

SDV

DNA

ADDONS Ver. 1.0



BUILT TO EVOLVE

The DNA was designed from the beginning as a versatile FPV platform — but development didn't stop with its release.

Continued flight testing, different setups, new use cases and feedback from pilots have led to new ideas and opportunities to further improve the aircraft. The result is a growing collection of optional addons and improvements, each developed to solve a specific problem, improve durability or make the DNA better suited to a particular use case.

These addons are not required to build or enjoy the DNA. The original aircraft remains fully functional as designed. Instead, they provide additional options that allow you to adapt and refine the aircraft based on where, how and what you fly.

Think of them as an expanding toolbox: choose the improvements that make sense for your DNA and leave out those you don't need.

Choose the addons that suit your aircraft, your setup and the way you fly it.

**The goal isn't to define one ultimate version of the DNA.
It's to give you more ways to make it your own.**

A LIVING MANUAL

Just like the collection of addons itself, this manual is designed to evolve over time.

Each addon is presented as a self-contained chapter, so there is no need to work through the manual from beginning to end. Simply choose the addon you want to install and follow its corresponding section.

BASIC STRUCTURE

As development of the DNA continues, new addons and improvements may be added to both the download package and this manual.

01 PURPOSE

The idea behind the addon, why it was developed and the benefits it provides.

02 BILL OF MATERIAL

An overview of any additional hardware or materials required.

03 PRINT FILES

The printed parts required for the addon, including relevant printing information.

04 ASSEMBLY GUIDE

Step-by-step instructions for installing and assembling the addon.

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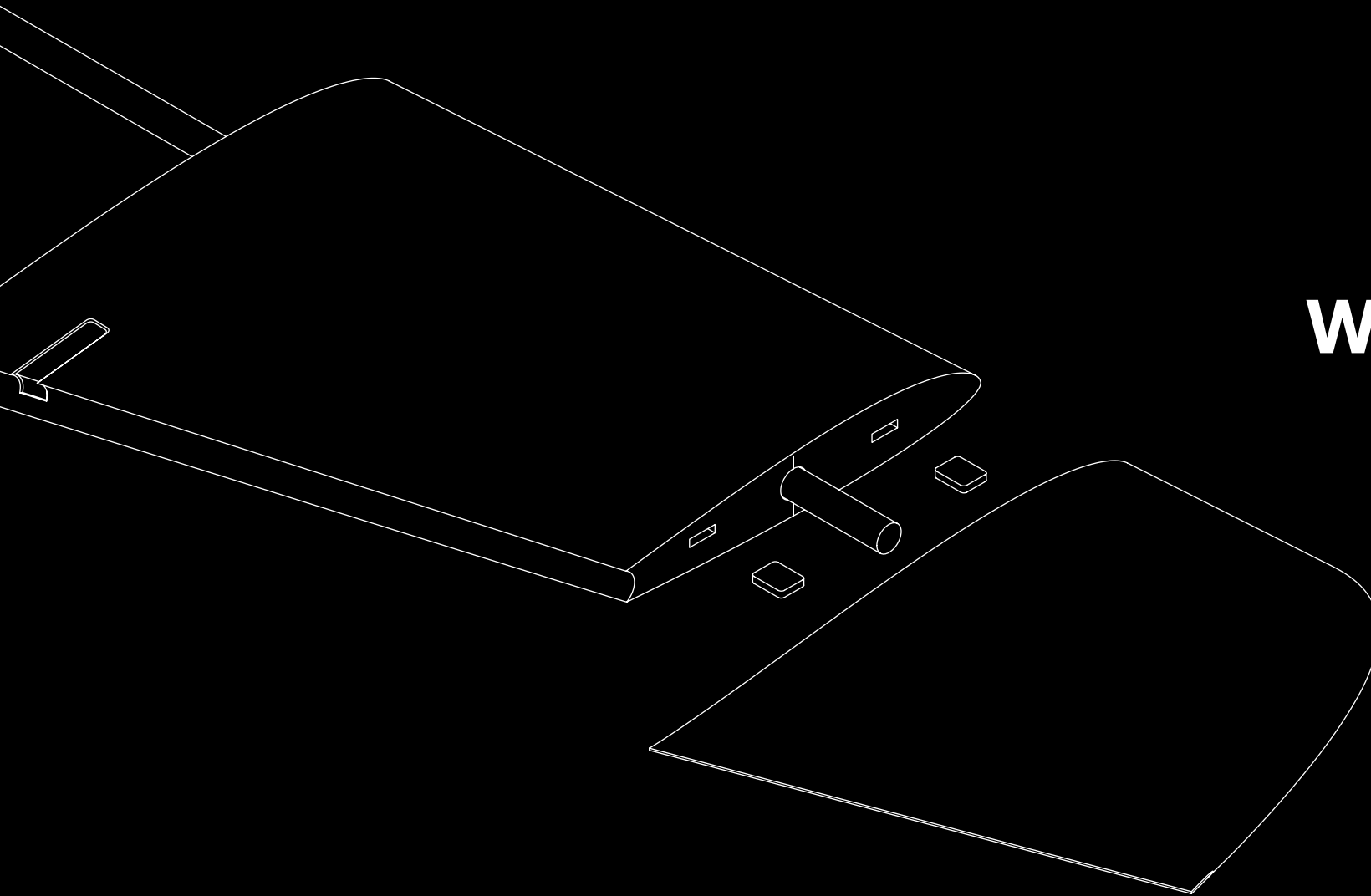
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WING V2⁰¹

PROVEN AERODYNAMICS. REFINED CONTROL.

The Wing V2 builds on the same aerodynamics and flight characteristics of the original DNA wing, while refining the control system for improved handling and a cleaner aerodynamic setup.

The biggest change is the redesigned servo mounting. On the original wing, the linkage geometry limited the usable servo travel. Wing V2 improves this geometry, allowing the full servo travel and resolution to be used. This provides finer control and makes better use of the servo's available precision.

The control linkage has also been moved inside the wing. Besides creating a cleaner overall design, removing the exposed linkage from the airflow further reduces unnecessary drag.

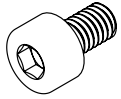
The elevons have been refined as well. Reduced tolerances provide a tighter fit, while additional internal ribs reinforce critical areas around the elevon hinge. This helps keep the hinge axis firmly supported and reduces the chance of developing play over time.

Rather than changing what already works aerodynamically, Wing V2 focuses on refining the details — keeping the proven characteristics of the original wing while improving the control setup around it.

