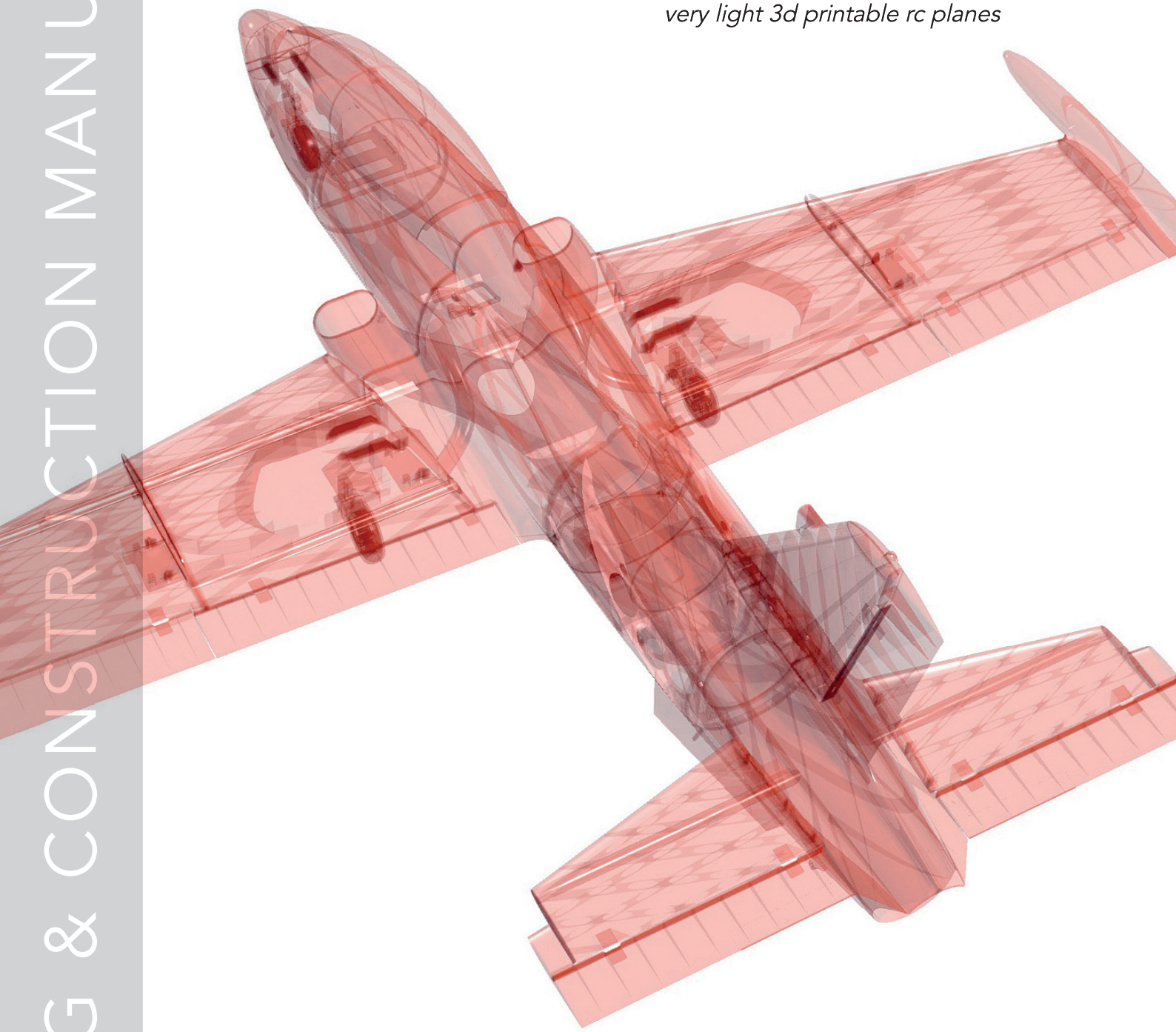
EN

PRINTING & CONSTRUCTION MANUAL

PLANE PRINT.com

very light 3d printable rc planes



Aermacchi MB-339

- Detailed scale model in 3D super lightweight construction.
- Real 1 wall construction (Currently only supported by CURA!).
- Wingspan 1034 mm (40.7 inches), EDF 70 mm.

WATCH OUT!
This 3D print model is specially optimized for CURA.

FAIR USE DATA ©

STL DATA FOR DOWNLOADING AT **www.planeprint.com**

V4 2020

PRINTING THE PARTS – PRINTING PROFILES

You may wonder why this 3D model is suitable exclusively for CURA right?

The most important thing about small RC model airplanes is always the ratio of size to weight. The lighter a model is, the better its flight characteristics and also the flight time is significantly increased.

With our unique design process, we manage to make Weights relevant items in a **true 1-wall printing process** for the outer skin but also for the filling offer. So we save weight while maintaining the necessary stability.

Here we show you how to get started from a standard CURA profile Make settings. For this model we only need 4, easy to create profiles.

It is **absolutely necessary** to observe the information provided by **PLANEPRINT.com** in order: to slice the component correctly. However, it may make sense to perfect your 3D printing by additionally performing several hiring activities depending on your printer and the filament used.

For slicing all Planeprint models, four profiles have to be created in Cura:

PROFILE P1_fullbody
PROFILE P2_hollowbody
PROFILE P3_surface
PROFILE P4_flex

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

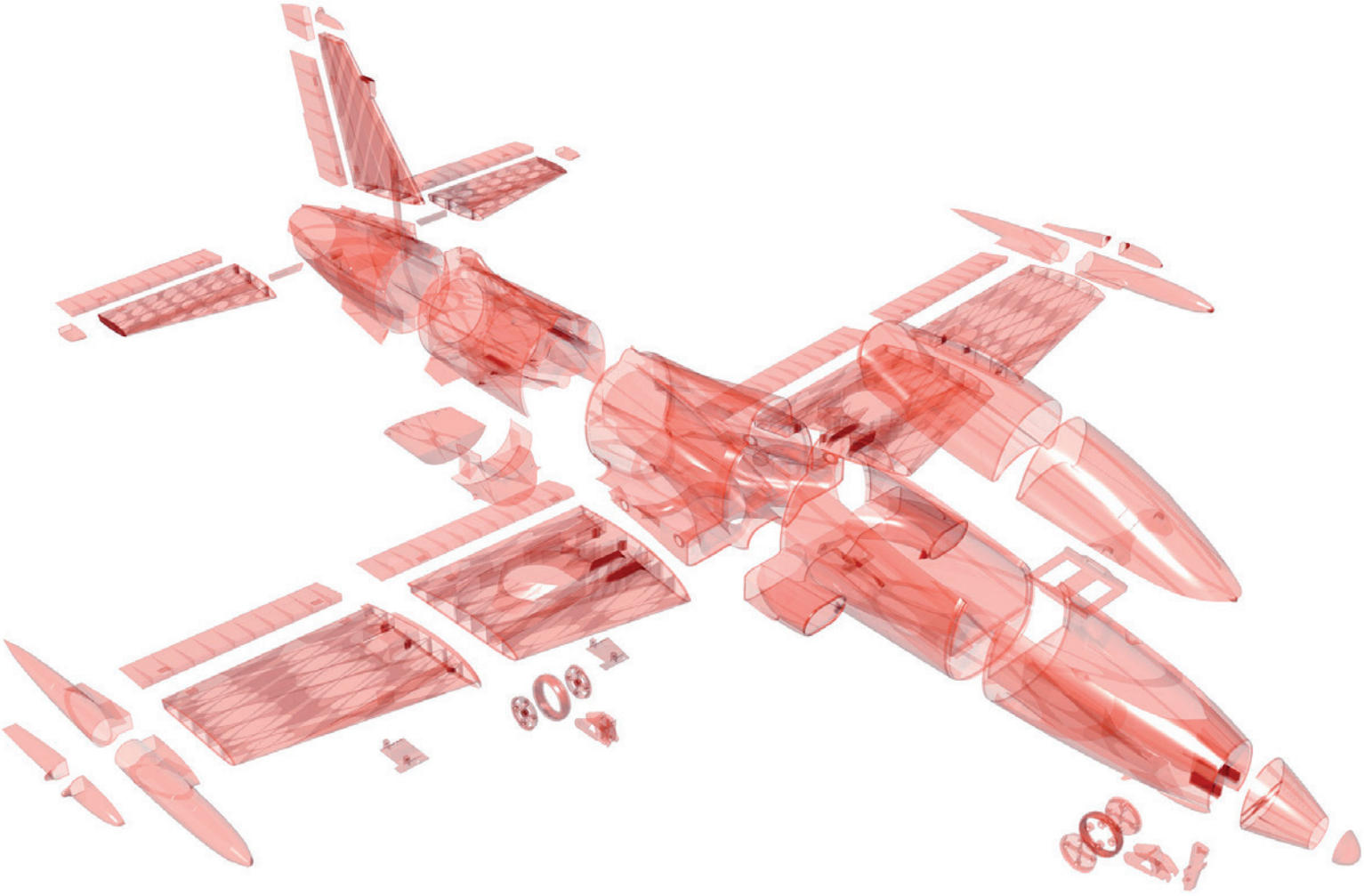
Important for the 1-wall-print!

In order to print airfoils of the lowest possible weight with high stability, it is necessary to print with only one wall line (Nozzle 0.4 mm). Decisive here is the adhesion between the layers! To achieve this, you must print at a much higher temperature than normal. As a **guideline**, 230 ° C is a good starting point. The parts-cooling fan should be set to 0% or a maximum of 20%. Since not every printer works the same, it may be necessary to make small adjustments to these settings.

The development of a complex, airworthy RC flight model to express on any standard 3D printer is a very complex and extensive process. Therefore, we appeal to your fairness not to forward the STL data you have acquired to third parties. Our STL files are provided with indelible copyright watermarks that can be verified at any time.

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

PRINTING MANUAL



PROFILE P1_FULLBODY

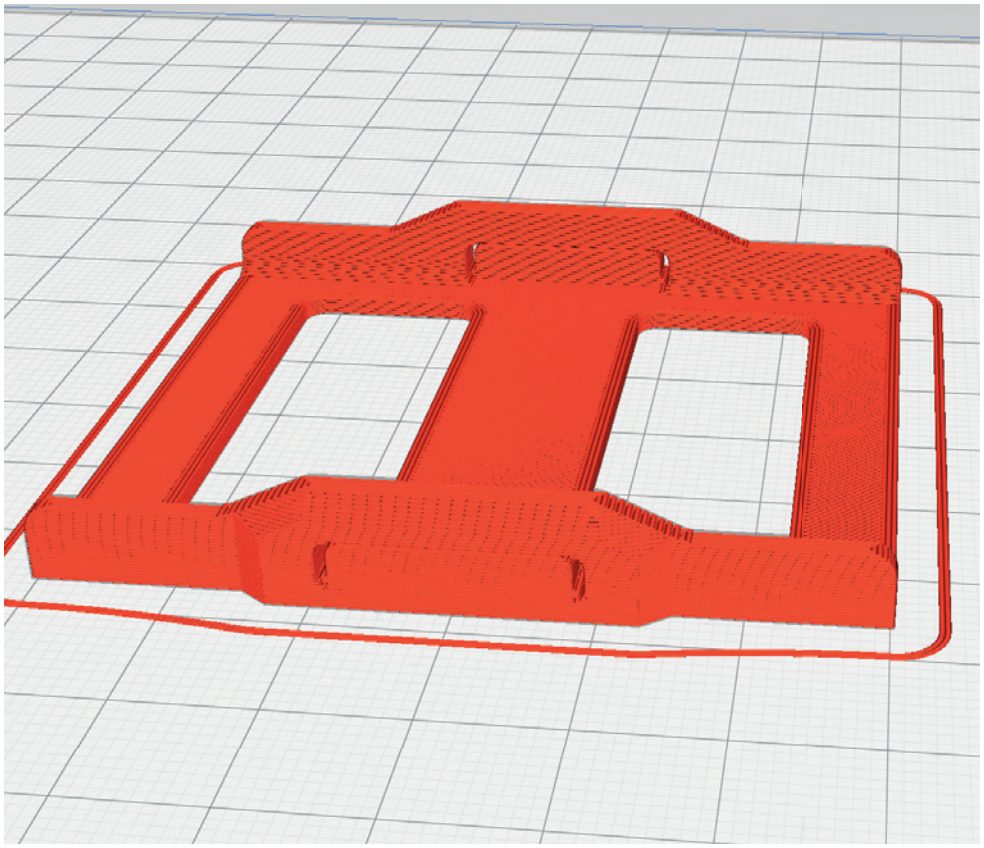
The following parts must be sliced with the profile P1_FULLBODY.
Recommended additional settings are listed in the screenshots.

