

MUGIN 5000 VTOL

BRIEF BUILD GUIDE



MUGIN LIMITED
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- 2、 INSTALLATION OF CENTER WING CIRCUITS & CABINET SERVO
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- 5、 AILERON INSTALLATION
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PIN DEFINITIONS

PARTS



Rear Boom

Landing Gear

Aileron

Fuselage

Horizontal Stabilizer

Center Wing

Front Boom

1 / Part List

2、INTRODUCTION



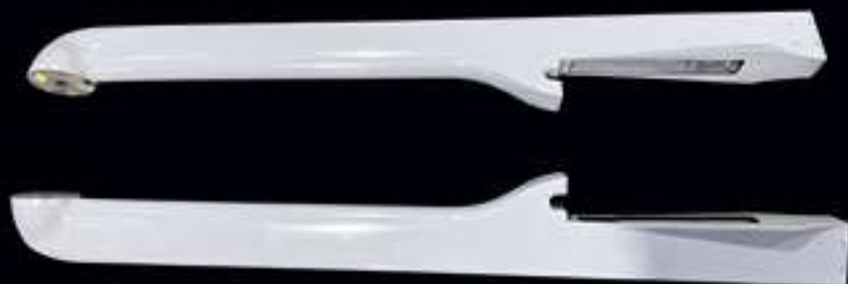
01 Fuselage

We can install the pusher engine, landing gear and structural plate onto it.



02 Center Wing

Connects the booms, aileron and fuselage. Power cords and signal wires go thru it.



03 Front Booms

Install the front VTOL motors & ESCs on them.



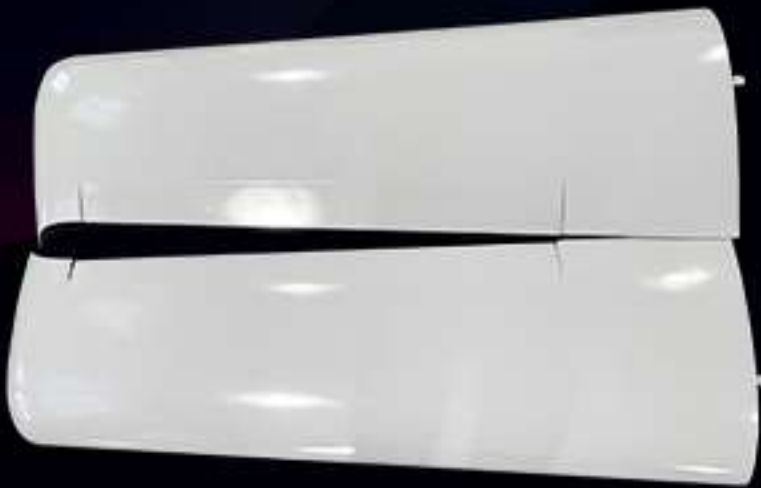
04 Rear Booms

Install the rear VTOL motors, ESCs, rudder servos and navigation lights on them.



05 Horizontal Stabilizer

Install the elevator servos and servo inverters on it.



06 Ailerons

Install aileron servos and navigation lights on it.



07 Landing Gear

Install them under the fuselage to support the entire fuselage.

INSTALLATION

01 Fuselage Installation

Structural
Plate

Engine

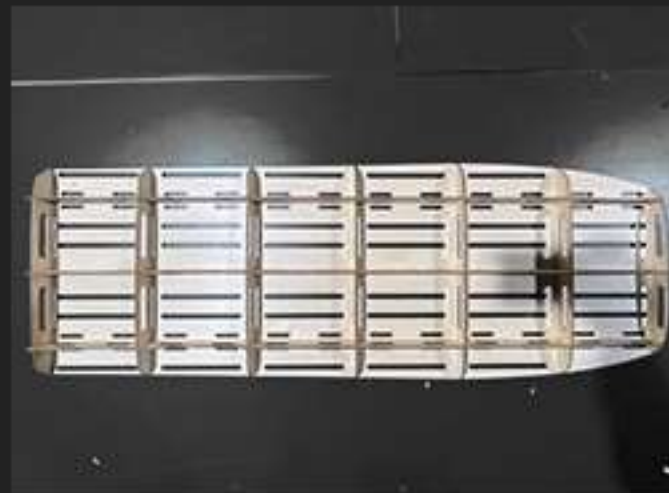
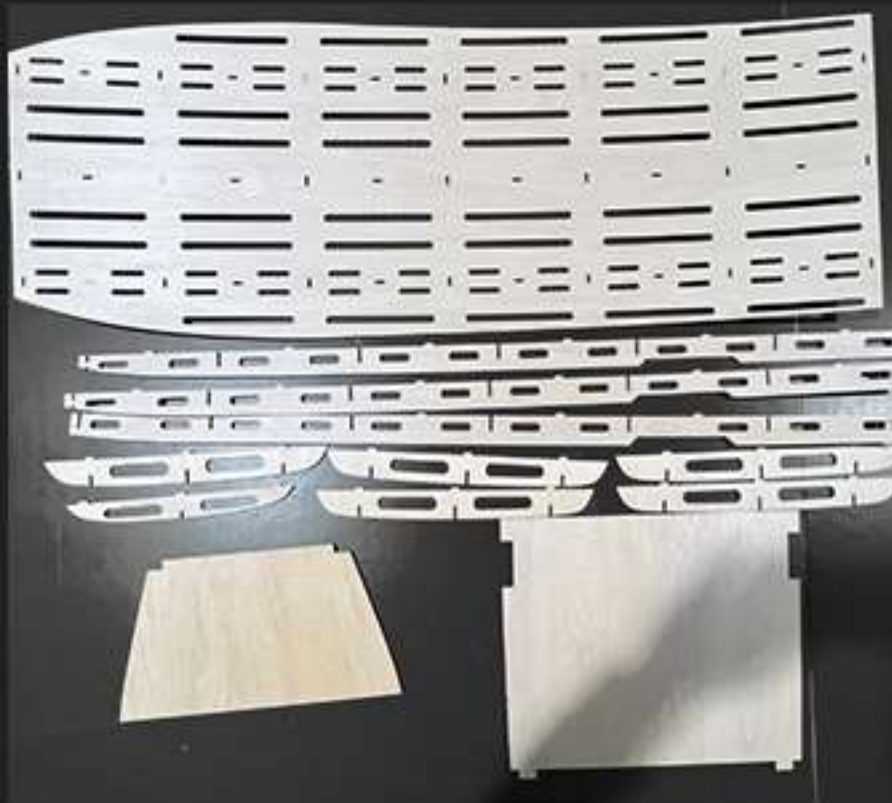
Fuel
Tank

