

PRINTEVO



Modular motorized flight Trainer

On our website, you will find additional packages for Floats, Skis, and FPV ...





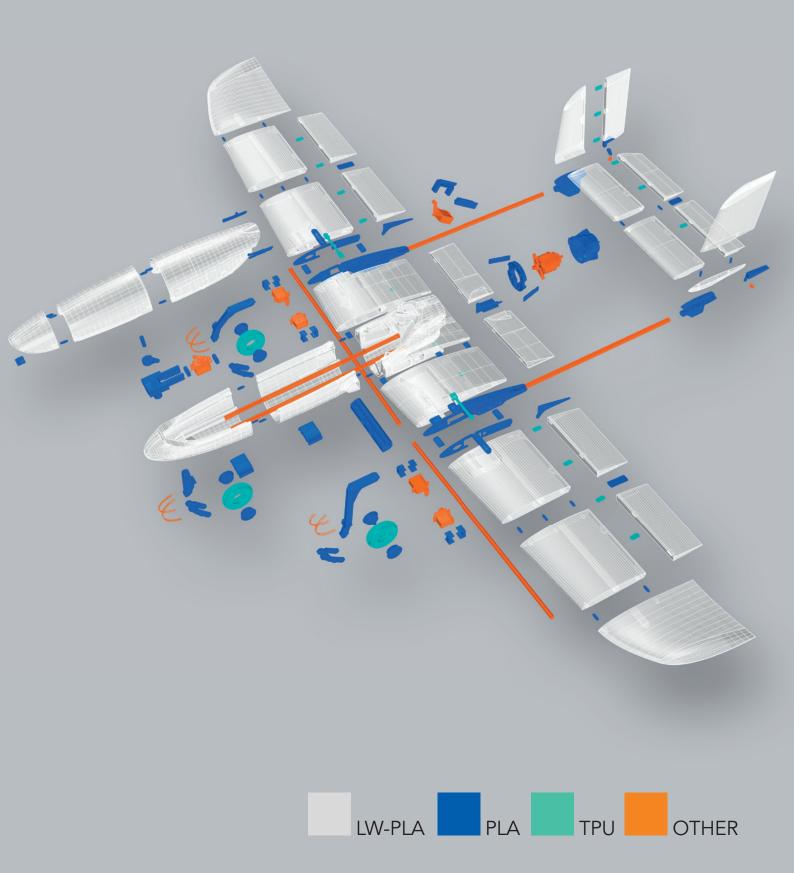
www.planeprint.com

the **ONLY** place where you can get original Planeprint STL files **legally!**

© Copyright info:

The design of this aircraft is subject to the copyright of René Marschall and PLANEPRINT and may not be used or modified for any other purpose.

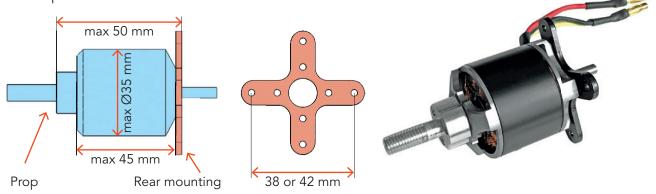
PRINTE





RC Components

MOTOR Motors up to Ø 35 mm, for example: **Kavan Brushless Motor PRO 2836-1050 600-950g** or comparable motors



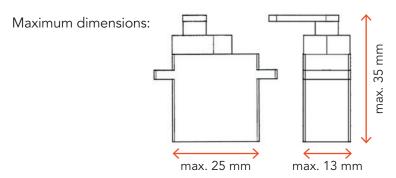
PROP 9x6, 10x5 (maximum possible 10 inch)

BEC-CONTROLLER min. 30 A (must fit the engine!)

RECEIVER 7 Channel (Throttle, 2xAileron, Elevator, Rudder, Flap, Nose Gear)

3S LiPo-Battery, 2500 – 3000 mAh (Ideal weight 210g, can also be heavier)
A setting with 4S is of course also possible, prop size must then be adjusted accordingly.

SERVOS 6 pieces like Corona 929MG, Savöx SH-0254, KST Clubman CM509MG or equivalent



SERVO EXTENSION CABLE 200 mm, 2 Pieces

Required accessoires - basic equipment

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

- LW-PLA foaming! (cannot be replaced by PLA!), ~350 grams
- Tough PLA, ~200 grams
- TPU A95 and LW-TPU Colorfabb VarioShore, ~100 grams

Materials

- CA super glue (thin and liquid medium)
- CA activator
- Sortiment of Tapping screws Ø2mm
- Sortiment of Metal Screws Ø3mm
- Carbon tube Ø8mm*1000mm (inside 6mm), 3 pieces Cut the tubes to the following lengths (mm): 2x465, 2x400, 2x331, 1x66mm
- Steel wire Ø0.8*1000mm, 2 pieces
- Rod connection (hole for Ø1mm steel wire), 3 pieces
- Self-adhesive Velcro tape
- Ball bearings 3x6x2.5mm, 6 pieces (optional for better wheel running)
- Neodym-Super-Magnet 5x5x5mm, 4 pieces (optional)

Tools

- Cutter knife
- small Philips screwdriver
- Sandpaper grain ~150
- Metal saw
- Needle nose pliers
- Ø2mm drill (optional)





Metal screws Ø3mm









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

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

Printing the parts – Printing profiles

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

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

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

For this model you need the following profiles:



NOTE When printing the PLANEPRINT EVO you should pay particular attention to a light weight of **each** individual part.

PROFILE P5_Gyroid

It is essential for the necessary stability of the LW parts printed with PROFILE_5 are as stable as possible. Please use a test part to check the strength by fracture tests. It must not break along the layer lines under any circumstances! Also note that the printing temperature for LW-PLA is as low as possible to obtain a wall thickness of 0.4 to 0.6 mm at a flow of 55 to 65 % (depending on brand and printer).

Caution: at too high temperatures, LW-PLA becomes brittle and breaks more easily.





PROFILE P1_Fullbody Tough PLA or PLA



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

P1_Bowden_evo.stl

MATERIAL PLA, Weight: ~ 4 g

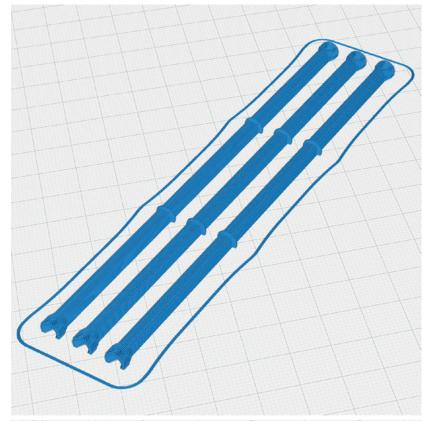
ADDITIONAL SETTINGS

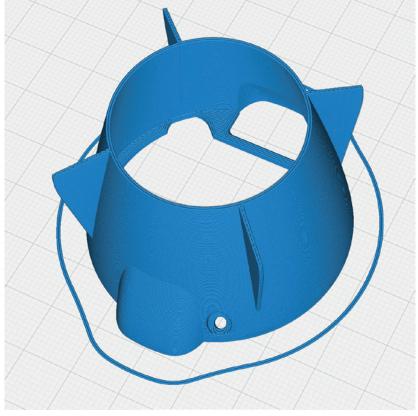
• Print this twice



MATERIAL PLA, Weight: ~ 6 g

ADDITIONAL SETTINGS





PROFILE P1_Fullbody Tough PLA or PLA



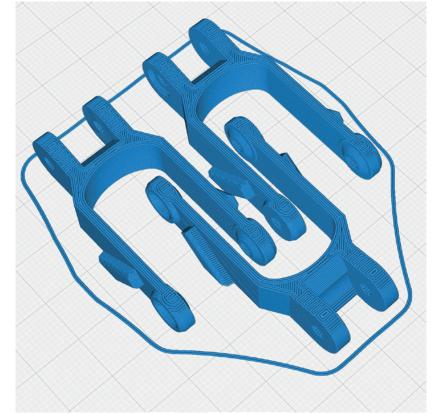
The information about the basic settings you can find on our website at PRINT. Please note the additional settings for the individual parts!

P1_Knuckles_evo.stl

MATERIAL PLA, Weight: ~ 11 g

ADDITIONAL SETTINGS

None required



P1_Motormount_evo.stl

MATERIAL PLA, Weight: ~ 10 g

ADDITIONAL SETTINGS



PROFILE P1_Fullbody Tough PLA or PLA



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

P1_Parts_evo.stl

MATERIAL PLA, Weight: ~ 9 g

ADDITIONAL SETTINGS

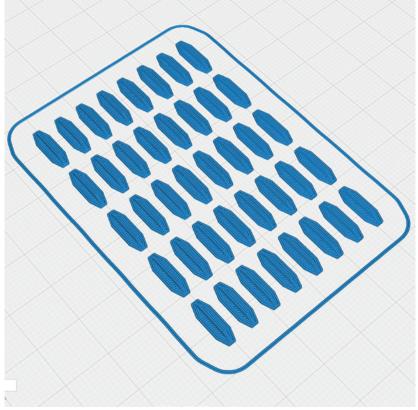
None required



P1_T-Connects_evo.stl

MATERIAL PLA, Weight: ~ 2 g

ADDITIONAL SETTINGS





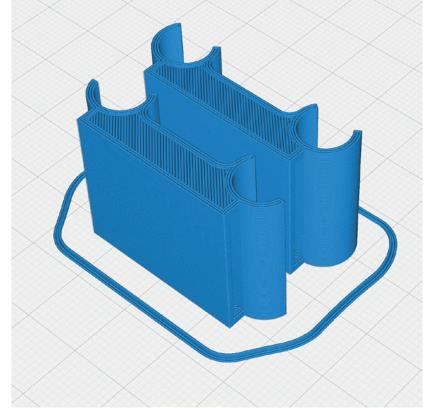
The information about the basic settings you can find on our website at PRINT. Please note the additional settings for the individual parts!

