PLANE PRINT

PLANE PRINT *Rise* nano
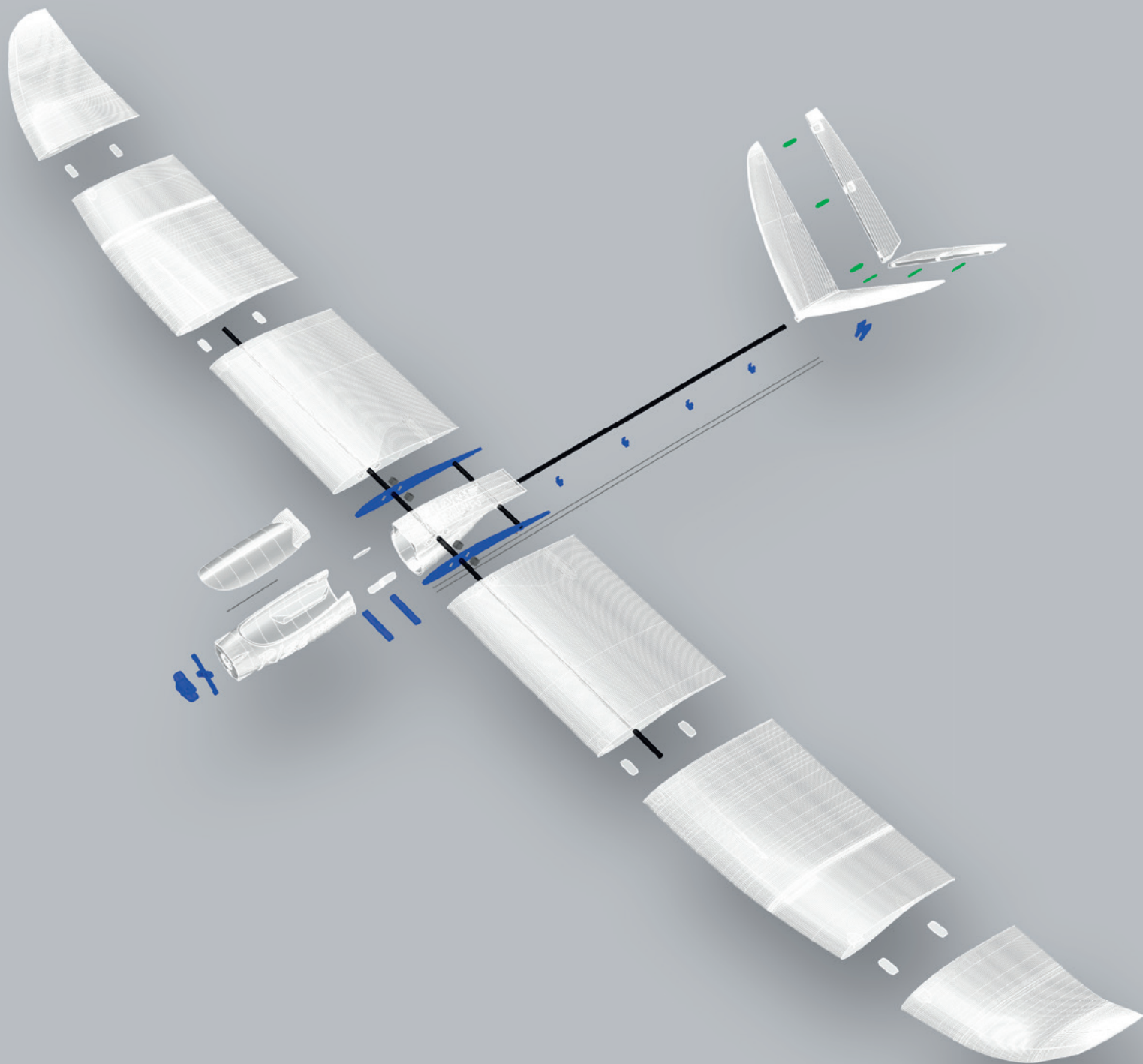
NOTE: Slicing **only** works with CURA!

FAIR DATA USE

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

PLANE PRINT *Rise* nano

PLANE PRINT.com

	LW-PLA		PLA		TPU		CARBON		STEEL

RC Components

ENGINE   **AXI 2203/40 VPP** or comparable indoor-20 grams-motors.

31 mm
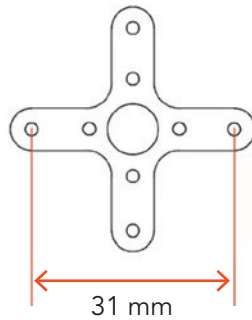
PROP   **Aeronaut folding prop 6x3** or comparable, also possible 6x4, 7x3, 7x4

BEC-CONTROLLER   **15 A** (one matching the motor)
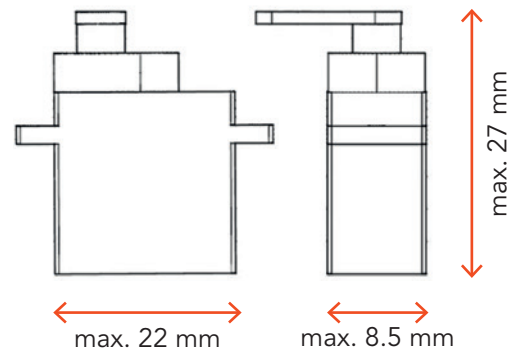
RECEIVER   **3 Channel**

BATTERY   **2S Lipo, 350 MaH** (ideal weight 24 to 27 grams)

SERVOS
- Stemedu Micro 3.7g Servo GH-S37D
- 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**

max. 27 mm

max. 22 mm   max. 8.5 mm

There are also ready-made indoor drive sets with motor, servos and battery available from many dealers.

Required accessoires – basic equipment

- **LW-PLA** (cannot be replaced by PLA!), ~100 grams
- **PLA** or **Tough PLA**, ~20 grams
- **TPU A95**, ~10 grams

- CA super glue (liquid and liquid medium)
- CA activator
- Steel wire Ø0.8*1000mm, 1 piece
- Carbon rod (no tube!) Ø4*1000mm, 1 piece
- Rod connection small, 2 pieces
- Neodym-Super-Magnet 5x5x5mm, 4 pieces

Rod connection hole 1 mm

Tools

Cutter knife, Drill, small Philips screwdriver, Sandpaper,
Metal saw, Needle nose pliers

Printing the parts – Printing profiles

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

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

PROFILE P1_Fullbody
PROFILE P2_Hollowbody
PROFILE P3_Surface
PROFILE P4_Flex
PROFILE P5_Gyroid

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

Important for the 1-wall-print (P3, P5)!

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.

For the new PROFILE P5_Gyroid it is essential to use **Cura Version 5 or later**, It will work with older versions, but the weight of the parts will be higher and the printing time longer.

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 60 to 70 % (depending on brand).
Caution: at too high temperatures, LW-PLA becomes brittle and breaks more easily.
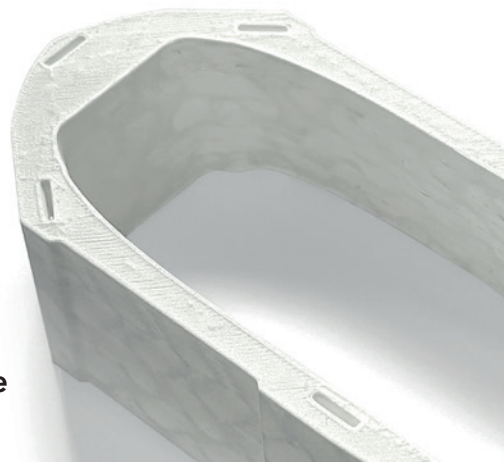
The development of a complex, airworthy RC flight model to express on any standard 3D printer is a very complex and extensive process. Therefore, we appeal to your fairness not to forward the STL data you have acquired to third parties.

Thank you for your understanding and have fun with your PLANEPRINT MODEL!
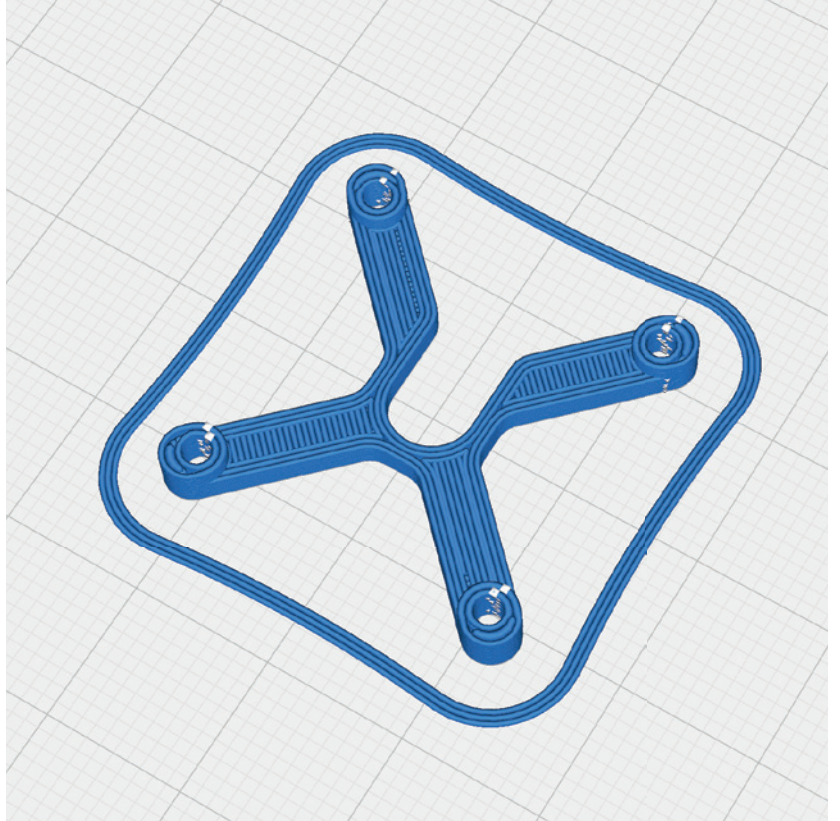
PROFILE P1_Fullbody PLA or Tough PLA

The following parts must be sliced with the PROFILE P1_Fullbody.
Please note the additional settings for the individual parts!