Electronics

Landing
Gear

| Structural Plate Installation

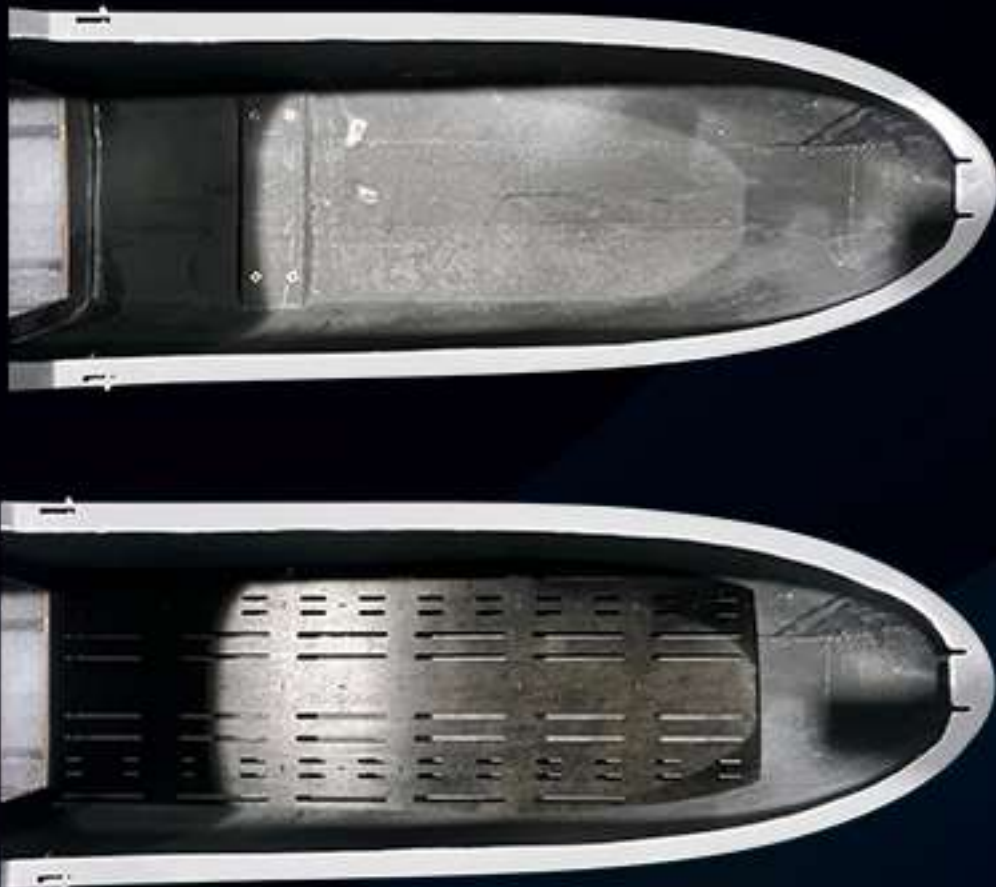
1) Assemble the plates and secure them with glue.



2) Structural Plate Painting (Can be directly use the plates without painting as you like)



3) Secure the structural plate inside the fuselage with glue.



4) Install the mount of pitot tube. It requires drilling while installation.



Structural
Plate

Engine

Fuel
Tank

Electronics

Landing
Gear

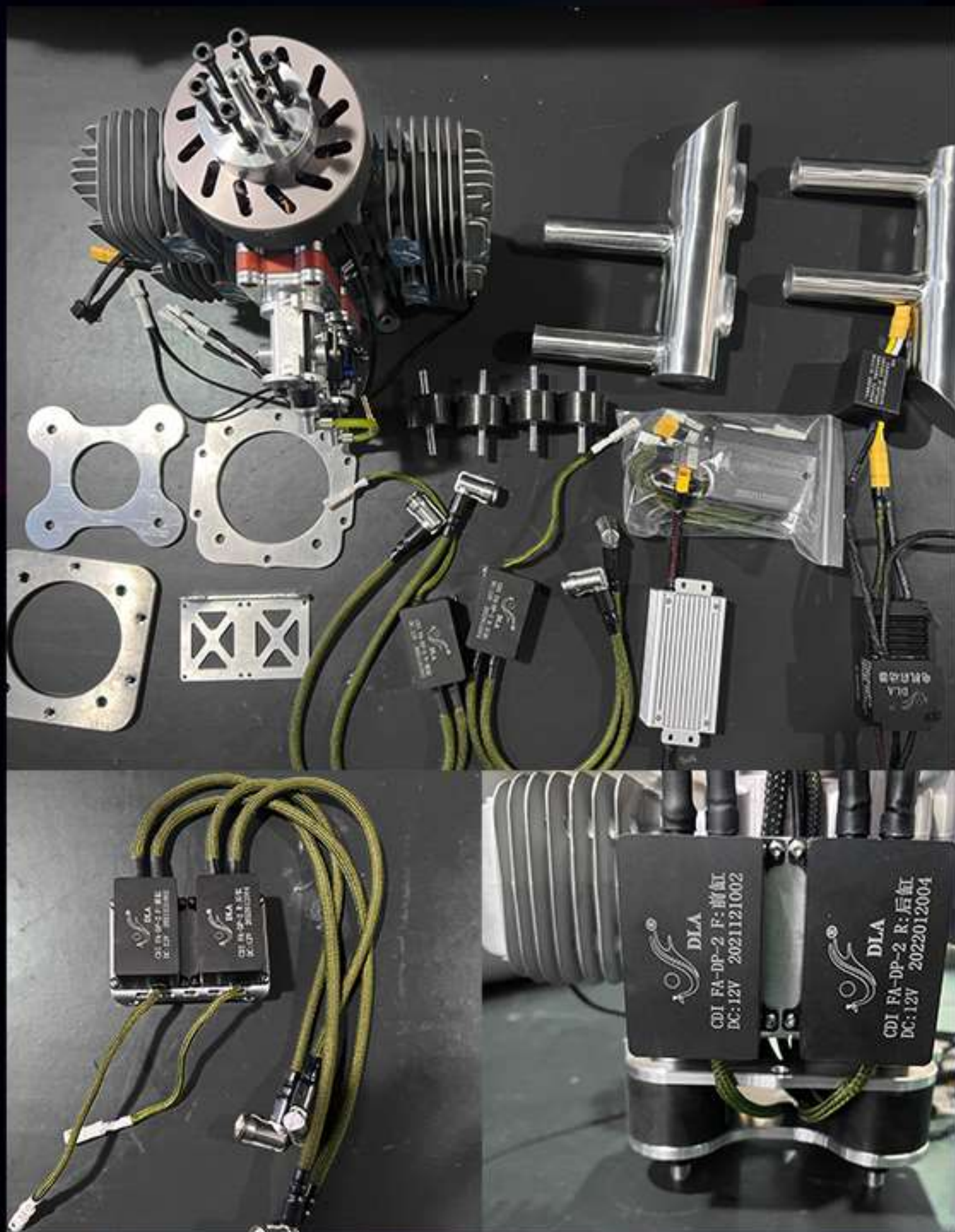
| Engine Installation (Take DLA232 for instance)