BENEFITS AT A GLANCE

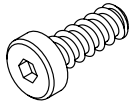
- ✓ Full servo travel through improved linkage geometry
- ✓ Higher usable servo resolution for more precise control
- ✓ Internal control linkage for a cleaner aerodynamic setup
- ✓ Reduced drag from exposed components
- ✓ Reinforced hinge areas to reduce play over time
- ✓ Same proven aerodynamics as the original DNA wing

6 | **HARDWARE** > BILL OF MATERIAL



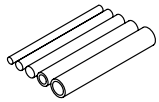
Socket Head Cap Screw (SHCS)

ID	Part	Amount
11	M3 x 6 mm Motor Mount	4 x



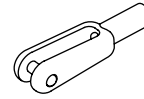
Self-Tapping Screw

ID	Part	Amount
12	M2 x 8 mm Servo Cover	12 x



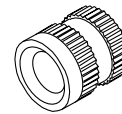
Carbon Tubes / Rods

ID	Part	Amount
13	Carbon Tube 8mm x 6mm x 700 mm Wing	1 x
14	Carbon Rod 3mm x 200 mm Elevon	2 x



Servo Linkages

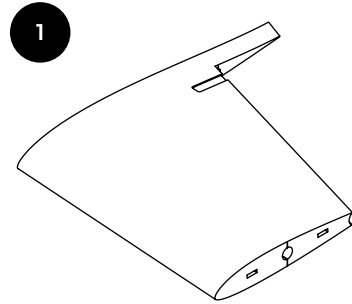
ID	Part	Amount
15	M2 Clevis	2 x
16	Ball Joint Connector	2 x
17	M2 Threaded Rod	2 x



Threaded Inserts

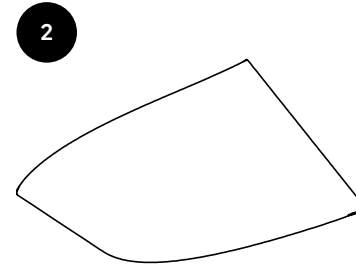
ID	Part	Amount
18	M3 x 3mm Servo Mount	4 x

