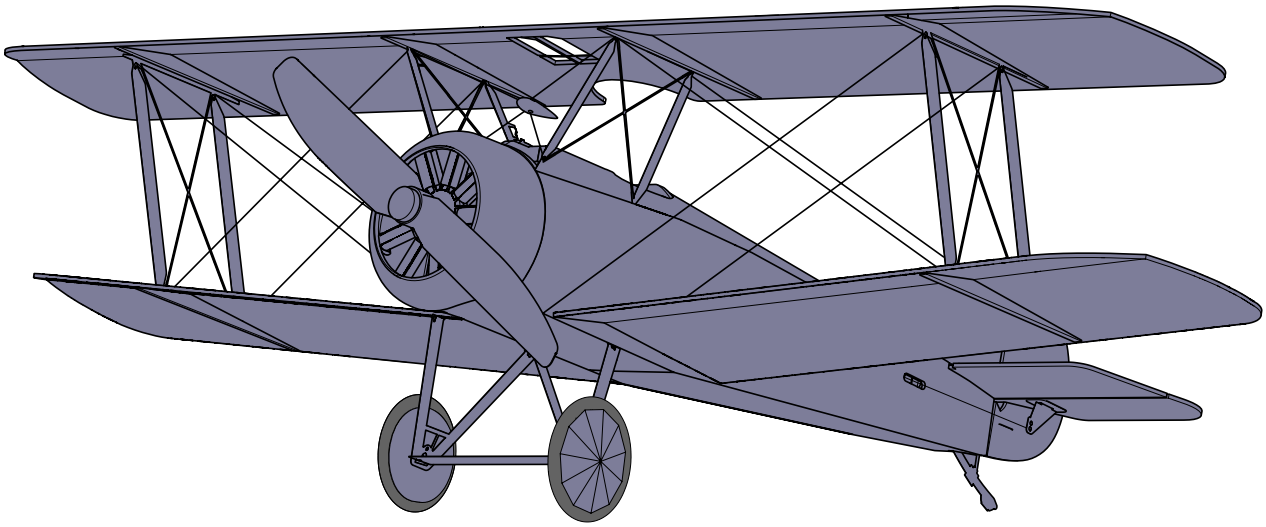
Microaces
MAKING HISTORY

ASSEMBLY GUIDE



Sopwith F.1 Camel

Introduction

Thank you for purchasing this Microaces Aero Kit. Designed using innovative ideas, advanced materials and detailed aircraft illustrations, this 1/24th scale aircraft will bring you hours of building enjoyment and many more exciting flying hours too. Please take your time to familiarise yourself with these instructions as the aircraft assembles in a very unique way, following a sequence of steps that should be adhered too to ensure a satisfactory and flyable model.

Safety

It is extremely important to us that you and those around you remain safe while building and flying Microaces kits. Please take note of the following notices of safety. Microaces Aero kits contain parts and packaging ***unsuitable*** for handling by small children. Please ensure that children under the age of 6 years are prevented from handling the component parts or packaging of this kit. Although the resulting model is lightweight, we DON'T recommend that you fly it near or over others where there is a danger of striking someone. We DO recommend that the maiden flight is performed over long grass in calm weather away from others.

Assembly

Read all the instructions carefully before starting assembly.
It is important to use the recommended glues or an equivalent with similar properties. Foam parts must be glued with a foam safe cement or permanent damage can result to components. Ensure your knife has a fresh or sharp blade installed to ensure a clean cut.

Warranty

Microaces warranties this kit is supplied with all components present and that those components are free from cosmetic or structural damage to an extent that would impair the assembly of the kit, alter the aesthetics of the built model and/or the flight performance of the resulting model. If any parts are missing or damaged please contact us via email at: support@microaces.com

Key


Note (Information)


Attention

Part Number


Do Not Glue


Contact Adhesive (Foam Safe)


Score before assembly


Alphatic Resin (or Foam Safe CA)


Cut


Paint


Sanding Required


Area of adhesion for glue

KIT PARTS

Sheet Parts

1 x 2mm Laser cut Depron airframe
1 x 1mm printed & laser cut Depron fuselage
1 x 1mm printed & laser cut Depron flight surfaces
1 x 200 micron printed & laser cut polypropylene
1 x polyester sticker sheet
1 x 0.8mm laser cut plywood motor mount parts

Loose Parts

2 x neoprene tyres
2 x 4mm Ø plastic tube (Black)
2 x 4mm Ø x 1mm noedymium magnets
1 x 110mm x 0.4mm x 1mm carbon fibre strip
1 x 390mm x 0.4mm x 1mm carbon fibre strip
1 x 70mm x 1mm Ø carbon fibre rod
1 x piano wire elevator control rod
1 x piano wire rudder control rod
1 x profile pilot figure
1 x Spectra rigging wire
1 x 3D printed fuel prop
1 x 3D printed rigging guide
1 x Brass tube 2mm Ø x 12mm

RECOMMENDED TOOLS/GLUES

Knife or Scalpel with fresh blade

Steel Rule or straight edge

Sanding Stick or sand paper (180 grit recommended)

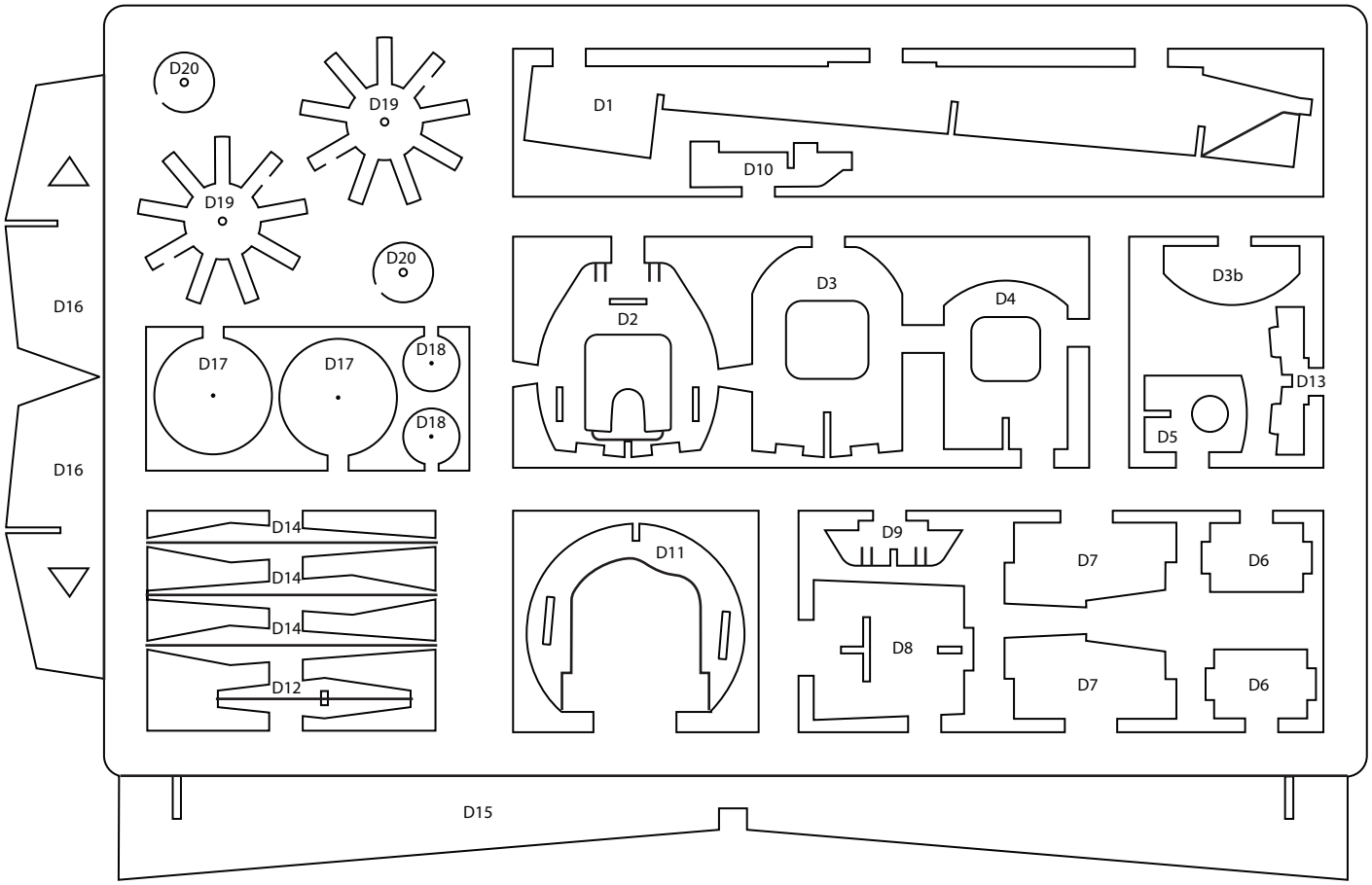
Tweezers

Needle nose pliers

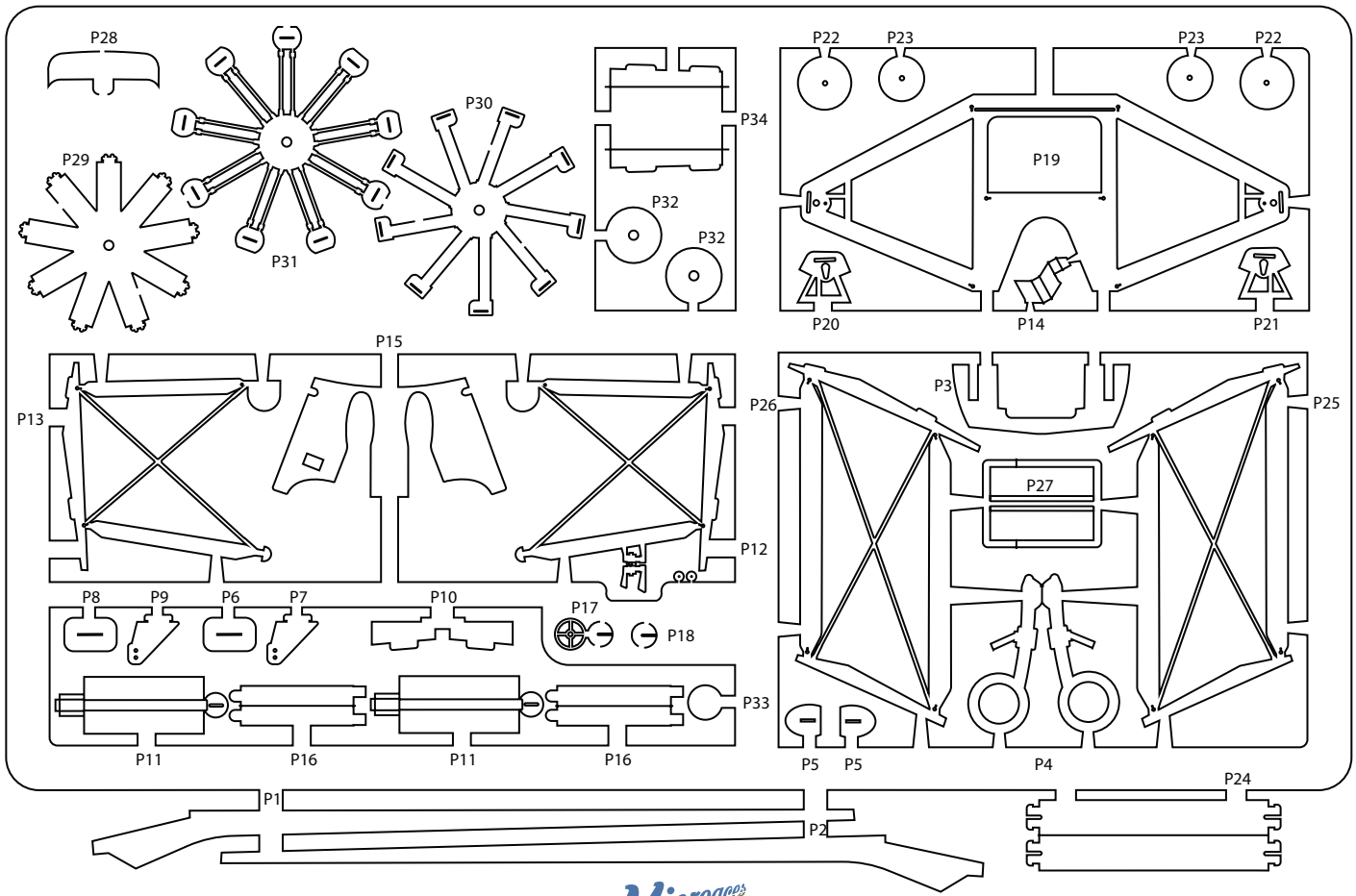
UHU por foam safe adhesive (For foam & plastic)

Aliphatic Resin or Foam safe cyano glue (for rigging & re-inforcement)

