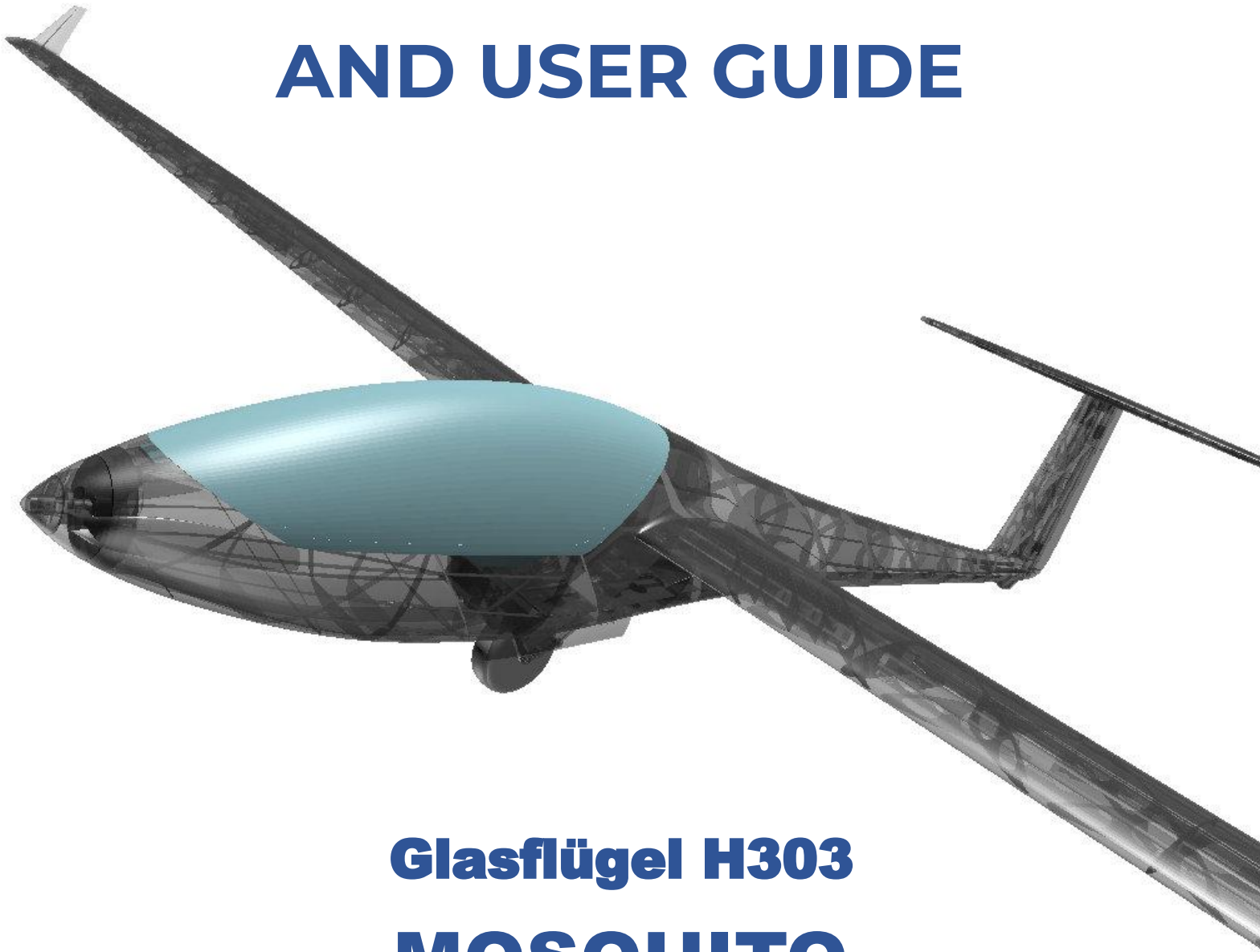


# **ASSEMBLY MANUAL AND USER GUIDE**



## **Glasflügel H303 MOSQUITO 3000mm**

By 3D AEROWORKS



## OVERVIEW:

This scale replica of Glasflugel's H303 Mosquito is designed for quick and easy construction and printed using a combination of regular PLA. Designed to suit the 3536 1250kv motor this model has more than enough power for its size. Utilizing up to 7 channels; Ailerons, Elevator, Flaps, Rudder, Airbrakes, Throttle, Landing gear with Gear doors, this model is sure to turn some heads at the local flying field. Links to components used can be found on the last page of the user guide.

## GENERAL SPECIFICATIONS

WINGSPAN:	3000mm
PRINT WEIGHT:	1600g
FLYING WEIGHT:	2500g
CENTER OF GRAVITY	55mm aft of L.E at wing root. (Marked with indentation)

## BUILD OPTIONS:

This model comes with different build options depending on your budget, skill level and desire for use of parts and components. Please carefully read this assembly manual before you decide which wing you are going to print.

**Wing option 1:** Wing "A" is designed to be a scale replica of the full size H303 Mosquito, with scale flap and trailing edge airbrakes. This wing is more complicated to assemble than the "B" wing. Only attempt this wing if you have intermediate building skills.

**Wing option 2:** Wing "B" is designed to be a simple wing with basic flaps and ailerons. This wing is designed for beginner builders.

**Wingtip options:** Three options for wingtips are included:

- Standard mosquito tip
- LS8 tip
- 4 meter tip (increases the total wingspan to 4m)

## ELECTRICS

MOTOR:	3536 1250kv
ESC:	50 amp (min)
SERVOS:	HXT 9g 1.5kg , 903MG 2.6kg, 15148BMG 1.7kg
BATTERY:	4500mah 4S 50c (420g) (or similar)



### INCLUDED WITH THESE FILES

**STL** files for all parts (scale to **1000%** if not using S3D)

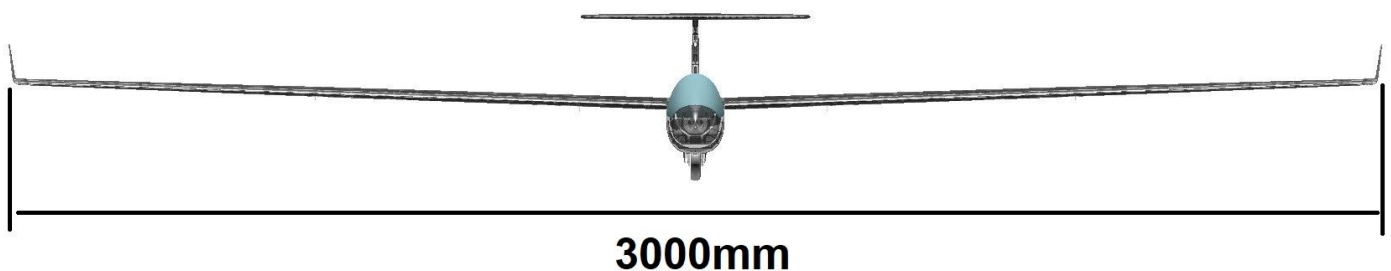
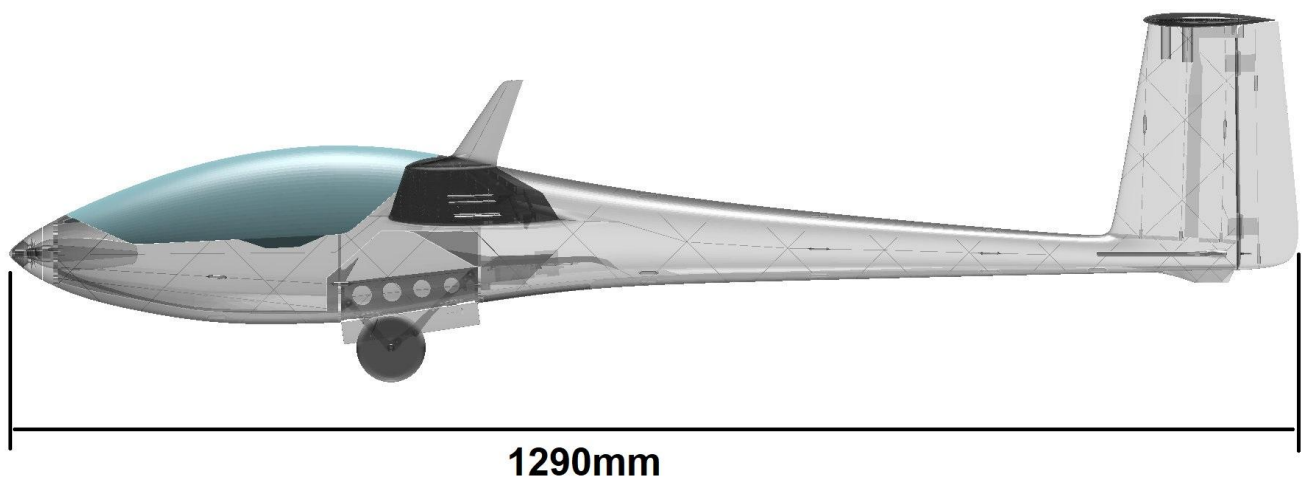
**FFF** factory files for Simplify 3d

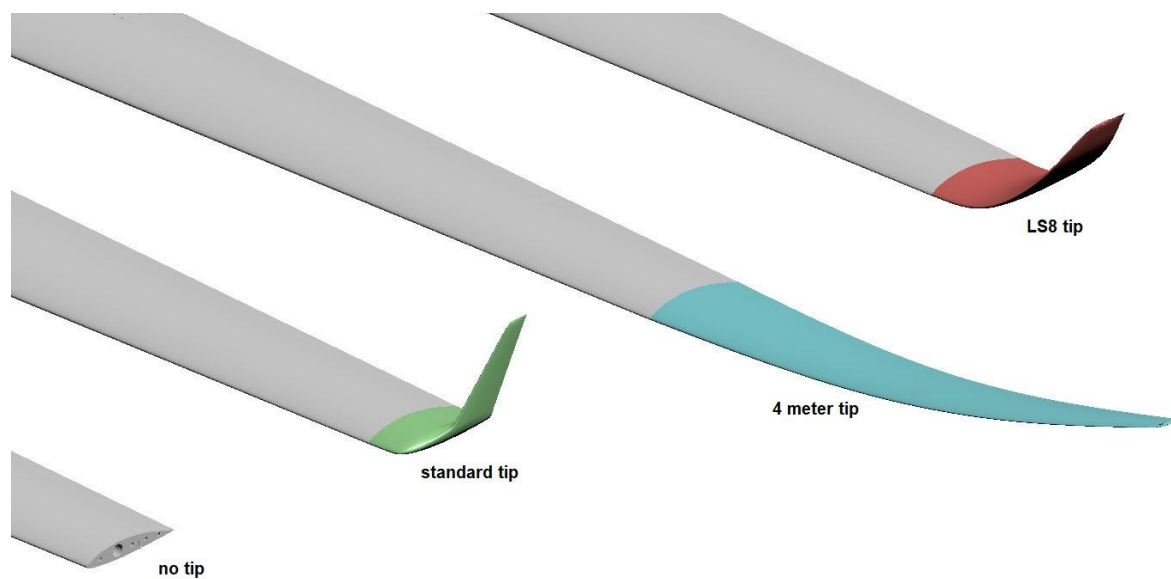
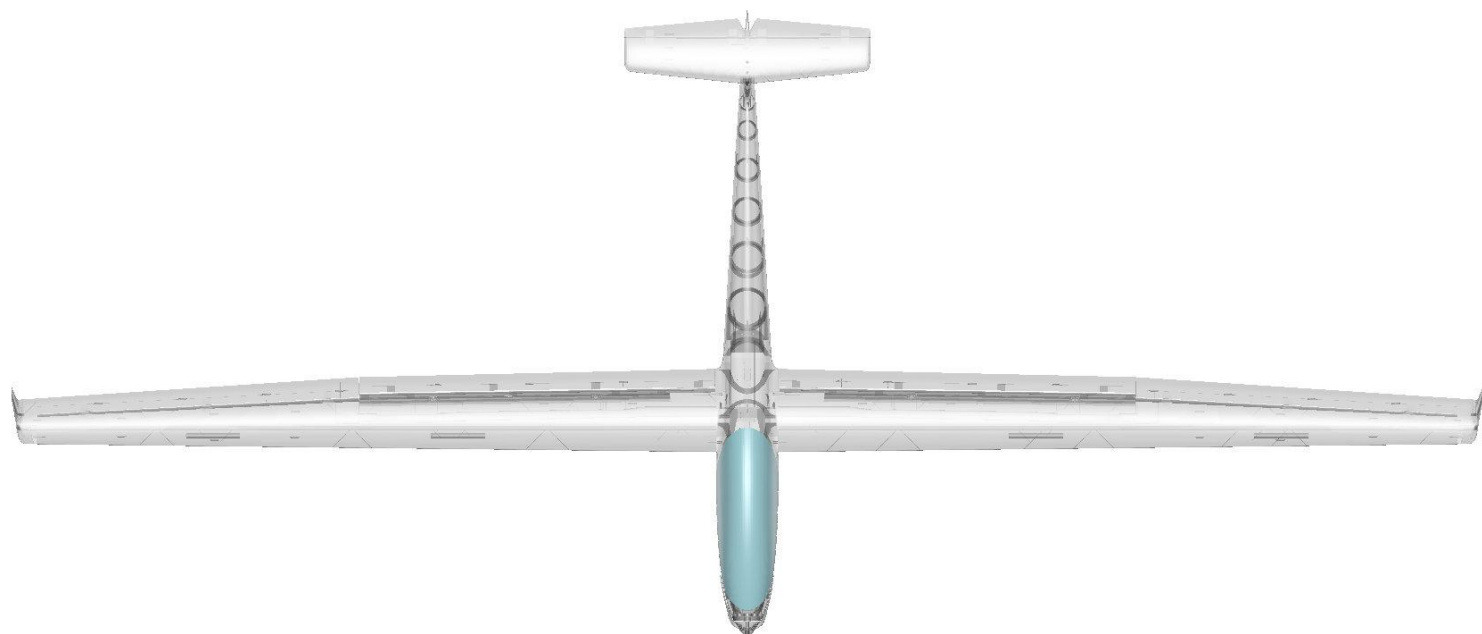
**GCODE** files for all components

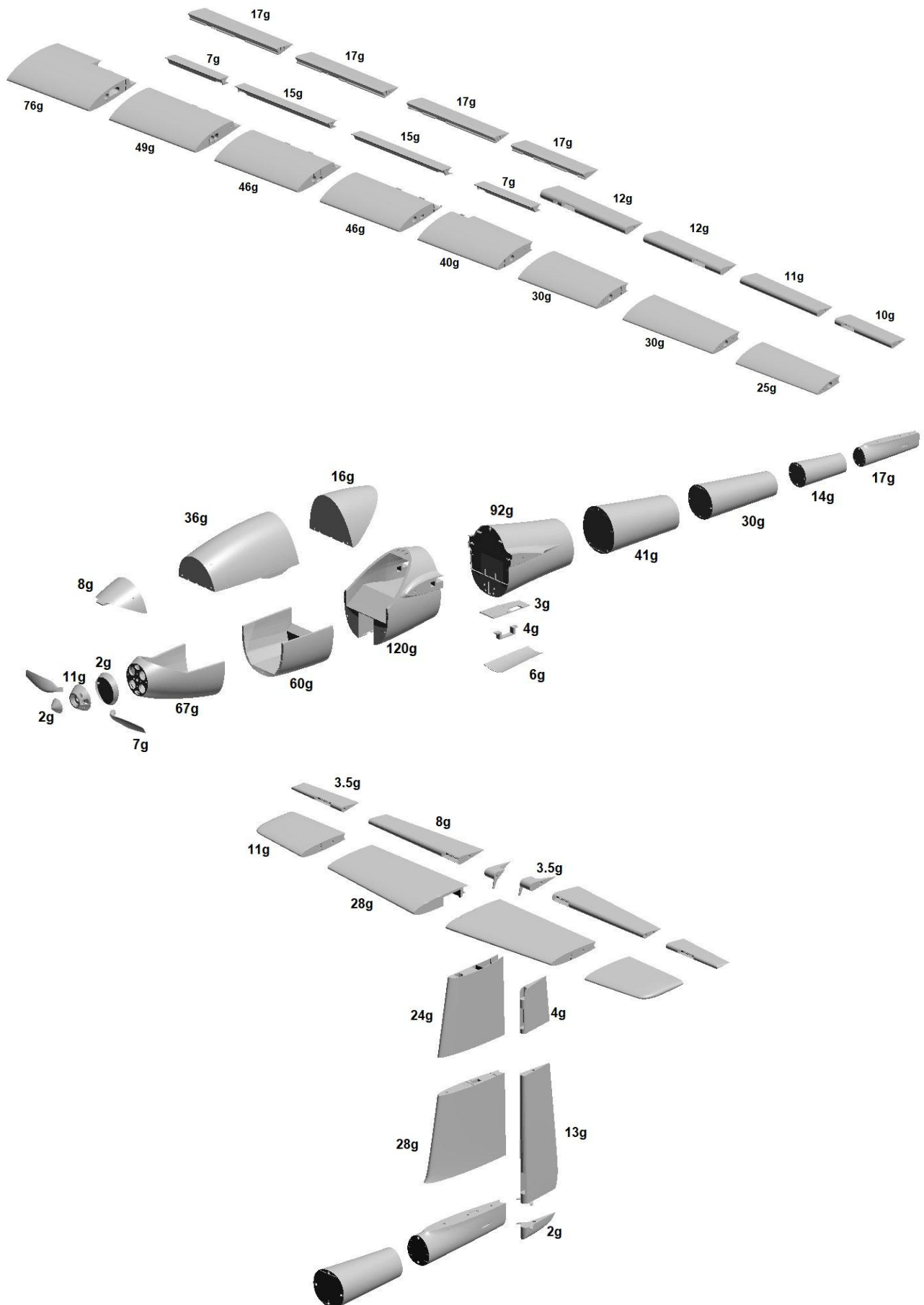
### ***HELP US CONTINUE TO PRODUCE QUALITY MODELS***

This model has taken many hours of hard work and testing in order to provide a nice flying aircraft. Please do not share it. Please show your appreciation by directing interested parties to the link below.

