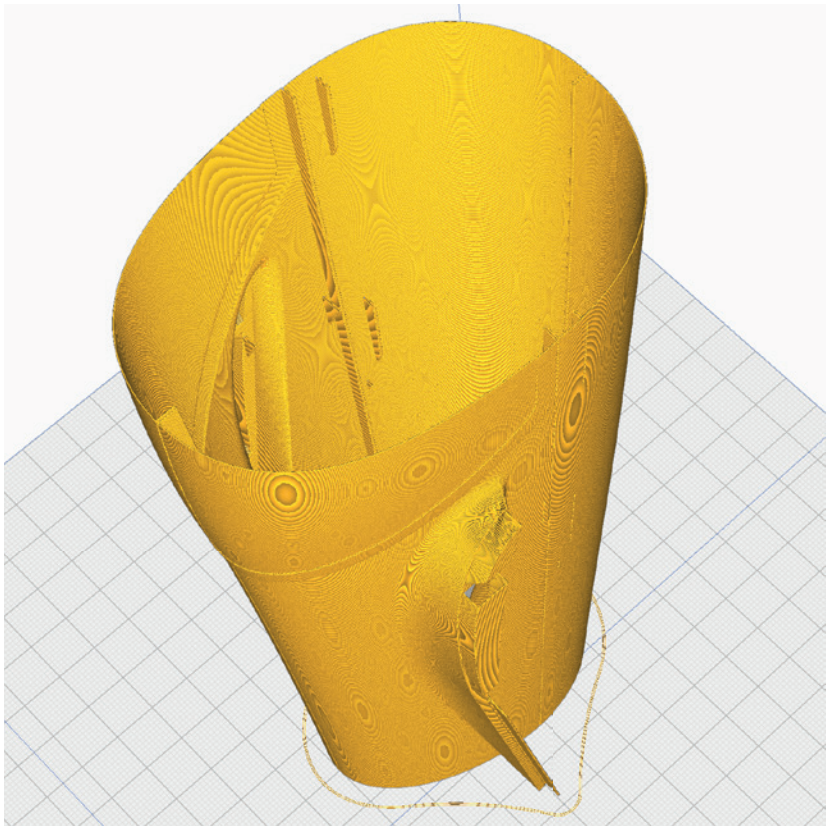
V_Fuselage 2–S1.stl

MATERIAL **LW-PLA**, ~ 13 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



SPIRALIZE/VASE MODE – Light-Weight LW-PLA!

The following parts must be sliced with the Funktion **Spiralize Outer Contour** (Cura) or **Spiral Vase** (Prusa Slicer). For these parts, only the outer wall (1 line/perimeter) is printed without Z-seam, no top and bottom layers.
It is essential to print these parts with LW-PLA!

Basic settings for LW-PLA: Please follow the instructions in our **WINGTEST AND CALIBRATION TOOL** on our website for correct adjustment!

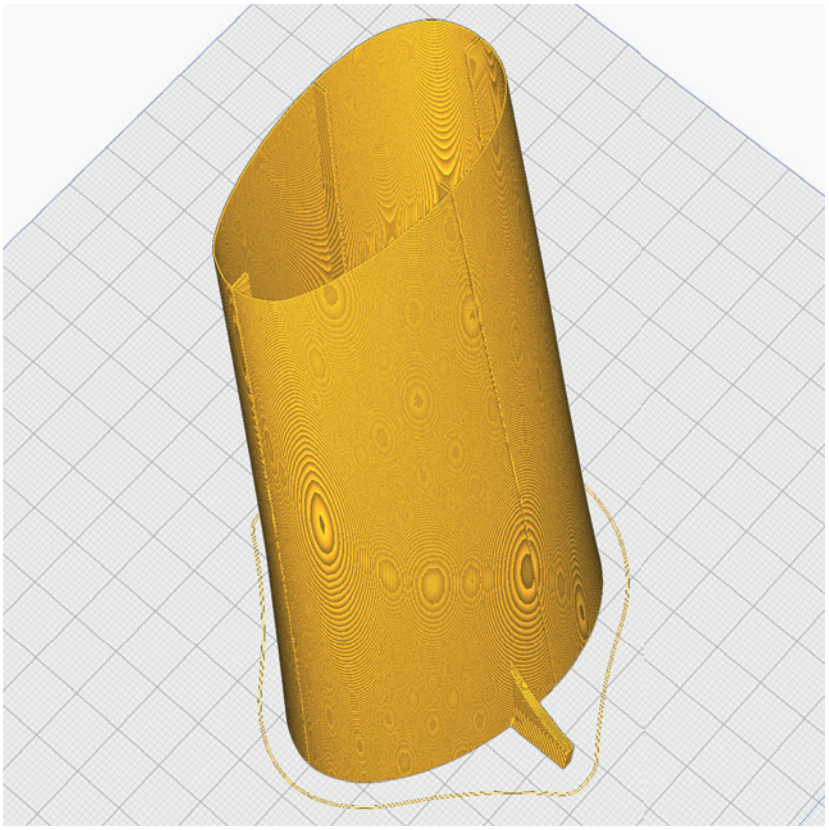
V_Fuselage 3–S1.stl

MATERIAL **LW-PLA**, ~ 8 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



V_Fuselage 4–S1.stl

MATERIAL **LW-PLA**, ~ 6 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA

SPIRALIZE/VASE MODE – Light-Weight LW-PLA!

The following parts must be sliced with the Funktion **Spiralize Outer Contour** (Cura) or **Spiral Vase** (Prusa Slicer). For these parts, only the outer wall (1 line/perimeter) is printed without Z-seam, no top and bottom layers.
It is essential to print these parts with LW-PLA!

Basic settings for LW-PLA: Please follow the instructions in our **WINGTEST AND CALIBRATION TOOL** on our website for correct adjustment!

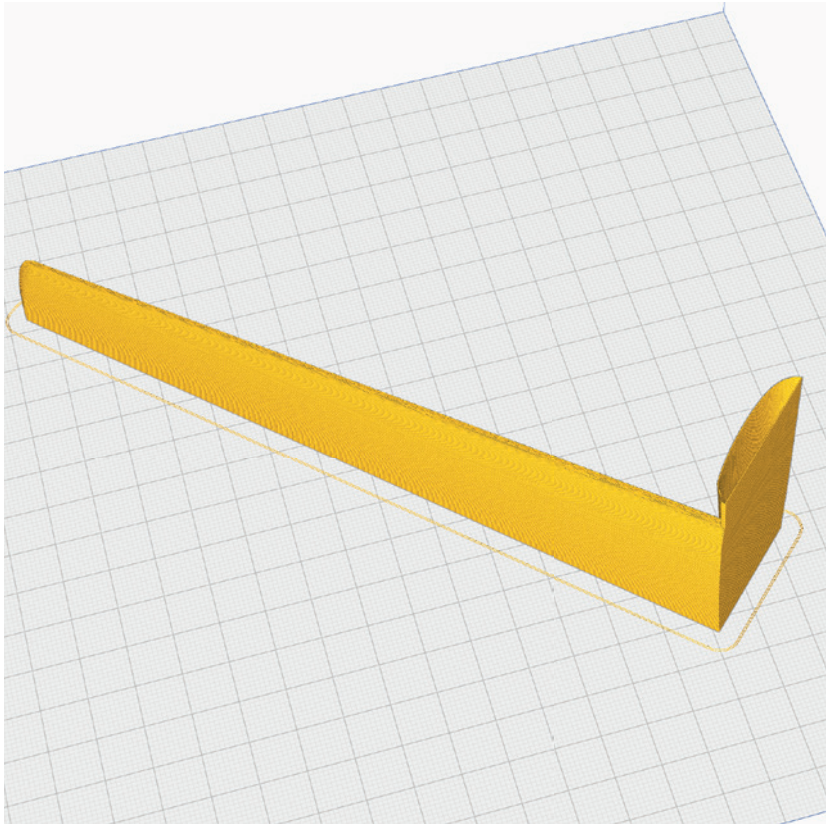
V_Fuselage 5 L–S1.stl and V_Fuselage 5 R–S1.stl

MATERIAL **LW-PLA**, ~ 4 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



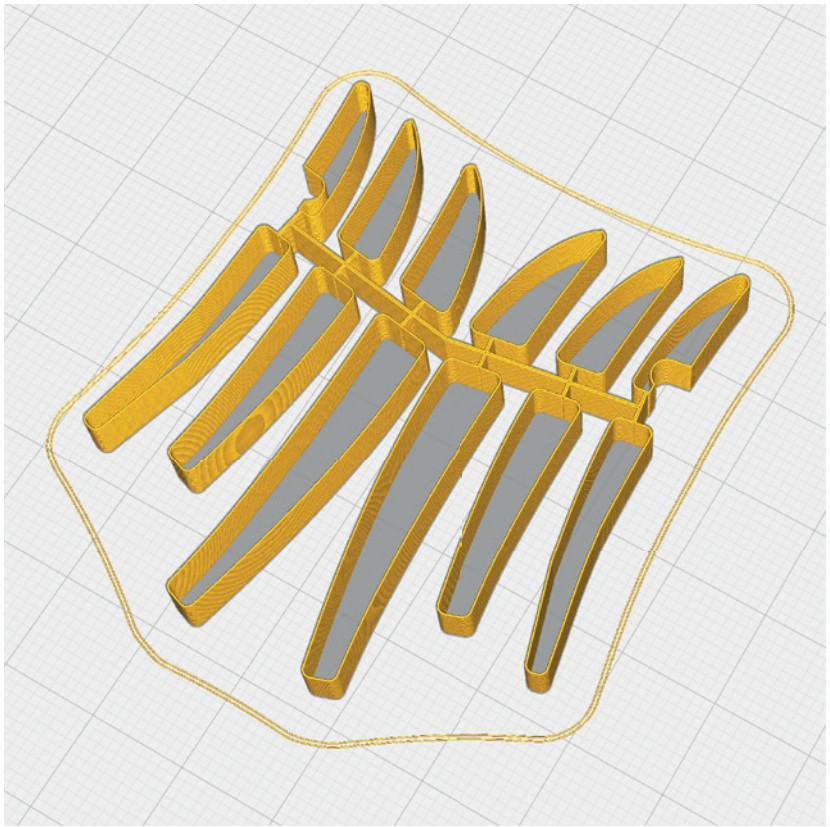
Wingconnect–S1.stl

MATERIAL **LW-PLA**, ~ 1 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



SPIRALIZE/VASE MODE – Light-Weight LW-PLA!

The following parts must be sliced with the Funktion **Spiralize Outer Contour** (Cura) or **Spiral Vase** (Prusa Slicer). For these parts, only the outer wall (1 line/perimeter) is printed without Z-seam, no top and bottom layers.
It is essential to print these parts with LW-PLA!

Basic settings for LW-PLA: Please follow the instructions in our **WINGTEST AND CALIBRATION TOOL** on our website for correct adjustment!

