3DLab Gang

SWIFT S-1

Wingspan: **1380mm**
Length: **748mm**
Print weight: **271g**
Takeoff weight approx: **524g**
Wing area: **13 dm²**
Wing load: **40 g/dm²**

STL
Gcodes
Includes

What you need

Filament	PLA - roughly 120g PLA LW - roughly 200g
Hardware	M2x6mm screws -(at least 20x) 5x5x1mm magnets -(at least 2x) 3x3x1000mm spruce/pinewood sticks -(at least 3x) Ø1,2x1000mm carbon rod -(at least 3x) Ø3x1000mm carbon rod -(at least 2x) Ø3x1000mm aluminum tube -(1x optional for aileron drive) 4x4x1000mm carbon tube -(1x) 1-1,2mm steel wire or clevis for pushrods CA glue -(activator recommended)
Motor	AXI 2208/26 V2 or equal
ESC	MC-12A or 12-20A ESC
Servos	4x BlueBird BMS-126WV or equal (servo boards are made for this particular type or similar from the same brand)
Propeller	CAM 7x4
RX Bat.	Nano-Tech 460 mAh 2S 25-40C
ESC Bat.	Nano-Tech 450 mAh 3S 65-130C or single battery with BEC
RC	At least 5 Channel

Files are made for Cura slicer only!

Profiles

PLA Solid

Layer Heigh: 0,3mm
Initial Layer Heigh: 0,2mm
Line Width: 0,5mm
Wall line count: 1
Top layers: 50
Bottom layers: 50
Printing temperature: 225
Build plate temperature: 60
Print speed 60mm/s
Wall flow: 100
Initial layer flow: 74
Fan speed: 60%
Surface mod: Normal
Slicing tolerance: Middle

PLA 1 wall

Layer Heigh: 0,3mm
Initial Layer Heigh: 0,2mm
Line Width: 0,5mm
Wall line count: 1
Top layers: 0
Bottom layers: 0
Printing temperature: 225
Build plate temperature: 60
Print speed 60mm/s
Wall flow: 100
Initial layer flow: 74
Fan speed: 60%
Surface mod: Surface
Slicing tolerance: Middle

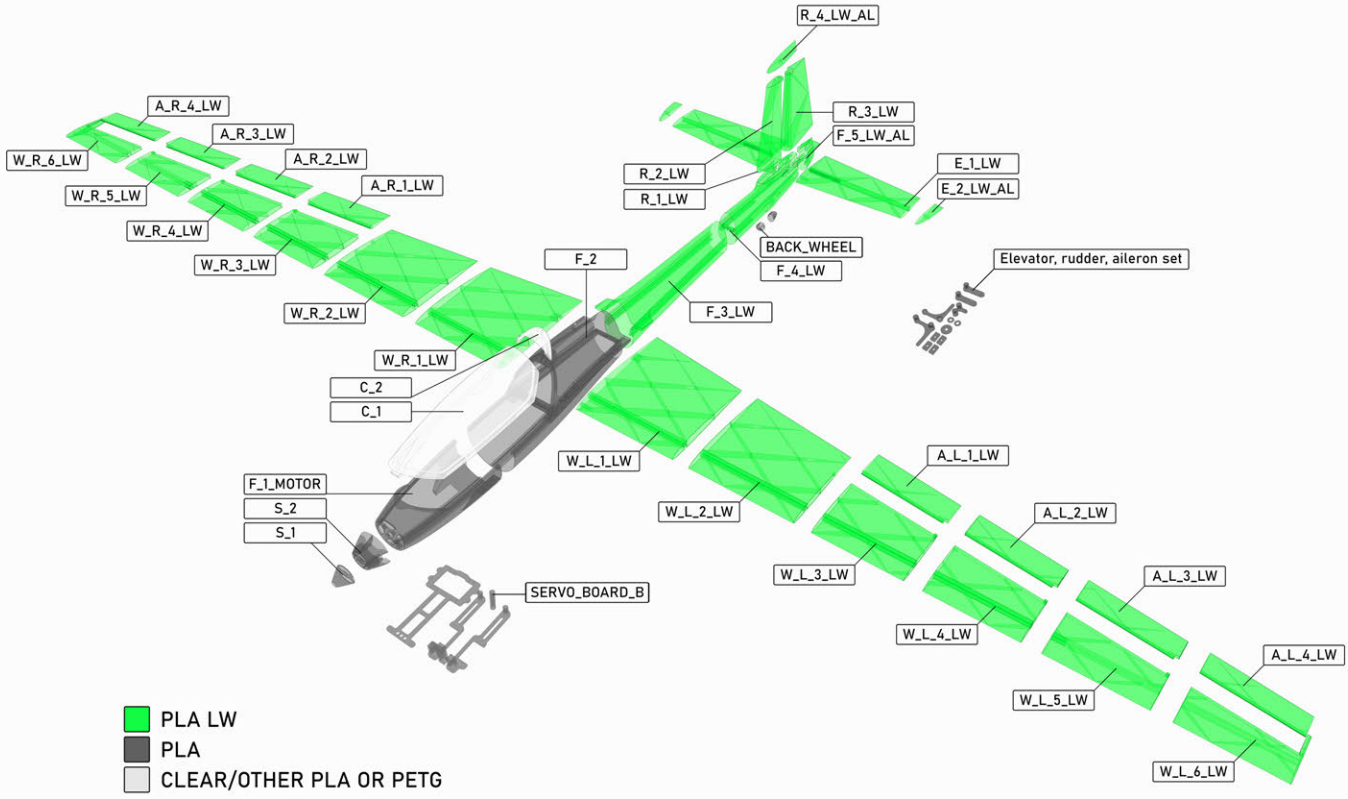
PLA LW 1 wall

Layer Heigh: 0,3mm
Initial Layer Heigh: 0,2mm
Line Width: 0,5mm
Wall line count: 1
Top layers: 0
Bottom layers: 0
Printing temperature: 225
Build plate temperature: 60
Print speed 30-60mm/s
Wall flow: 60
Initial layer flow: 60
Fan speed: 100%
Surface mod: Surface
Slicing tolerance: Middle

Use this as starting point to find sweet spot with your printer.

Before printing big parts make sure, that everything will fit perfectly (carbon spar, pinewood or carbon rods etc.)

Printed parts



Printed parts

Fuselage, Spinner - 91,66g motor version

S_1	0,6g
S_2	2,82g
F_1_GLIDER	19,67g
F_1_MOTOR	20,30g
F_2	39,93g
F_3_LW	17,26g
F_4_LW	9,80g
F_5_LW_AD	0,95g

Wing, Ailerons - 122,18g

W_L_1_LW	16,51g	W_R_1_LW	16,51g
W_L_2_LW	13,65g	W_R_2_LW	13,65g
W_L_3_LW	7,31g	W_R_3_LW	7,31g
W_L_4_LW	5,36g	W_R_4_LW	5,36g
W_L_5_LW	4,33g	W_R_5_LW	4,33g
W_L_6_LW	4,14g	W_R_6_LW	4,14g
A_L_1_LW	2,95g	A_R_1_LW	2,95g
A_L_2_LW	2,61g	A_R_2_LW	2,61g
A_L_3_LW	2,28g	A_R_3_LW	2,28g
A_L_4_LW	1,95g	A_R_4_LW	1,95g

Elevator, Rudder - 20,57g

E_1_LW	8,26g 2x
E_1_LW_AD	0,36g 2x
R_1_LW	4,09g
R_2_LW	0,72g
R_3_LW	6,52g
R_4_LW_AL	0,62g

