

# Fokker Dr.1 Triplane Assembly Guide





## Kit Contents

### SHEET PARTS

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

### LOOSE PARTS

2 x neoprene tyres  
1 x vacuum formed ABS plastic cowl  
2 x 5mm Ø x 1mm neodymium magnets  
1 x 100mm x 6mm Ø plastic tube  
1 x 200mm x 5mm Ø plastic tube  
1 x 1.7mm Ø x 12mm brass tube  
1 x 92mm x 0.4mm x 1mm carbon fibre strip  
1 x 407mm x 0.4mm x 1mm carbon fibre strip  
1 x 80mm 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

## Recommended Tools / Glues

Knife or scalpel with fresh blade

Steel rule or straight edge

Sanding stick or sand paper (180 grit if possible)

Tweezers

Needle nose pliers

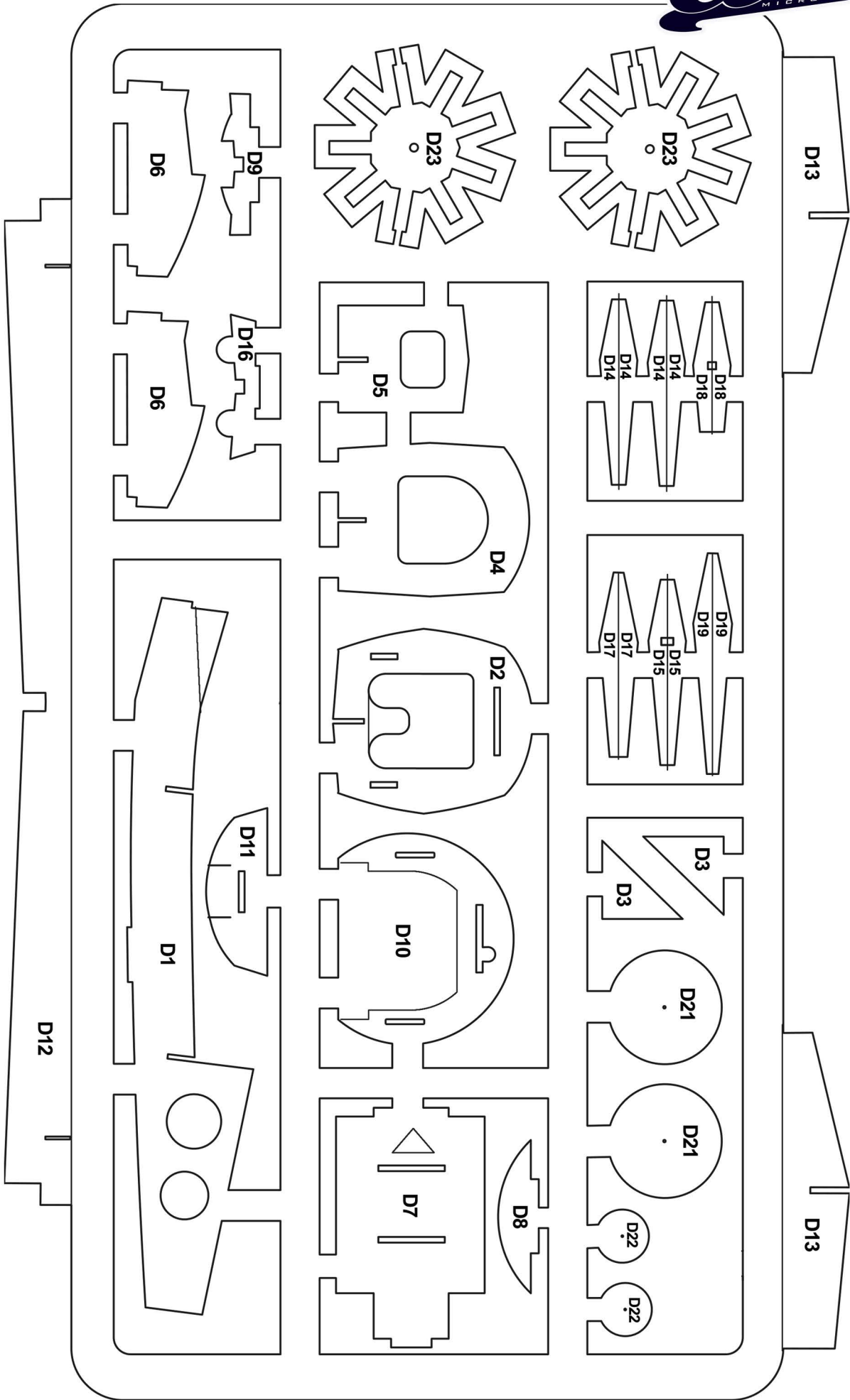
UHU por foam safe adhesive (For foam & plastic)

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



## Recommended Hardware

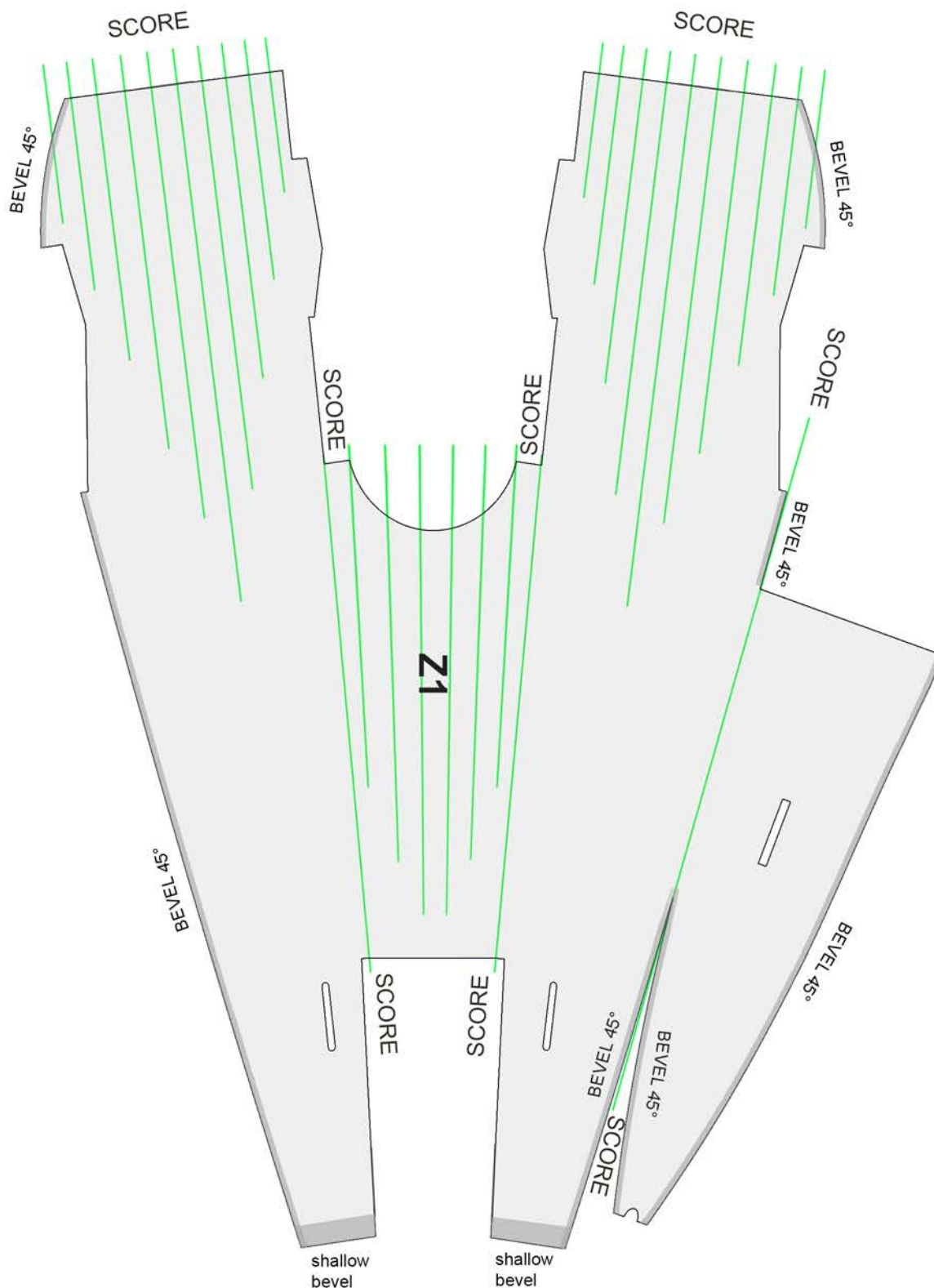
Receiver	<p>Parkzone PKZ3352, PKZ3351 or PKZUA1151 ultra micro receiver.</p> <p><b>Spektrum AR6400 or AR6410 ultra micro receiver.</b> <i>(N.B. Tx mix or mode 4 required to use AR6400/AR6410 for rudder/aileron)</i></p>
Motor/Gearbox	<p>Parkzone PKZ3624 ultra micro motor and gearbox.</p>
Prop Shaft	<p>Replace standard prop shaft with EFLU3004. This is required to accomodate the dummy rotary engine.</p>
Propeller	<p>GWS4040 or GWS4530 with Microaces rubber prop adapter.</p>
Battery	<p>Single cell Lithium Polymer 100 - 180mAh with UM connector.</p>



Using a straight edge as a guide, score the Depron with the **reverse** side of a craft knife or a ball tip 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.