P2_Battery mount_evo.stl

MATERIAL PLA, Weight: ~ 8 g

ADDITIONAL SETTINGS

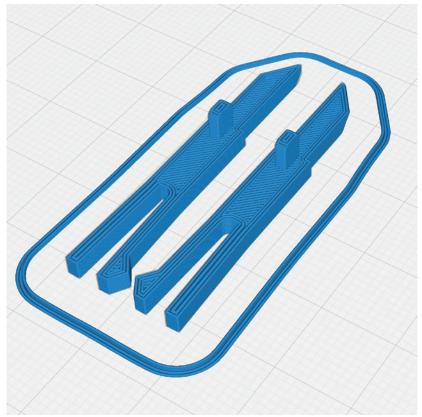
None required



P2_Cano lock_evo.stl

MATERIAL PLA, Weight: ~ 1 g

ADDITIONAL SETTINGS





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

P2_Center part_evo.stl

MATERIAL PLA, Weight: ~ 14 g

ADDITIONAL SETTINGS

• Wall Line Count/Perimeters: 3

• Top Layers: 3

• Bottom Layers: 3

P2_Drill tool_evo.stl

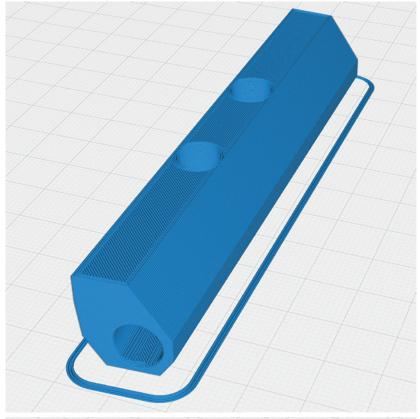
MATERIAL PLA, Weight: ~ 8 g

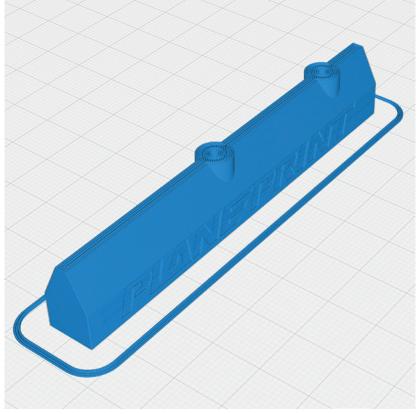
ADDITIONAL SETTINGS

• Wall Line Count/Perimeters: 3

• Top Layers: 3

• Bottom Layers: 3







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

P2_Gear Leg L_evo.stl and P2_Gear Leg R_evo.stl

MATERIAL PLA, Weight: ~ 9 g

ADDITIONAL SETTINGS

• Wall Line Count/Perimeters: 3

Top Layers: 3

• Bottom Layers: 3

P2_Gear Leg nose_evo.stl

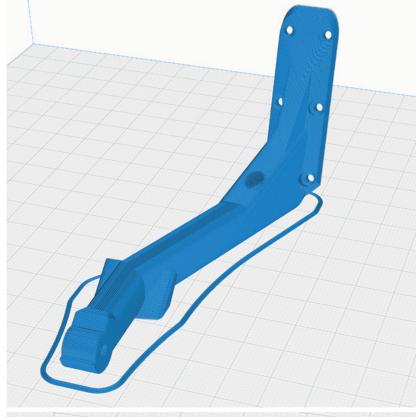
MATERIAL PLA, Weight: ~ 5 g

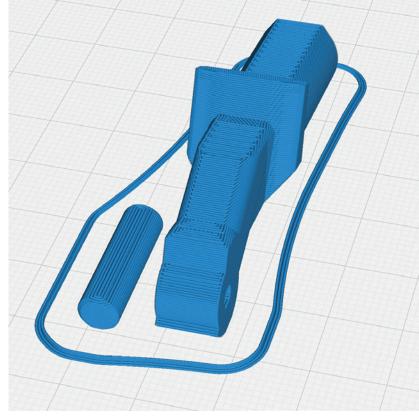
ADDITIONAL SETTINGS

• Wall Line Count/Perimeters: 3

• Top Layers: 3

• Bottom Layers: 3







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

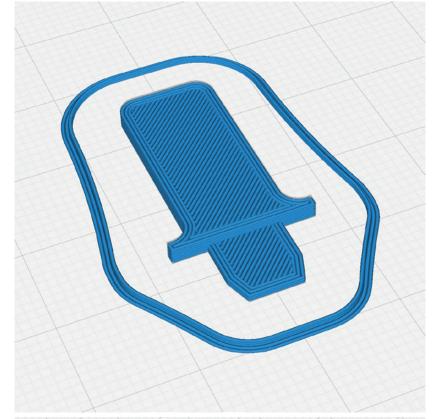
P2_Hinge tool_evo.stl

MATERIAL PLA, Weight: ~ 1 g

ADDITIONAL SETTINGS

None required

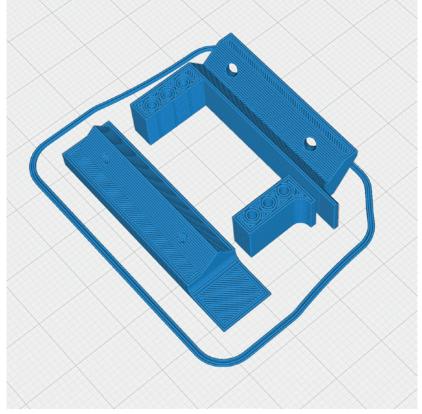
Use it to open the gaps for the hinges.



P2_Mount Flap Servo_evo.stl

MATERIAL PLA, Weight: ~ 3 g

ADDITIONAL SETTINGS





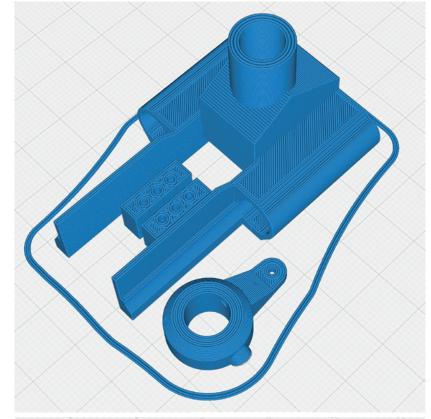
The information about the basic settings you can find on our website at PRINT. Please note the additional settings for the individual parts!

P2_Parts nose gear_evo.stl

MATERIAL PLA, Weight: ~ 11 g

ADDITIONAL SETTINGS

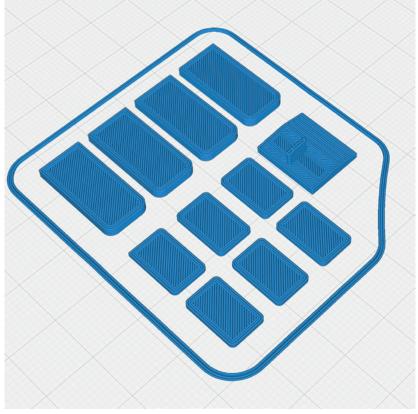
None required



P2_Parts_evo.stl

MATERIAL PLA, Weight: ~ 3 g

ADDITIONAL SETTINGS





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

P2_PROT FUS L_evo.stl and P2_PROT FUS R_evo.stl

MATERIAL PLA, Weight: ~ 16 g

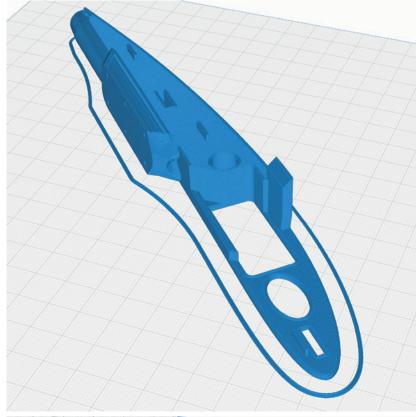
ADDITIONAL SETTINGS

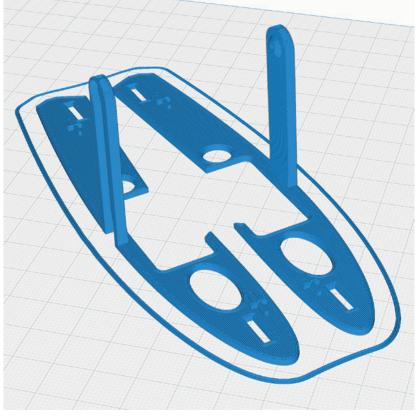
None required

P2_PROT Wing_evo.stl

MATERIAL PLA, Weight: ~ 7 g

ADDITIONAL SETTINGS







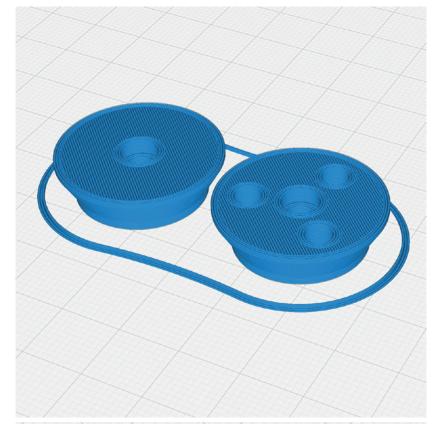
The information about the basic settings you can find on our website at PRINT. Please note the additional settings for the individual parts!