INFO

STL File: Battery-holder_p1.stl
Material: PLA
Weight: ~ 6 g

ADDITIONAL SETTINGS

- Generate Support checked

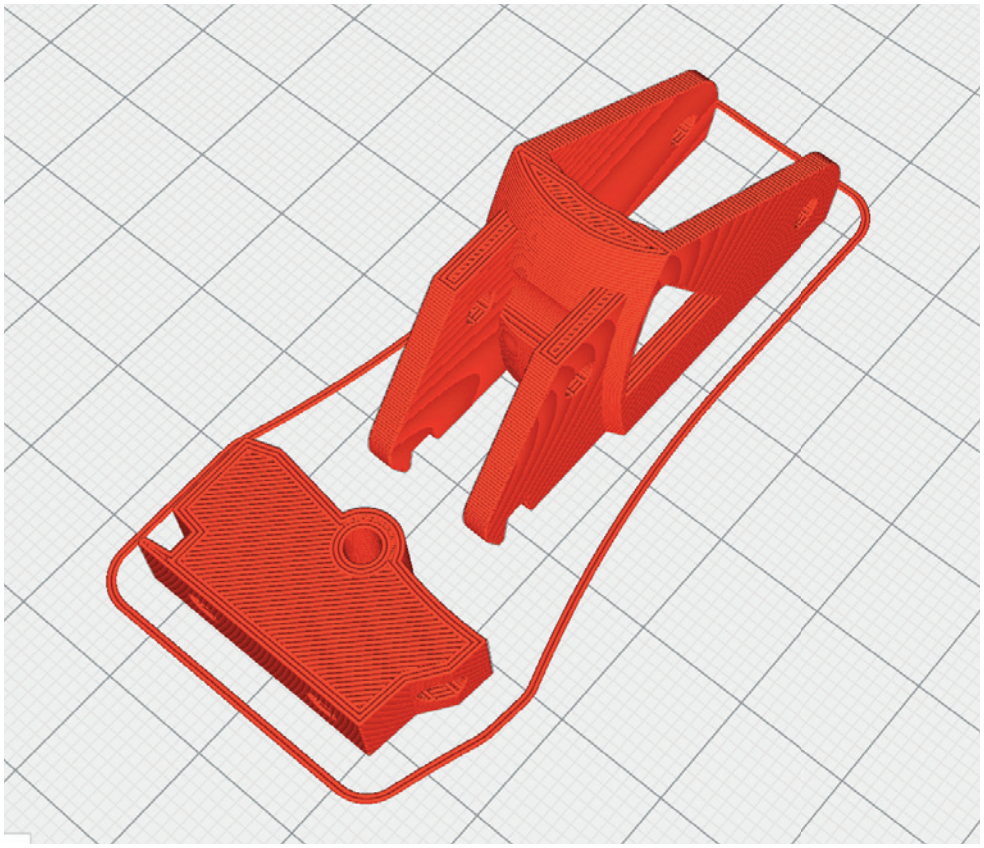


INFO

STL file: Gear-left_p1.stl
Material: PLA
Weight: ~ 6 g

ADDITIONAL SETTINGS

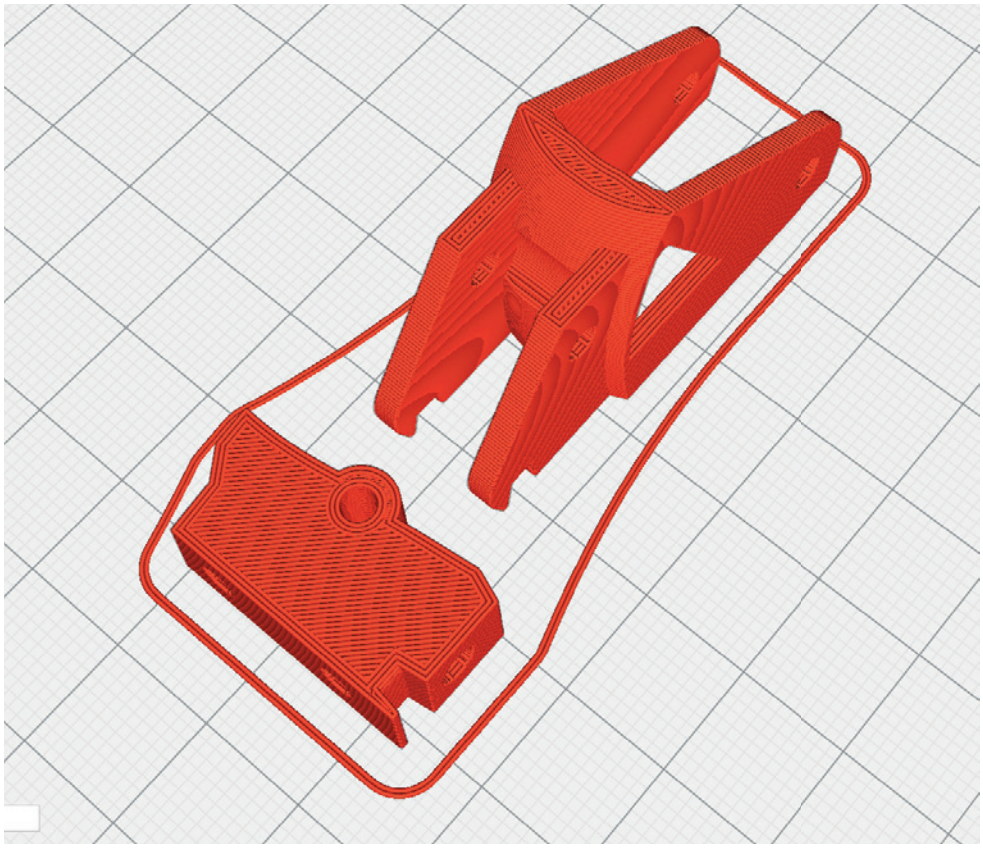
None required



PROFIL P1_FULLBODY

INFO

STL file: Gear-right_p1.stl
Material: PLA
Weight: ~ 6 g

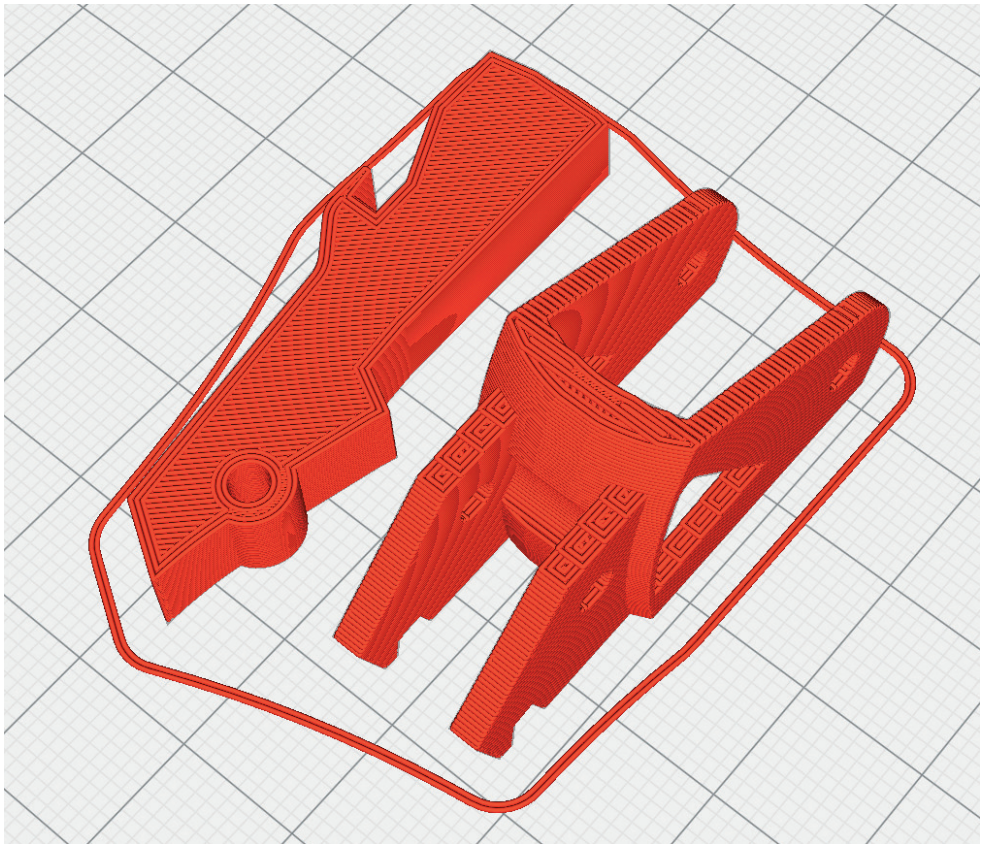


ADDITIONAL SETTINGS

None required

INFO

STL file: Gear-nose_p1.stl
Material: PLA
Weight: ~ 7 g



ADDITIONAL SETTINGS

None required

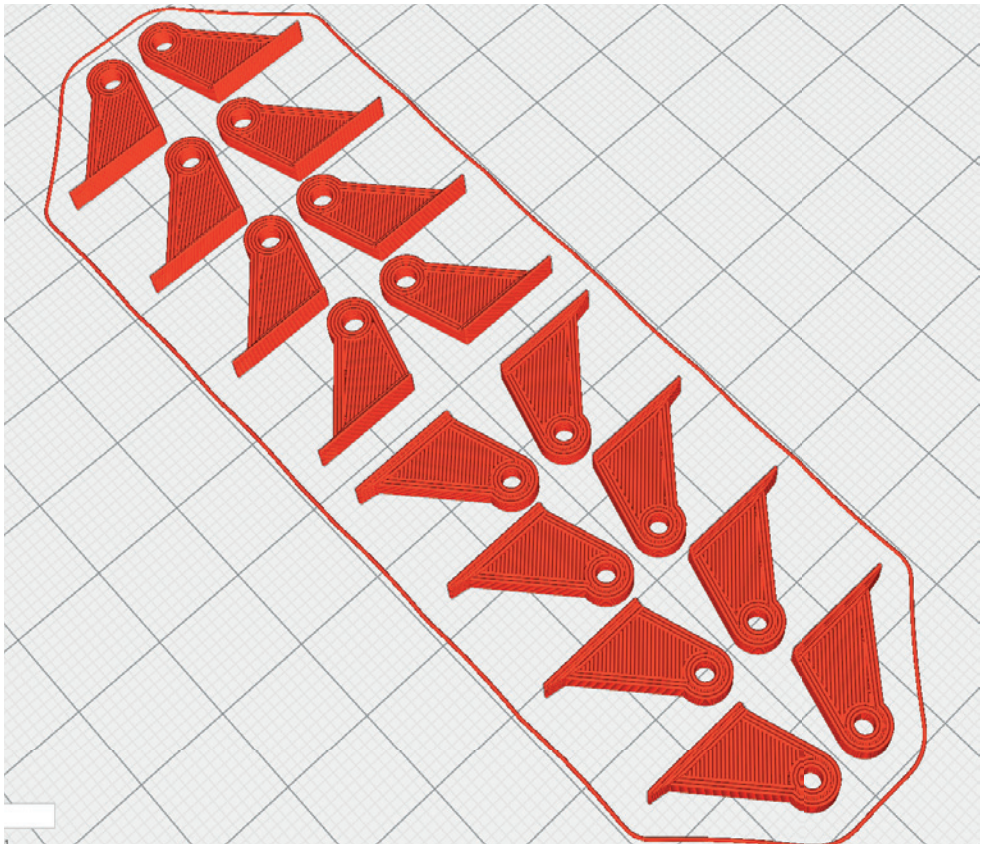
PROFILE P1_FULLBODY

INFO

STL file: Pin-horns_p1.stl
Material: PLA
Weight: ~ 4 g

ADDITIONAL SETTINGS

None required

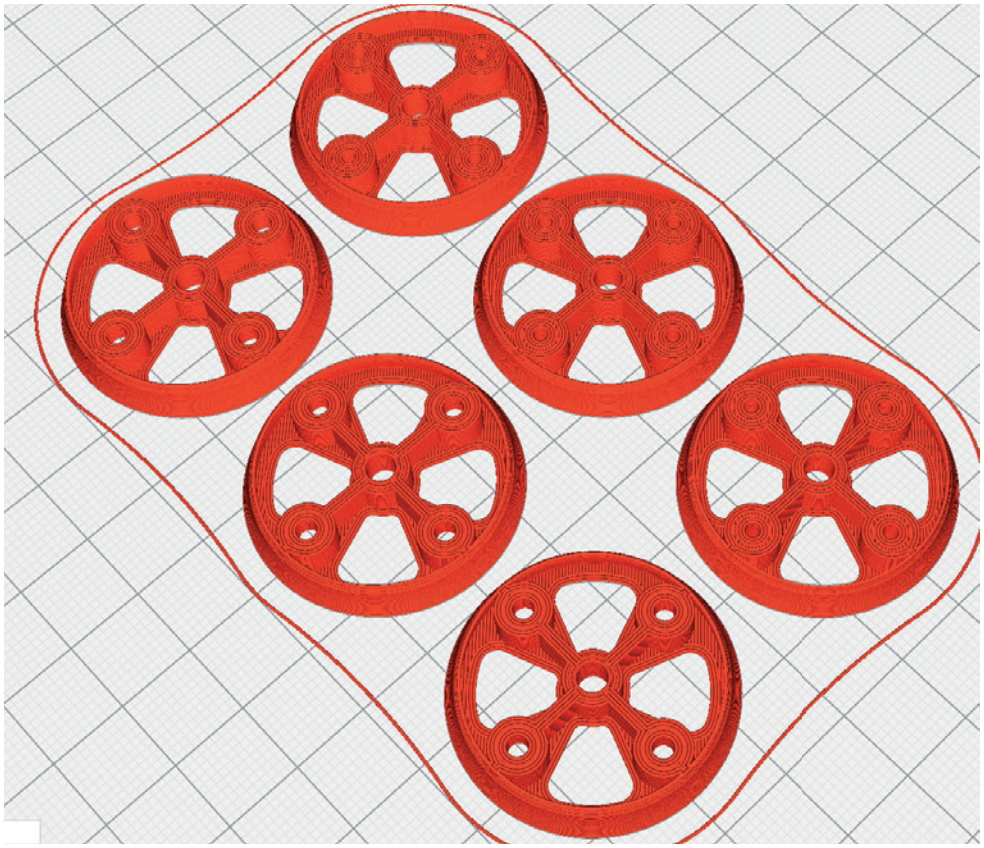


INFO

STL file: Rims_p1.stl
Material: PLA
Weight: ~ 12 g

ADDITIONAL SETTINGS

None required



PROFILE P1_FULLBODY

INFO

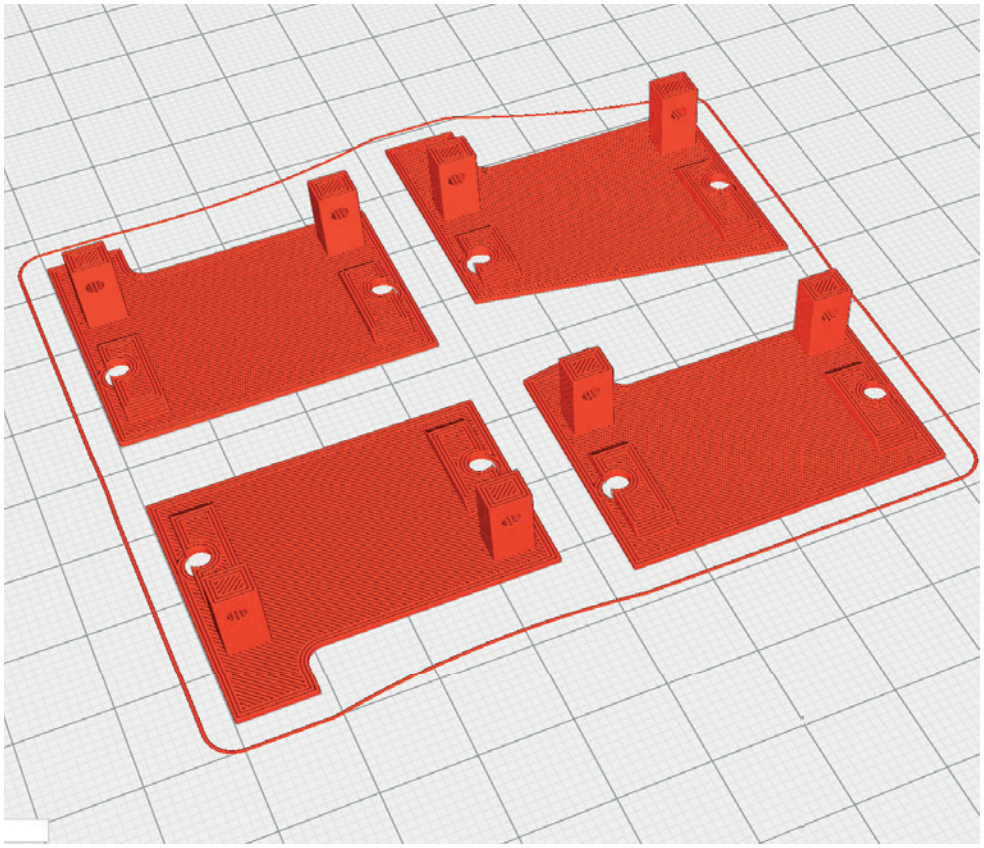
STL file: Covers-small-servos_p1.stl
Covers-big-servos_p1.stl
Material: PLA
Weight: ~ 6 g

ADDITIONAL SETTINGS

None required

PLEASE NOTE

Use the file „small" for smaller servos (Hitec HS-55), „big" for larger ones (Turnigy TGY 50090M)

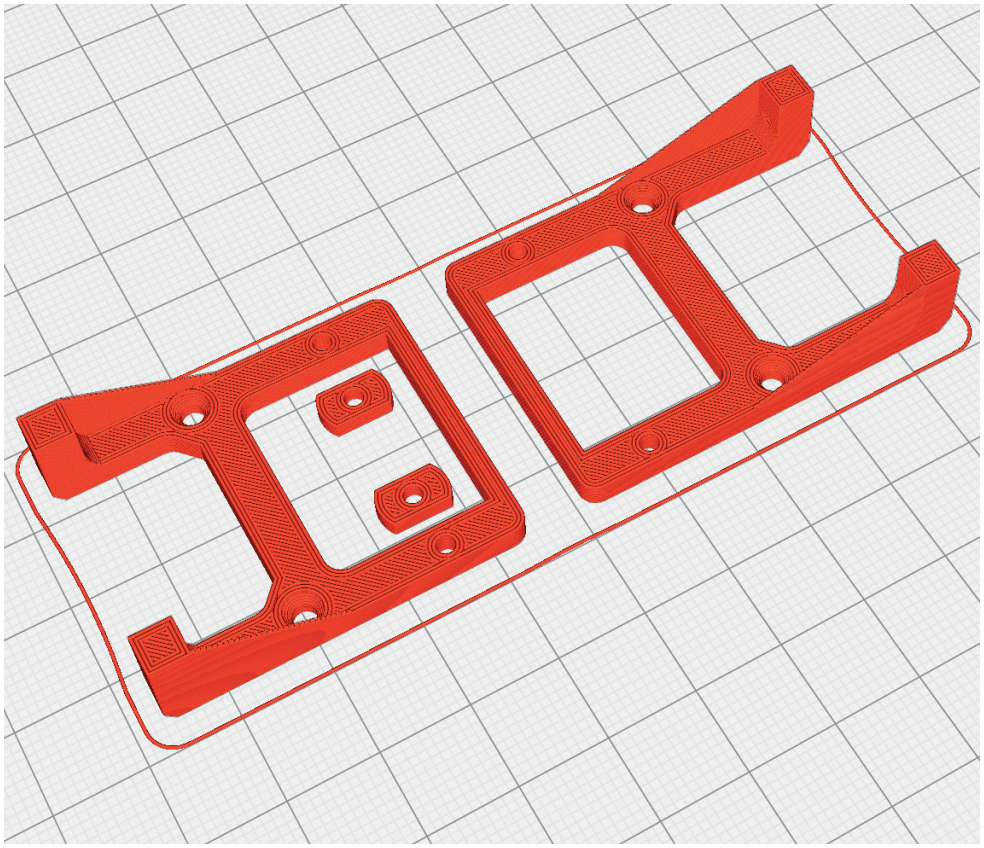


INFO

STL file: Servo-frame.stl
Material: PLA
Weight: ~ 6 g

ADDITIONAL SETTINGS

None required



PROFILE P2_HOLLOWBODY

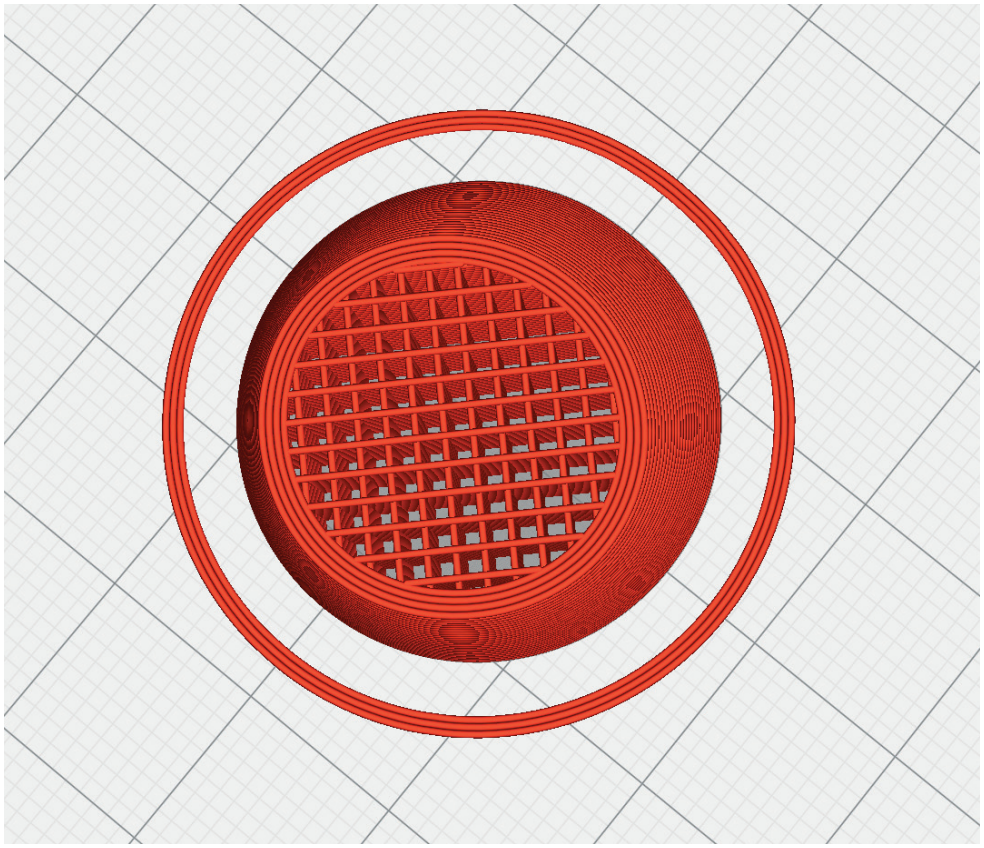
The following parts must be sliced with the profile P2_HOLLOWBODY.
Recommended additional settings are listed in the screenshots.

INFO

STL file: Nose1_p2.stl
Material: PLA
Weight: ~ 3 g

ADDITIONAL SETTINGS

- Infill Density 26 %
- Wall Line Count 4
- Bottom Layers 0
- Skirt (no Brim)
- reduce Nozzle Temp (200°C)

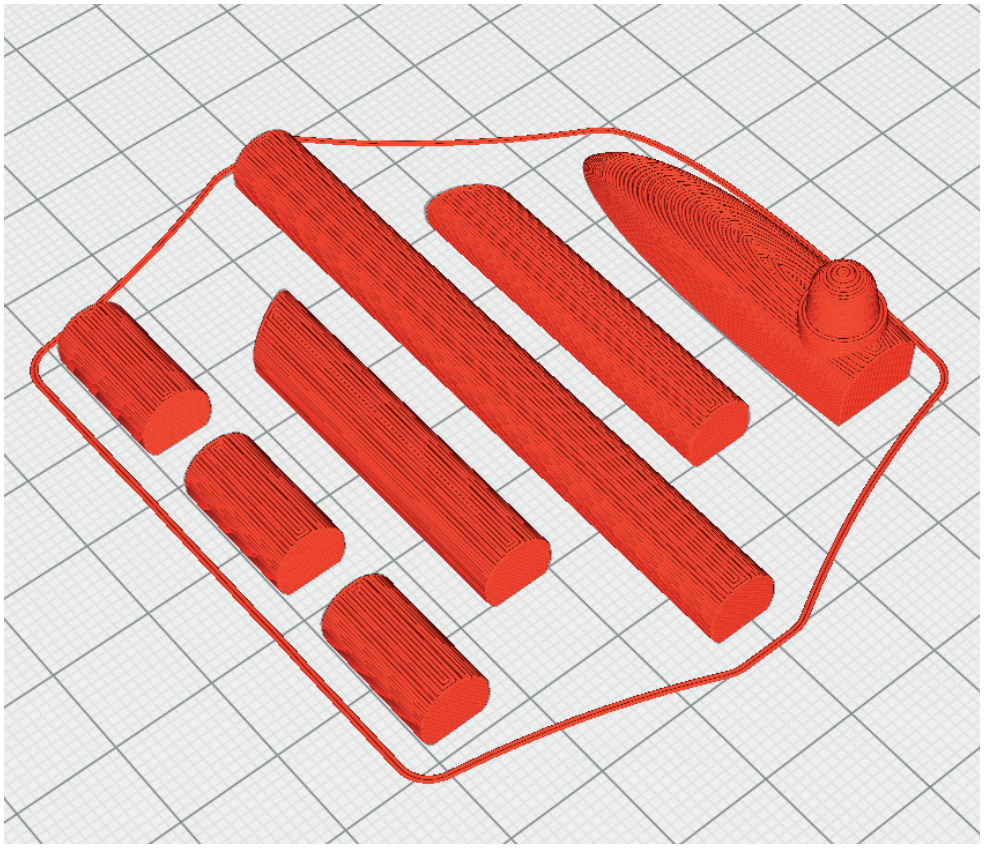


INFO

STL file: Rudder-3_p2.stl
Material: PLA
Weight: ~ 5 g

ADDITIONAL SETTINGS

- Top Layers 4
- Skirt (no Brim)



PROFILE P3_SURFACE

The following parts must be sliced with the profile PROFILE P3_SURFACE (1 Wall Print).
Recommended additional settings are listed in the screenshots.

PLEASE NOTE

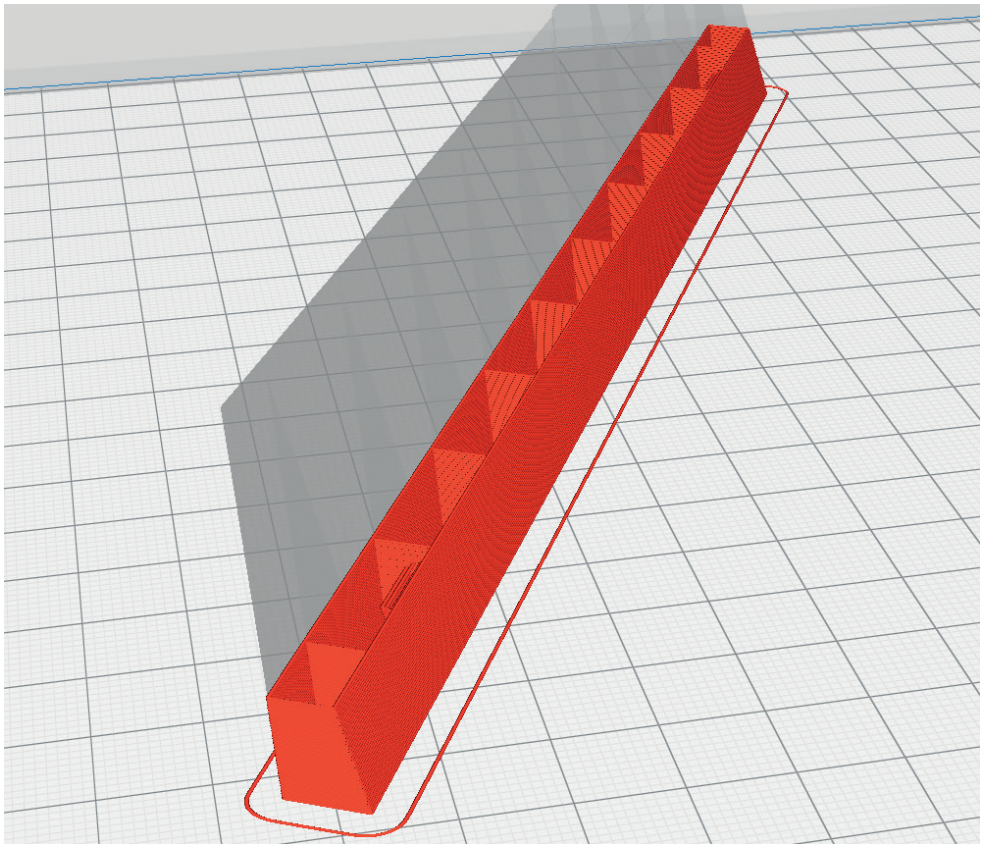
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Aileron-left_p3.stl
Aileron-right_p3.stl
Material: PLA
Weight: ~ 10 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

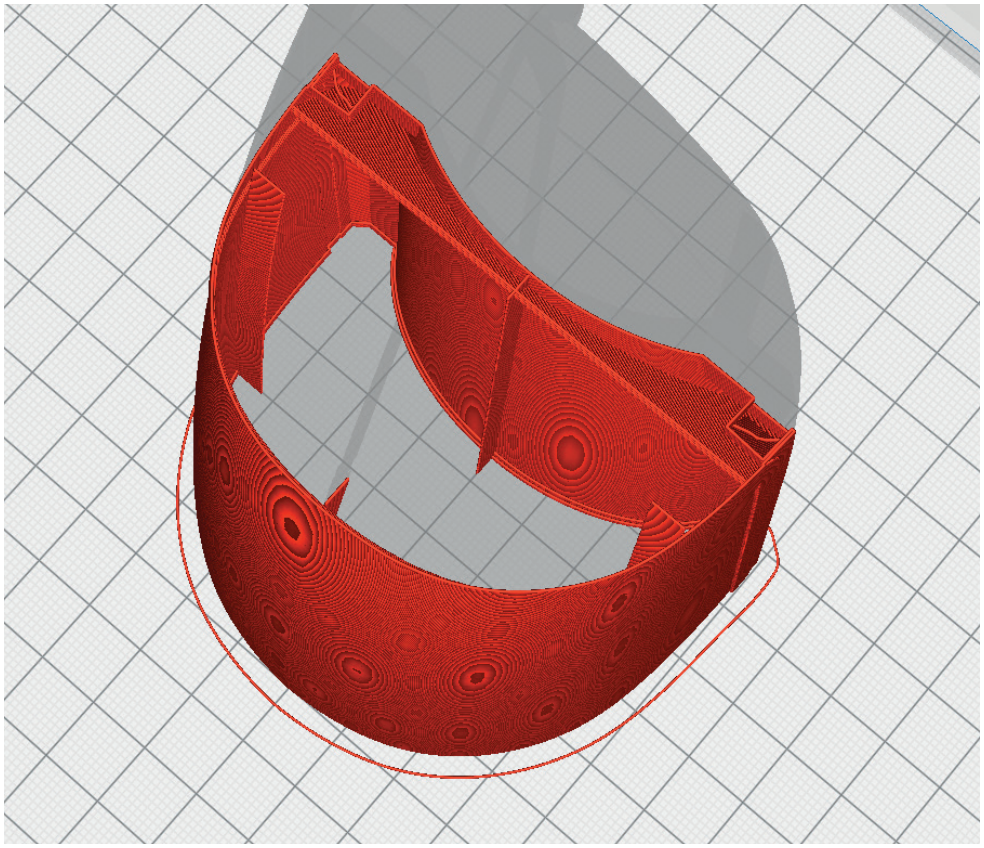


INFO

STL file: Canopy-1_p3.stl
Material: PLA
Weight: ~ 19 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

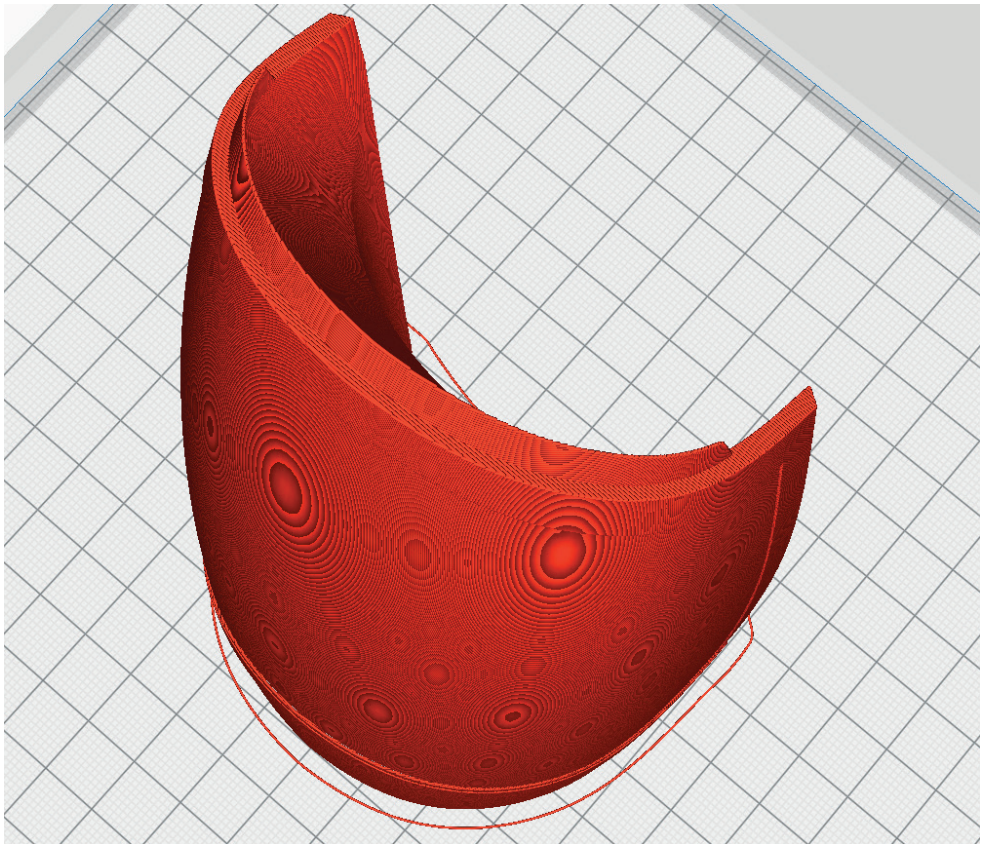
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Canopy-2_p3.stl
Material: PLA
Weight: ~ 21 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

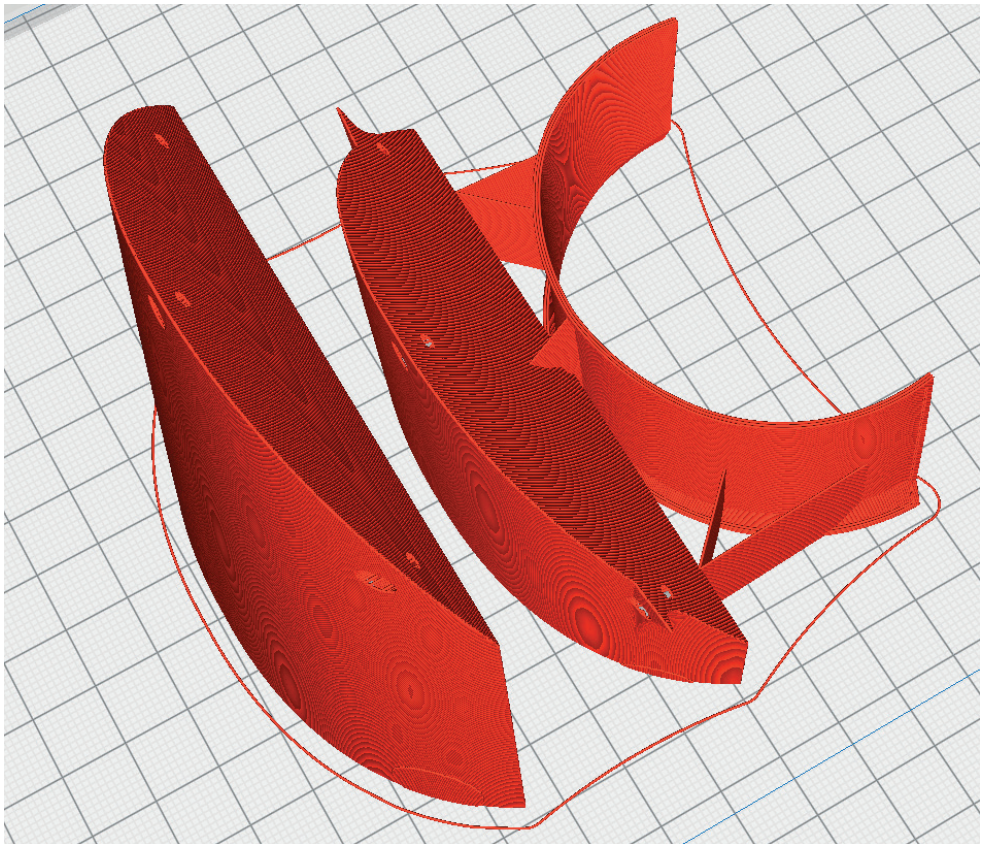


INFO

STL file: EDF-Cover_p3.stl
Material: PLA
Weight: ~ 18 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