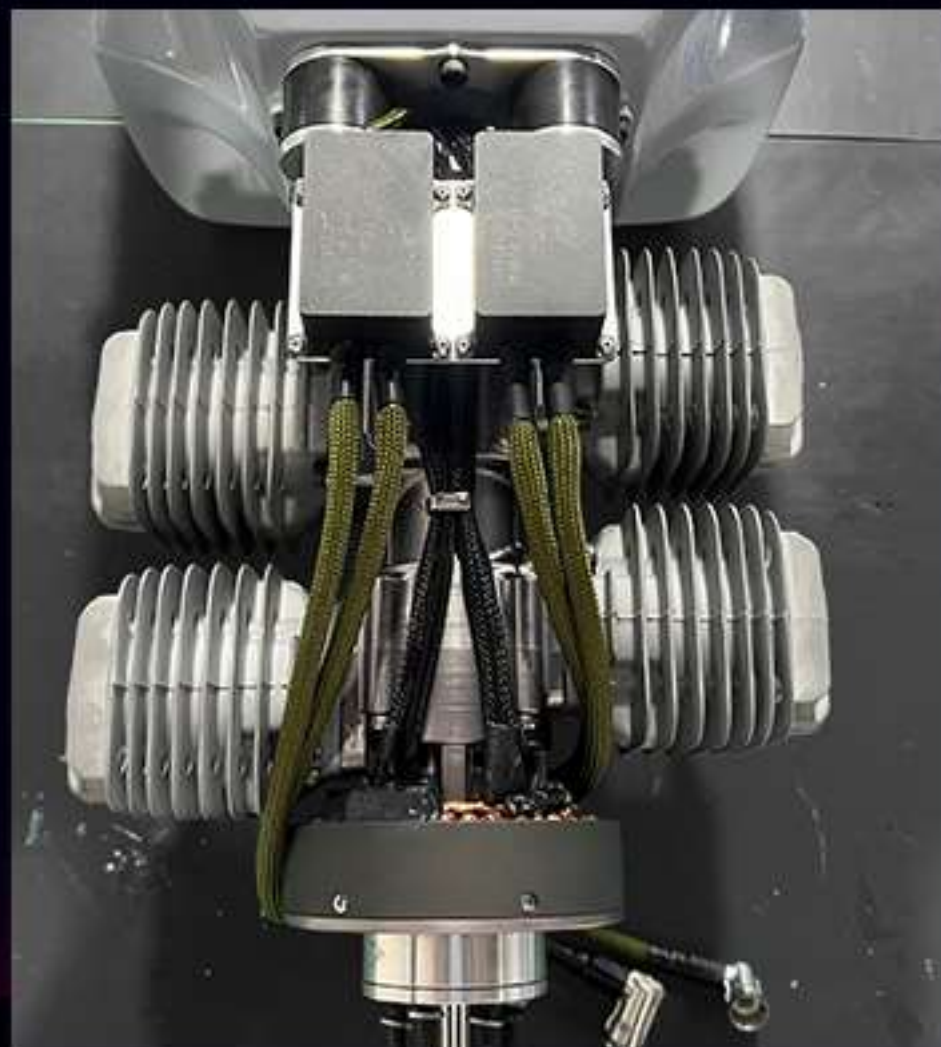
- 1) The installation of engine requires drilling. Please confirm the location before drilling.



2) Engine Installation

► a. A.Engine Bracket Installation

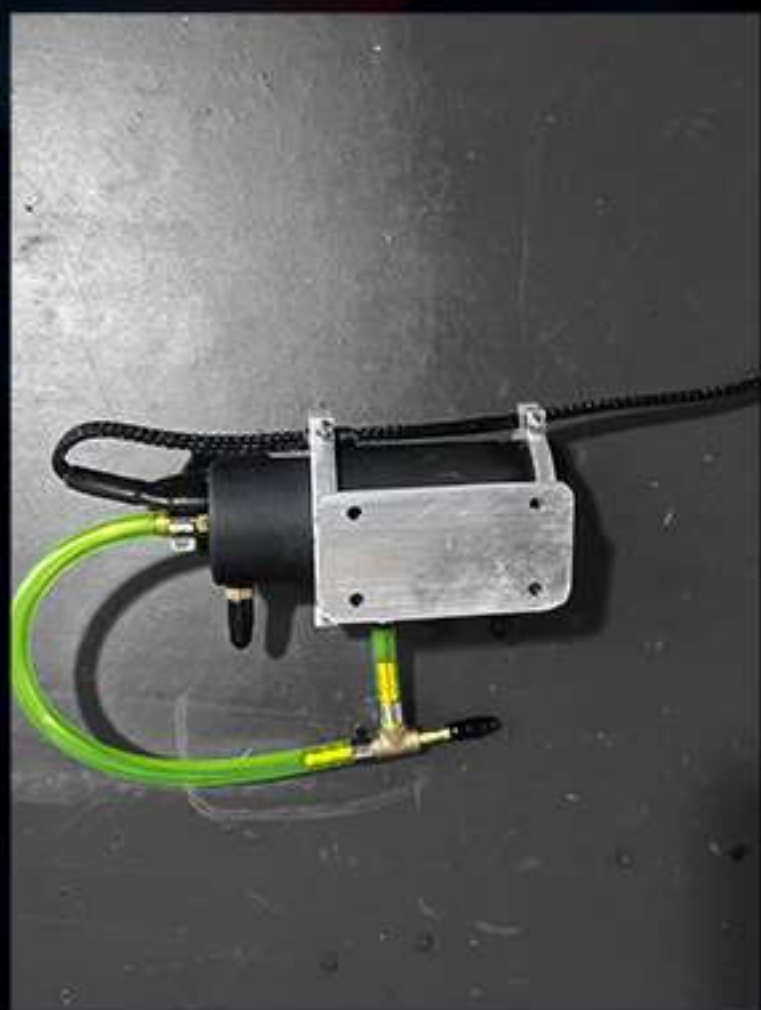




- ▶ b. Install the engine onto the fuselage

- ▶ c. Install the pump to fuselage. It requires drilling while installation.