P2_Rim BB_evo.stl or P2_Rim_evo.stl

MATERIAL PLA, Weight: ~ 4 g

ADDITIONAL SETTINGS

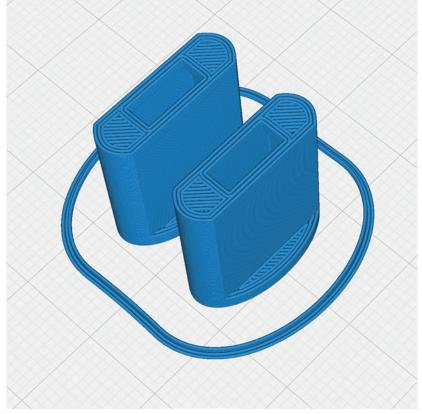
• Print this three times



P2_Servo plug_evo.stl

MATERIAL PLA, Weight: ~ 2 g

ADDITIONAL SETTINGS





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

P2_Tail linkage_evo.stl

MATERIAL PLA, Weight: ~ 3 g

ADDITIONAL SETTINGS

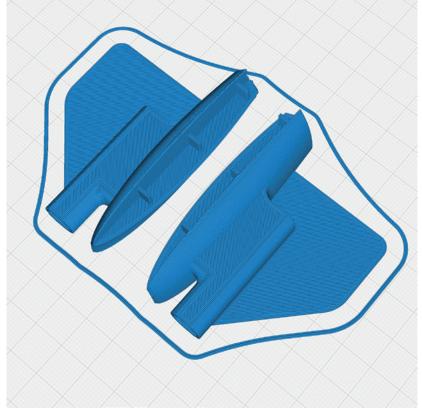
None required



P2_Tail parts_evo.stl

MATERIAL PLA, Weight: ~ 15 g

ADDITIONAL SETTINGS





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

P2 Carbon tool 8mm.stl

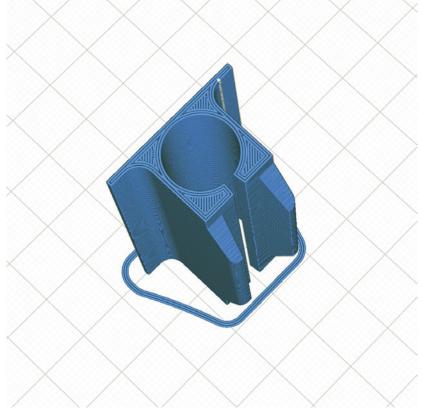
MATERIAL PLA

ADDITIONAL SETTINGS

None required

This tool helps to saw the carbon tubes





PROFILE P4_Flex LW TPU (A95/VarioShore)



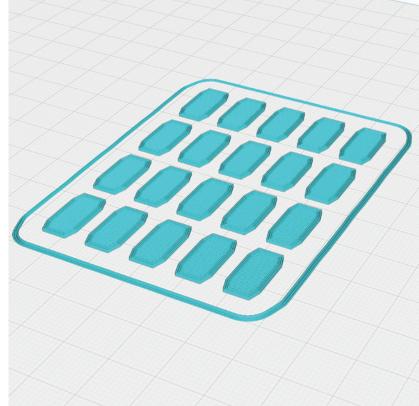
The information about the basic settings you can find on our website at PRINT. Please note the additional settings for the individual parts!

P4_Hinges_evo.stl

MATERIAL TPU, Weight: ~ 2 g

ADDITIONAL SETTINGS

None required



P4_Tire_evo.stl

MATERIAL VarioShore or TPU A95

ADDITIONAL SETTINGS

• Print this three times

VarioShore with Flow 70 %:

Wall Line Count: 5Top Layers: 5Bottom Layers: 5Infill Density: 10 %

• Infill Pattern: Gyroid

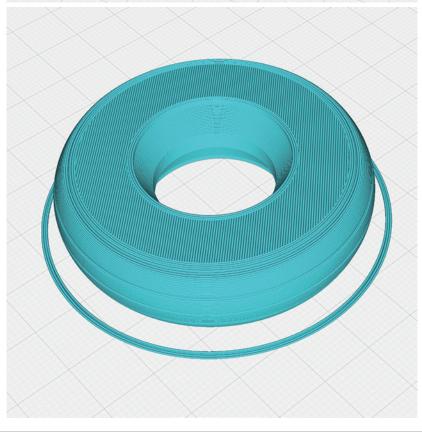
TPU A95:

• Wall Line Count: 3

• Top Layers: 3

• Infill Density: 6 %

• Infill Pattern: Gyroid



PROFILE P4_Flex LW TPU A95

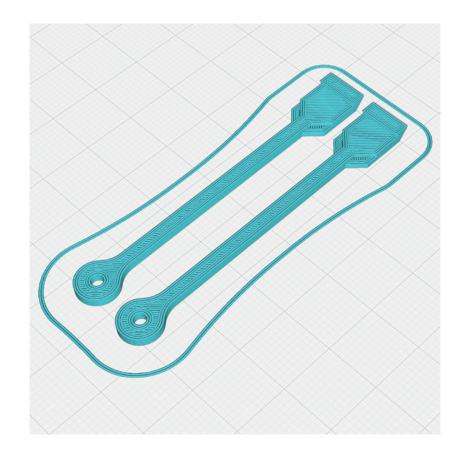


The information about the basic settings you can find on our website at PRINT. Please note the additional settings for the individual parts!

P4_Wing belts_evo.stl

MATERIAL TPU, Weight: ~ 1 g

ADDITIONAL SETTINGS





The information about the basic settings you can find on our website at PRINT.

Please note the additional settings for the individual parts!

It is essential to print these parts with foaming LW-PLA (pre-foamed is heavier)!

Basic settings for LW-PLA: Please follow the instructions in our WINGTEST AND CALIBRATION TOOL on our website for correct adjustment! Print only one STL at a time!

P5_AIL L1_evo.stl and P5_AIL R1_evo.stl

MATERIAL LW PLA, Weight: ~ 8 g

TIME ~ 1 hour 20 minutes

ADDITIONAL SETTINGS

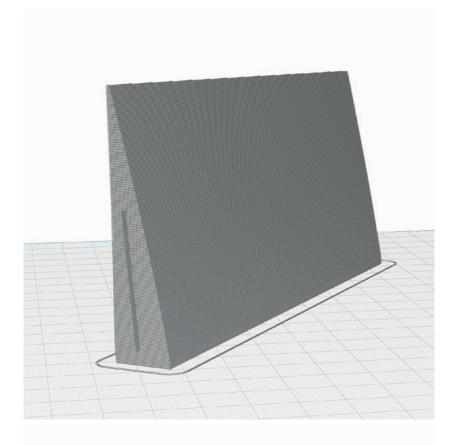
None required

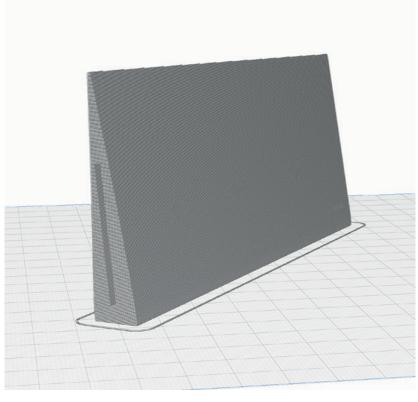
P5_AIL L2_evo.stl and P5_AIL R2_evo.stl

MATERIAL LW PLA, Weight: ~ 7 g

TIME ~ 1 hour 10 minutes

ADDITIONAL SETTINGS







The information about the basic settings you can find on our website at PRINT.

Please note the additional settings for the individual parts!

It is essential to print these parts with foaming LW-PLA (pre-foamed is heavier)!

Basic settings for LW-PLA: Please follow the instructions in our WINGTEST AND CALIBRATION TOOL on our website for correct adjustment! Print only one STL at a time!

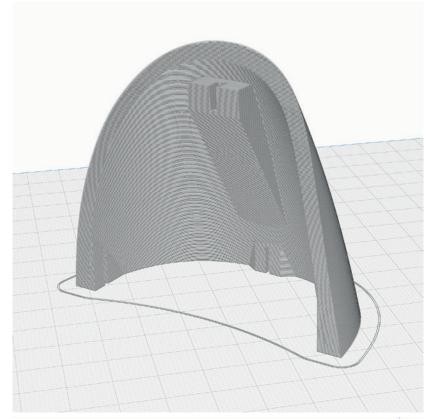
P5_Cano 1_evo.stl

MATERIAL LW PLA, Weight: ~ 4 g

TIME ~ 50 minutes

ADDITIONAL SETTINGS

None required

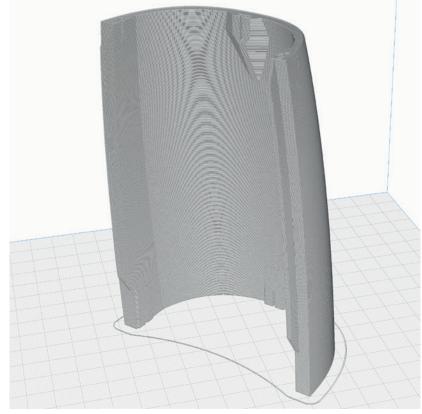


P5_Cano 2_evo.stl

MATERIAL LW PLA, Weight: ~ 12 g

TIME ~ 2 hours 40 minutes

ADDITIONAL SETTINGS





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

It is essential to print these parts with foaming LW-PLA (pre-foamed is heavier)!