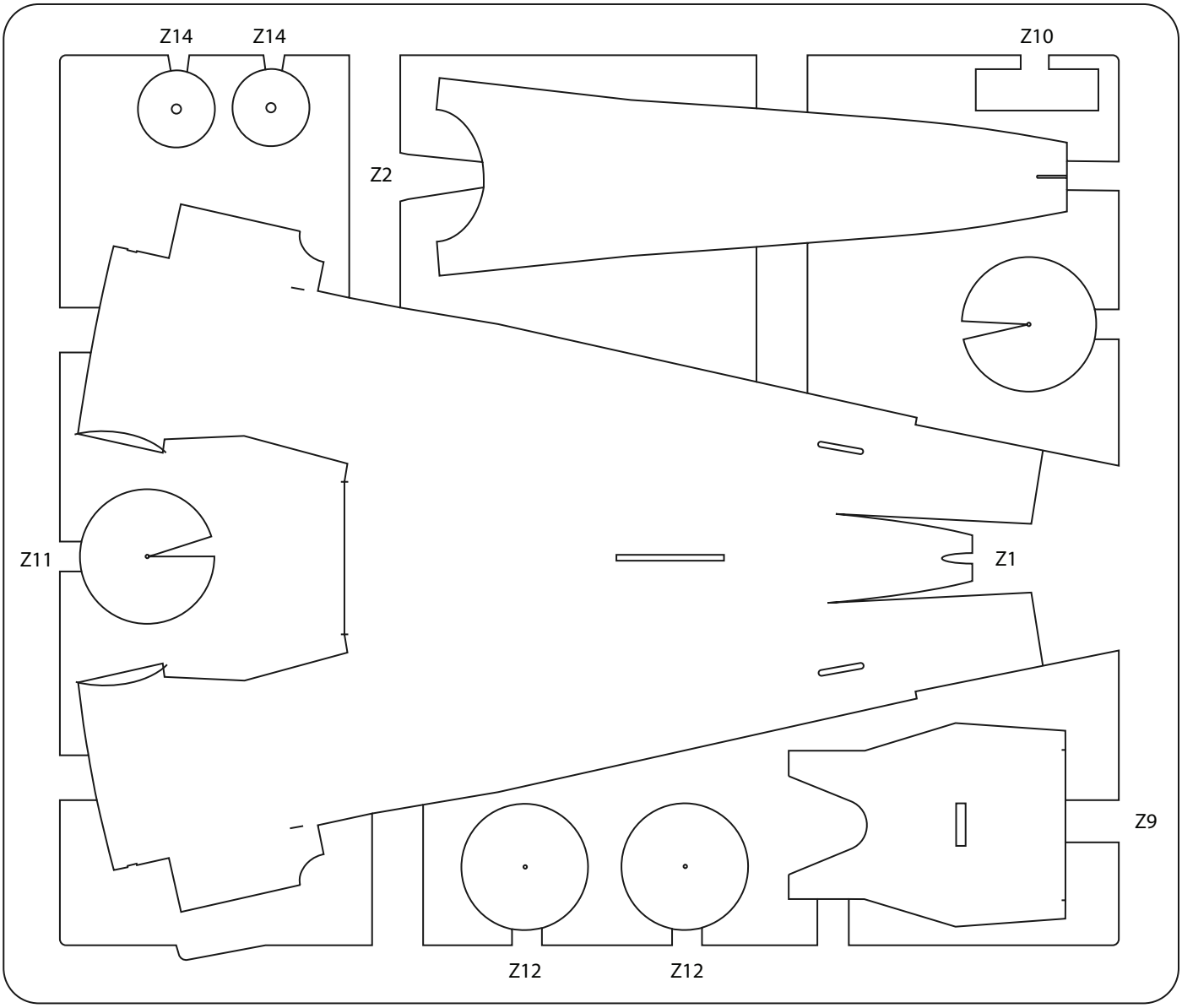
2mm DEPRON FOAM



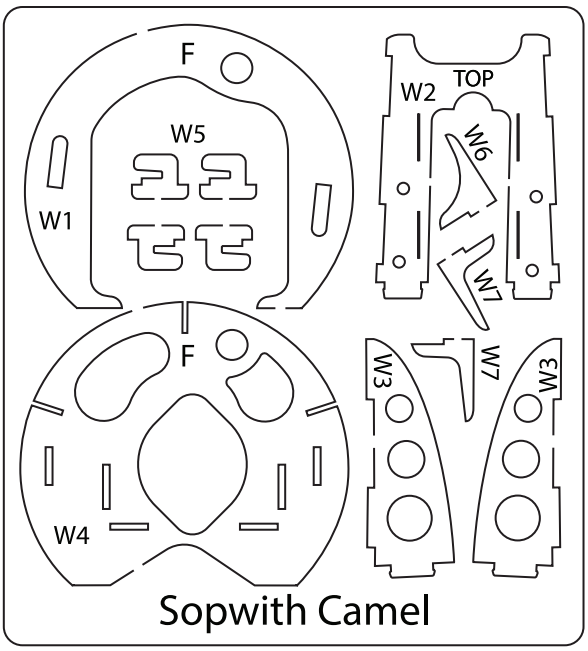
PLASTIC PARTS



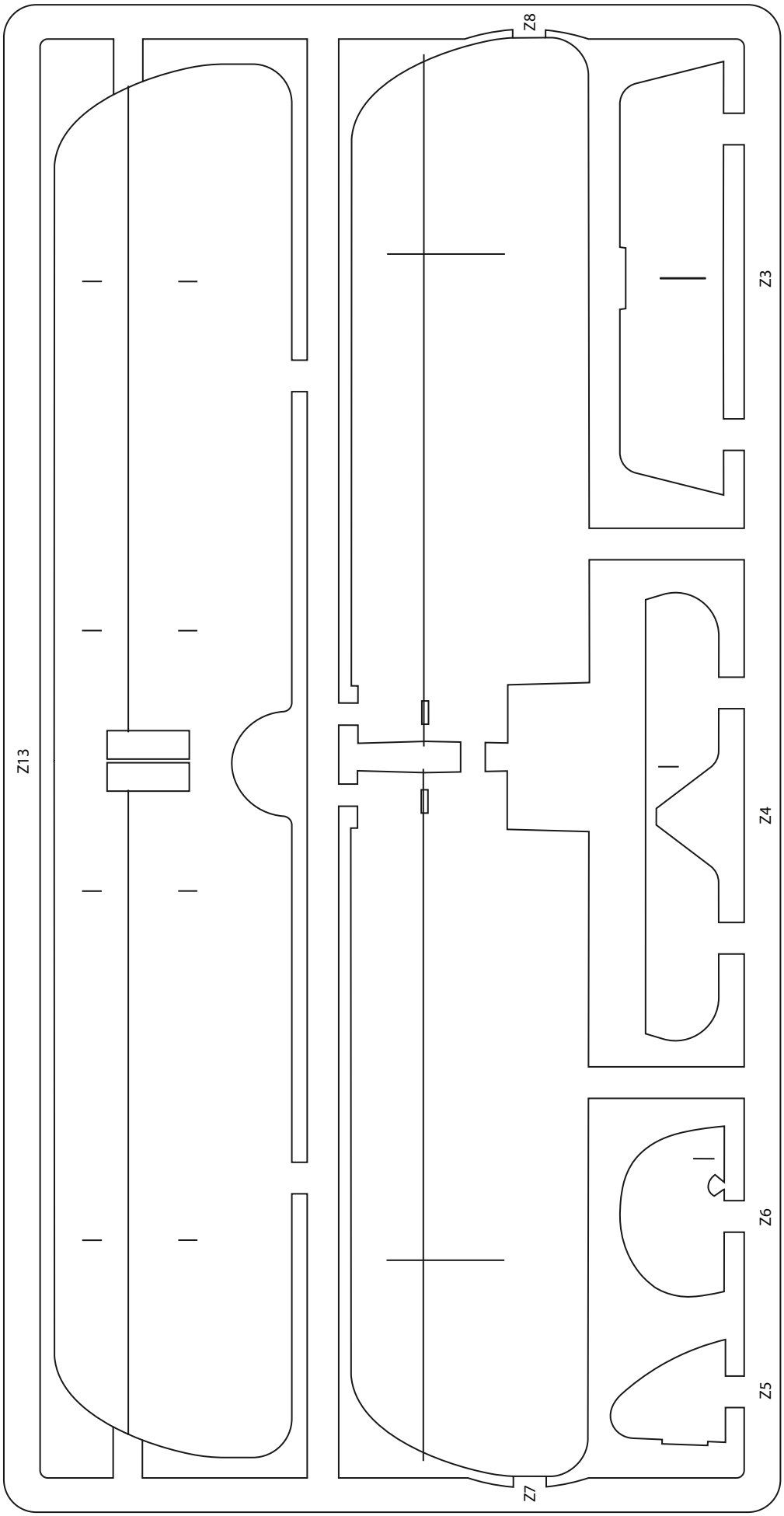
1mm DEPRON FOAM



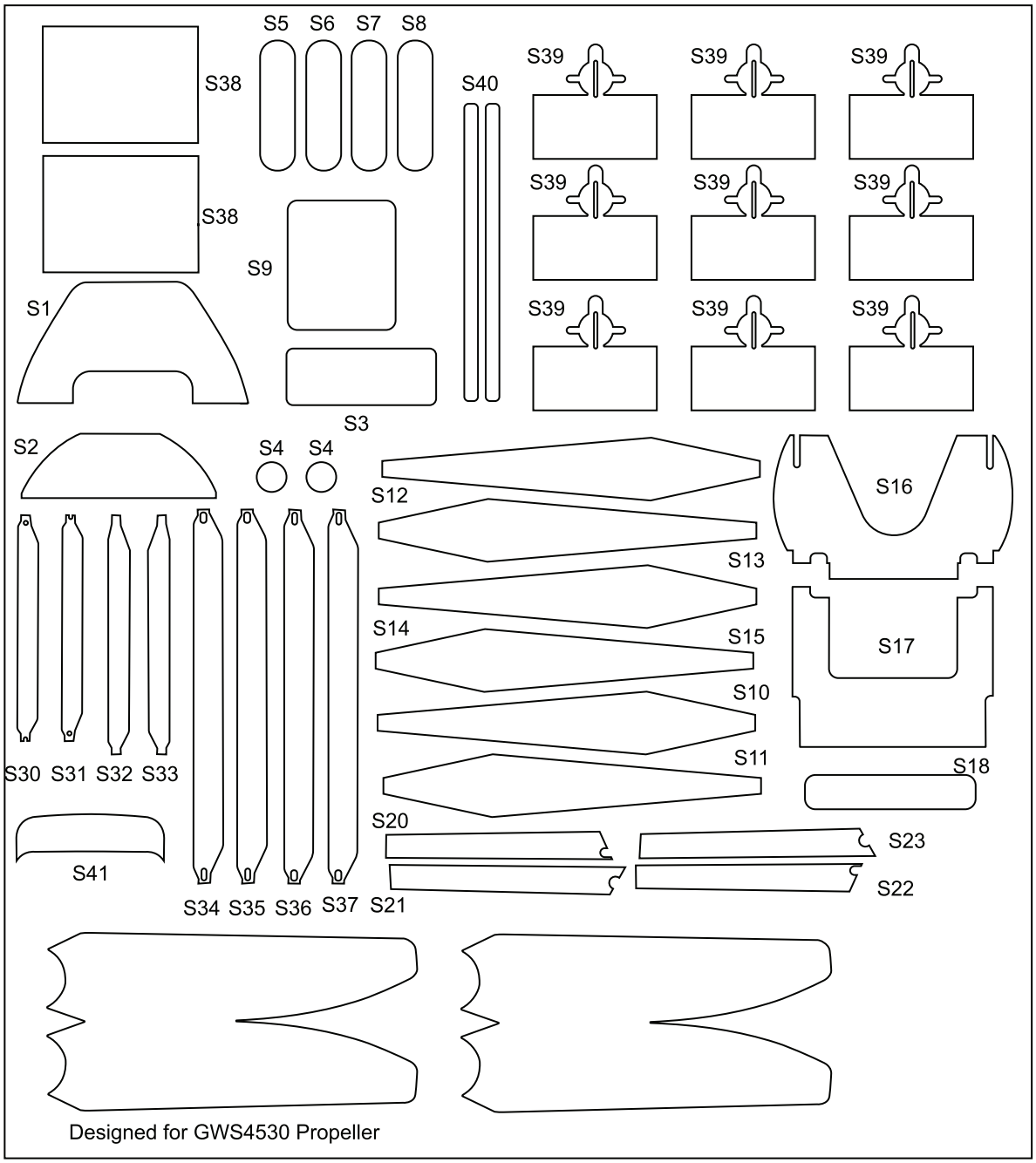
0.8mm PLYWOOD



1mm DEPRON FOAM



STICKERS

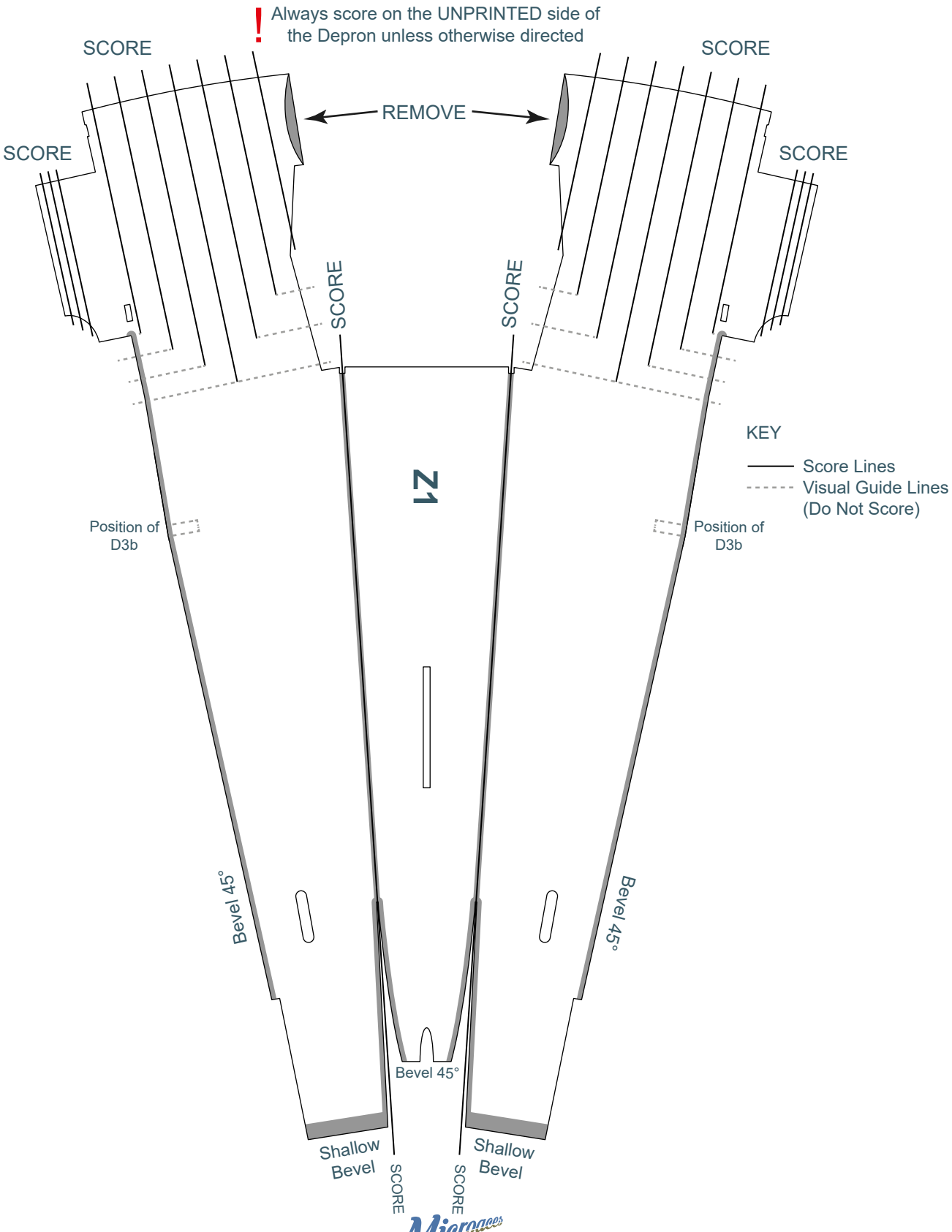

S5 S6 S7 S8
S38
S40
S39 S39 S39
S39 S39 S39
S38
S9
S1
S39 S39 S39
S3
S2
S4 S4
S12
S16
S13
S14
S15
S17
S10
S11
S18
S30 S31 S32 S33
S20
S23
S41
S22
S34 S35 S36 S37 S21
Designed for GWS4530 Propeller

SCORING & BEVELING GUIDE #1

Method for scoring 1mm Depron

Using a straight edge as a guide, score the depron with the reverse side of a craft knife or a ball point pen.

If you haven't used this technique before it is essential that you practice using a scrap or spare piece of 1mm Depron prior to processing any kit components.



Drawn to scale: Print without scaling and use for scoring parts indicated

SCORING & BEVELING GUIDE #2

Method for scoring 1mm Depron

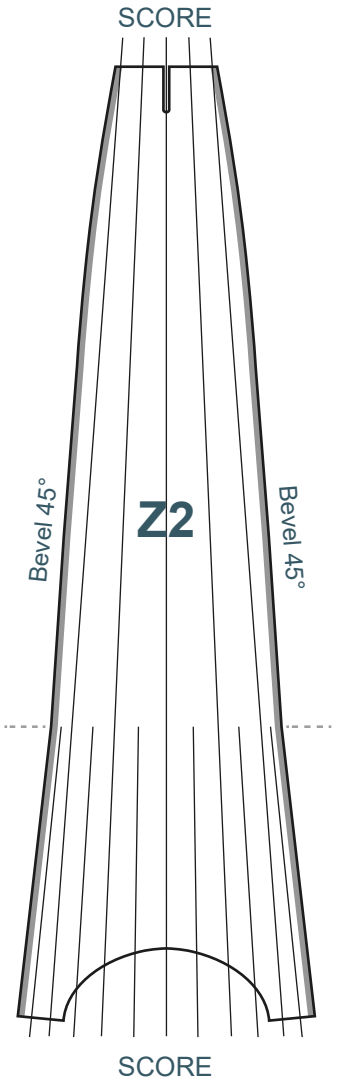
Using a straight edge as a guide, score the depron with the reverse side of a craft knife or a ball point pen.

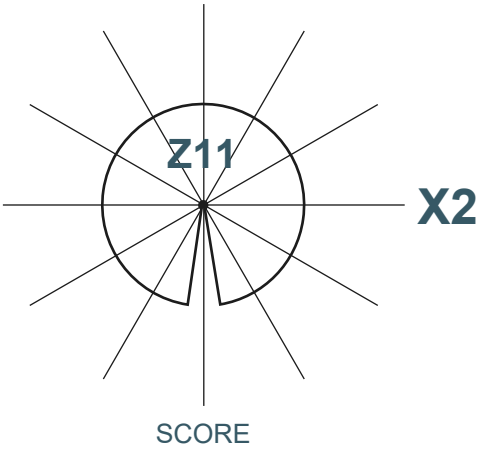
If you haven't used this technique before it is essential that you practice using a scrap or spare piece of 1mm Depron prior to processing any kit components.

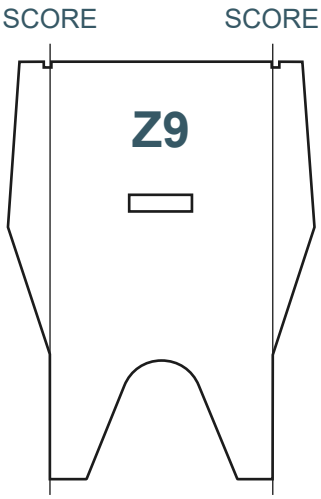
KEY

Score Lines
Visual Guide Lines (Do Not Score)

! Always score on the UNPRINTED side of the Depron unless otherwise directed



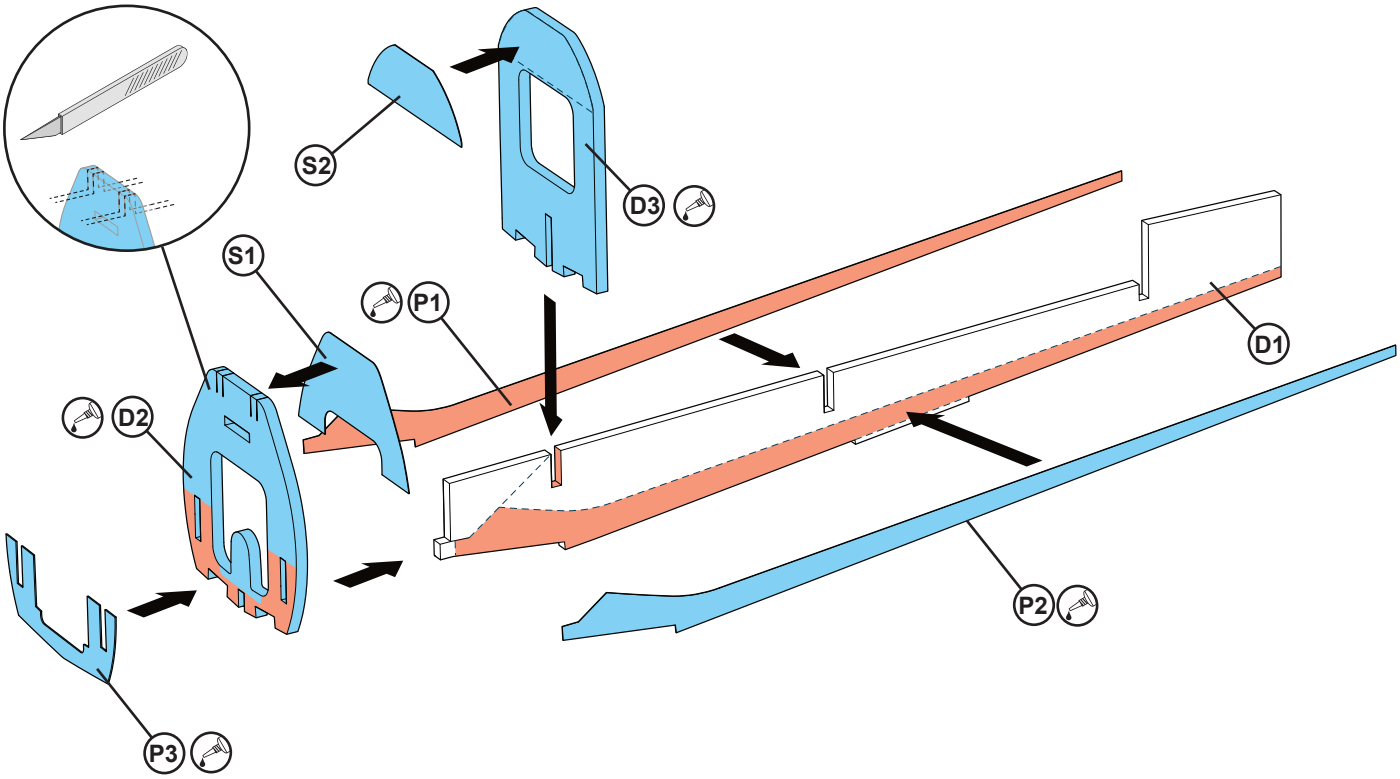


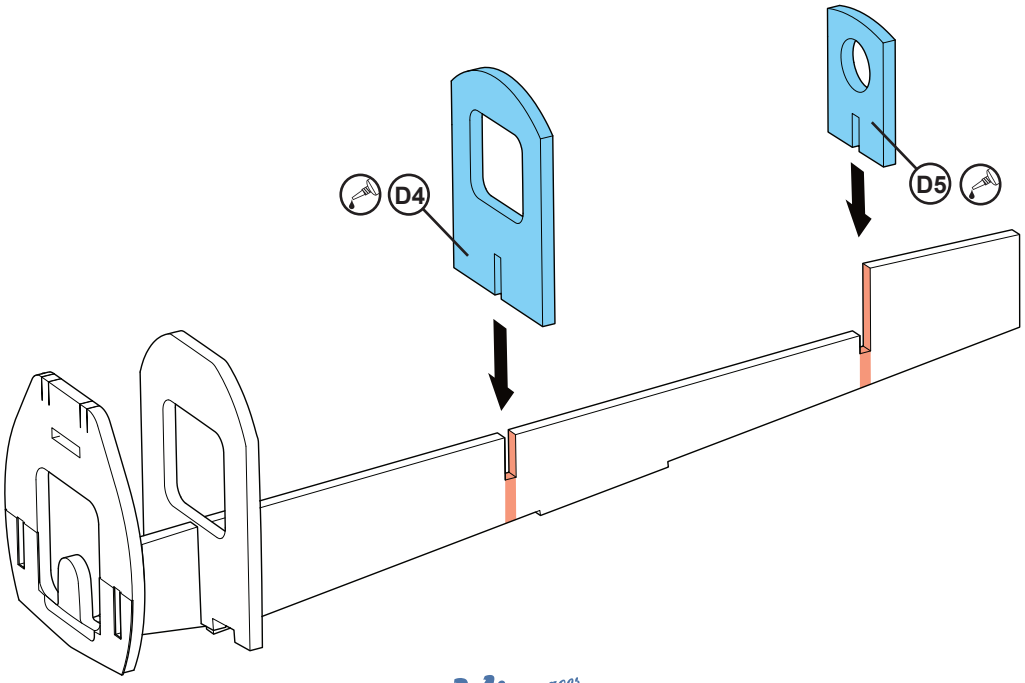


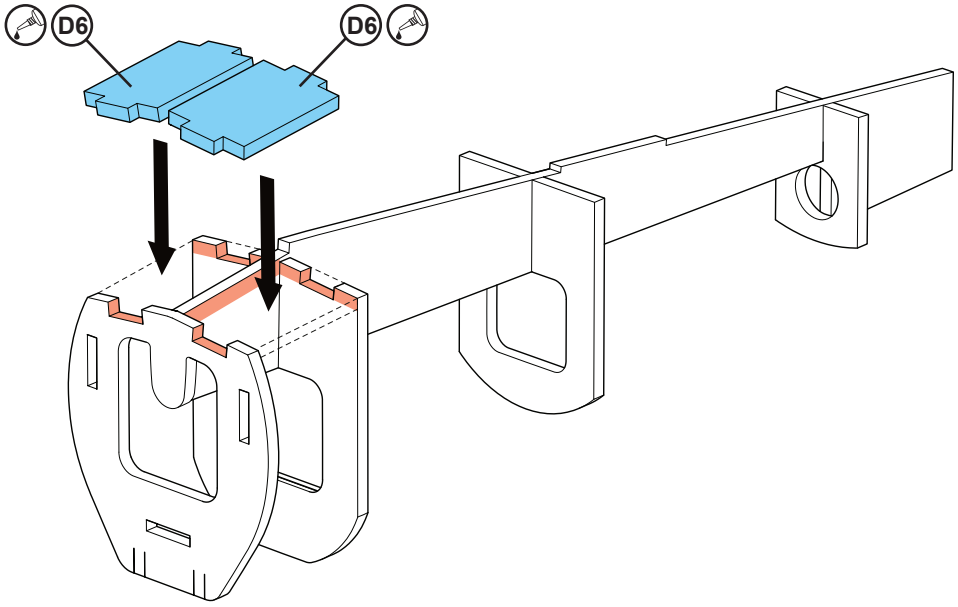
STAGE 1 AIRFRAME

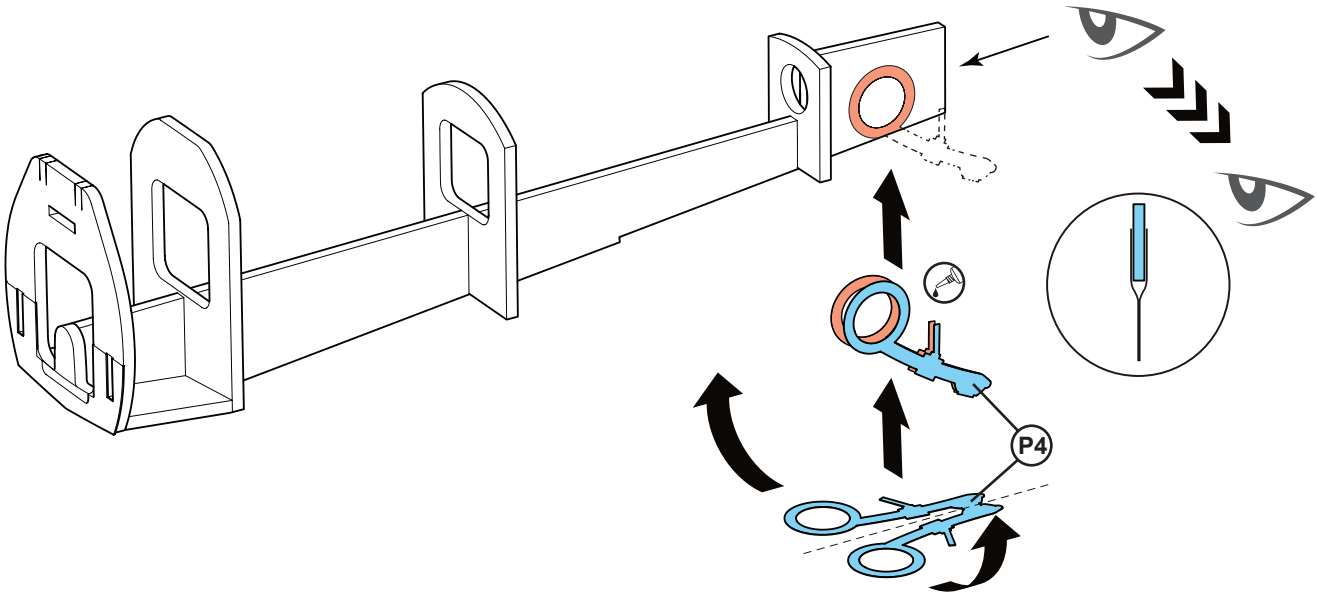
The plastic parts used in the airframe are there to increase the strength of the structure in vital areas whilst still providing some flexibility.

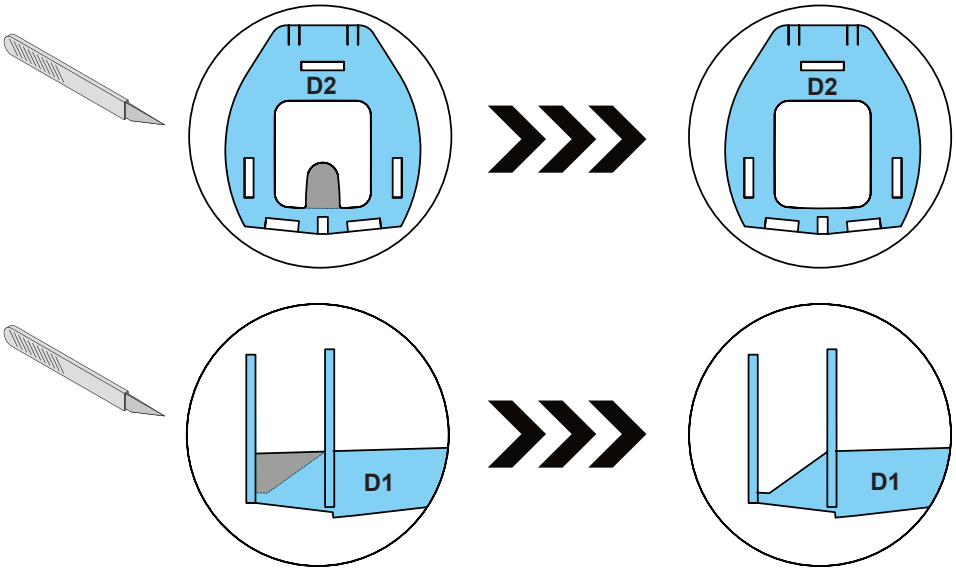
Apply a thin layer of adhesive to the plastic part and attach immediately to allow some wiggle time to get the parts lined up. Set aside to cure.