7 | PRINT FILES > OVERVIEW > LW-PLA > PROFILE-P4



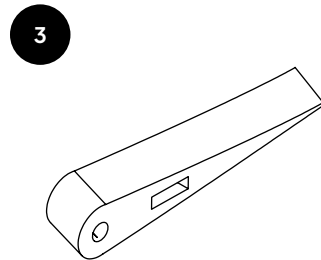
Wing_L1/R1

Profile: P4
Material: LW-PLA
Weight: 36.25 g



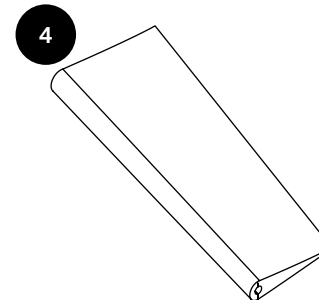
Wing_L2/R2

Profile: P4
Material: LW-PLA
Weight: 16.09 g



Elevon_L1/R1

Profile: P4
Material: LW-PLA
Weight: 1.18 g

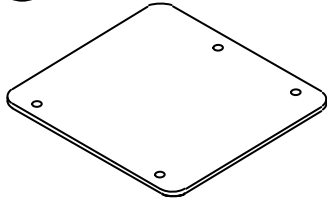


Elevon_L2/R2

Profile: P4
Material: LW-PLA
Weight: 7.48 g

8 | **PRINT FILES** > OVERVIEW > PLA > PROFILE-P2

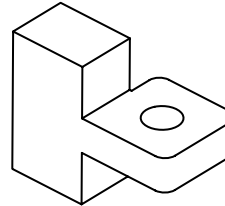
5



Servo_Cover_L/R

Profile: P2
Material: PLA
Weight: 5.19 g

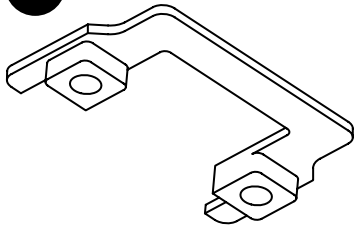
6



Servo_Mount_Bracket

Profile: P2
Material: PLA
Weight: 0.82 g

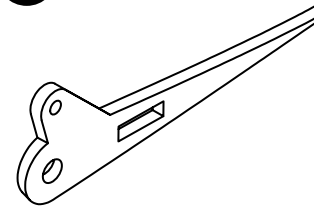
7



Servo_Mount_L/R

Profile: P2
Material: PLA
Weight: 1.45 g

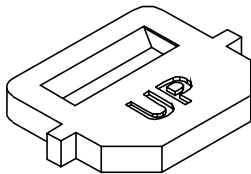
8



Servohorn_L/R

Profile: P2
Material: PLA
Weight: 0.97 g

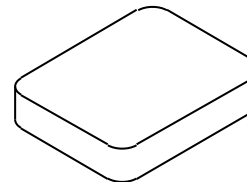
9



Wing_Lock_L/R

Profile: P2
Material: PLA
Weight: 0.80 g

10

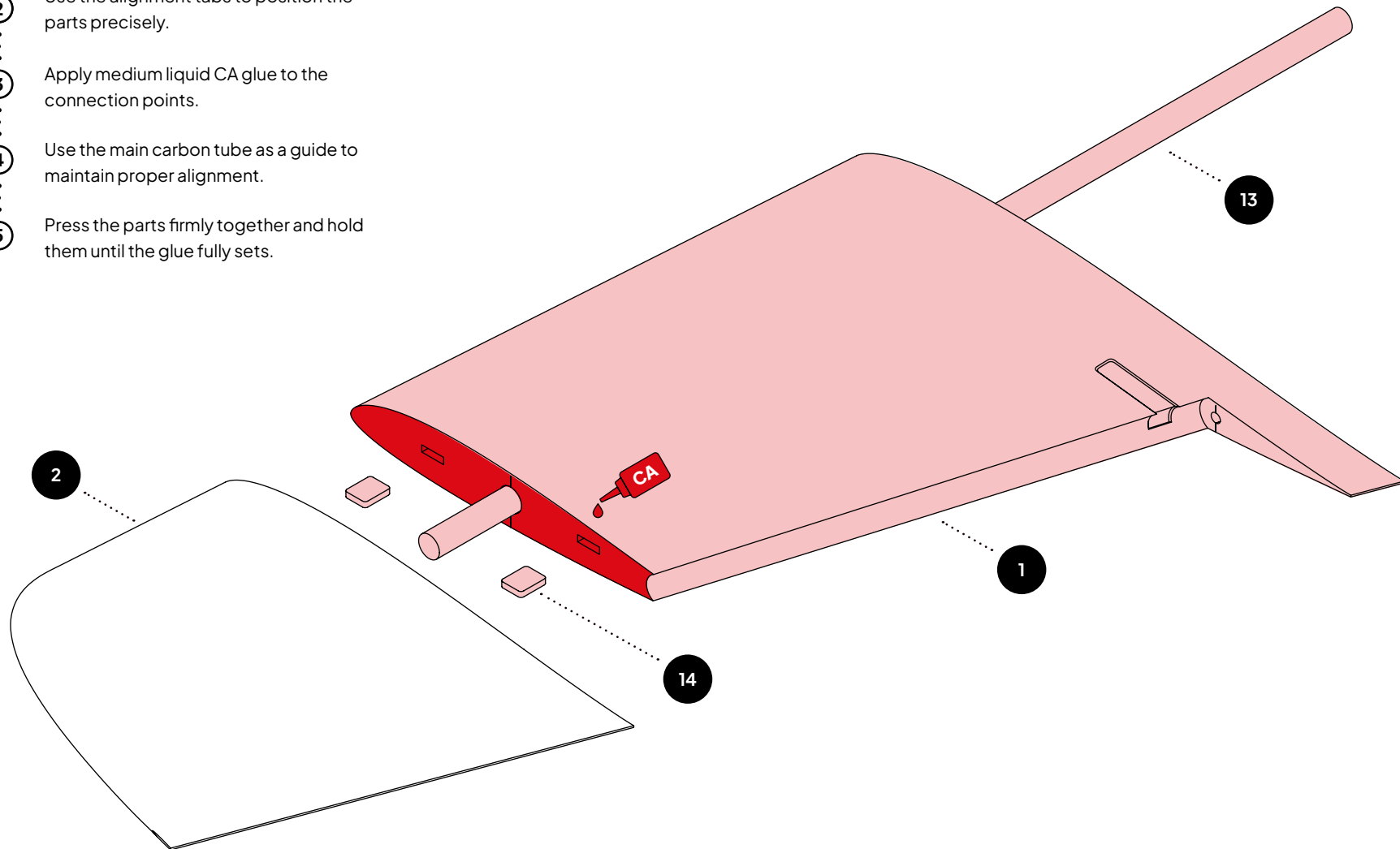


Alignment_Tab

Profile: P2
Material: PLA
Weight: 0.17 g

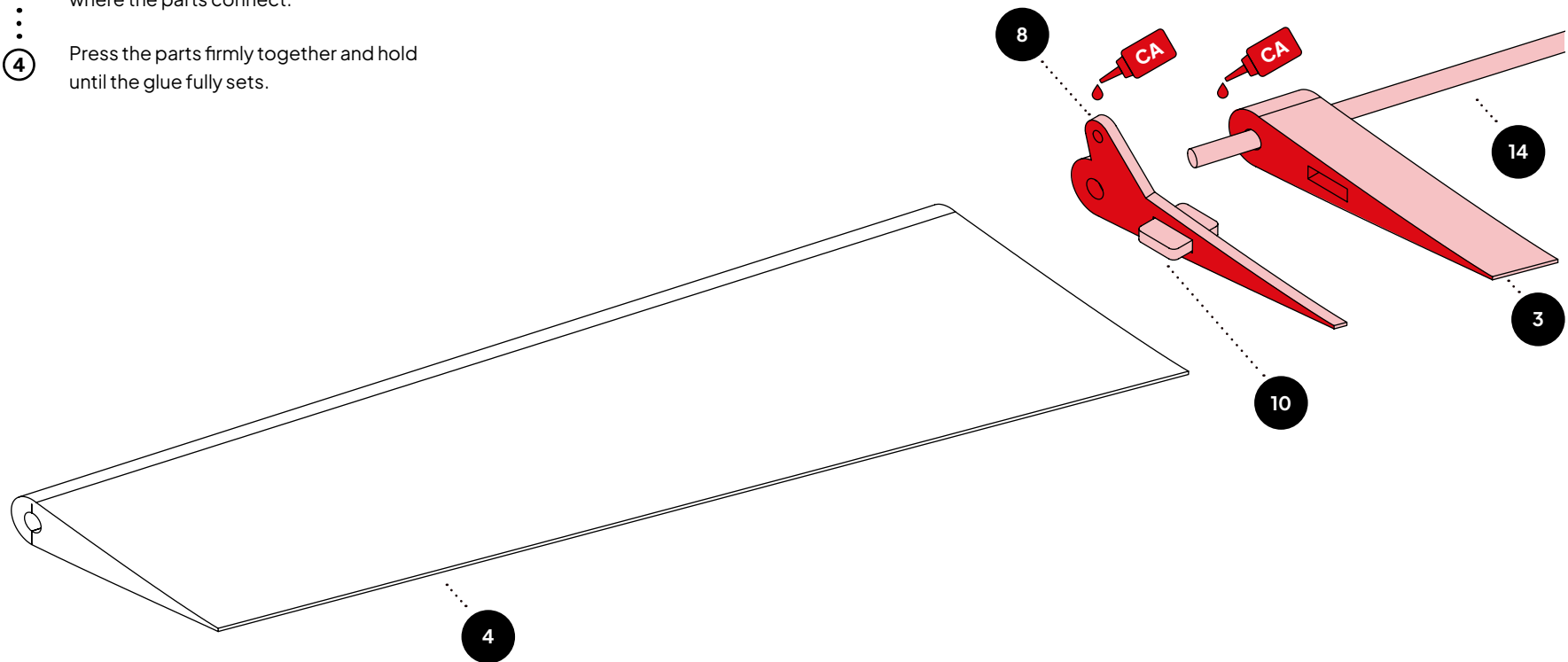
9 WING V2

- ① Dry-fit the parts to confirm proper alignment.
- ② Use the alignment tabs to position the parts precisely.
- ③ Apply medium liquid CA glue to the connection points.
- ④ Use the main carbon tube as a guide to maintain proper alignment.
- ⑤ Press the parts firmly together and hold them until the glue fully sets.



