

NORTH AMERICAN P-51D



1/6.5

wingspan 1740 mm / 68.5"

Edition 3 –2022, september 14

3D Lab GANG project by ADDIMP 3D – 2022

Preamble

This model reproduces the NORTH AMERICAN P-51D for manufacturing in 3D printing. It is your responsibility to manufacture all the parts necessary for the construction of this model.

All files are provided in stl and 3mf format for Cura 4.8 and above. These 3mf files are readable with PrusaSlicer 2.4 minimum, a range of the main settings are attached to adapt the settings to your slicer and printer.

No g-code files are provided.

This model is not for beginners, while still being easy to print and build, it still requires some familiarity with traditional building and 3D printing.

Skill construction		Experience building wood, fiber or 3D printed kits required
Pilot level		Experience piloting 3-axis aircraft like aerobatic

Characteristics

- Scale ~ 1:6.5
- Length : 1510 mm / 59.45"
- Wingspan : 1740 mm / 68.5"
- Wing surface: 53.7 dm² / 5.7 square feet
- Weight of printed parts, regular PLA : 3.0 kg / 6.6 lbs, usable materials: PLA, LW-PLA, Greentec Pro CF, nGen CF. PETG is not recommended, too brittle and too heavy.
- Gross weight in flight 4.8 kg / 8.8 lbs
- Max weight 5.3 kg / 11 lbs
- Wing loading : 90 g/dm² / ~3 oz/ft²

History of this document

Version	Date	Comment
1	Aout 2022	Version originale
2	September 02, 2022	Added F3 compatible LW-PLA (page 8) Corrected assembly order (page 14) Added wing nuts position (page 20) Added LW-PLA battery hatch print parameters (page 38) Modified exhausts (page 40 and 41) Added motor support fixing (page 63) Added battery hatch assembly (page 64 & 65) Added use of Ø3mm holes in W1L (page 85) Added tailwheel assembly (page 89)
3	September 14, 2022	Modified F4A & F5A to facilitate cockpit layout Modified F6 & F7 to accommodate news tailwheels Modified F8 for tailwheel control by rudder Added JinPin retractable main gear adapter Added Freewing wheel adapter Modified W3L/R A for external load pylon (addon to come)

The P-51 Mustang is an American fighter of the Second World War designed by the design office of North American Aviation.

In 1940, while the RAF was looking to buy P-40s from Curtiss in the United States, the factories were already at production limits.

Since North American Aviation was already a supplier to the RAF with its NA-16 training aircraft, they were asked to produce P-40s under licence.

North American Aviation tries to convince the British that it can create a more efficient fighter, with the same engine, in the same time as for the production of the P-40. In April 1940, the British accepted the proposal on the condition that the prototype be ready within four months.

Born then the NA-73. Its revolutionary aerodynamics allow it to perform well at low altitude, but its inefficient Allison V-1710 engine restricts it in its role as an air superiority fighter.

Thanks to their method of systematic testing, the British installed the RR Merlin engine. This transplant transforms the aircraft which becomes the main escort aircraft to accompany the bombers over Germany.

To reduce design time and simplify production, the NAA design office is trying to reuse many elements of the T-6 Texan. However, the wing benefits from the new NACA 45-100 wing profile with laminar flow and a propulsive effect fuselage radiator, developed by Curtiss.

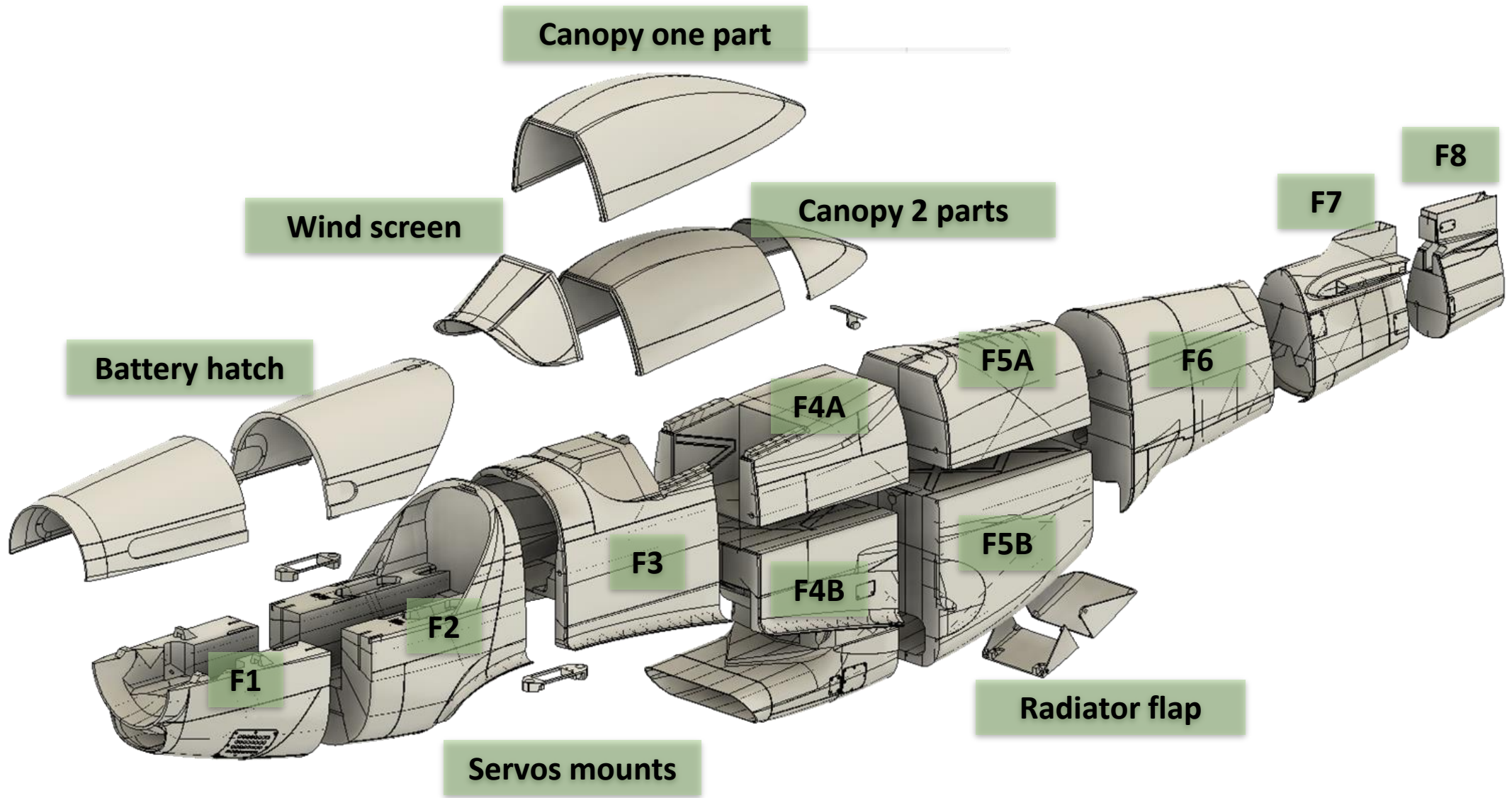
In May 1940, the contract was signed for the NA-73X, followed by another for three hundred and twenty planes. The prototype made its first flight on October 26, 1940.

In 1944, the P-51D was the backbone of the US Air Force on the European Western Front. It is the second most produced American fighter of World War II, with 15,586 produced, behind the Republic P-47 Thunderbolt and ahead of the Curtiss P-40 Warhawk.

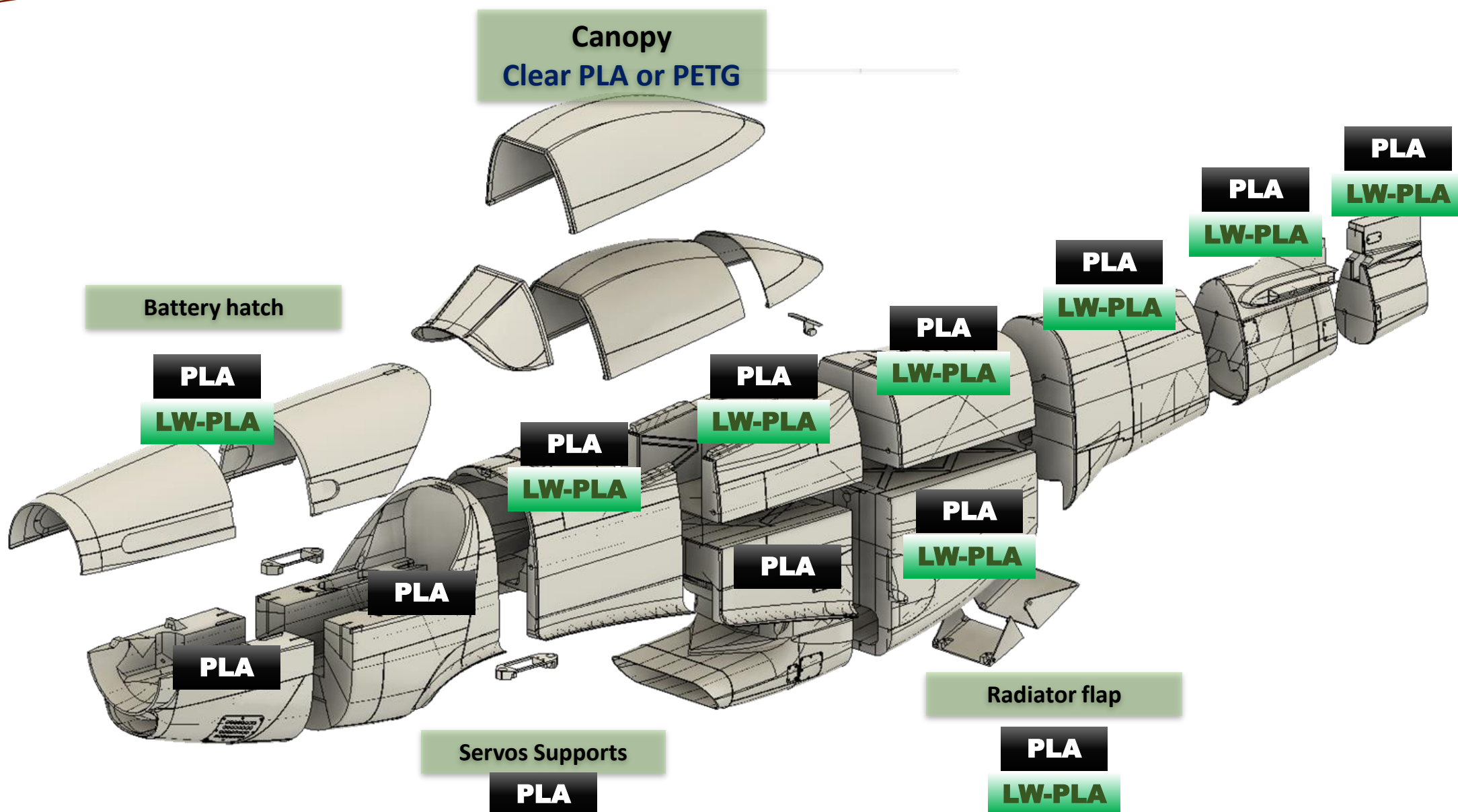
- Brushless 1800 W with 6S, 300 to 600 kV + ESC adapted to the engine. The powerplant and the retracts of the P-51D FMS 1700mm are used on the prototype.
- Battery LiPo 6S - 3500 mA minimum, dimensions maxi : L 160 x l 54 x h 60 mm
- ⇒ Pay attention to the connectors between the ESC and the battery.
- It is possible to use motorization sets in 8S. This type of sports engine is intended for experienced modellers and will not be the subject of any particular recommendation..
- Accessories
 - *1 servo 3 to 5 kg for elevator*
 - *1 servo 3 to 5 kg for rudder*
 - *1 servo 2 to 3 kg by aileron (2)*
 - *1 servo 6 to 9 kg by flap (2)*
 - 2 screws M6x60 + nylon nuts M6 for wing fixture to the fuselage
 - 2x steel wires Ø1.5 mm for elevator and rudder
 - Ailerons ; steel wire Ø 1.5 or clevises + threaded rod M2 or printed parts with M2 screws and nuts
 - Tube or Rod Ø3mm carbon or aluminium for the axis of the moving parts
 - Glue CA medium
 - 1x strap length 250 mm for the battery
 - Servos cables extension, 2x length 450 mm minimum for the ailerons. Cables « Y » and cables length 150mm for the others.
 - 4 carbon tubes Ø3 mm x 750 mm for the wings
 - 1 carbon tube Ø3 mm x 200 mm for the horizontal stabilisateur
 - 1 tube carbon or aluminium Ø18mm x 500mm as main reinfort for the wing
 - Self tapping screws Ø3 x 20 et Ø3 x 25 (retracts and motor mount)

P-51 D Mustang

Fuselage

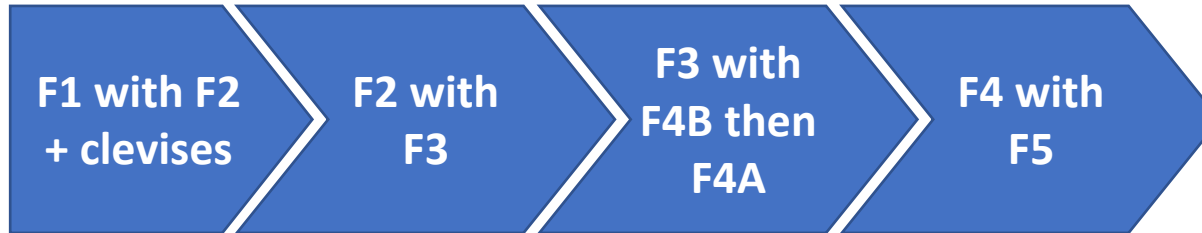


ADDIMP 3D



- For each section, check the openings of the control ducts. A Ø2mm rod must slide freely.
- Before each gluing, carry out a blank assembly and adjust if necessary.
- Particular attention must be paid to the assembly of sections F3 to F6. Offset fittings are used to promote rigidity. Be careful not to introduce over-length.

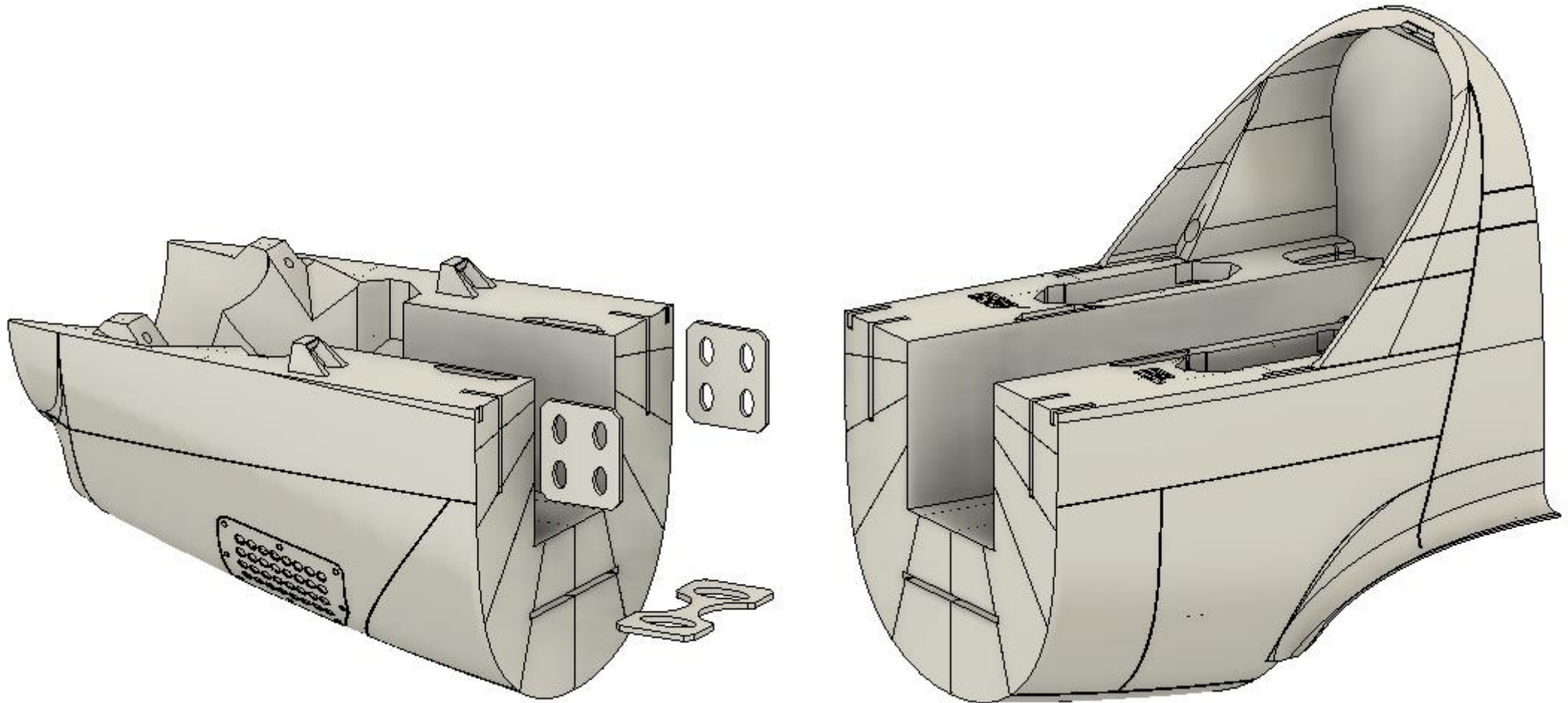
Assembly order



ASSEMBLY ORDER

1

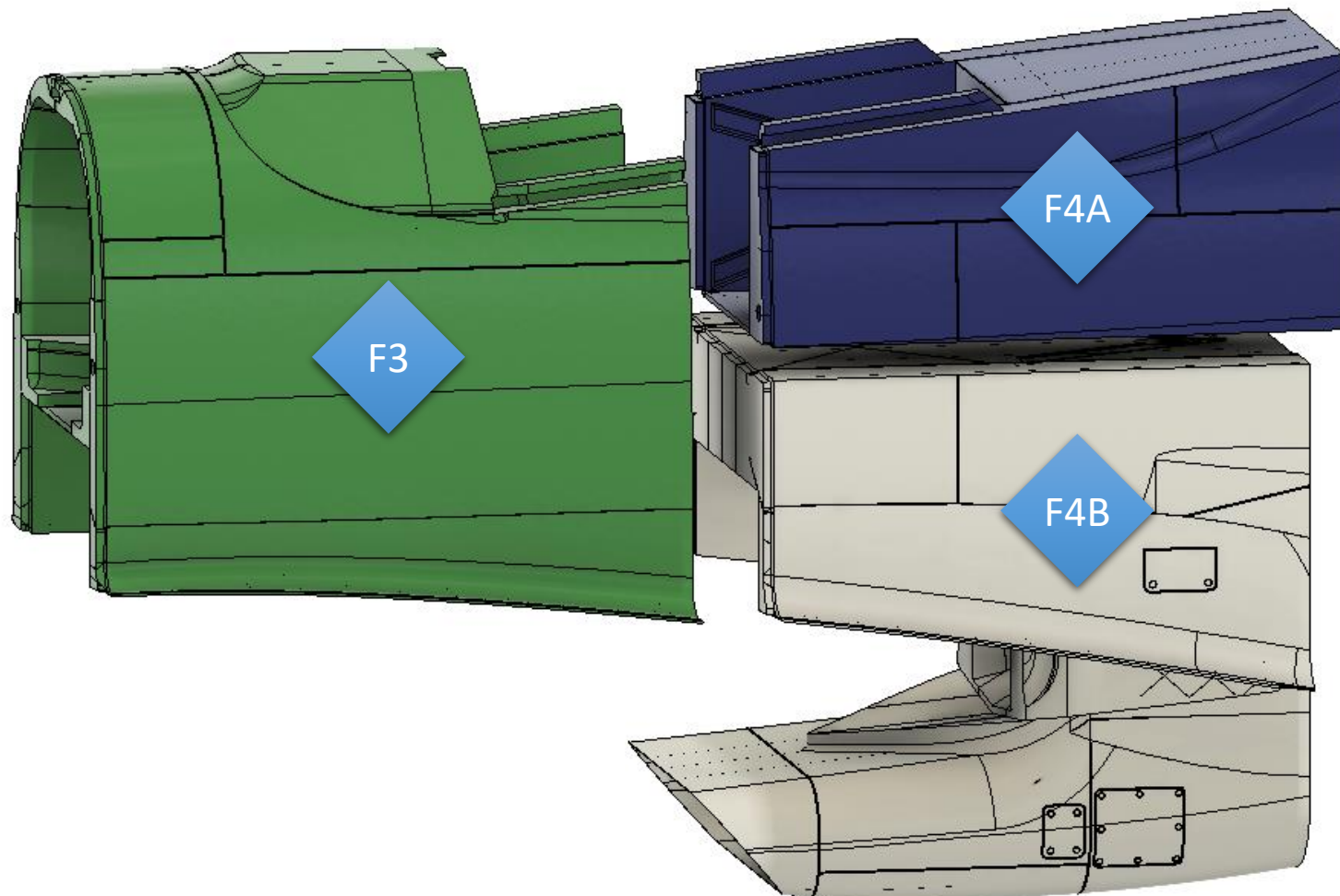
Glue F1 with F2 using splints



ASSEMBLY ORDER

2

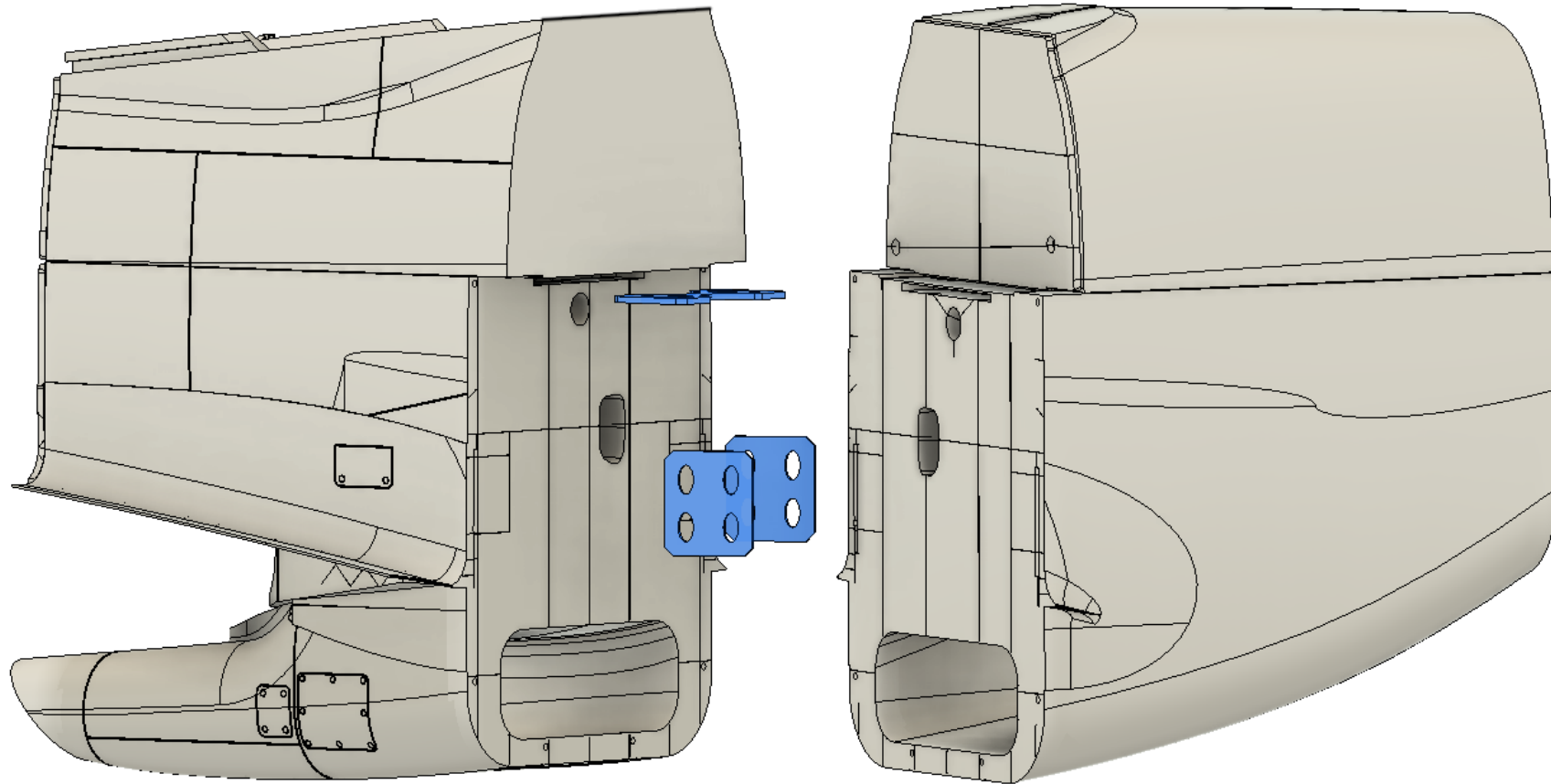
Glue F3 with F4B then F4A. Use the latter as a template when gluing.



ASSEMBLY ORDER

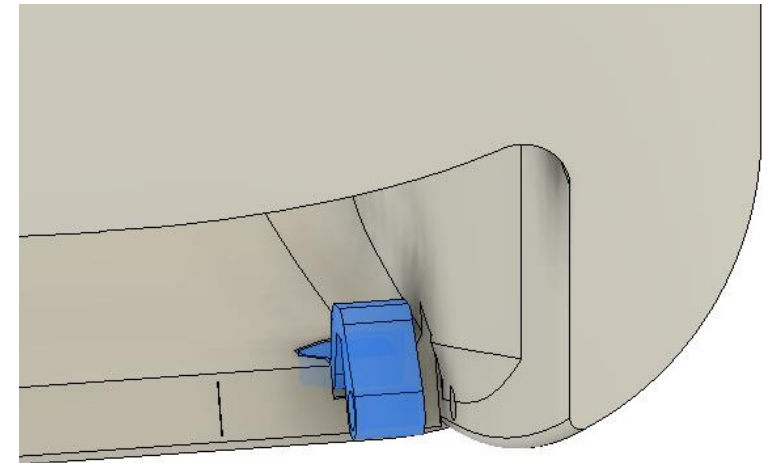
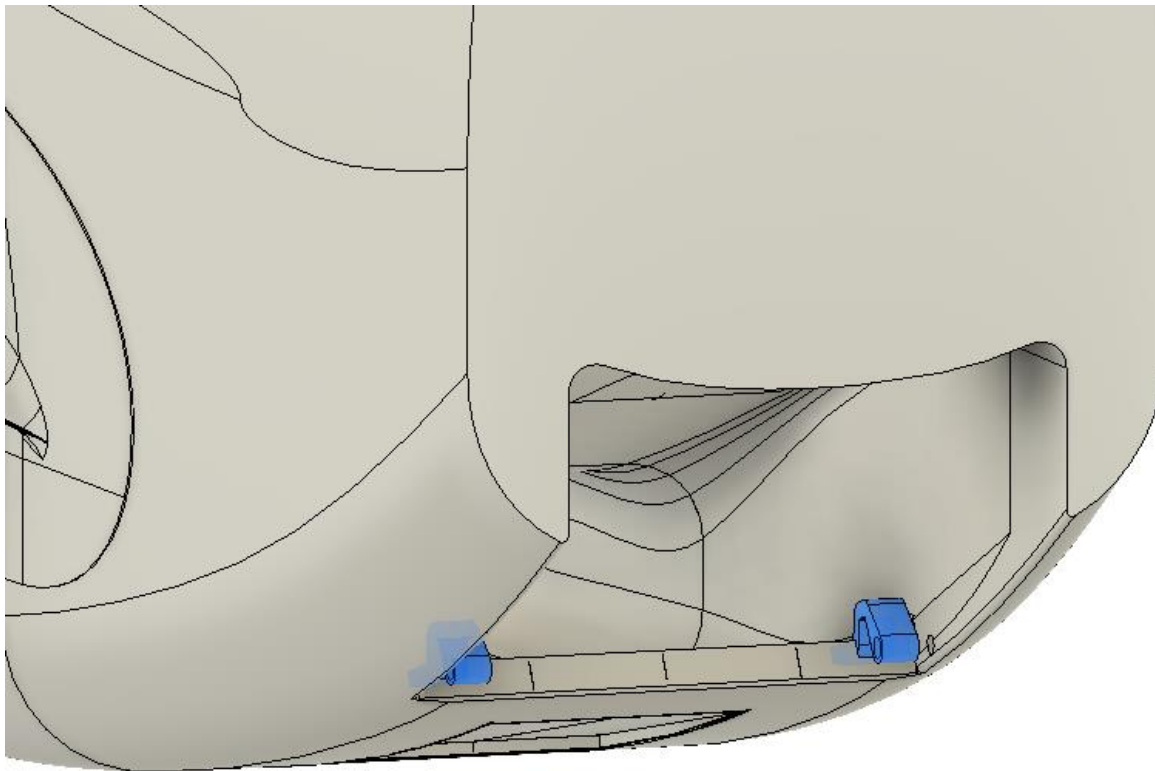
3

- Glue both F4 together
- Glue both F5 together
- Glue the F4 assembly with the F5 assembly using the splints



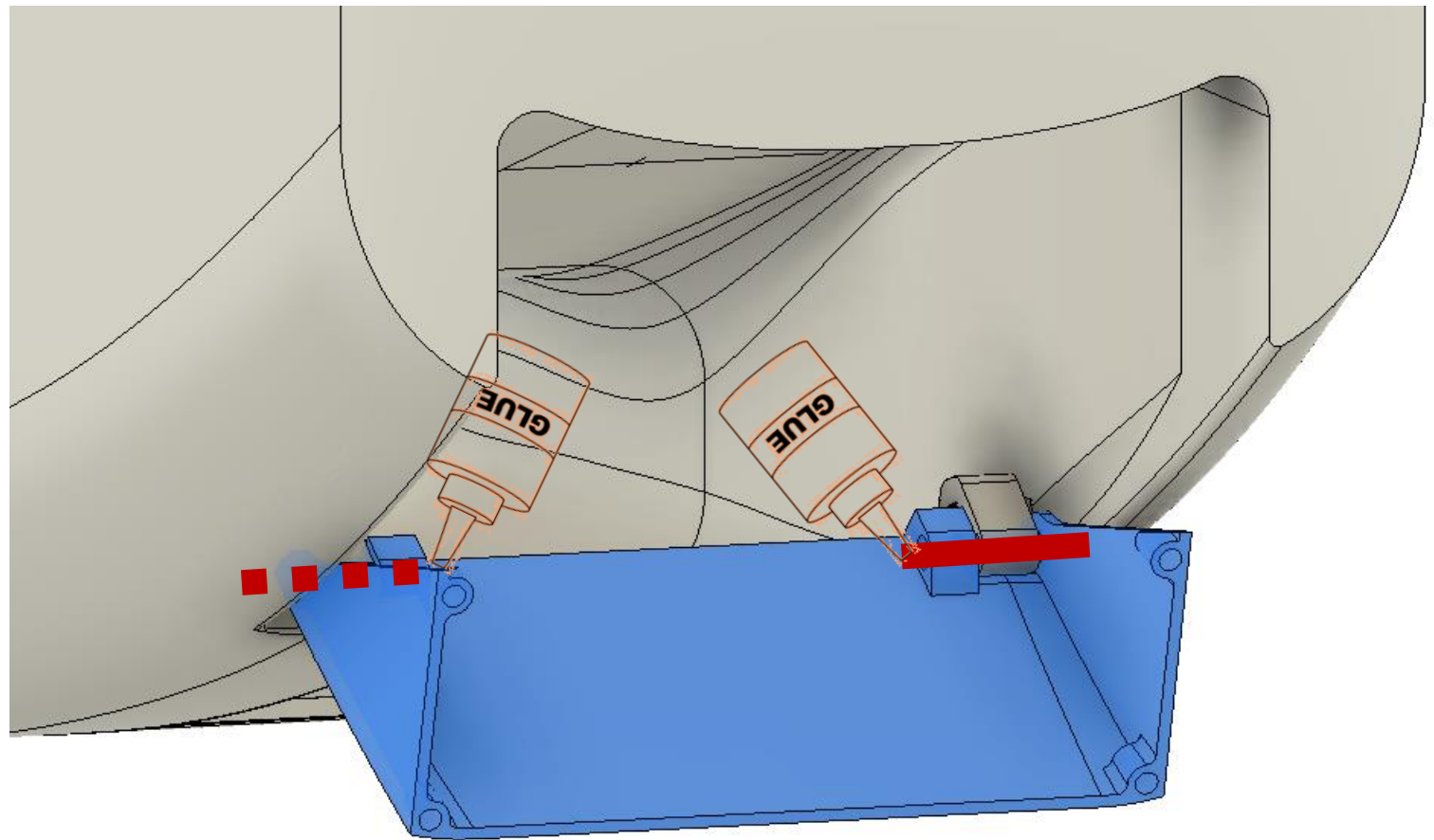
4

Glue both hinges for the radiator flap with F5



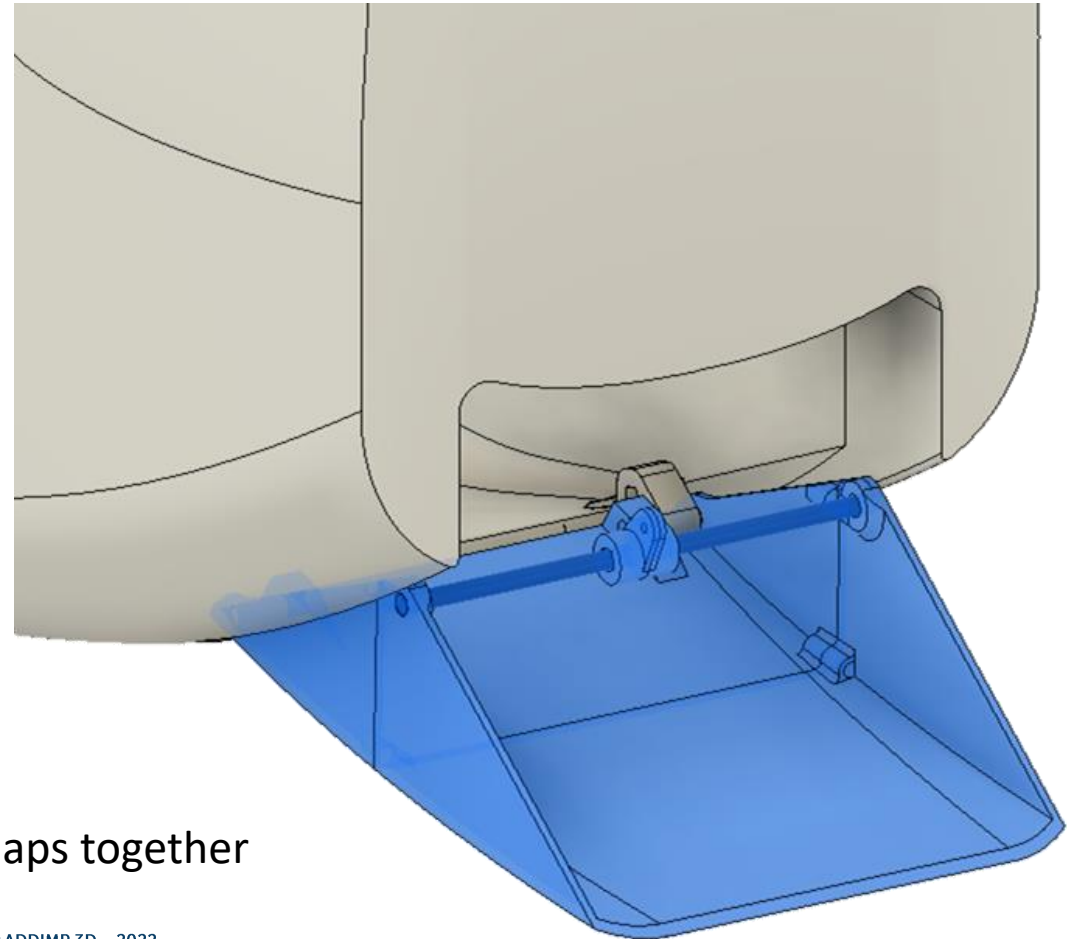
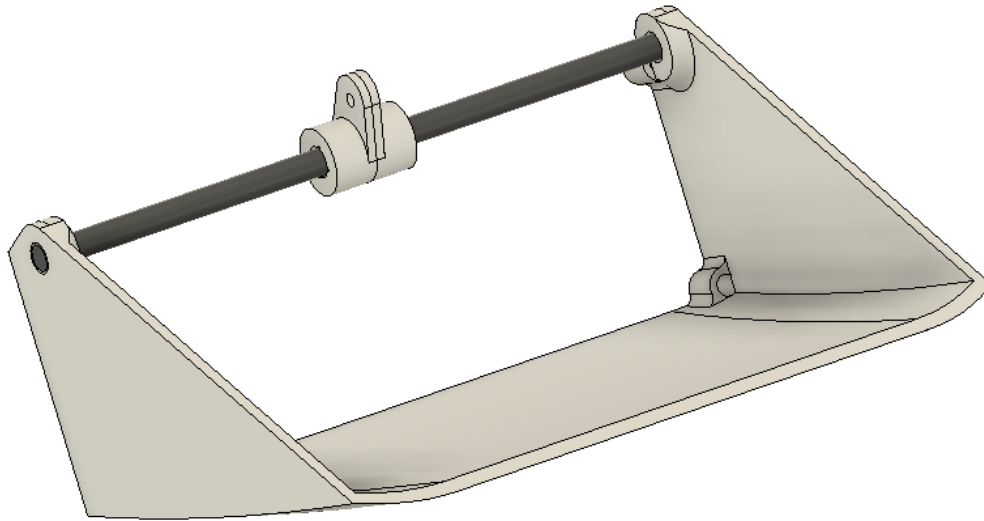
5

Assemble the front part of the flap with 2 x Ø3mm axles (round wood or carbon).
The axles are glued in the flap



6

Assemble, without glue, the two horns on a carbon or wood rod $\varnothing 3 \times 80$.
Glue the rod on the flap.

