

ZIGGY



NOTE: Slicing only works with CURA!



You can find the STL data at www.planeprint.com

PRINTING THE PARTS – PRINTING PROFILES

You may wonder why this 3D model is exclusive to CURA?

The most important thing with small RC model airplanes is always the **size to weight ratio**. 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 offer weight-relevant parts in a **true 1-wall printing** process for both the outer skin and the filling. This allows us to save weight while maintaining the necessary stability.

Here we show you how to make adjustments from a standard CURA profile. **For this model we need only 4, easy to create profiles.**

It is important to follow the instructions from PLANEPRINT.com to slice the part correctly.

However, it can be useful to perfect your 3D printing by making some additional settings depending on the printer and 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!

PROFILE P1_FULLBODY normal PLA

The following parts must be sliced with the PROFILE P1_FULLBODY.
Please note the additional settings for the individual parts!

CG scale_profile1_zy.stl

MATERIAL PLA, Weight: ~ 10 g

ADDITIONAL SETTINGS

None required



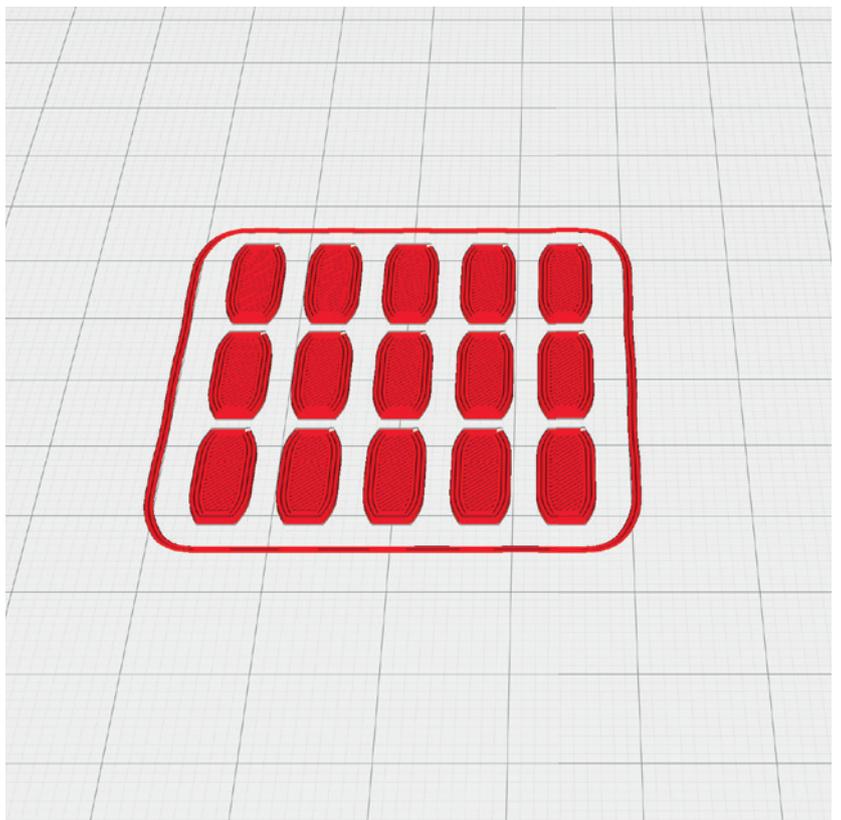
Interconnects_profile1_zy.stl

MATERIAL PLA, ~ 1 g

ADDITIONAL SETTINGS

None required

NOTE You can also print the interconnects with LW-PLA, then they are less visible.



PROFILE P1_FULLBODY normal PLA

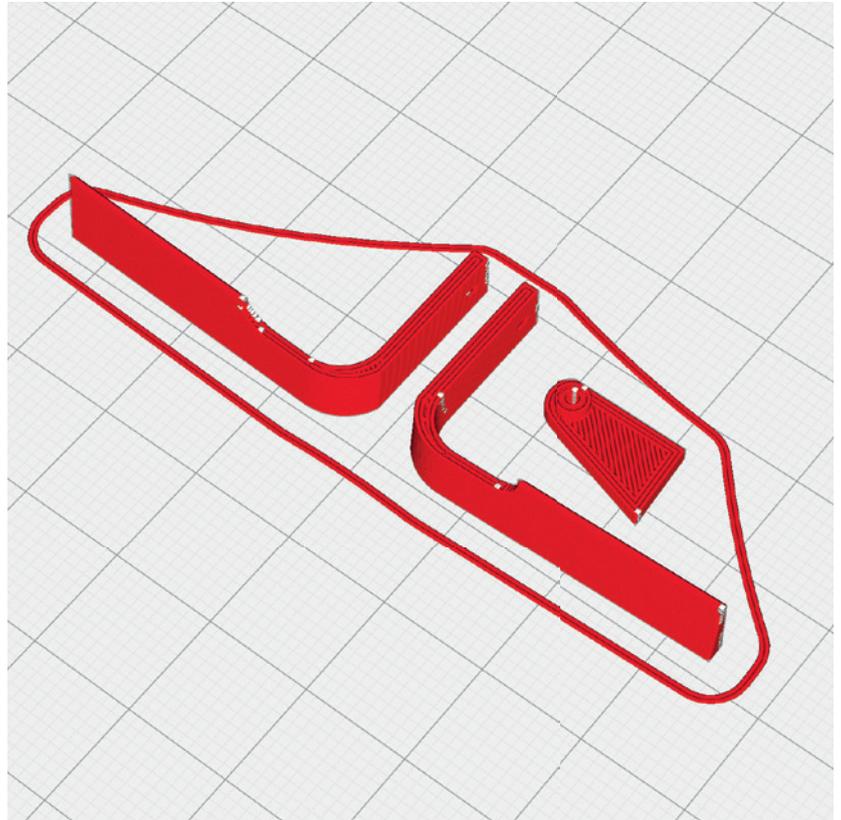
The following parts must be sliced with the PROFILE P1_FULLBODY.
Please note the additional settings for the individual parts!

Linkages_profile1_zy.stl

MATERIAL PLA, ~ 1 g

ADDITIONAL SETTINGS

None required



Motor mount XXX_profile1_zy.stl

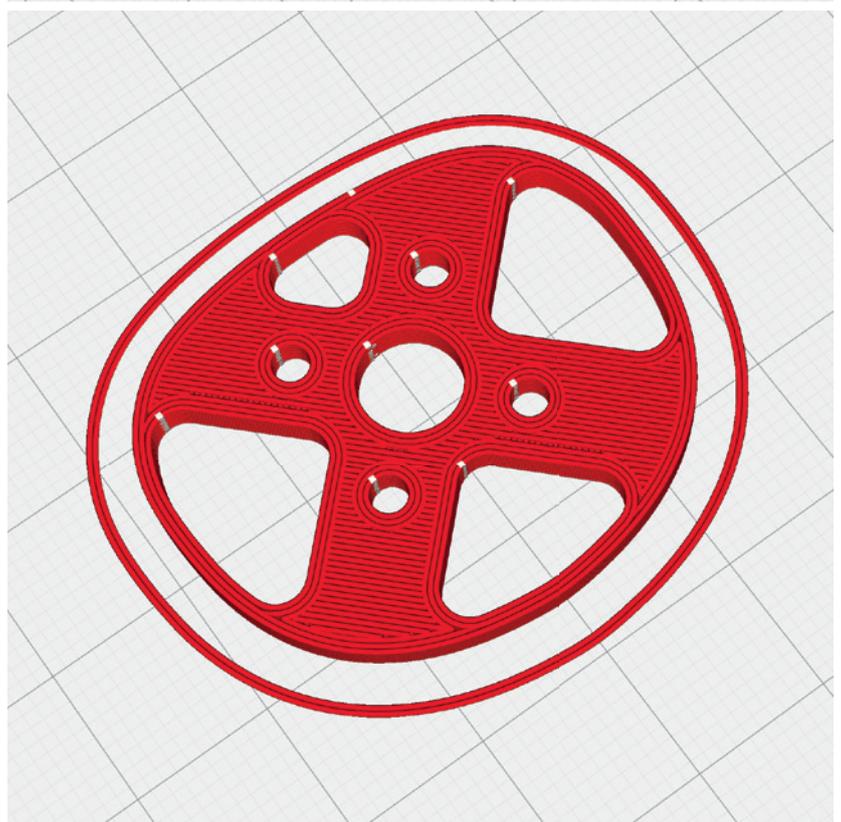
MATERIAL PLA, ~ 2 g

ADDITIONAL SETTINGS

None required

NOTE There are different versions for different engines:

- Motor back mount 31mm_profile1_zy.stl
- Motor back mount undrilled_profile1_zy.stl
- Motor front mount 14mm_profile1_zy.stl
- Motor front mount 16mm_profile1_zy.stl
- Motor front mount undrilled_profile1_zy.stl



PROFILE P1_FULLBODY normal PLA

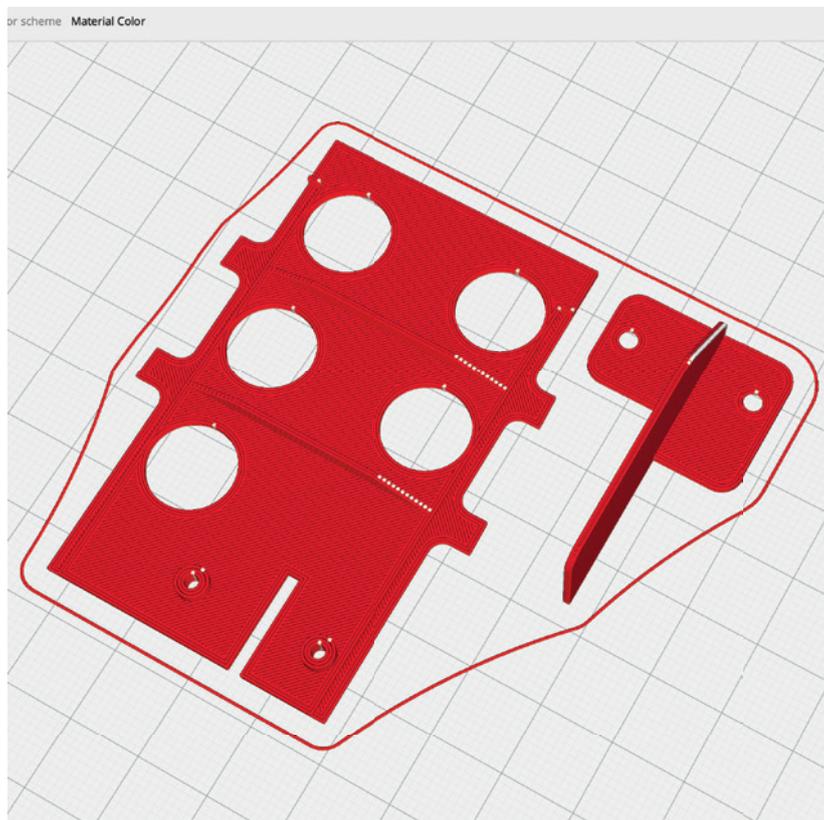
The following parts must be sliced with the PROFILE P1_FULLBODY.
Please note the additional settings for the individual parts!

Servomount_profile1_zy.stl

MATERIAL PLA, ~ 5 g

ADDITIONAL SETTINGS

None required



PROFILE P3_SURFACE Light-Weight LW-PLA

The following parts must be sliced with the PROFILE P3_SURFACE (1-wall-print).

Please note the additional settings for the individual parts!