Basic settings for LW-PLA: Please follow the instructions in our WINGTEST AND CALIBRATION TOOL on our website for correct adjustment! Print only one STL at a time!

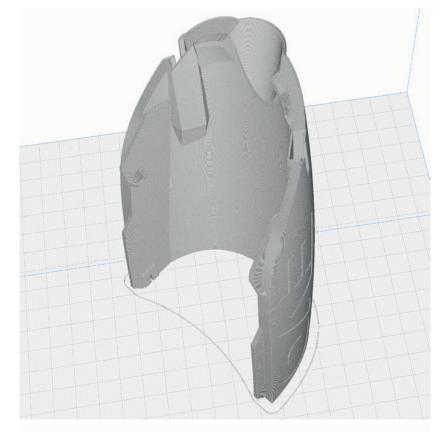
P5_Cano 3_evo.stl

MATERIAL LW PLA, Weight: ~ 15 g

TIME ~ 3 hours 20 minutes

ADDITIONAL SETTINGS

None required

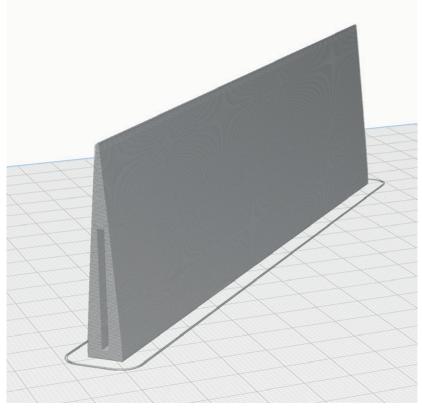


P5_ELE L_evo.stl and P5_ELE R_evo.stl

MATERIAL LW PLA, Weight: ~ 5 g

TIME ~ 1 hour

ADDITIONAL SETTINGS





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

It is essential to print these parts with foaming LW-PLA (pre-foamed is heavier)!

Basic settings for LW-PLA: Please follow the instructions in our WINGTEST AND CALIBRATION TOOL on our website for correct adjustment! Print only one STL at a time!

P5_Flap L_evo.stl and P5_Flap R_evo.stl

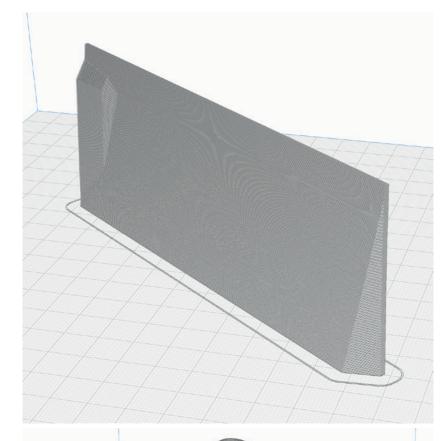
MATERIAL LW PLA, Weight: ~ 6 g

TIME ~ 1 hour

ADDITIONAL SETTINGS

None required

Only necessary if you want to build the EVO with landing flaps.



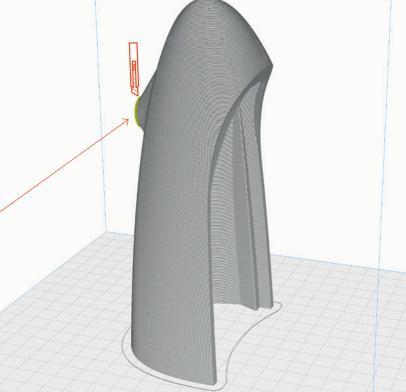
P5_FUS 1_evo.stl

MATERIAL LW PLA, Weight: ~ 20 g

TIME ~ 4 hours

ADDITIONAL SETTINGS

None required





Remove support.

Please be careful with the knife!



The information about the basic settings you can find on our website at PRINT. Please note the additional settings for the individual parts! It is essential to print these parts with foaming LW-PLA (pre-foamed is heavier)!

Basic settings for LW-PLA: Please follow the instructions in our WINGTEST AND CALIBRATION TOOL

on our website for correct adjustment! Print only one STL at a time!

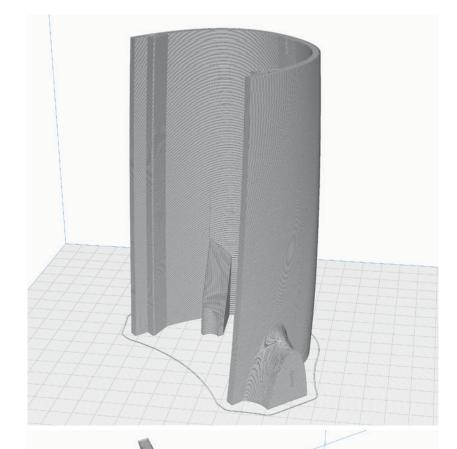
P5_FUS 2_evo.stl

MATERIAL LW PLA, Weight: ~ 19 g

TIME ~ 4 hours

ADDITIONAL SETTINGS

None required



P5_FUS 3 Flap_evo.stl or P5_FUS 3_evo.stl

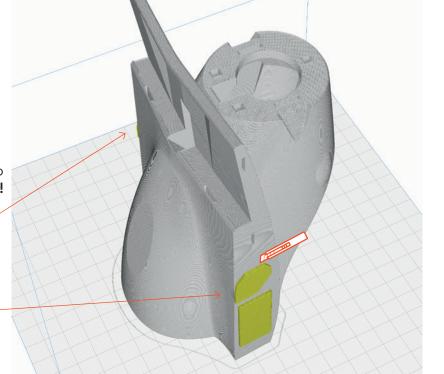
MATERIAL LW PLA, Weight: ~ 35 g

TIME ~ 7 hours

ADDITIONAL SETTINGS

None required

You have to decide here whether you want to build the EVO with or without landing flaps!



Remove support. Please be careful with the knife!





The information about the basic settings you can find on our website at PRINT.

Please note the additional settings for the individual parts!

It is essential to print these parts with foaming LW-PLA (pre-foamed is heavier)!

Basic settings for LW-PLA: Please follow the instructions in our WINGTEST AND CALIBRATION TOOL on our website for correct adjustment! Print only one STL at a time!

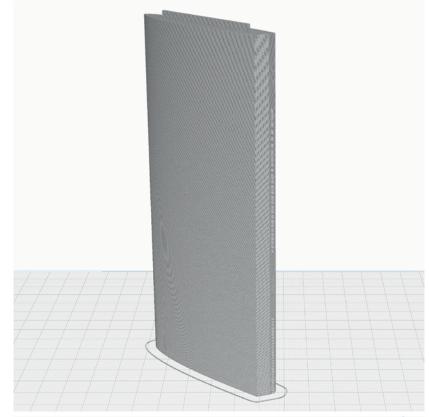
P5_HS L_evo.stl and P5 HS R evo.stl

MATERIAL LW PLA, Weight: ~ 10 g

TIME ~ 1 hour 40 minutes

ADDITIONAL SETTINGS

None required

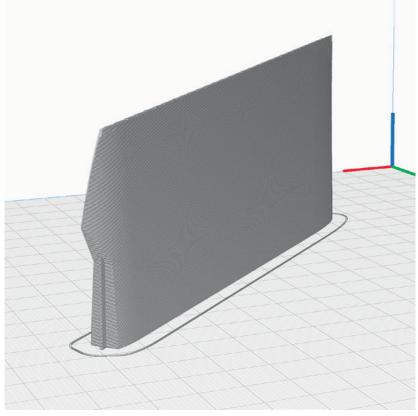


P5_RUD_evo.stl

MATERIAL LW PLA, Weight: ~ 6 g

TIME ~ 1 hour

ADDITIONAL SETTINGS





The information about the basic settings you can find on our website at PRINT.

Please note the additional settings for the individual parts!

It is essential to print these parts with foaming LW-PLA (pre-foamed is heavier)!

Basic settings for LW-PLA: Please follow the instructions in our WINGTEST AND CALIBRATION TOOL on our website for correct adjustment! Print only one STL at a time!

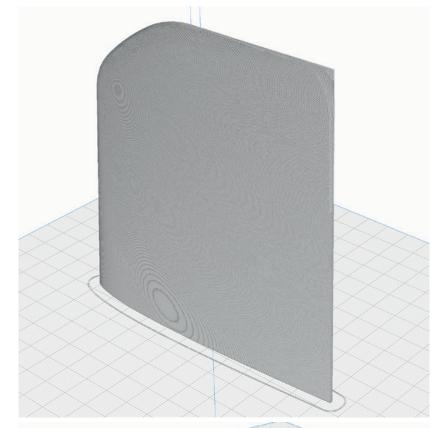
P5_VS La_evo.stl

MATERIAL LW PLA, Weight: ~ 10 g

TIME ~ 2 hours

ADDITIONAL SETTINGS

None required

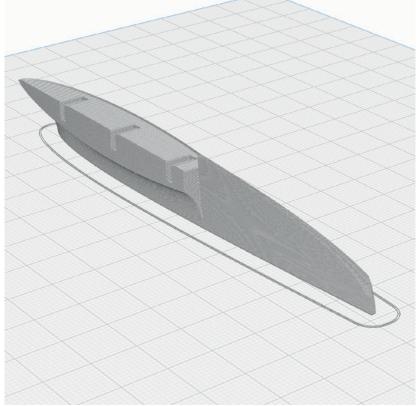


P5_VS Lb_evo.stl

MATERIAL LW PLA, Weight: ~ 2 g

TIME ~ 20 minutes

ADDITIONAL SETTINGS





The information about the basic settings you can find on our website at PRINT.