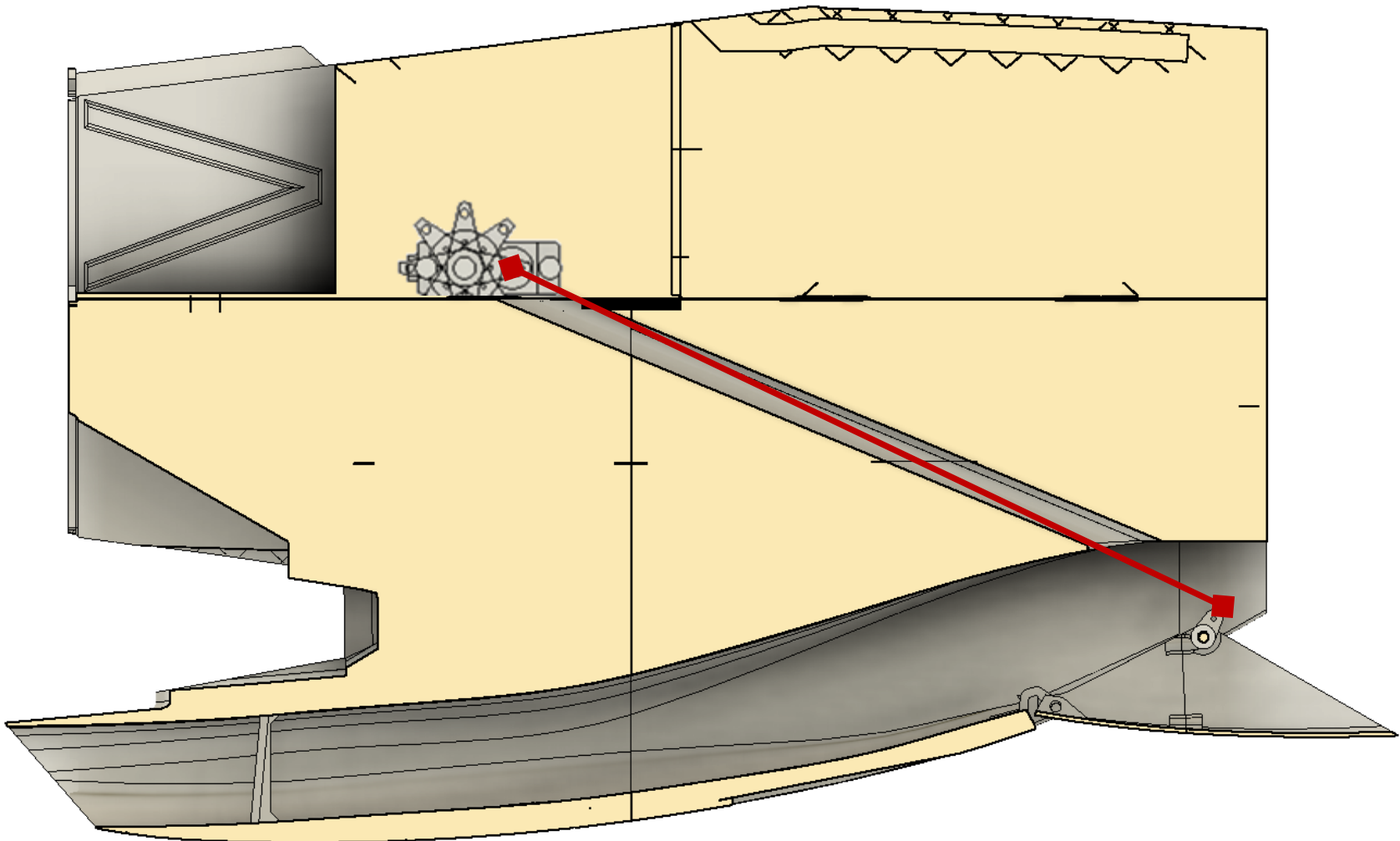


Glue both flaps together

7

Realize flexible control between servo and flap horn.

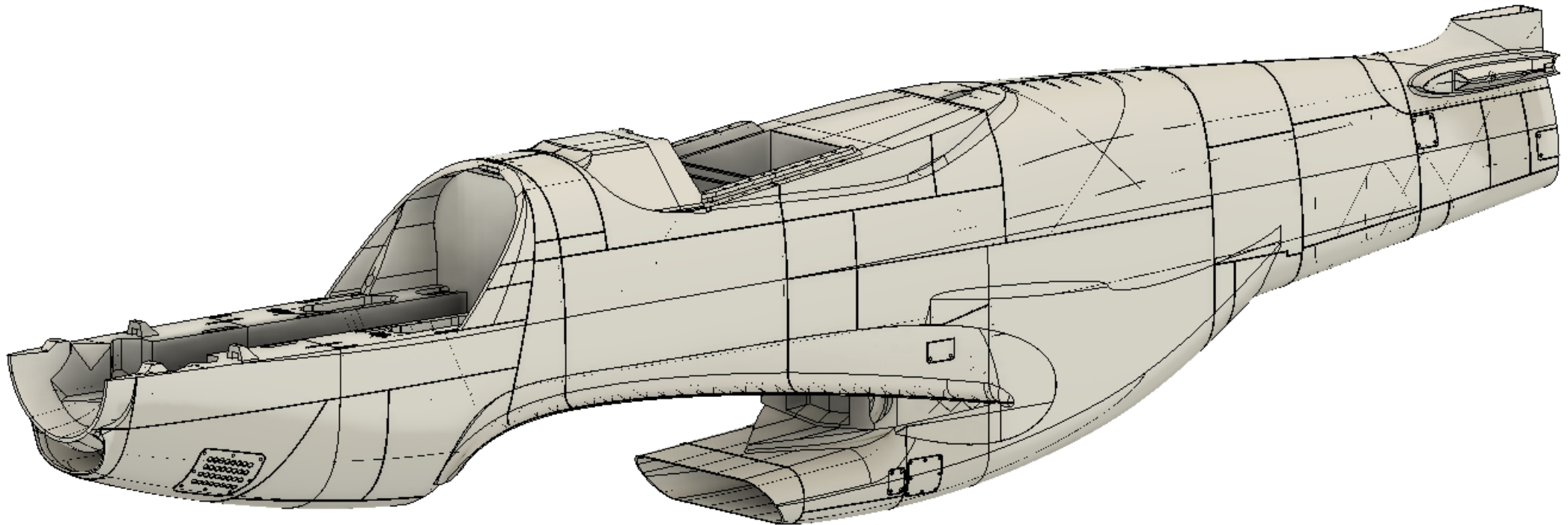
Once the command has been made and the servo travel has been adjusted, glue the horn on the rod.



ASSEMBLY ORDER

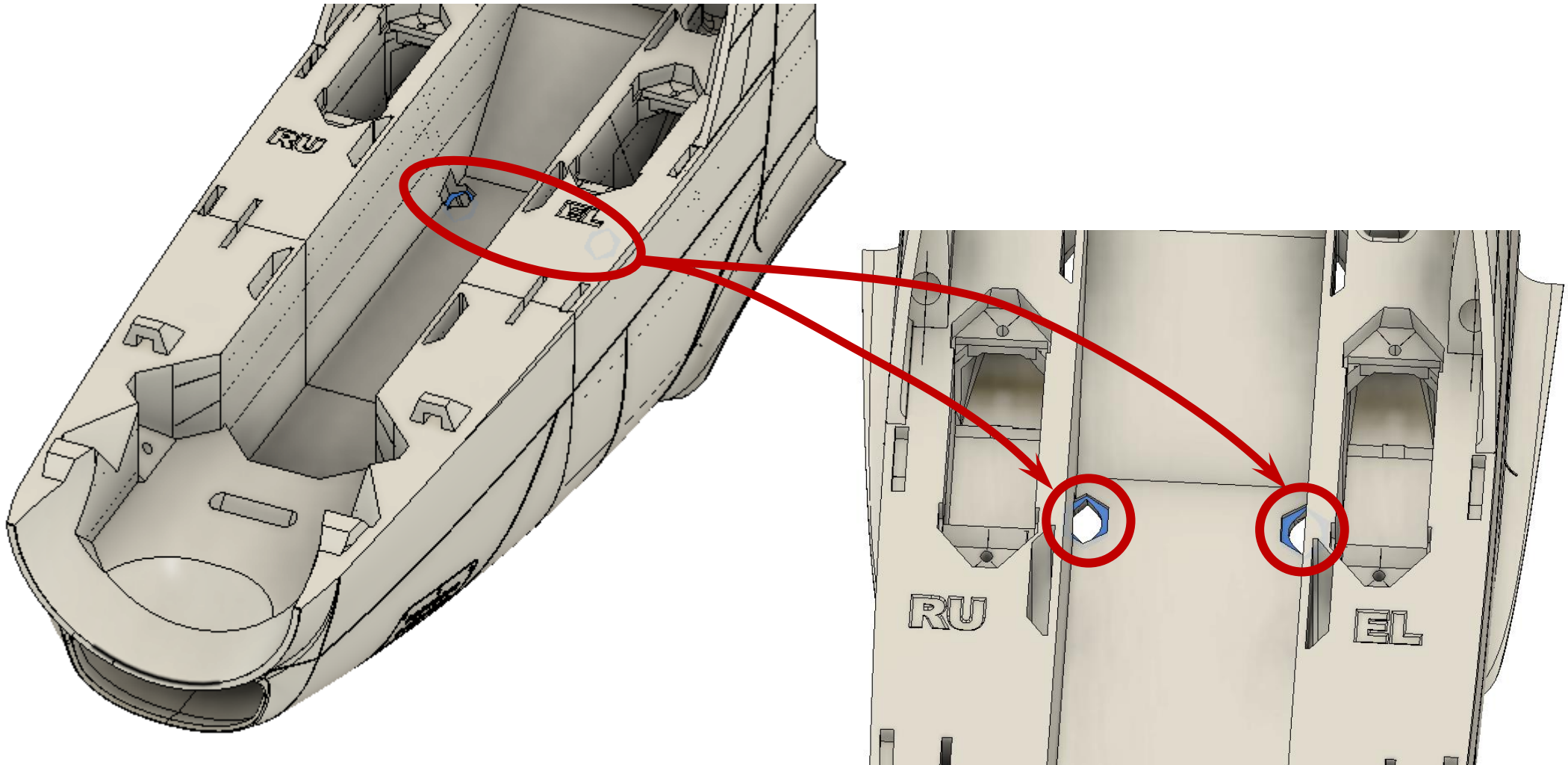
8

Assemble all the sections up to F7, then move on to assembling the horizontal stabilizer



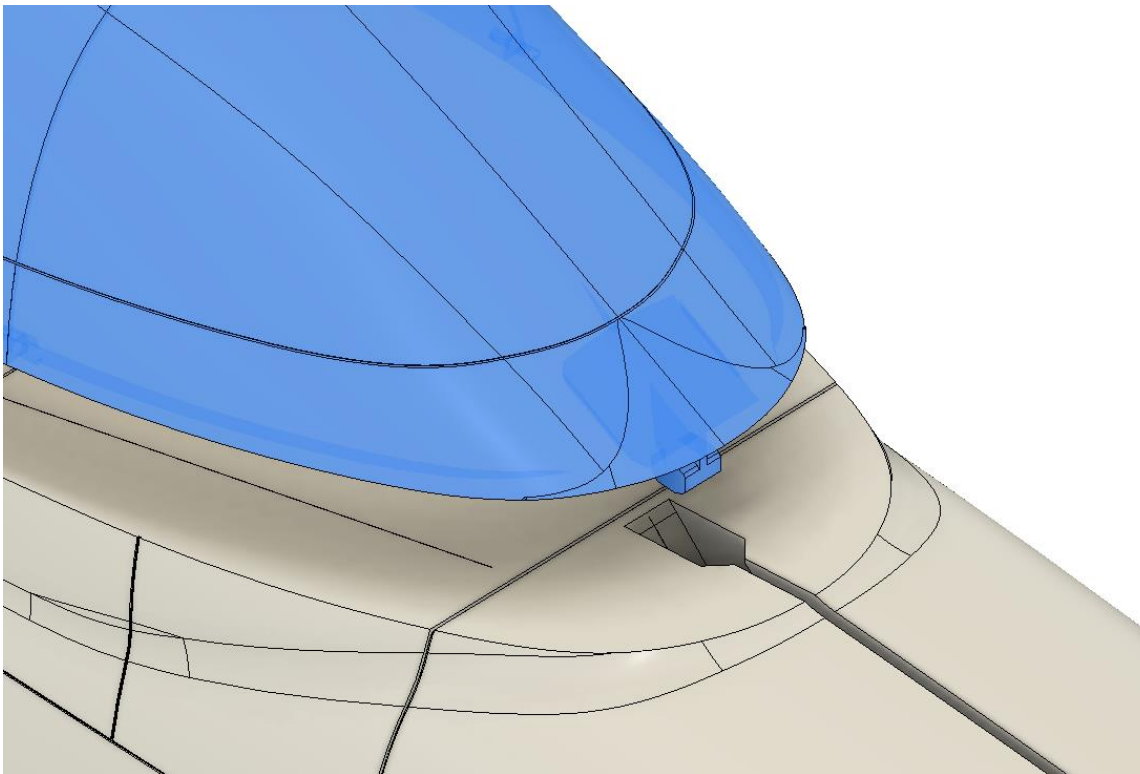
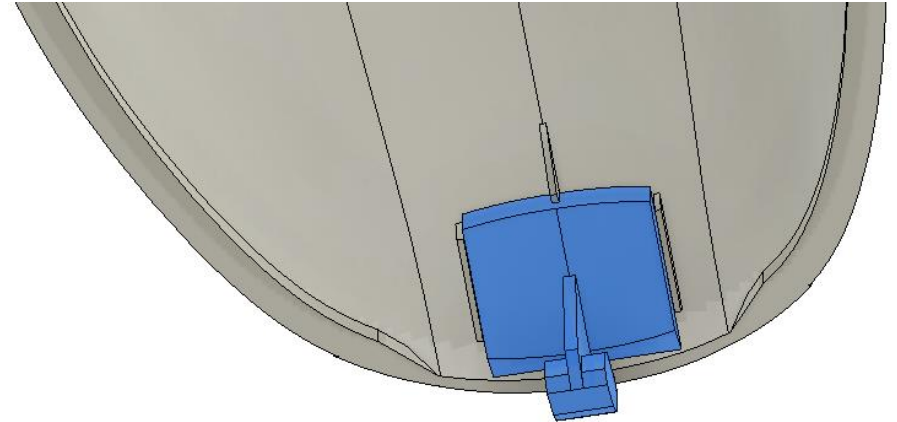
ORDRE D'ASSEMBLAGE

Housings for the wing's nuts, in F2.
2 nylon nuts M6



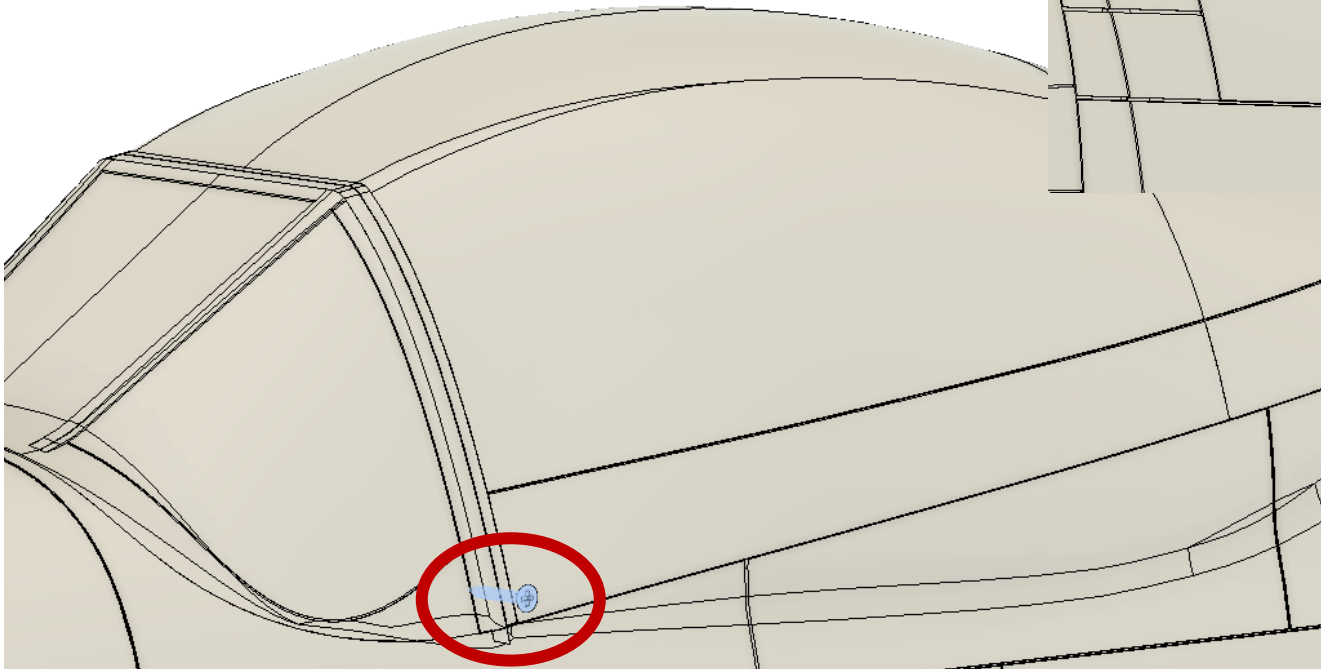
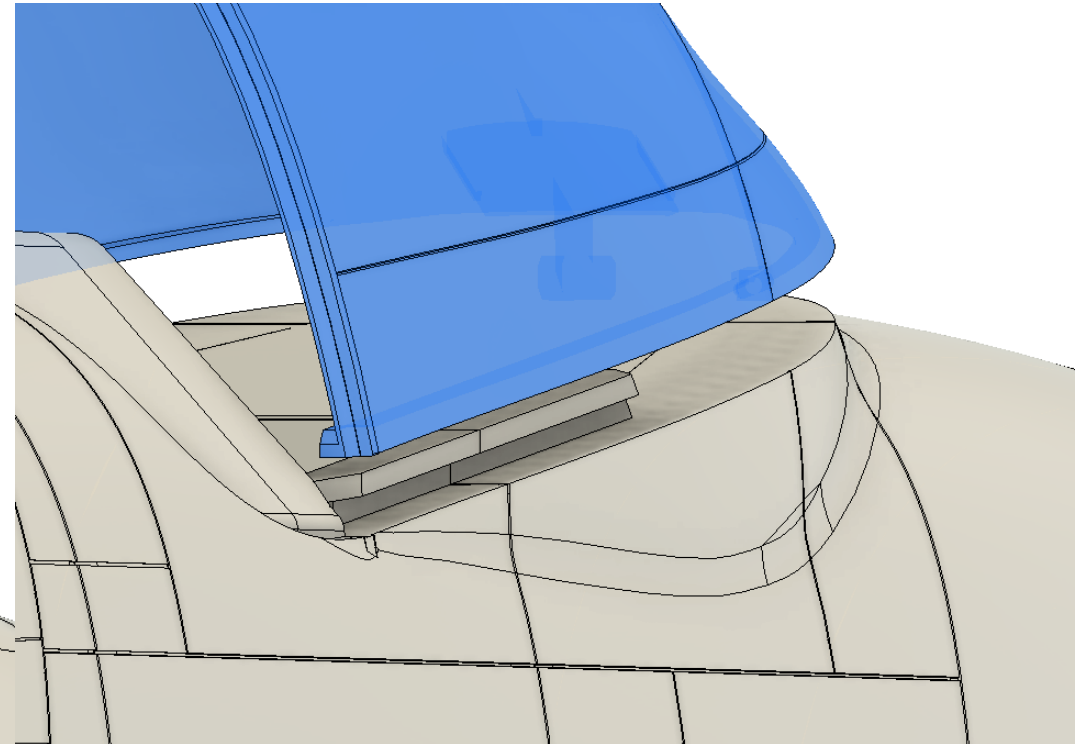
CANOPY ASSEMBLY

1- The clip is glued under the back part, between the ribs



2- The clip is engaged in the fuselage rail

3- engage the canopy guide in the side rail of the fuselage (deformation)

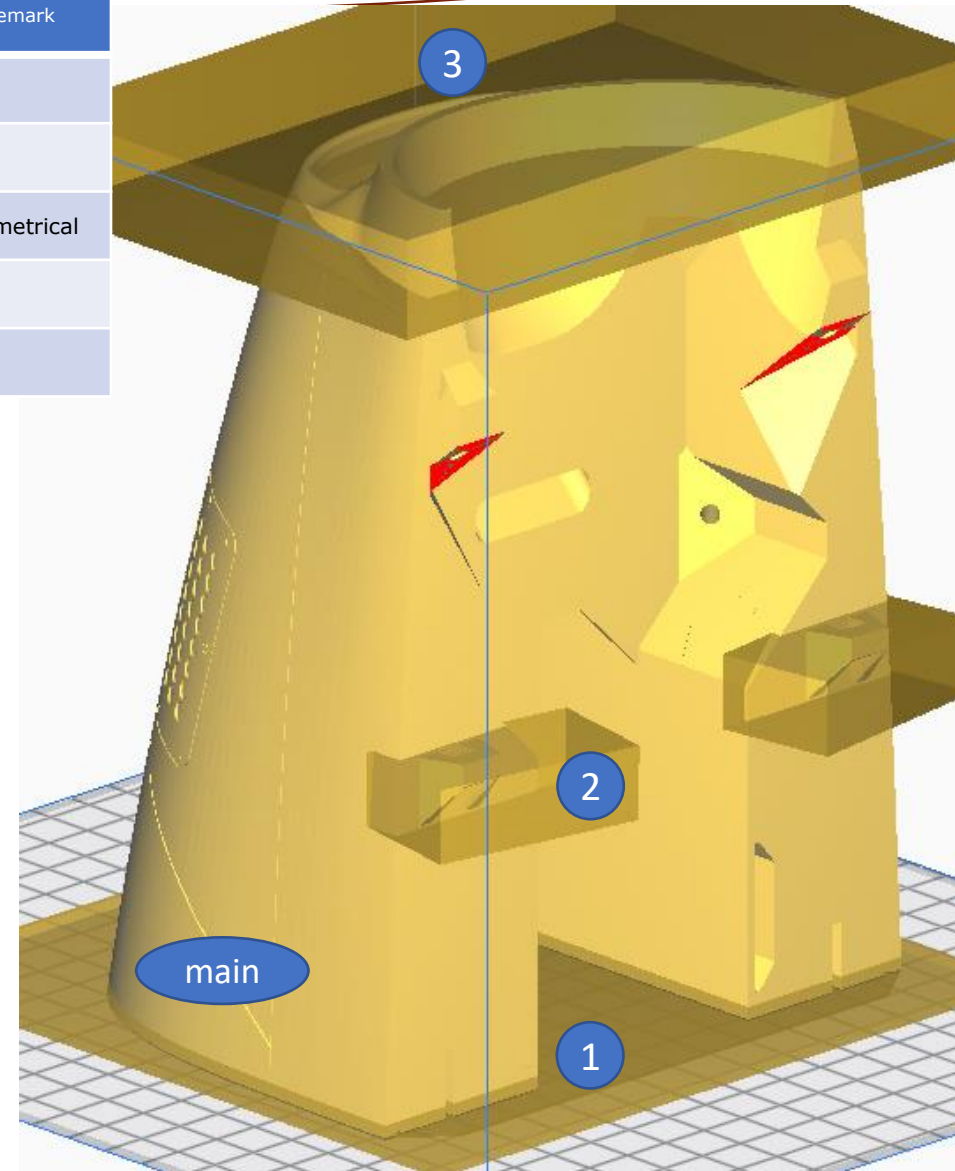


4- if necessary, secure the canopy with 2 screws 2.5x16 (one on each side)

ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
1	0.42	0.25	3	0	2.7	0	0	0	104	
main	0.42	0.25	1	-	-	0	0	0		
2	0.42	0.25	2	60.2	75.2	2	0	10		Symmetrical
3	0.42	0.25	2	166.2	-	5	0	5		

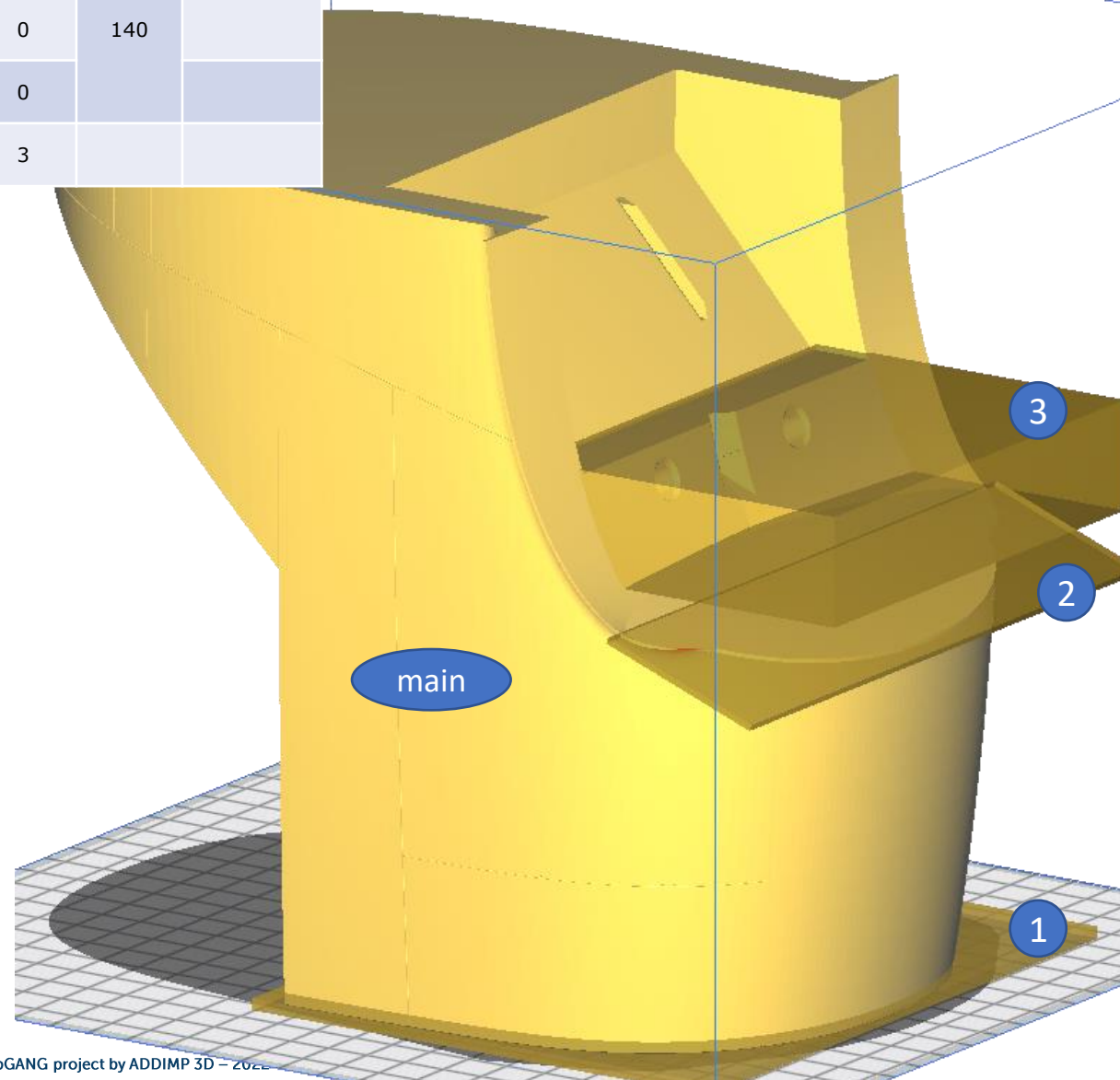
P-51D – 1/6.5
F1



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
1	0.42	0.25	3	0	2.7	0	0	0	140	
main	0.42	0.25	1	-	-	0	0	0		
2	0.42	0.25	2	-	-	2	0	0		
3	0.42	0.25	2	104.2	129.2	0	0	3		

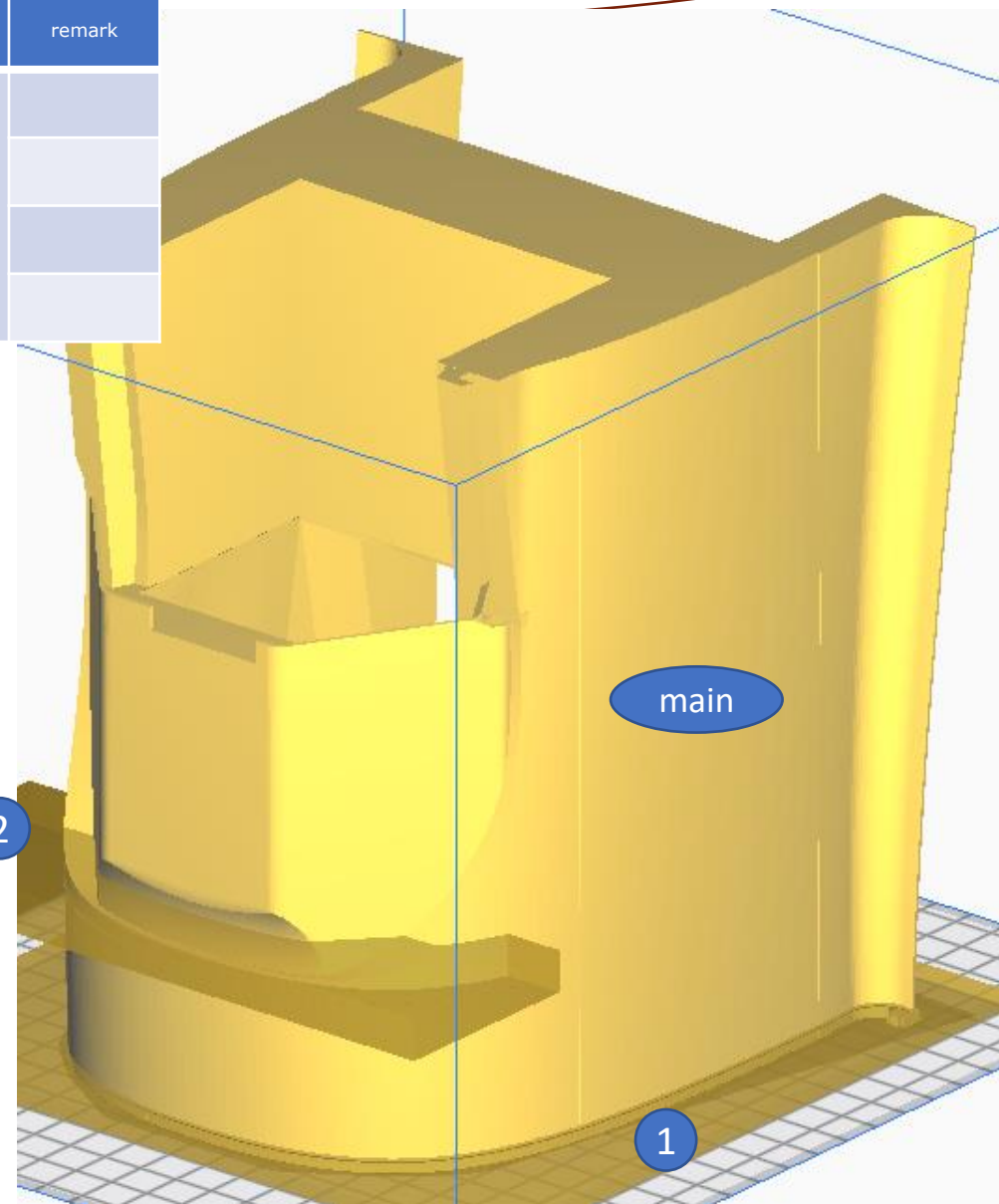
P-51D – 1/6.5
F2



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
1	0.42	0.25	3	0	3.95	0	0	0	123	
main	0.42	0.25	1	-	-	0	0	0		
2	0.42	0.25	2	44.45	54.45	0	0	0		

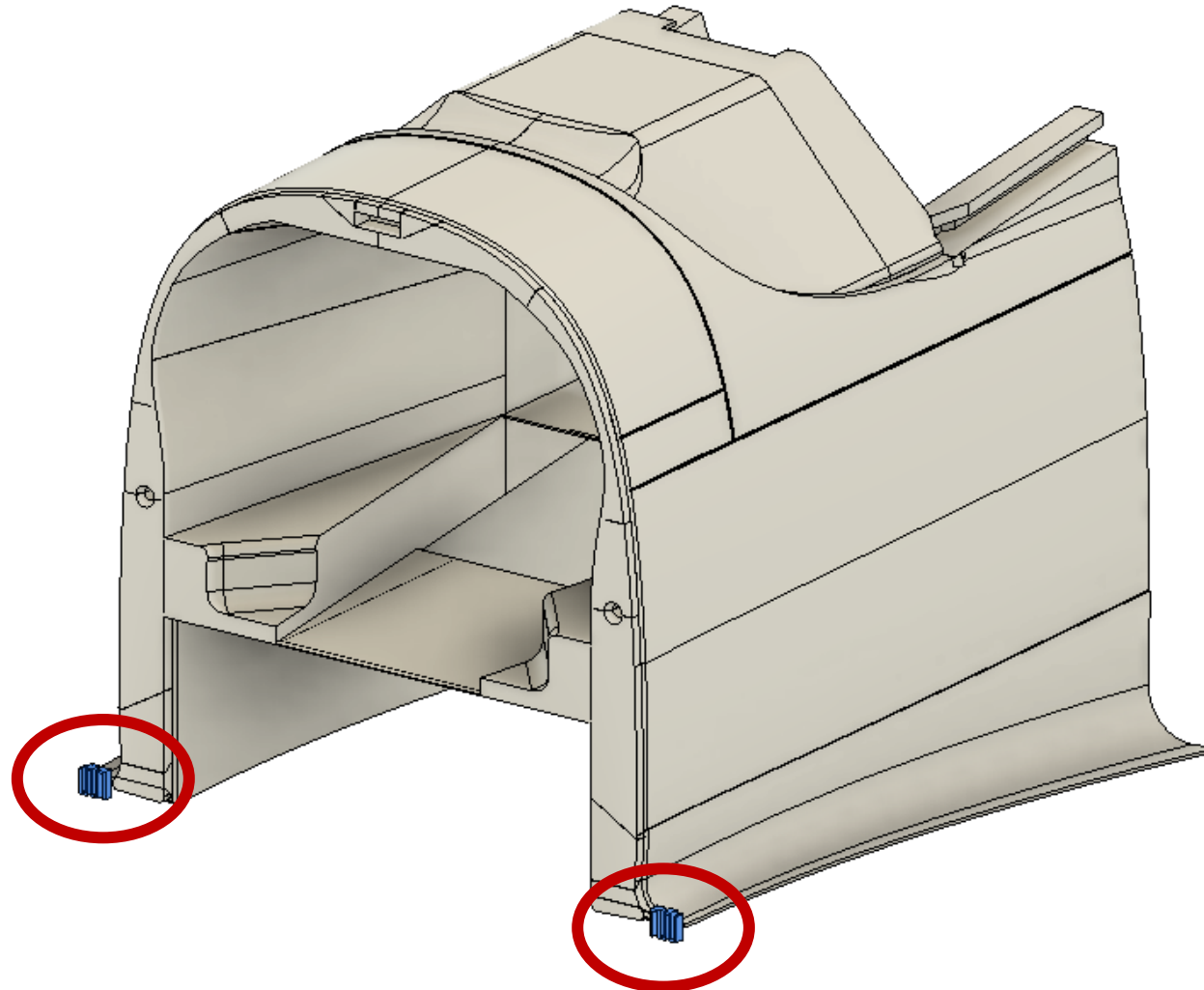
P-51D – 1/6.5
F3



PREPARATION

F3

Remove print supports.