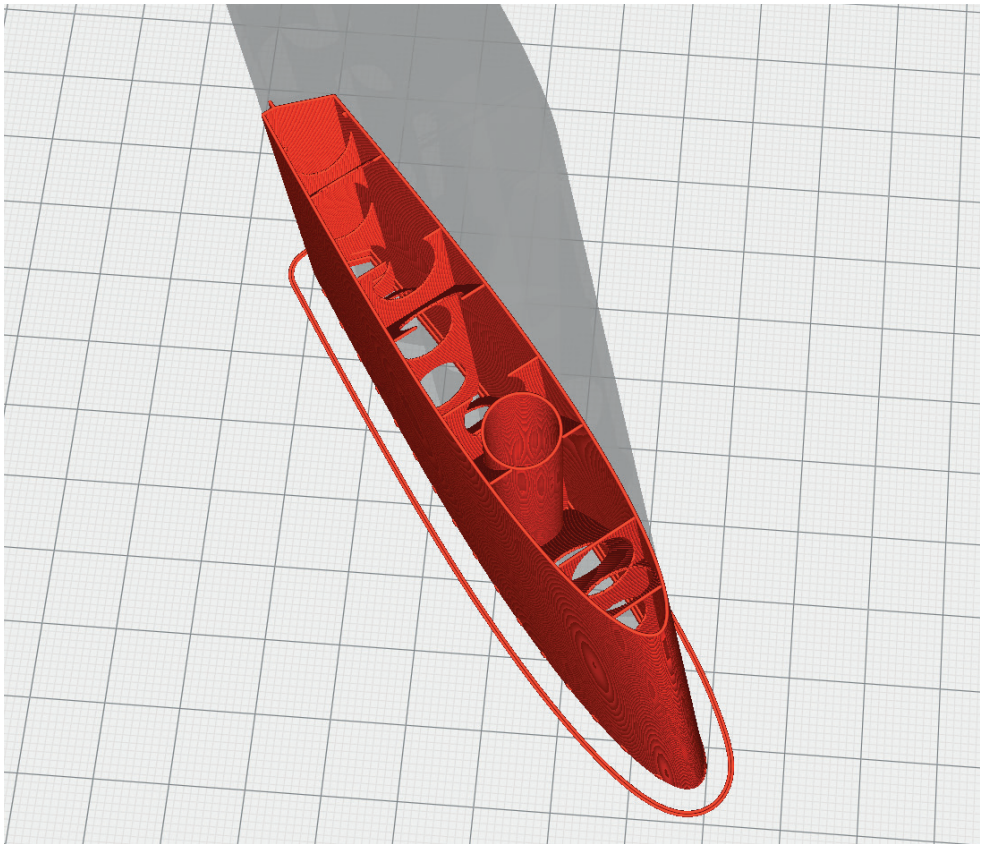
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Elevator1-left_p3.stl
Material: PLA
Weight: ~ 19 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

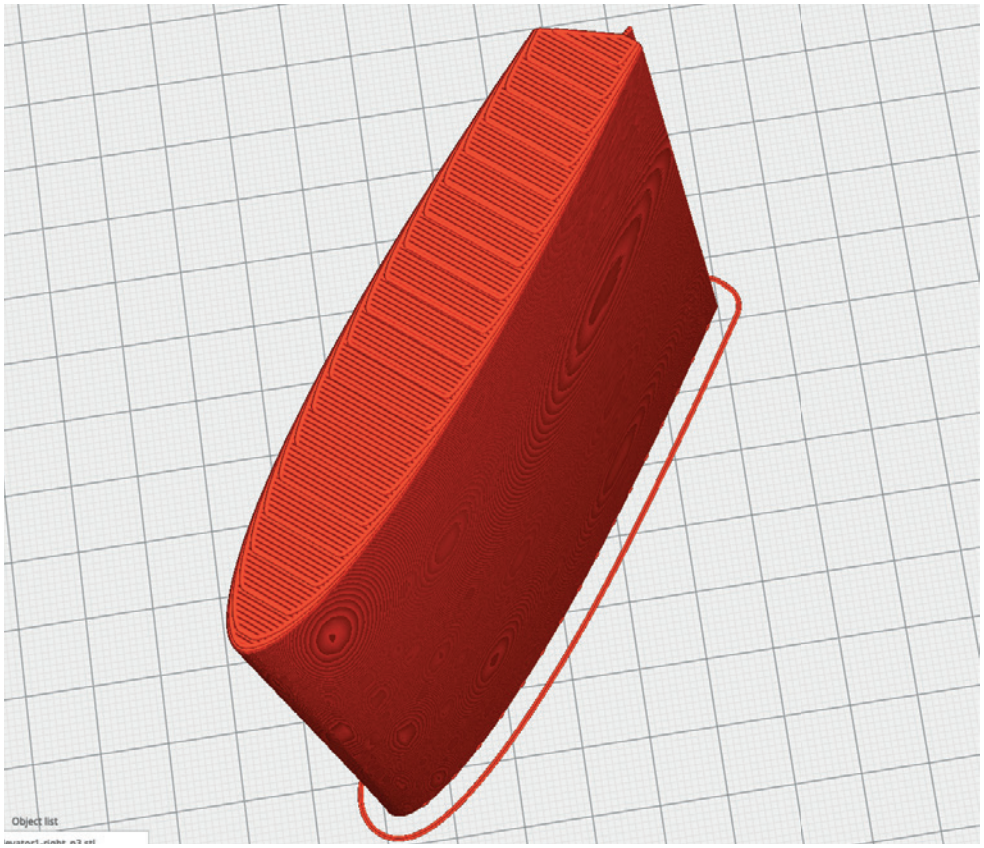


INFO

STL file: Elevator1-right_p3.stl
Material: PLA
Weight: ~ 19 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

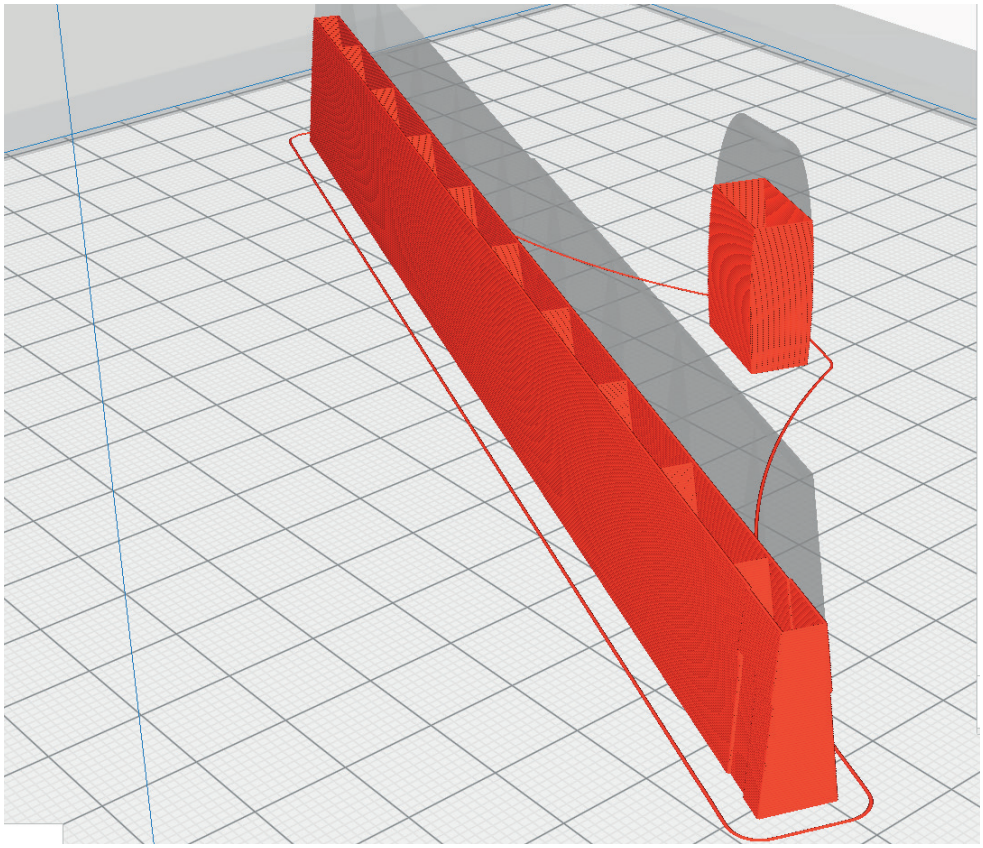
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Elevator2-left_p3.stl
Material: PLA
Weight: ~ 10 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

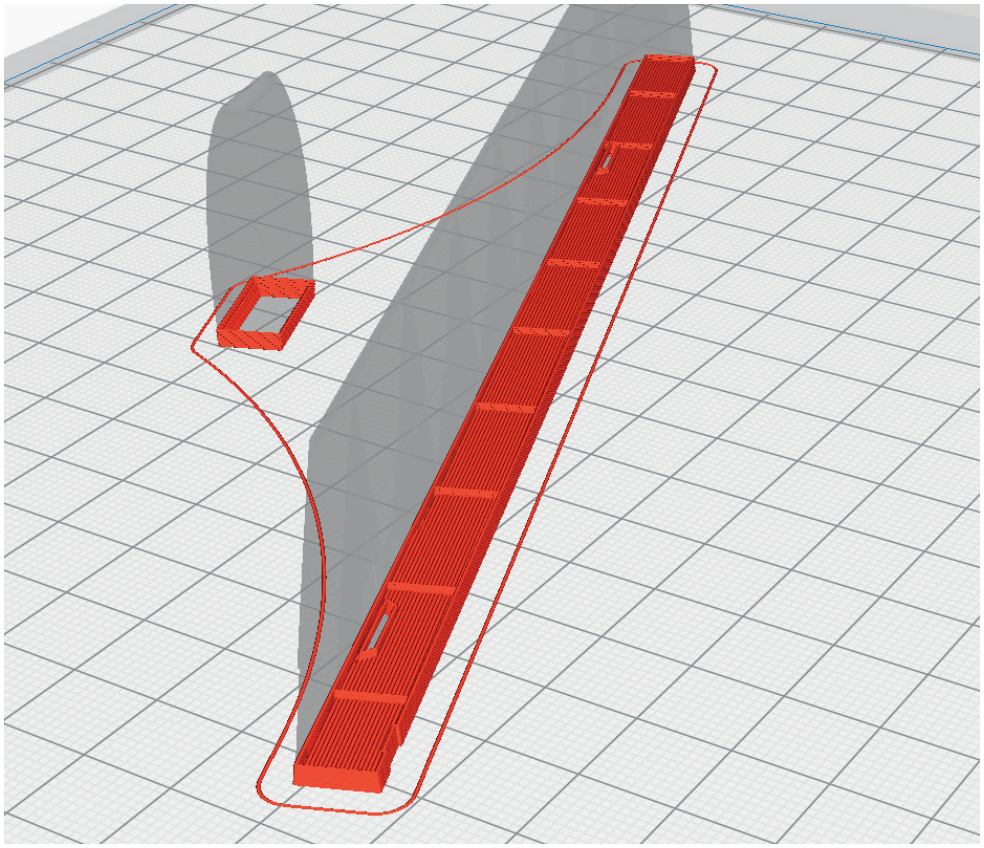


INFO

STL file: Elevator2-right_p3.stl
Material: PLA
Weight: ~ 10 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

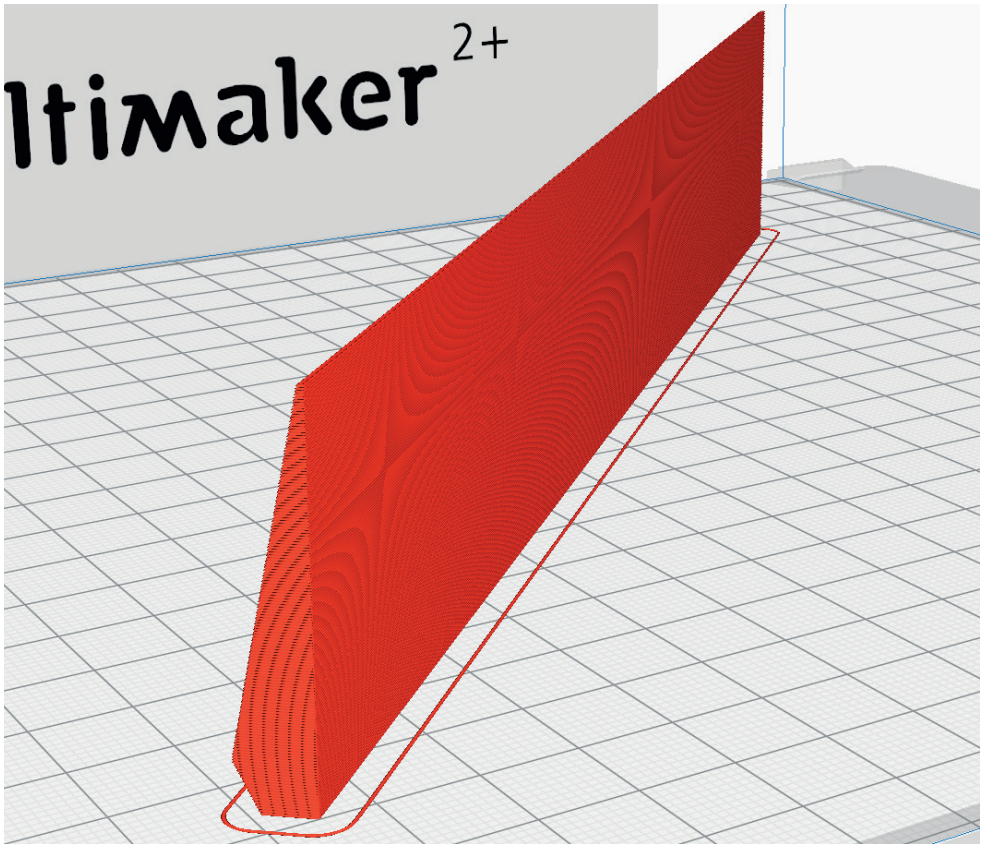
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Flap-left_p3.stl
Material: PLA
Weight: ~ 10 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

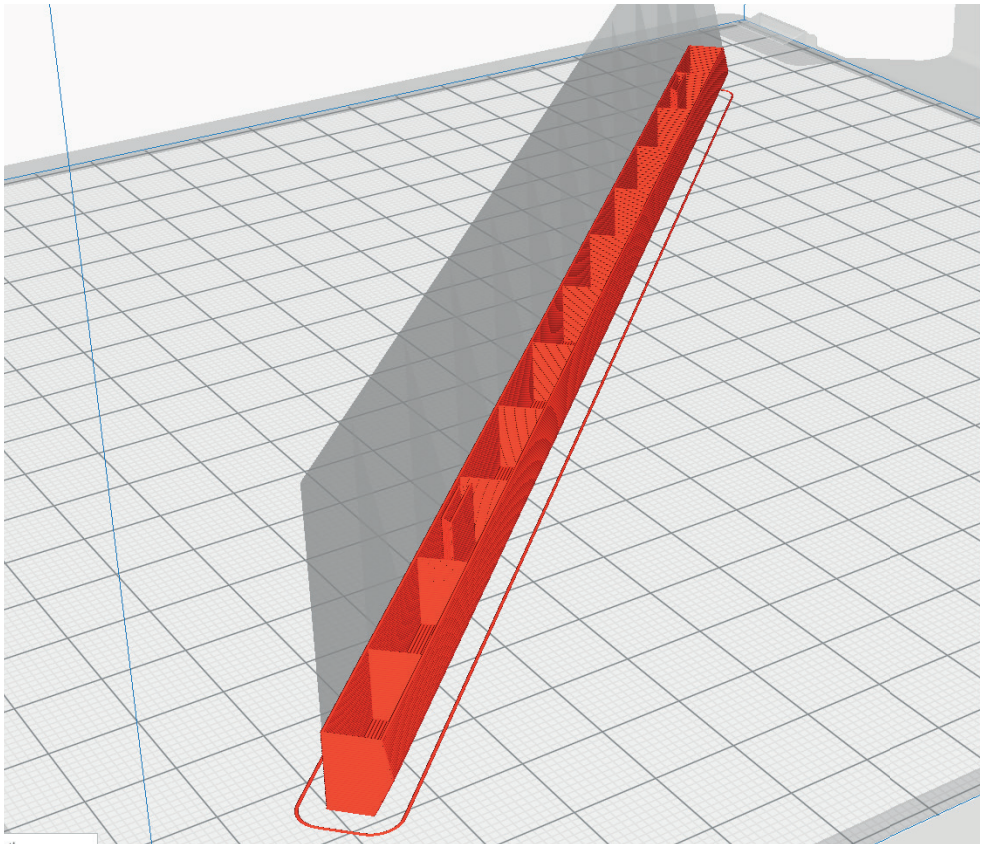


INFO

STL file: Flap-right_p3.stl
Material: PLA
Weight: ~ 10 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

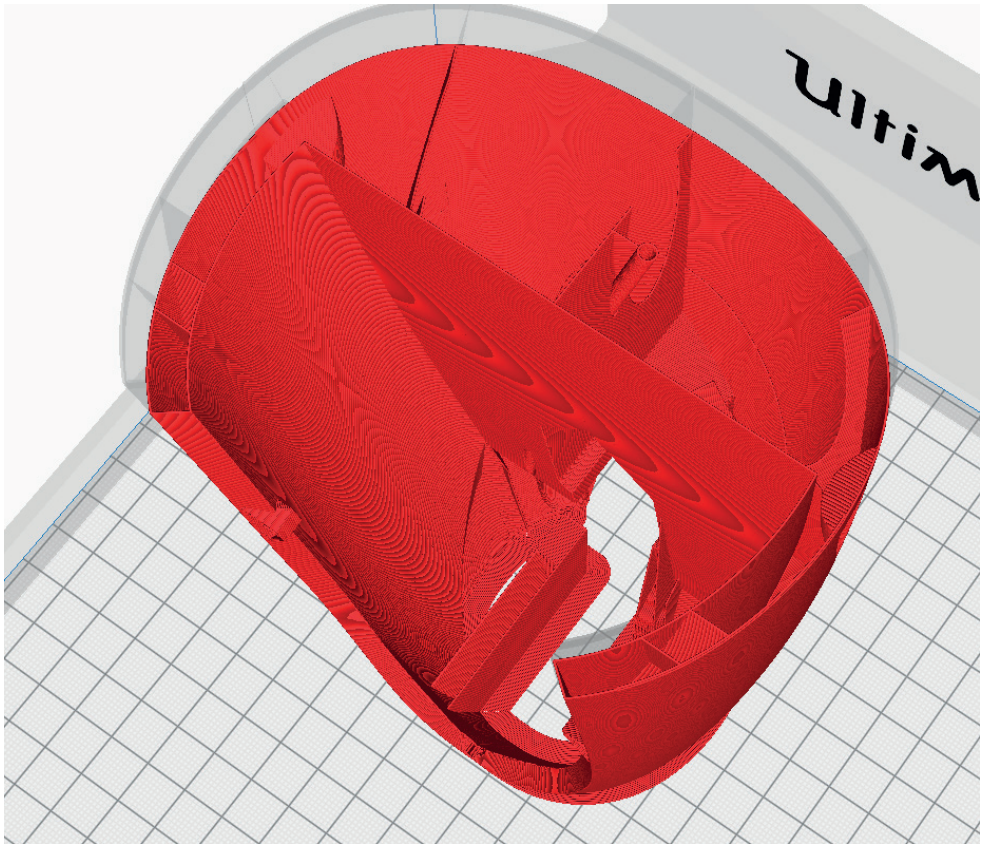
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Fuselage1_p3.stl
Material: PLA
Weight: ~ 53 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

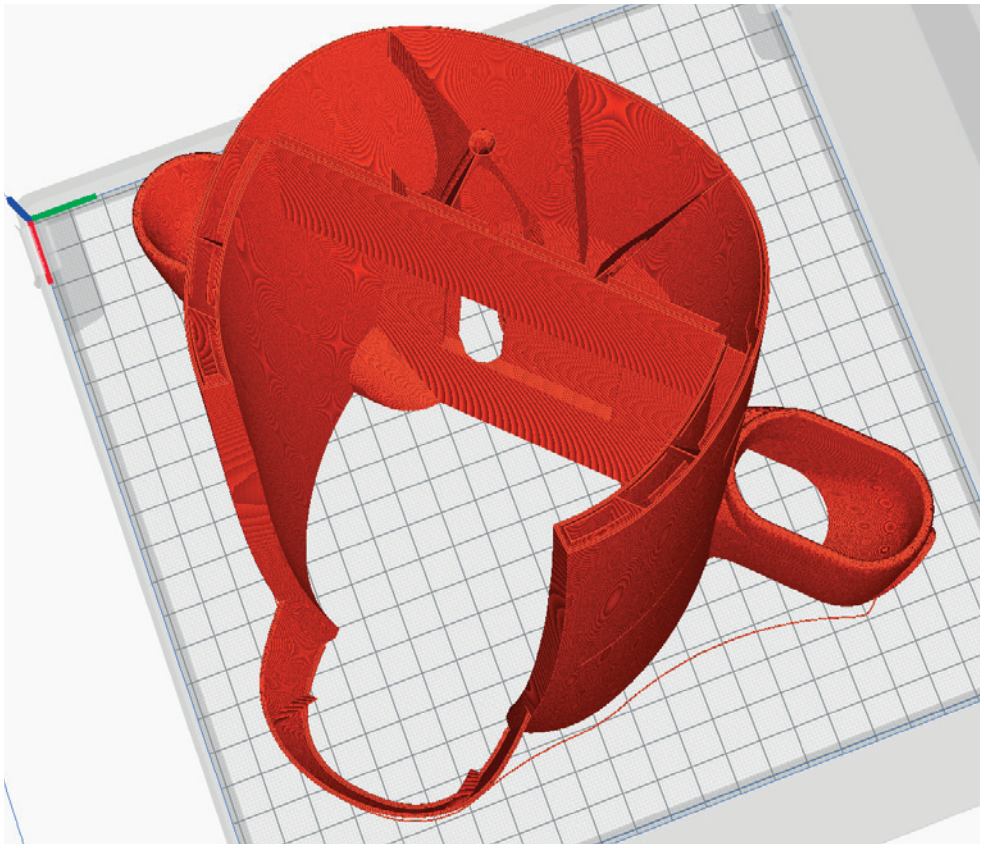


INFO

STL file: Fuselage2_p3.stl
Material: PLA
Weight: ~ 100 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

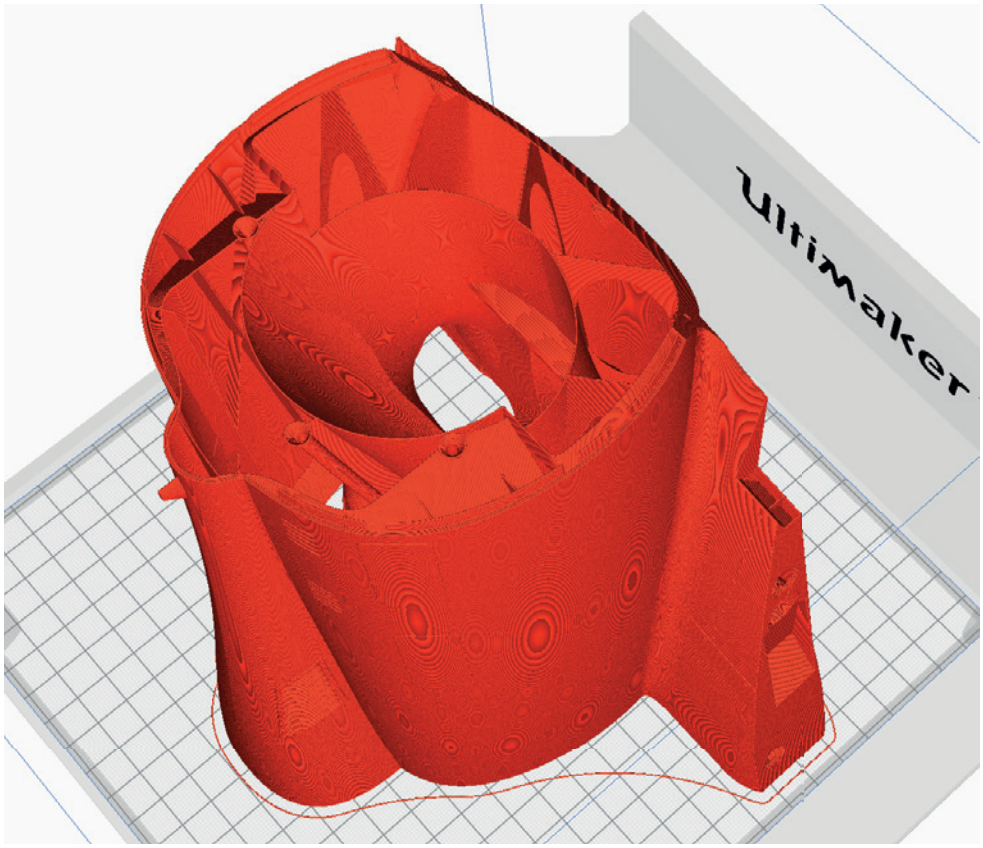
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Fuselage3_p3.stl
Material: PLA
Weight: ~ 96 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