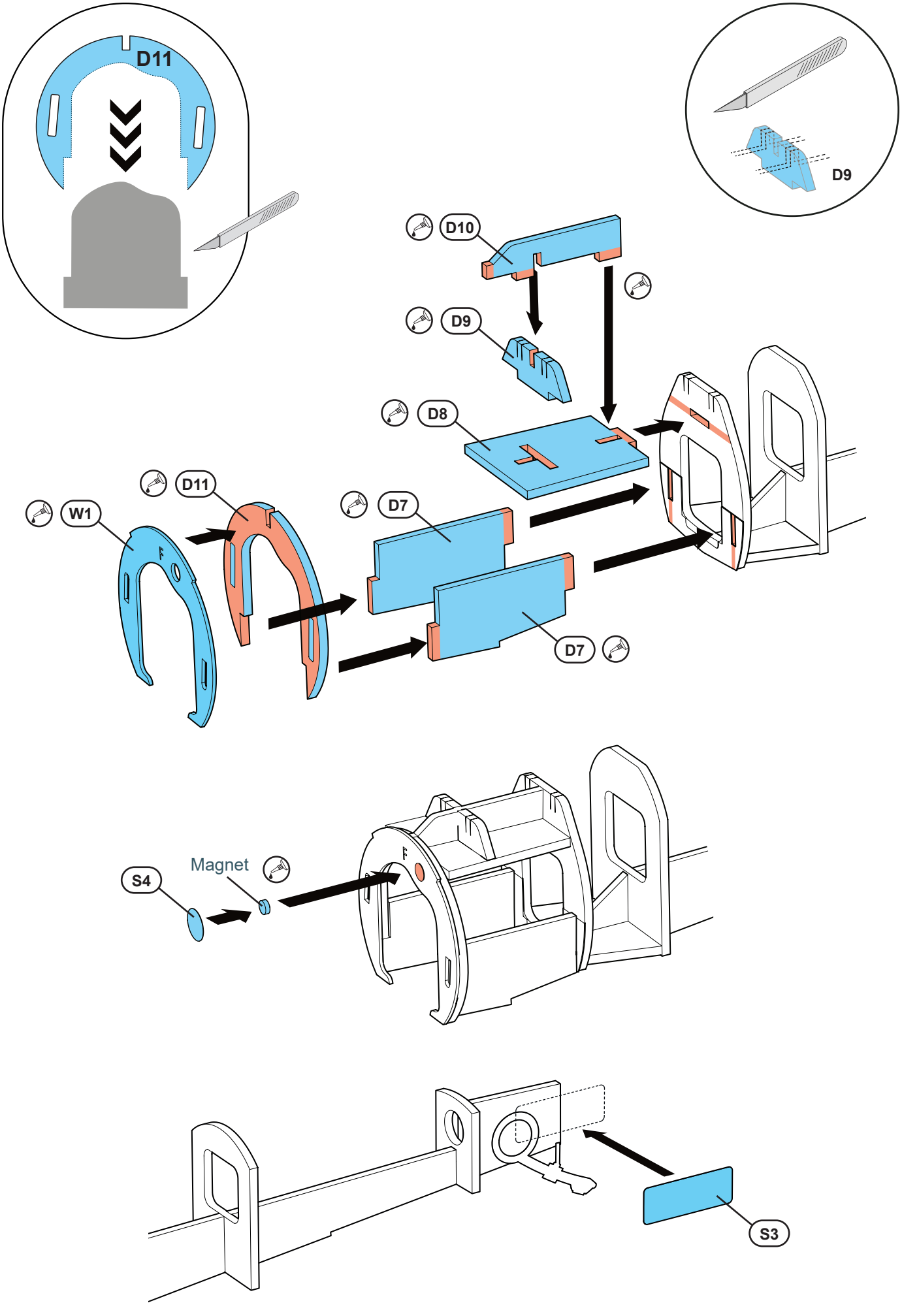





D6
D6

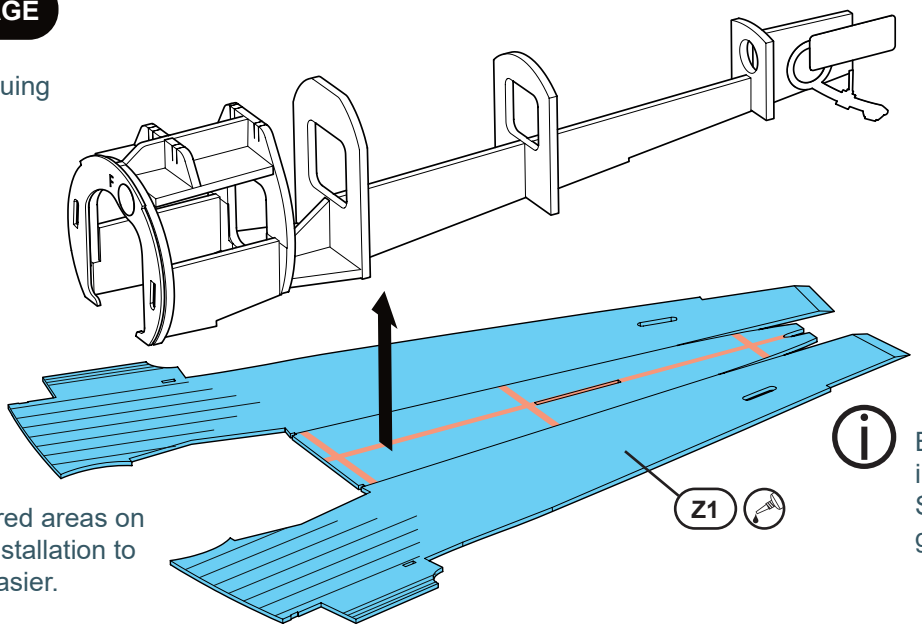

P4


D2
D2
D1
D1


D11
D9
D10
D9
D8
D11
W1
D7
D7
Magnet
S4
S3

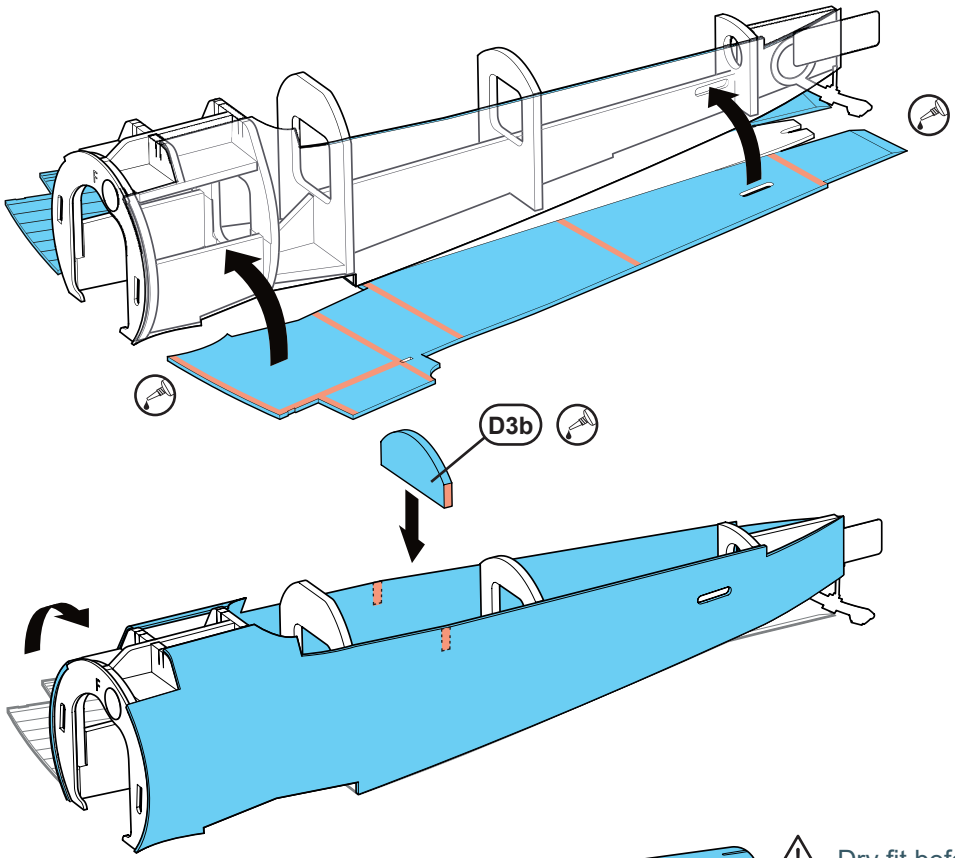
STAGE 2 FUSELAGE

⚠ Dry fit before gluing



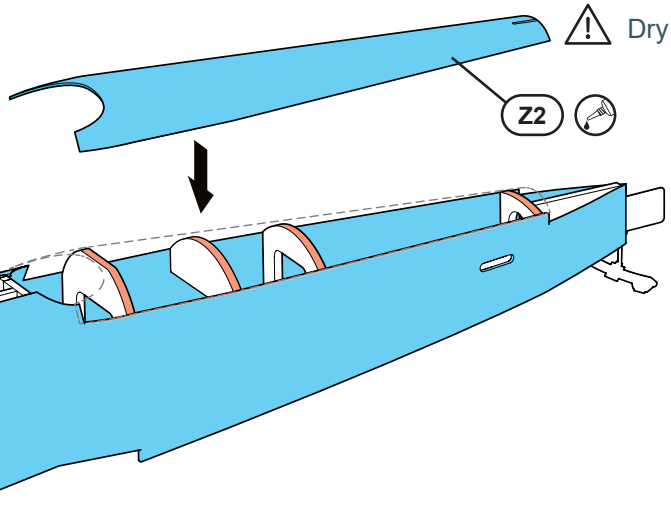
ⓘ Pre-bend scored areas on part prior to installation to make fitting easier.

ⓘ Bevel & Score before installation - See Scoring & Bevelling guide #1

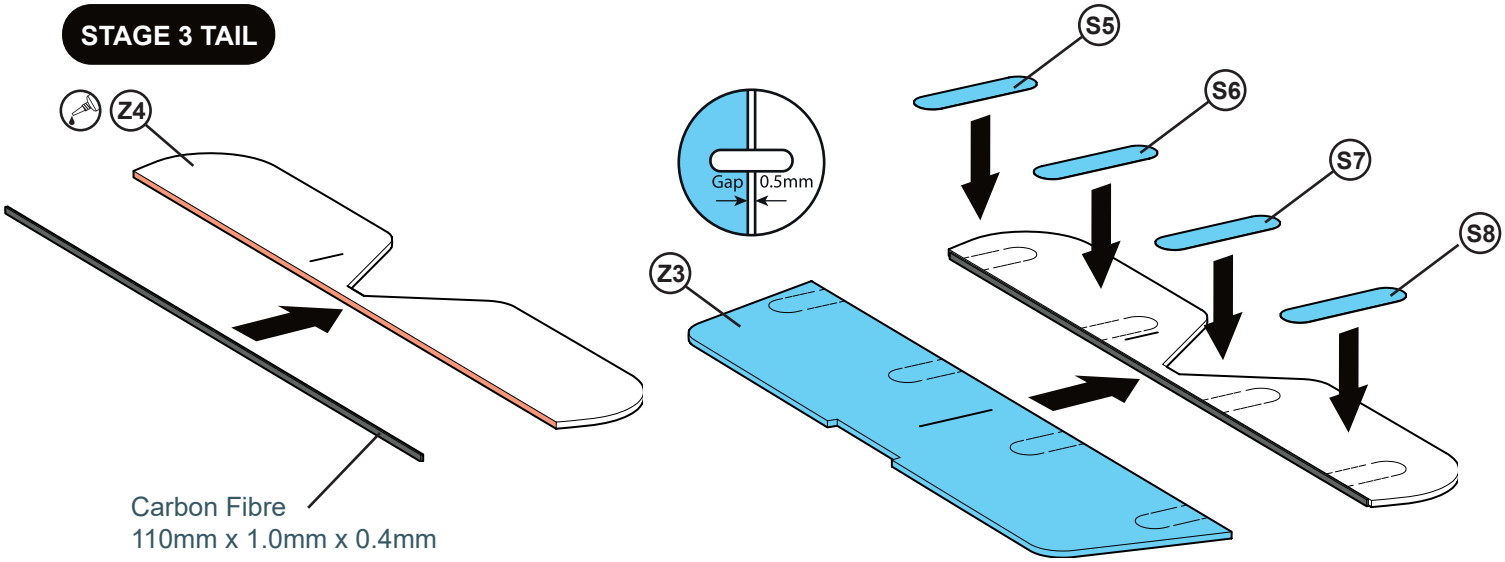


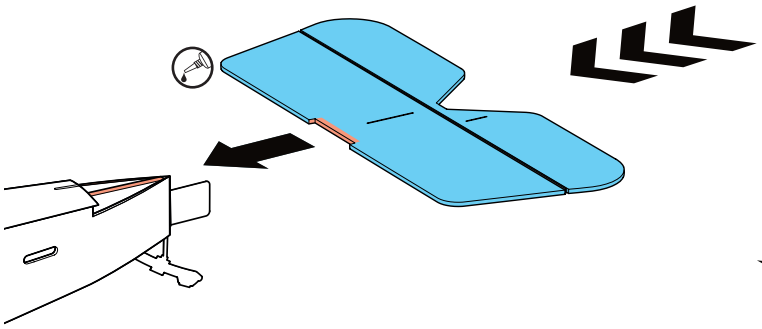
⚠ Dry fit before gluing

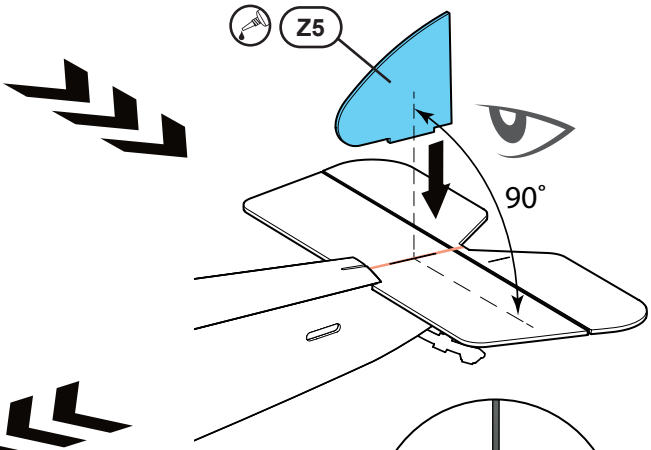
ⓘ Pre-bend scored areas on part prior to installation to make fitting easier.