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
1	0.42	0.25	3	0	3.95	0	0	0	73	
main	0.42	0.25	1	-	-	0	0	0		

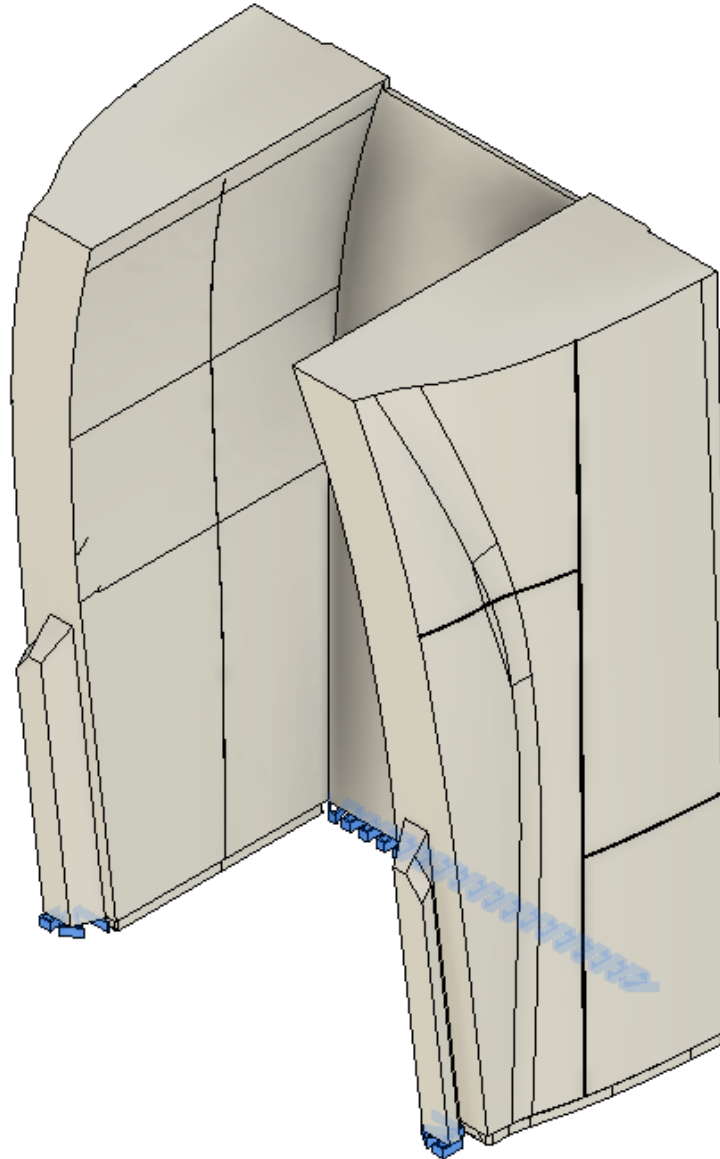
P-51D – 1/6.5
F4A



PREPARATION

F4A

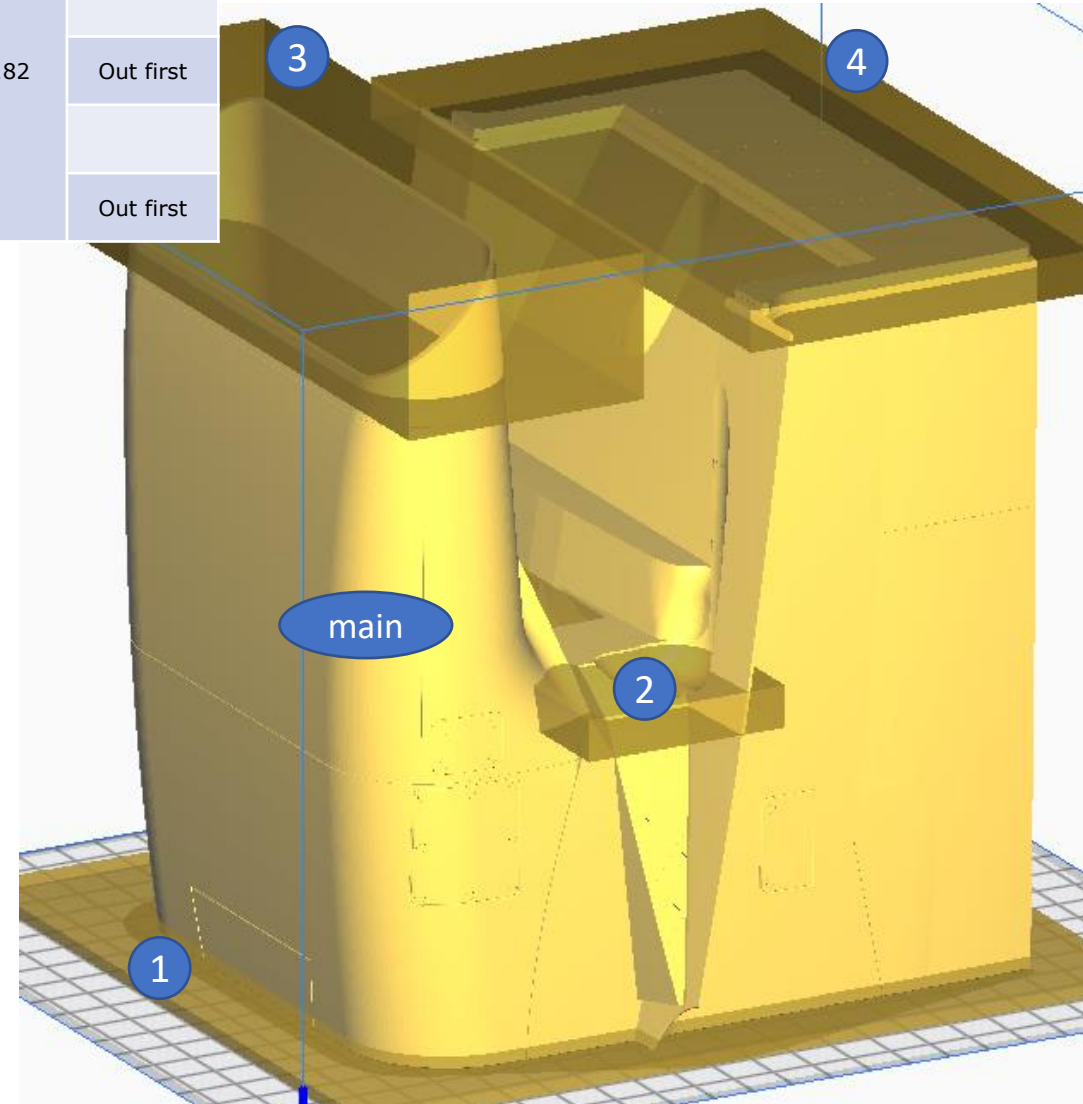
Remove print supports



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
1	0.42	0.25	3	0	2.95	0	0	0	182	
main	0.42	0.25	1	-	-	0	0	0		
2	0.42	0.25	2	77.2	87.2	0	0	2		Out first
3	0.42	0.25	2	161.2	-	0	0	0		
4	0.42	0.25	3	167.7	-	0	0	0		Out first

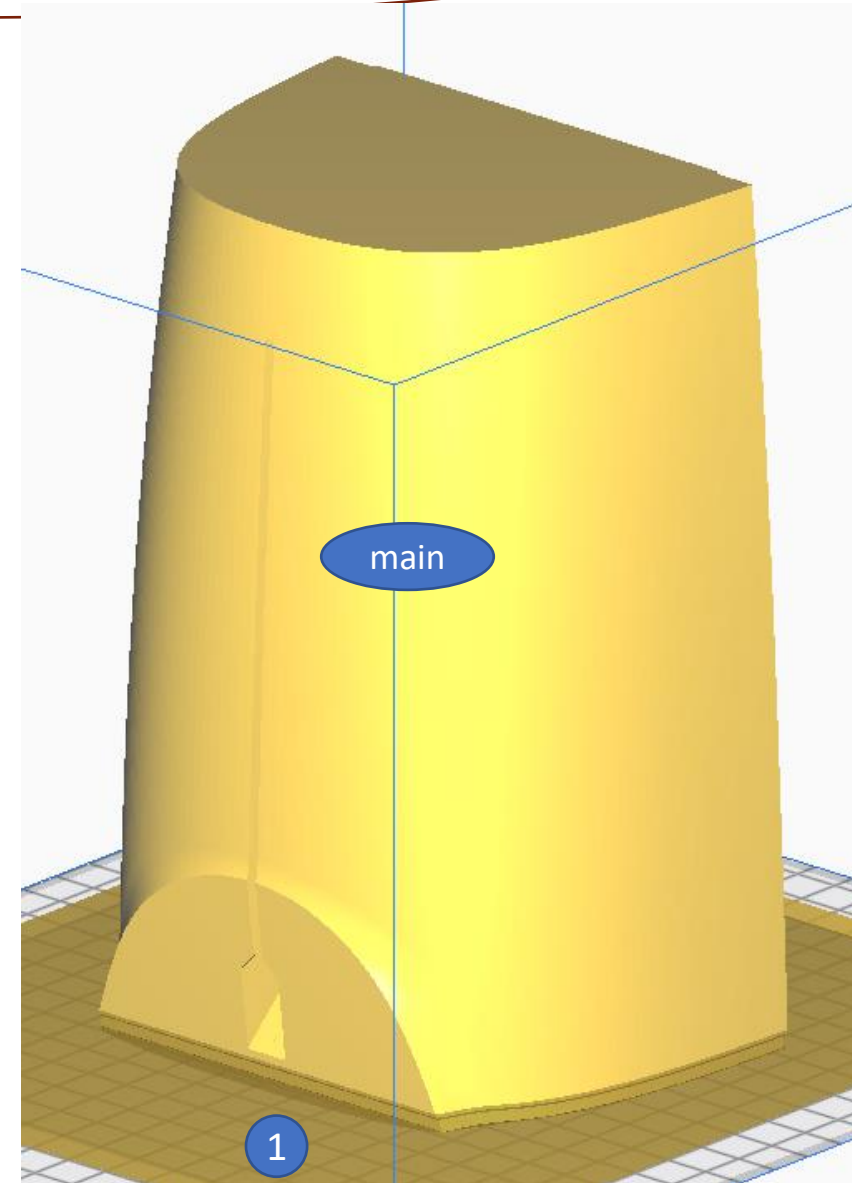
P-51D – 1/6.5
F4B



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
1	0.42	0.25	3	0	3.95	0	0	0	68	
main	0.42	0.25	1	-	-	0	0	0		

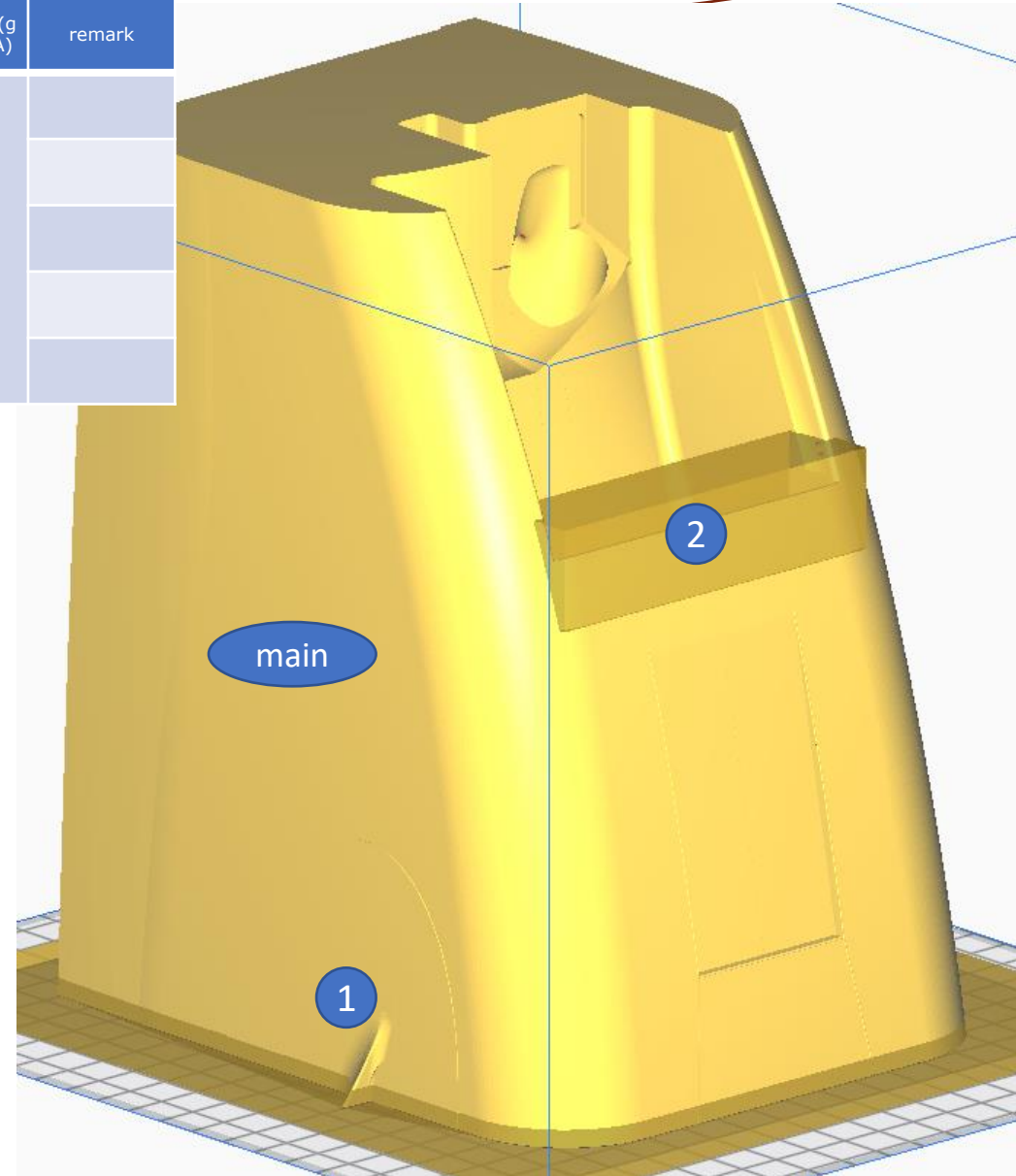
P-51D – 1/6.5
F5A



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Process 1	0.42	0.25	3	0	2.95	0	0	0	132	
main	0.42	0.25	1	-	-	0	0	0		
Process 2	0.42	0.25		118.7	129.2	0	0	5		

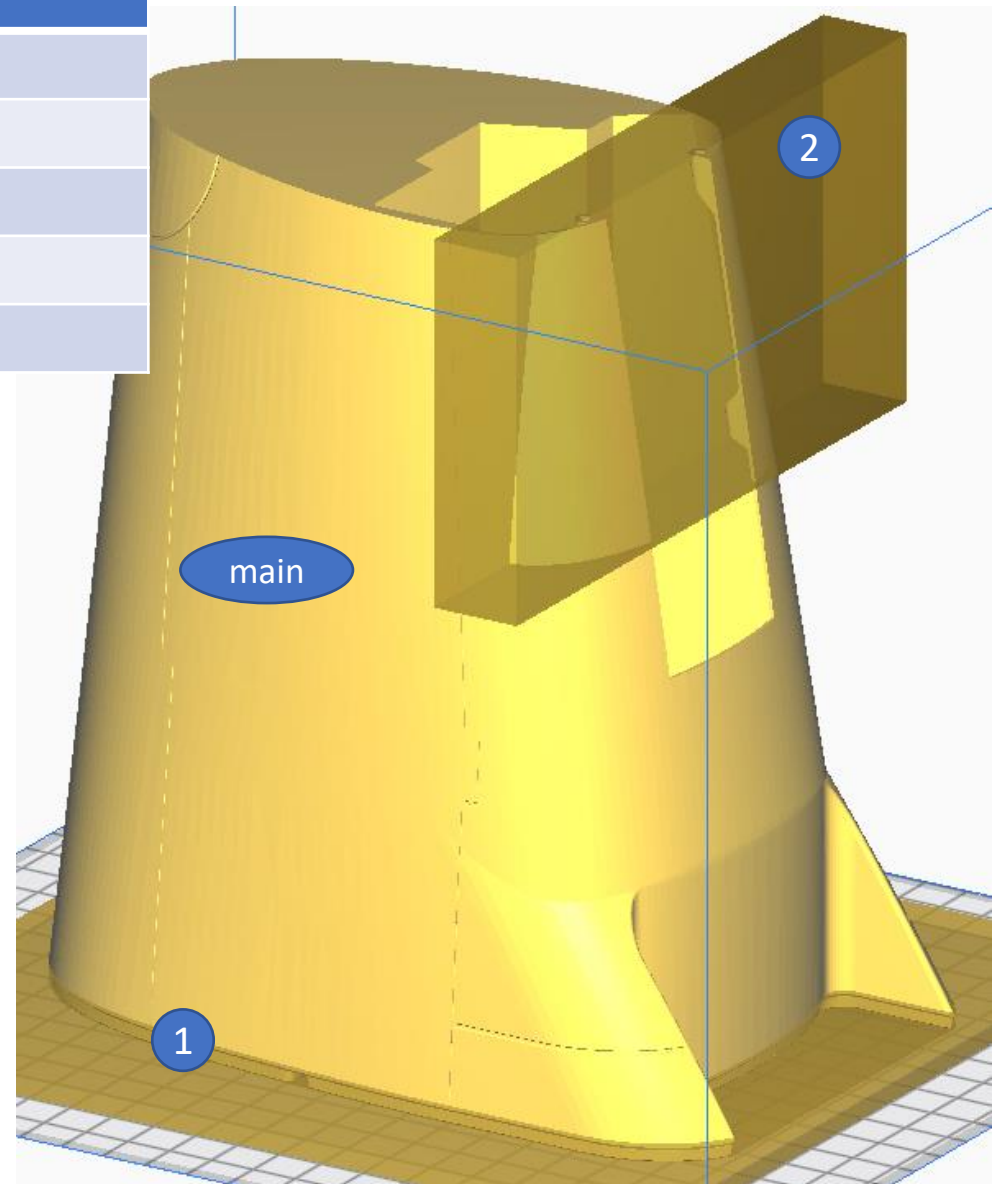
P-51D – 1/6.5
F5B



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Process 1	0.42	0.25	3	0	3.95	0	0	0	91	
main	0.42	0.25	1	-	-	0	0	0		
Process 2	0.42	0.25	3	119.45	-	0	0	10		

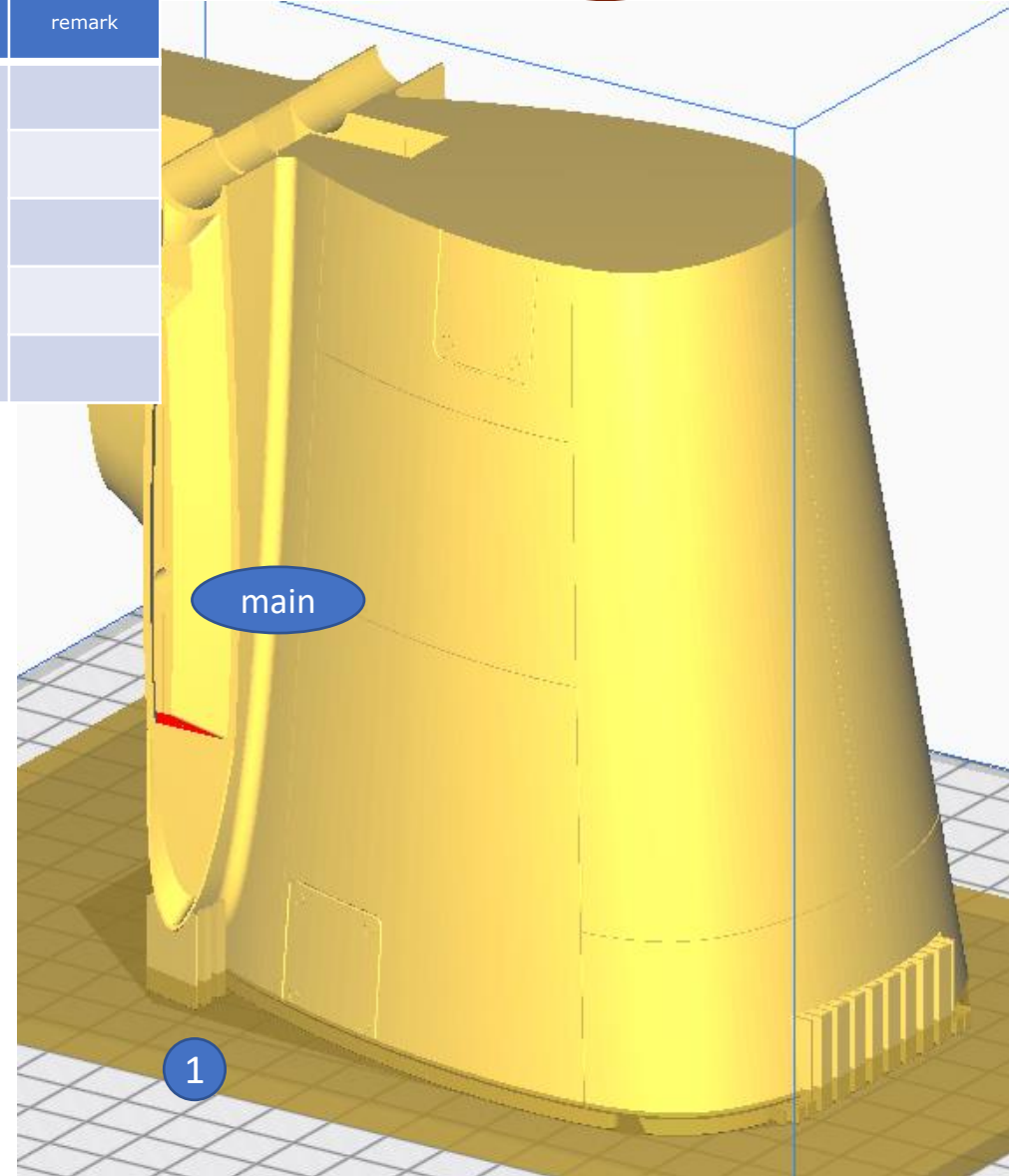
P-51D – 1/6.5
F6



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Process 1	0.42	0.25	3	0	3.7	0	0	0	56	
main	0.42	0.25	1	-	-	0	0	0		

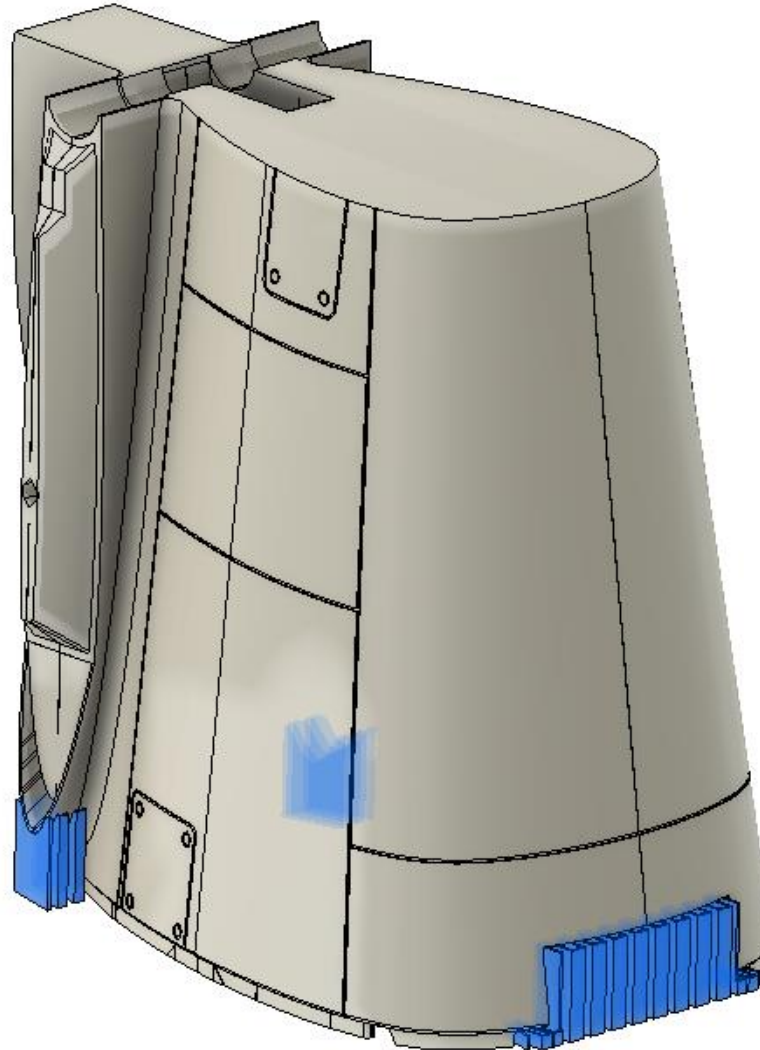
P-51D – 1/6.5
F7



PREPARATION

F7

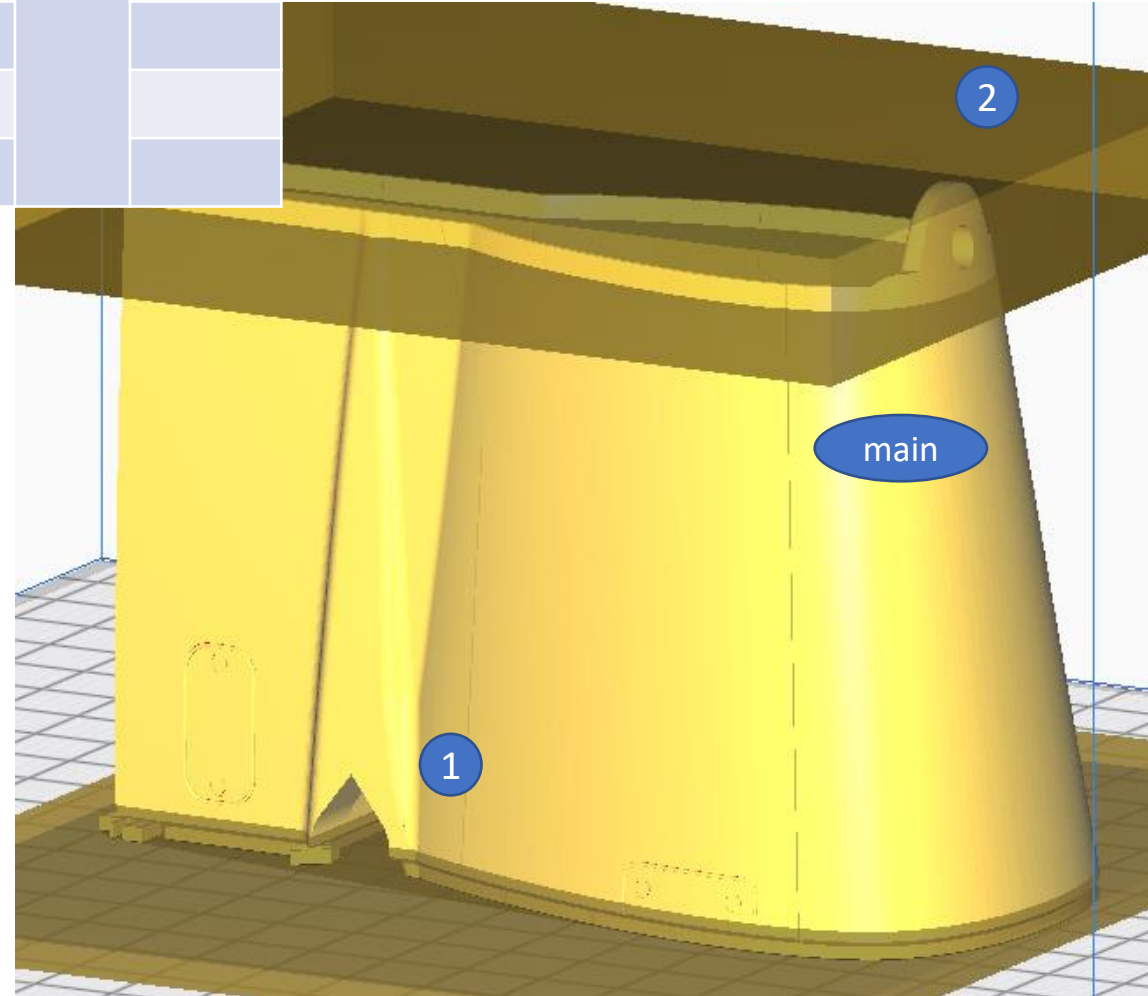
Remove print supports



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Process 1	0.42	0.25	3	0	3.45	0	0	0	23	
main	0.42	0.25	1	-	-	0	0	0		
Process 2	0.42	0.25	1	73.95	-	2	0	0		

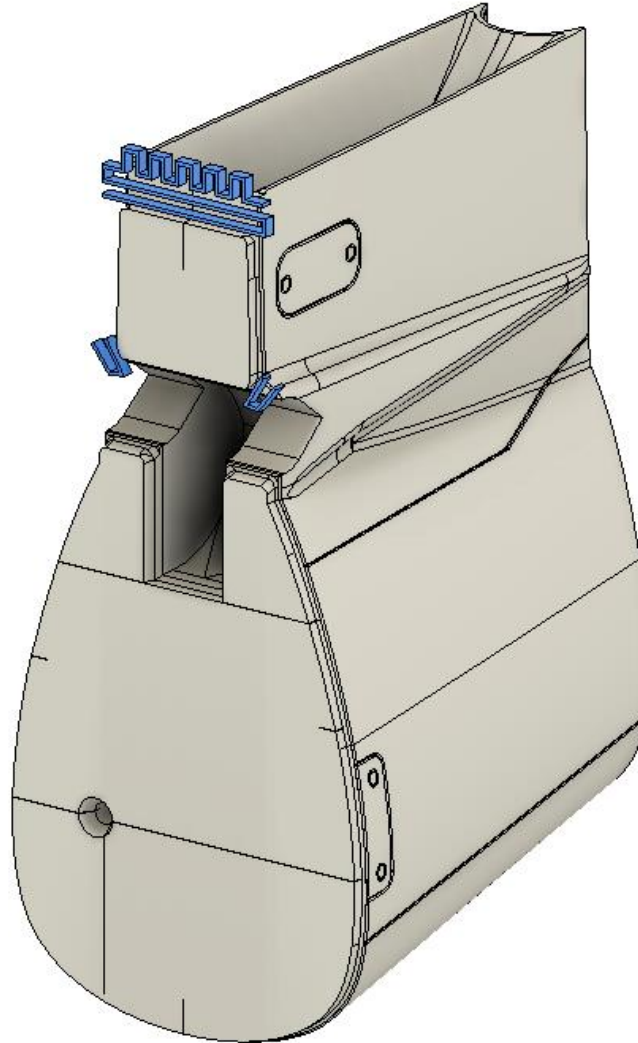
P-51D – 1/6.5
F8



PREPARATION

F8

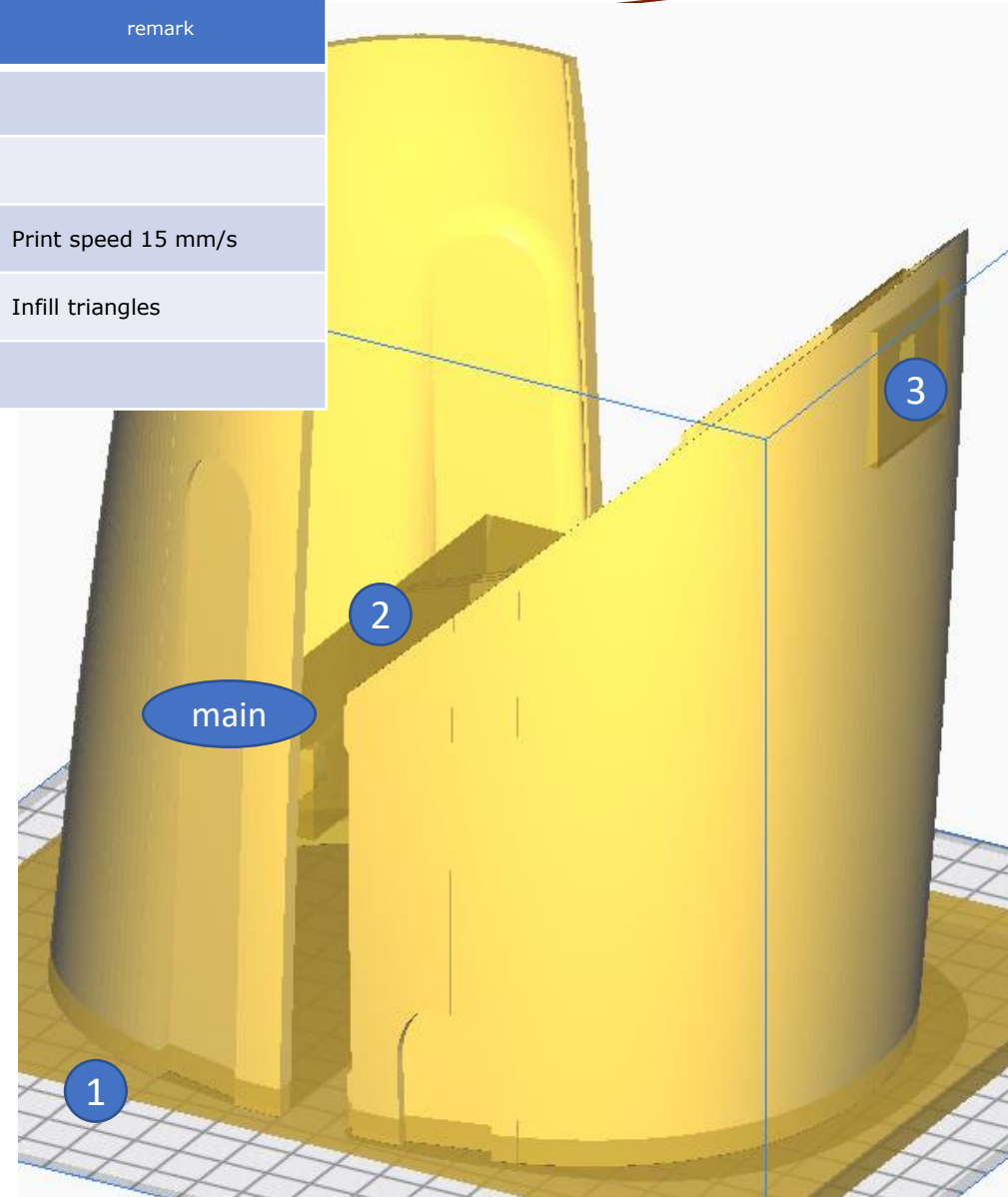
Remove print supports



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Process 1	0.42	0.25	3	0	6	0	0	12	98	
main	0.42	0.25	1	-	-	3	2	3		
Process 2	0.42	0.25	1	55.95	75.95	0	0	0		Print speed 15 mm/s
Process 3	0.42	0.25	2	145.7	175.7	0	0	6		Infill triangles