P1_Motormount-XXX_Rn.stl

MATERIAL   PLA, Weight: ~ 1 g
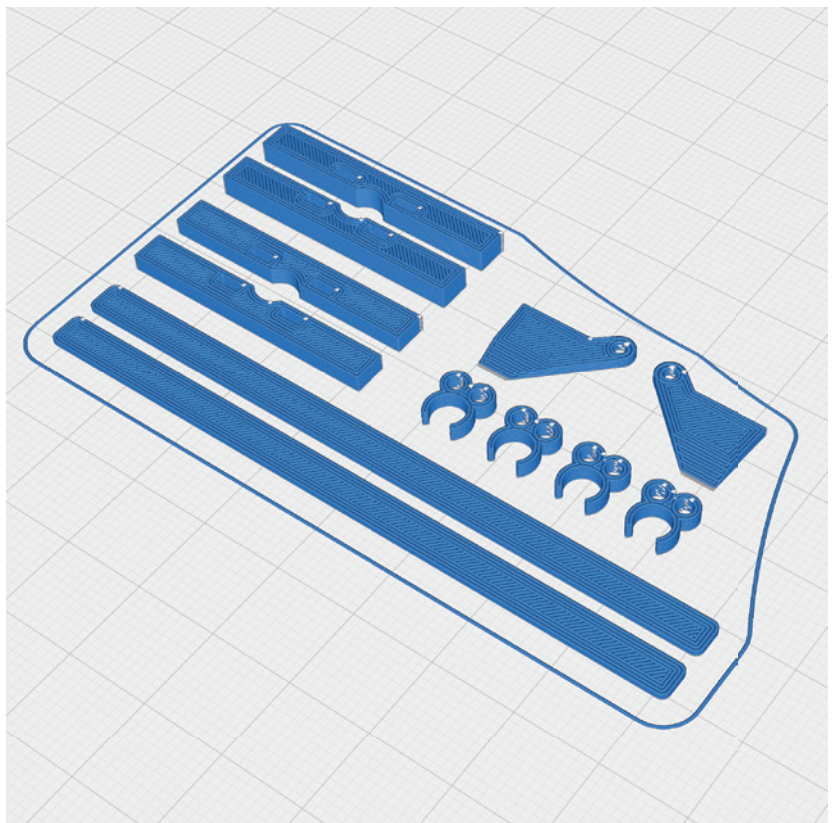
ADDITIONAL SETTINGS

None required

P1_Parts_Rn.stl

MATERIAL   PLA, Weight: ~ 3 g

ADDITIONAL SETTINGS

None required

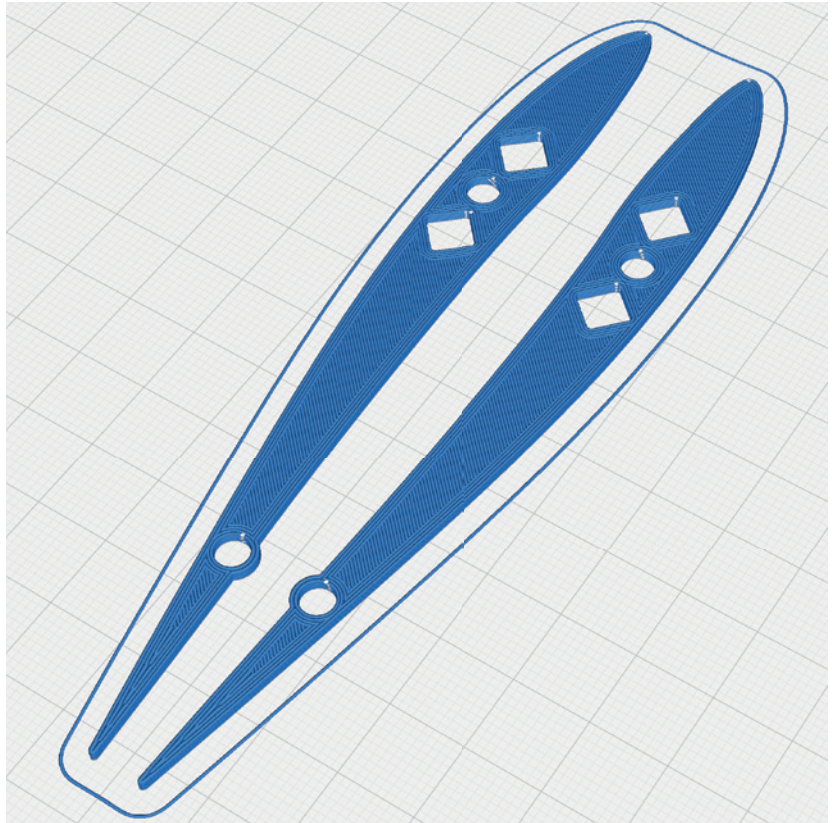# PROFILE P1_Fullbody PLA or Tough PLA

The following parts must be sliced with the PROFILE P1_Fullbody.
Please note the additional settings for the individual parts!

P1_Protector_Rn.stl

MATERIAL   PLA, Weight: ~ 3 g

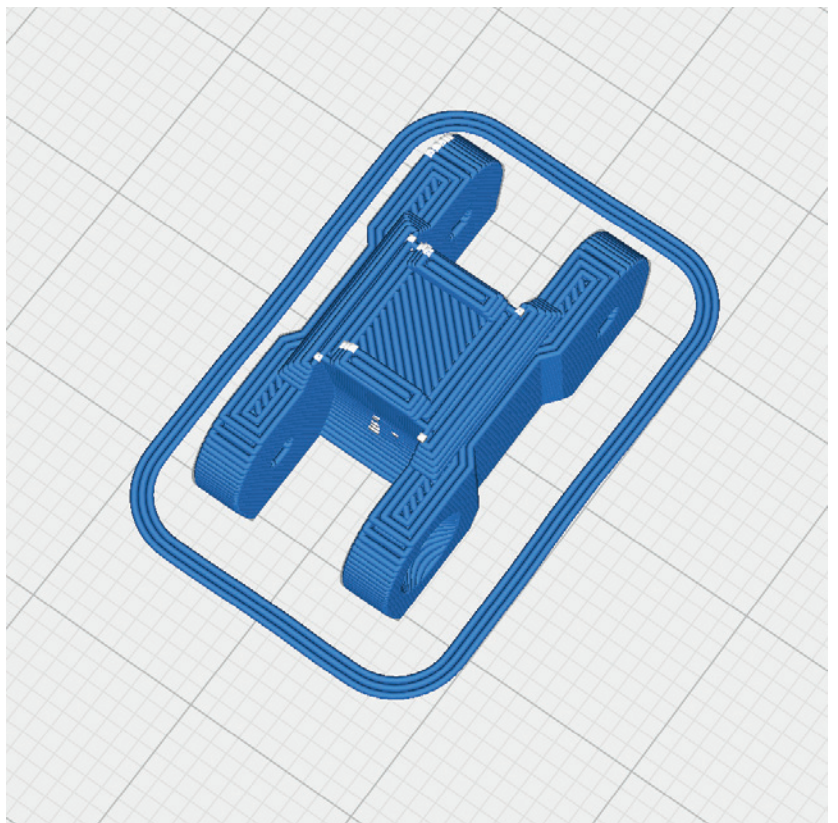**ADDITIONAL SETTINGS**

None required

P1_Spinner folding prop Xmm_Rn.stl

MATERIAL   PLA, Weight: ~ 1 g

ADDITIONAL SETTINGS

None required
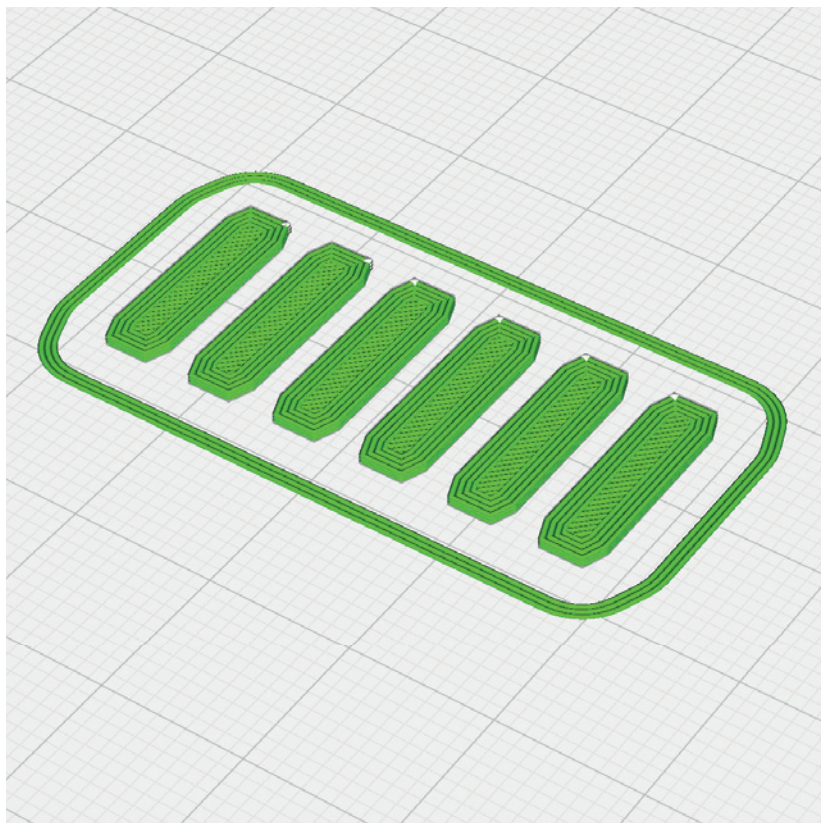
PROFILE P4_Flex TPU A95

The following parts must be sliced with the PROFILE P4_Flex.
Please note the additional settings for the individual parts!

P4_Hinges_Rn.stl

MATERIAL   TPU ~ A95, Weight: ~ 1 g

ADDITIONAL SETTINGS

None required

PROFILE P5_Gyroid Light-Weight LW-PLA!

The following parts must be sliced with the PROFILE P5_Gyroid. **Please note the additional settings for the individual parts!** It is essential to print these parts with LW-PLA!

Basic settings for LW-PLA: Please follow the instructions in our **WINGTEST AND CALIBRATION TOOL** on our website for correct adjustment!
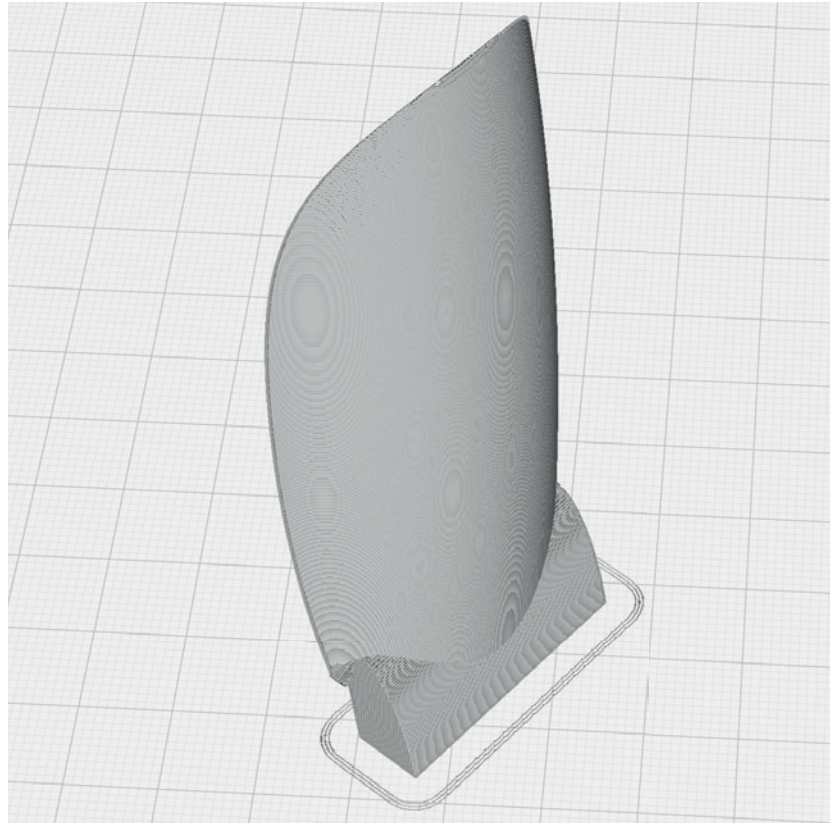
P5_Canopy_Rn.stl

MATERIAL **LW-PLA**, ~ 2 g*
*Weighed (approximate guideline)

ADDITIONAL SETTINGS

None required

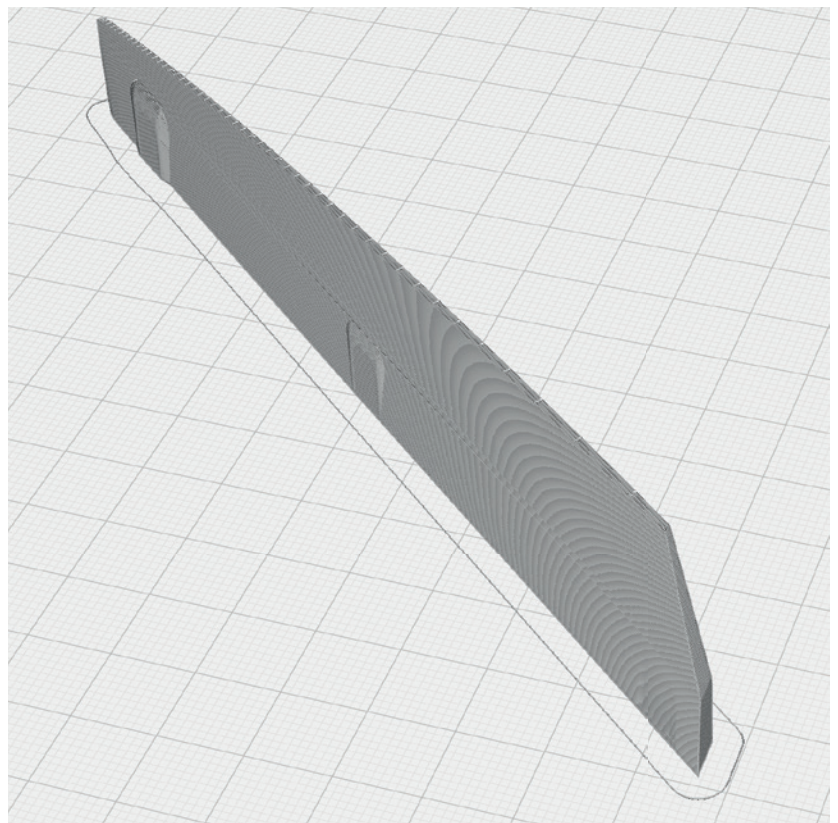## P5_Elevator-L_Rn.stl and P5_Elevator-R_Rn.stl

MATERIAL **LW-PLA**, ~ 2 g*
*Weighed (approximate guideline)

ADDITIONAL SETTINGS

None required

PROFILE P5_Gyroid Light-Weight LW-PLA!