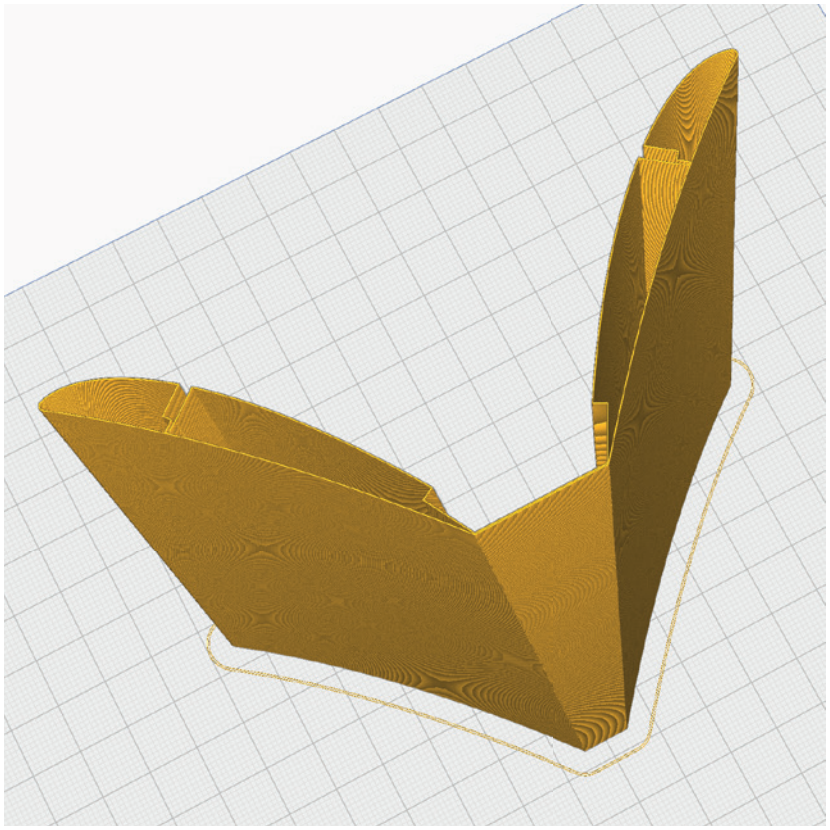
V_Wings 1–S1.stl

MATERIAL **LW-PLA**, ~ 15 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



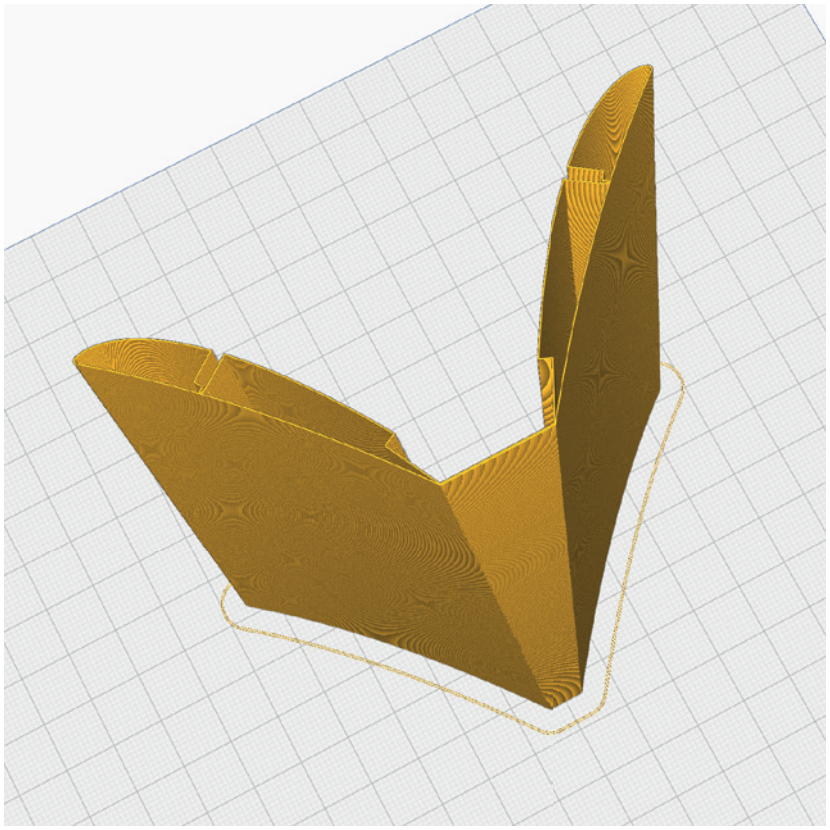
V_Wings 2–S1.stl

MATERIAL **LW-PLA**, ~ 12 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



SPIRALIZE/VASE MODE – Light-Weight LW-PLA!

The following parts must be sliced with the Funktion **Spiralize Outer Contour** (Cura) or **Spiral Vase** (Prusa Slicer). For these parts, only the outer wall (1 line/perimeter) is printed without Z-seam, no top and bottom layers.
It is essential to print these parts with LW-PLA!

Basic settings for LW-PLA: Please follow the instructions in our **WINGTEST AND CALIBRATION TOOL** on our website for correct adjustment!

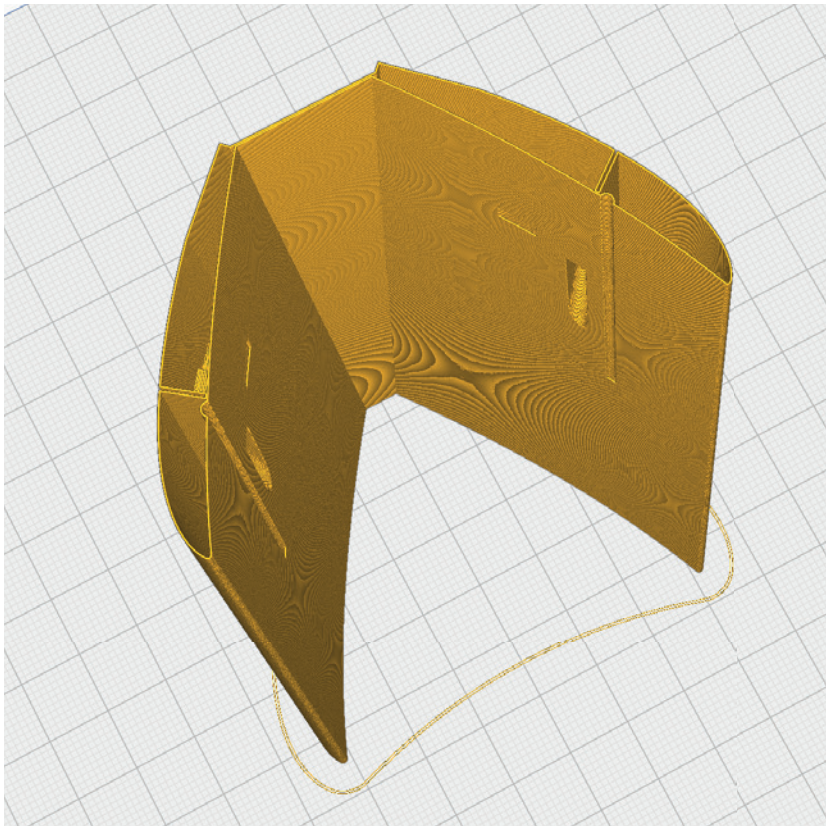
V_Wings 3–S1.stl

MATERIAL **LW-PLA**, ~ 11 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

- Flow, Temp and Speed suitable for LW PLA



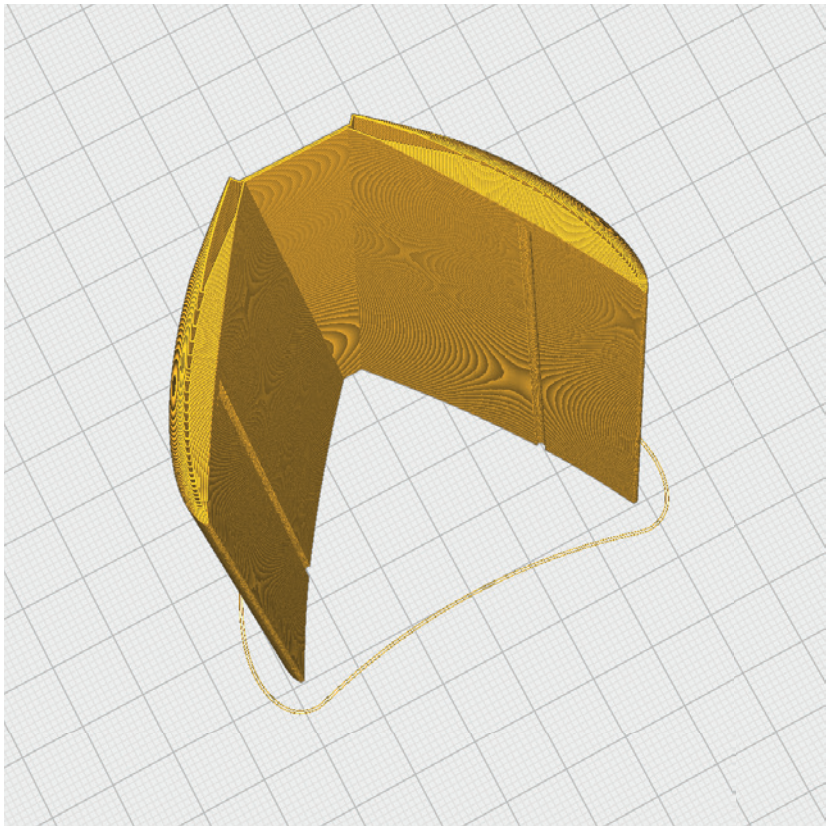
V_Wings 4–S1.stl

MATERIAL **LW-PLA**, ~ 8 g*
*Weighed (approximate guideline)

SETTINGS

- Layer Height: 0.25 mm
- Wall Line Count/Perimeters: 1
- Spiralize Outer Contour (Cura)/ Spiral Vase (Prusa)
- Top and Bottom Layers: 0

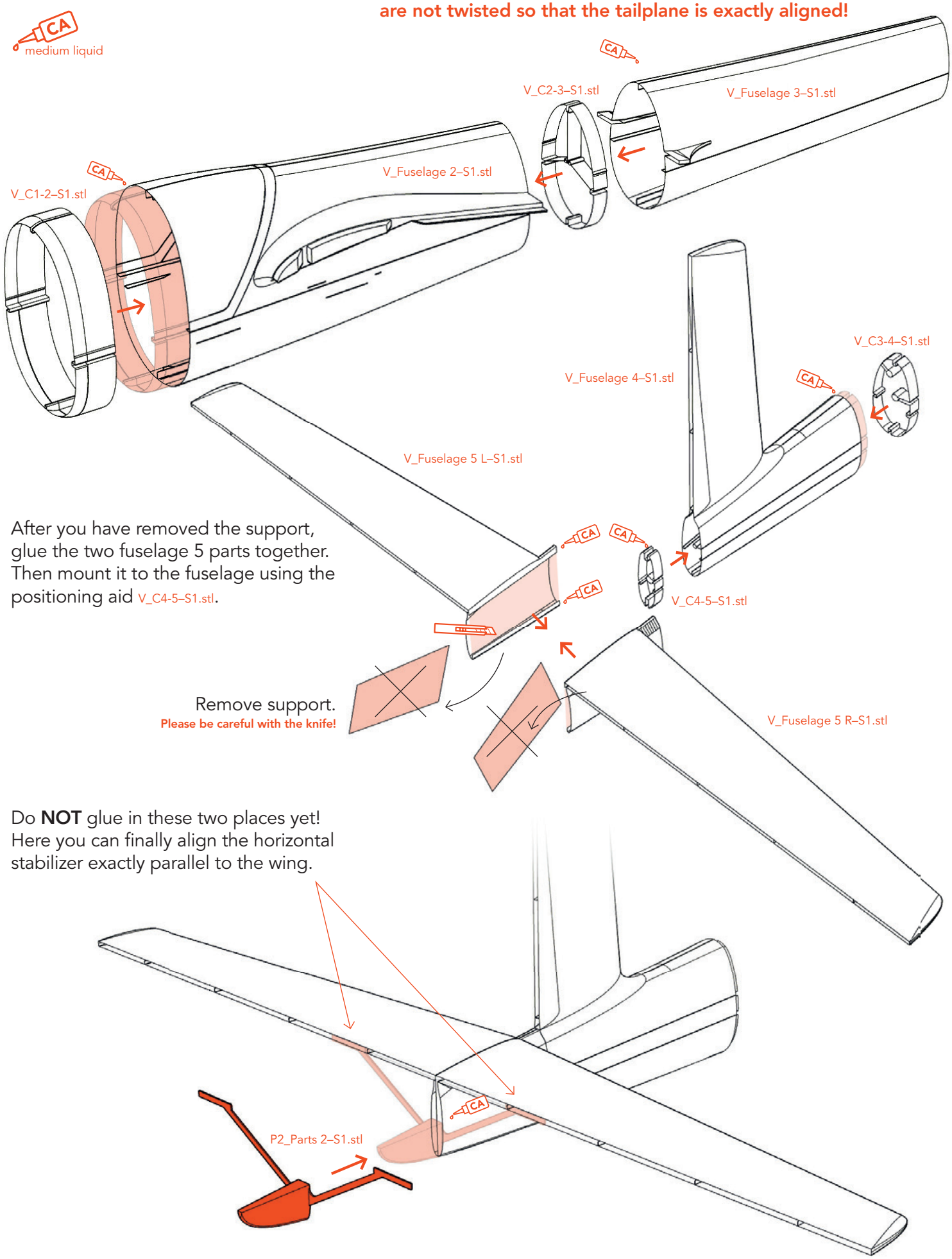
- Flow, Temp and Speed suitable for LW PLA



Fuselage assembly

First glue the positioning aids to one fuselage part, then stick the second one on top. **Make sure that the parts are not twisted so that the tailplane is exactly aligned!**

CA
medium liquid



After you have removed the support, glue the two fuselage 5 parts together. Then mount it to the fuselage using the positioning aid V_C4-5–S1.stl.

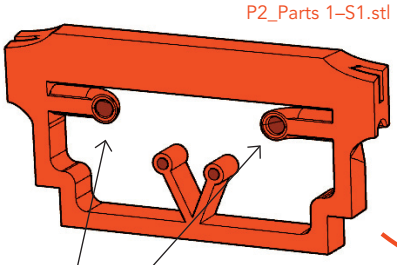
Remove support.
Please be careful with the knife!

Do **NOT** glue in these two places yet! Here you can finally align the horizontal stabilizer exactly parallel to the wing.