P-51D – 1/6.5
Hatch in 2 parts



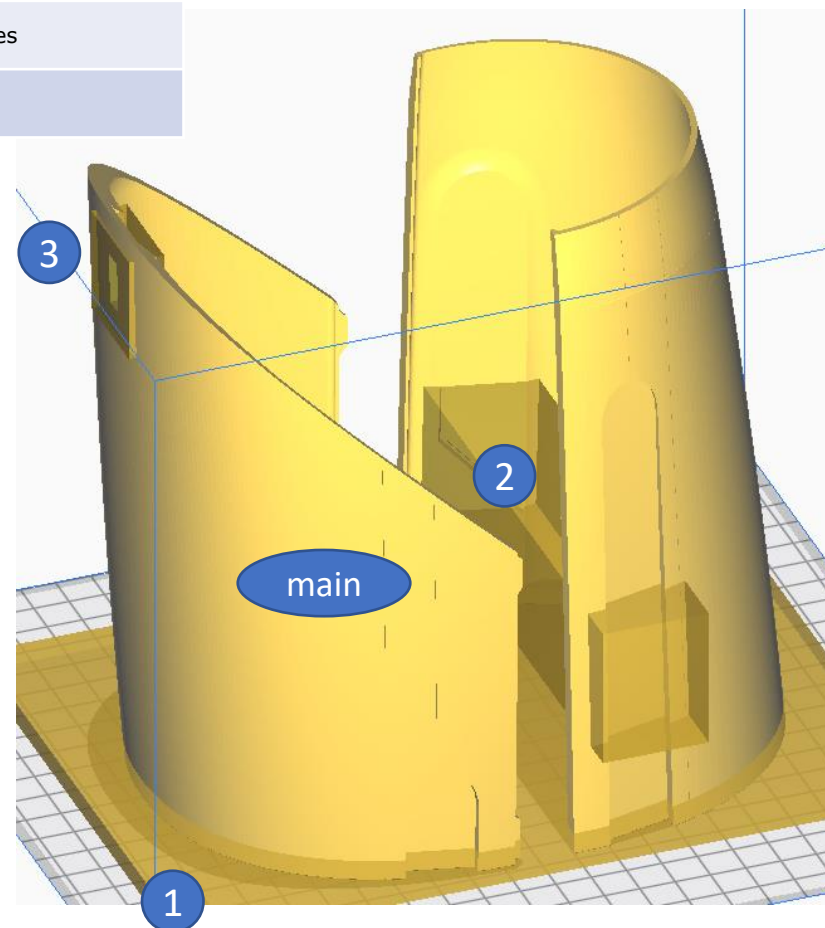
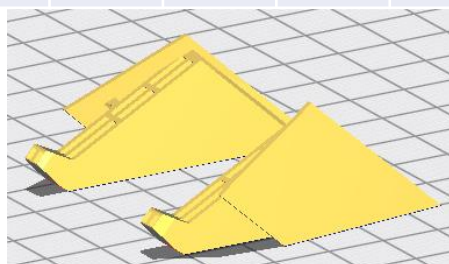
ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Process 1	0.42	0.25	3	0	6	0	0	12	98	
main	0.42	0.25	1	-	-	3	2	3		
Process 2	0.42	0.25	1	55.95	75.95	0	0	0		
Process 3	0.42	0.25	2	145.7	175.7	0	0	6		Infill triangles

P-51D – 1/6.5

Hatch in 2 LW parts and separate clips

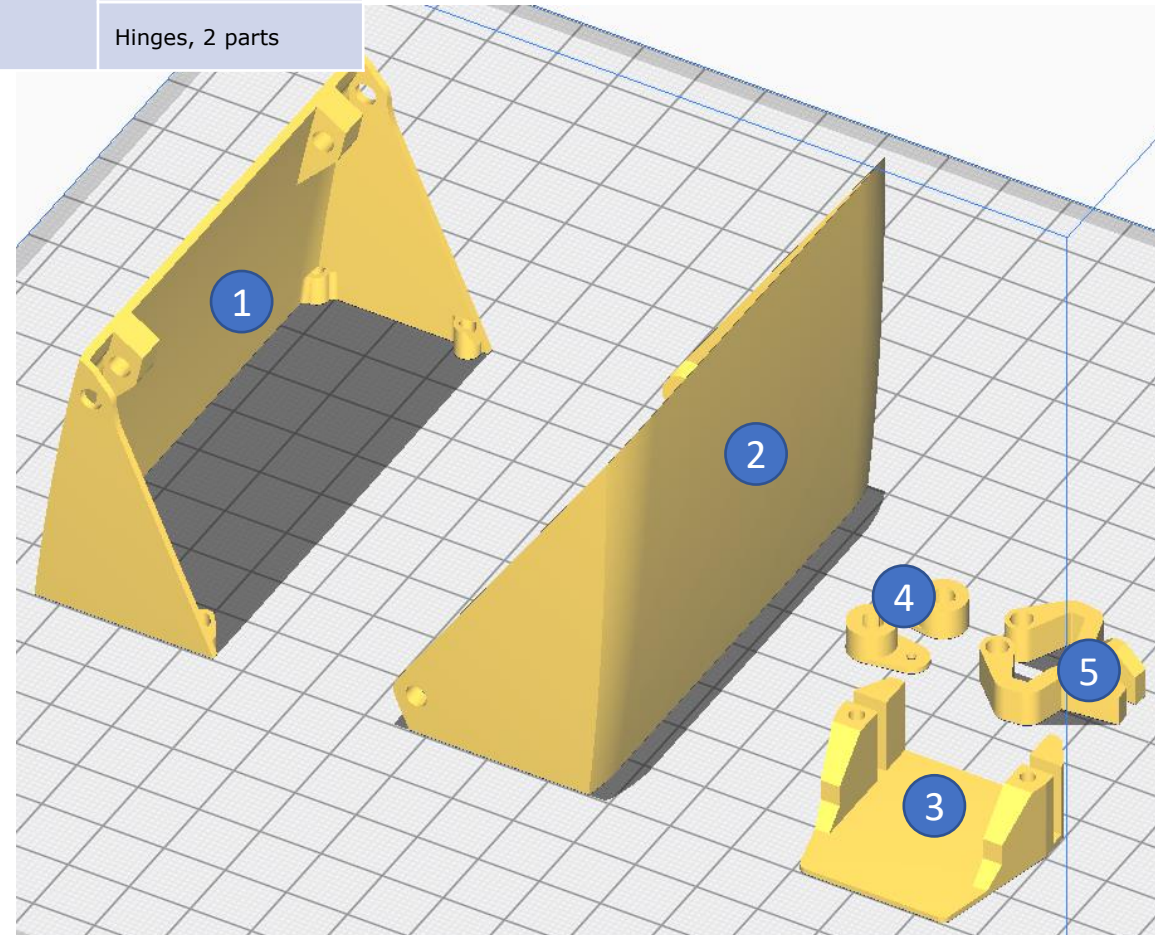
	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Main clips	0.45	0.25	2	-	-	2	2	10	5	



ADDIMP 3D

Part	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	Remark
1	0.42	0.25	2	0	6	2	2	10	34	Flap inner
2	0.42	0.25	2	0	0	2	2	10		Flap outer
3	0.42	0.25	2	0	0	2	2	10		Servo mount
4	0.42	0.25	2	0	0	2	2	10		Horn, 2 parts
5	0.42	0.25	2	0	0	2	2	10		Hinges, 2 parts

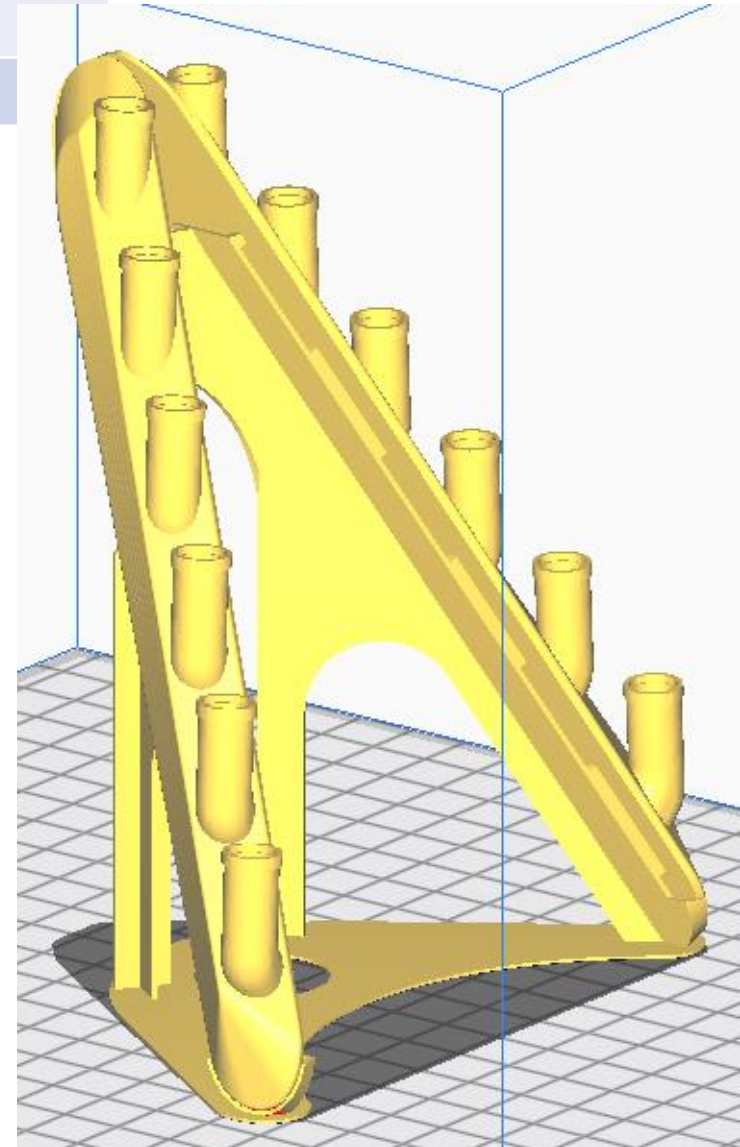
P-51D – 1/6.5
Flap radiator



ADDIMP 3D

Part	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	
main	0.48	0.25	1	-	-	2	2	5	10	

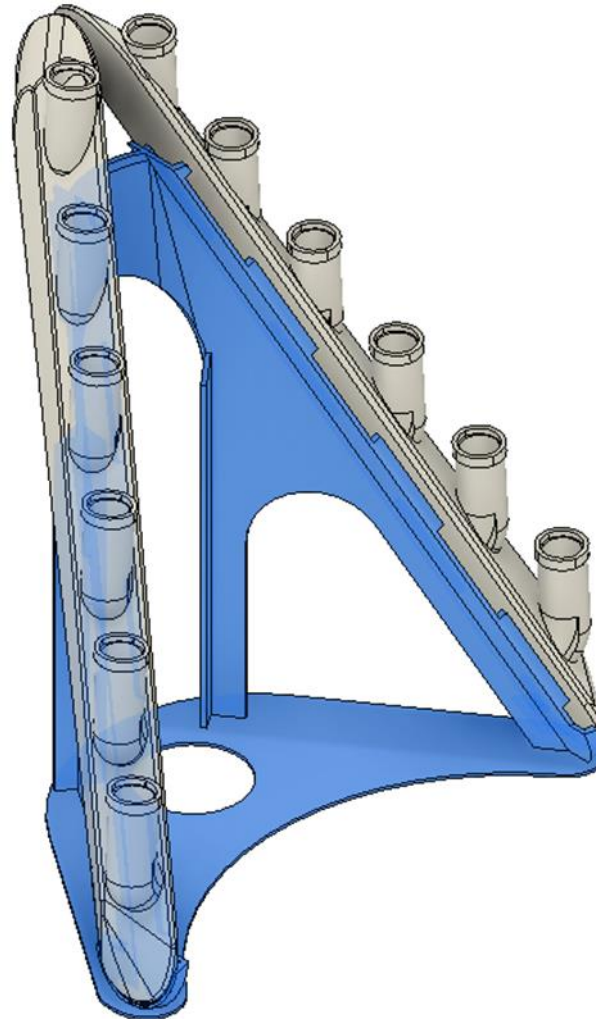
P-51D – 1/6.5
Exhausts V2



PREPARATION

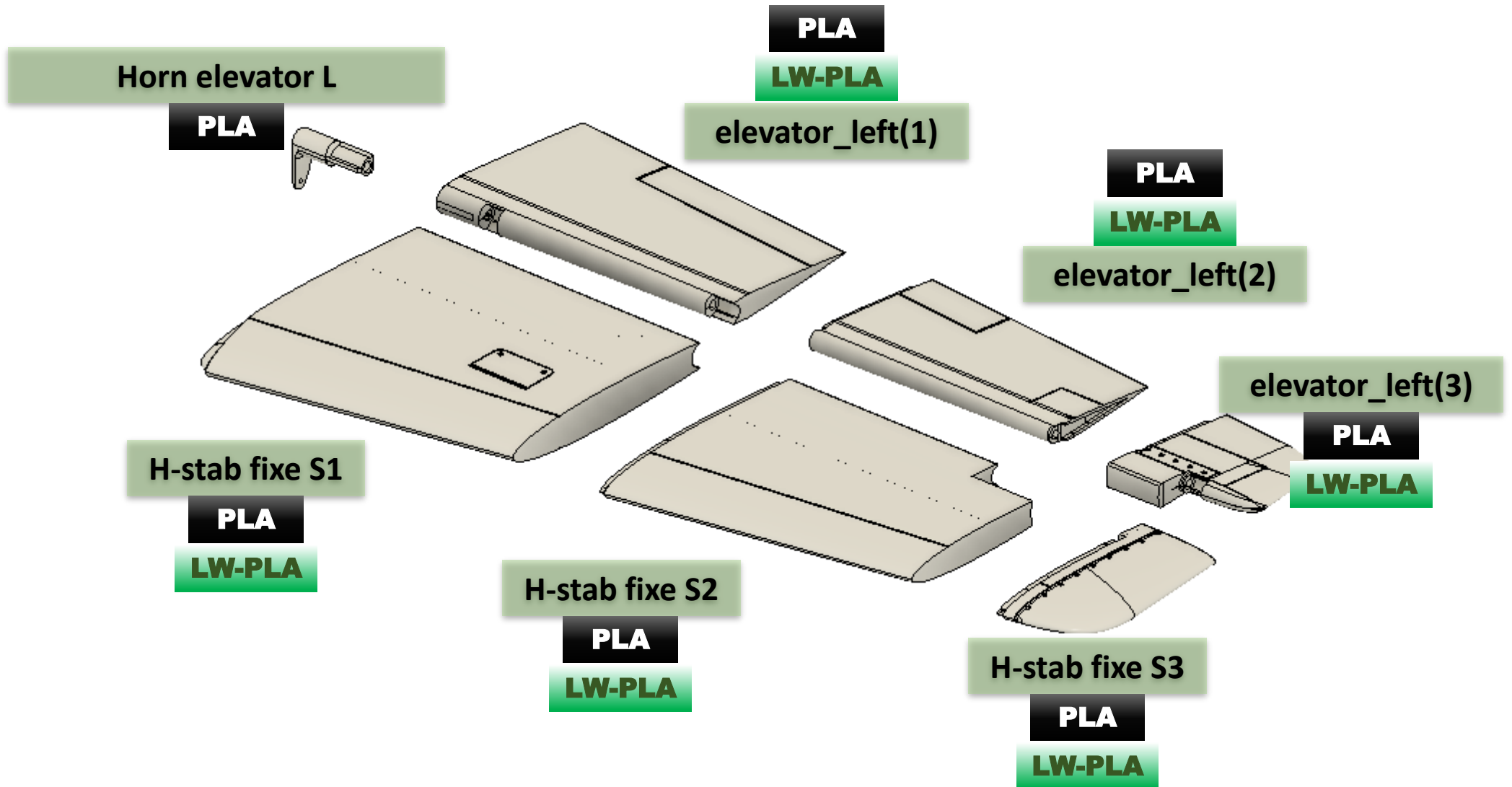
1

Remove print supports



P-51 D Mustang

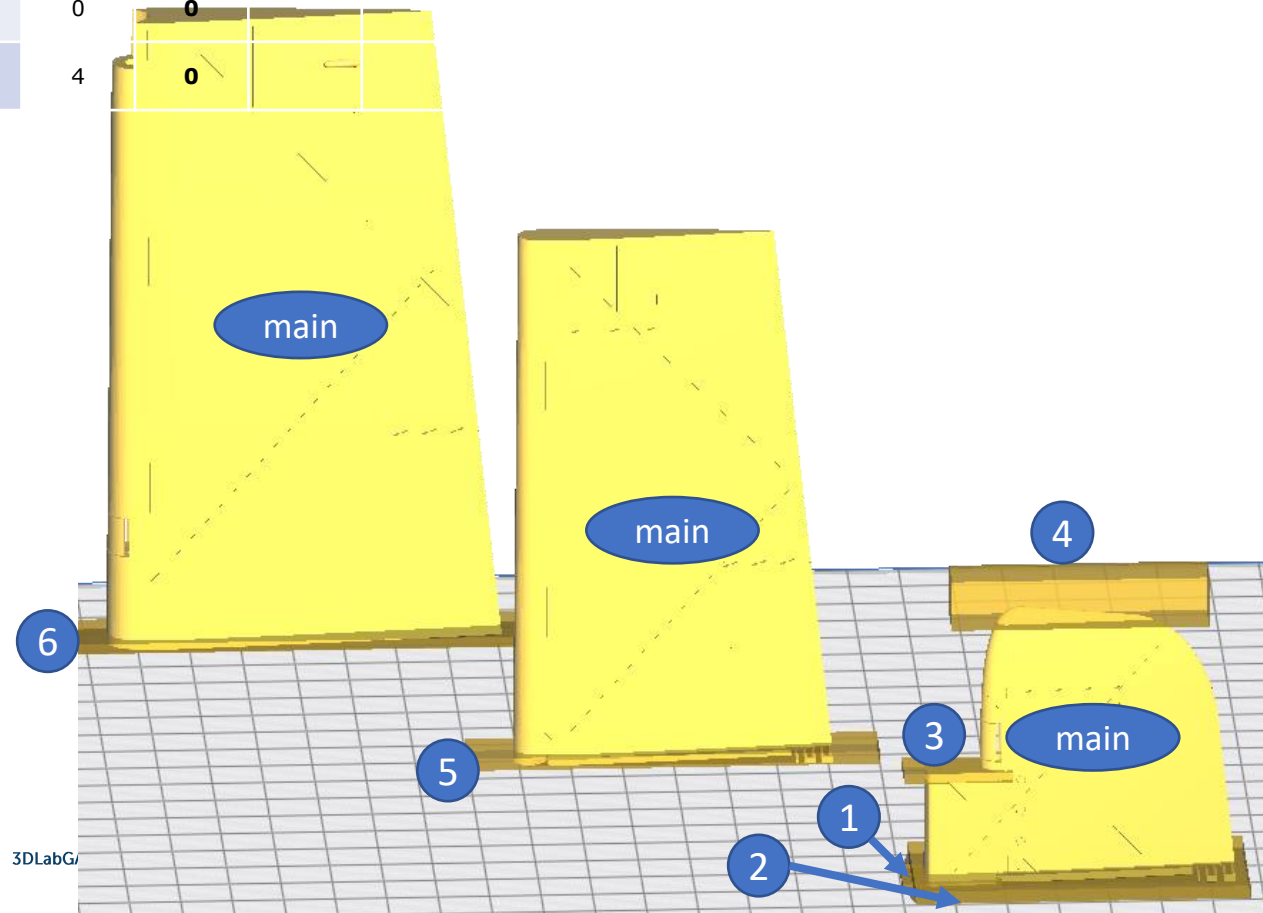
Tails



ADDUP 3D

	Extrusion width (mm)	Flow (%)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Main	0.4	55	0.25	1	-	-	0	0	0	14	
Process 1	0.4	55	0.25	2	0	1	0	3	0		
Process 2	0.4	55	0.25	2	0	2.5	0	0	0		
Process 3	0.4	55	0.25	2	21.2	23.2	4	0	10		
Process 4	0.4	55	0.25	2	52.45	-	3	0	0		
Process 5	0.4	55	0.25	2	0	2.5	0	0	0	4	
Process 6	0.4	55	0.25	3	0	2	0	4	0		

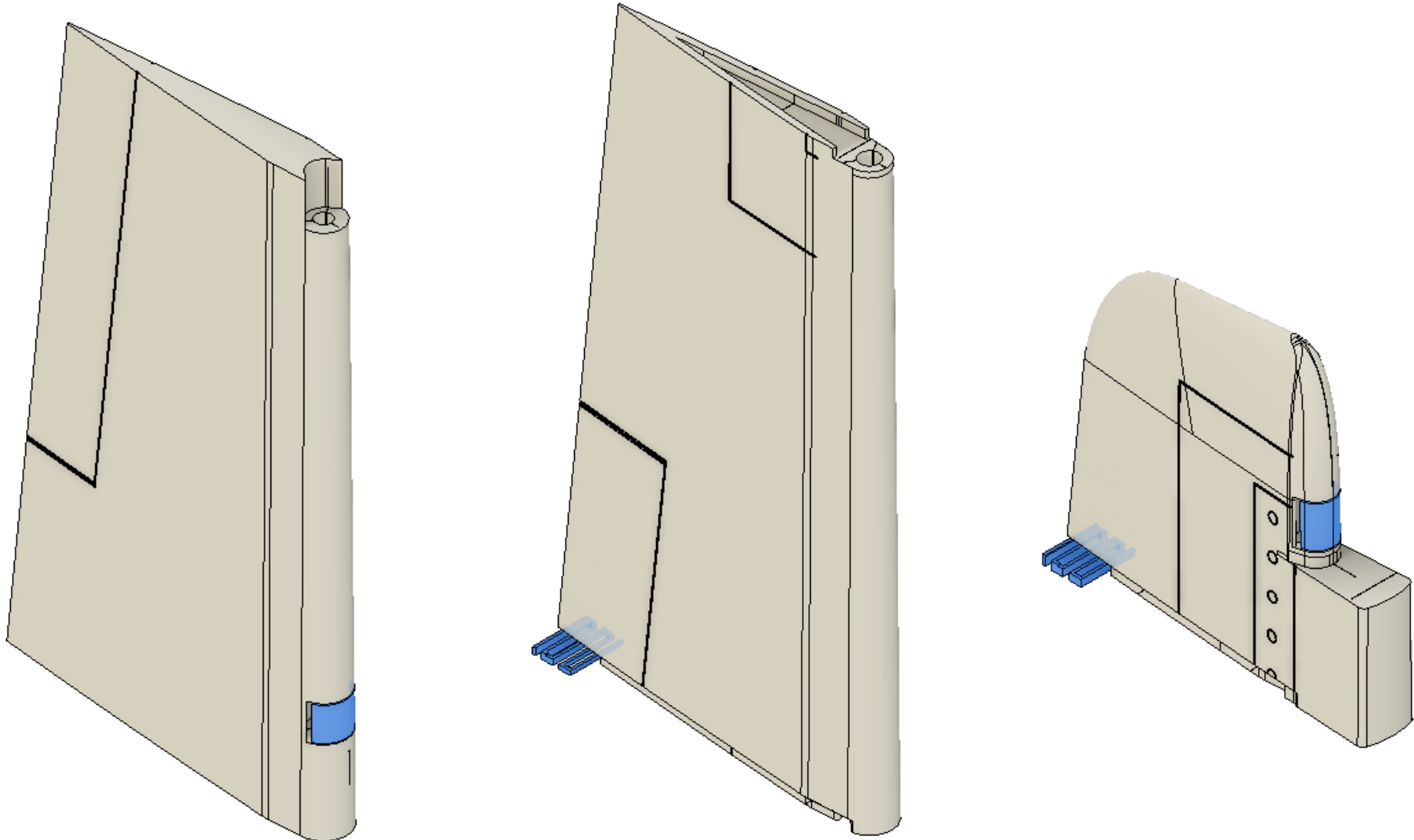
P-51D – 1/6.5
Left elevator
LW-PLA



PREPARATION

1

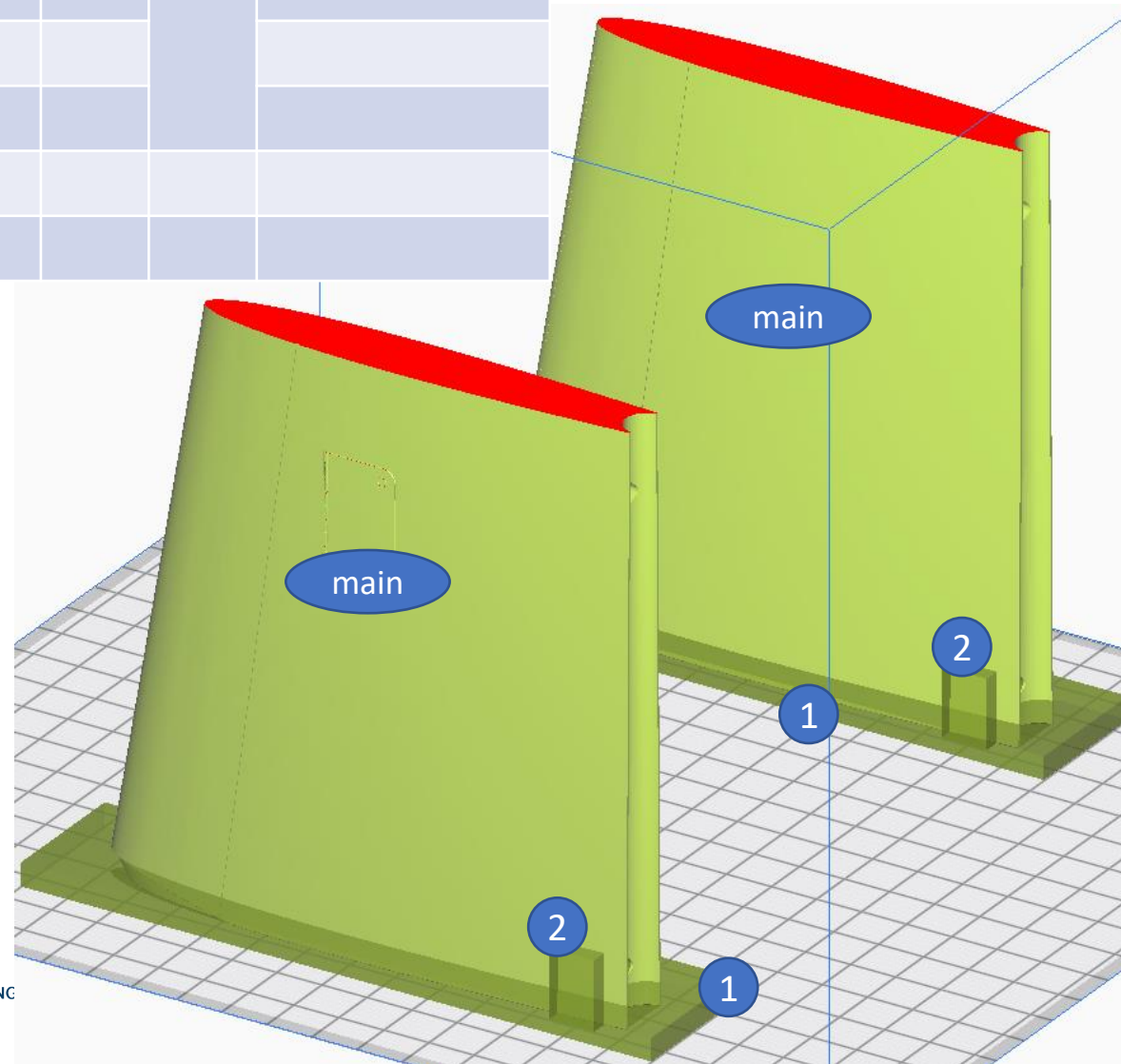
Remove print supports



ADDUP 3D

	Extrusion width (mm)	Flow (%)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Main	0.4	55	0.25	1	-	-	0	0	0	21	
Process 1	0.4	55	0.25	2	0	5	0	2	0		
Process 2	0.4	55	0.25	1	0	15	0	0	10		

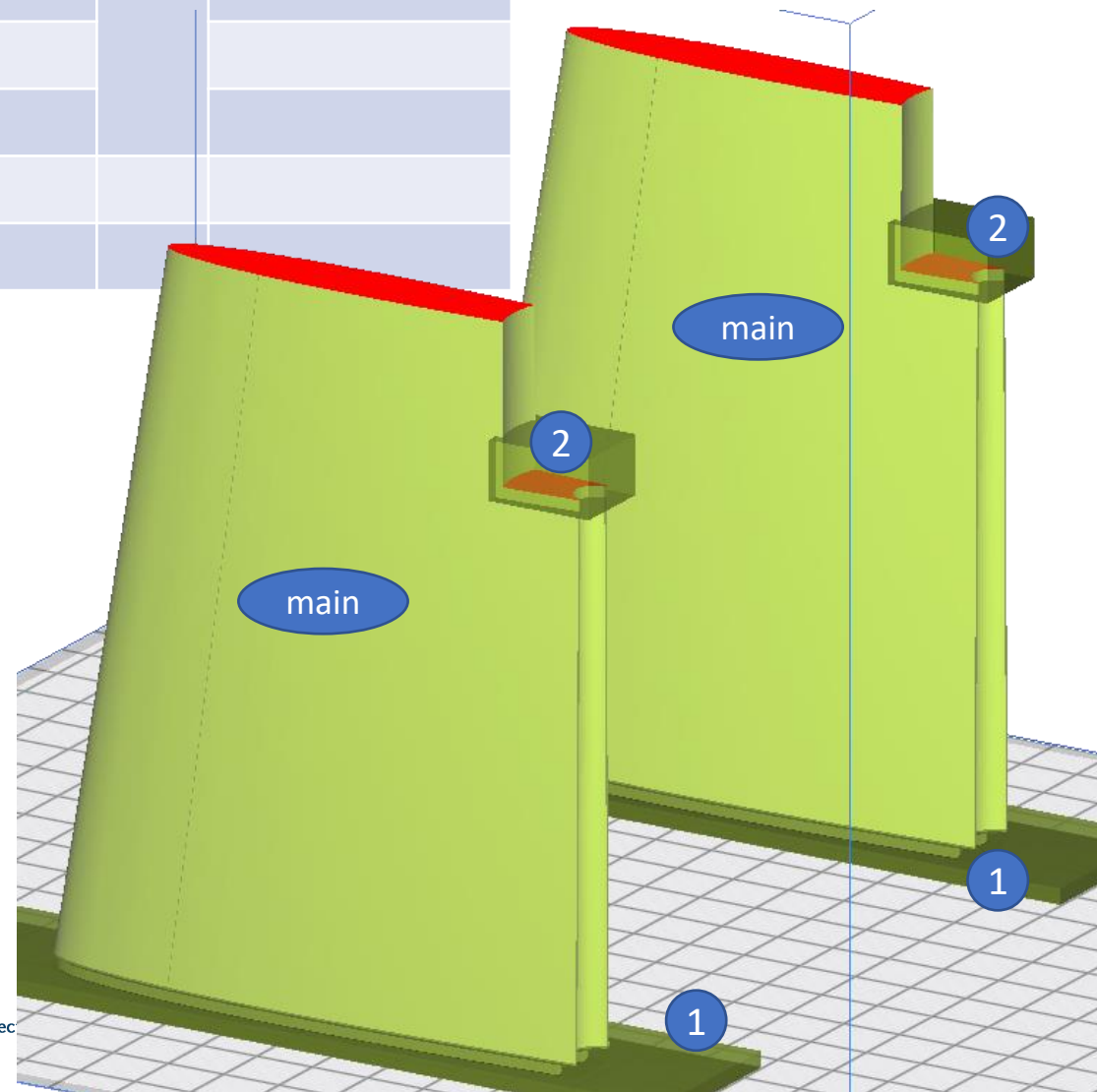
P-51D – 1/6.5
H-stab S1 (left & right)
LW-PLA



ADDUP 3D

	Extrusion width (mm)	Flow (%)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Main	0.4	55	0.25	1	-	-	0	0	0	14	
Process 1	0.4	55	0.25	3	0	2.7	0	0	0		
Process 2	0.4	55	0.25	1	92.95	102.95	3	0	15		

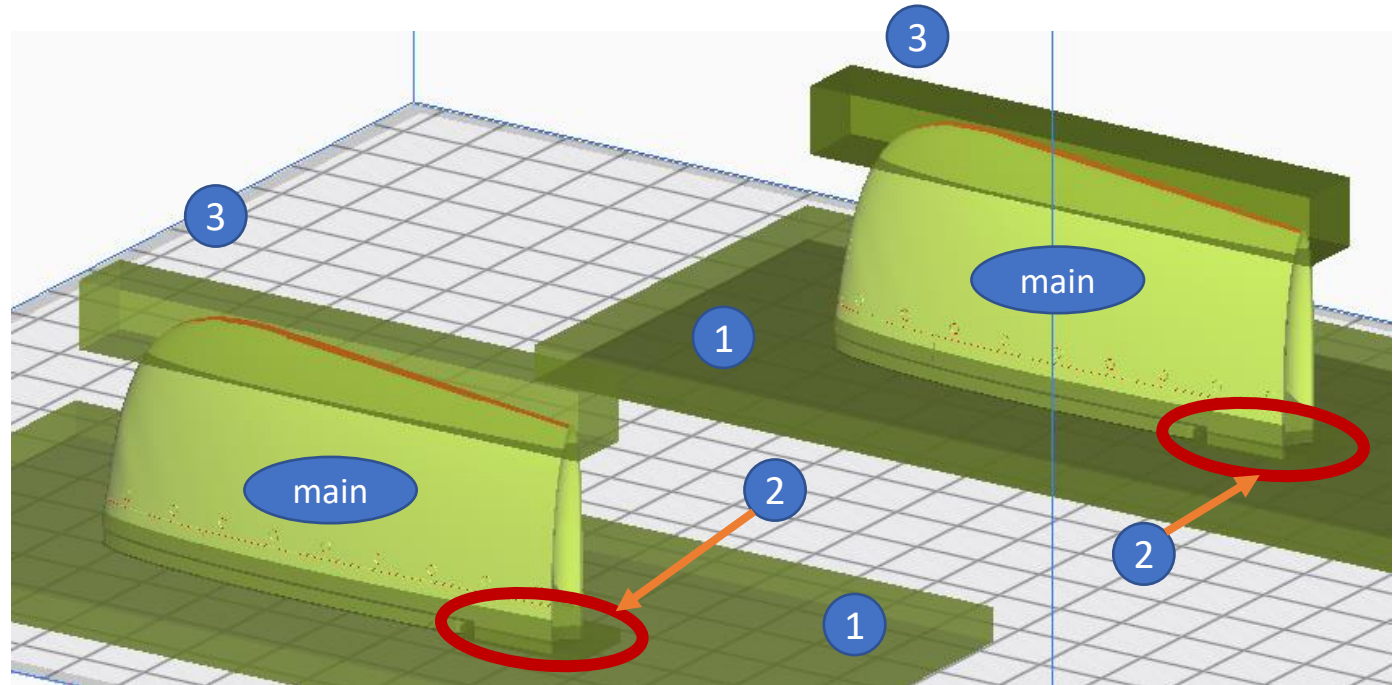
P-51D – 1/6.5
H-stab S2 (left & right)
LW-PLA



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Total number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and PLA)	remark
Main	0.42	0.25	1	-	-	0	0	0	10	
Process 1	0.42	0.25	3	0	5	0	0	0		
Process 2	0.42	0.25	1	0	2	0	4	0		
Process 3	0.42	0.25	2	29.2	-	3	0	0		

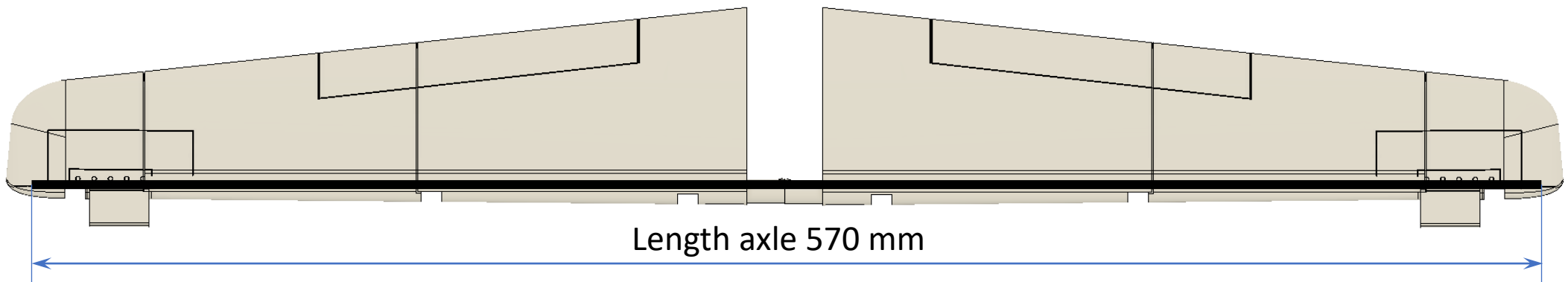
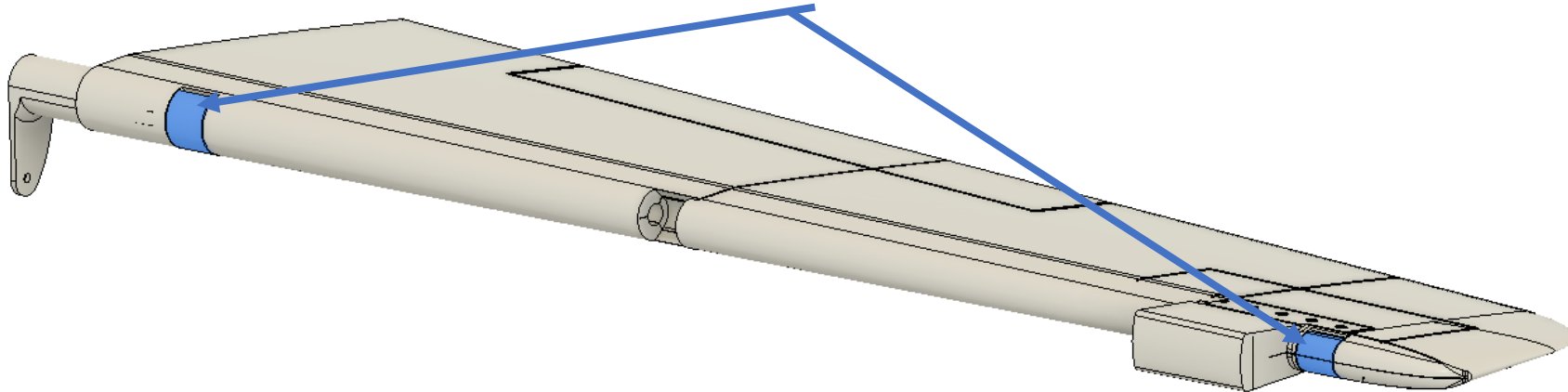
P-51D – 1/6.5
H-stab S3 (left & right)



CHECK**1**

Remove the supports at each hinge and under each flap.
Cut a $\varnothing 3\text{mm}$ axle (carbon or hardwood) length between 570 and 572mm.
Check that this pin slides freely in each part (horn, flap and hinges).

