

ΕN

## **PLANEPRINT SUPER TUCANO**

- Full scale replica in 3D super lightweight construction.
- Real 1 wall construction (Currently only supported by CURA!).
- Wingspan 1300 mm (51 inches).



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



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

### **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 <u>www.planeprint.com/print</u>

### 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.

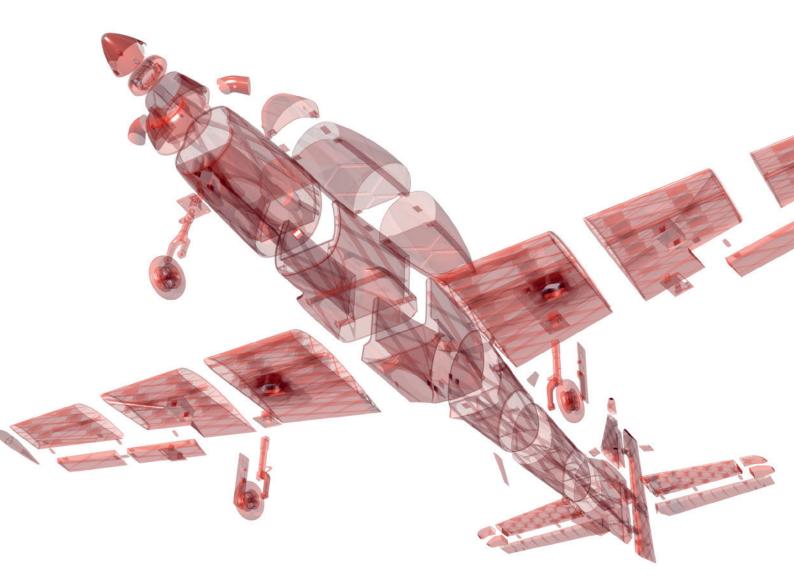
#### Thank you for your understanding and have fun with your PLANEPRINT MODEL!

SUPER TUCANO



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### **PRINTING MANUAL**





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The following parts must be sliced with the profile P1\_FULLBODY. Recommended additional settings are listed in the screenshots.

#### INFO

STL: st-Battery mount 1\_profile1.stl Material: PLA Weight: ~ 14 g

#### ADDITIONAL SETTINGS

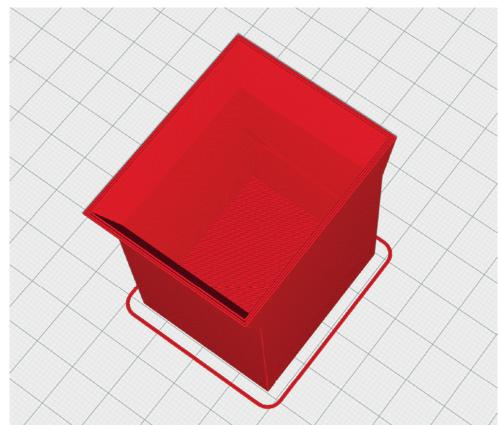
The size fits for batteries with the dimensions 33x37 mm. If your battery differs, you can change the X and Y axis in Cura.

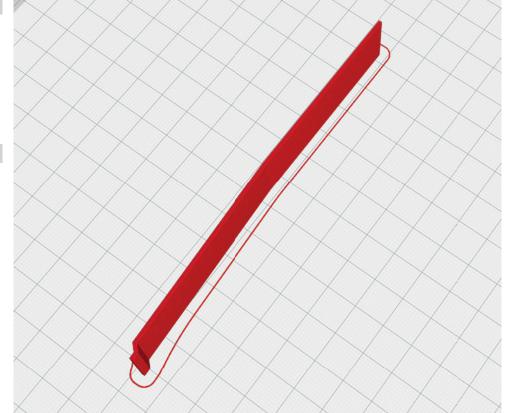


#### INFO

STL: st-Battery mount 2\_profile1.stl Material: PLA Weight: ~ 4 g

#### ADDITIONAL SETTINGS









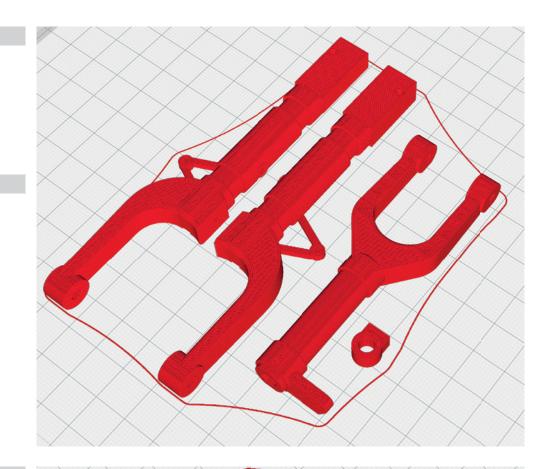
The following parts must be sliced with the profile P1\_FULLBODY. Recommended additional settings are listed in the screenshots.

#### INFO

STL: st-Gear 1\_profile1.stl Material: PLA Weight: ~ 31 g

#### ADDITIONAL SETTINGS

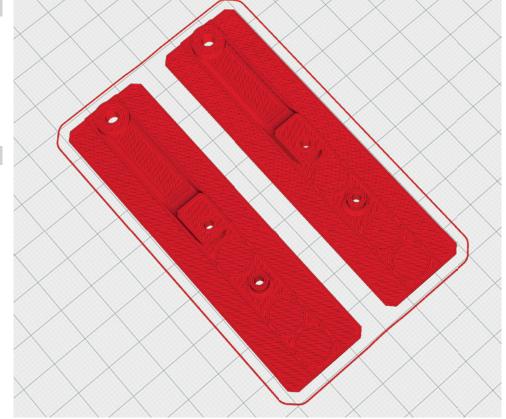
- Wall Line Count 8
- Fan 50 %



#### INFO

STL: st-Gear 2\_profile1.stl Material: PLA Weight: ~ 9 g

#### ADDITIONAL SETTINGS







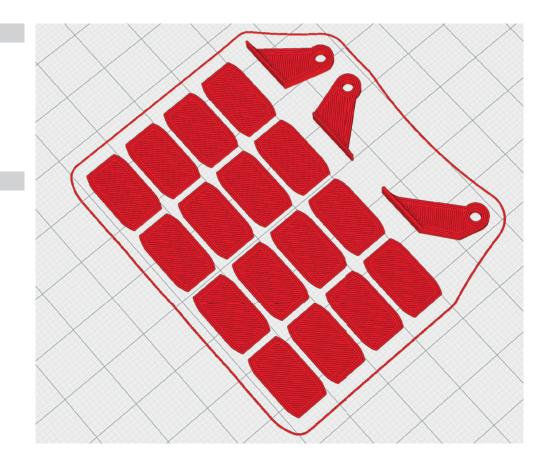
The following parts must be sliced with the profile P1\_FULLBODY. Recommended additional settings are listed in the screenshots.

#### INFO

STL: st-Parts 1\_profile1.stl Material: PLA Weight: ~ 3 g

#### ADDITIONAL SETTINGS

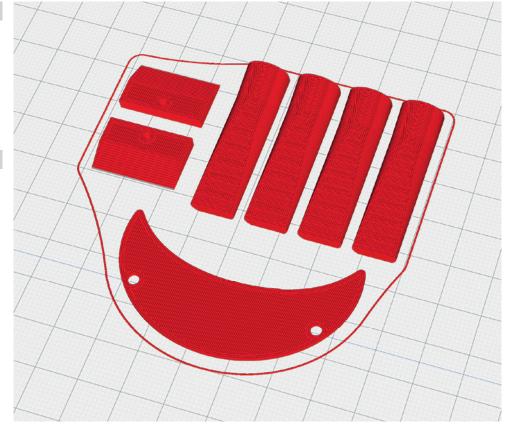
None nessesery



#### INFO

STL: st-Parts 2\_profile1.stl Material: PLA Weight: ~ 16 g

#### ADDITIONAL SETTINGS







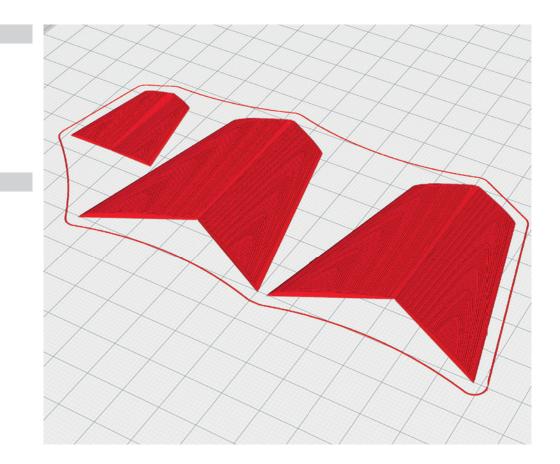
The following parts must be sliced with the profile P1\_FULLBODY. Recommended additional settings are listed in the screenshots.