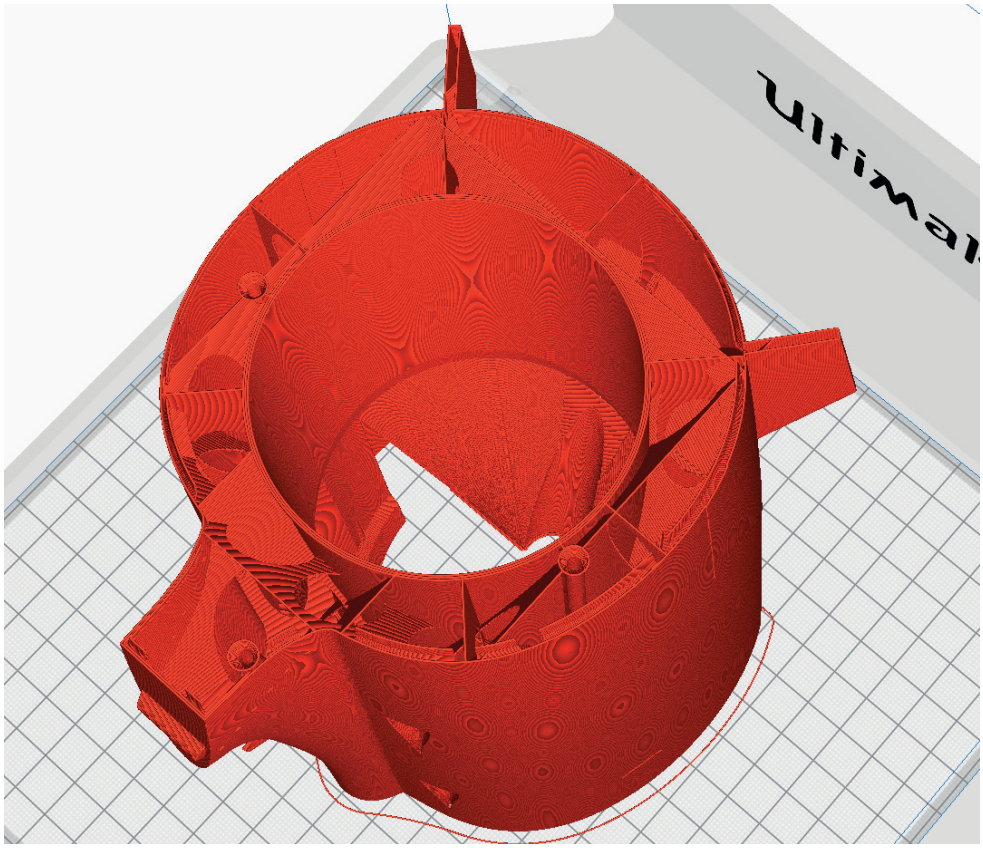


INFO

STL file: Fuselage4_p3.stl
Material: PLA
Weight: ~ 76 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

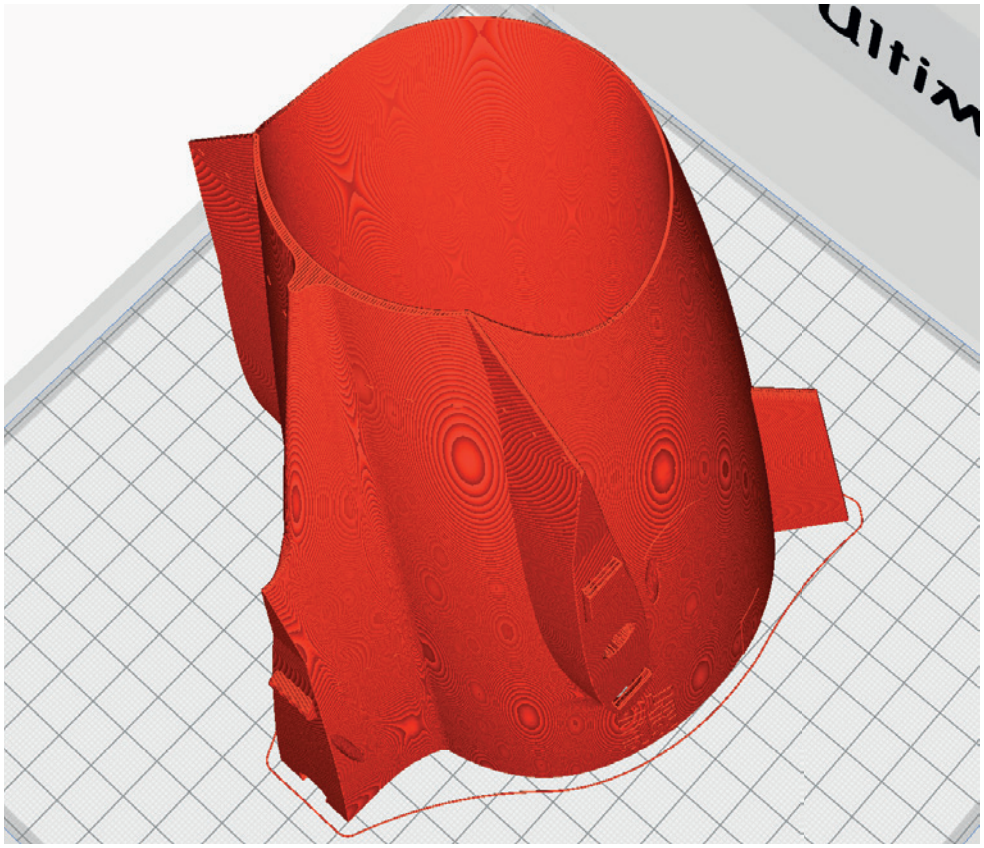
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Fuselage5_p3.stl
Material: PLA
Weight: ~ 66 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

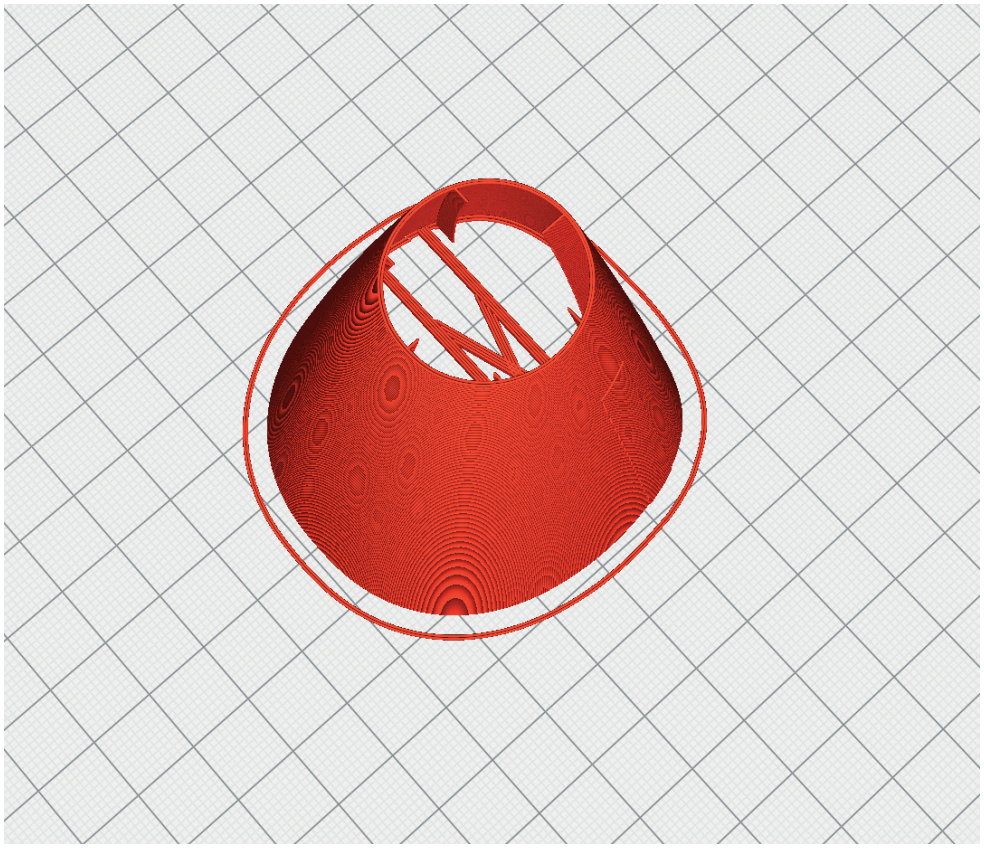


INFO

STL file: Nose2_p3.stl
Material: PLA
Weight: ~ 5 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

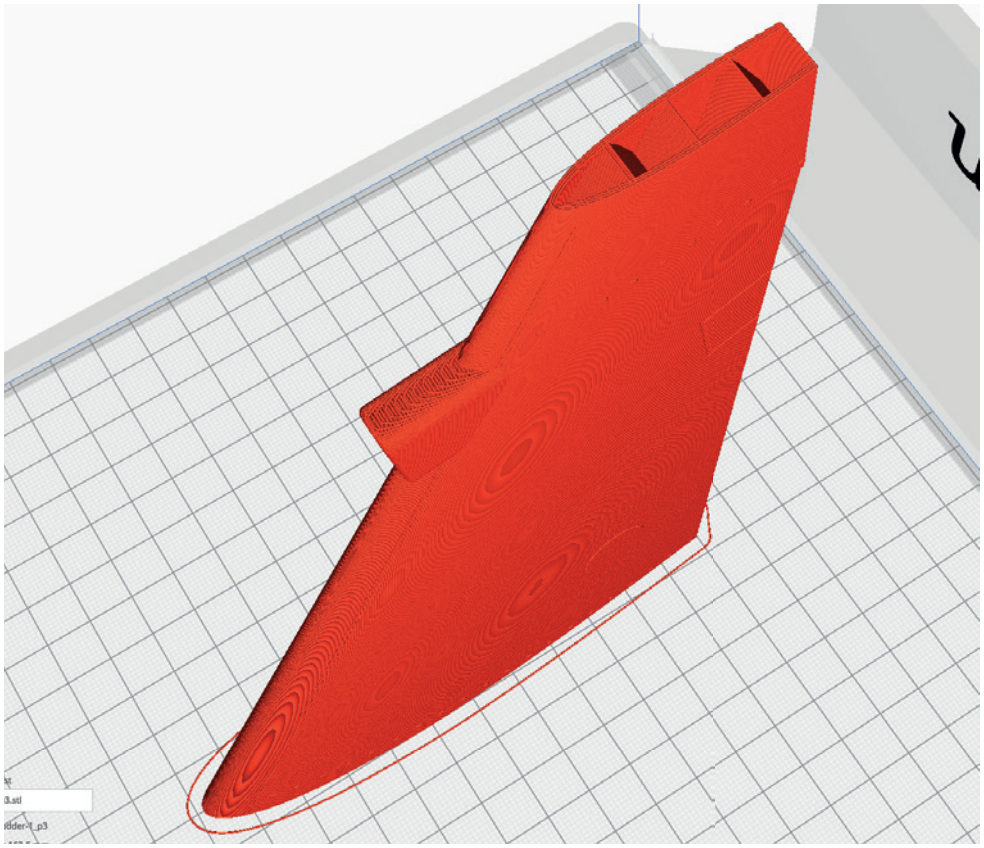
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Rudder-1_p3.stl
Material: PLA
Weight: ~ 24 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

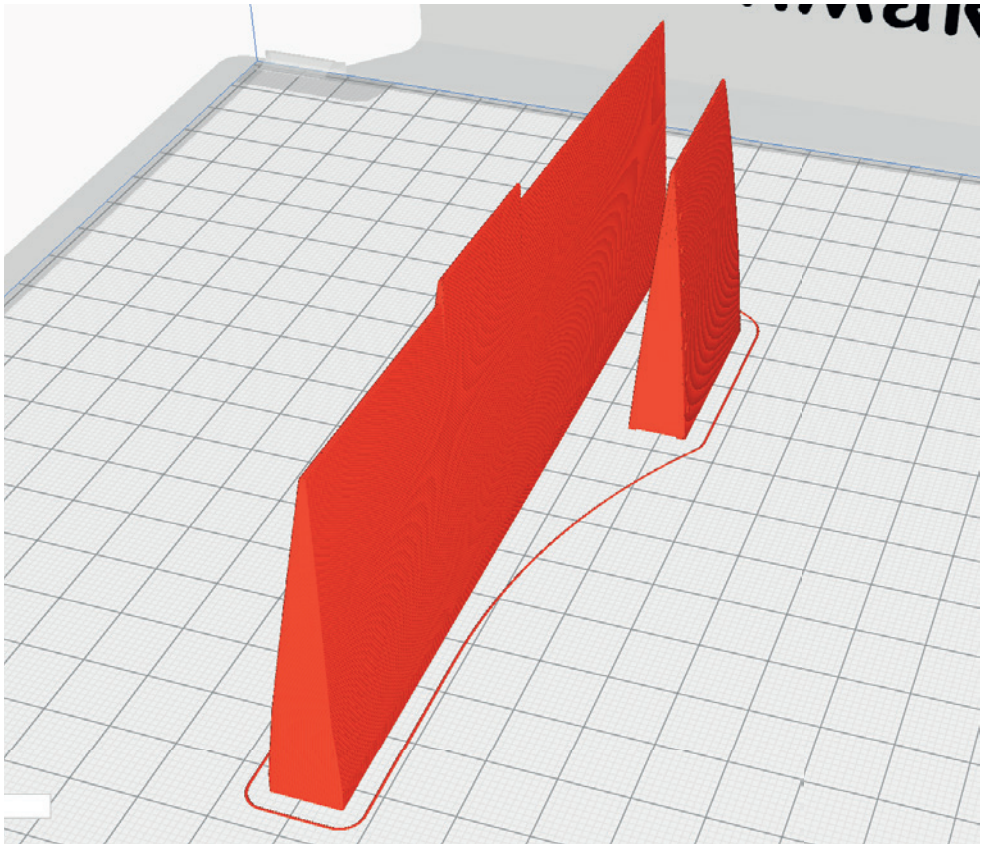


INFO

STL file: Rudder-2_p3.stl
Material: PLA
Weight: ~ 11 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

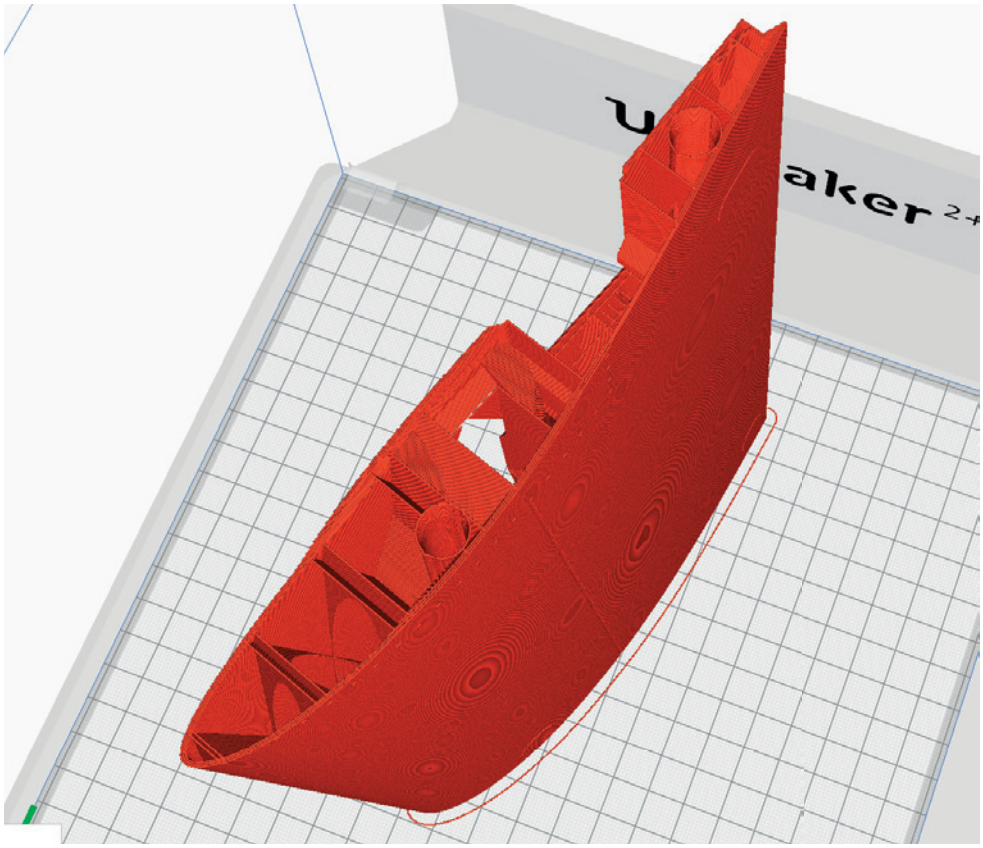
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Wing1-left_p3.stl
Material: PLA
Weight: ~ 61 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

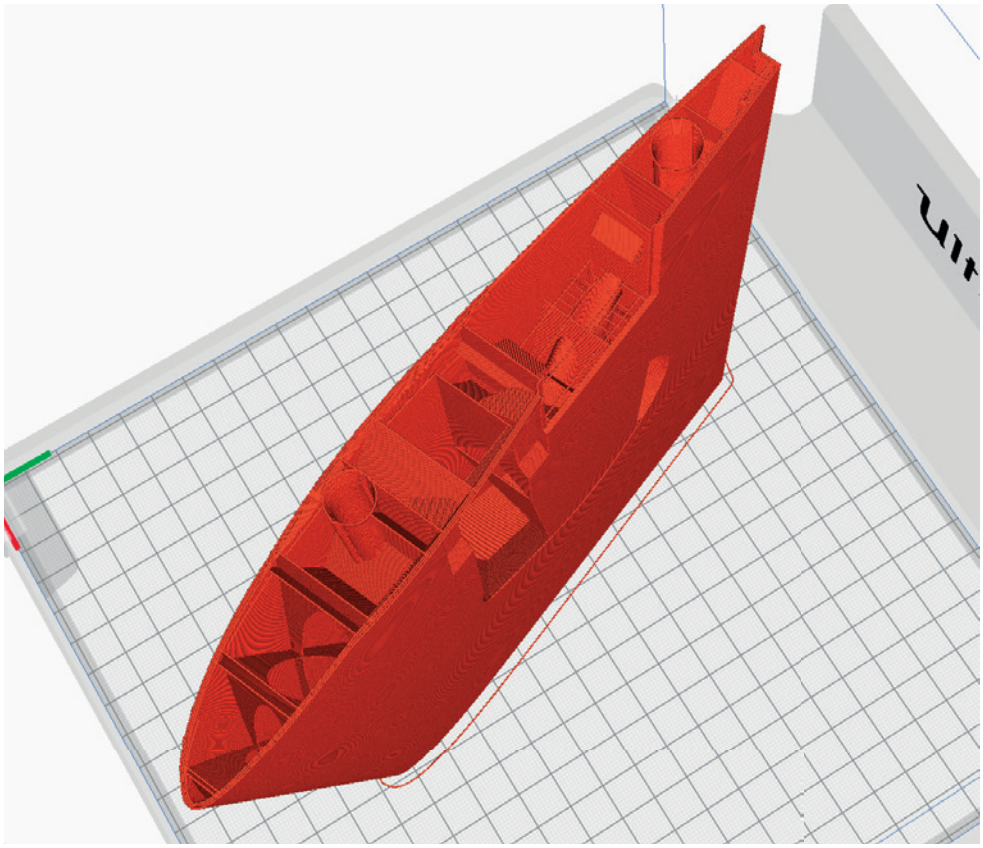


INFO

STL file: Wing1-right_p3.stl
Material: PLA
Weight: ~ 61 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

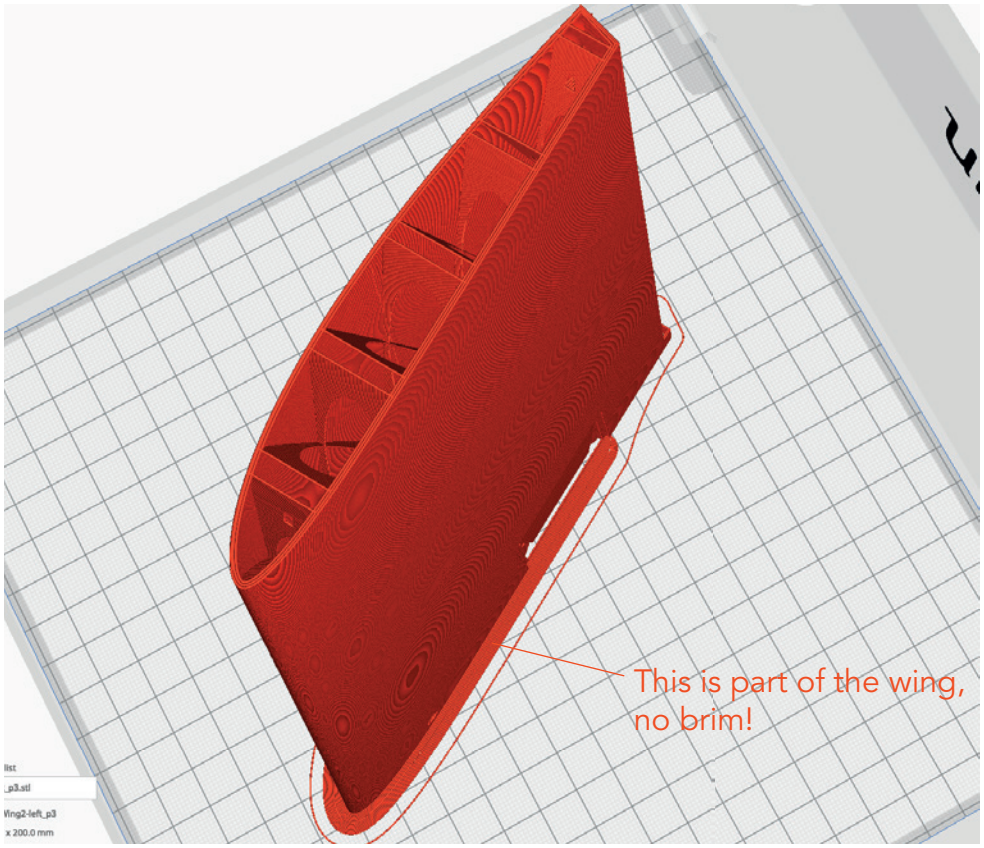
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: Wing2-left_p3.stl
Material: PLA
Weight: ~ 39 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

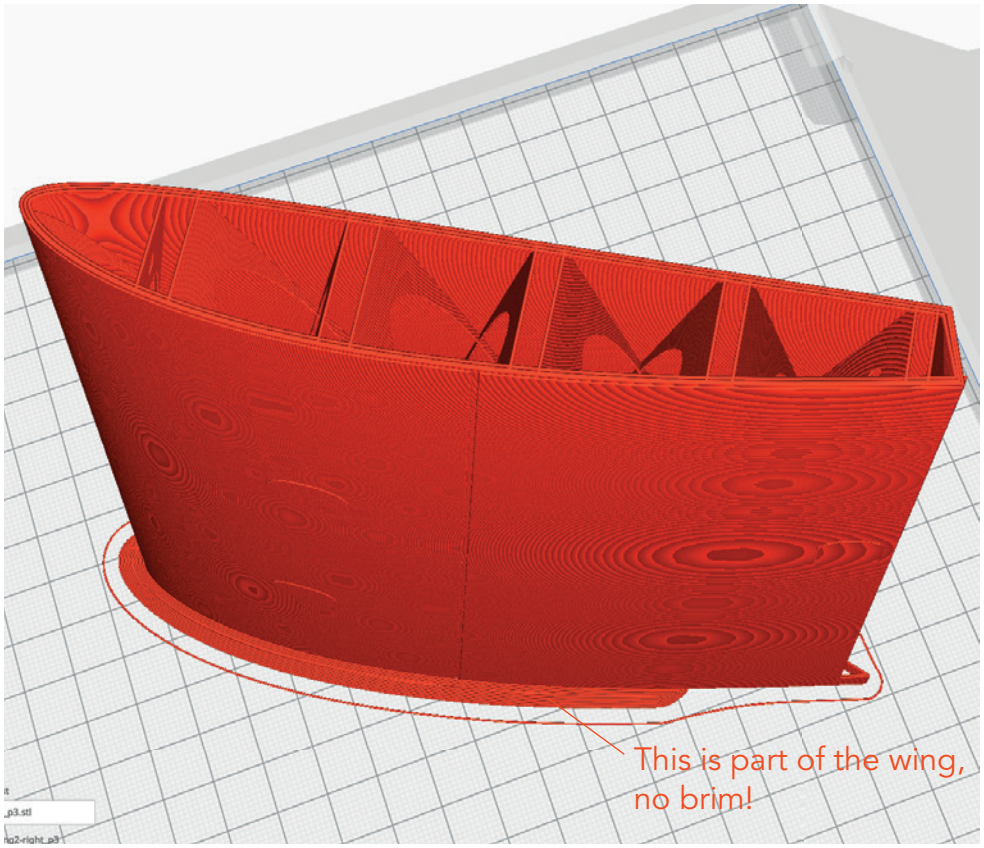


INFO

STL file: Wing2-right_p3.stl
Material: PLA
Weight: ~ 39 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



PROFILE P3_SURFACE

PLEASE NOTE

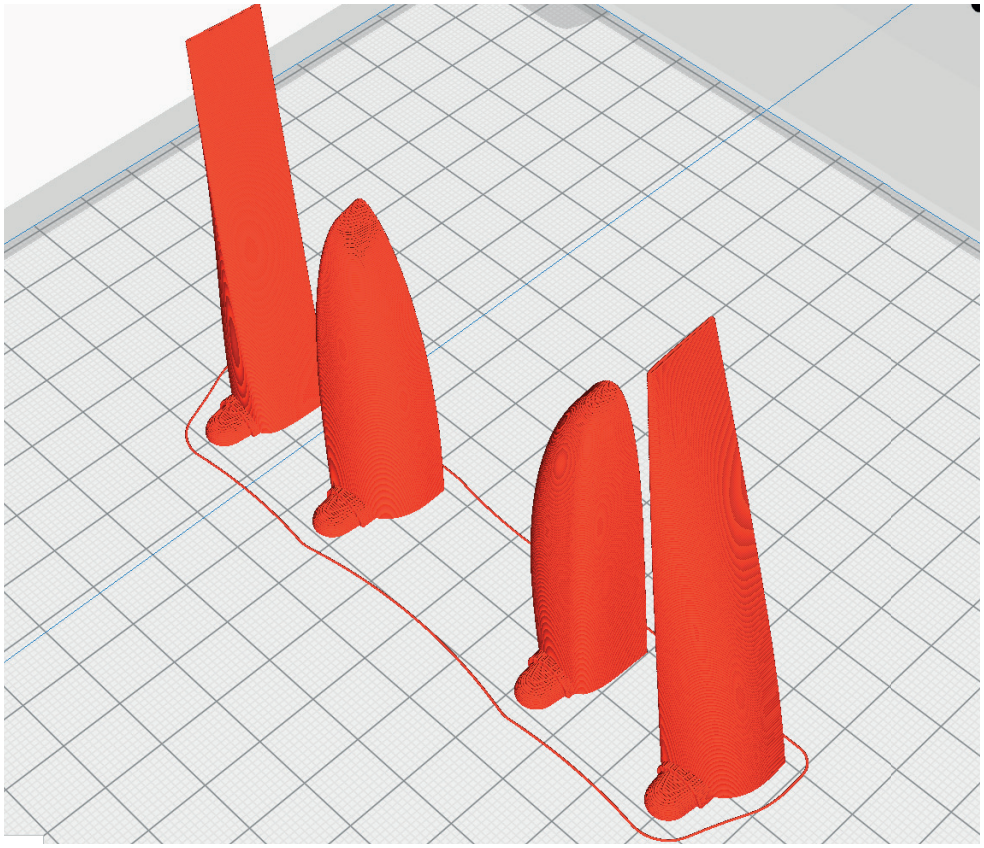
In profile P3_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

INFO

STL file: WingtipsV1_p3.stl
Material: PLA
Weight: ~ 6 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.