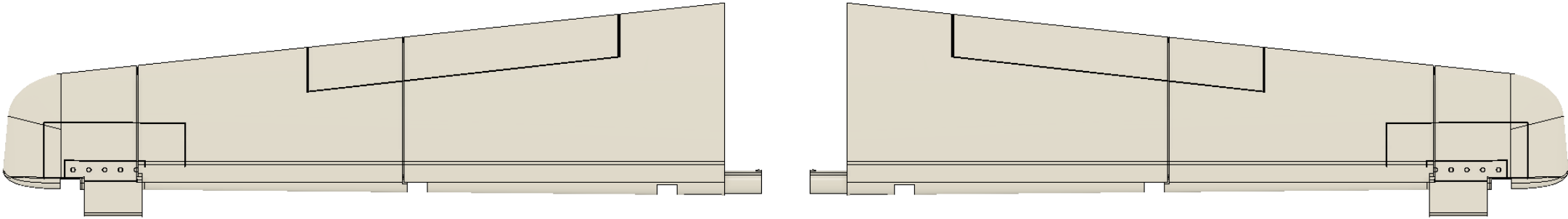
Remove print supports



ASSEMBLY

2

Assemble each elevator flap completely

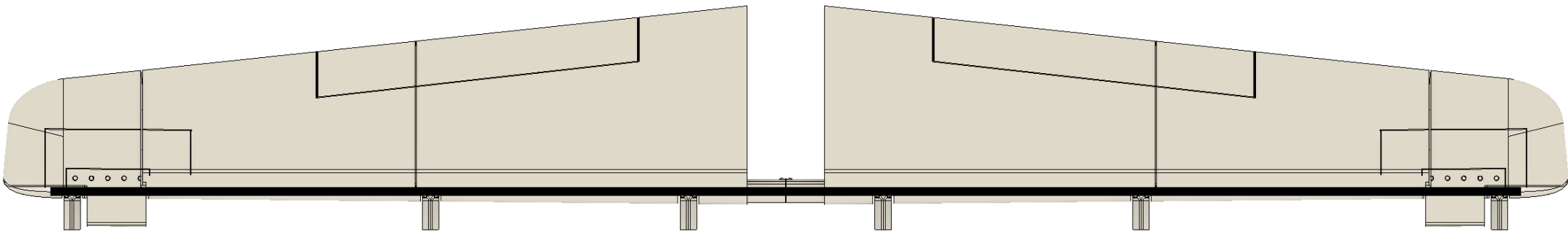


For each flap, add 3 hinges 6.4mm wide.

Check that the axis rotates freely in its full length.

Glue the two flaps together with the axis inside, checking the general alignment.

The alignment of the trailing edges is more important than that of the horns.



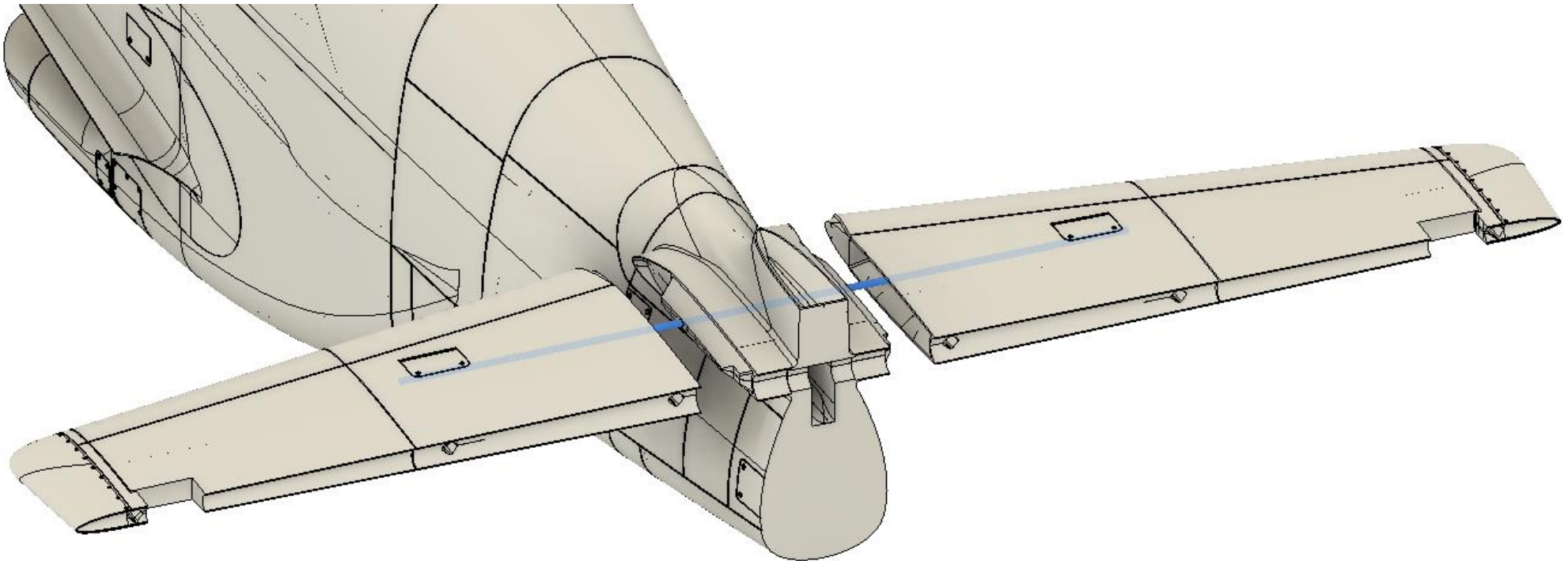
ASSEMBLY

3

Glue the two parts in the fuselage.

A carbon tube $\varnothing 3\text{mm} \times 320$ maxi can be used to reinforce the junction.

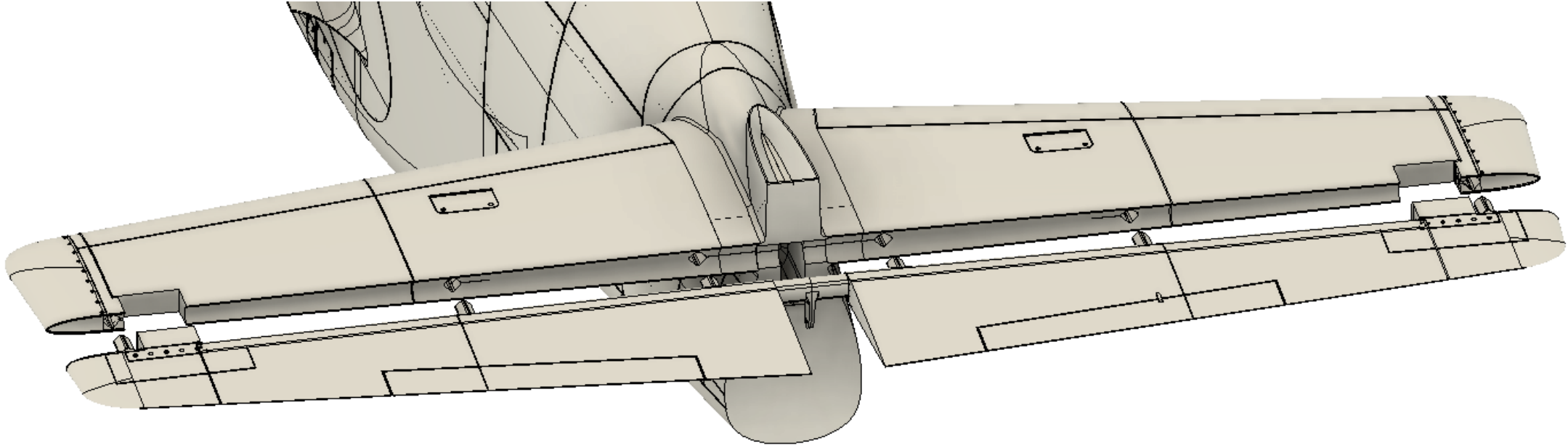
Check the general geometry.



ASSEMBLY

4

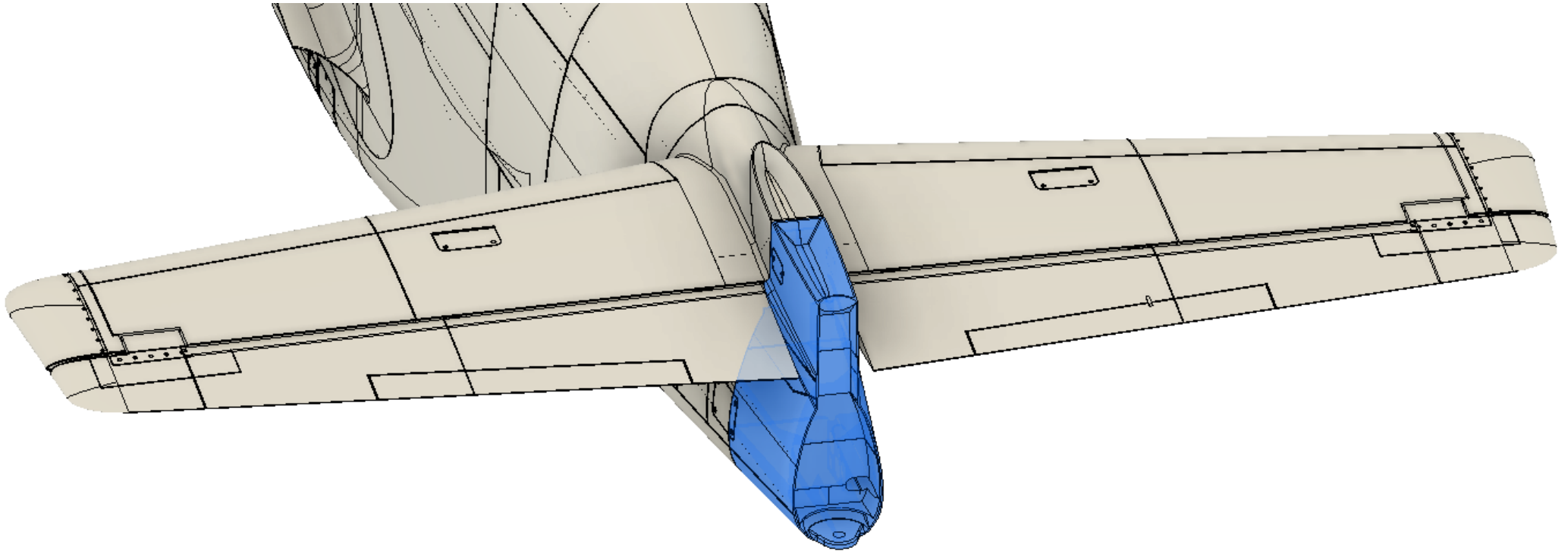
Attach the elevator command to the horn, insert it into the fuselage.
Assemble the elevator assembly on the fixed part, glue the hinges.
Check for full flap travel.



ASSEMBLAGE

5

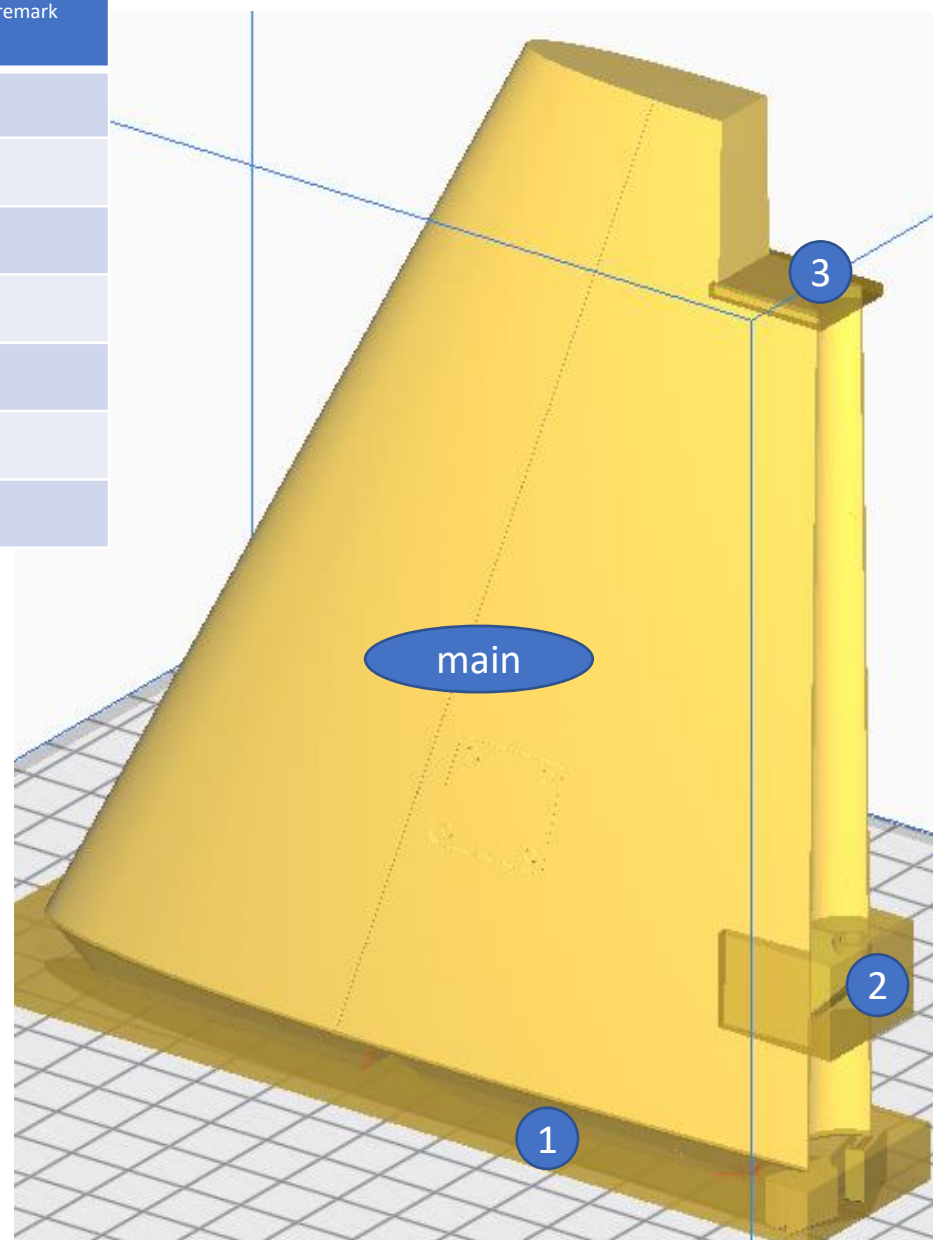
Glue F8, Check again for full elevator travel.



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
main	0.42	0.25	1	-	-	0	0	0	29	
Process 1	0.42	0.25	3	0	9.2	0	3	0		
Process 2	0.42	0.25	2	28.2	43.2	2	2	10		
Process 3	0.42	0.25	2	142.2	144.2	3	0	10		

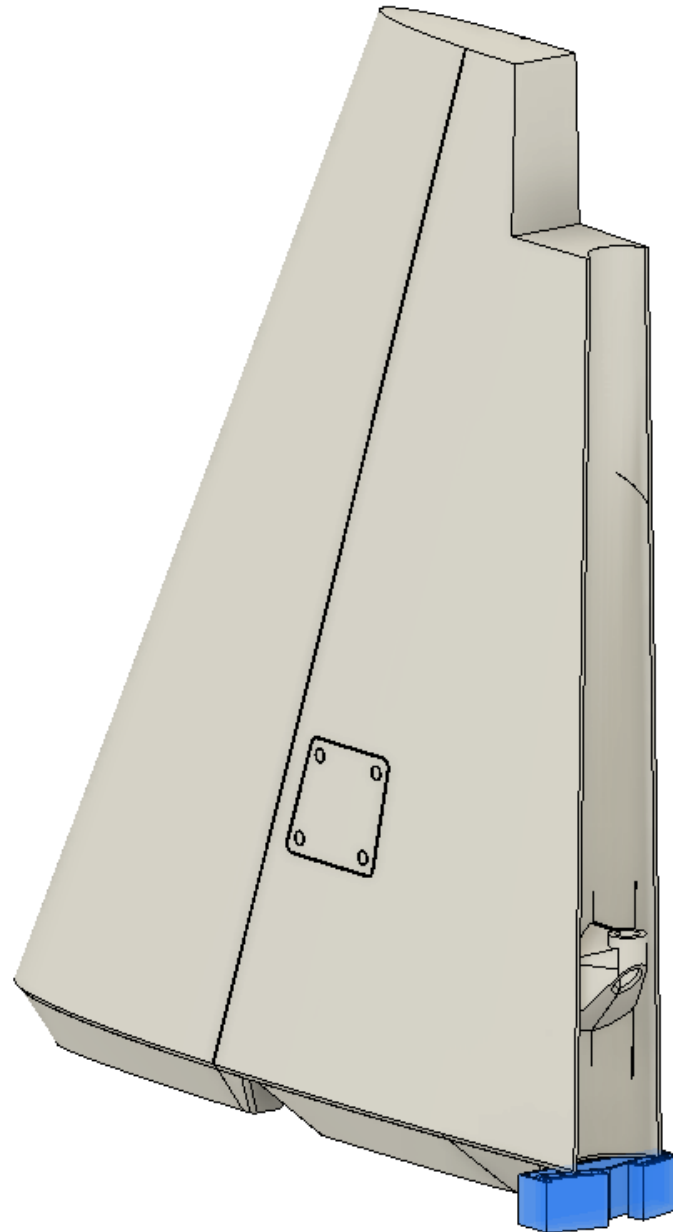
P-51D – 1/6.5
fin fixe



PREPARATION

1

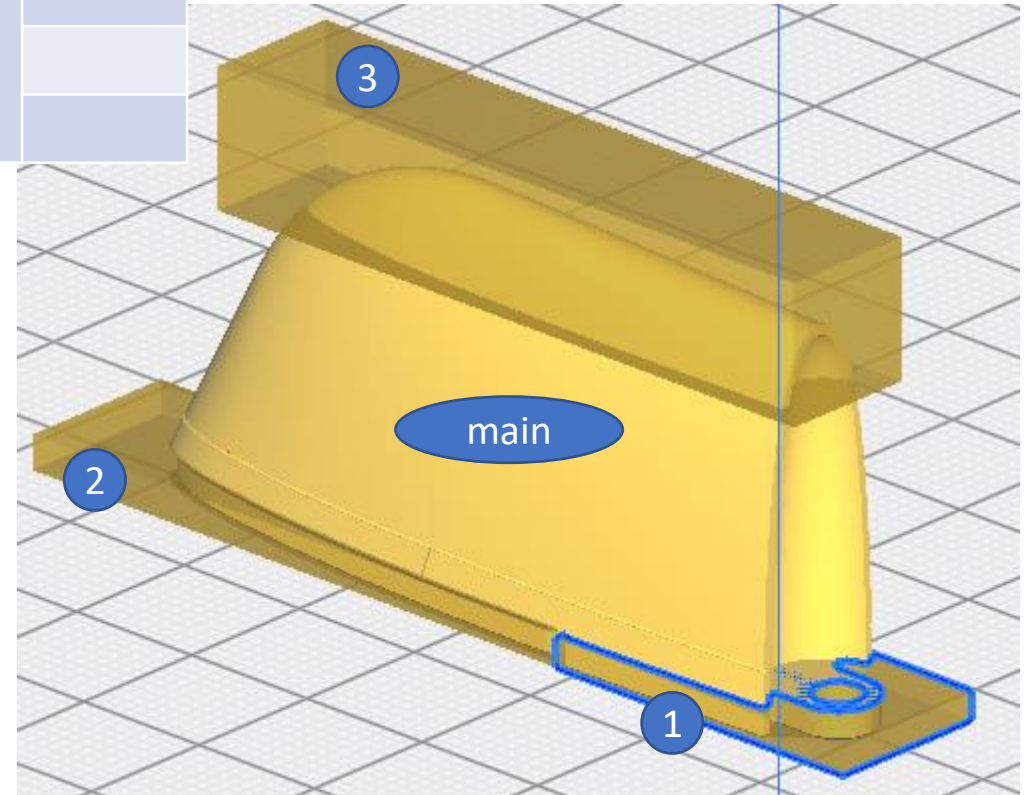
Remove print supports



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	Remark
main	0.42	0.25	1	-	-	0	0	0	3	
Process 1	0.42	0.25	3	0	2	2	2	15		
Process 2	0.42	0.25	2	0	2.95	0	0	0		
Process 3	0.42	0.25	1	22.2	-	2	0	0		

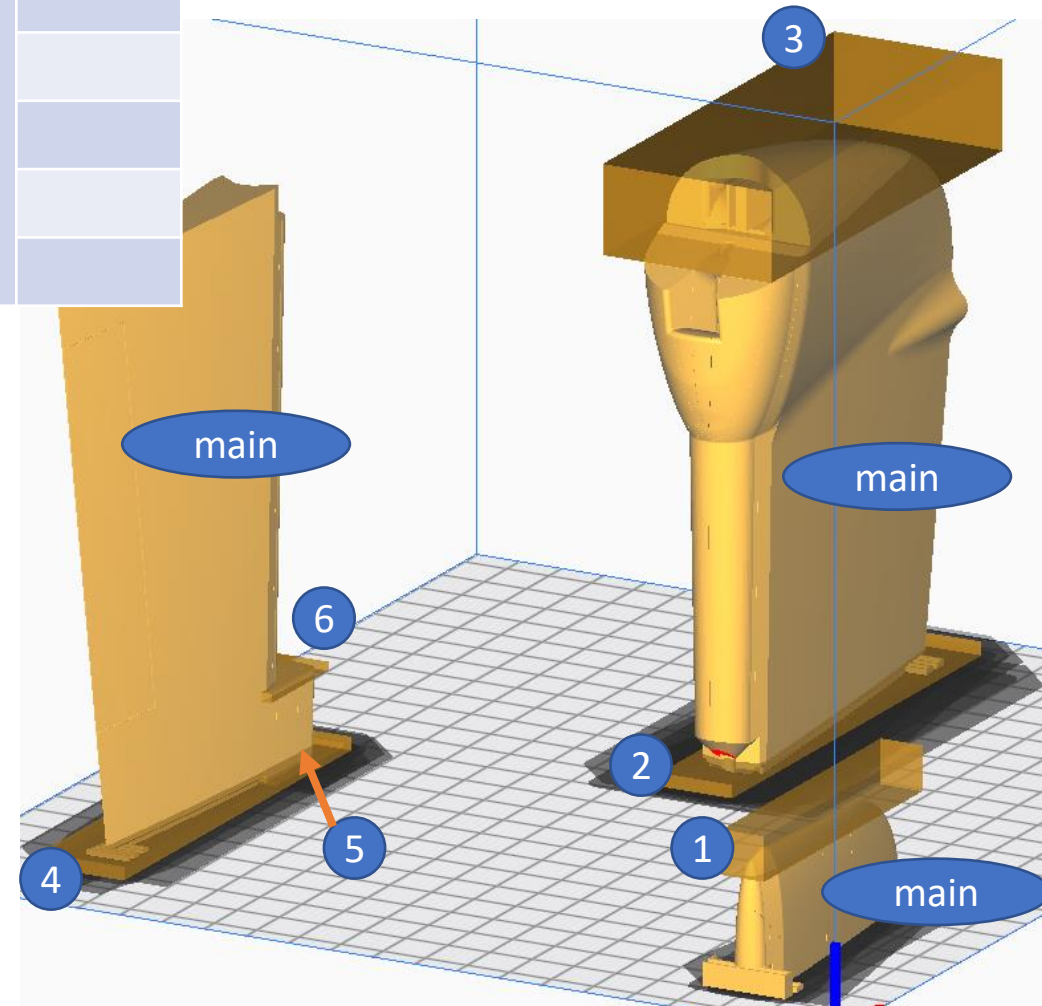
P-51D – 1/6.5
fin fixe tip



ADDIMP 3D

	Extrusion width (mm)	Flow (%)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	Remark
main	0.4	55	0.25	1	-	-	0	0	0	23	
Process 1	0.4	55	0.25	2	25.2	-	3	0	8		
Process 2	0.4	55	0.25	2	0	2.95	0	0	0		
Process 3	0.4	55	0.25	2	116	-	4	0	5		
Process 4	0.4	55	0.25	2	0	3	0	0	0		
Process 5	0.4	55	0.25	2	0	1	0	4	0		
Process 6	0.4	55	0.25	2	18.7	20.7	4	0	7		

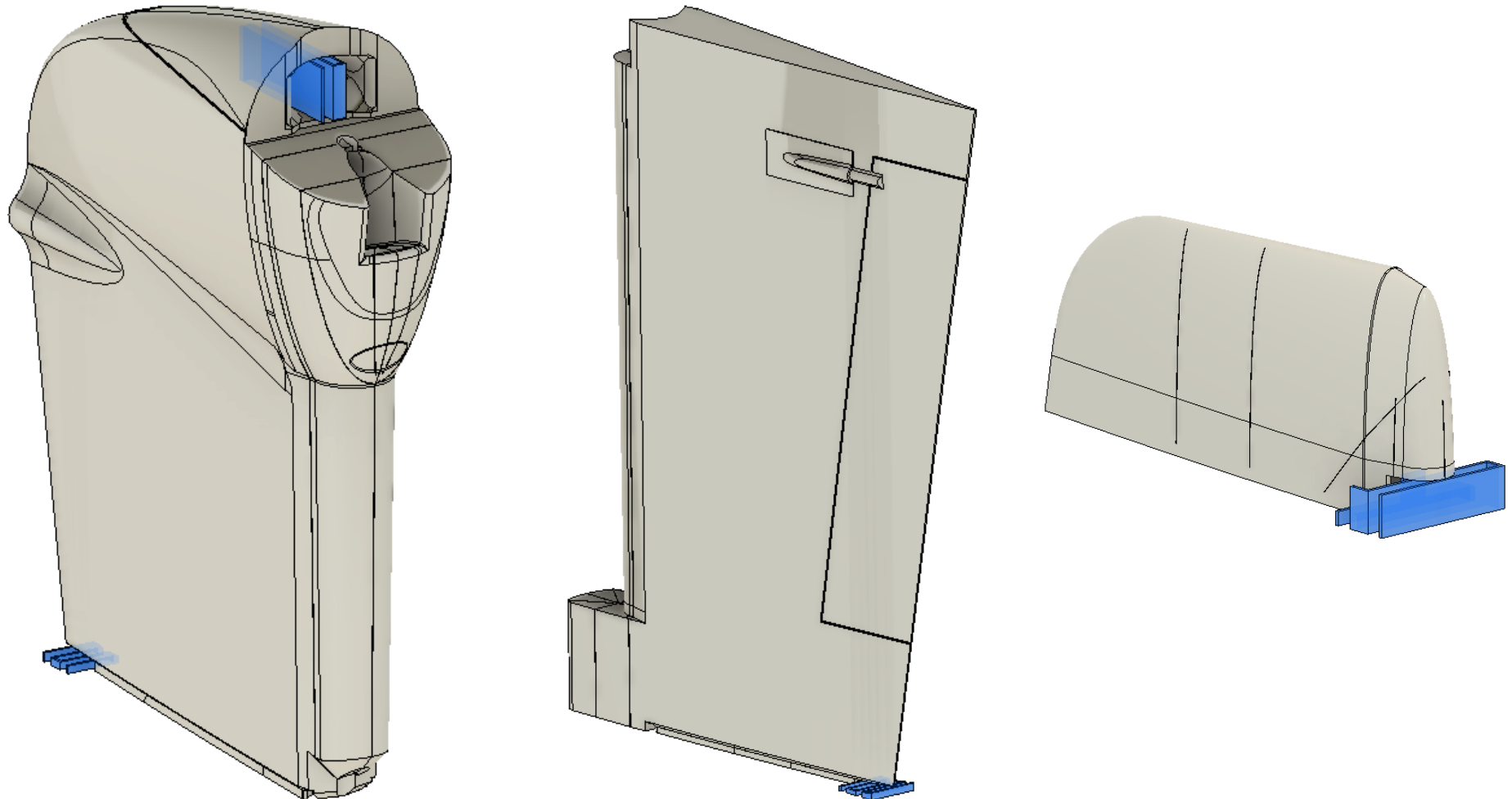
P-51D – 1/6.5
Rudder flap
LW-PLA



PREPARATION

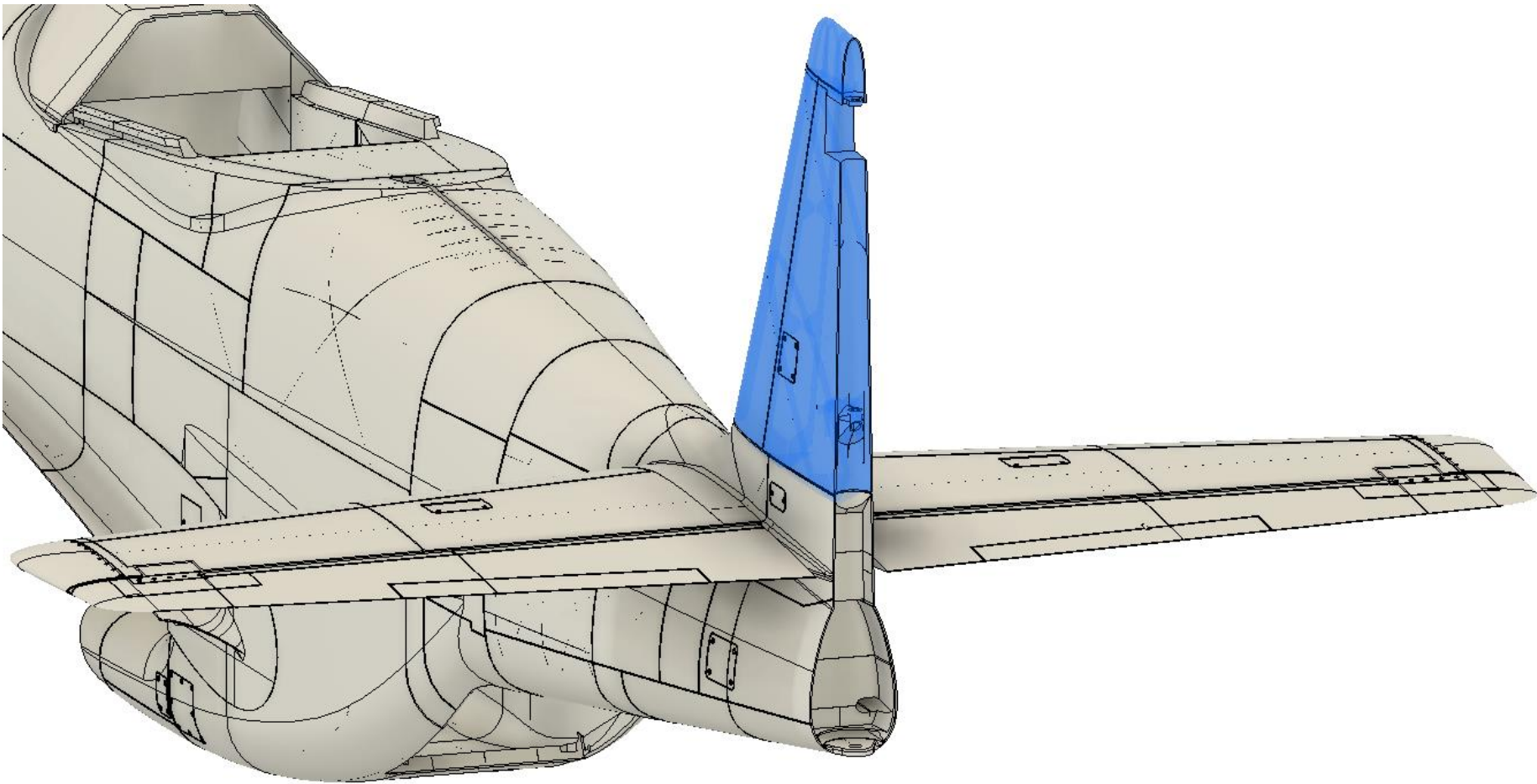
1

Remove print supports



ASSEMBLY**6**

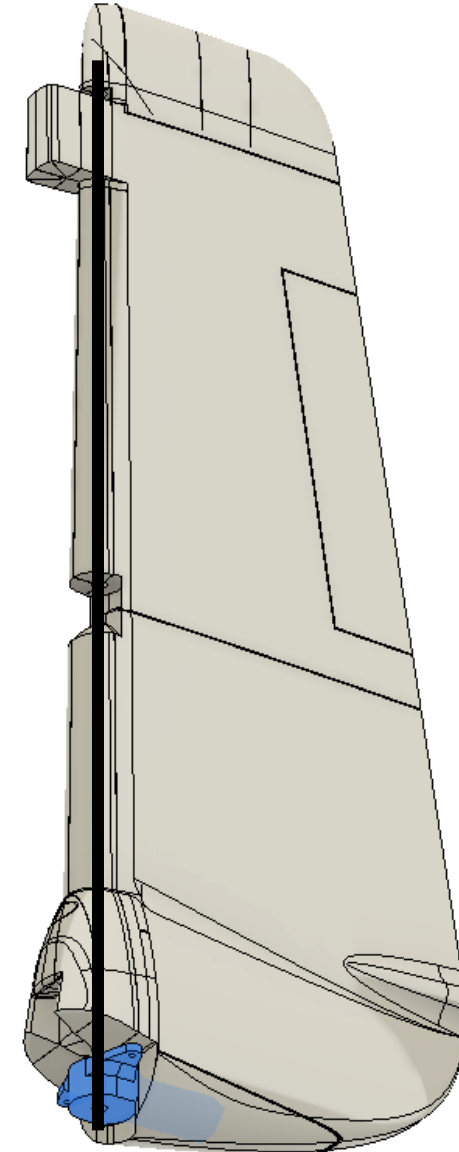
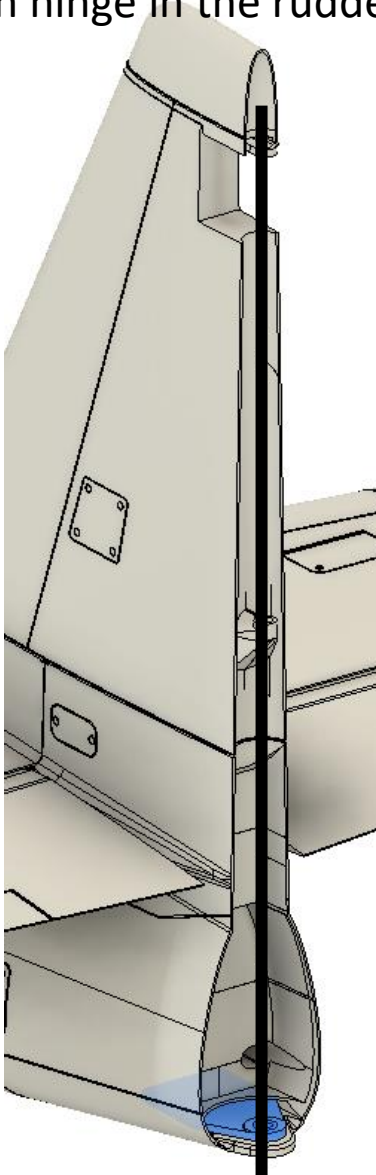
Glue the fin to the fuselage, check perpendicularity.