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



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



# Fokker Dr.1 Scoring, & Beveling Guide #2

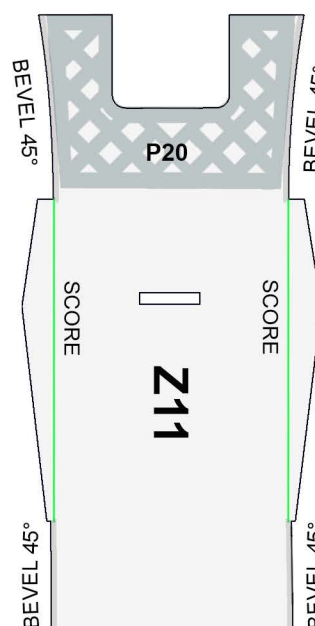
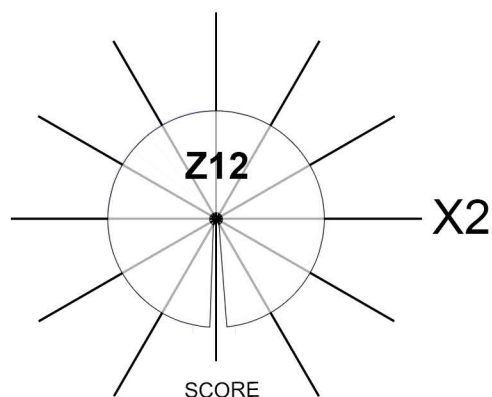
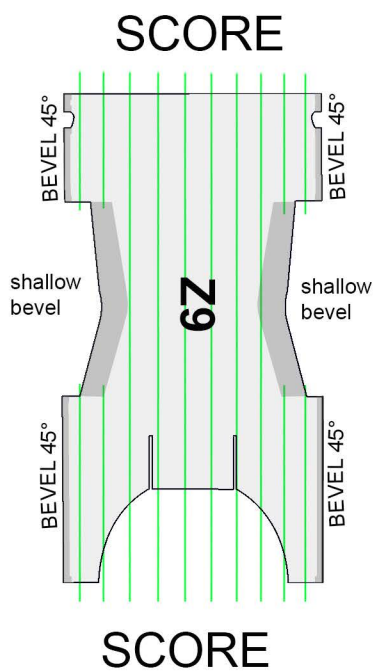


## Method for scoring 1mm Depron

Using a straight edge as a guide, score the Depron with the **reverse** side of a craft knife or a ball tip 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.

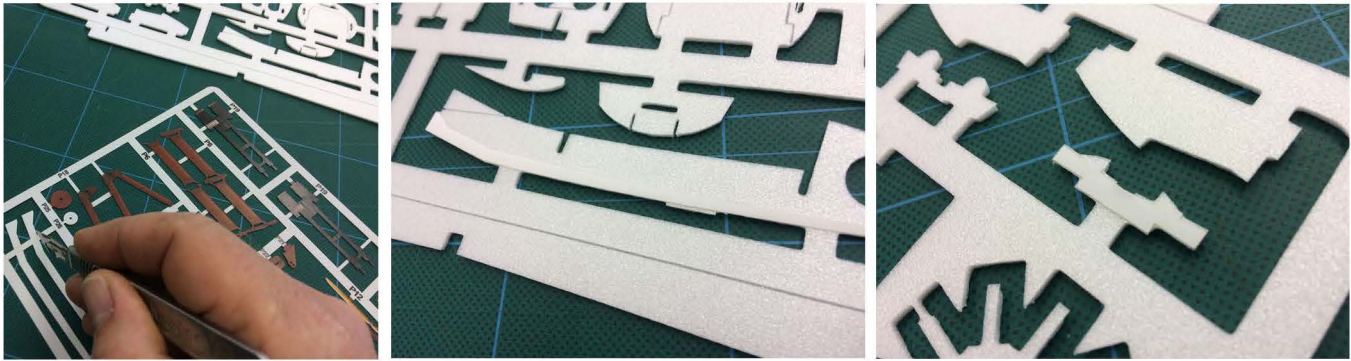
! Always score on the UNPRINTED side of the Depron unless otherwise directed.



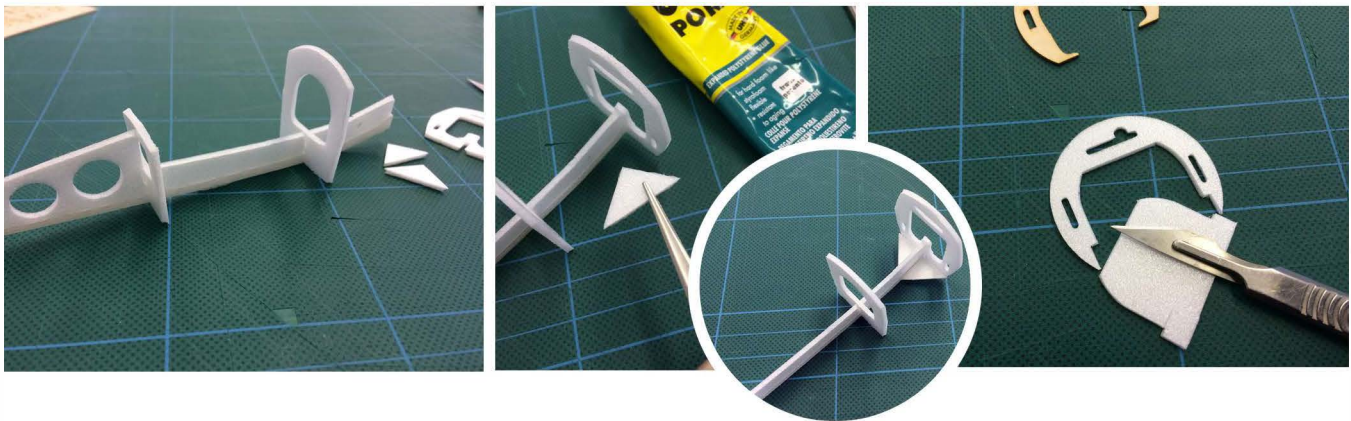
# Fokker Dr.1 Assembly Guide



## Stage 1 - Airframe



Attach P1 & P2 to either side of D1 along the lower edge of the part. This can be done while D1 is still attached to the parts sprue. Attach P3 to D9 and P4 to D16 whilst also on the sprue.



Remove D1 from sprue and slot and glue formers D4 and D5 in positions shown above.

Attach D2 to the front of D1 and add triangular fillets D3 for reinforcement.

Remove material from D10 using the laser etched marks on the front face of the part.



Attach W1 to the front of D10 and secure one of the 4mm x 1mm neodymium magnets into the hole provided.

Attach D8 and D9 to D7 as shown above. Add stickers S1 and S2 to D4 and D11 respectively.



# Fokker Dr.1 Assembly Guide



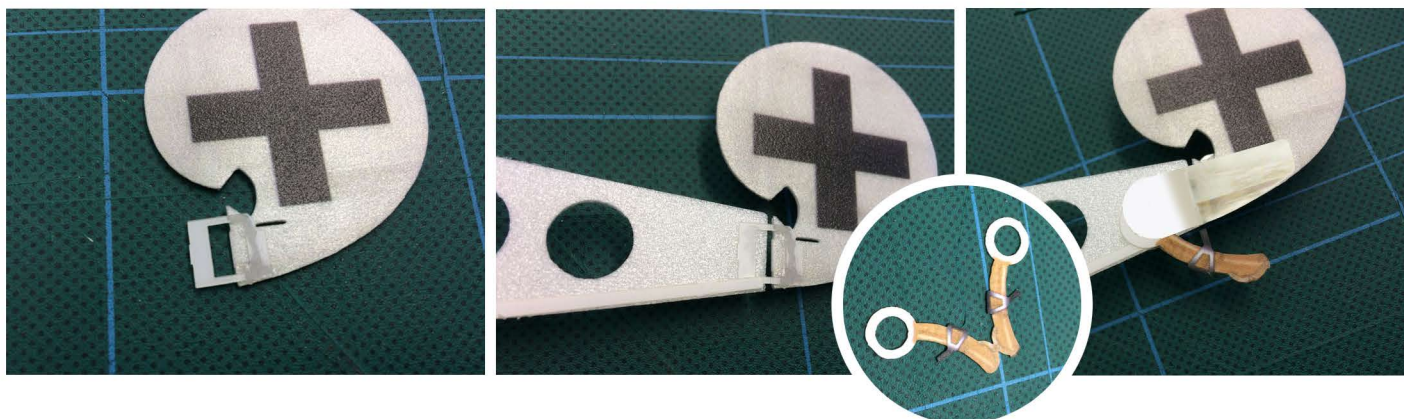
## Stage 1 - Airframe



Inset the tongue on D7 through the slot in the top part of D2 attach D11 to the end of the tongue.