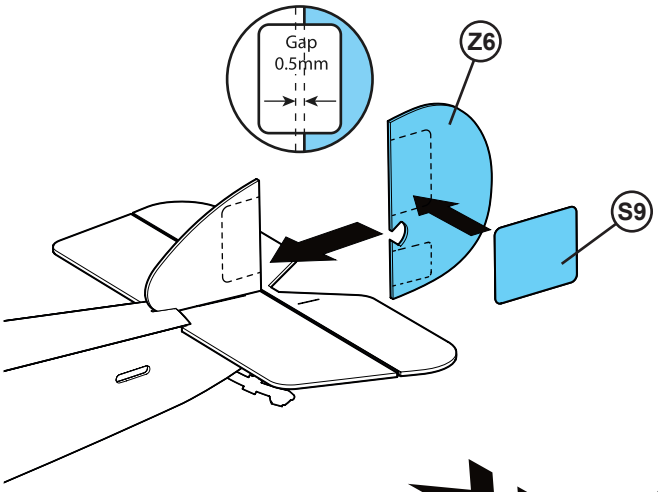


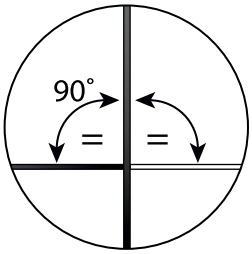
STAGE 3 TAIL

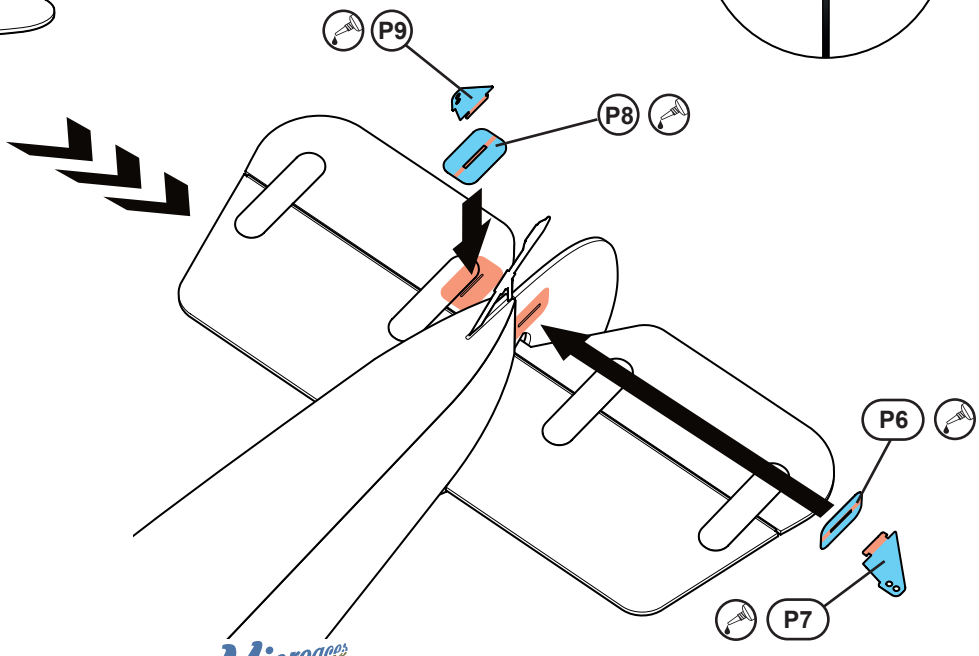

Z4
Carbon Fibre
110mm x 1.0mm x 0.4mm
Gap 0.5mm
Z3
S5
S6
S7
S8



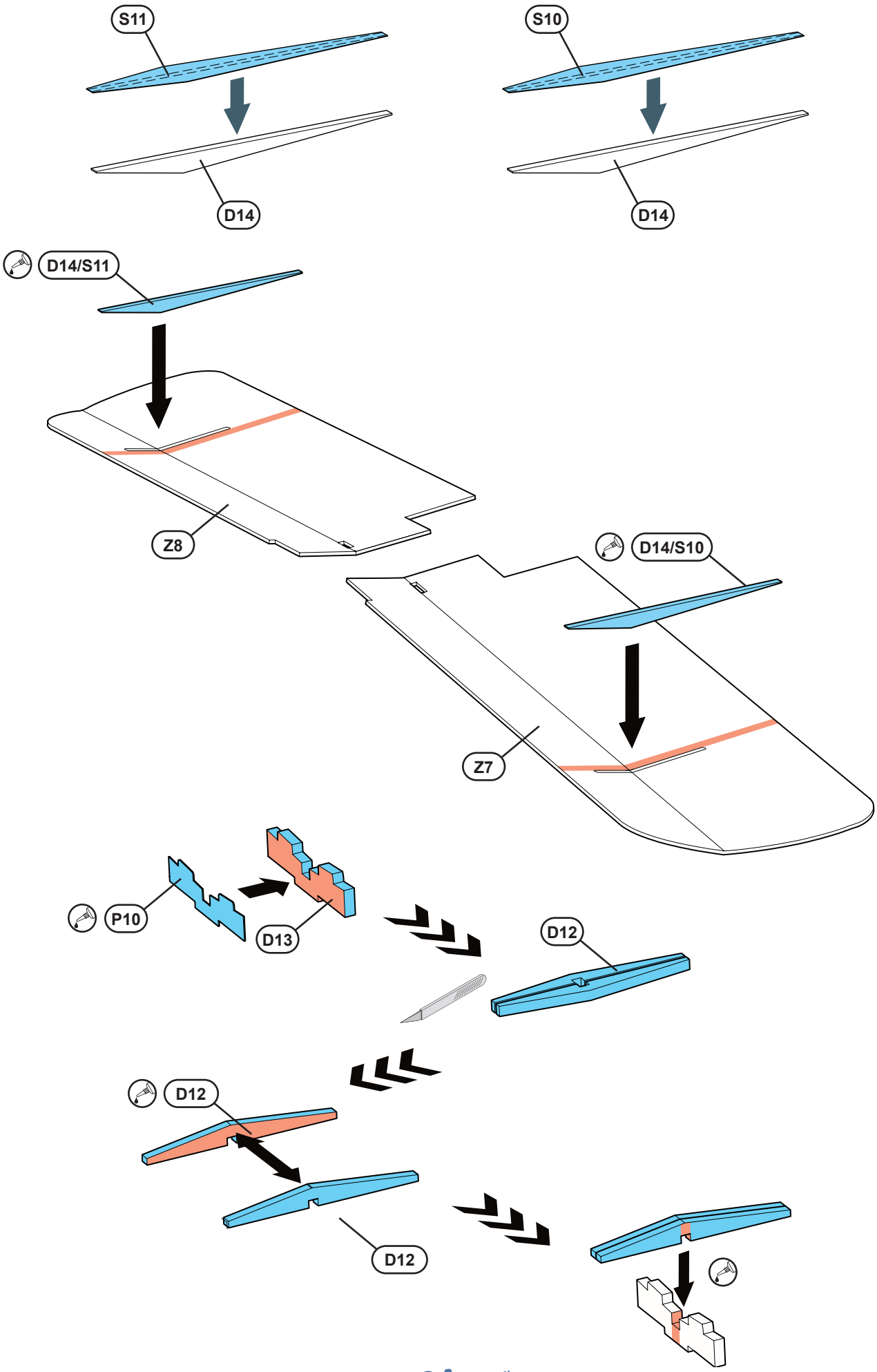

Z5
90˚

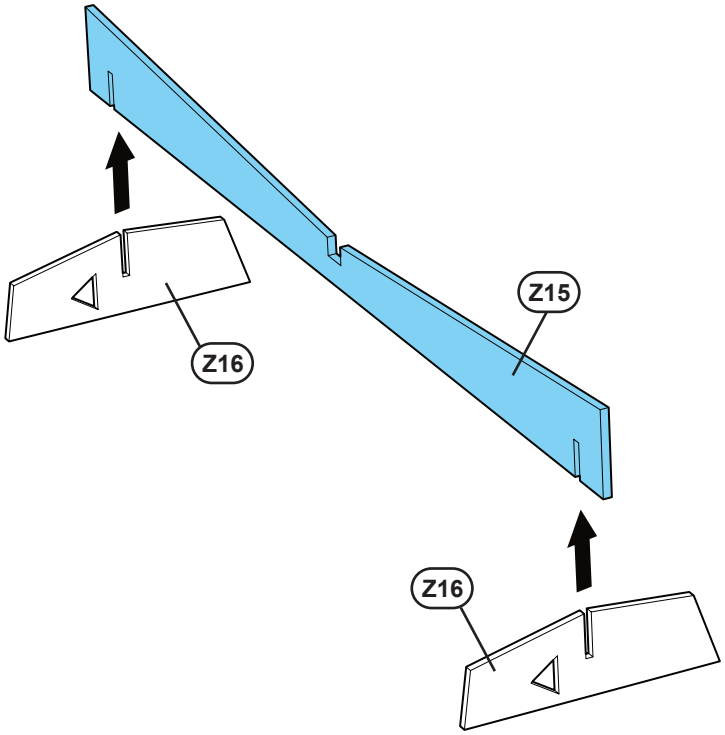

Gap
0.5mm
Z6
S9

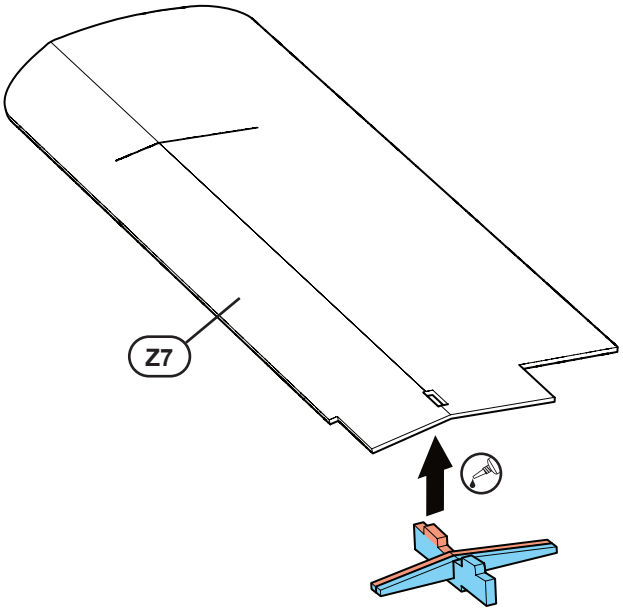

90˚
=
=

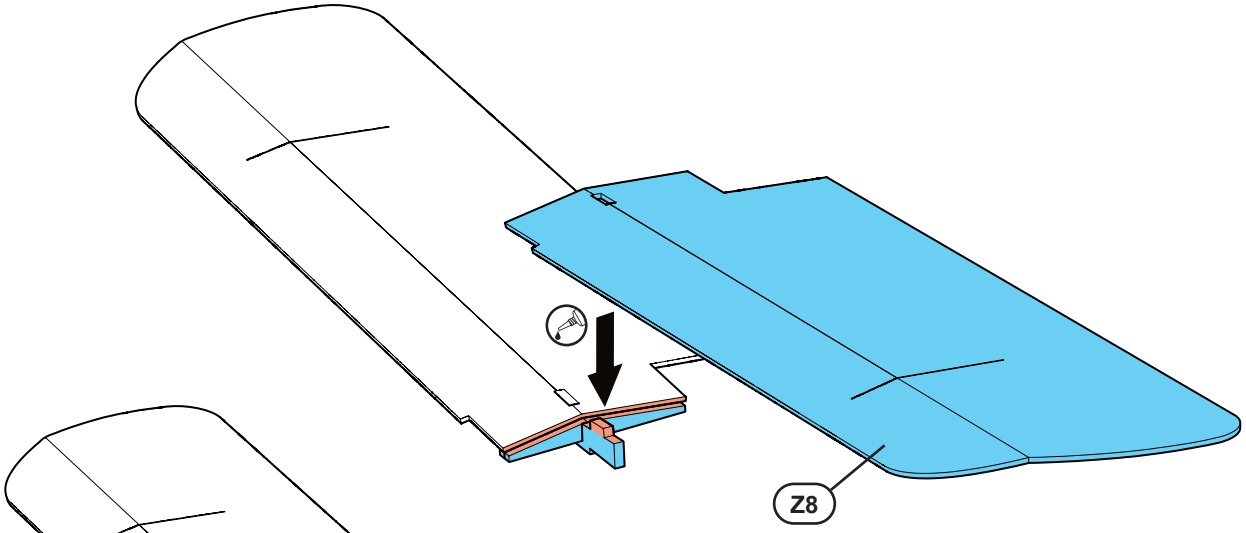

P9
P8
P6
P7

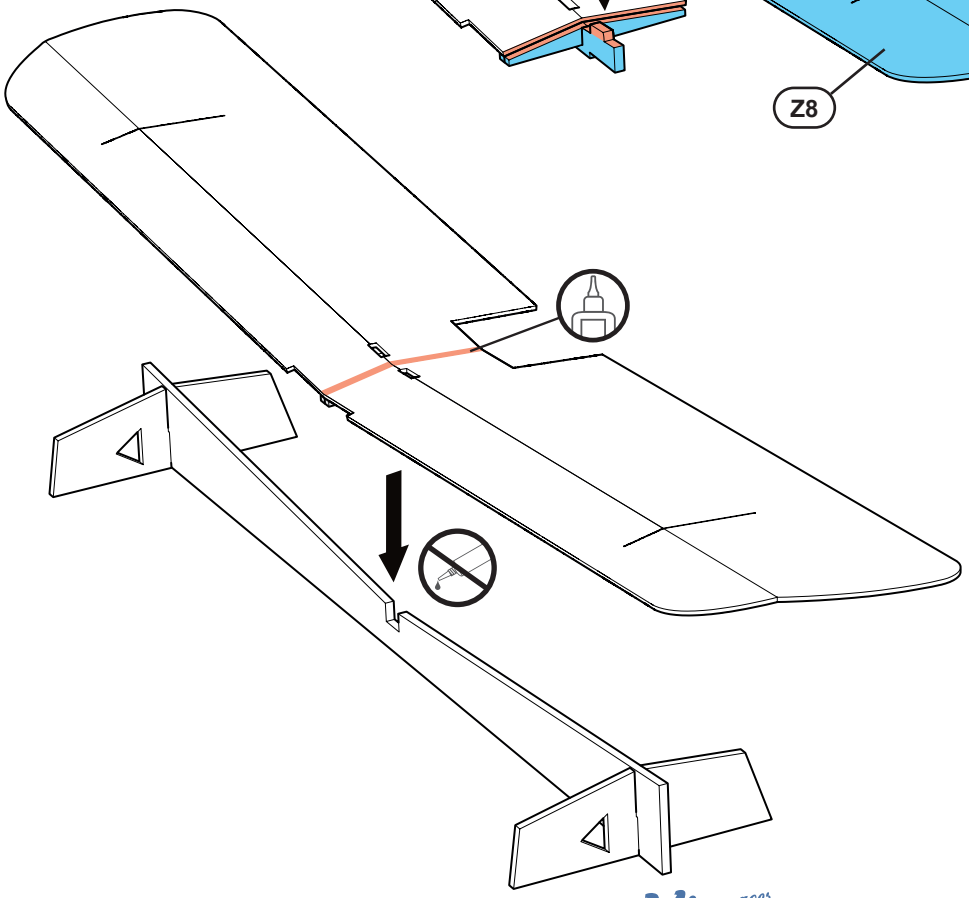
STAGE 4 LOWER WING



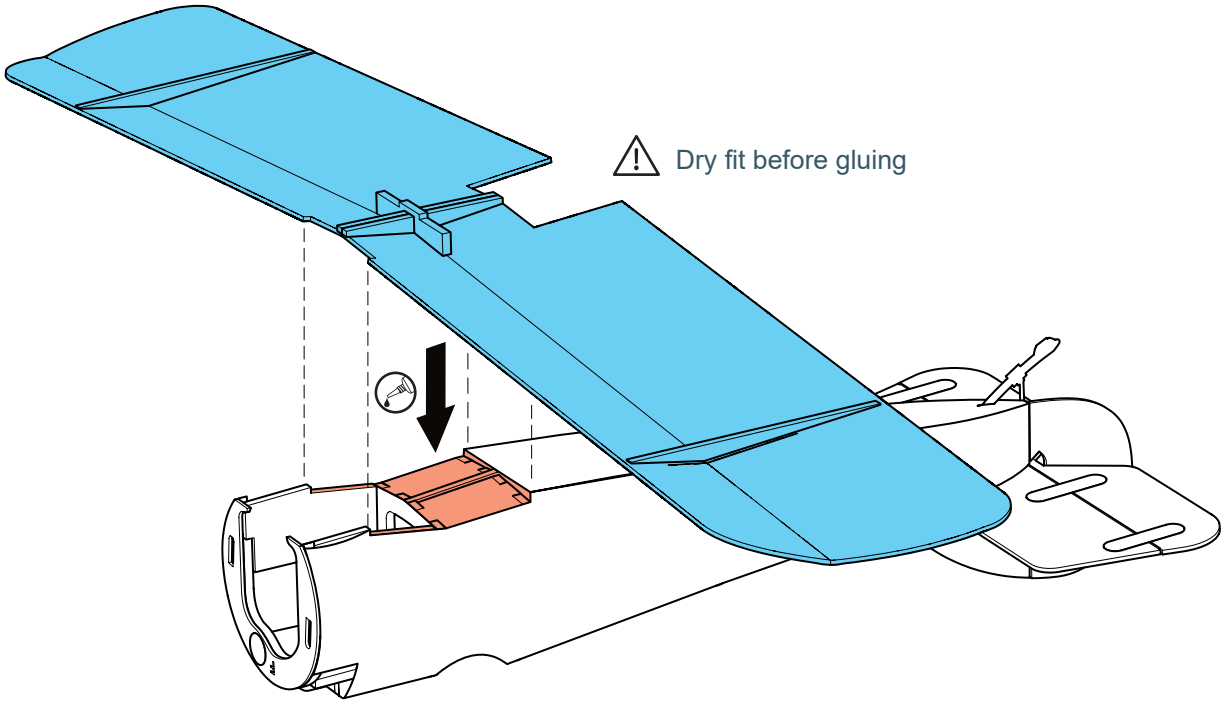




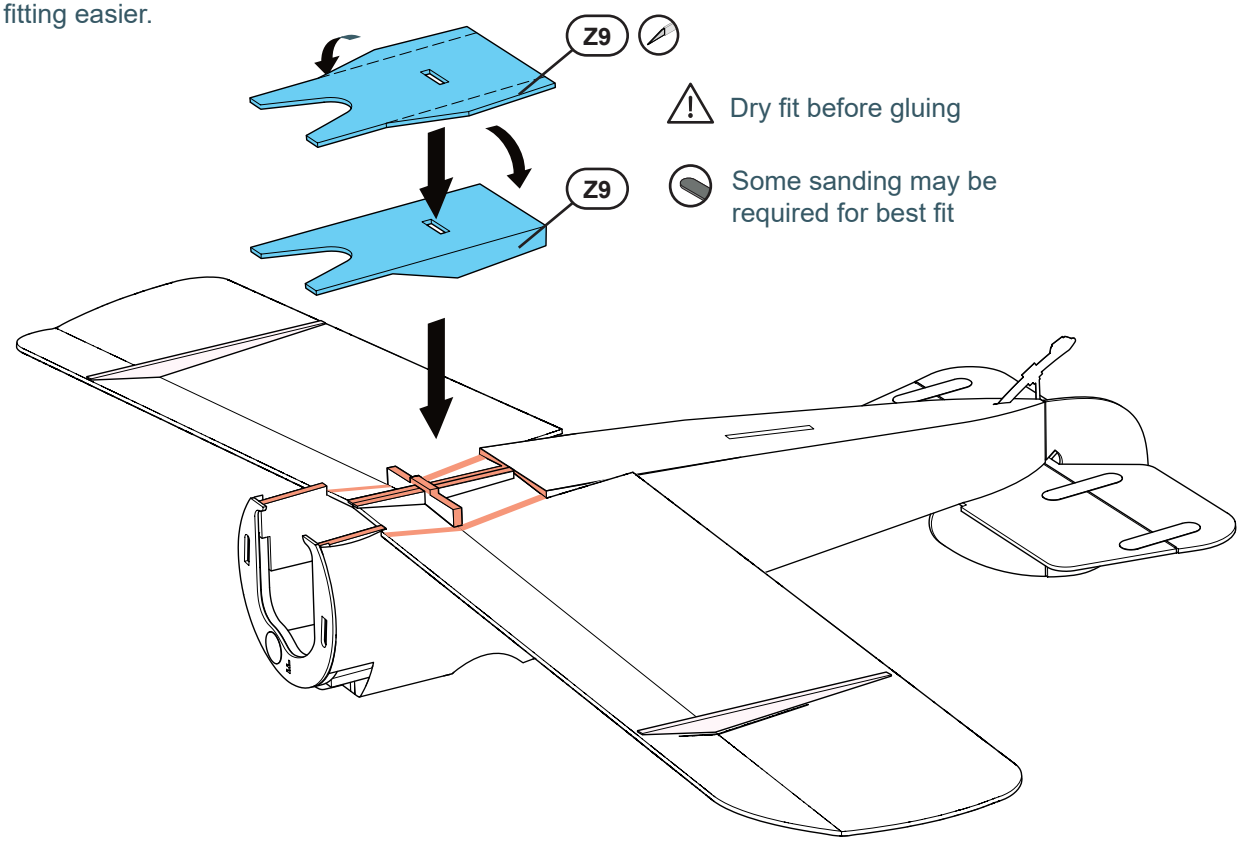




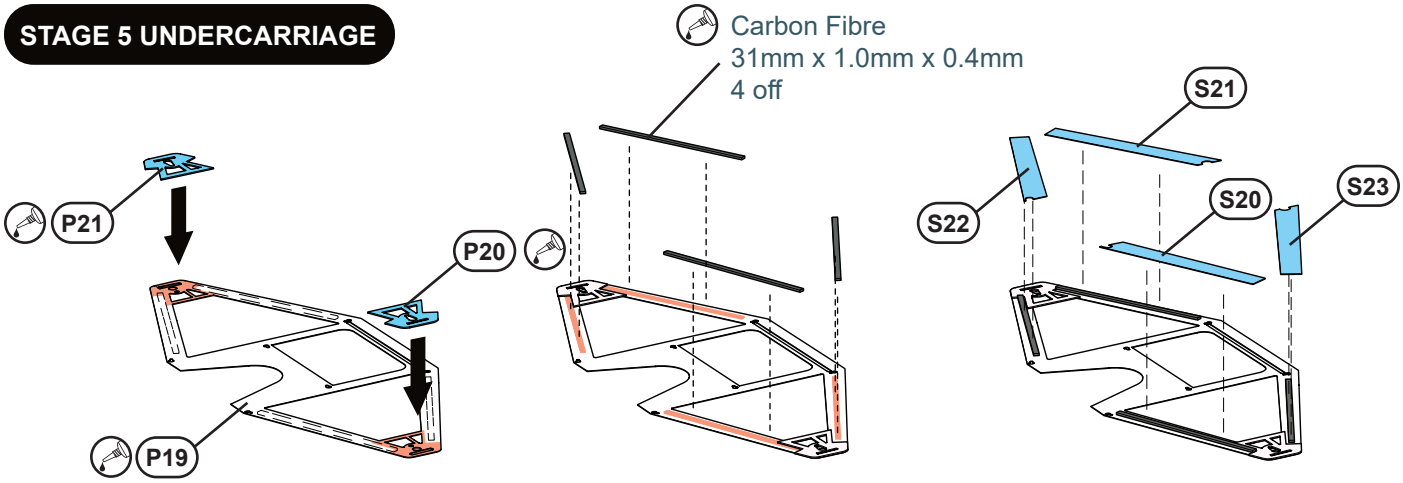
Time
1 Hour

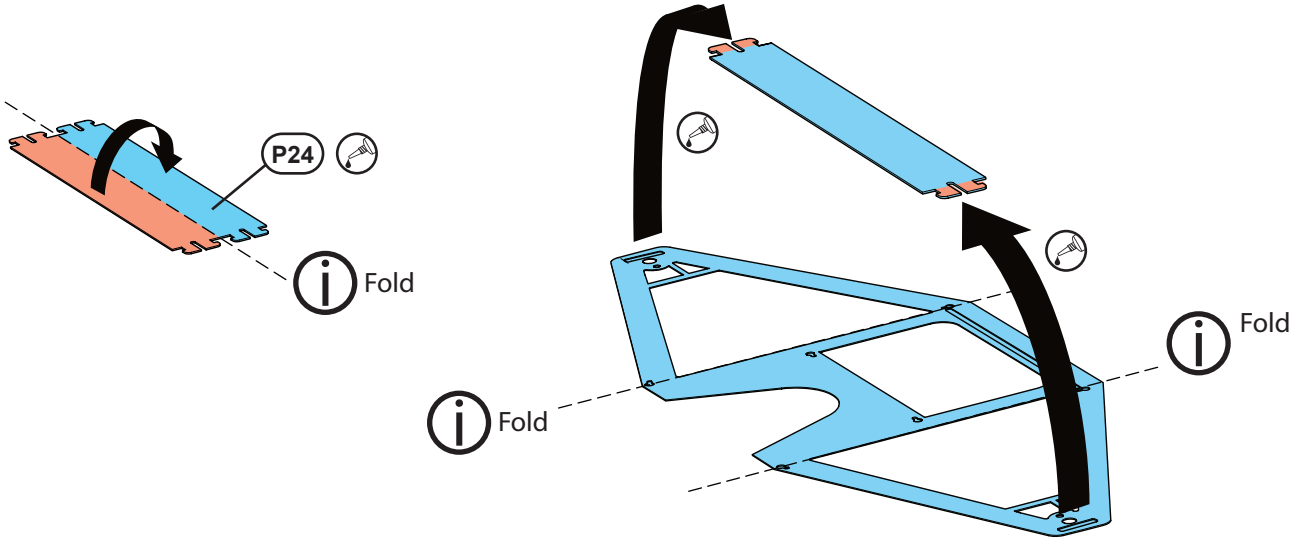


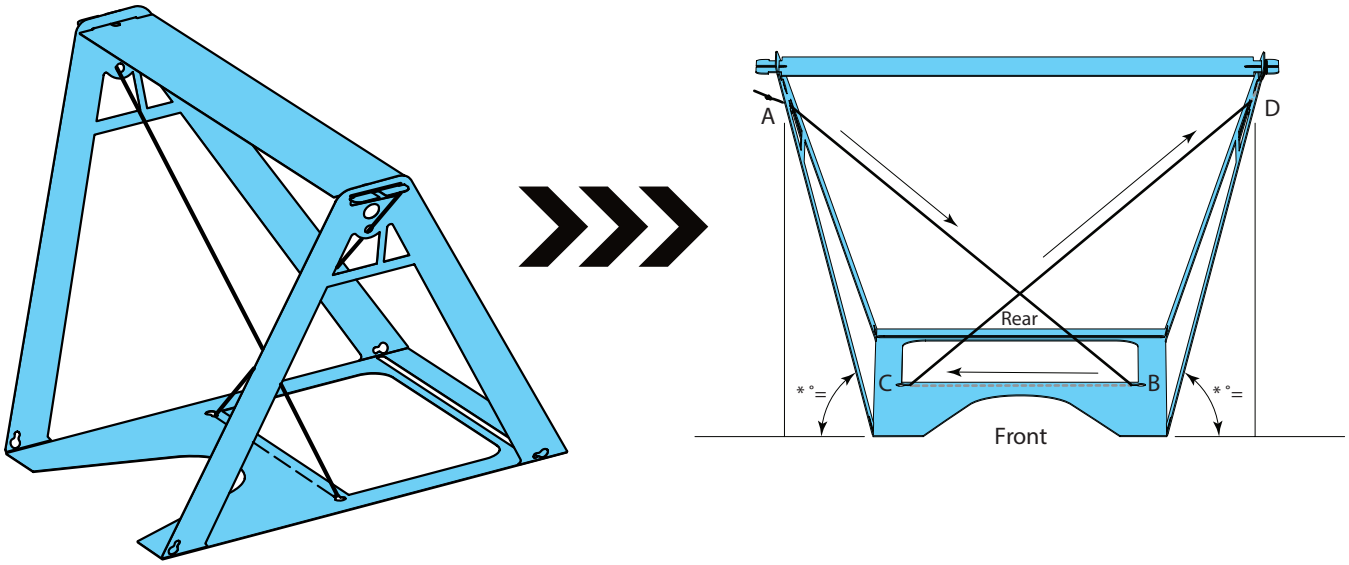
Pre-bend scored areas on part prior to installation to make fitting easier.

