



*McDonnell Douglas*  
**FA-18 Hornet**  
*Parkjet*

Photograph of actual aircraft.



4th Generation Jet Fighter

# F-18 Hornet History

The McDonnell Douglas F/A-18 Hornet is a twin-engine, supersonic, all-weather, carrier-capable, multirole combat jet, designed as both a fighter and attack aircraft (hence the F/A designation). Designed by McDonnell Douglas (now Boeing) and Northrop, the F/A-18 was derived from the latter's YF-17 Cobra in the 1970s for use by the United States Navy and Marine Corps. The Hornet is also used by the air forces of several other nations, and since 1986, by the U.S. Navy's Flight Demonstration Squadron, the Blue Angels.

The fighter's primary missions are fighter escort, fleet air defense, suppression of enemy air defenses, air interdiction, close air support, and aerial reconnaissance. Its versatility and reliability have proven it to be a valuable carrier asset, though it has been criticized for its lack of range and payload compared to its earlier contemporaries, such as the Grumman F-14 Tomcat.

The Hornet first saw combat action during the 1986 United States bombing of Libya and subsequently participated in the 1991 Gulf War and 2003 Iraq War. The F/A-18 Hornet served as the baseline for the Boeing F/A-18E/F Super Hornet, its larger, evolutionary redesign.

Starting in 1980, the aircraft began to be referred to as the F/A-18A, and the designation was officially announced on 1 April 1984. The TF-18A (Twin seater) was redesignated F/A-18B



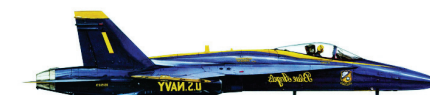
## Designers Notes

An easy to fly, instantly recognisable classic in the air - the Hornet will look good in any collection.

Available up to 70mm EDF (4s) or pusher, both single seater and twin seater versions.

This guide is for the FA-18- A to C variants.

The superhornet is a separate project.



# Before you start.



## Adhesives

- > For the majority of construction :
  - UHU Creativ for Styrofoam (also called UHU POR)
  - 3M 77 Spray adhesive.
- > For wing spars and motor mounts :
  - Epoxy. (5 and 15mins cure times are the most convenient) micro-balloons can be added to reduce weight.
- > For servo's / and quick grab :
  - Hot melt glue gun - Caution if the glue gets too hot it will melt foam - test first!

## Tapes

- > For holding parts tightly together whilst glue sets
  - Low tack masking tapes
- > For leading edges, hinges, general strengthening
  - 3M Gift tape (Purple - not green one!) - I prefer lightweight plastic hinges.

## Cutting parts

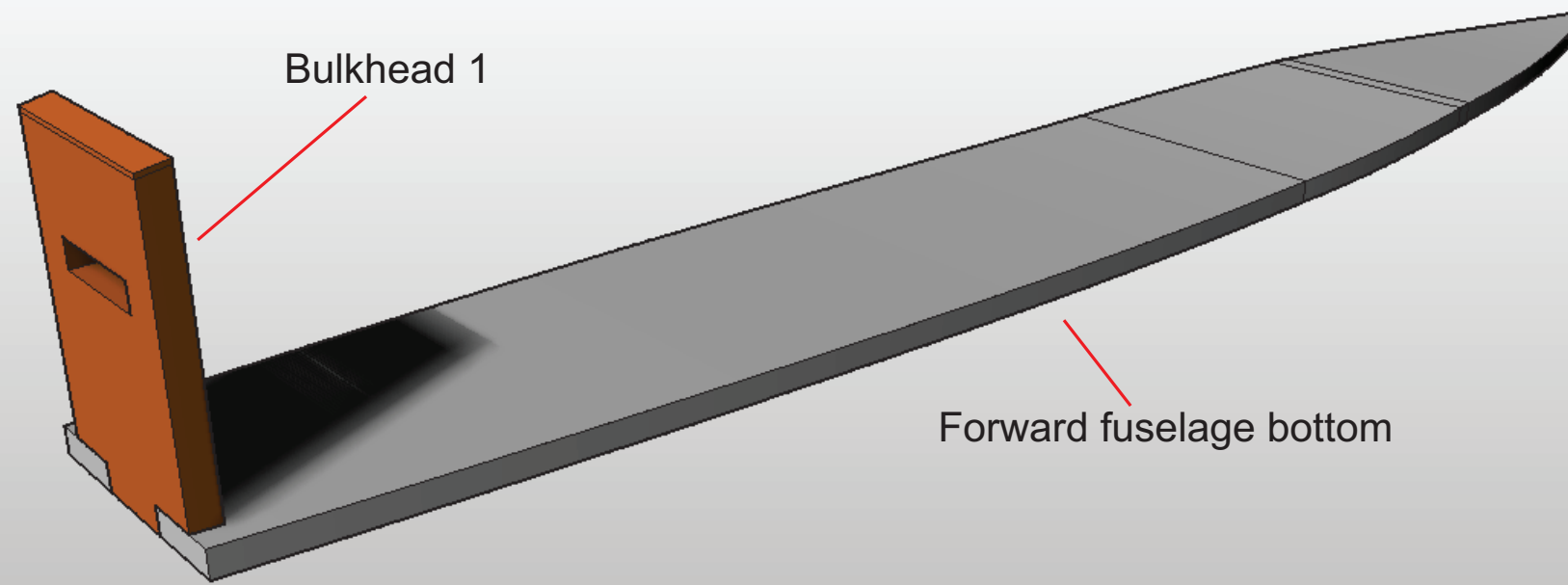
1. Print the plans,
2. Cut around each part using scissors - allow a border of approx (1/4") 6mm
3. Use either 3M spray mount or a very light coat of 3M 77 to the back of the parts and stick in an economical layout on the Depron foam.
4. Using a safety rule and craft knife over a cutting mat - important! use a fresh blade otherwise it will drag and spoil the foam. (I find the stanley knife perfect) make the straight edge cuts, then the curved parts freehand.
5. Once the parts are cut-out, keep the template stuck to the part until just before needed to help identify the parts.
6. After use, I find it helpful to keep all the used tempates in case replacement parts need making. (the glue eventually dries and they don't stick together!)

**IMPORTANT** Wherever the plans call for marking guidelines onto the depron, please ensure that you do otherwise it can cause problems later on. I suggest you use a Sharpie Fineliner to transfer the lines.

## Glueing parts together.

1. Ensure a really good fit - this will reduce the amount of adhesive used. The Bar Sander is a great tool for this.
2. Follow the adhesive instructions closely.
3. Use ordinary steel head pins to help keep the parts located whilst epoxy sets.
4. Use objects as weights such as paperweights to apply pressure whilst adhesive sets.
5. Use masking tape to apply pressure whilst adhesive sets. Also use masking tape to along the slots for the wing spars whilst gluing the carbon rod spars into the wings.

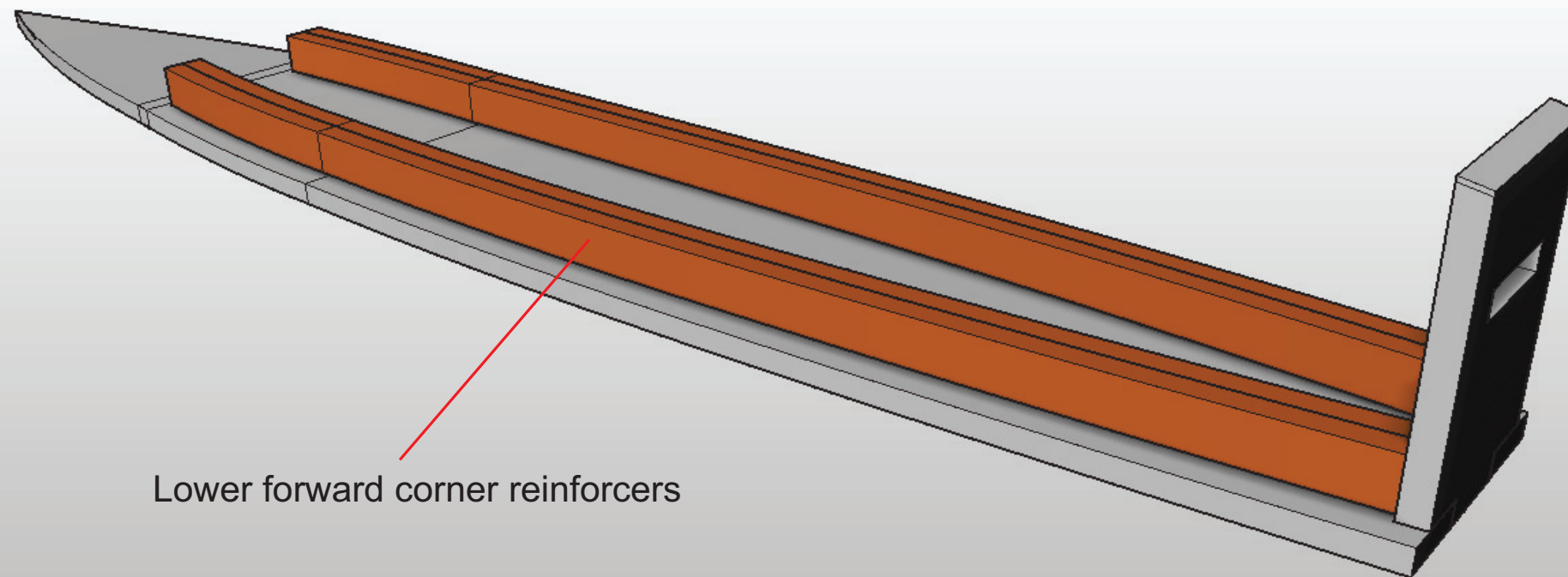




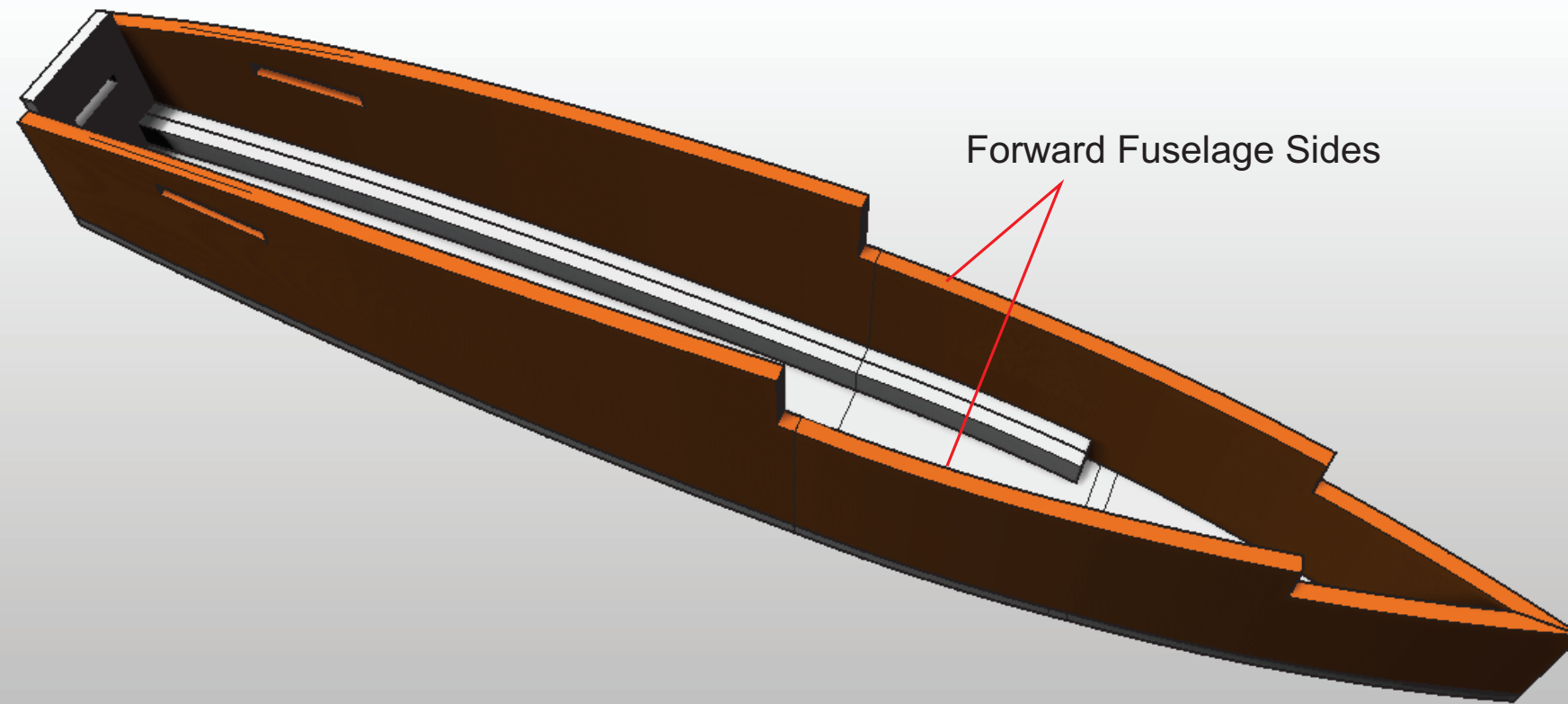
Gently curve the **Forward Fuselage (bottom)** to match the lower edge of the **forward Fuselage side**. Glue **Bulkhead 1** in place.



Glue the **Lower forward corner reinforcers** to the forward fuselage bottom - spaced the thickness of your foam sheet away from the edge



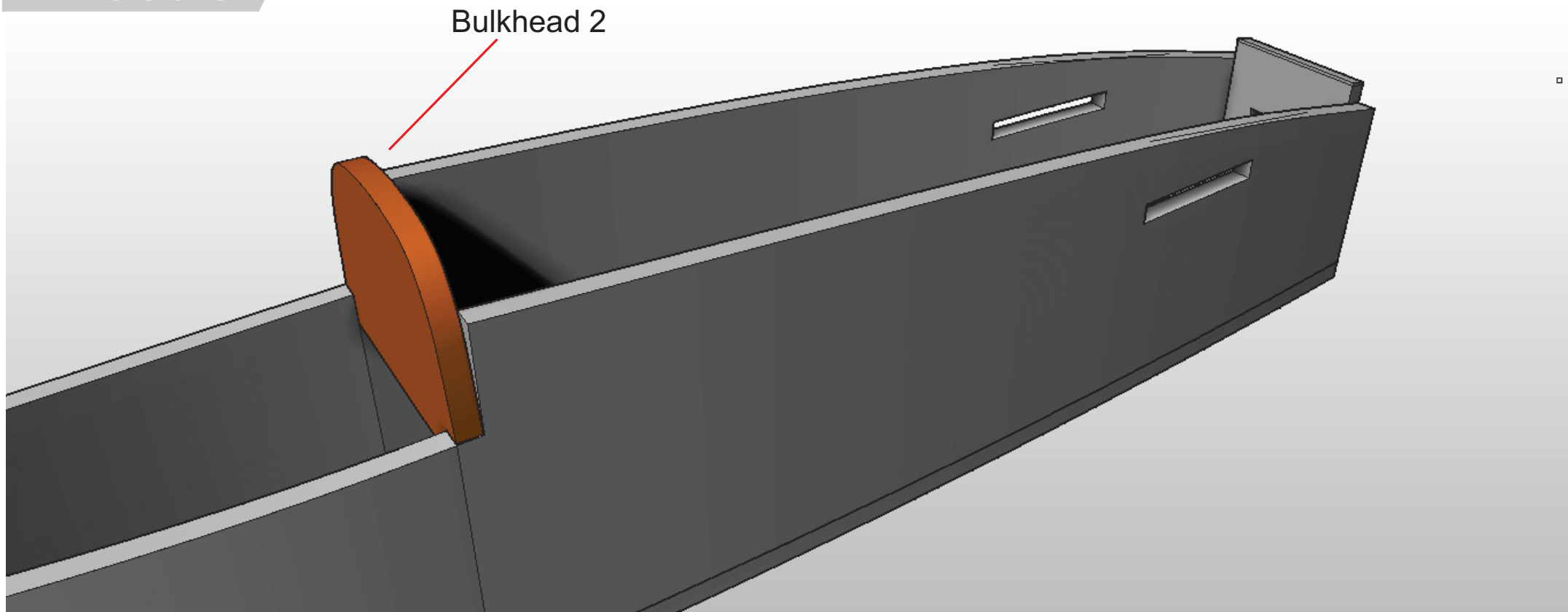
All versions



Gently curve the **Forward Fuselage sides** to match the base and glue in place.



All versions



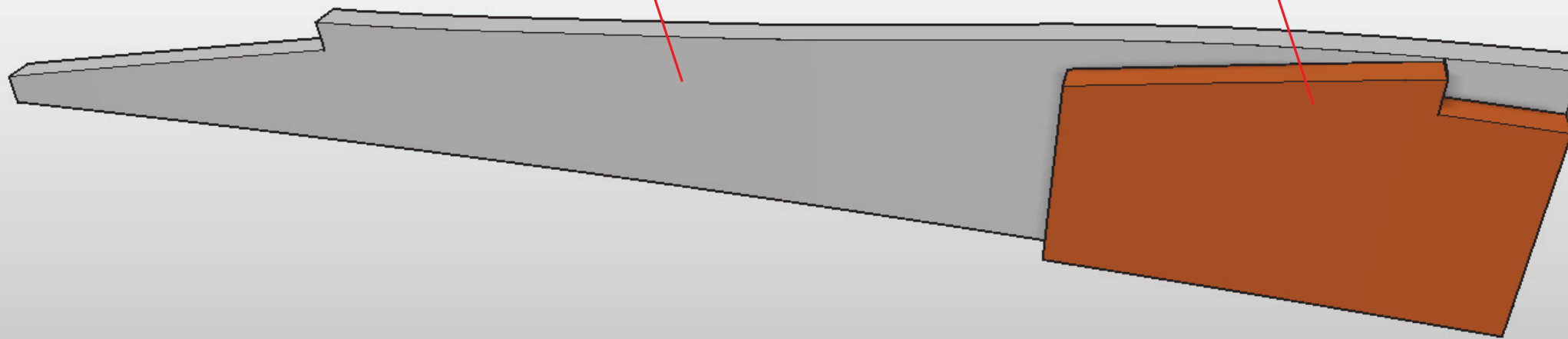
Glue **Bulkhead 2** to the assembly



All versions

Cockpit support pieces

Magnet panel support pieces  
single cockpit



Single Canopy version

Make a mirrored pair of cockpit support assemblies.

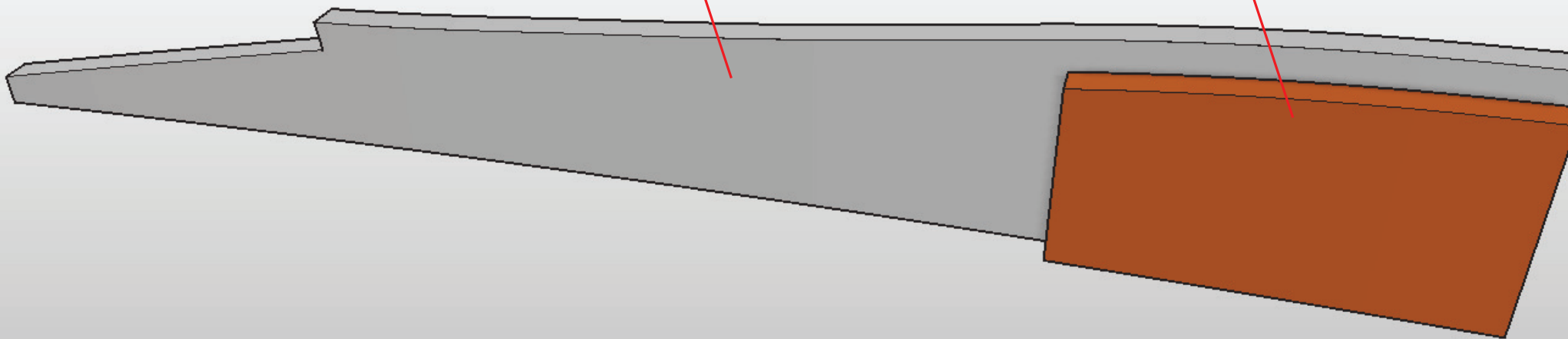
Glue the **Magnet panel support pieces** to the rear corner of the **Cockpit support pieces** as shown.



All versions

Cockpit support pieces

Magnet panel support pieces  
dual cockpit

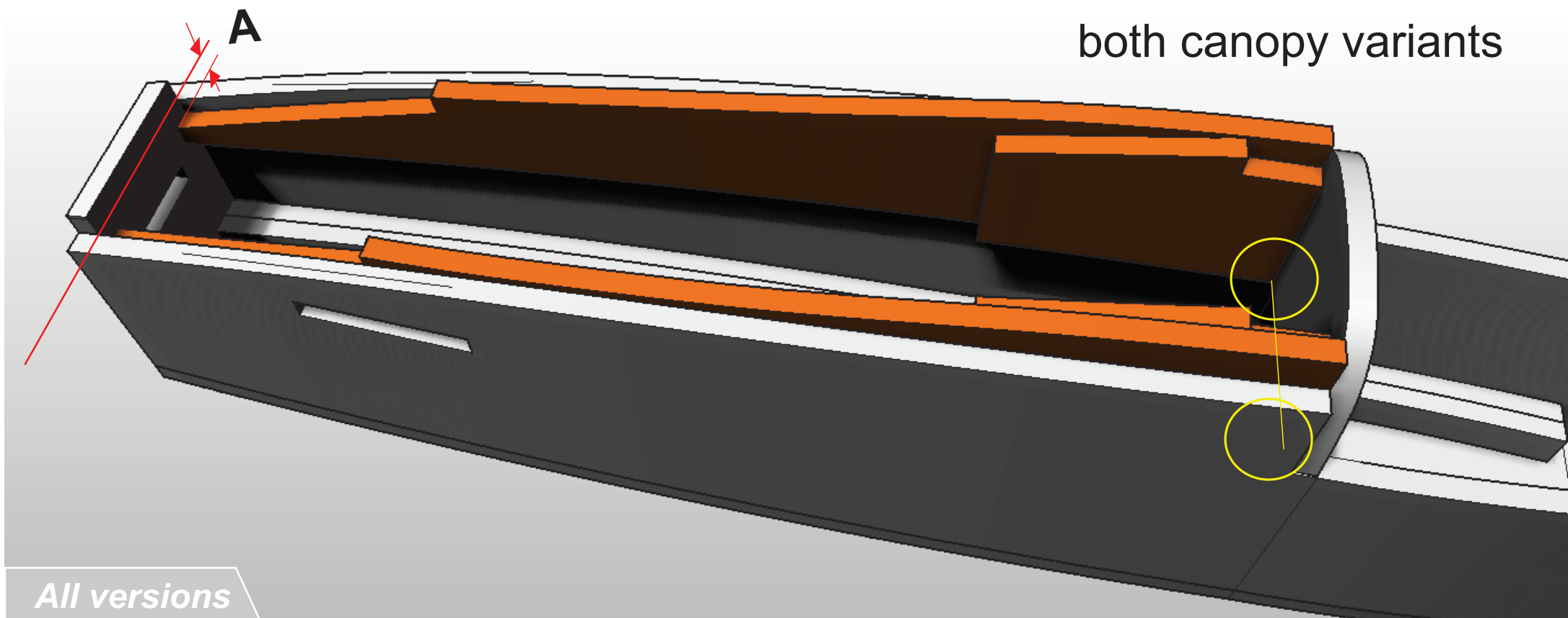


Twin Canopy version

Make a mirrored pair of cockpit support assemblies.

Glue the **Magnet panel support pieces** to the rear corner of the **Cockpit support pieces** as shown.





All versions

both canopy variants

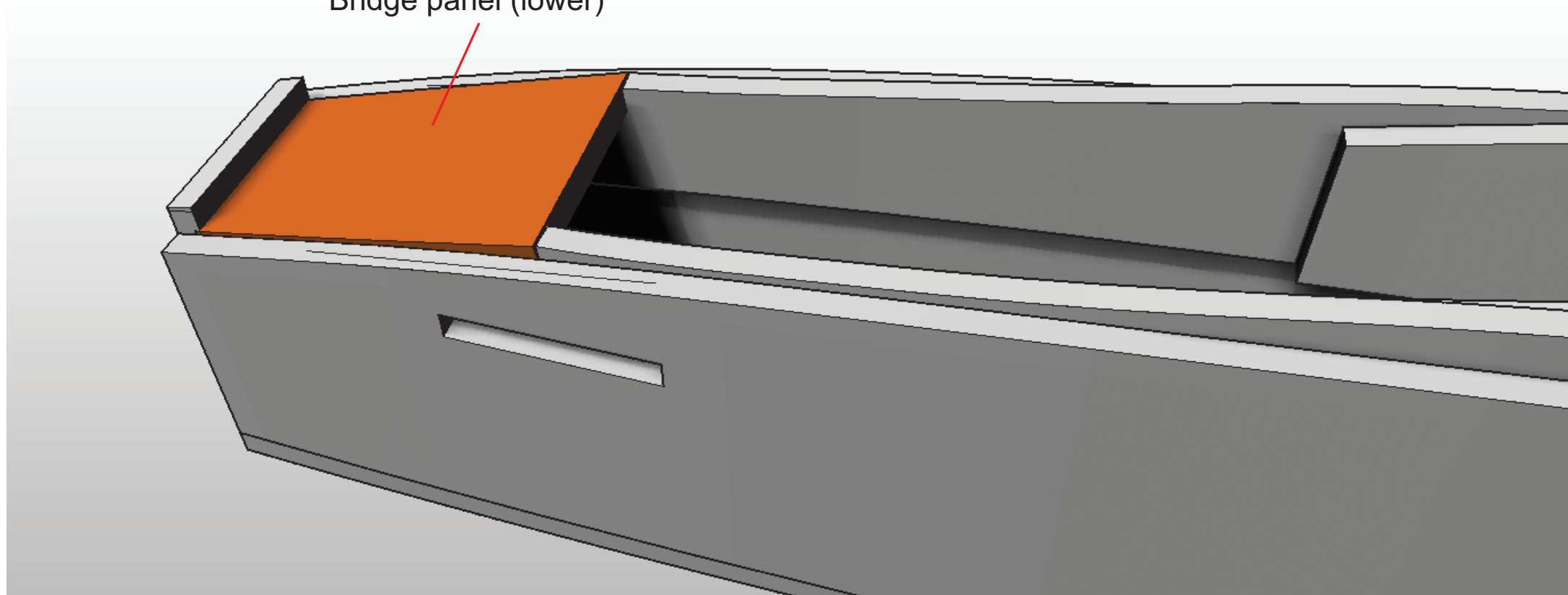
Align the cockpit support panels so that :-

the front is the thickness of your foam sheet lower than the fuselage side panels (A)

The rear aligns with the bottom of bulkhead 2



All versions



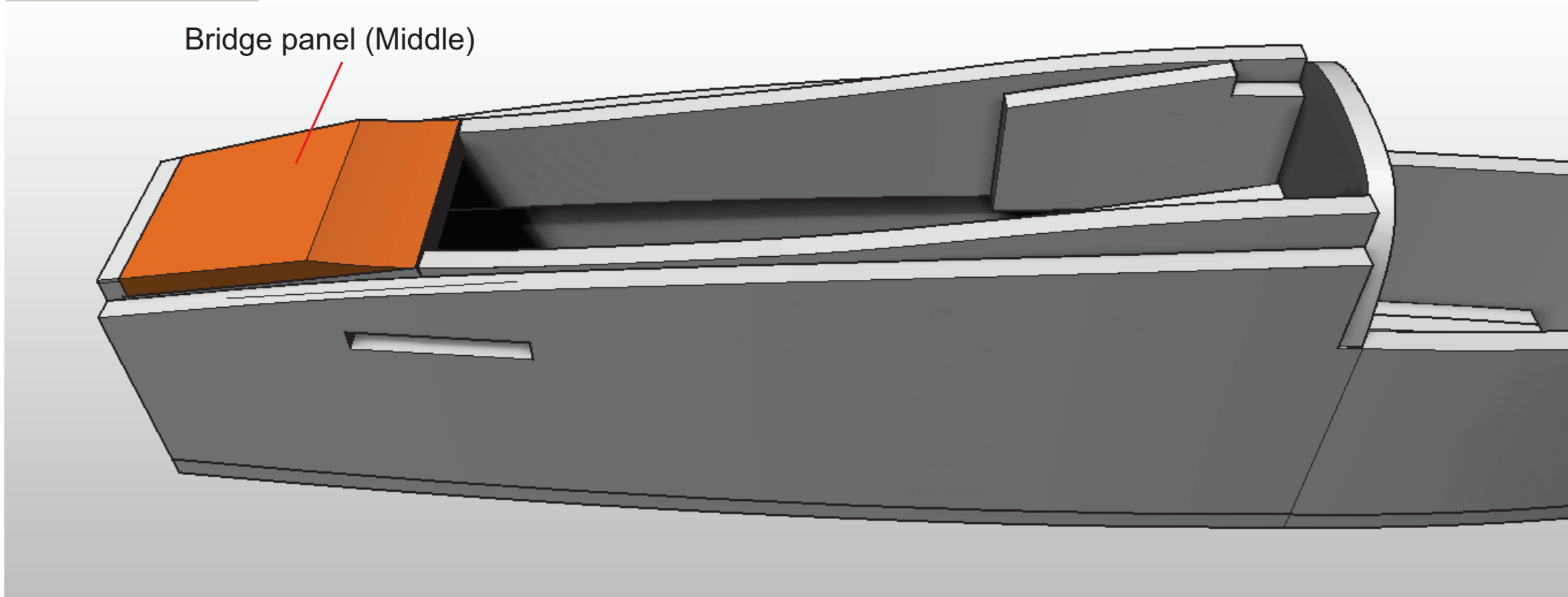
Bridge panel (lower)

Glue **Bridge panel (lower)** to the assembly



All versions

Bridge panel (Middle)