INFO

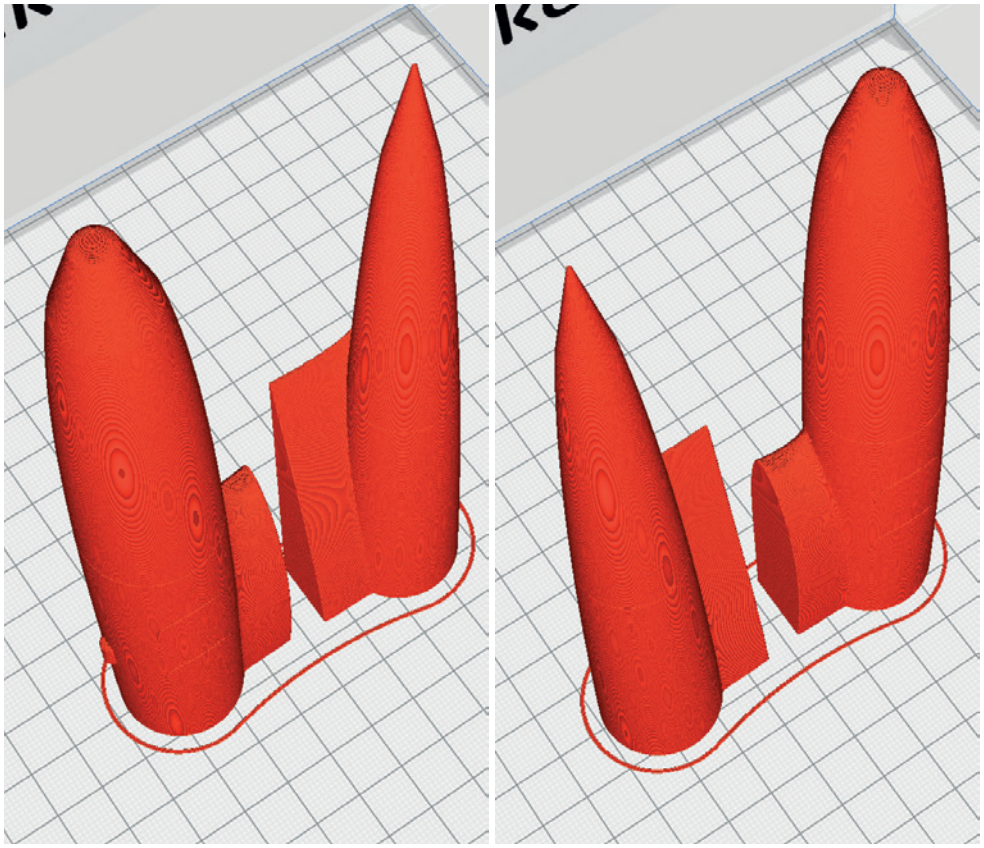
STL file:
WingtipV2-left_p3.stl
WingtipV2-right_p3.stl

Material: PLA
Weight: ~ 13 g

ADDITIONAL SETTINGS

Depending on your printer, a **brim** may not be required.

Use the Fan or reduce the nozzle temp a bit



PROFILE P4_FLEX

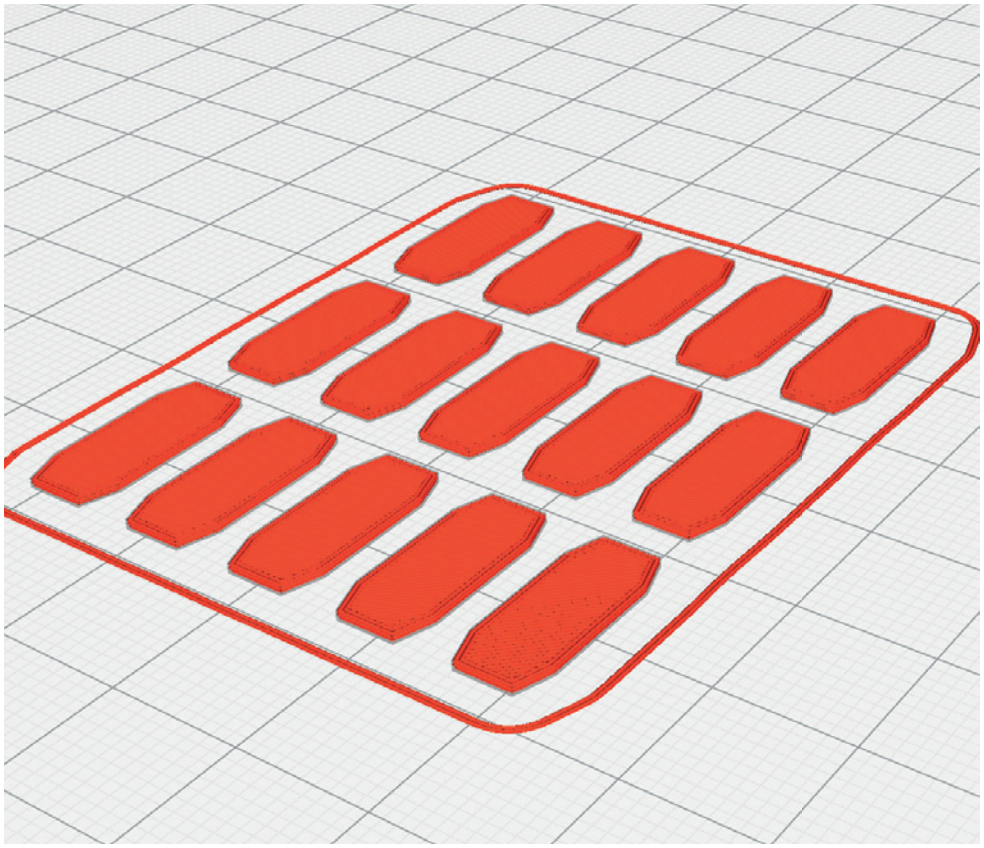
The following parts must be sliced with the profile PROFILE P4_FLEX (flexible materials).
Recommended additional settings are listed in the screenshots.

INFO

STL file: Hinges_p4.stl
Material: TPU soft or middel
Weight: ~ 1 g

ADDITIONAL SETTINGS

None required

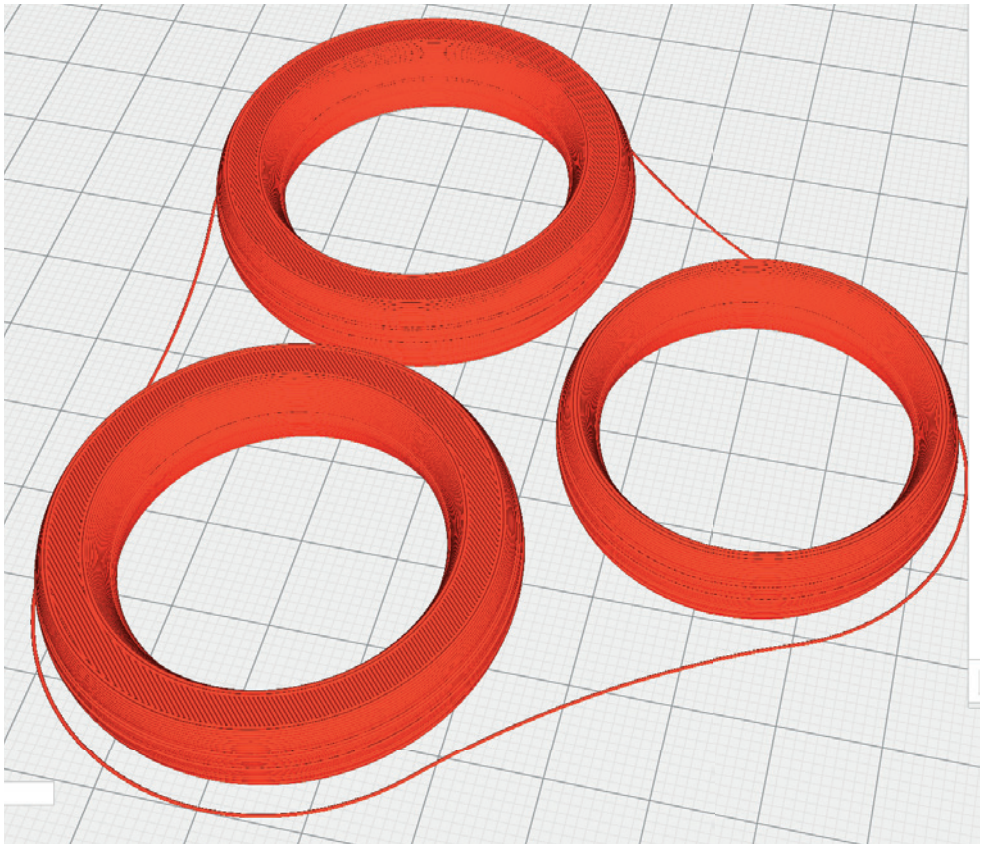


INFO

STL file: Tires_p4.stl
Material: TPU soft or middel
Weight: ~ 12 g

ADDITIONAL SETTINGS

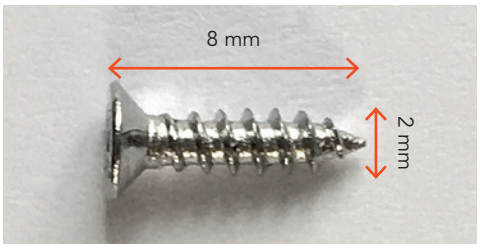
Infill Density 100 %



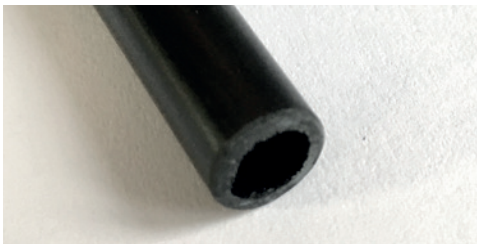
REQUIRED ACCESSORIES

MATERIALS

- some tapping screws Ø2*8mm

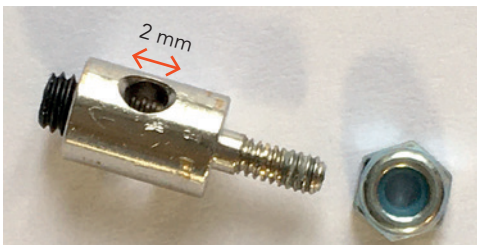


- Suitable screws for the rectraction gear
- CA super glue, liquid and liquid medium
- Activator
- servo extension cable
- V-cable for the flap-servos
- servo cable for the Retraction Gear
- Velcro fastening strap for the battery
- steel round bar Ø3mm
- Carbon tube Ø8*1000mm 1 Piece



- Carbon wire Ø1,2*1000mm 3 Pieces
- Neodym-Super-Magnet 5x5x5mm 4 Pieces

- rod connection 9 Pieces



TOOLS

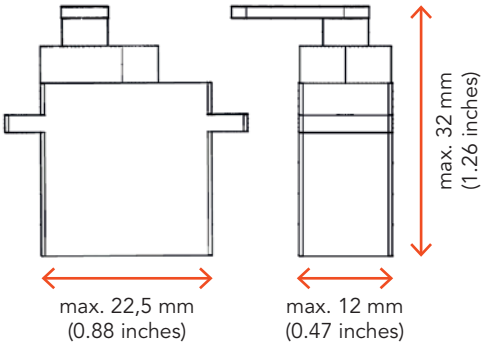
- Cutter knife
- Philips screwdriver
- Needle nose pliers
- Drill Ø3mm, Ø2,5mm, Ø1,5mm

RC COMPONENTS

Motor: • EDF 70 mm, 4S or 6S
We use the FMS 70

ATTENTION: you need an EDF without intake ring!

Servo 6 Pieces: • Hitec HS-55
• TURNIGY TGY-50090M

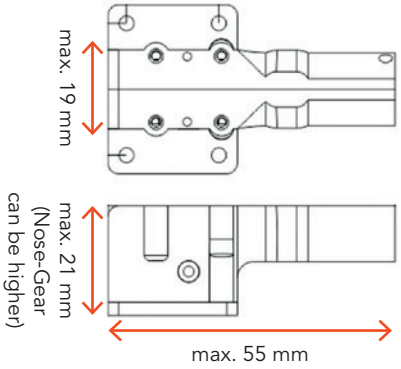


BEC-Controller: BEC, suitable for your EDF

Battery pack (~400 g): 4S or 6S LiPo-Akku ca. 4.200 MAH

Receiver: min. 7 Channel

2x Servoless Retraction Gear small (32mm x 25mm)
1x Servoless Retraction Nose-Gear small

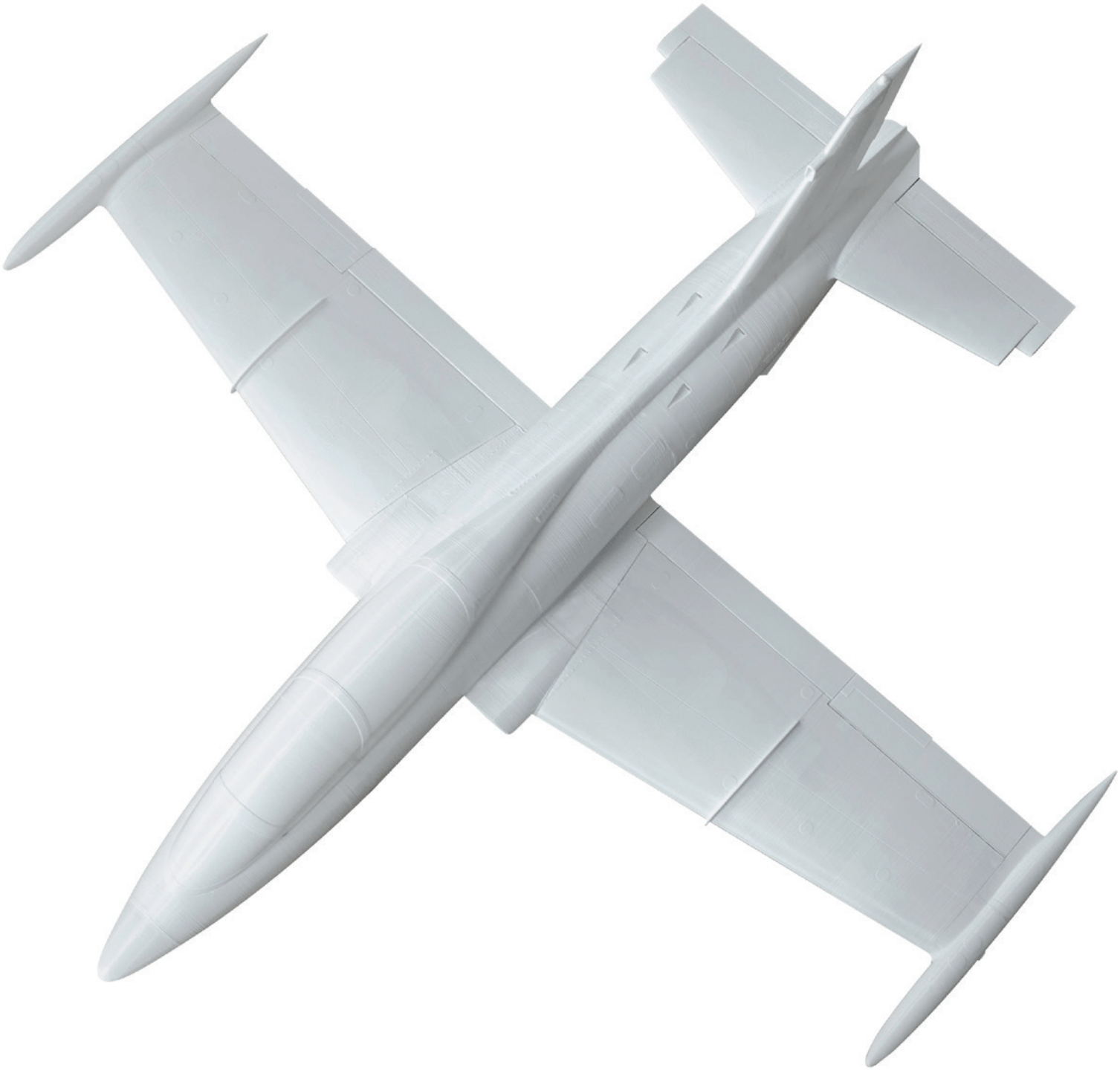


TIPP

We recommend the purchase of a small range of screws, which can be used for all future PLANEPRINT models.

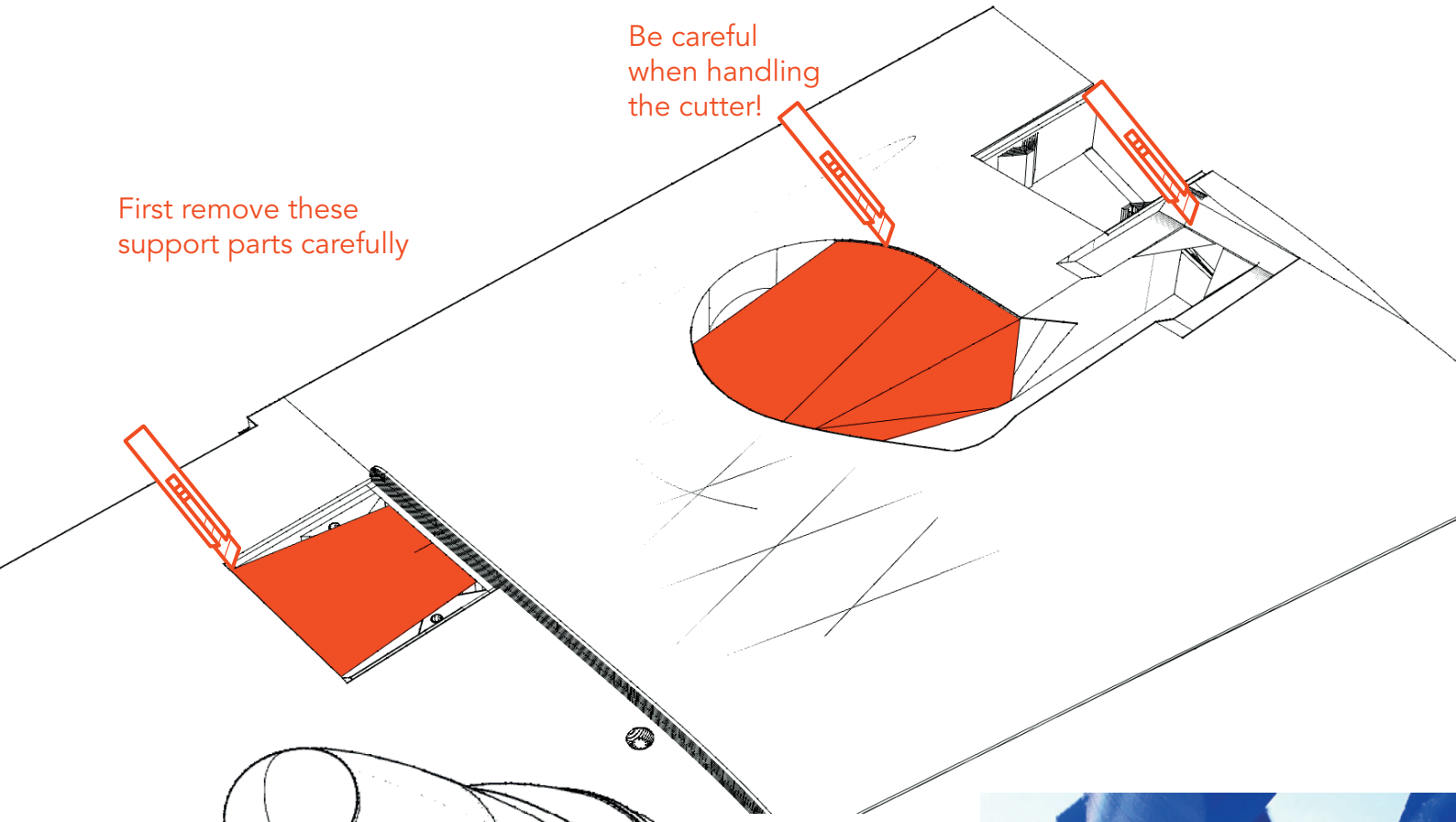
Simply search the Internet for: M2 Flat Head Tapping Screw Assortment …

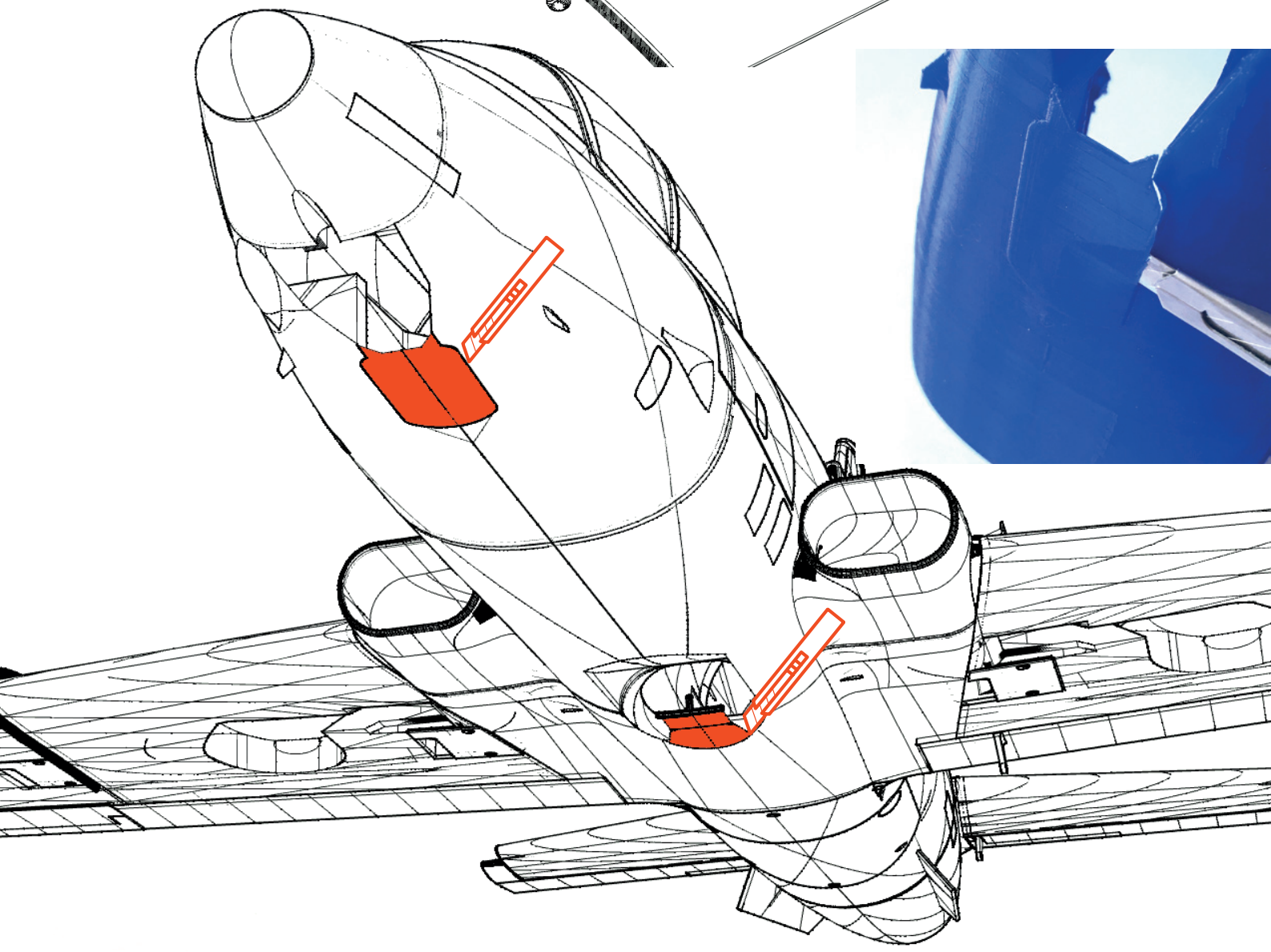
CONSTRUCTION MANUAL



Be careful
when handling
the cutter!