Attach both D6 parts via the slots in the sides of D2 facing forward as shown above.

Attach W1/D10 assembly to the front of the airframe slotting in the short tongues on both D6 parts and D7.



Attach plastic hinge joint P2a to the rudder Z2 on the port (left) side as shown in the above image. Then attach the other half of P2a to the port side of the airframe at the rear. Ensure there is ~1mm gap between the rudder and the frame.

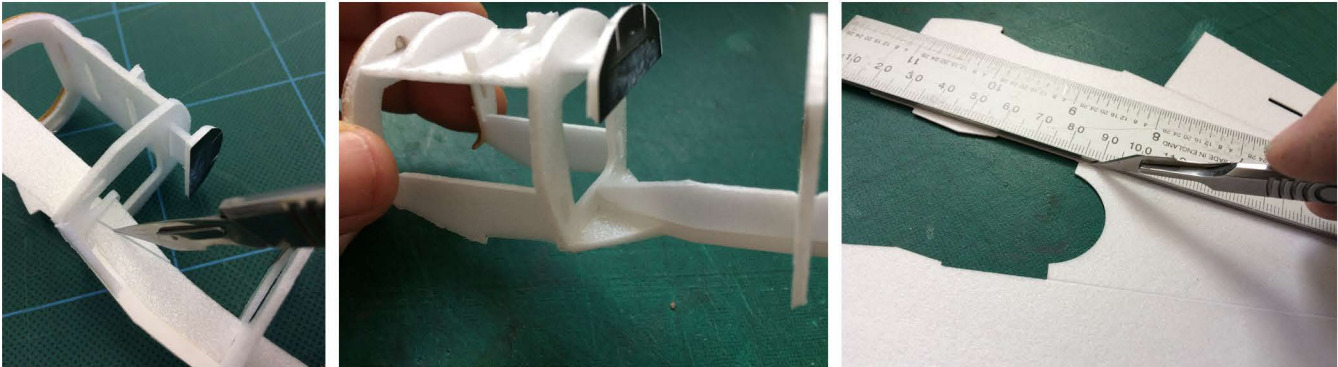
Fold and attach the tail skid P2 to the rear of the airframe, gluing the round tabs either side of the keel (D1) and cover on the port side with sticker S4.



# Fokker Dr.1 Assembly Guide



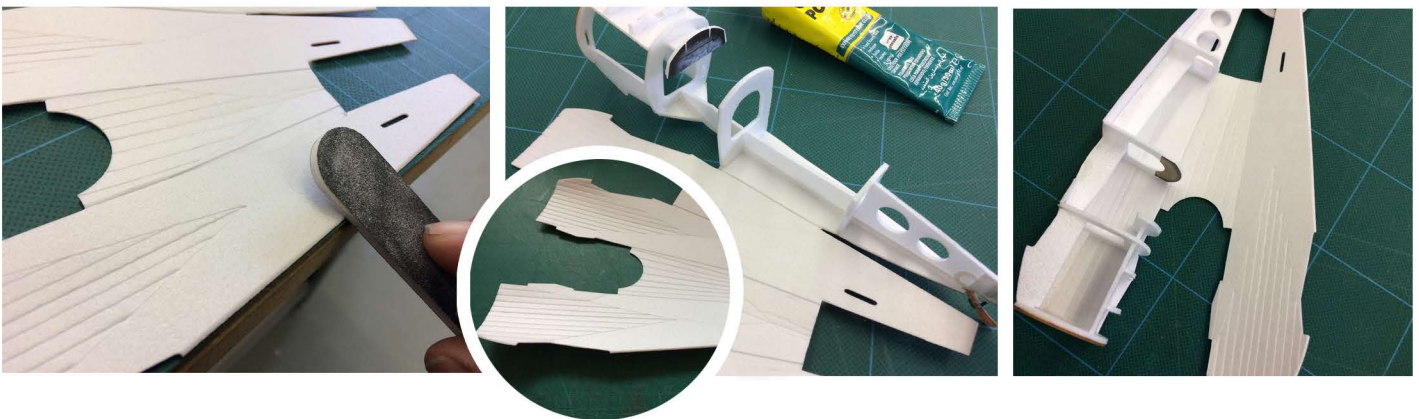
## Stage 1 - Airframe



Using a sharp craft knife, remove the slotted areas from D1 and D2 as shown above. This makes room for batteries larger than 80mAh to fit into the fuselage.

Using the score guide provided in this assembly guide, score Z1 on the inside of the part using the BACK of a craft knife or a blunt scoring implement.

## Stage 2 - Fuselage



Using a sanding stick, carefully create bevels on all the edges indicated on the guide for Z1.

Once the scoring and bevelling has been done, pre-bend the areas that will sit on curved formers to aid final fitment.

Attach the underside of the fuselage skin to the bottom rear of the airframe, using the slot to line the parts up correctly.

Use this opportunity to dry fit the fuselage to ensure everything fits and to familiarise yourself with how it should sit once glued.

A small amount of sanding of formers may be required to ensure a good fit at this stage.

# Fokker Dr.1 Assembly Guide



## Stage 2 - Fuselage



Carefully apply glue to one side at a time and work around the fuselage until the airframe is wrapped with Z1.

Ensure, as much as possible, that each side of the fuselage is level with the other.

Attach the rudder control horn at this stage using P21 & P22. The horn fits on the starboard (right) side of the rudder using the slot provided.

## Stage 3 - Tail



Release Z3 from Z4 by cutting along the score line.

Attach 92mm long 1.0mm x 0.4mm carbon fibre strip to the leading edge of the elevator (Z4).

Place 4 x S5 hinge stickers on Z3 where marked and attach Z4 leaving a small gap to allow for free elevator movement.

You can attach the elevator control horn at this time if desired using P23 & P24.



# Fokker Dr.1 Assembly Guide



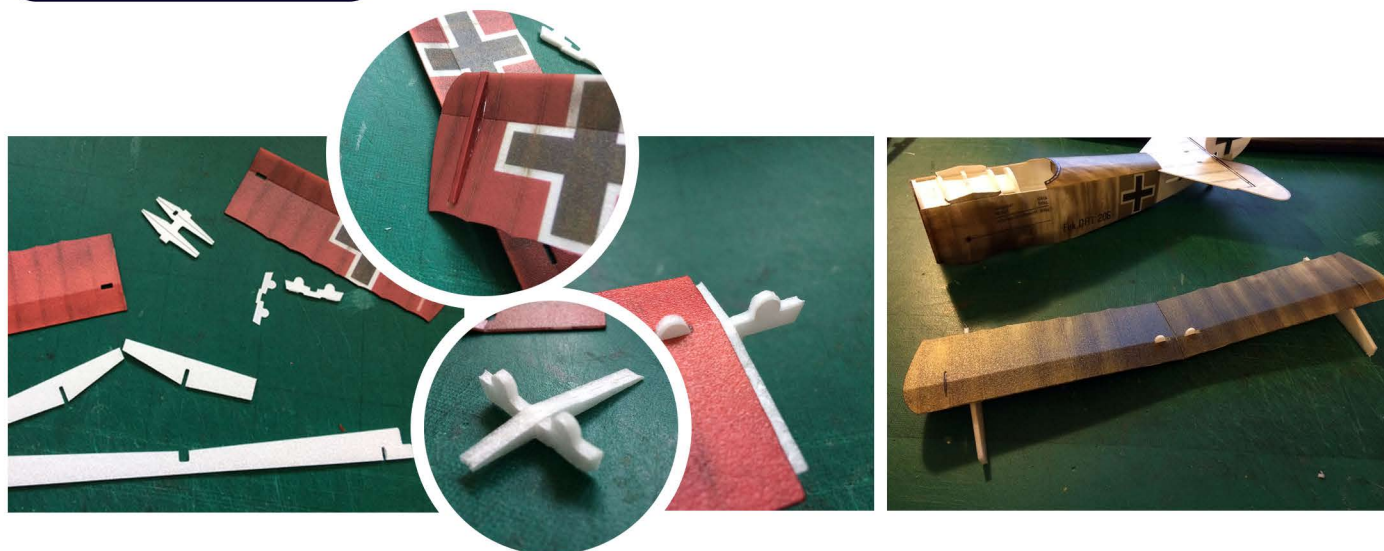
## Stage 3 - Tail



Dry fit the tail assembly to the fuselage. Ensure the tail is square to the fuselage and sits level on the horizontal plane. Small amounts of adjustment may be required by sanding.