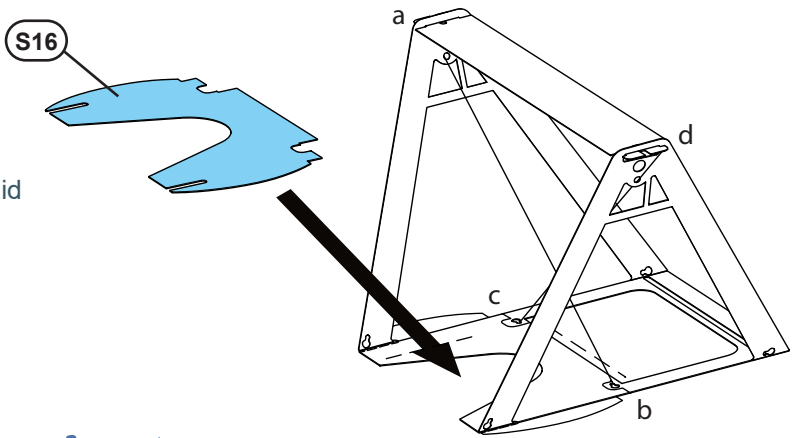


STAGE 5 UNDERCARRIAGE

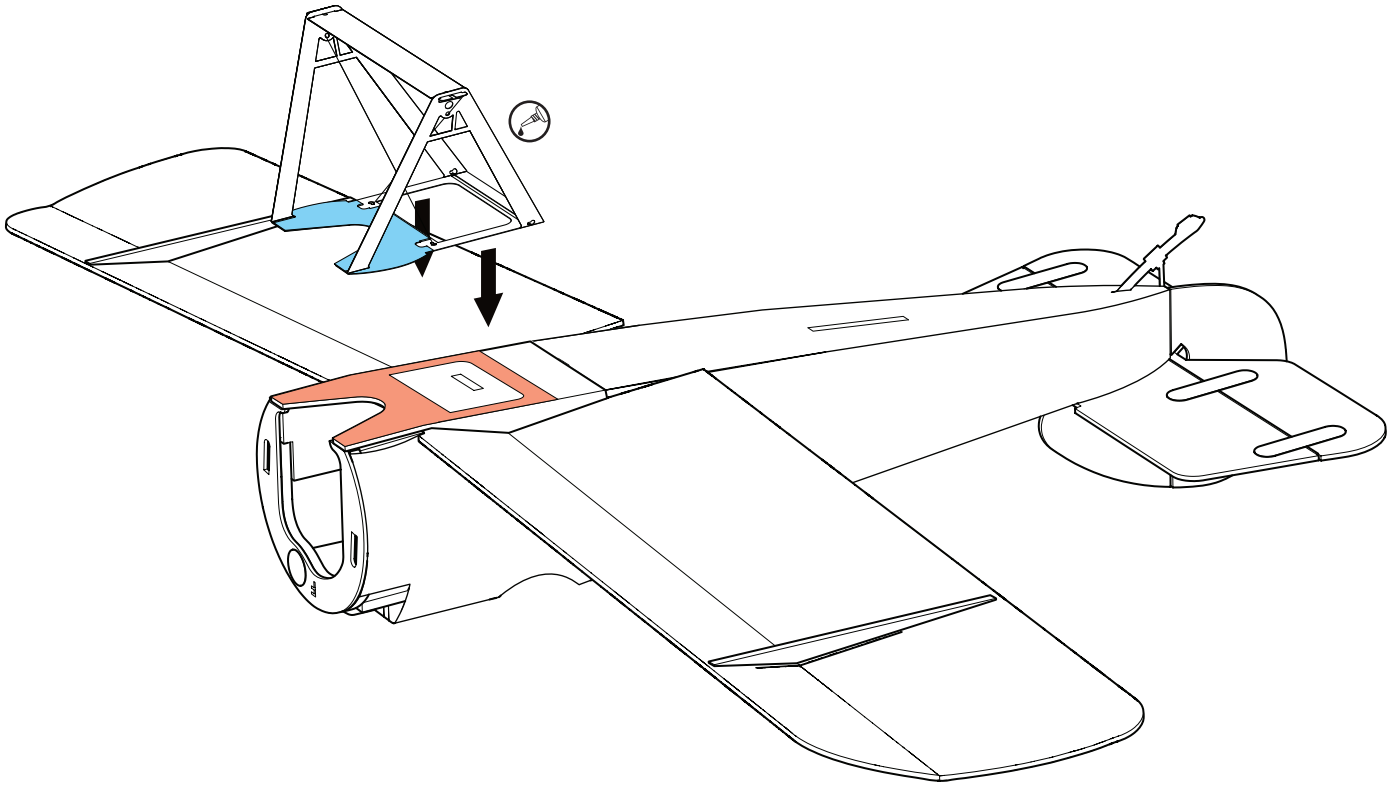


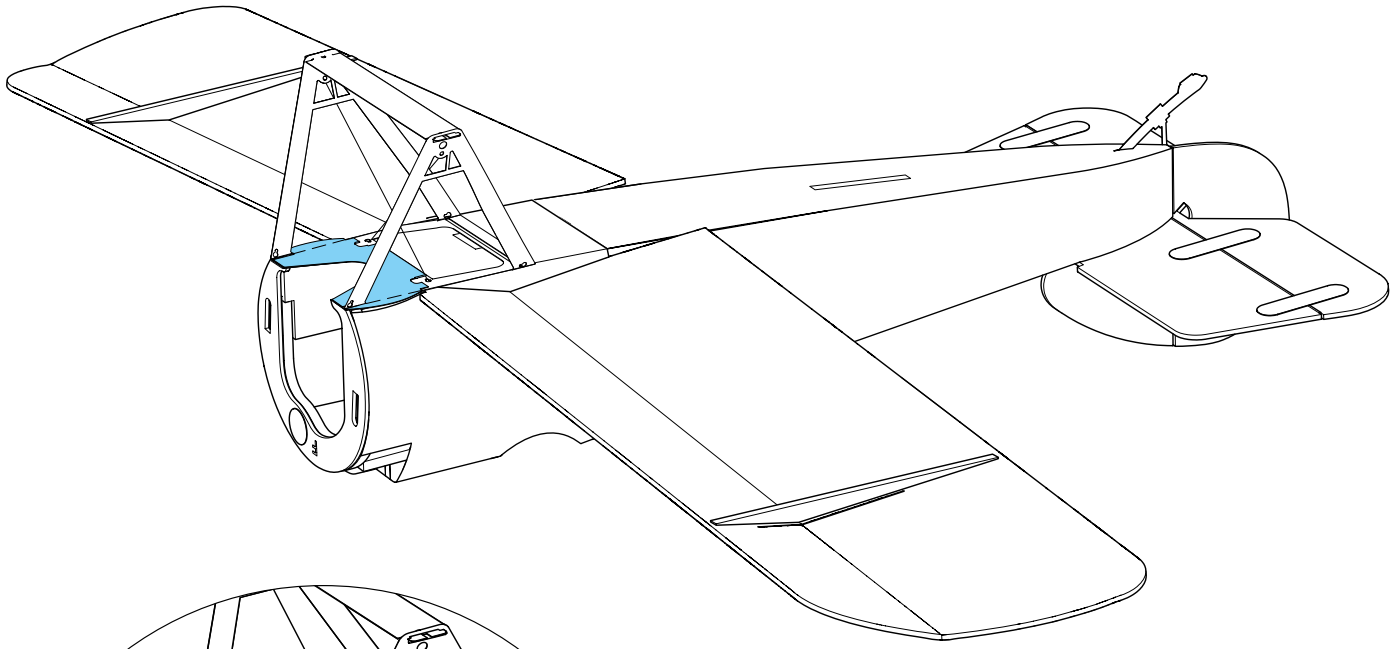


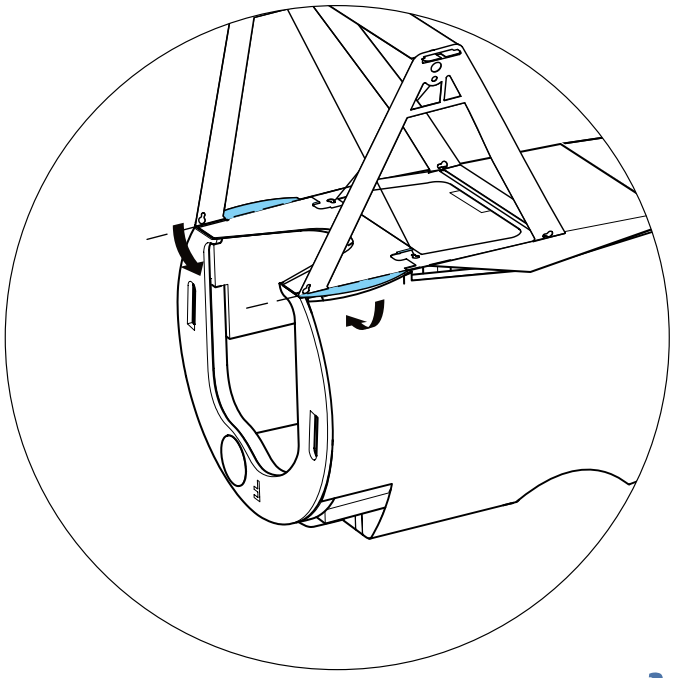




Complex Stickers can be applied by wetting the adhesive side to aid positioning

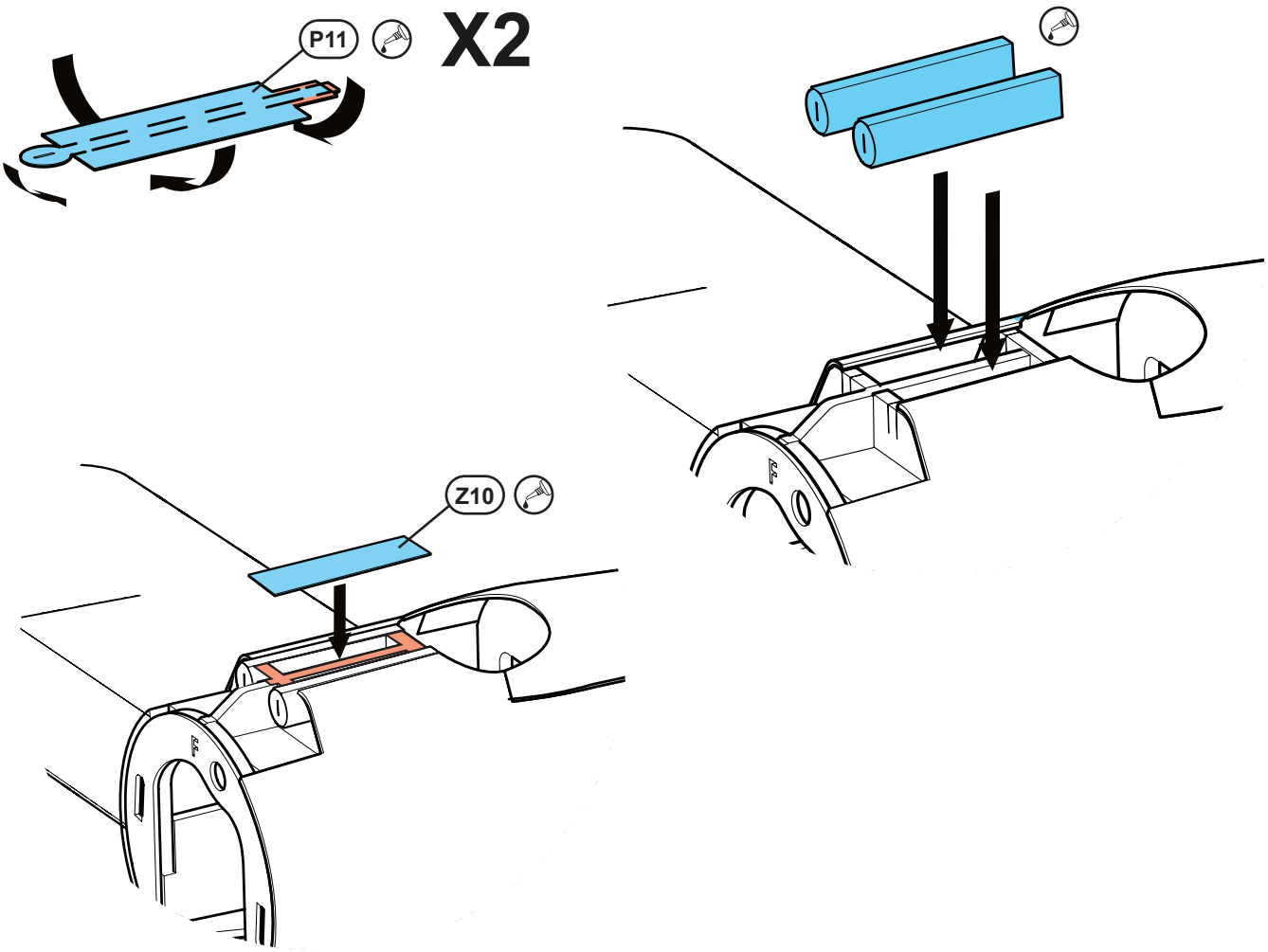




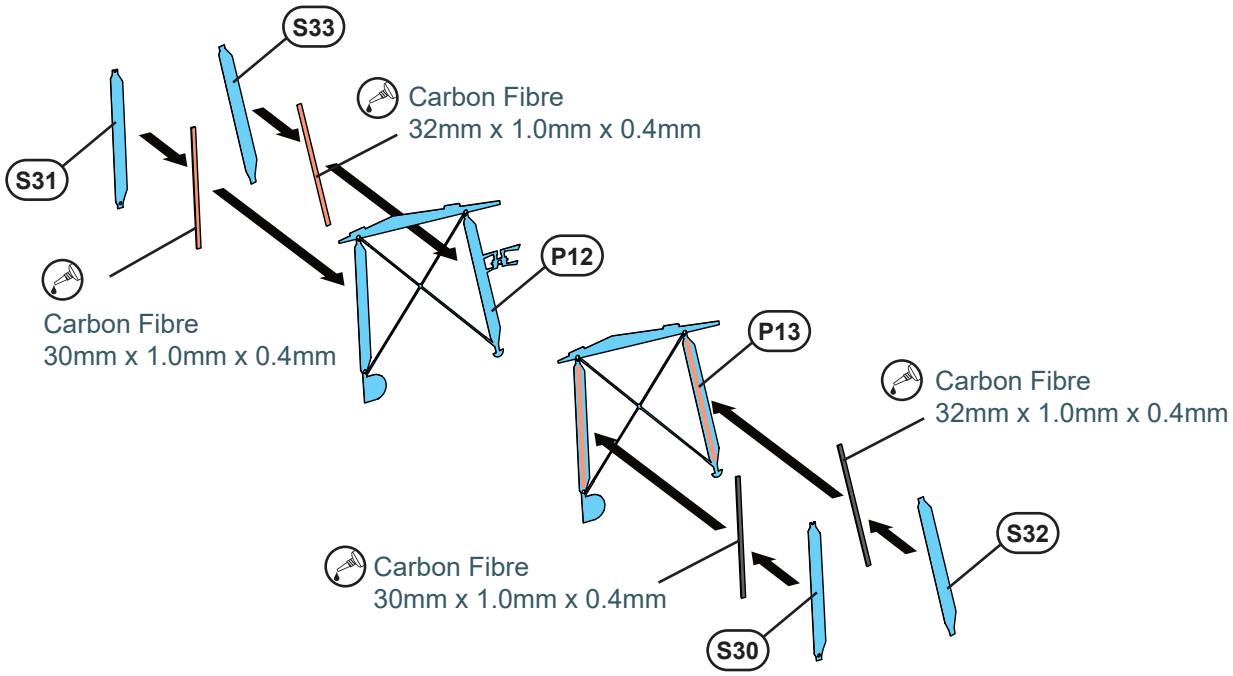


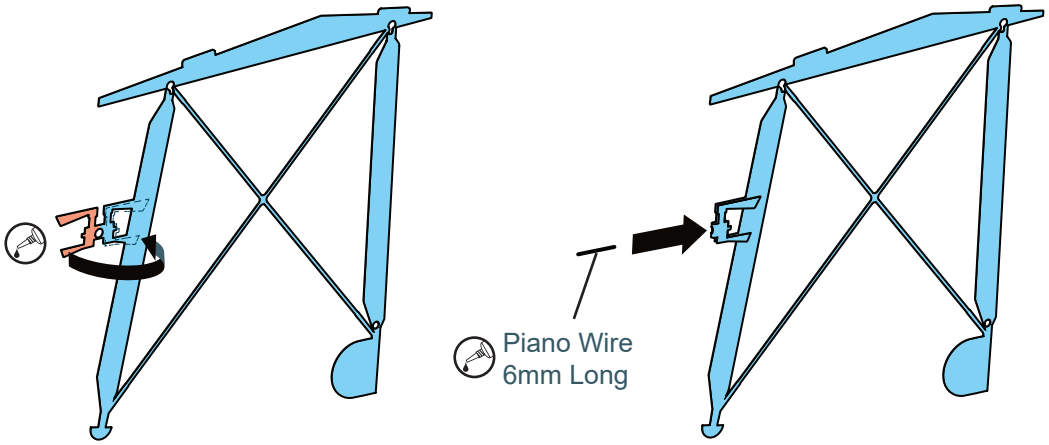
⚠ Fold side stickers down into gap

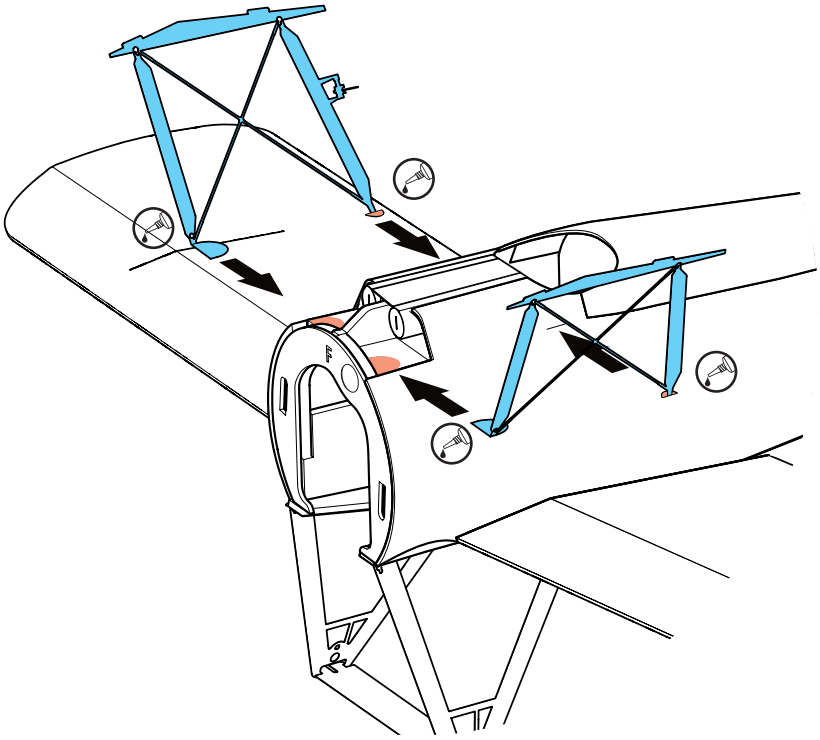
STAGE 6 DETAIL



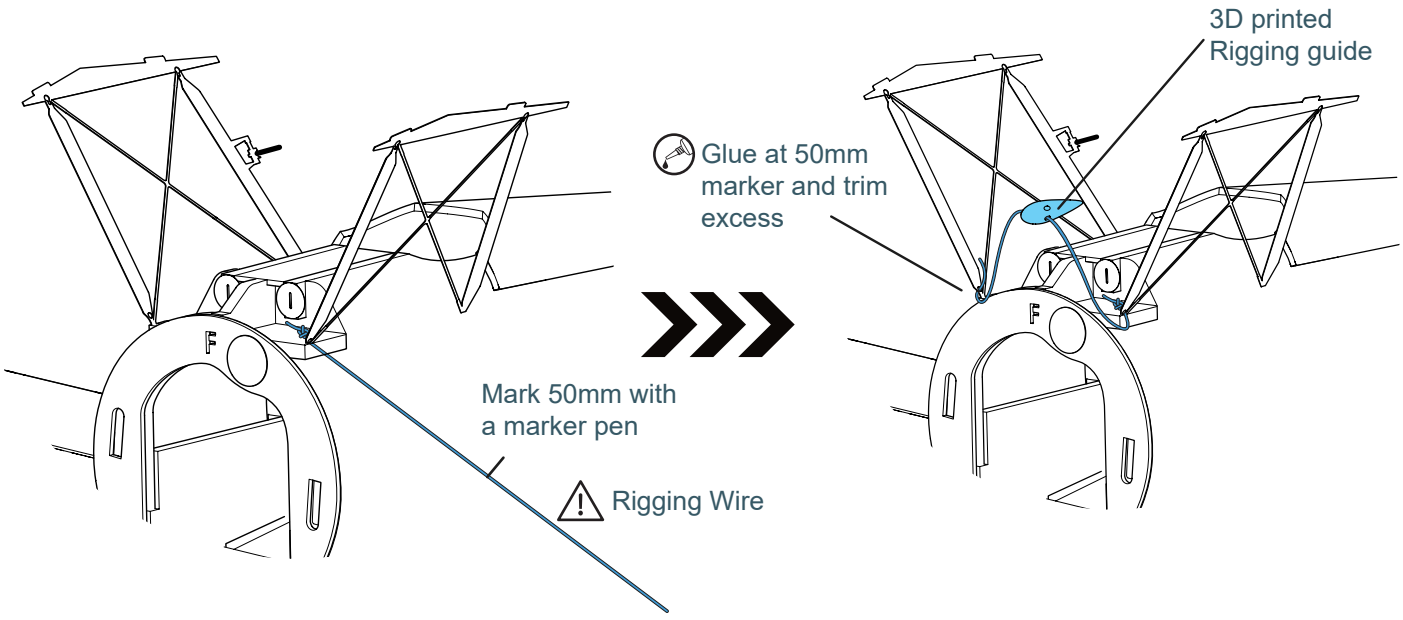
STAGE 7 STRUTS





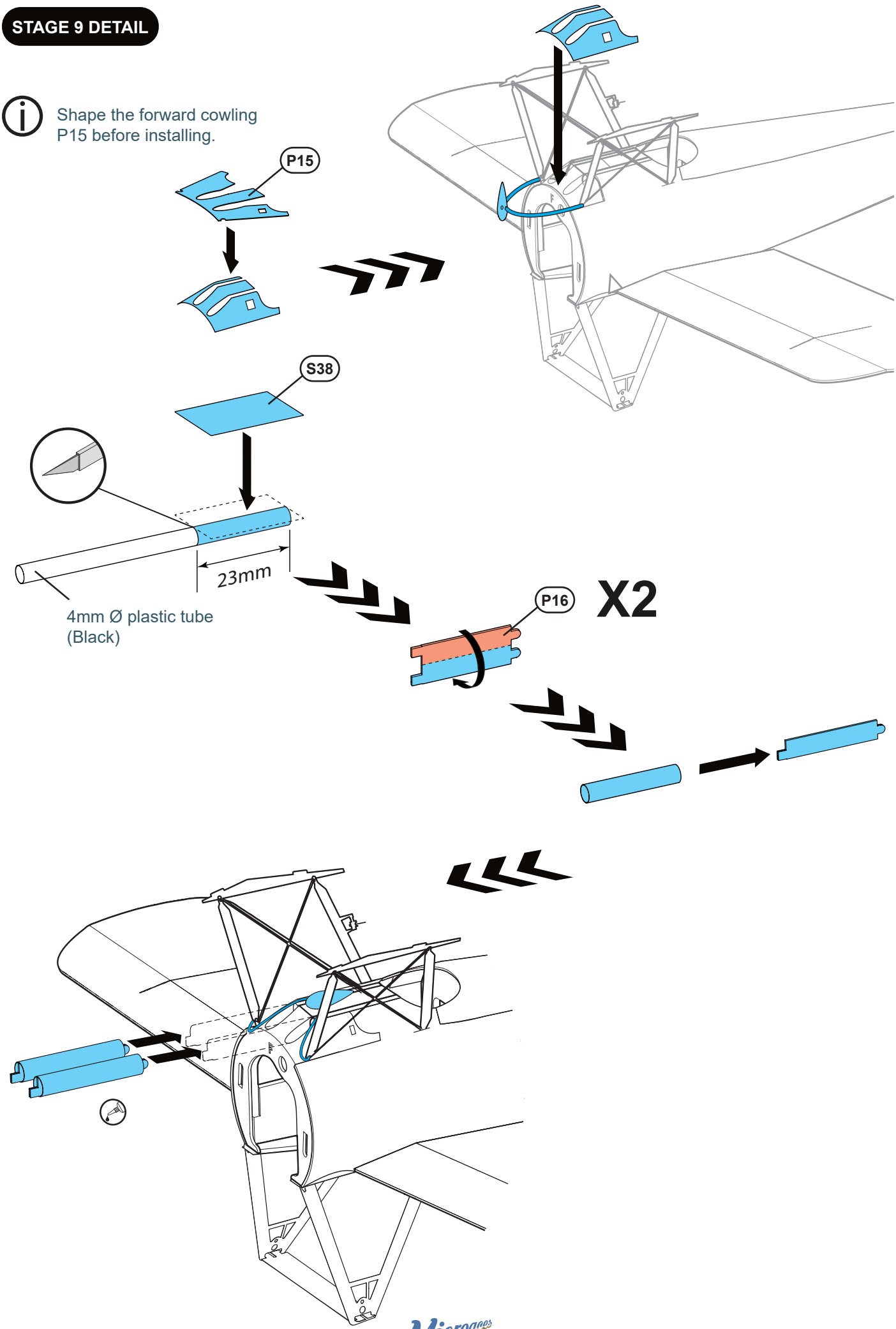


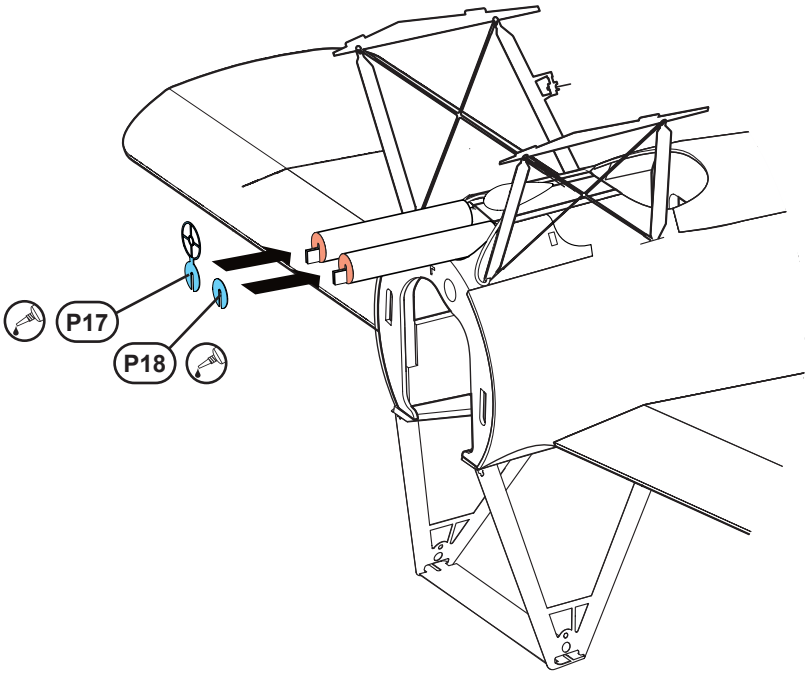
STAGE 8 RIGGING FAIRING

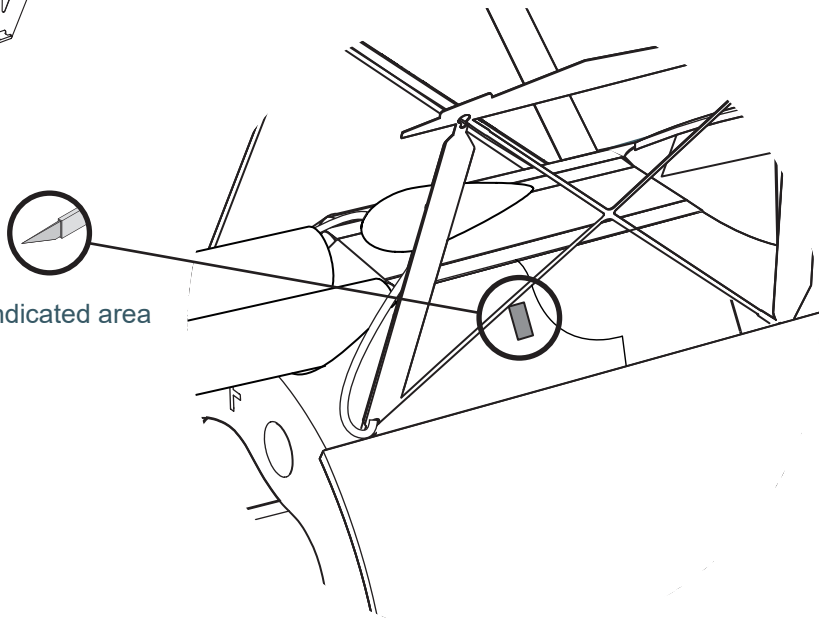


STAGE 9 DETAIL

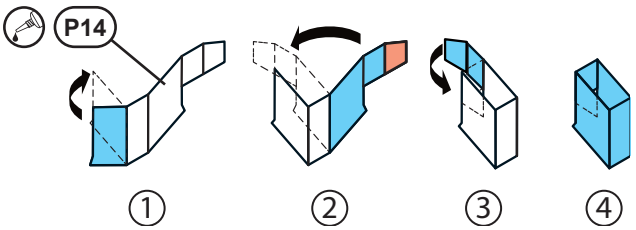
Shape the forward cowling P15 before installing.