Please note the additional settings for the individual parts!

It is essential to print these parts with foaming LW-PLA (pre-foamed is heavier)!

Basic settings for LW-PLA: Please follow the instructions in our WINGTEST AND CALIBRATION TOOL on our website for correct adjustment! Print only one STL at a time!

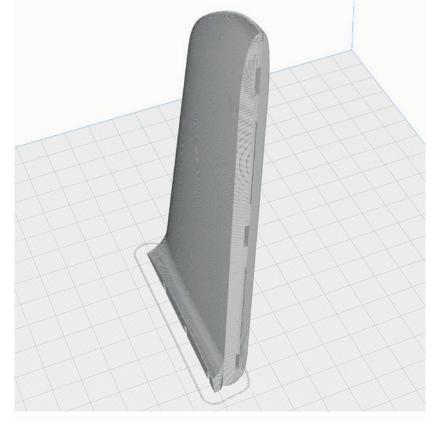
P5 VS R evo.stl

MATERIAL LW PLA, Weight: ~ 8 g

TIME ~ 1 hour 10 minutes

ADDITIONAL SETTINGS

None required



P5_Wing FUS Flap L_evo.stl and P5_Wing FUS Flap R_evo.stl or

P5_Wing FUS L_evo.stl and P5_Wing FUS R_evo.stl

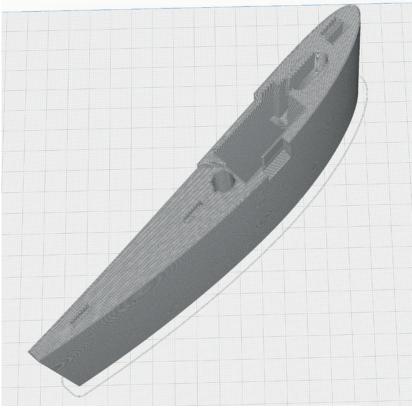
MATERIAL LW PLA, Weight: ~ 24 g

TIME ~ 5 hours

ADDITIONAL SETTINGS

None required

You have to **decide** here whether you want to build the EVO **with or without landing flaps!**





The information about the basic settings you can find on our website at PRINT. Please note the additional settings for the individual parts! It is essential to print these parts with foaming LW-PLA (pre-foamed is heavier)!

Basic settings for LW-PLA: Please follow the instructions in our WINGTEST AND CALIBRATION TOOL on our website for correct adjustment! Print only one STL at a time!

P5_Wing L1_evo.stl and P5_Wing R1_evo.stl

MATERIAL LW PLA, Weight: ~ 25 g

TIME ~ 5 hours

ADDITIONAL SETTINGS

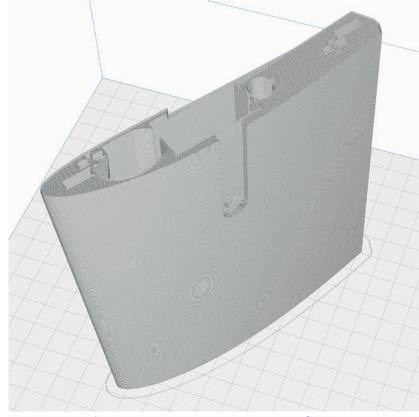
None required

P5_Wing L2_evo.stl and P5_Wing R2_evo.stl

MATERIAL LW PLA, Weight: ~ 20 g

TIME ~ 3 hours 30 minutes

ADDITIONAL SETTINGS







The information about the basic settings you can find on our website at PRINT.

Please note the additional settings for the individual parts!

It is essential to print these parts with foaming LW-PLA (pre-foamed is heavier)!

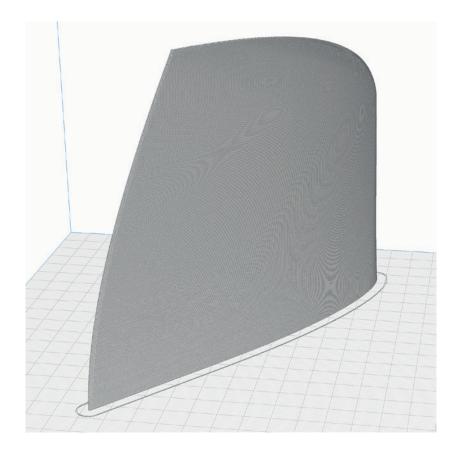
Basic settings for LW-PLA: Please follow the instructions in our WINGTEST AND CALIBRATION TOOL on our website for correct adjustment! Print only one STL at a time!

P5_Winglet L_evo.stl and P5_Winglet R_evo.stl

MATERIAL LW PLA, Weight: ~ 17 g

TIME ~ 3 hours

ADDITIONAL SETTINGS



Basic Information:



Gluing the parts printed with PROFILE P5

STEP 1 As a first step, it is important to roughen and smooth the adhesive surfaces with sandpaper.

STEP 2 Insert the interconnects into the slots provided on one side.

Apply a lot of glue to the side with the interconnects. It is important that there is glue everywhere, especially on the outside and inside of the wall surfaces, in order to achieve a perfect connection. The interconnects only serve to align the parts to each other. It is better **not** to apply glue here, otherwise it can happen that the glue suddenly hardens while the parts are being put together and stops the process.

Use medium viscosity CA glue, thinner glue would run down the parts too easily.

After assembly, **align the two parts exactly** and wipe off the excess CA glue from the surface with a cloth. Now spray with activator spray along the gluing surface and carefully press the parts together.

STEP 4 Clean the glued areas slightly with a **sharp-bladed** cutter.

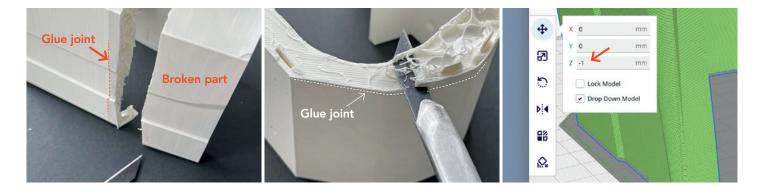


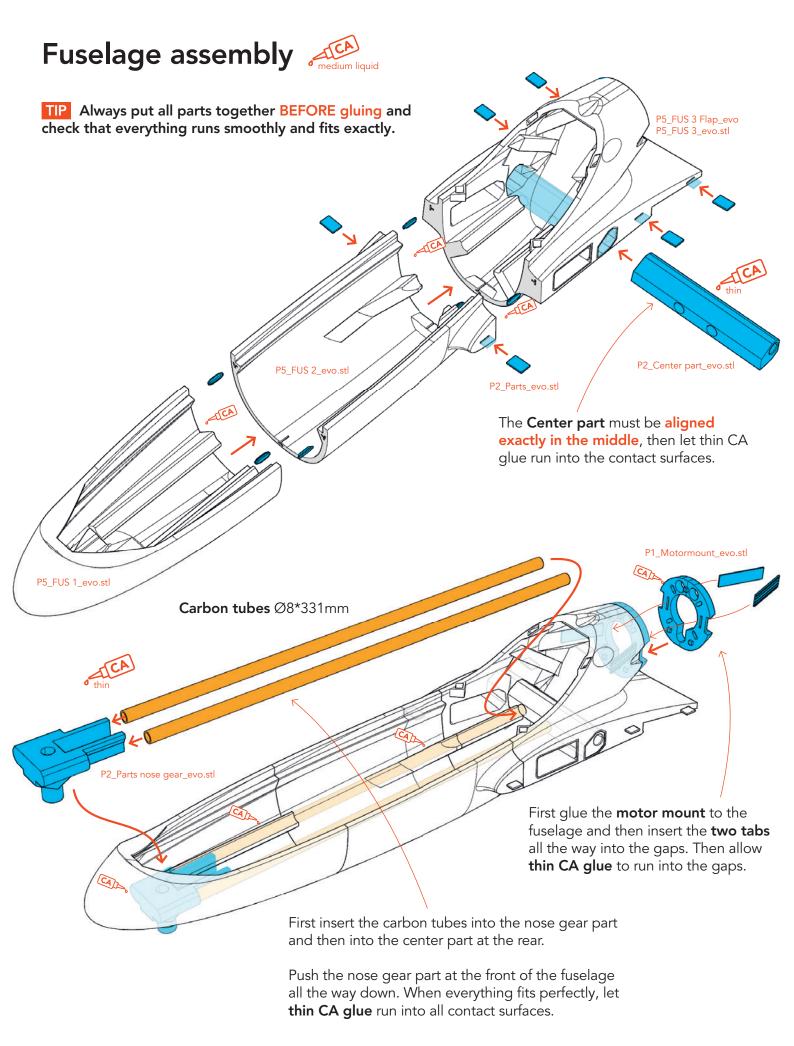
PROFILES 5 parts are easy to repair

STEP 1 Using the knife, carefully remove the damaged part about 3 mm from the glue joint between two parts.