<https://cults3d.com/en/3d-model/various/glasflügel-h303-mosquito>











## REQUIRED TOOLS:

KNIFE

LIGHTER

SANDPAPER (MEDIUM GRIT 320)

PLIERS

CA GLUE + HOT GLUE

SCREW DRIVERS (PHILLIPS AND HEX)

FILE (flat)

DRILL AND BITS (1mm, 2mm, 3mm, 6mm, 10mm)

SOLDERING IRON

## REQUIRED COMPONENTS:

X1 3536 1250kv brushless outrunner

X1 50amp esc

X1 4500mah 4s 50c LIPO OR SIMILAR (420g)

X9 9g servo (**wing "A"**)

X5 9g servo (**wing "B"**)

X1 15148BMG 1.7kg (21g) (gear)

X1 903MG 2.6kg (elevator)

1mm Piano wire

2mm Piano wire (threaded on one end)

3mm steel rod (min 35mm)

X6 10x10x2mm Magnet (ROUND)

X11 16x29mm nylon hinges (**wing "A"**)

X17 16x29mm nylon hinges (**wing "B"**)

X4 m2 linkage stopper

X4 M2 x8mm countersunk screws

M2 screws assorted (5mm - 14mm)

X2 M3 x20mm pan head wood screws

X2 M3 x15mm machine thread/hex head

X8 M3 x10mm machine thread

X7 10x8mm round carbon rolled tube (500mm)

X1 8x6mm carbon rolled tube (500mm)

X1 10x10x6.5mm square carbon tube (500mm)

X1 10mm wooden dowel (100mm min)

X1 70mm foam wheels

Velcro

Braided fishing line (or similar)

Bamboo skewers 3mm

0.3x4mm springs

X2 sets 8 pin plugs (OPTIONAL)

5m Servo wire 26AWG

X4 m2 ball joint linkage (**wing "A"**)



# ASSEMBLY INSTRUCTIONS

## 1 FUSELAGE ASSEMBLY

All faces which are to be glued to other parts need to be given a light sanding (scuff the surface) to assist with glue adhesion.

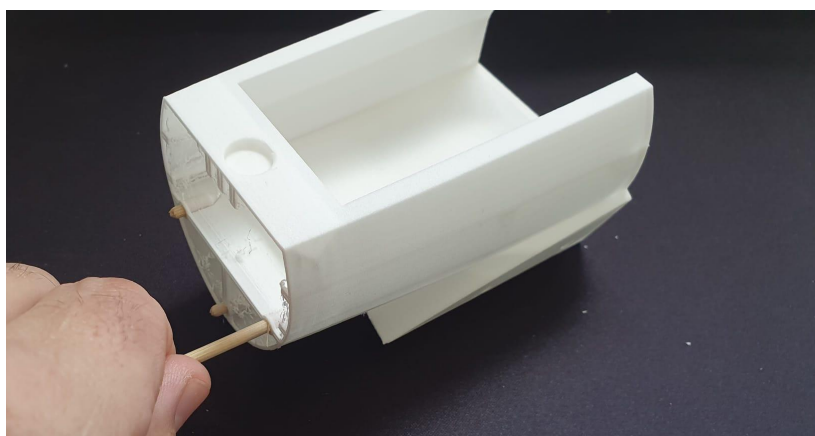


## 2

Cut 15mm sections of skewer and place into alignment holes in the fuselage sections.

**NOTE** - It may be required to open up the holes a small amount if the fit is too tight. Do this by using a 3mm drill bit. Gently spin it in reverse as you insert it into the hole. This will ensure the bit does not tear the print.

Test fit the sections of the fuse before gluing to ensure a clean fit.

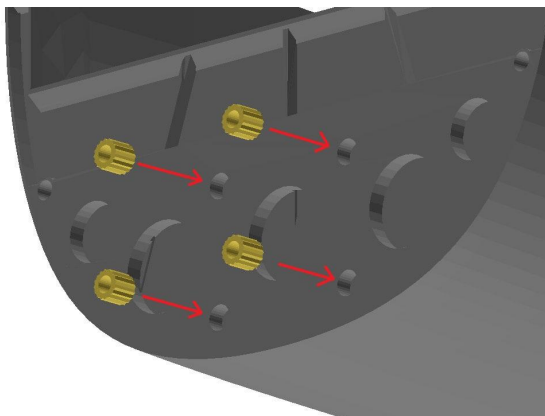




3

Using a hot soldering iron, press/melt the brass inserts into the slots in fuse sections 3 and 5.

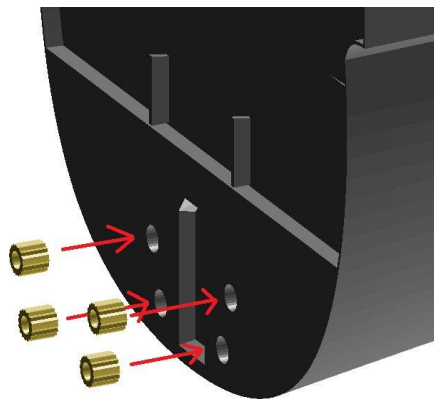
### FUSE 3



Place insert on slot



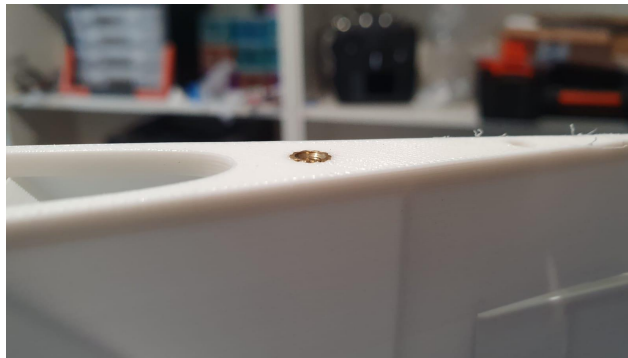
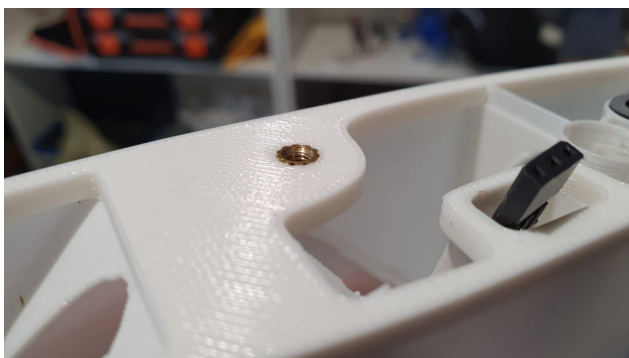
### FUSE 5



Press into place with hot soldering iron



INSTALLED CORRECTLY







**4**

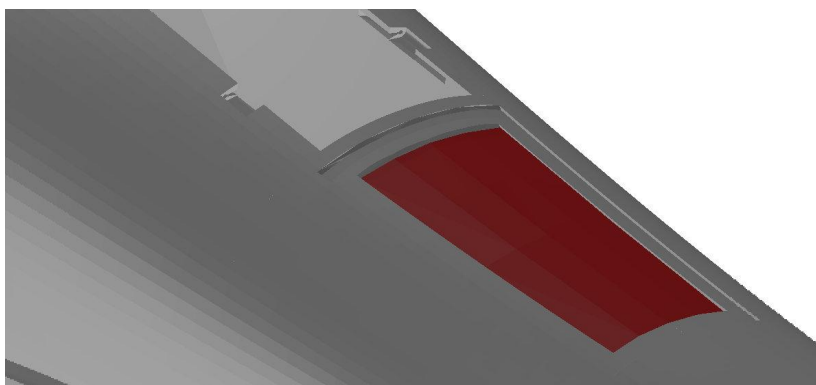
Test fit the landing gear mount plates to check the location of the brass inserts. Use m3x10mm machine screws.

**5**

Glue all sections of the fuselage together using CA.

**6**

Remove the inner face from the belly hatch using a sharp knife or hot wire. (see pic/ highlighted faces)



**7**

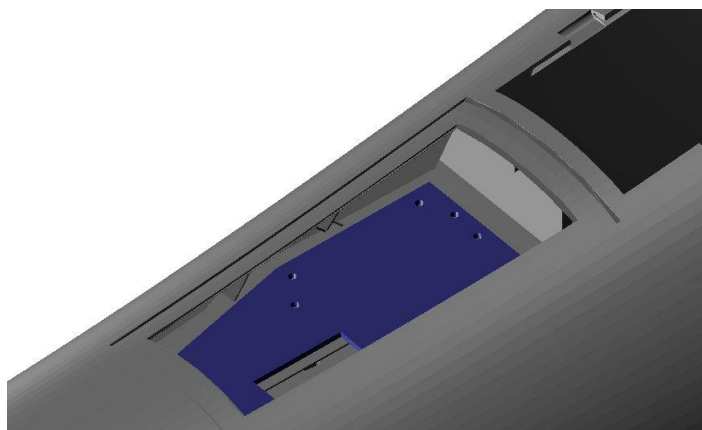
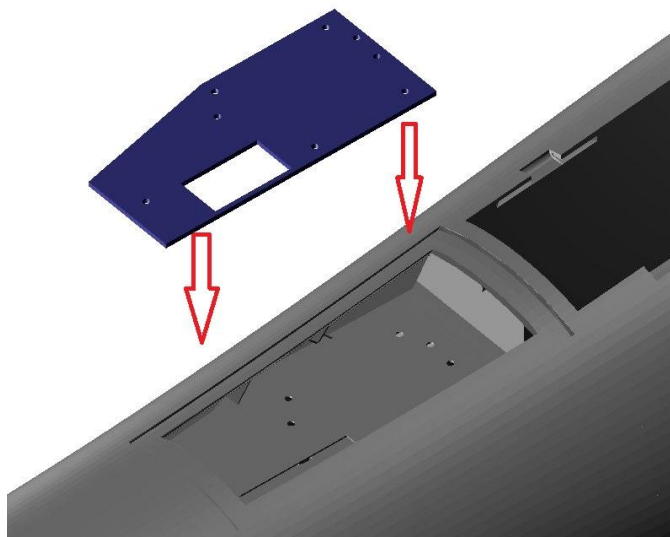
Remove the elevator servo wire opening face from fuse 9 hatch using a sharp knife or hot wire. (see pic/ highlighted faces)





8

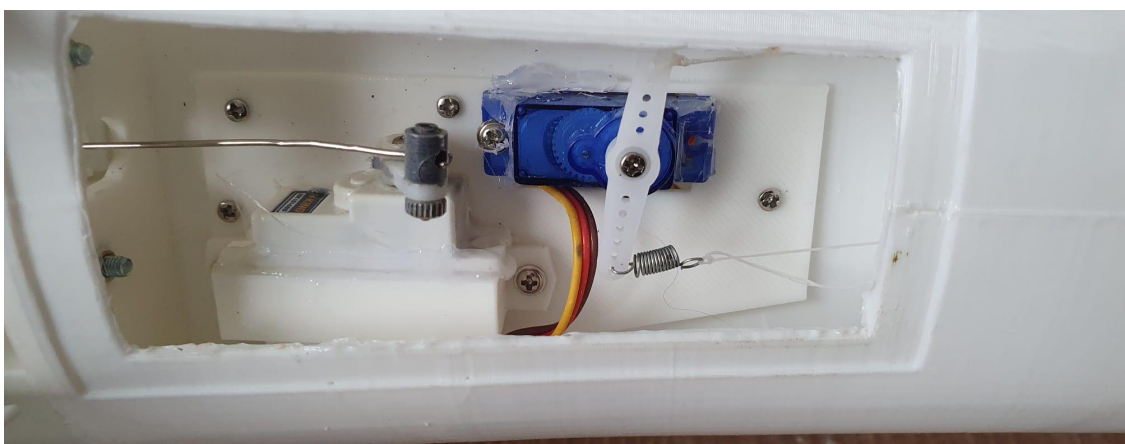
Install the gear and rudder mount plate in through the belly opening. Fit the part using m2 screws.



9

Install the rudder servo (9g 1.6kg) using m2 screws.

Install the gear servo (15148BMG 1.7kg) to the mount plate using the gear clamp and hot glue as required.





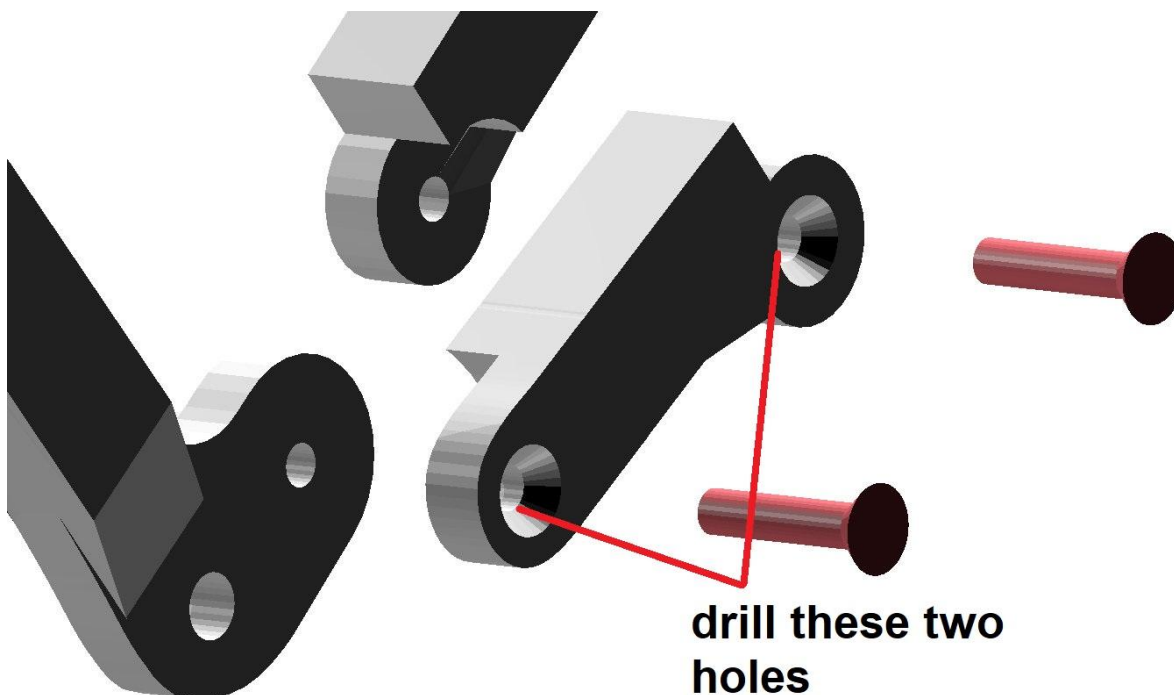
**10**

Cut a 50mm length of m2 rod which has a threaded end. Install the threaded end into the tail slot provided. This will act as a tail skid.



## **11     INSTALLING THE LANDING GEAR**

Using an m2 drill bit, open the holes in the “landing gear middle” part to prevent the screws from binding. (the holes should only be large enough so that the threads do not bind when the screw is bottomed out)



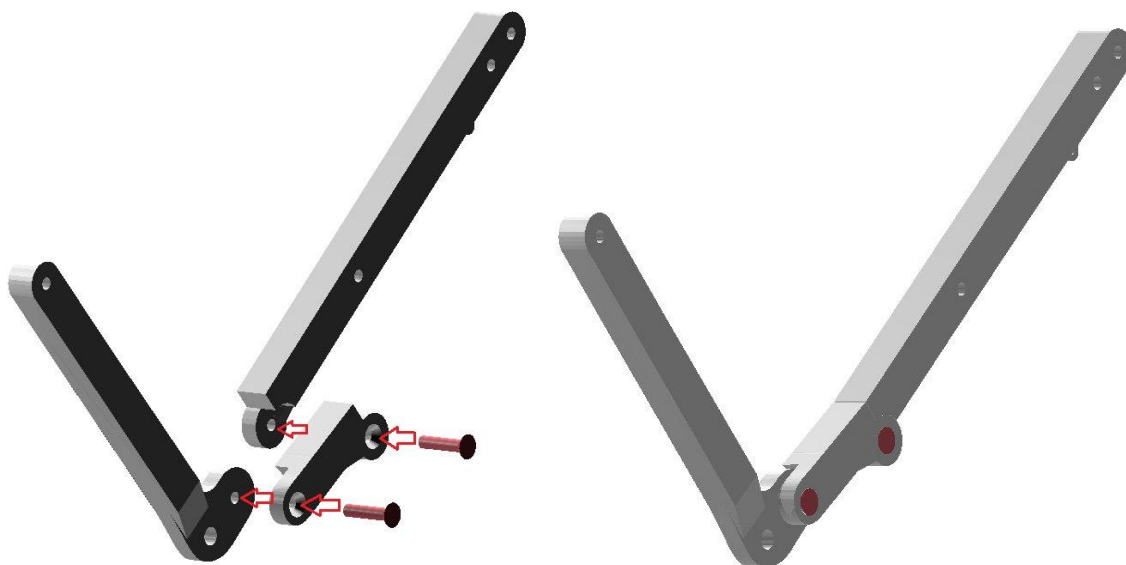




**12**

Assemble the landing gear legs using m2x8mm countersunk machine screws.