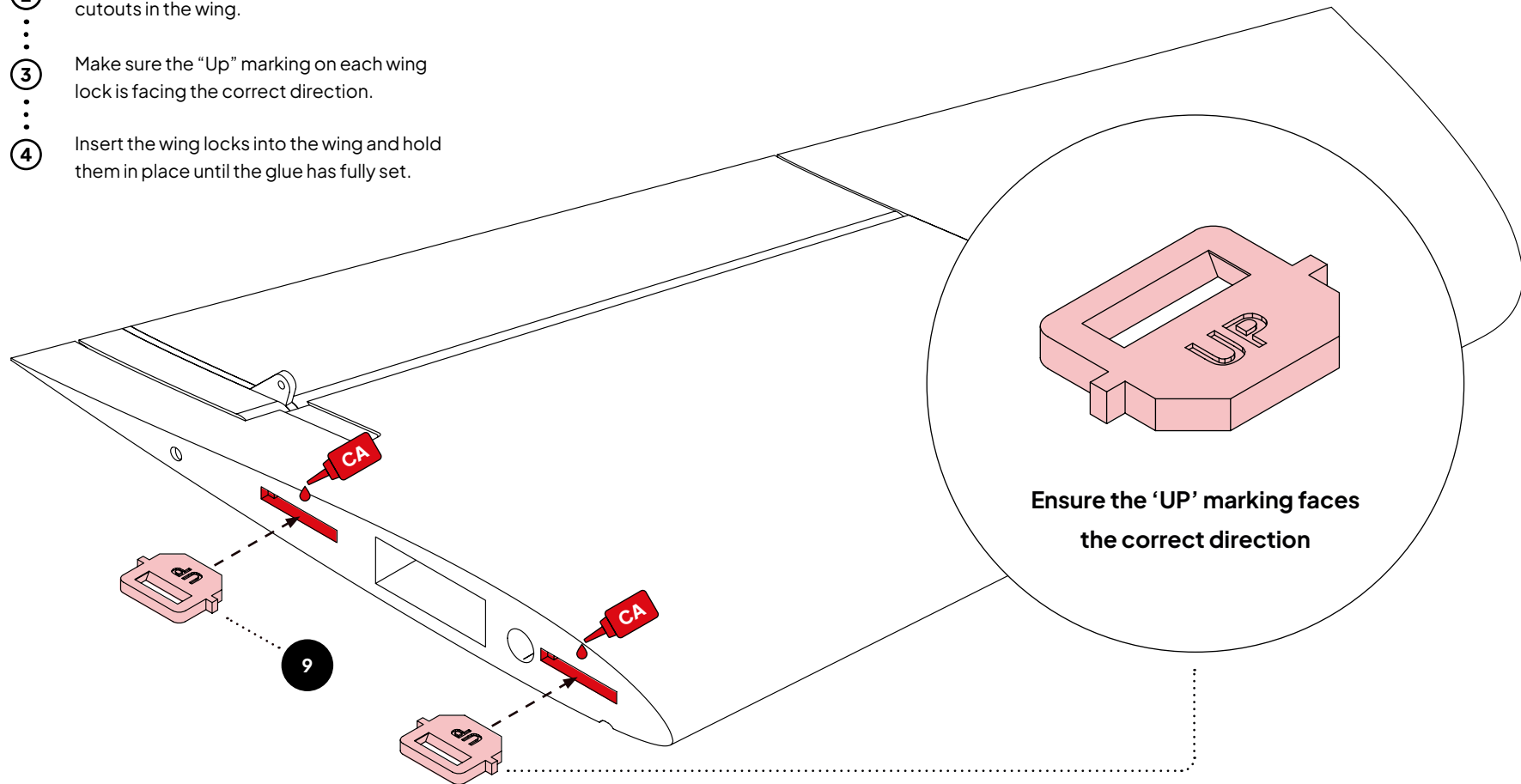
WING V2 – ELEVON

- ① Dry-fit the parts to ensure that they move freely on the carbon rod.
- ② Insert the carbon rod through the parts, making sure they are properly aligned.
- ③ Apply medium liquid CA glue to the joints where the parts connect.
- ④ Press the parts firmly together and hold until the glue fully sets.