Glue in place once you're happy with the position.

## Stage 4 - Lower Wing



Apply 2 x S6 to 2 x D14 to form two wing ribs. Attach these to the outer positions on the lower wing parts Z5 & Z6 positioning them tight up against the slots in the wings.

Assemble the central wing brace using D16 (with P4 attached) and 2 x D15 glued together.

Attach both wings to the central brace and set the wing into the dihedral jig assembled from D12 & 2 x D13. *NB. Do not glue the wing to the dihedral jig!*



# Fokker Dr.1 Assembly Guide



## Stage 4/5 - Lower/Mid Wing



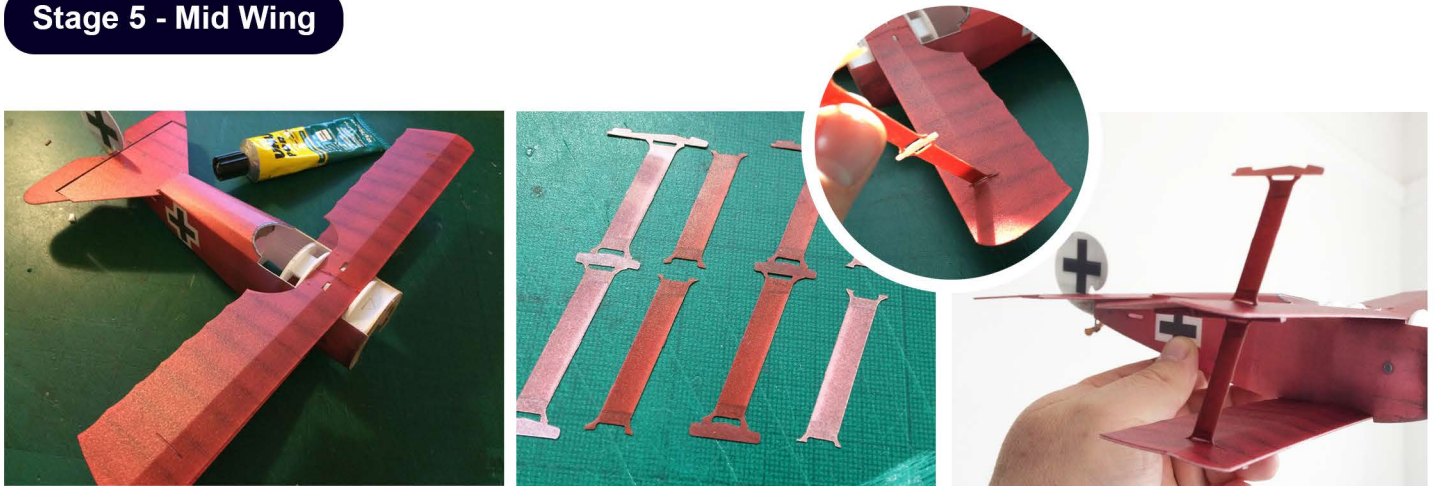
Dry fit the lower wing. Ensure there is little or no gap at the wing root before final assembly.

Also ensure the dihedral in the wing remains when the wing is fitted. Glue in place once you are satisfied with the fit. Run a bead of foam safe CA or aliphatic resin into the wing root to increase strength.

Attach sticker 2 x S7 to 2 x wing rib D14. Attach the 2 ribs to the marked area on the outside of the slots on mid wing parts Z7 & Z8. Glue 2 x D18 together in preparation for attaching the wing.

Attach 2 x P27 on the underside of each mid wing, reinforcing the small trailing edge hole.

## Stage 5 - Mid Wing



Seat the central rib formed from 2 x D18 centrally on the top of the fuselage forward of the cockpit. The slot in the double rib should fit into the slot on D16 already mounted on the deck.

Seat the the mid-wings onto this arrangement and once happy with alignment, glue in place.

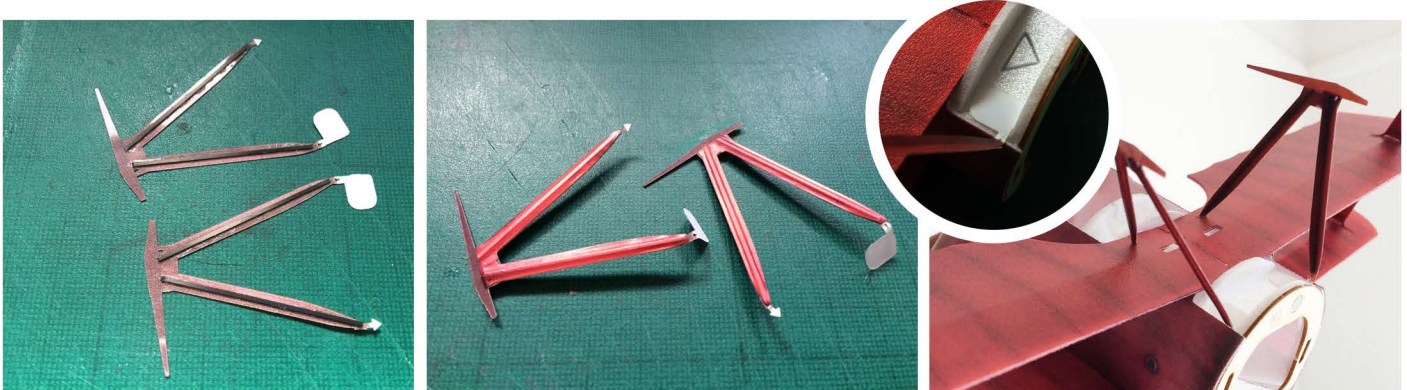
Attach P6 and P7 to P8 to form the starboard interplane strut. Attach P9 & P10 to P8 to form the port interplane strut.

Slot the struts down through the mid and lower wing through the slots provided and seat in the way shown in the image above. *NB. No need to glue them in place at this time.*

# Fokker Dr.1 Assembly Guide



## Stage 6 - Struts

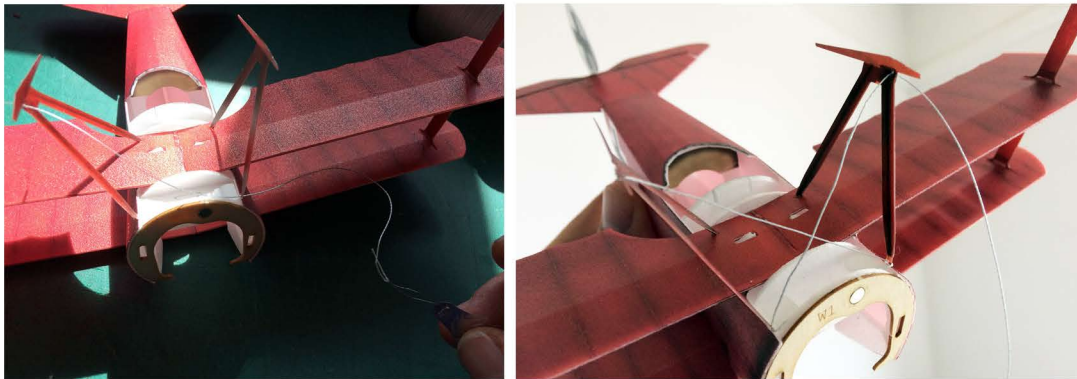


Attach 4 x 41mm of 0.4mm x 1.0mm carbon fibre strip to each leg of P13 & P14. (Cabane struts)

Cover the unprinted side of each leg with stickers S9 & S10 and S11 & S13.

Attach the cabane struts to the fuselage by gluing the square tab on the forward leg of P13 & P14 to the open forward deck against the firewall and slotting the arrow end of the rear legs of the cabane struts through the pre-cut holes in the trailing edge of the mid wing.

## Stage 6 - Struts



Tie in a stopper knot to one end of the supplied rigging wire. Using a rigging tool, thread the wire through the top left hole on the cabane strut. (See image above left)

Pull the thread through and take it through the bottom right hole of the opposing strut on the right.