### LEFT GEAR LEG



**13**

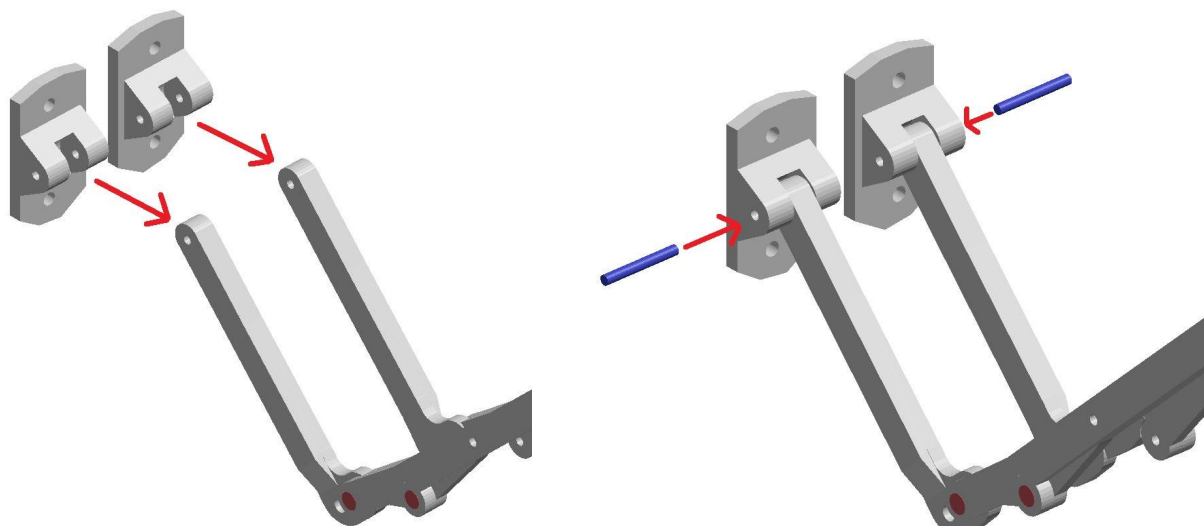
Cut the following lengths of 2mm steel rod:

X2 - 16mm

X1 - 35mm

X1 - 45mm

Install the 16mm lengths in the front gear mounts with the front of the gear legs.

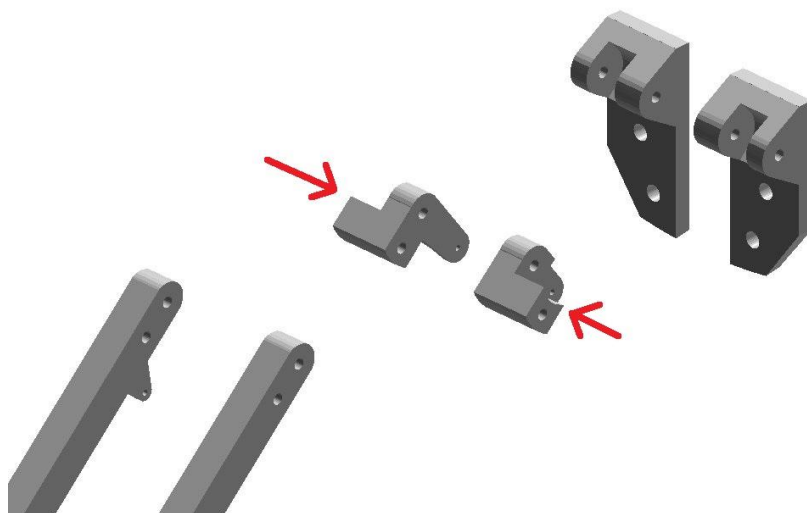




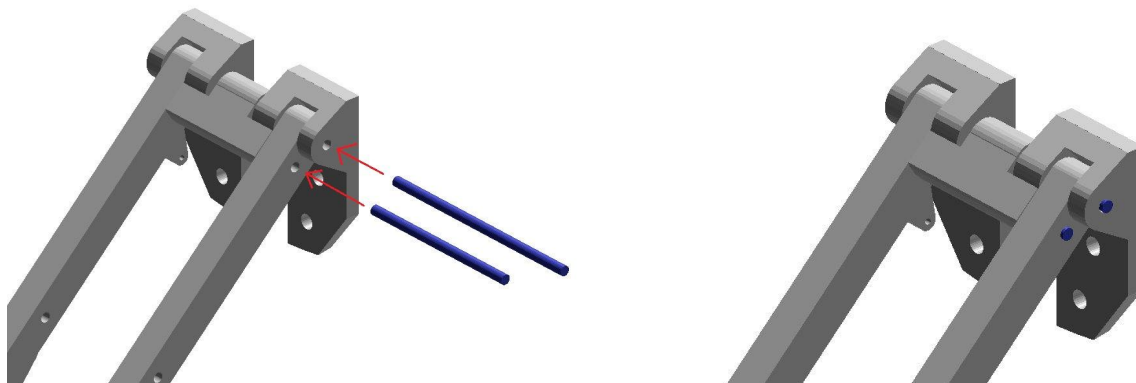
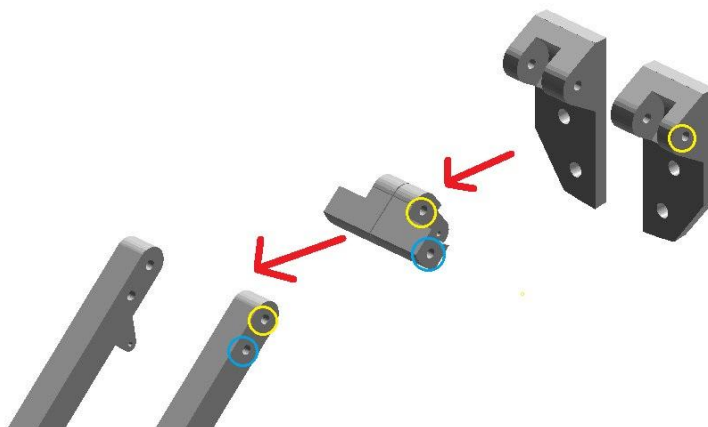


14

Install the 35 and 45mm lengths in the rear gear mounts with the rear gear legs.

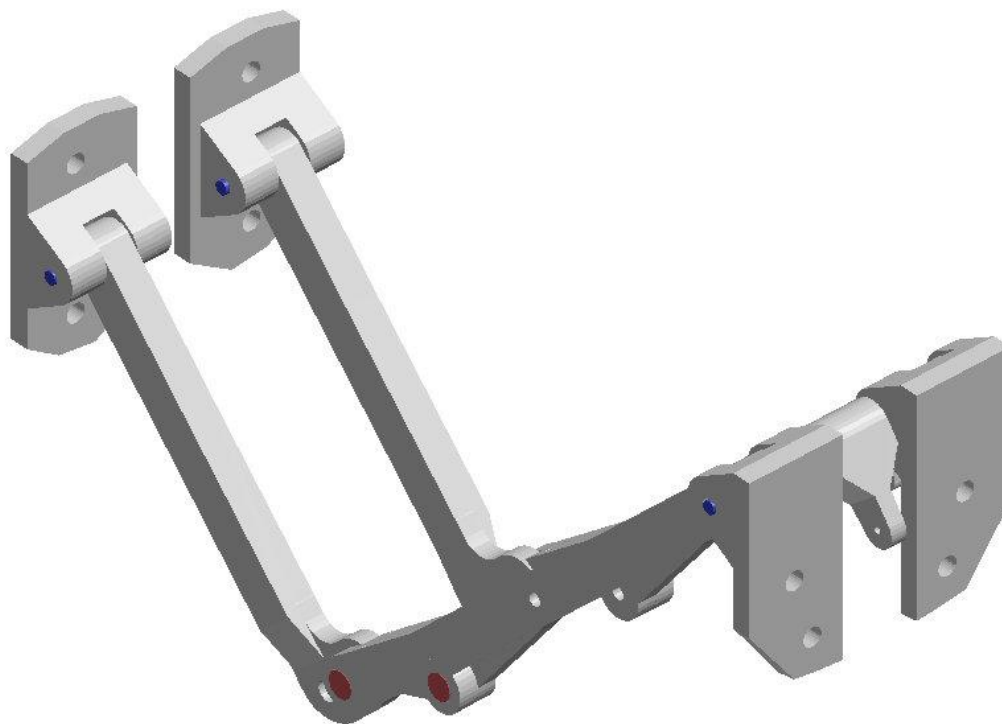


highlighted holes with same colour line up





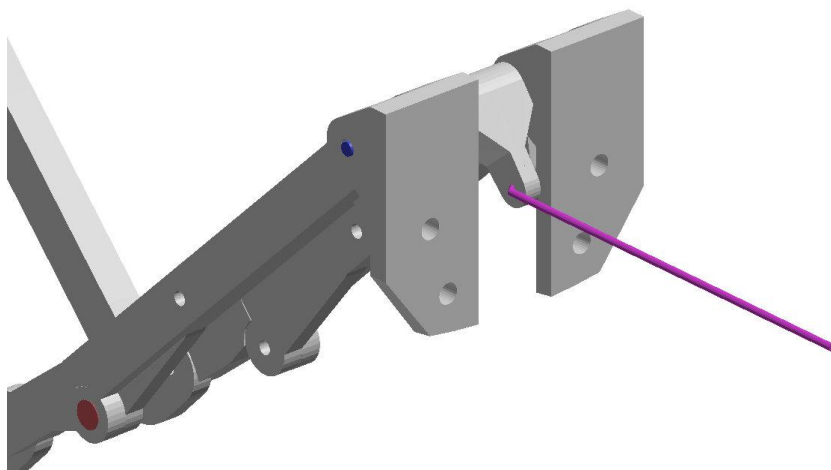
## REFERENCE IMAGES OF THE COMPLETED GEAR ASSEMBLY





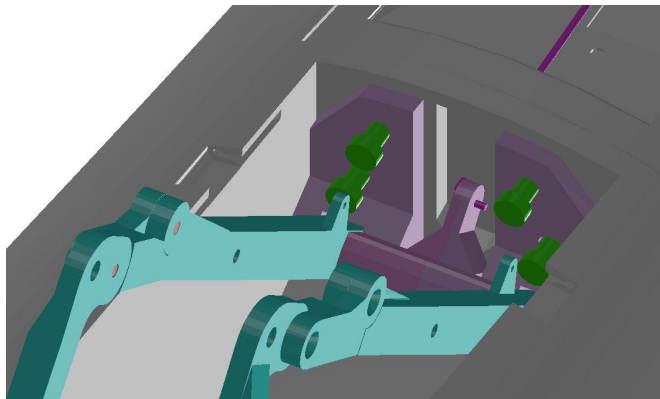
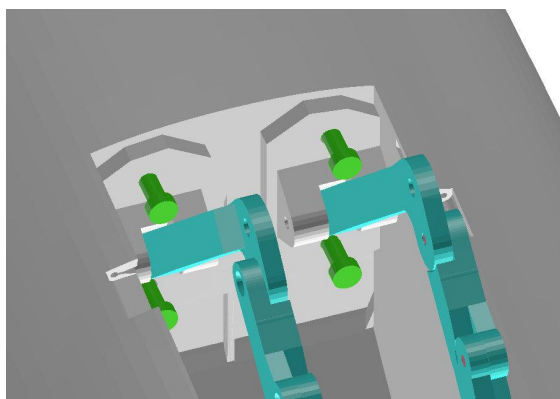
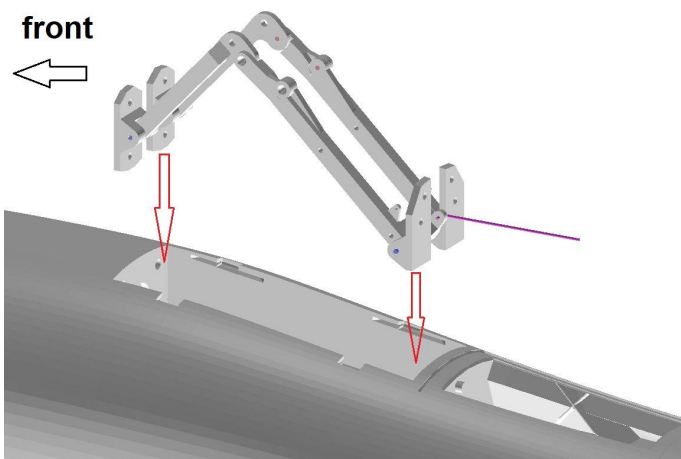
**15**

Install a 65mm length of 1mm or 1.2mm wire to the gear drive arm.



**16**

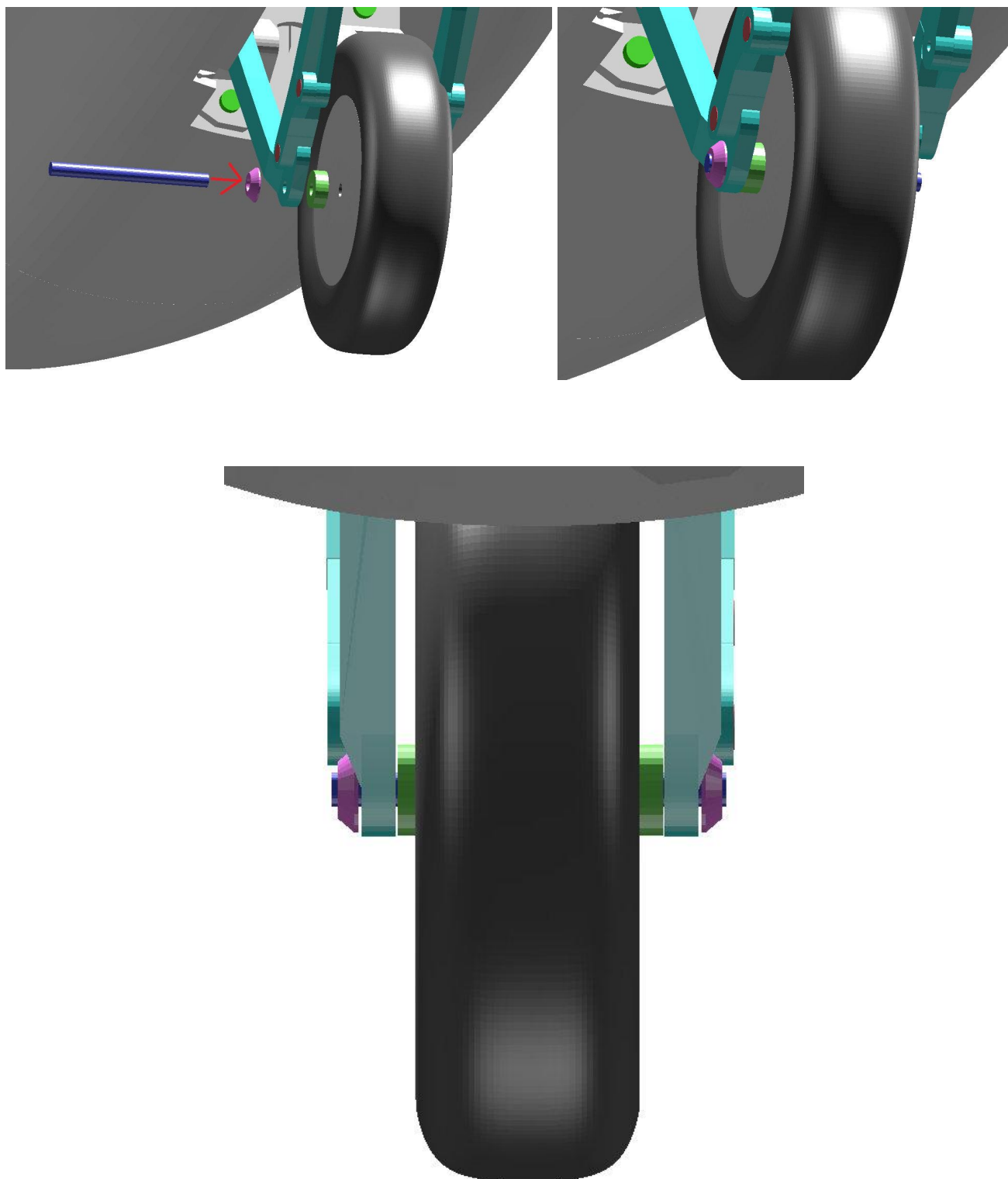
Install the gear assembly to the fuselage using the m3x10mm machine screws.





17

Cut a 35mm length of 3mm steel rod and fit the wheel using the 3d printed spacers and stop collar. Secure the collars in place with a small amount of CA.