#### INFO

STL: st-Parts 3\_profile1.stl Material: PLA Weight: ~ 6 g

#### ADDITIONAL SETTINGS

• Layer Height 0.15 or less

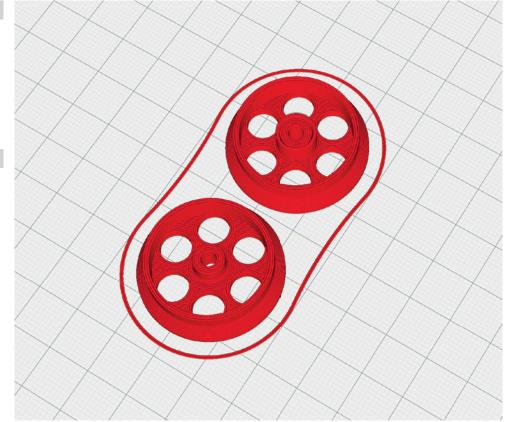


#### INFO

STL: st-Rim\_profile1.stl Material: PLA Weight: ~ 6 g

#### ADDITIONAL SETTINGS

• Print 3 times (You can also multiply it in Cura)





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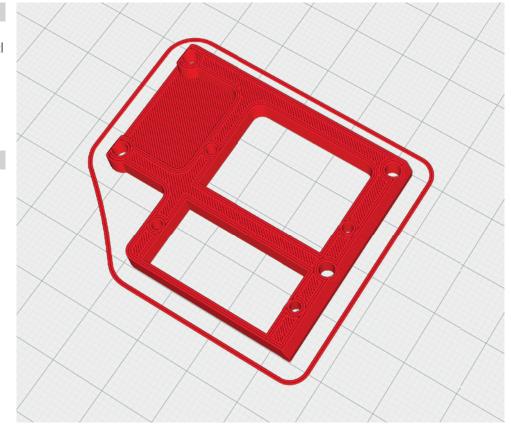
The following parts must be sliced with the profile P1\_FULLBODY. Recommended additional settings are listed in the screenshots.

#### INFO

STL: st-Servo mount-XX\_profile1.stl Material: PLA Weight: ~ 4 g

#### ADDITIONAL SETTINGS

• There are different versions

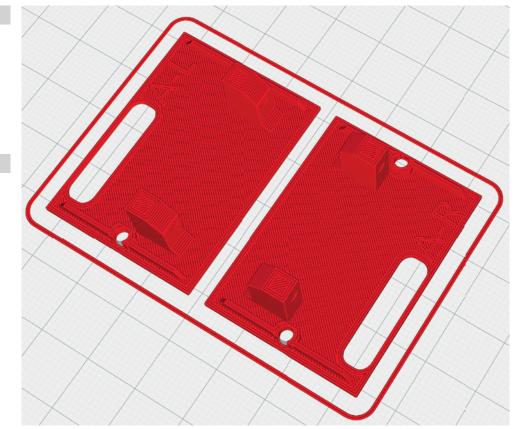


#### INFO

STL: st-Servocover-XX\_profile1.stl Material: PLA Weight: ~ 5 g

#### ADDITIONAL SETTINGS

• There are different versions





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The following parts must be sliced with the profile P1\_FULLBODY. Recommended additional settings are listed in the screenshots.

#### INFO

STL: st-Spinner-plate\_profile1.stl Material: PLA Weight: ~ 8 g

#### ADDITIONAL SETTINGS

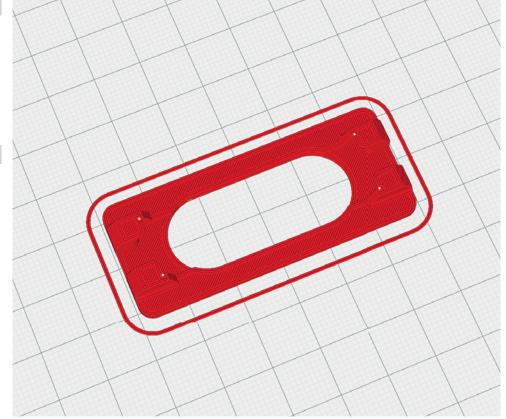
None nessesery



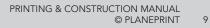
#### INFO

STL: st-Wingmount\_profile1.stl Material: PLA Weight: ~ 3 g

#### ADDITIONAL SETTINGS







### **PROFILE P2\_HOLLOWBODY**

The following parts must be sliced with the profile P2\_HOLLOWBODY. Recommended additional settings are listed in the screenshots.





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**

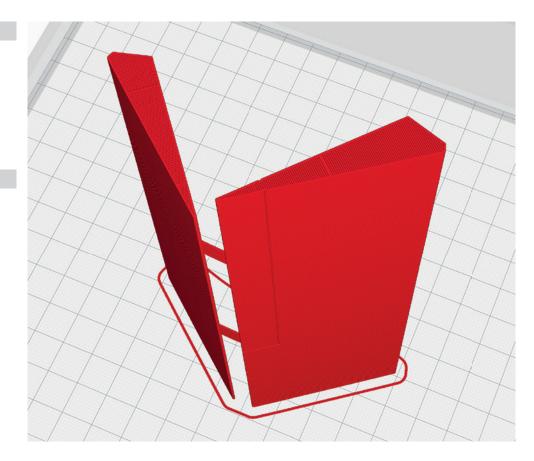
In profile P3\_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

#### INFO

STL: st-Aileron-left\_profile3.stl st-Aileron-right\_profile3.stl Material: PLA Weight: ~ 19 g

#### ADDITIONAL SETTINGS

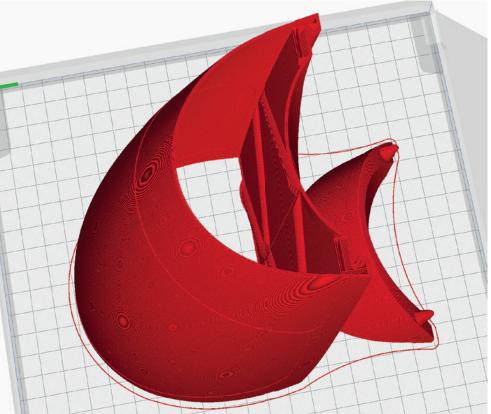
Depending on your printer, a **brim** may not be nessesery.



#### INFO

STL: st-Canopy 1\_profile3.stl Material: PLA Weight: ~ 42 g

#### ADDITIONAL SETTINGS







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!

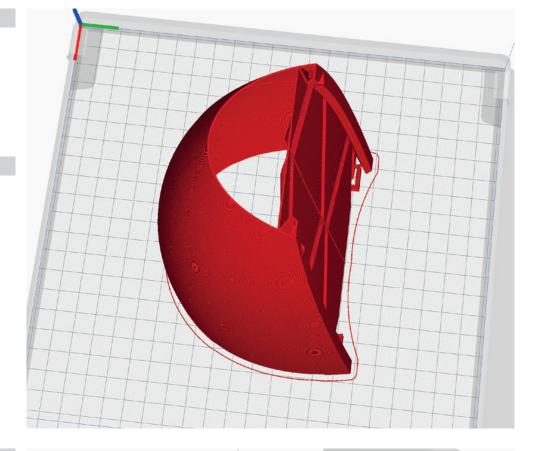
#### INFO

STL: st-Canopy 2\_profile3.stl Material: PLA Weight: ~ 31 g

#### ADDITIONAL SETTINGS

Reduce Nozzle heat a little and more fan around the nose.

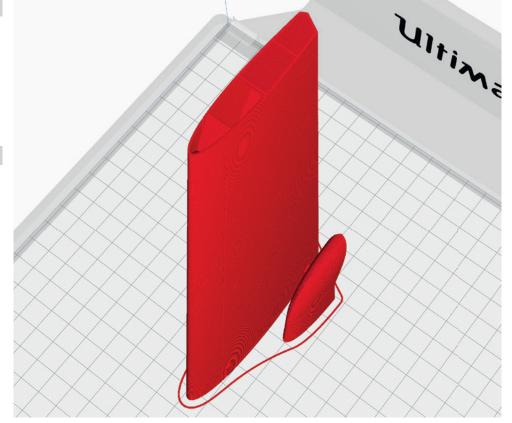
Depending on your printer, a **brim** may not be nessesery.