The following parts must be sliced with the PROFILE P5_Gyroid. **Please note the additional settings for the individual parts!** It is essential to print these parts with LW-PLA!

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

P5_Fuselage 1_Rn.stl

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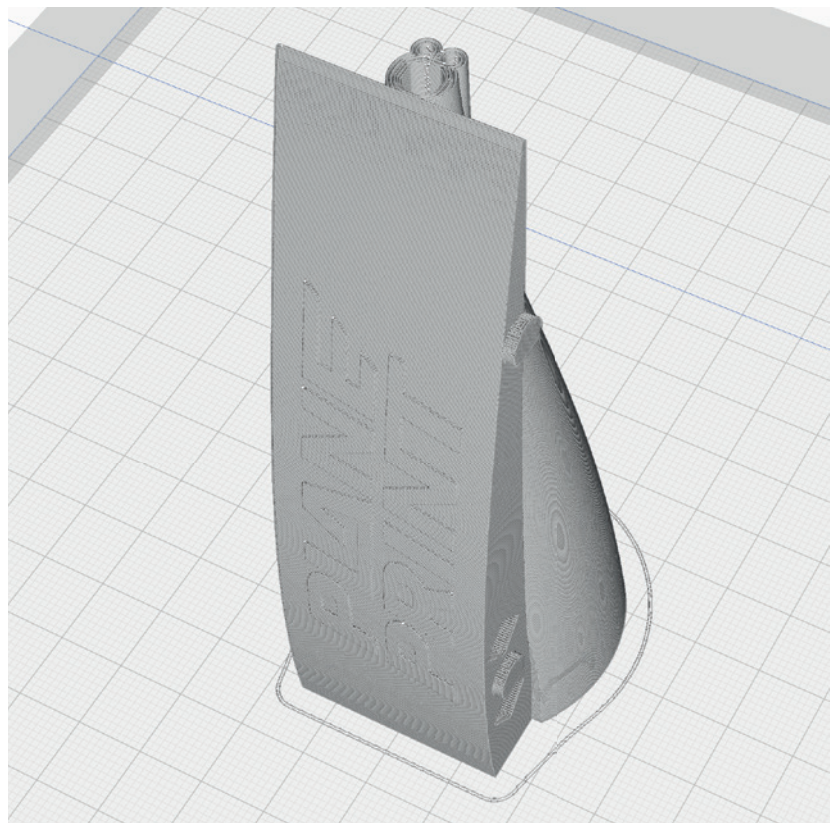
ADDITIONAL SETTINGS

None required

P5_Fuselage 2_Rn.stl

MATERIAL **LW-PLA**, ~ 7 g*
*Weighed (approximate guideline)

ADDITIONAL SETTINGS

None required

PROFILE P5_Gyroid Light-Weight LW-PLA!

The following parts must be sliced with the PROFILE P5_Gyroid. **Please note the additional settings for the individual parts!** It is essential to print these parts with LW-PLA!

Basic settings for LW-PLA: Please follow the instructions in our **WINGTEST AND CALIBRATION TOOL** on our website for correct adjustment!
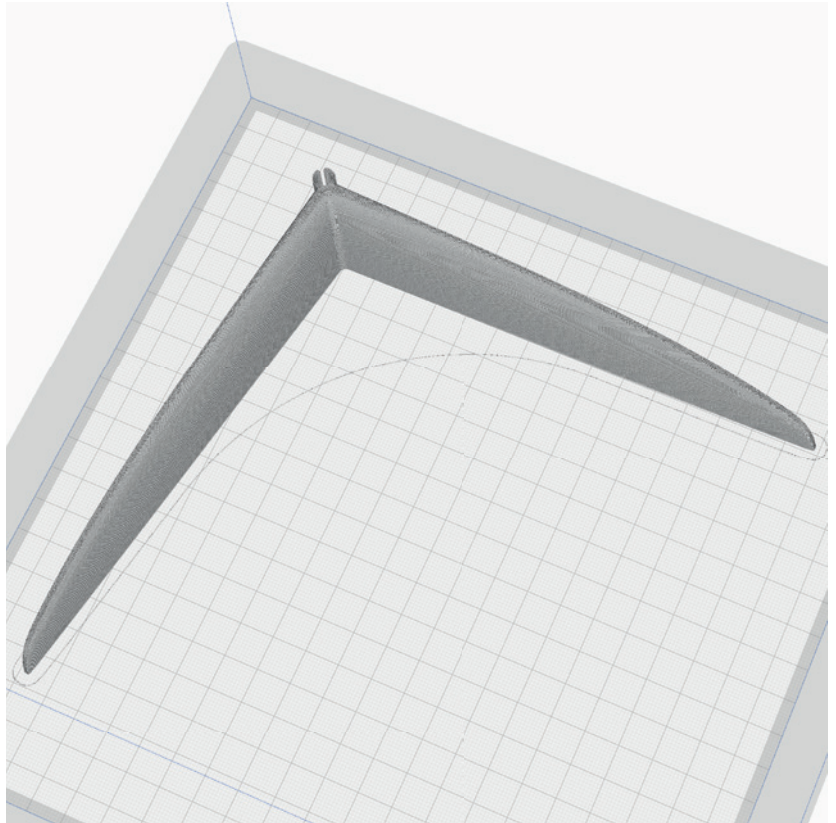
P5_V-Tail_Rn.stl

MATERIAL LW-PLA, ~ 8 g*

*Weighed (approximate guideline)

ADDITIONAL SETTINGS
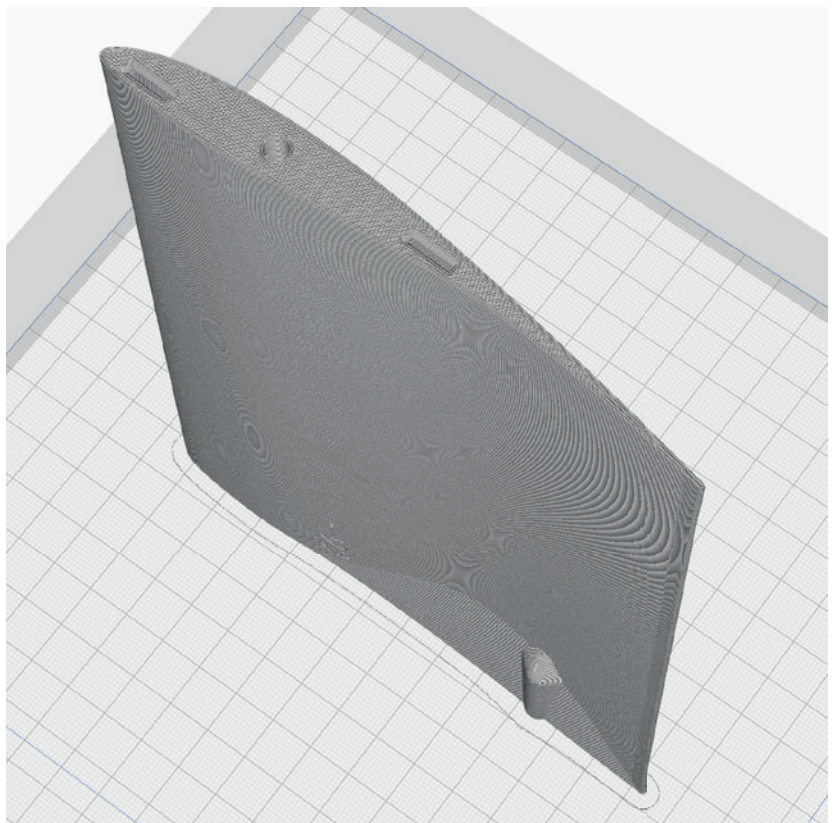
• Z Seam Position: **back left**

P5_Wing 1-L_Rn.stl and P5_Wing 1-R_Rn.stl

MATERIAL LW-PLA, ~ 20 g*

*Weighed (approximate guideline)

ADDITIONAL SETTINGS

None required

PROFILE P5_Gyroid Light-Weight LW-PLA!

The following parts must be sliced with the PROFILE P5_Gyroid. **Please note the additional settings for the individual parts!** It is essential to print these parts with LW-PLA!

Basic settings for LW-PLA: Please follow the instructions in our **WINGTEST AND CALIBRATION TOOL** on our website for correct adjustment!
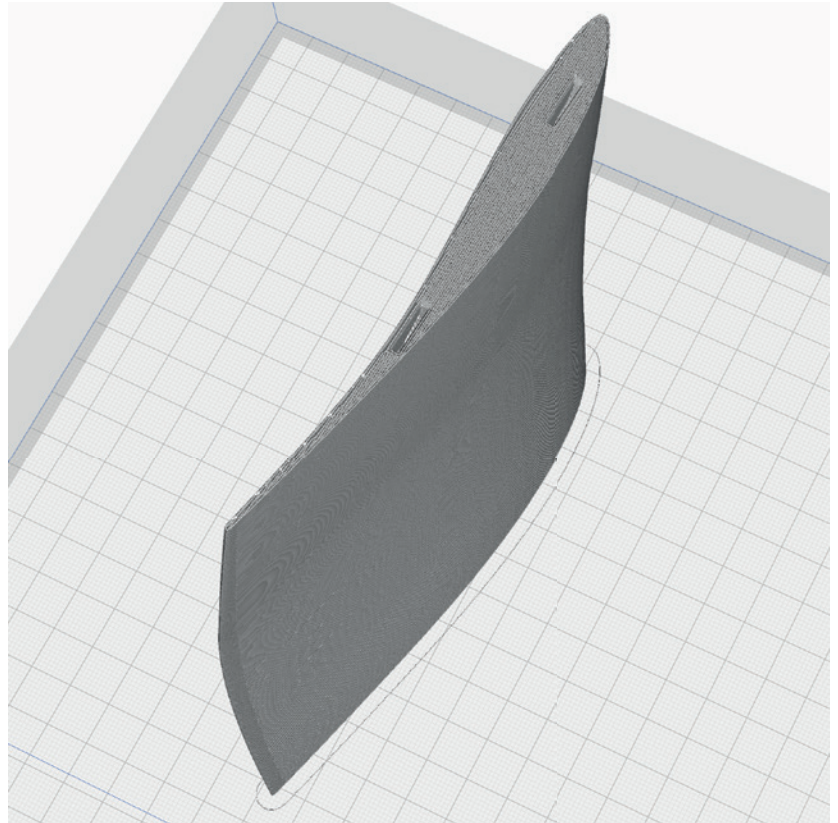
P5_Wing 2-L_Rn.stl and P5_Wing 2-R_Rn.stl