Fuselage assembly

CA
medium liquid

P2_Parts 1–S1.stl

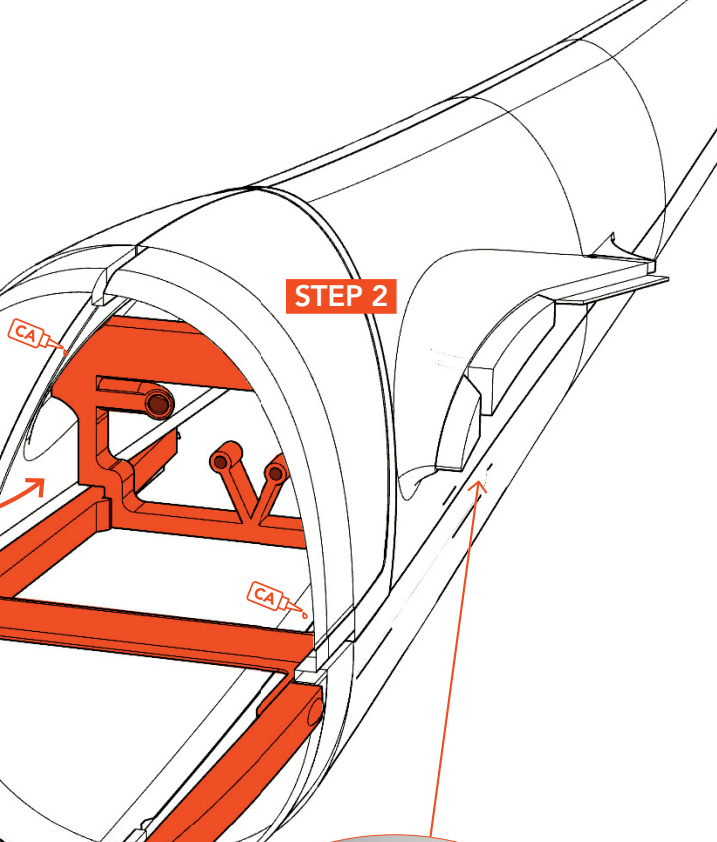


Insert these parts into the fuselage exactly as shown in the picture. Make sure that the **openings** are facing forward!

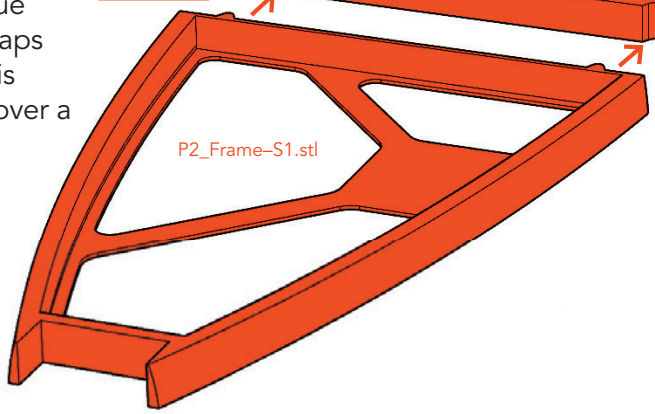
There are small bars in the fuselage that serve as a positioning aid.

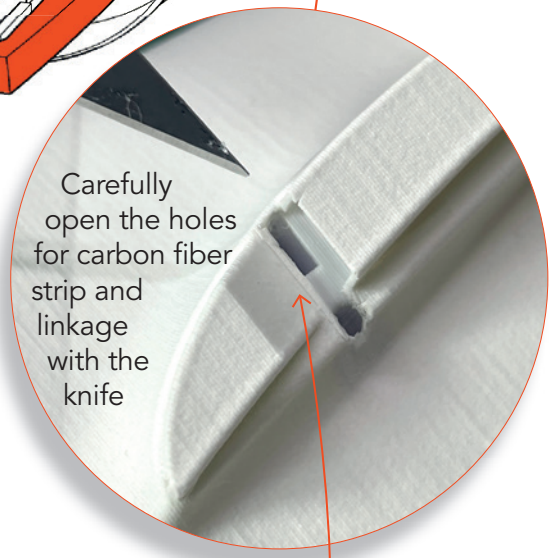
When all the parts are correctly positioned, allow thin CA glue to run into the gaps until everything is well connected over a large area.

STEP 2

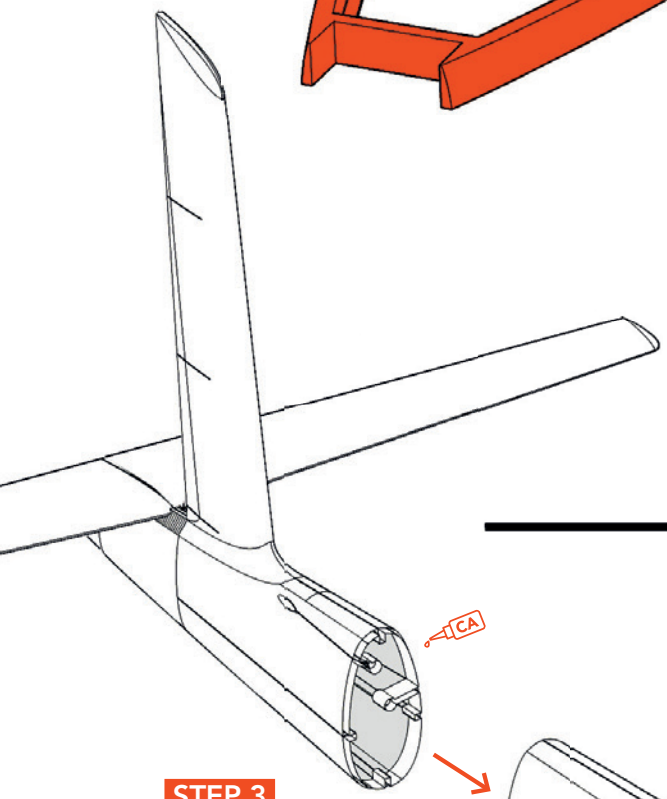


STEP 1

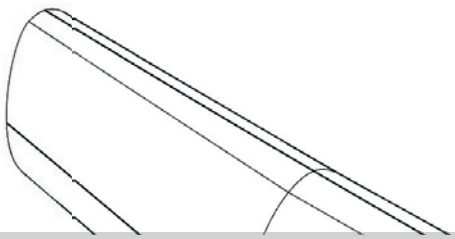




Carefully open the holes for carbon fiber strip and linkage with the knife

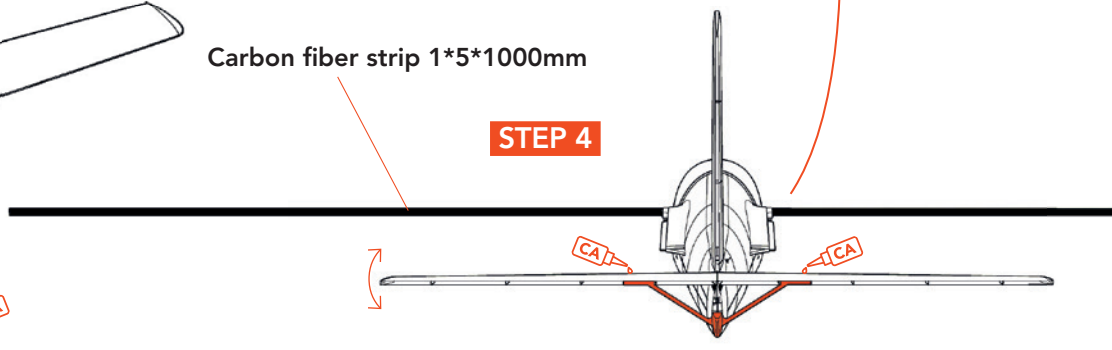


STEP 3



Carbon fiber strip 1*5*1000mm

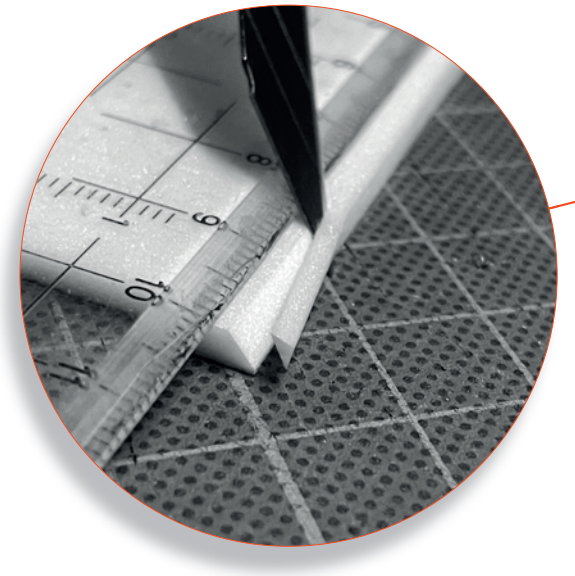
STEP 4

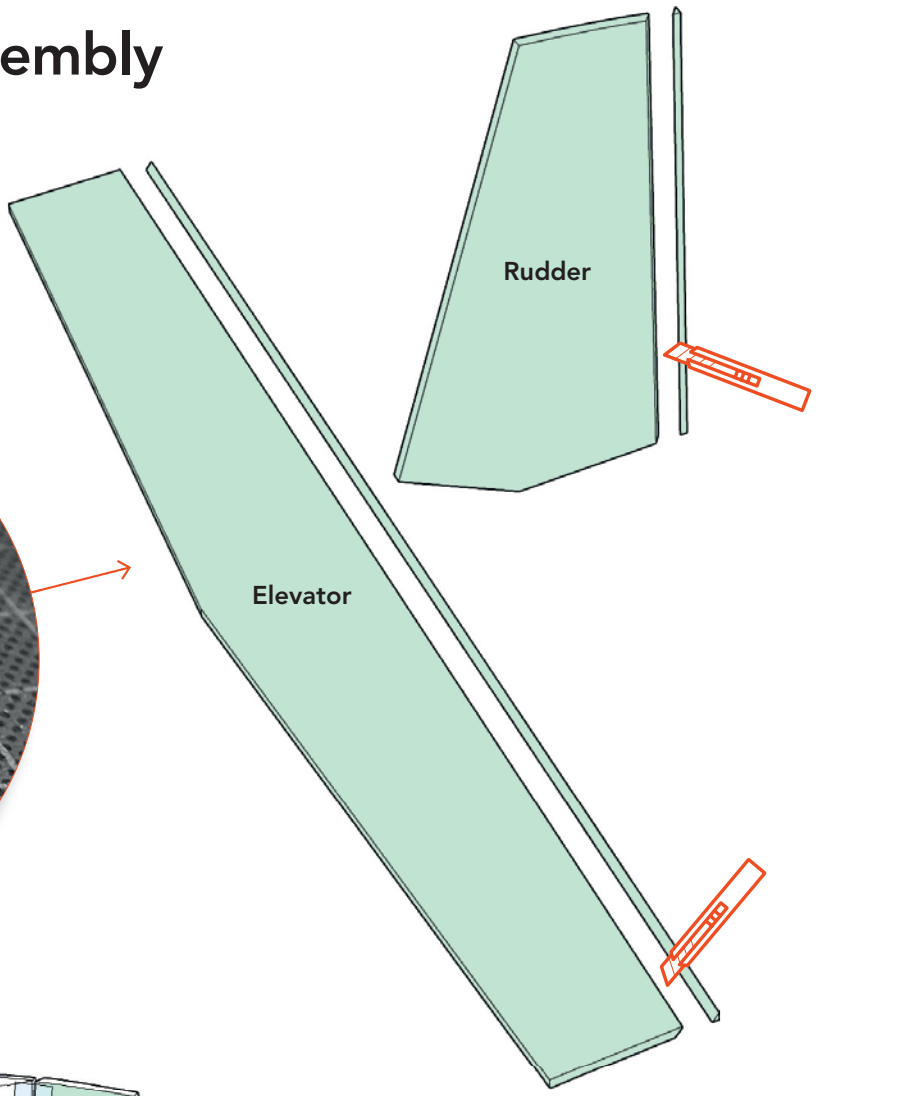


Insert the carbon fiber strip through fuselage 2, align the horizontal stabilizer parallel to it and glue the two struts in place.

Elevator/Rudder assembly

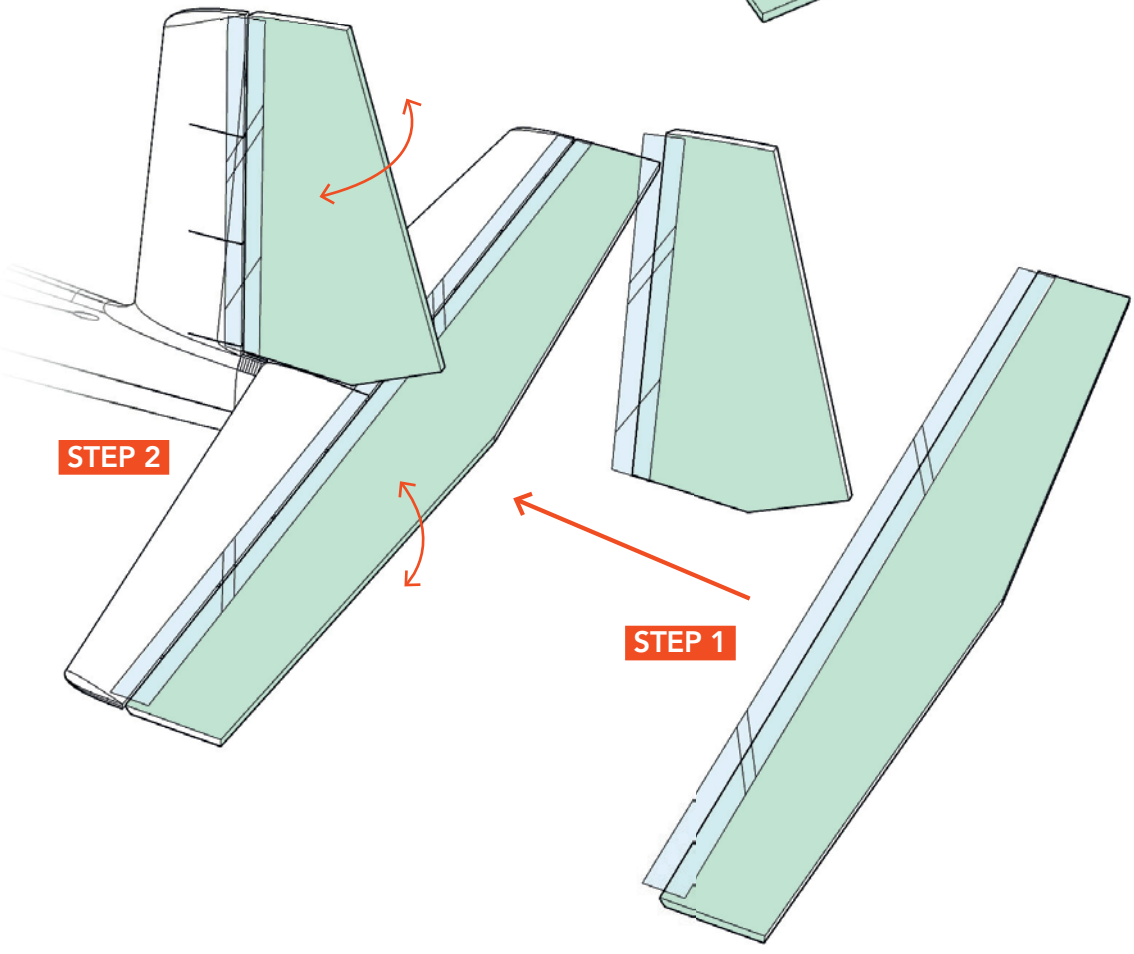
Cut these two edges at an angle of about 40°. You can also use sandpaper for this.