ASSEMBLY

7

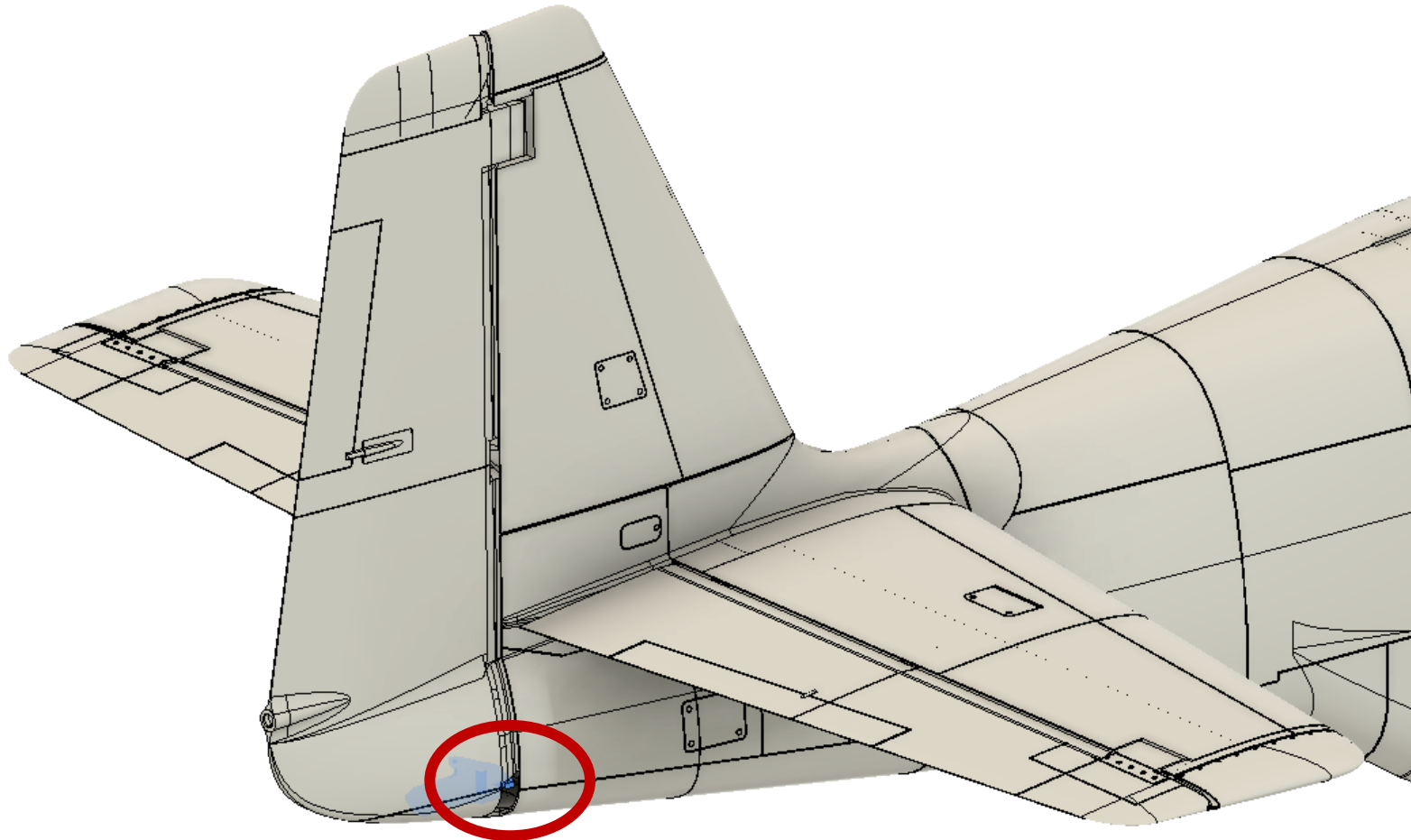
Glue the lower hinge into the fuselage, align with the other hinges.
Glue the horn hinge in the rudder, align with the general axis



ASSEMBLY

8

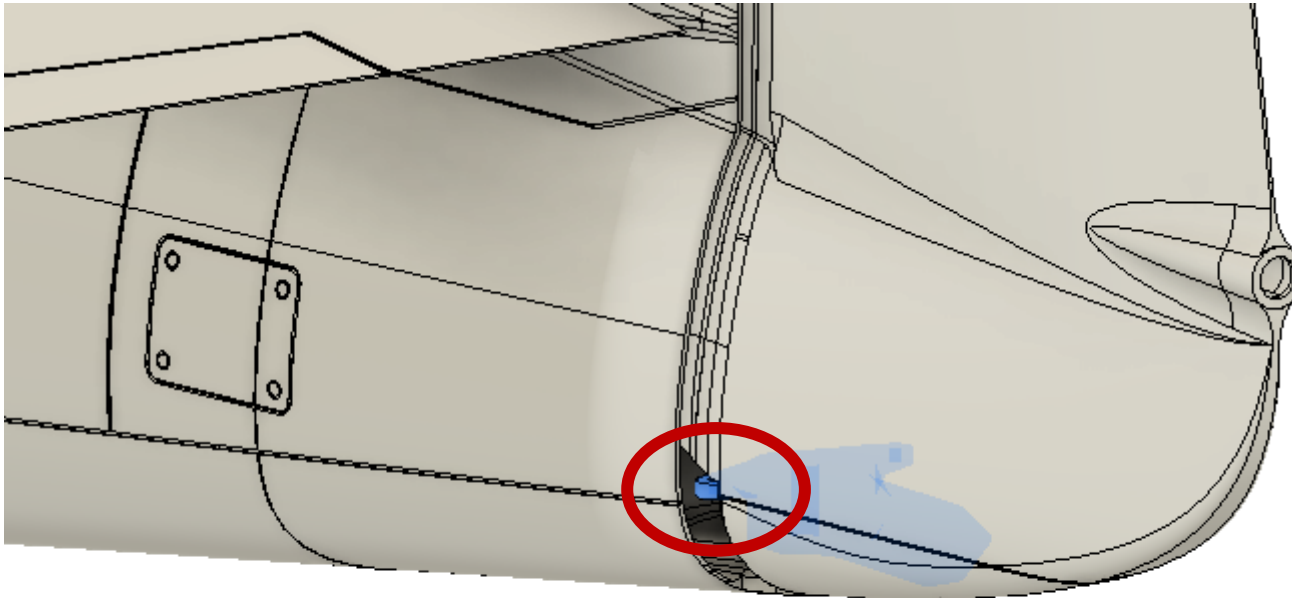
Attach the rudder command to the horn, insert it into the fuselage.
Assemble the rudder assembly on the fixed part, insert the $\varnothing 3 \times 275$ mm axis.
Check for full rudder travel.



ASSEMBLY

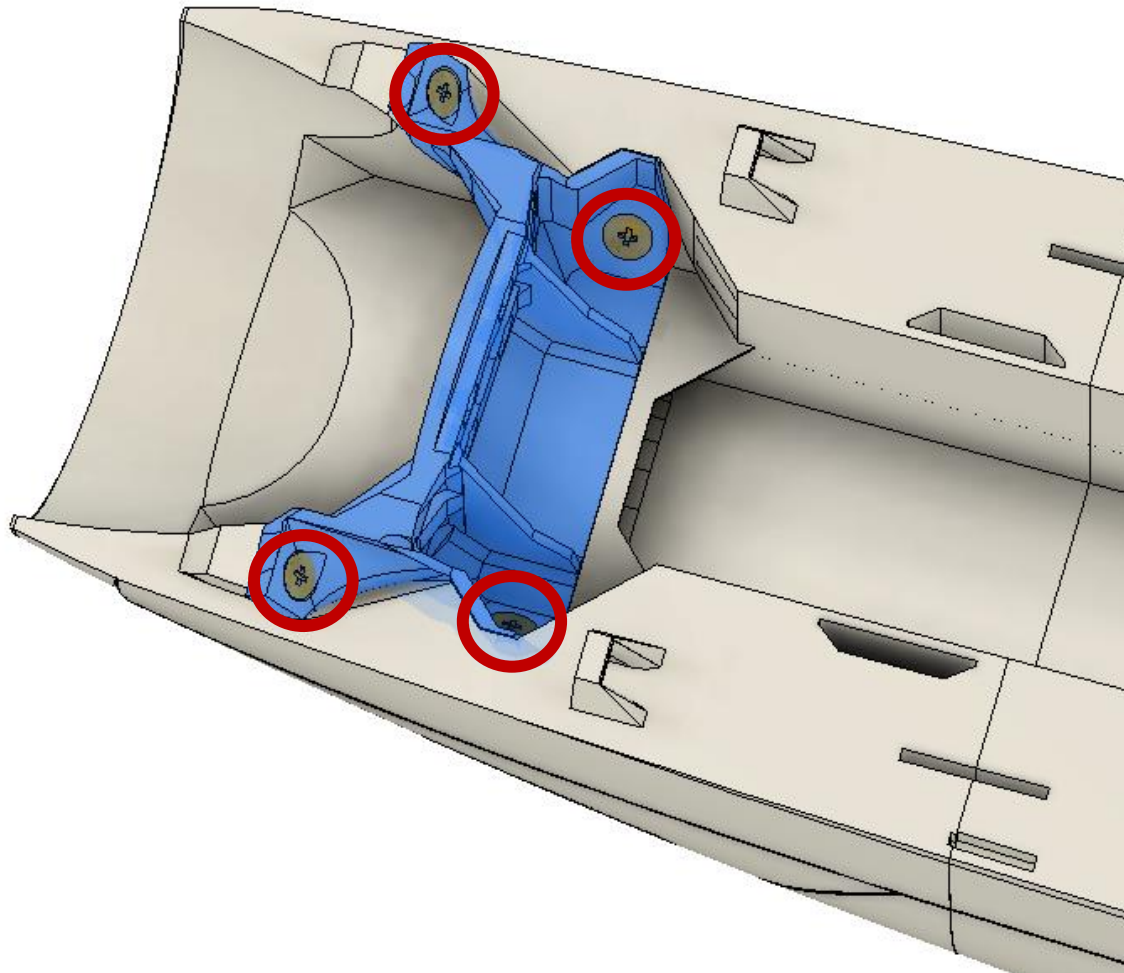
9

The left side of the horn is used to control the tailwheel.



ASSEMBLAGE

Montor mount assembly with 4 screws $\varnothing 4 \times 20\text{mm}$

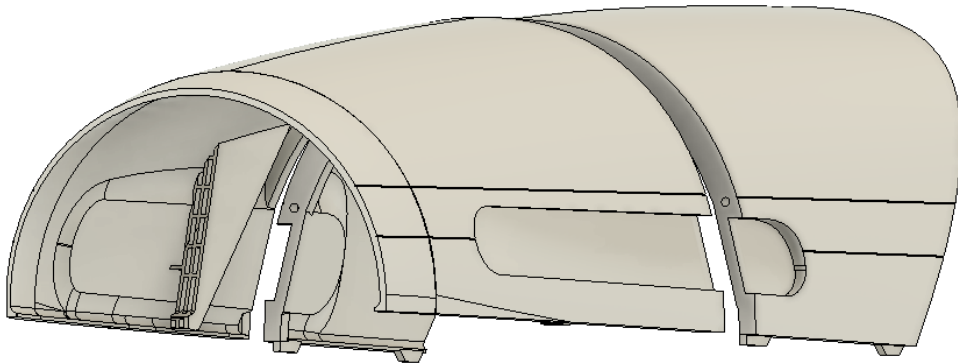


ASSEMBLAGE

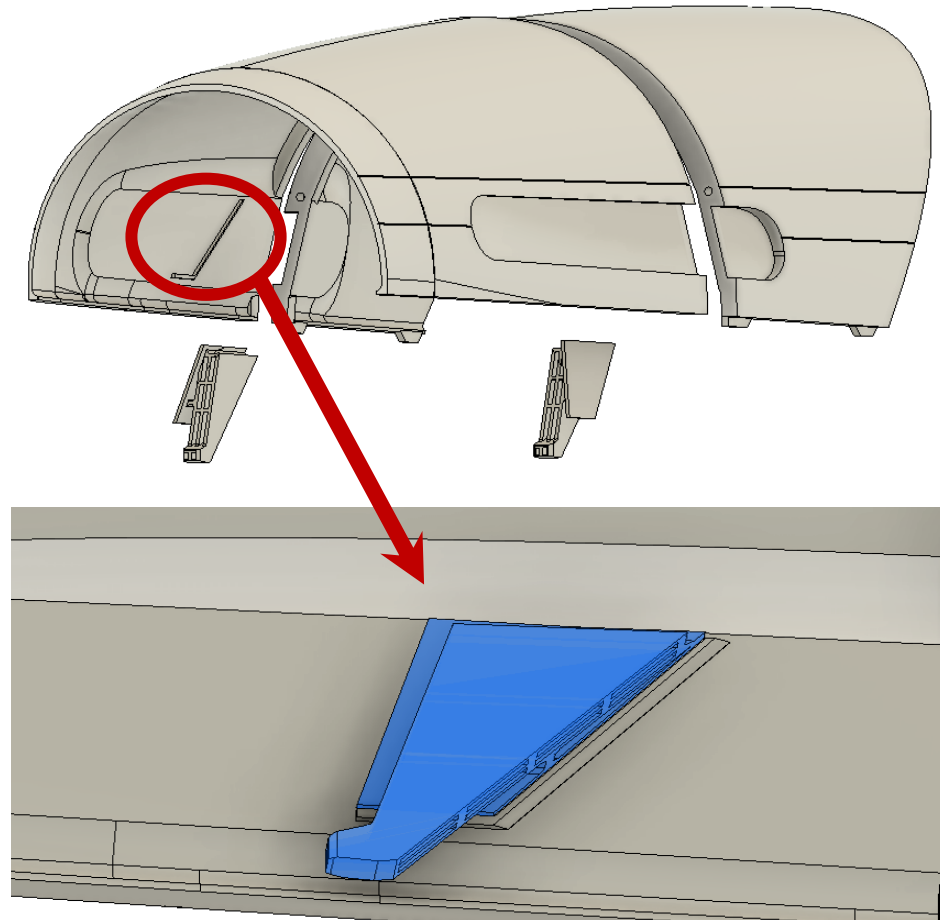
Battery hatch, 2 versions.

Assembly of the 2 parts with glue and 3 rods $\varnothing 2 \times 6$

2 parts only, printed with rigid material
(non LW)

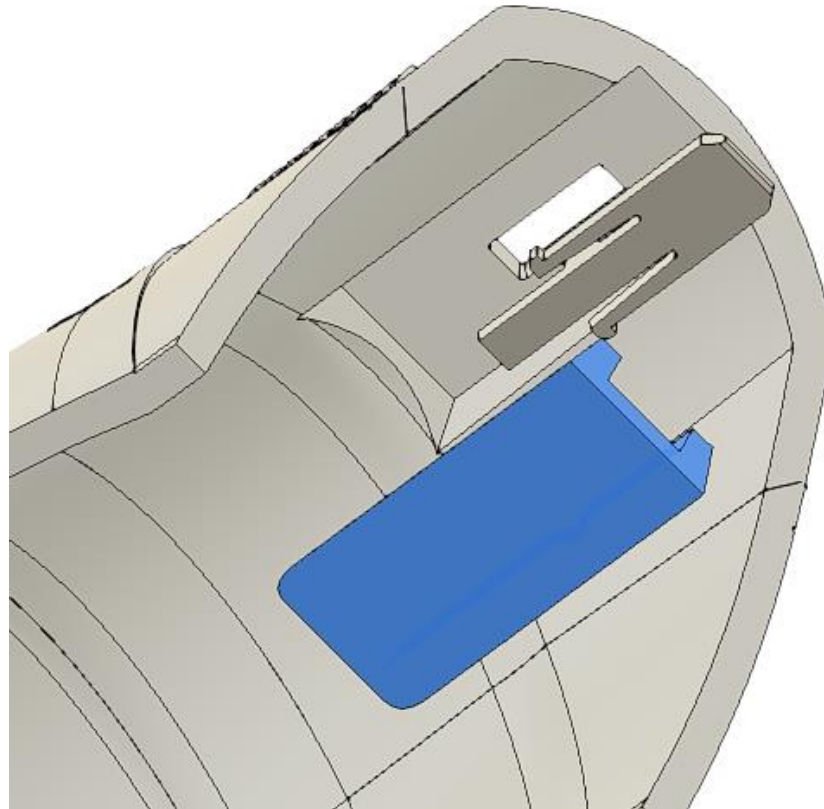


2 parts printed with LW + clips in rigid material



ASSEMBLAGE

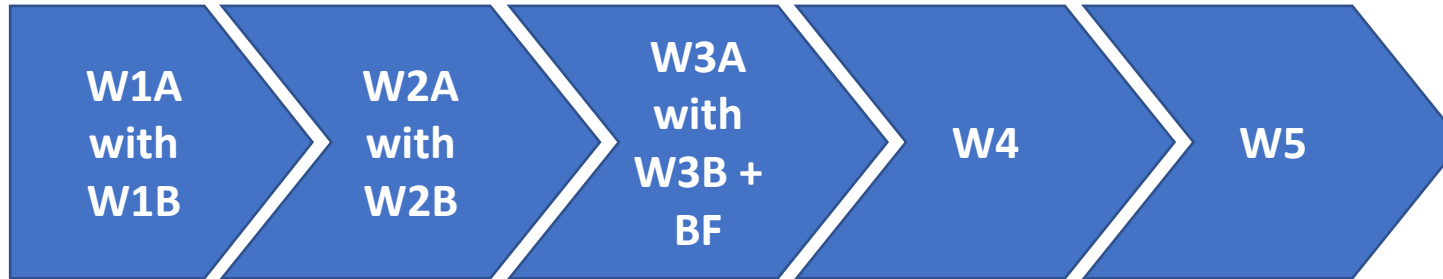
Battery hatch, glue the lock support in its housing under the hatch.
Be careful not to glue the lock.

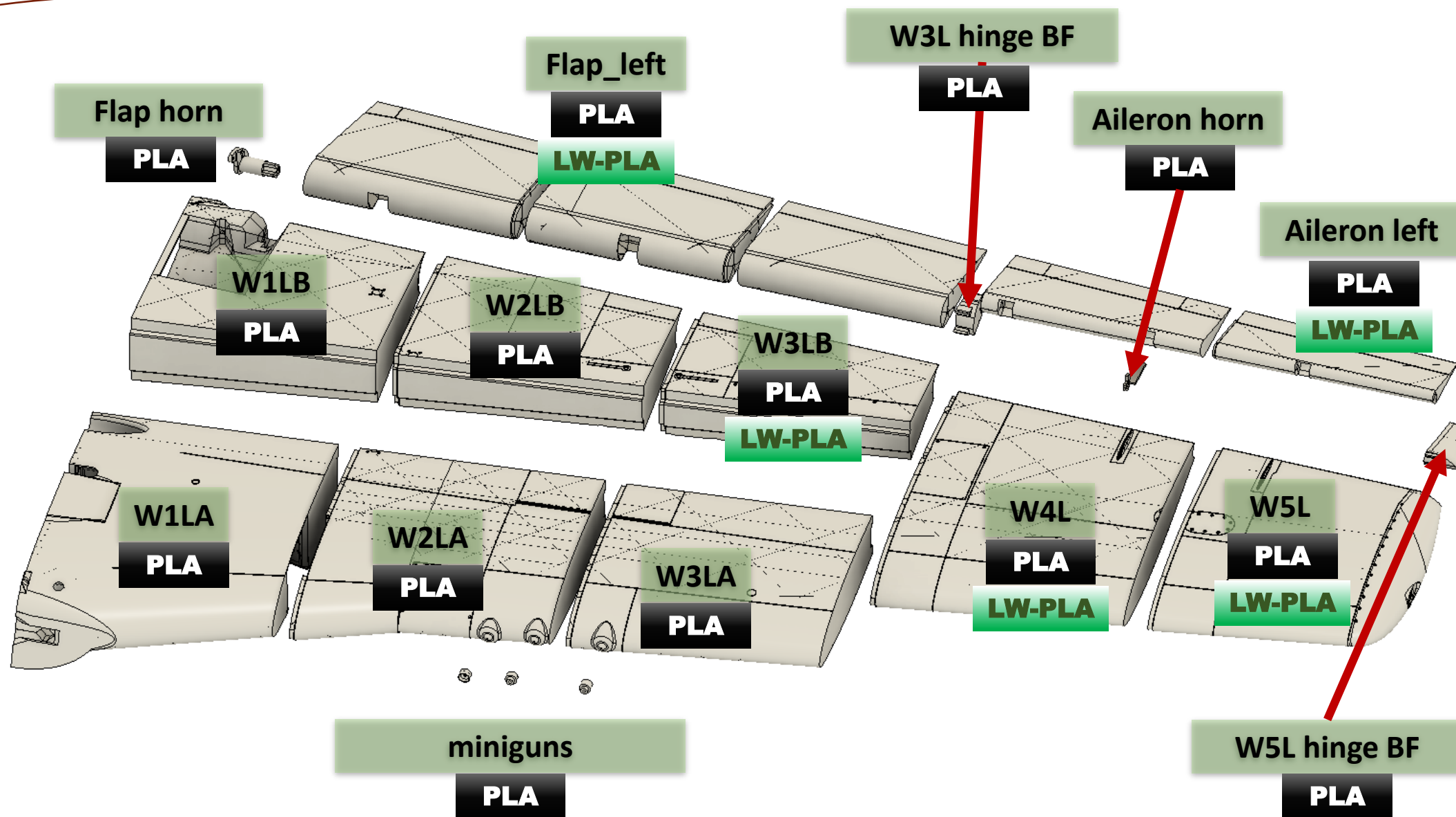


P-51 D Mustang

Wings

Assembly order

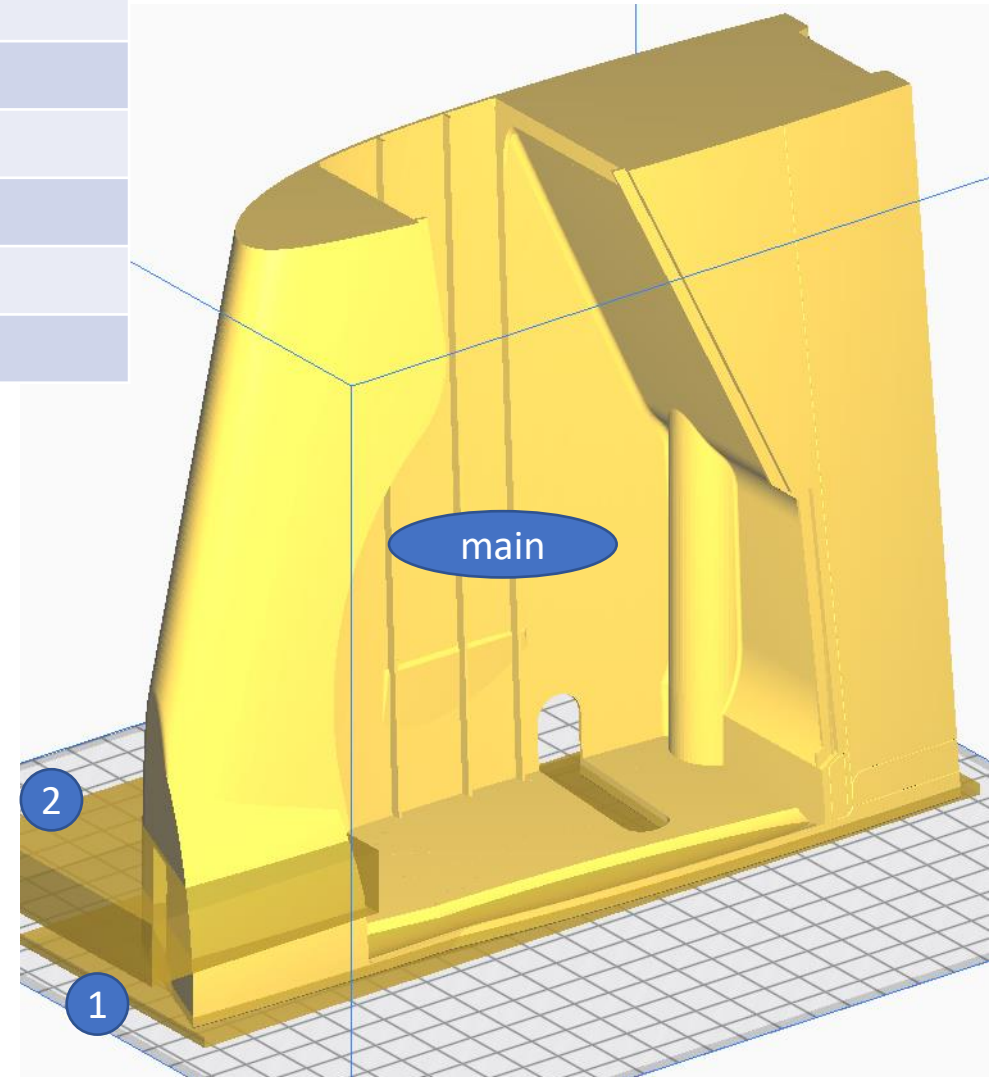




ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
main	0.42	0.25	1	-	-	0	0	0	123	
Process 1	0.42	0.25	4	0	2.7	0	0	10		
Process 2	0.42	0.25	2	16.95	32.95	0	0	10		

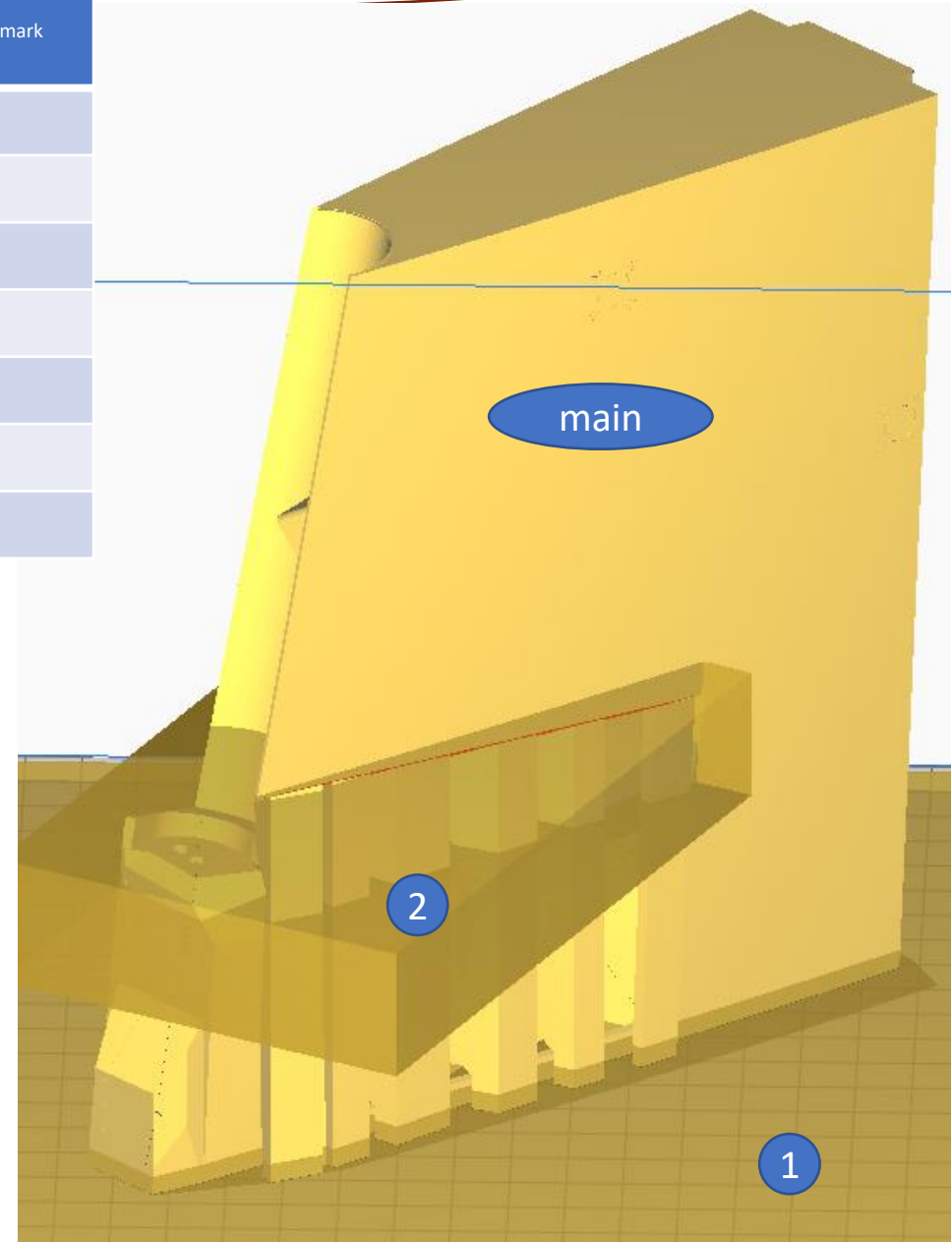
P-51D – 1/6.5
W1LA



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
main	0.42	0.25	1	-	-	0	0	0	89	
Process 1	0.42	0.25	3	0	3.7	0	0	0		
Process 2	0.42	0.25	1	51.2	75.2	2	2	0		