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

Aileron-left_LW_profile3_zy.stl Aileron-right_LW_profile3_zy.stl

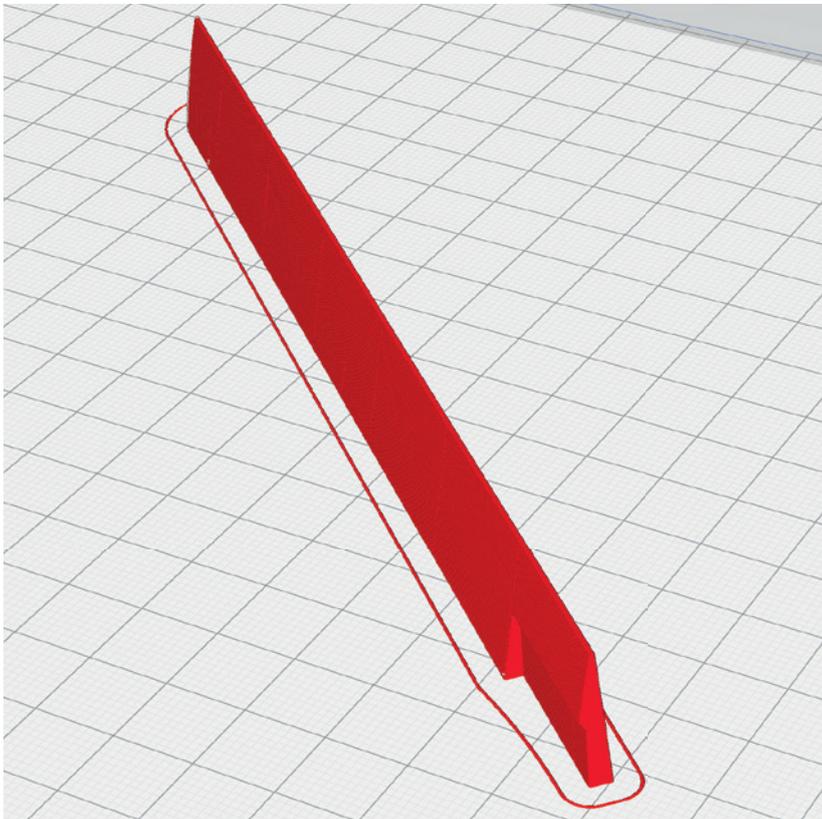
MATERIAL LW-PLA, ~ 4 g*

*Display in Cura. The actual weight is 2 grams

ADDITIONAL SETTINGS

- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



Cover_LW_profile3_zy.stl

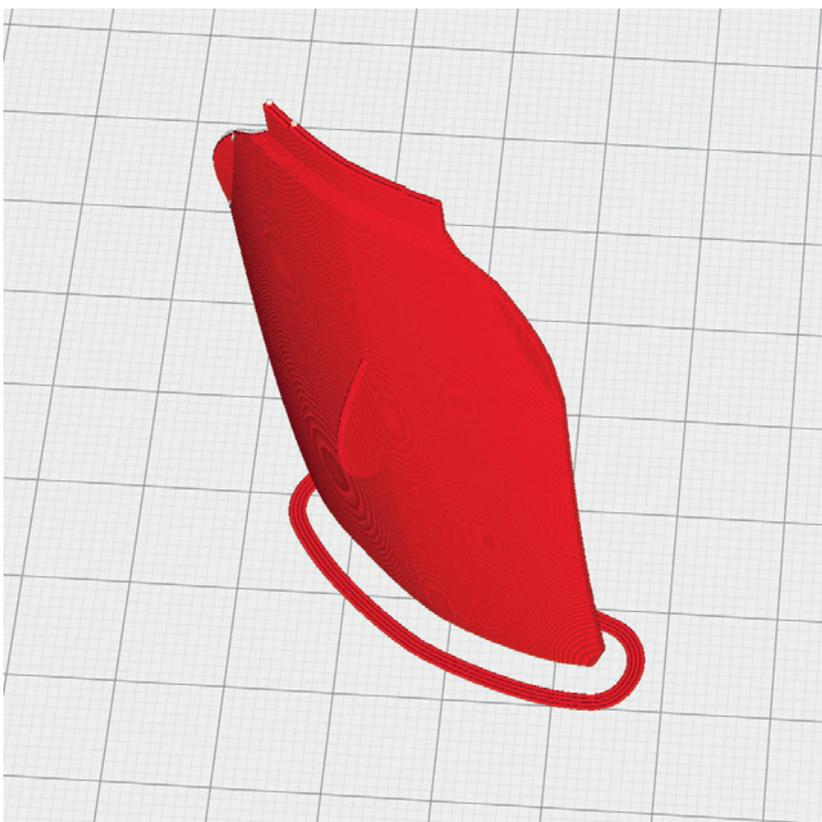
MATERIAL LW-PLA, ~ 3 g*

*Display in Cura. The actual weight is 1,3 grams

ADDITIONAL SETTINGS

- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



PROFILE P3_SURFACE Light-Weight LW-PLA

The following parts must be sliced with the PROFILE P3_SURFACE (1-wall-print).

Please note the additional settings for the individual parts!

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

Elevator_LW_profile3_zy.stl

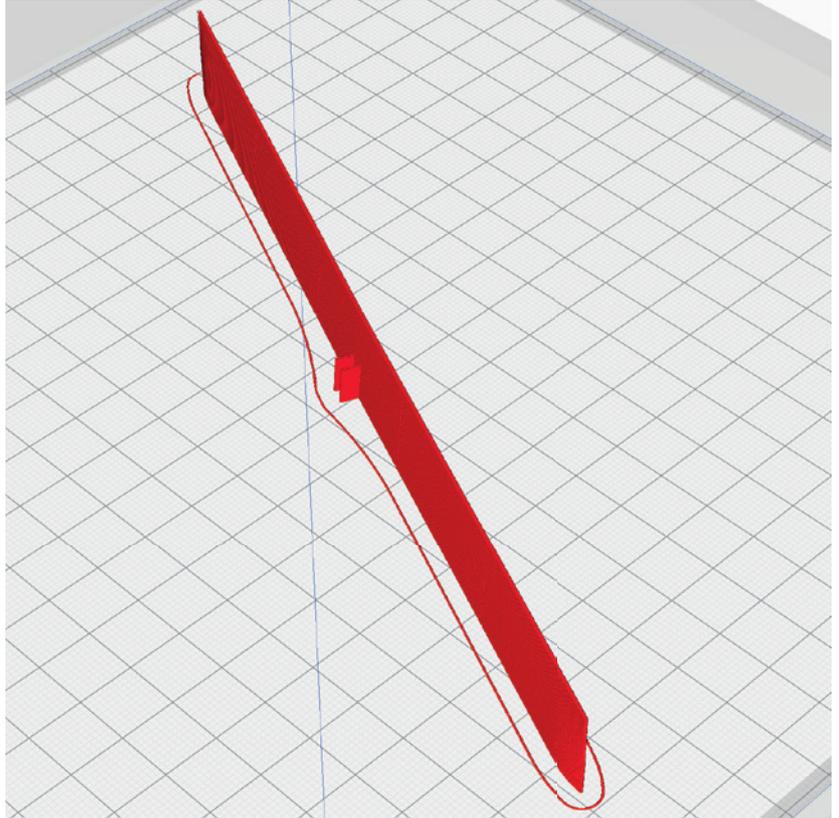
MATERIAL LW-PLA, ~ 4 g*

*Display in Cura. The actual weight is 2 grams

ADDITIONAL SETTINGS

- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



Fuselage1_LW_profile3_zy.stl

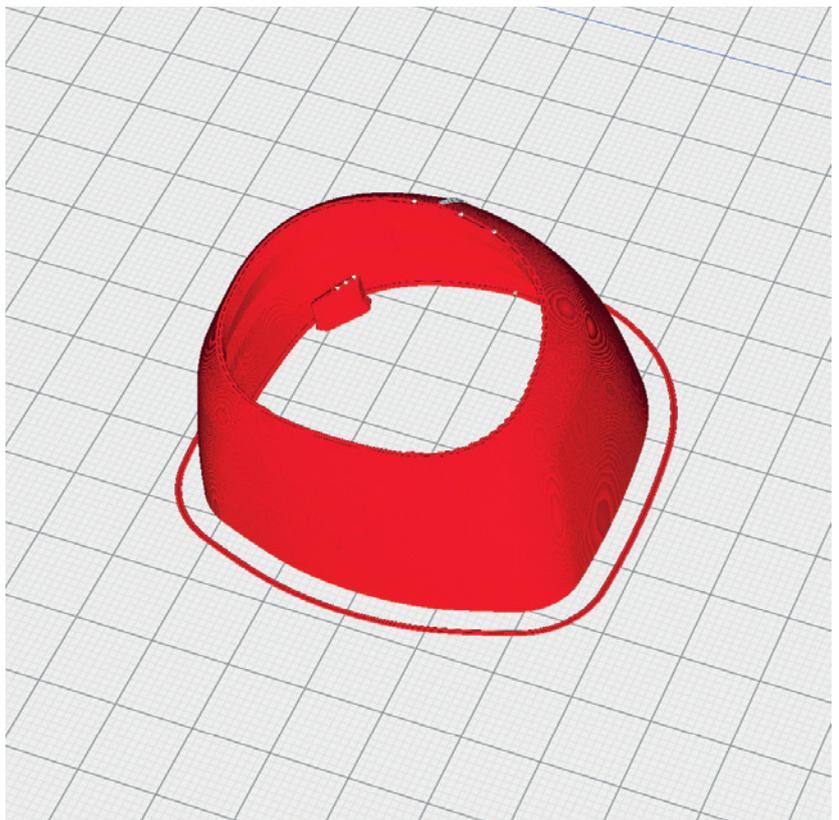
MATERIAL LW-PLA, ~ 6 g*

*Display in Cura. The actual weight is 2,9 grams

ADDITIONAL SETTINGS

- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



PROFILE P3_SURFACE Light-Weight LW-PLA

The following parts must be sliced with the PROFILE P3_SURFACE (1-wall-print).

Please note the additional settings for the individual parts!

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

Fuselage2_LW_profile3_zy.stl

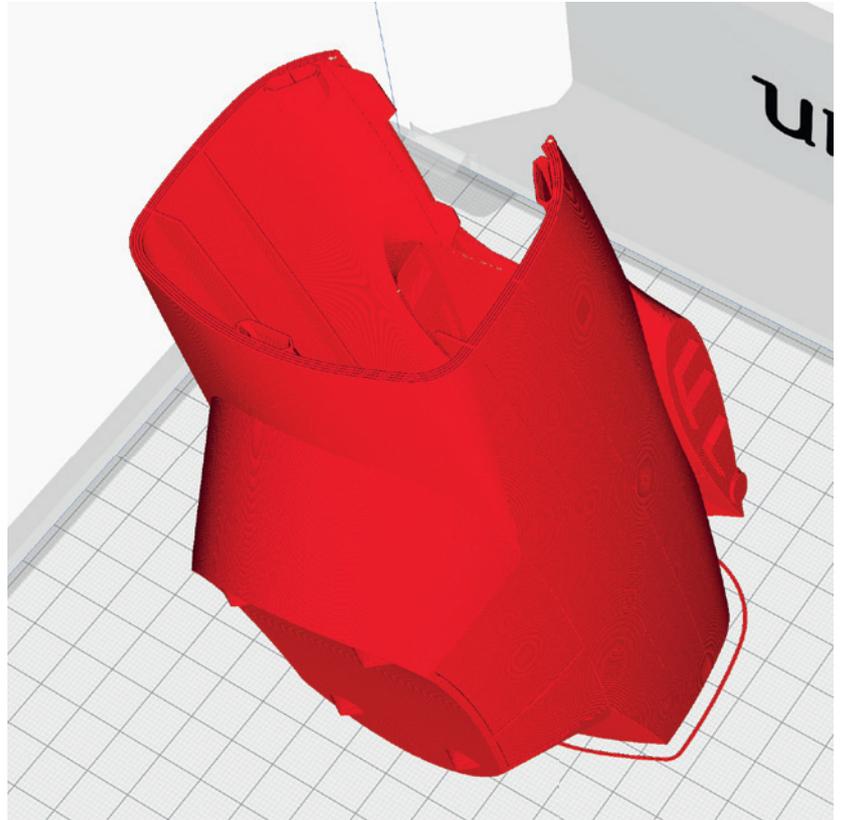
MATERIAL LW-PLA, ~ 37 g*

*Display in Cura. The actual weight is 19,2 grams

ADDITIONAL SETTINGS

- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



Fuselage3_LW_profile3_zy.stl

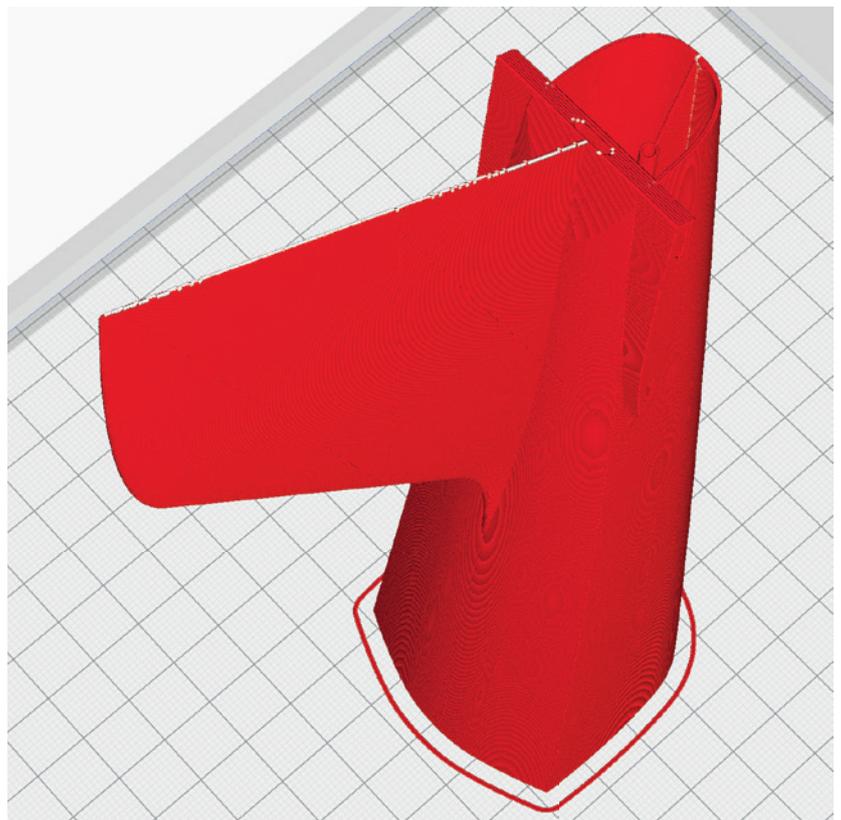
MATERIAL LW-PLA, ~ 21 g*

*Display in Cura. The actual weight is 10,6 grams

ADDITIONAL SETTINGS

- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



PROFILE P3_SURFACE Light-Weight LW-PLA

The following parts must be sliced with the PROFILE P3_SURFACE (1-wall-print).

Please note the additional settings for the individual parts!