#### INFO

STL: st-Elevator 1-left\_profile3.stl st-Elevator 1-right\_profile3.stl Material: PLA Weight: ~ 25 g

#### ADDITIONAL SETTINGS





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!

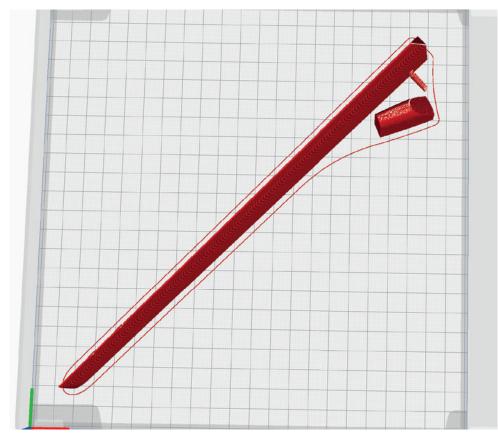
#### INFO

STL: st-Elevator 2-left\_profile3.stl st-Elevator 2-right\_profile3.stl Material: PLA Weight: ~ 18 g

#### ADDITIONAL SETTINGS

E. left: • Z Seam Position right E. right: • Z Seam Position left

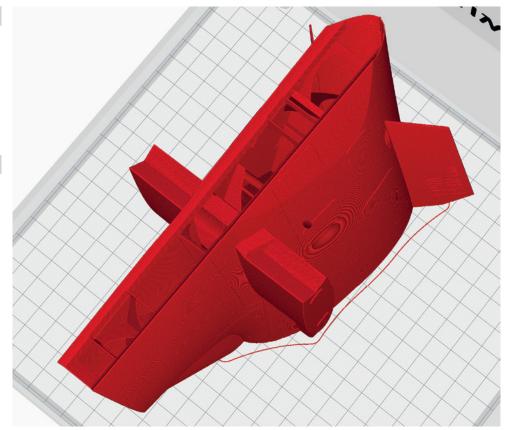
Depending on your printer, a **brim** may not be nessesery.



#### INFO

STL: st-Fuselage 1\_profile3.stl Material: PLA Weight: ~ 59 g

#### ADDITIONAL SETTINGS







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**

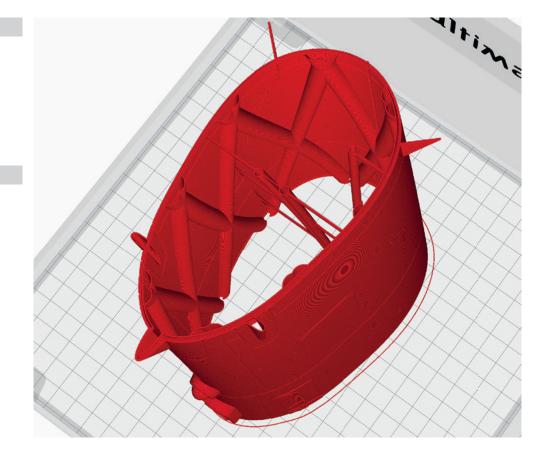
In profile P3\_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

#### INFO

STL: st-Fuselage 2\_profile3.stl Material: PLA Weight: ~ 60 g

#### ADDITIONAL SETTINGS

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



#### INFO

STL: st-Fuselage 3\_profile3.stl Material: PLA Weight: ~ 66 g

#### ADDITIONAL SETTINGS





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!

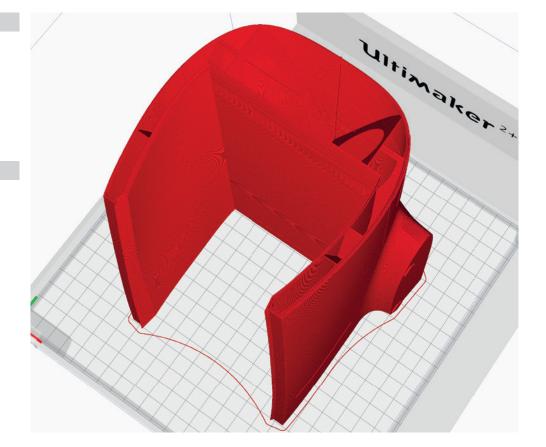
# STL: st-Fuselage 4\_profile3.stl Ultimal ceret Material: PLA Weight: ~ 88 g ADDITIONAL SETTINGS Depending on your printer, a **brim** may not be nessesery.

#### INFO

INFO

STL: st-Fuselage 5\_profile3.stl Material: PLA Weight: ~ 84 g

#### ADDITIONAL SETTINGS







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

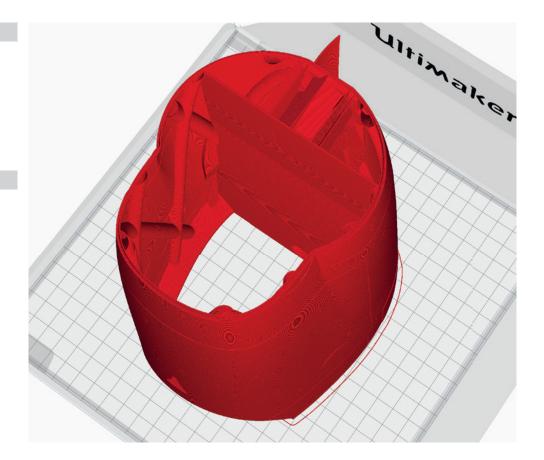
In profile P3\_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

#### INFO

STL: st-Fuselage 6\_profile3.stl Material: PLA Weight: ~ 89 g

#### ADDITIONAL SETTINGS

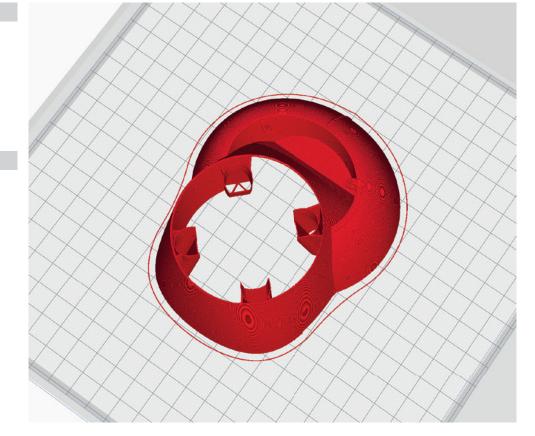
Depending on your printer, a **brim** may not be nessesery.



#### INFO

STL: st-Fuselage 7\_profile3.stl Material: PLA Weight: ~ 23 g

#### ADDITIONAL SETTINGS





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**

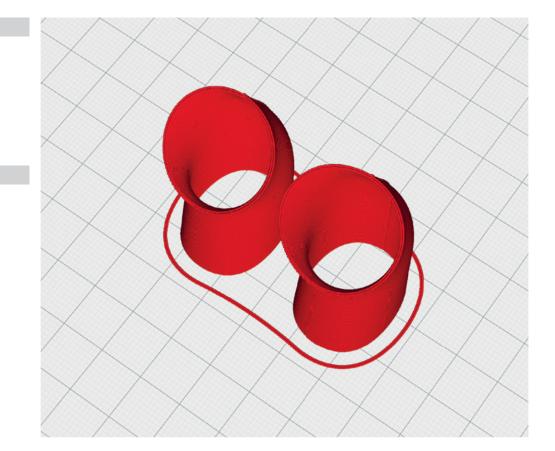
In profile P3\_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur! ΕN

#### INFO

STL: st-Pipes\_profile3.stl Material: PLA Weight: ~ 5 g

#### ADDITIONAL SETTINGS

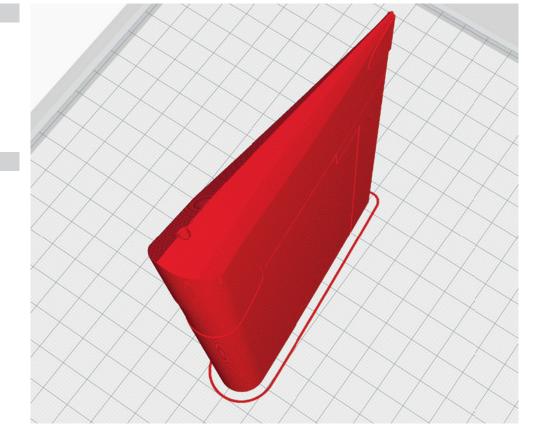
Depending on your printer, a **brim** may not be nessesery.