Canopy - 23,91g

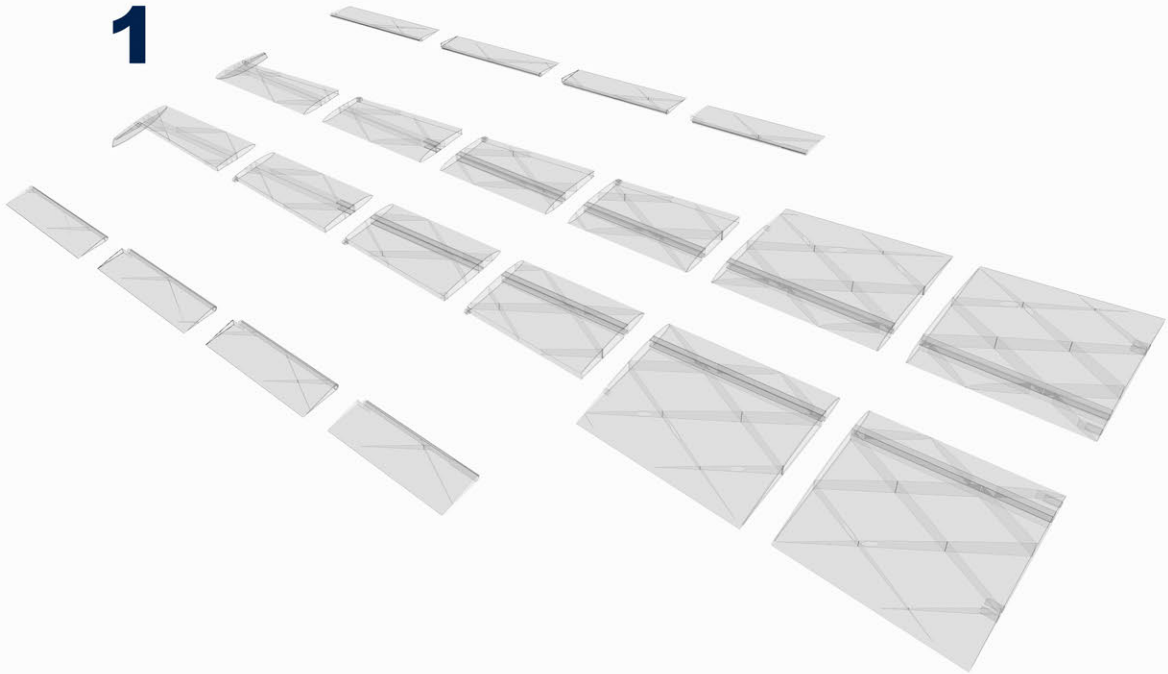
C_1	23,06g
C_2	0,85g

Accessories

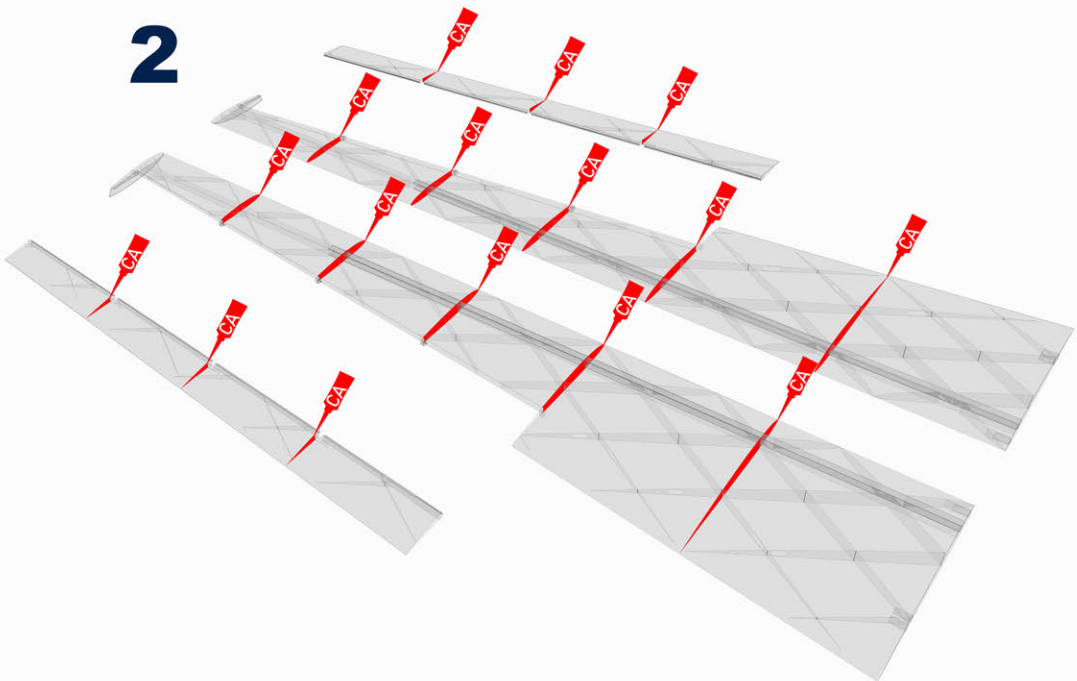
SERVO_BOARD_A	5,36g
SERVO_BOARD_B	9,38g
BACK_WHEEL_AL	0,36g
ELEVATOR, RUDDER, AILERON SET	2,91g