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

HS-left_LW_profile3_zy.stl
HS-right_LW_profile3_zy.stl

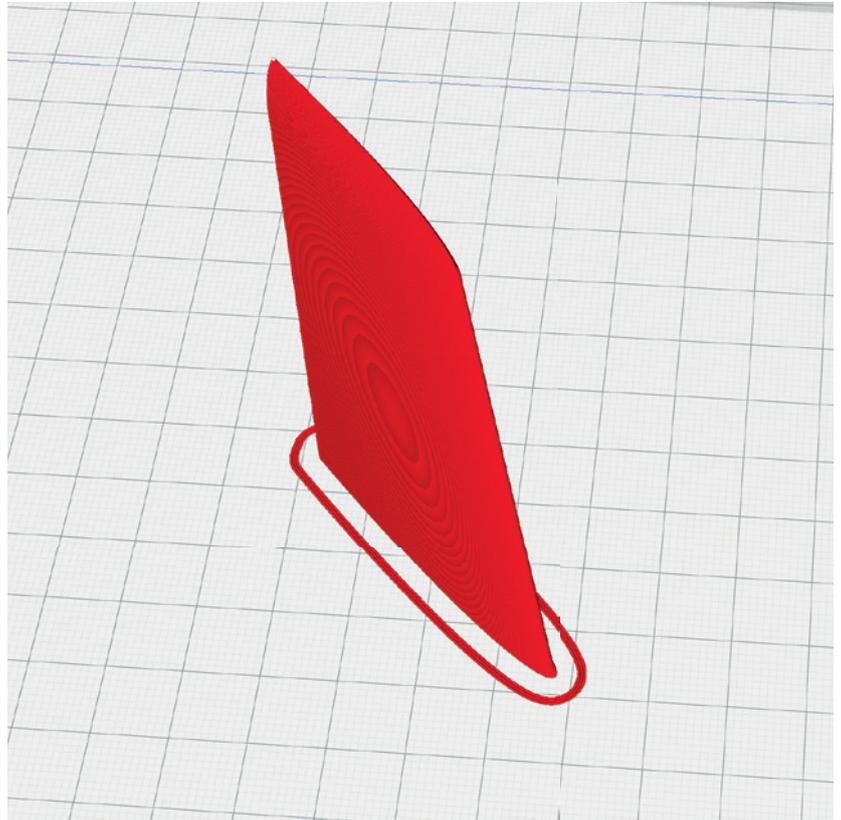
MATERIAL LW-PLA, ~ 4 g*

*Display in Cura. The actual weight is 2,1 grams

ADDITIONAL SETTINGS

- Fan +30 %
- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



WING-down-left_LW_profile3_zy.stl
WING-down-right_LW_profile3_zy.stl

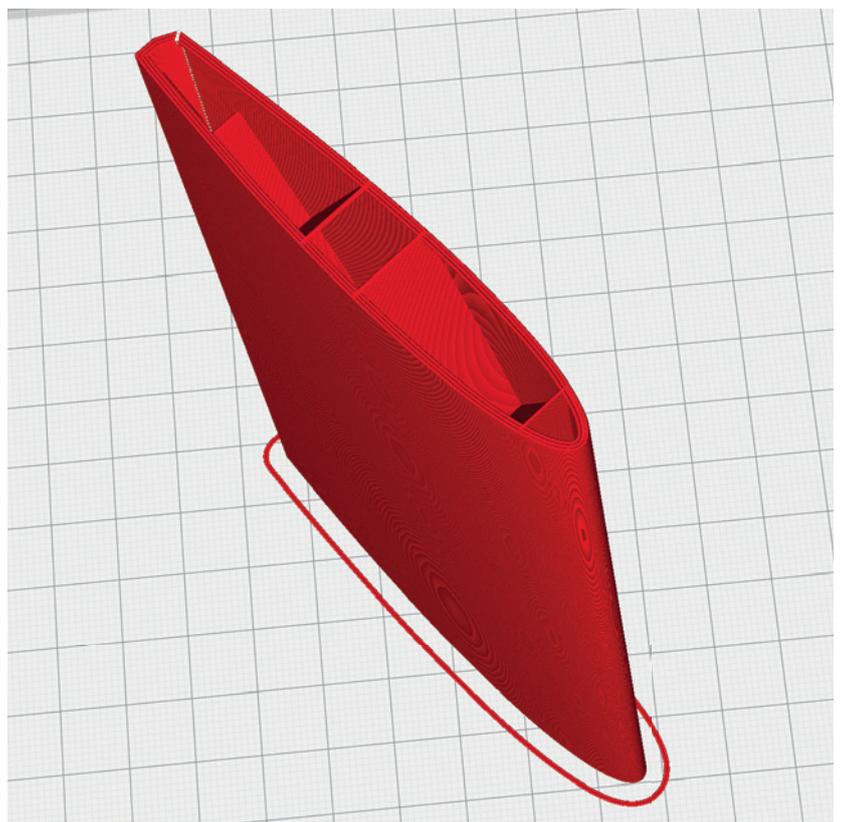
MATERIAL LW-PLA, ~ 19 g*

*Display in Cura. The actual weight is 9,5 grams

ADDITIONAL SETTINGS

- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



PROFILE P3_SURFACE Light-Weight LW-PLA

The following parts must be sliced with the PROFILE P3_SURFACE (1-wall-print).

Please note the additional settings for the individual parts!

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

WING-up_LW_profile3_zy.stl

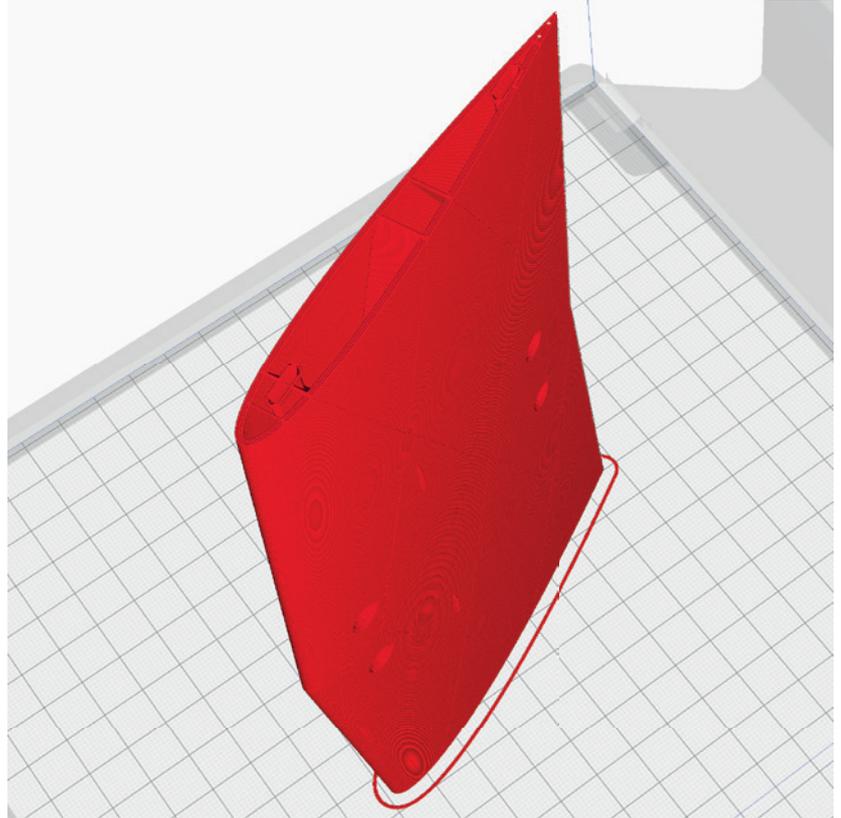
MATERIAL LW-PLA, ~ 26 g*

*Display in Cura. The actual weight is 13,9 grams

ADDITIONAL SETTINGS

- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



WING-up-left_LW_profile3_zy.stl WING-up-right_LW_profile3_zy.stl

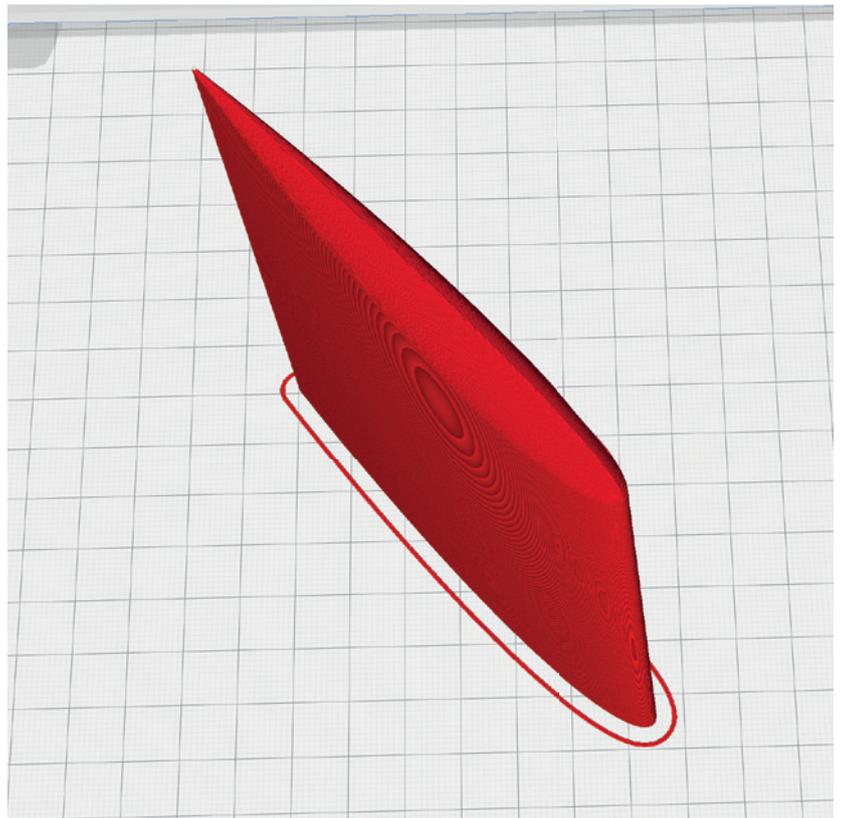
MATERIAL LW-PLA, ~ 16 g*

*Display in Cura. The actual weight is 8,3 grams

ADDITIONAL SETTINGS

- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



PROFILE P3_SURFACE Light-Weight LW-PLA

The following parts must be sliced with the PROFILE P3_SURFACE (1-wall-print).

Please note the additional settings for the individual parts!

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

Winglet-left-LW_profile3_zy.stl
Winglet-right-LW_profile3_zy.stl

MATERIAL LW-PLA, ~ 4 g*

*Display in Cura. The actual weight is 2,2 grams

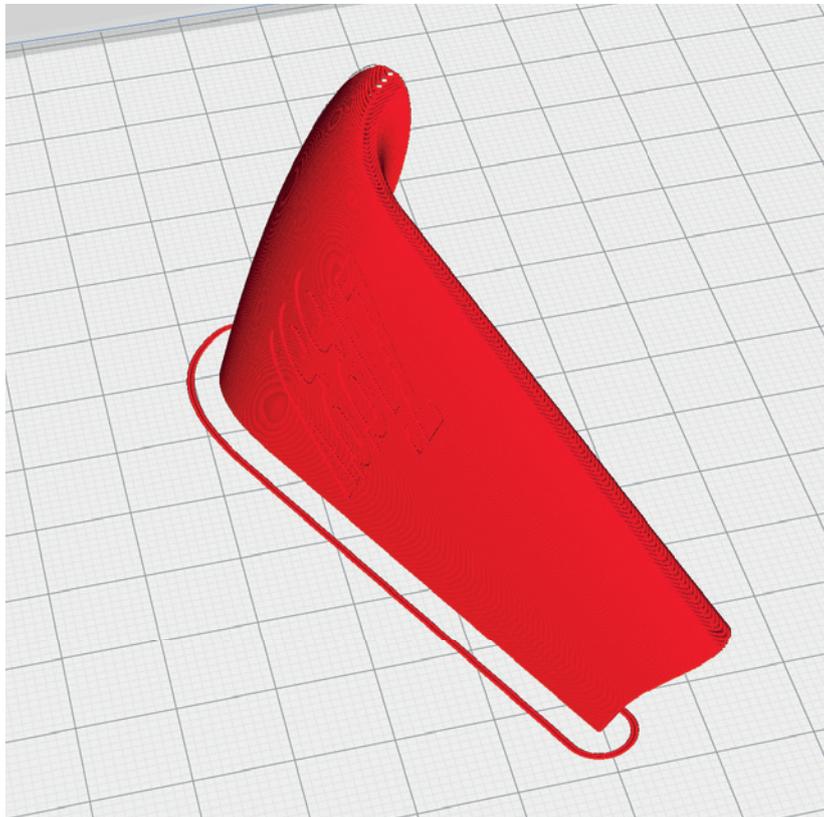
ADDITIONAL SETTINGS

left: • Z Seam Position **right**

right: • Z Seam Position **left**

- Setting Profile3_Surface
- Flow 60 % or less
- Higher nozzle temperature

The optimal weight and sufficient strength is achieved with 60 % flow. Increase the temperature until the wall thickness is 0.4 to 0.5 mm. (We print at 235° and 60% flow).