#### INFO

STL: st-Rudder 1\_profile3.stl Material: PLA Weight: ~ 17 g

#### ADDITIONAL SETTINGS





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**

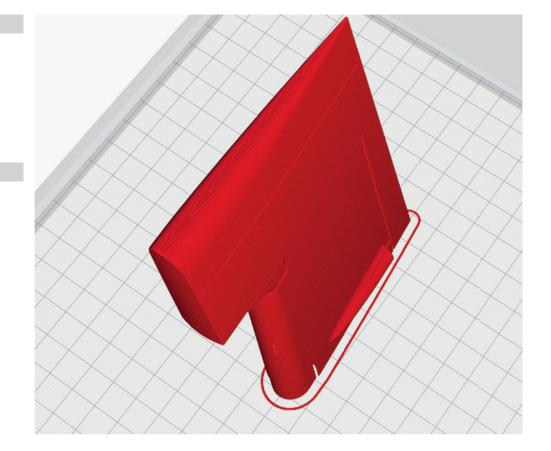
In profile P3\_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

#### INFO

STL: st-Rudder 2\_profile3.stl Material: PLA Weight: ~ 21 g

#### ADDITIONAL SETTINGS

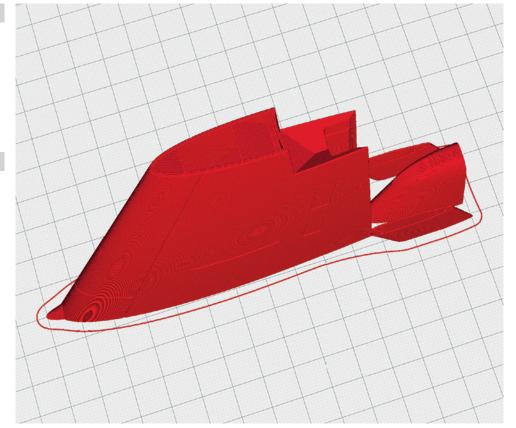
Depending on your printer, a **brim** may not be nessesery.



#### INFO

STL: st-Rudder 3\_profile3.stl Material: PLA Weight: ~ 20 g

#### ADDITIONAL SETTINGS







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!

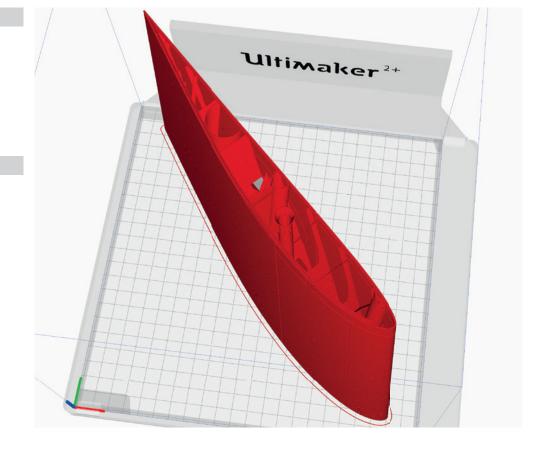
# STL: st-Spinner\_profile3.stl Material: PLA Weight: ~ 8 g ADDITIONAL SETTINGS None nessesery

#### INFO

INFO

STL: st-Wing 1-left\_profile3.stl st-Wing 1-right\_profile3.stl Material: PLA Weight: ~ 106 g

#### ADDITIONAL SETTINGS







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**

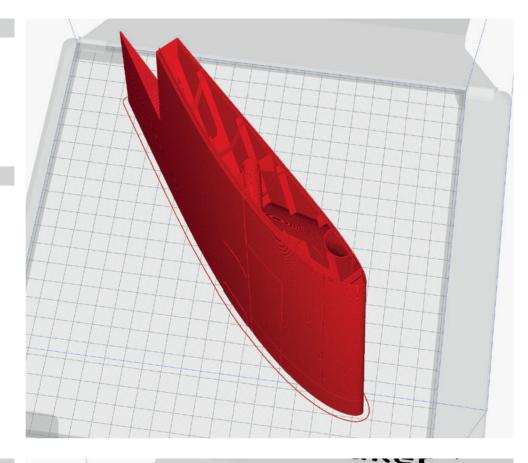
In profile P3\_SURFACE, there should not be more than one STL on the buildplate at the same time, otherwise slicing errors can occur!

#### INFO

STL: st-Wing 2-left\_profile3.stl st-Wing 2-right\_profile3.stl Material: PLA Weight: ~ 60 g

#### ADDITIONAL SETTINGS

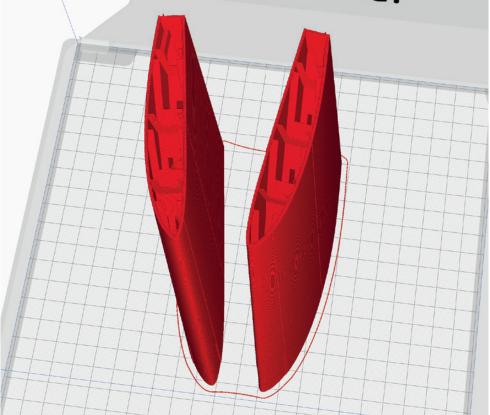
Depending on your printer, a **brim** may not be nessesery.



#### INFO

STL: st-Wing 3-both\_profile3.stl Material: PLA Weight: ~ 66 g

#### ADDITIONAL SETTINGS







The following parts must be sliced with the profile PROFILE P3\_SURFACE (1 Wall Print). Recommended additional settings are listed in the screenshots.

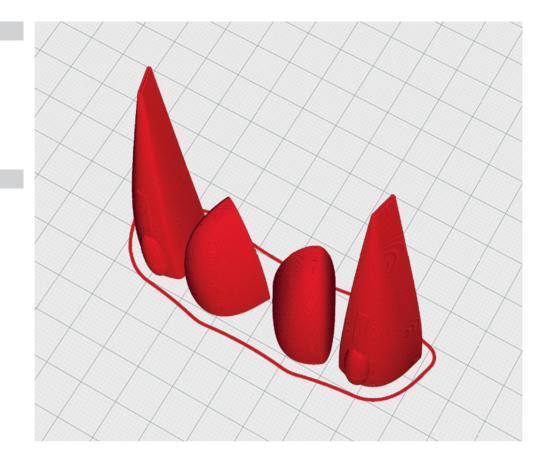
#### **PLEASE NOTE**

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: st-Wingtips\_profile3.stl Material: PLA Weight: ~ 6 g

#### ADDITIONAL SETTINGS





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### **PROFILE P4\_FLEX**

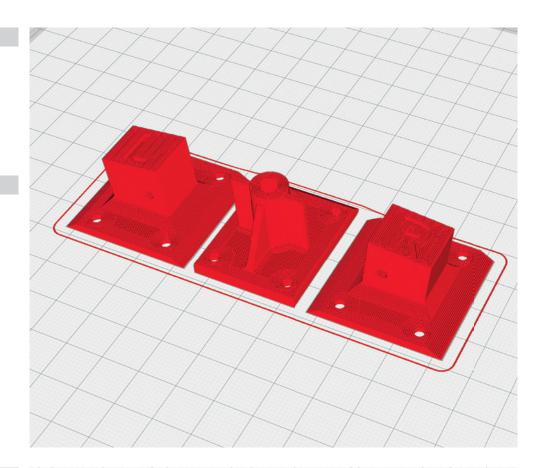
The following parts must be sliced with the profile PROFILE P4\_FLEX (flexible materials). Recommended additional settings are listed in the screenshots.

#### INFO

STL: st-Gear flex\_profile4.stl Material: TPU soft Weight: ~ 19 g

#### ADDITIONAL SETTINGS

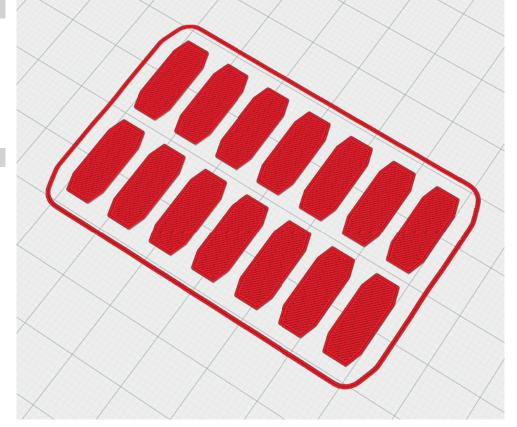
- Wall Line Count 8
- Infill Density 100 %



#### INFO

STL: st-Hinges\_profile4.stl Material: TPU soft Weight: ~ 1 g

#### ADDITIONAL SETTINGS







#### ΕN

### **PROFILE P4\_FLEX**

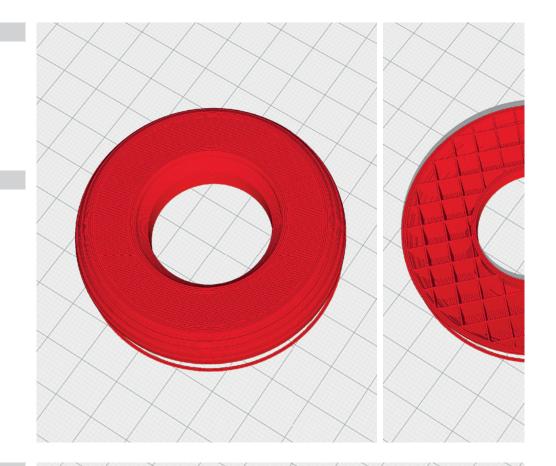
The following parts must be sliced with the profile PROFILE P4\_FLEX (flexible materials). Recommended additional settings are listed in the screenshots.