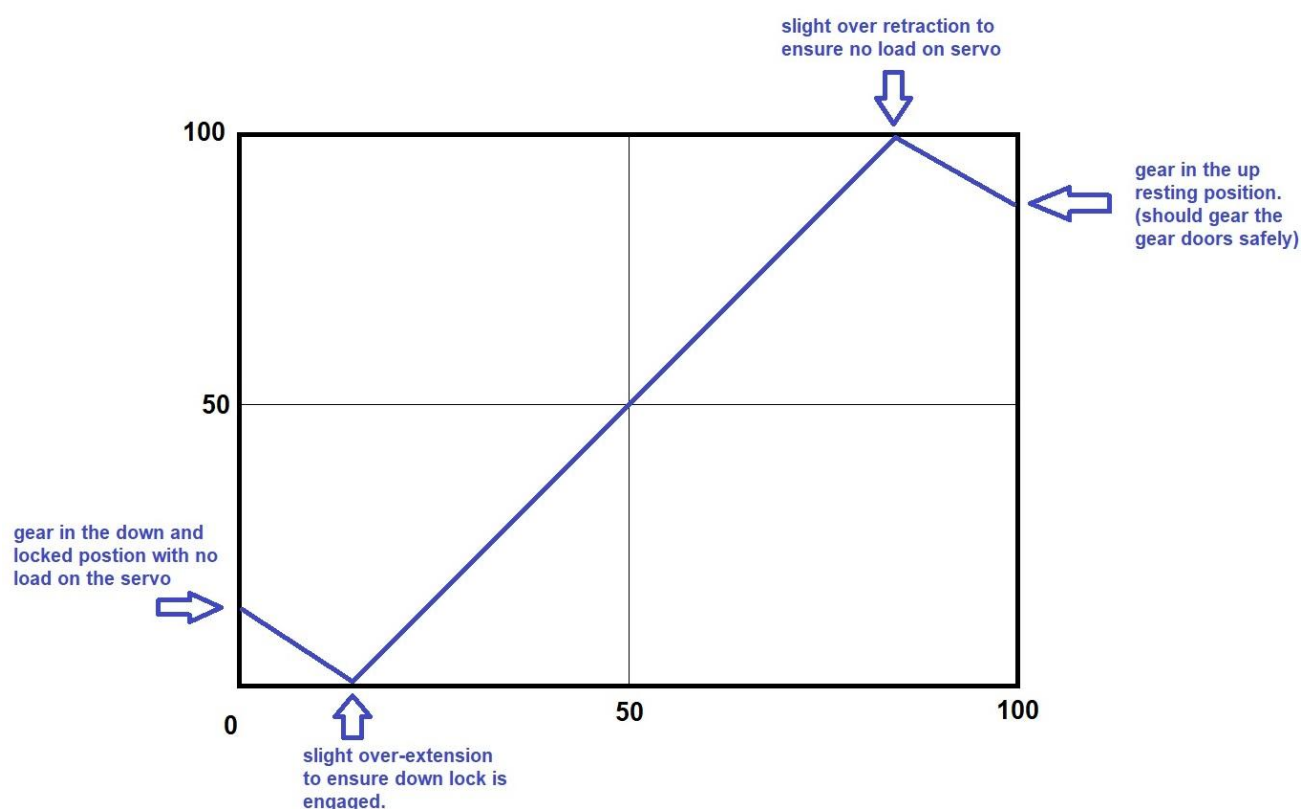






## 18

The gear leg is designed with over-center downlocks and as such the gear is self locking when extended. This is to unload the retract and not to send impact shocks through the servo. The position of the gear legs in the retracted position also means that there is almost no load on the servo. When setting up the gear retract on your transmitter, it is advised that the servo arm should partially over-extend and over-retract when running up or down. This ensures the gear runs through the full travel but leaves the servo unloaded when in the up or down position. See diagram below of the travel curve.



NOTE: the travel curve shown above is for reference purpose only, the travel limits and up and down position will need to be fine tuned by the user and may look different from the image shown above.



## 19 INSTALLING THE GEAR DOORS

Glue the hinge arms to the gear doors using CA using the following reference:

FR = front right

RR = rear right

FL = front left

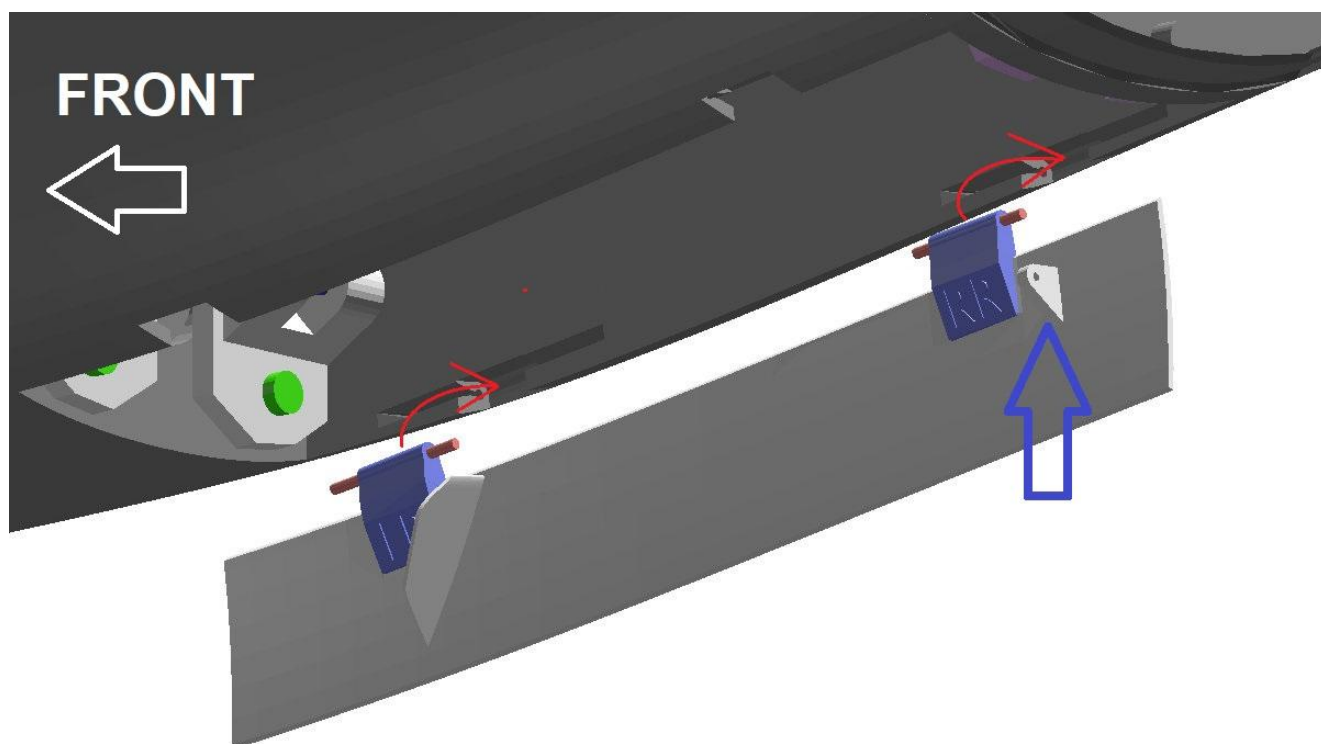
RL = rear left

## 20

Cut four 20mm lengths of 0.9mm or 1.0mm wire and insert them through the hinge arms.

## 21

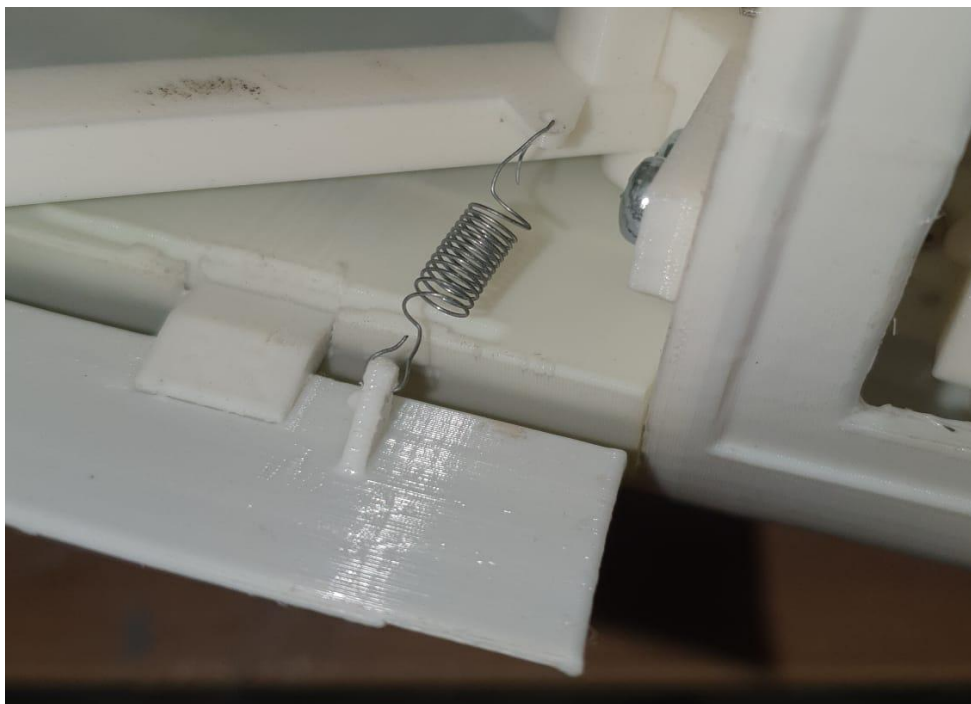
Press the hinge pins into the slots on either side of the landing gear bay. NOTE: the gear door control arm (BLUE ARROW) must be facing the tail of the model.





22

Cut a small section of spring (4mm or similar) and connect the gear door to the gear leg. There should be a small amount of tension on the spring in both the up and down position of the gear.



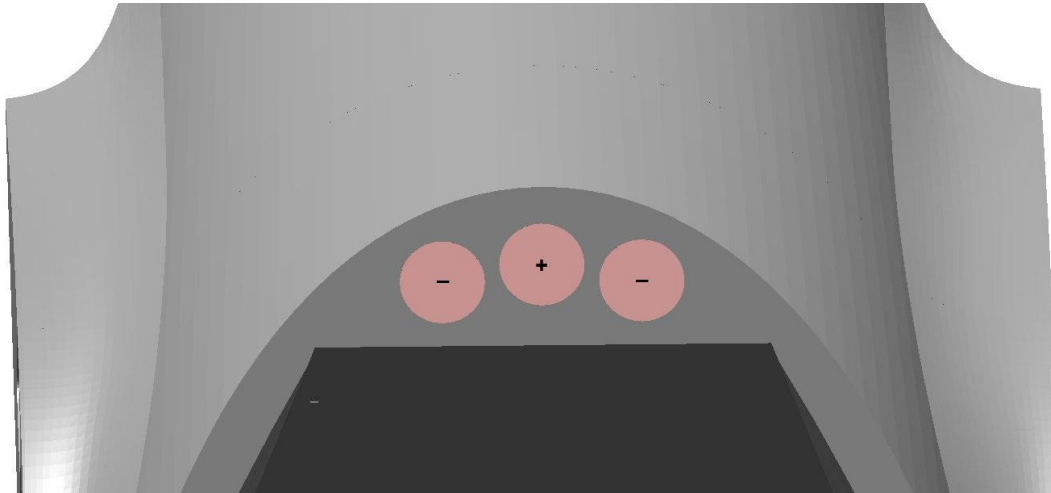
The gear doors should sit flush on the outer skin of the model and should rest on the lip of the gear leg mount plates. (Highlighted face marked in red)





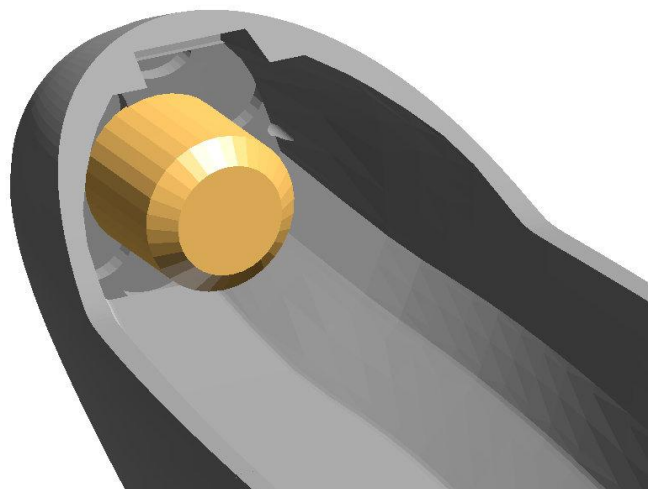
**23**

Glue the sections of the canopy together and install the magnets into the canopy and fuselage. NOTE: each magnet should oppose the polarity of the magnet directly beside it. (see image below)



## **24     INSTALLING THE MOTOR AND PROPELLER**

Install the motor so that the shaft protrudes through the firewall. See below.

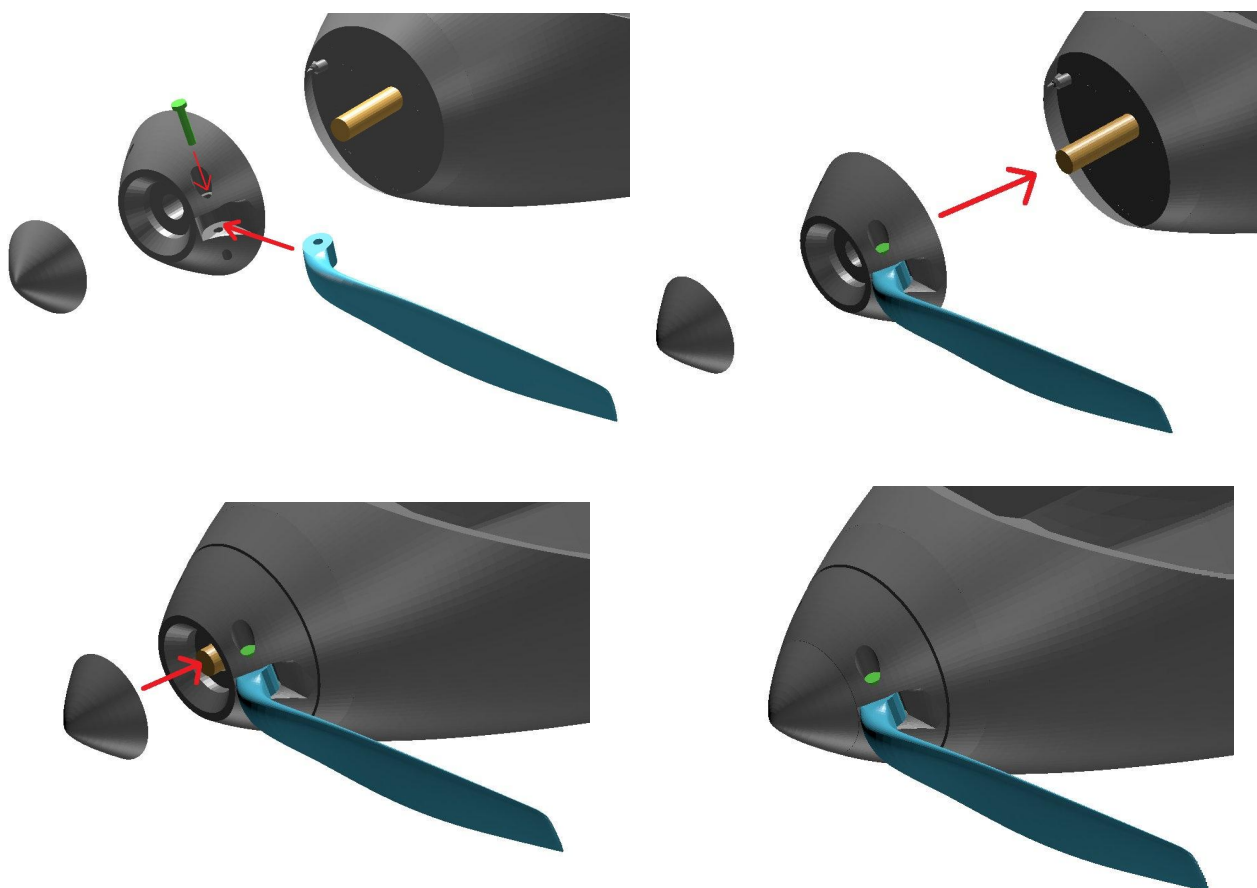






## 25

Mount the blades to the hub and fit the propeller to the motor shaft. There should be about a 1mm gap between the spinner backplate and the front lip of the fuselage.



## 26 INSTALLING THE TAIL

Assemble the sections of the vertical stabilizer together and glue it to the fuselage using CA.

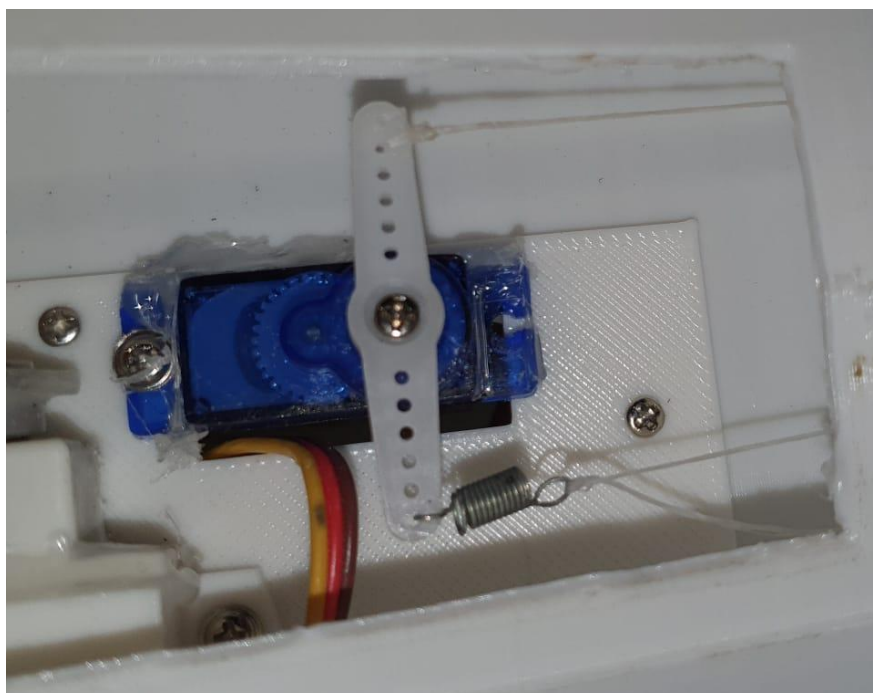
## 27

Assemble the sections of the rudder and fit it to the vertical stabilizer using the nylon pinned hinges.