MATERIAL LW-PLA, ~ 19 g*

*Weighed (approximate guideline)
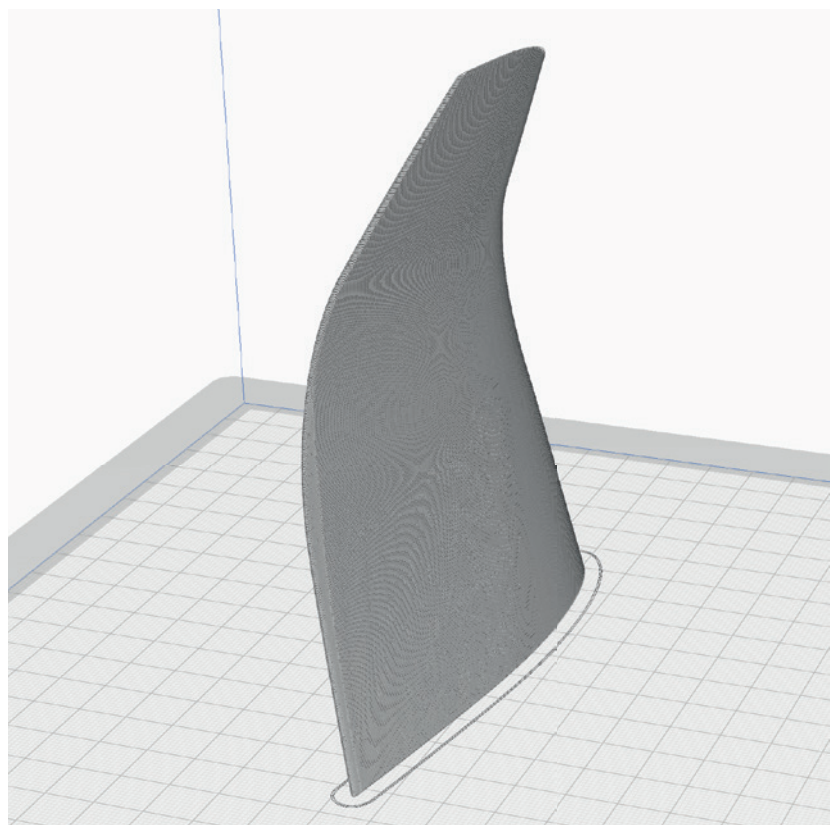
ADDITIONAL SETTINGS

None required

P5_Wing 3-L_Rn.stl and P5_Wing 3-R_Rn.stl

MATERIAL LW-PLA, ~ 8 g*

*Weighed (approximate guideline)

ADDITIONAL SETTINGS

None required

PROFILE P5_Gyroid Light-Weight LW-PLA!

The following parts must be sliced with the PROFILE P5_Gyroid. **Please note the additional settings for the individual parts!** It is essential to print these parts with LW-PLA!

Basic settings for LW-PLA: Please follow the instructions in our **WINGTEST AND CALIBRATION TOOL** on our website for correct adjustment!
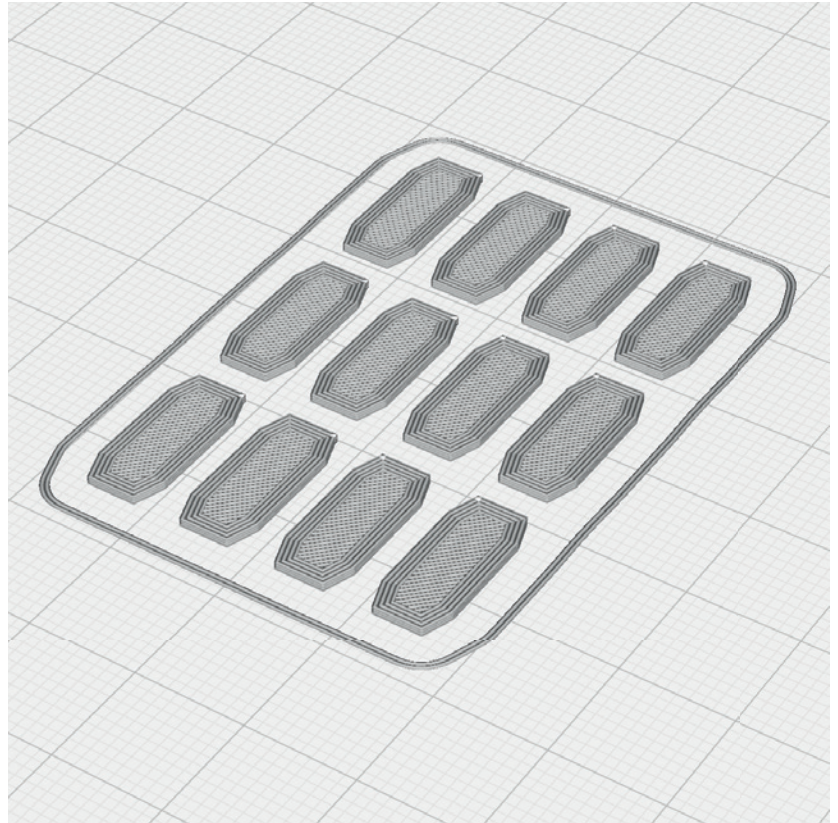
P5_Interconnects_Rn.stl

MATERIAL **LW-PLA**, ~ 1 g*

*Weighed (approximate guideline)

ADDITIONAL SETTINGS

None required

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.

STEP 3   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.

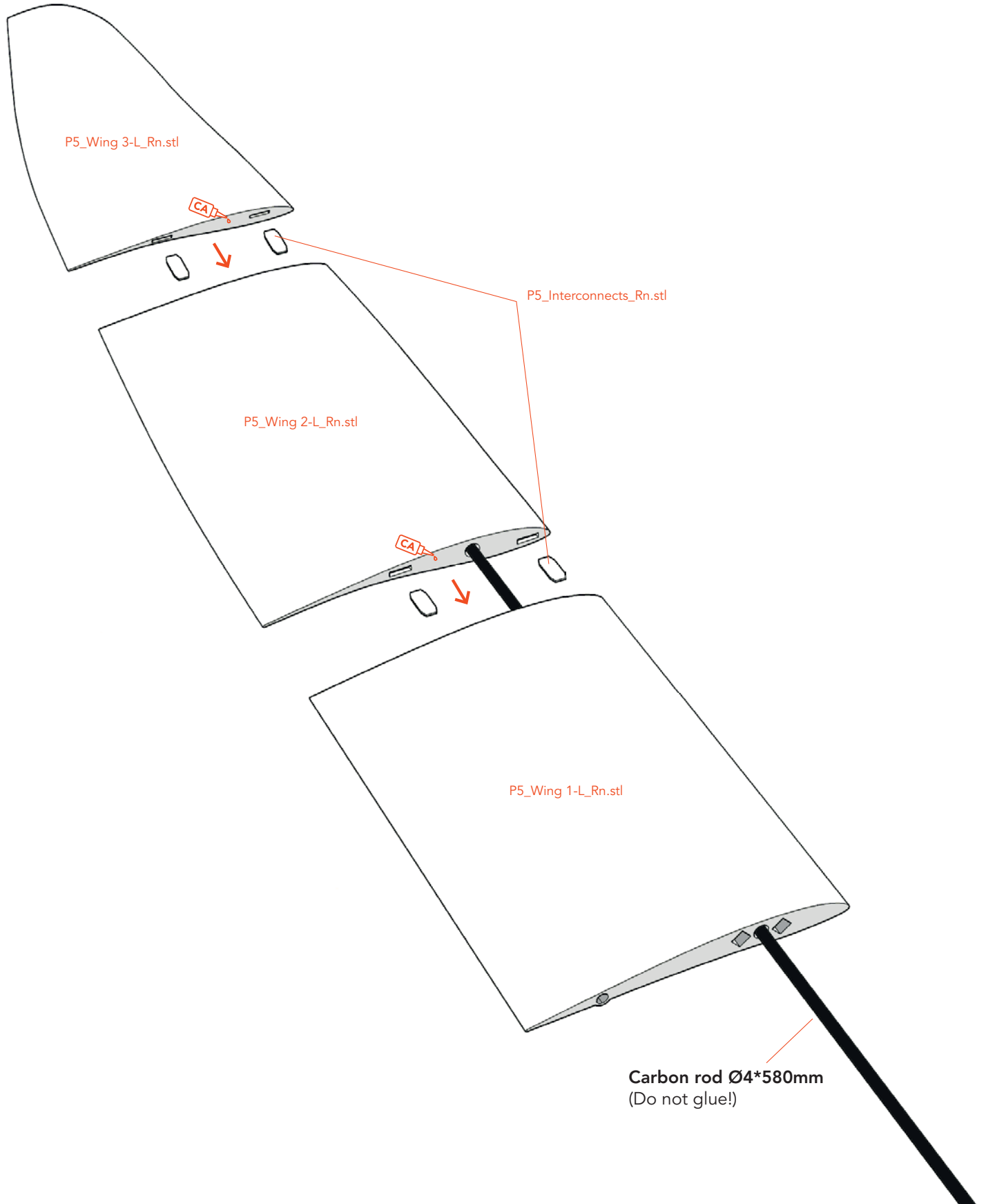**Use medium viscosity CA glue, thinner glue would run down the parts too easily.**

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.
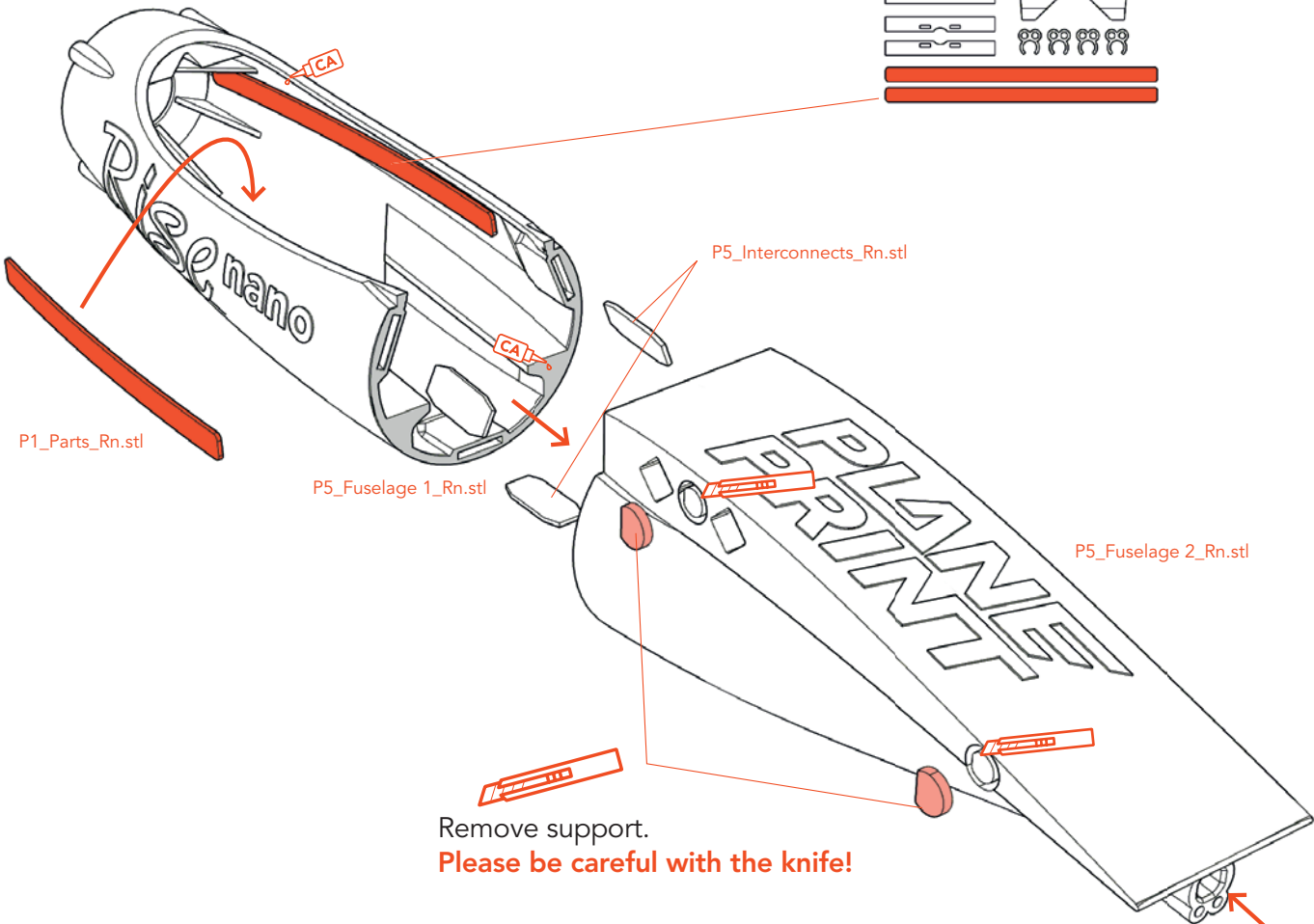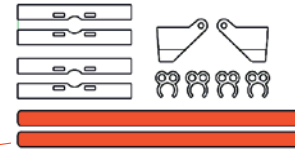
Wings assembly