#### INFO

STL: st-Tire main\_profile4.stl Material: TPU soft Weight: ~ 16 g

#### ADDITIONAL SETTINGS

- Wall Line Count 3
- Top Layers 4
- Bottom Layers 4
- Infill Density 15 %

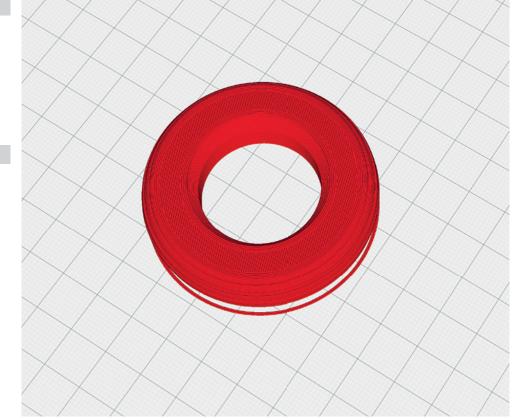


#### INFO

STL: st-Tire front\_profile4.stl Material: TPU soft Weight: ~ 16 g

#### ADDITIONAL SETTINGS

- Wall Line Count 3
- Top Layers 4
- Bottom Layers 4
- Infill Density 15 %





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### **PROFILE P4\_FLEX**

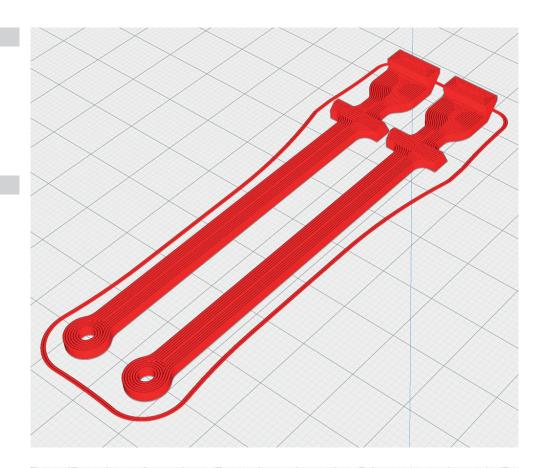
The following parts must be sliced with the profile PROFILE P4\_FLEX (flexible materials). Recommended additional settings are listed in the screenshots.

#### INFO

STL: st-Tension belt\_profile4.stl Material: TPU soft Weight: ~ 3 g

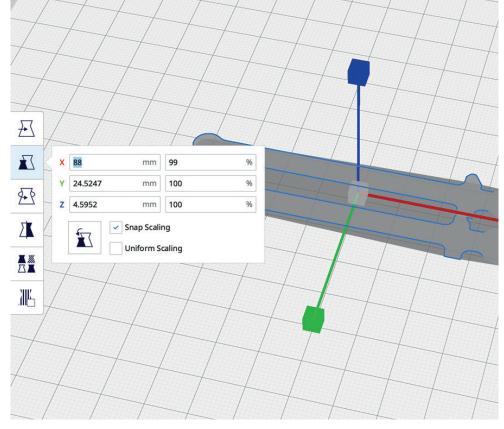
#### ADDITIONAL SETTINGS

• Wall Line Count 10



#### Tension belt lenght

In the folder Individual parts you will find the tension belts also as a single file. If you want to change them slightly in length, you can simply change the dimension of the X-axis in Cura (Uniform scaling must NOT be selected).





### NESSESERY ACCESSORIES

some tapping screws Ø2mm



- CA super glue, liquid and liquid medium
- Activator
- servo extension cable 2 Pieces
- Steel rod Ø1mm
   1 Piece
- Carbon rod Ø1,5\*1000mm 3 Pieces
- Carbon rod Ø4mm 1 Piece
- Carbon tube Ø6\*1000mm 2 Pieces
- Carbon tube Ø8\*1000mm 1 Piece



Neodym-Super-Magnet
 5x5x5mm
 4 Pieces



rod connection

7 Pieces



• Self-adhesive velcro tape

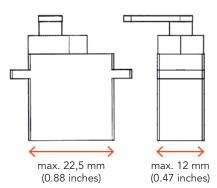
#### TOOLS

- Cutter knife
- Philips screwdriver
- Drill Ø8mm, Ø4mm, Ø2mm, Ø1,5mm

#### **RC COMPONENTS**

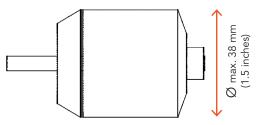
- Servo 5 Pieces\*:
- EMAX ES08A or Hitec HS-55

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\* or 4 if rudder and front wheel are connected with a V-cable.

Engine (3S-setting): Hacker A30-10XL V4 (177 grams)



BEC-Controller: Prop: Battery pack: 3S, min. 55A, BEC APC 12\*6 3S LiPo-Akku 2.700 mAh (200 grams)

You can also use a more powerful engine (in the 3s-setting you need some lead in front to keep the CG).

 Engine (4S-setting):
 4S 60amp ESC 3548 1100kv

 Prop:
 APC 12\*6

#### 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**





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#### Gluing the parts

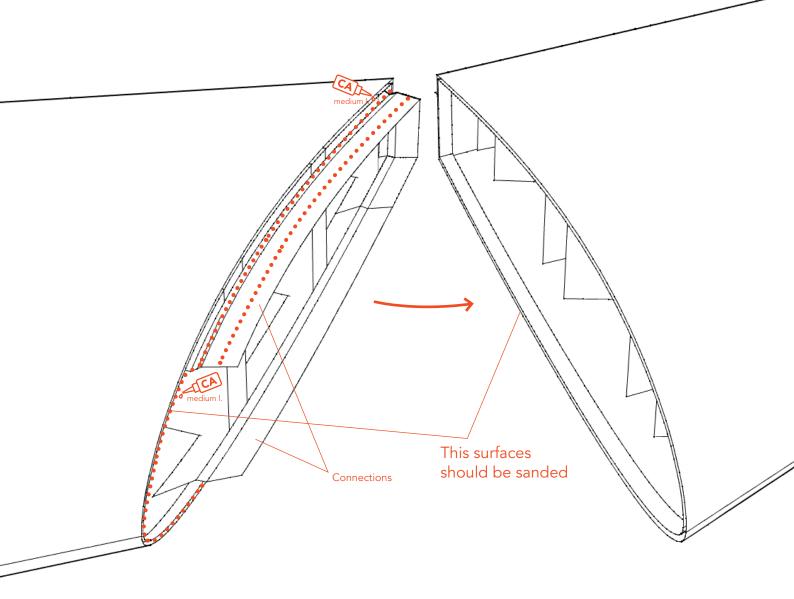
To glue the fuselage and wing parts well, use **medium**-liquid CA adhesive.

First check whether the parts go well together. Then apply a lot of CA glue to the part with the connections and all surfaces that will touch later (except the bowden tubes). Put the parts together and align the parts perfectly. If glue comes out, wipe with a cloth. Then spray activator spray on the glue points. For a strong connection, the adhesive surfaces should be sanded.