Next thread it through the opposite bottom hole of the left strut and back up to the top hole on the right strut. Leave a 100mm excess of thread and cut the wire. Save excess to use on the under-carriage rigging.

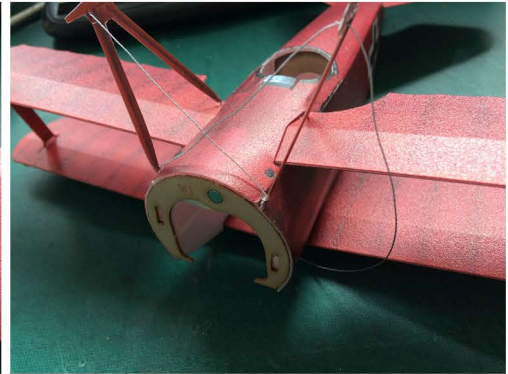
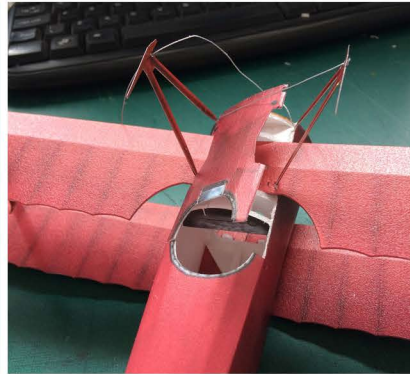
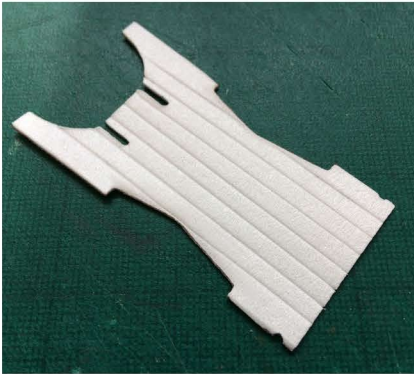
NB. No need to tighten or secure the rigging at this stage.



# Fokker Dr.1 Assembly Guide



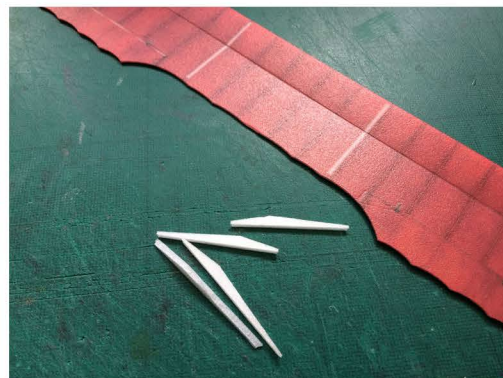
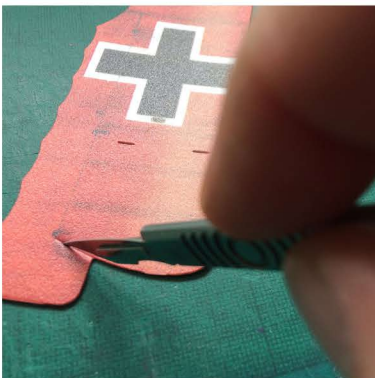
## Stage 7 - Forward Deck



Using the guide at the front of this manual, sand and score Z9 before applying it to the deck area in front of the cockpit. Once scored, pre-bend Z9 to assist with the fitting.

Dry fit initially. Sand parts if required to ensure a good fit before gluing in place.

## Stage 8 - Upper Wing



Before assembly of the upper wing partially release the tip of the aileron to allow some washout to be introduced into it if required during trimming of the aircraft.

Cover 2 x wing ribs D17 with 2 x stickers S7 and 2 x wing ribs D19 with 2 x stickers S8.

Attach the longer D19 ribs to the marked outer positions on the upper wing and the D17 ribs to the inner positions on the same wing.

Dry fit the upper wing to the tops of all the struts using the locator pins on the interplane (outer) struts to push into the slots in the wing on the inside of the ribs.

Once happy with position and alignment, glue the top wing in place on all four ribs.



# Fokker Dr.1 Assembly Guide



## Stage 9 - Detail



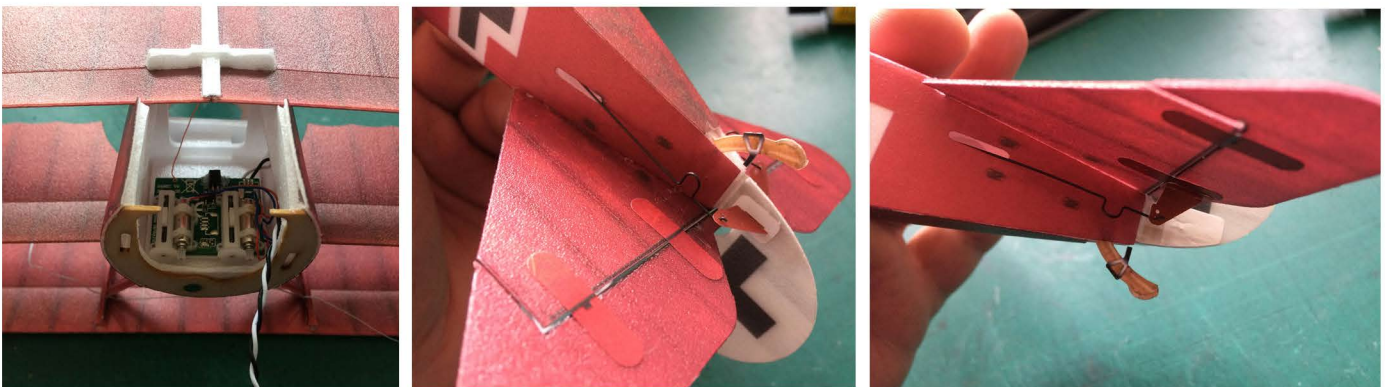
Place the small circular end of an S15 sticker over the end of the 6mm diameter clear plastic tube provided and fold down the small tabs before folding the main sticker down the length of the tube and wrapping it around the circumference.

Cut the tube flush with the end of the sticker to form the cooling jacket for the machine gun.

Fold and glue machine gun part P19 then slide the cooling jacket over the gun barrel ensuring the muzzle of the weapon slots through the end of the jacket. There should be a hole in the sticker to allow passage through. Secure in place.

Repeat the process to create a second machine gun and attach both into the slots provided in front of the cockpit.

## Stage 10 - Receiver



It is advisable to install the receiver at this stage of the build. The receiver can be installed at a later stage but if done now it is less of a fiddle!

The receiver sits inverted in the airframe so use a strong double sided servo tape. It's worth cutting it to conform to the receiver to maximise the amount of contact to the receiver.

Install the receiver as far forward as possible without binding the servo gears against the firewall. Power up the receiver and bind to your transmitter to ensure both elevator and rudder (and aileron) trim are centralised. Disconnect the receiver before turning off the transmitter.

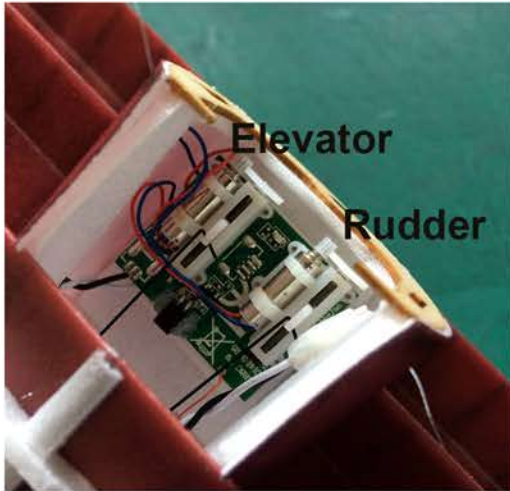
Insert the control rods into the fuselage and attach to elevator and rudder control horns. Ensure you use the correct rod for the corresponding flight surface.