28

Connect braided fishing line to the control horns of the rudder and feed them up through the fuselage to the rudder servo. Connect one of the control lines with a spring on one side to keep any slack out of the rudder lines.



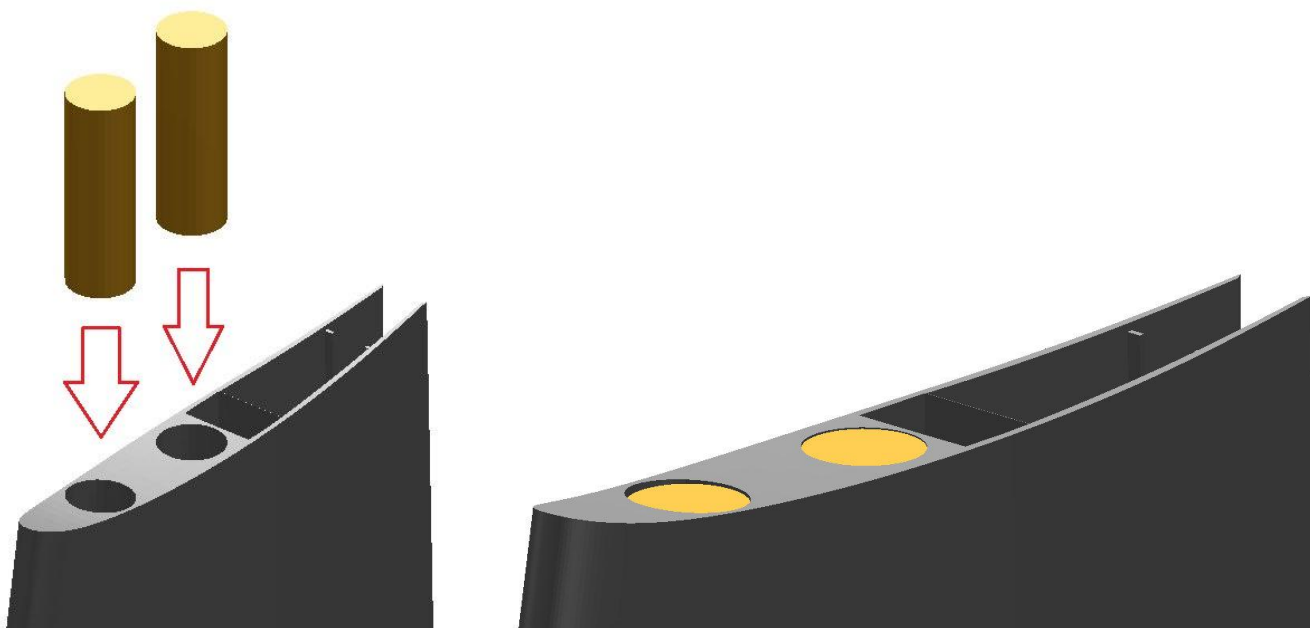


**29**

Fit the belly panel using small m2 screws. (it is advised to drill pilot holes for the screws with a 1mm drill bit)

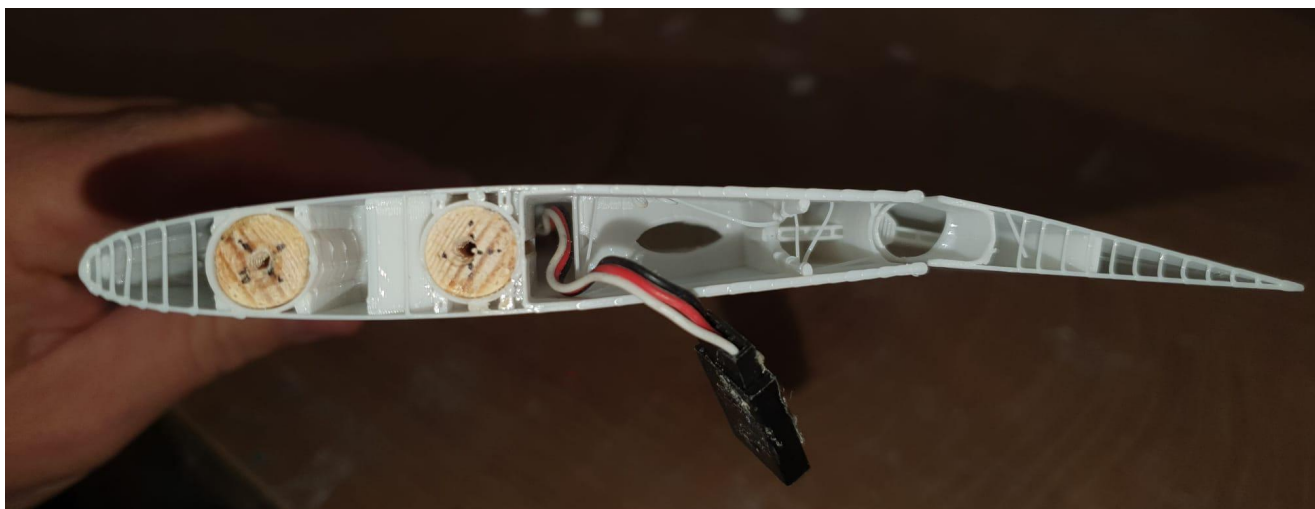
**30**

Cut two 30mm lengths of 10mm wooden dowel and glue them into the slots in the top of the vertical stabilizer. The dowels should sit just under the top of the stabilizer.



**31**

Run the elevator servo wire down through the vertical stabilizer wire tunnel all the way up the fuselage to where the receiver will be located (near the main spar).



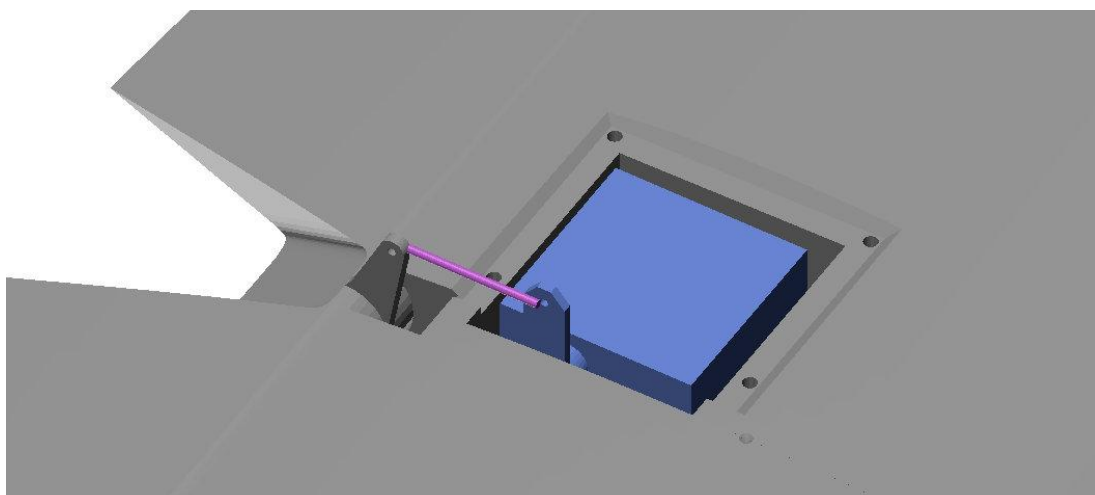


**32**

Assemble the sections of the horizontal stabilizer and elevator. Glue the elevator to the horizontal stabilizer using nylon pinned hinges. (these hinges may need to be trimmed to fit)

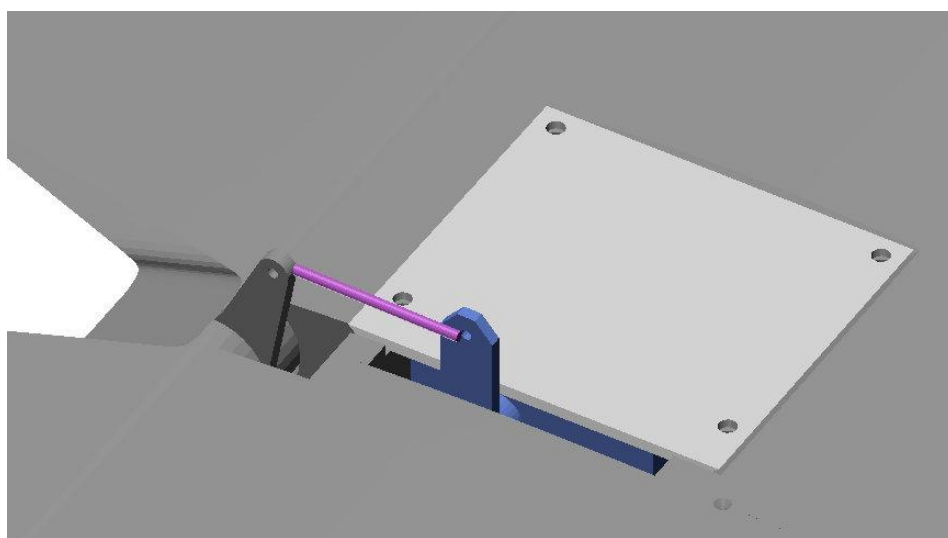
**33**

Install the elevator servo (903MG 2.6kg) into the slot and secure it with hot glue (the tabs will need to be trimmed). The control arm should be neutral facing directly down out of the stabilizer.



**34**

Fit the cover plate over the elevator servo using m2 screws.

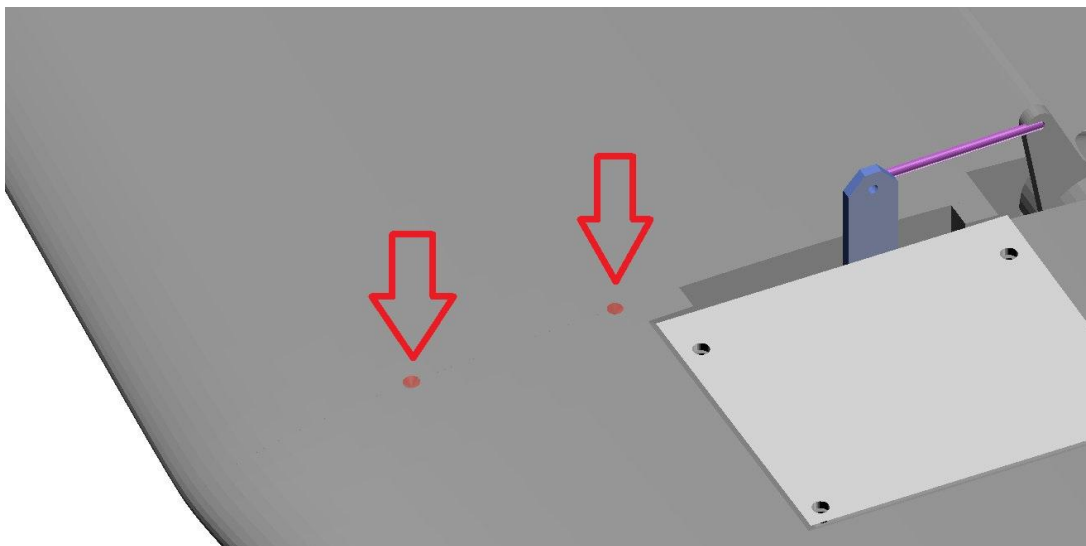






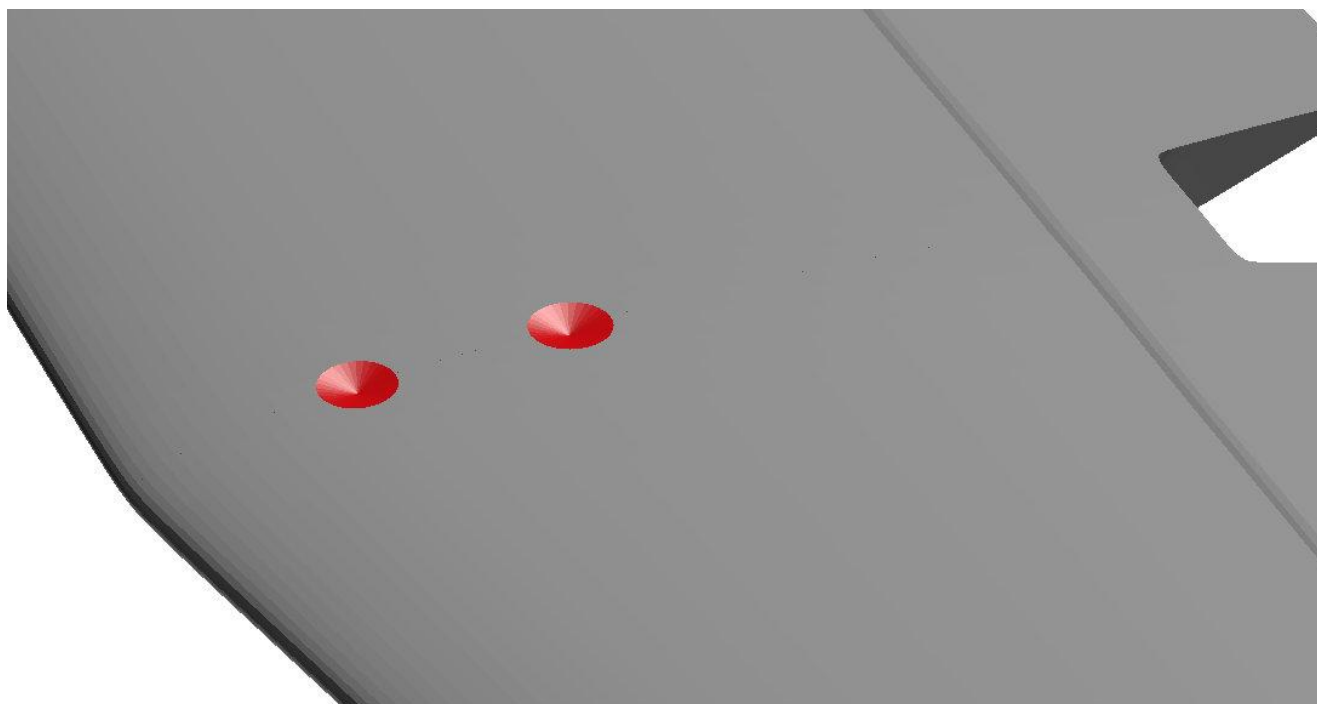
**35**

Run a 3mm drill bit through the mounting points on the underside of the horizontal stabilizer.



**36**

Drill a 6mm hole in the TOP of the horizontal stabilizer in the position marked with the indents so that the screws will be able to be installed. (working up in size from 2mm is advised)





37

Install the m3 x 20mm screws into the horizontal stabilizer and gently press them into the wooden dowels in the vertical stabilizer just hard enough to indent the wood. Using a 2mm drill bit, drill pilot holes in the dowels for the horizontal stabilizer to mount to.

NOTE: The horizontal stabilizer is designed to be easily removed so as to make transport to and from the airfield safe and easy. **When mounting the horizontal stabilizer, be careful not to over tighten the screws. They only need to be tight enough so that the stabilizer does not move around.**



## 38 WING "A" ASSEMBLY

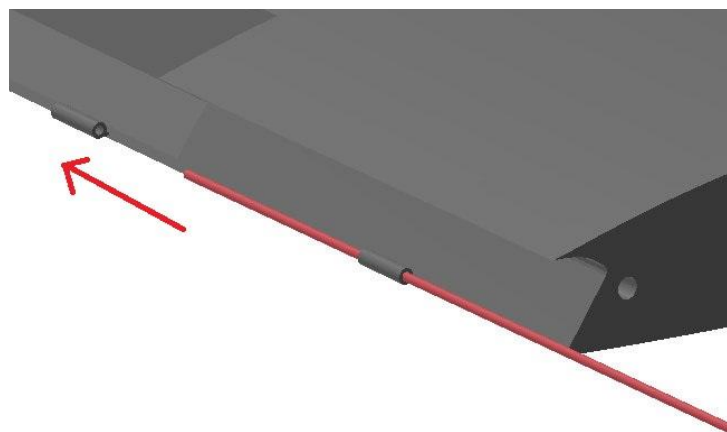
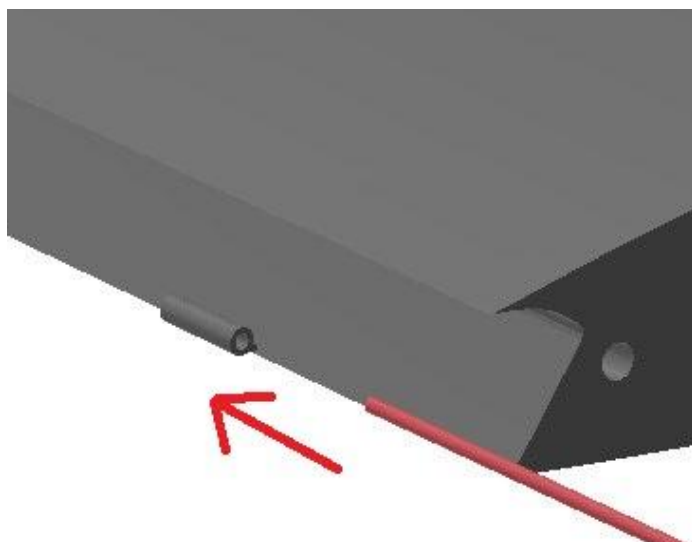
Pre-drill the following slots in the wings so that the related components can be easily fitted:

Main wing spar slots = 10mm

Alignment pin slots = 3mm

Flap and airbrake hinge slots = 1mm

The easiest way we found to do this for the airbrake and flap hinge slots was to put a 200mm length of 1mm wire into a drill and feed it through the hinge slots as it turns.