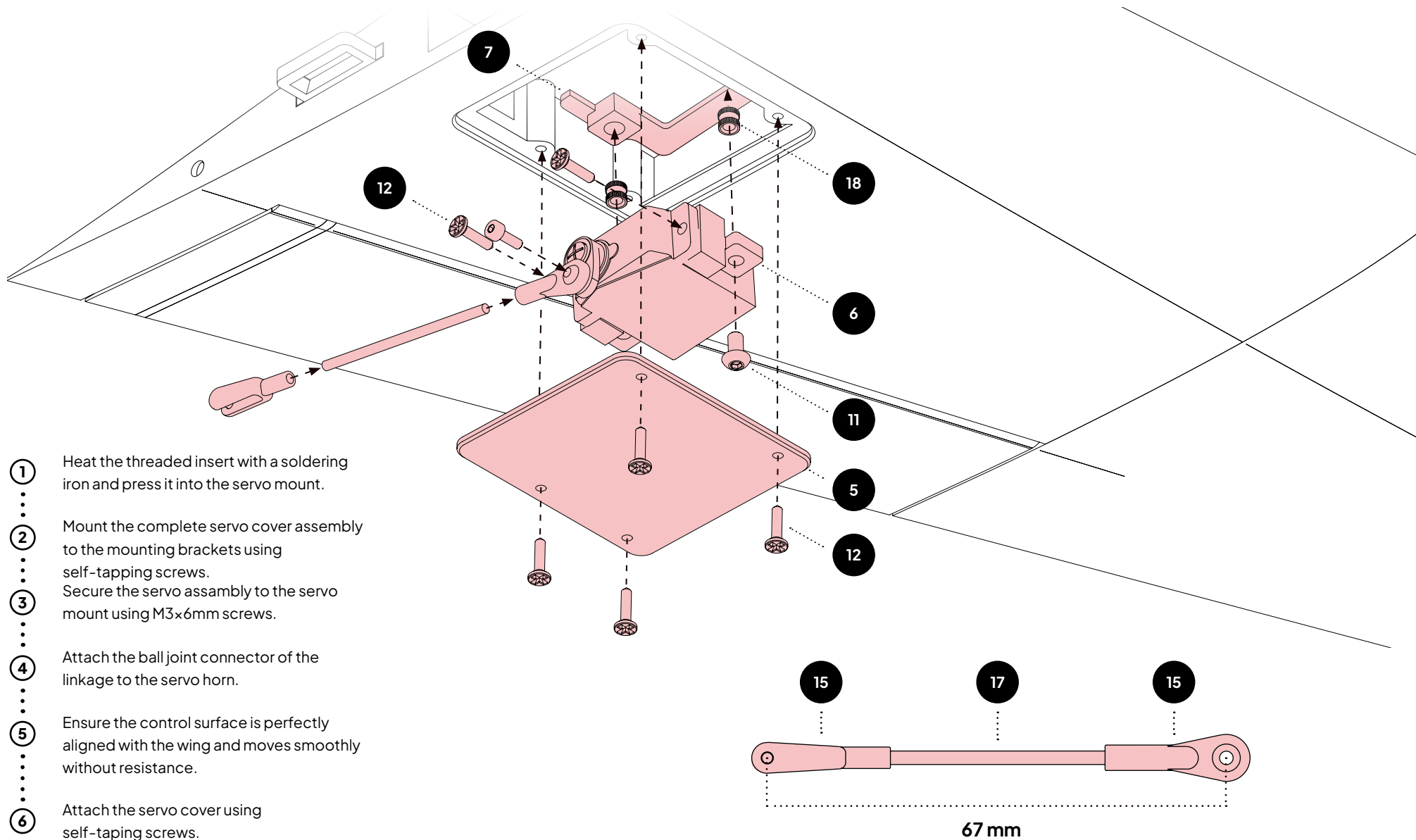


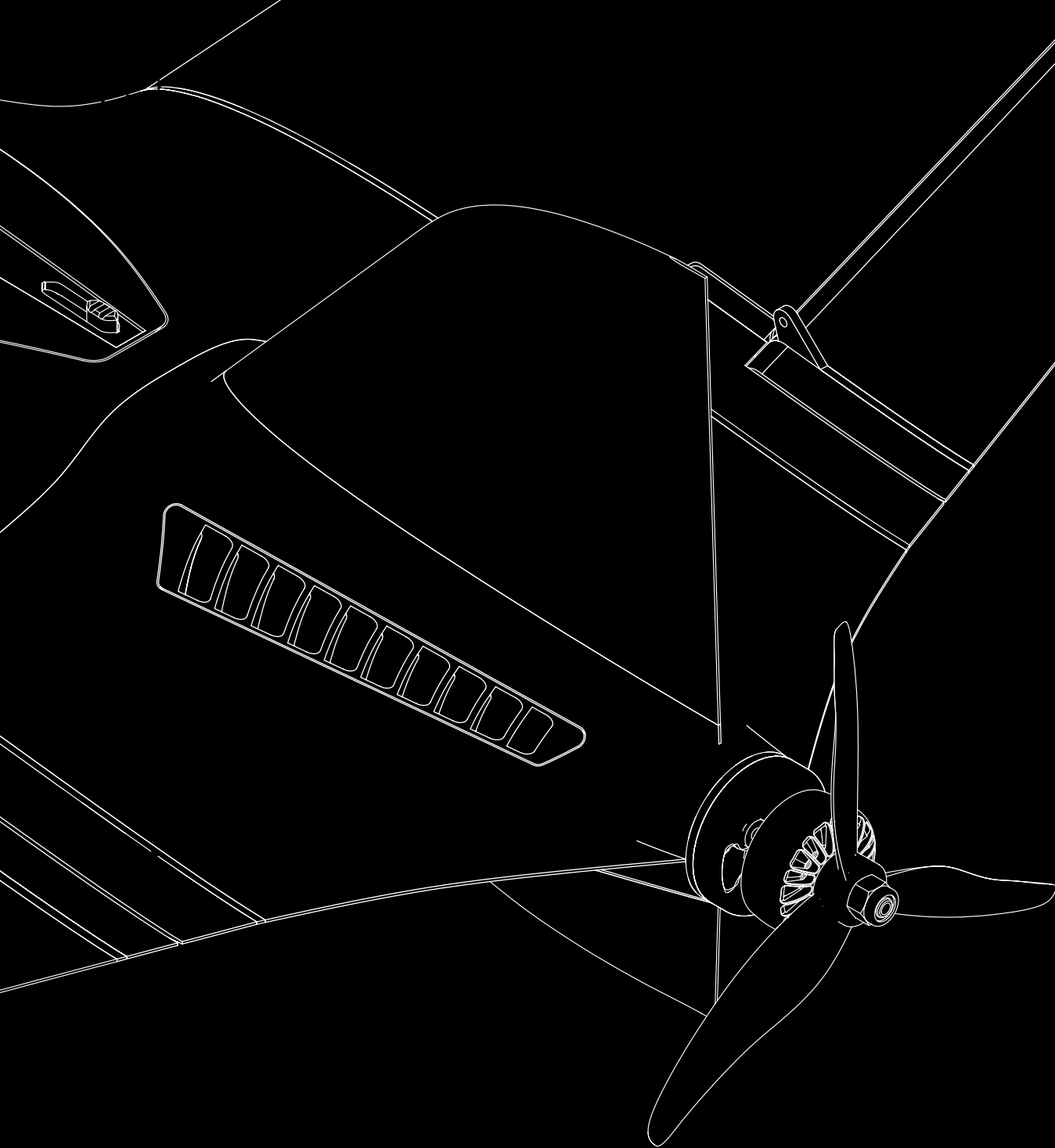
WING V2 – WING MOUNT

- ① Dry-fit the wing locks to confirm they align perfectly with the wing root.
- ② Apply medium liquid CA glue to the marked cutouts in the wing.
- ③ Make sure the “Up” marking on each wing lock is facing the correct direction.
- ④ Insert the wing locks into the wing and hold them in place until the glue has fully set.



13 | WING V2 – SERVO COVER





AIR OUTLET⁰²

KEEP THE HEAT MOVING

High-performance setups can put a significant load on the ESC. During sustained high-speed flying, the increased current draw can generate enough heat to cause the ESC to overheat.

The standard fuselage already allows some air to escape through the opening around the rear motor mount. While sufficient for most setups, this opening is relatively small and can become a limiting factor when considerably more heat is generated.

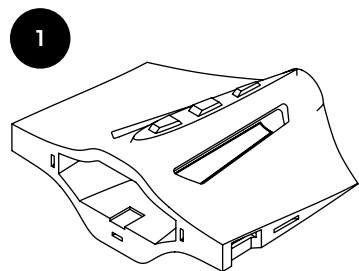
The Air Outlet was developed specifically for these more demanding setups. The ram-air intake at the front of the fuselage provides plenty of fresh cooling air, while the additional outlet gives the heated air a larger and more direct path to escape. This creates more effective airflow through the fuselage and prevents heat from building up around the electronics.