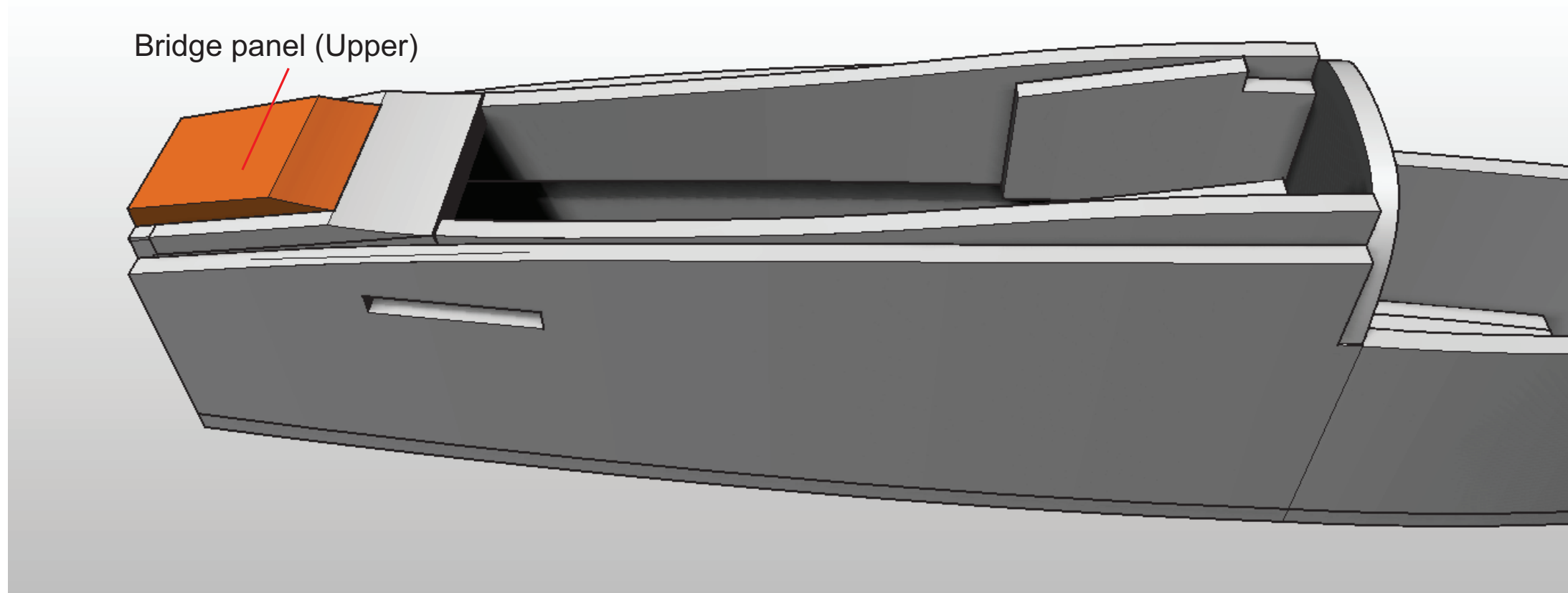


Glue **Bridge panel (middle)** to the assembly



All versions

Bridge panel (Upper)



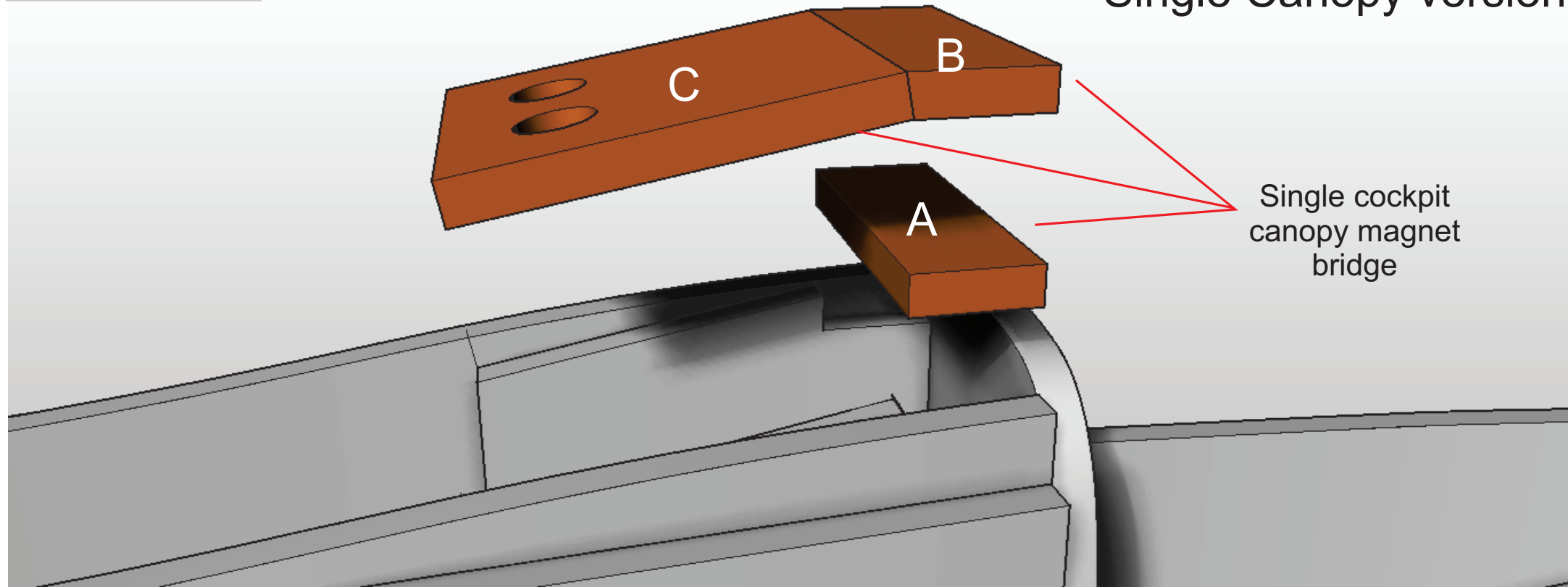
Glue **Bridge panel (upper)** to the assembly





All versions

### Single Canopy version

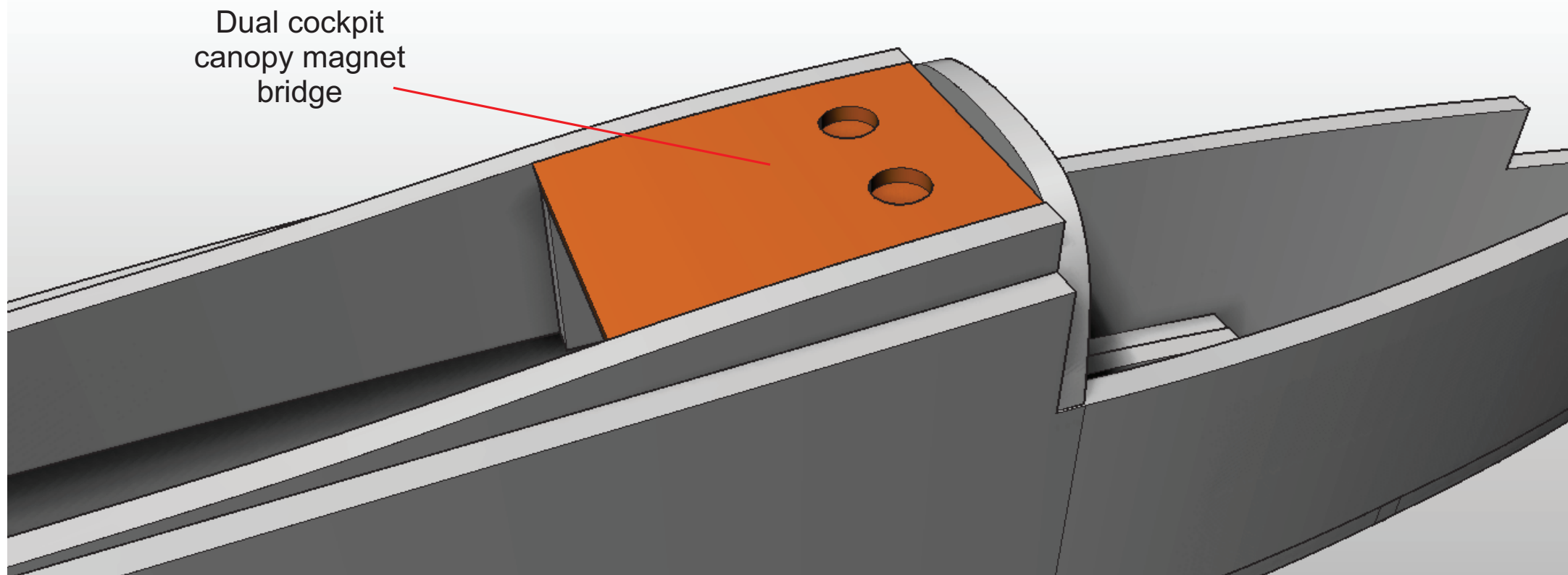


Glue the **Single Cockpit canopy magnet bridge** parts A,B and C in place.



All versions

### Twin Canopy version

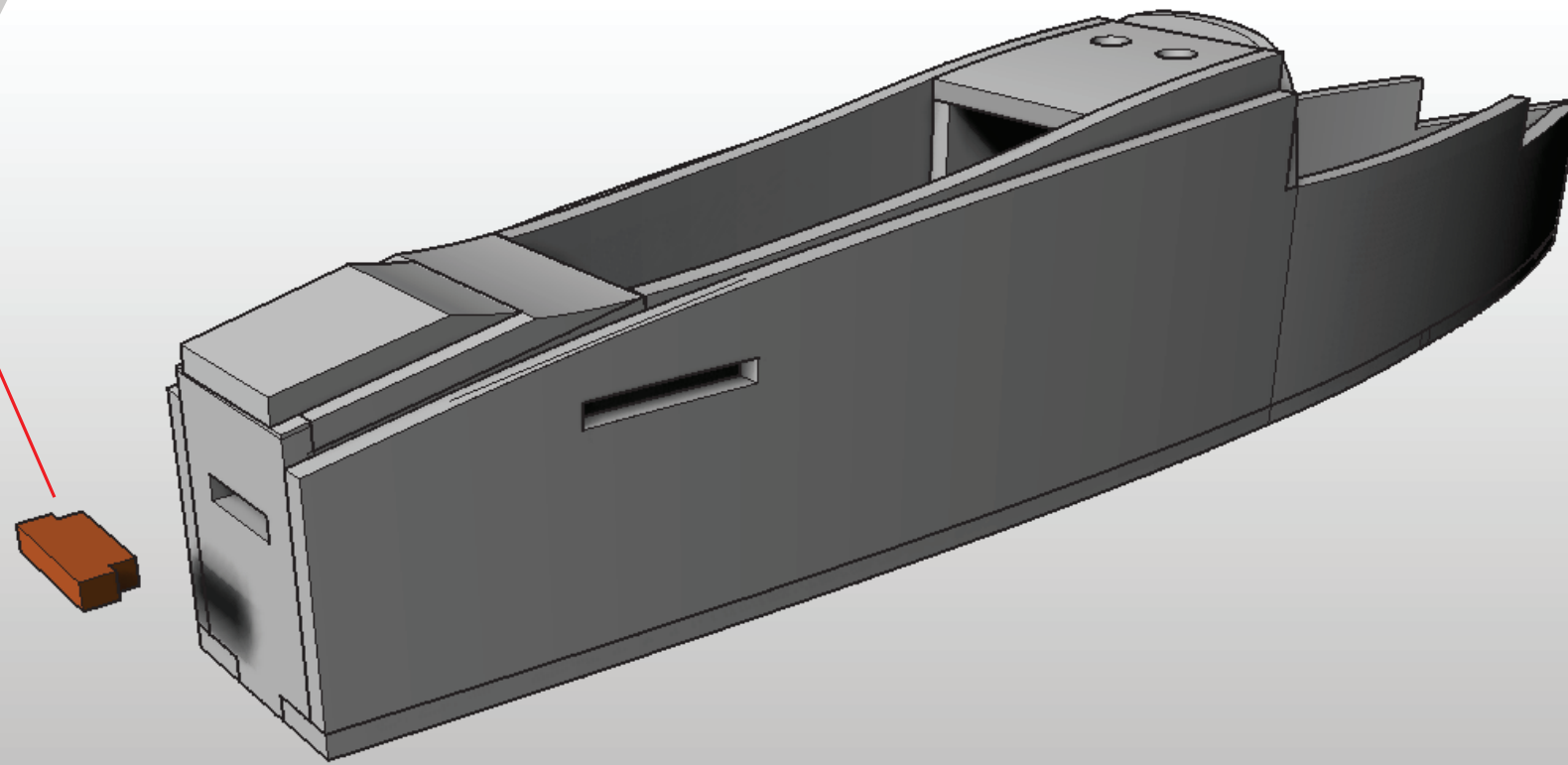


Gently curve, then Glue the **Dual Cockpit canopy magnet bridge** in place.



All versions

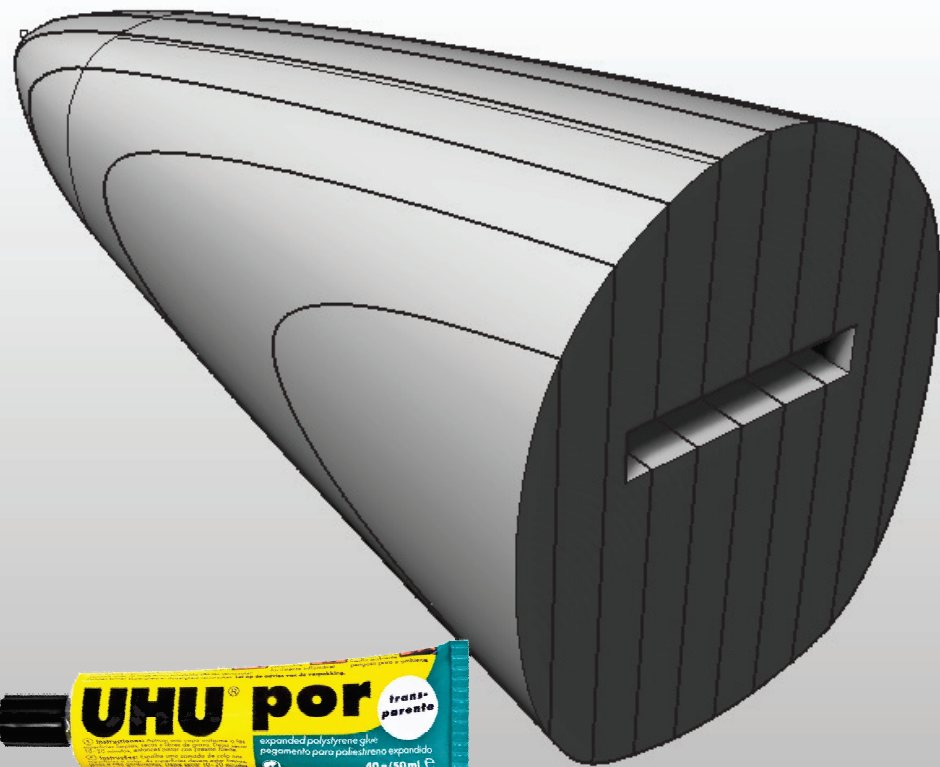
Nosecone Aligner



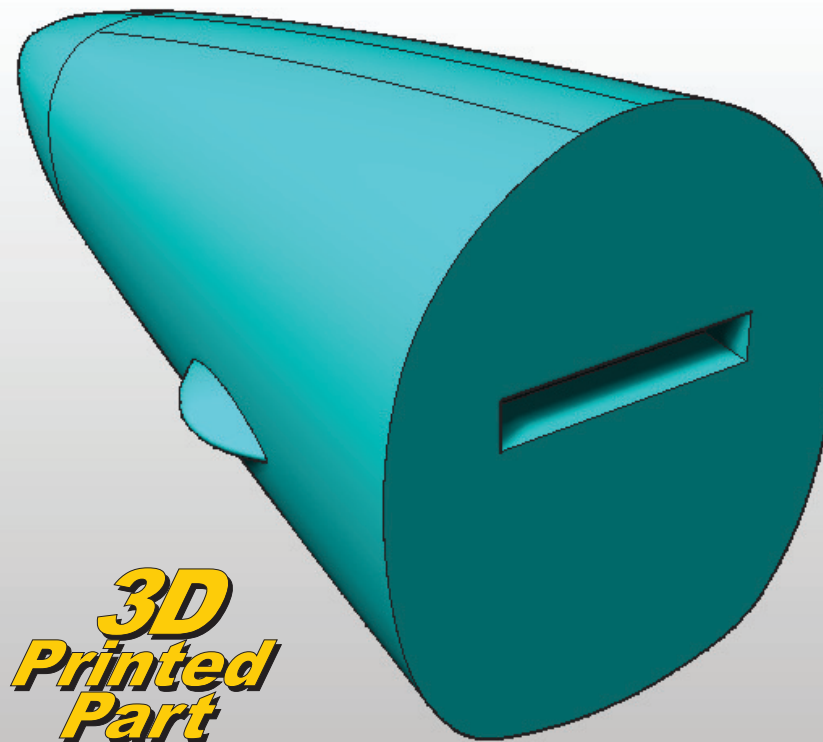
Glue the **Nosecone Aligner** in place.



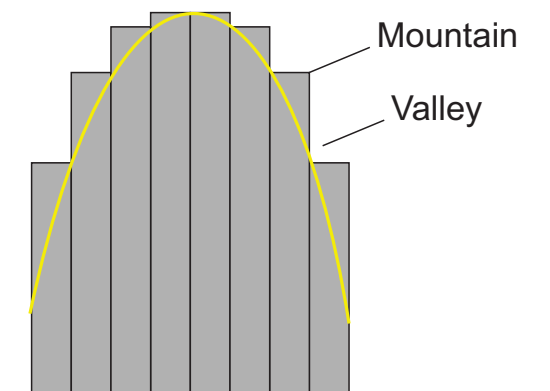
All versions



**3D  
Printed  
Part**  
(optional)

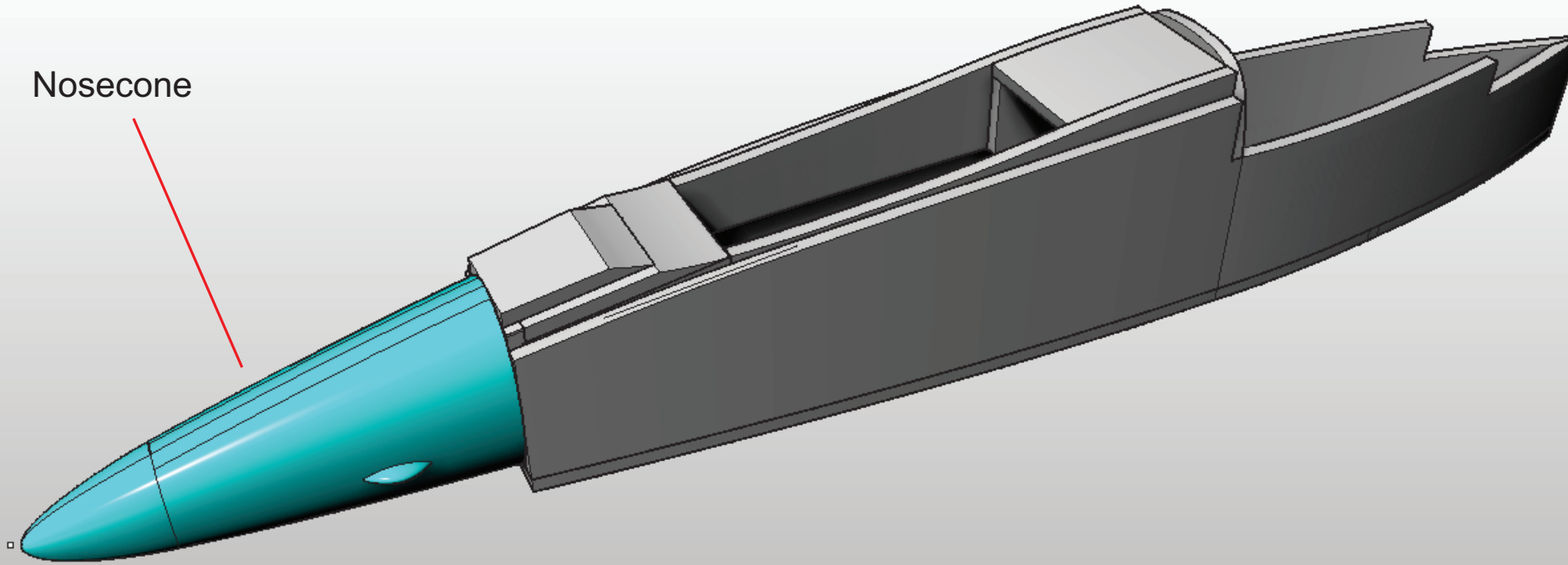


Create either a 3d printed Nosecone or a nosecone consisting of layers of foam sanded to get the right shape, by removing the 'mountains' until the 'valleys' are no more.



All versions

Nosecone



Glue the **Nosecone** in place using the aligner to position correctly

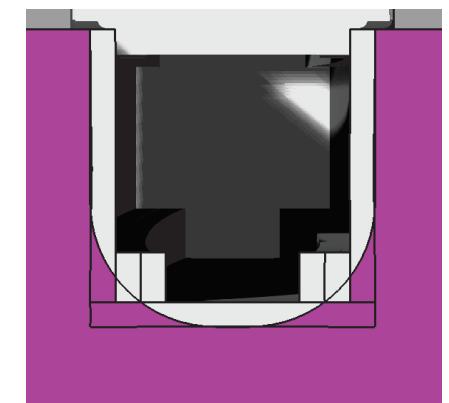


All versions

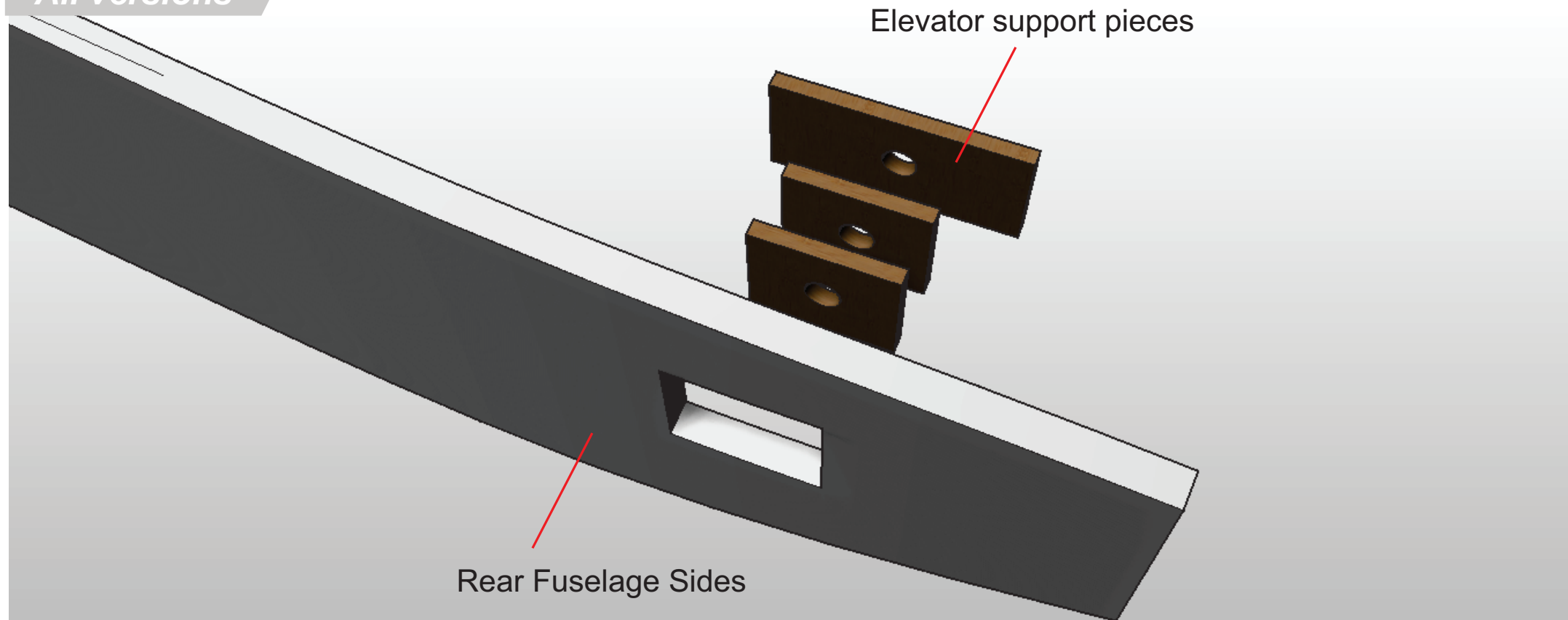


Sand the lower corners of the forward fuselage between the nosecone and the sanding JIG positioned as shown.

DO NOT sand rear of the sanding jig as this will be glued to the rear part of the assembly



All versions

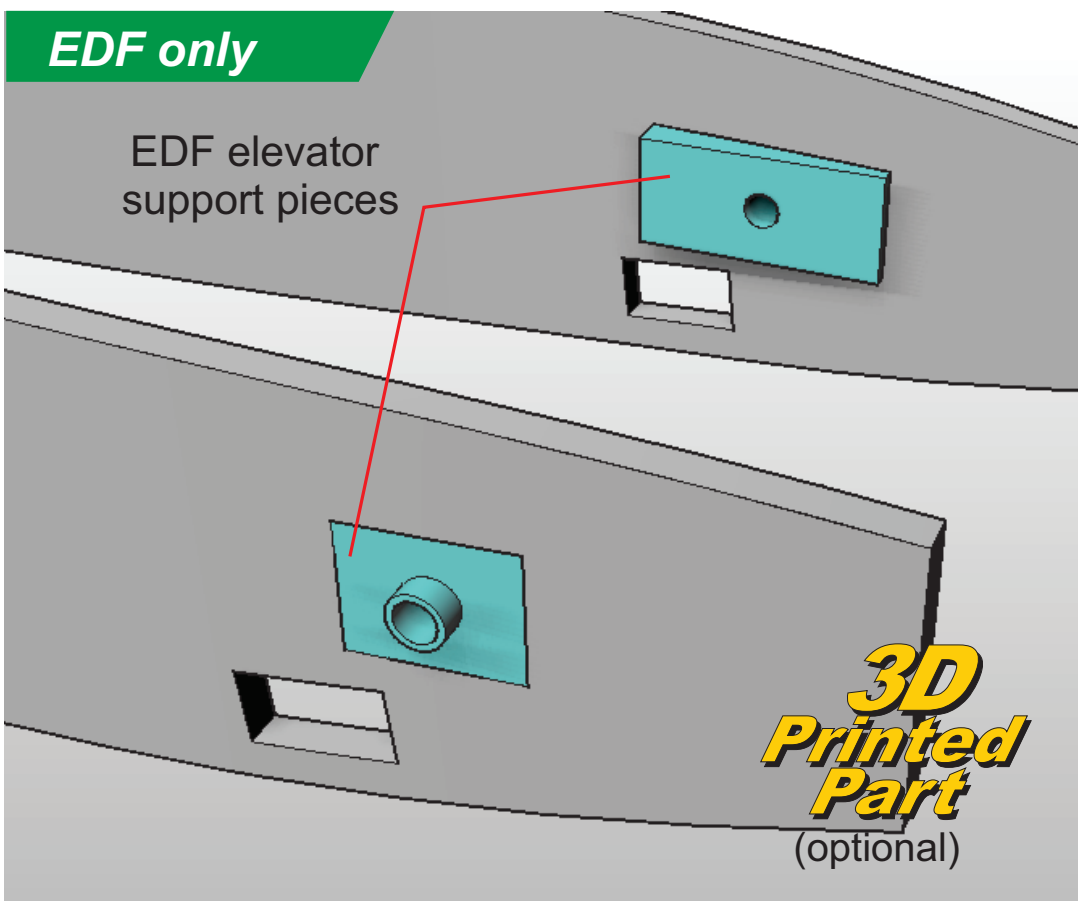


Gently curve the **Rear fuselage sides** to match the rear fuselage belly shape.

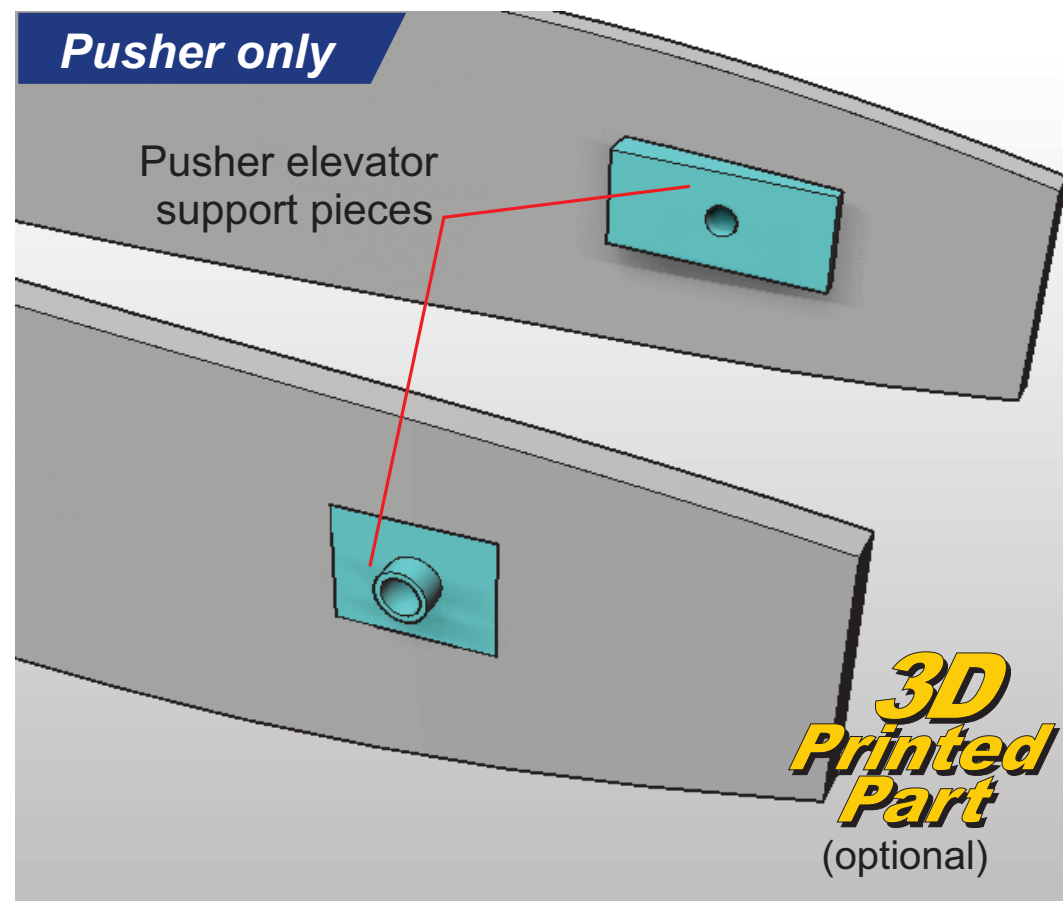
Glue together the 3mm liteply elevator support pieces, and then on to both the rear fuselage sides



EDF only



Pusher only



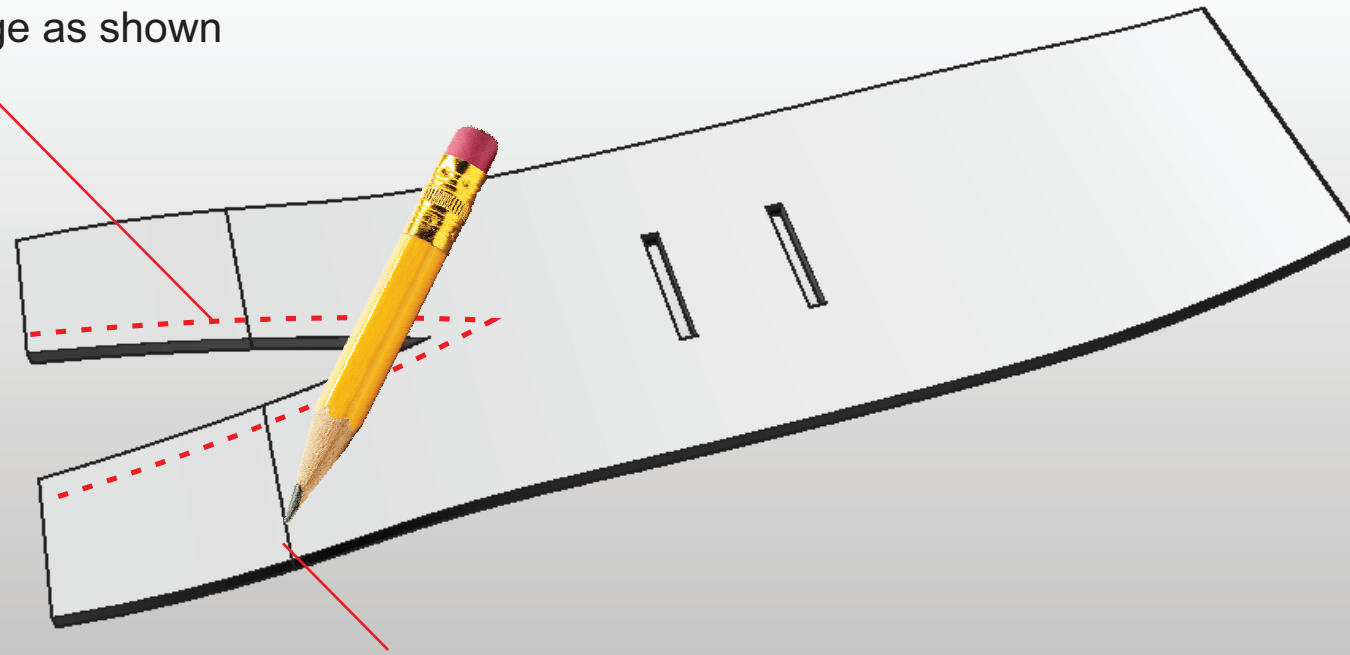
Alternatively, 3D print either the EDF or Pusher elevator supports and glue in place.