The hinges are simply made with thin adhesive tape. To ensure that the tape holds well, you should coat the adhesive area with UHU POR beforehand. When the glue is dry, first stick the tape to the elevator/ rudder, then attach it to the fuselage.

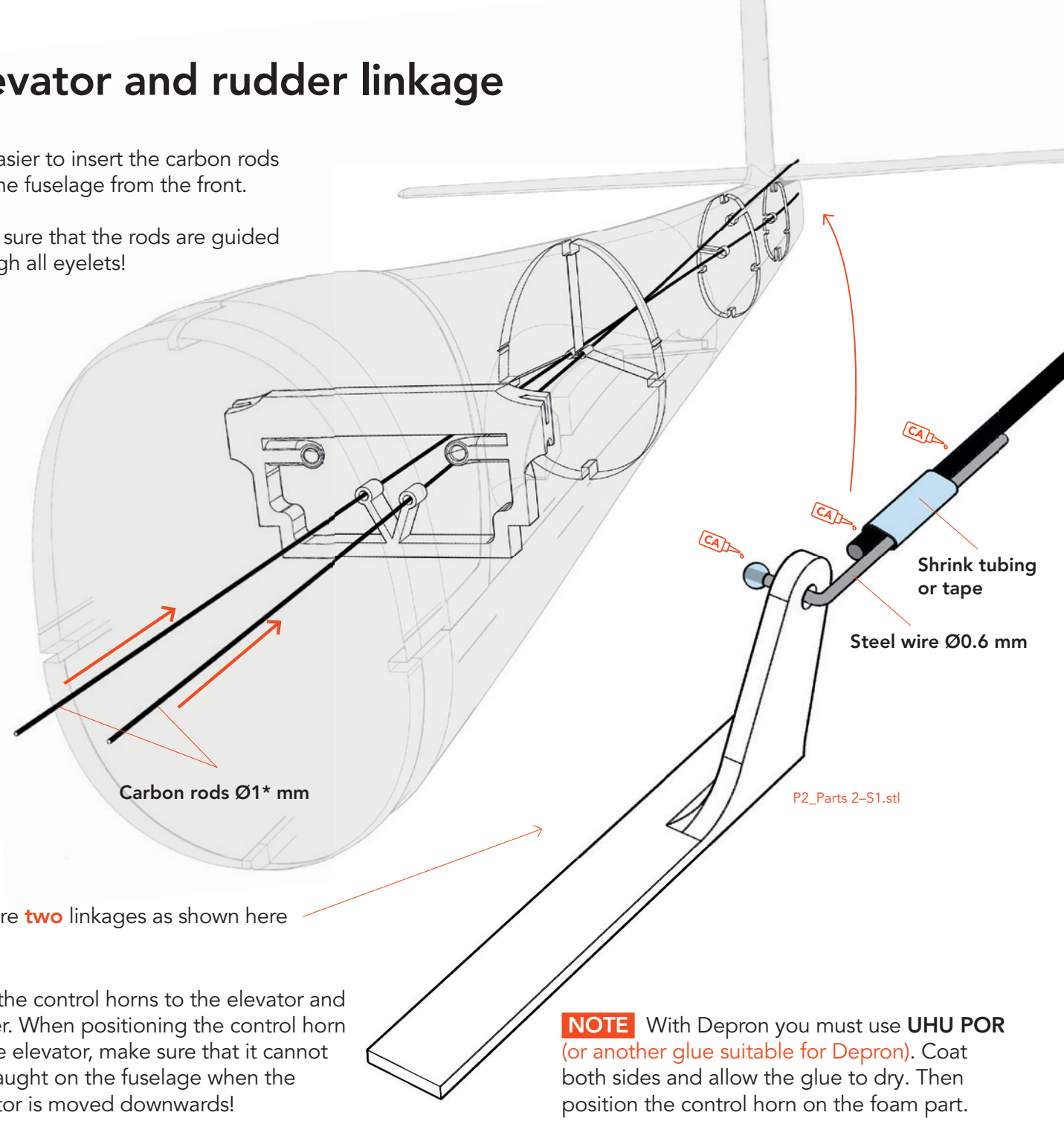
Leave a small gap so that the elevator/rudder can be moved easily.



Elevator and rudder linkage

It is easier to insert the carbon rods into the fuselage from the front.

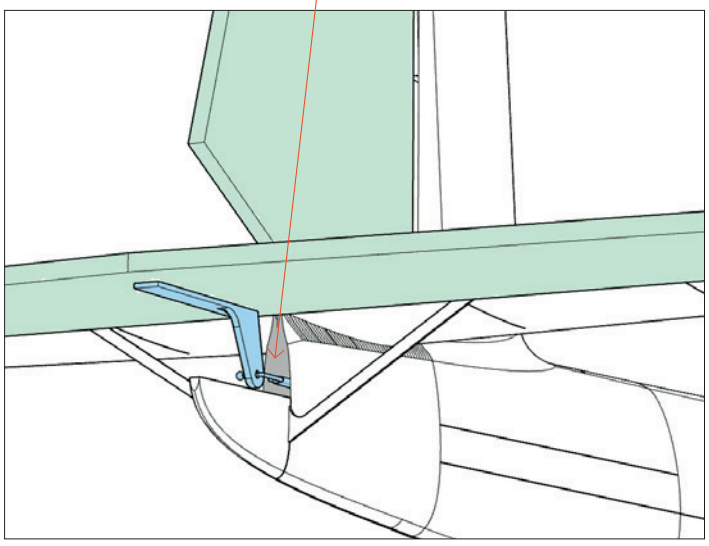
Make sure that the rods are guided through all eyelets!

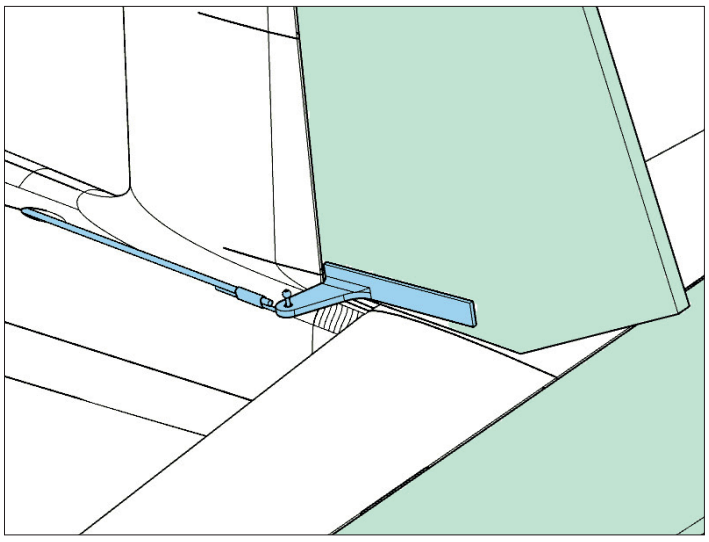


Prepare **two** linkages as shown here

Glue the control horns to the elevator and rudder. When positioning the control horn on the elevator, make sure that it cannot get caught on the fuselage when the elevator is moved downwards!

NOTE With Depron you must use **UHU POR** (or another glue suitable for Depron). Coat both sides and allow the glue to dry. Then position the control horn on the foam part.



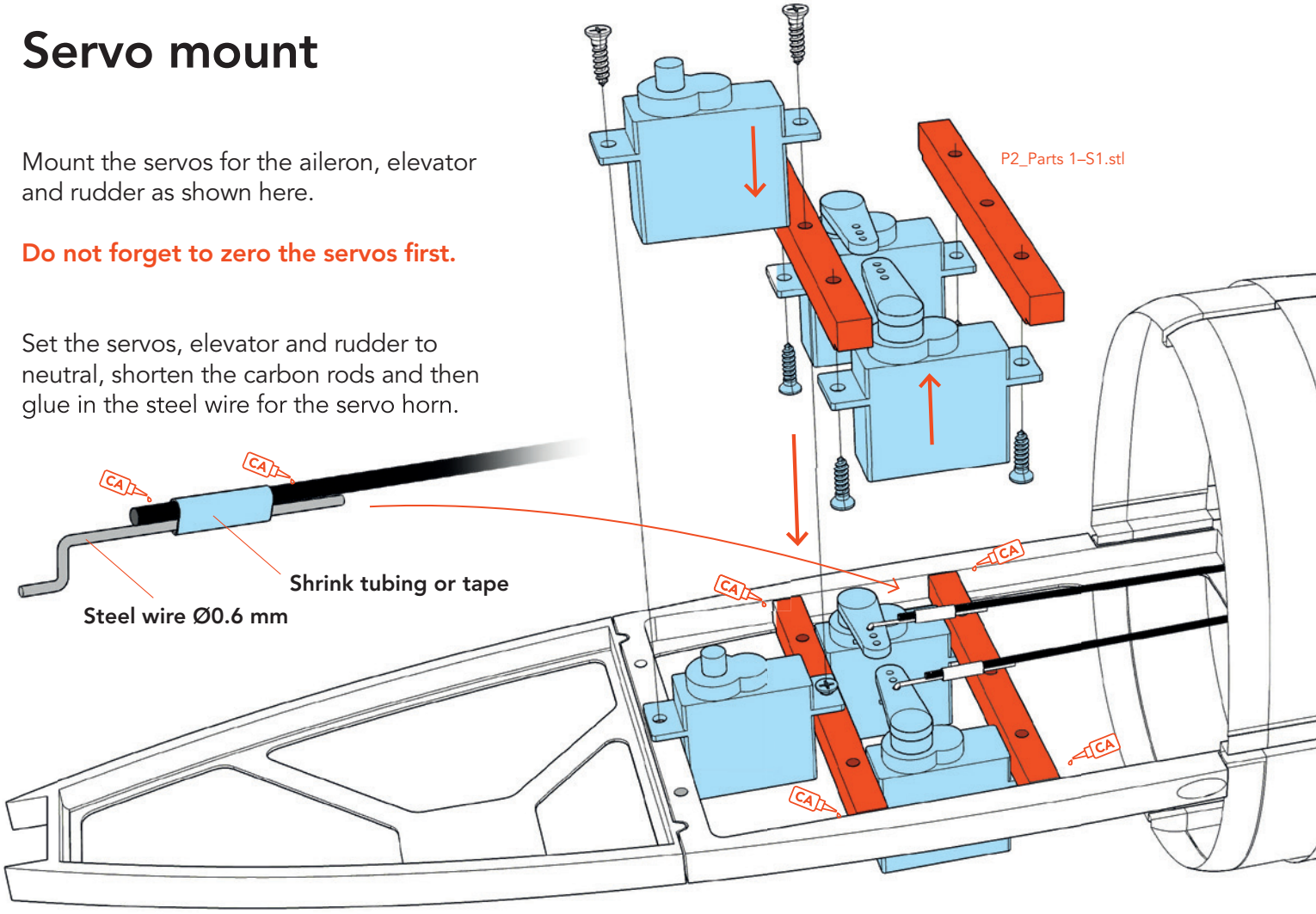


Servo mount

Mount the servos for the aileron, elevator and rudder as shown here.