Assembly
Wings

1

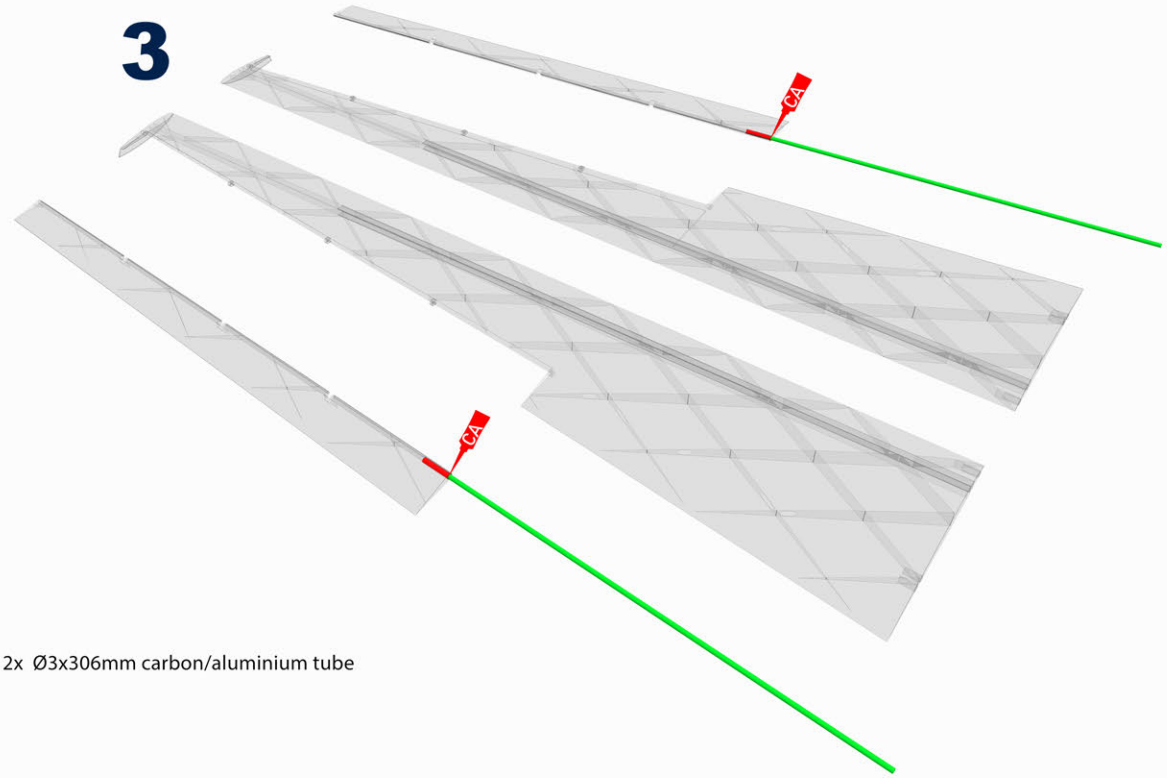


2



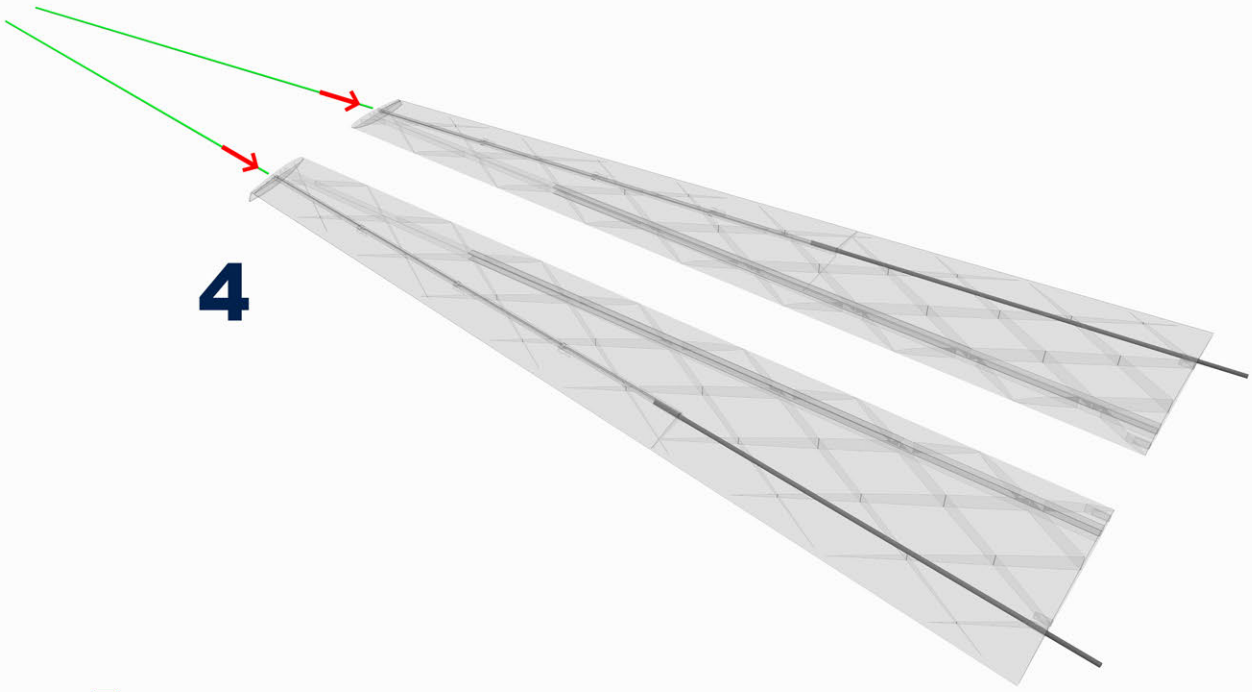
Assembly
Wings

3



2x Ø3x306mm carbon/aluminium tube

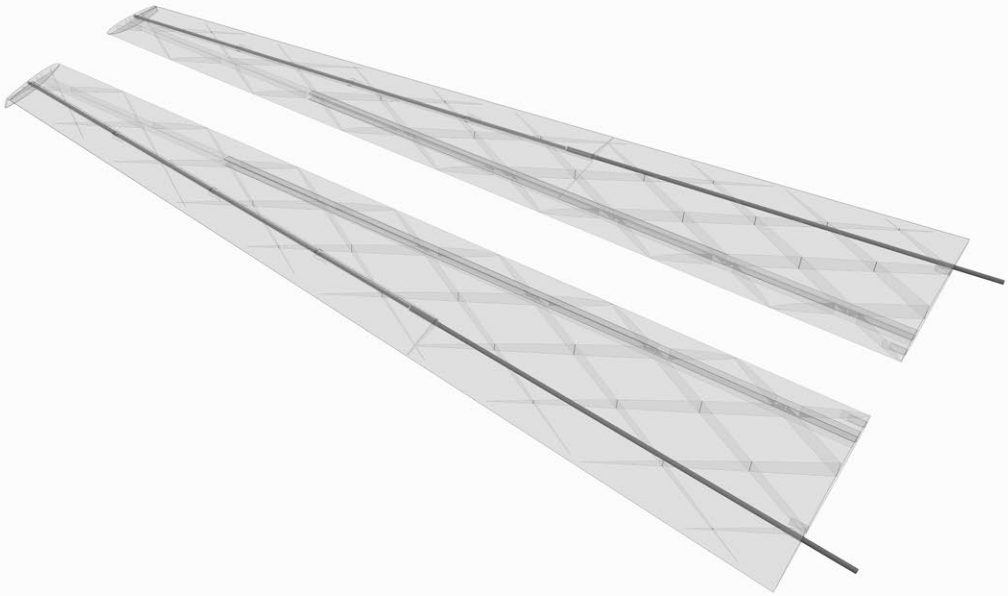
4



2x Ø1,2x386mm carbon rod

Assembly
Wings

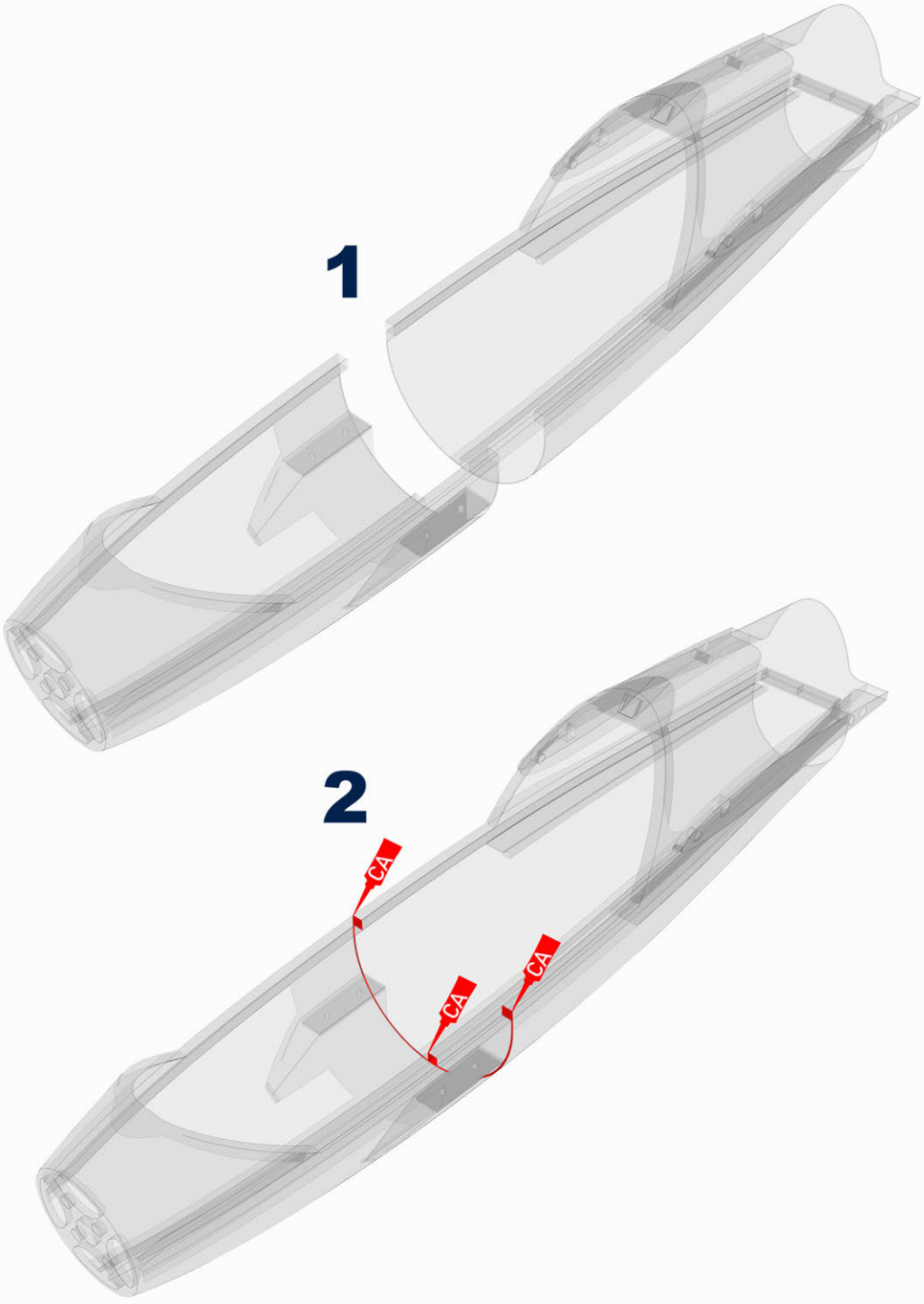