PROFILE P4_FLEX TPU A95

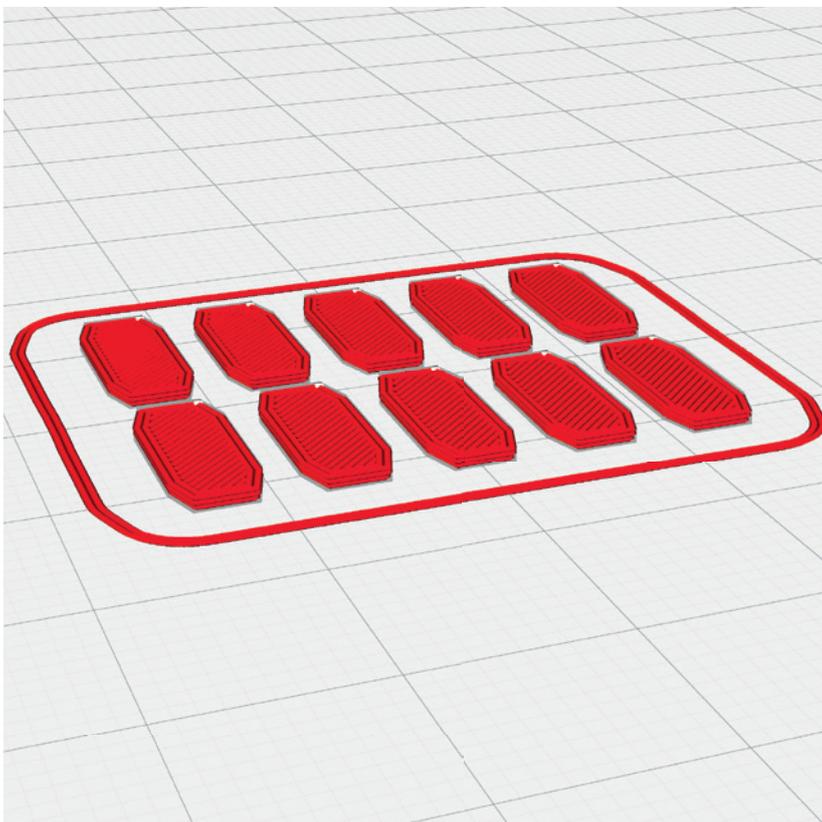
The following parts must be sliced with the PROFILE P4_FLEX.
Please note the additional settings for the individual parts!

Hinges_profile4_zy.stl

MATERIAL TPU ~ A95, Weight: ~ 1 g

ADDITIONAL SETTINGS

None required



REQUIRED ACCESSOIRES

Filament

- normal PLA about 50 grams
- LW-PLA about 150 grams (**ABSOLUTELY NECESSARY**)
We strongly recommend using white (natural) LW-PLA, which heats up much less in direct sunlight.
- TPU (A95) about 5 grams

Materials

- 2 tapping screws $\text{Ø}2 \times 8$ mm
(simply search for: M2 flat head tapping screw assortment) →
- CA super glue (liquid and liquid medium)
- CA activator
- Steel wire $\text{Ø}0.6\text{mm} \times 400\text{mm}$
(or $\text{Ø}0.8\text{mm}$, max. $\text{Ø}1\text{mm}$ for the servo linkages)
- small Rod connection, 3 pieces



Tools

- Cutter knife
- small Philips screwdriver
- needle-nose pliers

RC COMPONENTS

2S-Setting (Like our Ziggy from the official Planeprint video)

ENGINE AXI 2203/40 VPP

PROP APC 6x6E (our prototype from the video)

But you can also use other motors.

It is important that the motor should have a weight of about 20 grams.



BEC-CONTROLLER one matching the motor

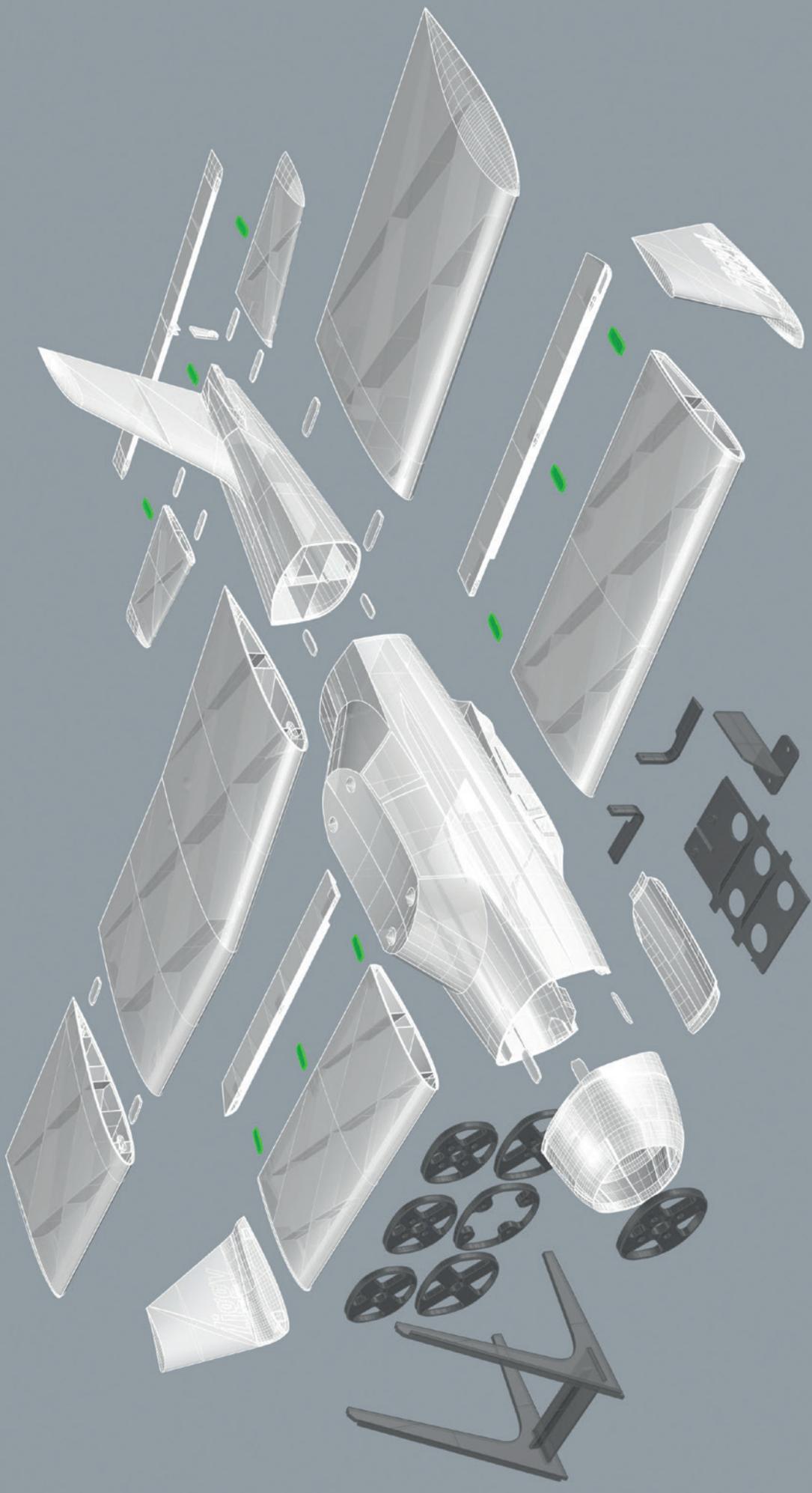
RECEIVER 3 Channel

BATTERY 2S Lipo, from 350 to 650 MaH (our prototype from the video)

SERVOS

- PLANET-HOBBY ECO PLUS
- PICCO 8 DIGITAL SERVO
- Diamond D47
- Hitec HS 40 Eco Servo 4,8g