# Fokker Dr.1 Assembly Guide



## Stage 10 - Receiver



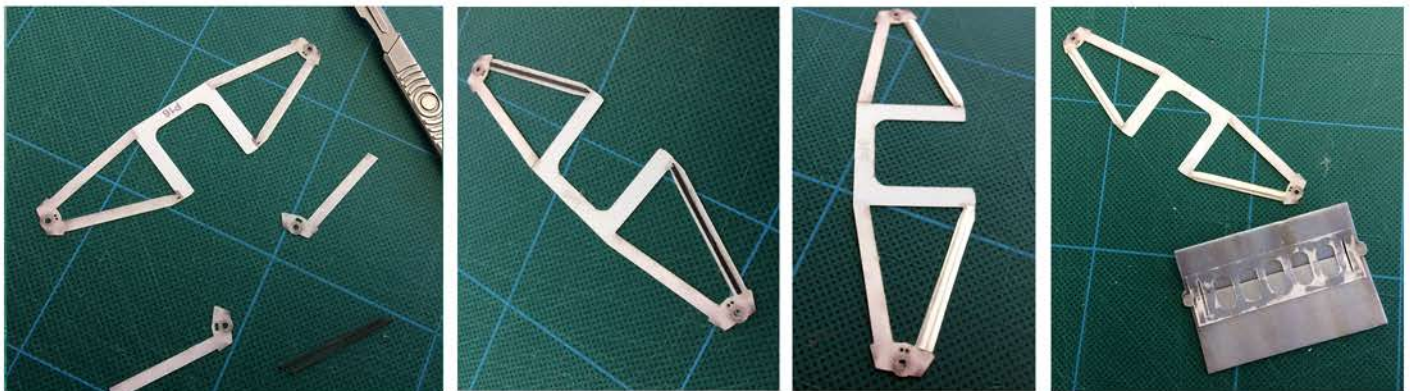
Using a pair of needle nose pliers, hold the control rod at the point where it should bend and pass through the hole in the servo arm.

Initiate a slight bend in the control rod at this point then completely remove the rod from the model.

Complete the 100 - 110 degree bend at the marked point and remove excess rod using wire cutters leaving a 5 - 8mm straight 'hook' on the rod.

Repeat for the second control rod then re-install the rods and attach at both control horn and servo ends.

## Stage 11 - Undercarriage



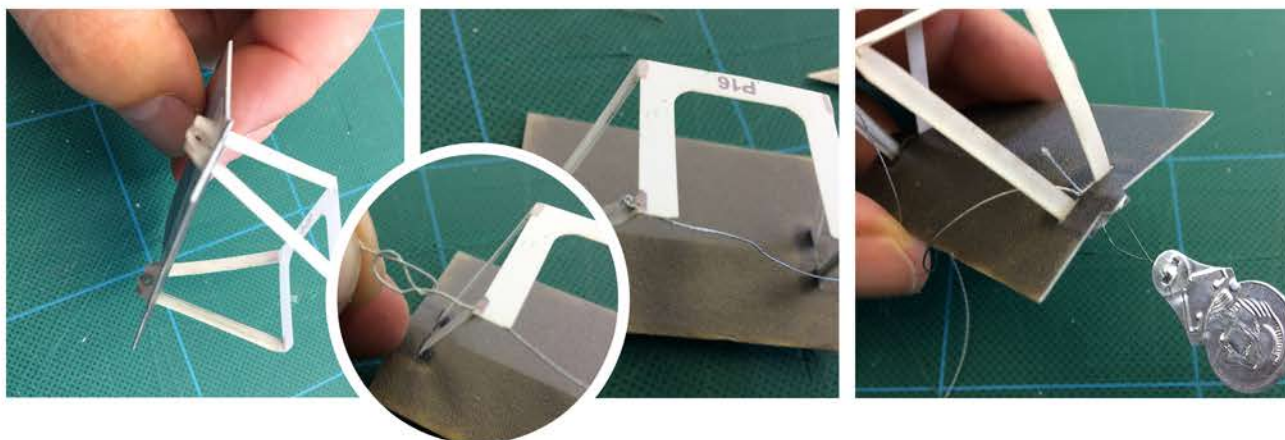
Remove Undercarriage parts P16, P17 & P18 from the plastics sprue. Attach P18 & 17 to the unprinted side of P16 as shown in illustrations above.

Cut 2 x 31mm carbon fibre strips (1.0mm x 0.4mm) and attach to the other legs of P16 not covered by P17 & 18.

Cover the carbon fibre on both legs with stickers S16 and S17.

Remove P15 and Z10 from their respective sprues. Glue P15 onto the underside of Z10 matching up the scores on each and the cut slots.

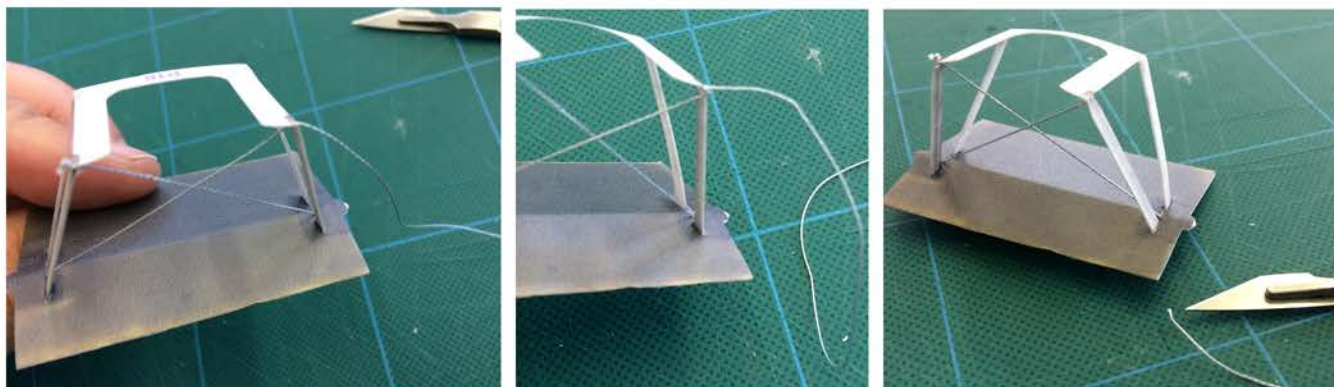
## Stage 11 - Undercarriage



Bend the undercarriage legs down at the point they meet the 'U' shaped attachment area.

Push the bottoms of each leg into the slots in Z10. Ensure correct orientation. NB the open end of the 'U' points forward when attached to the fuselage.

Thread and knot a length of rigging wire to the top of one of the undercarriage legs. Pull the thread down through the slot in Z10 on the opposite side and thread through the smaller hole in the bottom of the leg.



Pass the rigging wire along the underside of Z10, through the opposite hole on the other undercarriage leg, then back up through the opposite slot in Z10 and up through the opposing hole on the upper leg, opposite to where the initial wire starts.

Tighten the thread to take slack out of the wire. Tie off at the top of the leg and secure with a dab of foam safe aliphatic or CA glue.

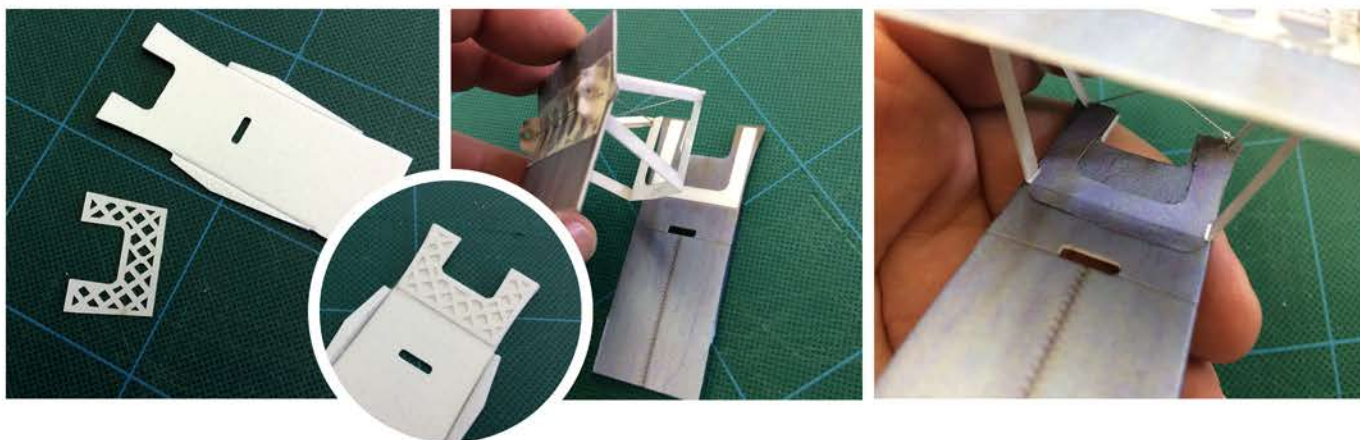
Trim the excess rigging wire.



# Fokker Dr.1 Assembly Guide



## Stage 11 - Undercarriage



Remove Z11 and P20 from sprues. Use the Scoring and Beveling guide to prepare Z11.

Glue P20 to the unprinted side of Z11 in the position shown in the guide and in the image above.