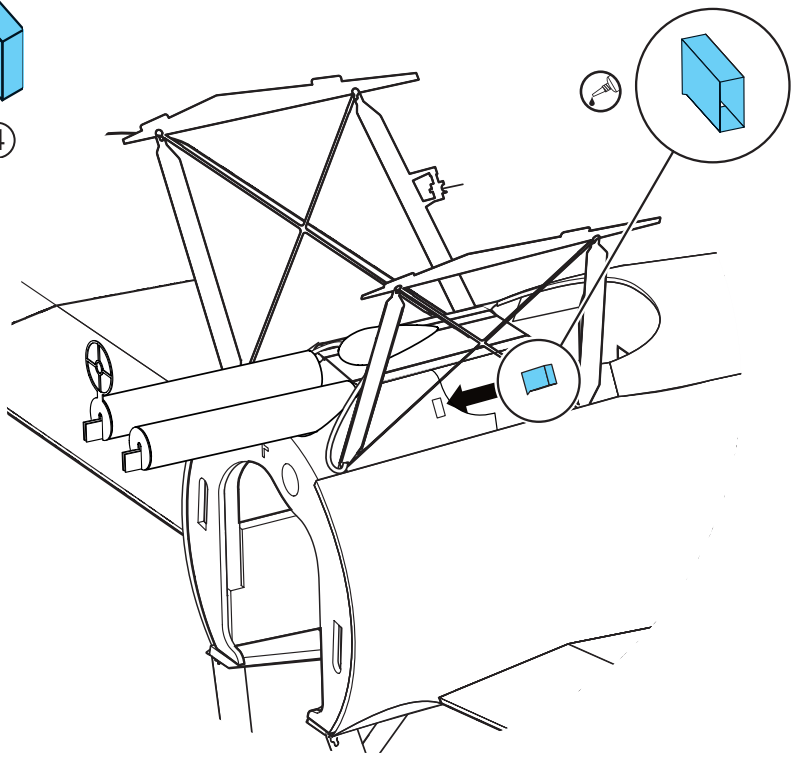


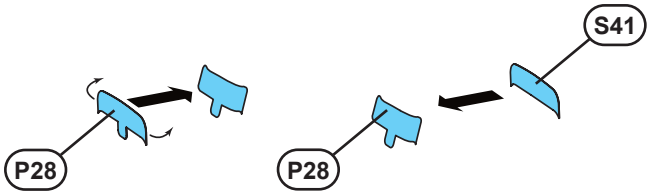




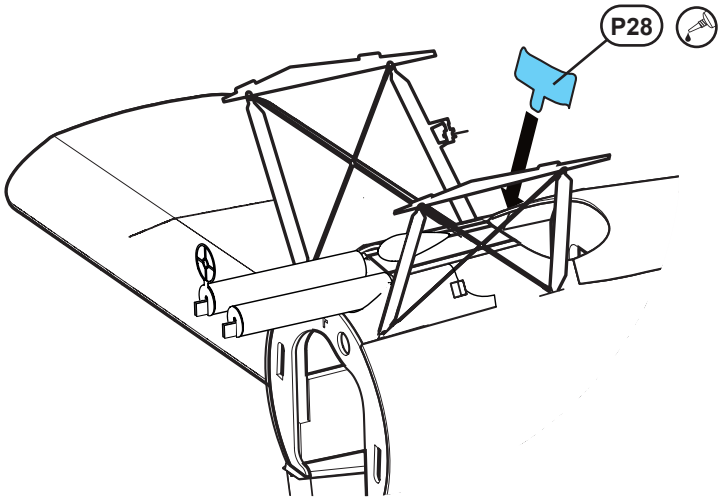
Remove indicated area



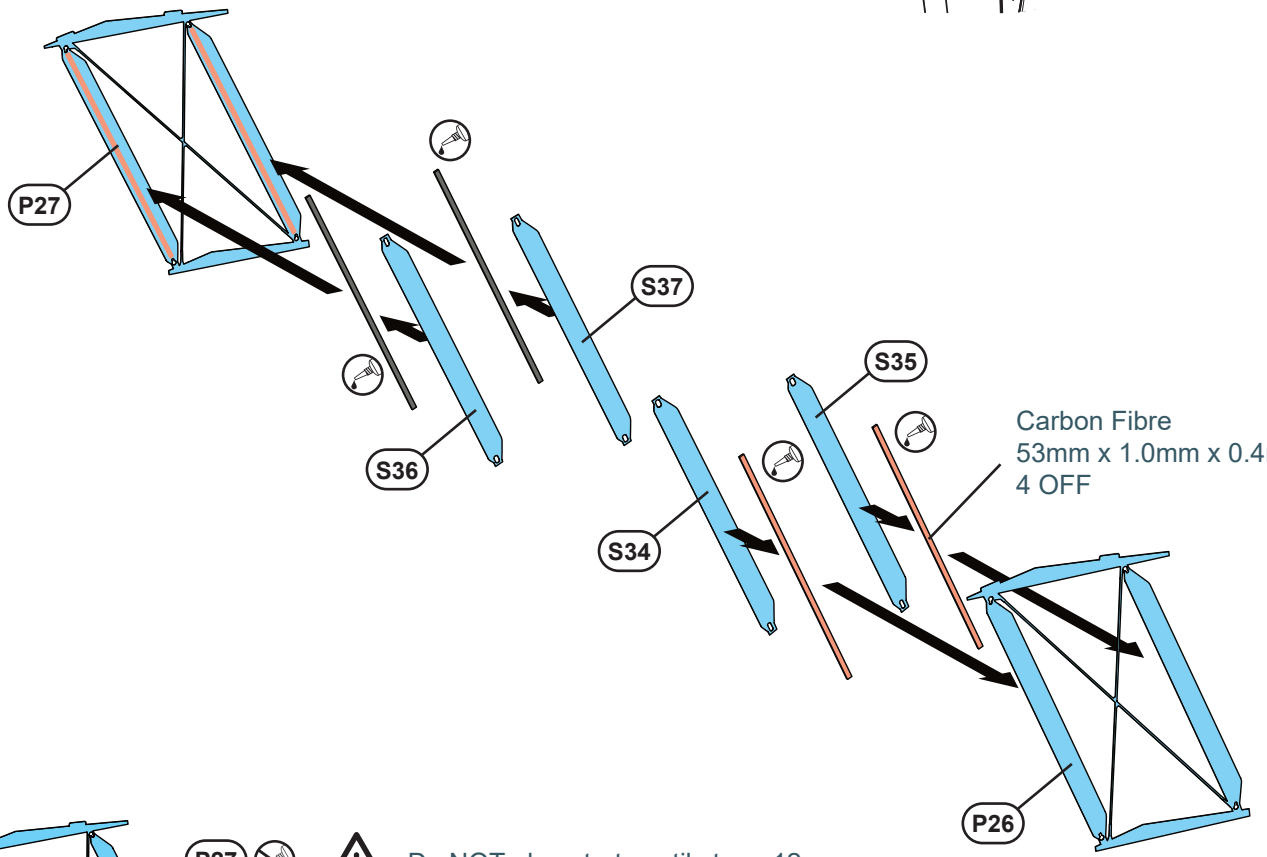




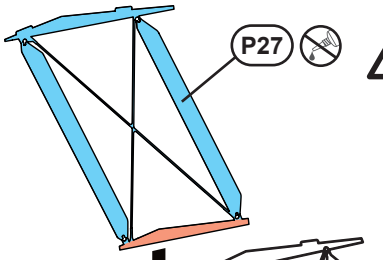
Bend the windshield P28
before applying sticker S41



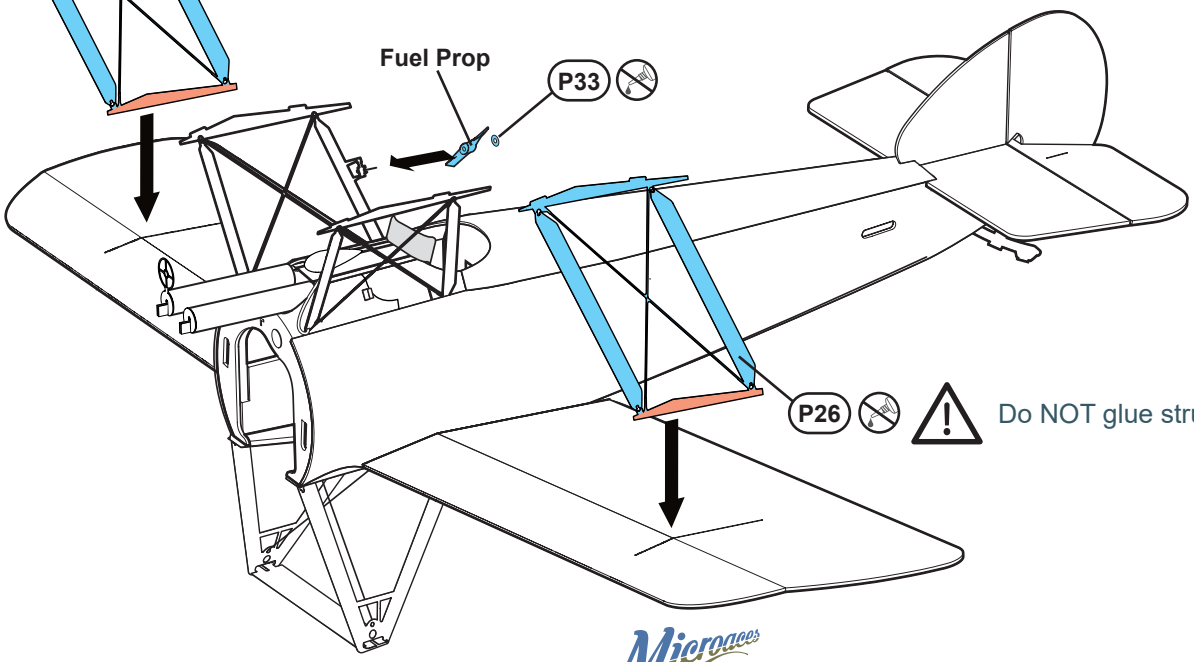
STAGE 10 STRUTS



Carbon Fibre
53mm x 1.0mm x 0.4mm
4 OFF

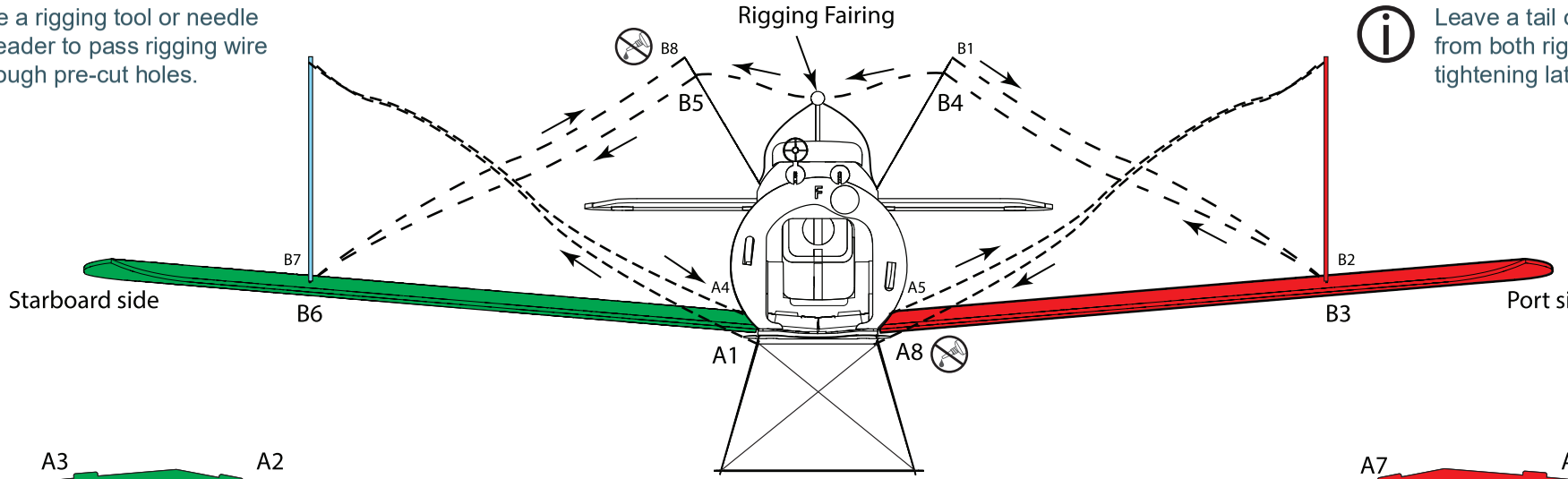


Do NOT glue struts until stage 12

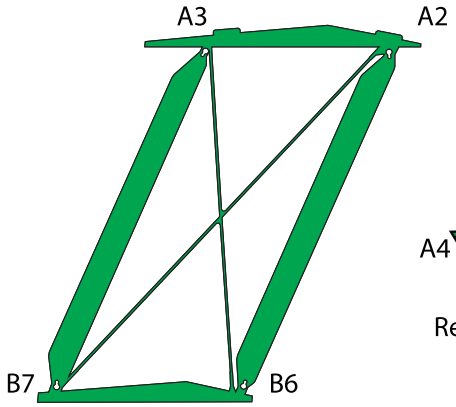


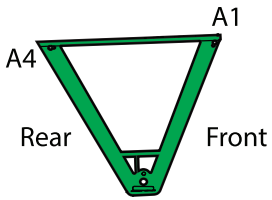
Do NOT glue struts until stage 12

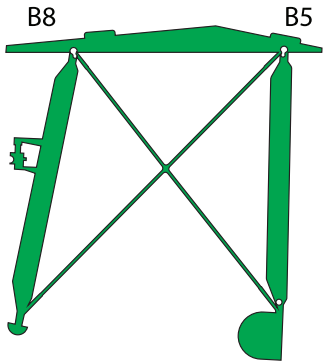
Use a rigging tool or needle threader to pass rigging wire through pre-cut holes.

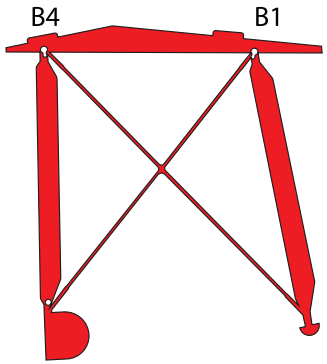


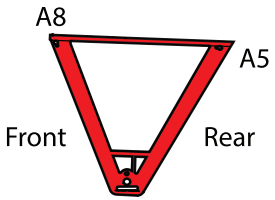
Leave a tail out at A8 & B8 from both rigging runs for tightening later.

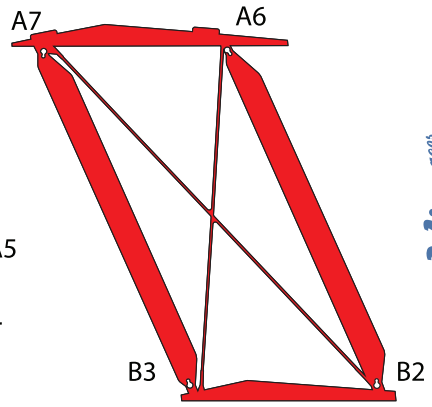


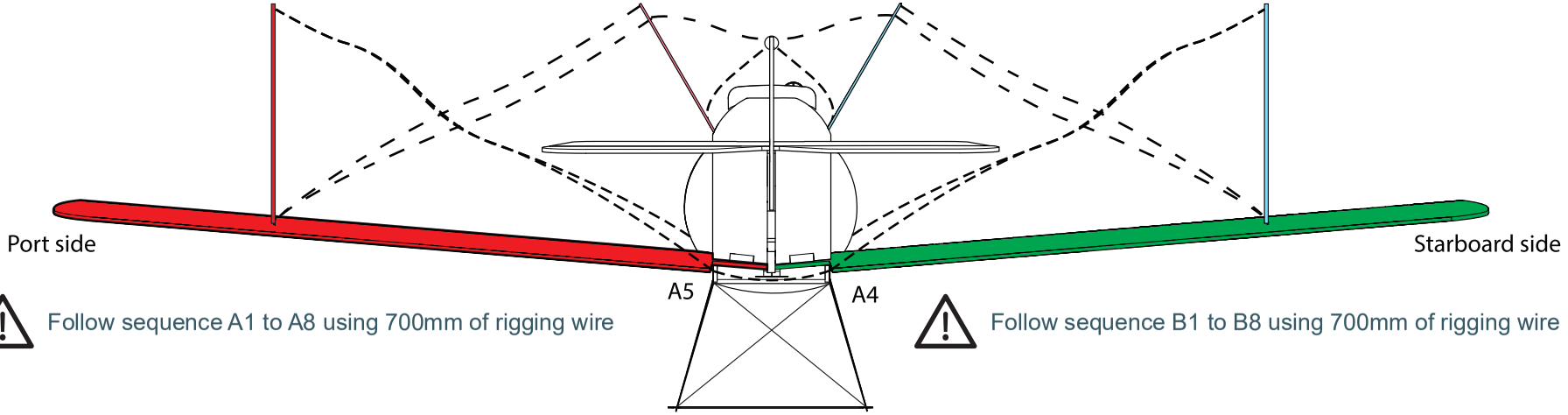










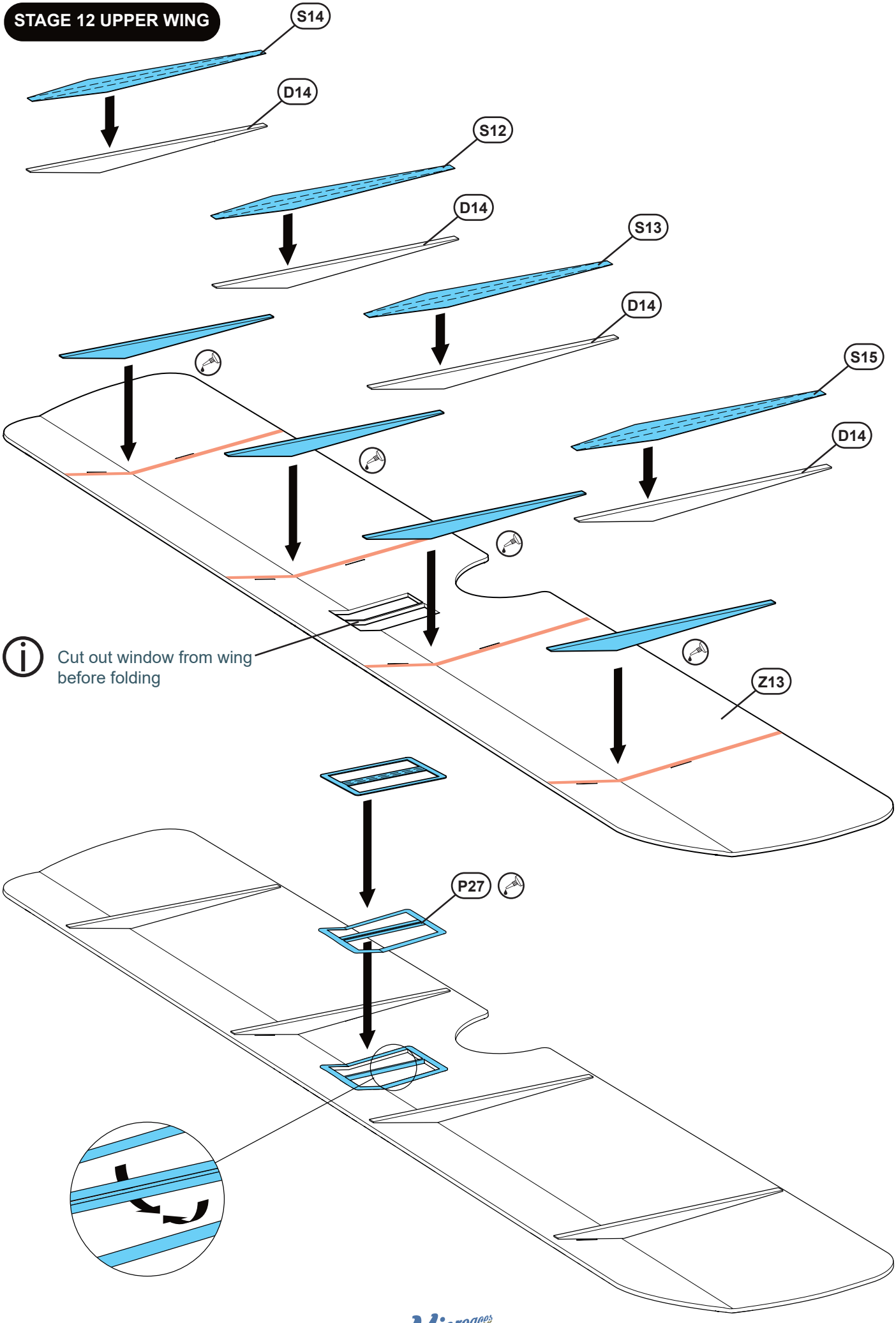


Follow sequence A1 to A8 using 700mm of rigging wire

Follow sequence B1 to B8 using 700mm of rigging wire

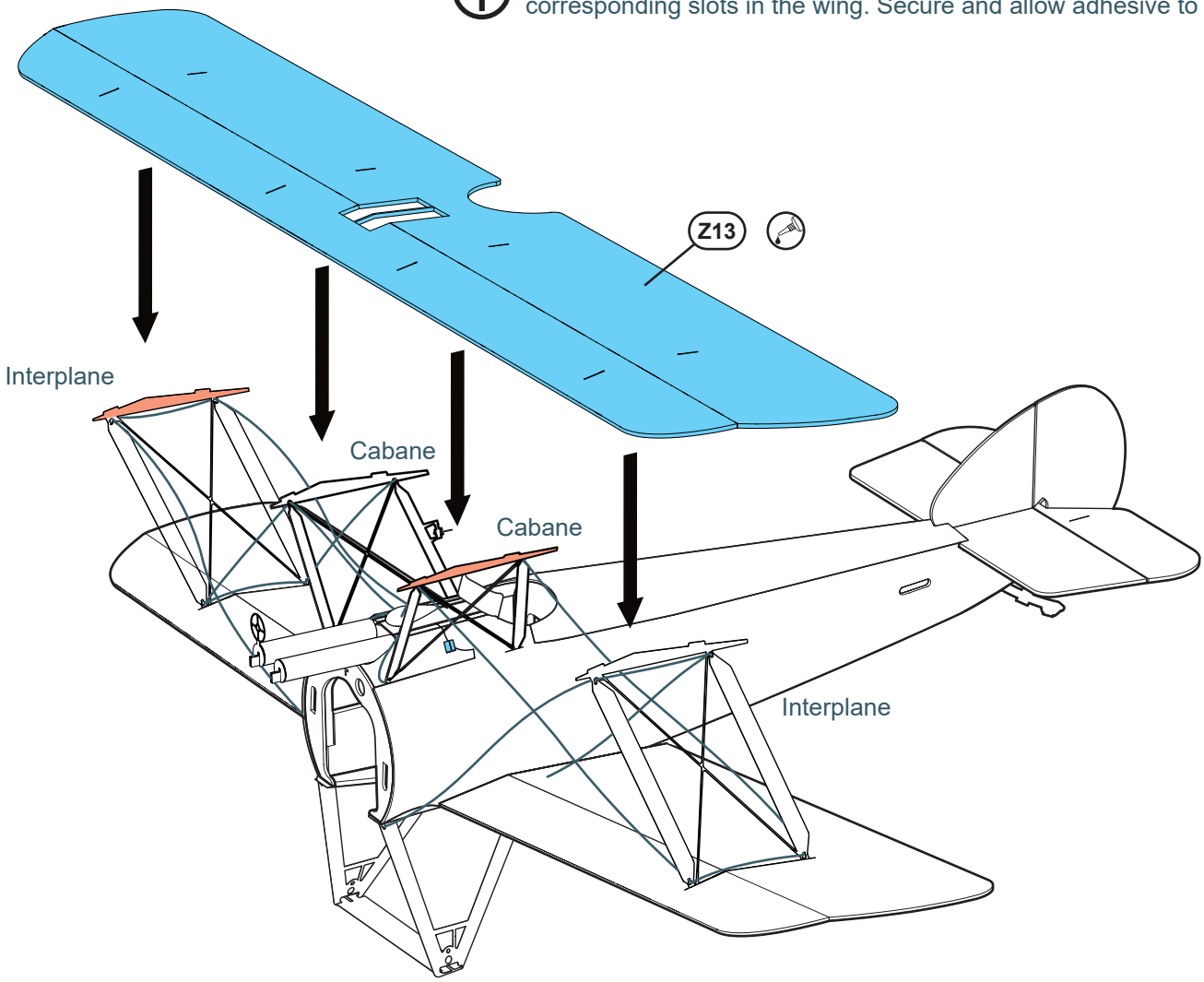
STAGE 11 RIGGING

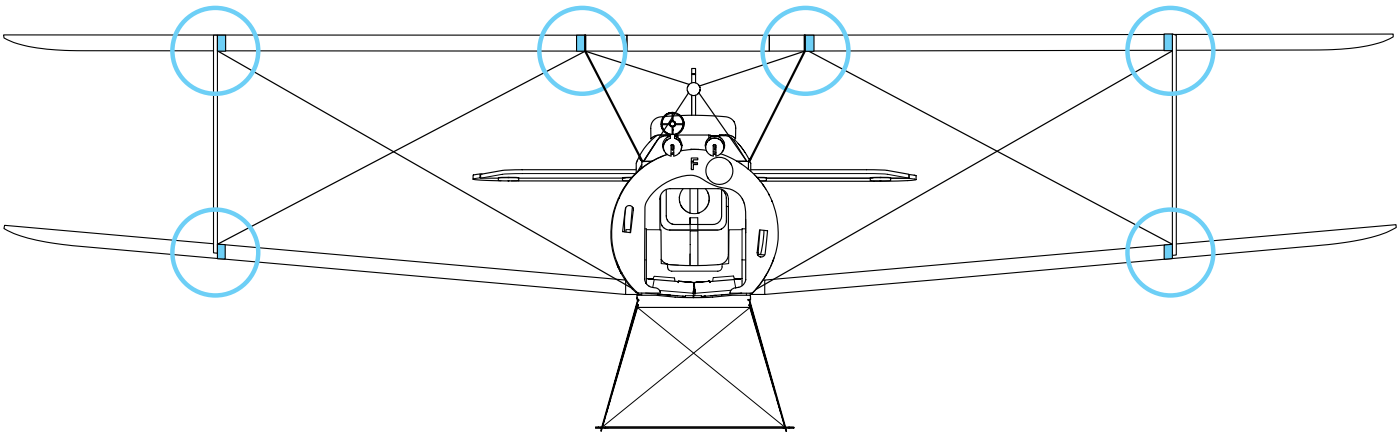
STAGE 12 UPPER WING



Mounting the Wing

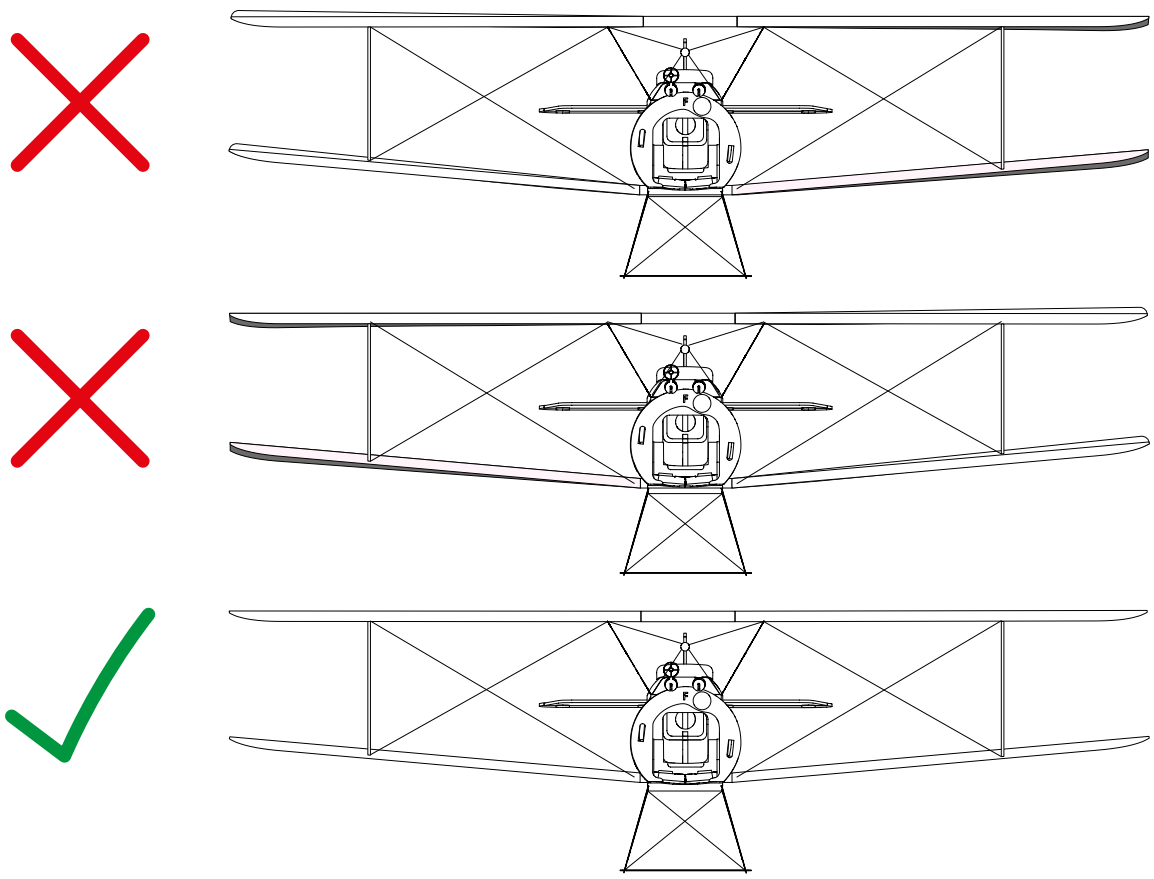
Ensure the tabs on the top of the strutwork insert fully into the corresponding slots in the wing. Secure and allow adhesive to set.