▶ d. Install the exhaust tube.



Structural
Plate

Engine

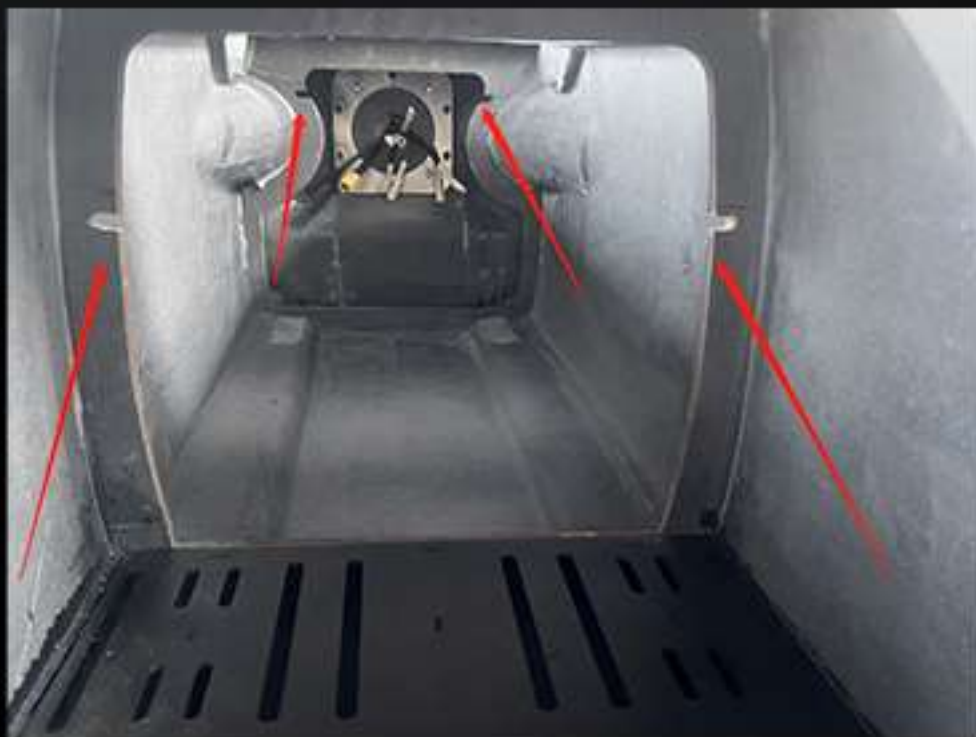
Fuel
Tank

Electronics

Landing
Gear

| FUEL TANK INSTALLATION

- 1) Before installation, we need to drill the holes to secure the fuel tank.



- 2) Install the retaining nuts of fuel tank. The nut locations need to be confirmed before drilling.

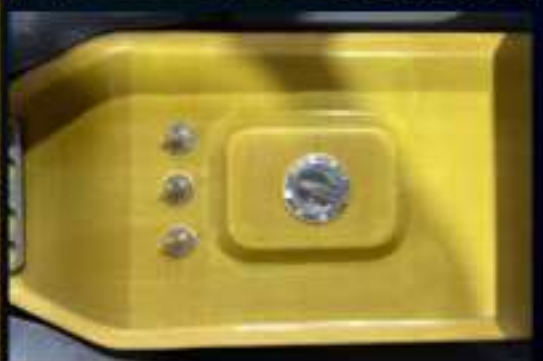




3) Install anti-collision cotton



4) Now install the fuel tank inside the fuselage



Structural
Plate

Engine

Fuel
Tank

Electronics

Landing
Gear

| Equipment Board Installation

- 1) The equipment board is used for installing the electronics on it. Please make certain the hole locations where to drill before installation.



Structural
Plate

Engine

Fuel
Tank

Electronics

Landing
Gear

| Landing Gear Installation

- 1) Trim the screw holes by using a tapping bit.



- 2) Before installing the landing gear, please make certain the front part and rear part will not be mixed up.

a.



b.



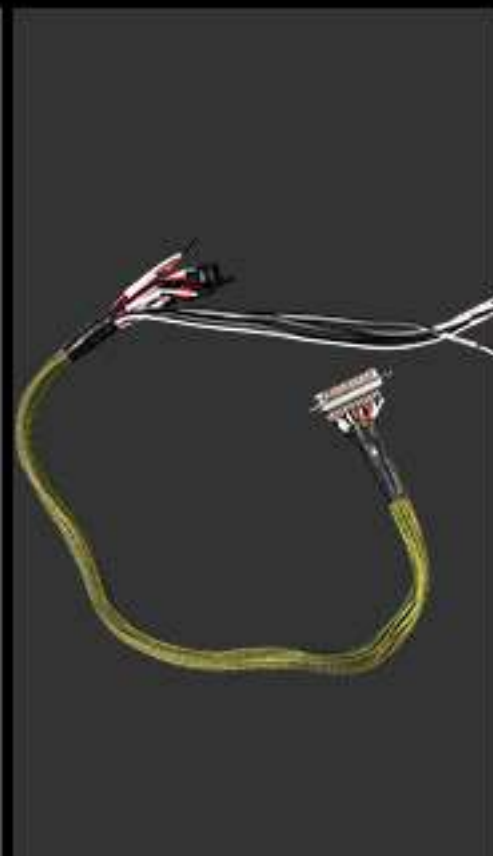
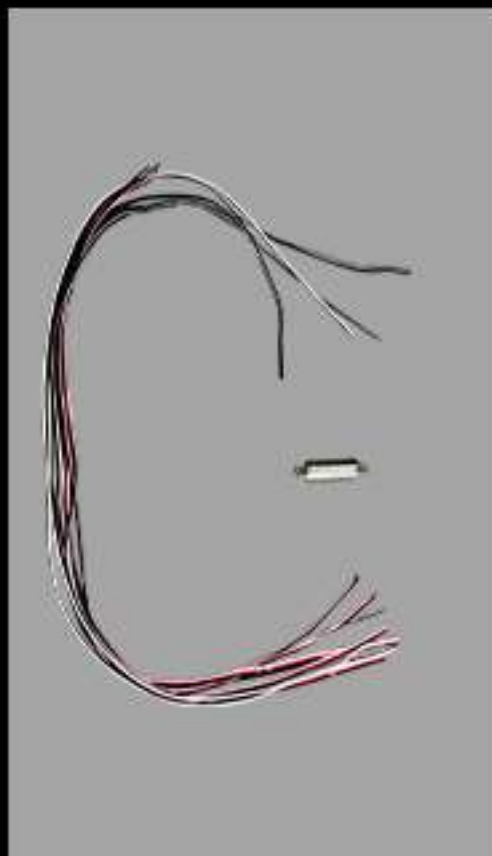
Sort out the fuselage electronics and circuits