First remove these
support parts carefully



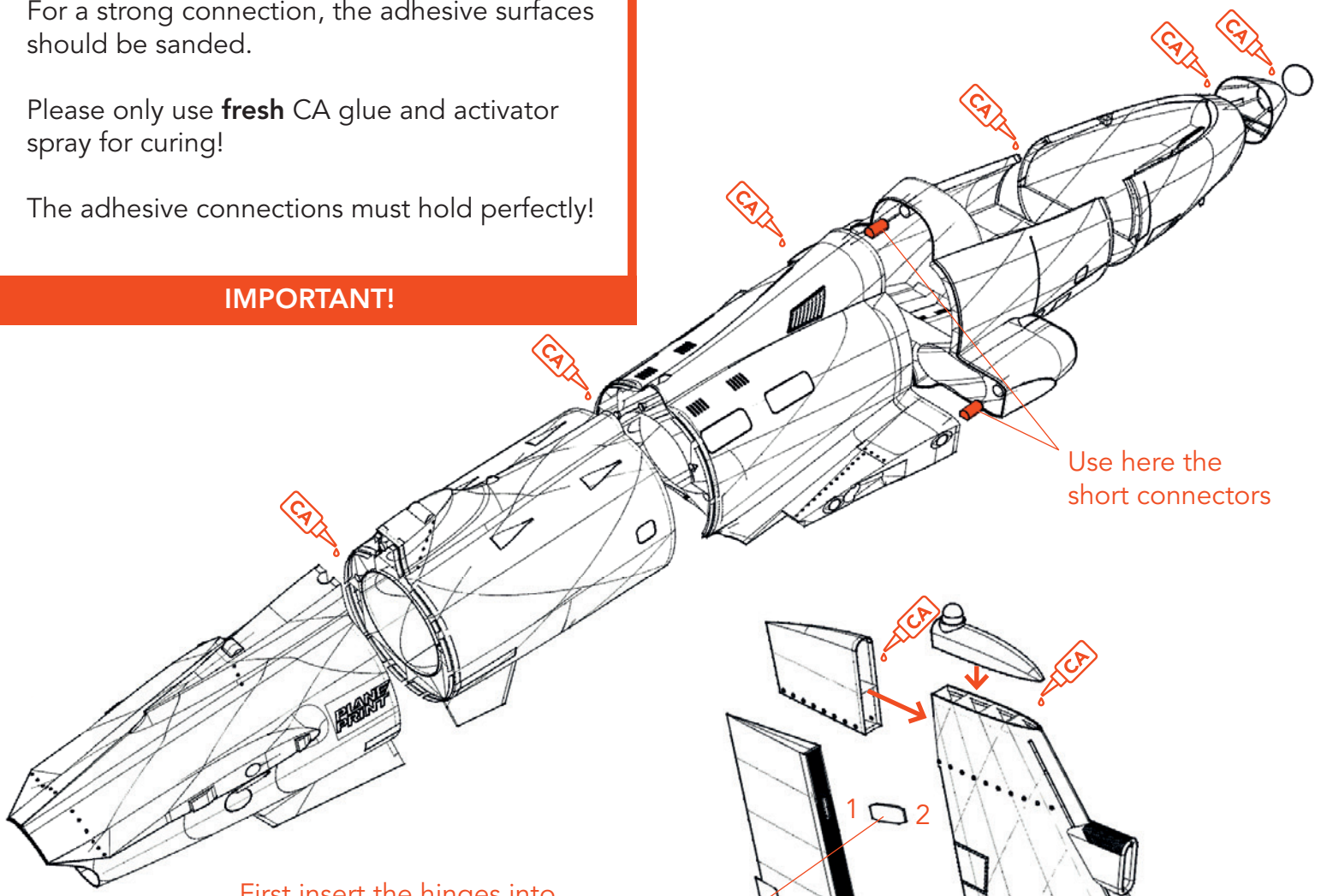


For a strong connection, the adhesive surfaces should be sanded.

Please only use **fresh** CA glue and activator spray for curing!

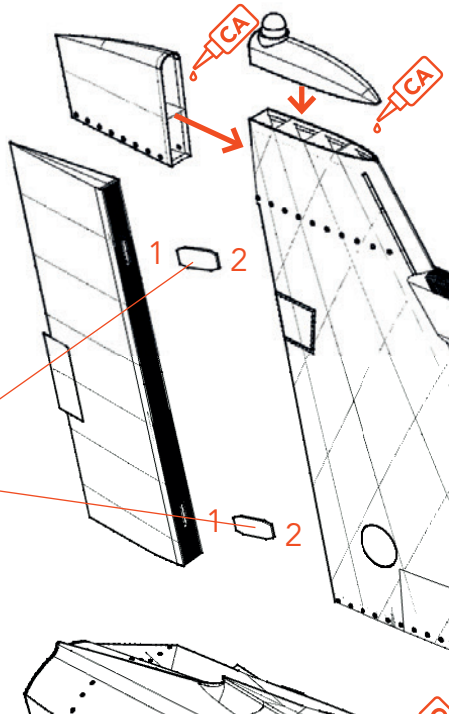
The adhesive connections must hold perfectly!

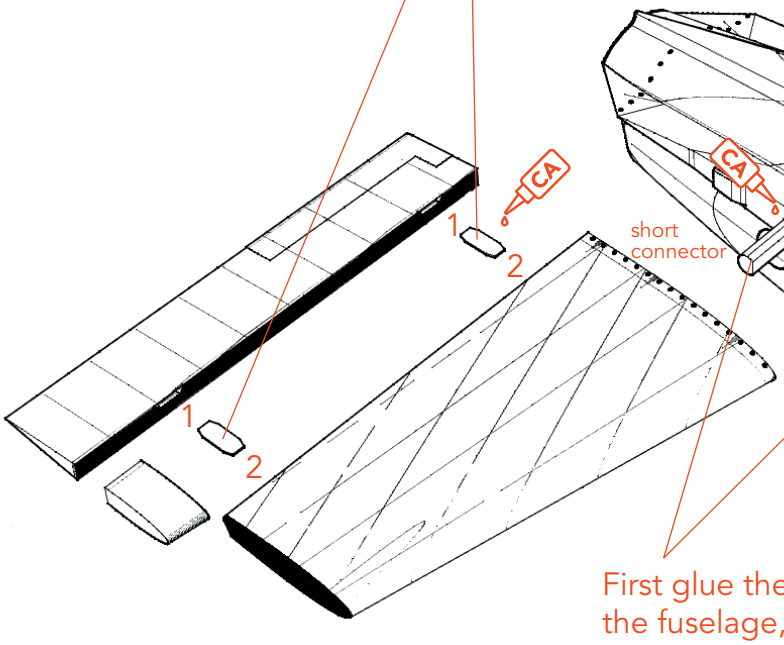
IMPORTANT!

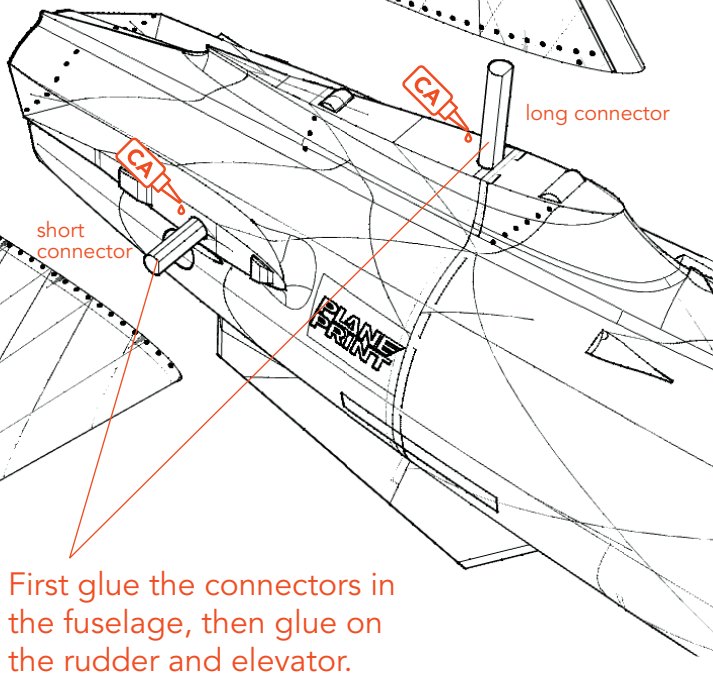


First insert the hinges into the rudder and stick on with a small drop of liquid CA Glue.

Look at the instructions on the next page!

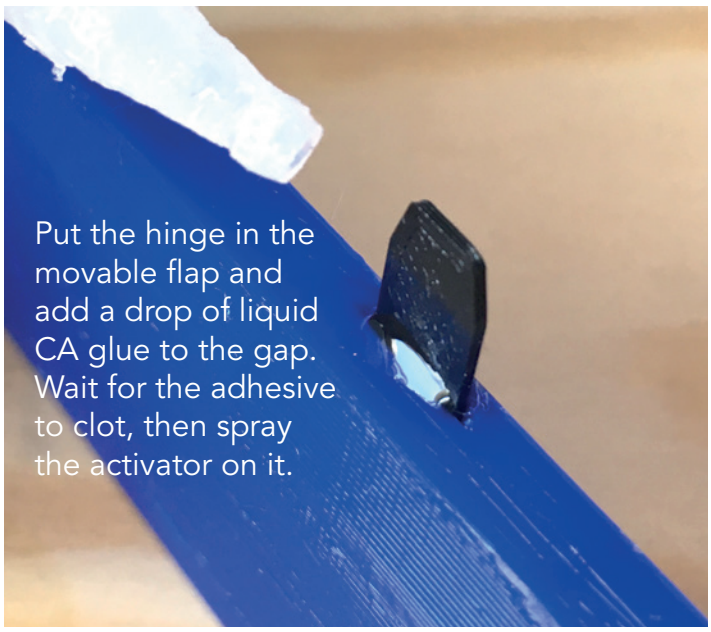


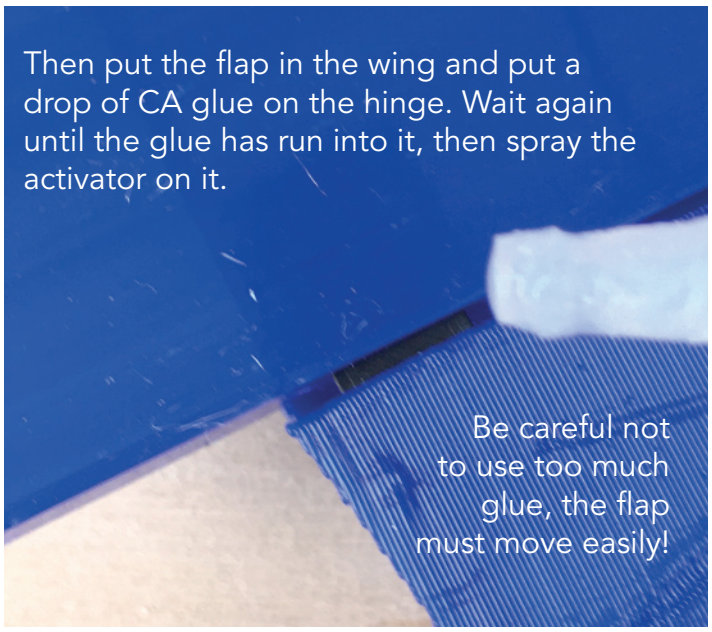


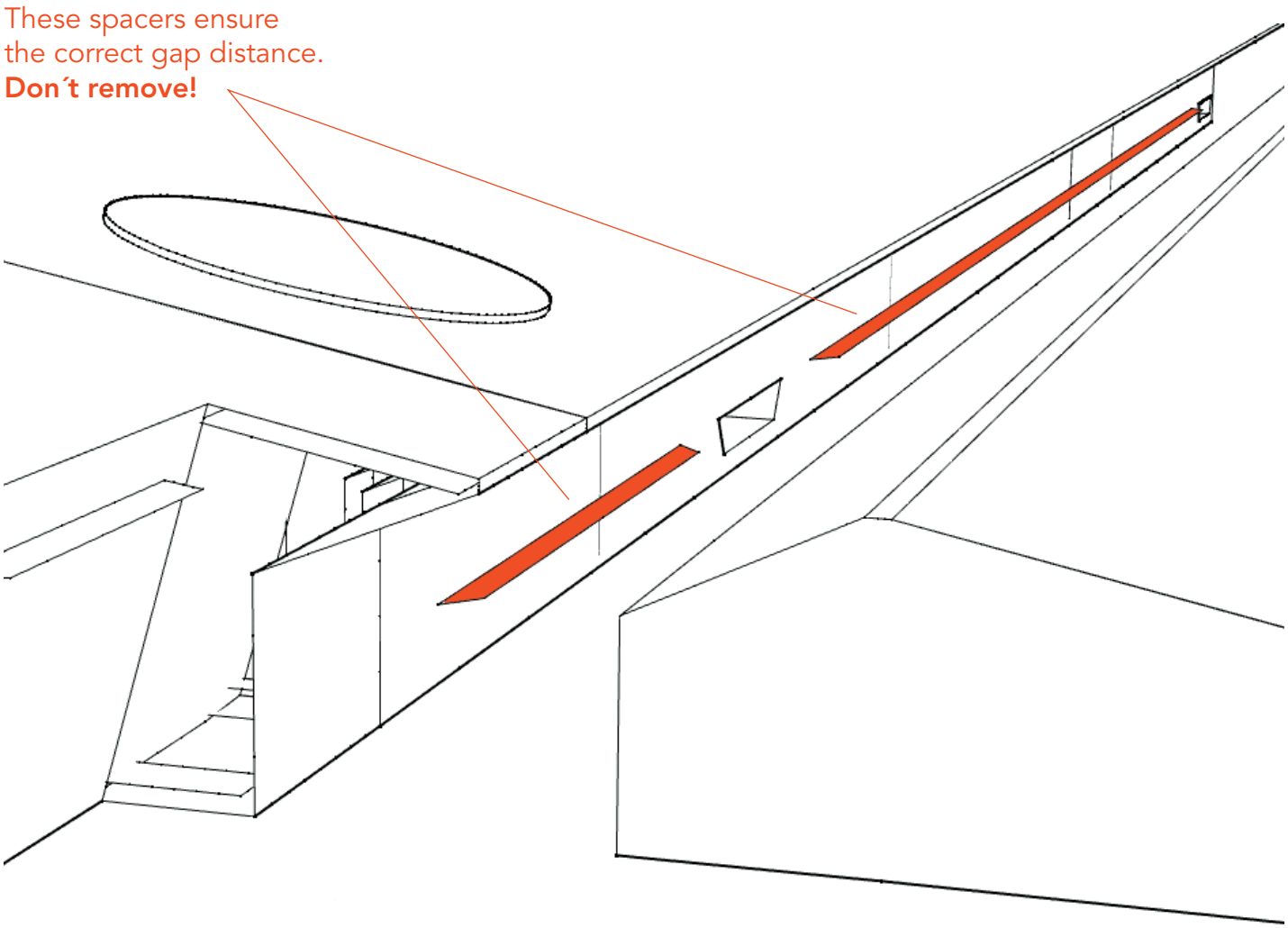


First glue the connectors in the fuselage, then glue on the rudder and elevator.

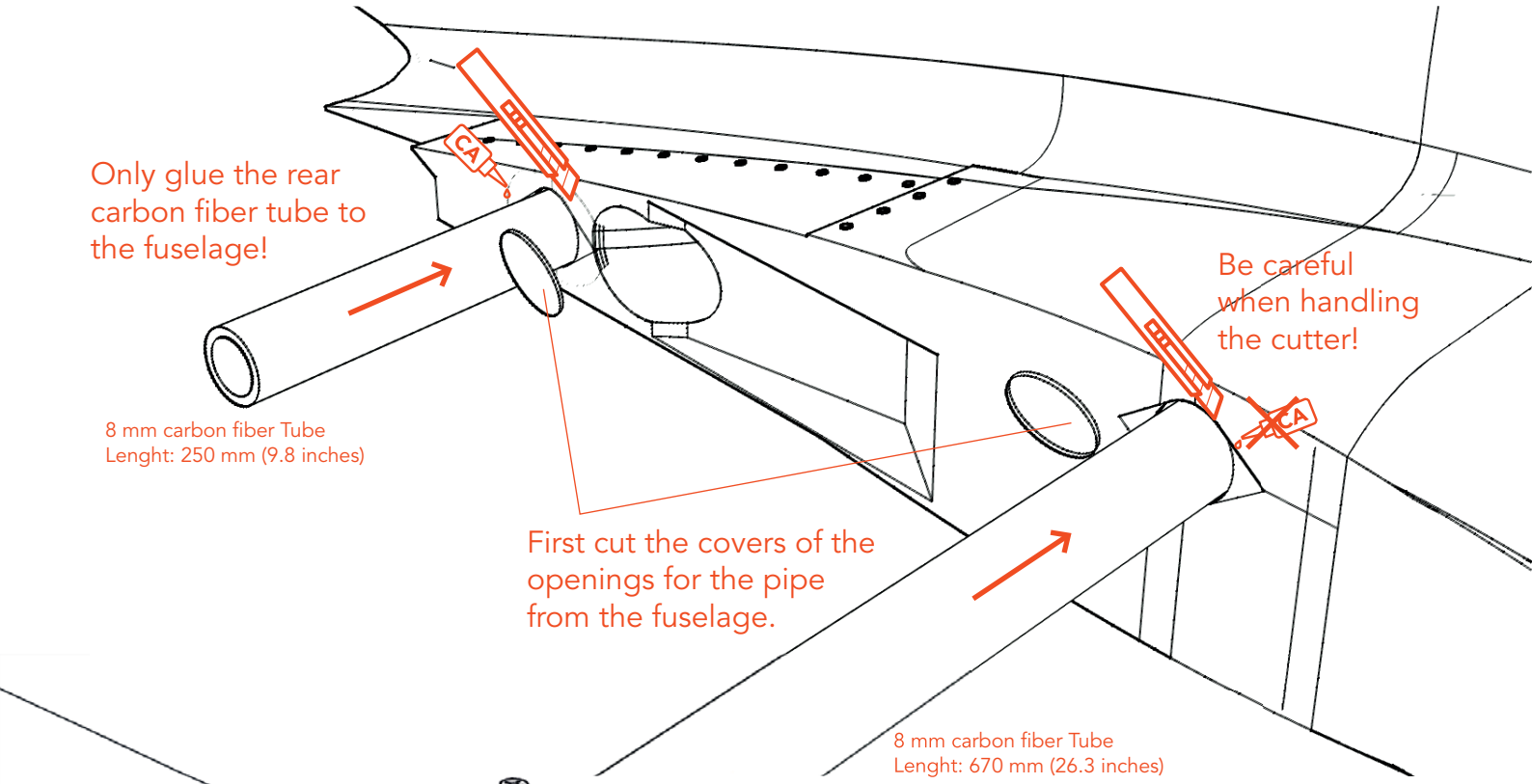
Install the hinges (using the flaps as an example)

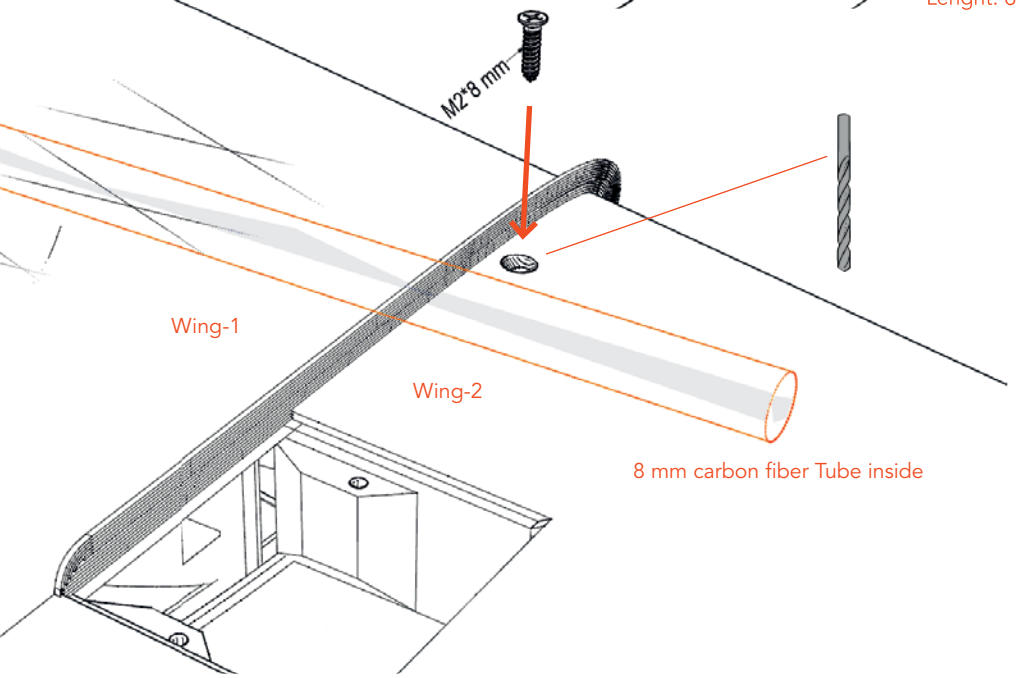




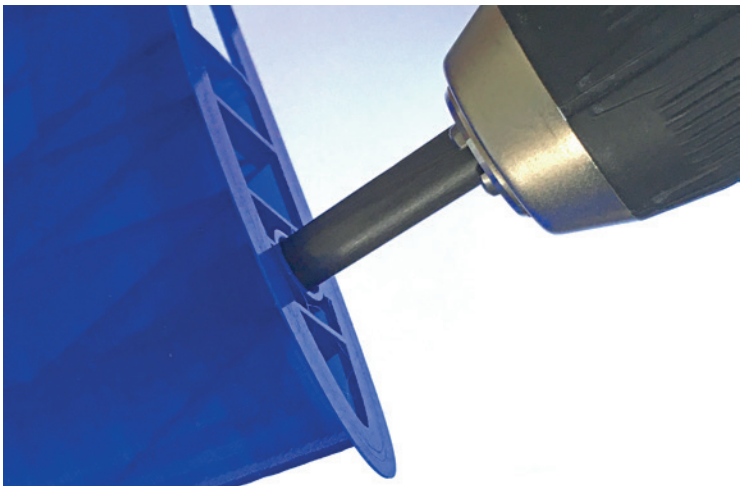


Wing attachment



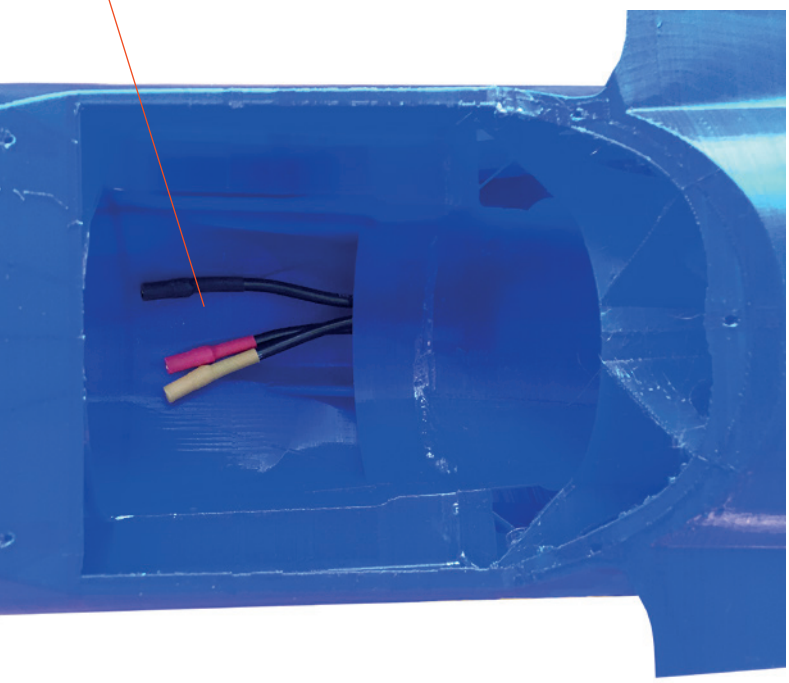


If the carbon tubes in the wings are a little stiff, clamp the remaining tube in a drill and enlarge the hole a little.