or similar in the same size, **2 pieces**

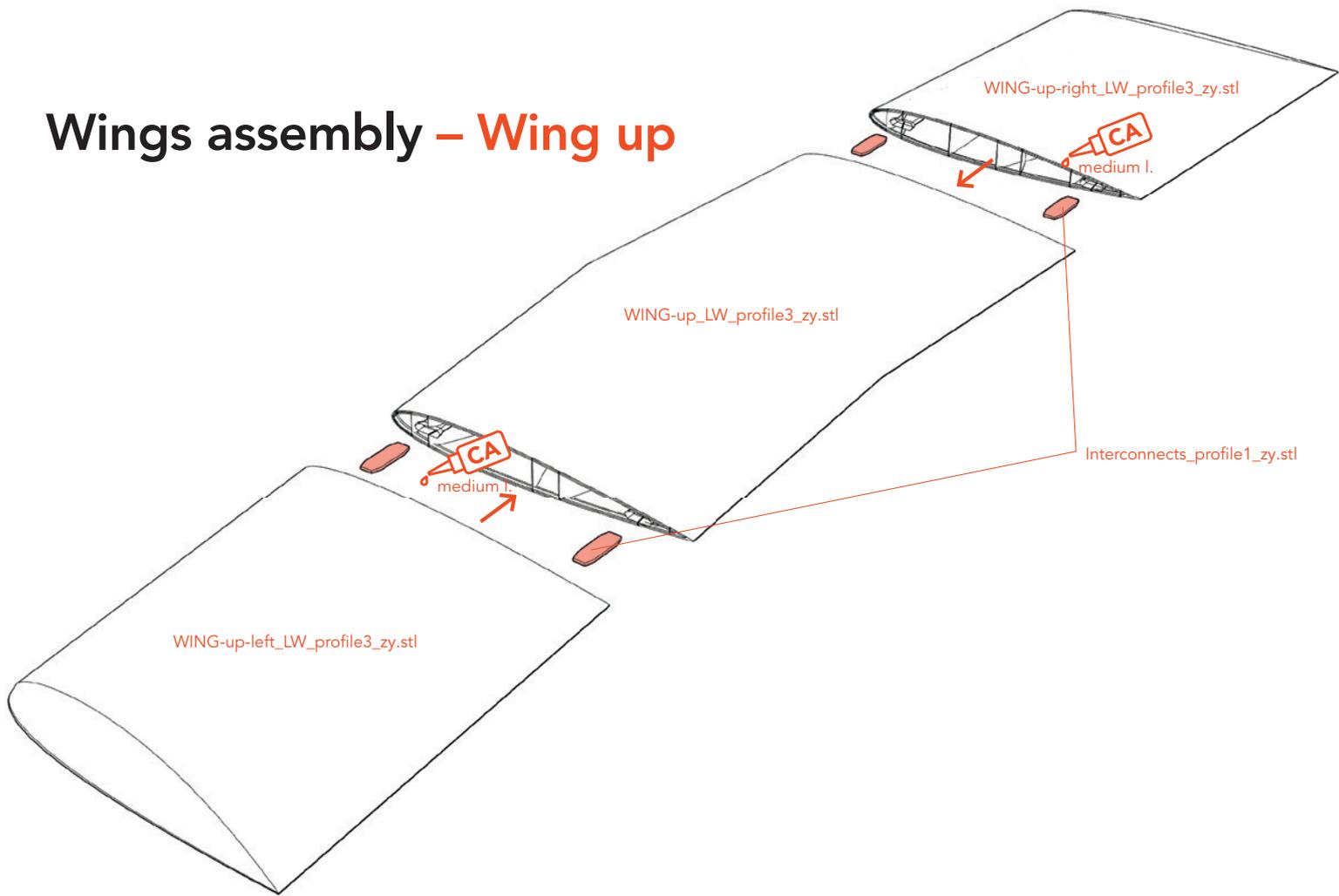


LW-PLA PLA TPU

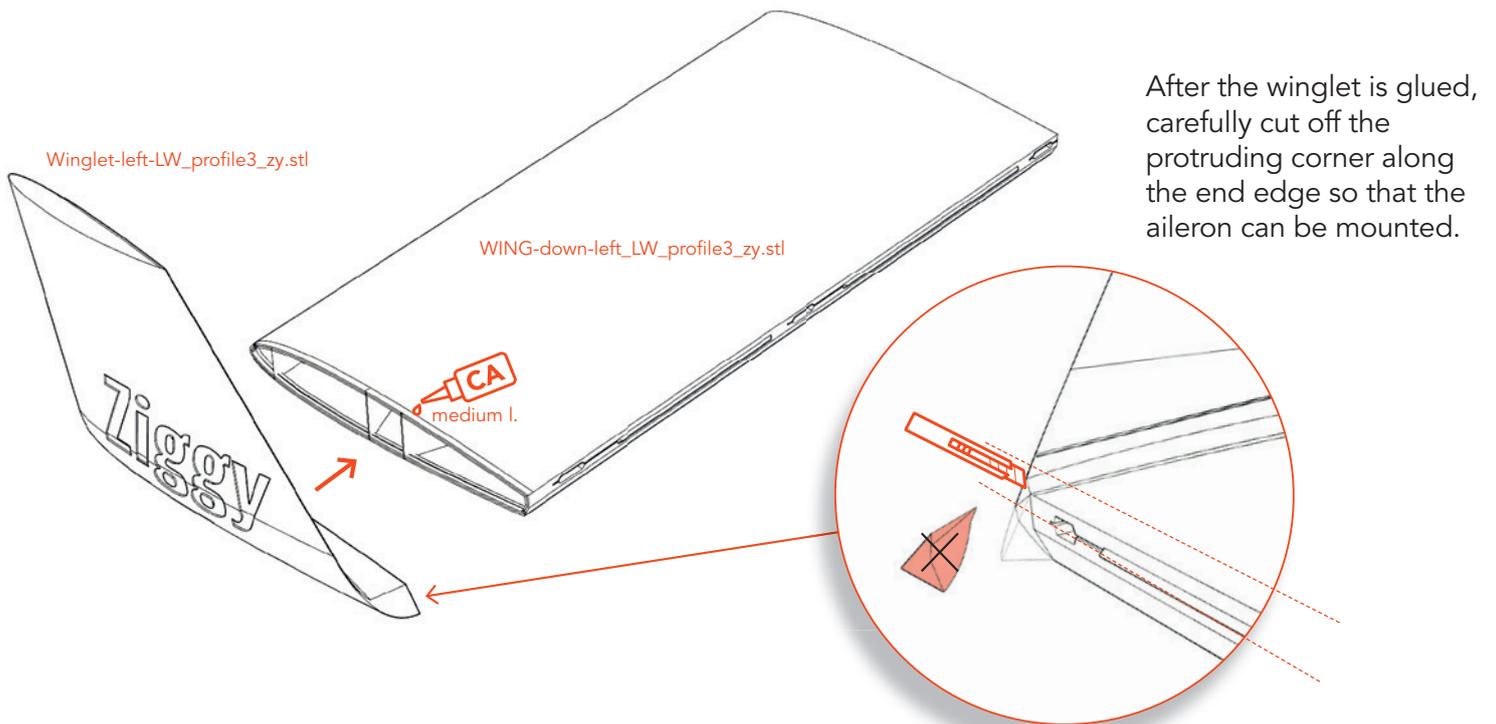
PLANE ZIGGY
PRINT

ASSEMBLING MANUAL

Wings assembly – Wing up



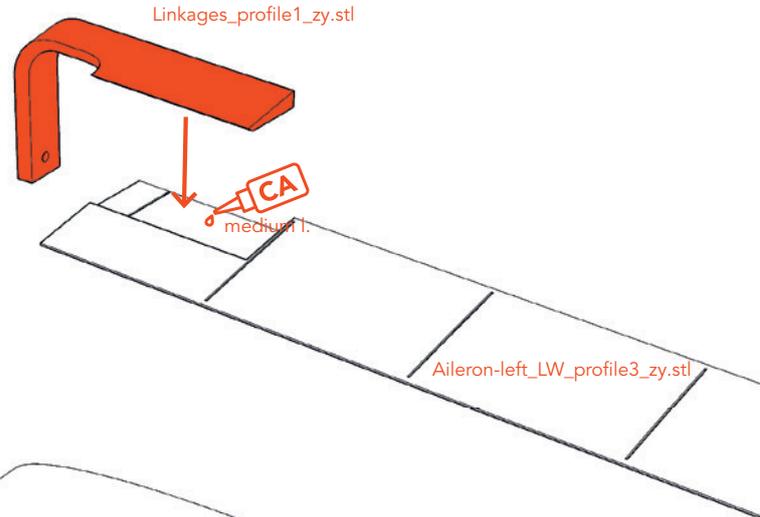
Wings assembly – Wing down



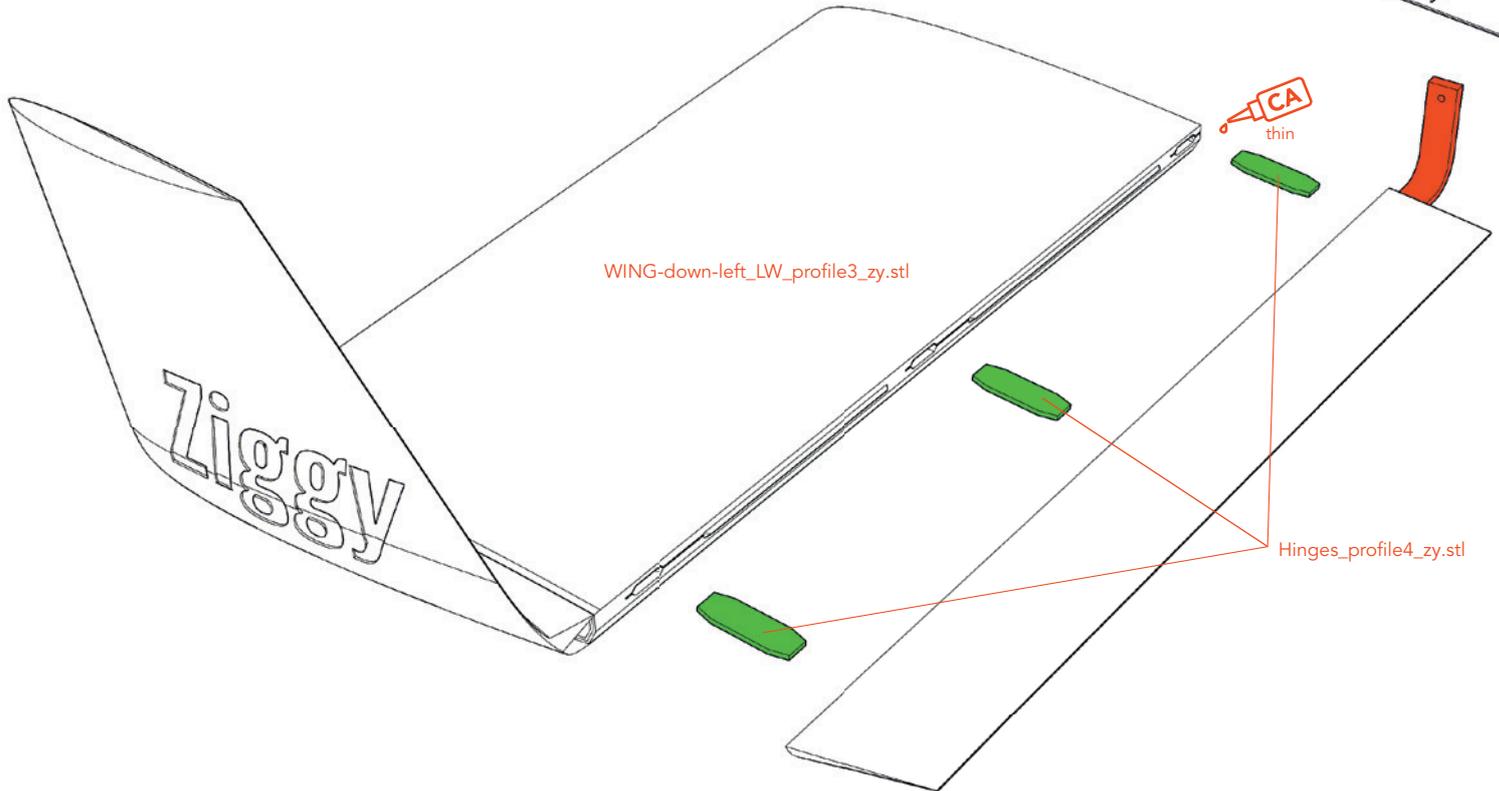
Wings assembly – Ailerons

First, glue the linkage to the aileron.

Then glue the ailerons to the wing.



Attention Do not glue the wings to the fuselage yet!



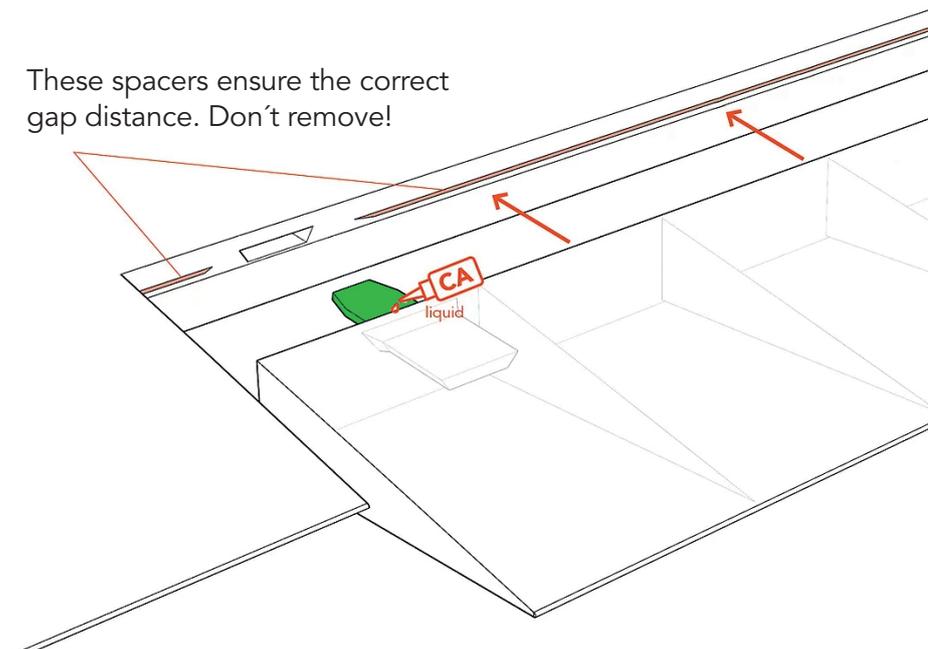
Installation of the TPU Hinges

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 aileron in the wing until the aileron 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.

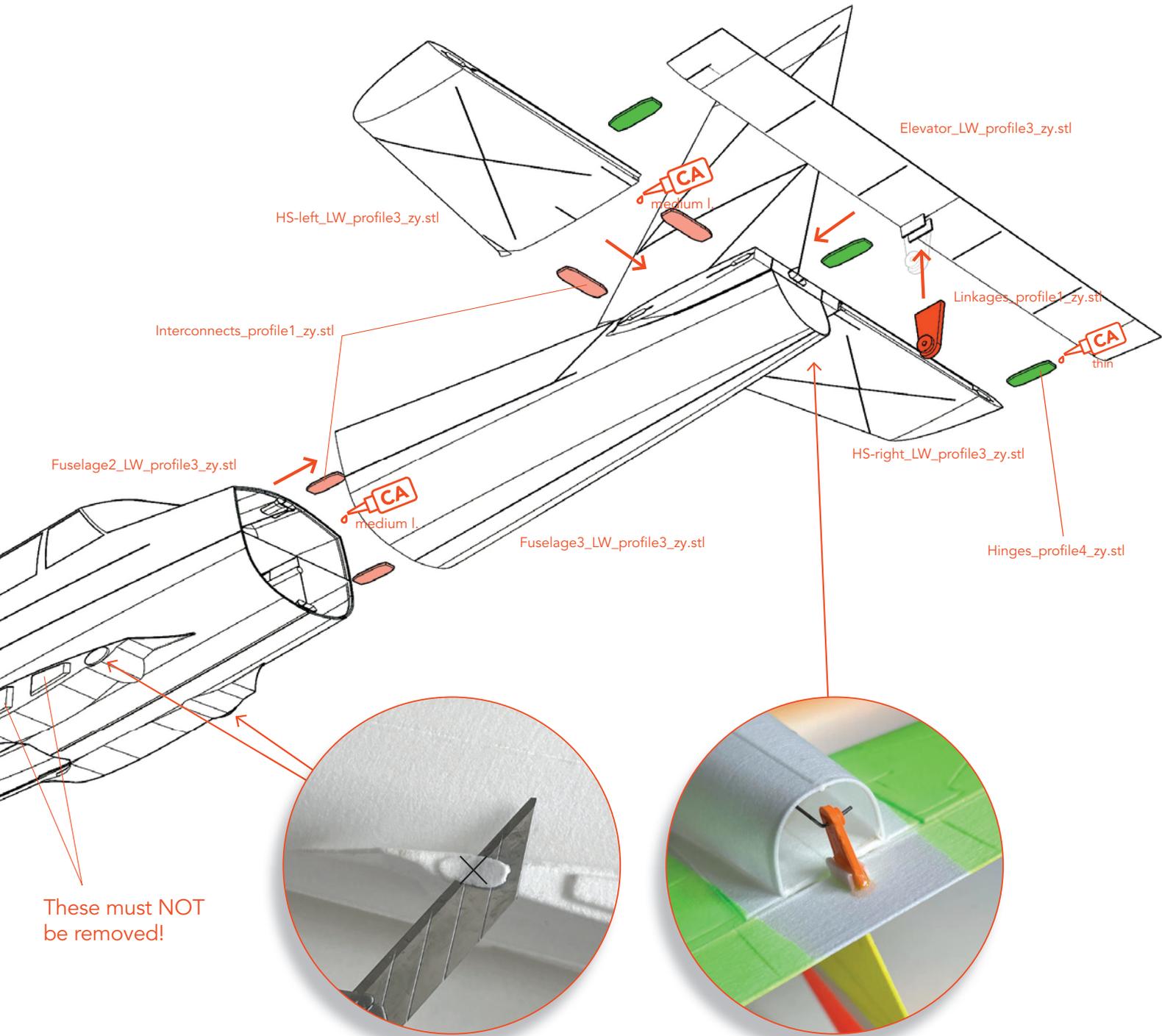
Do not use too much glue, the aileron must move easily!

These spacers ensure the correct gap distance. Don't remove!