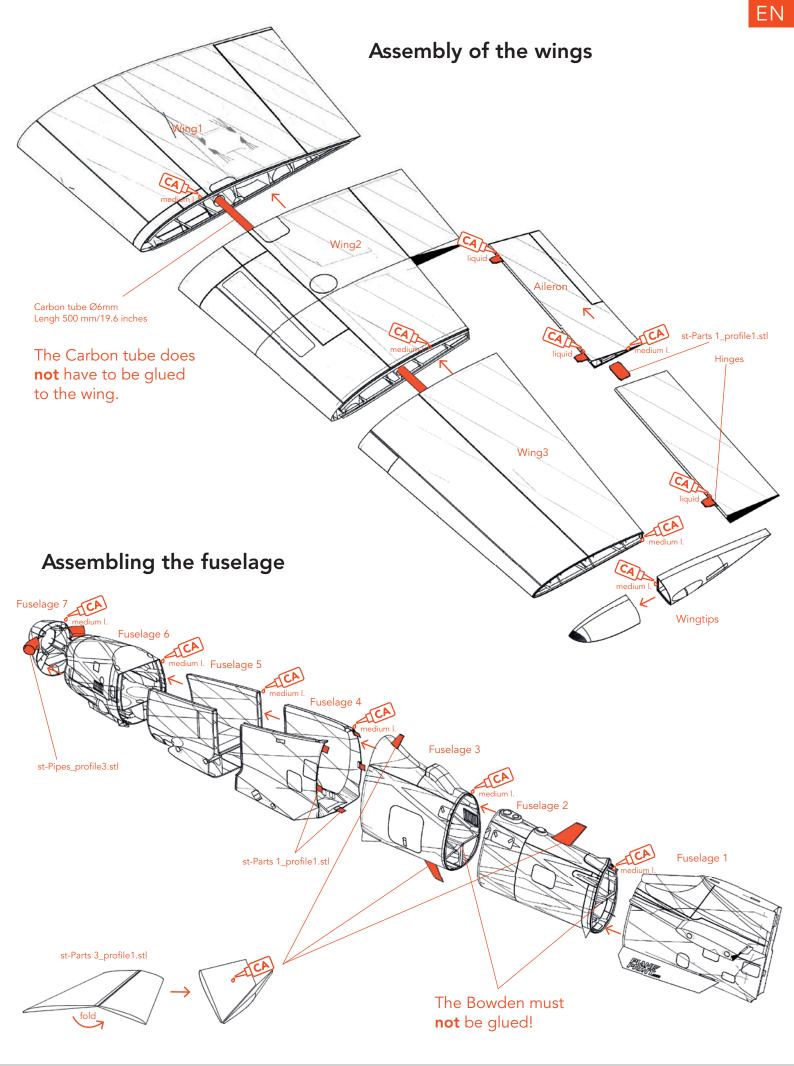
Please only use **fresh** CA glue and activator spray for curing!

The adhesive connections must hold perfectly!

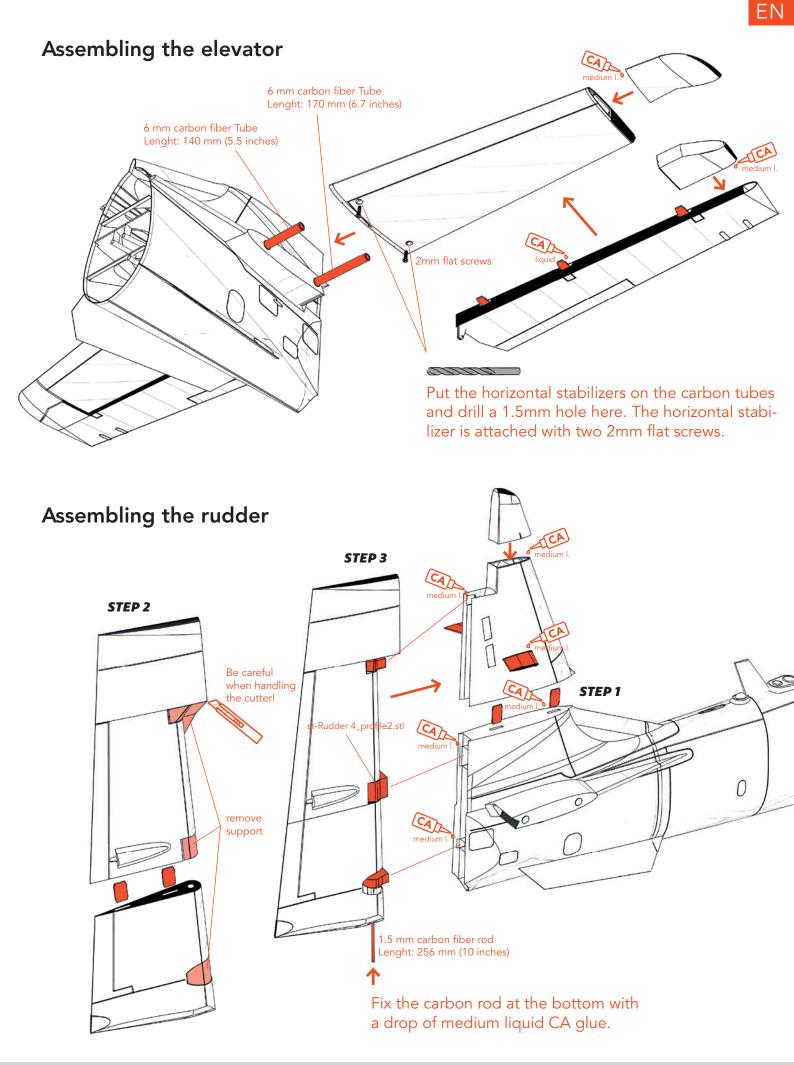
#### **IMPORTANT!**









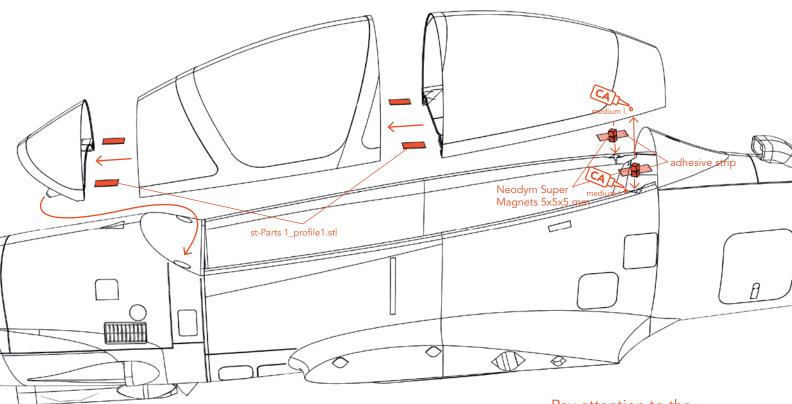




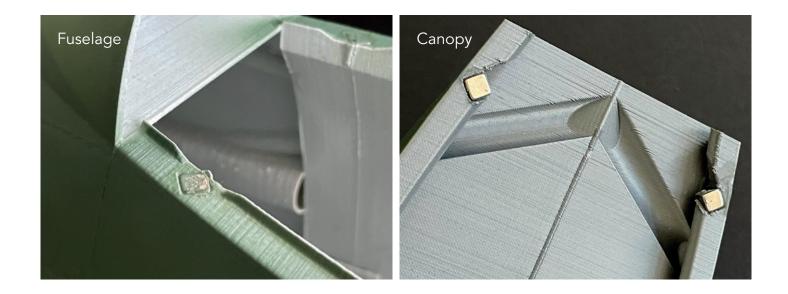
#### Magnetic clasp canopy

Put two pieces of adhesive tape together with the adhesive side facing outwards, put two neodymium magnets on them. add some CA glue to the magnetic holders in the fuselage and canopy. then stick the canopy to the fuselage and let the glue harden. The adhesive tape ensures that the wing and fuselage can be separated again.

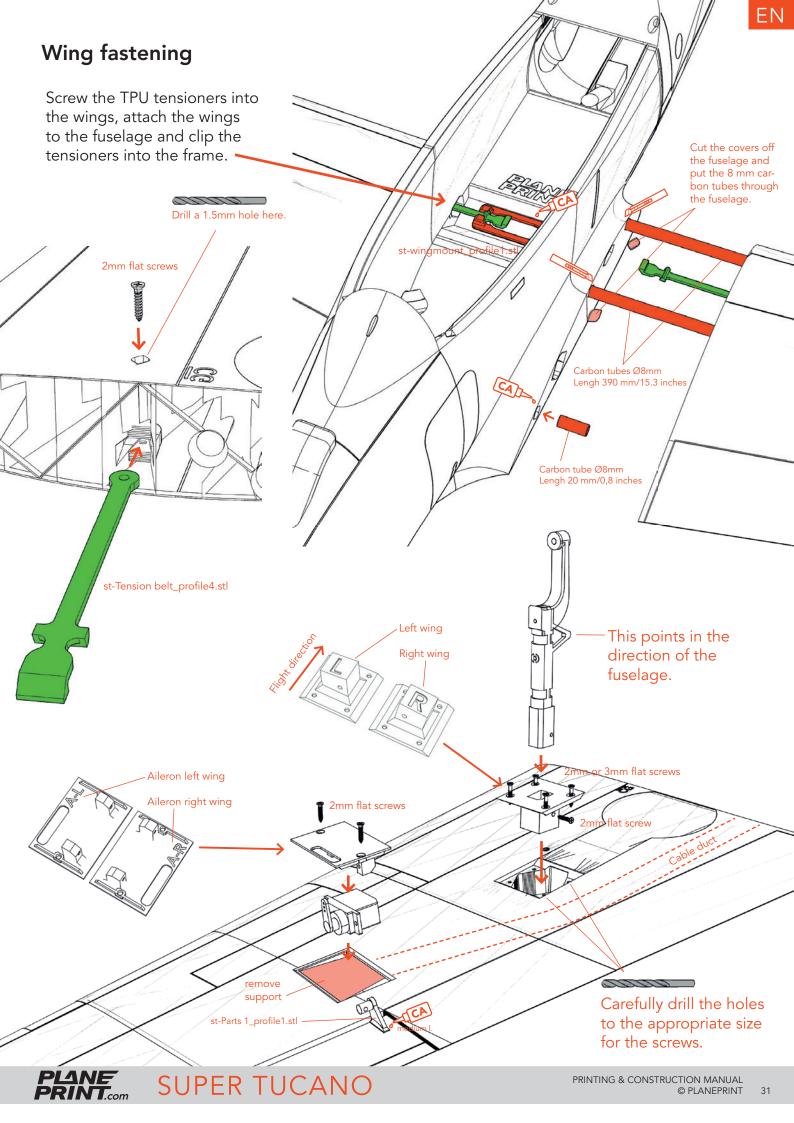
**Important:** the magnets must touch so that they achieve the maximum force!