During high-speed testing, the additional airflow effectively eliminated the ESC overheating experienced with the standard fuselage.

At the same time, there was virtually no impact on aerodynamic performance.

BENEFITS AT A GLANCE

- ✓ Improved ESC cooling for high-performance setups
- ✓ Increased airflow through the fuselage
- ✓ Prevents hot air from accumulating around the electronics
- ✓ Reduces the risk of ESC overheating during sustained high-current operation
- ✓ No measurable impact on top speed

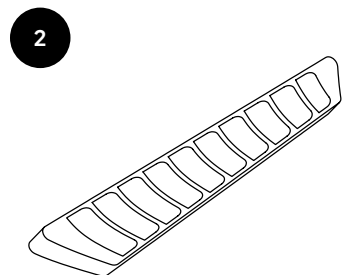
**Fuse-F3**

Profile: P4

Material: LW-PLA

Weight: 39.42 g

PLA > PROFILE-P2

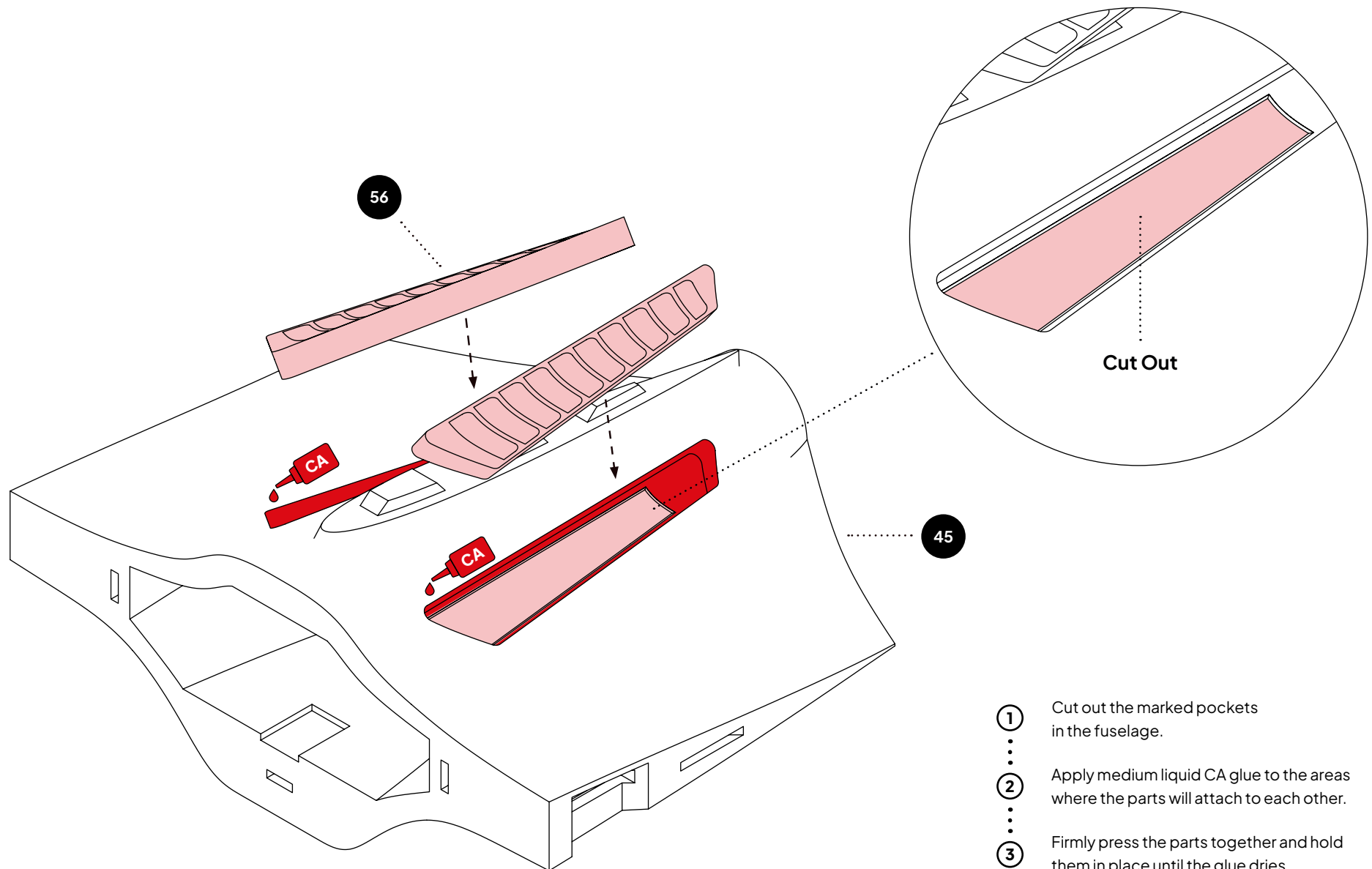
**Outlet_L/R**

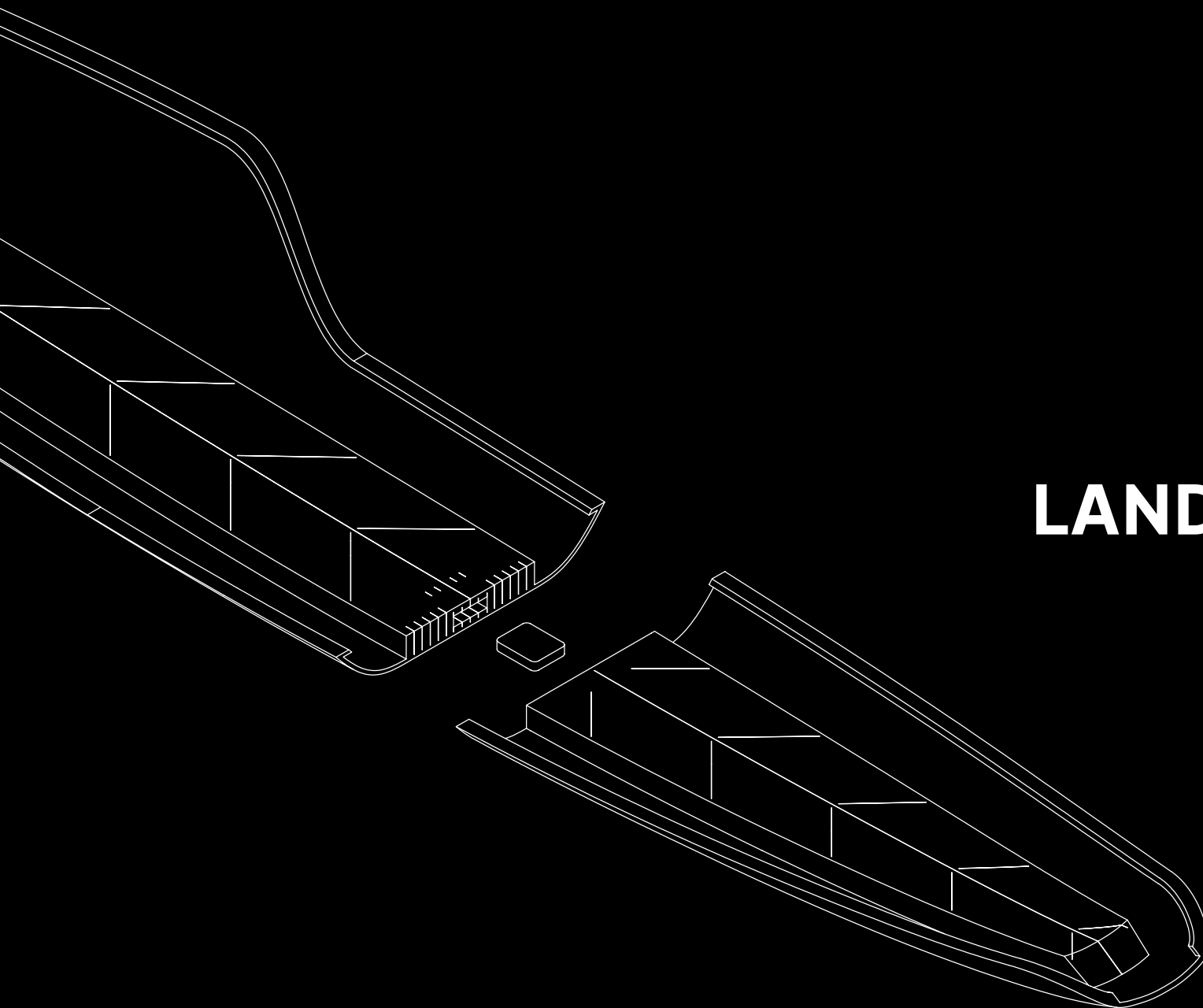
Profile: P2

Material: PLA

Weight: 3.64 g

17 | OUTLETS





LANDING SKID⁰³

PROTECTION WHERE IT MATTERS

The underside of a lightweight 3D-printed fuselage is naturally one of the areas most exposed to wear and damage. A common solution is to reinforce the bottom of the fuselage with a layer of fiberglass — an effective method, but one that requires additional materials, tools and experience to get right.