Fuselage assembly

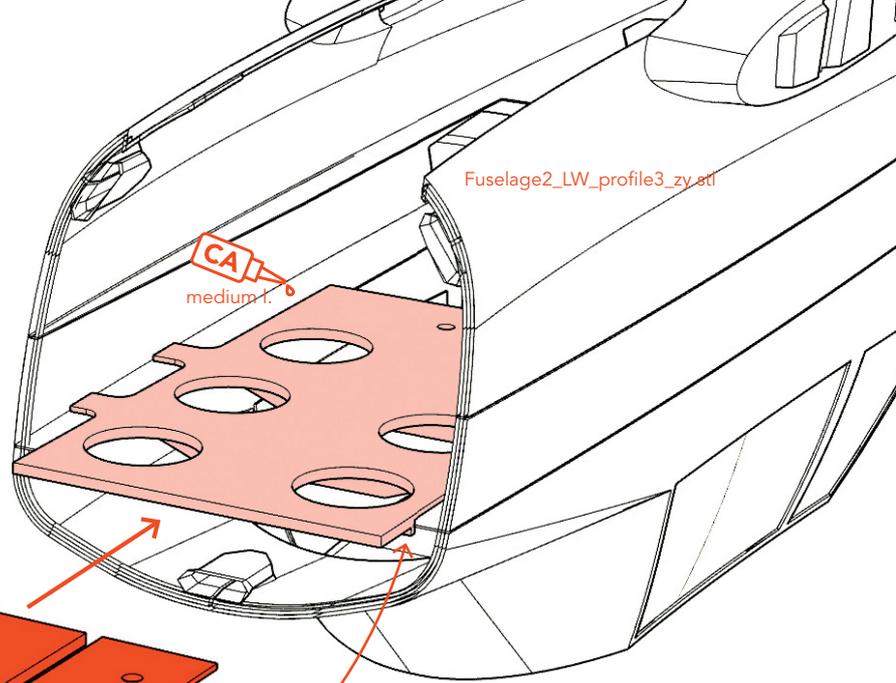
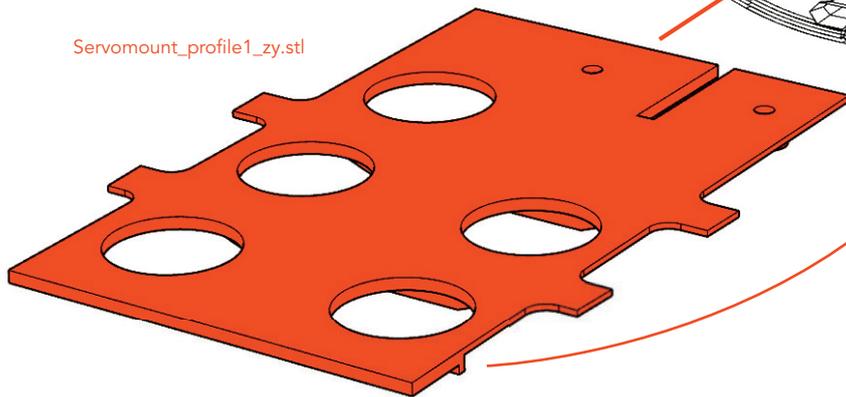
Assemble the parts as shown in the picture.



Fuselage assembly

Glue the servo mount into the fuselage 2 as shown in picture.

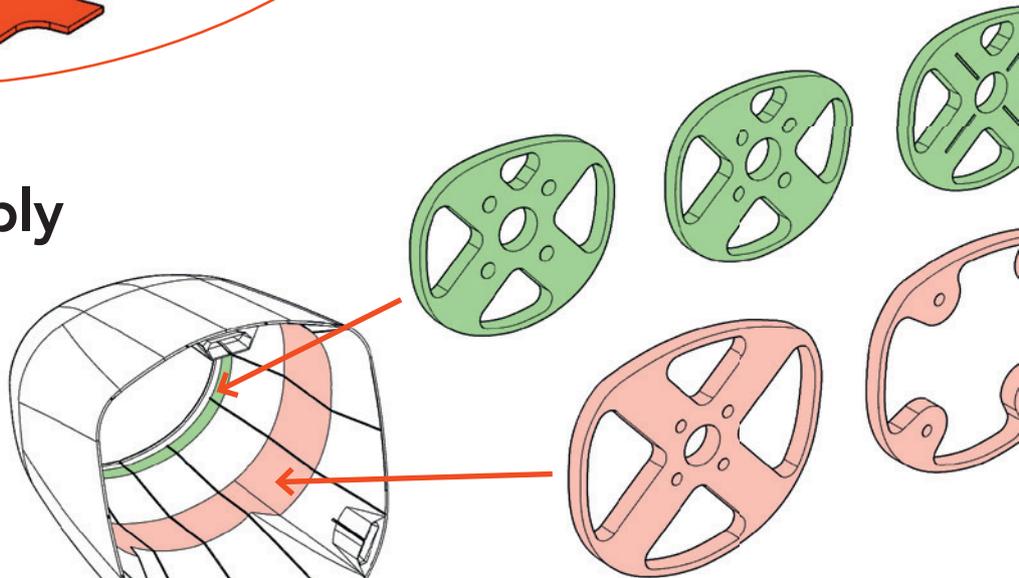
Pay attention to the positioning, the plate protrudes slightly from the fuselage.



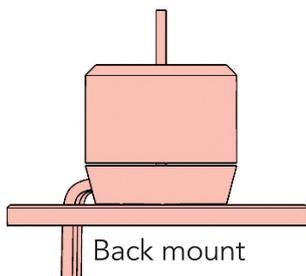
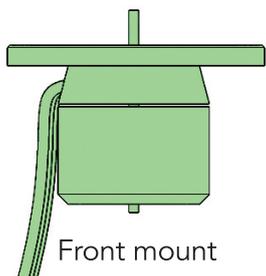
Fuselage 1 assembly

Before the fuselage is mounted, the motor mount must be installed.

The green marked motor mounts are used for front mounted motors, the red marked ones for back mounted motors.

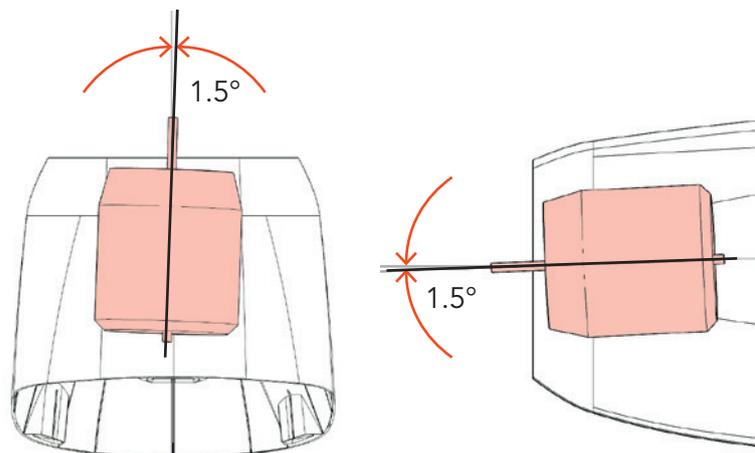


There are different versions, choose the right one for your engine.



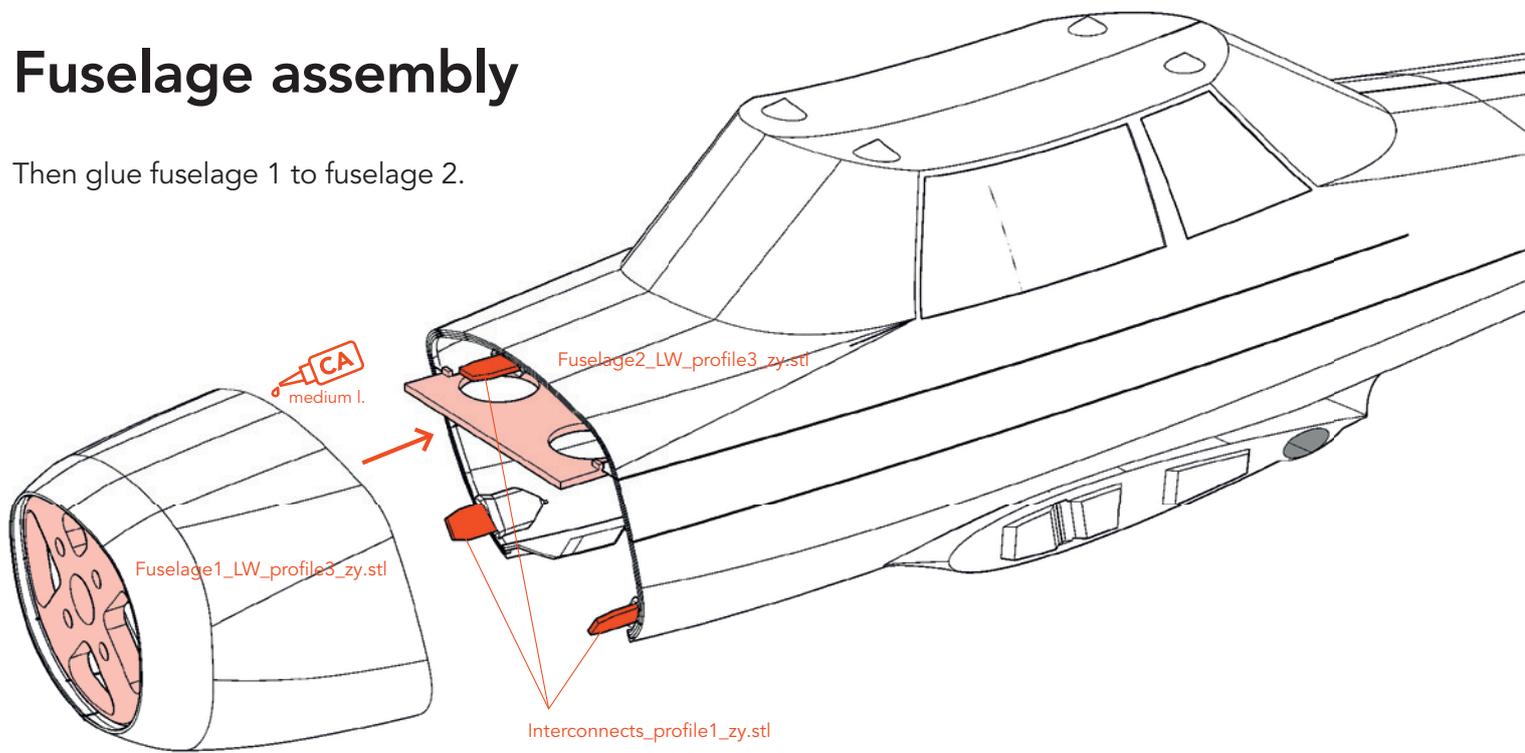
First screw the motor to the matching motor mount and then insert it into the fuselage 1 from behind. Then align the motor so that it points approx. 1.5 degrees **downwards** and 1.5 degrees to the **right** (viewed from above). **If your prop turns to the left, the motor must point to the left.**

Then glue the motor mount well to the fuselage 1.



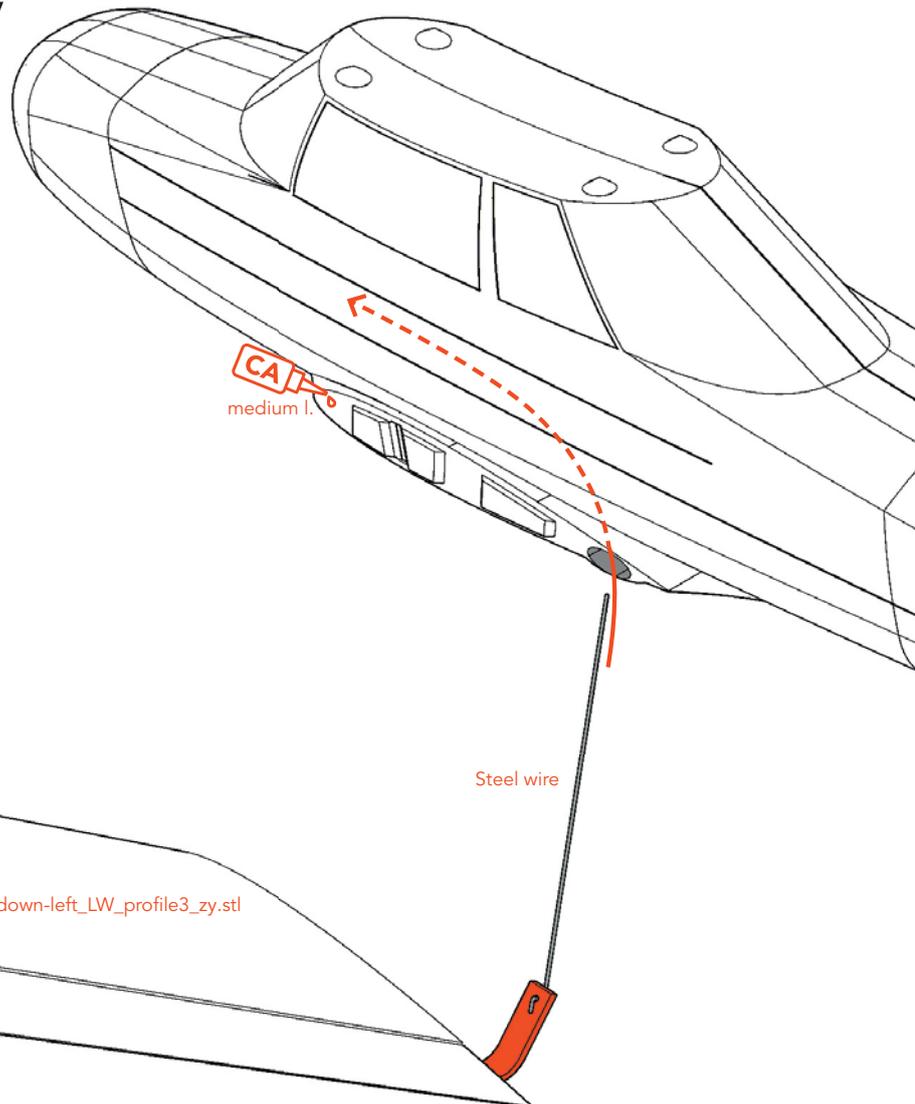
Fuselage assembly

Then glue fuselage 1 to fuselage 2.