STAGE 13 RIGGING TENSION

FRONT VIEW



Ensure correct alignment when tensioning the rigging

The rigging on the Sopwith Camel is functional. It strengthens and stabilises the wings to provide predictable flight characteristics so is important to get right!

Tension the wire between struts. Because of the shape of the laser cut holes in the struts, you can lock the thread at each point that it passes through a rigging hole.

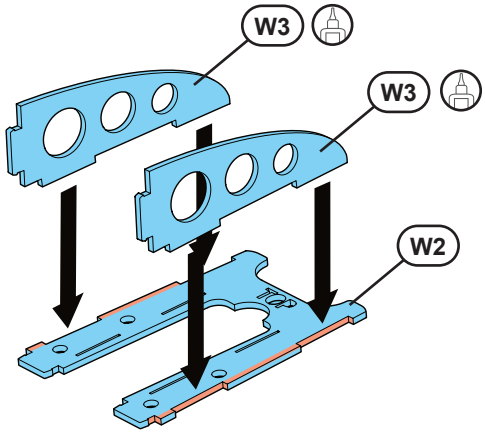
Work on tensioning the wire on both sides of the aircraft simultaneously to help maintain symmetry.
Secure the end points of the rigging to the underside of the wing once happy with the tension using foam safe CA or Aliphatic resin.

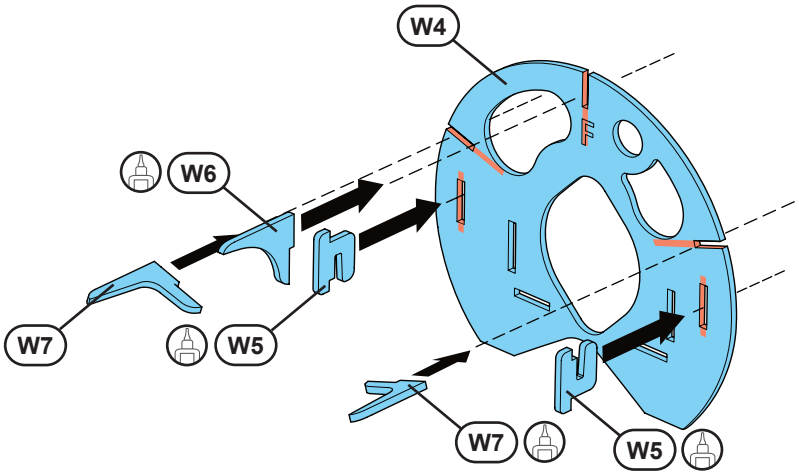
Check alignment visually then add a small amount of adhesive to each point where the rigging passes through strut work.

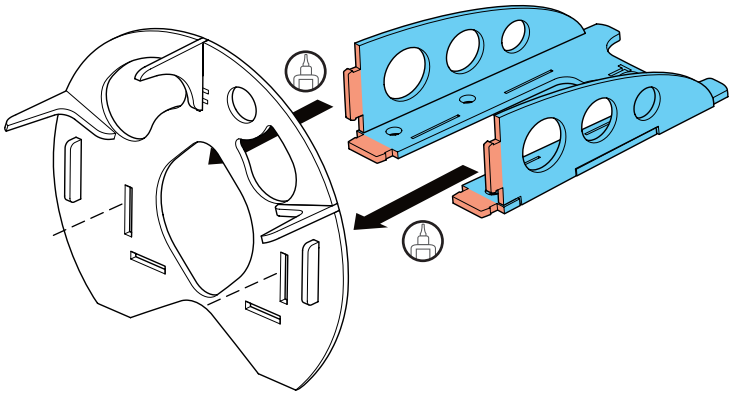
Trim excess rigging with a fresh blade.

Glue bottom of both Interplane struts to lower wing ribs.

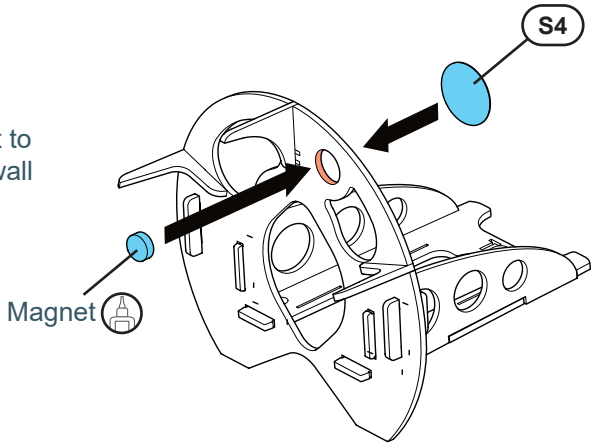
STAGE 14 MOTOR MOUNT



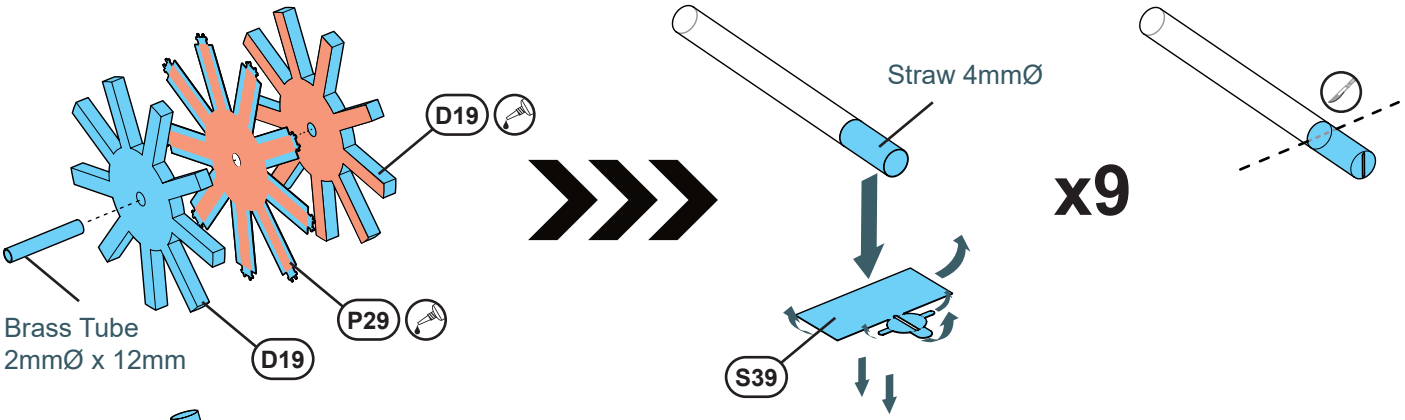


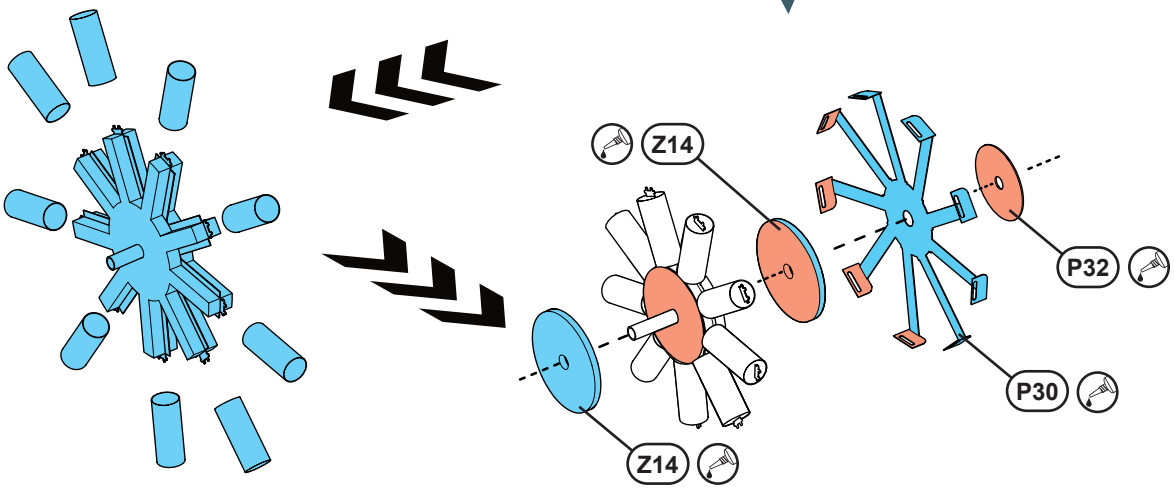


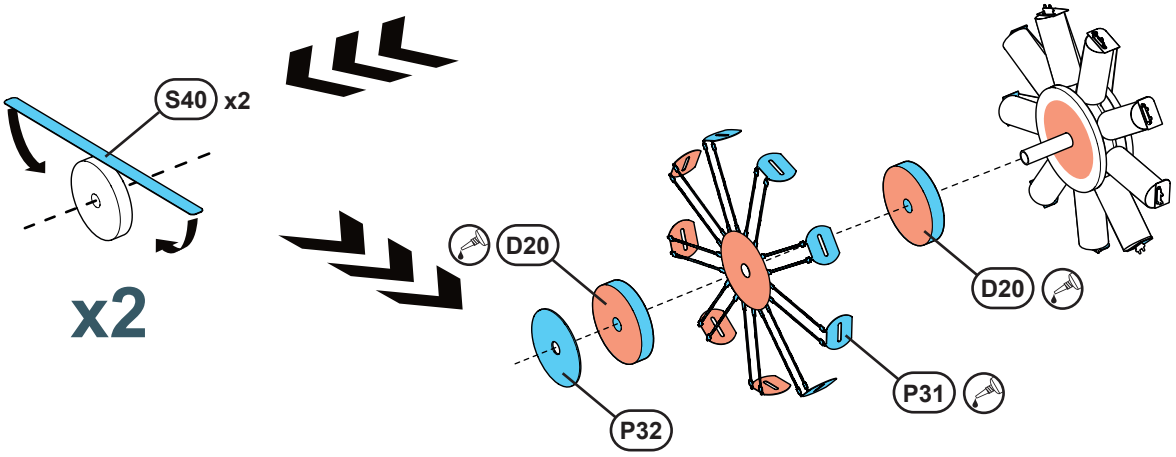
Ensure the magnet is correctly oriented before installation. Do this by matching it to the magnet installed in the fuselage firewall before installing it here.