The Landing Skid was developed as a simpler and more accessible alternative. Instead of requiring an additional building technique, the protection itself can simply be printed along with the rest of the aircraft.

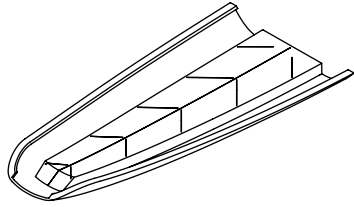
The skid forms a replaceable protective layer between the LW-PLA fuselage and the ground, taking the abrasion and impacts that would otherwise affect the airframe. Its slip-on design requires no permanent modification and, in most cases, doesn't even need to be glued in place.

This is particularly useful when operating the DNA from less-than-ideal landing sites. During testing, the skid proved effective even on rough surfaces such as gravel, significantly reducing damage to the fuselage.

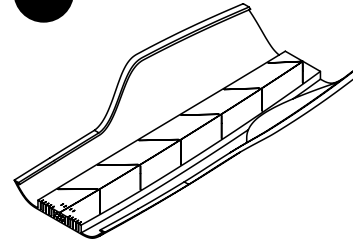
BENEFITS AT A GLANCE

- ✓ No fiberglassing required — simply print and install
- ✓ Protects the LW-PLA fuselage from abrasion and landing damage
- ✓ Ideal for rough surfaces such as gravel and dirt
- ✓ Replaceable if it becomes worn or damaged
- ✓ Slip-on design

1

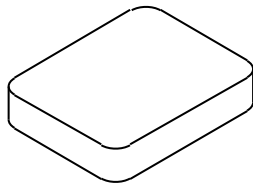
**Skid_Front****Profile:** P1**Material:** ABS-GF, PETG, TPU**Weight:** 9.94 g