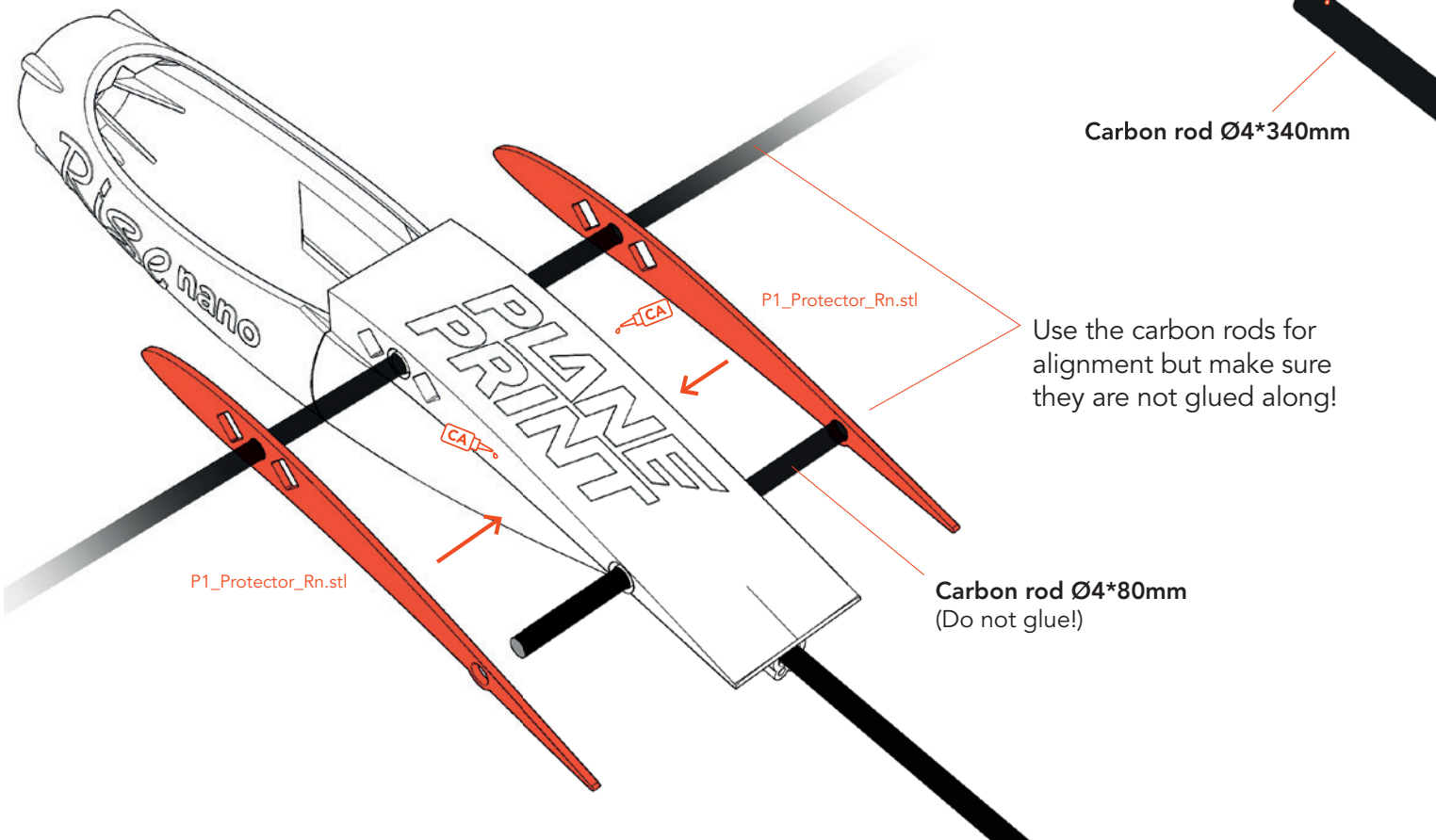Use the carbon rod for alignment **but make sure that it is not glued!**

CA
medium l.

P5_Wing 3-L_Rn.stl

P5_Interconnects_Rn.stl

P5_Wing 2-L_Rn.stl

P5_Wing 1-L_Rn.stl

Carbon rod Ø4*580mm
(Do not glue!)

Fuselage assembly

CA
medium l.

P1_Parts_Rn.stl

CA

P1_Parts_Rn.stl

P5_Interconnects_Rn.stl

CA

P5_Fuselage 1_Rn.stl

P5_Fuselage 2_Rn.stl

Remove support.
Please be careful with the knife!

Carbon rod Ø4*340mm

CA

P1_Protector_Rn.stl

Use the carbon rods for alignment but make sure they are not glued along!

CA

CA

P1_Protector_Rn.stl

Carbon rod Ø4*80mm
(Do not glue!)

Canopy assembly

Steel wire Ø0.8*60mm

CA

P5_Canopy_Rn.stl

STEP 1

STEP 2

Motor mount

Tape the motor mount well to the fuselage and screw the motor on. Mount the folding prop blades to the spinner, making sure they move easily but the screw is tight. Choose the right width (6 or 8 mm) for your folding prop!

Then attach them with the rubber ring that comes with the motor (The spinner must be very tight!). Normally the spinner fits exactly on a 5.5 mm shaft. **If your motor is different, this spinner must not be mounted. The prop must run absolutely accurate and balanced! Always keep it away from you (and other people) when starting the motor!**

P1_Motormount-31mm_Rn.stl

P1_Spinner folding prop 6mm_Rn.stl
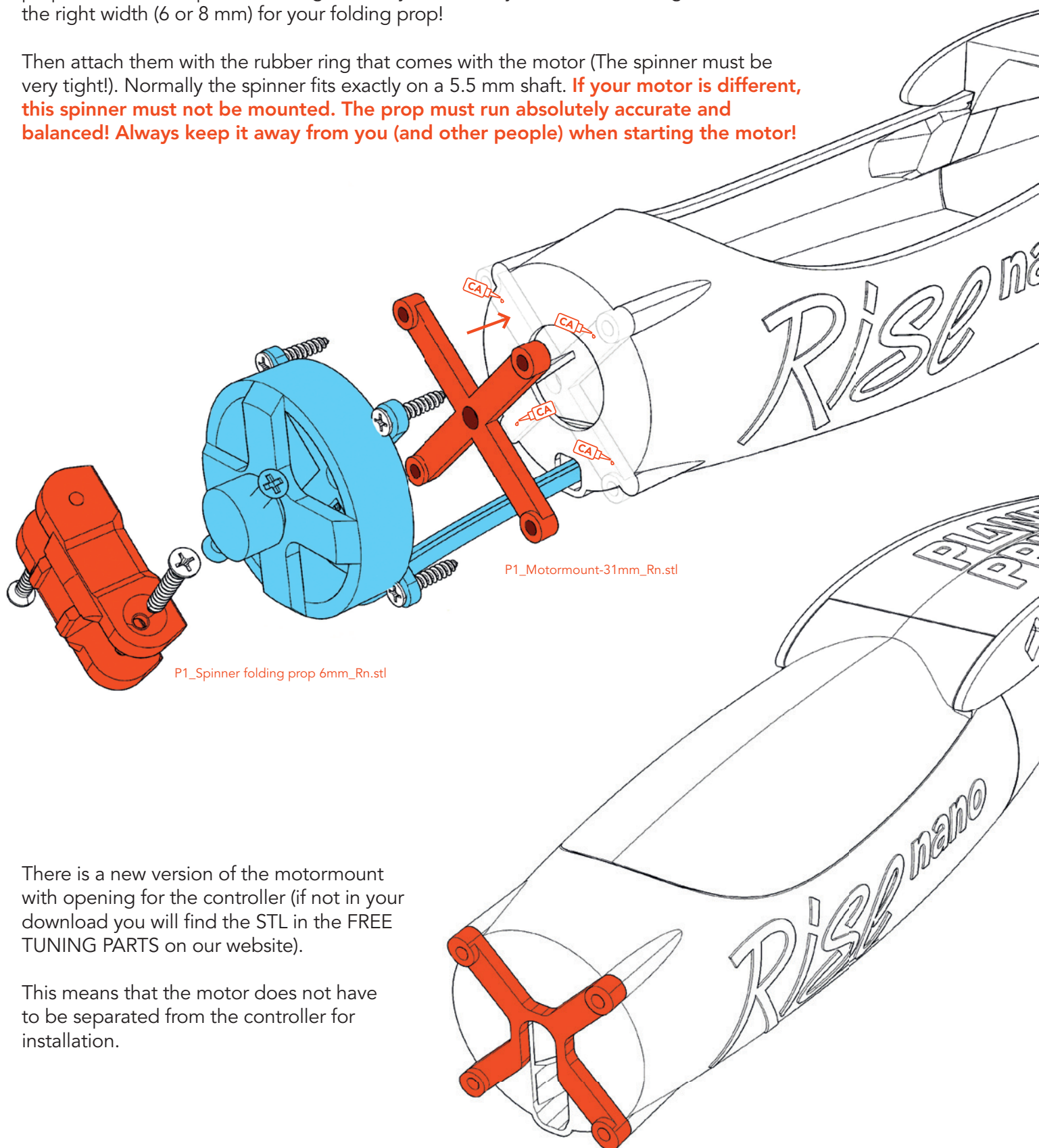
There is a new version of the motormount with opening for the controller (if not in your download you will find the STL in the FREE TUNING PARTS on our website).
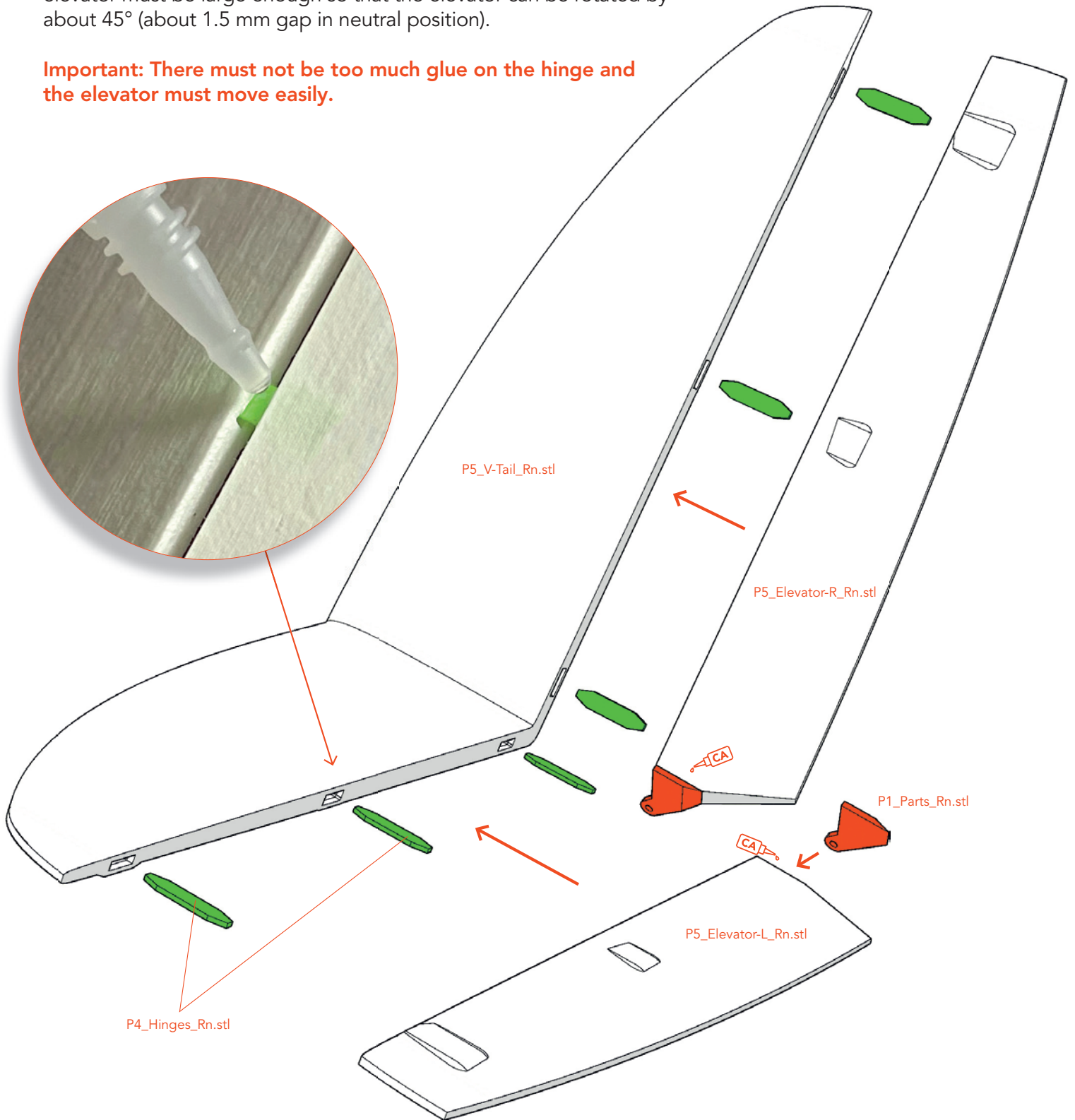
This means that the motor does not have to be separated from the controller for installation.