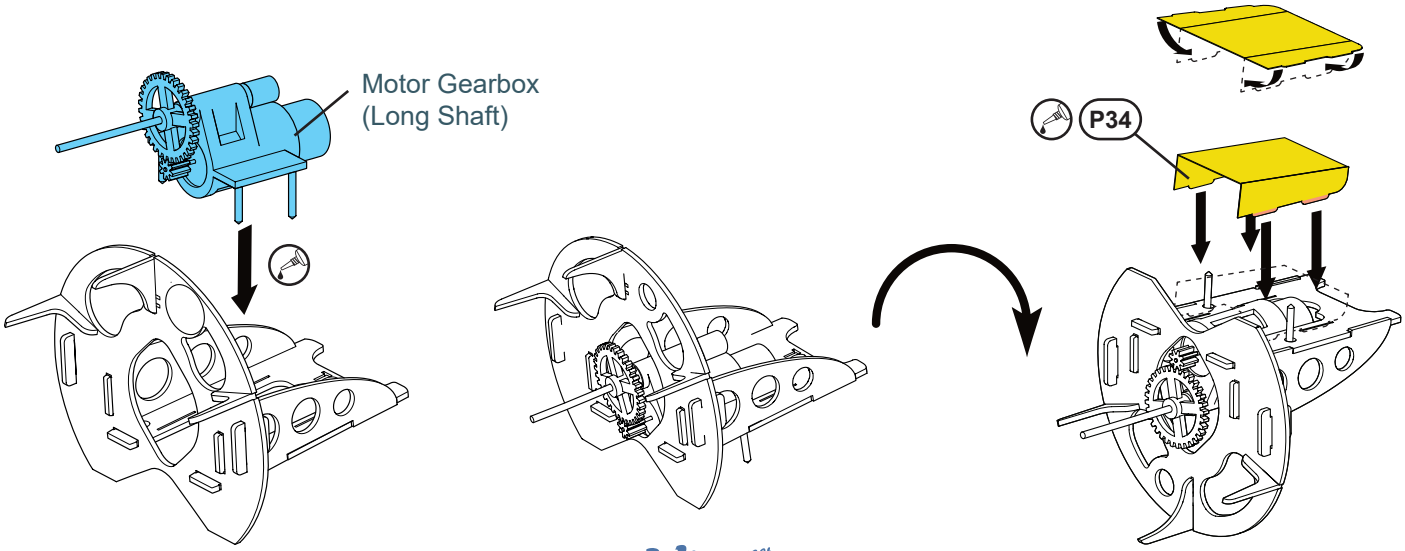


STAGE 15 ROTARY ENGINE

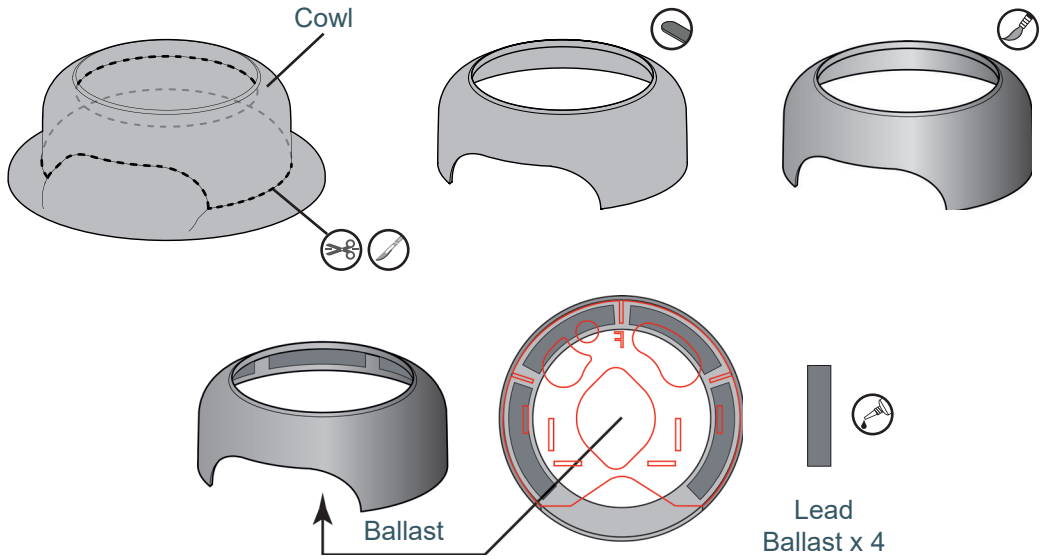


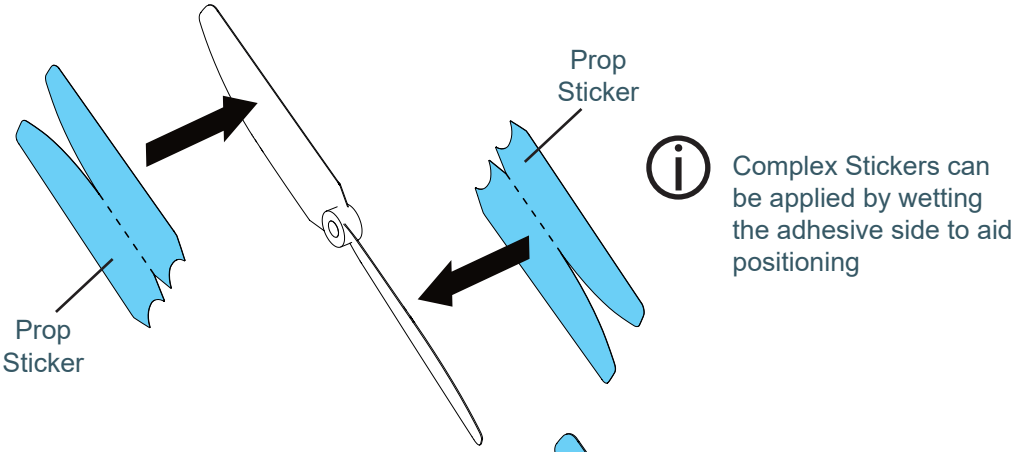


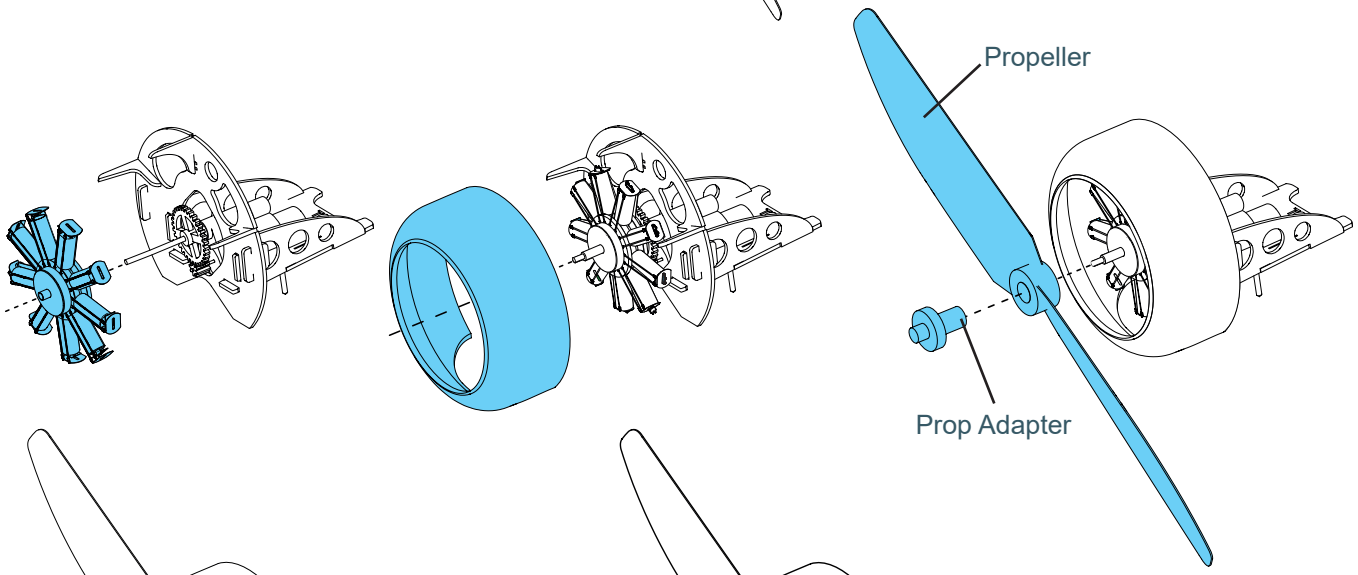


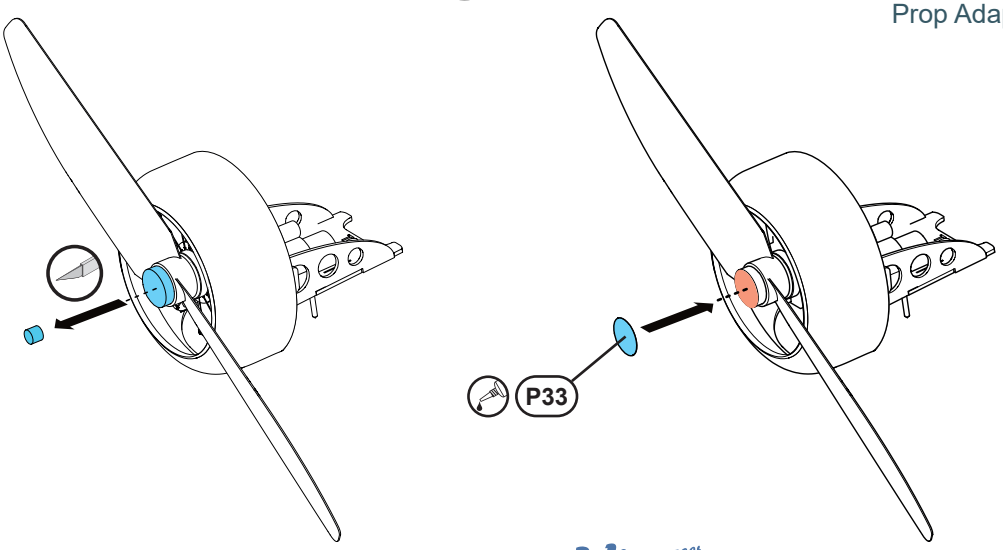


STAGE 16 COWL





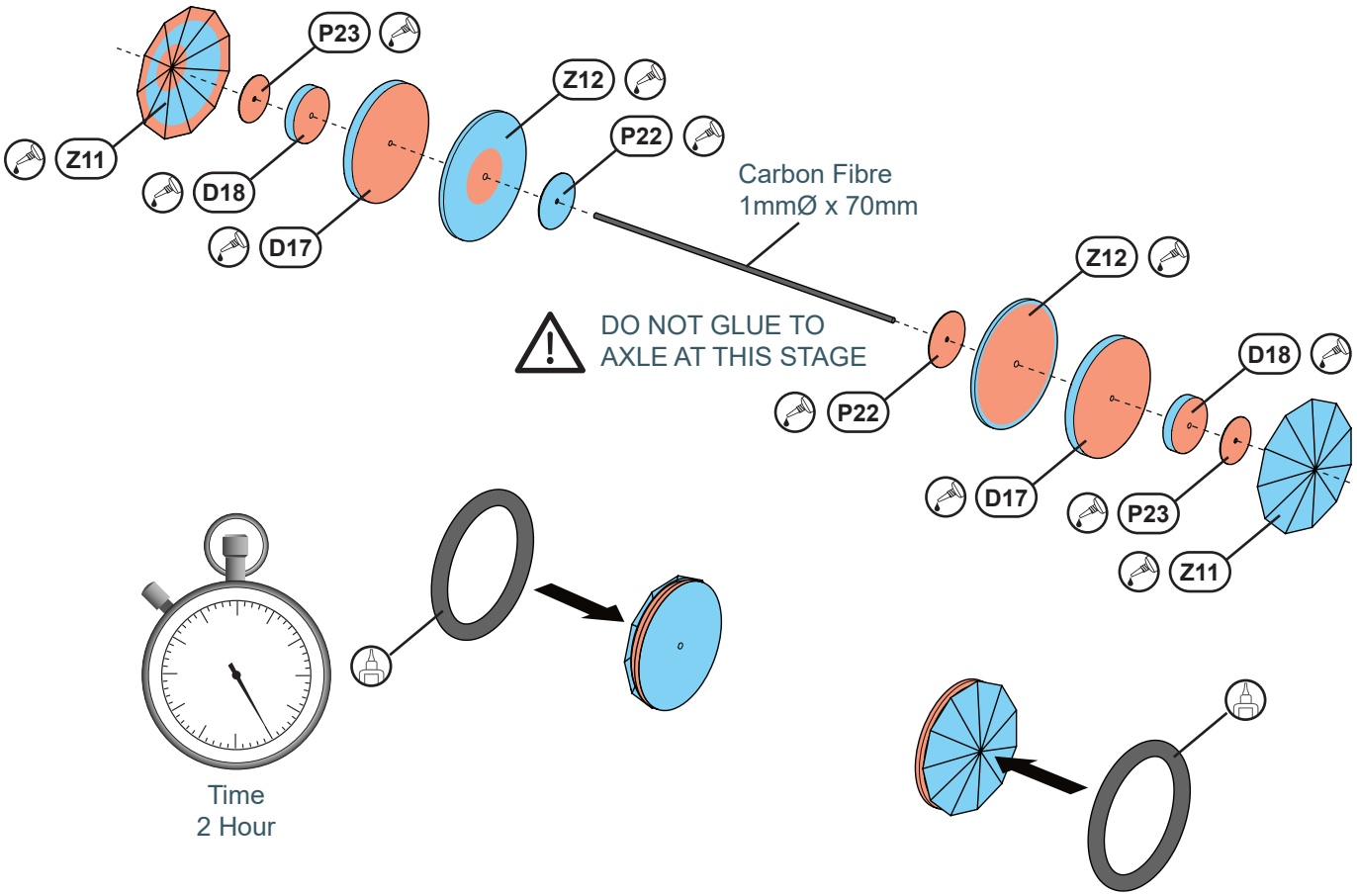




STAGE 17 WHEEL ASSEMBLY

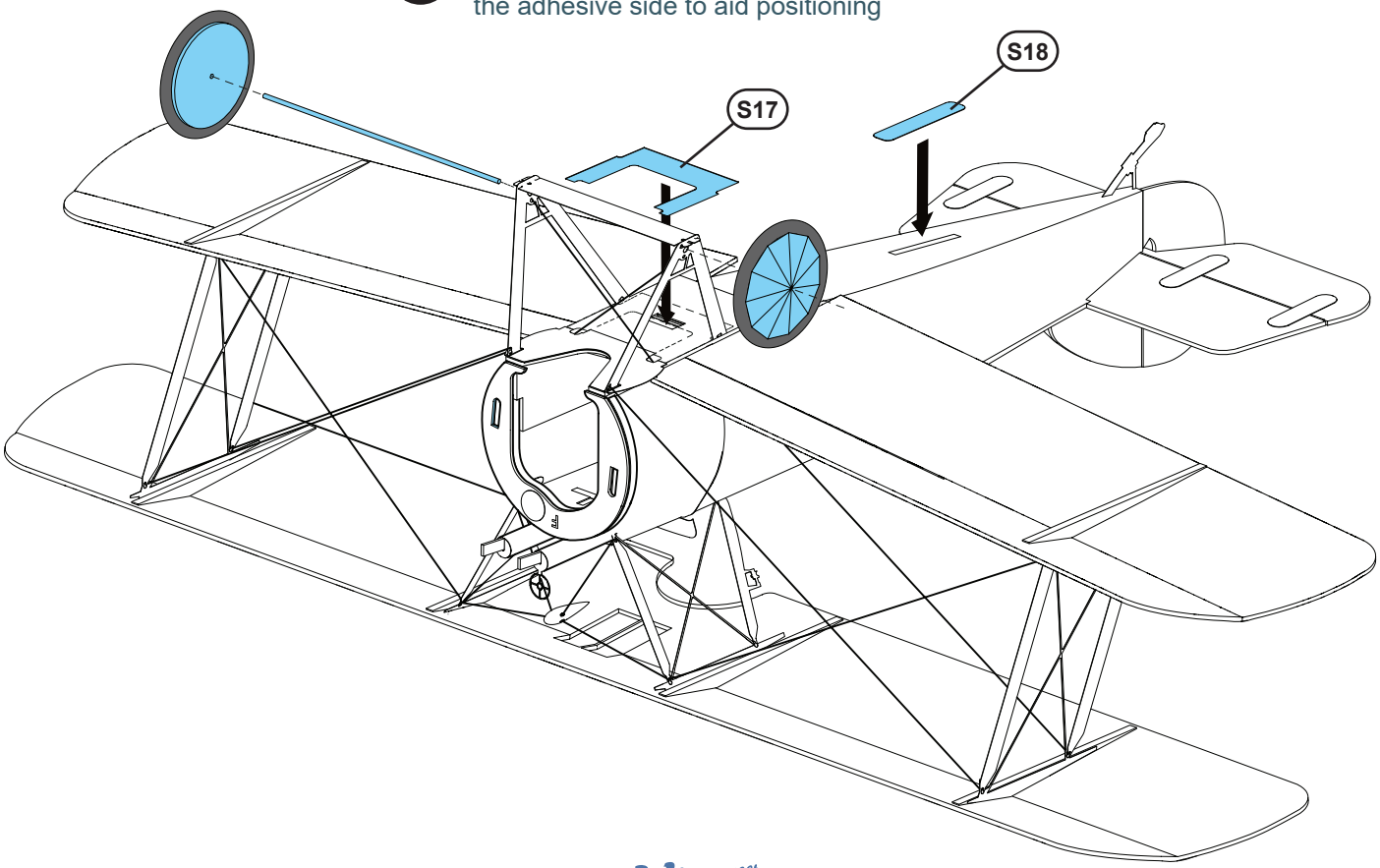
Bevel & Score Z11 before installation - See Scoring & Bevelling guide #2

Assemble each wheel onto the axle temporarily to ensure good alignment.



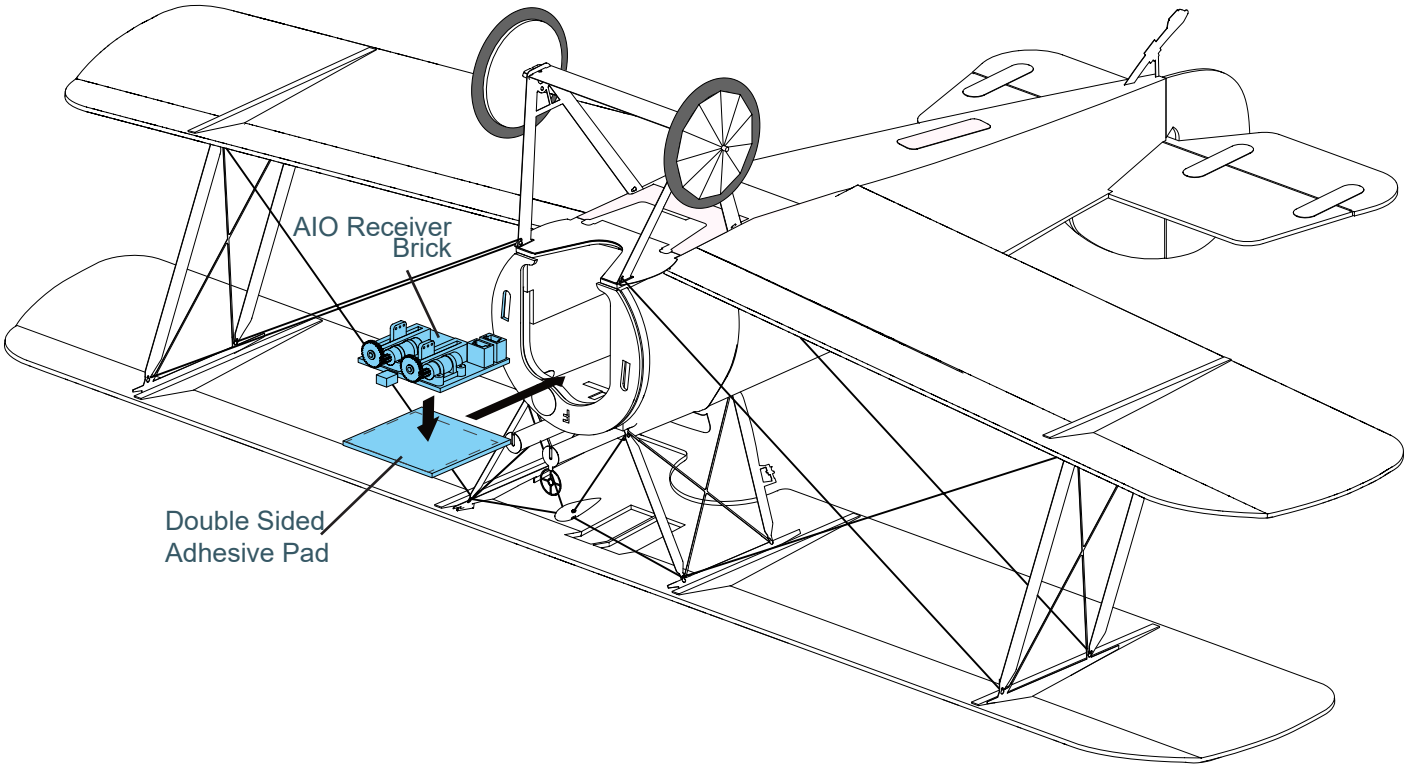
Time
2 Hour

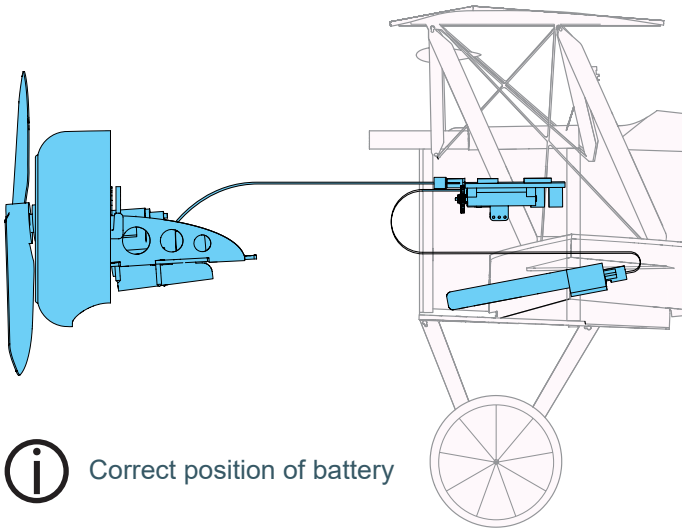
Complex Stickers can be applied by wetting the adhesive side to aid positioning



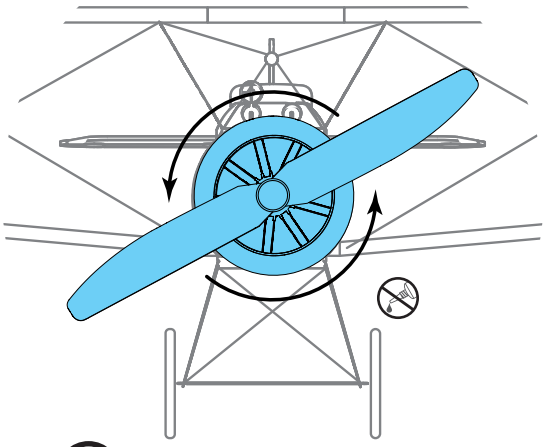
STAGE 18 ELECTRONICS

Ensure receiver servos are centered before installing. To do this, bind to transmitter and center trims on Elevator, Ailerons & Rudder (on transmitter).



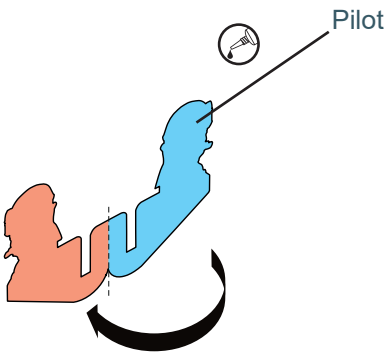


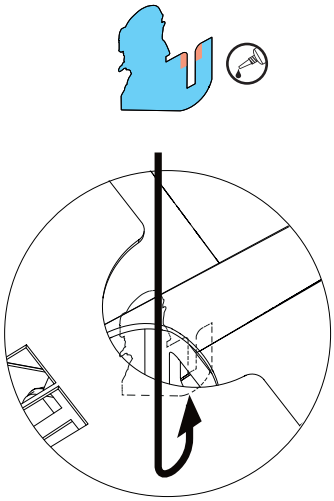
Correct position of battery



Attach motor assembly by inserting lugs into slots and rotating until magnets align

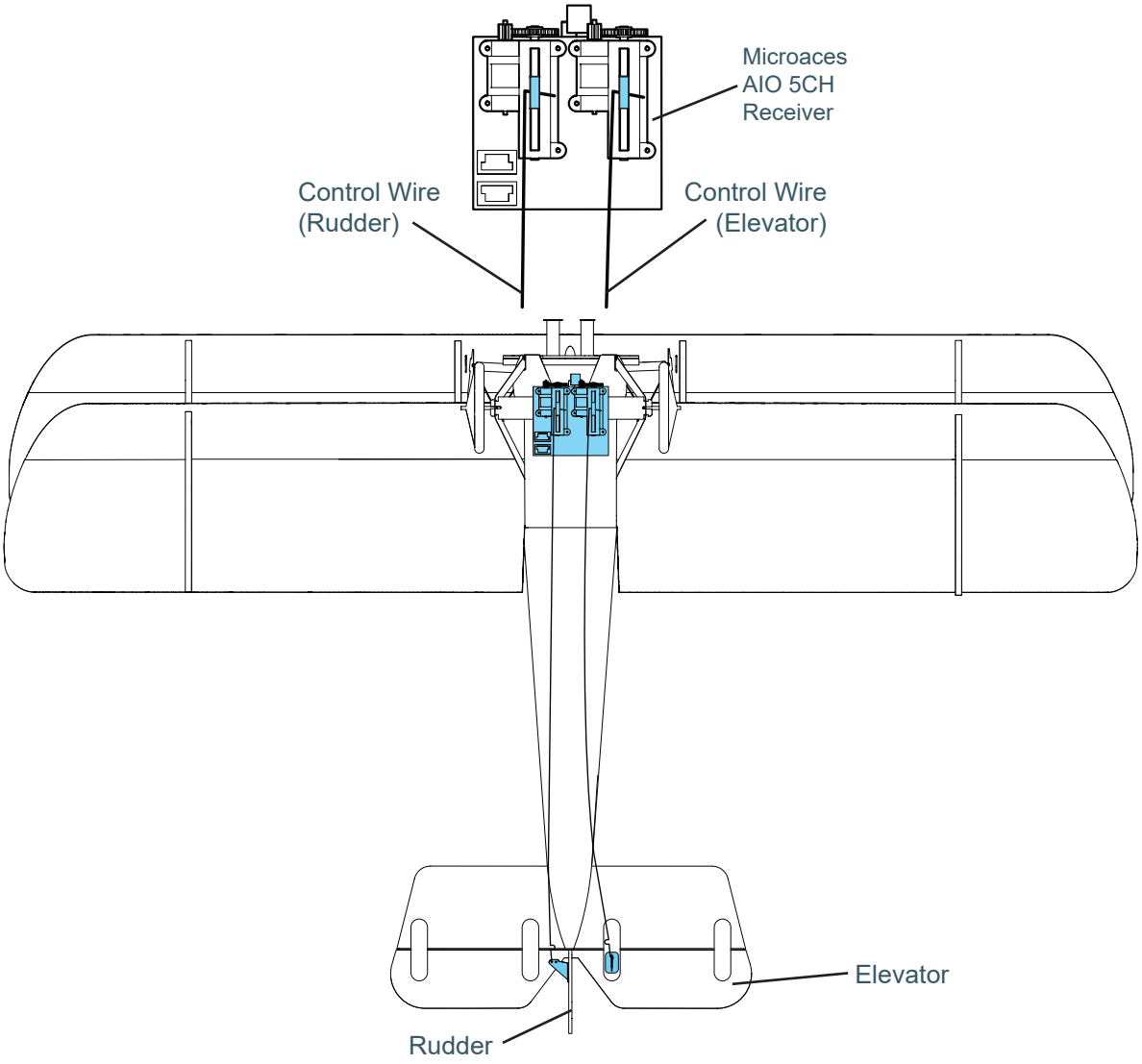
STAGE 19 PILOT



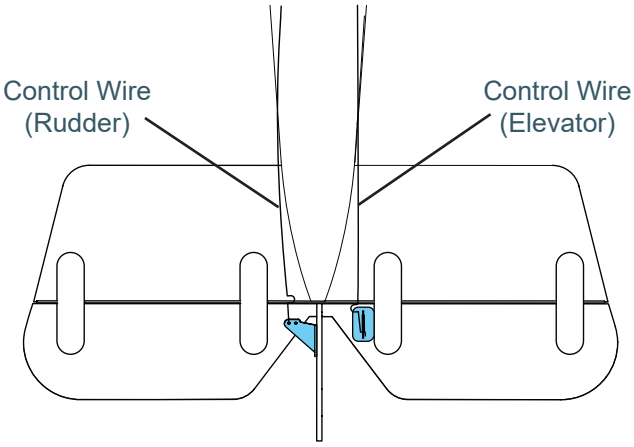


STAGE 20 CONTROL RODS

Insert individual control wire from the rear and attach to appropriate control horn. Set control surface to neutral then, using slim or needle nose pliers, bend the end of the control wire at the piont it will need to attach to the servo arm. Un-hook the control wire from the control horn, pull out of the fuselage and complete the hook bend for the servo arm. Trim hook to 4mm in length.



View from Below



The Control Horns for the rudder and elevator are very flexible. Install the control wires for each and use tweezers to bend the horns to insert the 'Z' bend into the hole.

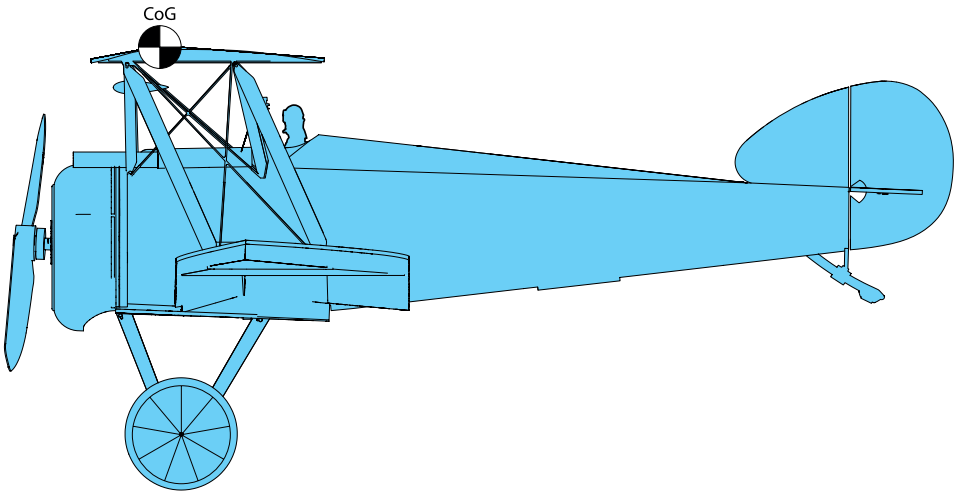
Use the outer hole of the control horns for more gentle control of your aircraft!

STAGE 21 FINISHING TOUCHES

Centre of Gravity (CoG)

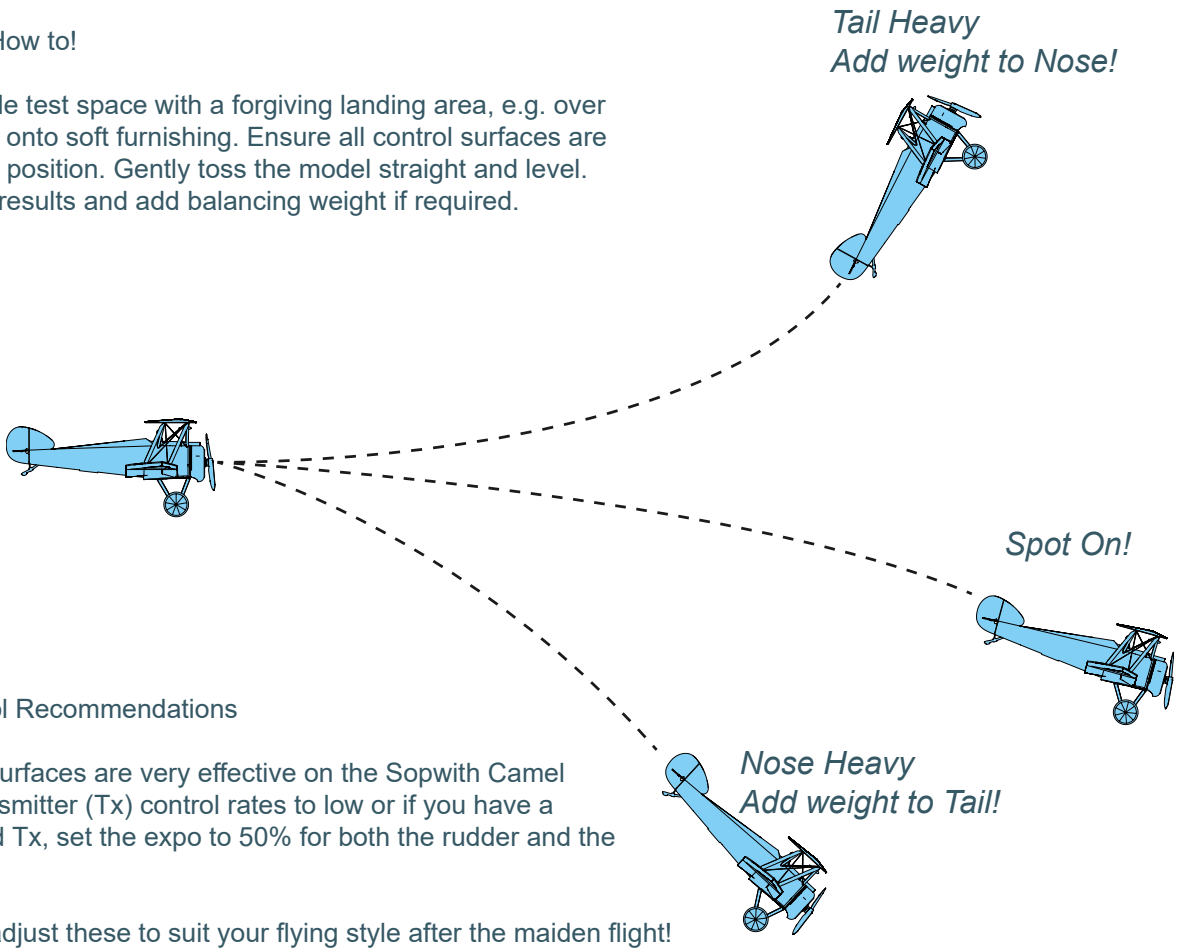
With all the electronics installed including the battery, the CoG should be around the apex of the top wing as shown on the diagram below.

Balance on finger tips to see if the aircraft balances at this point. Before adding any weight it is advisable to perform a glide test. Add weight accordingly to obtain a smooth glide.



Glide Test - How to!

Find a suitable test space with a forgiving landing area, e.g. over long grass or onto soft furnishing. Ensure all control surfaces are in the neutral position. Gently toss the model straight and level. Observe the results and add balancing weight if required.



Radio Control Recommendations

The control surfaces are very effective on the Sopwith Camel Set your transmitter (Tx) control rates to low or if you have a computerised Tx, set the expo to 50% for both the rudder and the elevator.

Feel free to adjust these to suit your flying style after the maiden flight!