Glue the undercarriage assembly to the printed side of Z11 in the marked area. Ensure it is firmly fixed. This is not an area to use adhesive sparingly!

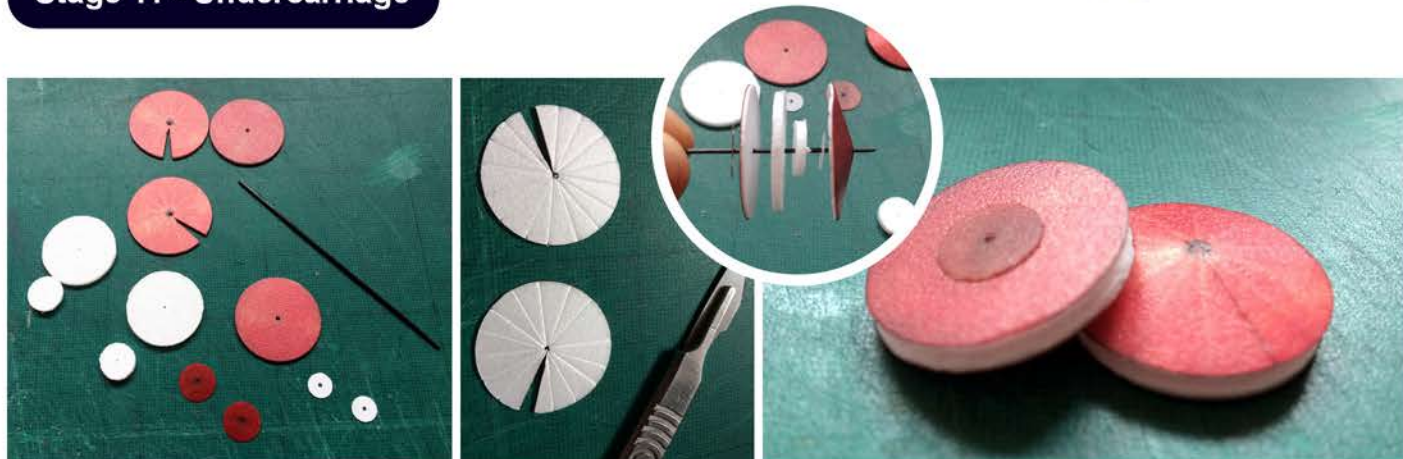
Cover the plastic parts of the adhered undercarriage assembly with stickers S18 & S19. It is recommended to wet these stickers before application to help position the stickers more easily.



Attach Z11, with undercarriage to the main fuselage.

Cover the locating slot in Z11 with sticker S20 and run the long 'stitching' sticker S21 up the underside of the fuselage.

## Stage 11 - Undercarriage



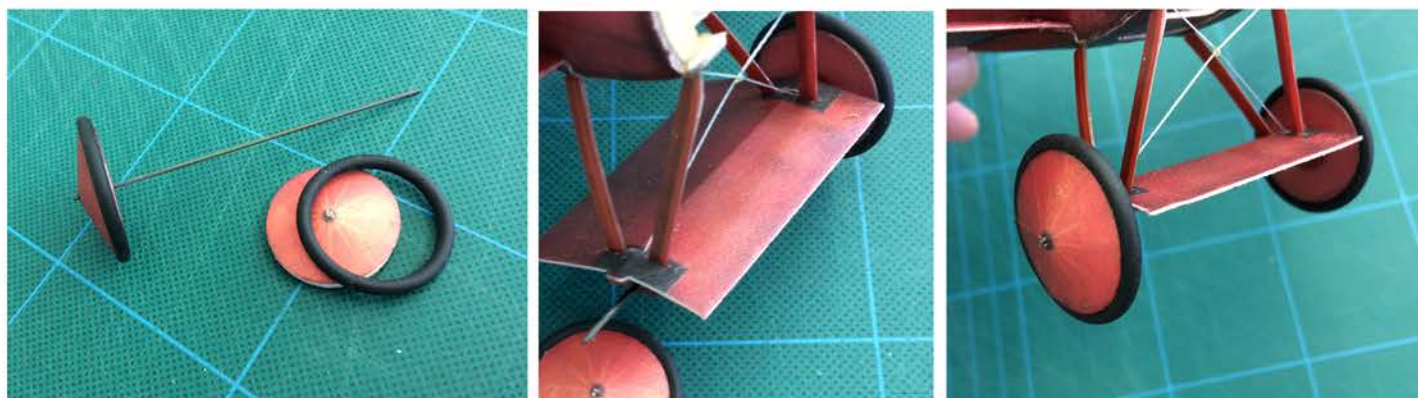
Gather the parts to assemble the wheels. 2 x D21 and D22, 2 x P25 and P26, 2 x Z12 and Z13 and an 80mm x 1mm dia. carbon fibre rod.

Using the guide provided, score the unprinted side of both Z12 parts. Glue the seam of each together to form shallow cones from these parts.

Using the rod as a makeshift 'skewer', assemble a wheel in the following order:

P25 - Z13 - D21 - D22 - P26 - Z12.

Glue these parts firmly together (but avoid gluing to the rod) and let the adhesive cure fully before attaching the tyres. Spin the rod to make any balance adjustments required before the glue fully sets.



Attach the neoprene tyres to the rims of the wheels then glue one of the wheels to the end of the carbon fibre rod.

Insert the rod through the larger holes in the lower legs of the undercarriage and glue the second wheel to the free end of the rod.

The wheels and rod should be able to rotate freely.



## Stage 12 - Rotary Engine



Attach an S22 sticker to the end of the 5mm dia. black straw provided by first covering the end of the straw with the round part of the sticker, folding the tabs down the length of the straw then wrapping the main oblong part of the sticker around the circumference of the straw.

Carefully cut the straw at the base of the sticker and repeat 8 times to create 9 cylinders. *(NB there is a spare S22 sticker should you need 'practice')*

Gather the other parts needed to assemble engine: 2 x Z15, 2 x D23, P29, P30, P31 & P32 plus the 12mm brass tube that acts as a bearing.

Attach both D23 parts to either side of P29 and insert the brass tube through the centre. Ensure the tube is positioned so that there is 2mm showing at the rear of the motor and the rest of it out front. At this point it is worth ensuring the motor can rotate smoothly before the adhesive is dry.



Attach a Z15 to the front and one to the back of the motor and carefully wrap an S23 & S24 sticker around the edge of each.

Slide and secure the cylinders onto each protrusion ensuring that each is oriented correctly so the slit in the top of each cylinder allows the tips of P29 to slide through.

Attach P30 to the rear of the motor (ensuring the printed side faces forward) and align so the inward facing spikes can be guided into the the slot in the head of each cylinder.

Complete by attaching P31 to the front and P32 to the rear of the motor.



# Fokker Dr.1 Assembly Guide



## Stage 13 - Cowl



Gather the parts that are used to create the cowl. This includes the vac formed plastic, the laser cut plywood sheet and a 4mm x 1mm neodymium magnet.

Using sharp scissors or a knife, cut the excess plastic away from the vac formed cowl being careful not to crack or cut the part in the process. You can always more accurately trim after cutting the majority of excess away!



Use a sanding stick to more precisely finish off the edges of the cowl part.

Use a sharp craft knife/scalpel to remove the three dimples on the inside of the cowl.

Use a round file or rolled up piece of fine grade sandpaper to open out the resulting three holes to 5 - 6 mm diameter.

If required of the model colour scheme, paint the cowl at this stage.

It is recommended that a grey enamel primer is first applied to the outer surface of the cowl, lightly sanded when dry, then several coats of an appropriate colour for the scheme using either enamel or acrylic paint.

Apply a top coat of eggshell finish varnish if available.