5



Final wings

Assembly

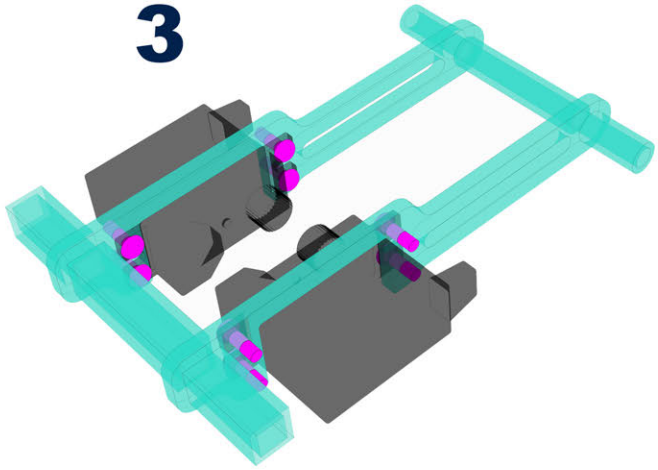
Fuselage part 1

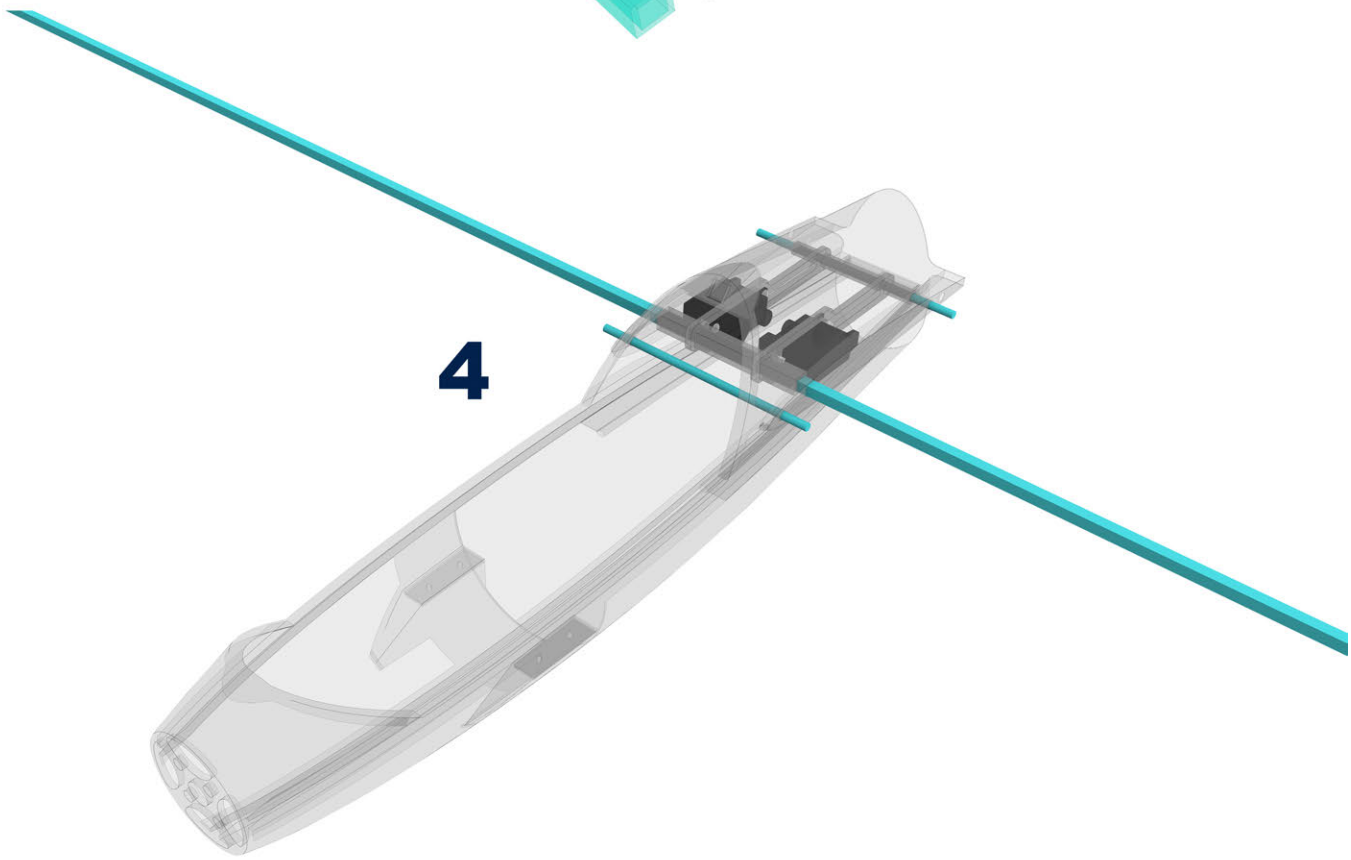


Assembly
Fuselage part 1

3

8x M2x6mm
SERVO_BOARD_B

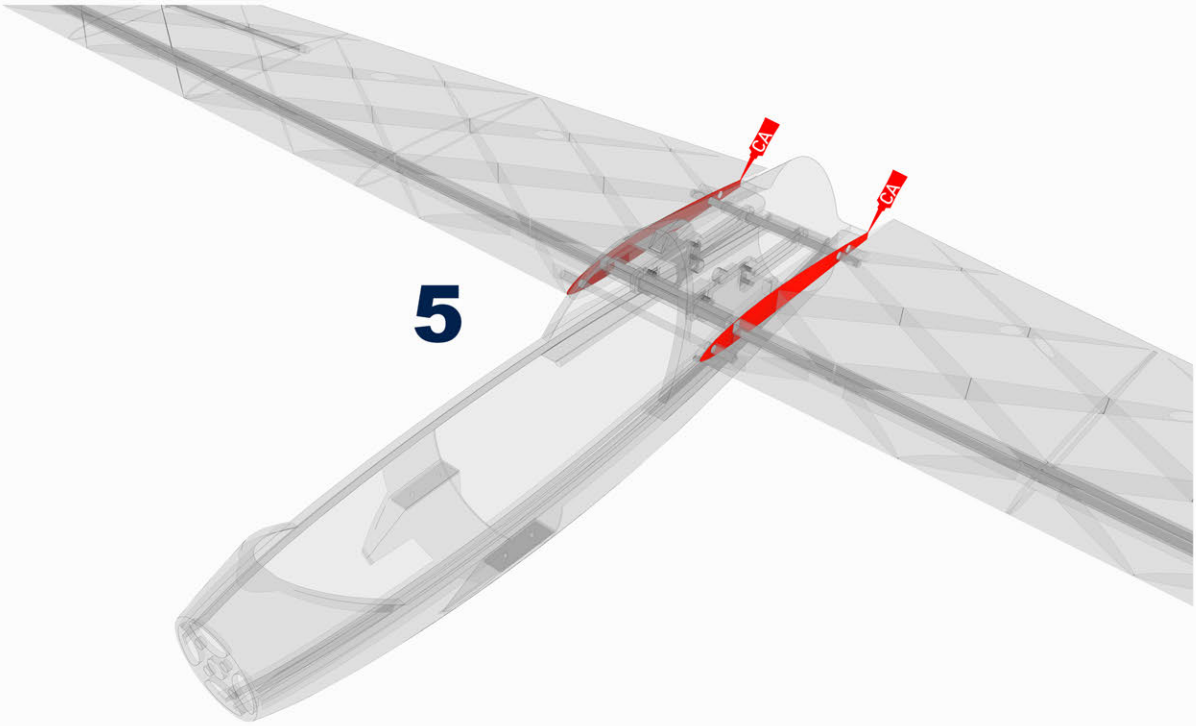


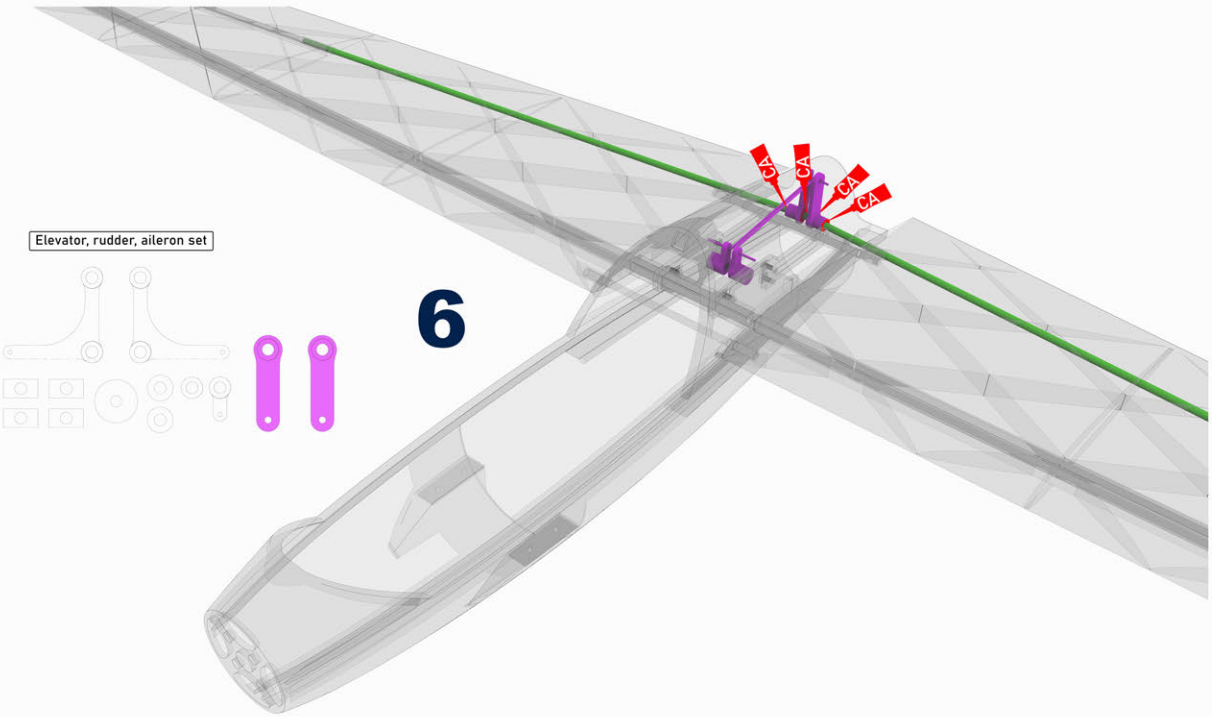


4