If the first few layers of the hinge slots are not clean and round, use a knife to gently pry the faulty layers of hinge away until the hinge is nice and round.

**Faulty first layers of hinge**



**Trimmed hinge slot**



**39**

Glue all sections of the wings together.

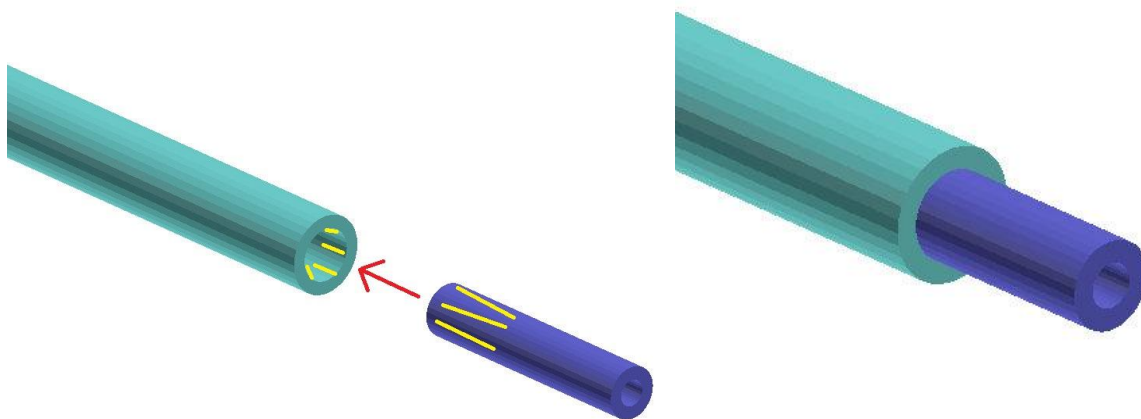
**40**

Cut six 50mm lengths of 8x6mm carbon tube.

**41**

Glue the 40mm sections of 8mm carbon tube into the 10mm carbon tubes as connectors to make one long carbon spar. (see below, Yellow indicates CA)

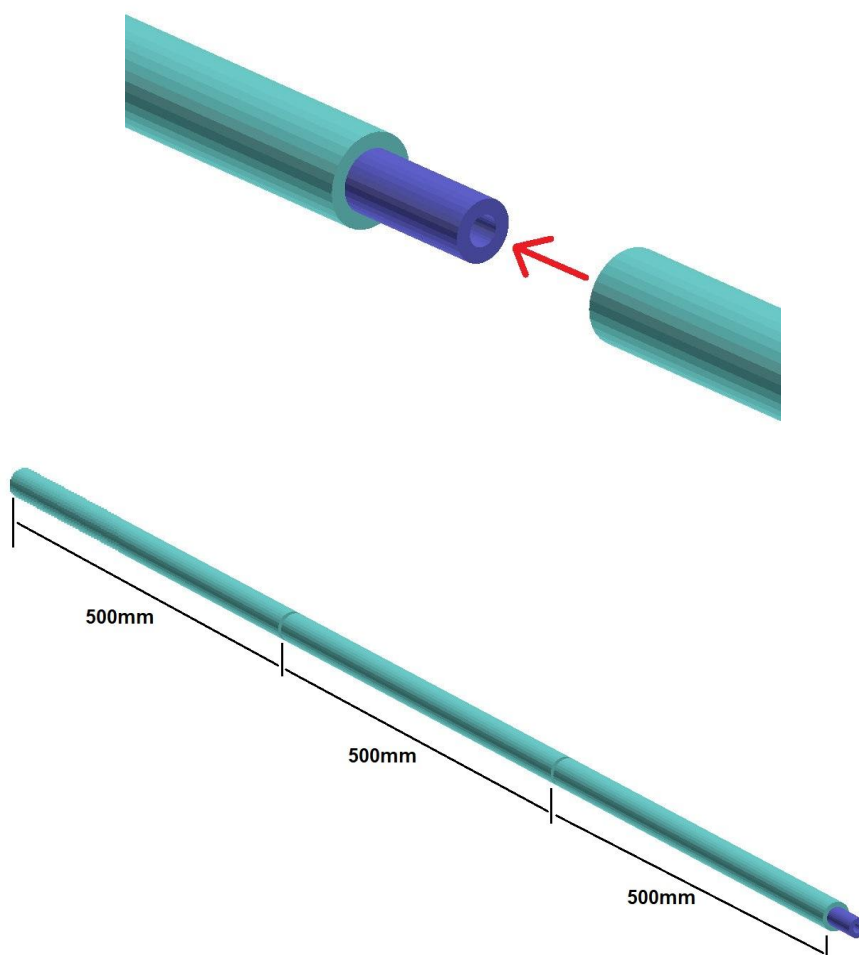
**Correct fitment**





42

Repeat the previous step until three 10mm x 500mm carbon tubes are connected to make one 1500mm tube with one 8mm carbon tube protruding from the end of the last carbon tube. The protruding 8mm tube will act as a temporary connector for any wingtip that is used.



43

Install the carbon tube into the wing with the 8mm protruding end facing the wingtip, **do not glue it in place**. It might be necessary to adjust the final position of the spar once the wingtip is fitted.

44

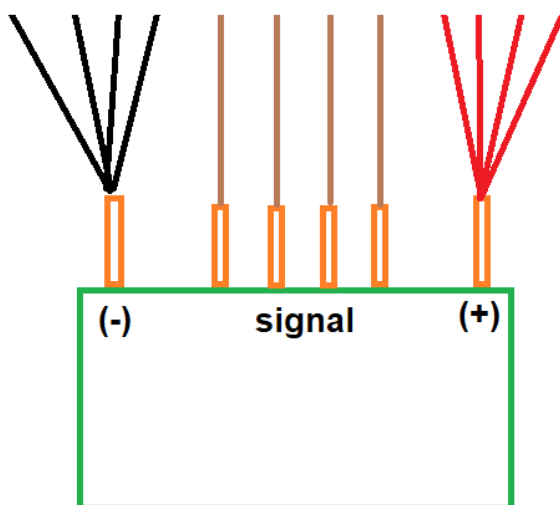
Run lengths of string through the servo wire tunnels for each of the four servos per wing. Following this, pull the servo wires through the wing starting with the outermost servo (aileron)





45

Connect the servos to the servo wires running through the wings. It is advised to terminate the servo wires at the wing root with an 8 pin plug (this makes assembly at the field easier). The four negative wires should terminate on the one negative pin, the positive wires on the positive pin and the four signal wires on the middle pins.



46

Install the servo mounts to the servos using 5 or 6mm m2 screws and install the servos into the wings using 14mm m2 screws. (the short mount block is for the side of the servo where the wires come out of)





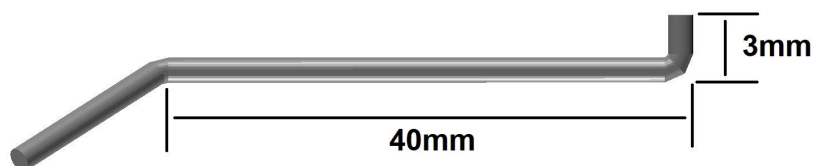
47

Glue the sections of the ailerons and flaps together. Ensure the parts are straight and true when glued. We suggest bracing them against a perfectly flat surface (clean table) during gluing.

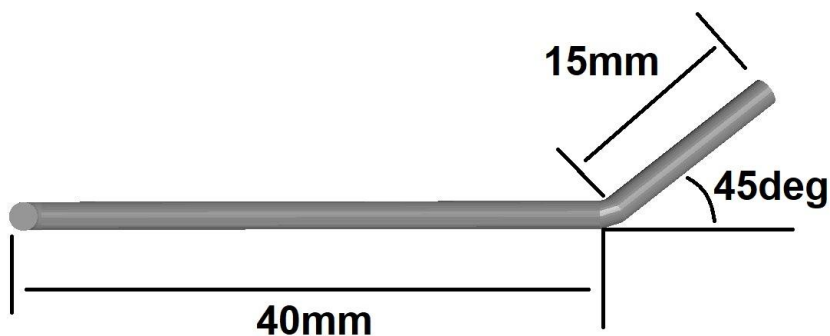
48

Cut two lengths of 60mm length of 2mm push rod (**RDS flap control rod**) and bend one for the left wing according to the following images (also make a mirrored version for the right wing). NOTE: The shape and length of this part is important as it will drive the RDS for the flaps.

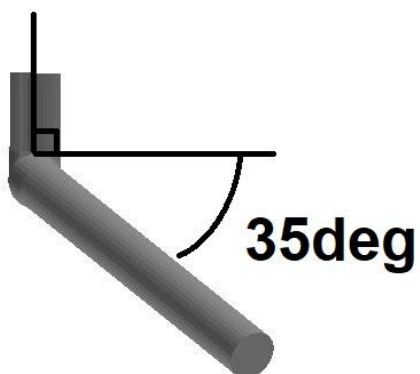
Side view



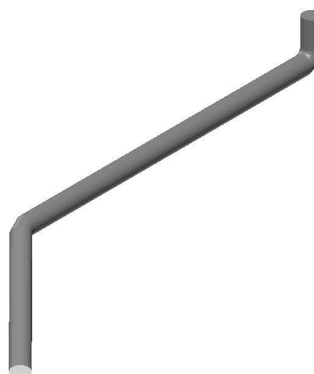
Top view



Front view



Angled view





**49**

Fit the RDS flap control rod to the RDS mount and feed it through the slot.



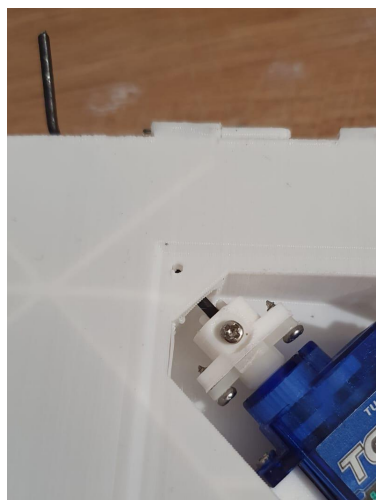
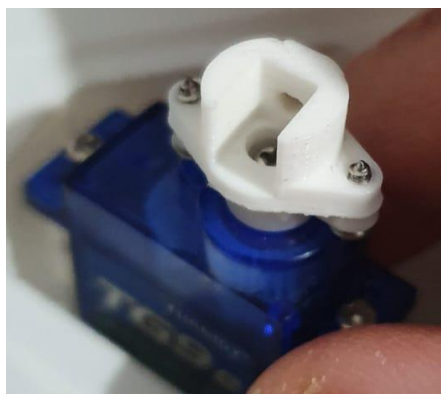
**50**

Fit the RDS mount adapter to the servo arm using small m2 screws.



**51**

Fit the RDS adapter to the servo, install the servo and connect the RDS control rod using an m2 x 5mm screw. The screw hole in the RDS adapter should be easily accessible.(see image on right)

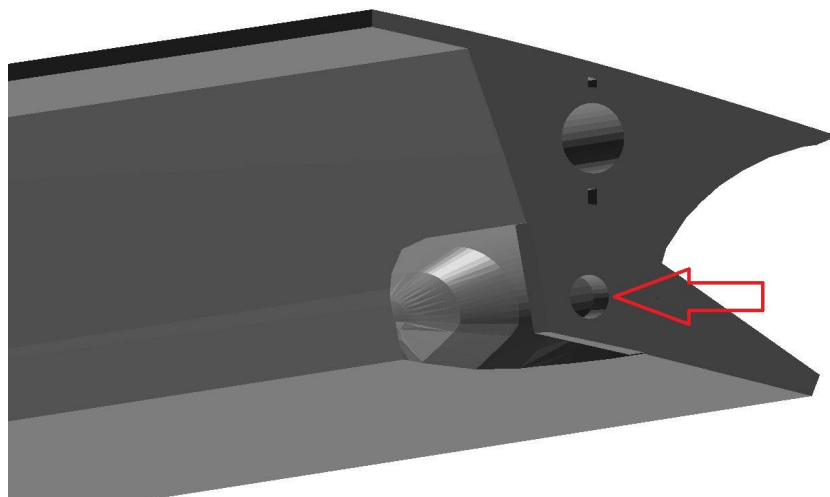






**52**

Prepare the airbrake by drilling the control arm mounts with a 2mm drill bit. (indicated with red arrow) This will make it easier to fit the control arm linkages later on.



**53**

Repeat step **38** on the hinge slots for the airbrake.

**54**

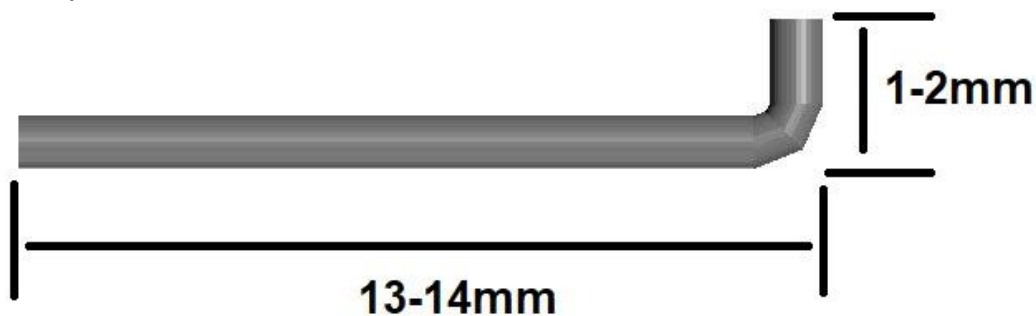
Glue the sections of the airbrake together using CA. Again be sure that the parts are straight and true during the gluing process.

**55**

Cut eighteen 15mm lengths of 1mm push rod.

**56**

Bend one end to 90deg, the bent end should be about 1-2mm long. These will be the hinge pins for the flaps and airbrakes.







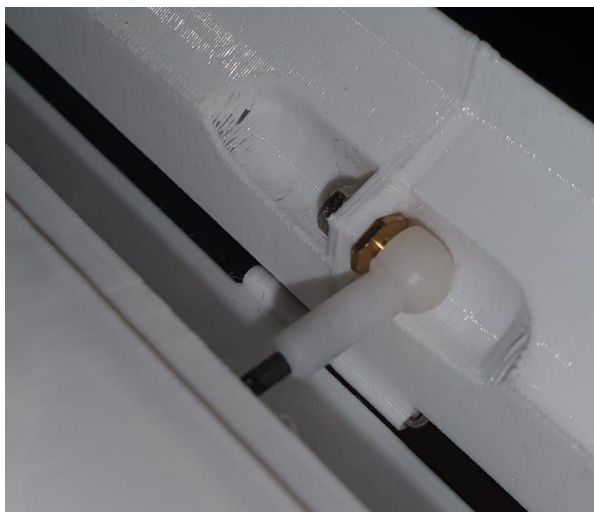
**57**

Install the airbrake using the hinge pins.



**58**

Fit the ball joint linkages to the airbrake.

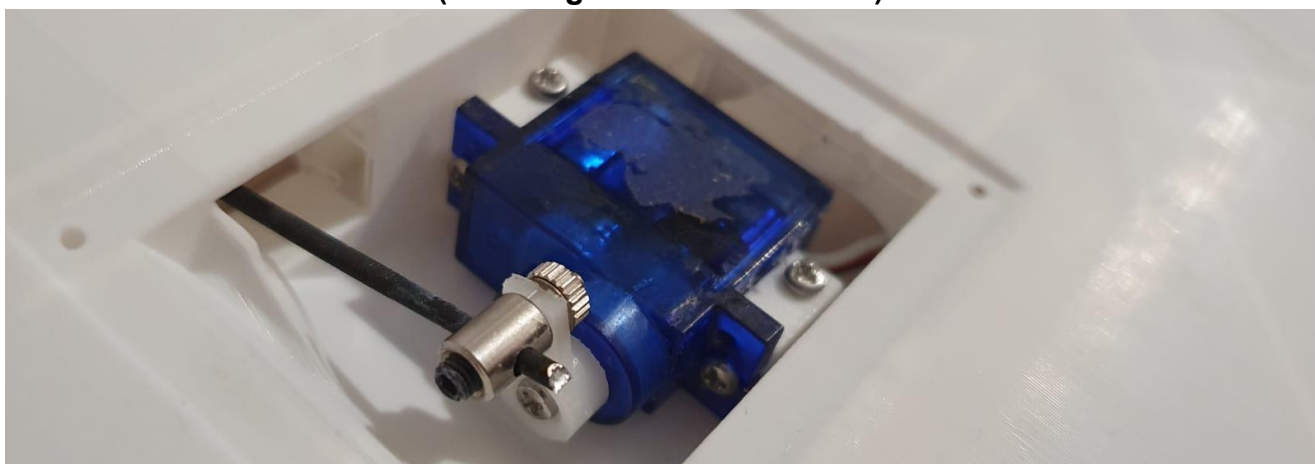




59

Fit the push rod to the airbrake servos with an m2 linkage stopper. NOTE: the linkage stopper needs to be fitted to the servo arm so that it does not protrude out past the skin of the wing.