(The hole sizes in the EDF / Pusher versions are different)



## EDF only

Mark the gluing flange as shown



Mark if you intend to use a 3Dprinted air intake

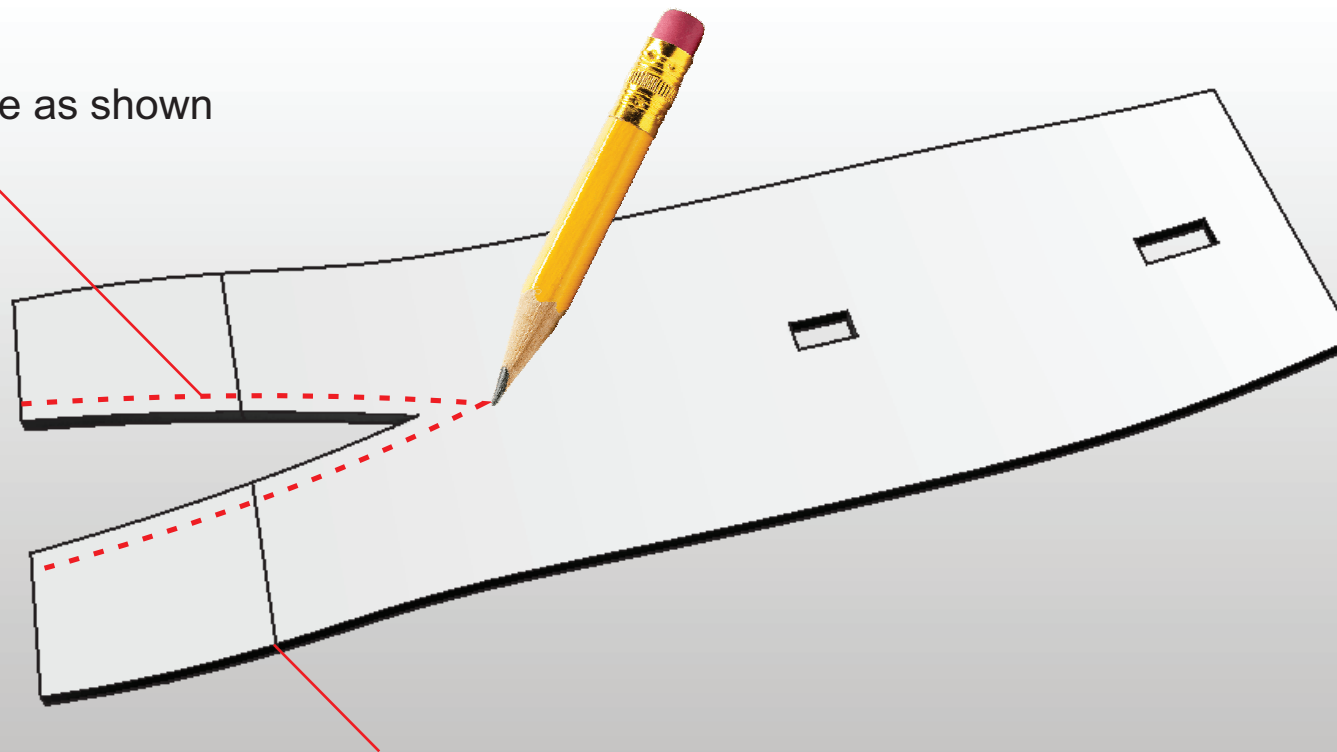
Cut the **rear fuselage bottom** according if you have chosen EDF or Pusher

Gently curve the piece to match the rear fuselage sides.

draw a line as indicated if you are intending to use the 3d printed air intake.

## Pusher only

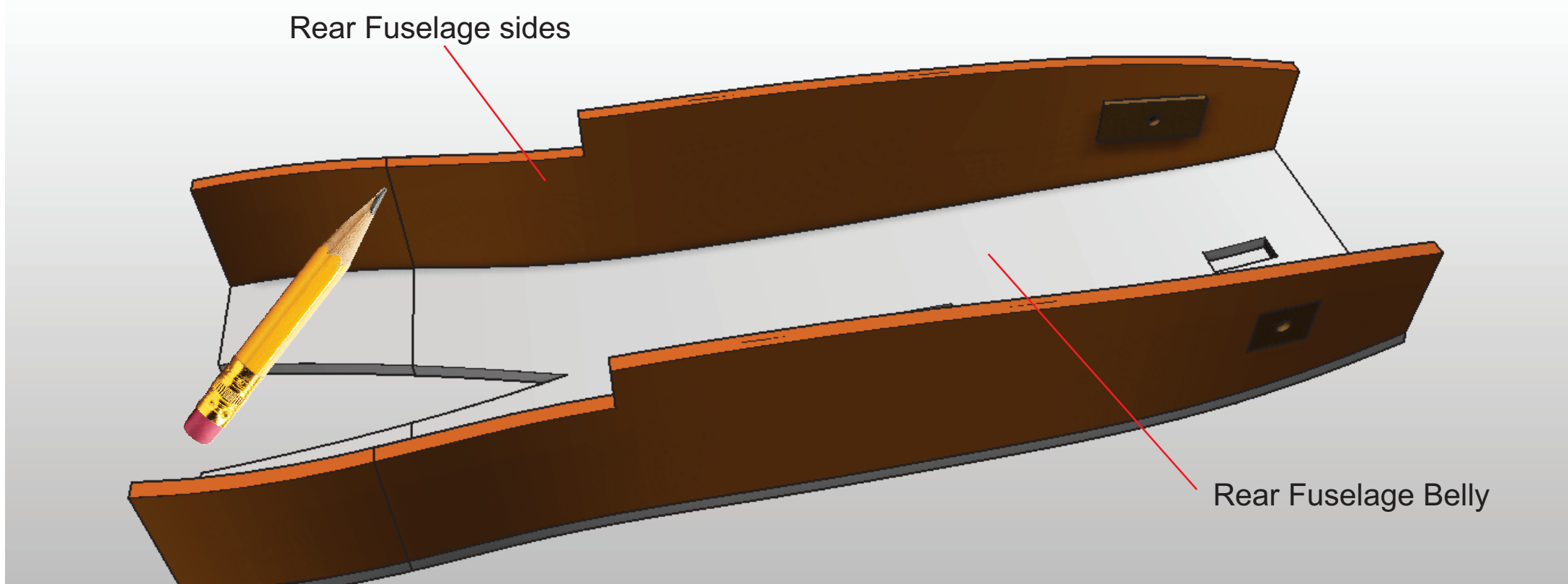
Mark the gluing flange as shown



Mark if you intend to use a 3Dprinted air intake



All versions

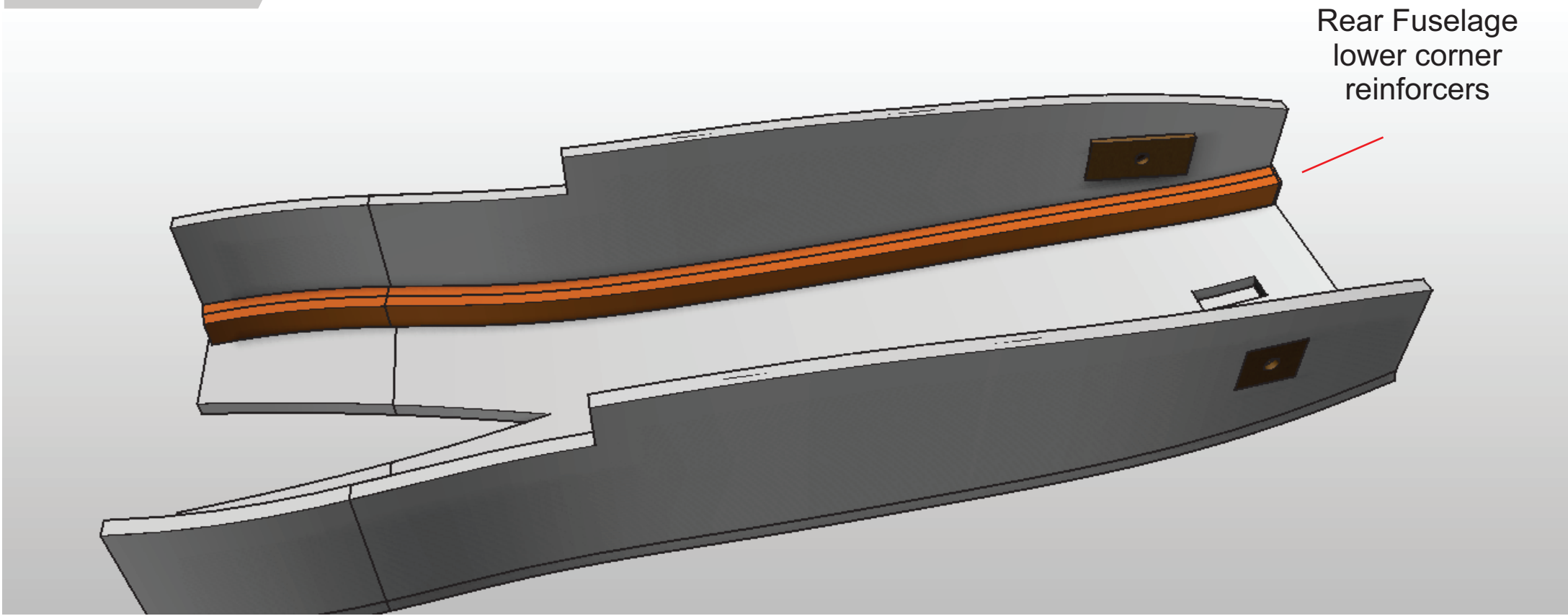


Mark on the rear fuselage sides if you are intending to use 3d printed air intakes.

Glue the **Rear Fuselage sides** and **Rear Fuselage belly** together



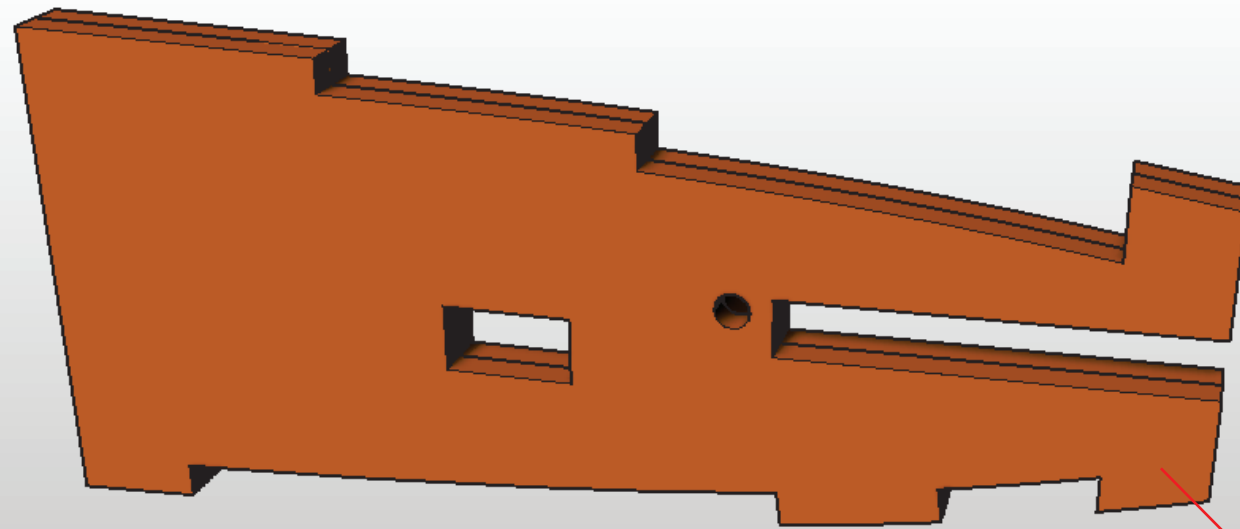
All versions



Glue the 4x **Rear Fuselage Lower corner reinforcers** to the rear fuselage assembly.



**Pusher only**

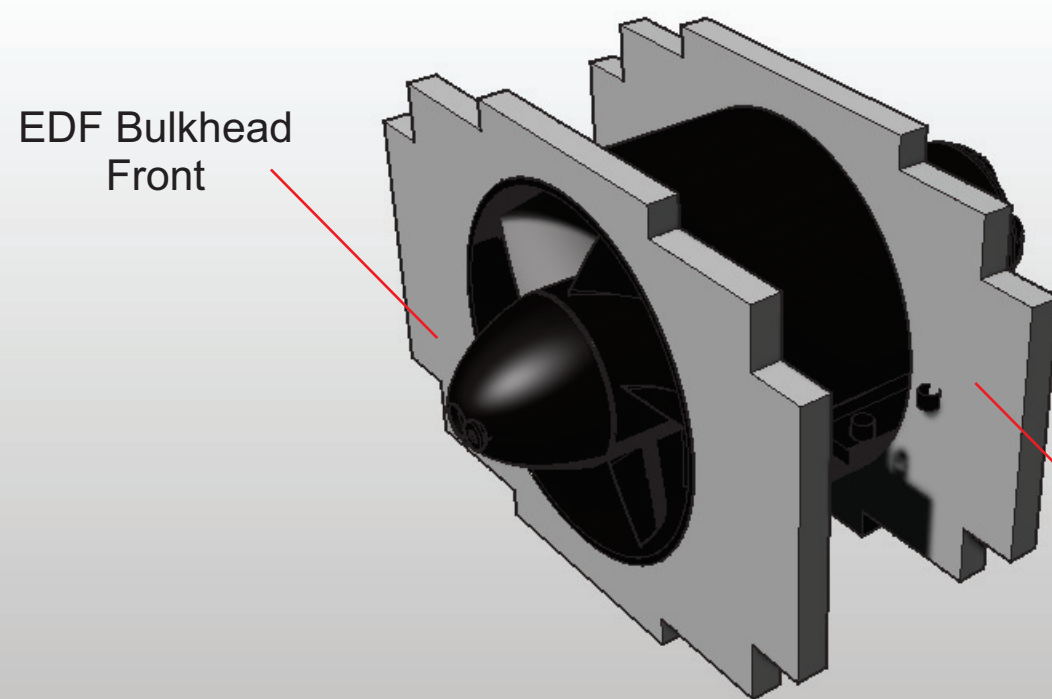


Pusher Motor Mount Panel

Glue the two pieces of the **Pusher motor mount** together



**EDF only**



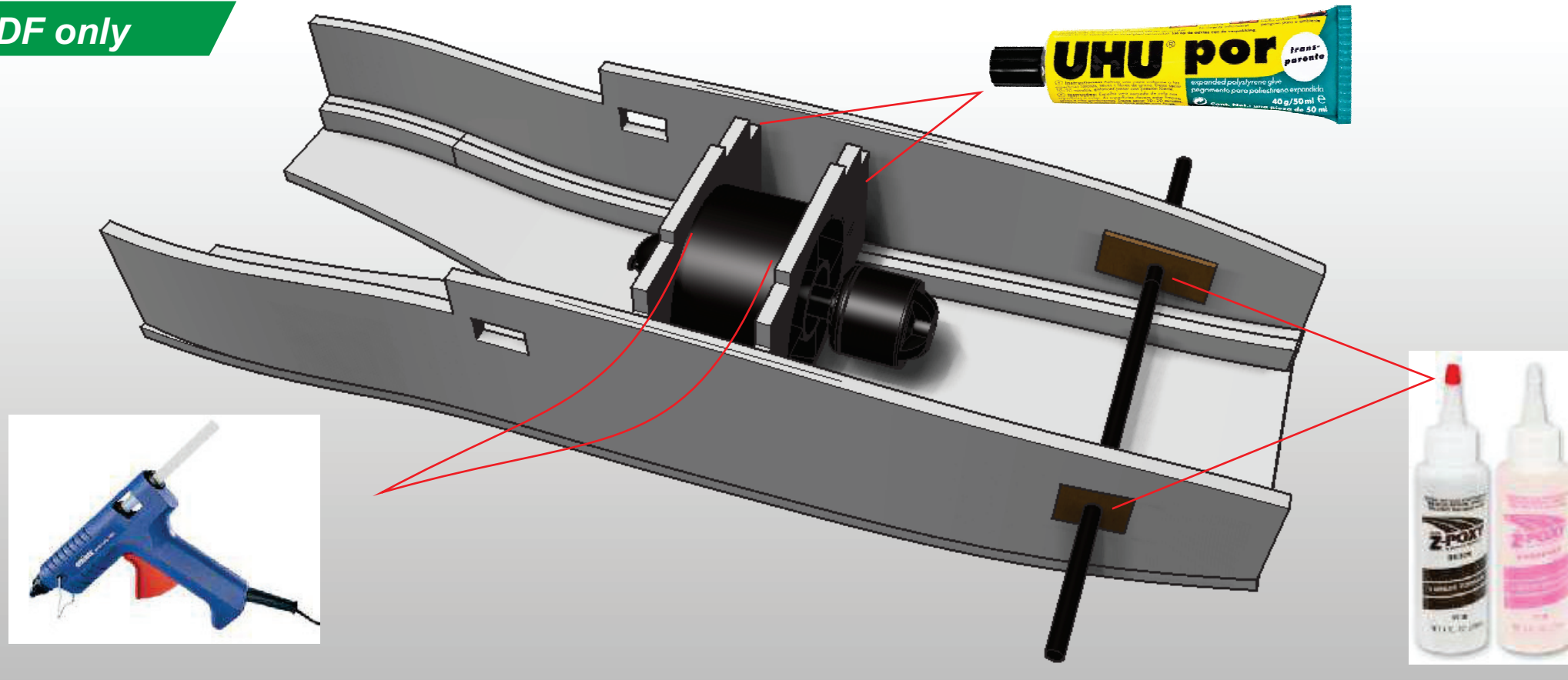
EDF Bulkhead Front

EDF Bulkhead Rear

Dry fit the two EDF bulkheads to fit your chosen EDF unit.



EDF only

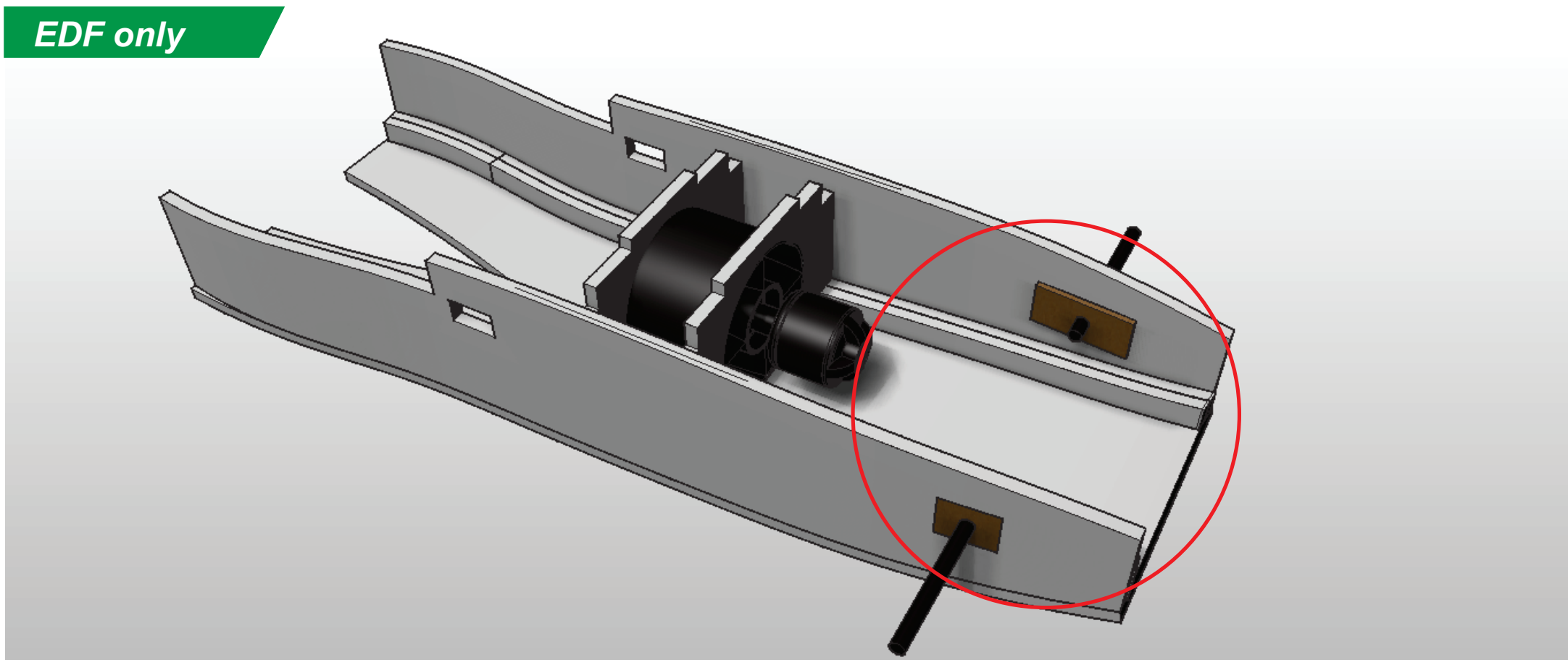


Dry fit the EDF bulkhead assembly into the fuselage, then glue in place using UHU por and Hot melt glue

Thread a single carbon rod through the two elevator supports on the fuselage leaving the correct lengths either side. Drill out if necessary to ensure a good fit.

Glue in place using Epoxy

EDF only



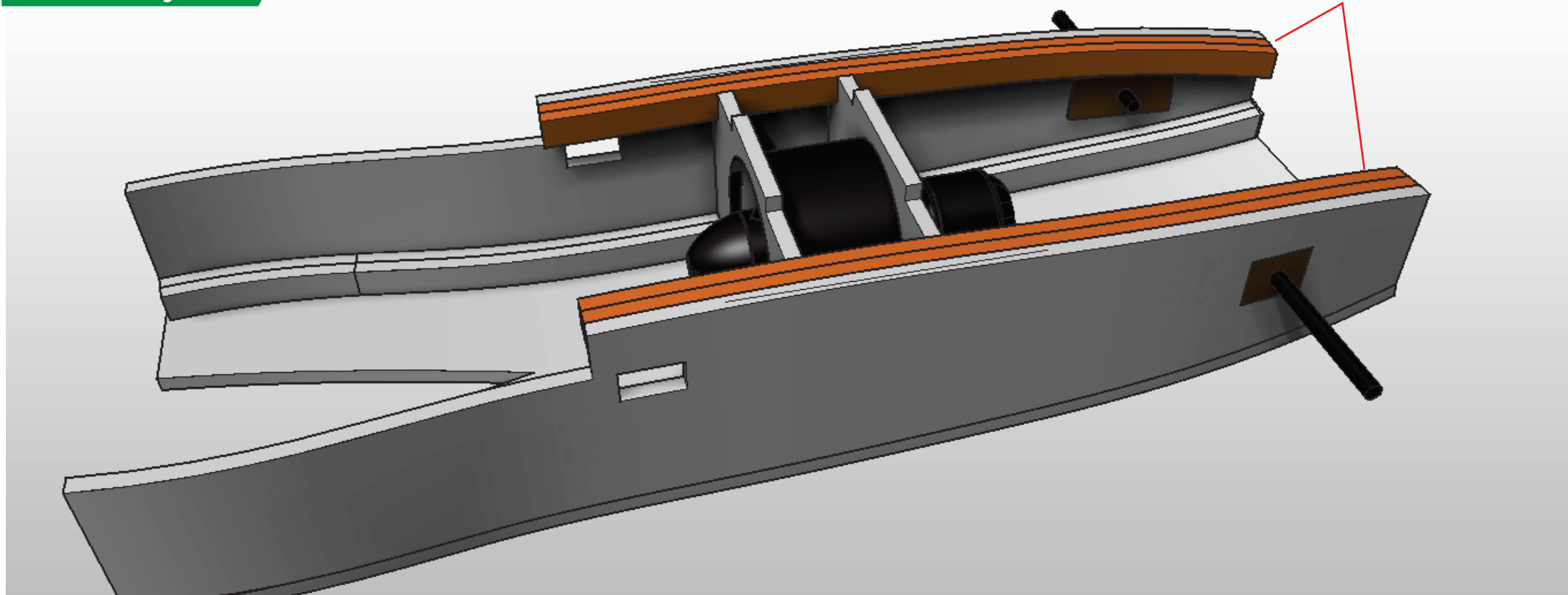
When the epoxy has set, trim away the middle section of the carbon as shown.





EDF only

Upper rear corner reinforcers

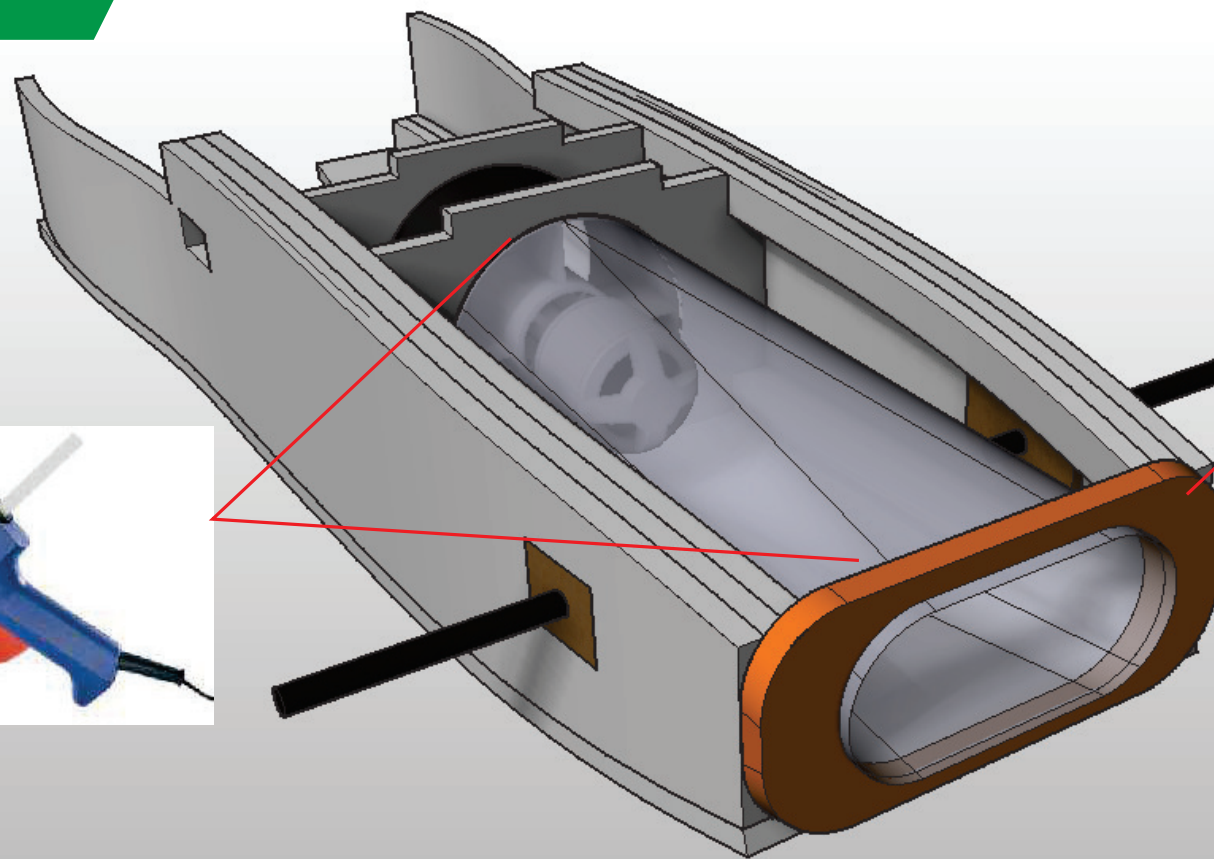


Glue the **Upper rear corner reinforcers** in place as shown



EDF only

EDF Exhaust bulkhead  
(non 3d printed thrust tube)



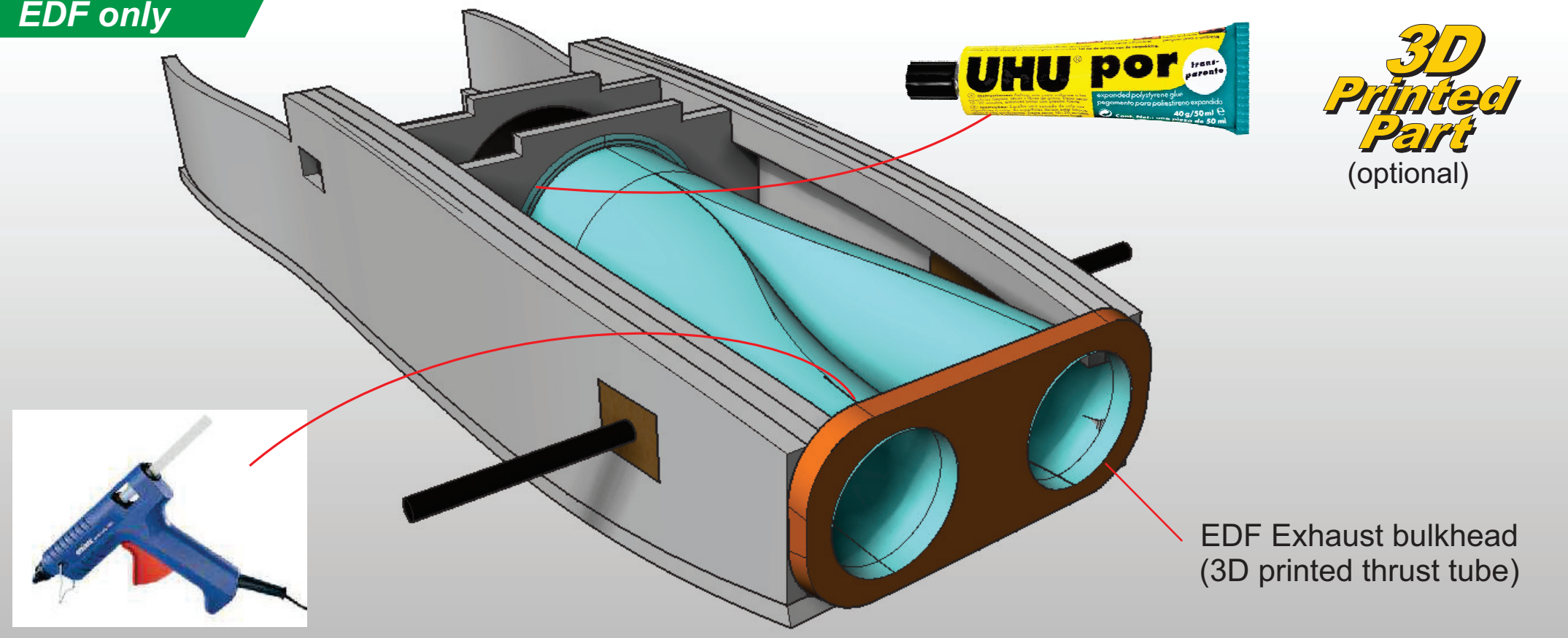
If you are not using 3D printed parts, use 0.5mm plastic sheet to form the EDF thrust tube, taped together using nylon reinforced tape.