1x 4x4x1000mm carbon tube
2x Ø3x86mm carbon rod

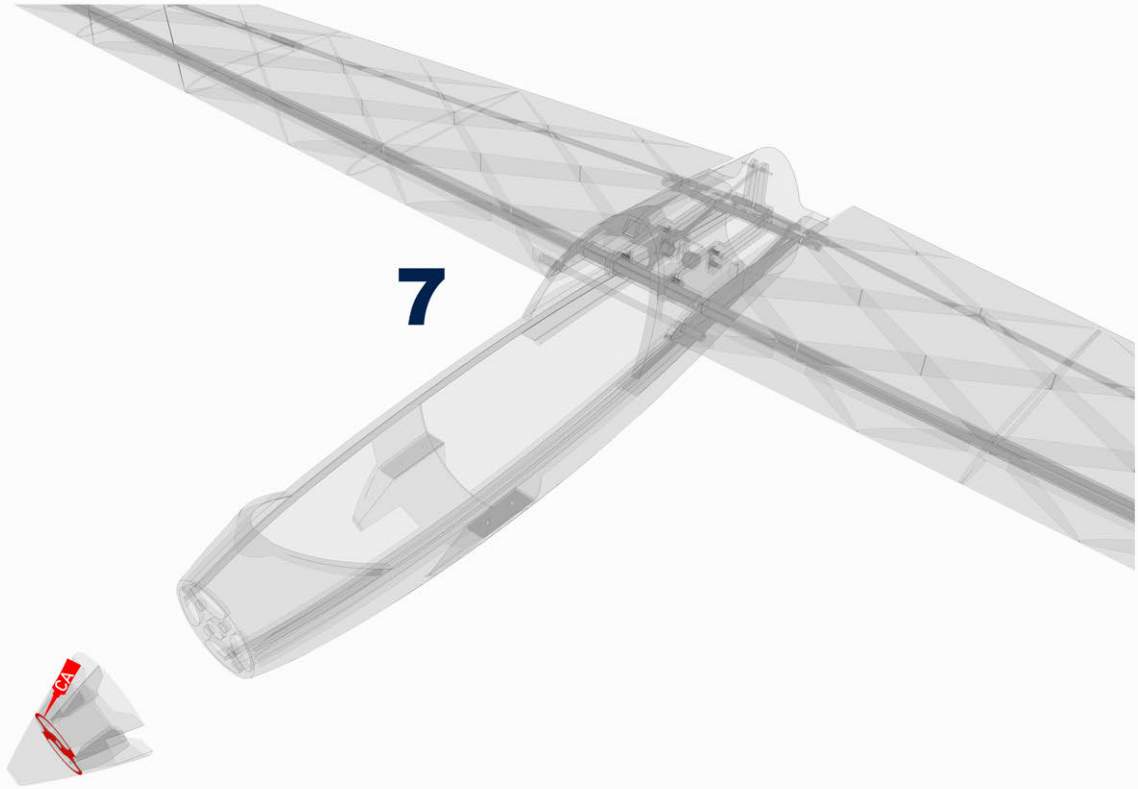
Assembly
Fuselage part 1

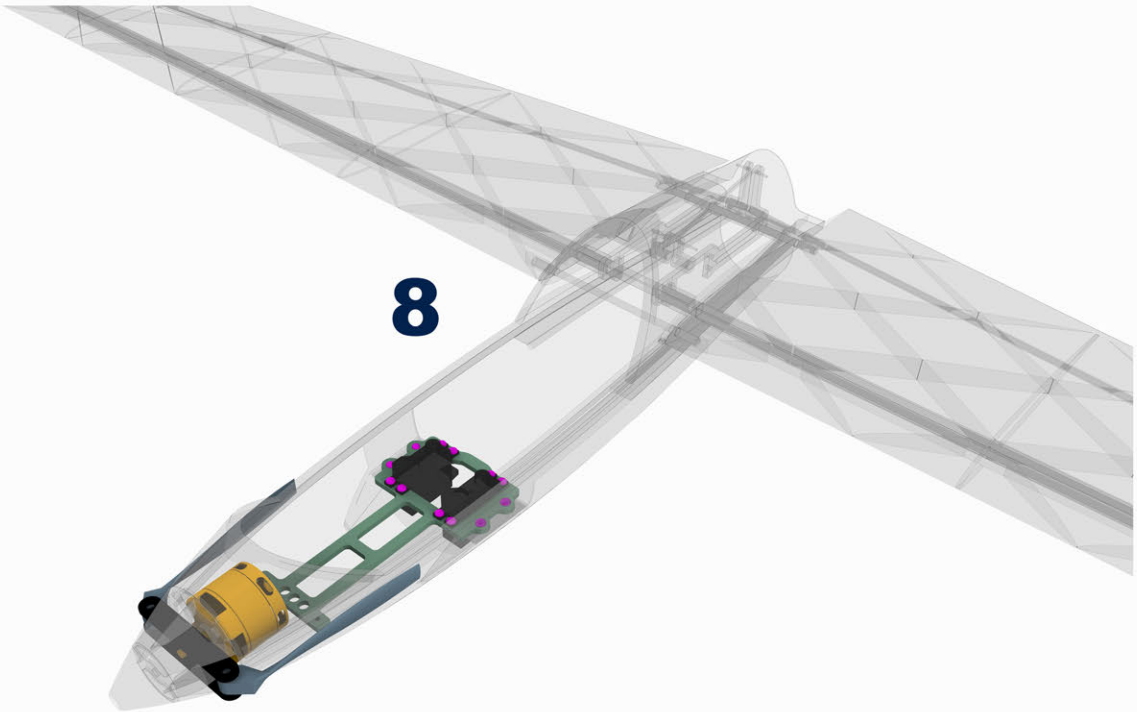




2x Ø3x306mm carbon/aluminium tube
2x servo and 2x printed horns

Assembly
Fuselage part 1





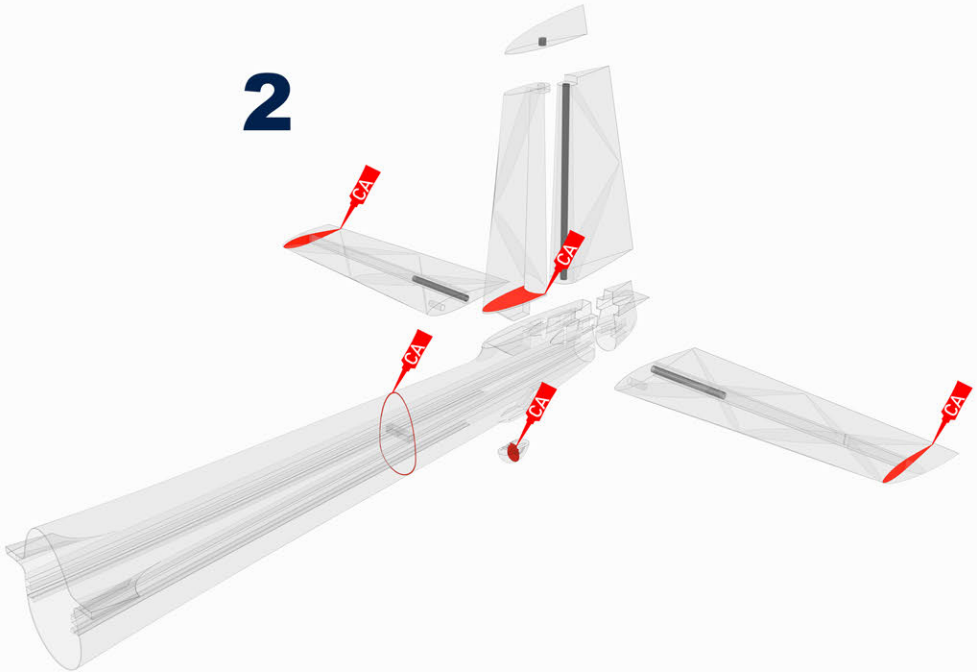
- Motor
- 12x M2x6mm screws
- Servo Board B

Assembly

Fuselage part 2

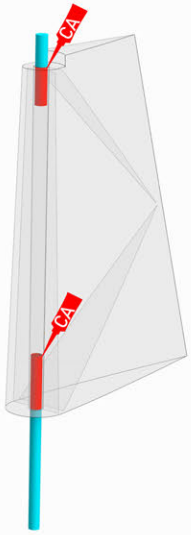
1

2

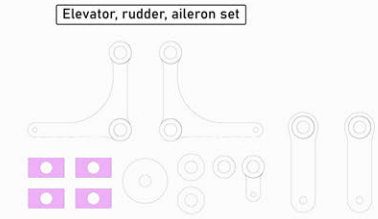


Assembly
Fuselage part 2

3



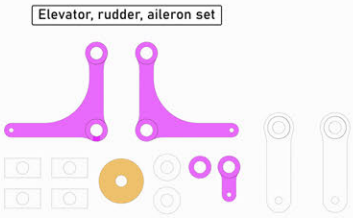
1x Ø3x28mm carbon rod
1x Ø3x65mm carbon rod