- Sort out engine parts. The wires for RPM, throttle, starter and power need to be extended.
- The engine parts can be installed on the rear equipment board.

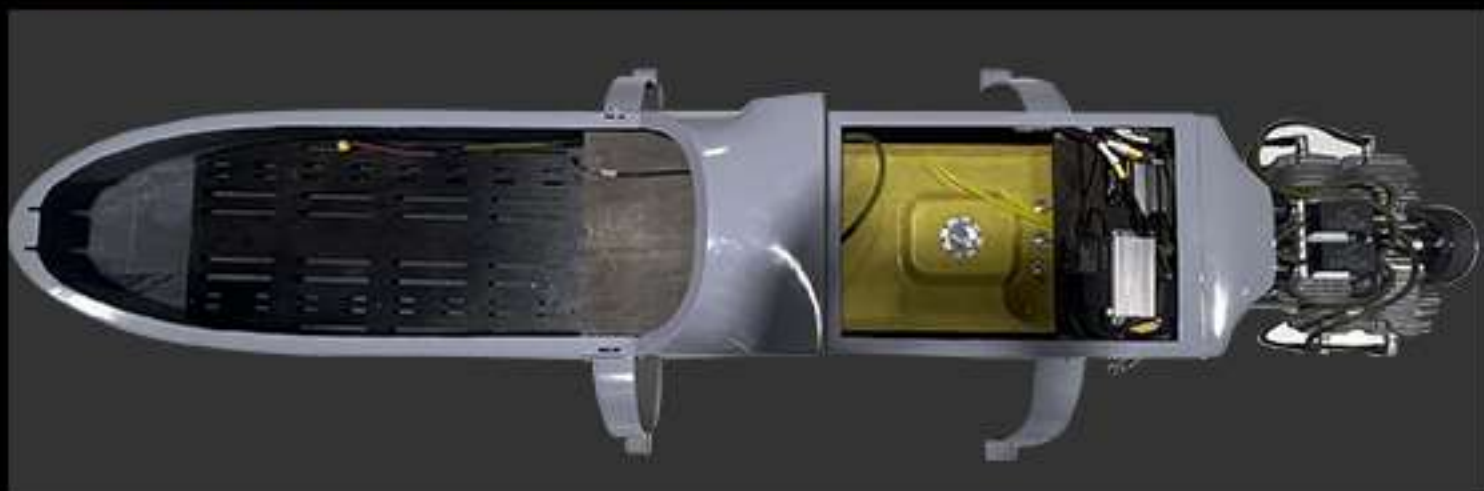
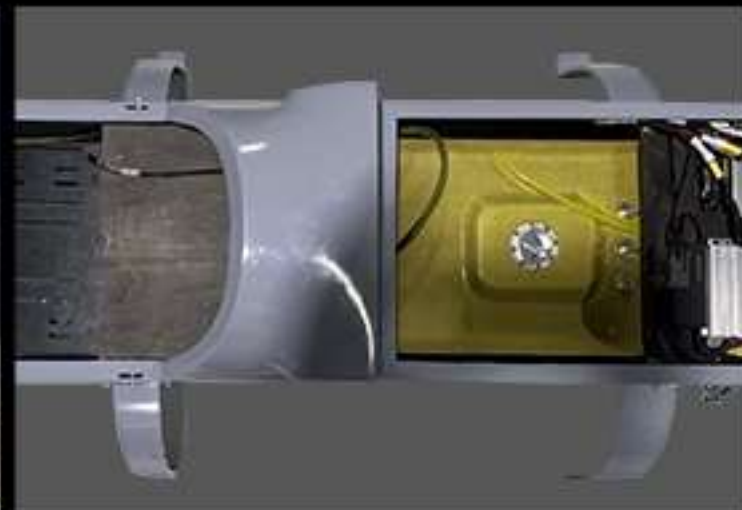


- The soldering and sorting of wires inside the fuselage.

1) Wire soldering. Please make certain the pins are soldered correctly.



2) Sorting and installation of wires.