Make the **EDF exhaust bulkhead** from 2x lite-ply and glue in place using UHU por.

Glue the thrust tube in place carefully using hot melt glue, run the EDF motor cables upwards.



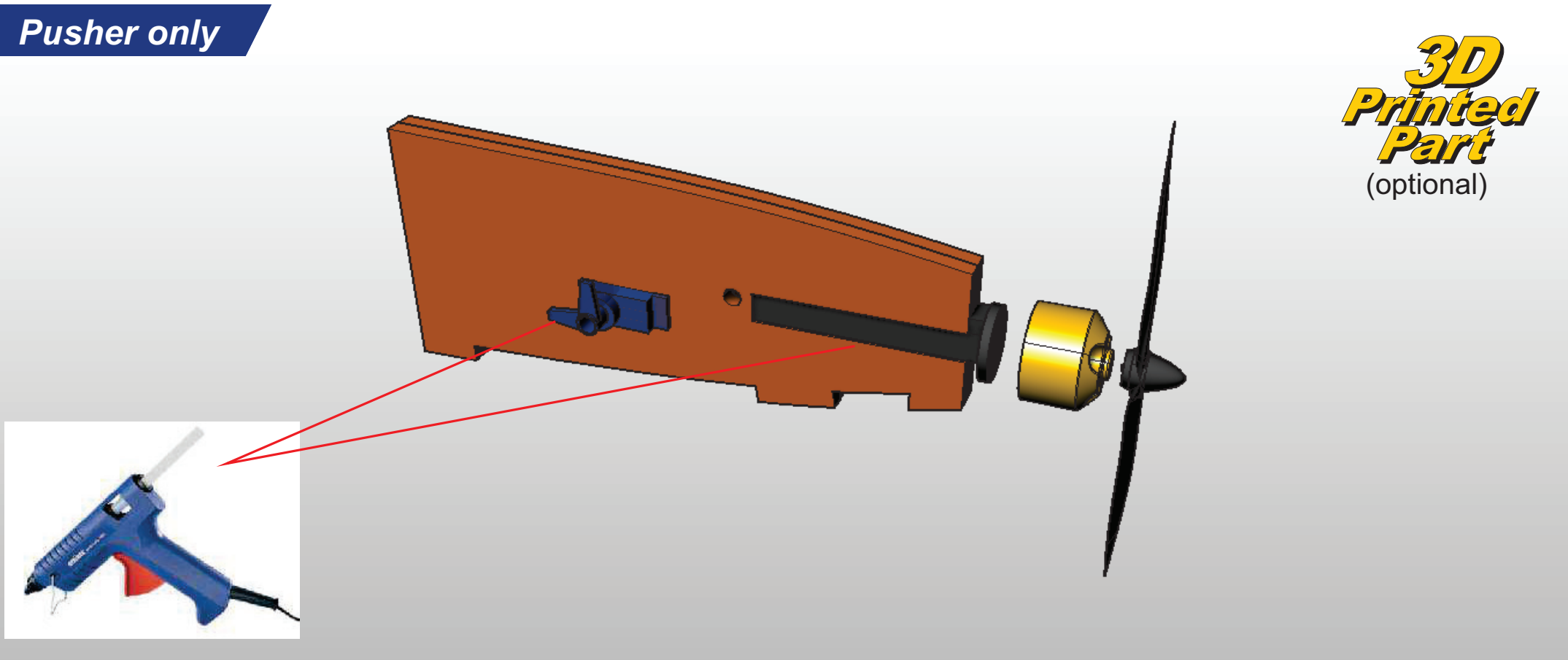
## EDF only



If you are using the 3D printed thrust tube, glue the flange to the rear EDF bulkhead using UHU por.

Glue the EDF Exhaust bulkhead (3D printed thrust tube) to the assembly around the ducting. Glue the ends in place using a few drops of hot-melt glue

## Pusher only



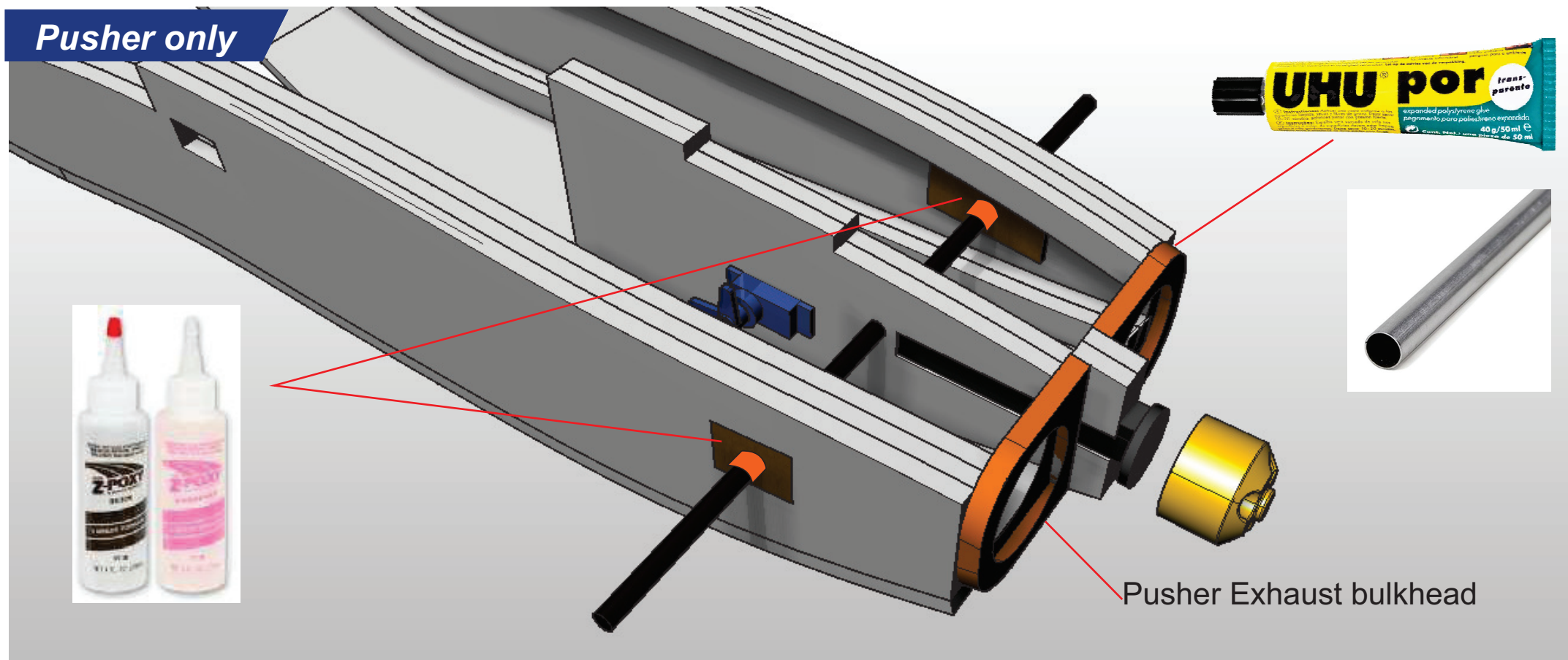
Glue the elevator servo in place.

Glue the motor mount in place. Either use the Hobbyking - SKU: OR004-00602 or 3d print one from the [www.Jetworks.online](http://www.Jetworks.online) website.

Attach the motor to the motor mount.



## Pusher only



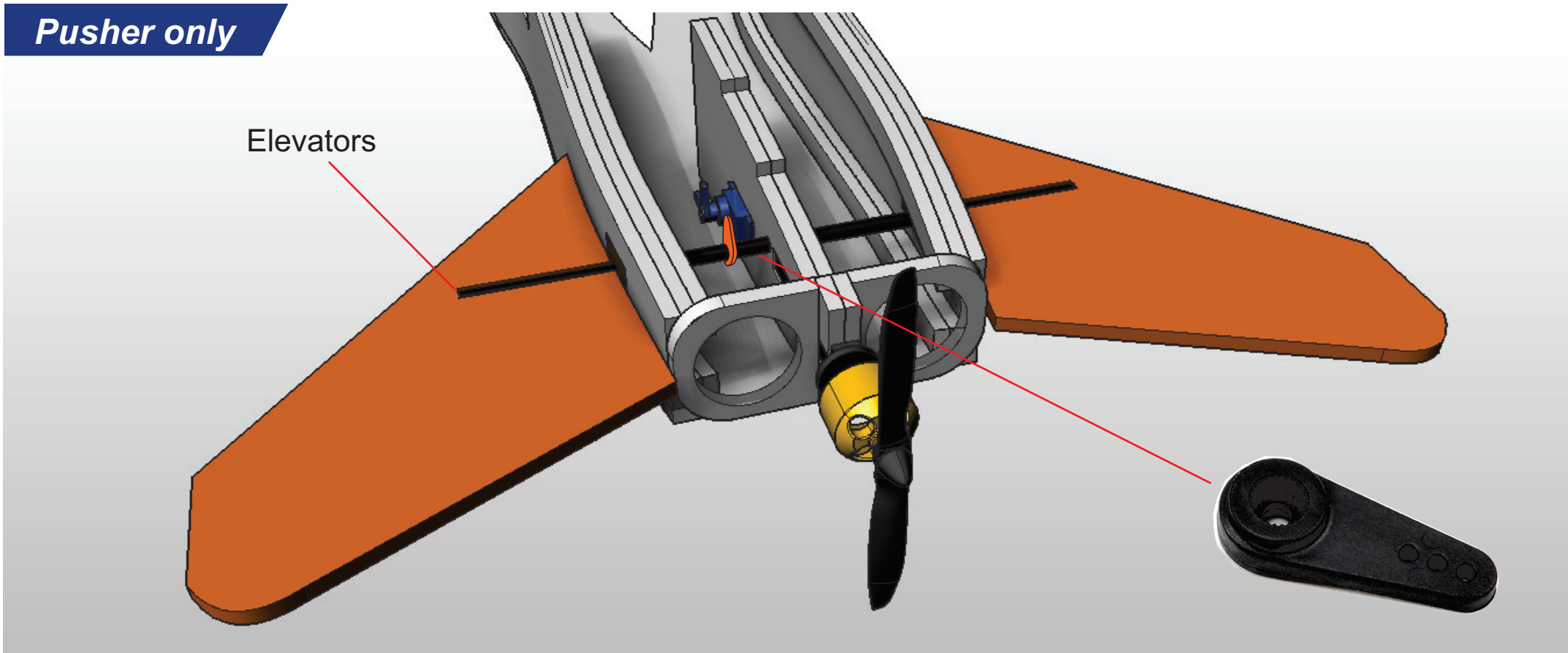
Drill out the plywood elevator supports to take two 10mm long aluminium tubes.

Feed the carbon elevator shaft through the tubes to set the correct angle.

Apply masking tape to the ends of the aluminium tubes then glue them to the fuselage using epoxy.

Glue the two parts of the **Pusher exhaust bulkhead** to the assembly.

## Pusher only



Remove the masking tape. Slide out the elevator shaft

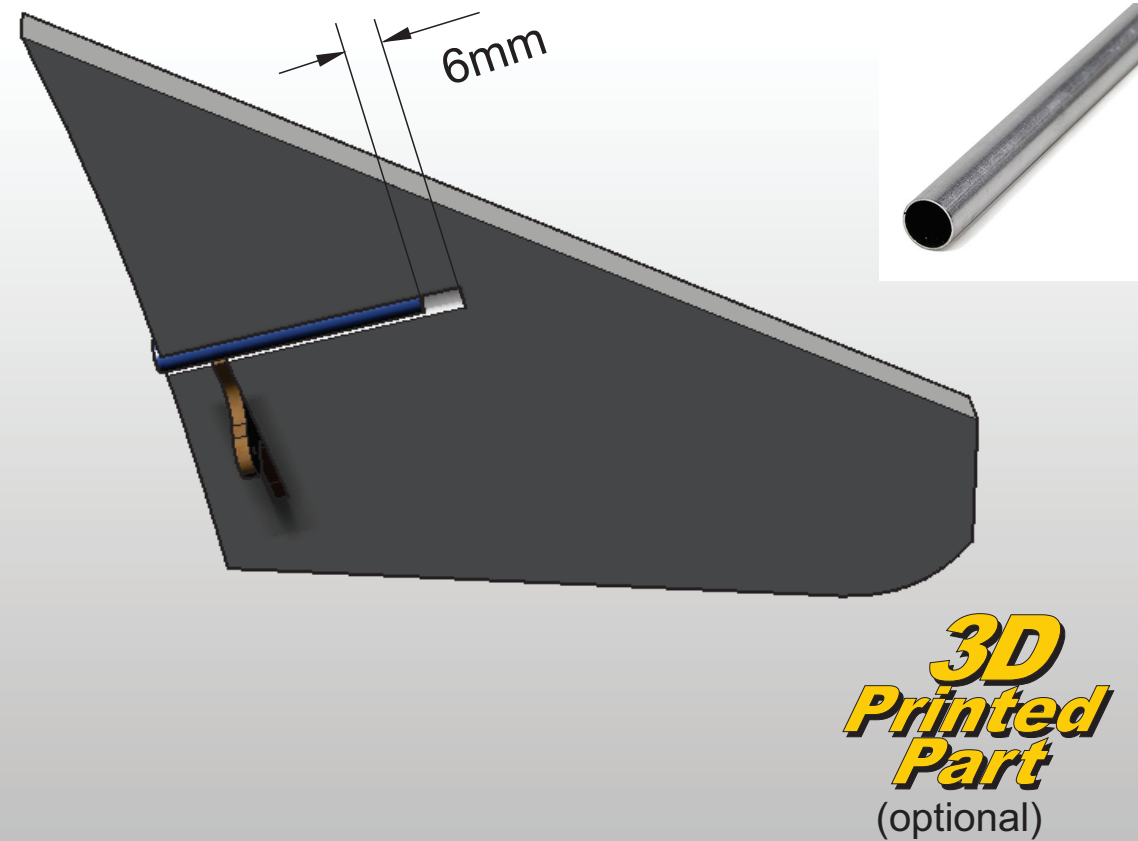
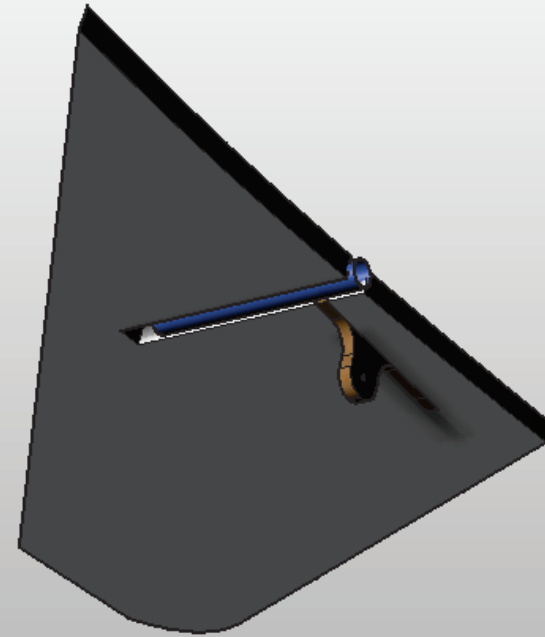
Drill out a standard size servo horn and then reassemble the shaft with the horn in line with the already fitted servo horn.

Use 2x prop adaptor rings on the shaft to prevent the shaft from sliding.

Attach the **Elevators** using epoxy and masking tape, supporting in place whilst the glue sets.



**EDF only**

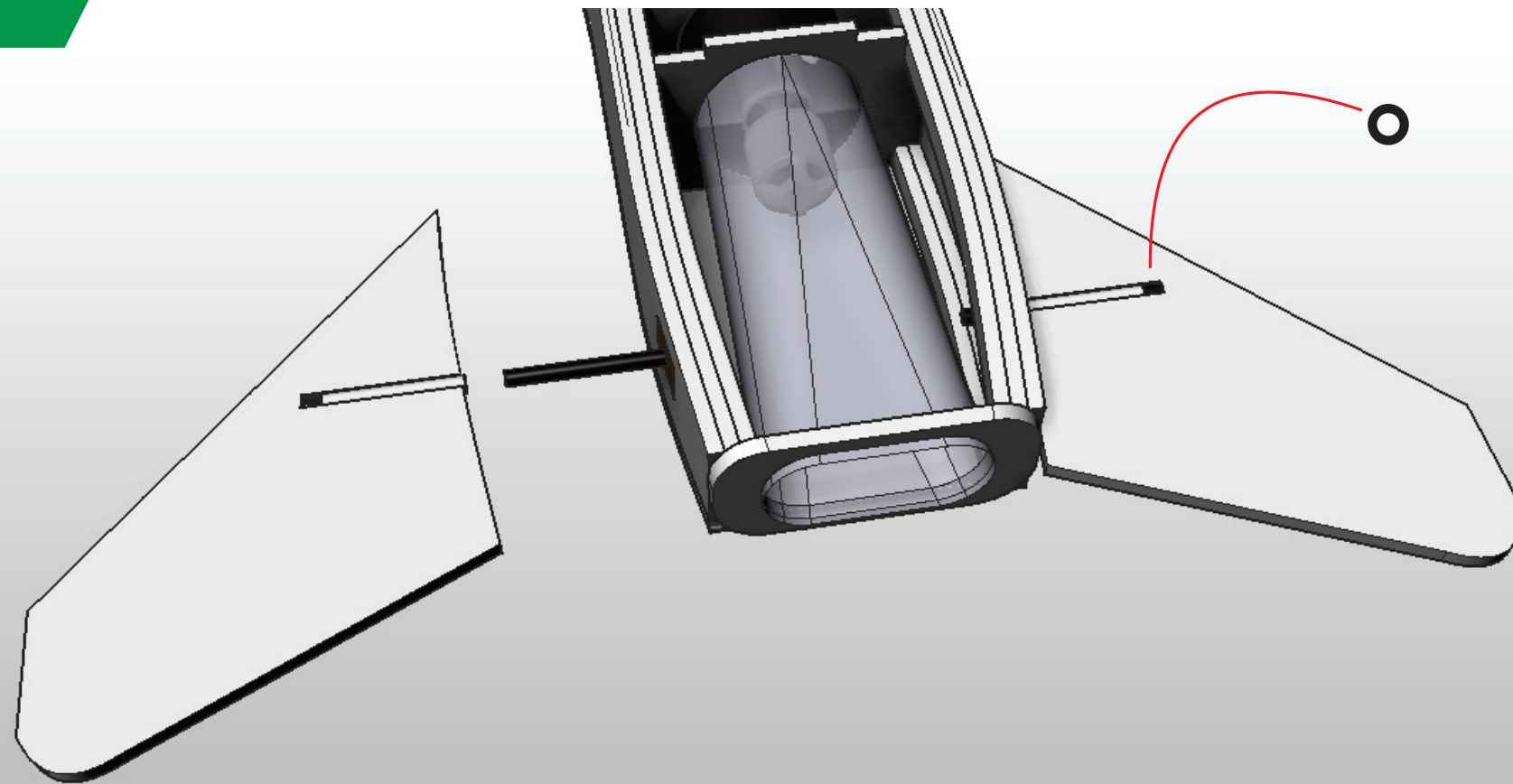


Glue the Aluminium tube in place within each elevator as shown, leaving a 6mm gap at the end.

Glue the two 3mm lite-ply control horns in place as shown.



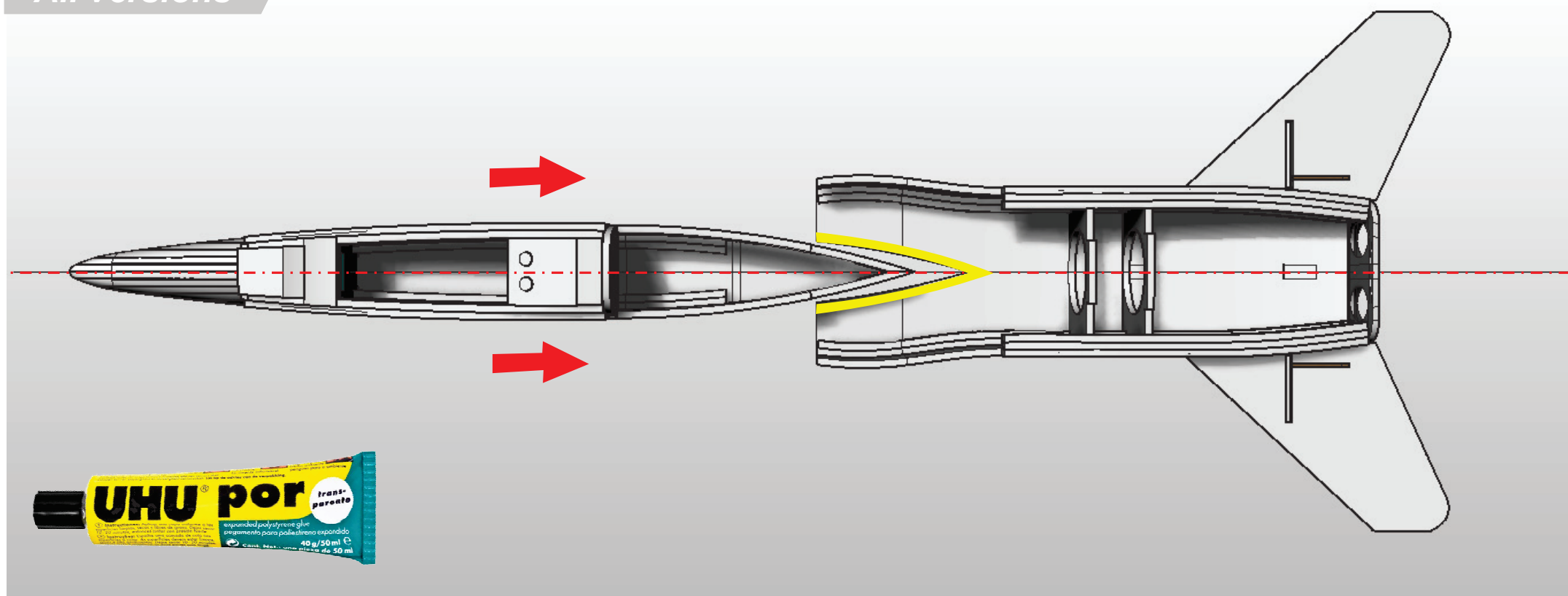
**EDF only**



Slide the elevators onto the assembly, pin in place by sliding drilled out prop adaptors onto the carbon shafts.



All versions

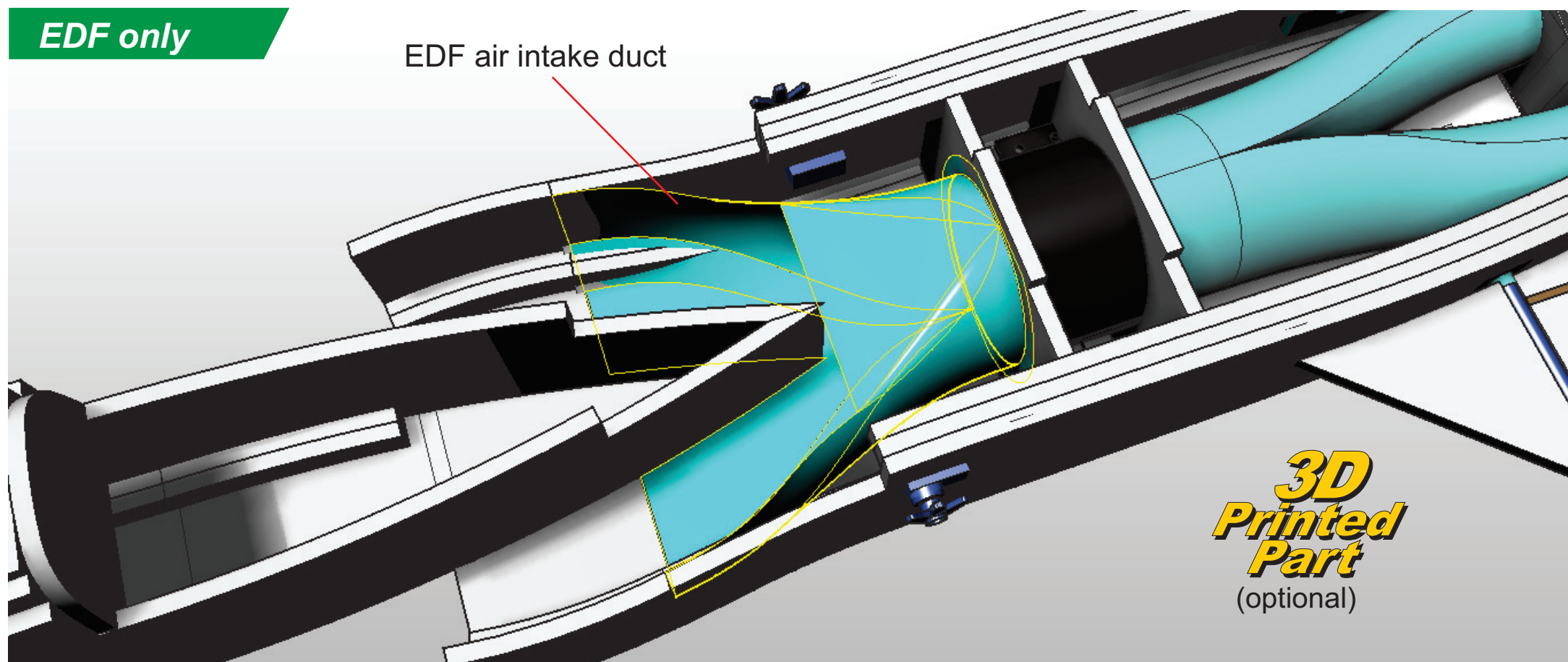


Draw a straight line on your workbench and align both front and rear parts.

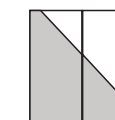
Glue the front part to the rear part in the area marked in yellow - this should be marked on your model already.

**ENSURE THE FUSELAGE IS STRAIGHT!**

EDF only



Chamfer the inside edge of the lower corner reinforcement pieces.