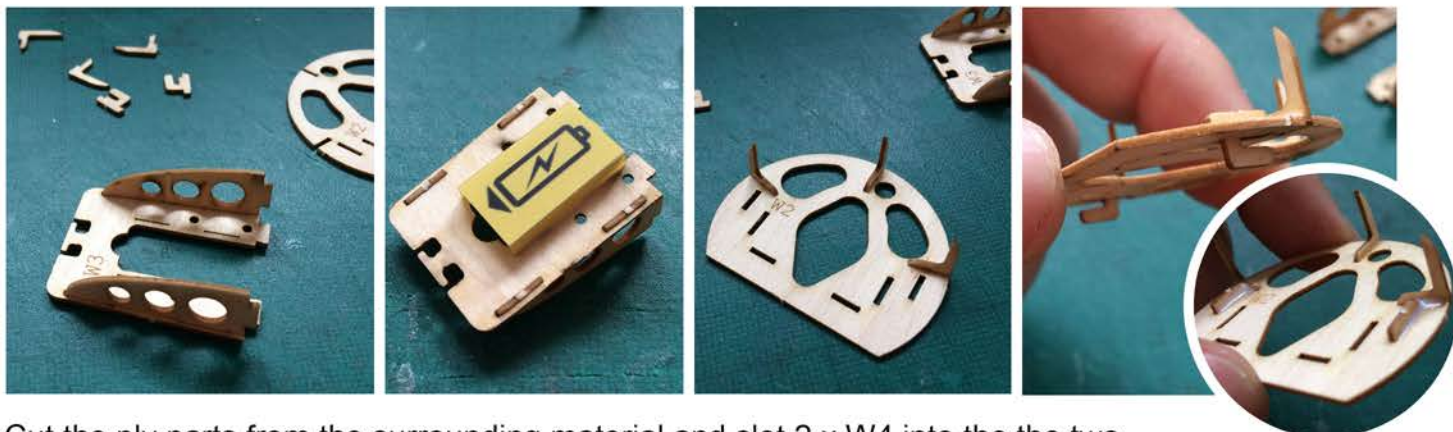
Once the paint has dried completely, apply sticker S25 to the front of the cowl and S26 to the lower right.(See above)



# Fokker Dr.1 Assembly Guide



## Stage 13 - Cowl



Cut the ply parts from the surrounding material and slot 2 x W4 into the the two edges of W3 as shown above. **NB: ensure W3 text is facing upwards when attaching W4.**

Remove P28 from the plastic sprue, bend where scored and slot into the underside of the W3/W4 assembly. This is the *motor mount assembly*.

Attach 3 x W5 onto the W2 part. Ensure they protrude forwards from the front face of W2.  
**NB: The front face has 'W2' engraved on it.**

Push 2 x W6 through the outermost slots on W2. Ensure the 'hook' part of W6 appears on the rear side of W2. **NB: ensure the hook face downwards on the right and up on the left (as you look at the back of W2).** This is the *firewall assembly*

Once happy with part positioning, glue all parts in place using aliphatic resin adhesive or similar.



Slot and glue the motor mount assembly into the back of the firewall assembly as shown above.

Install a PKZ3624 motor and gearbox into the motor mount. Don't forget to replace the standard prop shaft with EFLU3004 extended prop shaft before install. Use the cleat at the back of the motor mount to strain relieve the motor/wire join.

Install the neodymium magnet into the hole provide in the firewall and cover with sticker S3.

Slide the motor onto the prop shaft and ensure it can spin freely. Attach the cowl to the firewall. Ensure the motor and prop shaft spin freely before gluing (UHU por works well here).



# Fokker Dr.1 Assembly Guide



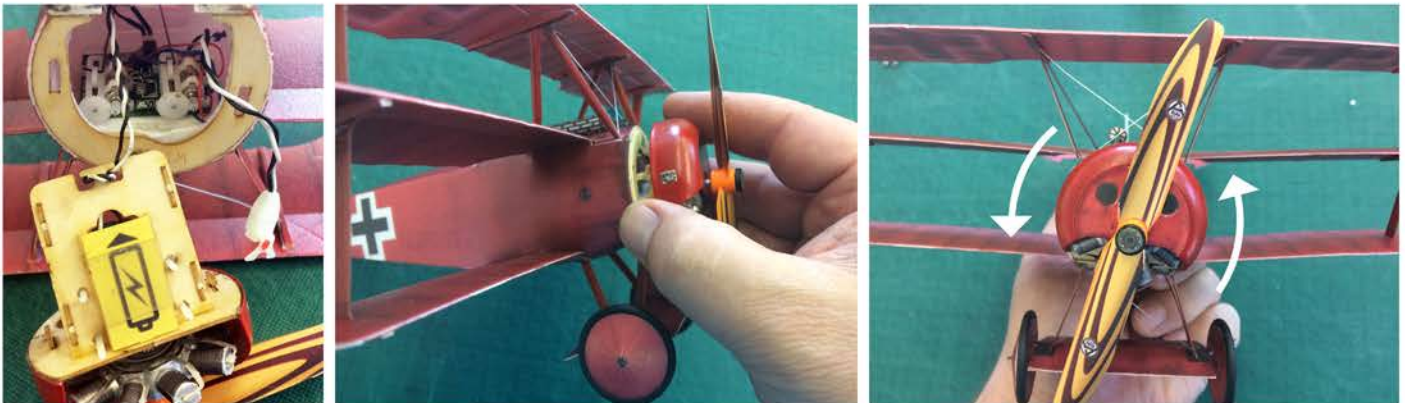
## Stage 13 - Cowl



Apply prop stickers appropriate to your chosen GWS propeller. It is recommended that you wet both the prop blade and the adhesive side of the sticker, allowing time to position the sticker accurately on each blade.

If using a GWS prop, cut the pimple off the front of the rubber prop adapter and push the adapter into the prop boss. Stick P33 onto the front of the prop adapter.

Wind the prop onto the prop shaft. Use a pair of pliers or tweezers to hold the prop shaft gear in place while winding the prop clockwise (viewed from the front).



Plug the motor into the receiver. This usually requires a pair of tweezers and a little patience!

To attach the cowl assembly to the fuselage guide the motor mount into the forward cavity at a slightly clockwise, twisted angle.

Slot the plywood 'hooks' into the slots on the plywood fuselage firewall and once in place, twist the whole cowl assembly anti-clockwise until the magnets on both assemblies come into contact.

Removal of the cowl requires a clockwise twist and the cowl should release from the fuselage by pulling it forwards. Please remember the motor is plugged in to the receiver so GREAT CARE should be taken not to put unnecessary stress on the electrical joints.



# Fokker Dr.1 Assembly Guide



## Stage 14 - Battery Placement

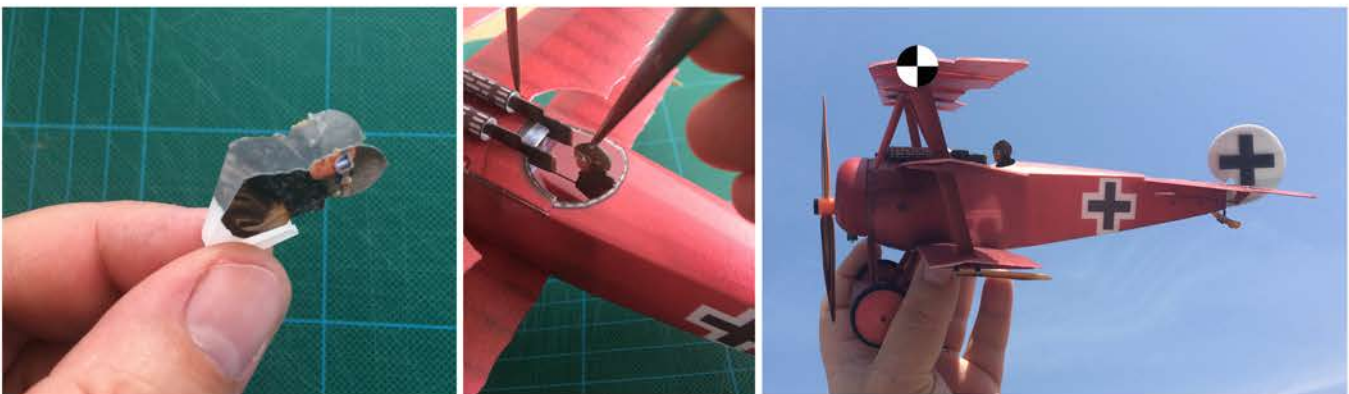


Connect the battery to the receiver and place on the battery plate on the motor mount.

*It's advisable to use a very low profile Velcro or a re-stickable double sided pad to hold the battery during installation.*

Install the engine cowl as directed in the instructions. The battery should sit just behind the dummy motor with a small portion of it visible through the cutout in the lower forward fuselage.

## Stage 15/16 - Pilot / Centre of Gravity



Remove the pilot from his sprue, fold along the scored line and glue together.

Fix into the cockpit using the hook at the bottom of the pilot figure to slide onto the bulkhead behind the cockpit.

With battery installed, the Centre of Gravity should be located on the crease of the top wing.



# Fokker Dr.1 Assembly Guide



## Stage 17 - Ballast



After initial test glides or the maiden flight, if the model required more nose weight, a good position to add it is onto the lower part of the cowl firewall as show in the picture opposite.

Symptoms of a tail heavy Dr1 range from a tendancy to stall dramatically to excessive wing rocking during powered flight.

If glide testing first, a flight that ends up in a nose up attitude stall signifies the need for more forward ballast.

There is a small amount of lead provided in the kit if required. It is recommended that this is glued in place even though it does have a self adhesive strip.

*Happy Flying!*