2

**Skid_Back****Profile:** P1**Material:** ABS-GF, PETG, TPU**Weight:** 19.39 g

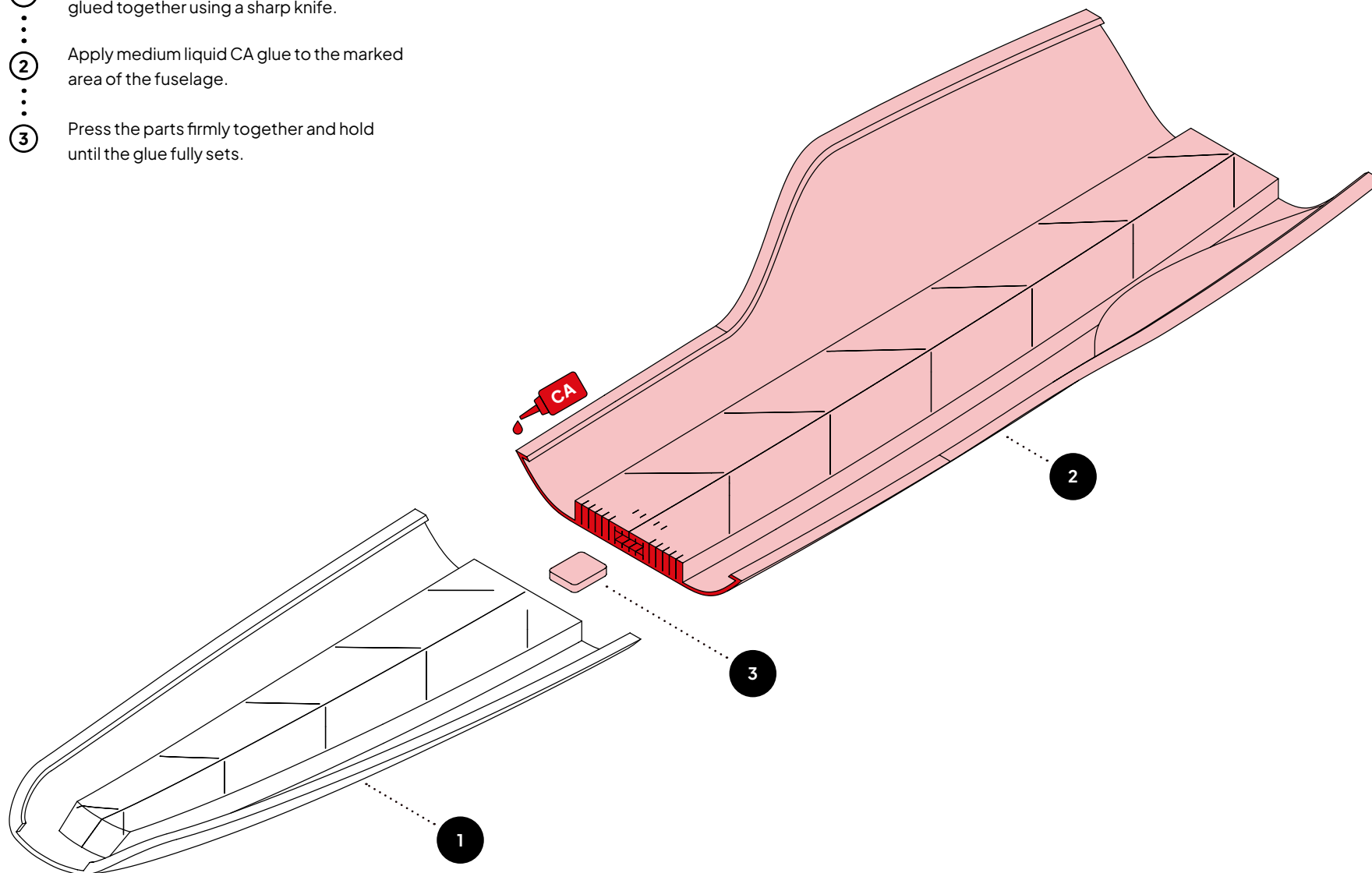
PLA > PROFILE-P2

3

**Alignment_Tab****Profile:** P2**Material:** PLA**Weight:** 0.17 g

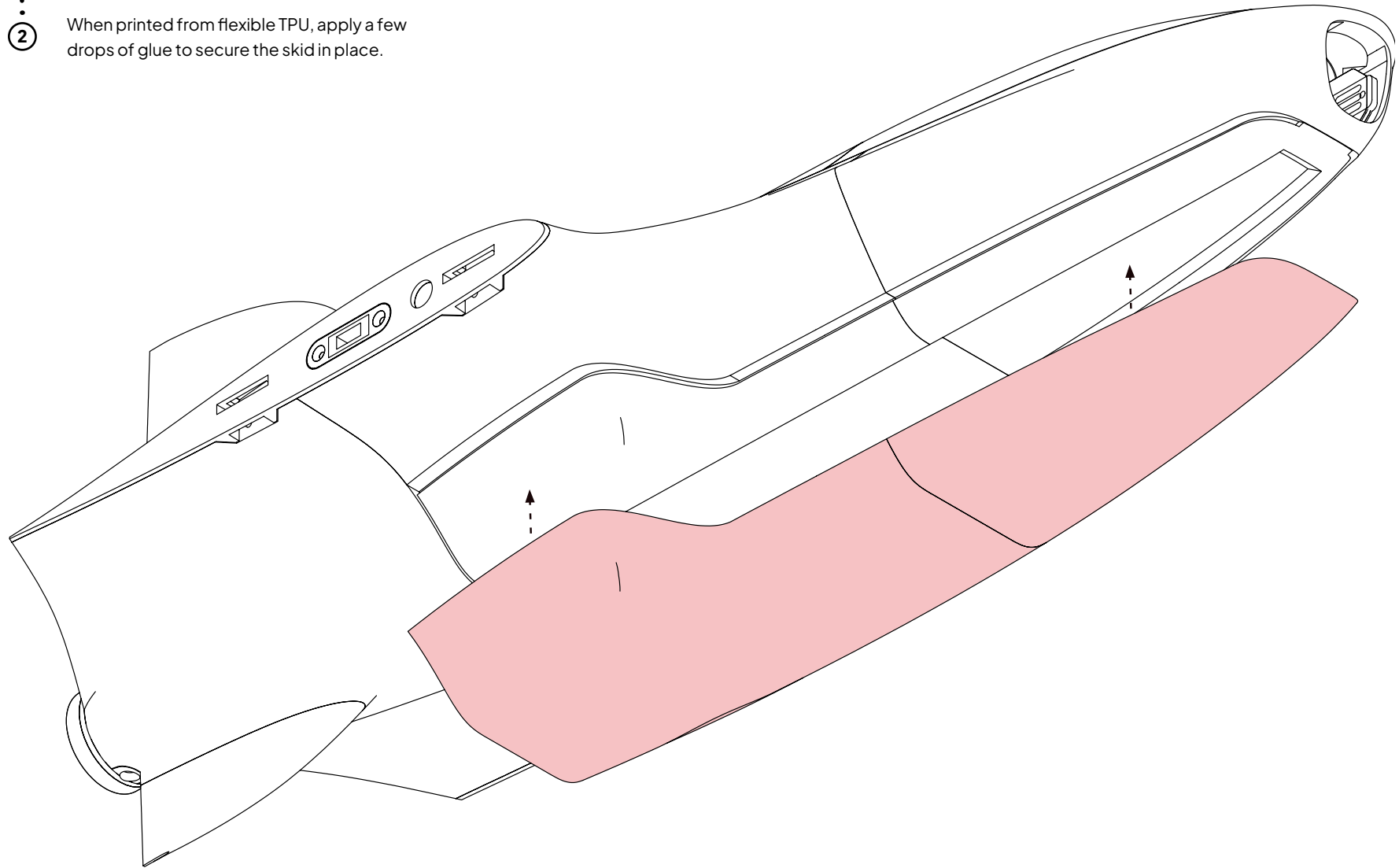
21 | LANDING SKID

- ① Clean the edges where the parts will be glued together using a sharp knife.
- ② Apply medium liquid CA glue to the marked area of the fuselage.
- ③ Press the parts firmly together and hold until the glue fully sets.



LANDING SKID ASSEMBLY

- ① Attach the landing skid to the fuselage. In most cases, no glue is required.
- ⋮
- ② When printed from flexible TPU, apply a few drops of glue to secure the skid in place.



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Thank you for your support! Your help makes the future a reality.



Contact

Do you have any questions or need assistance?
Don't hesitate to reach out.

info@3dblackbox.io