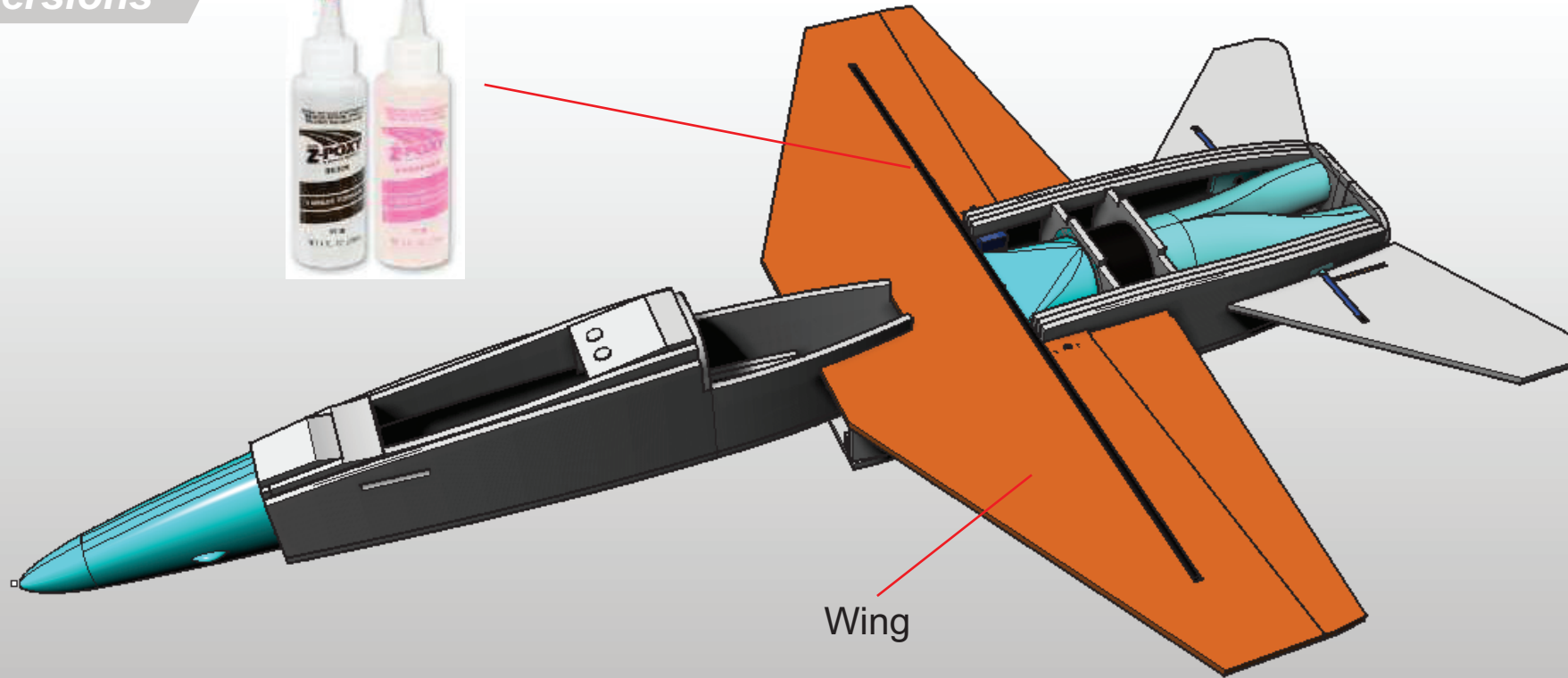


If you have a 3D printer, create the **EDF air intake duct** and glue in place.

Alternatively, fabricate an air intake ducting using 3mm depron



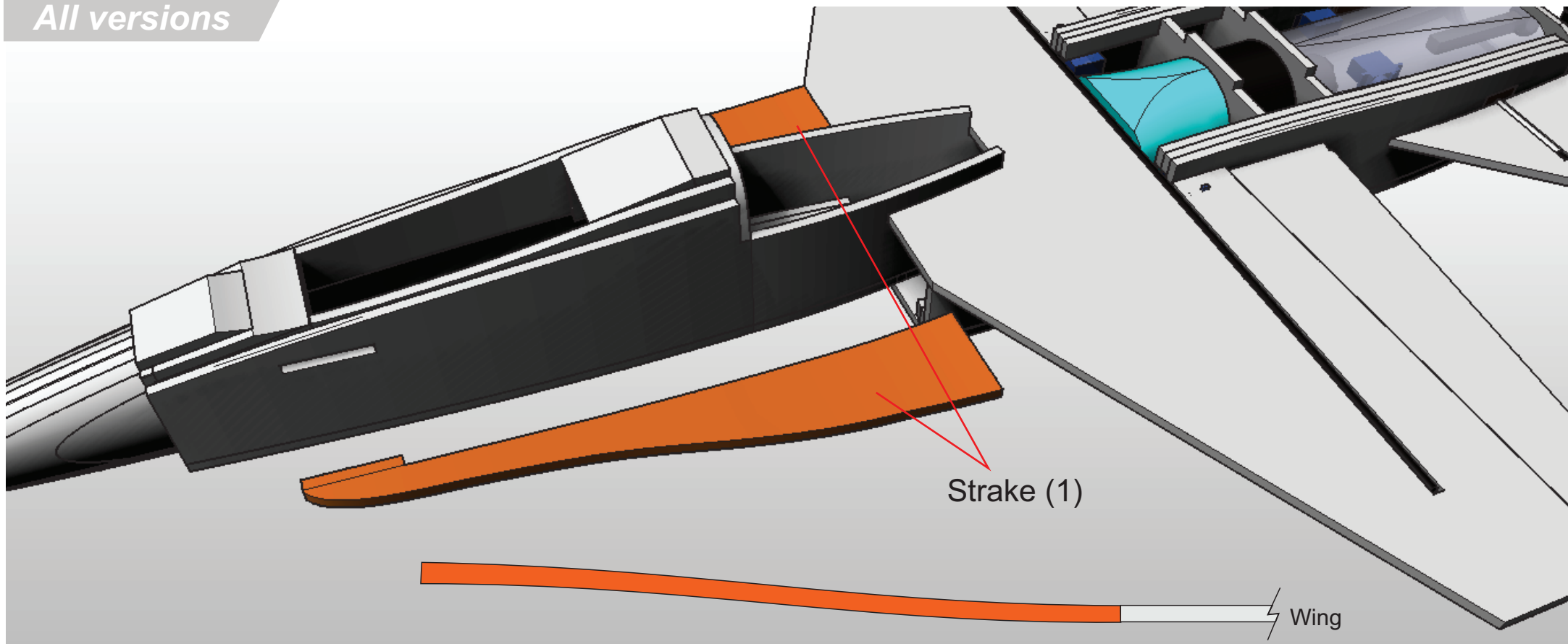
All versions



Glue the carbon spar into the **Wing** using epoxy and masking tape, then once set, glue the **Wing** onto the fuselage.



All versions

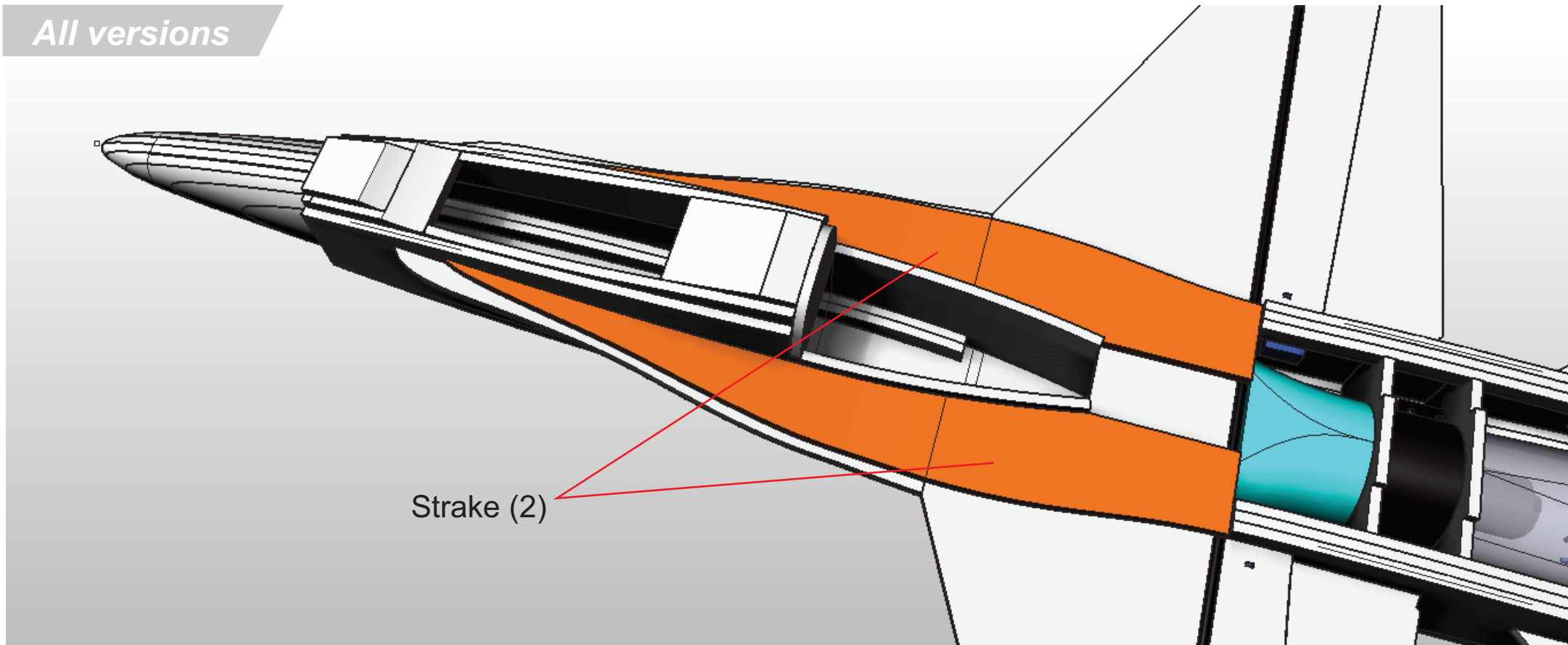


Gently curve the **Strake (1)** to create the shape indicated.

The **Strake (1)** shape should smoothly flow into the wing as shown in the sectional view.



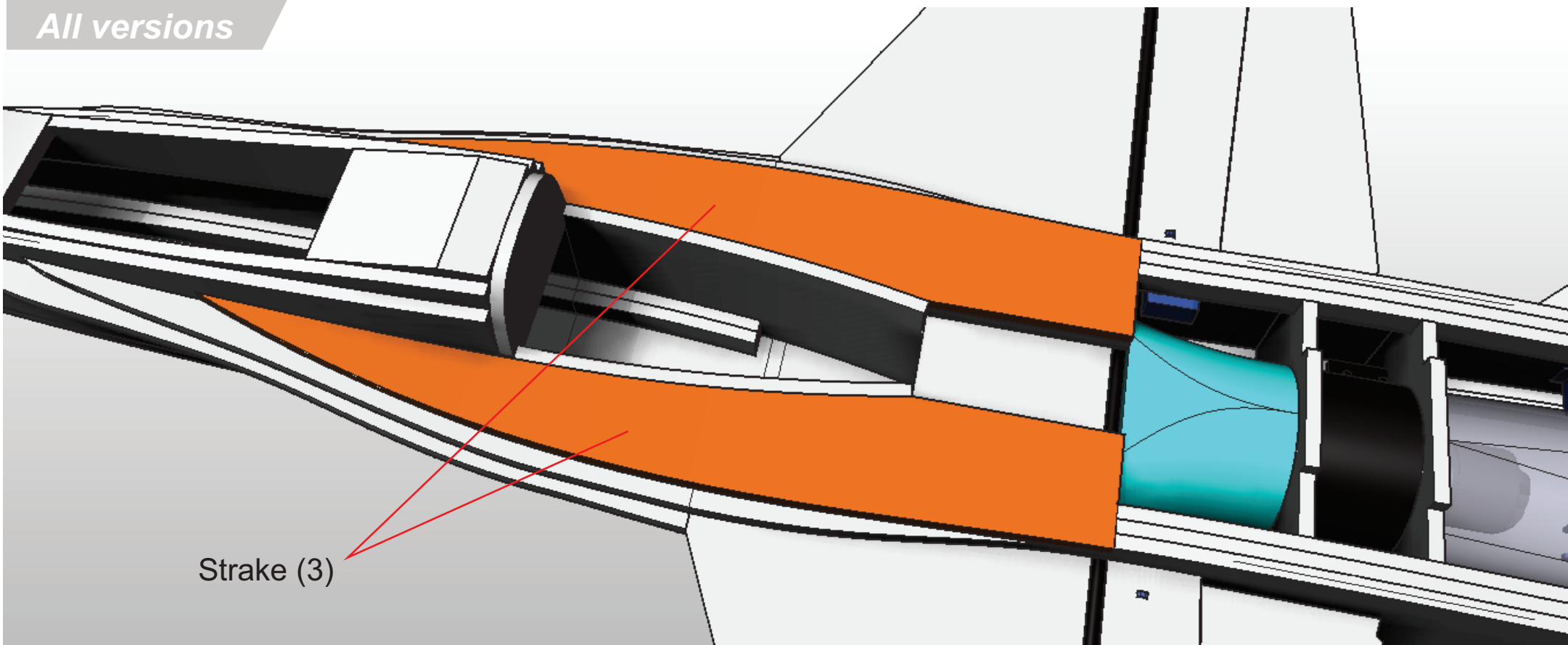
All versions



Glue **Strake (2)** pieces in place as shown



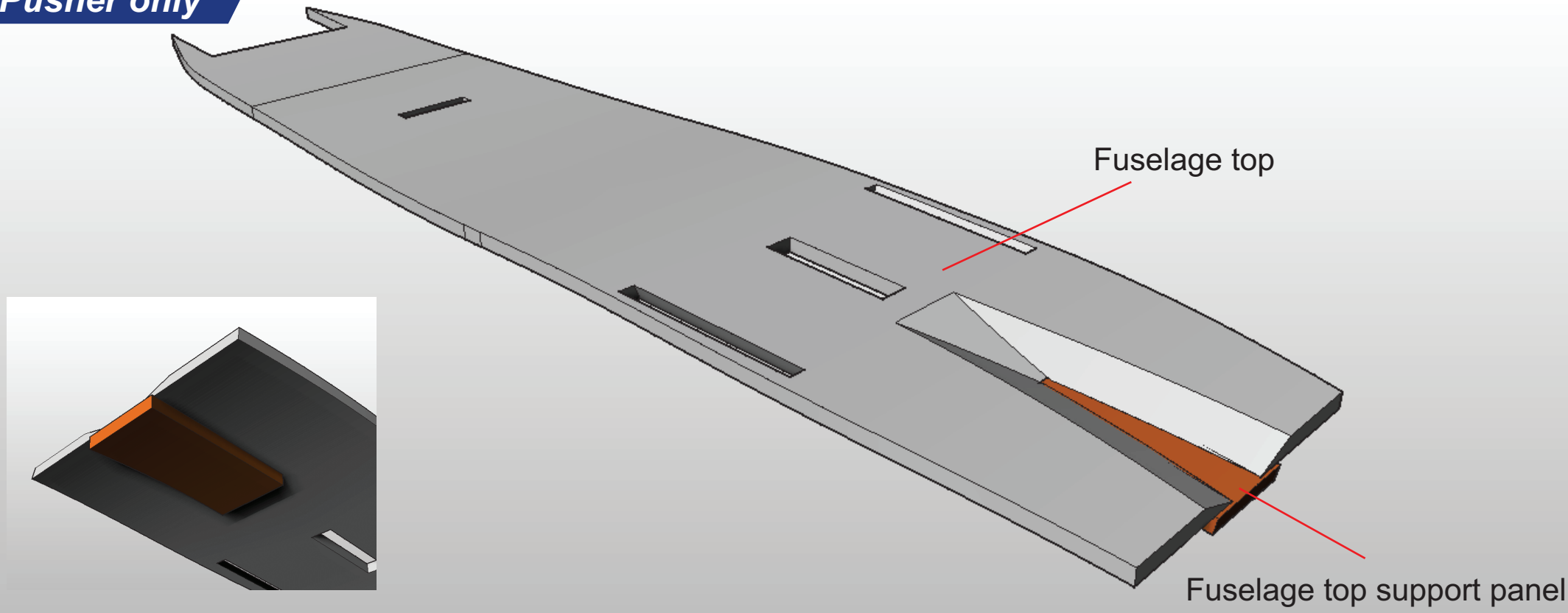
All versions



Glue **Strake (3)** pieces in place as shown



**Pusher only**

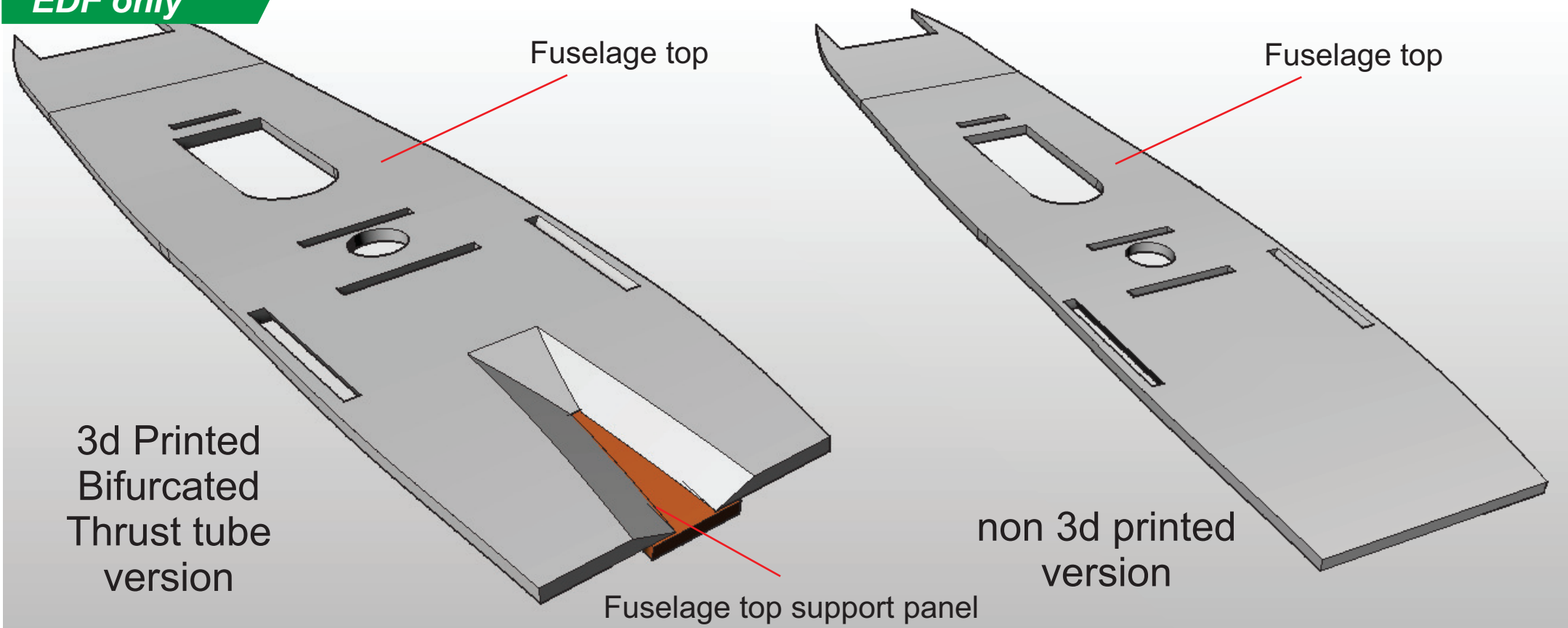


**Pusher version**

Glue the **Fuselage top support panel** to the underside of the **Fuselage top**



**EDF only**



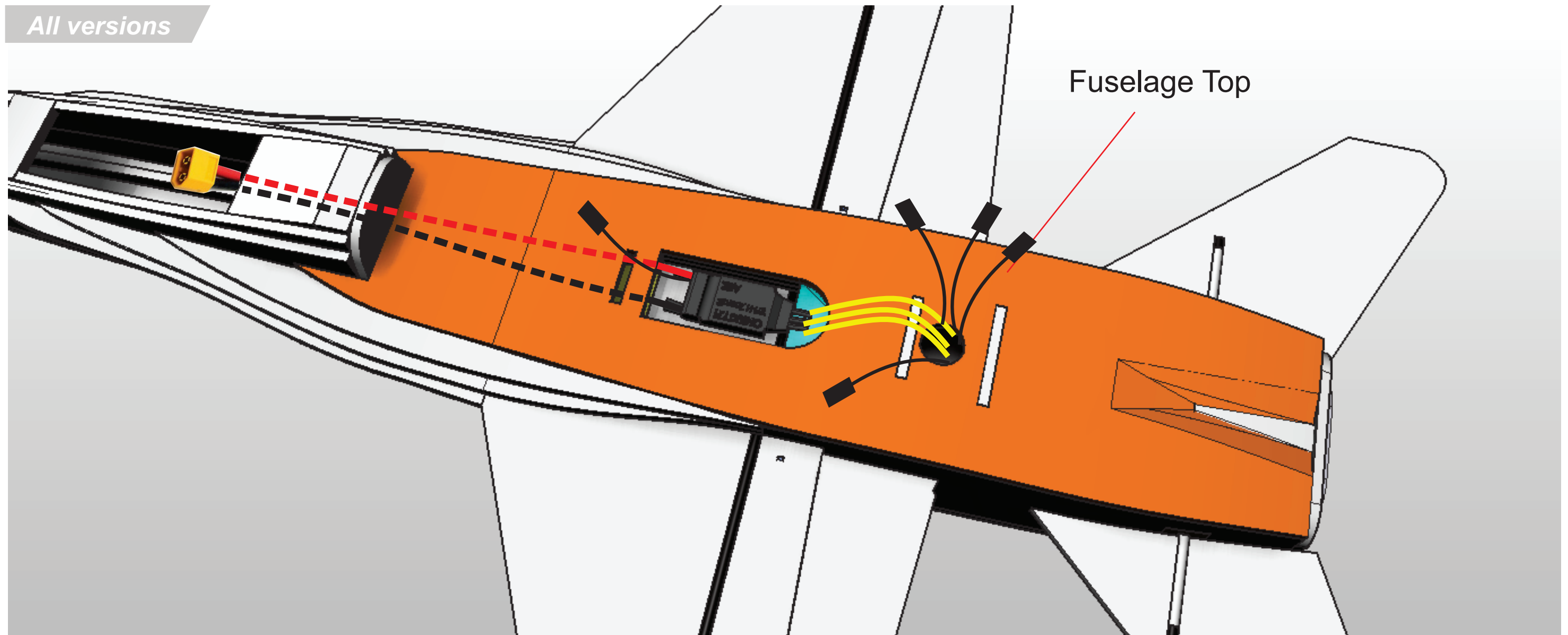
**3D printed thrust tube version only**

Glue the **Fuselage top - support panel** to the underside of the **Fuselage top**





All versions



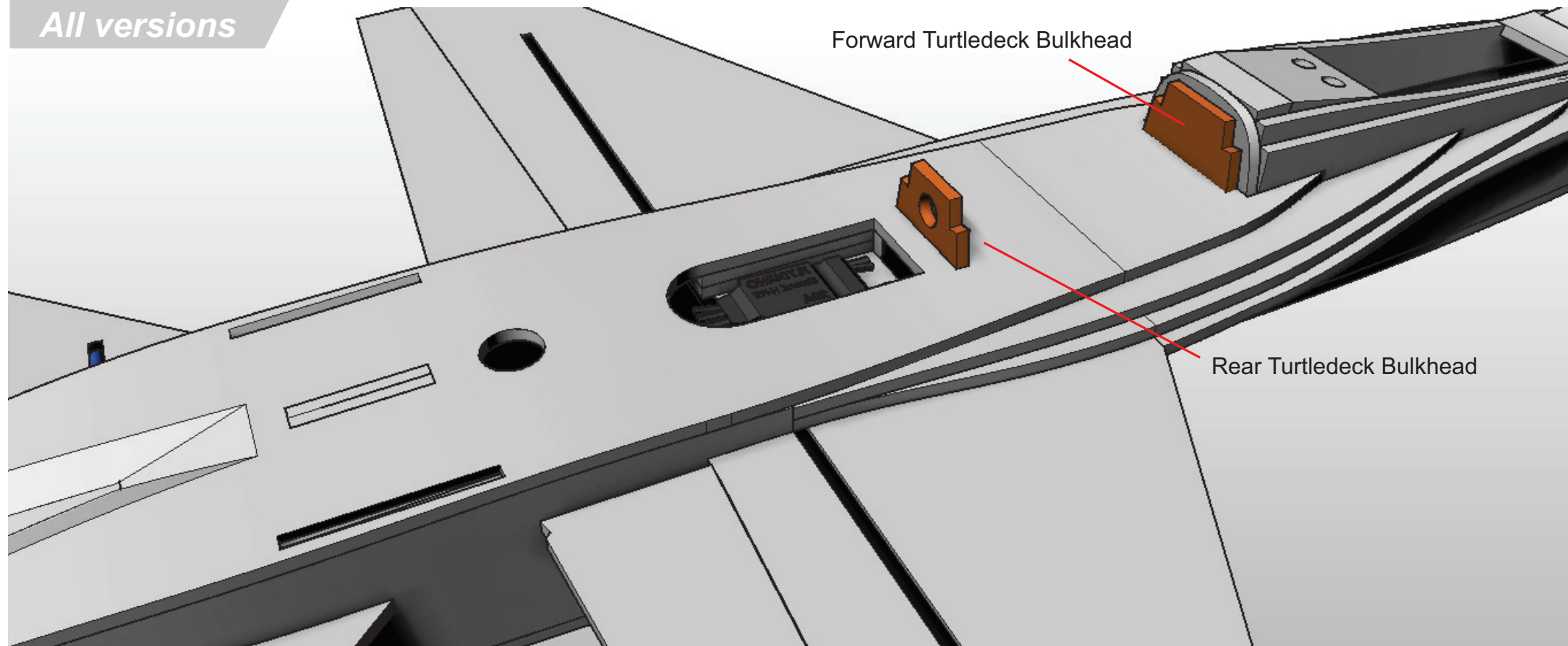
Run the motor cables and servo cables through the circular hole. Connect the motor cables to the ESC.

Run the power cables into the forward fuselage (under the fuselage top). Sit the ESC in the hole as shown

Glue the **Fuselage Top** onto the fuselage.



All versions

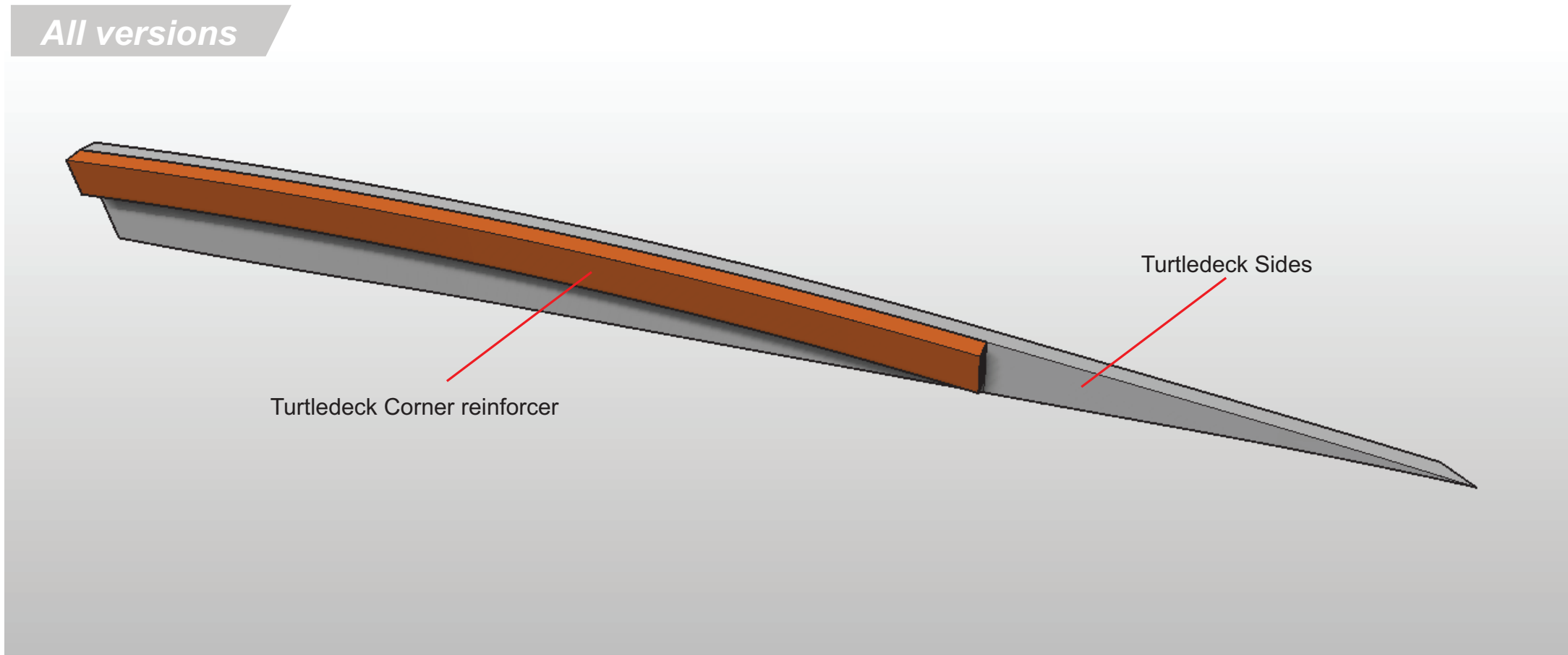


Fit the **Forward turtledeck bulkhead** on the centreline of the plane against bulkhead 2.

Glue the **Rear turtledeck bulkhead** in place.



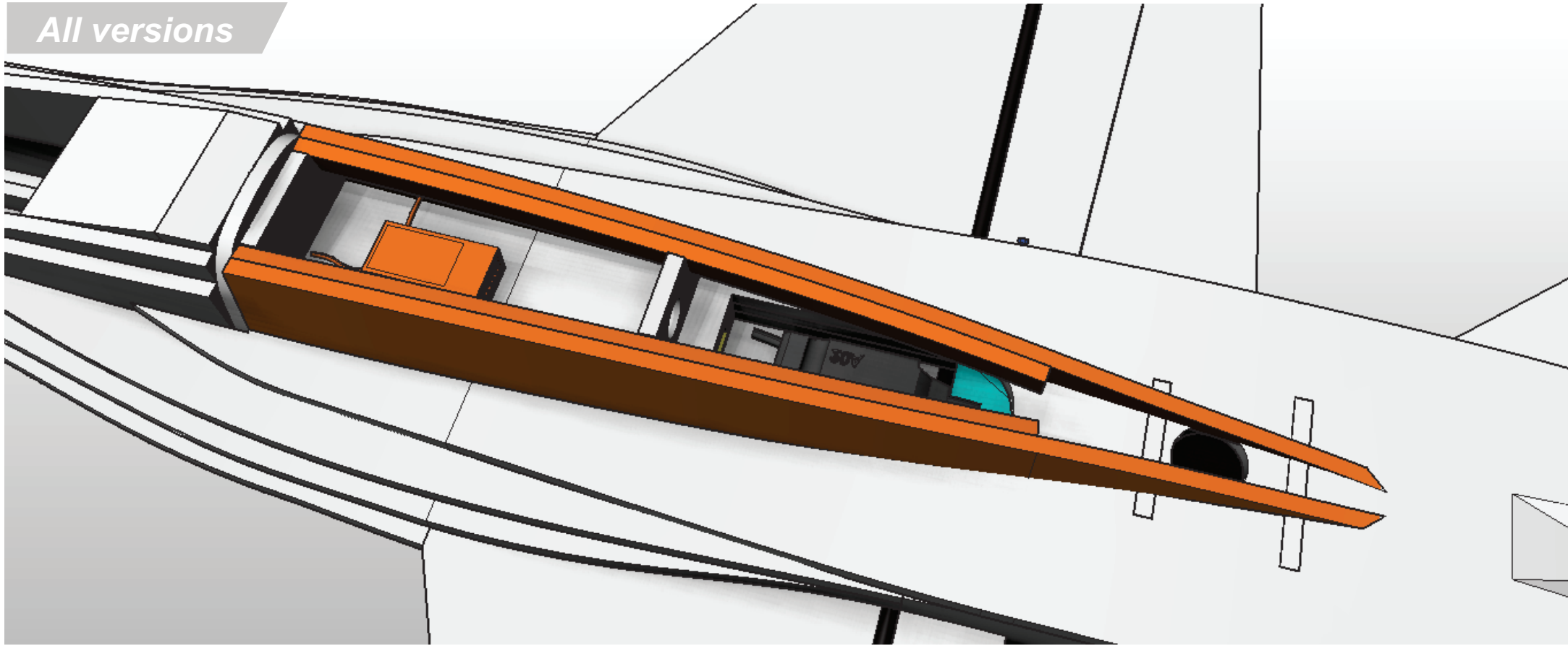
All versions



Glue the **Turtledeck corner reinforcers** to the **Turtledeck sides** to create a mirrored pair.