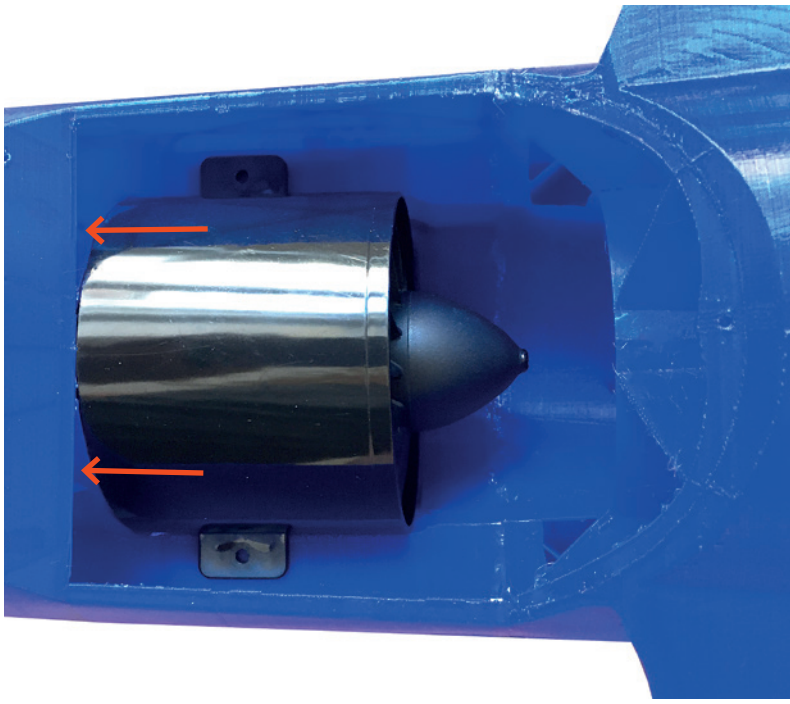


Installation EDF

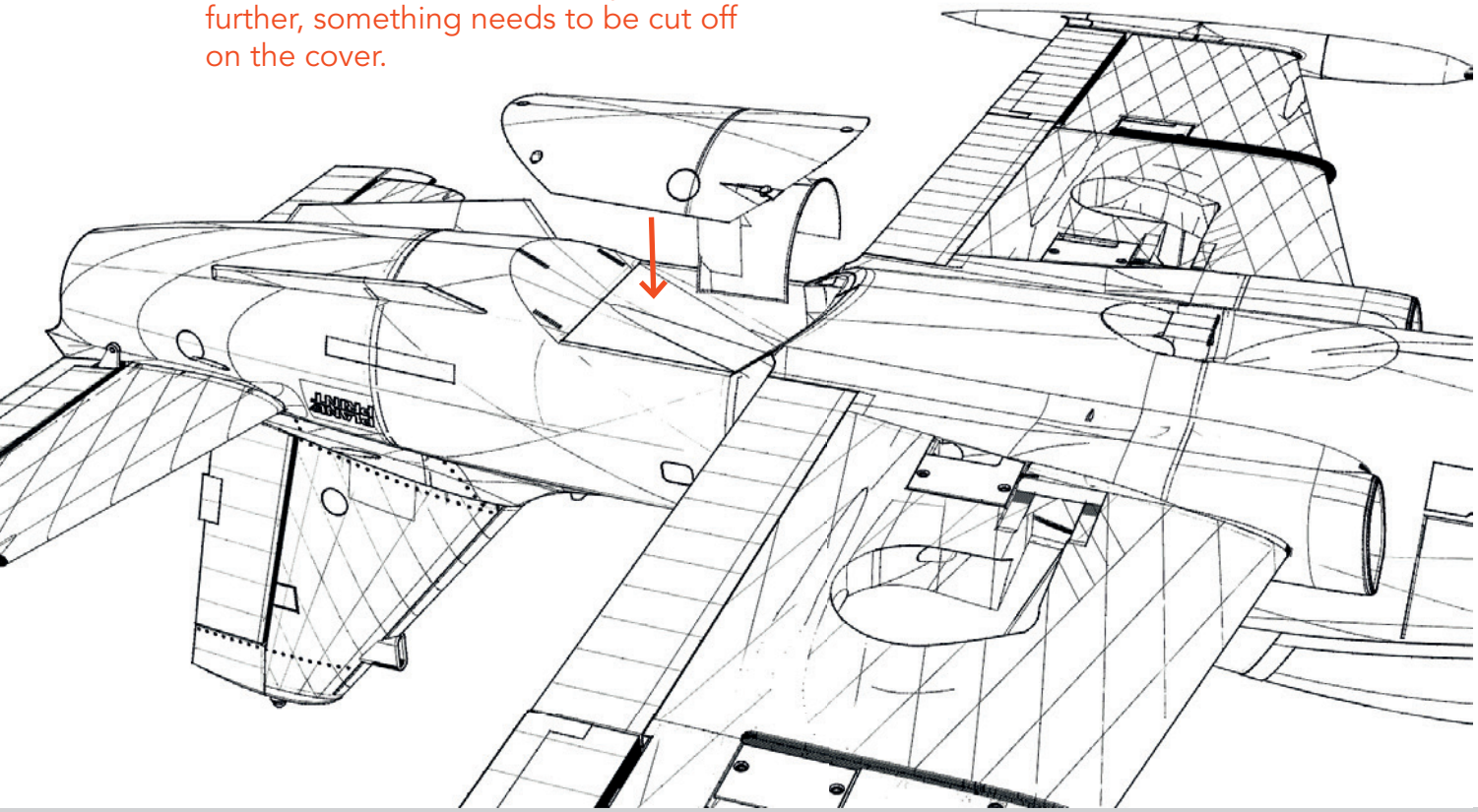
Insert the BEC controller from the front here to connect the EDF



The EDF must line up with the rear edge, then drill holes for the screws

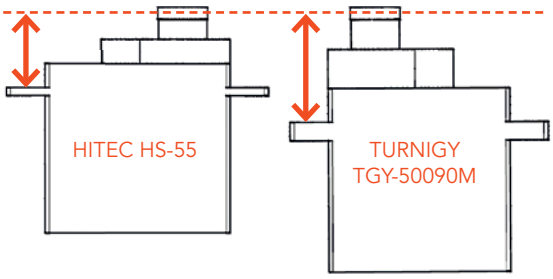


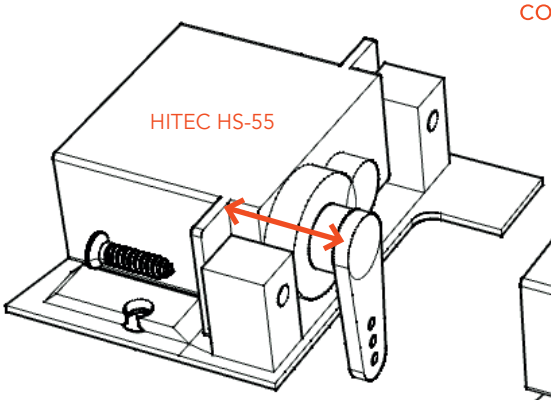
The cover is attached with six flat screws 2 * 8mm. If your EDF protrudes further, something needs to be cut off on the cover.



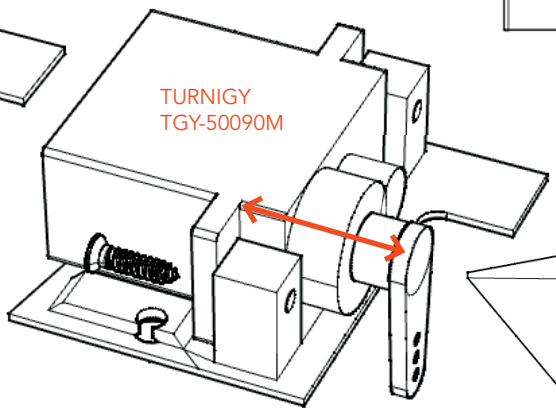
Installation of the flap servos

Use the right servo cover for your servos

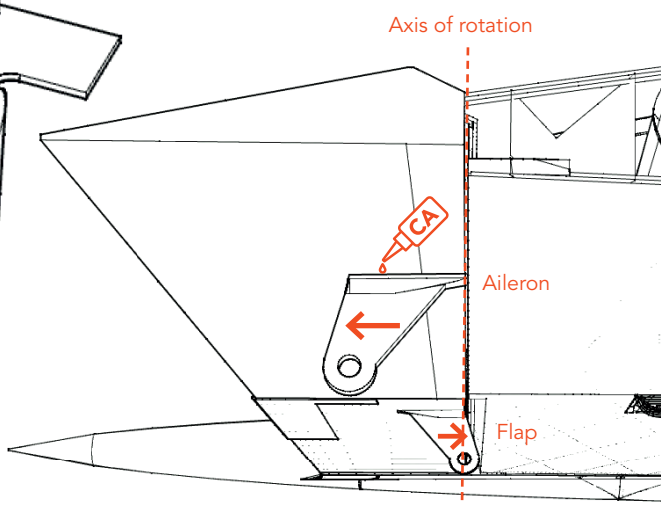




Covers-small-servos_p1.stl



Covers-big-servos_p1.stl



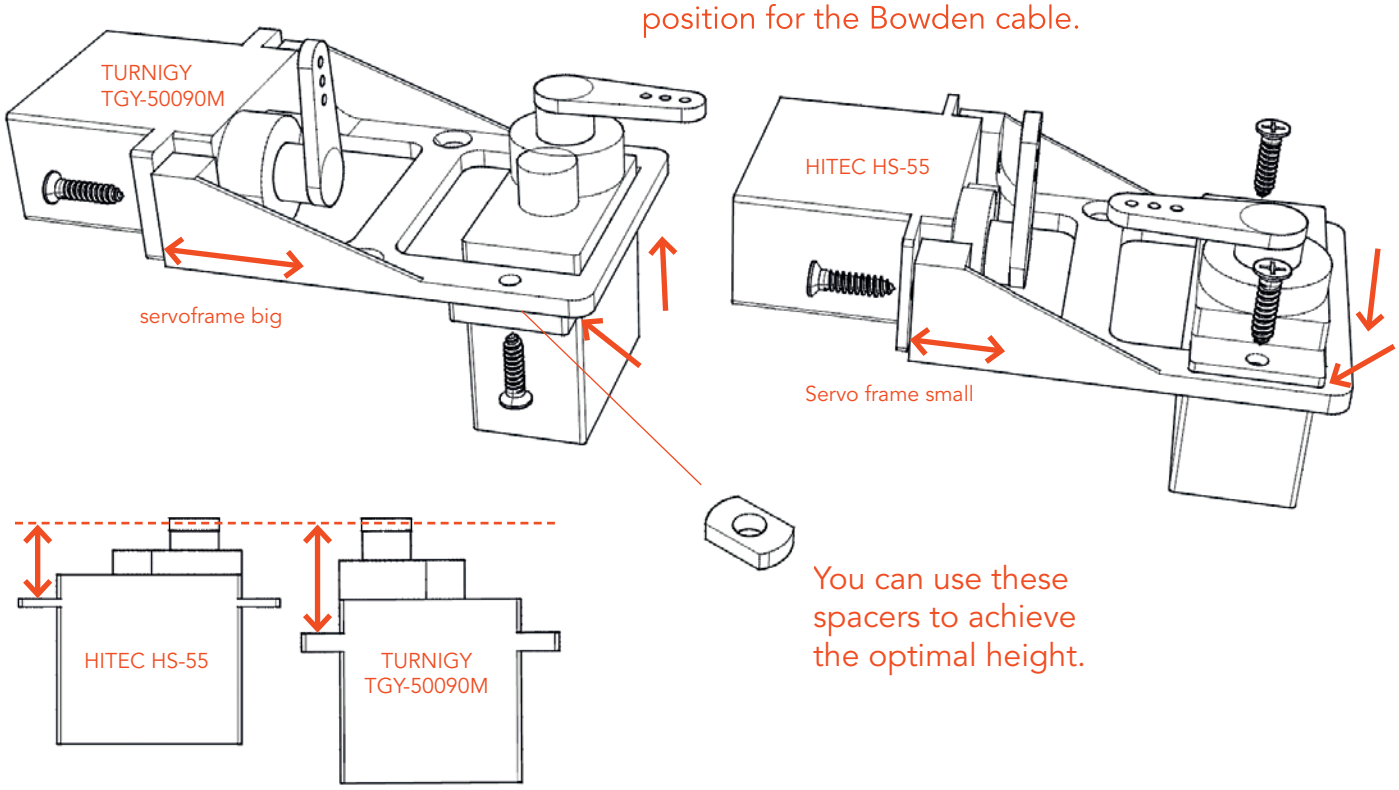
The flap servos both point in the same direction and can be connected to the receiver using a V-cable.

The pin horns of the flaps must point backwards!

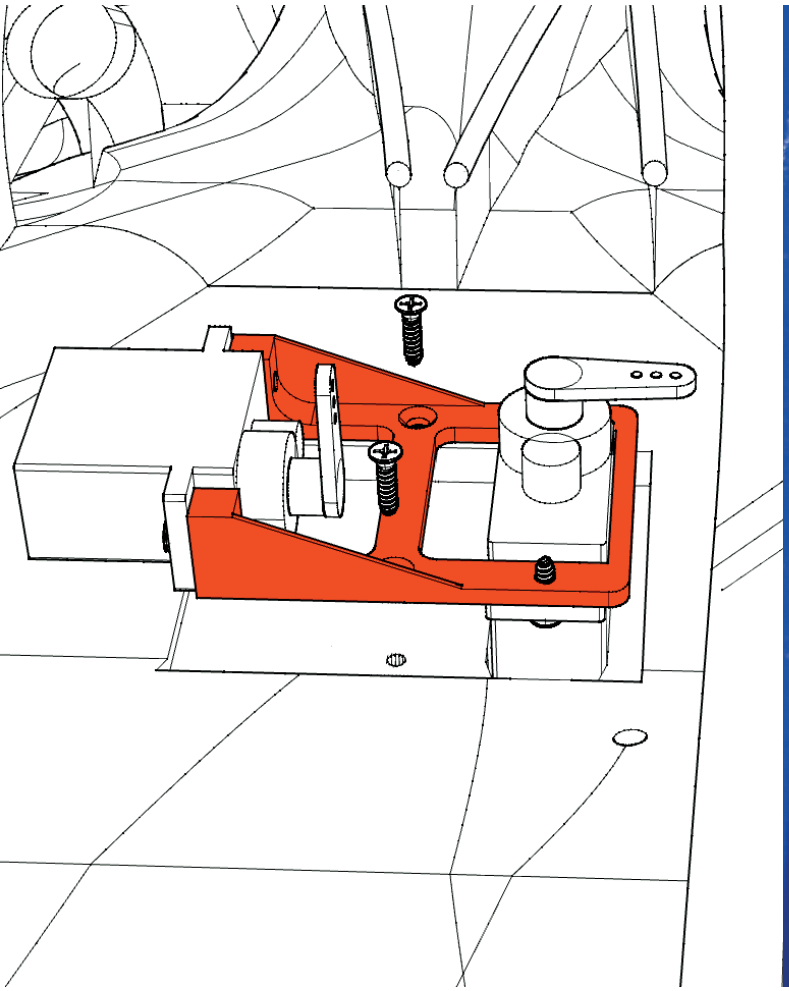
Center of gravity

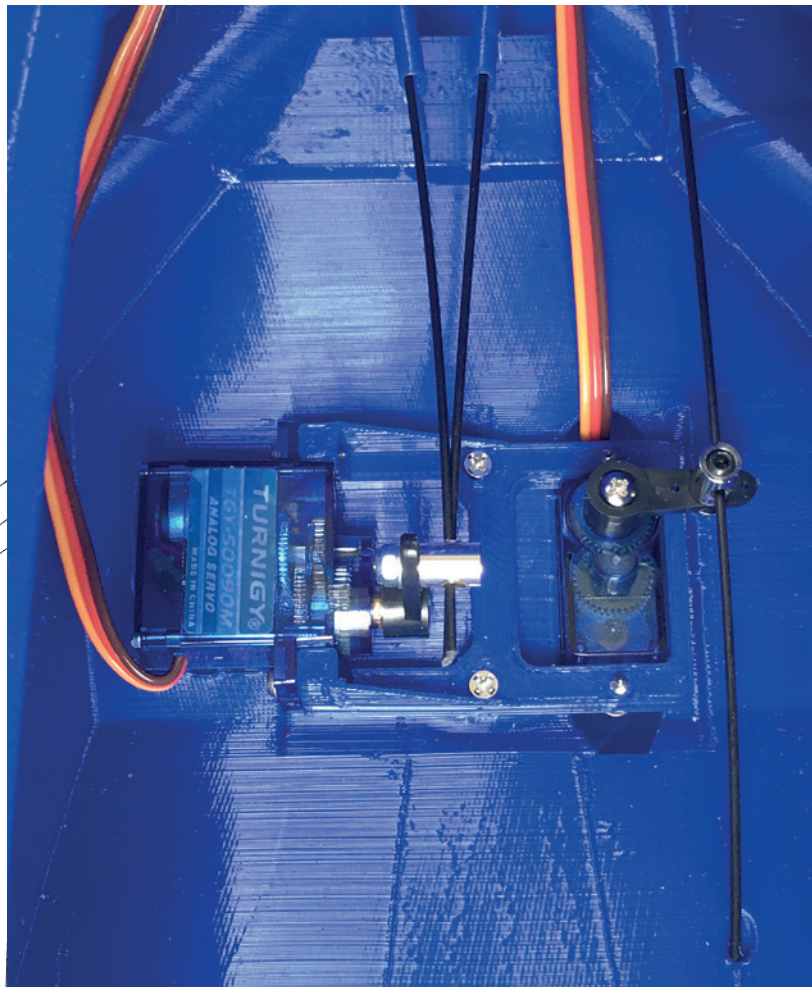
Installation of the rudder and elevator servos

Use the appropriate servo frame for your servos to get the optimal position for the Bowden cable.

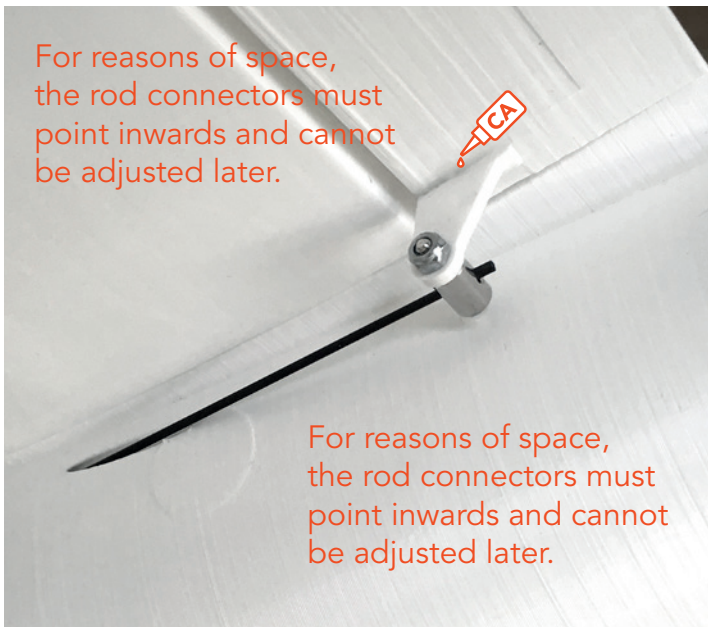


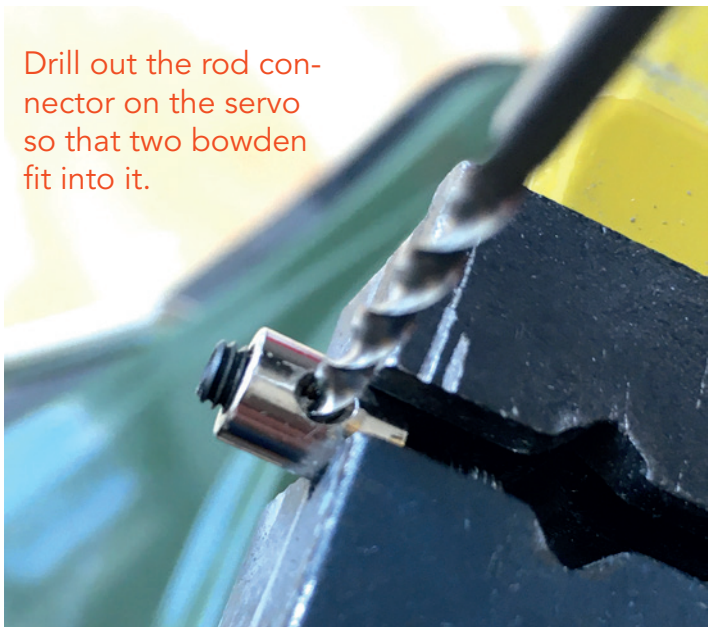
You can use these spacers to achieve the optimal height.

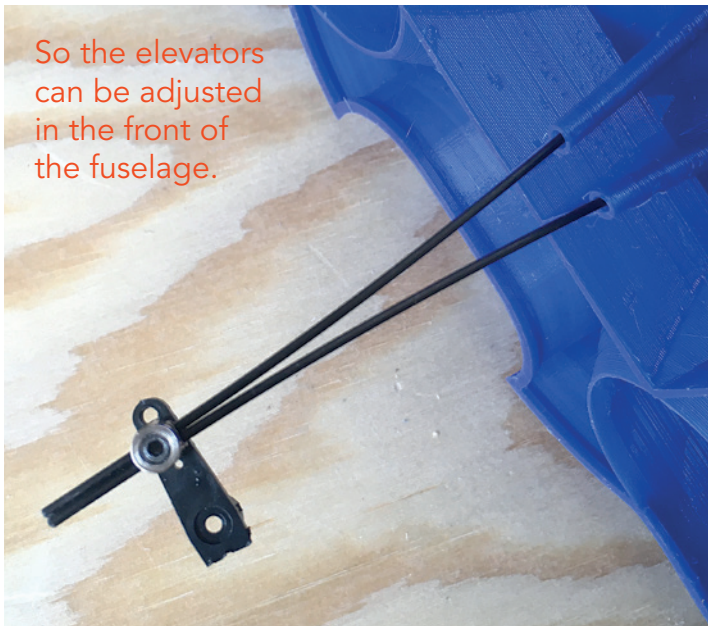




Assembling bowden elevator



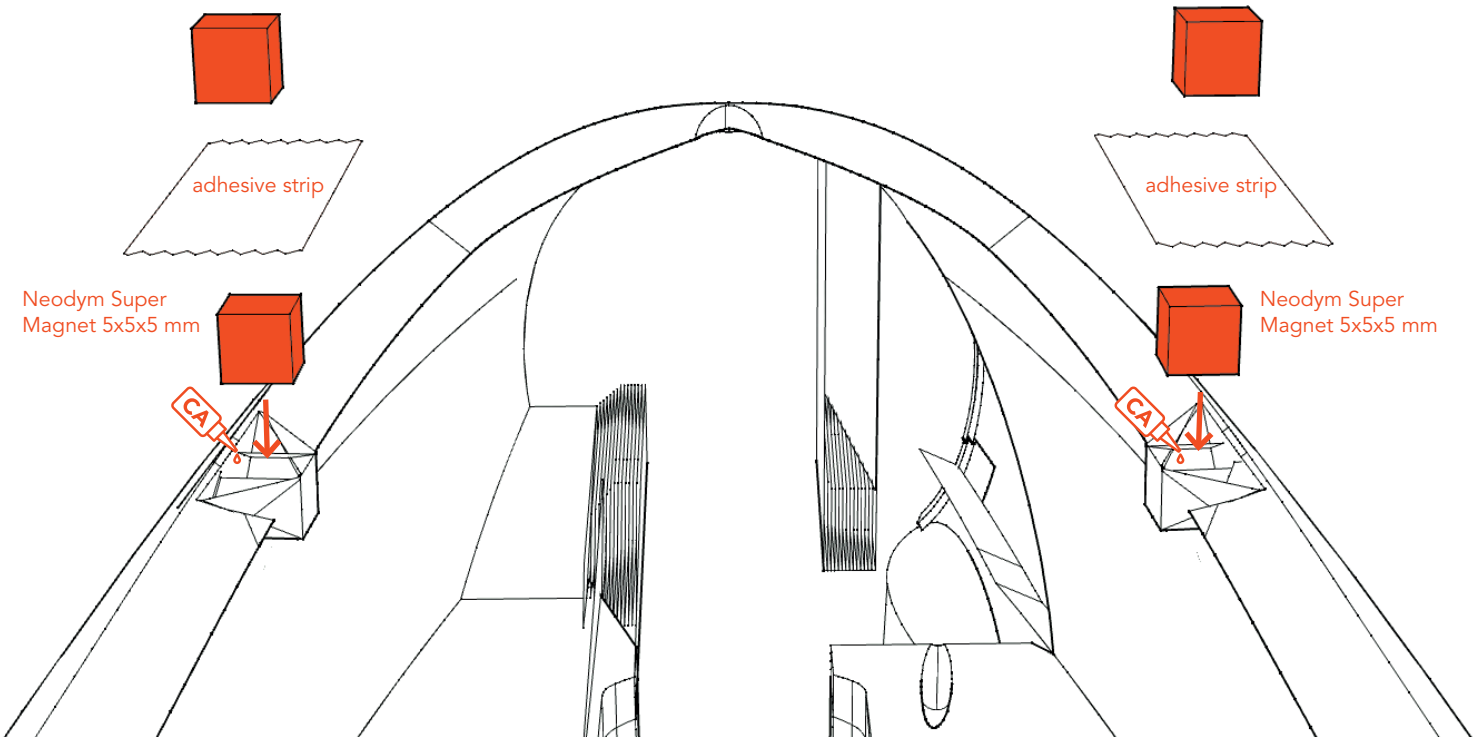


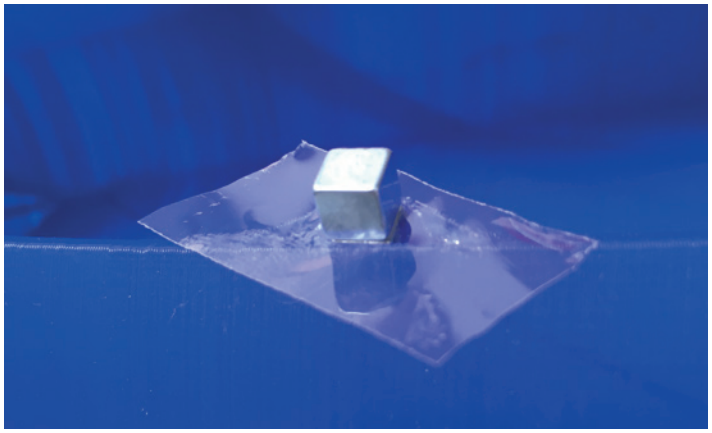


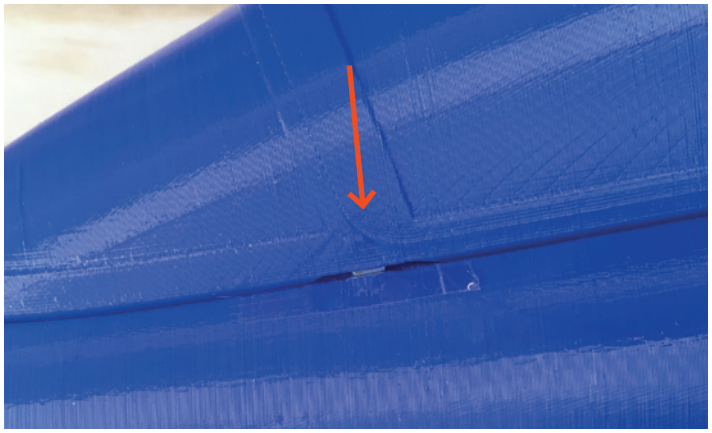
Magnetic clasp Canopy

First glue two neodym super magnets into the recesses in the fuselage. Then stick two adhesive strips over it and put the two magnets for the Canopy on it.