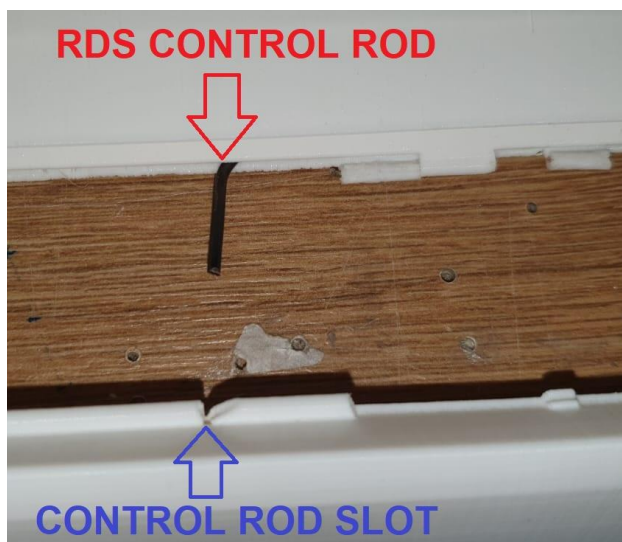
(see images below of fitment)





60

Fit the flap to the wing using the hinge pins. The pins should fit tight, but hot glue can be added to the tip if they will fall out during flight. (it is advised to test fit the pins in the flap slots before attempting to fit the flap).



Pin ready to be fitted



Pin fitted



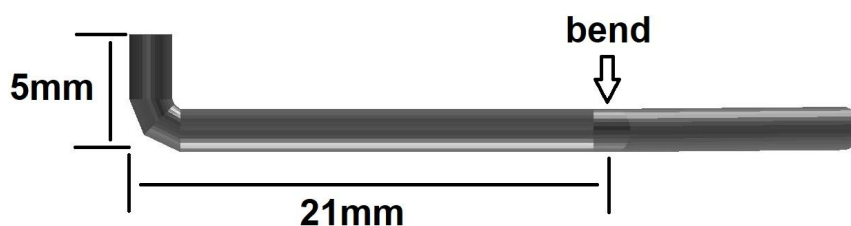




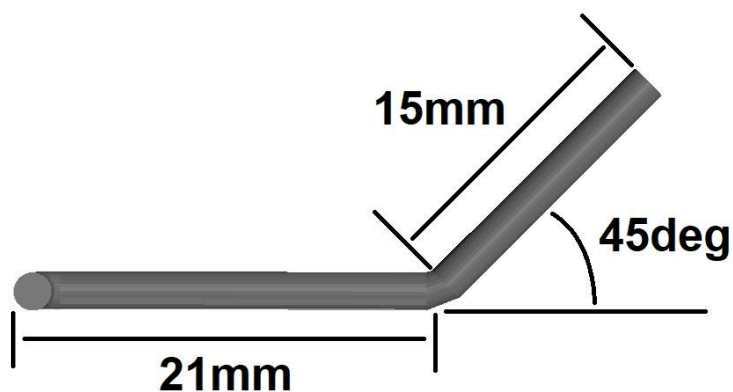
61

Cut two lengths of 60mm length of 2mm push rod (**RDS aileron control rod**) and bend one for the left wing according to the following images (also make a mirrored version for the right wing). NOTE: The shape and length of this part is important as it will drive the RDS for the ailerons.

Side view



Top view



Front view



Angled view







**62**

Fit the RDS aileron control rod to the RDS mount and feed it through the slot.



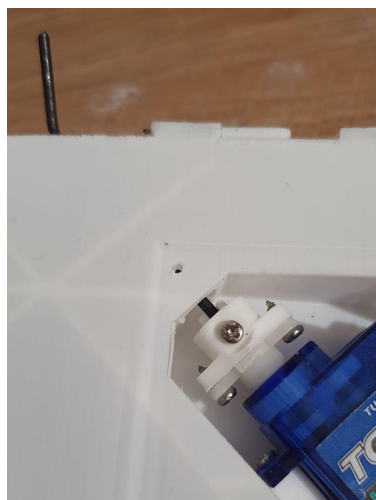
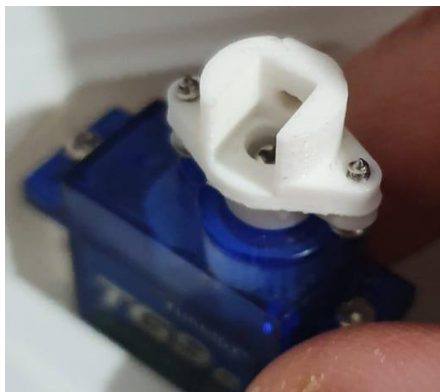
**63**

Fit the RDS mount adapter to the servo arm using small m2 screws.



**64**

Fit the RDS adapter to the servo, install the servo and connect the RDS control rod using an m2 x 5mm screw. The screw hole in the RDS adapter should be easily accessible.(see image on right)





**65**

Fit the ailerons to the wing using nylon pinned hinges secured with CA. Be sure that the ailerons do not bind with the flap through the full range of travel.

**NOTE:** Be sure that the CA is only inside the hinge slot. Wipe away any excess CA from the entrance otherwise the hinge will bind and render the part useless.

**66**

Fit the servo covers using small m2 screws.

**67**

Cut a 400mm length of 10mm square carbon tube and assemble the wings to the fuselage.

**68**

A single m2 x 20mm screw installed through the end of the square carbon spar is designed to hold the wings on during flight. Mark the position of the screw hole with the wings fitted and drill the hole using a 1.5mm drill bit.

**NOTE: it is advised to drill the spar screw hole 1mm inwards of the marked position on one side so that the wing is slightly under pressure against the fuselage when the screw is installed.**

**69**

Cut a length of 10mm carbon tube and install it into the wingtip so that it protrudes from the wingtip by 35mm (**length of carbon tube will differ depending on the wingtip chosen**)





70

Fit the wingtip to the wing and secure it with some tape. The wingtips are designed to be removed after flight to prevent damage during transport to and from the field.

## 1 WING “B” ASSEMBLY

Pre-drill the following slots in the wings so that the related components can be easily fitted:

Main wing spar slots = 10mm

Alignment pin slots = 3mm

2

Glue all sections of the wings together.

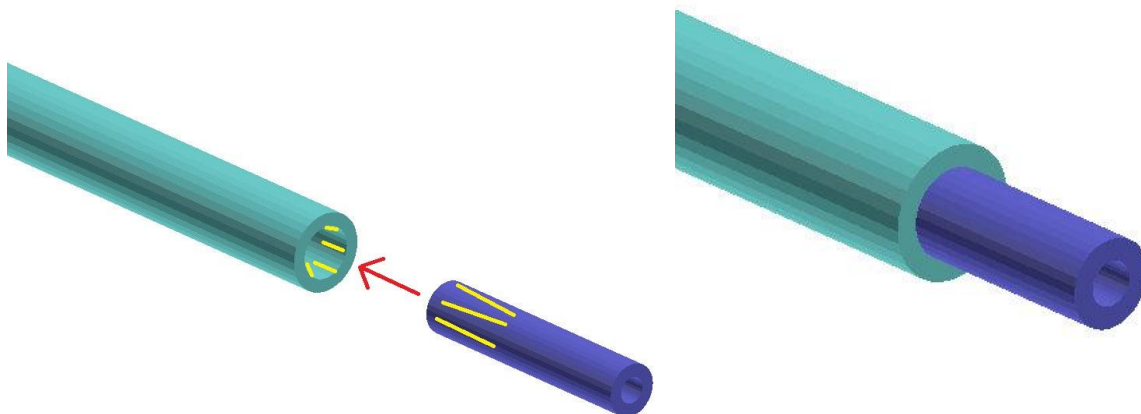
3

Cut six 50mm lengths of 8x6mm carbon tube.

4

Glue the 40mm sections of 8mm carbon tube into the 10mm carbon tubes as connectors to make one long carbon spar. (see below, Yellow indicates CA)

**Correct fitment**

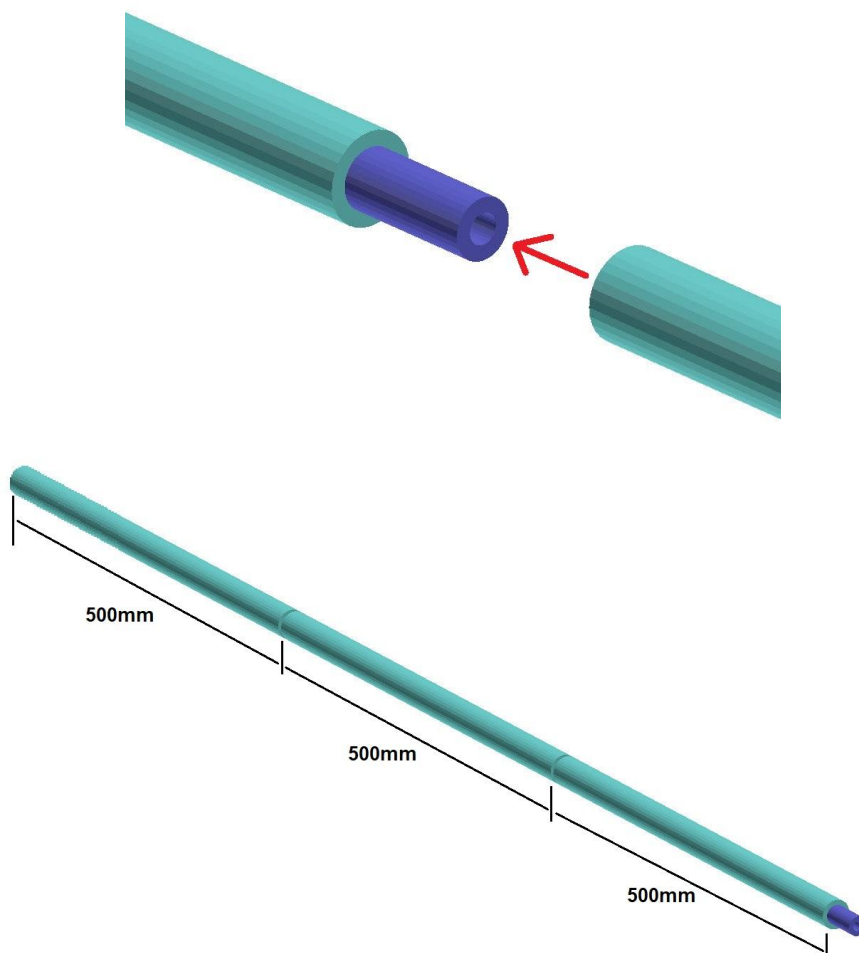






5

Repeat the previous step until three 10mm x500mm carbon tubes are connected to make one 1500mm tube with one 8mm carbon tube protruding from the end of the last carbon tube. The protruding 8mm tube will act as a temporary connector for any wingtip that is used.



6

Install the carbon tube into the wing with the 8mm protruding end facing the wingtip, **do not glue it in place**. It might be necessary to adjust the final position of the spar once the wingtip is fitted.

7

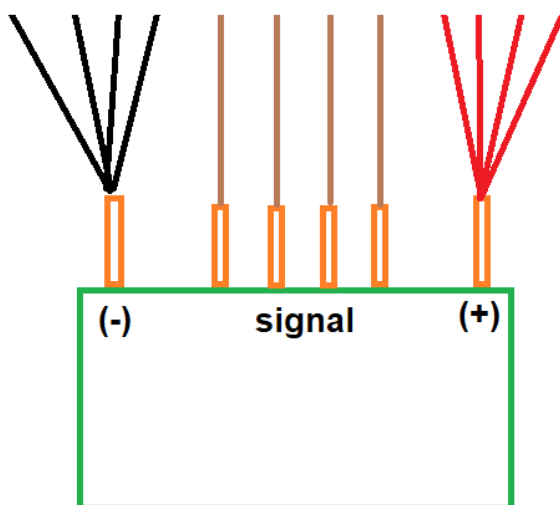
Run lengths of string through the servo wire tunnels for each of the four servos per wing. Following this, pull the servo wires through the wing starting with the outermost servo (aileron)





8

Connect the servos to the servo wires running through the wings. It is advised to terminate the servo wires at the wing root with an 8 pin plug (this makes assembly at the field easier). The four negative wires should terminate on the one negative pin, the positive wires on the positive pin and the four signal wires on the middle pins.



9

Install the servo mounts to the servos using 5 or 6mm m2 screws and install the servos into the wings using 14mm m2 screws. (the short mount block is for the side of the servo where the wires come out of)





**10**

Glue the sections of the ailerons and flaps together. Ensure the parts are straight and true when glued. We suggest bracing them against a perfectly flat surface (clean table) during gluing.

**11**

Fit the ailerons and flaps to the wing using nylon pinned hinges secured with CA

**NOTE:** Be sure that the CA is only inside the hinge slot. Wipe away any excess CA from the entrance otherwise the hinge will bind and render the part useless.

**12**

Connect up the ailerons and flaps using 1mm or 1.2mm push rod.

**13**

Cut a 400mm length of 10mm square carbon tube and assemble the wings to the fuselage.

**14**

A single m2 x 20mm screw installed through the end of the square carbon spar is designed to hold the wings on during flight. Mark the position of the screw hole with the wings fitted and drill the hole using a 1.5mm drill bit.

**NOTE: it is advised to drill the spar screw hole 1mm inwards of the marked position on one side so that the wing is slightly under pressure against the fuselage when the screw is installed.**

**15**

Cut a length of 10mm carbon tube and install it into the wingtip so that it protrudes from the wingtip by 35mm (**length of carbon tube will differ depending on the wingtip chosen**)





16

Fit the wingtip to the wing and secure it with some tape. The wingtips are designed to be removed after flight to prevent damage during transport to and from the field.

## **BALANCING AND CG**

Fit the battery using Velcro as required and balance the aircraft inverted on the CG marking points located **55mm aft of the leading edge at the wing root.**

### **RANGE OF TRAVEL:**

#### **WING “A”**

##### **MAIDEN FLIGHT:**

Elevator	+/- 15mm
Rudder	+/- 15mm
Aileron	+/- 15mm

##### **AEROBATIC FLIGHT:**

Elevator	+/- 20mm
Rudder	+/- 30mm
Aileron	+/- 15mm

Airbrake deployed with flaps retracted (max)	20 degrees
Airbrake deployed with flaps extended (max)	55 degrees
Flaps Take-off / Approach (max)	15 degrees
Flaps Landing (max)	45 degrees

#### **WING “B”**

##### **MAIDEN FLIGHT:**

Elevator	+/- 15mm
Rudder	+/- 15mm
Aileron	+/- 15mm

##### **AEROBATIC FLIGHT:**

Elevator	+/- 20mm
Rudder	+/- 30mm
Aileron	+/- 15mm

Flaps Take-off / Approach (max)	15 degrees
Flaps Landing (max)	45 degrees





## **PARTS LINKS:**

X1 3536 1250kv brushless outrunner

[https://de.aliexpress.com/item/4001034105325.html?spm=a2g0o.productlist.main.15.618472e77EzV2D&algo\\_pvid=b773c072-5f44-4623-b629-789ffd1c7a02&algo\\_exp\\_id=b773c072-5f44-4623-b629-789ffd1c7a02-7&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2212000018171498438%22%7D&pdp\\_npi=2%40dis%21EUR%2128.31%2123.22%21%21%21%21%21%40211be59e16701939636911870d0725%2112000018171498438%21sea&curPageLogUid=W0gMgzkZEDR5](https://de.aliexpress.com/item/4001034105325.html?spm=a2g0o.productlist.main.15.618472e77EzV2D&algo_pvid=b773c072-5f44-4623-b629-789ffd1c7a02&algo_exp_id=b773c072-5f44-4623-b629-789ffd1c7a02-7&pdp_ext_f=%7B%22sku_id%22%3A%2212000018171498438%22%7D&pdp_npi=2%40dis%21EUR%2128.31%2123.22%21%21%21%21%21%40211be59e16701939636911870d0725%2112000018171498438%21sea&curPageLogUid=W0gMgzkZEDR5)

X1 50amp esc

[https://de.aliexpress.com/item/4000349406793.html?spm=a2g0o.productlist.main.3.5d6251b9FXumNI&algo\\_pvid=39917e40-9df4-4a6d-9473-37a472c76b22&algo\\_exp\\_id=39917e40-9df4-4a6d-9473-37a472c76b22-1&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2210000001443796912%22%7D&pdp\\_npi=2%40dis%21EUR%2138.05%2122.45%21%21%21%21%21%40211bd7d616701939909616220d0725%2110000001443796912%21sea&curPageLogUid=VyYFlsUwo5nS](https://de.aliexpress.com/item/4000349406793.html?spm=a2g0o.productlist.main.3.5d6251b9FXumNI&algo_pvid=39917e40-9df4-4a6d-9473-37a472c76b22&algo_exp_id=39917e40-9df4-4a6d-9473-37a472c76b22-1&pdp_ext_f=%7B%22sku_id%22%3A%2210000001443796912%22%7D&pdp_npi=2%40dis%21EUR%2138.05%2122.45%21%21%21%21%21%40211bd7d616701939909616220d0725%2110000001443796912%21sea&curPageLogUid=VyYFlsUwo5nS)