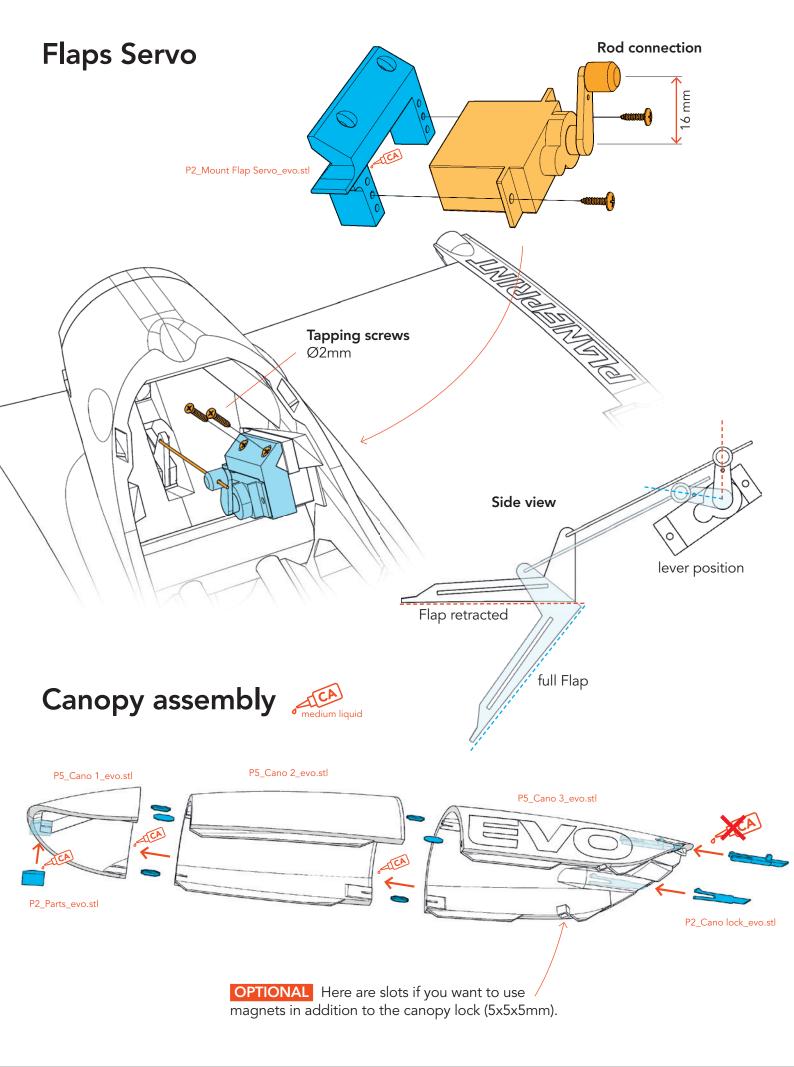
STEP 2 Cut wall and infill and clean the surface with sandpaper. The top surface of the damaged part remains!

STEP 3 The remaining top surface is about 1 mm thick. To compensate for this, you can move the new part to be printed down the Z axis in Cura by 1 mm.





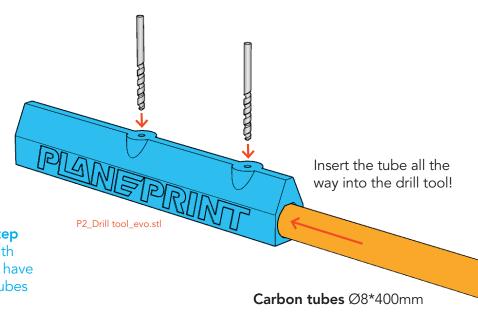
Fuselage assembly August Inquided Inqui P2_PROT FUS R_evo.stl P5_Wing FUS R_evo.stl P5_Wing FUS L_evo.stl STEP 1 P2_PROT FUS L_evo.stl P5_Flap R_evo.stl Flaps P1_Parts_evo.stl P5_Flap L_evo.stl Steel wire Ø0.8*62mm P4_Hinges_evo.stl STEP 2 P5_Flap L_evo.stl Hinges: Slide the flaps all the way to the fuselage and put a drop of thin CA glue on the hinges. P5_Flap R_evo.stl Wait again for the glue to run in, and then spray the activator on it. Do not use too much glue, the flap must move easily! INT EVO PRINTING & ASSEMBLING MANUAL © PLANEPRINT

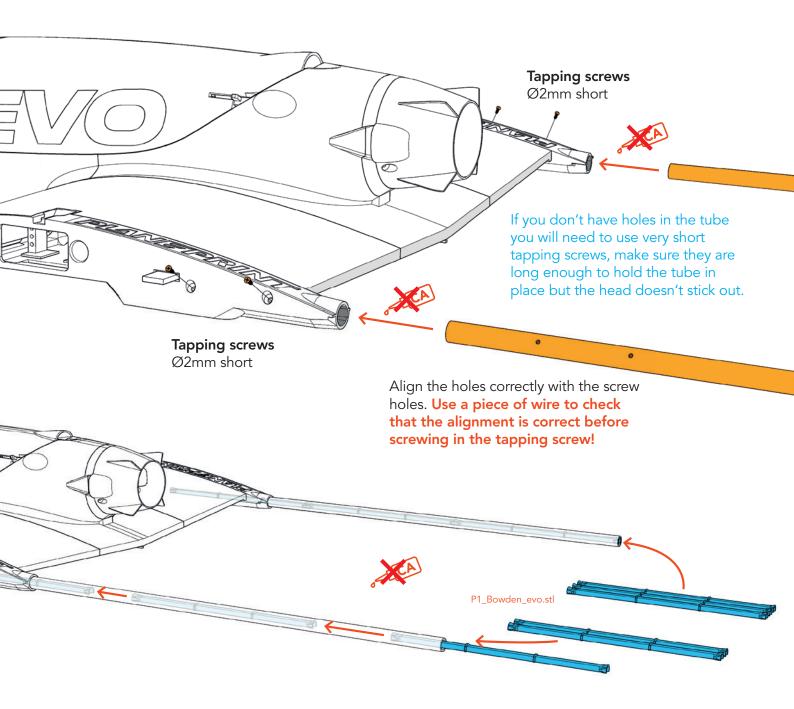


Tailplane assembly

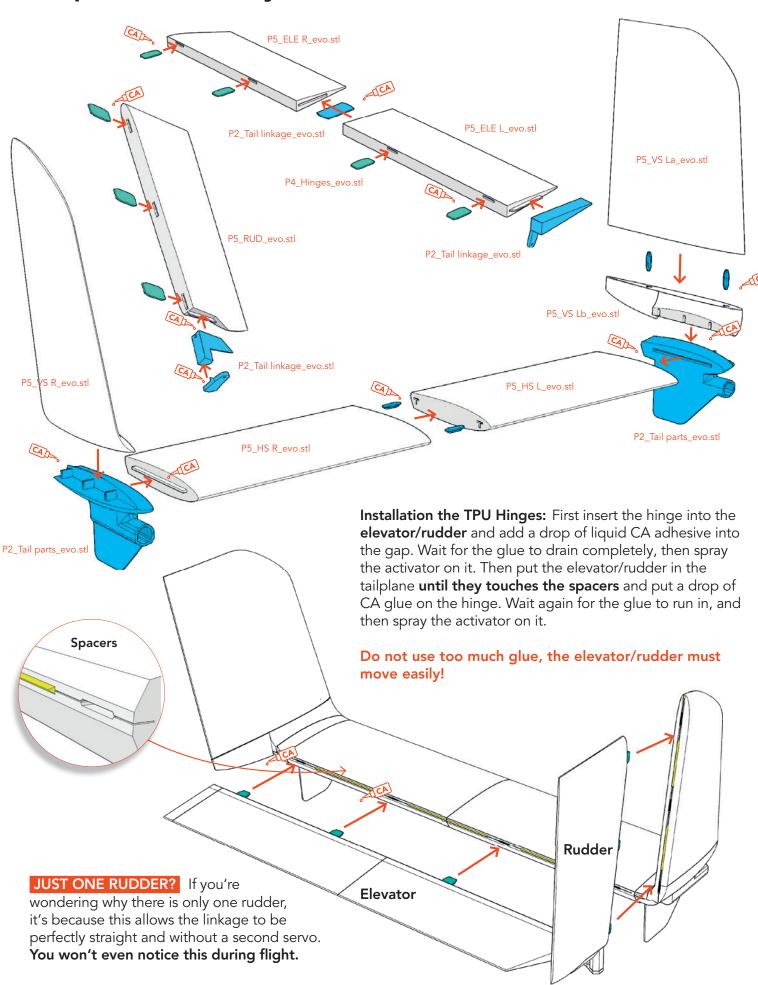
Insert the **two carbon tubes for the tailplane** into the **drill tool** and drill two holes in a wall with a **Ø2mm drill** bit (not all the way through the tube).