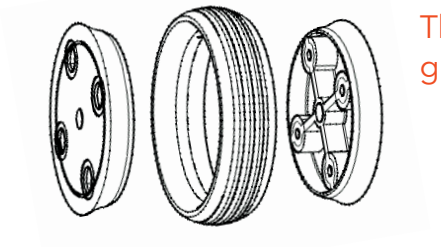
Add CA Glue to the Canopy's magnetic recesses and place the Canopy on the magnets on the fuselage.





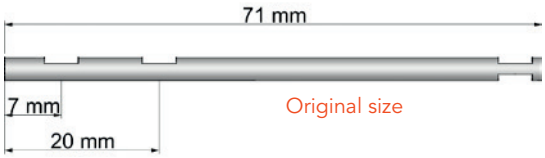


Retractable landing gear



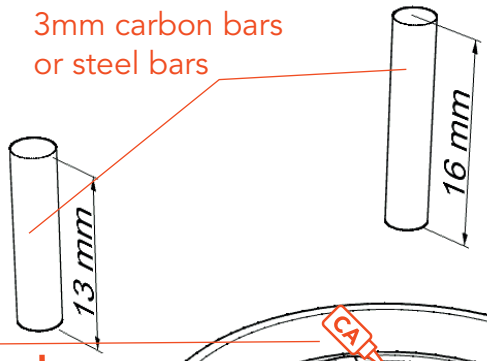
The rims can be glued or screwed.

You need two Ø 3mm steel round bars.
File flats at the indicated points.



IMPORTANT!
The wheel axle should be oiled. Otherwise the PLA can become hot due to friction and block the wheel!

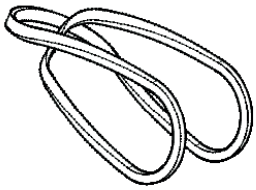
3mm carbon bars or steel bars

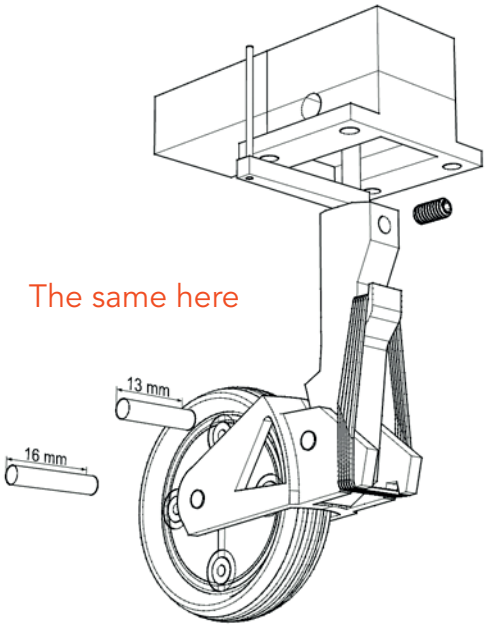


Be careful that the CA glue only stays on the outside and the part remains movable!

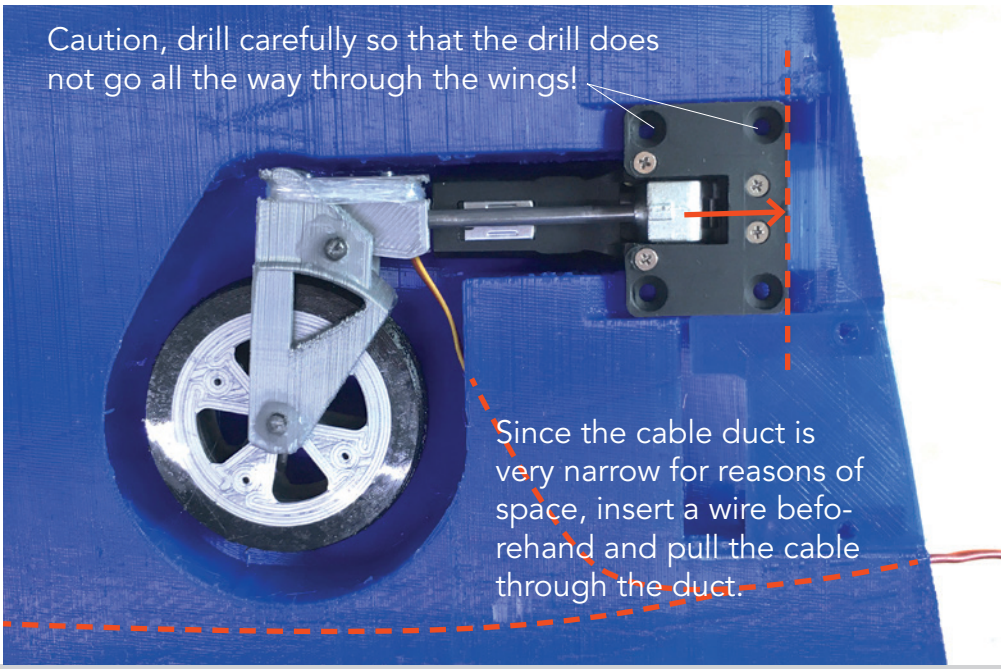
Drill these holes exactly to 3mm

Use as many hair gums and fold them 4 or 5 times until the landing gear is spring-loaded so that the plane is in good shape.

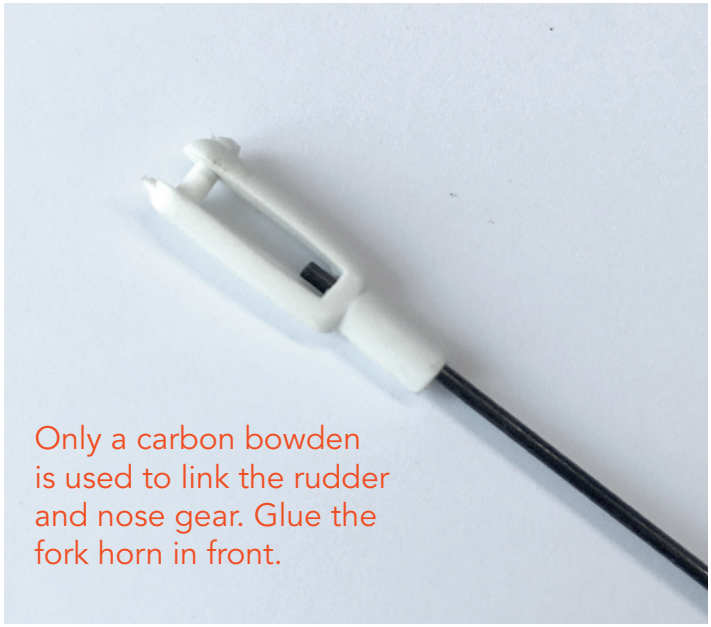


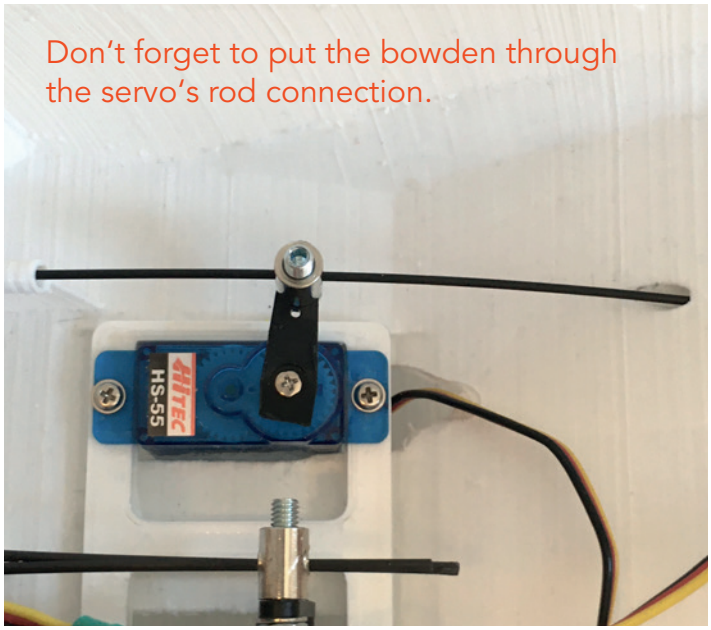


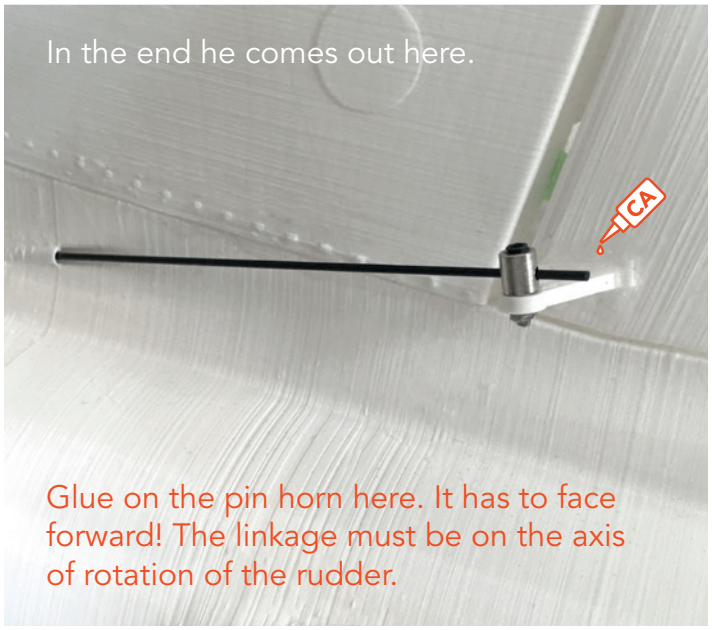
The same here



Assembling nose landing gear

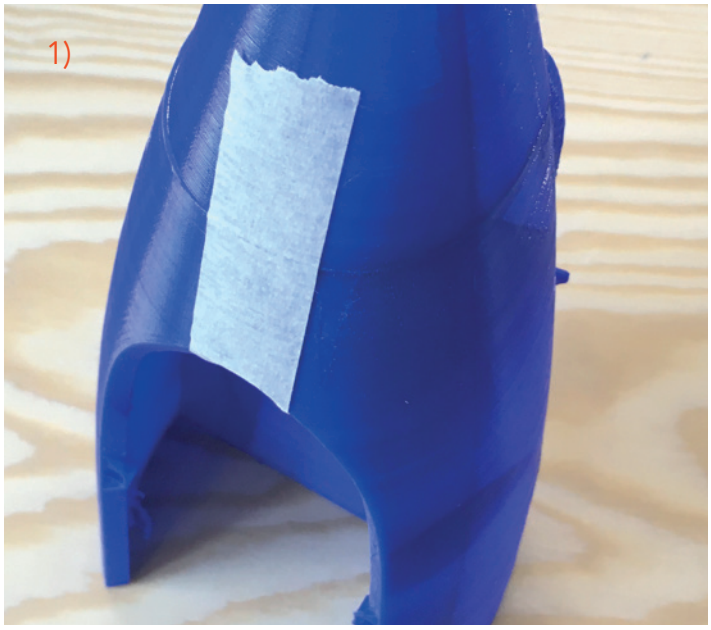




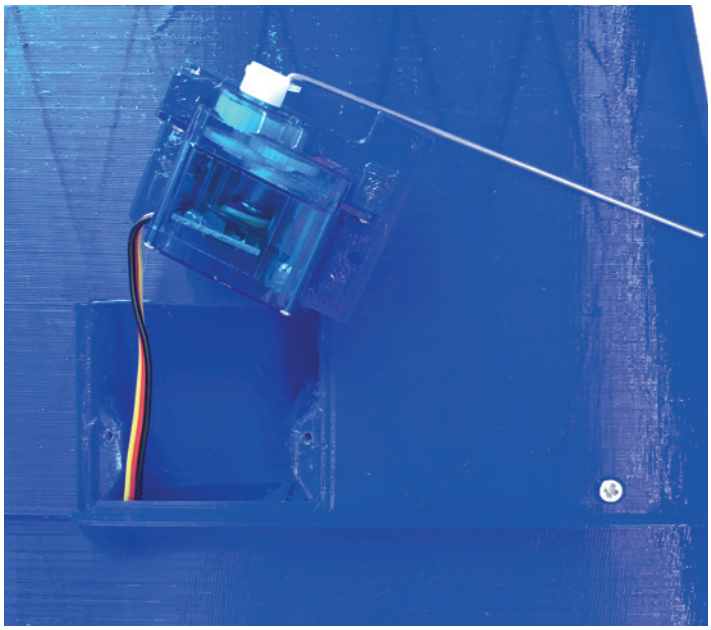


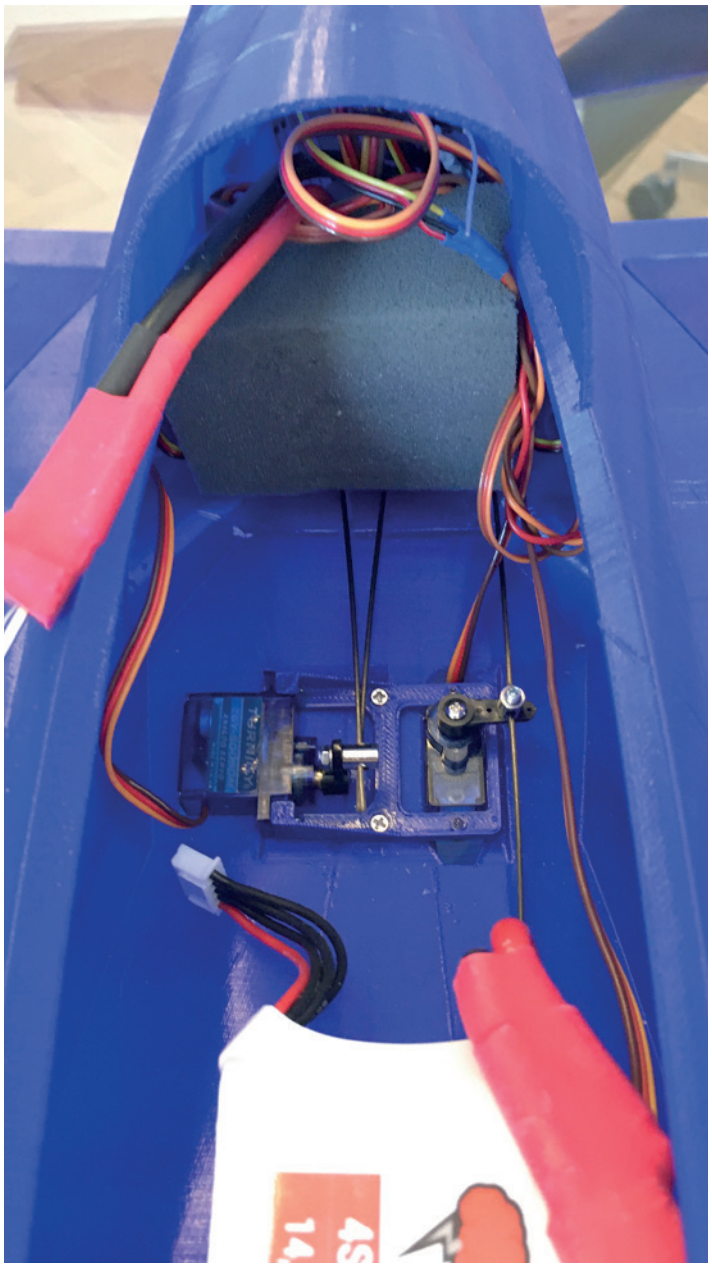
DETAIL PHOTOS

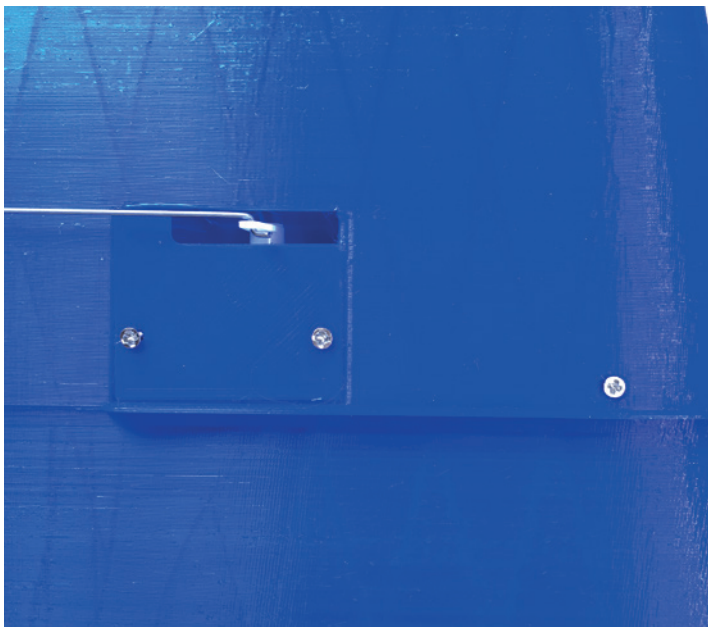
1)



2)

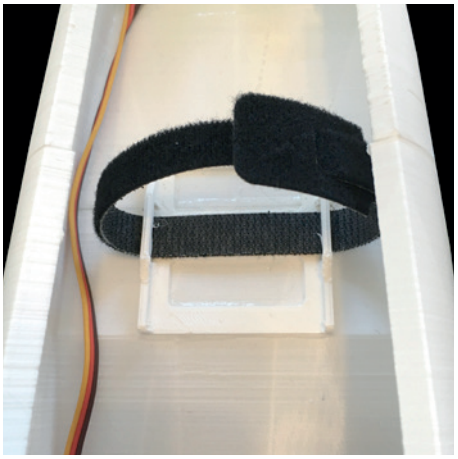






Finally, position the battery mount so that the correct CG is reached exactly.

Make a mark so that you always use the battery in the same position!



Center of grativy

QUICK START GUIDE

After installing the electronics and setting up the transmitter, check that the control surfaces are aligned correctly. Set the transmitter trim to zero. The ailerons should be aligned with the trailing edge of the wing tip. Then align the flaps with the ailerons. The elevator should be aligned with the horizontal stabilizer and the rudder to the vertical stabilizer. Change the position of the moving parts by changing the length of the linkage from the servo arm to the control horn. In-flight adjustments can be made later with the trim.

TRANSMITTER CONFIGURATION

1. Select empty (Acro) model
2. Wing type: 2 ailerons
3. Reversing the direction of servo as required (see control function)
4. Servo adjustment all: 100%

EXPO SETTING

Aileron	30 %
Elevator	30 %
Rudder	0 %

SETTING THE SERVO TRAVEL

Aileron	▲ = 12 mm ▼ = 8 mm
Elevator	▲ = 10 mm ▼ = 10 mm
Rudder	◀ = 15 mm ▶ = 15 mm
Flaps	half ▼ = 9 mm full ▼ = 18 mm Mix with the flaps minimal elevator down

FLIGHT TIMER

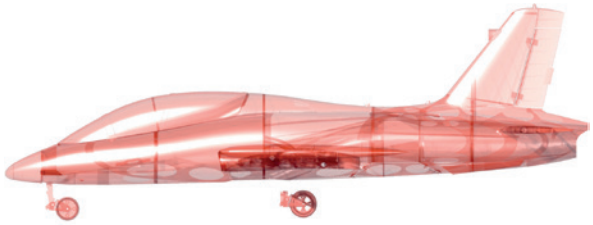
Flight time will vary depending on the battery size. Expect 6 minutes under normal circumstances (4.200 4S battery). It is a good idea to be conservative with the flight timer until you gain experience with your airplane.

CENTER OF GRAVITY (CG)

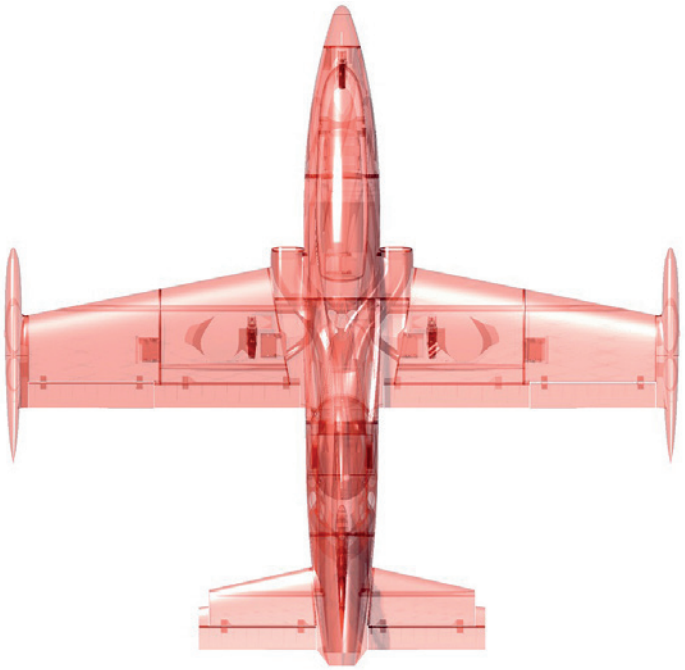
The center of gravity is exactly at the level of the gear legs, see the mark under the fuselage.

TECHNICAL SPECIFICATIONS

1.008 mm (39.4 inches)



1.034 mm (40.7 inches)



FLYING WEIGHT:

~ 1.750 g, depending on
RC components and 3D printing

CONTROL DIRECTION TEST

Turn on the transmitter and connect the battery. When checking the control directions, look at the aircraft from behind.

1. Move the aileron lever to the left. The right aileron should move down and the left aileron should move up so that the aircraft tilts to the left.

2. Move the aileron lever to the right. The right aileron should move up and the left aileron down so that the aircraft is tilting to the right.

3. Pull back the elevator lever. The elevators should move up, causing the aircraft to rise.

4. Push the elevator lever forward. The elevator should move down so that the aircraft sinks.

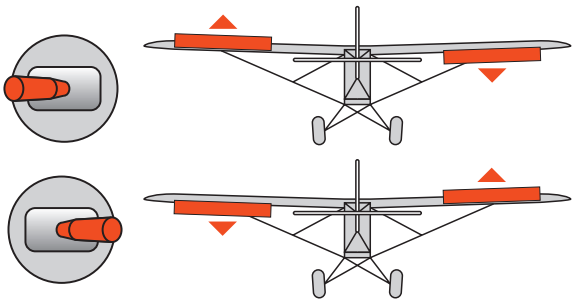
5. Move the rudder lever to the left. The rudder should move to the left.

6. Move the rudder lever to the right. The rudder should move to the right

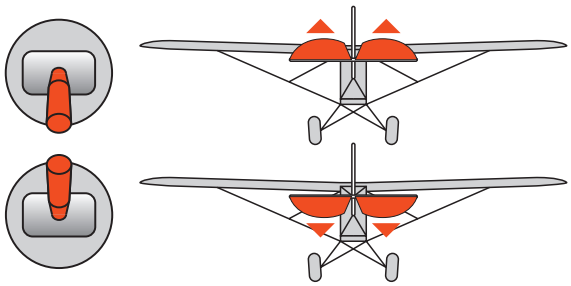
7. Move the flap switch to position 2. The flaps should move down by the set value „half".

8. Move the flap control switch to position 3. The flaps should move down by the set value „whole".

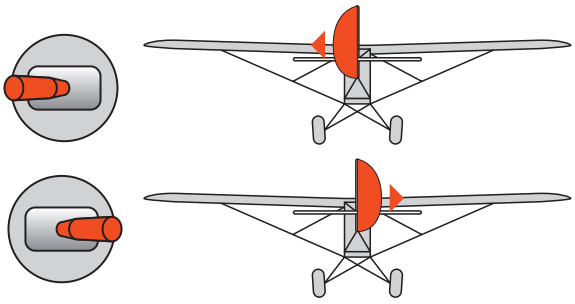
AILERON



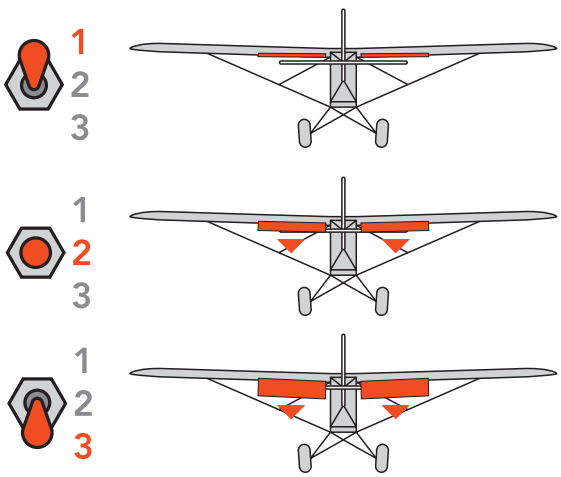
ELEVATOR



RUDDER



FLAPS



AGE RECOMMENDATION 14+

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

By using the download data, an RC model airplane, called „model" for short, can be manufactured using a 3D printer. As a user of this model, only you are responsible for safe operation that does not endanger you or others, or that does not damage the model or property of others.

PLANEPRINT.com assumes no responsibility for damage to persons and property caused by pressure, transport or use of the product. Filaments, printing supplies, hardware or consumables that can not be used after faulty 3D printing will not be replaced by PLANEPRINT.com in any way.

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.

We develop our models to the best of our knowledge and belief. We accept no liability for consequential damage and injuries caused by improper use. Please be careful when handling motors, batteries and propellers and only move your model with insurance and in approved places!

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very light 3d printable rc planes