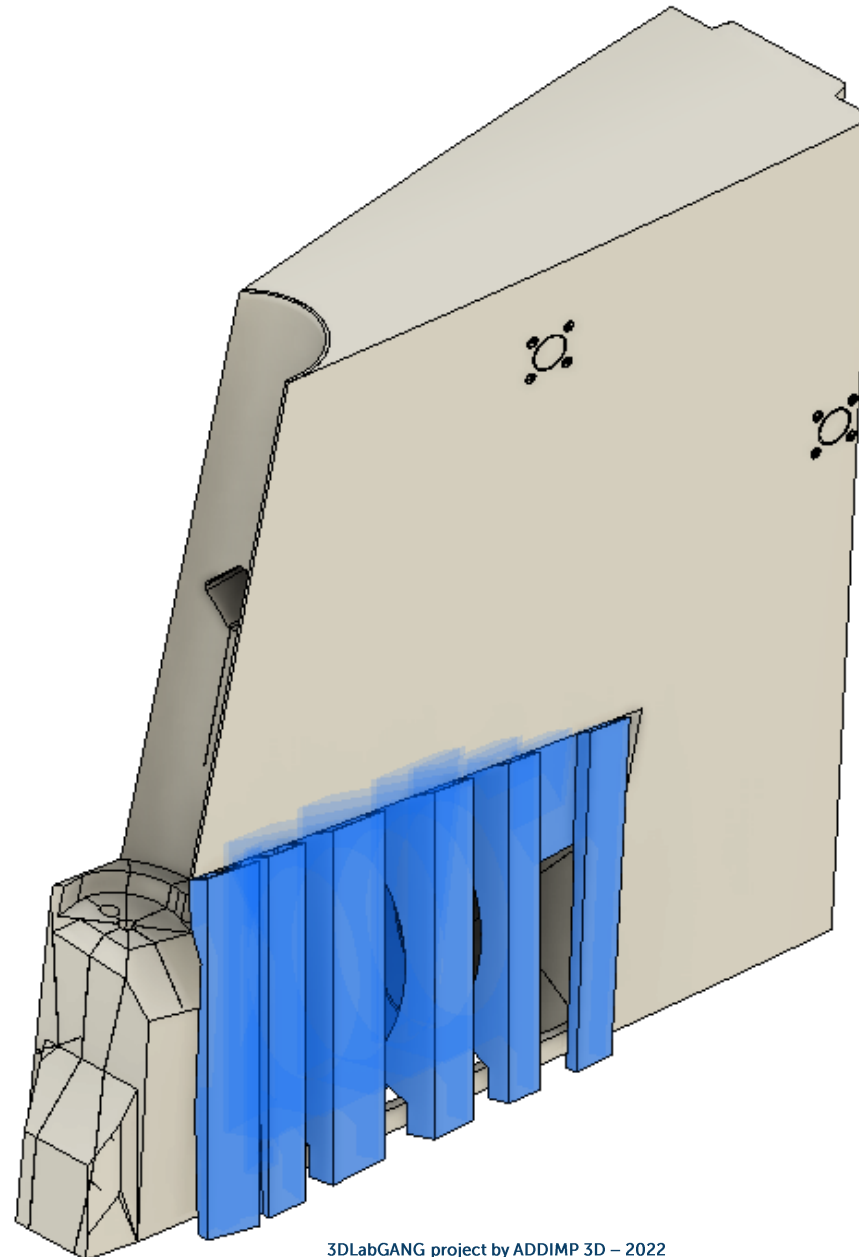
P-51D – 1/6.5
W1LB



PREPARATION

1

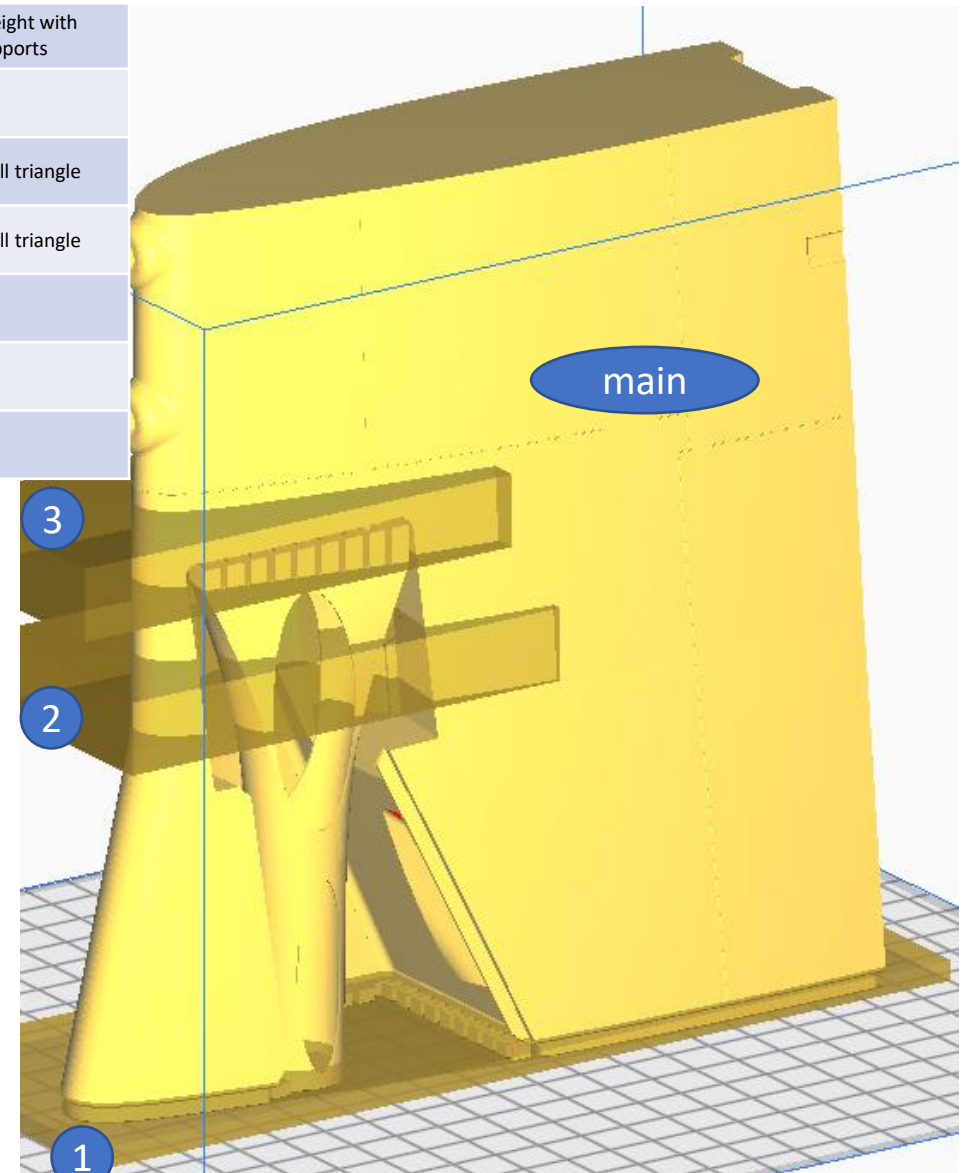
Remove print supports



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
main	0.42	0.25	1	-	-	0	0	0	124	Weight with supports
Process 1	0.42	0.25	3	0	4.2	0	0	0		
Process 2	0.42	0.25	2	74.2	89.2	2	2	10		Infill triangle
Process 3	0.42	0.25	2	99.2	113.2	2	2	10		Infill triangle

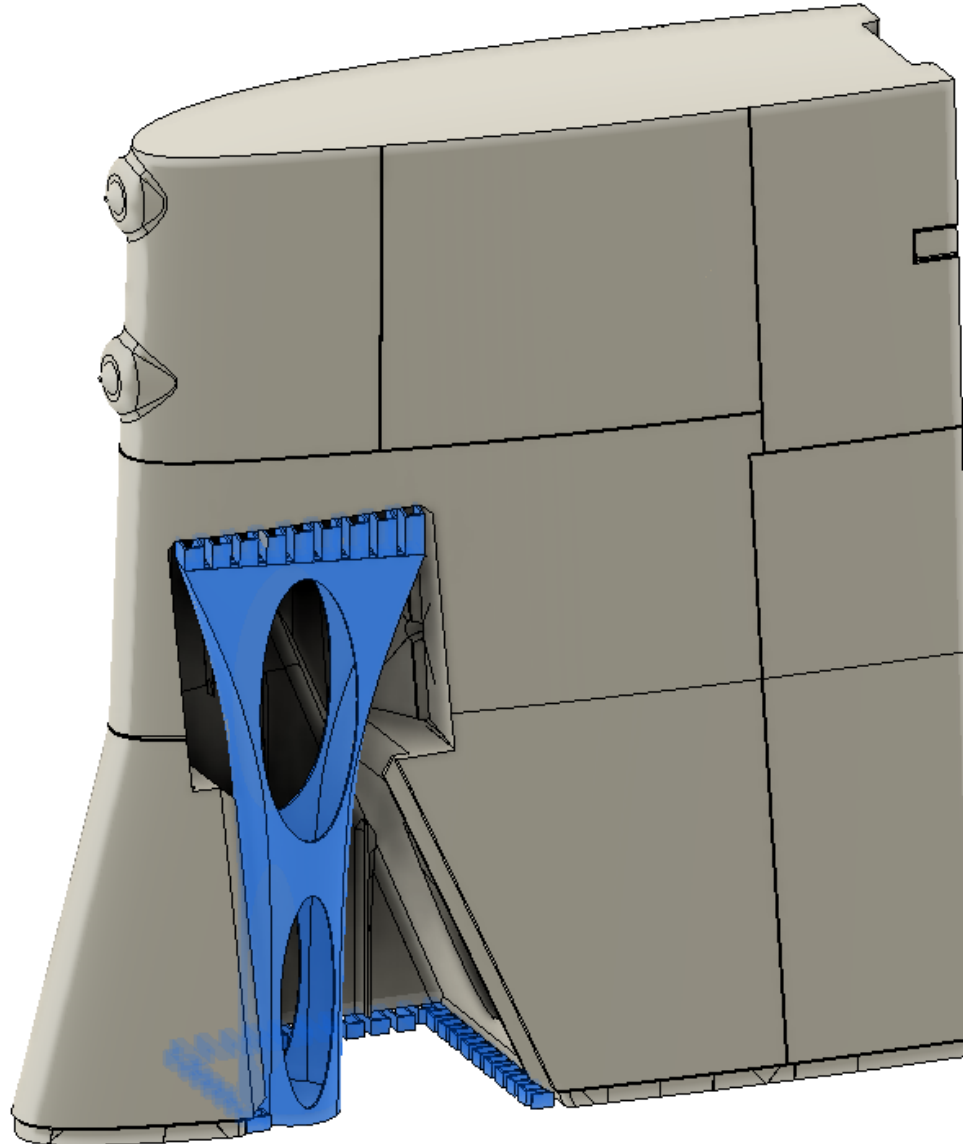
P-51D – 1/6.5
W2LA



PREPARATION

W2LA

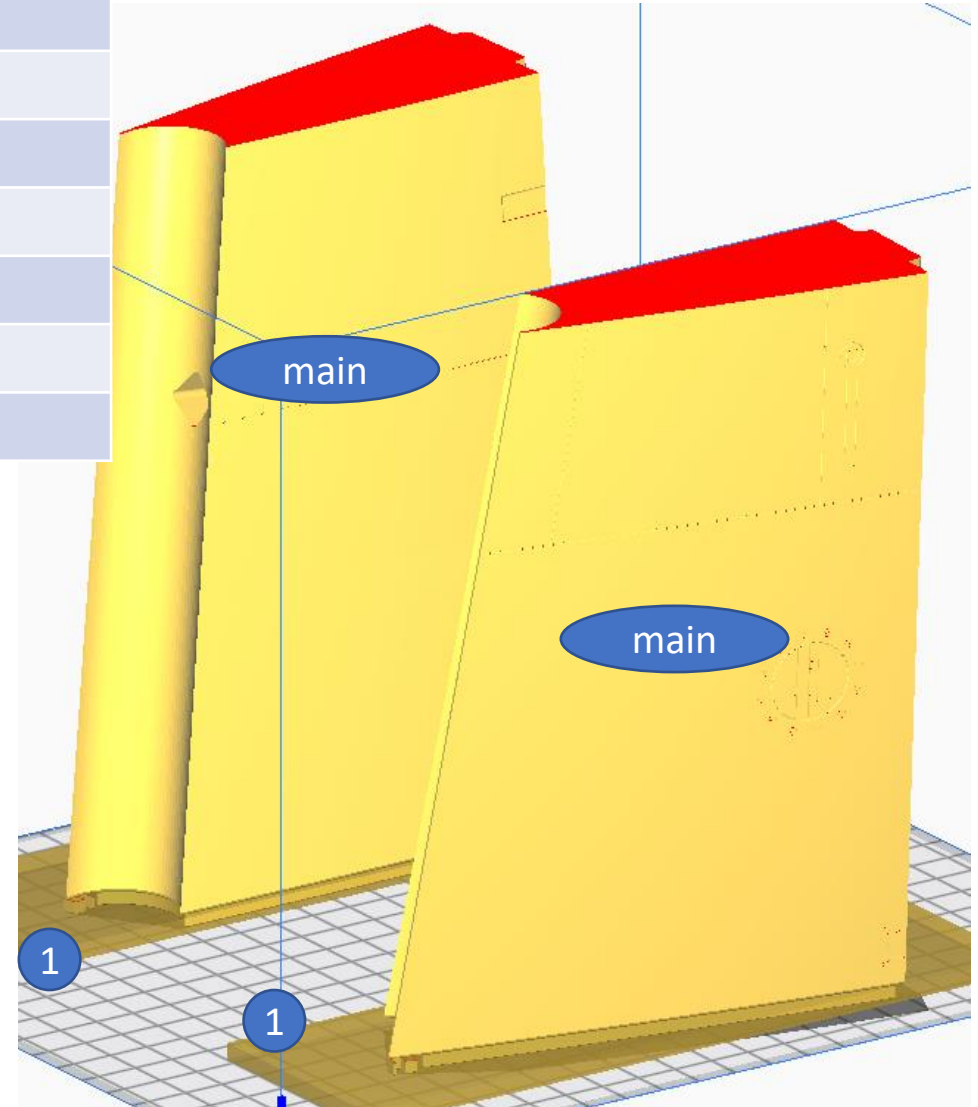
Remove print supports



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
main	0.42	0.25	1	-	-	0	0	0	42 chacun	
Process 1	0.42	0.25	3	0	3.95	0	0	0		

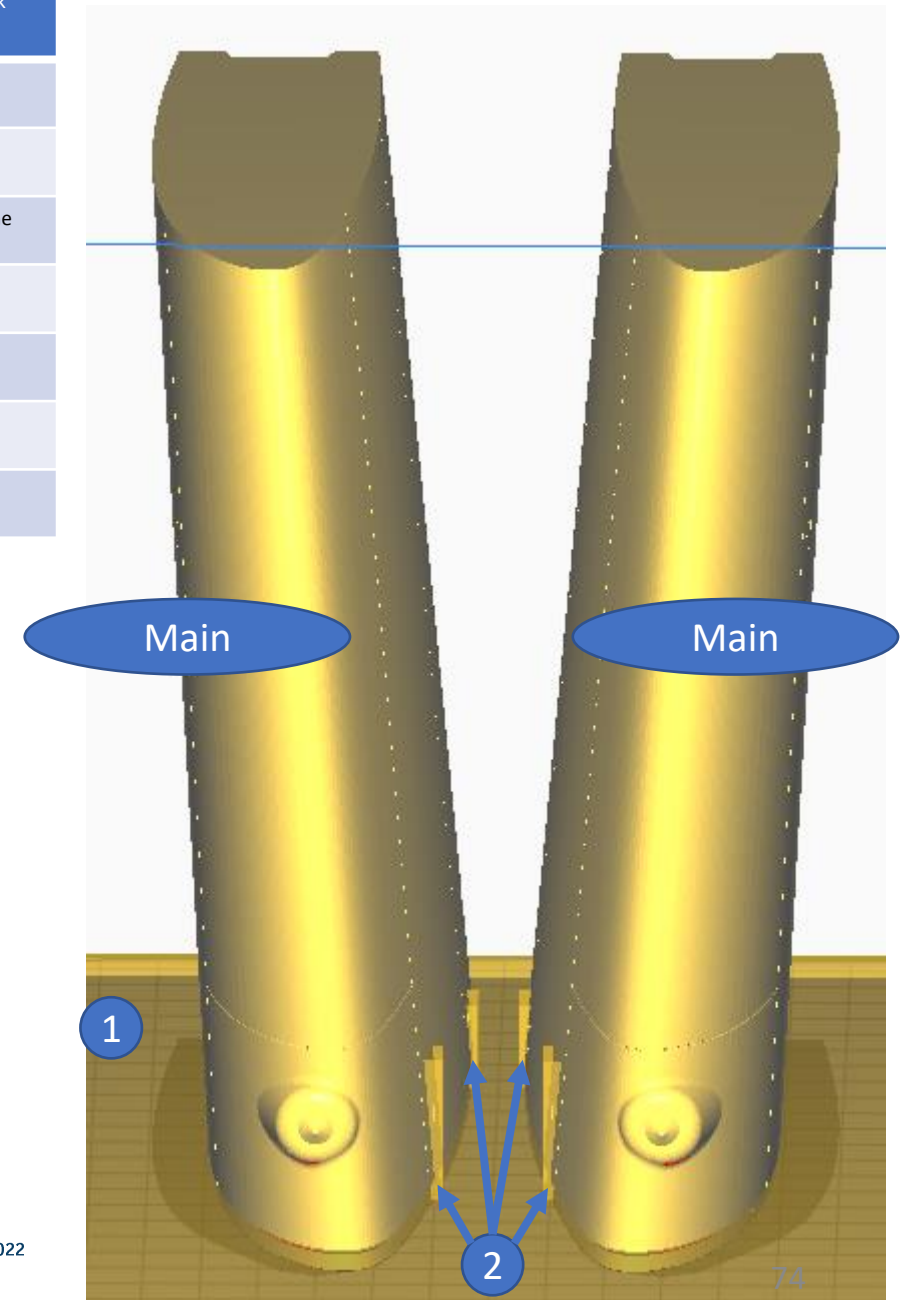
P-51D – 1/6.5
W2LB & W2RB



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
Main	0.42	0.25	1	-	-	0	0	0	138	
Process 1	0.42	0.25	3	0	3.95	0	0	0		
Process 2	0.42	0.25	1	0	25	0	0	10		Infill line

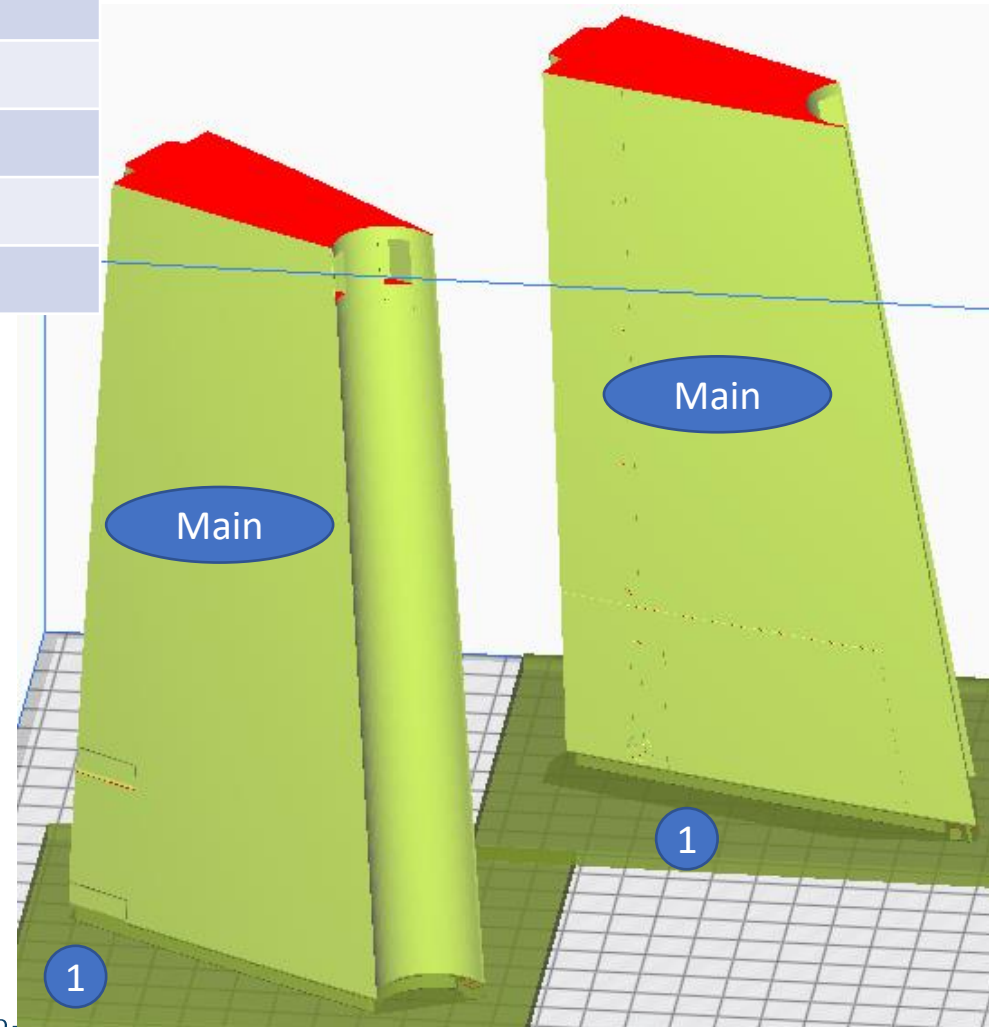
P-51D – 1/6.5
W3LA & W3RA



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
Main	0.42	0.25	1	-	-	0	0	0	28 each	
Process 1	0.42	0.25	3	0	3.95	0	0	0		

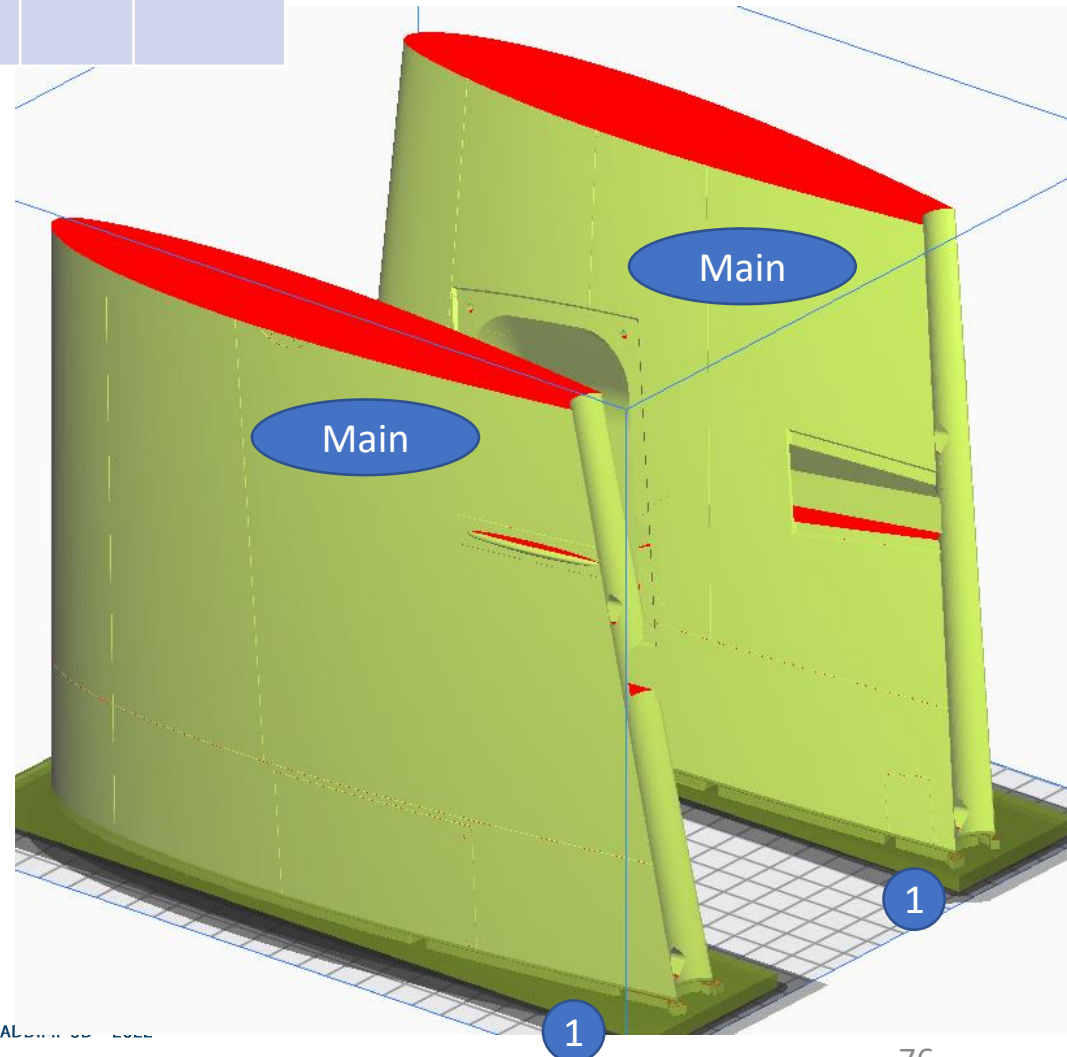
P-51D – 1/6.5
W3LB & W3RB



ADDITIVE 3D

	Extrusion width (mm)	Flow (%)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
Main	0.4	55	0.25	1	-	-	0	0	0	39 each	
Process 1	0.4	55	0.25	3	0	4.45	0	0	0		

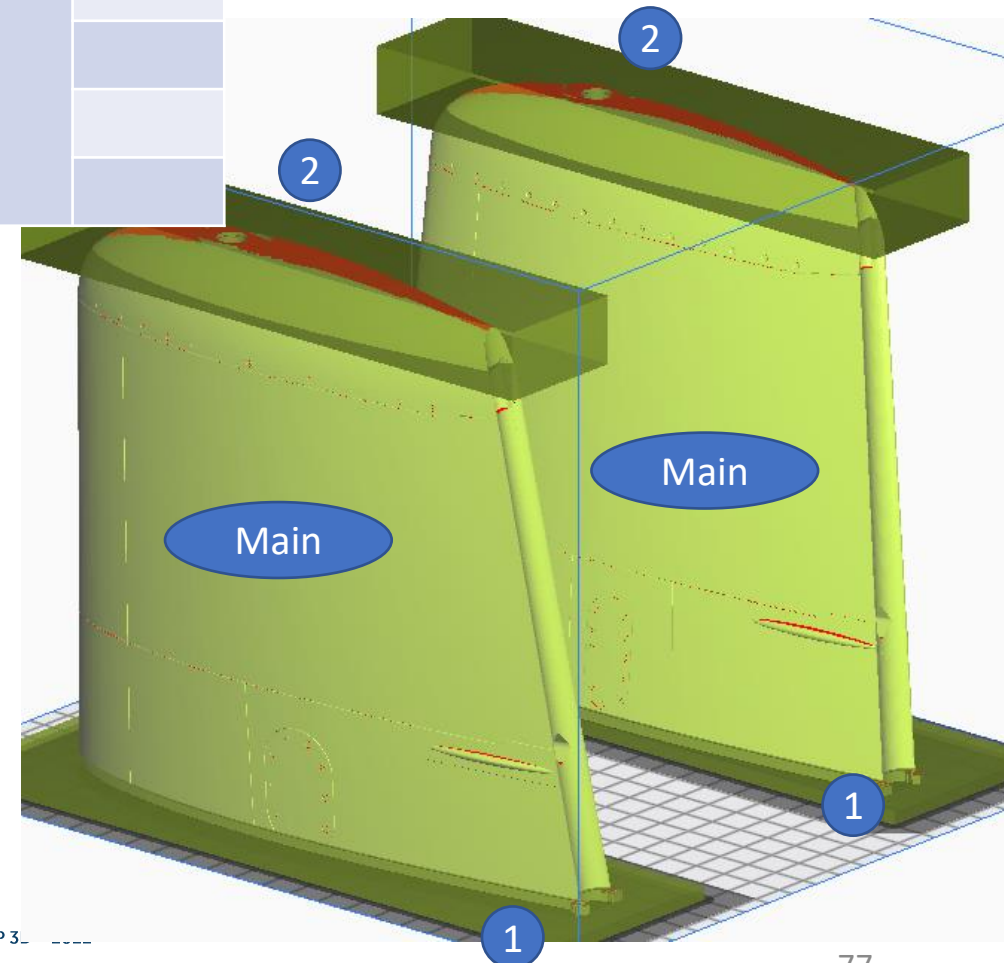
P-51D – 1/6.5
W4LA & W4RA



ADDIMP 3D

	Extrusion width (mm)	Flow (%)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
Main	0.4	55	0.25	1	-	-	0	0	0	28 each	
Process 1	0.4	55	0.25	3	0	4.45	0	0	0		
Process 2	0.4	55	0.25	2	155.7	-	3	0	5		Out first

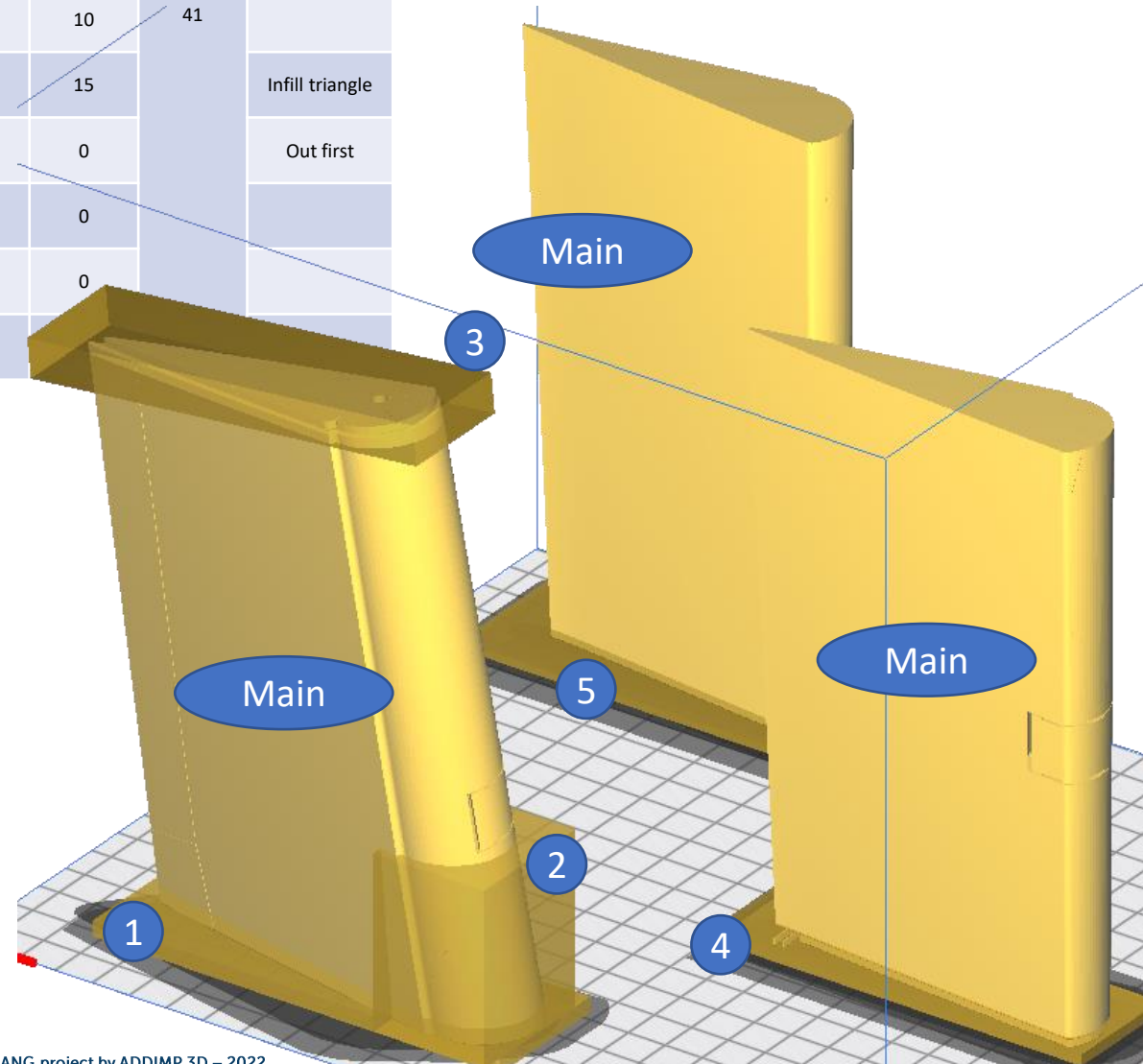
P-51D – 1/6.5
W5LA & W5RA



ADDIMP 3D

	Extrusion width (mm)	Flow (%)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
Main	0.4	55	0.25	1	-	-	0	0	0	41	
Process 1	0.4	55	0.25	2	0	4	0	3	10		
Process 2	0.4	55	0.25	1	0	45	0	0	15		Infill triangle
Process 3	0.4	55	0.25	3	140	-	0	0	0		Out first
Process 4	0.4	55	0.25	3	0	2.95	0	0	0		
Process 5	0.4	55	0.25	2	0	2	0	2	0		

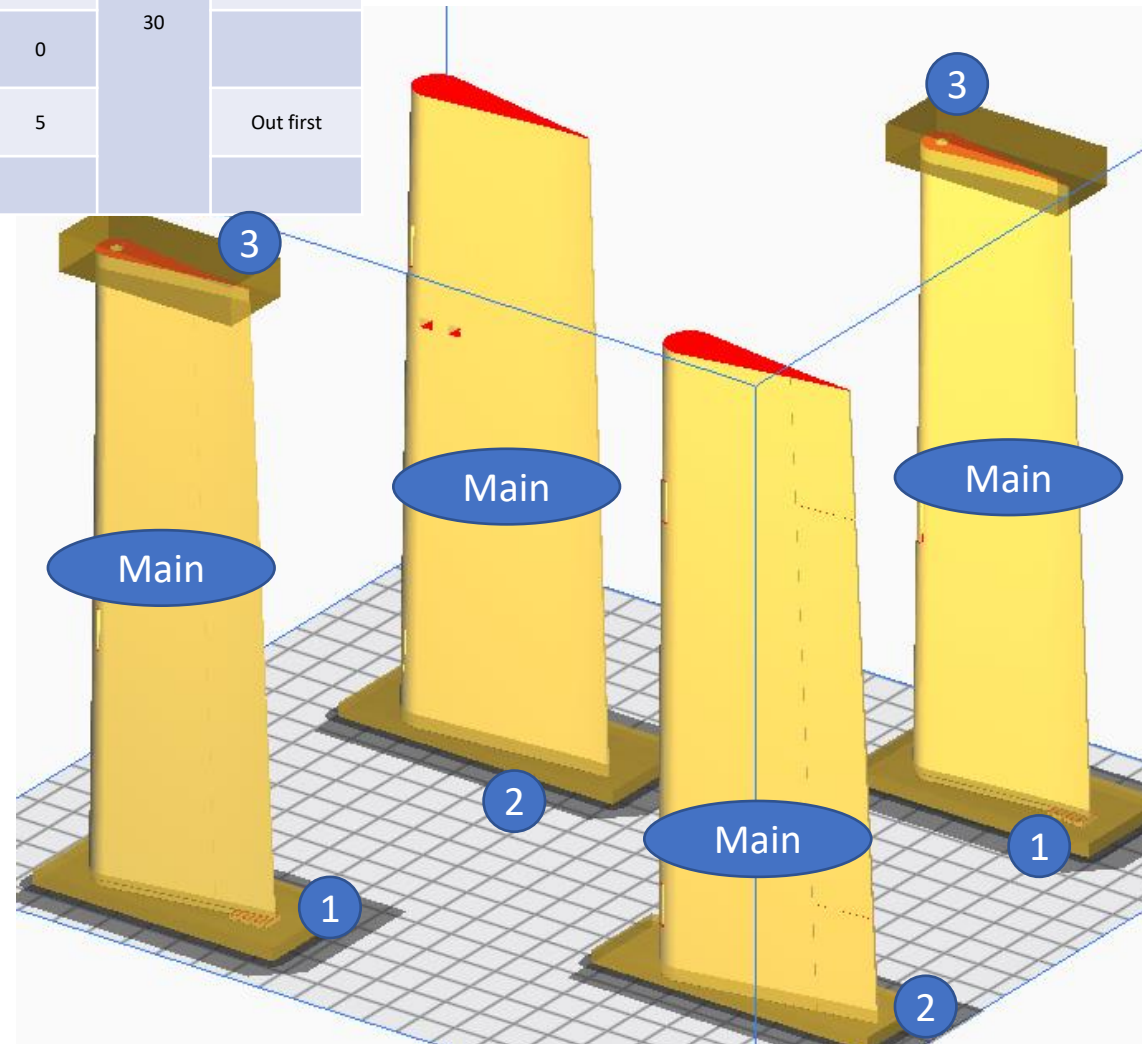
P-51D – 1/6.5 flaps



ADDIMP 3D

	Extrusion width (mm)	Flow (%)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
Main	0.4	55	0.25	1	-	-	0	0	0	30	
Process 1	0.4	55	0.25	3	0	3.5	0	0	0		
Process 2	0.4	55	0.25	3	0	3.5	0	3	0		
Process 3	0.4	55	0.25	2	161.95	-	3	0	5		Out first

P-51D – 1/6.5
ailerons



ADDIMP 3D

	Extrusion width (mm)	Flow (%)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
Main	0.4	55	0.25	2	-	-	2	2	15	26	