4

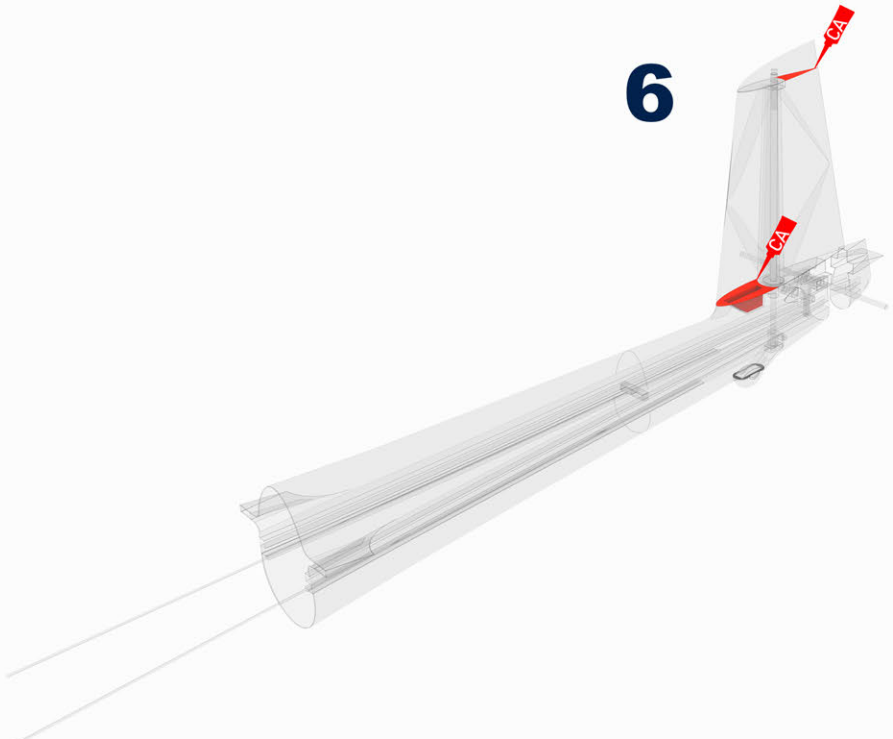
Assembly
Fuselage part 2

5

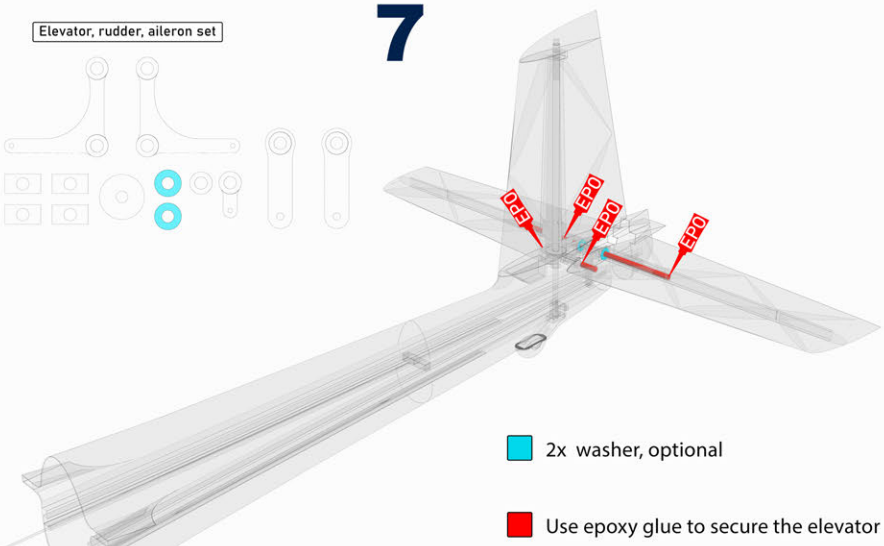


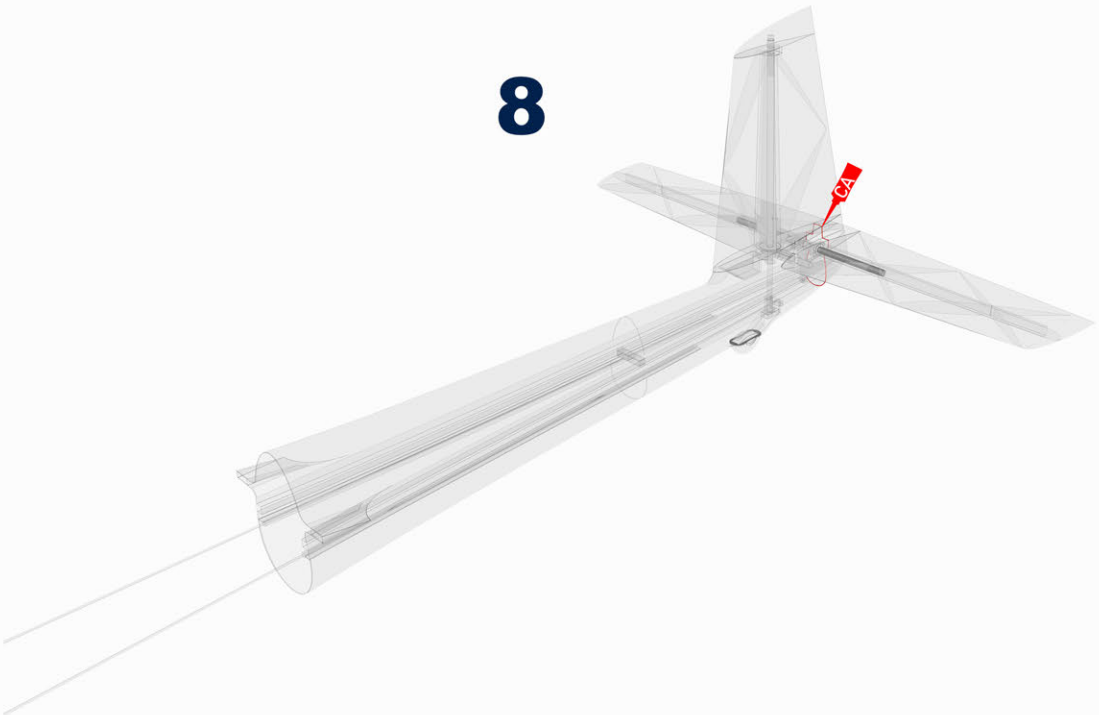
- 1x Ø3x37mm carbon rod
- 1x Ø3x107mm carbon rod
- Elevator, rudder, aileron set
- 2x Ø1,2x600mm carbon rod with clevis or steel rod with L bend