Tailplane assembly

CA thin liquid

Hinges: Put V-Tail, hinges and an elevator together and add a drop of **thin! CA glue** on each hinge (photo). Due to the capillary effect, the glue runs into the gaps. The distance between the V-tail and the elevator must be large enough so that the elevator can be rotated by about 45° (about 1.5 mm gap in neutral position).

Important: There must not be too much glue on the hinge and the elevator must move easily.

P5_V-Tail_Rn.stl

P5_Elevator-R_Rn.stl

P1_Parts_Rn.stl

P5_Elevator-L_Rn.stl

P4_Hinges_Rn.stl

Tailplane assembly

thin liquid

Insert the carbon rod for the wing into the fuselage and place it upside down on two supports of the same height so that it is absolutely parallel to the ground (in this case, caps from activator spray cans). Then place the V-tail on the rear carbon rod. When the V-tail rests on the table, it is automatically in the correct position relative to the fuselage. Then put **thin CA glue** in the gap of the carbon rod.
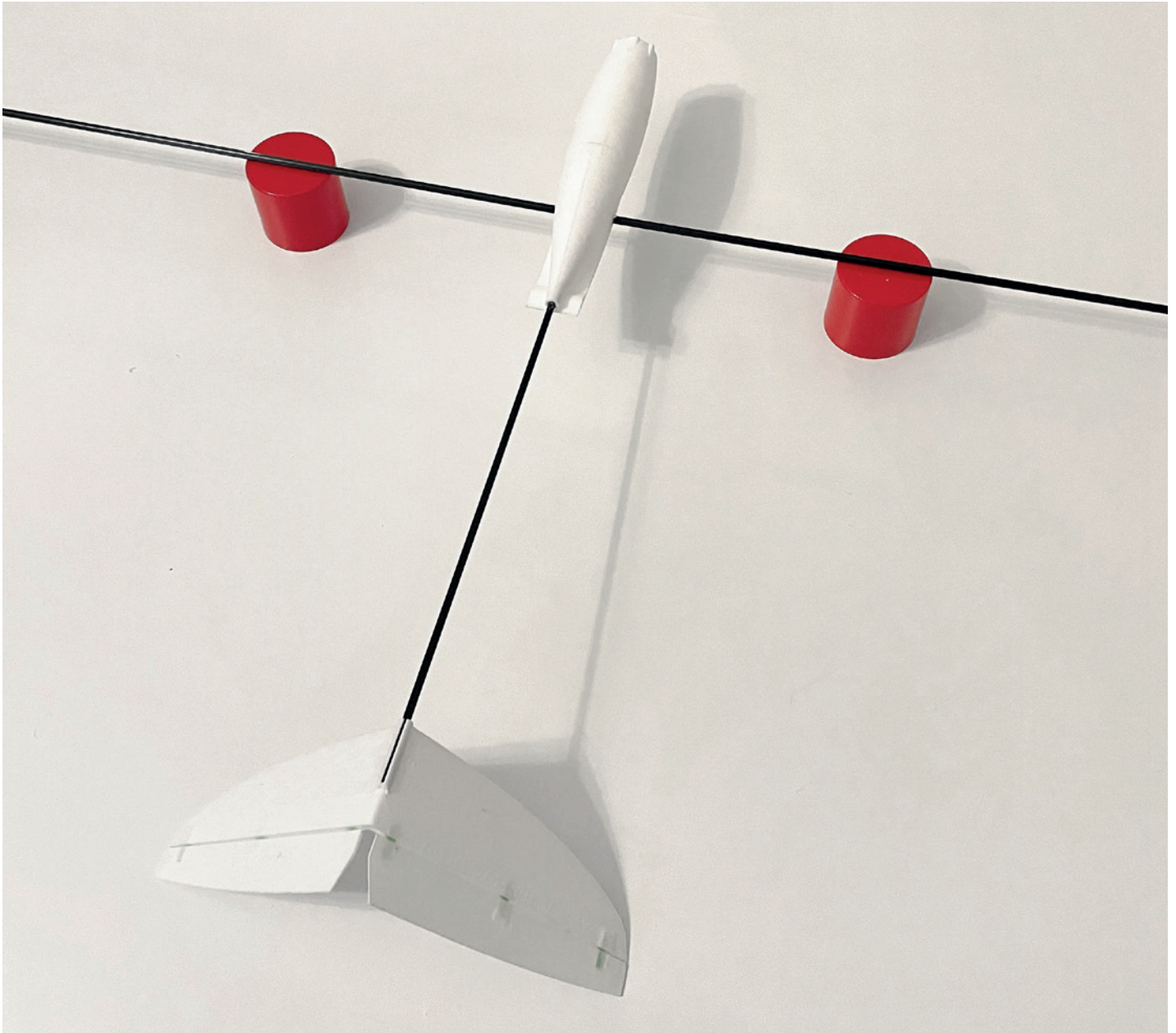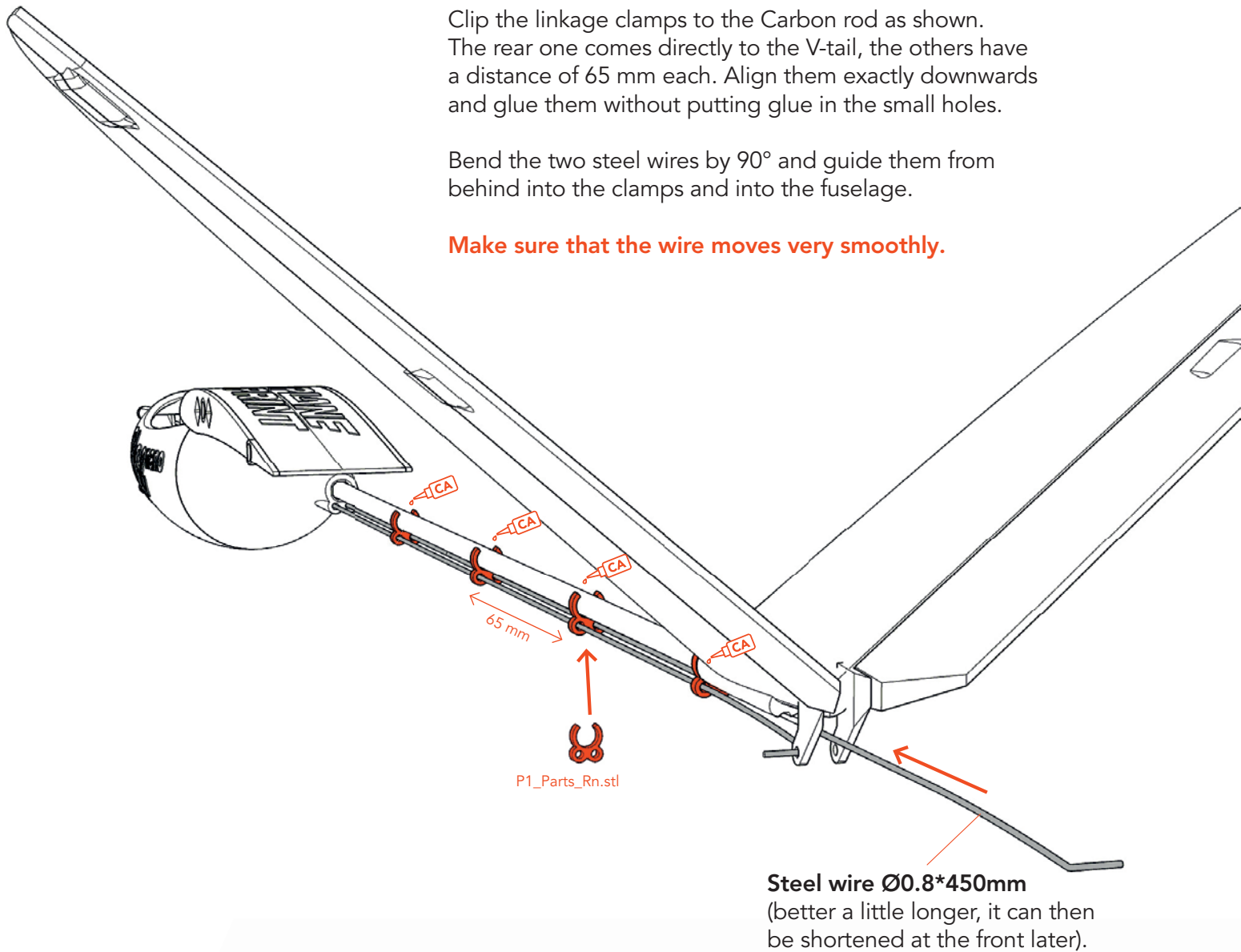
Linkage

Clip the linkage clamps to the Carbon rod as shown.
The rear one comes directly to the V-tail, the others have
a distance of 65 mm each. Align them exactly downwards
and glue them without putting glue in the small holes.

Bend the two steel wires by 90° and guide them from
behind into the clamps and into the fuselage.

Make sure that the wire moves very smoothly.