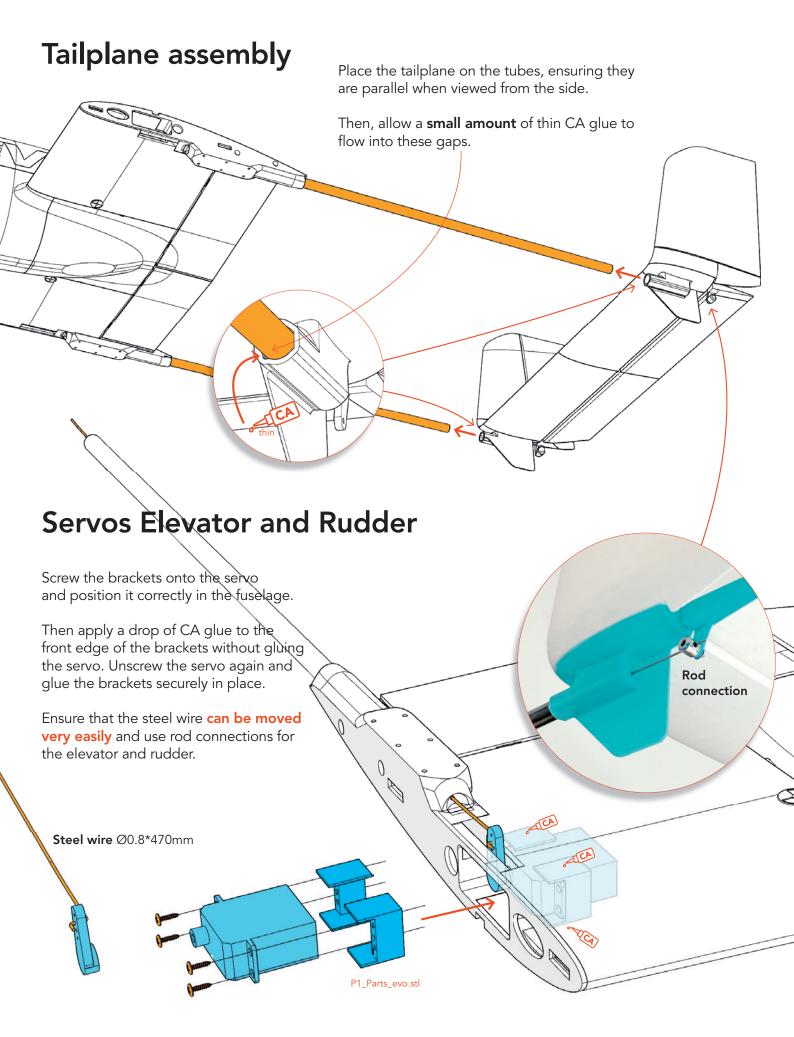
If you don't have a drill you can **skip this step** and just attach the tubes to the fuselage with short screws. In this case, however, you will have to check frequently to make sure that the tubes have not loosened.