02 INSTALLATION OF CENTER WING CIRCUITS AND CABINET SERVO

1) Installation of cabinet servo



2) Wiring & Layout

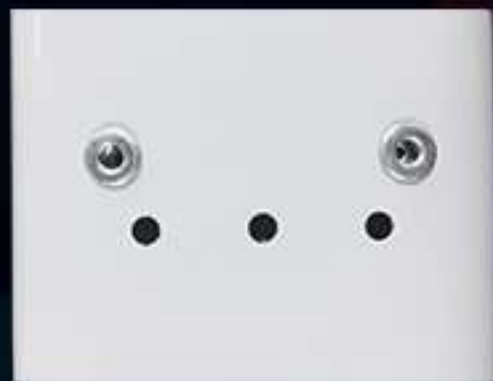


03 Boom Installation

1) Motor plug soldering



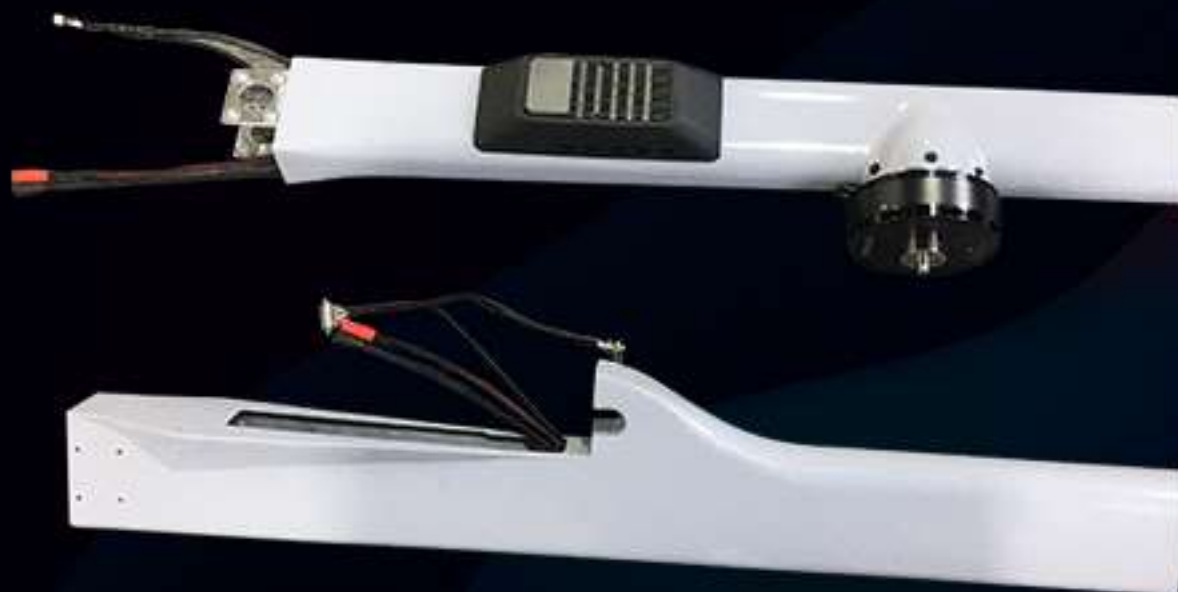
2) The installation of VTOL ESCs requires drilling. Before drilling, please make certain that the hole locations are correct.



3) Solder ESCs, rudders, elevators and LED extension wires.



4) Install motors, ESCs, servos and LED navigation lights.





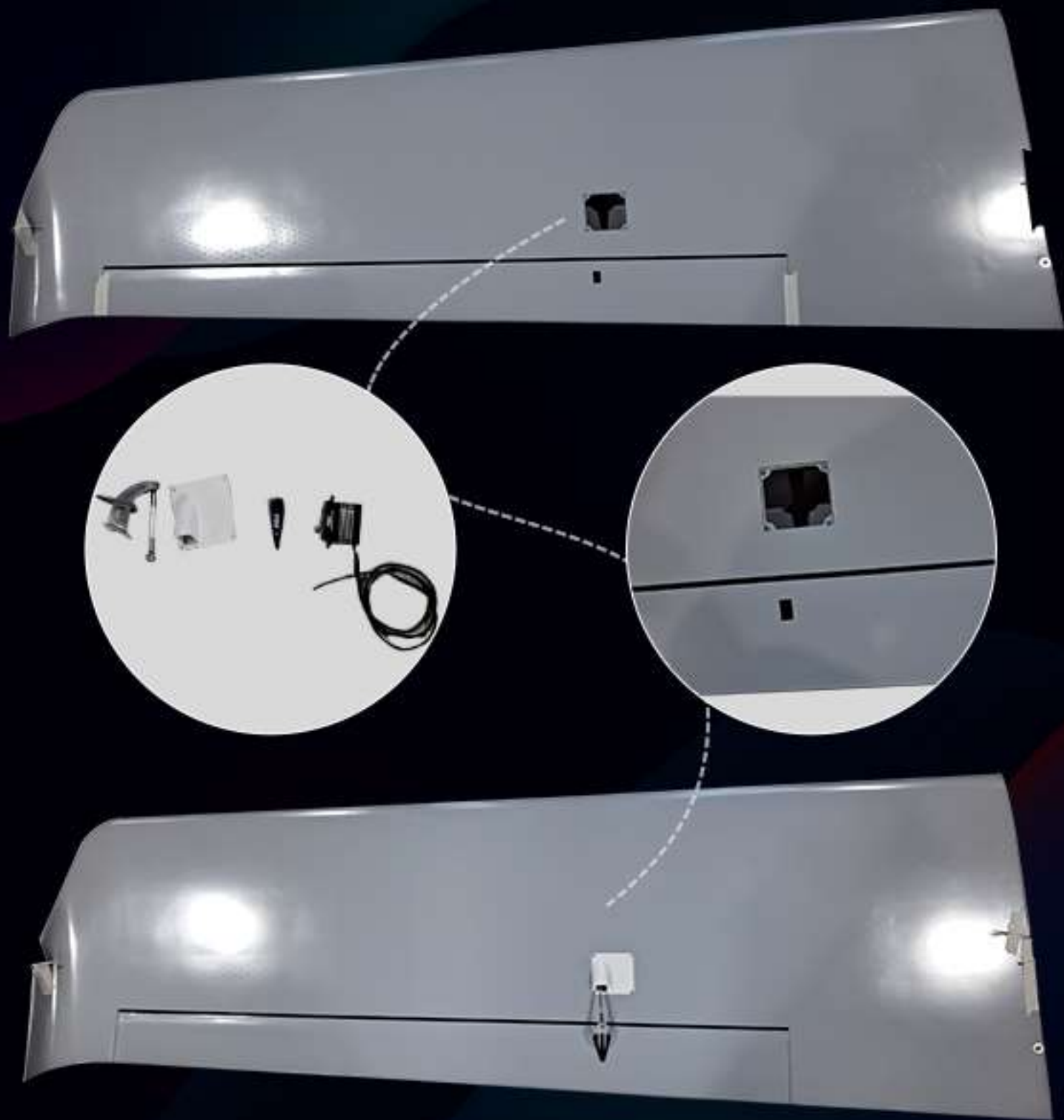
04 Installation of Horizontal Stabilizer

- 1) Solder and install the servo extension wire, aviation plug and servo inverter.