X1 4500mah 4s 50c LIPO OR SIMILAR (420g)

[https://hobbyking.com/en\\_us/turnigy-battery-4000mah-4s-30c-lipo-pack-xt-60.html?queryID=c95091d4c2e2d39847387fe69c7d306e&objectID=69426&indexName=hbk\\_live\\_products\\_analytics](https://hobbyking.com/en_us/turnigy-battery-4000mah-4s-30c-lipo-pack-xt-60.html?queryID=c95091d4c2e2d39847387fe69c7d306e&objectID=69426&indexName=hbk_live_products_analytics)

X9 9g servo

[https://hobbyking.com/en\\_us/turnigytm-tg9d-digital-micro-servo-1-8kg-0-09sec-9g.html?queryID=5140502f0f9e21619bc511d4a45d6cf1&objectID=41779&indexName=hbk\\_live\\_products\\_analytics](https://hobbyking.com/en_us/turnigytm-tg9d-digital-micro-servo-1-8kg-0-09sec-9g.html?queryID=5140502f0f9e21619bc511d4a45d6cf1&objectID=41779&indexName=hbk_live_products_analytics)

X1 15148BMG 1.7kg (21g) (gear)

[https://hobbyking.com/de\\_de/hobbykingtm-hk15148b-mg-digital-servo-1-7kg-0-18sec-21g.html](https://hobbyking.com/de_de/hobbykingtm-hk15148b-mg-digital-servo-1-7kg-0-18sec-21g.html)

X1 903MG 2.6kg (elevator)

[https://de.aliexpress.com/item/4001119653424.html?spm=a2g0o.order\\_list.order\\_list\\_main.53.7a085c5ff9658a&gatewayAdapt=glo2deu](https://de.aliexpress.com/item/4001119653424.html?spm=a2g0o.order_list.order_list_main.53.7a085c5ff9658a&gatewayAdapt=glo2deu)

1mm Piano wire (200mm min)

[https://de.aliexpress.com/item/32975279180.html?spm=a2g0o.order\\_list.0.0.707b5c5fIPDMJL&gatewayAdapt=glo2deu](https://de.aliexpress.com/item/32975279180.html?spm=a2g0o.order_list.0.0.707b5c5fIPDMJL&gatewayAdapt=glo2deu)

2mm Piano wire (520mm min)

[https://de.aliexpress.com/item/32975279180.html?spm=a2g0o.order\\_list.0.0.707b5c5fIPDMJL&gatewayAdapt=glo2eu](https://de.aliexpress.com/item/32975279180.html?spm=a2g0o.order_list.0.0.707b5c5fIPDMJL&gatewayAdapt=glo2eu)





3mm steel rod (min 35mm)

[https://de.aliexpress.com/item/1005003594895025.html?spm=a2g0o.productlist.main.1.2fc2655cGpa76q&algo\\_pvid=72cbc316-d766-4a8b-8d73-7834570caabb&algo\\_exp\\_id=72cbc316-d766-4a8b-8d73-7834570caabb-0&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2212000026420660107%22%7D&pdp\\_npi=2%40dis%21EUR%213.63%211.85%21%21%21%21%21%40210212c016701941316627074d0780%212000026420660107%21sea&curPageLogUid=zSlSnrr3gaeS](https://de.aliexpress.com/item/1005003594895025.html?spm=a2g0o.productlist.main.1.2fc2655cGpa76q&algo_pvid=72cbc316-d766-4a8b-8d73-7834570caabb&algo_exp_id=72cbc316-d766-4a8b-8d73-7834570caabb-0&pdp_ext_f=%7B%22sku_id%22%3A%2212000026420660107%22%7D&pdp_npi=2%40dis%21EUR%213.63%211.85%21%21%21%21%21%40210212c016701941316627074d0780%212000026420660107%21sea&curPageLogUid=zSlSnrr3gaeS)

X6 10x10x2mm Magnet (ROUND)

[https://www.aliexpress.com/item/1005001362617359.html?spm=a2g0o.productlist.0.0.5da3607dAATH5j&algo\\_pvid=b9e32b8a-0d4f-469a-b838-b478442dda50&algo\\_expid=b9e32b8a-0d4f-469a-b838-b478442dda50-0&btsid=0bb0623a15991797178681785e1811&ws\\_ab\\_test=searchweb0\\_0.searchweb201602\\_.searchweb201603](https://www.aliexpress.com/item/1005001362617359.html?spm=a2g0o.productlist.0.0.5da3607dAATH5j&algo_pvid=b9e32b8a-0d4f-469a-b838-b478442dda50&algo_expid=b9e32b8a-0d4f-469a-b838-b478442dda50-0&btsid=0bb0623a15991797178681785e1811&ws_ab_test=searchweb0_0.searchweb201602_.searchweb201603)

X11 16x29mm nylon hinges

[https://de.aliexpress.com/item/4000785269166.html?spm=a2g0o.order\\_list.0.0.773d5c5f1I0Bxa&gatewayAdapt=glo2deu](https://de.aliexpress.com/item/4000785269166.html?spm=a2g0o.order_list.0.0.773d5c5f1I0Bxa&gatewayAdapt=glo2deu)

X4 m2 linkage stopper

[https://hobbyking.com/en\\_us/linkage-stopper-d1-8mm-10pcs.html?queryID=02fb98102ab77ce2acbe478988468a80&objectID=31742&indexName=hbk\\_live\\_products\\_analytics](https://hobbyking.com/en_us/linkage-stopper-d1-8mm-10pcs.html?queryID=02fb98102ab77ce2acbe478988468a80&objectID=31742&indexName=hbk_live_products_analytics)

X4 M2 x8mm countersunk screws

[https://de.aliexpress.com/item/32968616563.html?spm=a2g0o.productlist.main.7.76f87b08ZXJmKB&algo\\_pvid=9be3f546-cc23-4be7-ae7e-5617e194ba78&algo\\_exp\\_id=9be3f546-cc23-4be7-ae7e-5617e194ba78-3&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2266576899408%22%7D&pdp\\_npi=2%40dis%21EUR%212.36%211.91%211.89%21%21%21%21%402102169316701939240631888d076b%2166576899408%21sea&curPageLogUid=s7J2ildER7K7](https://de.aliexpress.com/item/32968616563.html?spm=a2g0o.productlist.main.7.76f87b08ZXJmKB&algo_pvid=9be3f546-cc23-4be7-ae7e-5617e194ba78&algo_exp_id=9be3f546-cc23-4be7-ae7e-5617e194ba78-3&pdp_ext_f=%7B%22sku_id%22%3A%2266576899408%22%7D&pdp_npi=2%40dis%21EUR%212.36%211.91%211.89%21%21%21%21%402102169316701939240631888d076b%2166576899408%21sea&curPageLogUid=s7J2ildER7K7)

M2 screws assorted (5mm - 14mm)

[https://de.aliexpress.com/item/1005001870799002.html?spm=a2g0o.productlist.main.27.7c7c275fOdxXvR&algo\\_pvid=e8a79481-9e7c-4b7d-b73c-713a2b629955&algo\\_exp\\_id=e8a79481-9e7c-4b7d-b73c-713a2b629955-13&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2212000017972648994%22%7D&pdp\\_npi=2%40dis%21EUR%219.77%214.98%21%21%21%21%21%40212248ba16673934615254497d0766%2112000017972648994%21sea&curPageLogUid=GidAFVMwUfU3](https://de.aliexpress.com/item/1005001870799002.html?spm=a2g0o.productlist.main.27.7c7c275fOdxXvR&algo_pvid=e8a79481-9e7c-4b7d-b73c-713a2b629955&algo_exp_id=e8a79481-9e7c-4b7d-b73c-713a2b629955-13&pdp_ext_f=%7B%22sku_id%22%3A%2212000017972648994%22%7D&pdp_npi=2%40dis%21EUR%219.77%214.98%21%21%21%21%21%40212248ba16673934615254497d0766%2112000017972648994%21sea&curPageLogUid=GidAFVMwUfU3)

X2 M3 x20mm pan head wood screws

[https://de.aliexpress.com/item/1005001715481424.html?spm=a2g0o.productlist.main.31.5507113fKEjFW2&algo\\_pvid=8e977101-8180-45b4-adbd-8198707380f1&algo\\_exp\\_id=8e977101-8180-45b4-adbd-8198707380f1-15&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2212000017298653764%22%7D&pdp\\_npi=2%40dis%21EUR%213.22%212.26%21%21%21%21%21%40211bec8616673935199377108d0724%2112000017298653764%21sea&curPageLogUid=yyOx3nA30zoJ](https://de.aliexpress.com/item/1005001715481424.html?spm=a2g0o.productlist.main.31.5507113fKEjFW2&algo_pvid=8e977101-8180-45b4-adbd-8198707380f1&algo_exp_id=8e977101-8180-45b4-adbd-8198707380f1-15&pdp_ext_f=%7B%22sku_id%22%3A%2212000017298653764%22%7D&pdp_npi=2%40dis%21EUR%213.22%212.26%21%21%21%21%21%40211bec8616673935199377108d0724%2112000017298653764%21sea&curPageLogUid=yyOx3nA30zoJ)

X2 M3 x15mm machine thread/hex head



[https://de.aliexpress.com/item/10000150053486.html?algo\\_pvid=2512aad9c-9296-4612-b0c5-1fb553ad58fc&algo\\_exp\\_id=2512aad9c-9296-4612-b0c5-1fb553ad58fc-0&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2220000000127991015%22%7D&pdp\\_npi=2%40dis%21EUR%210.62%210.49%21%21%21%21%21%40211bf31616701938911564838d0780%2120000000127991015%21sea&curPageLogUid=BPbKqc2vGblB](https://de.aliexpress.com/item/10000150053486.html?algo_pvid=2512aad9c-9296-4612-b0c5-1fb553ad58fc&algo_exp_id=2512aad9c-9296-4612-b0c5-1fb553ad58fc-0&pdp_ext_f=%7B%22sku_id%22%3A%2220000000127991015%22%7D&pdp_npi=2%40dis%21EUR%210.62%210.49%21%21%21%21%21%40211bf31616701938911564838d0780%2120000000127991015%21sea&curPageLogUid=BPbKqc2vGblB)

X8 M3 x10mm machine thread

[https://de.aliexpress.com/item/10000150053486.html?algo\\_pvid=2512aad9c-9296-4612-b0c5-1fb553ad58fc&algo\\_exp\\_id=2512aad9c-9296-4612-b0c5-1fb553ad58fc-0&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2220000000127991015%22%7D&pdp\\_npi=2%40dis%21EUR%210.62%210.49%21%21%21%21%21%40211bf31616701938911564838d0780%2120000000127991015%21sea&curPageLogUid=BPbKqc2vGblB](https://de.aliexpress.com/item/10000150053486.html?algo_pvid=2512aad9c-9296-4612-b0c5-1fb553ad58fc&algo_exp_id=2512aad9c-9296-4612-b0c5-1fb553ad58fc-0&pdp_ext_f=%7B%22sku_id%22%3A%2220000000127991015%22%7D&pdp_npi=2%40dis%21EUR%210.62%210.49%21%21%21%21%21%40211bf31616701938911564838d0780%2120000000127991015%21sea&curPageLogUid=BPbKqc2vGblB)

X7 10x8mm round carbon rolled tube (500mm)

<https://de.aliexpress.com/item/4000407024494.html?gatewayAdapt=glo2deu>

X1 8x6mm carbon rolled tube (500mm)

<https://de.aliexpress.com/item/4000407024494.html?gatewayAdapt=glo2deu>

X1 10x10x6.5mm square carbon tube (500mm)

[https://de.aliexpress.com/item/4001086545108.html?spm=a2g0o.productlist.main.1.66786537uJSlJa&algo\\_pvid=67b1d666-a683-4c2b-8fc8-bae8c1c46b98&algo\\_exp\\_id=67b1d666-a683-4c2b-8fc8-bae8c1c46b98-0&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2210000014296523704%22%7D&pdp\\_npi=2%40dis%21EUR%217.26%217.26%21%21%21%21%21%40211bf2da16701943092284097d0750%2110000014296523704%21sea&curPageLogUid=3JnQDWF8APA8](https://de.aliexpress.com/item/4001086545108.html?spm=a2g0o.productlist.main.1.66786537uJSlJa&algo_pvid=67b1d666-a683-4c2b-8fc8-bae8c1c46b98&algo_exp_id=67b1d666-a683-4c2b-8fc8-bae8c1c46b98-0&pdp_ext_f=%7B%22sku_id%22%3A%2210000014296523704%22%7D&pdp_npi=2%40dis%21EUR%217.26%217.26%21%21%21%21%21%40211bf2da16701943092284097d0750%2110000014296523704%21sea&curPageLogUid=3JnQDWF8APA8)

X1 10mm wooden dowel (100mm min)

X1 70mm foam wheels

[https://de.aliexpress.com/item/1005003406670800.html?spm=a2g0o.productlist.main.17.785a31eeqX5b5a&algo\\_pvid=a966a887-7cc9-4c84-83af-734abd9f1bd3&algo\\_exp\\_id=a966a887-7cc9-4c84-83af-734abd9f1bd3-8&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2212000025645768175%22%7D&pdp\\_npi=2%40dis%21EUR%211.57%211.02%21%21%21%21%21%402102111816701943368082749d078e%2112000025645768175%21sea&curPageLogUid=DhaOhJohXkel](https://de.aliexpress.com/item/1005003406670800.html?spm=a2g0o.productlist.main.17.785a31eeqX5b5a&algo_pvid=a966a887-7cc9-4c84-83af-734abd9f1bd3&algo_exp_id=a966a887-7cc9-4c84-83af-734abd9f1bd3-8&pdp_ext_f=%7B%22sku_id%22%3A%2212000025645768175%22%7D&pdp_npi=2%40dis%21EUR%211.57%211.02%21%21%21%21%21%402102111816701943368082749d078e%2112000025645768175%21sea&curPageLogUid=DhaOhJohXkel)

Velcro

Braided fishing line (or similar)

Bamboo skewers 3mm

0.3x4mm springs

[https://de.aliexpress.com/item/32817511422.html?spm=a2g0o.productlist.main.15.7000522baAuXdU&algo\\_pvid=a37af567-3fea-4a31-9b57-5d1c7a4a2127&algo\\_exp\\_id=a37af567-3fea-4a31-9b57-5d1c7a4a2127-7&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2210000001984713544](https://de.aliexpress.com/item/32817511422.html?spm=a2g0o.productlist.main.15.7000522baAuXdU&algo_pvid=a37af567-3fea-4a31-9b57-5d1c7a4a2127&algo_exp_id=a37af567-3fea-4a31-9b57-5d1c7a4a2127-7&pdp_ext_f=%7B%22sku_id%22%3A%2210000001984713544)



<https://de.aliexpress.com/item/1005004650206928.html?gatewayAdapt=glo2deu>

X2 sets 8 pin plugs (OPTIONAL)

<https://de.aliexpress.com/item/1005004650206928.html?gatewayAdapt=glo2deu>

5m Servo wire 26AWG

[https://de.aliexpress.com/item/32610086634.html?spm=a2g0o.productlist.main.3.3c705a41D6xV2d&algo\\_pvid=963f916c-7710-4369-862e-048e35d6c066&algo\\_exp\\_id=963f916c-7710-4369-862e-048e35d6c066-1&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2265814141414%22%7D&pdp\\_npi=2%40dis%21EUR%218.31%217.82%21%21%21%21%21%402102188b16701946958585661d0735%2165814141414%21sea&curPageLogUid=6xqQ2UsmoPjr](https://de.aliexpress.com/item/32610086634.html?spm=a2g0o.productlist.main.3.3c705a41D6xV2d&algo_pvid=963f916c-7710-4369-862e-048e35d6c066&algo_exp_id=963f916c-7710-4369-862e-048e35d6c066-1&pdp_ext_f=%7B%22sku_id%22%3A%2265814141414%22%7D&pdp_npi=2%40dis%21EUR%218.31%217.82%21%21%21%21%21%402102188b16701946958585661d0735%2165814141414%21sea&curPageLogUid=6xqQ2UsmoPjr)

X4 m2 ball joint linkage (**wing “A”**)

[https://de.aliexpress.com/item/32972208724.html?spm=a2g0o.productlist.main.5.649f1bd4yQZehv&algo\\_pvid=87490f5e-8a1f-402d-926c-5df5cba1fca3&algo\\_exp\\_id=87490f5e-8a1f-402d-926c-5df5cba1fca3-2&pdp\\_ext\\_f=%7B%22sku\\_id%22%3A%2266674126626%22%7D&pdp\\_npi=2%40dis%21EUR%218.56%218.56%21%21%21%21%21%40211bec8616701947254635966d0724%2166674126626%21sea&curPageLogUid=d2StH80gGnLK](https://de.aliexpress.com/item/32972208724.html?spm=a2g0o.productlist.main.5.649f1bd4yQZehv&algo_pvid=87490f5e-8a1f-402d-926c-5df5cba1fca3&algo_exp_id=87490f5e-8a1f-402d-926c-5df5cba1fca3-2&pdp_ext_f=%7B%22sku_id%22%3A%2266674126626%22%7D&pdp_npi=2%40dis%21EUR%218.56%218.56%21%21%21%21%21%40211bec8616701947254635966d0724%2166674126626%21sea&curPageLogUid=d2StH80gGnLK)





**Thank you for supporting us! We hope you enjoy many hours of flying your Mosquito glider. If you have any questions regarding the build process or set-up of your model, please contact us at:**

**[Aeroworks3d@outlook.com](mailto:Aeroworks3d@outlook.com)**