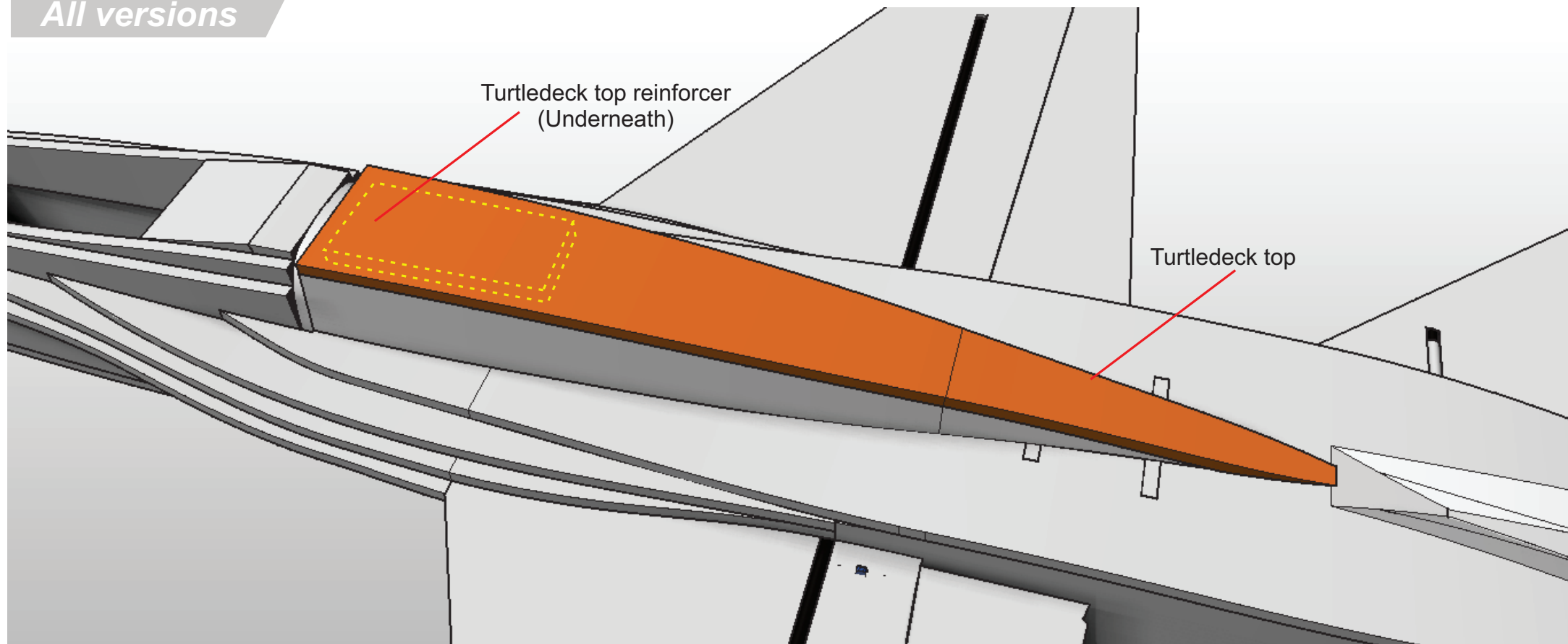
All versions



Gently curve the Turtledeck sides and glue them to the marked lines drawn on the fuselage top.

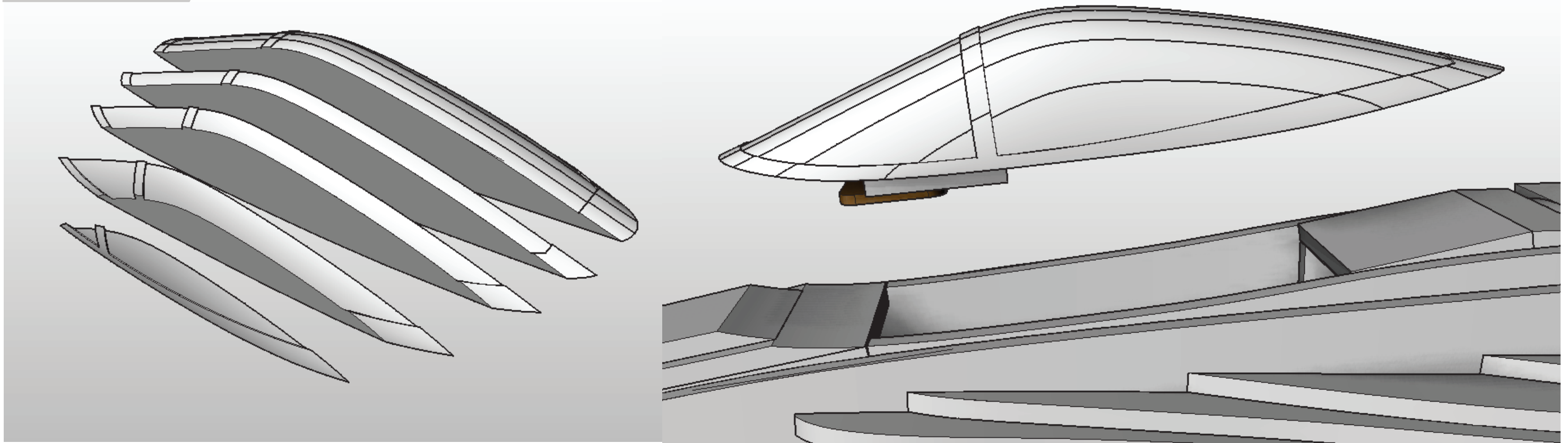


All versions



Glue the **Turtledeck top** onto the fuselage.

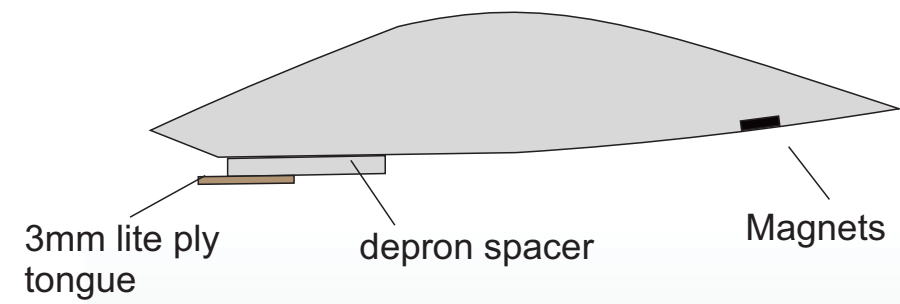




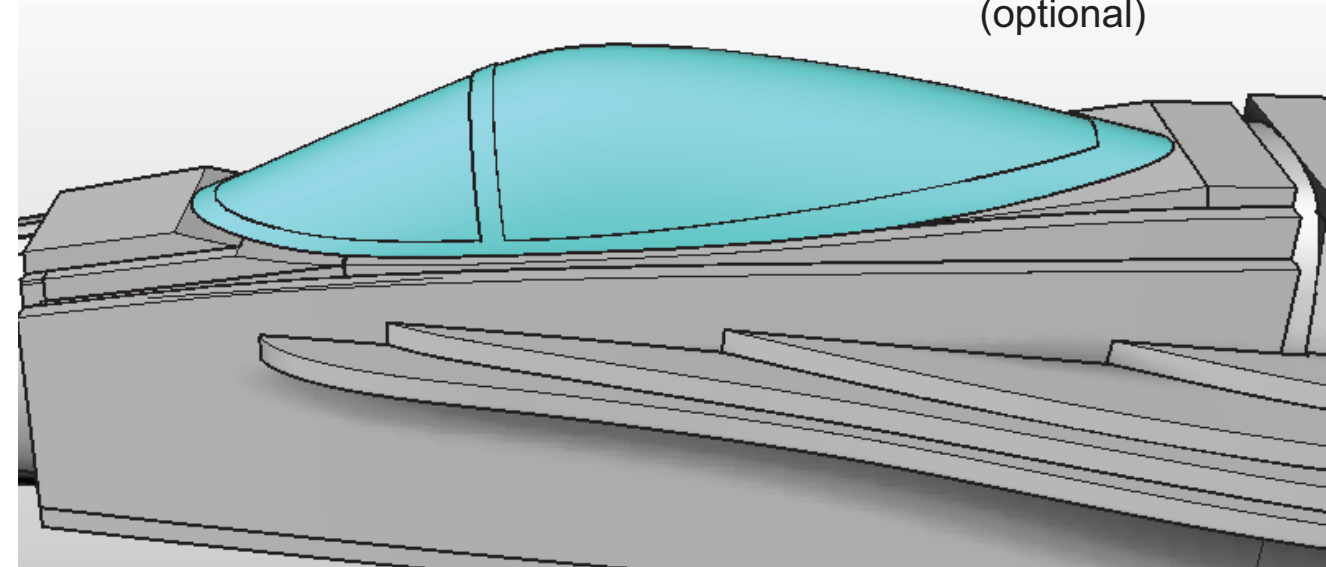
Create the canopy in the same way as the nosecone, or 3d Print one, and add a tongue and magnets as shown.

1. press magnet into depron to impress shape.
2. Dig out a recess for the magnet using a sharp knife.
3. Apply glue into recess and push magnet into it.
4. Whilst still wet, lay masking tape over the area.
5. When fully cured, remove tape and put adjoining magnet on top
6. When correctly aligned, press adjoining depron onto the sticking up magnet to impress shape.
7. Repeat steps 2-4 for the upper part.

**IMPORTANT.**  
Before glueing the upper magnet in, check that the magnet is the right way around!

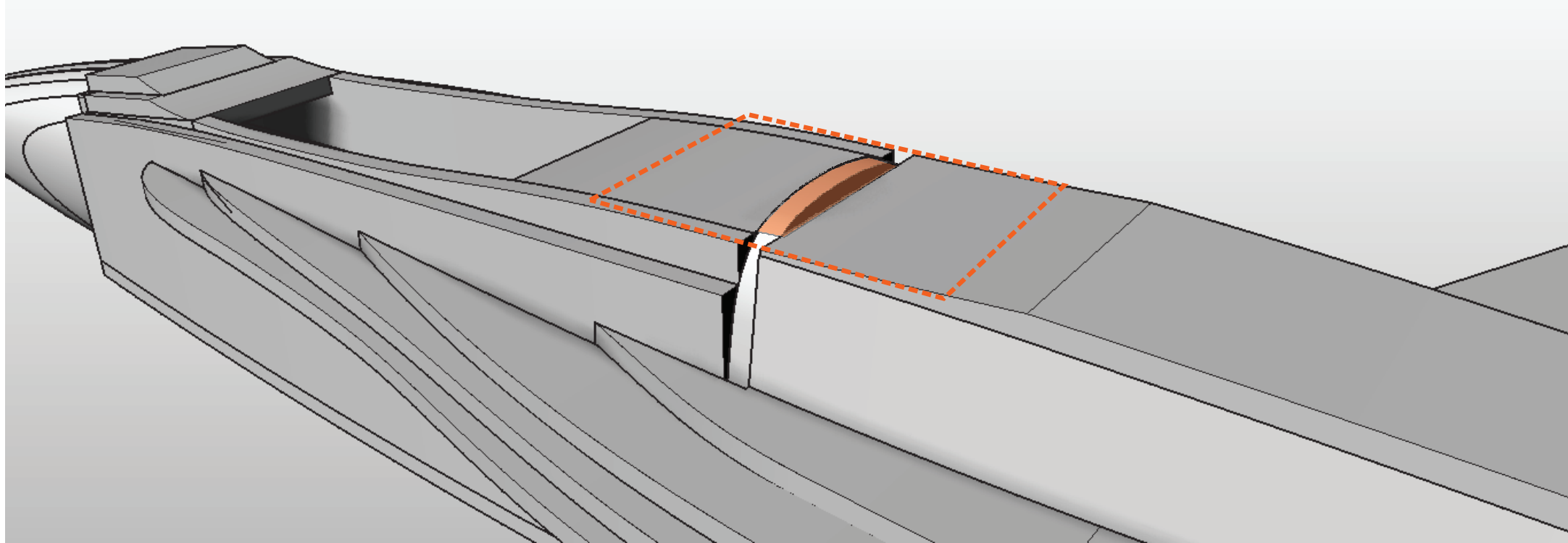


**3D Printed Part**  
(optional)



All versions

### TWIN CANOPY VERSION

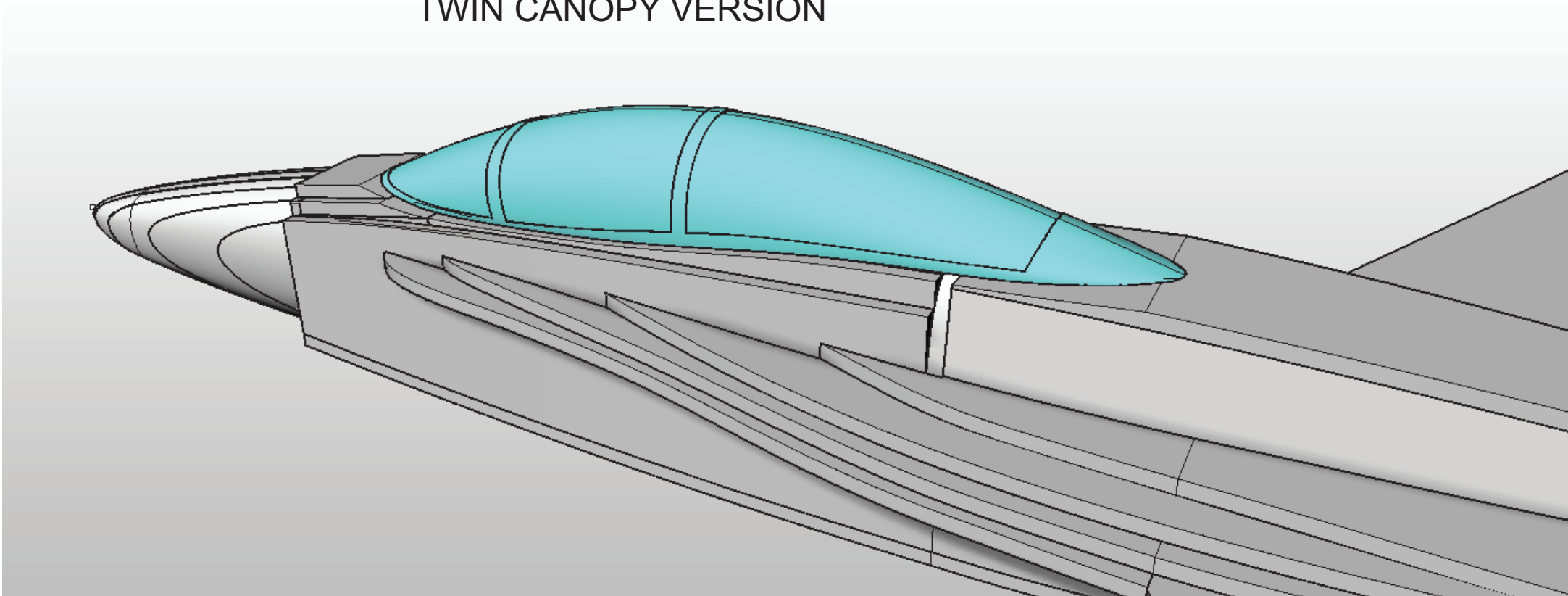


Twin Canopy only.

Sand Bulkhead 2 to create a flattened surface

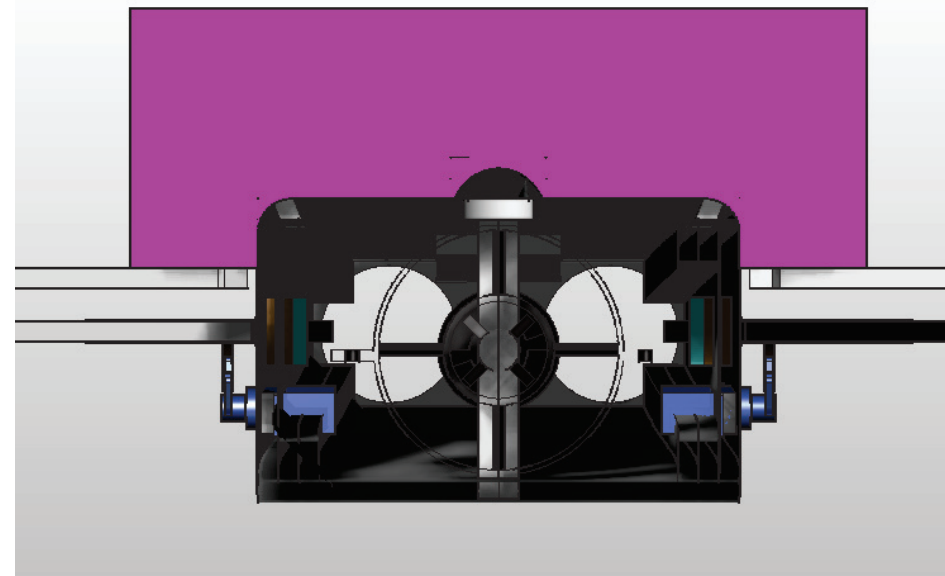
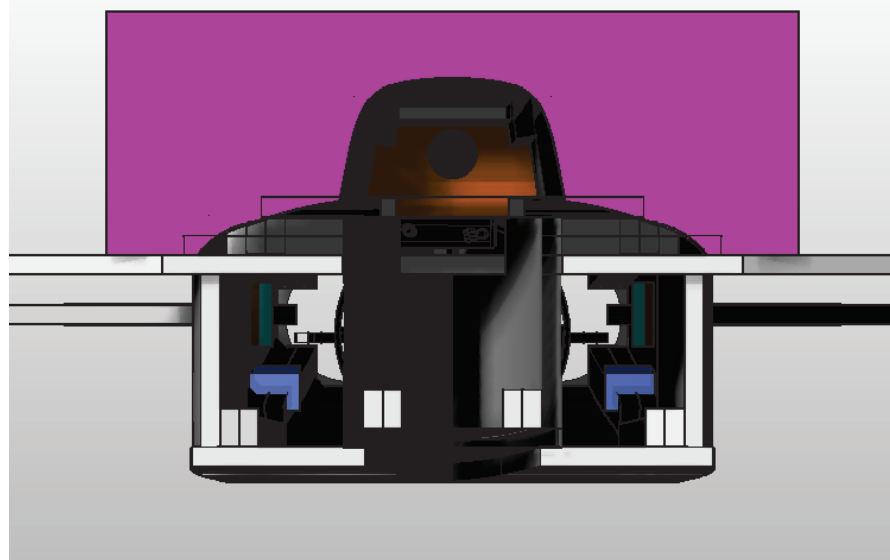
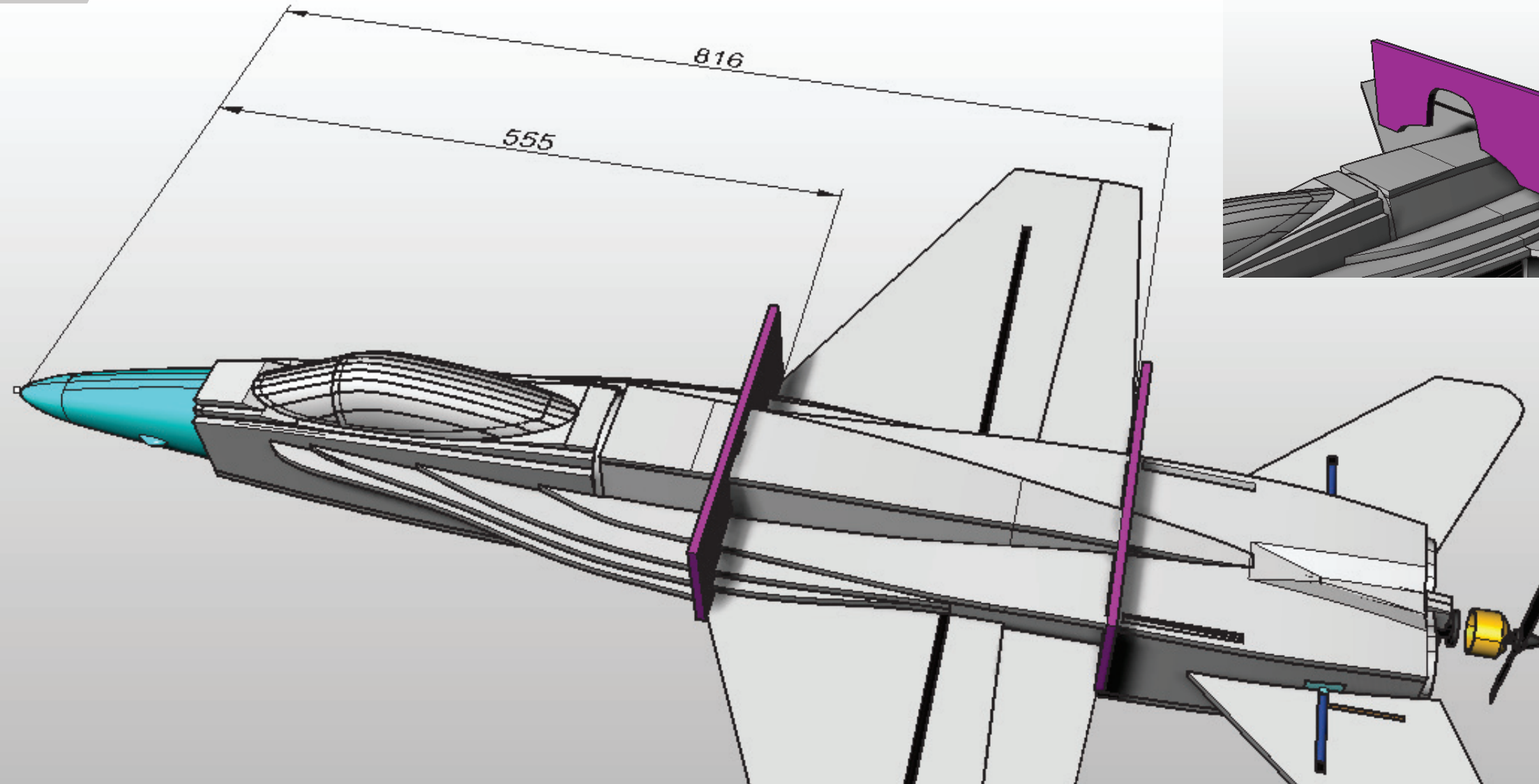
All versions

### TWIN CANOPY VERSION



Make the Twin canopy as per the previous page either from laminated foam or 3D print





Sand the fuselage and turtledeck to shape using the jigs as shown.

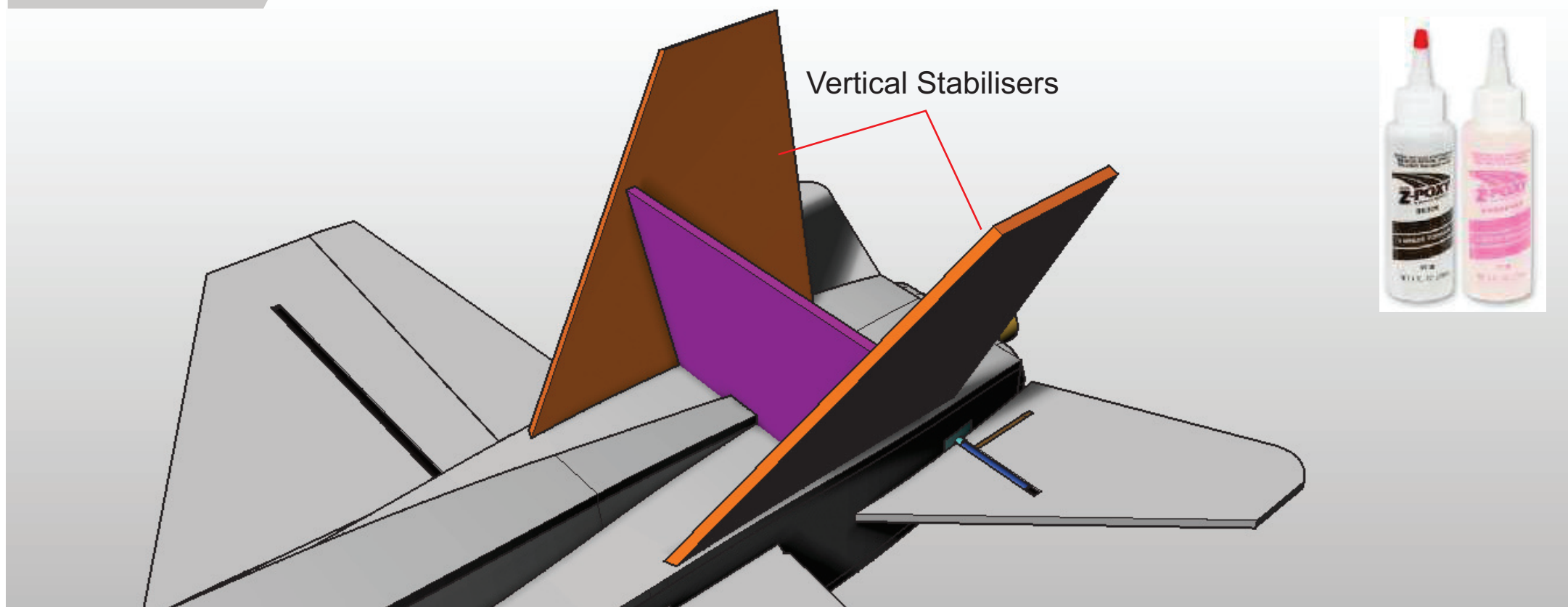
Use the exhaust bulkhead and nosecone shapes to help you get the correct shape.

Sand the contoured step 'mountains' down to the 'valleys' on the forward wing/strake area.

Look carefully at the real aircraft for inspiration.



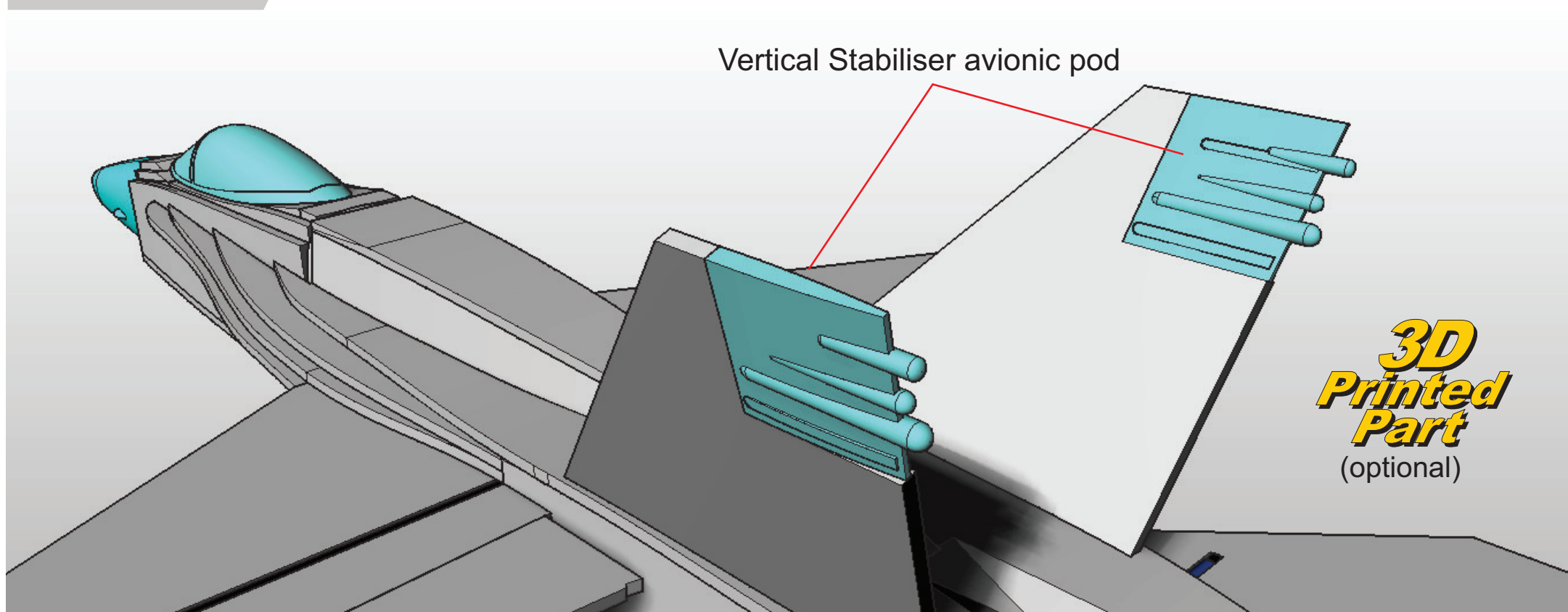
All versions



Glue the **Vertical stabilisers** into the fuselage using epoxy glue.

Use the alignment jig as shown. Hold in place until the glue is set.