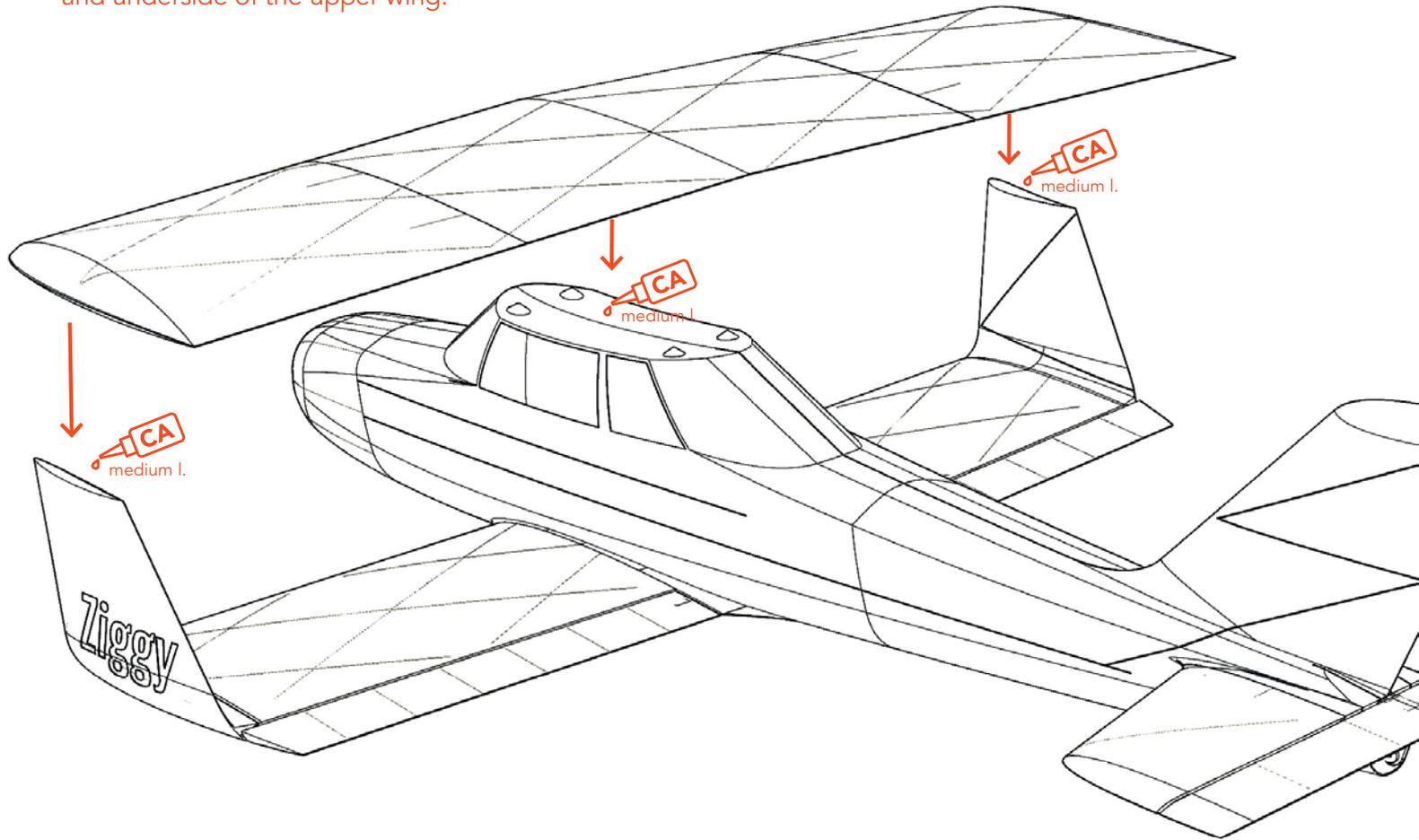
Wings down assembly

Now attach the steel wire to the linkage and feed both through the opening in the fuselage. Then glue the wing down to the fuselage. Repeat with the other side.

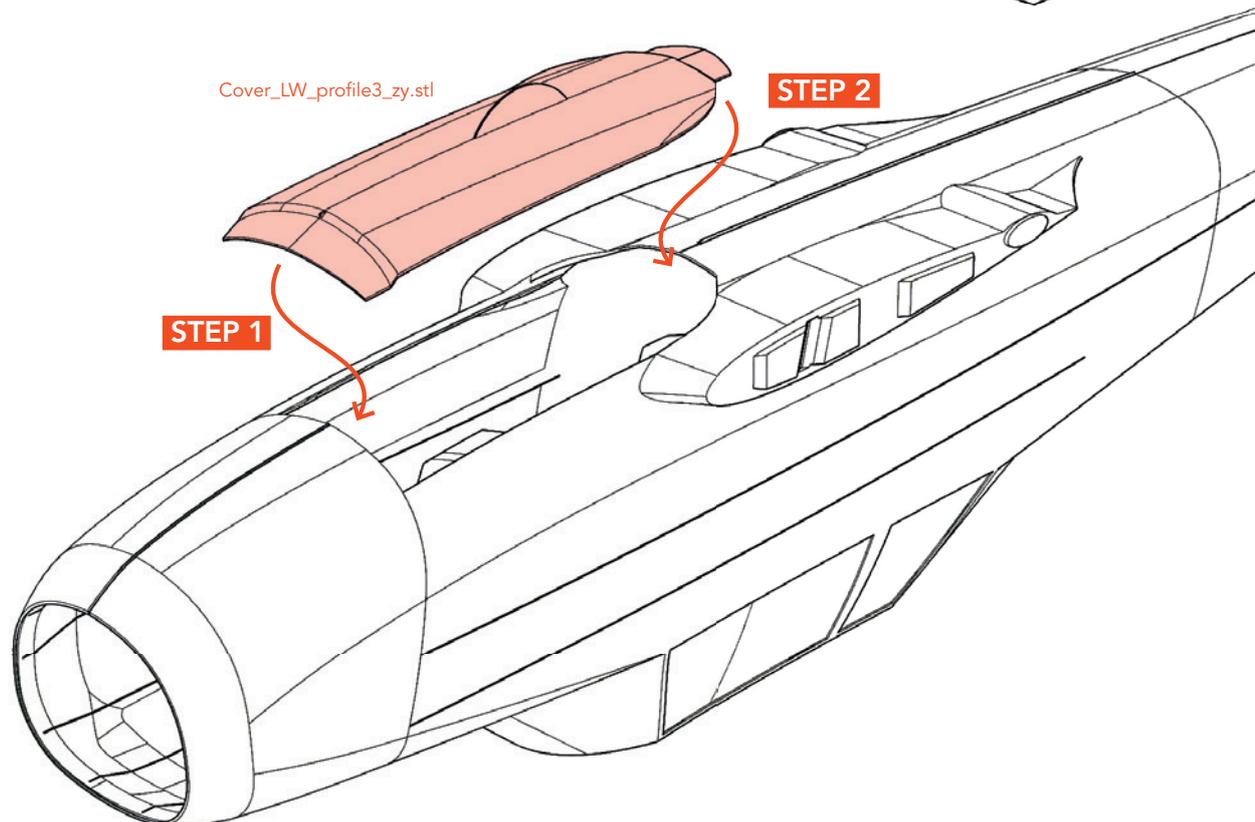


Wings assembly – Wing up

Only now is the upper wing mounted. First glue the center to the fuselage, then apply glue to the winglets. Note the positioning guides on the fuselage and underside of the upper wing.

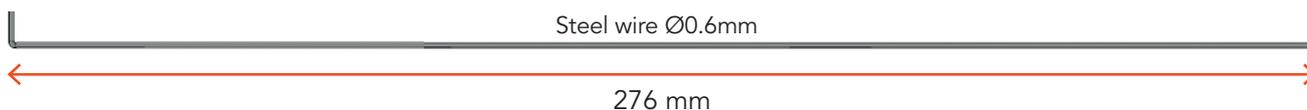
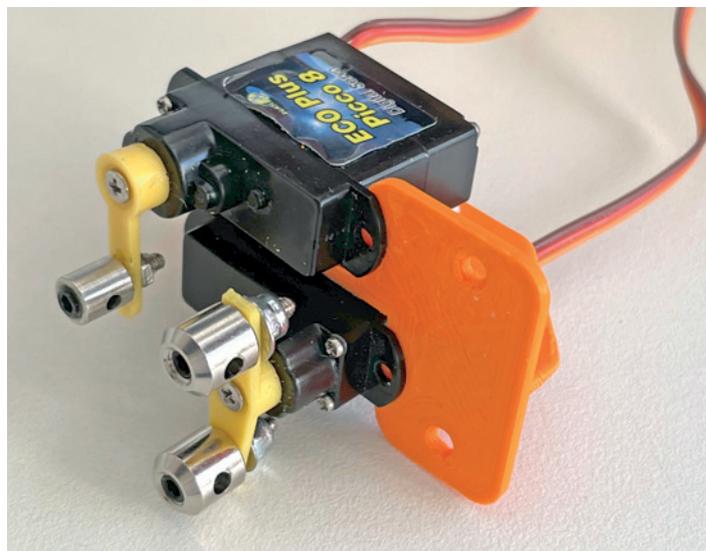
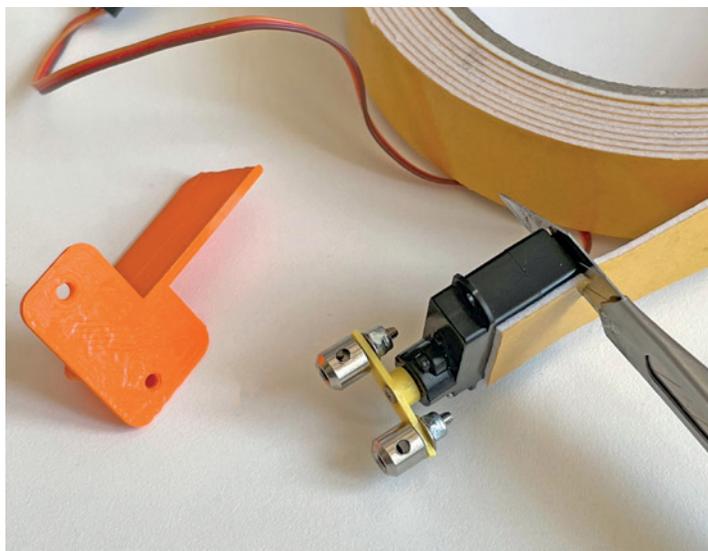
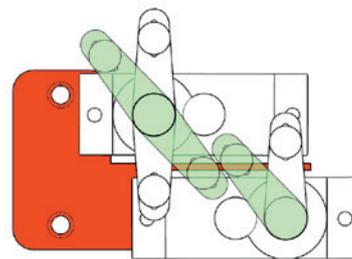


Cover



Servo mount

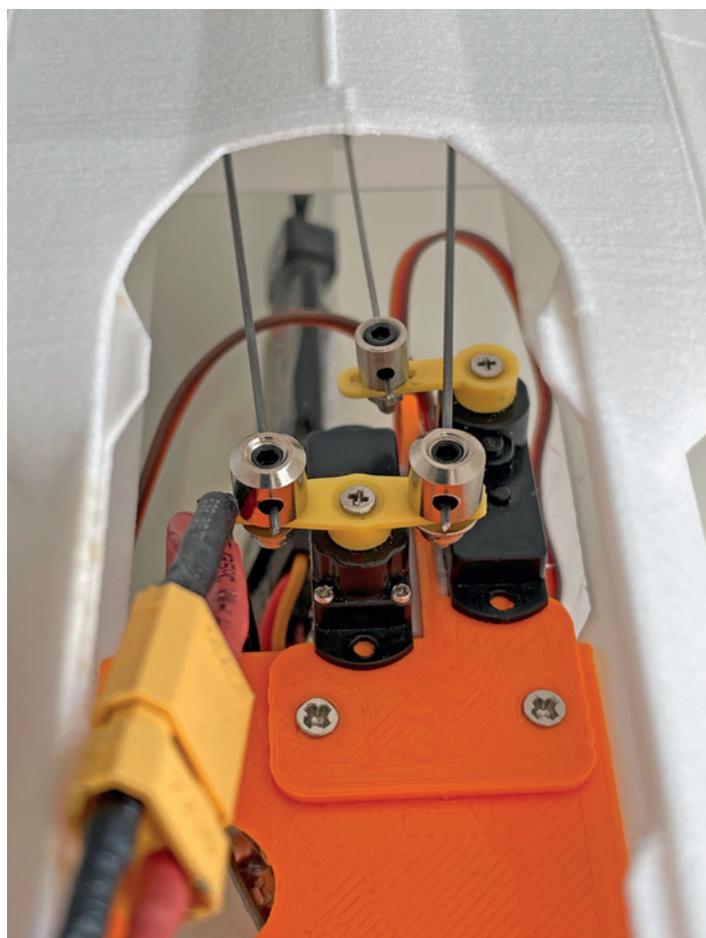
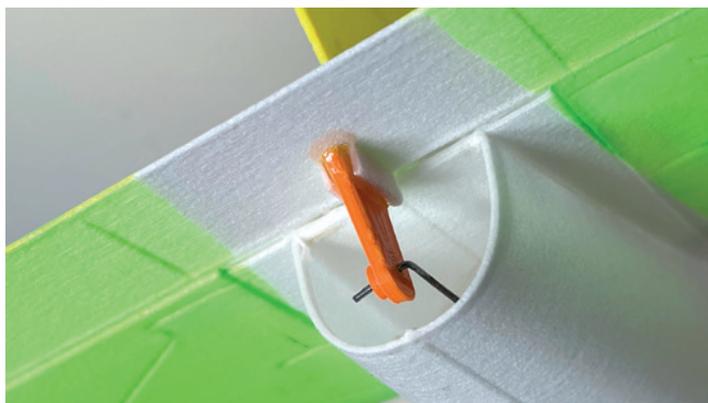
Tape the servos to the servo mount with double-sided tape as shown here. Make sure that there is enough space between the servo arms so that they do not touch each other when they are retracted.