6



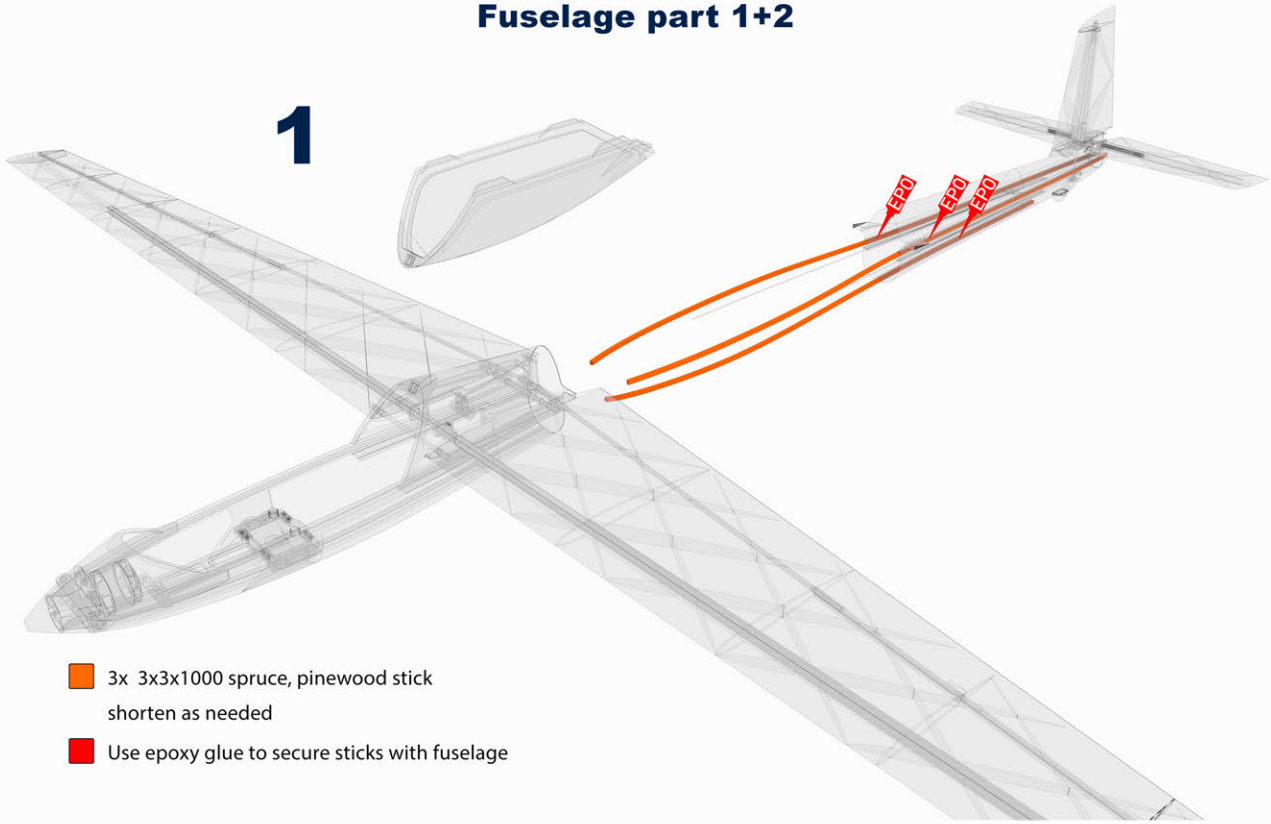
Assembly
Fuselage part 2





Assembly
Fuselage part 1+2

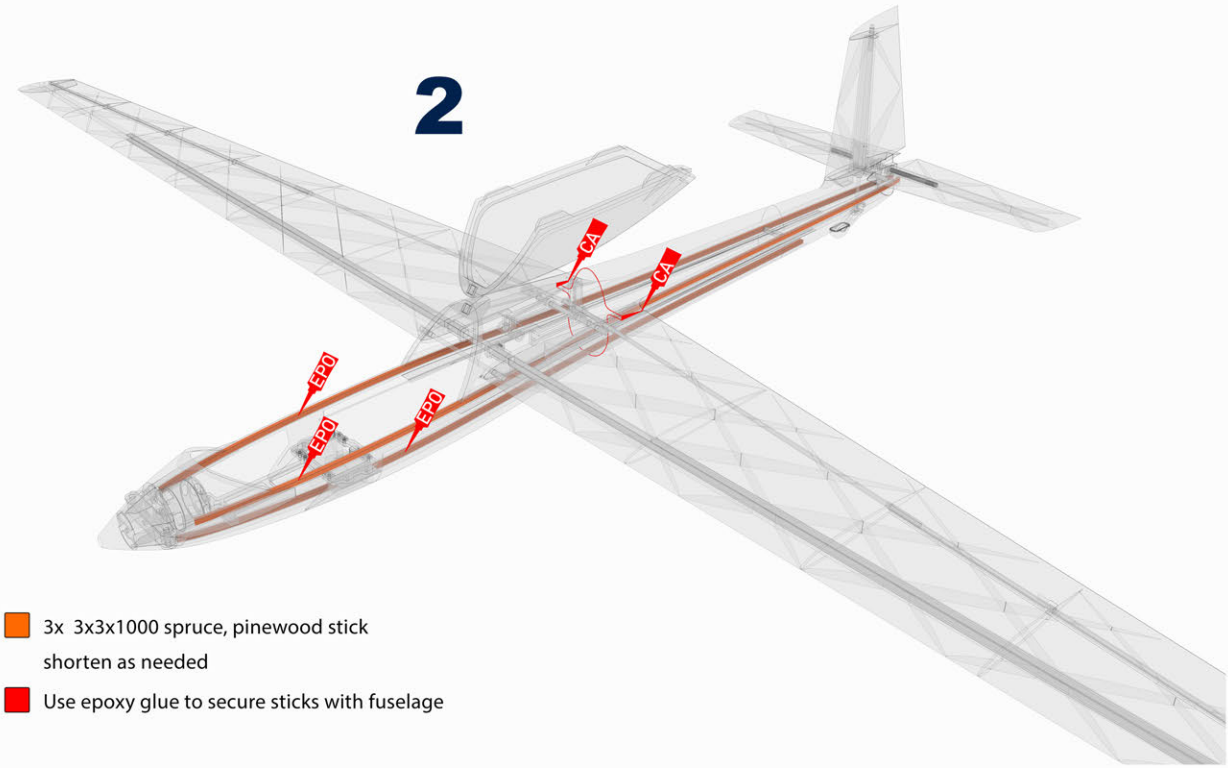
1



3x 3x3x1000 spruce, pinewood stick
shorten as needed

Use epoxy glue to secure sticks with fuselage

2

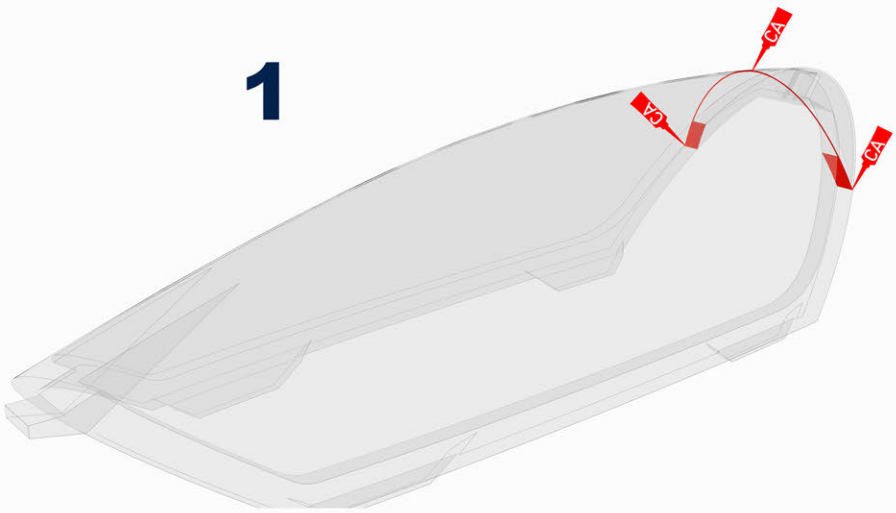


3x 3x3x1000 spruce, pinewood stick
shorten as needed

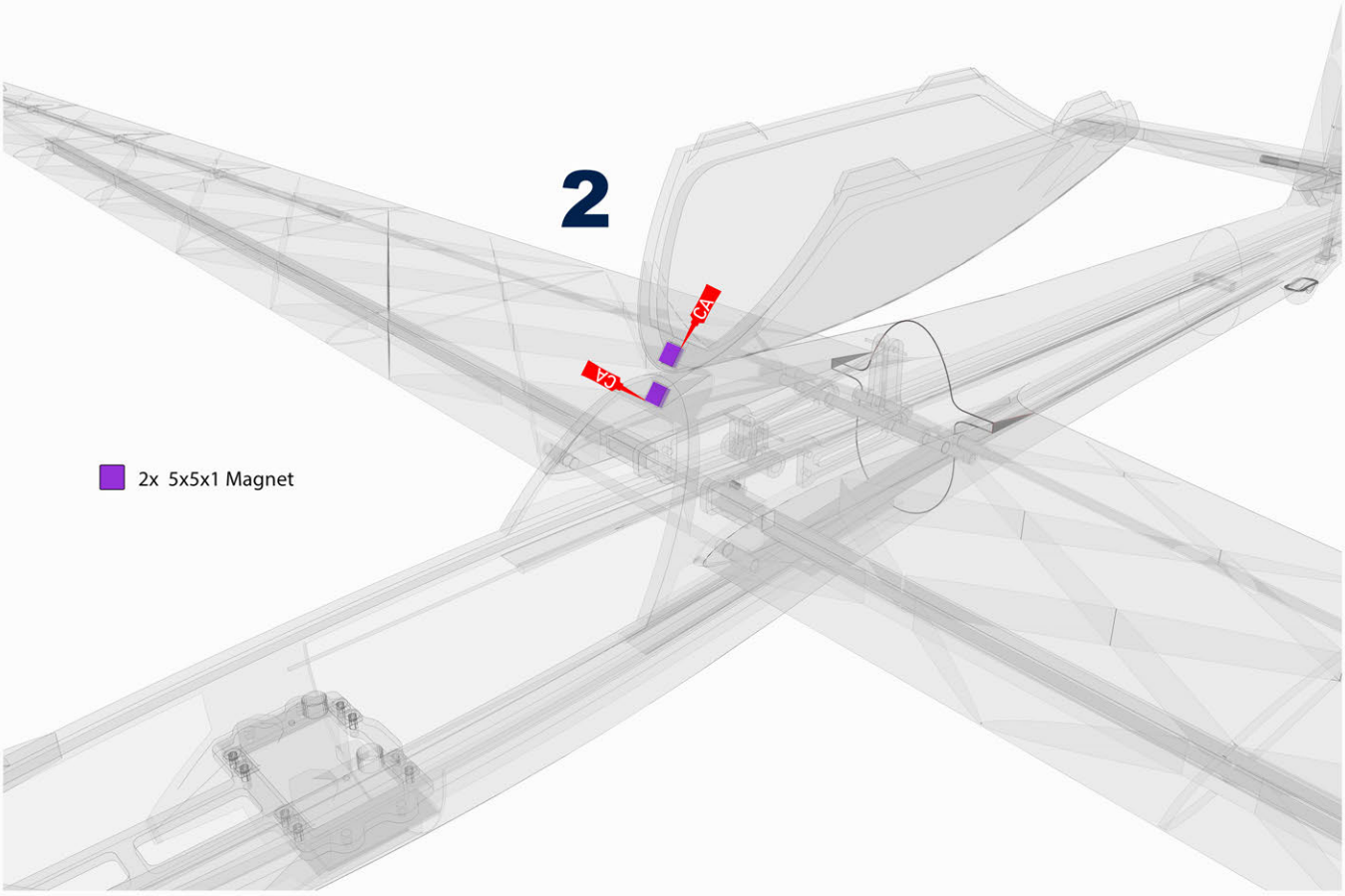
Use epoxy glue to secure sticks with fuselage

Assembly
Canopy

1

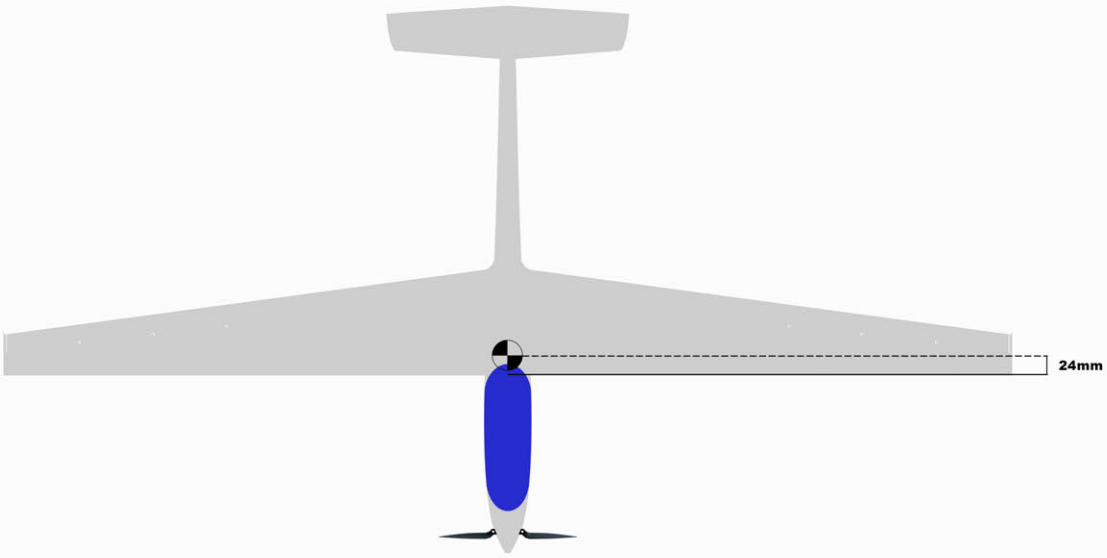


2



Center of gravity

24mm is great for maiden flight. If you feel comfortable, you can try to set center of gravity a bit backwards



Control deflections

Here are basic deflections, which is good to use as starting point. There are many options to change the flight charecteristics.

Ailerons	+12mm
	- 12mm
Elevator	+8mm
	- 8mm
Rudder	+32mm
	- 32mm