Pay attention to the correct alignment of the magnets so that they do not reject each other!

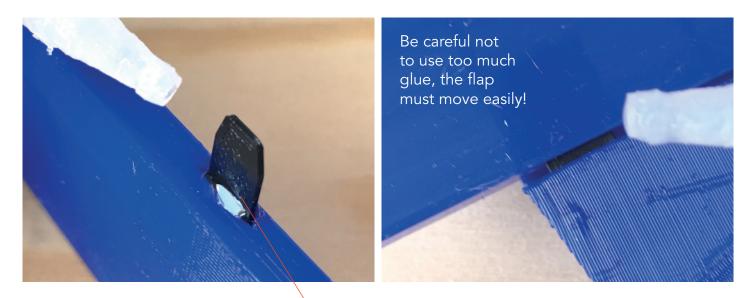






#### Installation of the TPU Hinges

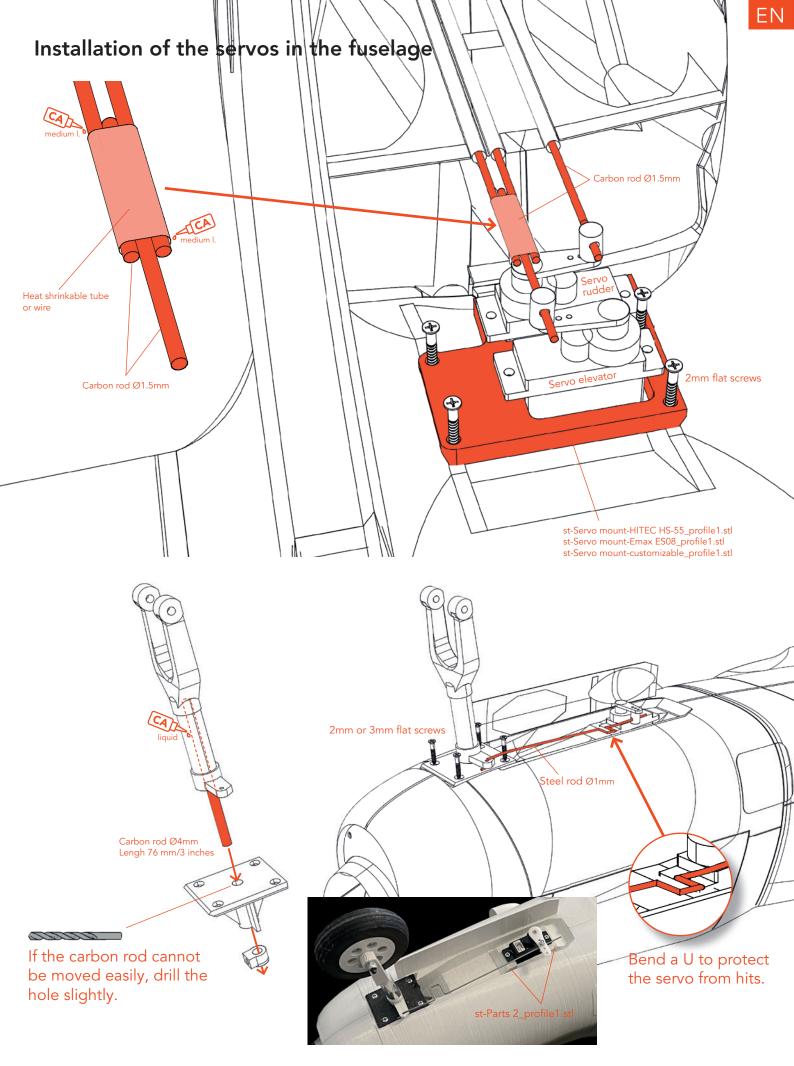
**First** insert the hinge into the movable flap and add a drop of liquid CA adhesive into the gap. Wait for the glue to drain completely, then spray the activator on it. Then put the flap in the wing **until the flap touches the spacers** and put a drop of CA glue on the hinge. Wait again for the glue to run in, and then spray the activator on it.