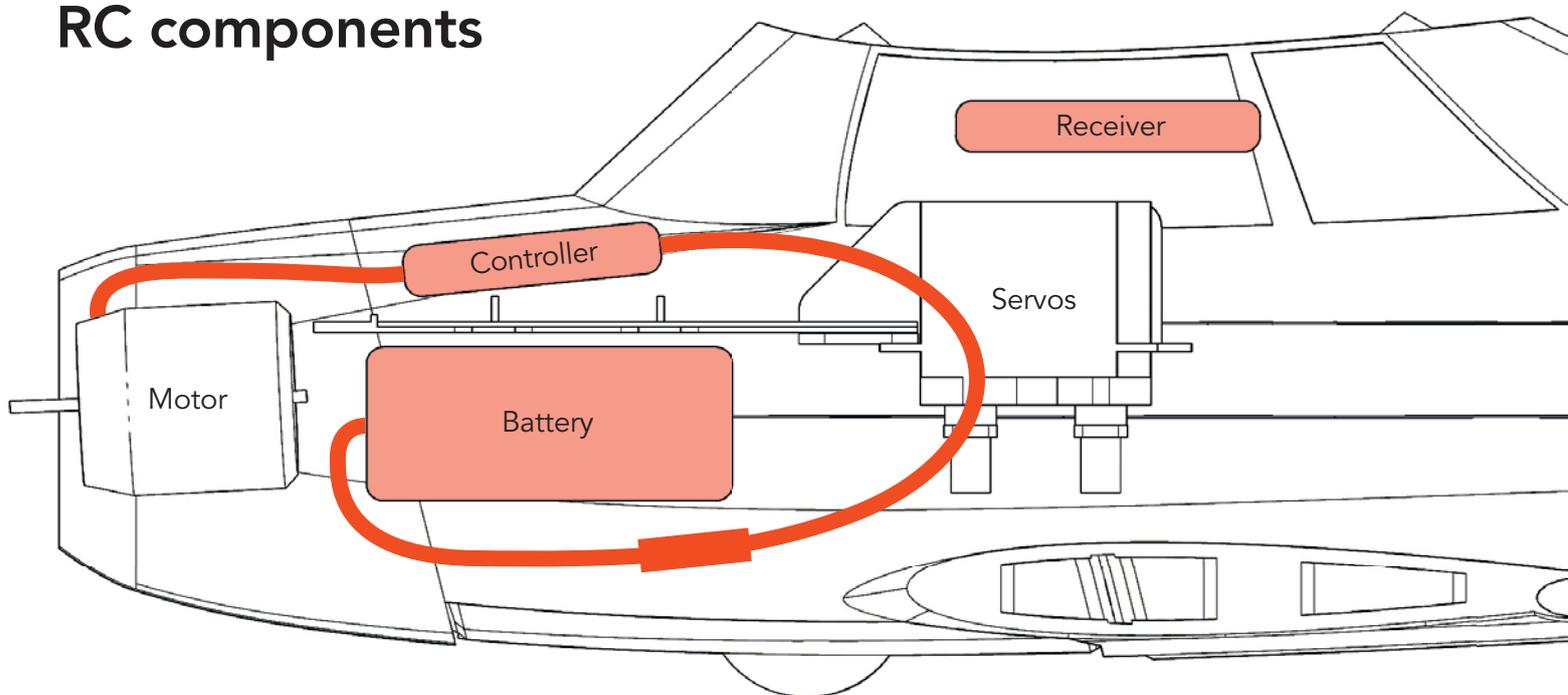
Bend a steel wire as shown in the picture and shorten it to 276 mm. Then insert it from behind into the bowden in the fuselage and clip it to the linkage of the elevator. If the hole is too small, you can heat a wire with the lighter and widen the hole a bit, make sure it fits exactly and still moves easily.

Then screw the servo mount into the fuselage. If the steel wires are still a little too long, shorten them so that nothing is blocked.

Attention Before you switch on the servos for the first time, reduce the maximum travel considerably so that the rudders cannot touch anything.

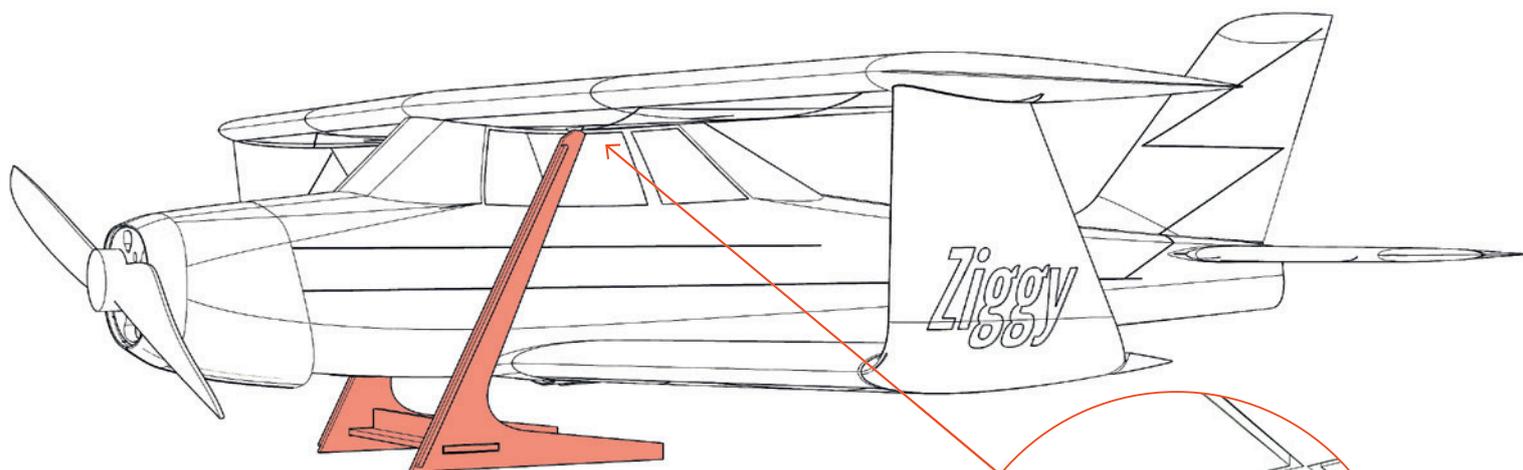


RC components



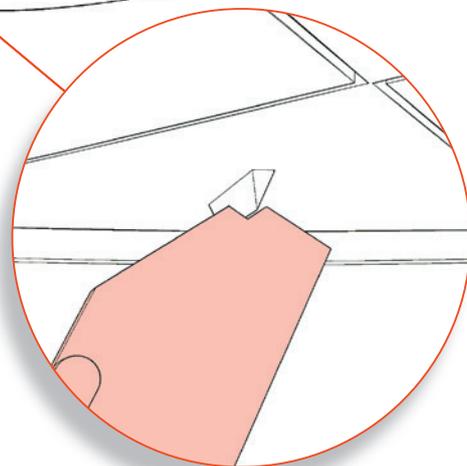
Center of Gravity (CG)

The aircraft must balance at **33 mm behind the leading edge** (see markings on the upper wing). If you have a very fast motorization, the CG should be placed a little further forward.



CG scale_profile1_zy.stl

For the exact determination of the CG you will find a CG scale in the download.

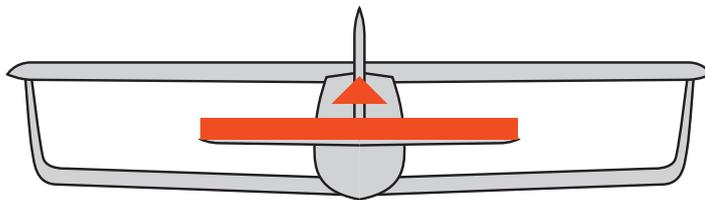


Control Direction Test

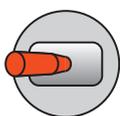
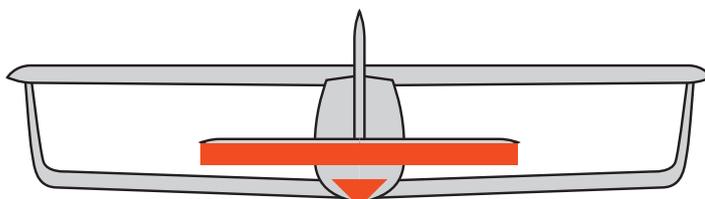
Turn on the transmitter and connect the battery. When checking the control directions, **look at the aircraft from behind.**



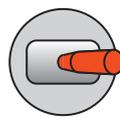
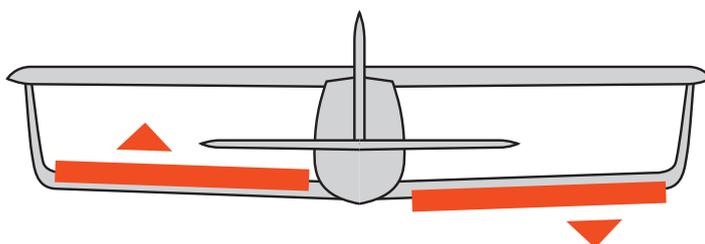
ELEVATOR UP



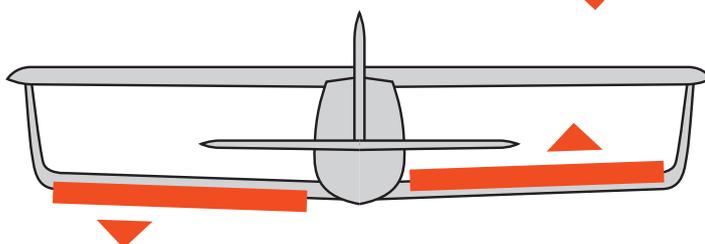
ELEVATOR DOWN



AILERON LEFT



AILERON RIGHT



SETTINGS FOR FLYING

After installing the electronics and setting up the transmitter, check that the control surfaces are aligned correctly. Set the transmitter trim to zero. Align all rudders to zero position. **Before switching on for the first time, reduce the maximum travel significantly so that the rudders cannot touch anything.**

Setting the servo travel

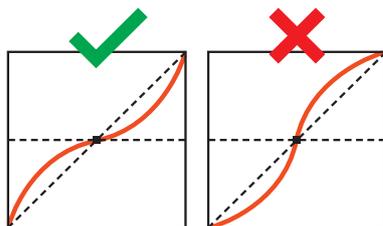
ELEVATOR up: 8 mm, down: 8 mm

AILERON up: 6 mm, down: 6

Expo setting

ELEVATOR 40 %

AILERON 40 %



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

Flight timer

Flight time will vary depending on the battery size. Expect 3 minutes under normal circumstances; however, it may be possible to fly for much longer. It is a good idea to be conservative with the flight timer until you gain experience with your airplane.

TECHNICAL SPECIFICATIONS

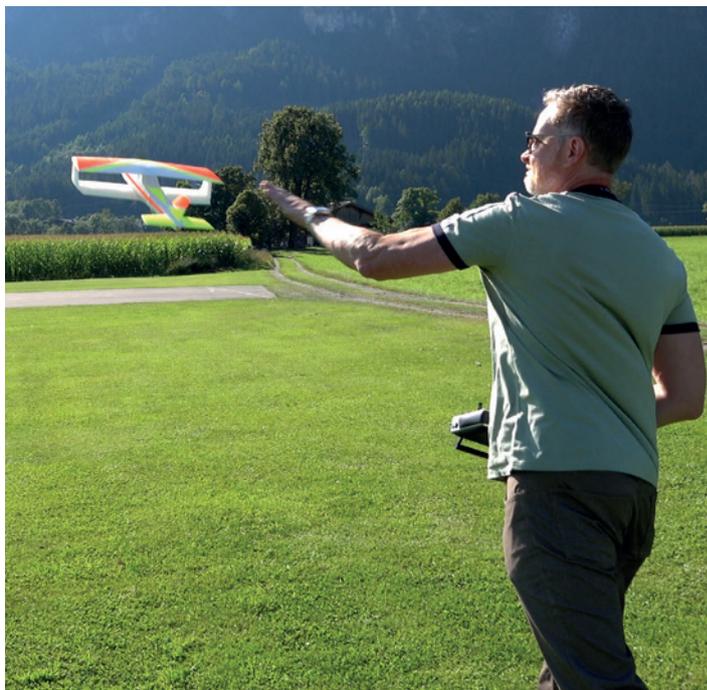
WINGSPAN 420 mm/16.5 inches

LENGHT 420 mm/16.5 inches

FLIGHT WEIGHT 196 grams (with 2S/350MaH-Battery)

Launch from hand

The best way to start is to grab the top of the fuselage behind the wing and set the engine to full throttle or near full throttle. Then throw the Ziggy upward at an angle of **at least 45 degrees** with a quick swing.



Landing

For landing, you should make the Ziggy as slow as possible with clear use of elevator up. **The slower it touches the ground, the better.** You don't have to be afraid of a stall, the Ziggy is very uncritical here.

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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