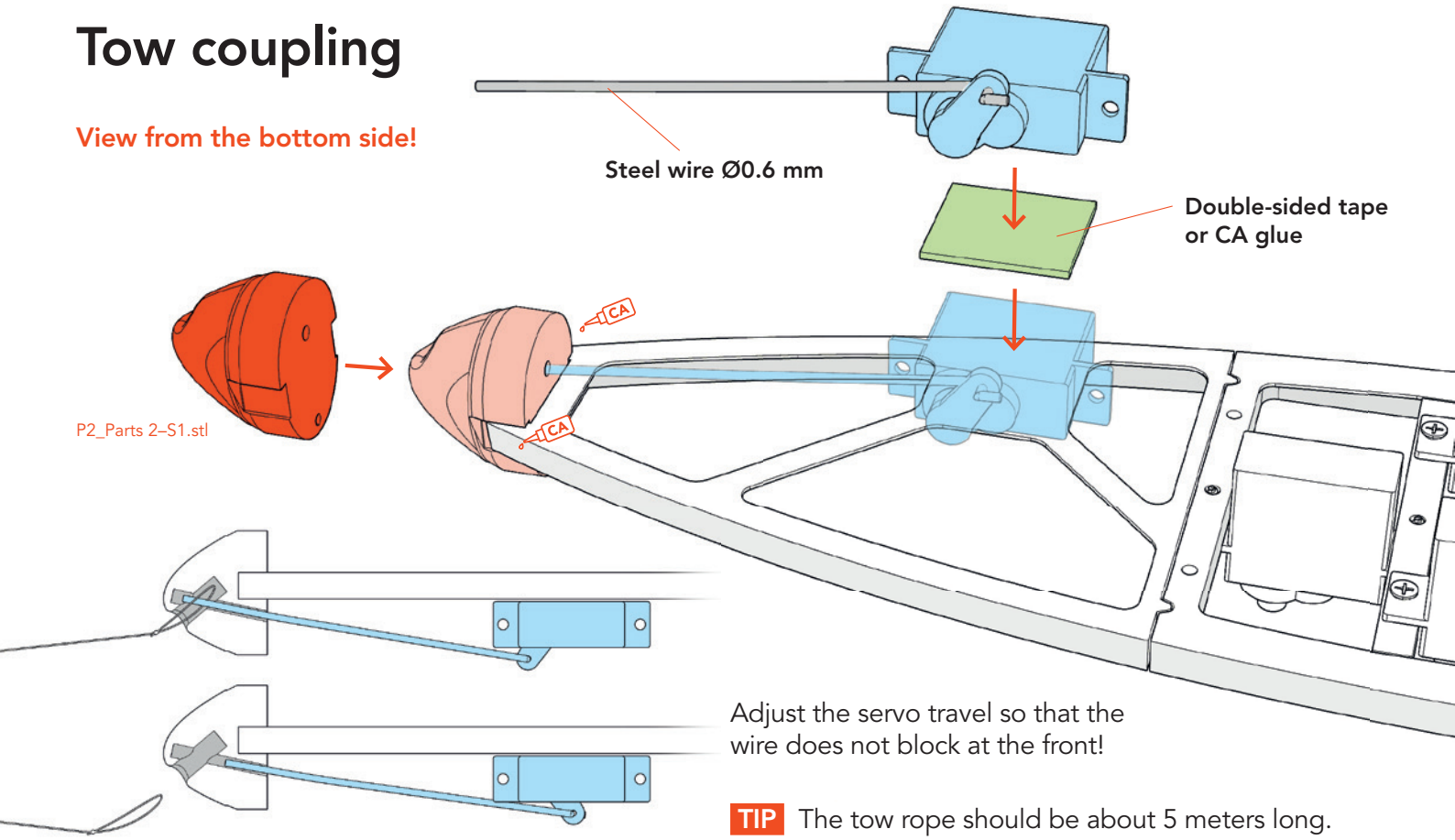
Do not forget to zero the servos first.

Set the servos, elevator and rudder to neutral, shorten the carbon rods and then glue in the steel wire for the servo horn.



Tow coupling

View from the bottom side!



Adjust the servo travel so that the wire does not block at the front!

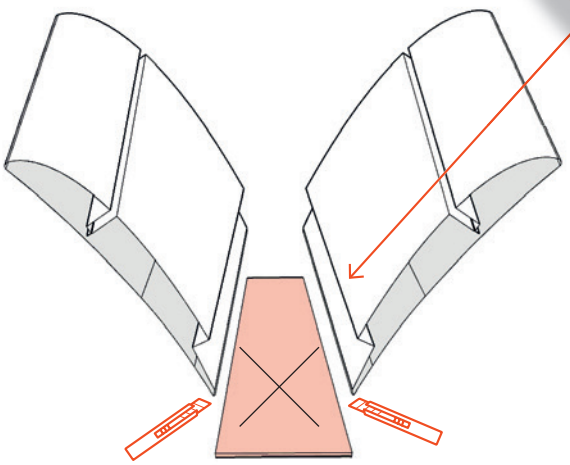
TIP The tow rope should be about 5 meters long.

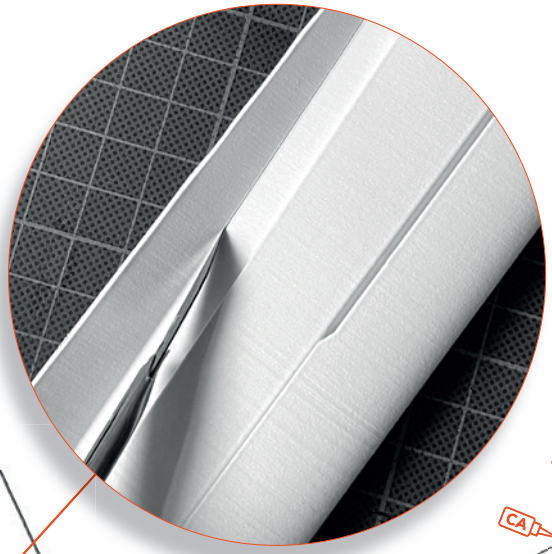
Wing assembly

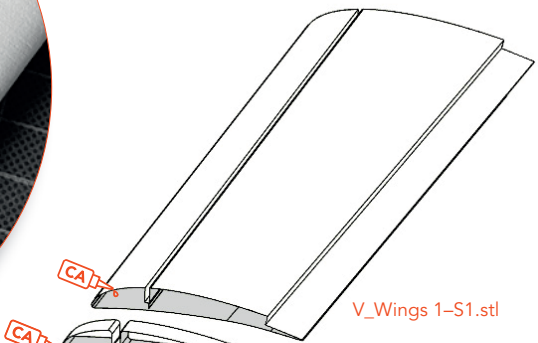
CA
medium liquid

First remove the support of all wing parts.

Please be careful with the knife!





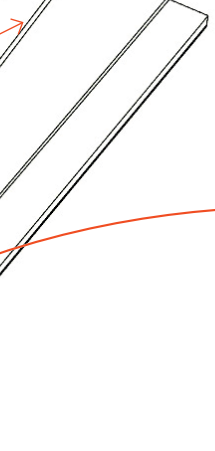


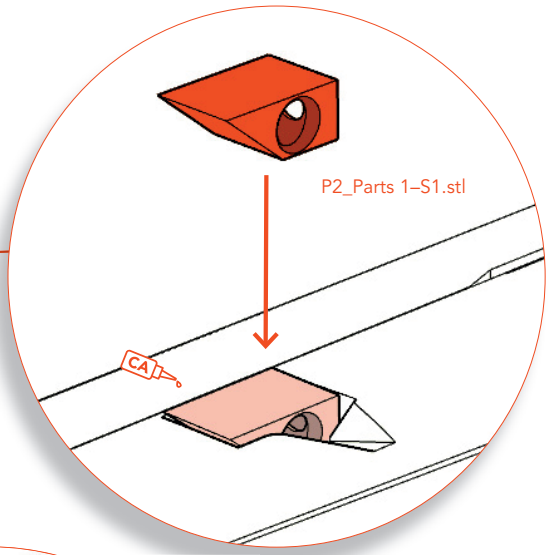
V_Wingconnect–S1.stl

V_Wings 2–S1.stl

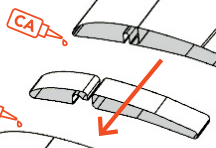
Place the wing parts on a flat plate and glue them together using the wing connectors.

Be careful not to get any glue into the gap at the top of the wing!