CA

CA

CA

CA

65 mm

P1_Parts_Rn.stl

Steel wire Ø0.8*450mm
(better a little longer, it can then
be shortened at the front later).

Servo mount

The servos must sit as low as possible in the fuselage.
There are two different servo holders in different heights,
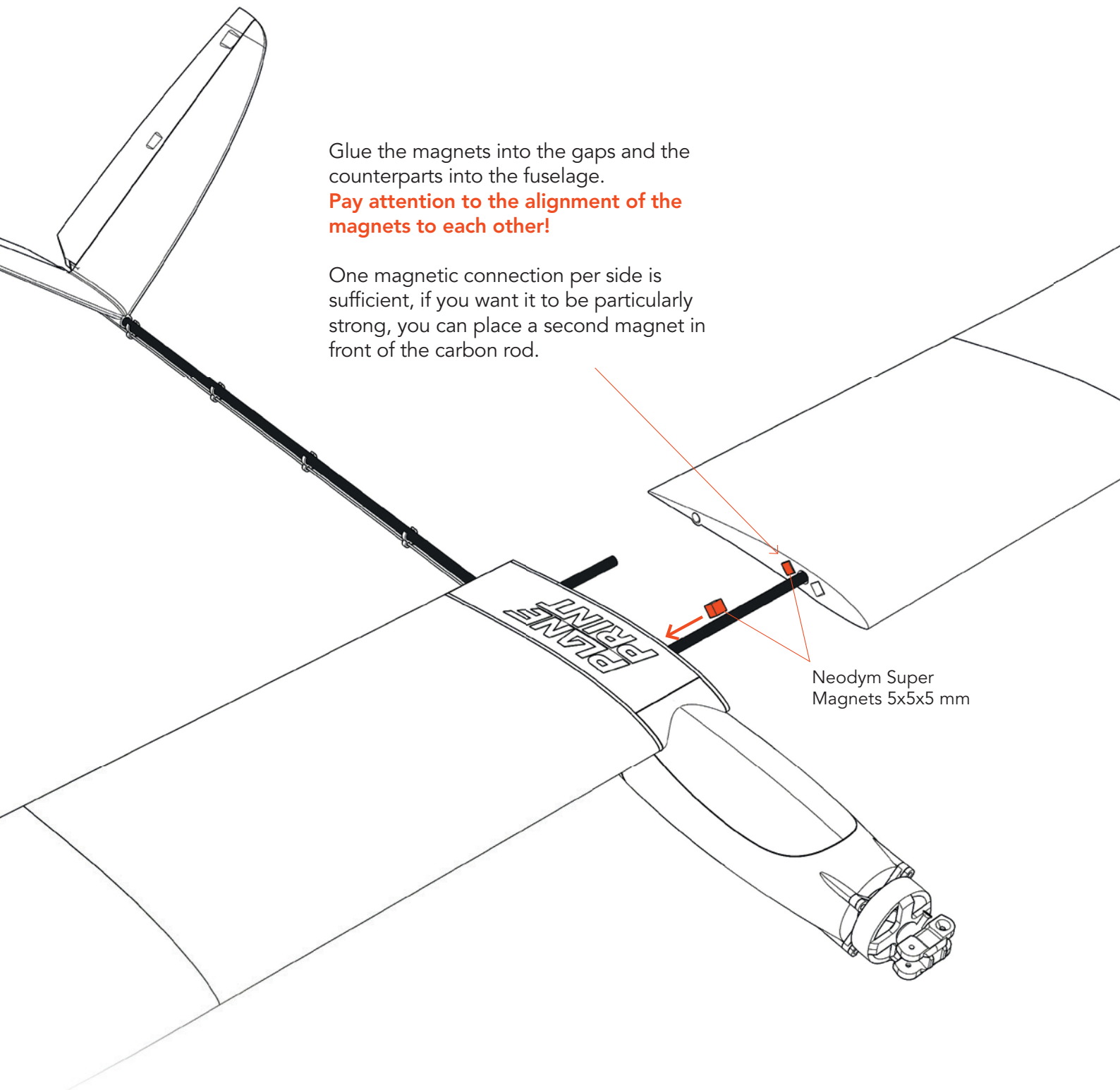suitable for different servos.

P1_Parts_Rn.stl
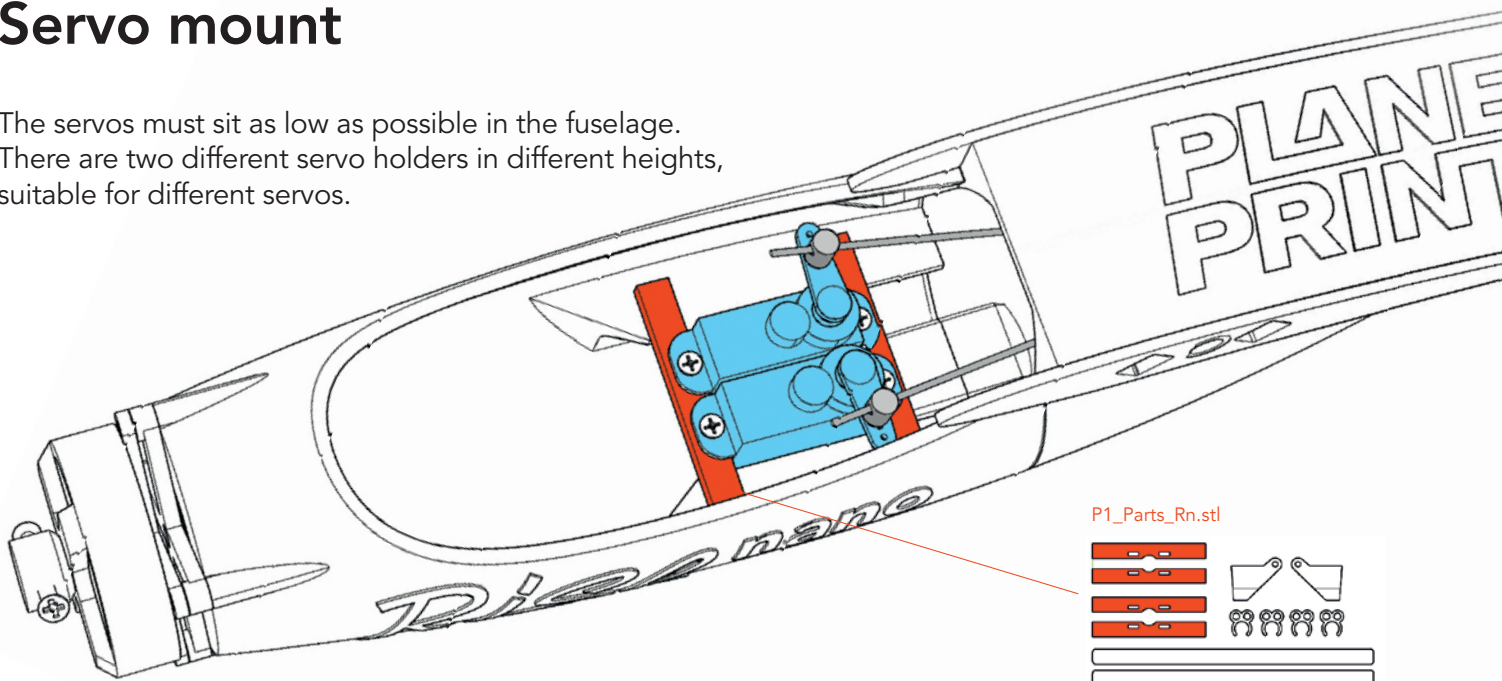
Wing mount

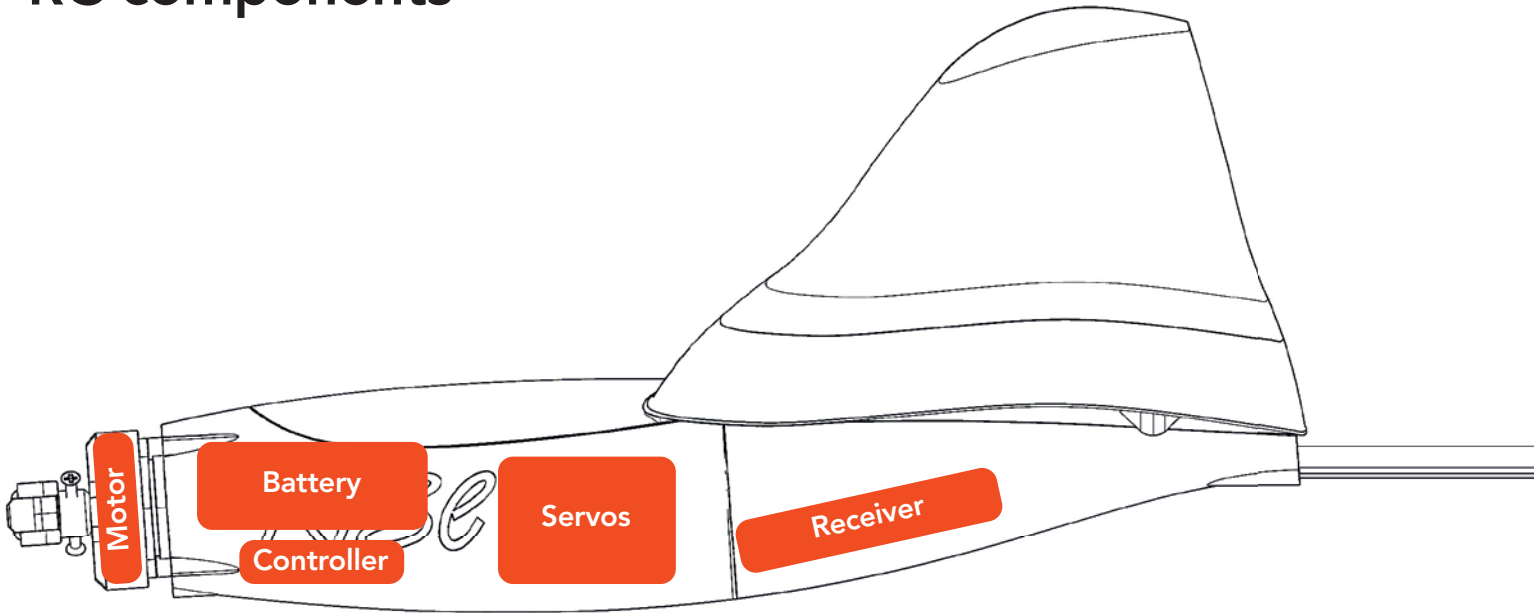Glue the magnets into the gaps and the counterparts into the fuselage.
Pay attention to the alignment of the magnets to each other!