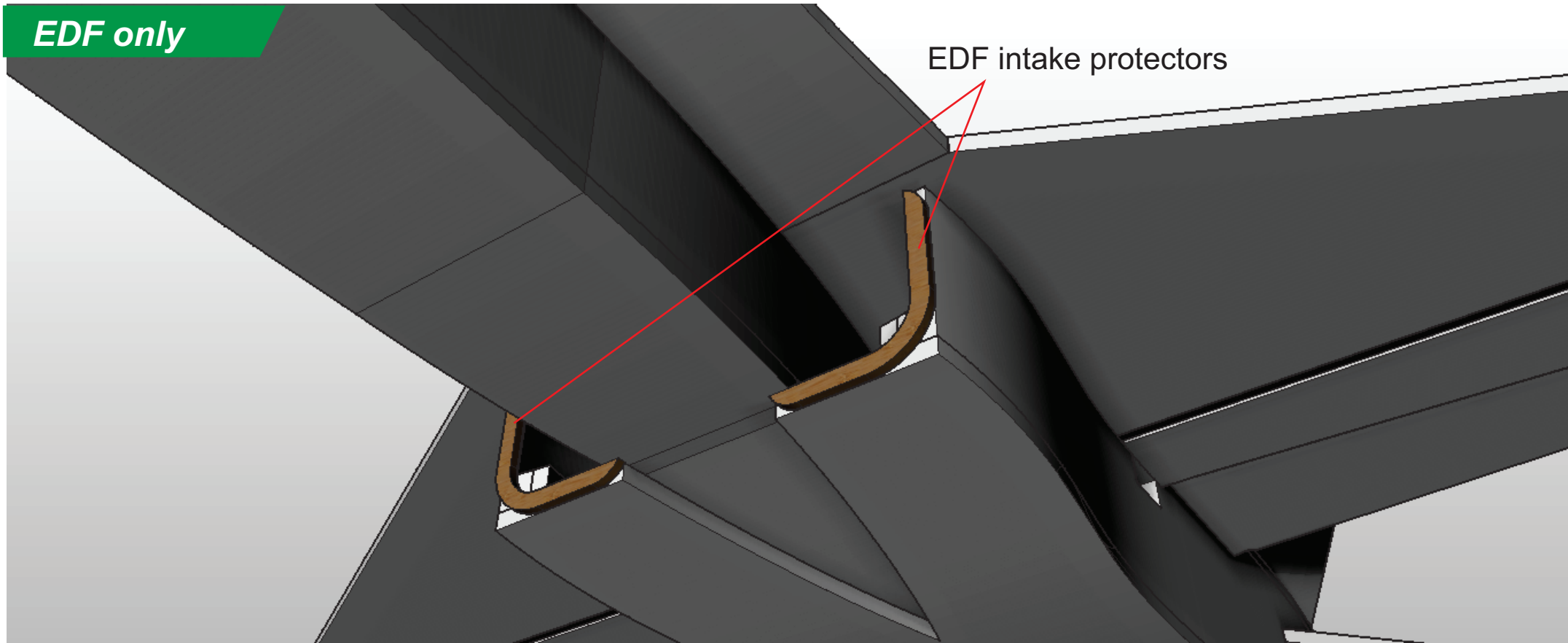
All versions



If you have a 3D printer then you can print out the **Vertical stabiliser avionics pod** details to make your printer more scale looking.



**EDF only**

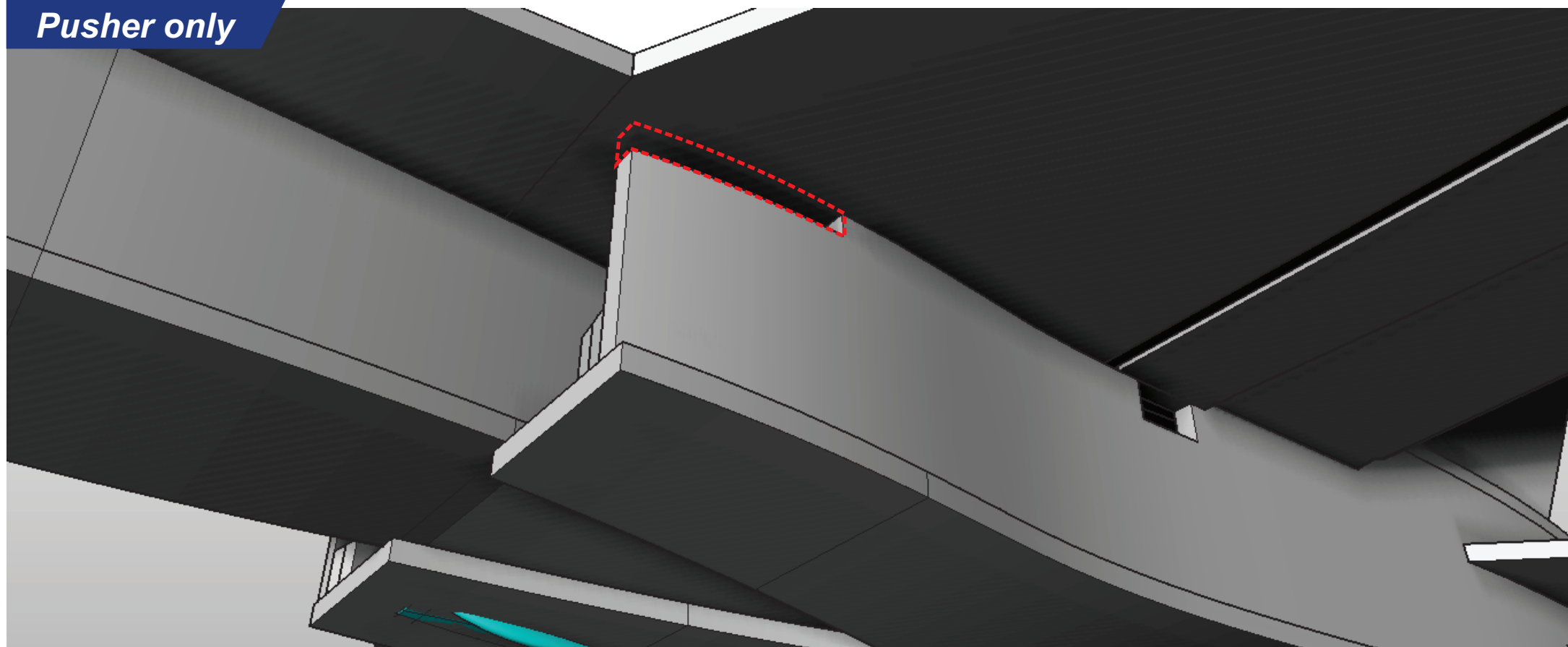


EDF intake protectors

Glue the 3mm lite-ply **EDF intake protectors** in place as shown. Use the shape to shape your lower fuselage to represent the shape of the real hornet.



**Pusher only**



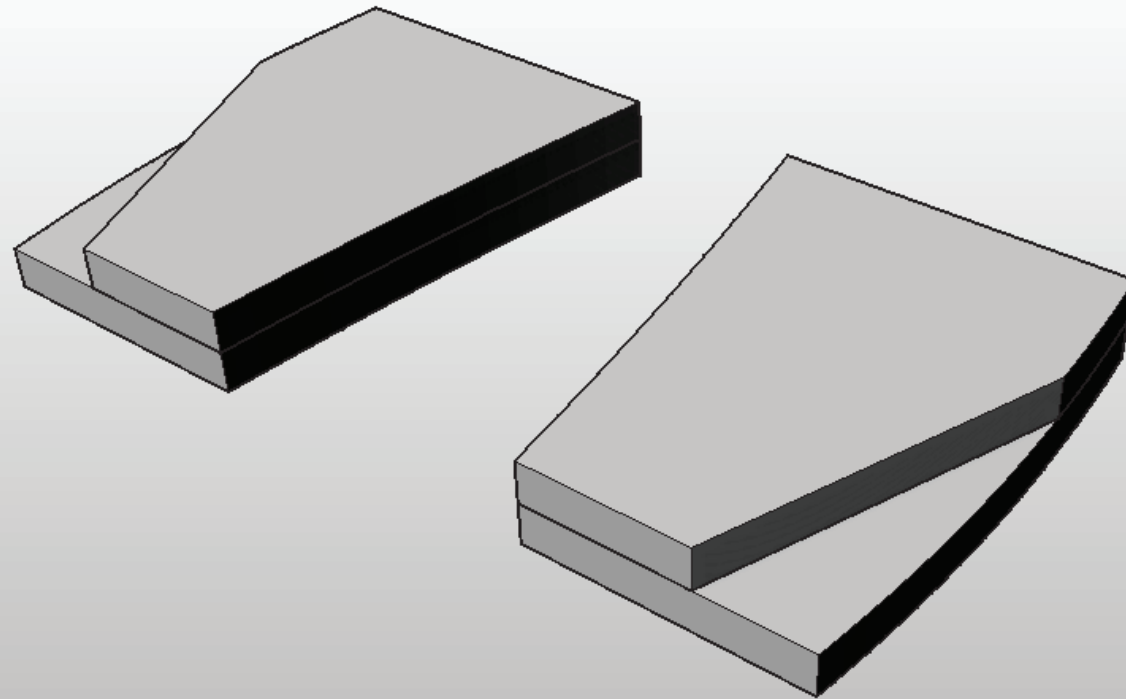
Pusher only.

Trim away the part indicated on the plans





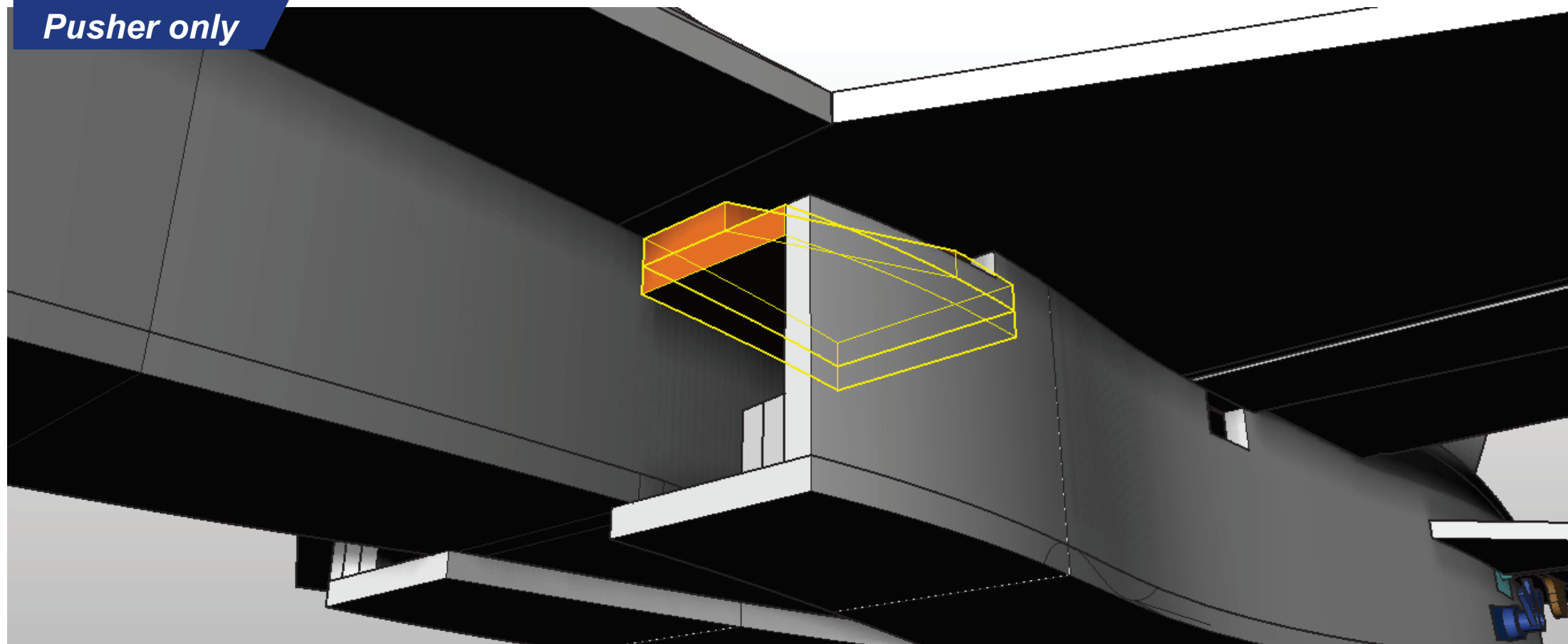
**Pusher only**



Glue together the two pairs of air intake uppers as shown



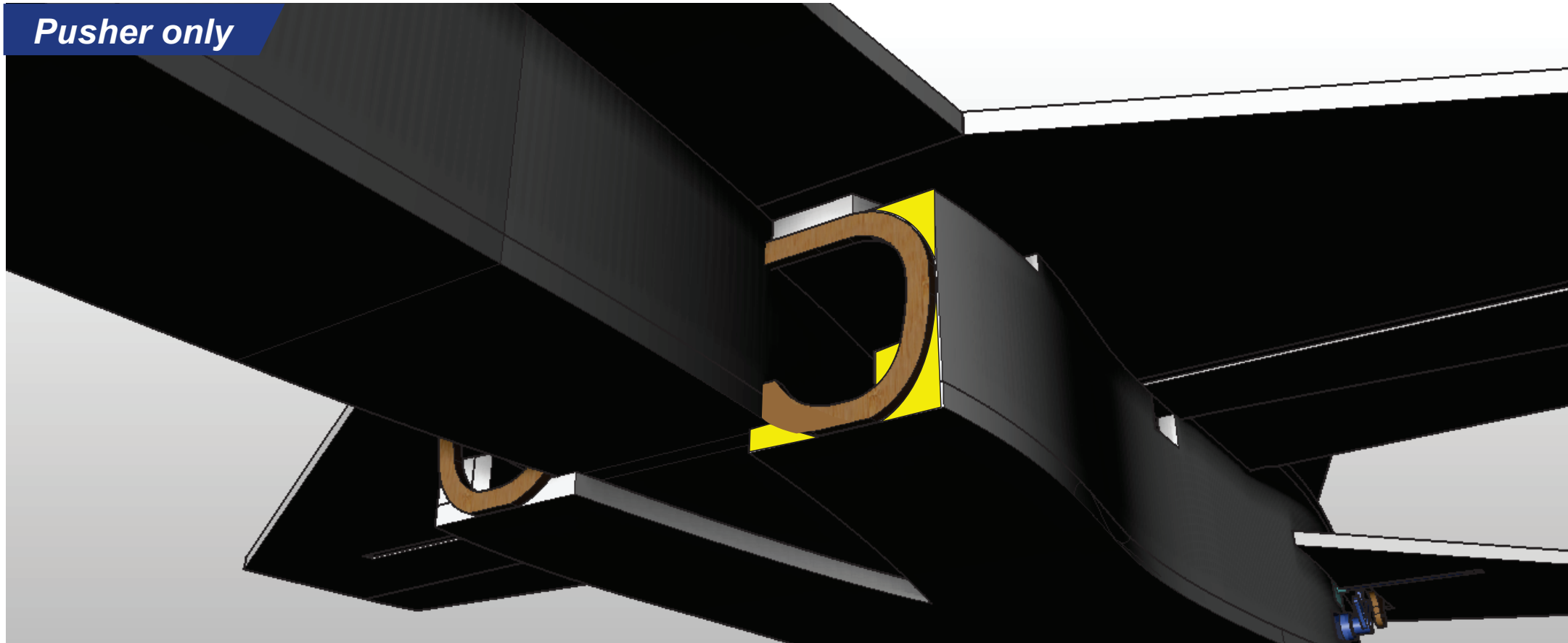
**Pusher only**



Glue the intake uppers to the fuselage as shown.



**Pusher only**

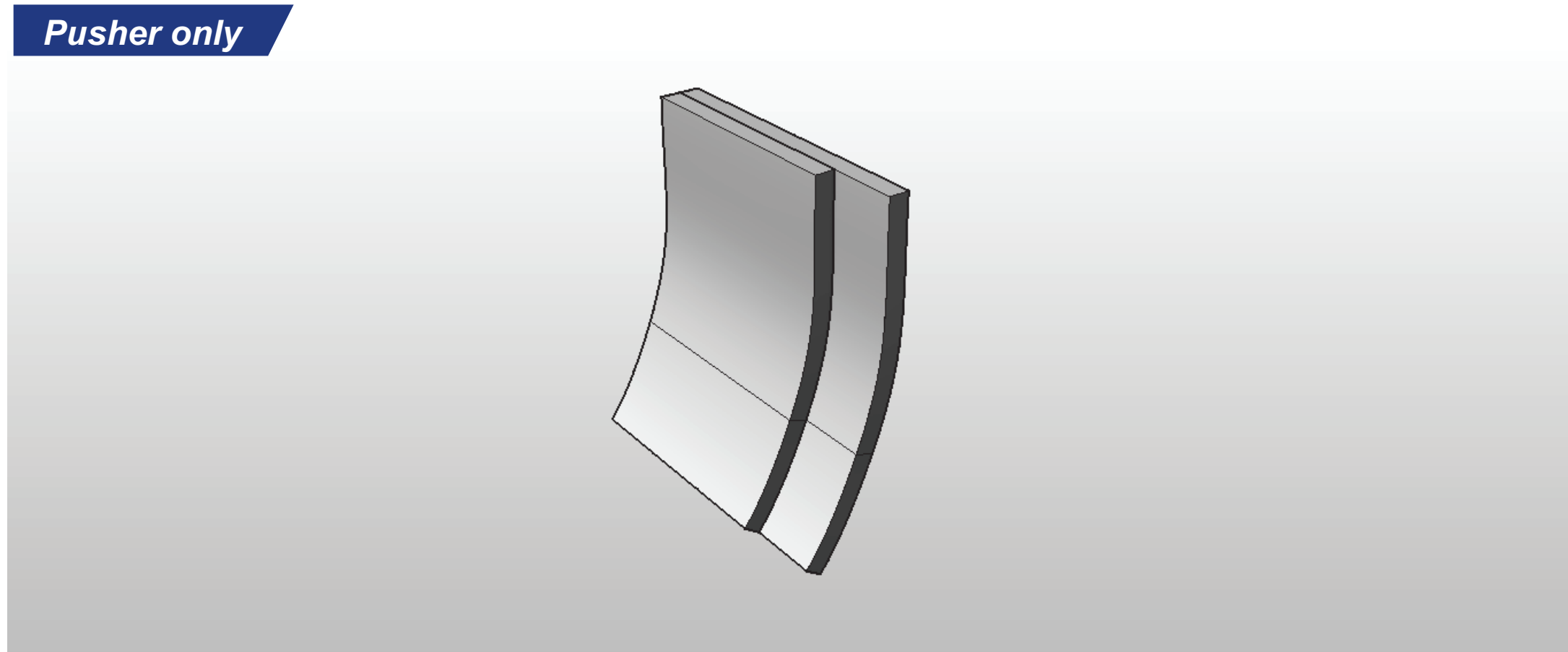


Glue the Pusher intake protectors to the model as shown.

Sand all the areas shown in yellow and smoothen the lower fuselage to represent the real plane.



**Pusher only**

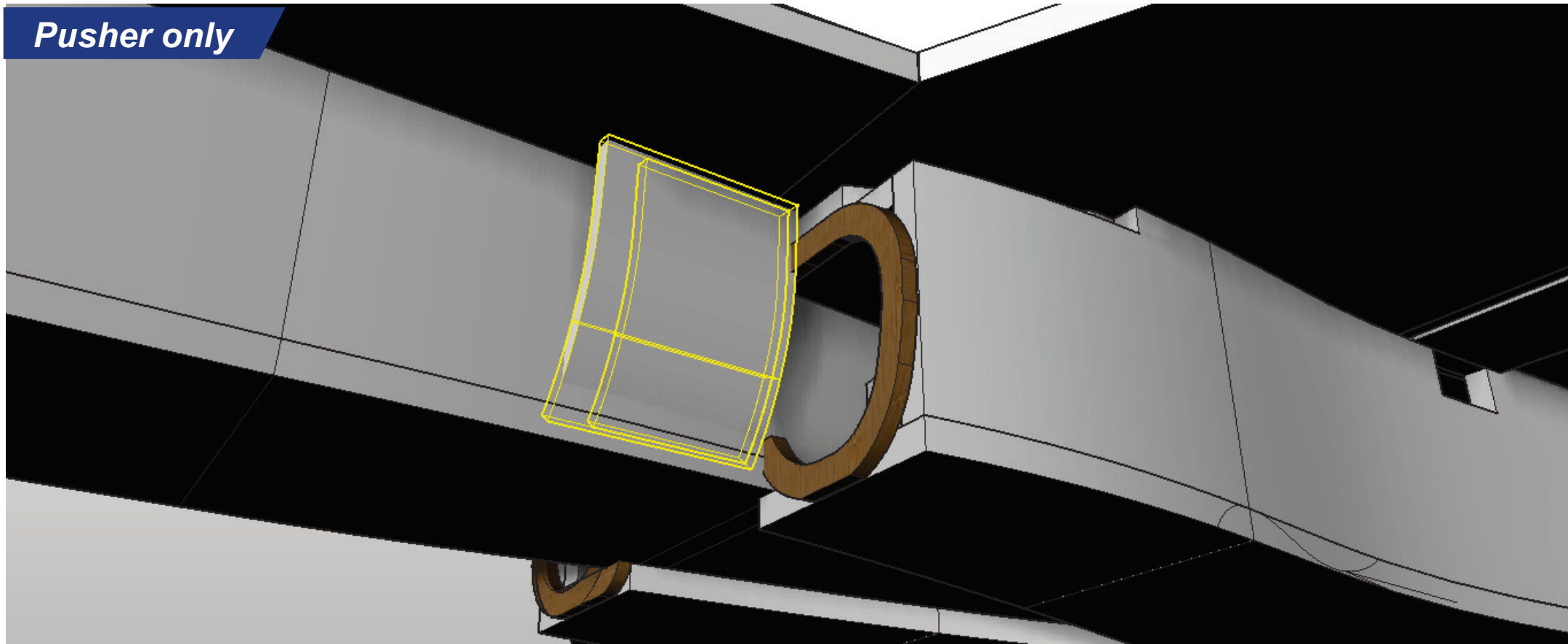


Using 3mm depron, form the two pieces that make up the Splitter.

Make a mirrored pair.



**Pusher only**

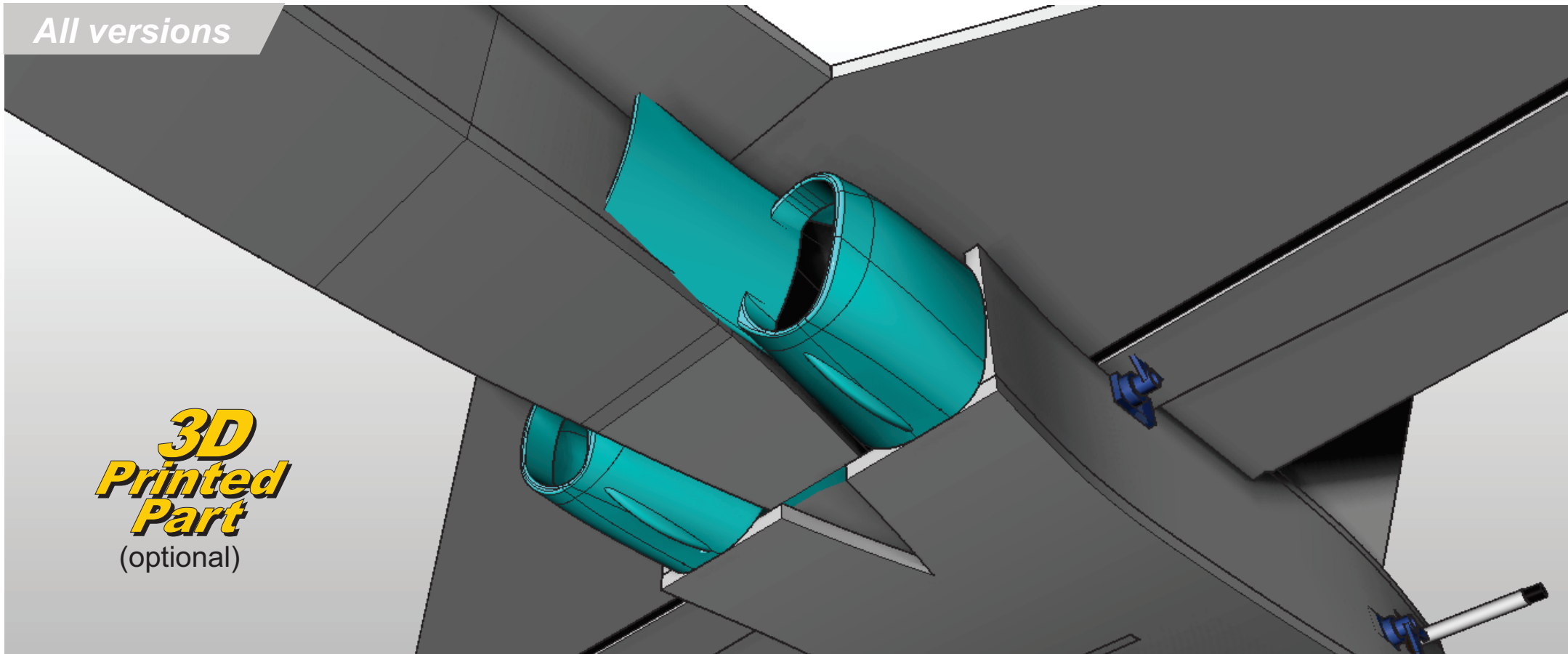


Once the fuselage is shaped then glue the splitters onto the aircraft.

Depending on how you are painting your model, you may want to paint these parts separately and add them during the painting phase.



**All versions**



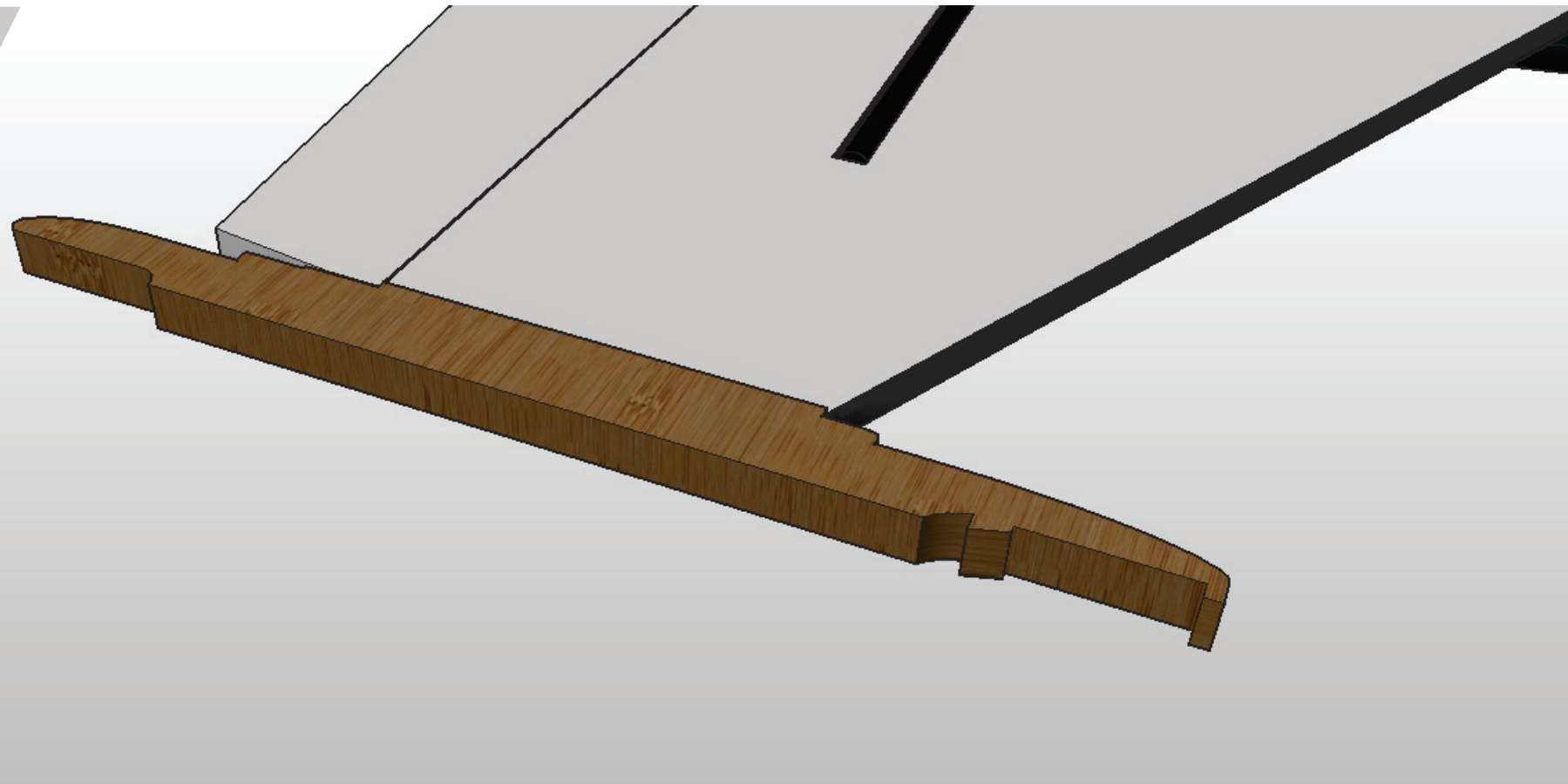
If you have a 3D printer then trim the lower fuselage to the line marked on the plans, and glue the intakes in place.

Sand the rest of the lower rear fuselage to blend into the 3d printed parts, with the lower corner edges all the way to the exhaust bulkhead.