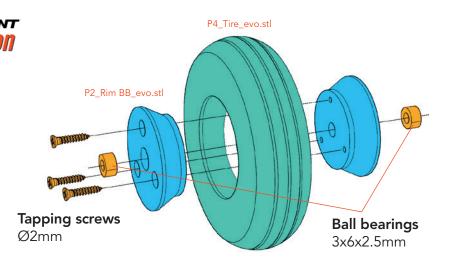
Tailplane assembly

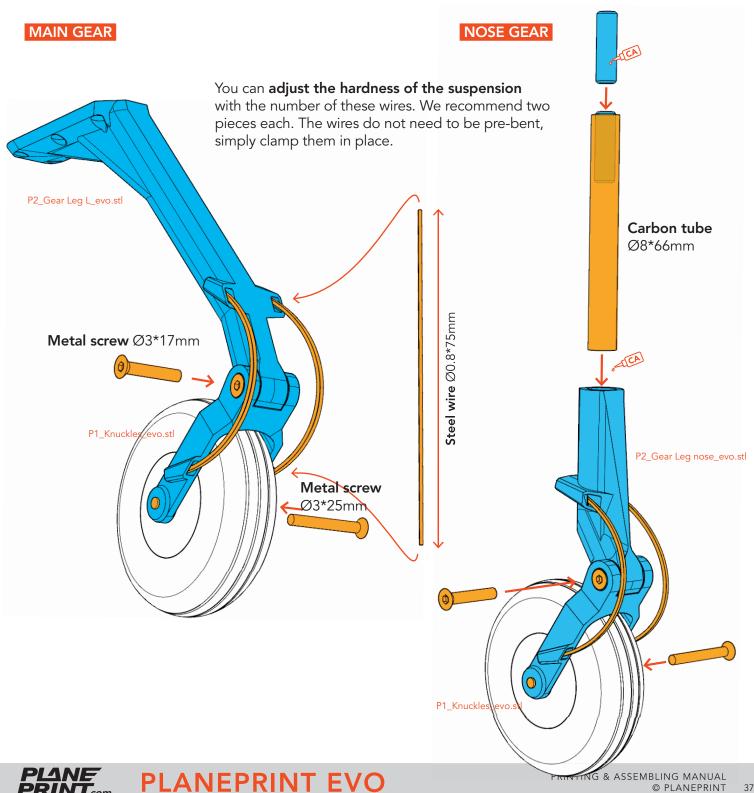


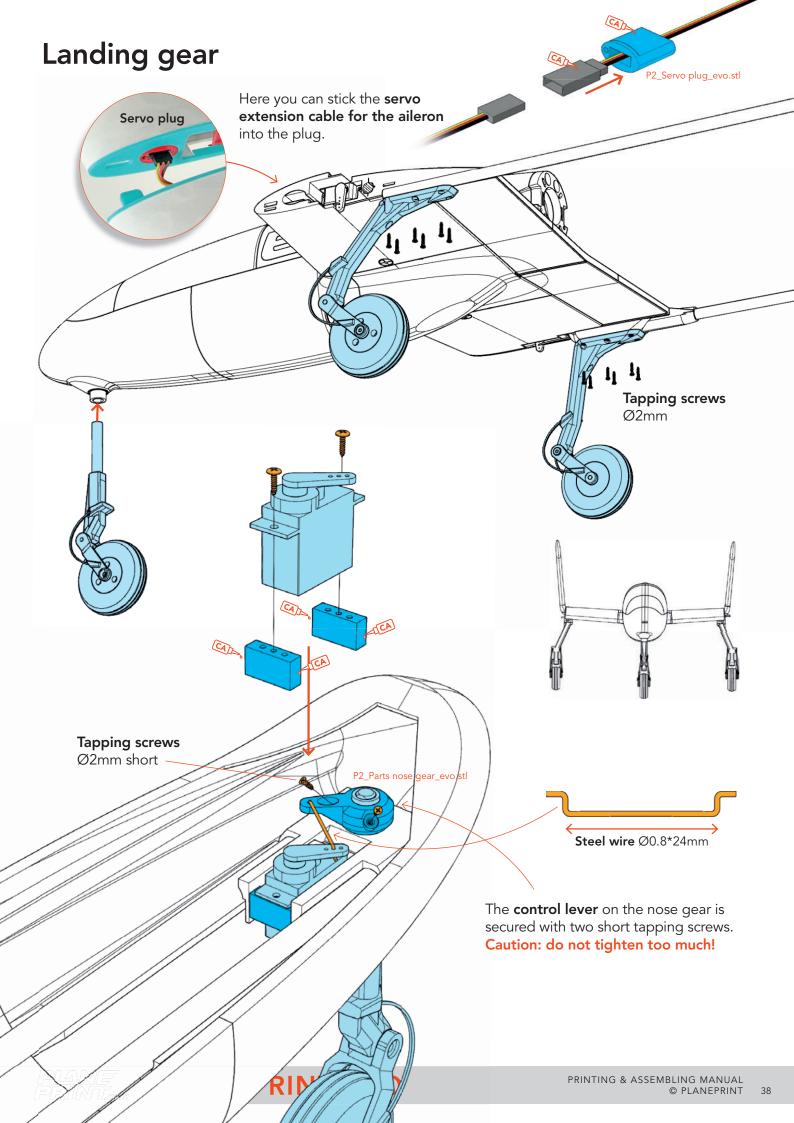


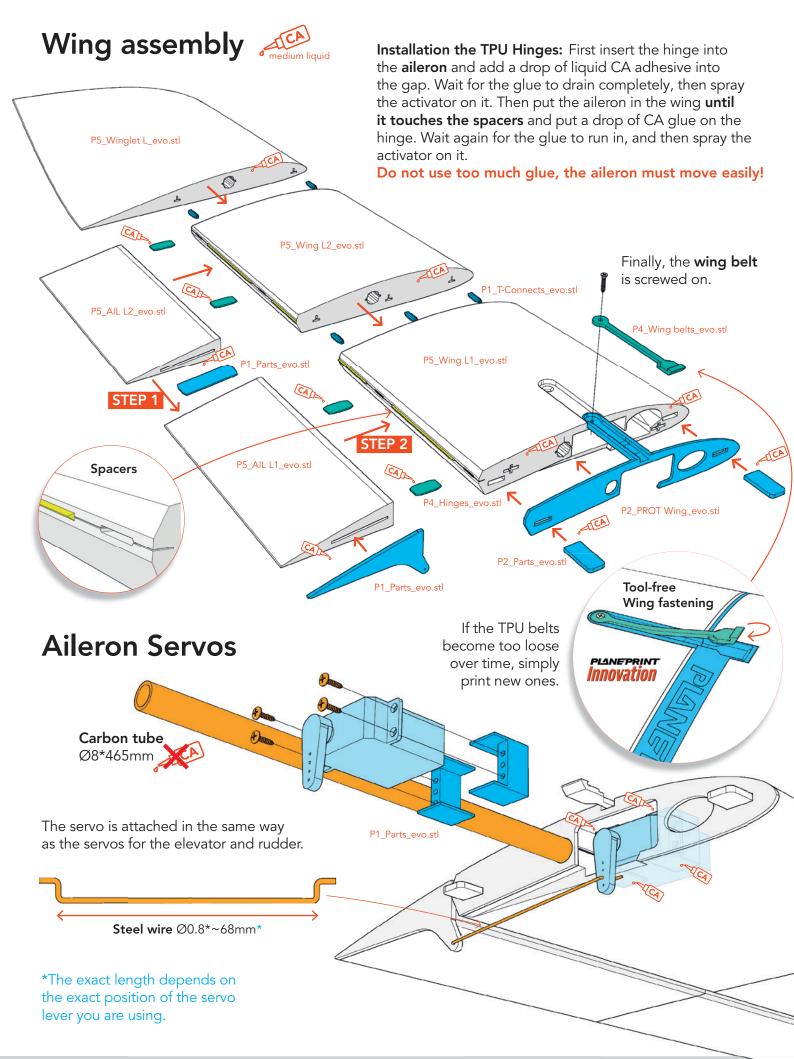
Landing gear *Innovation*

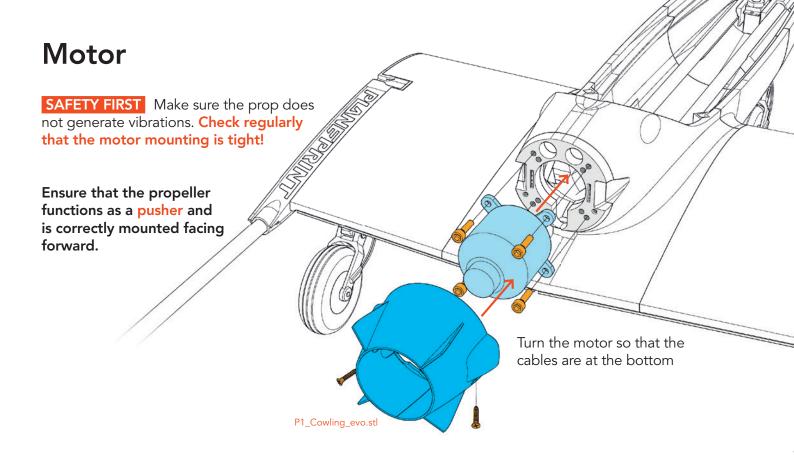
You can build the wheels with or without ball bearings. However, if you choose the version without BB, please note that the rim can become hot due to friction on the screw when rolling, which can cause a temporary braking effect. It is advisable to use some grease or oil and to check the rim frequently.







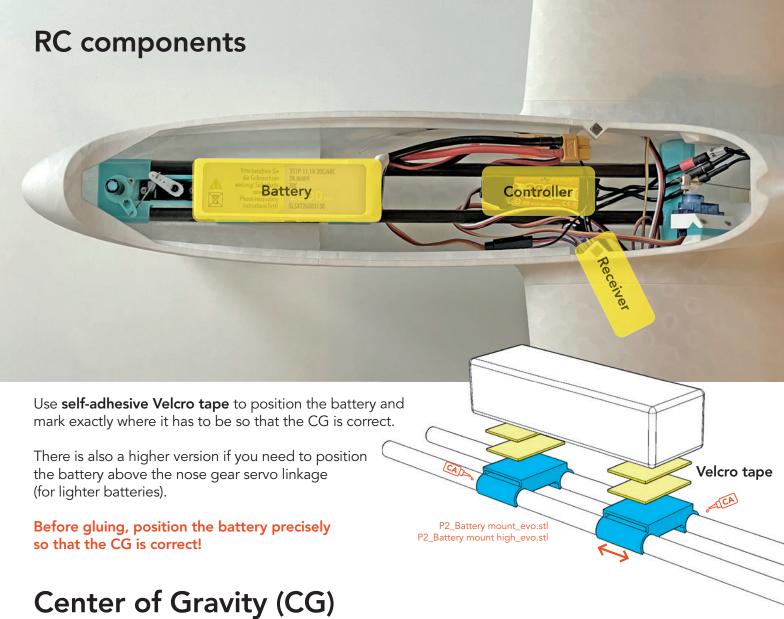




Give your EVO new capabilities...

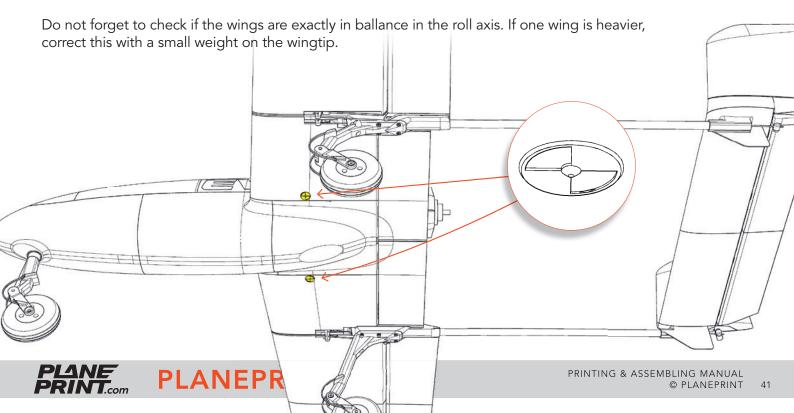
Our website www.planeprint.com/evo offers various optional add-on packages to significantly expand the range of applications for your EVO. It's worth taking a look...



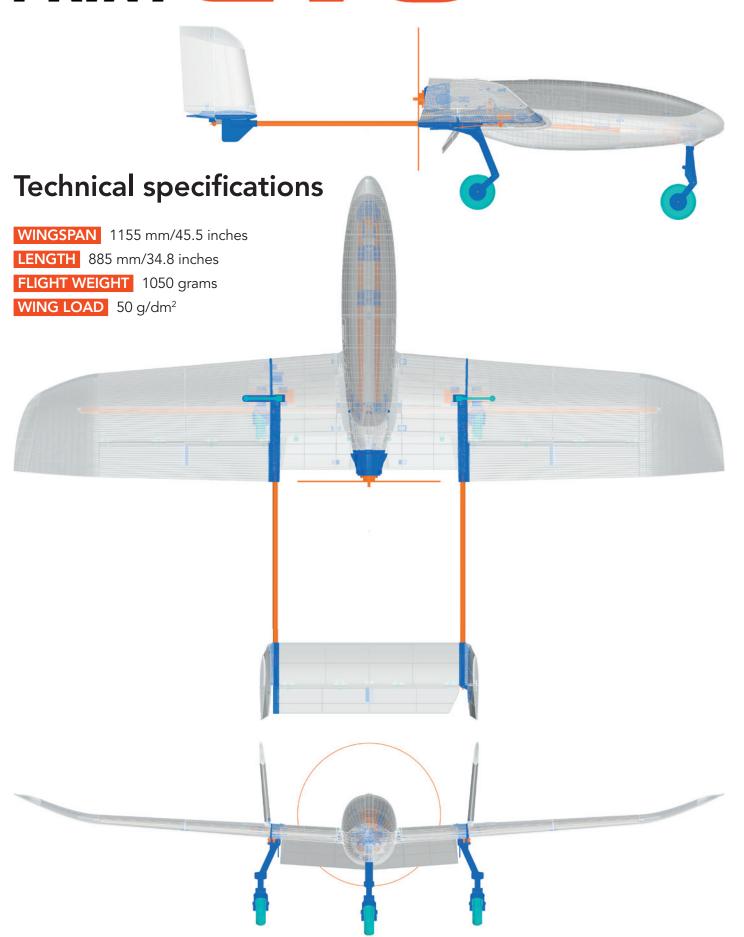


The aircraft must balance on these points – see the markings on the wing.

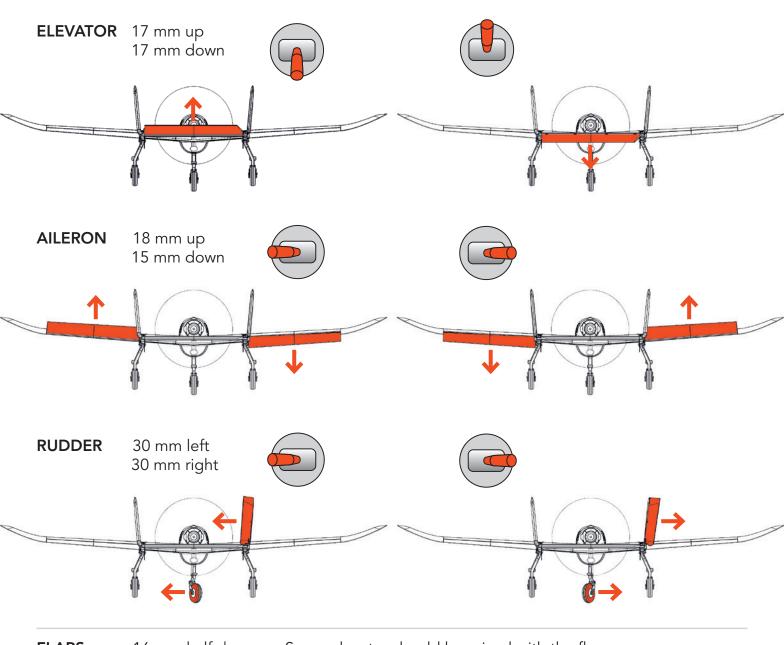
NOTE The EVO is not very sensitive to the exact position of the CG; depending on your preferences, it can be a few mm in front of or behind it. For the maiden flight, however, the CG should not be behind this mark.



PLANE VO

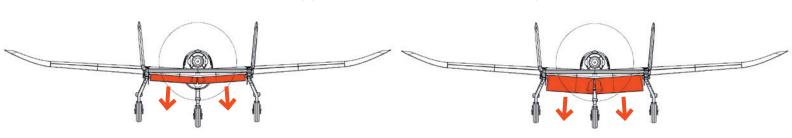


Control Direction Test Look at the aircraft from behind



FLAPS

16 mm half down 38 mm full down Some elevator should be mixed with the flap (approx. 2 to 3 mm down at full flap)

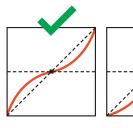


EXPO

ELEVATOR 20 %

AILERON 20 %

RUDDER 20 %



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



AGE RECOMMENDATION 14+

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

The STL data (or data processed from it, such as G codes) must never be passed on to third parties!

The purchase of the STL does not authorize the production of models for third parties.

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 or incorrectly printed parts. Please be careful when handling motors, batteries and propellers and only move your model with insurance and in approved places!