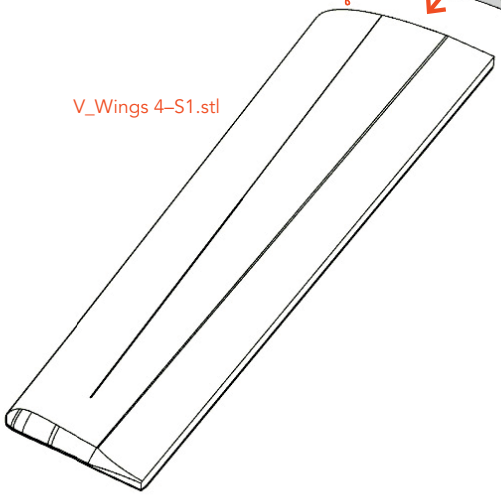


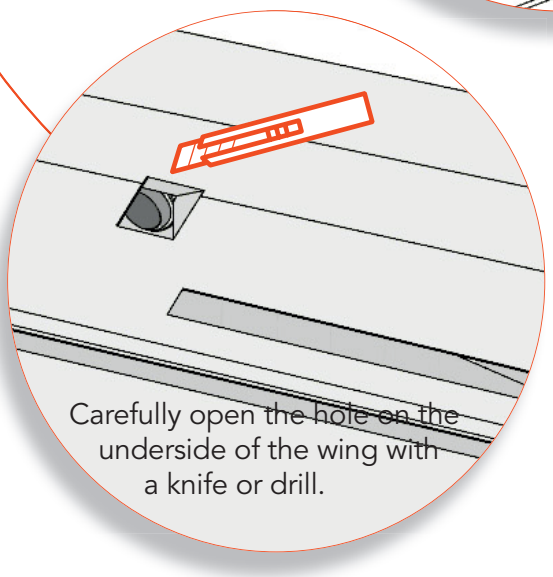


V_Wings 3–S1.stl



V_Wings 4–S1.stl

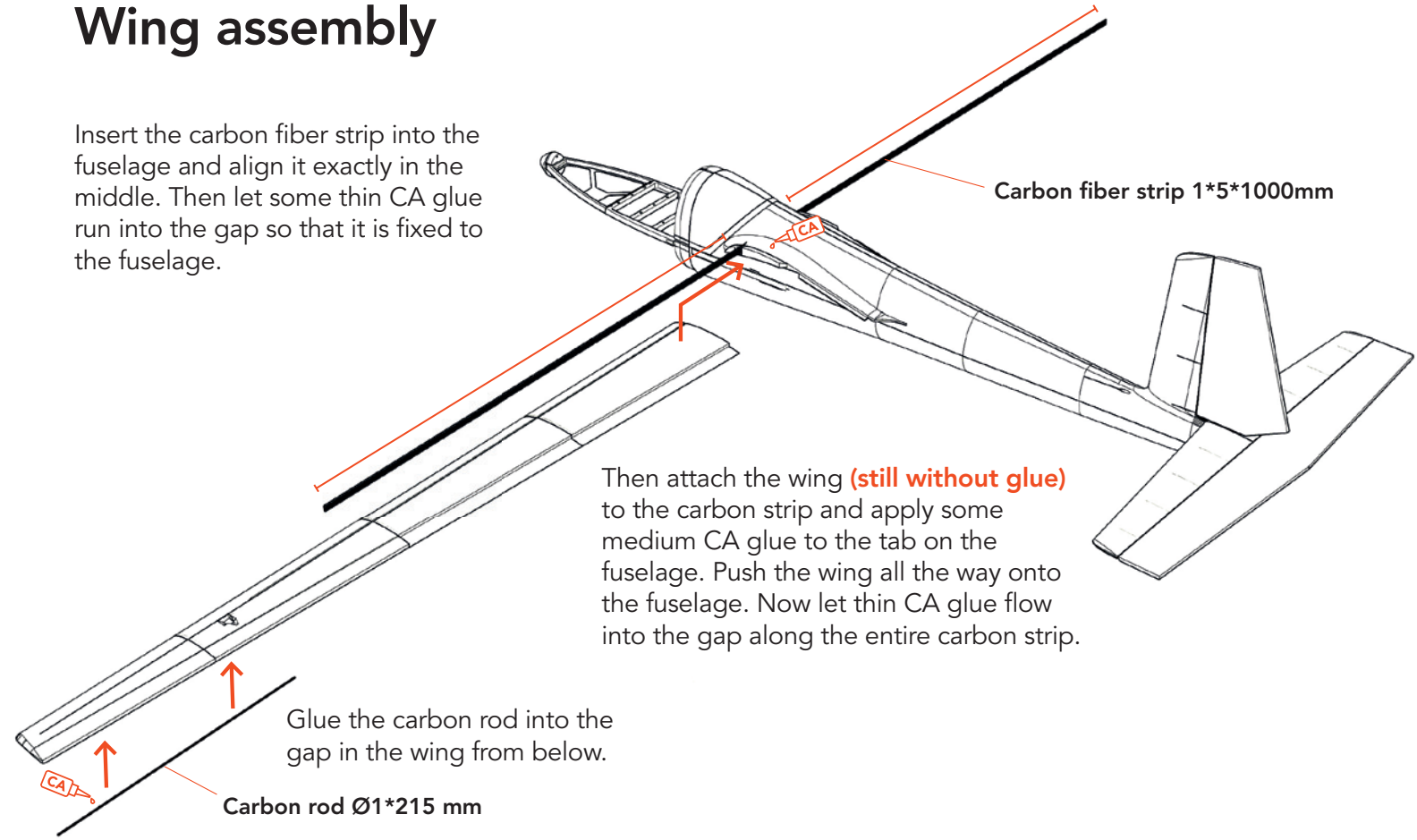




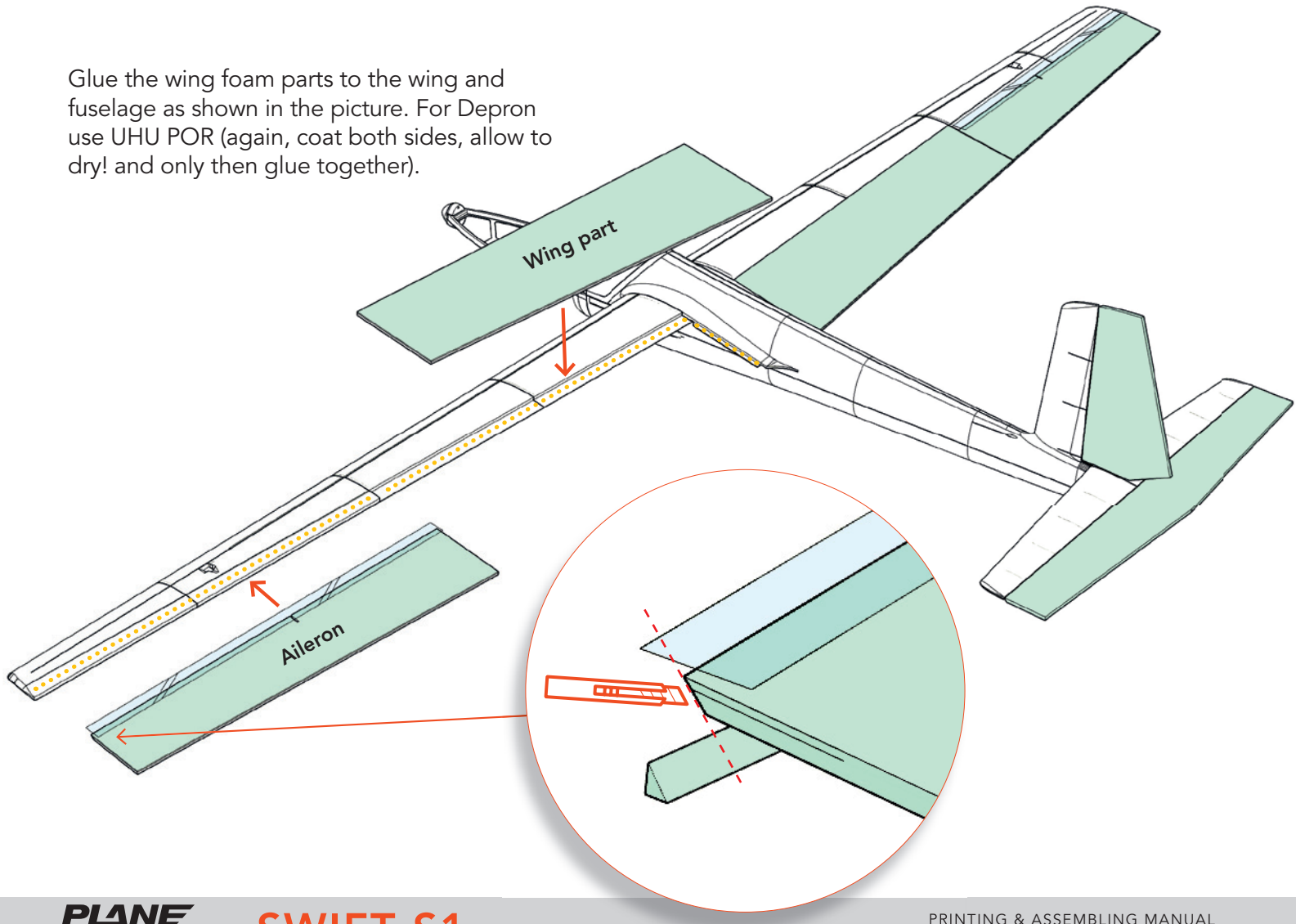
Carefully open the hole on the underside of the wing with a knife or drill.

Wing assembly

Insert the carbon fiber strip into the fuselage and align it exactly in the middle. Then let some thin CA glue run into the gap so that it is fixed to the fuselage.

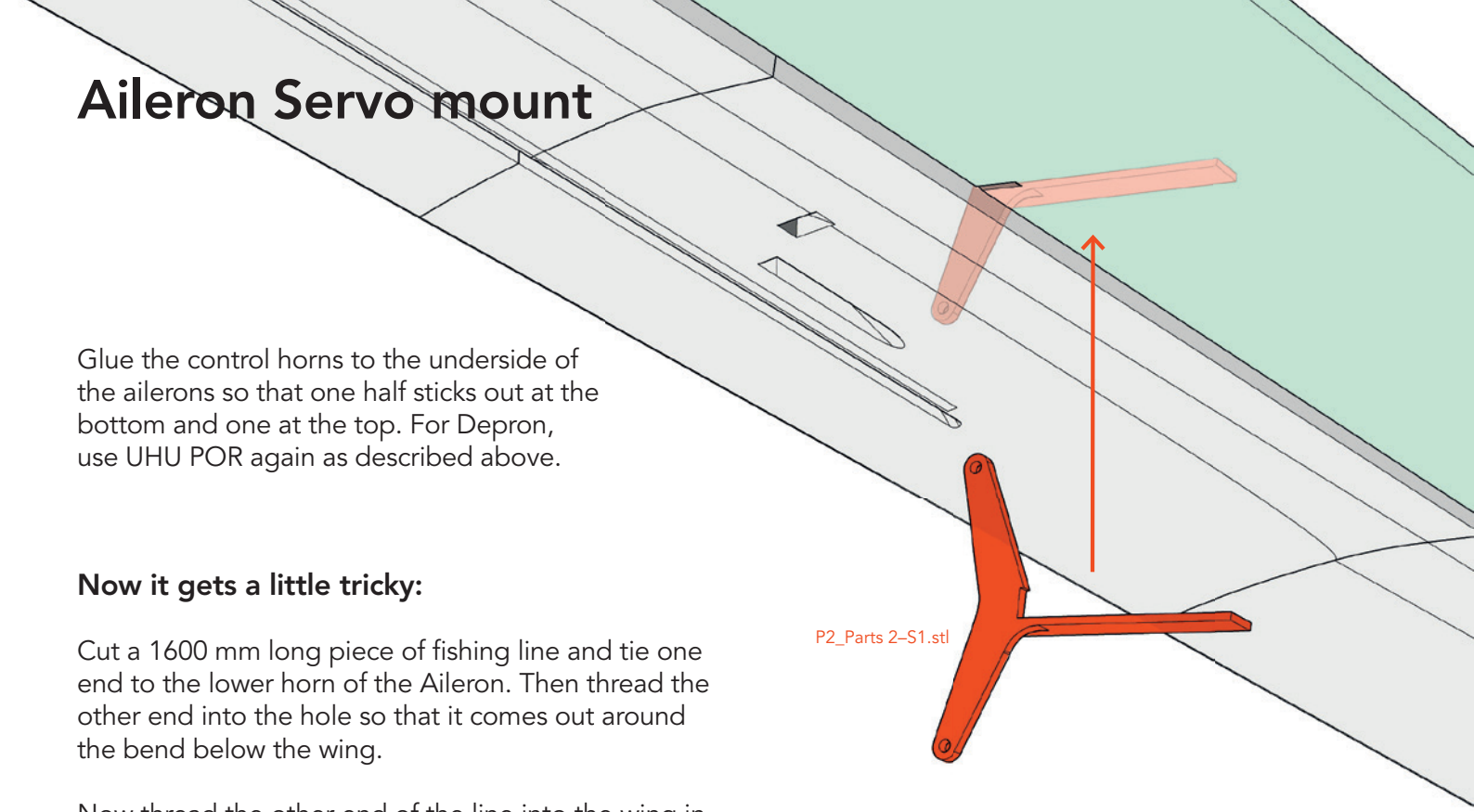


Glue the wing foam parts to the wing and fuselage as shown in the picture. For Depron use UHU POR (again, coat both sides, allow to dry! and only then glue together).



Aileron Servo mount

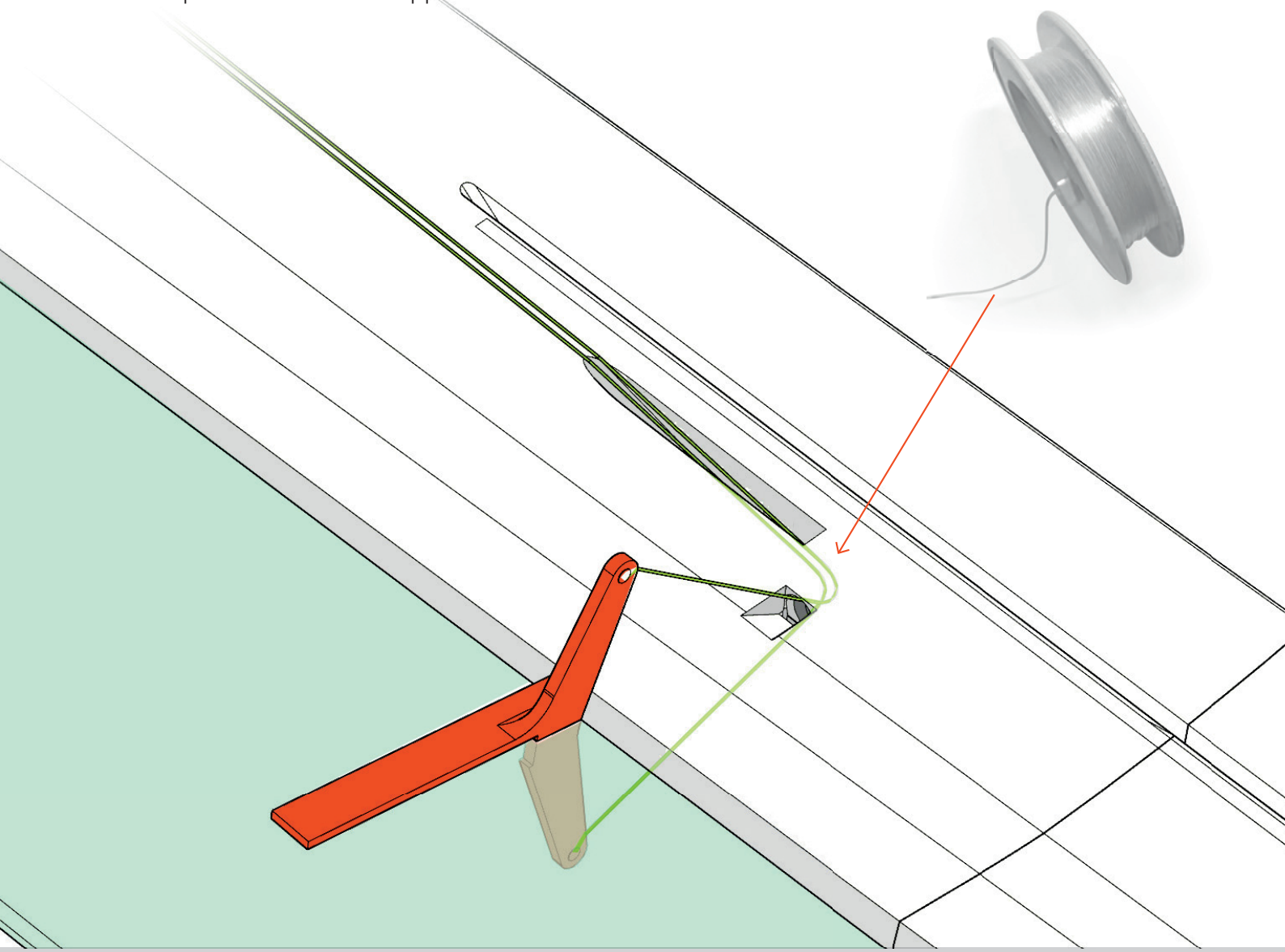
Glue the control horns to the underside of the ailerons so that one half sticks out at the bottom and one at the top. For Depron, use UHU POR again as described above.



Now it gets a little tricky:

Cut a 1600 mm long piece of fishing line and tie one end to the lower horn of the Aileron. Then thread the other end into the hole so that it comes out around the bend below the wing.