**3D  
Printed  
Part**  
(optional)



All versions

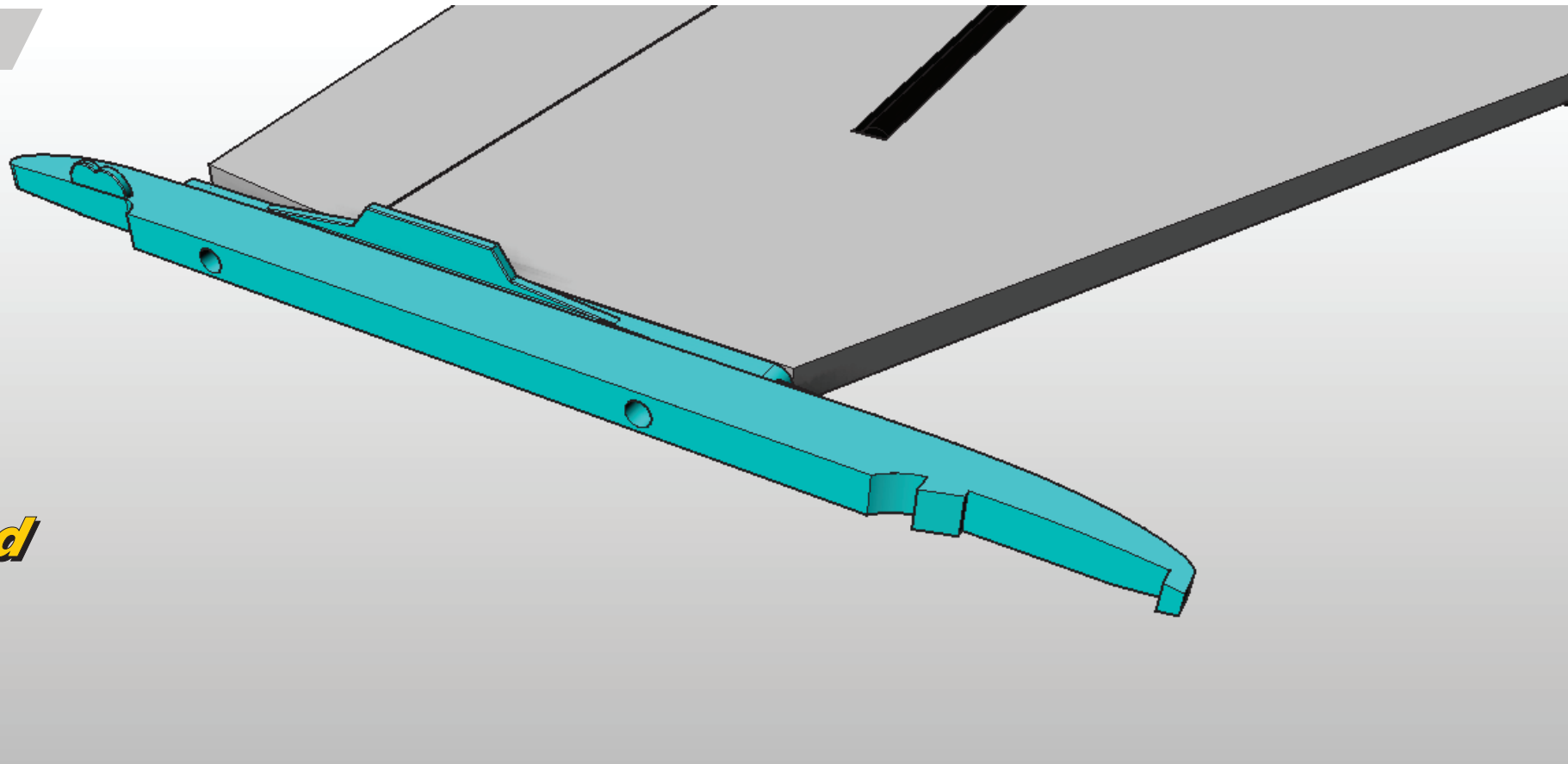


Fabricate two wingtip pylons from 8mm balsa and glue onto the wingtips.

Use UHU por as it's flexible and may help to protect the wing in the event of snagging it on landing.



All versions

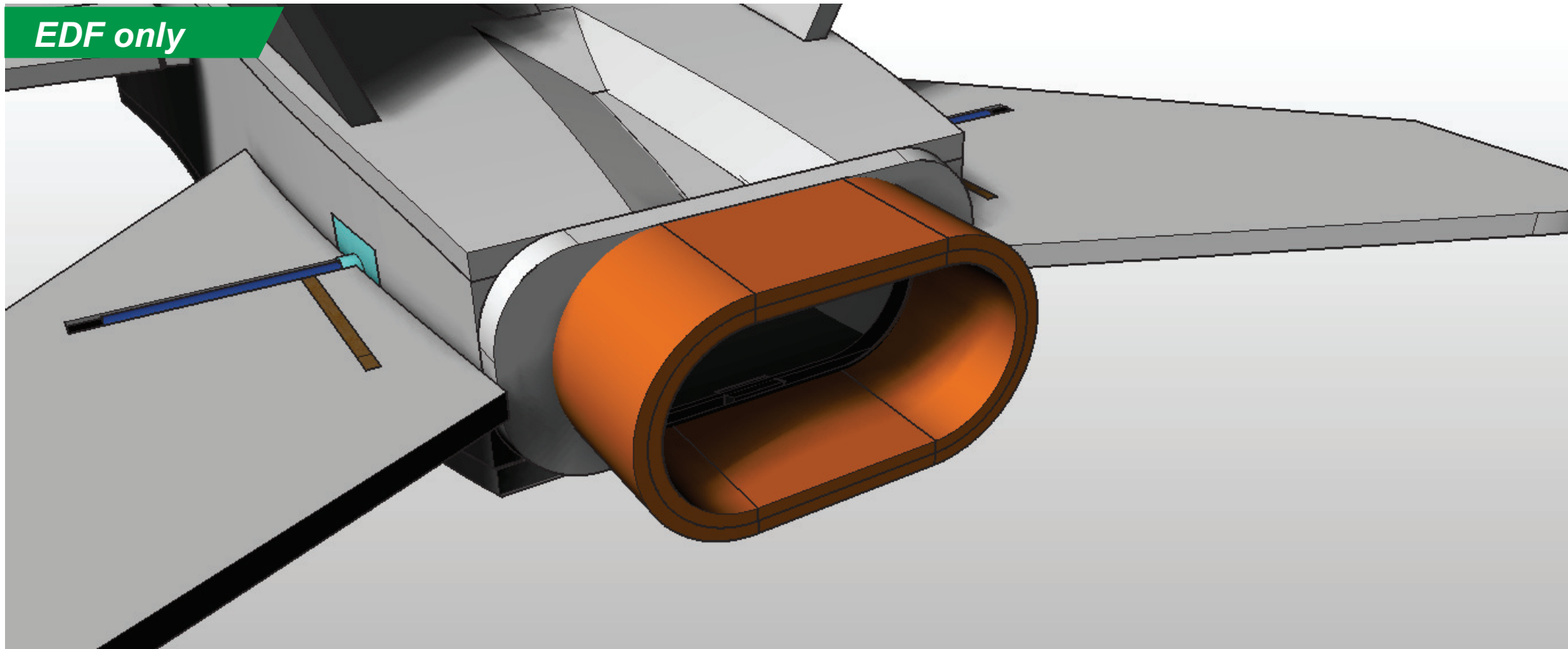


Fabricate two wingtip pylons from 8mm balsa and glue onto the wingtips.

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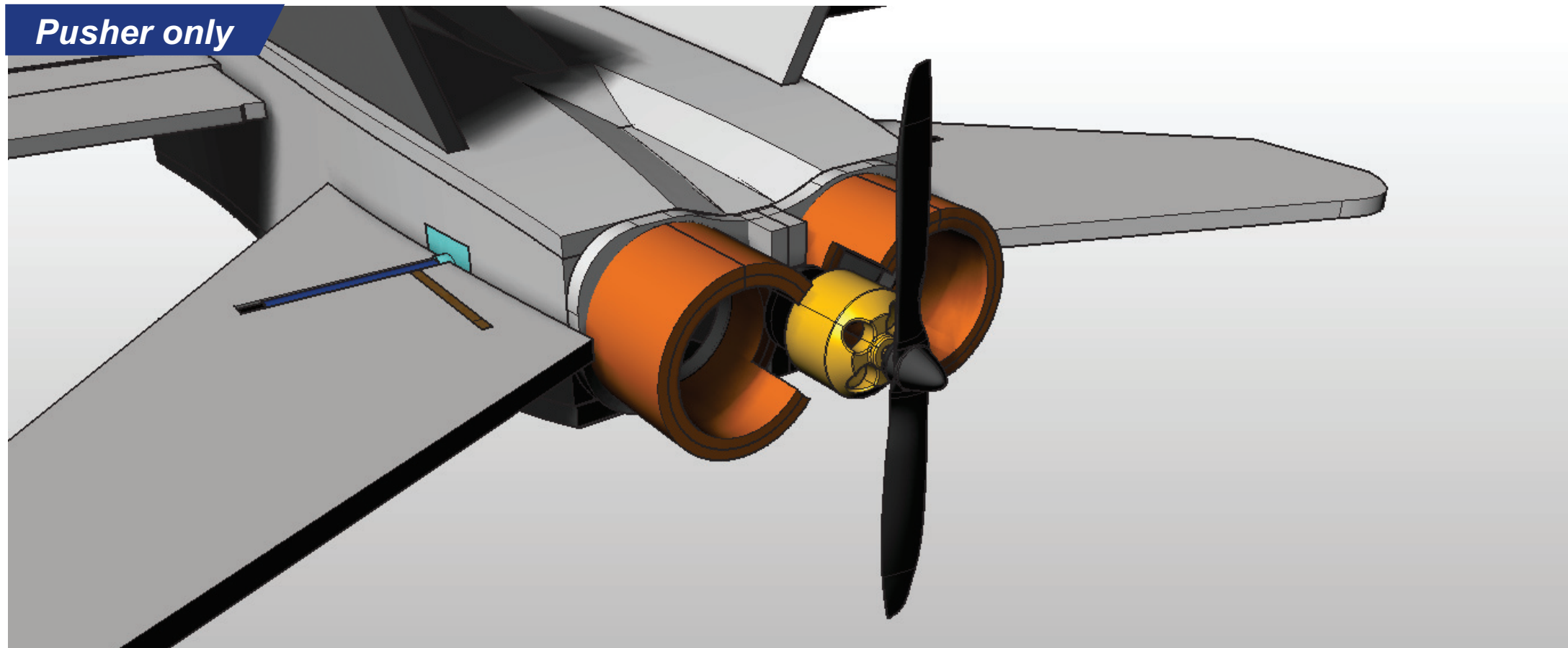
**EDF only**



Using 3mm depron and the forming jigs to make a double skinned exhaust as shown.



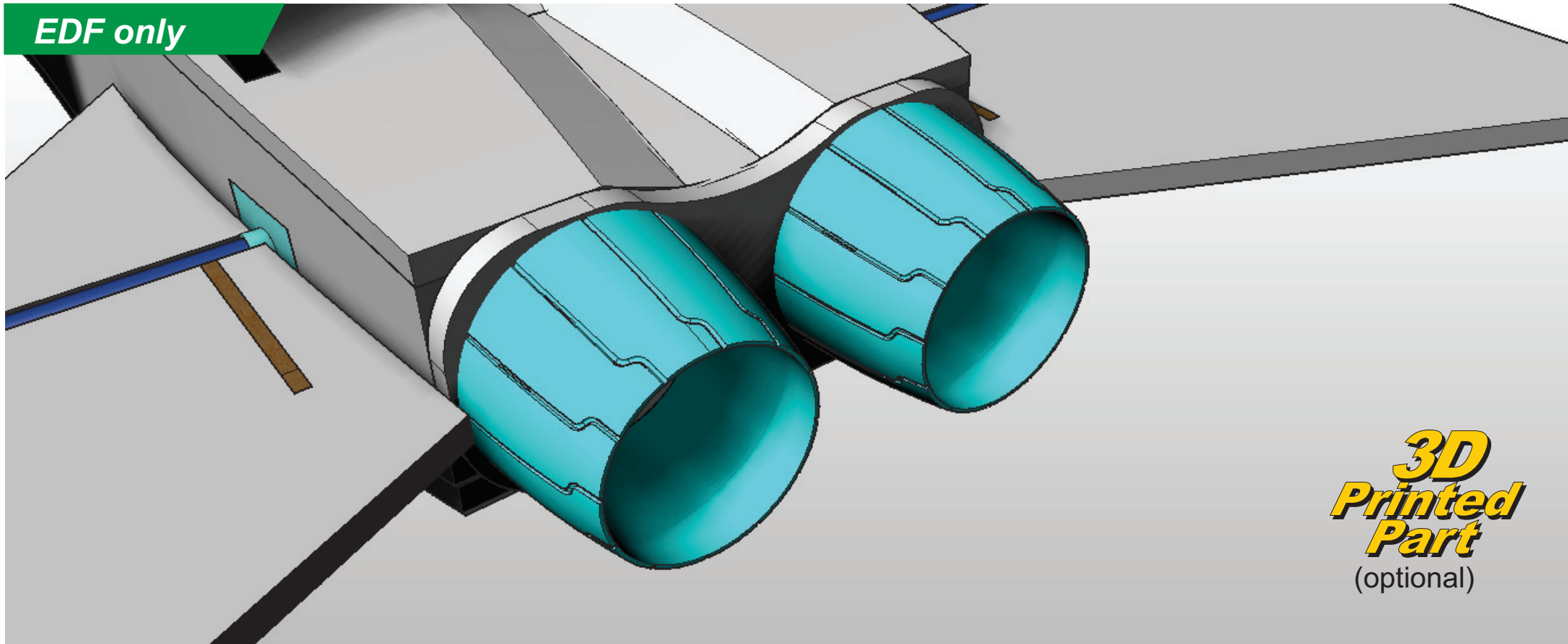
**Pusher only**



Using 3mm depron and the forming jigs to make two double skinned exhausts as shown, then trim away around your motor.



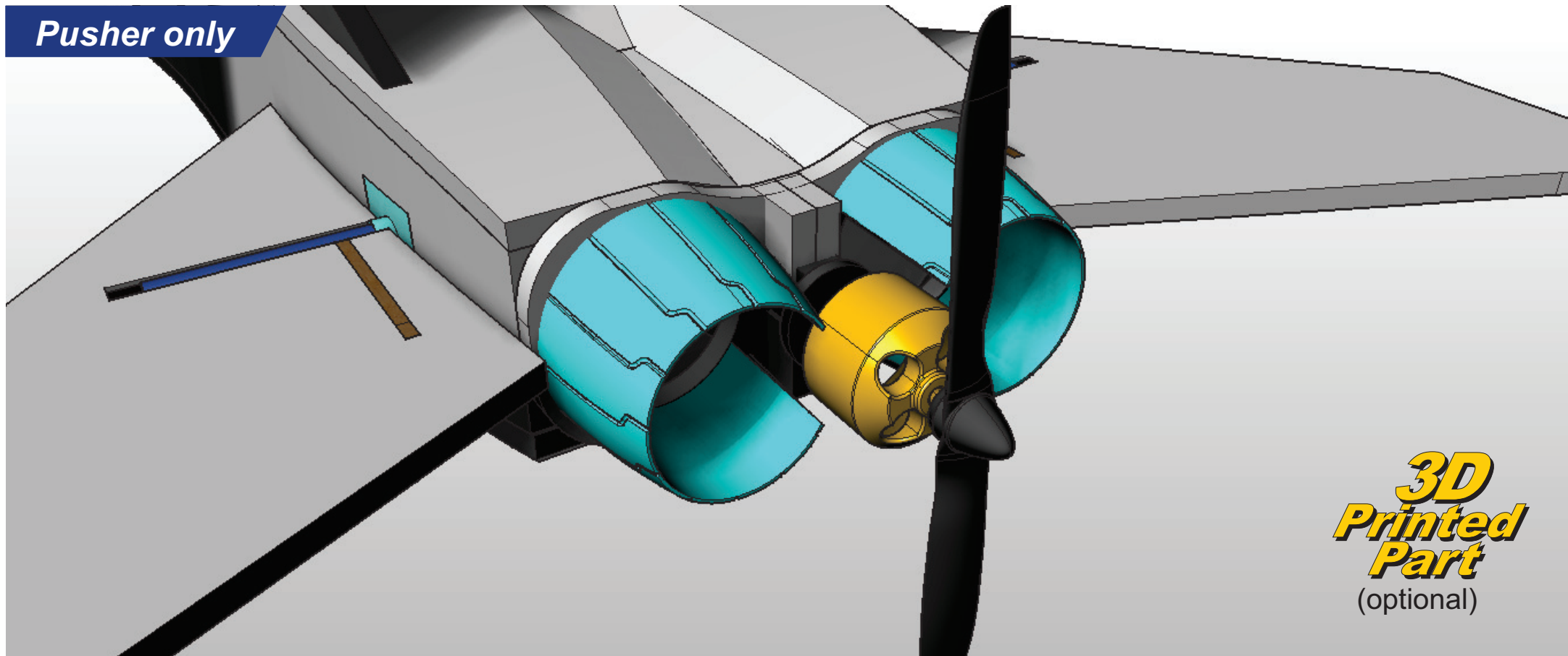
EDF only



If you are using the 3d printed bifurcated duct, then use two 3d printed exhausts as shown.



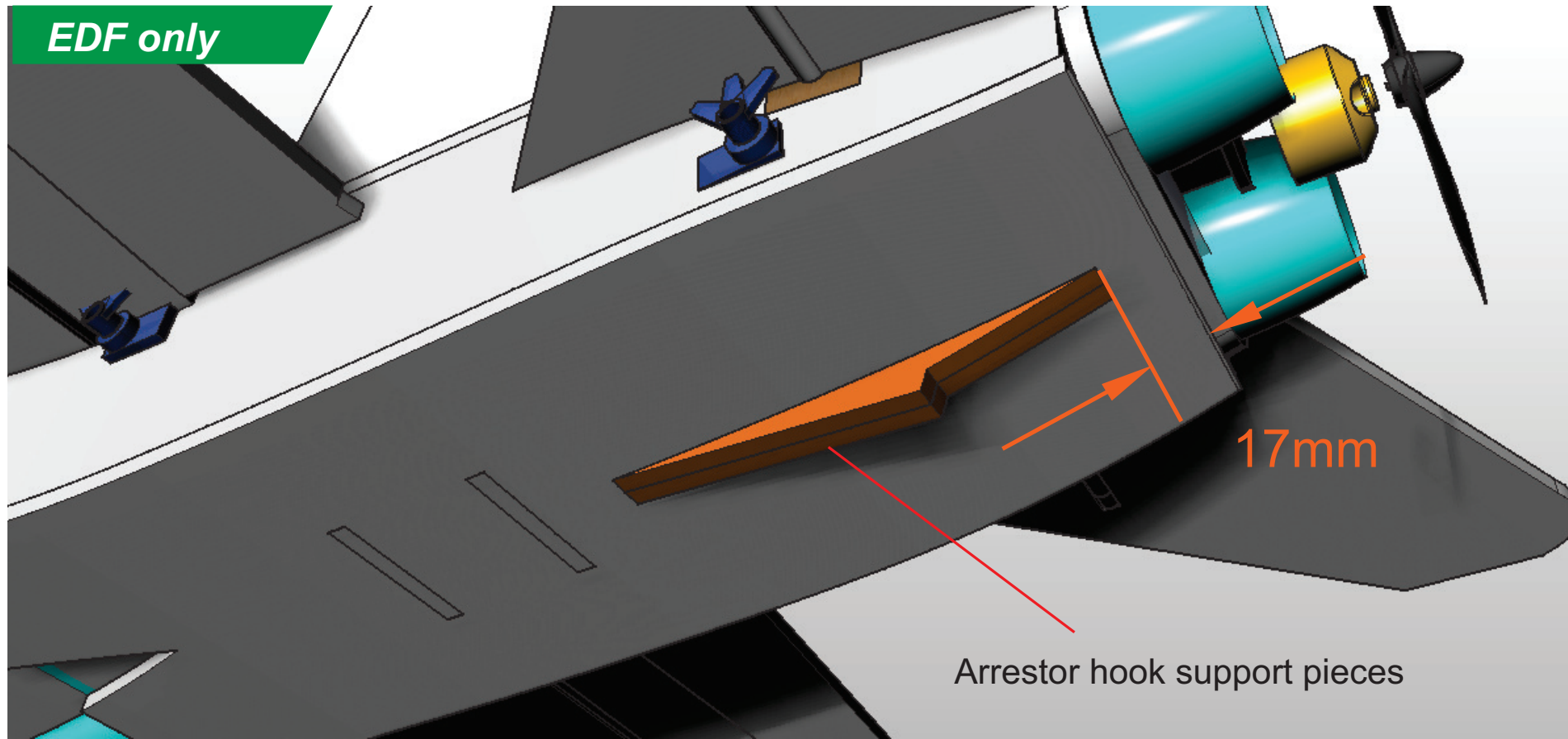
Pusher only



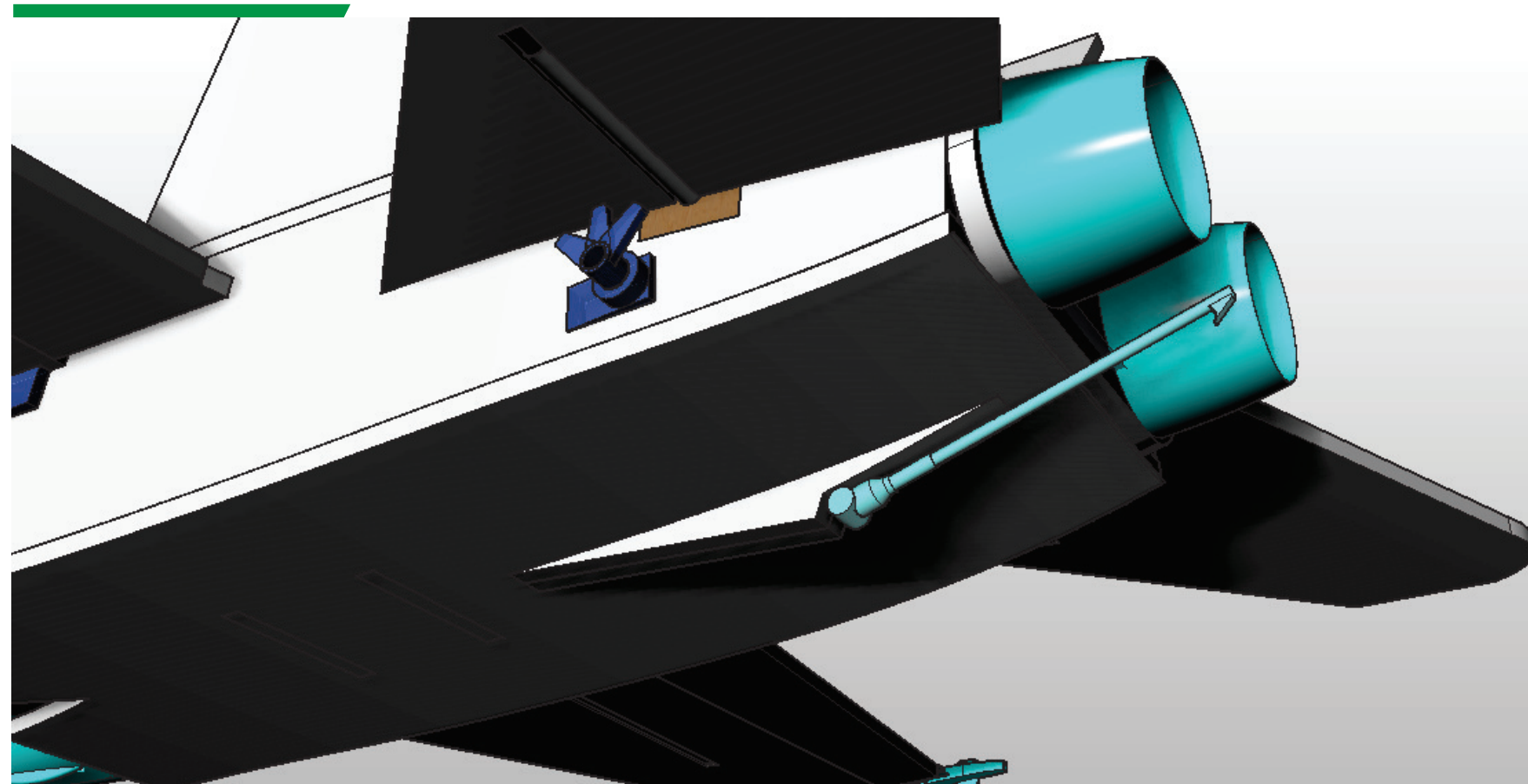
Glue the Pusher variant exhausts to the fuselage as shown.



EDF only



Glue the **Arrestor hook support pieces** together and then onto the underside of the fuselage as shown.

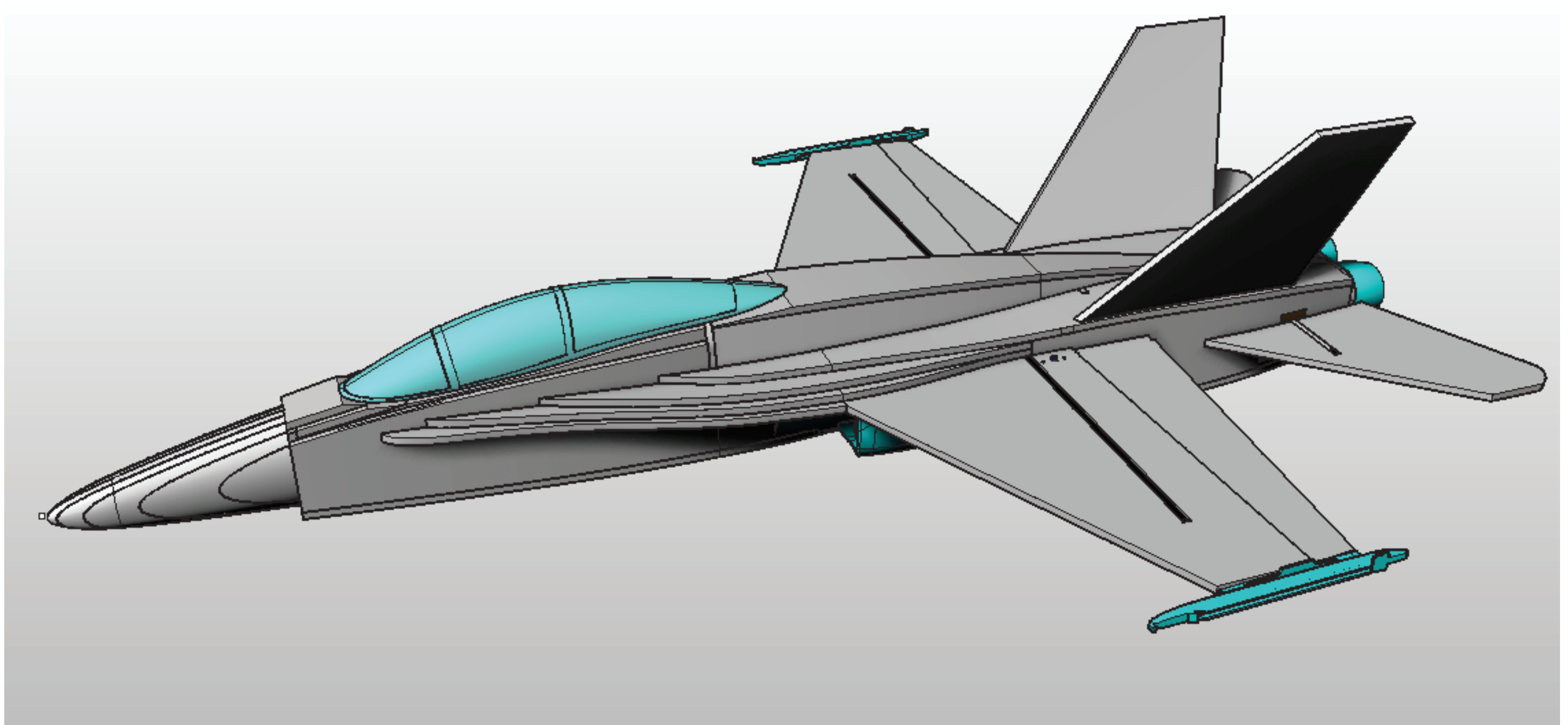


**3D  
Printed  
Part**  
(optional)

Fabricate an arrestor hook using 2x3mm lite ply pieces glued together

Alternatively, print out an arrestor hook using a 3D printer.

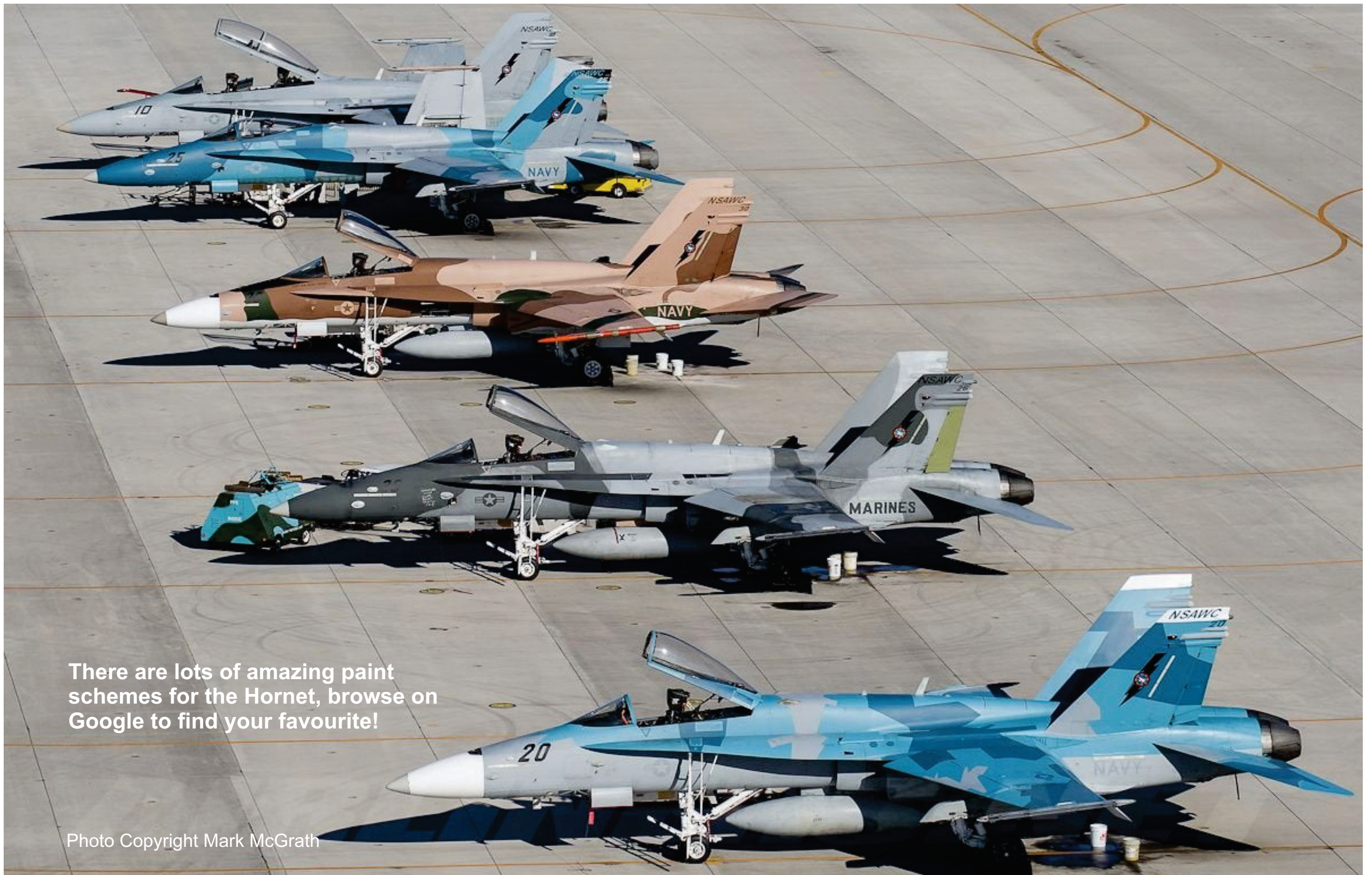




**Congratulations!** Your Hornet is Complete. You can fly it as it is, or you can paint it!







There are lots of amazing paint schemes for the Hornet, browse on Google to find your favourite!

Photo Copyright Mark McGrath