One magnetic connection per side is sufficient, if you want it to be particularly strong, you can place a second magnet in front of the carbon rod.
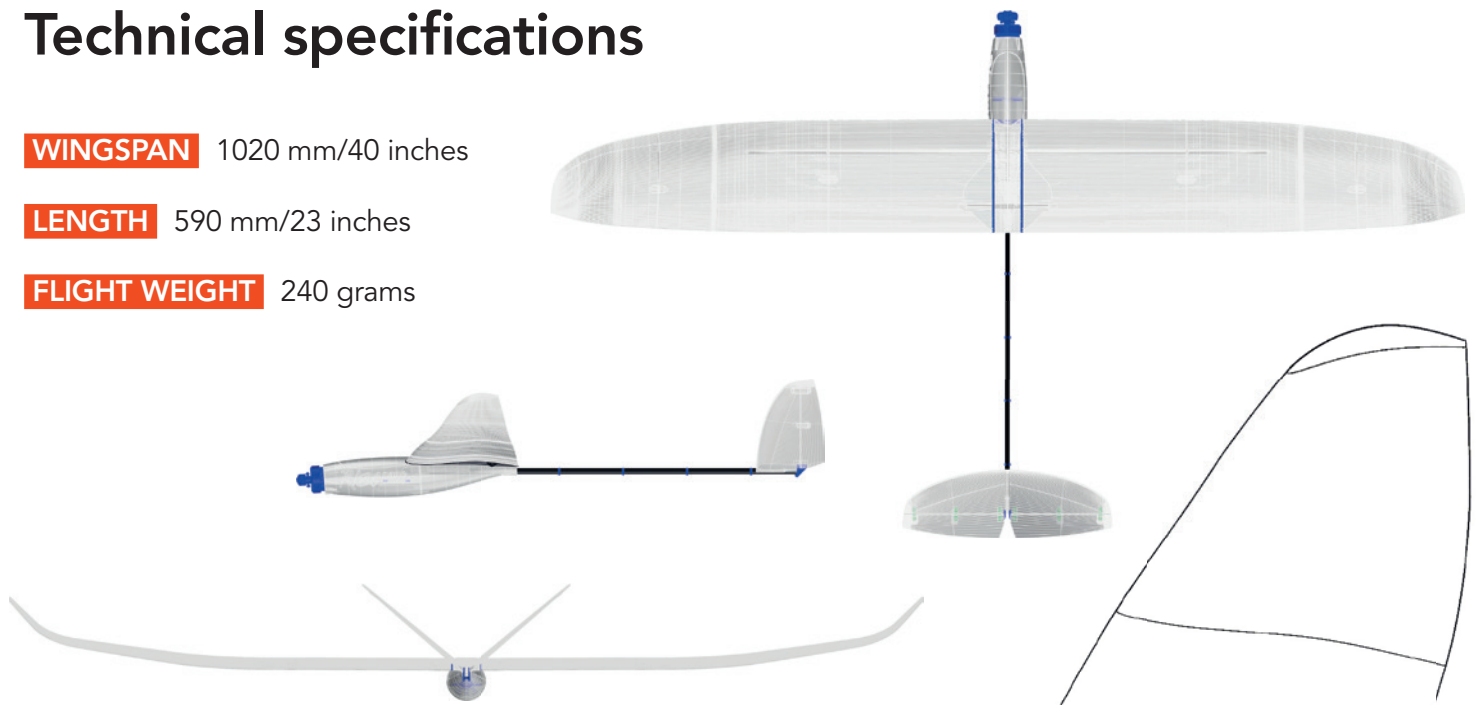
Neodym Super Magnets 5x5x5 mm

RC components

Motor
Battery
Controller
Servos
Receiver

Technical specifications

WINGSPAN 1020 mm/40 inches
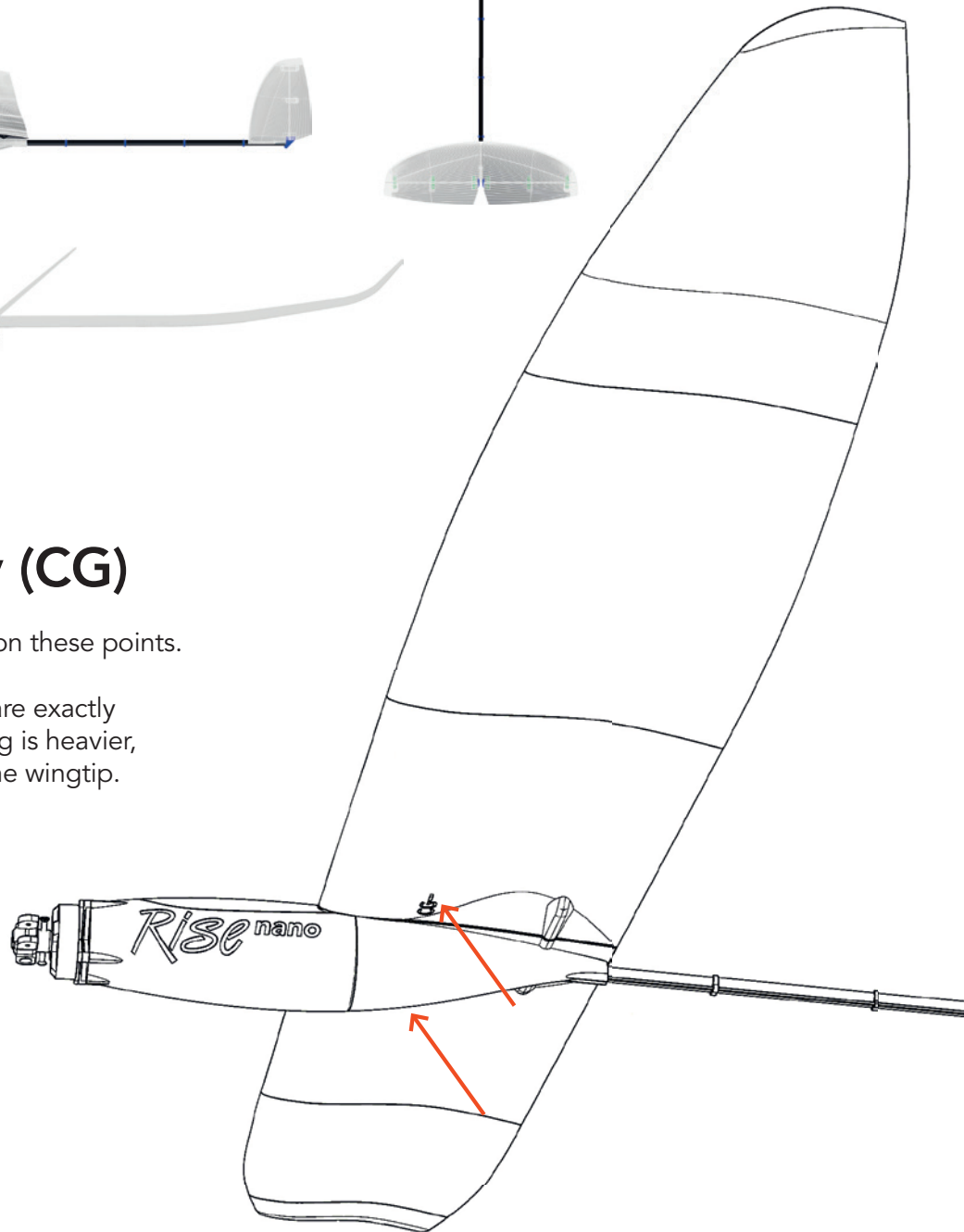
LENGTH 590 mm/23 inches

FLIGHT WEIGHT 240 grams

Center of Gravity (CG)

The aircraft must balance **precisely** on these points.

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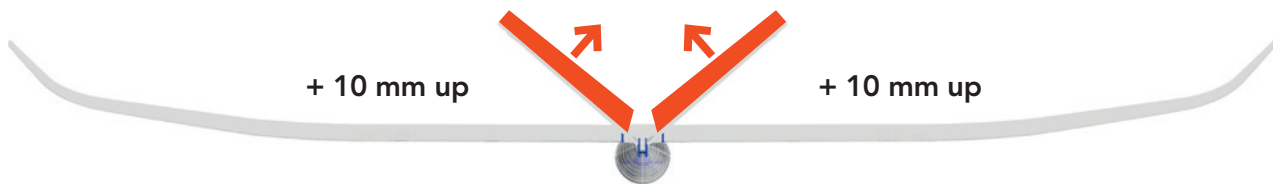
Flying tips

The RISE nano is **controlled by elevator and rudder only** and has no ailerons. However, it is recommended to use the rudder function in parallel on both control sticks (rudder and aileron). To do this, simply mix the aileron stick with the rudder stick.

The RISE nano has a wide speed range, which means you can fly it very fast or relatively slow. **In thermal conditions, the elevator should be trimmed up a few clicks** to climb optimally in the updraft. You can also program two flight phases for this.
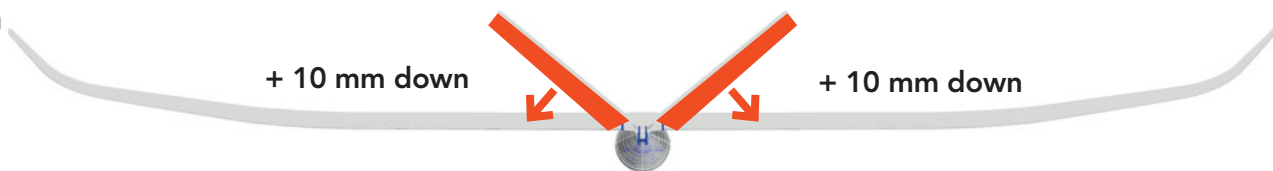
Settings for flying

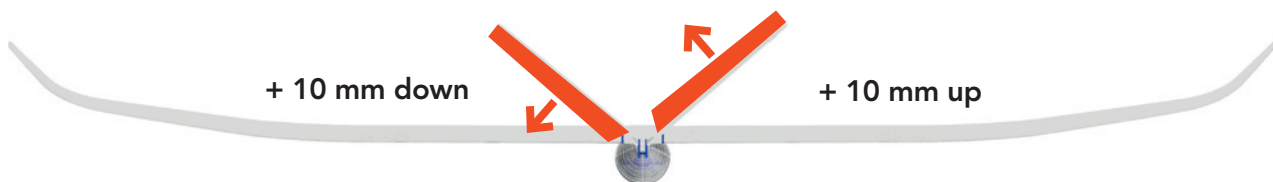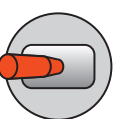When checking the control directions, **look at the aircraft from behind.**

Elevator up

+ 10 mm up   + 10 mm up

Elevator down

+ 10 mm down   + 10 mm down

Rudder left

+ 10 mm down   + 10 mm up

Rudder right

+ 10 mm up   + 10 mm down
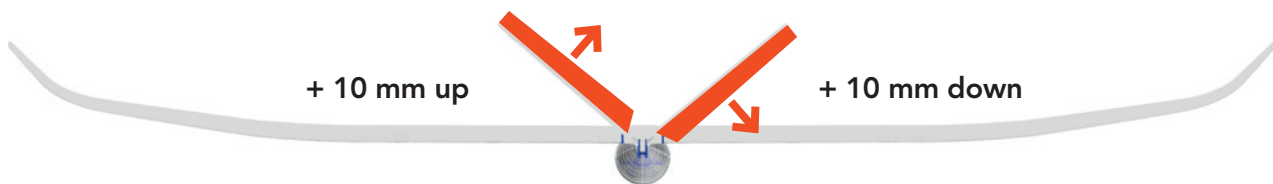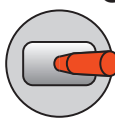
At full throttle the nose pulls up a bit, to avoid this you can mix some elevator down to the trottle (about 10%). But do not test this at the first start but at high altitude!

Full Throttle

~ 10 % down   ~ 10 % down
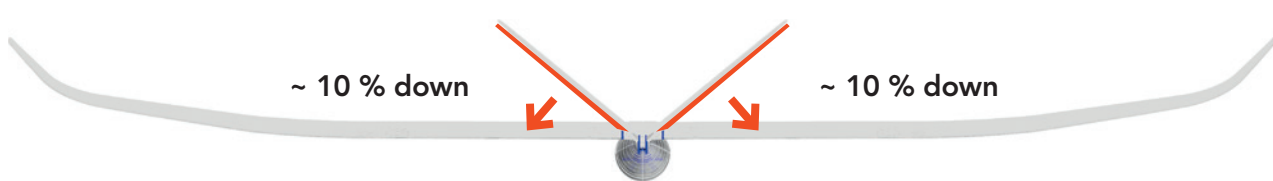
Do not forget to **program the motor brake in your controller**, otherwise the folding propeller will not stop.

Expo setting

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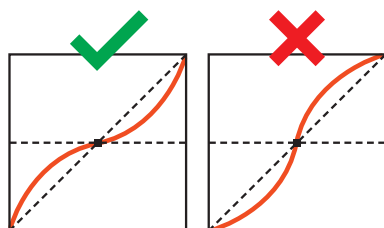
The STL data (or data processed from it, such as G codes) must never be passed on to third parties!

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!

PLANE PRINT