**Covers for
ailerons
commands**

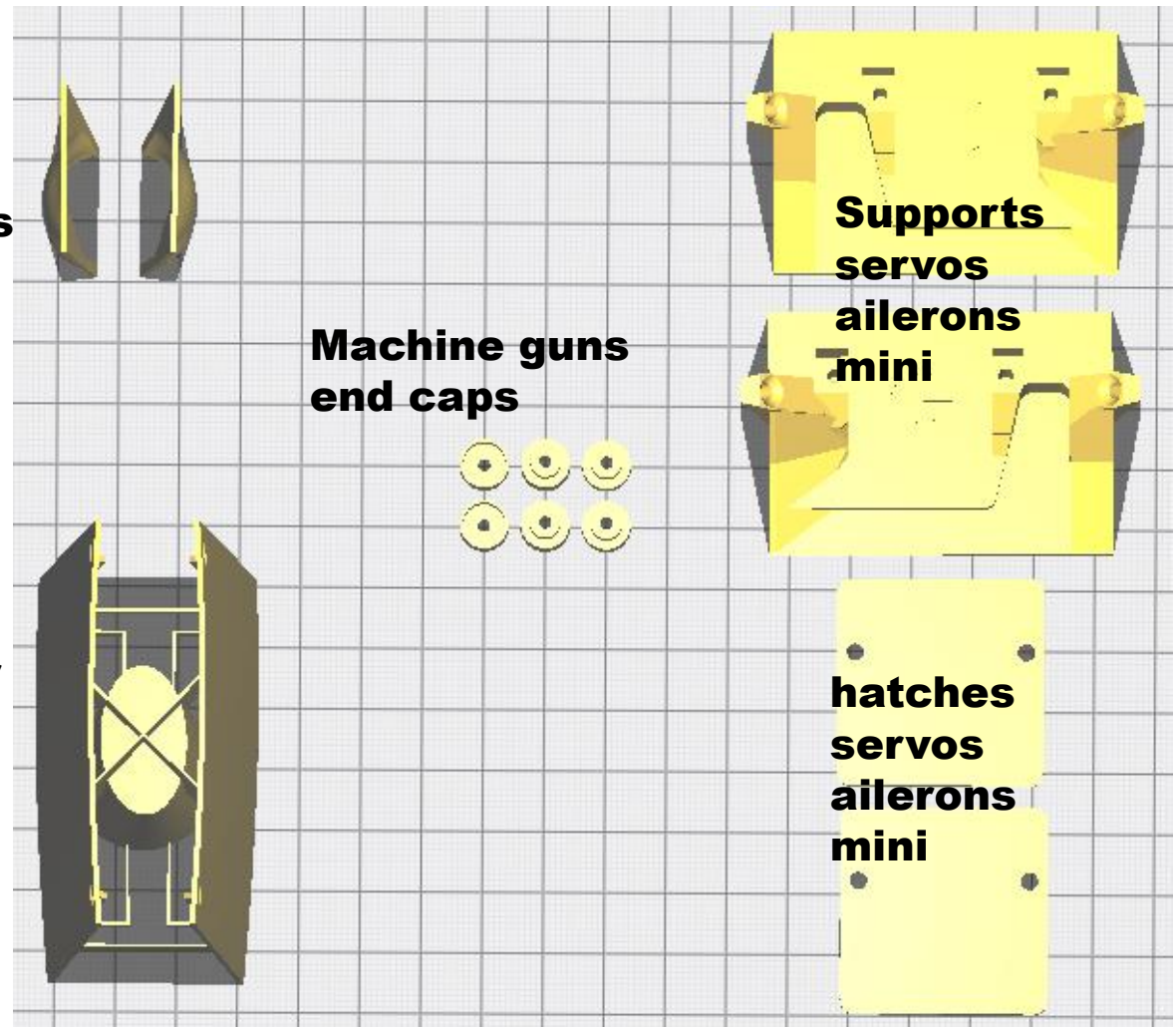
**Hatches for
ailerons
servos**

**Machine guns
end caps**

**Supports
servos
ailerons
mini**

**hatches
servos
ailerons
mini**

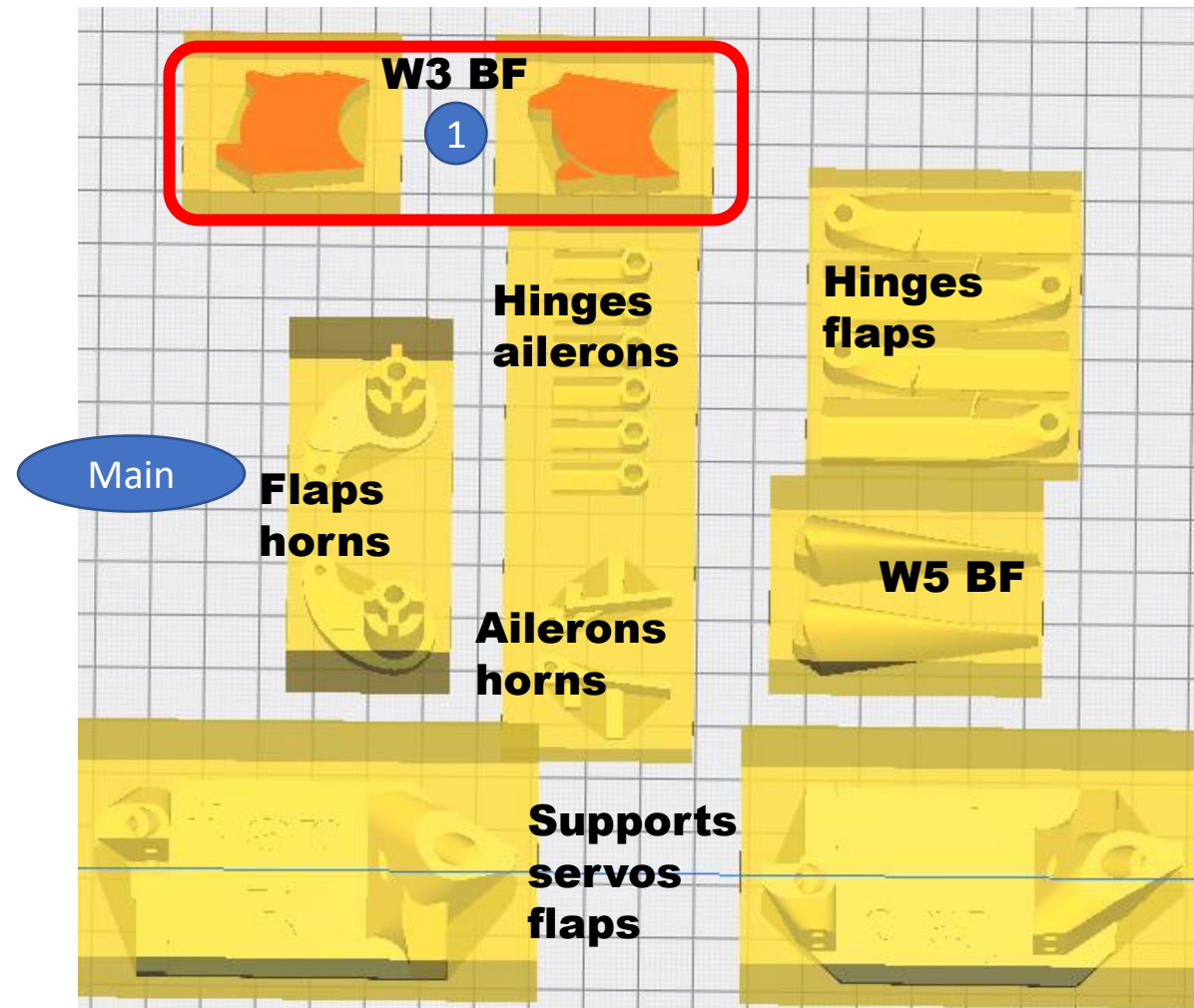
P-51D – 1/6.5
Accessories LW-PLA



ADDIMP 3D

	Extrusion width (mm)	Layer height (mm)	Number of perimeter	Start height (mm)	Stop height (mm)	Top solid layers	Bottom solid layers	Infill %	Weight (g and LW-PLA)	remark
Main	0.45	0.25	2	-	-	3	3	20	46	
Process 1	0.45	0.25	2	-	-	0	3	0		

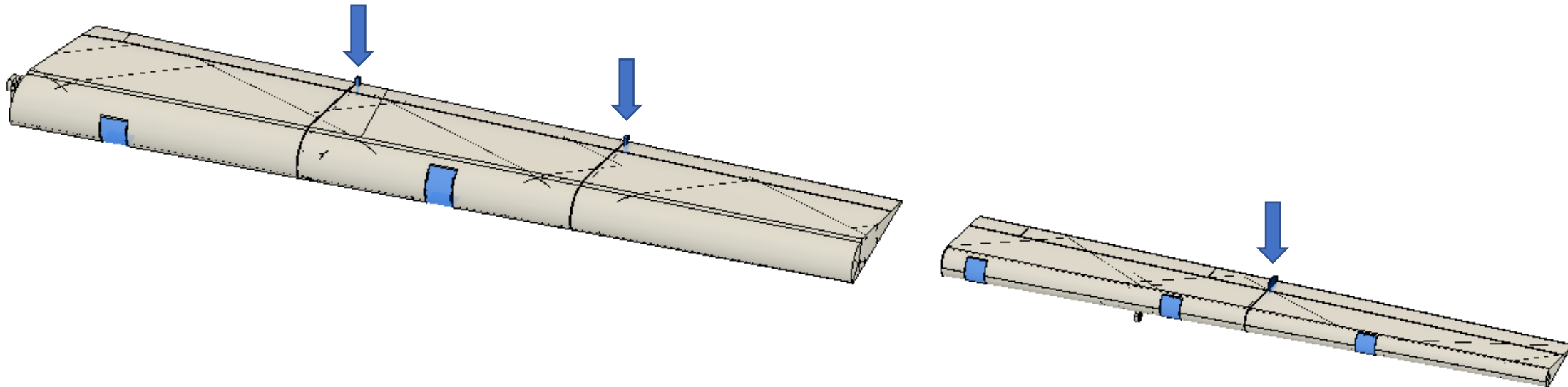
P-51D – 1/6.5
Accessories PLA



PREPARATION

Aileron & flap

Remove print supports



ASSEMBLY

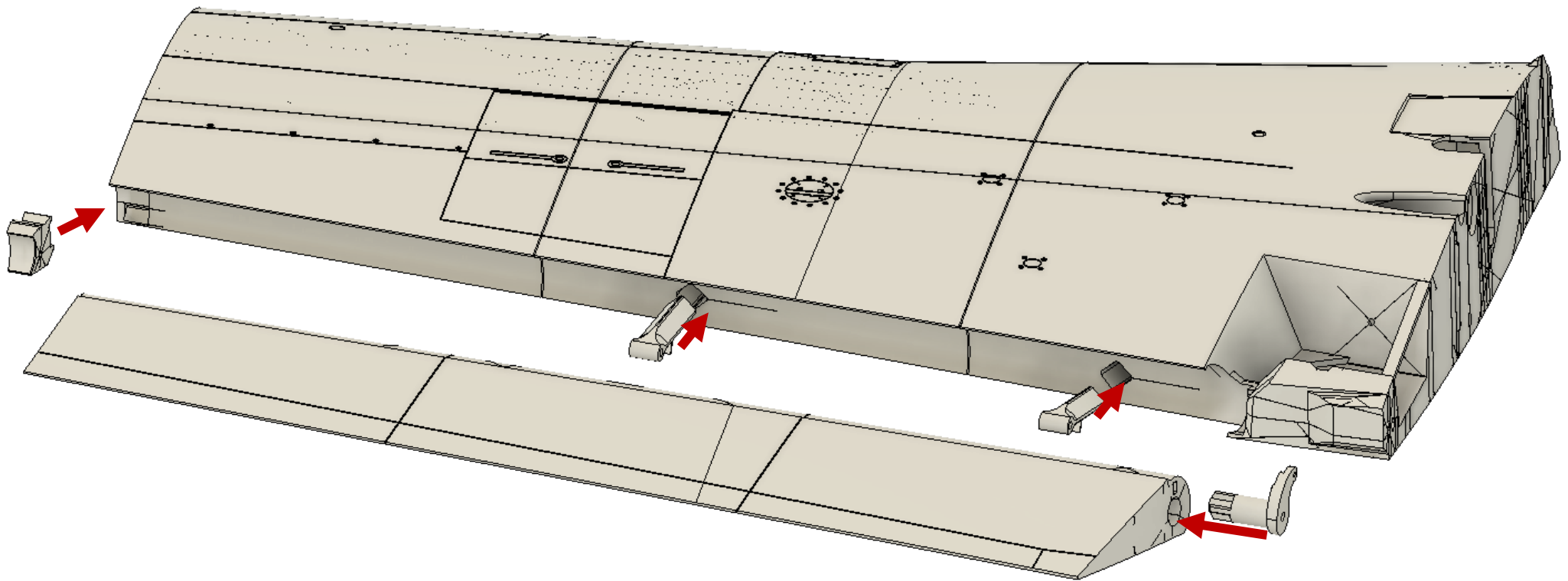
Flap

Check that the $\varnothing 3\text{mm}$ axis slides freely in all passages and hinges.

Glue the hinges into the wing (up to the stop).

Glue the bell crank in the flap.

Assemble the flap with the wing using an axis $\varnothing 3\text{mm} \times 470\text{mm}$

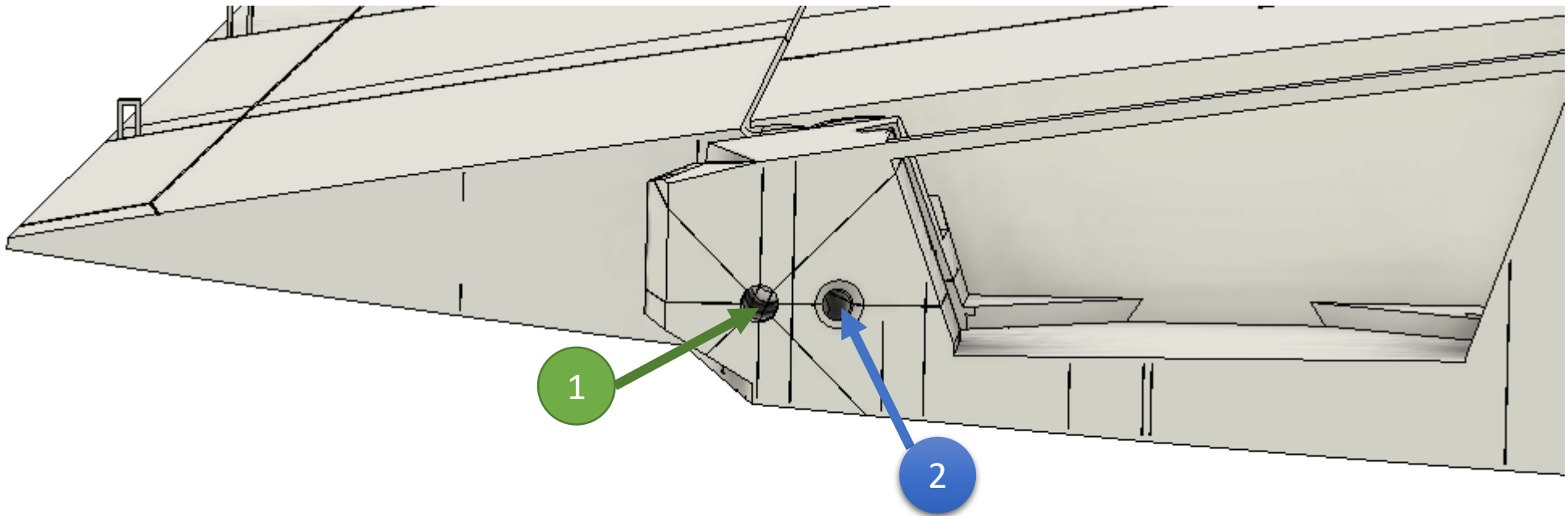


ASSEMBLAGE

Flap

Hole n°1 is used to pass the axis of the flap.

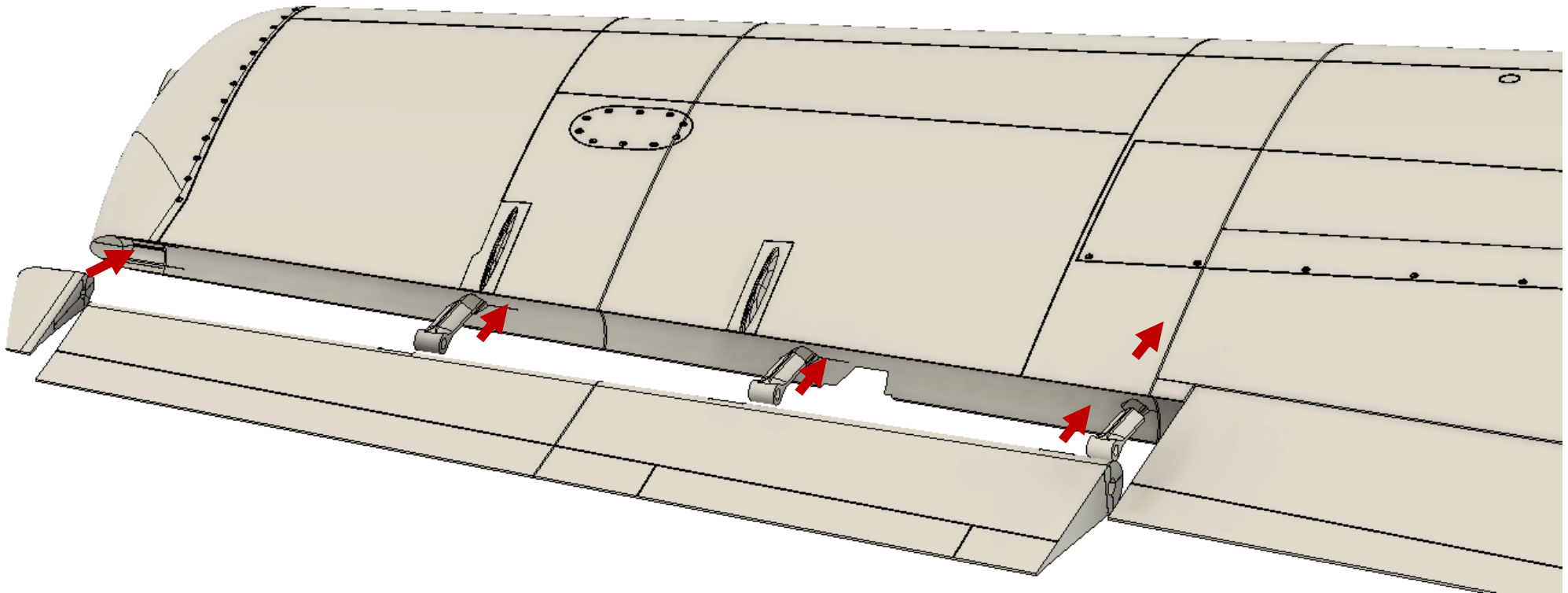
Hole n°2 is used for a $\varnothing 3\text{mm}$ tube or rod to center the 2 wing parts together.



ASSEMBLY

Aileron

Check that the $\varnothing 3\text{mm}$ axis slides freely in all passages and hinges.
Assemble the aileron and its hinges with the axis $\varnothing 3\text{mm} \times 334\text{mm}$.
Glue the hinges in the wing making sure there is operating gap for the aileron.
Glue the horn under the aileron.



ASSEMBLY

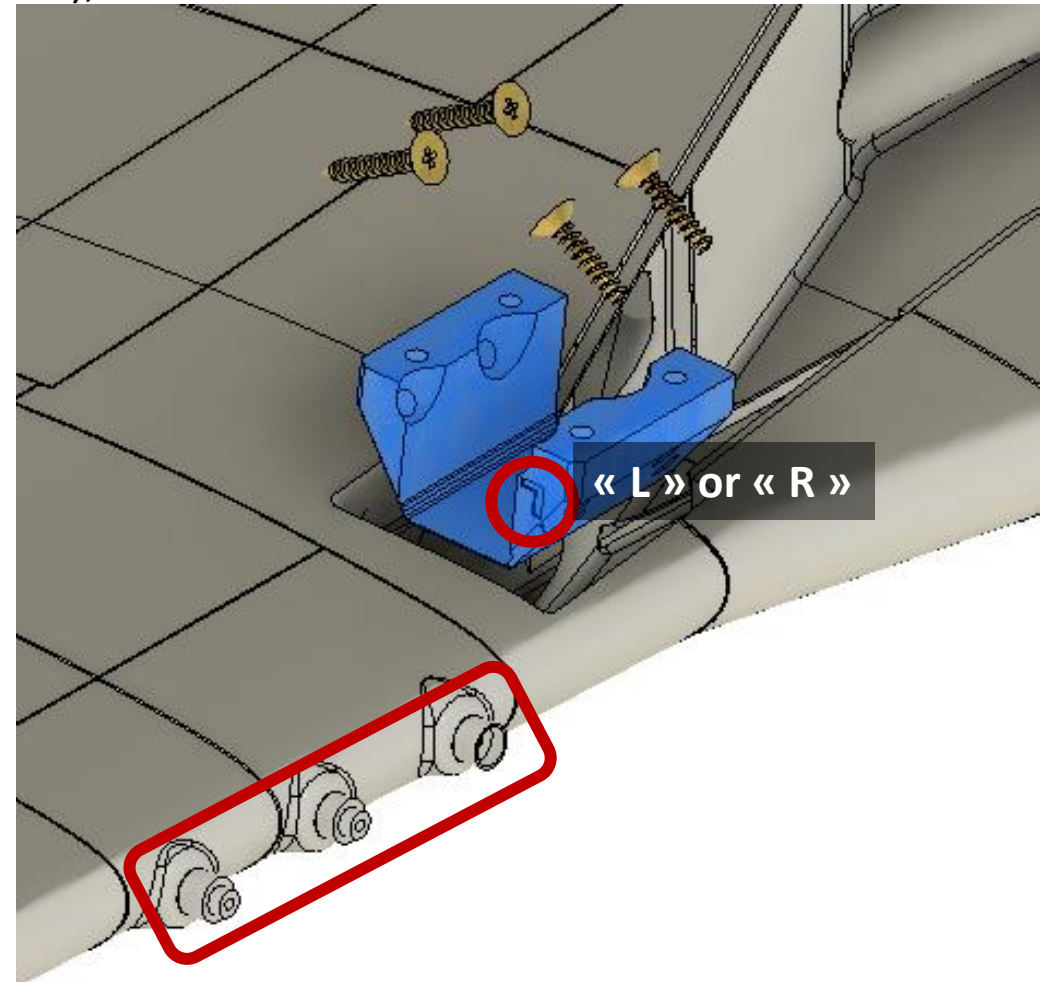
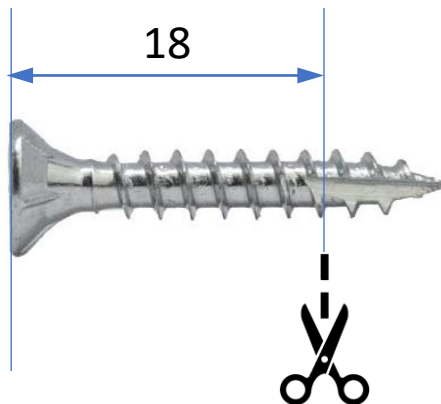
Retracts

Cut 2 of the 4 screws to 18mm length. Due to the short length of the LE, it is better than to use a true 18mm length screw.

Assemble the adapter (the side is represented by a letter);

- 2 screws 4 x 25 at the back
- 2 recut screws 4 x 18 at the front.

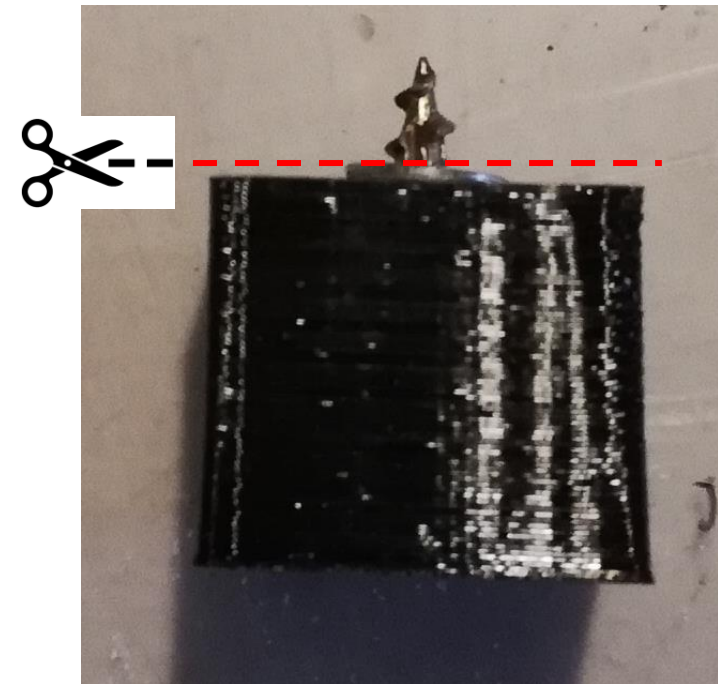
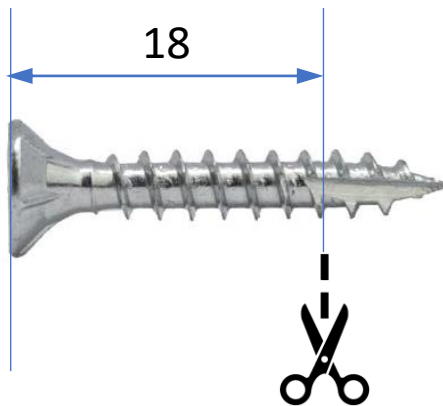
Add the 3 machine gun end caps



ASSEMBLAGE

Retracts

To cut the screws, it is possible to use the tool provided (decoupe-vis-d4x18.stl).
Use a medium or large Ø3mm washer to facilitate cutting without damaging the tool.



ASSEMBLY

Retracts

Disassemble the landing gear leg and replace the $\varnothing 5\text{mm}$ metal rod with a 14mm longer one. When reassembling, insert the spacer.



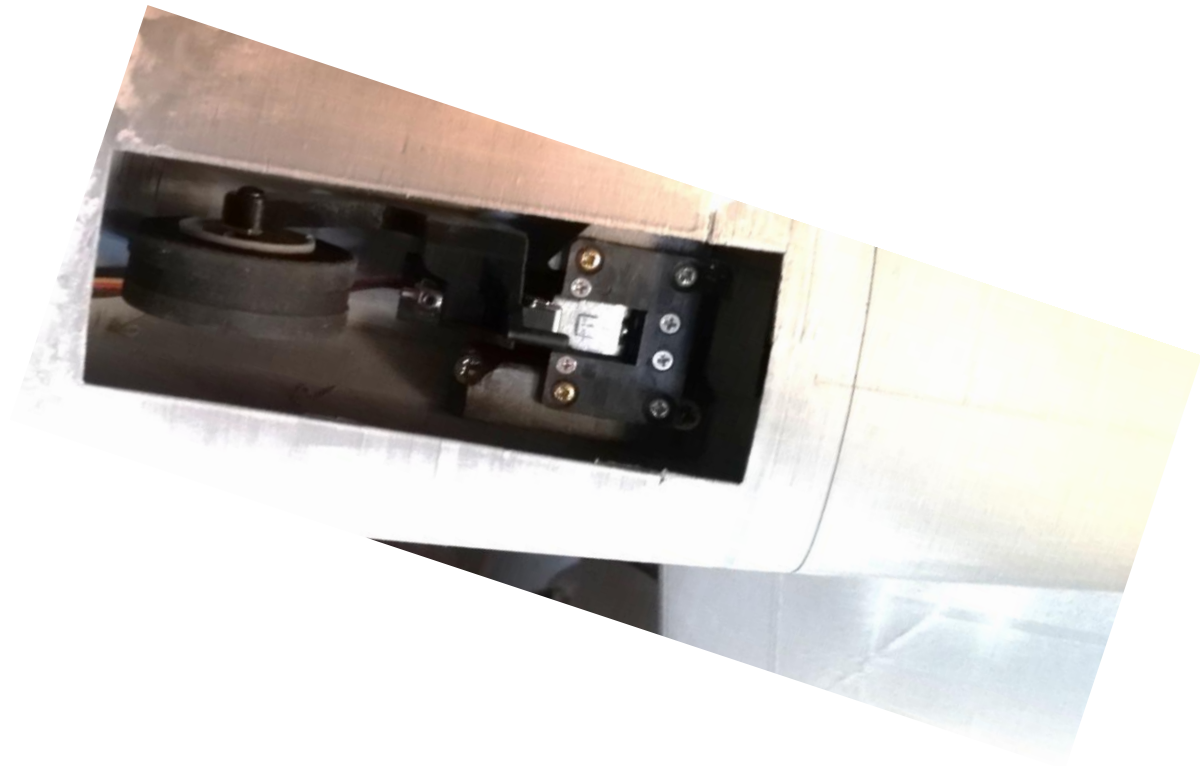
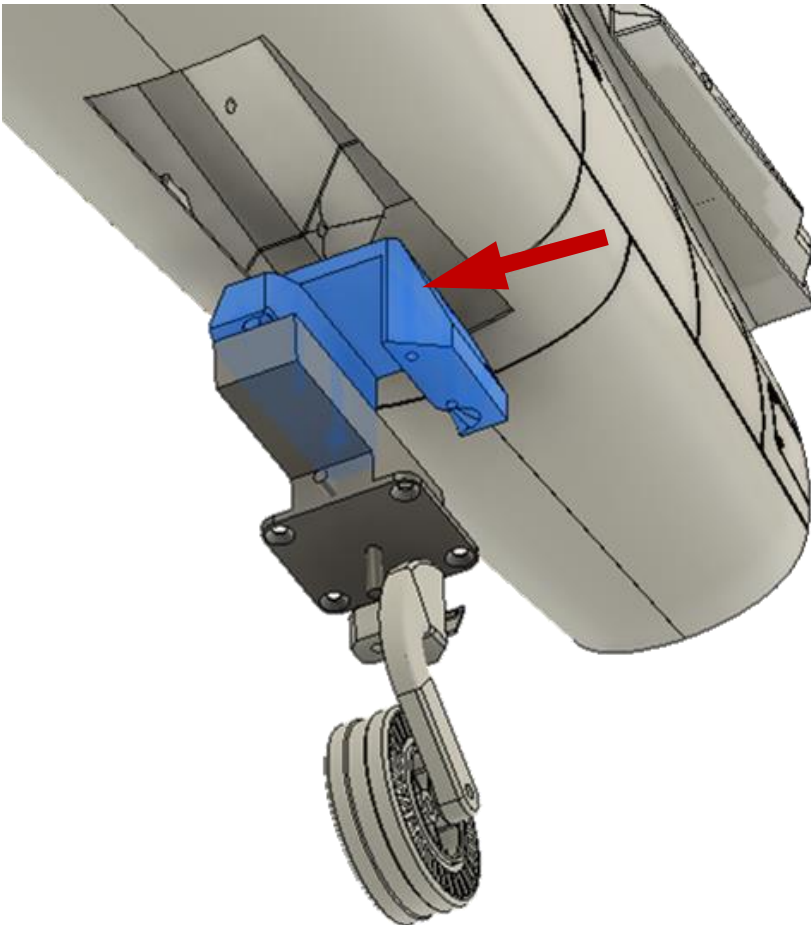
ASSEMBLAGE

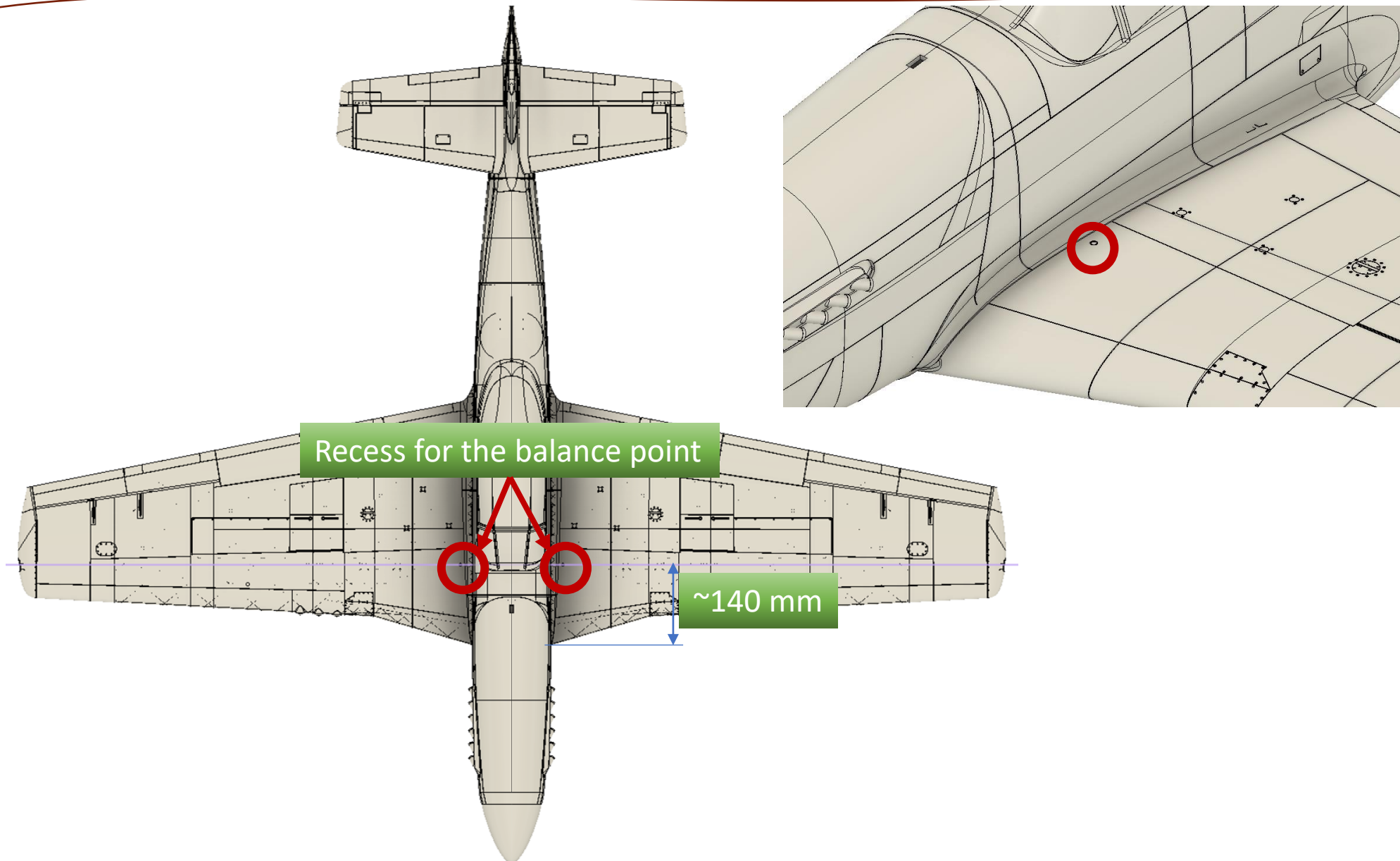
Roulette

See the specific instructions for assembling the tailwheel.

It retracts forward.

As for the main landing gear, there is an adapter to install first with 3 (or 4, depending on model) screws $\varnothing 3 \times 20$





- Ailerons
 - +12 mm (up)
 - -10 mm (down)
- Rudder +/- 30°
- Elevator +/- 15 mm
- Flaps -45° max

Some contents for the P-51D Mustang;

- <https://www.ipmsstockholm.se/home/north-american-p-51d-mustang-in-detail/>
- Monografie Lotnicze 55, 56 & 57
- Detail & Scale 051
- Squadron-Signal - Walk Around n°07

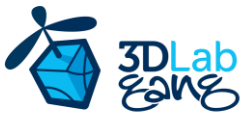
- <https://imodeler.com/tag/p-51D/>
- <http://www.mustang.gaetanmarie.com/profiles.htm>

Decals

- <https://callie-graphics.com/collections/p-51-mustang>

Pilots Please Attention !!

- For the first flights you can reduce the displacement for elevator and aileron.
- **Make sure the battery is well fixed in proper position. If it moves during flight it will cause the CoG move aft and can lead to uncontrollable flight behavior.**
- **Check motor mount and screws before each flight...**
- **Do NOT leave this PLA plane on direct summer sun or in car. (max. PLA temp is about 50°C)**
- **Never fly aft positioned Center of gravity.**
- **Flying at high speed and practicing high-G maneuvers puts the airframe of the aircraft under great stress which can lead to breakage in flight.**
- ➔ **Be vigilant and careful when you practice this type of flight, no express or implied warranties do not engage ADDIMP 3D or its partners.**
- **Respect your local reglementation for flying.**
 - **Please, use these files only for your own purpose.**
 - **Do not send it further.**
 - **Enjoy and have fun**



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[addimp3d.rc.planes.group](#)

[3DPrintedPilots](#)

RCGroups

<https://www.rcgroups.com/forums/showthread P-51-D-1/6-5-scale>

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