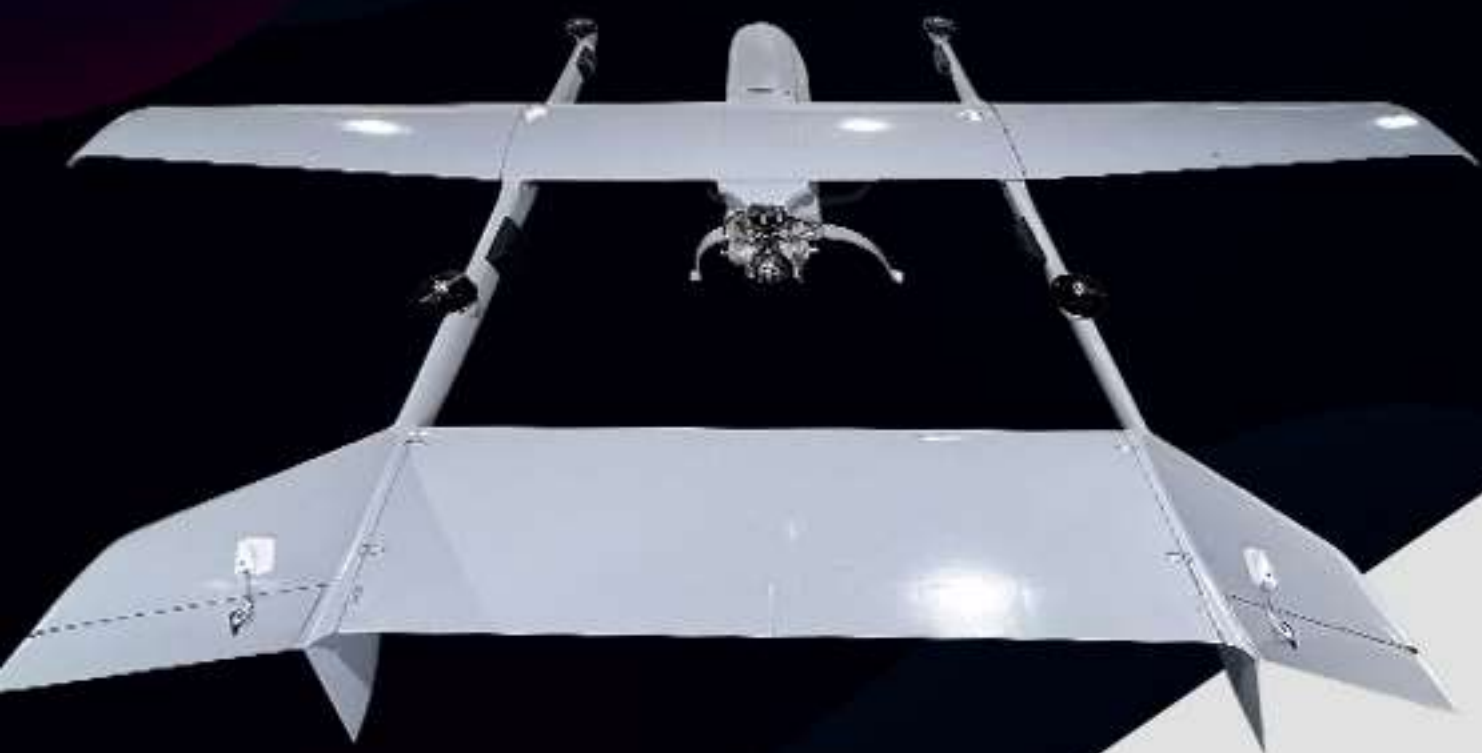


05 Aileron Installation

1) Solder and install aileron servos, LED navigation lights.



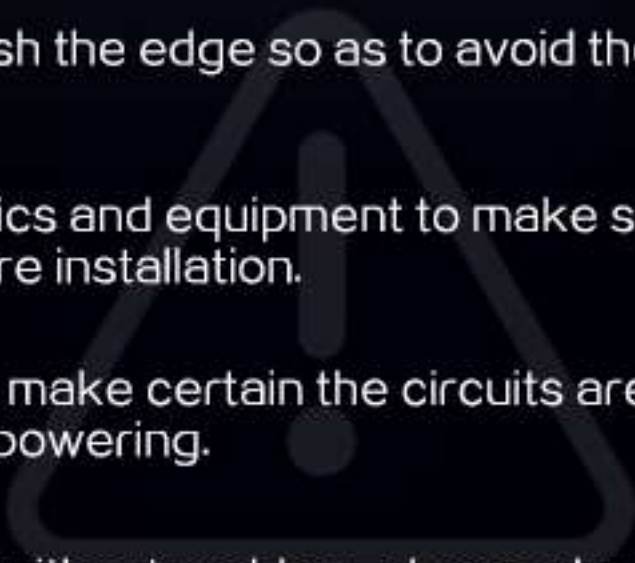
06 Installation Completed





Cautions

- 1** While soldering, please make certain that the negative and positive are correct.
- 2** Before drilling, please confirm the hole locations first.
- 3** After drilling, please polish the edge so as to avoid the damage to wires.
- 4** Please test the electronics and equipment to make sure they work properly before installation.
- 5** After installation, please make certain the circuits are without problem before powering.
- 6** If the circuits are tested without problem, please glue the plugs for insulation and fixation.



Pin Definitions

1、 Pin Definitions of DB25 Connector that used between Center Wing and Fuselage

Pin Definitions of DB25 Connector (Center Wing & Fuselage)

PIN #	Definition		Remarks
1	Aileron	-	
2	Aileron	+	
3	Aileron	S	
4	Elevator	-	
5	Elevator	+	
6	Elevator	S	
7	Ruder	-	
8	Ruder	+	
9	Ruder	S	
10	Left upper motor	-	
11	Left upper motor	s	
12	Left upper motor	-	
13	Left upper motor	s	
14	Right upper motor	-	
15	Right upper motor	s	
16	Right down motor	-	
17	Right down motor	s	
18	LED	-	

PIN #	Definition	Remarks
19	LED +	
20	LED S	
21	Servo for Center Wing Cabinet -	
22	Servo for Center Wing Cabinet +	
23	Servo for Center Wing Cabinet s	