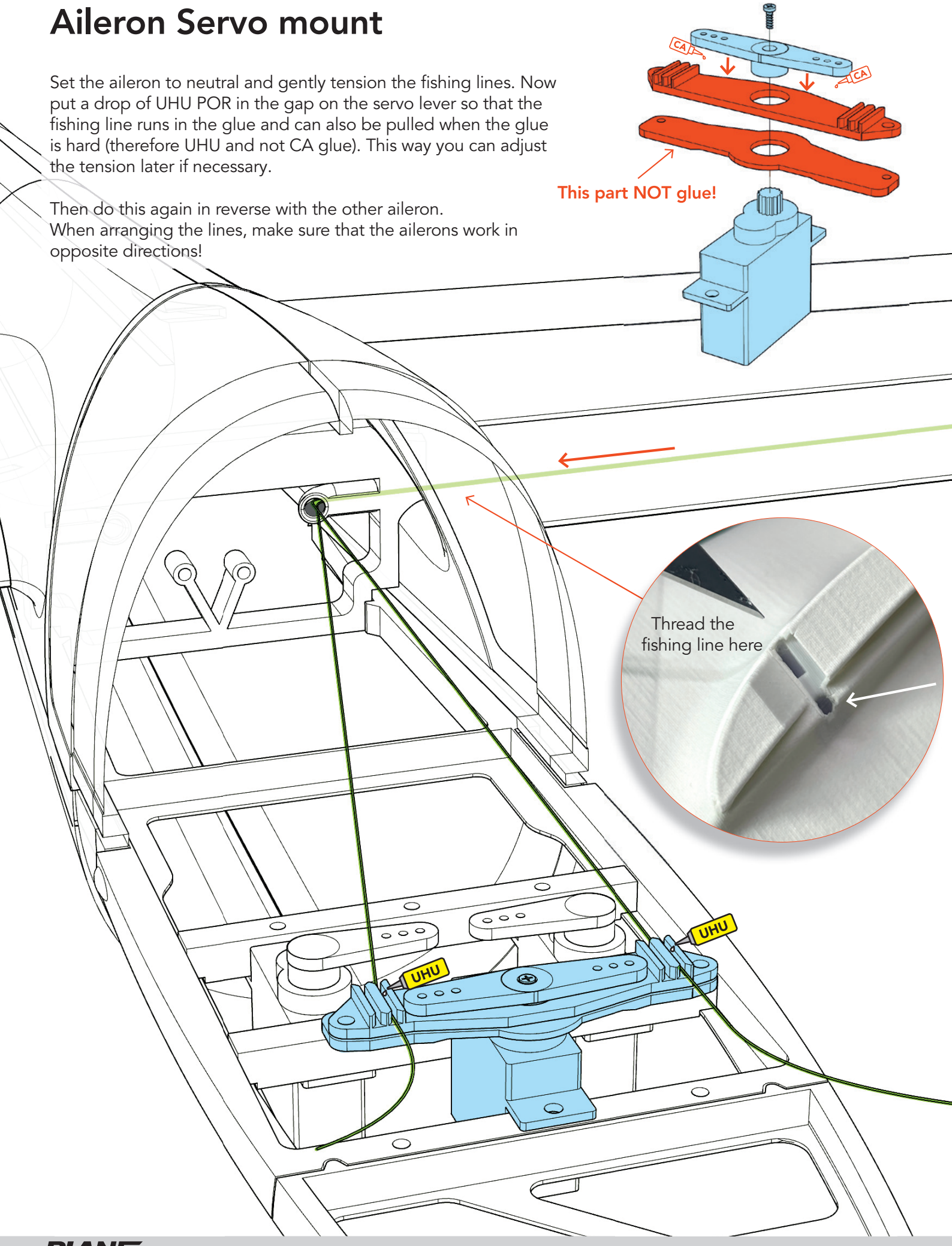
Now thread the other end of the line into the wing in the opposite direction from below. This must protrude from the top and be tied to the upper horn.



Aileron Servo mount

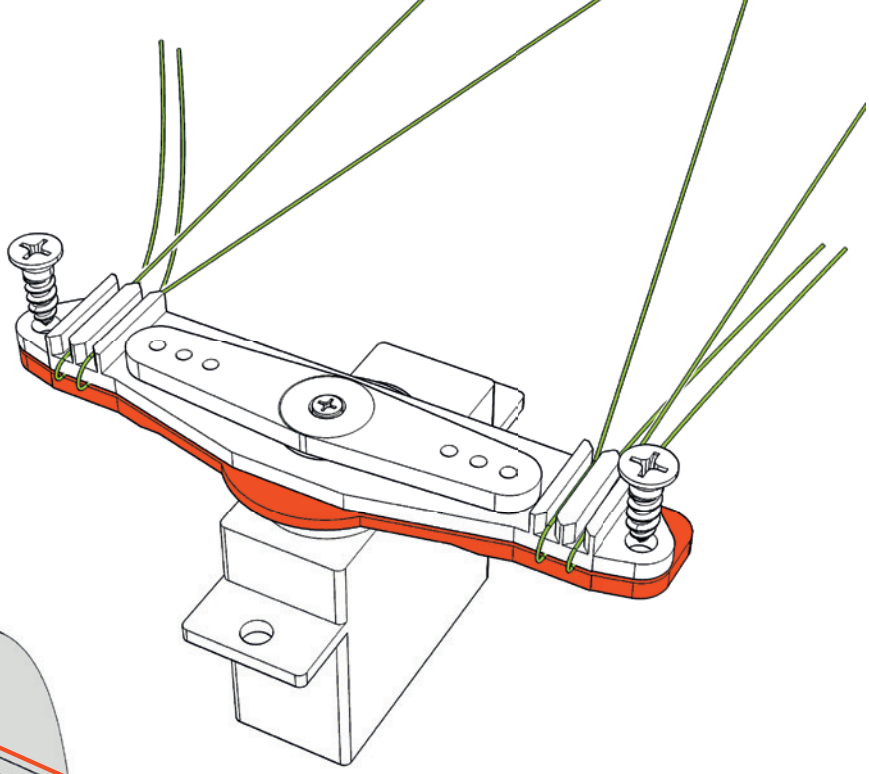
Set the aileron to neutral and gently tension the fishing lines. Now put a drop of UHU POR in the gap on the servo lever so that the fishing line runs in the glue and can also be pulled when the glue is hard (therefore UHU and not CA glue). This way you can adjust the tension later if necessary.

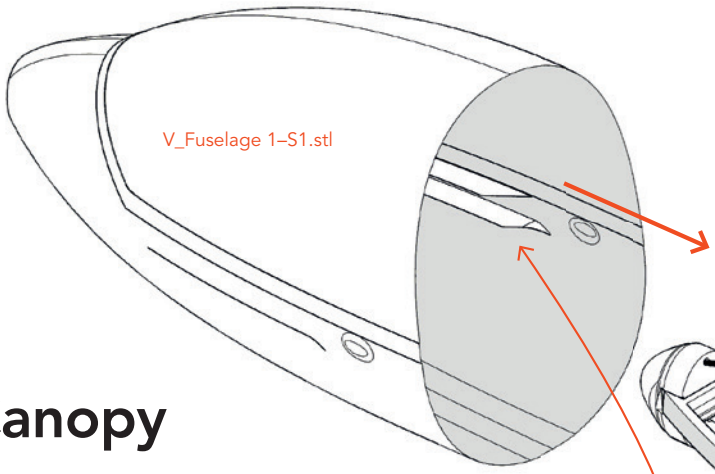
Then do this again in reverse with the other aileron.
When arranging the lines, make sure that the ailerons work in opposite directions!



Aileron Servo mount

If the setting of the ailerons fits, bend the fishing lines downwards and clamp them between the plates. Then secure them with two short screws. You can then change the settings later.

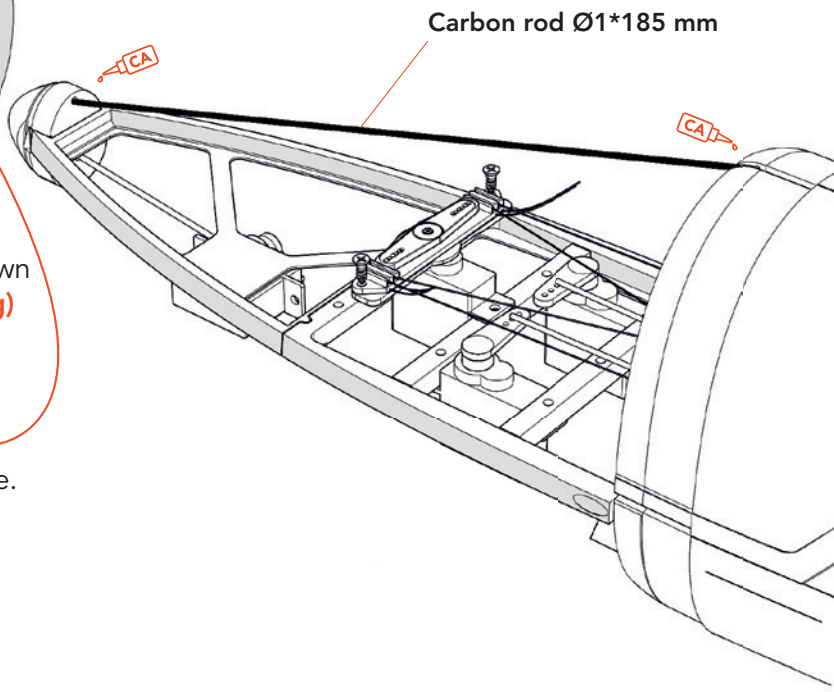




Canopy

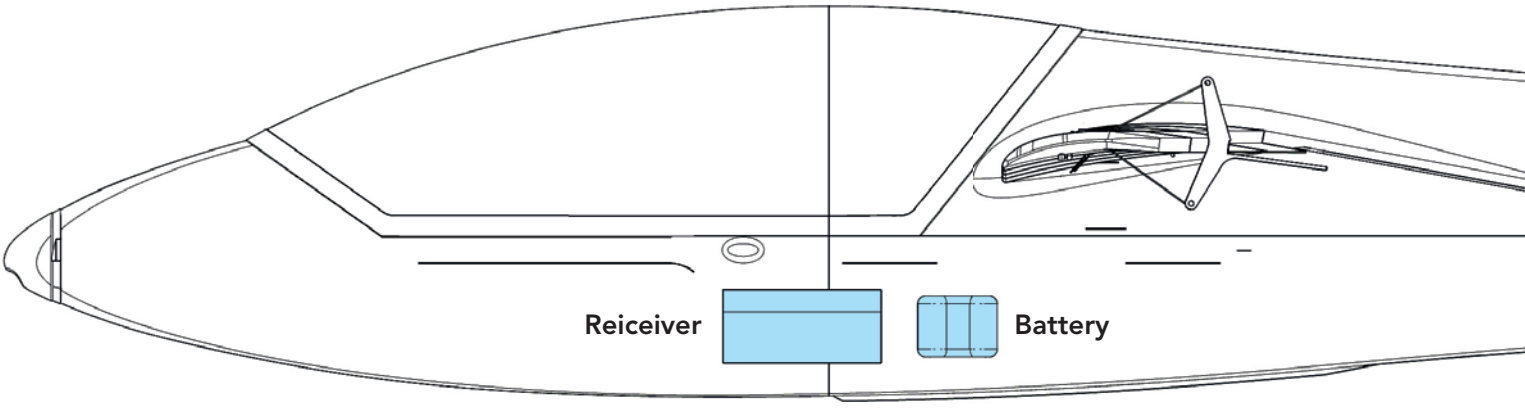
Glue in a piece of carbon rod for stabilization as shown in the picture. **Make sure that the tip (tow coupling) is not pushed up or down, otherwise the canopy will no longer fit exactly!**

The canopy is simply pushed along the **guide tabs** on the fuselage. It does not need to be fixed in place.



RC Components

Position the components so that the CG fits exactly. Secure them with self-adhesive Velcro tape.