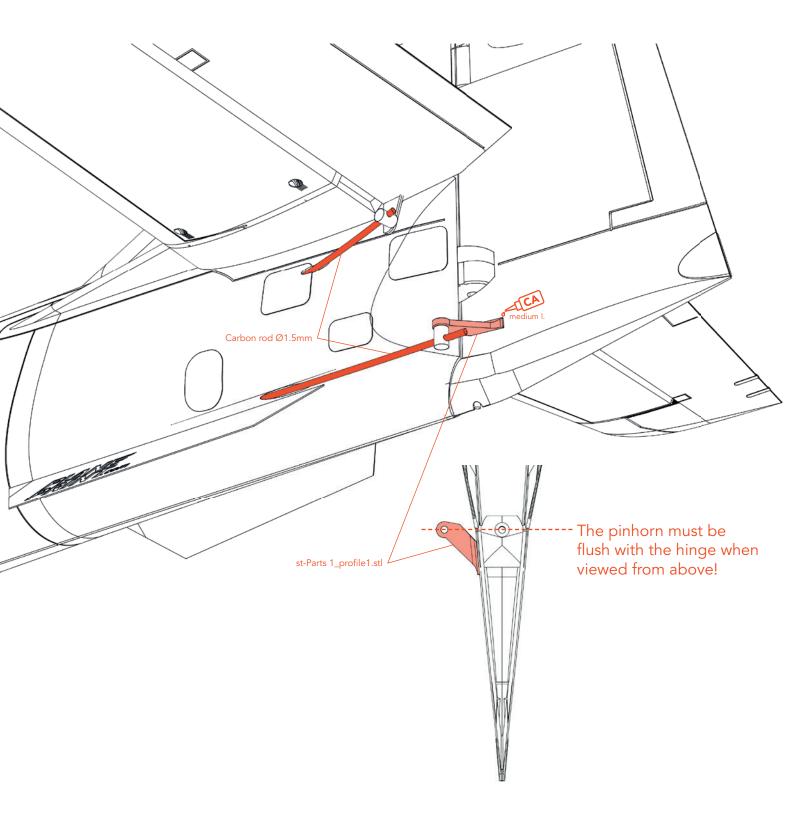


SUPER TUCANO

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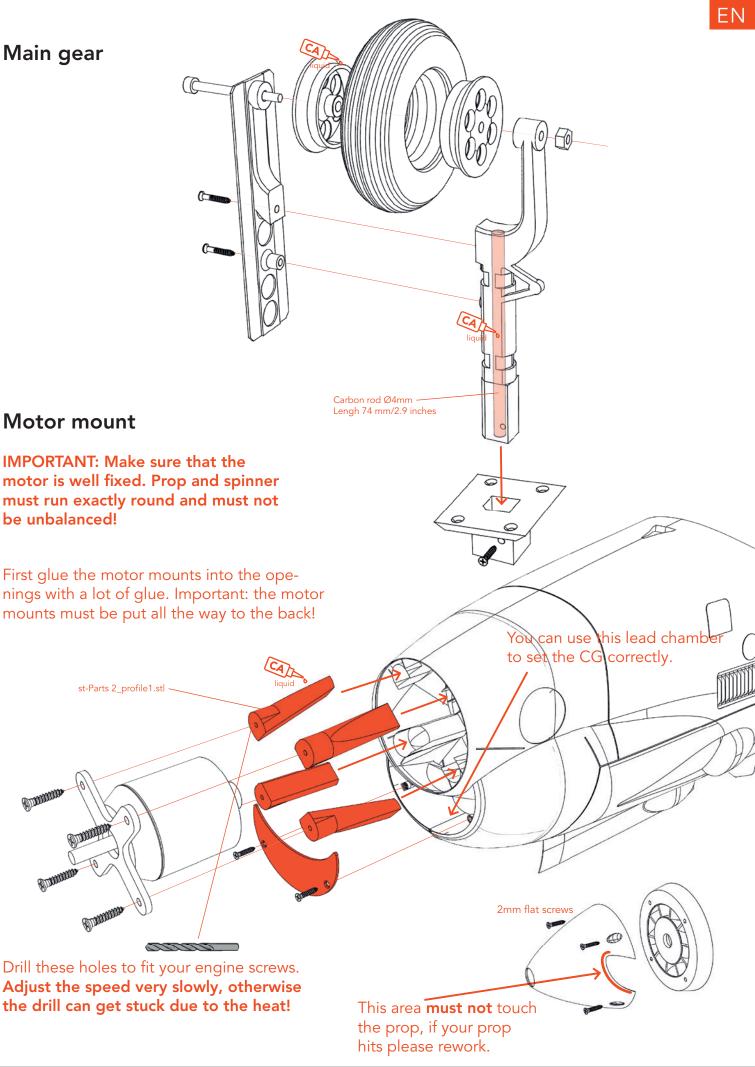




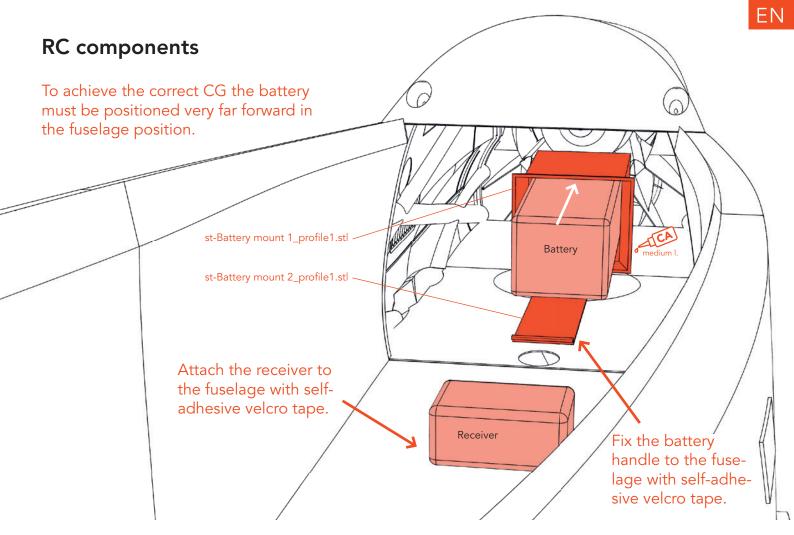




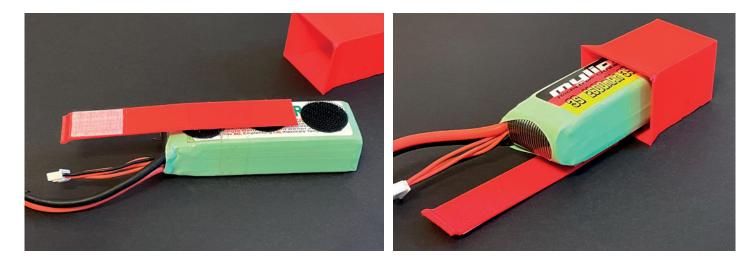
Main gear



#### SUPER TUCANO RINT.com



Attach the battery handle (STL: Battery mount 2) to the battery with self-adhesive Velcro tape.



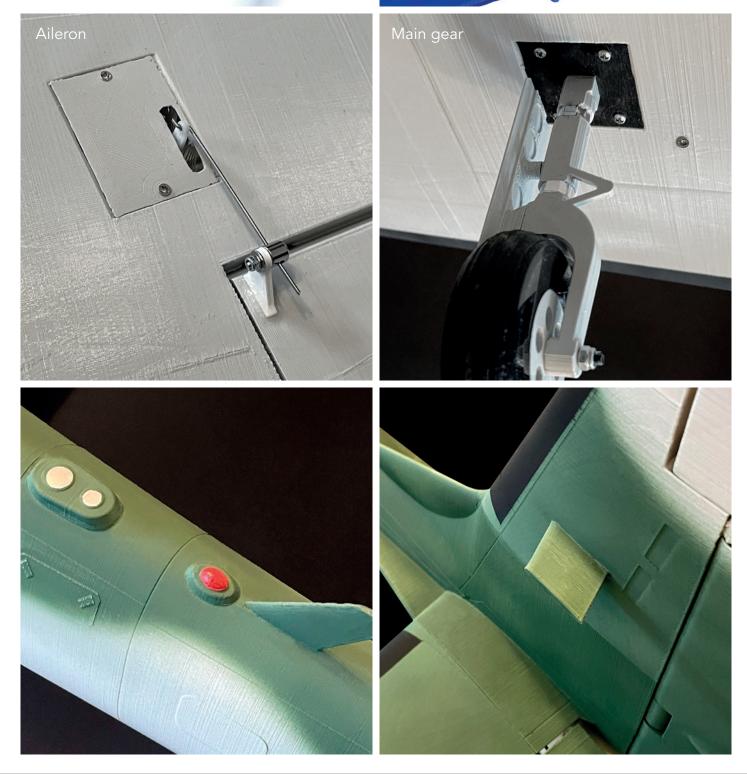


### **DETAIL PHOTOS**

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









### 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.

ΕN

#### TRANSMITTER CONFIGURATION

- 1. Select empty (Delta) model
- 2. Reversing the direction of servo as nessesery (see control function)
- 3. Servo adjustment all: 100%

#### FLIGHT TIMER

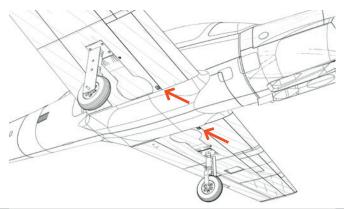
Flight time will vary depending on the battery size. Engine runtime expect 8 minutes under normal circumstances (2700 3S battery). It is a good idea to be conservative with the flight timer until you gain experience with your airplane.

#### SETTING THE SERVO TRAVEL

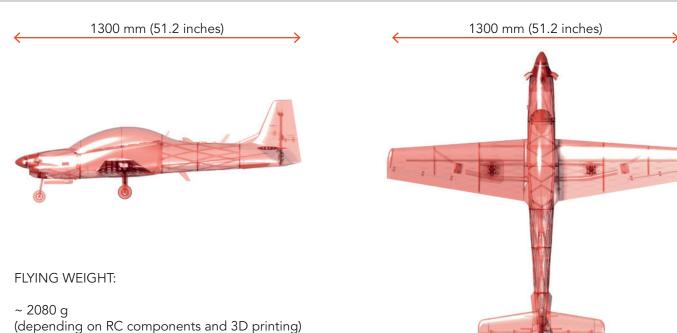
Aileron	▲ = 18 mm ▼ = 15 mm	Expo -30 % Expo -30 %
Elevator	▲ = 24 mm ▼ = 18 mm	Expo -30 % Expo -30 %
Rudder	<ul> <li><b>4</b> = 28 mm</li> <li><b>b</b> = 28 mm</li> </ul>	Ехро -10 % Ехро -10 %

CENTER OF GRAVITY (CG)

See the Marker on the Wings. THE CG HAS TO FIT EXACTLY!



#### TECHNICAL SPECIFICATIONS

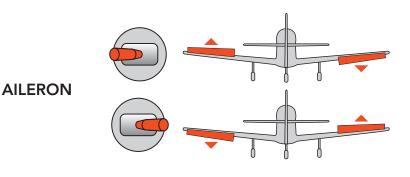


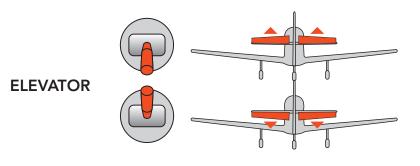


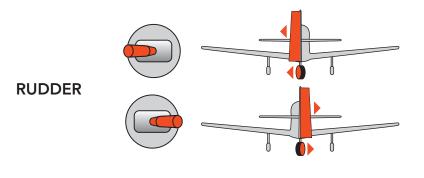
### **CONTROL DIRECTION TEST**

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









### **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.

FΝ

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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