2、Pin Definitions of DB15 Connector that Used between Booms and Center Wing

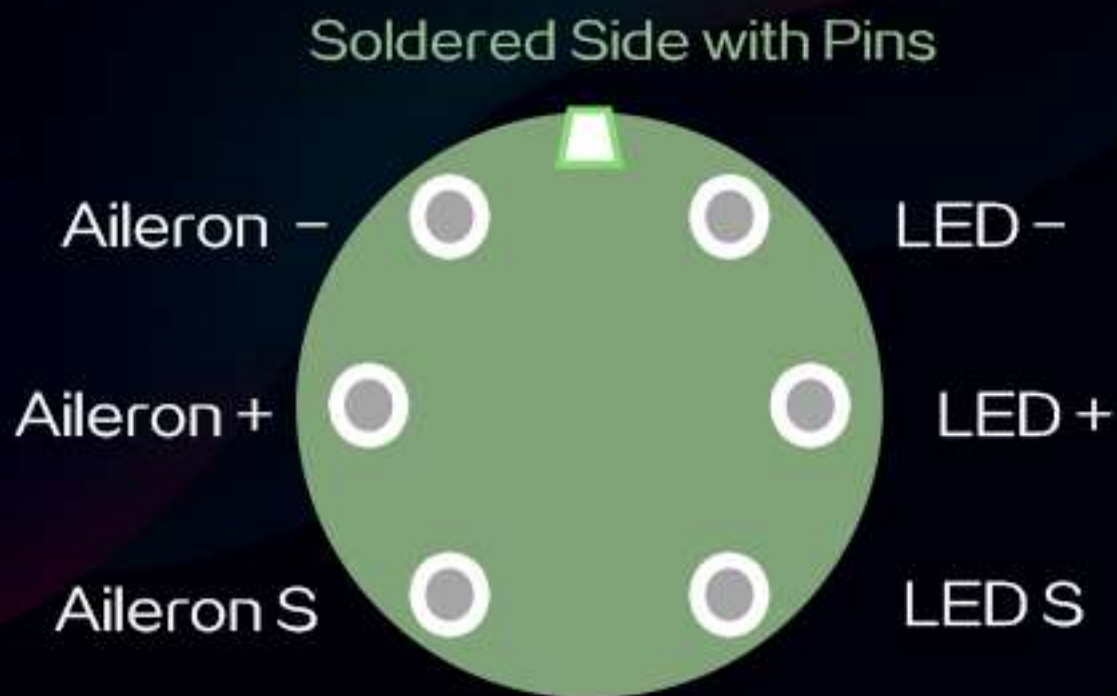
Pin Definitions of DB15 Connector (Booms & Center Wing)					
PIN#	Definition				
1	Rudder -				
2	Rudder +				
3	Rudder S				
4	Elevator -				
5	Elevator +				
6	Elevator S				
7	Right upper motor 1 -		left upper motor 3 -		
8	Right upper motor 1 S		left upper motor 3 S		
9	Right down motor 4 -		left down motor 2 -		
10	Right down motor 4 S		left down motor 2 S		
11	LED -				
12	LED +				
13	LED S				

3、 Pin Definitions of DB15 Plug that Between Front Booms and Rear Booms.

Pin Definitions of DB15 Plug (Front Booms & Rear Booms)

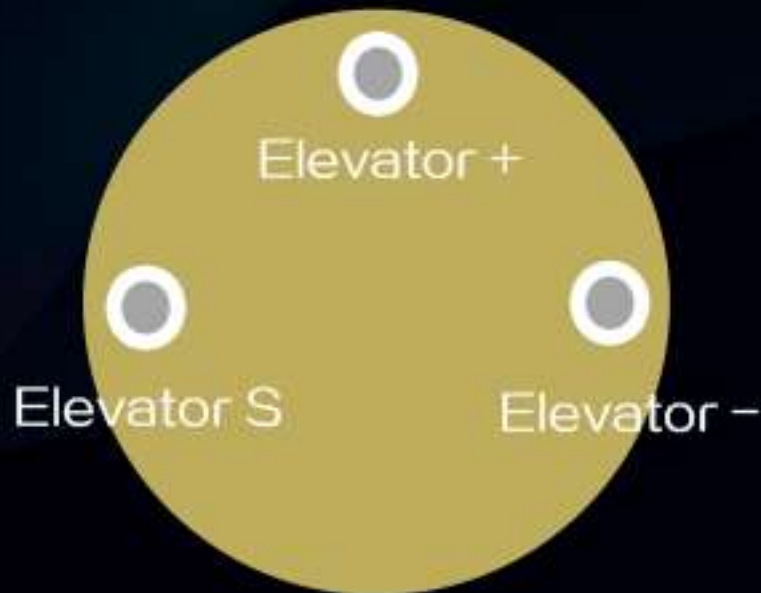
PIN #	Definition					
1	Rudder		-			
2	Rudder		+			
3	Rudder		S			
4	Elevator		-			
5	Elevator		+			
6	Elevator		S			
7	Right down motor	4	-	left down motor	2	-
8	Right down motor	4	S	left down motor	2	S
9	LED		-			
10	LED		+			
11	LED		S			

4、 Pin Definitions of PAG 6-Pin Plug that Used between Center Wing and Ailerons.

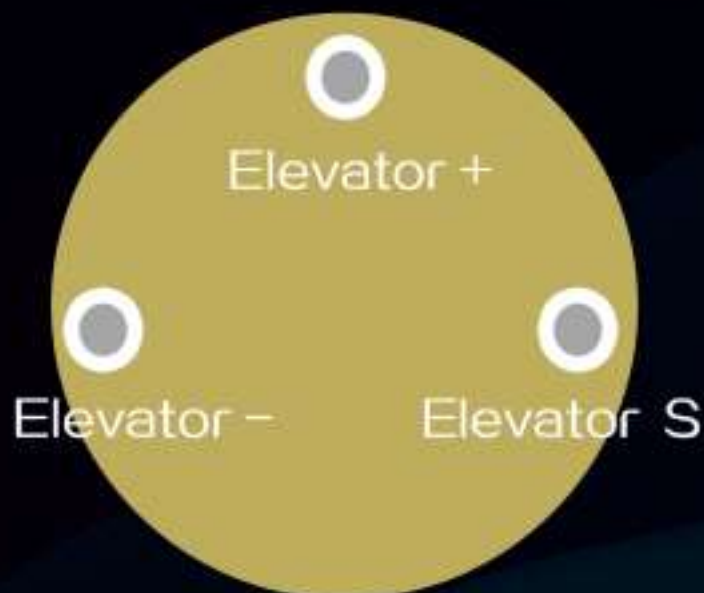


5、 Pin Definitions for PAG 3-Pin Plug that Used Between Horizontal Stabilizer and Vertical Stabilizers.

Soldered Side with Pins



Soldered Side with Holes



6、 The Pin definitions are for reference only.



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