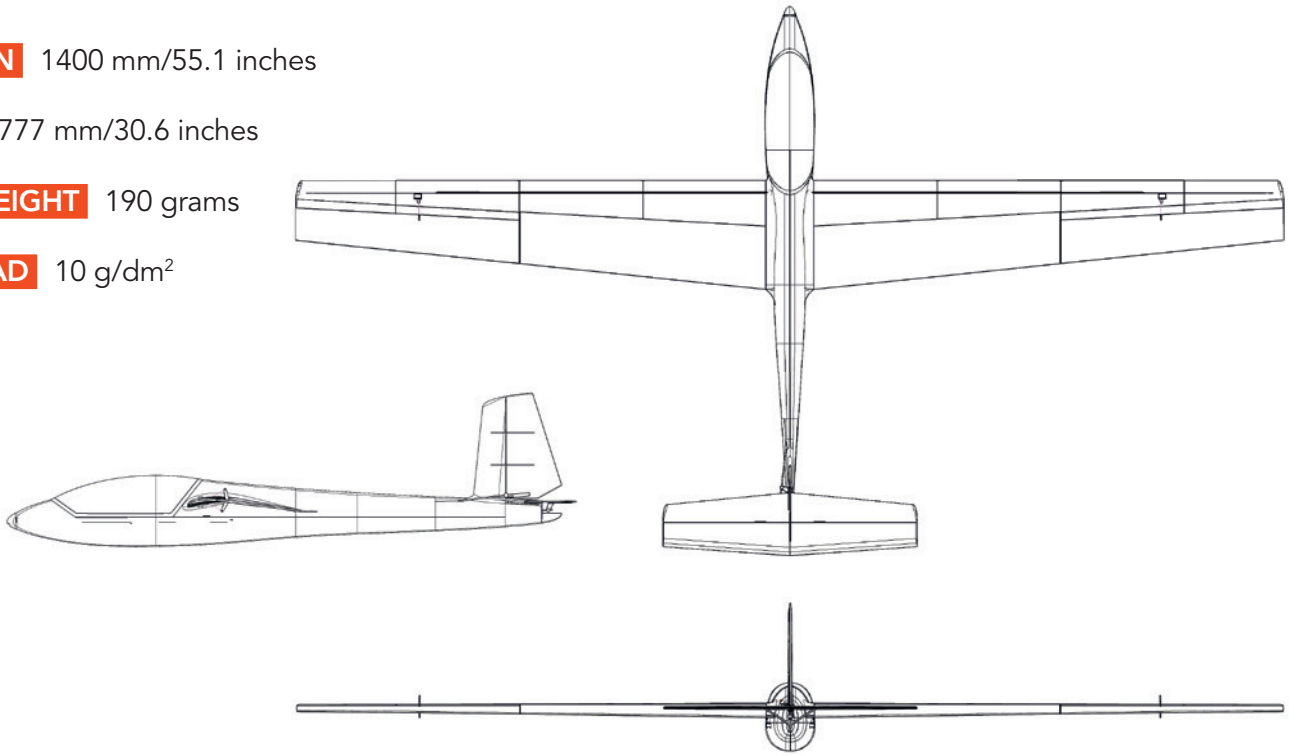
Technical specifications

WINGSPAN 1400 mm/55.1 inches

LENGTH 777 mm/30.6 inches

FLIGHT WEIGHT 190 grams

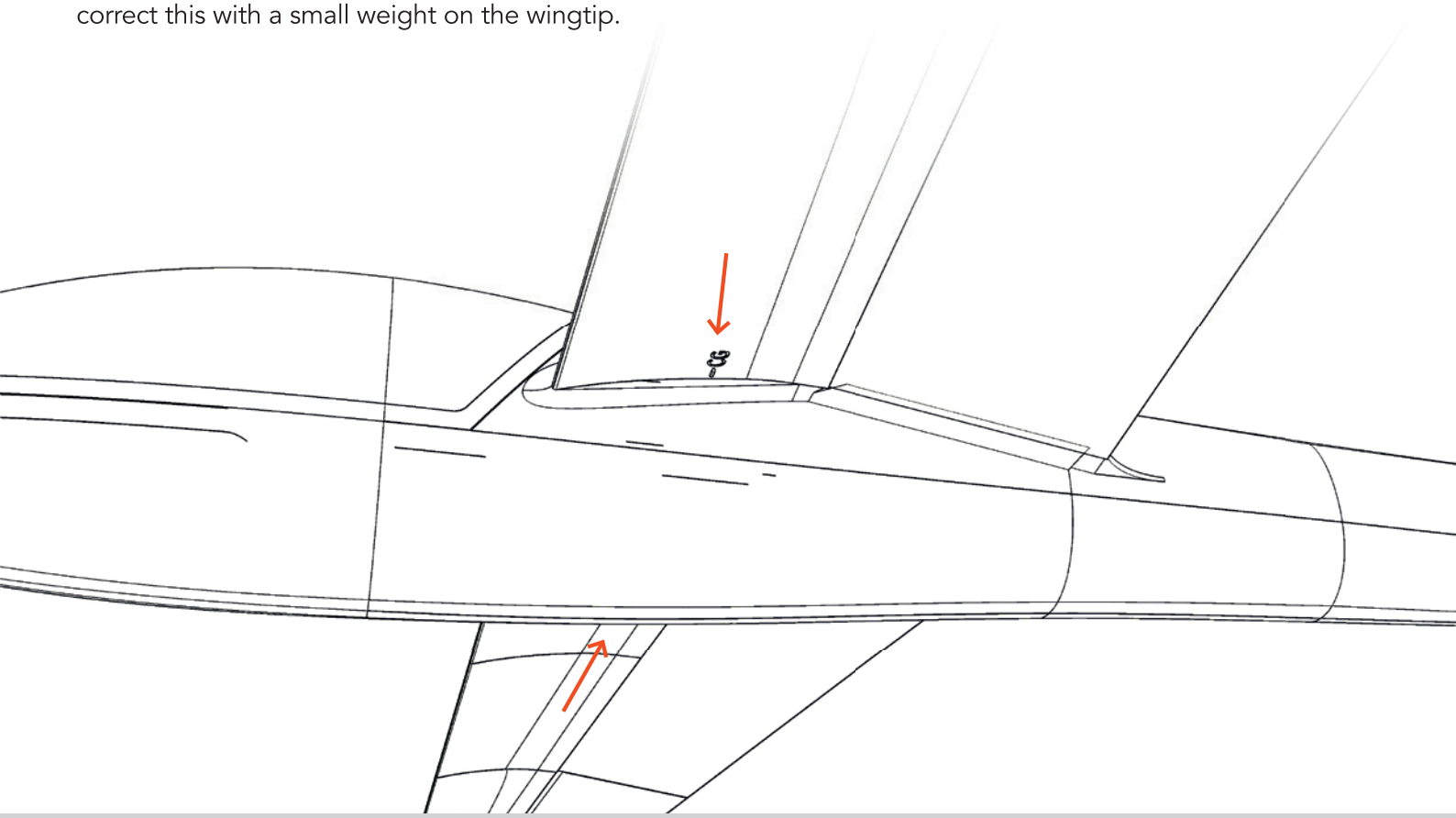
WING LOAD 10 g/dm^2



Center of Gravity (CG)

The aircraft must balance on these points – **see the markings on the wing**.
(42 mm/1.6 inch behind the leading edge)

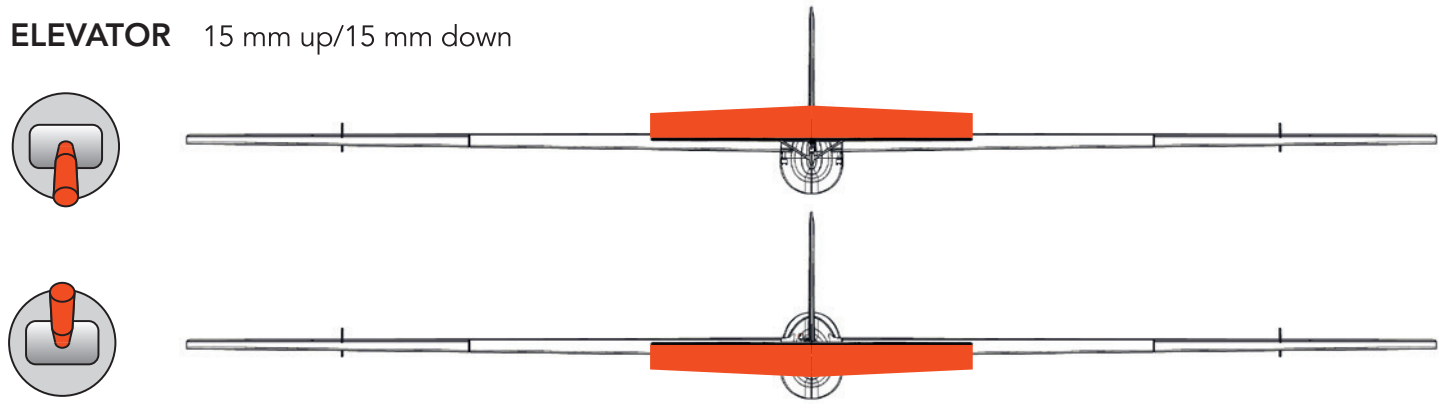
Do not forget to check if the wings are exactly in ballance in the roll axis. If one wing is heavier, correct this with a small weight on the wingtip.



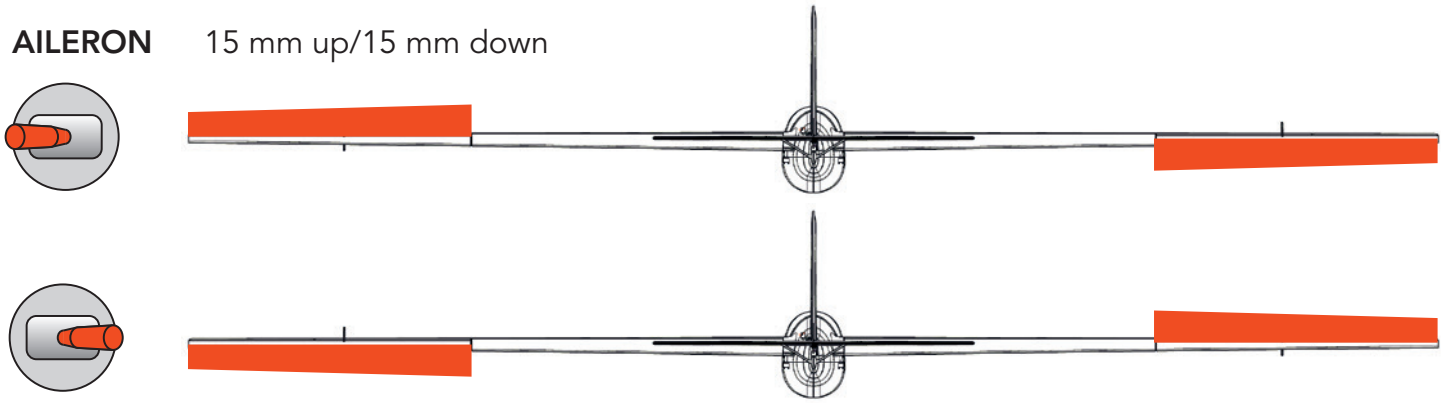
Control Direction Test

When checking the control directions, **look at the aircraft from above** (rudder) **and behind.**

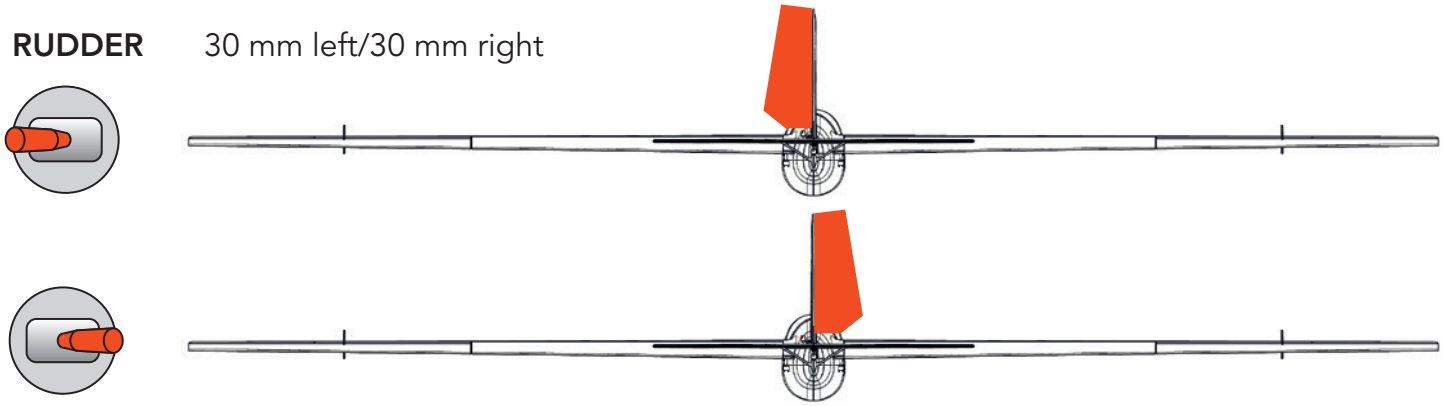
ELEVATOR 15 mm up/15 mm down



AILERON 15 mm up/15 mm down



RUDDER 30 mm left/30 mm right



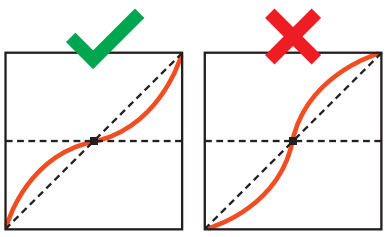
Program the throttle lever or a switch for the **Tow function**.

EXPO

ELEVATOR 30 %

AILERON 30 %

RUDDER 30 %



(for some remote controls a minus has to be in front of the number)

AGE RECOMMENDATION 14+

NOT FOR CHILDREN UNDER 14 YEARS.
THIS IS NOT A TOY!

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When operating, always keep a safe distance from your model in all directions to avoid collisions and injuries.

This model is controlled by a radio signal. Radio signals can be disturbed from outside without being able to influence it. Interference can lead to a temporary loss of control.

Always operate your model on open terrains, far from cars, traffic and people.

Always follow the instructions and warnings for this product and any optional accessories (servos, receivers, motors, propellers, chargers, rechargeable batteries, etc.) carefully.

Keep all chemicals, small parts and electrical components out of the reach of children.

Avoid water contact with all components that are not specially designed and protected. Moisture damages the electronics.

Never take an item of the model or accessory in your mouth as this can lead to severe injuries or even death.

Never operate your model with low batteries in the transmitter or model.

Always keep the model in view and under control.
Use only fully charged batteries.

Always keep the transmitter switched on when the model is switched on.

Always remove the battery before disassembling the model.

Keep moving parts clean and dry at all times.

Always allow the parts to cool before touching them.

Always remove the battery after use.

Make sure that the Failsafe is properly set before the flight.

Never operate the model with damaged wiring.

Never touch moving parts.

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