Aerocraft Maker

Manual for Wright Flyer

Including aircraft build, V7RC installation, and tutorial for test fly

Contents

I. Three-view diagram

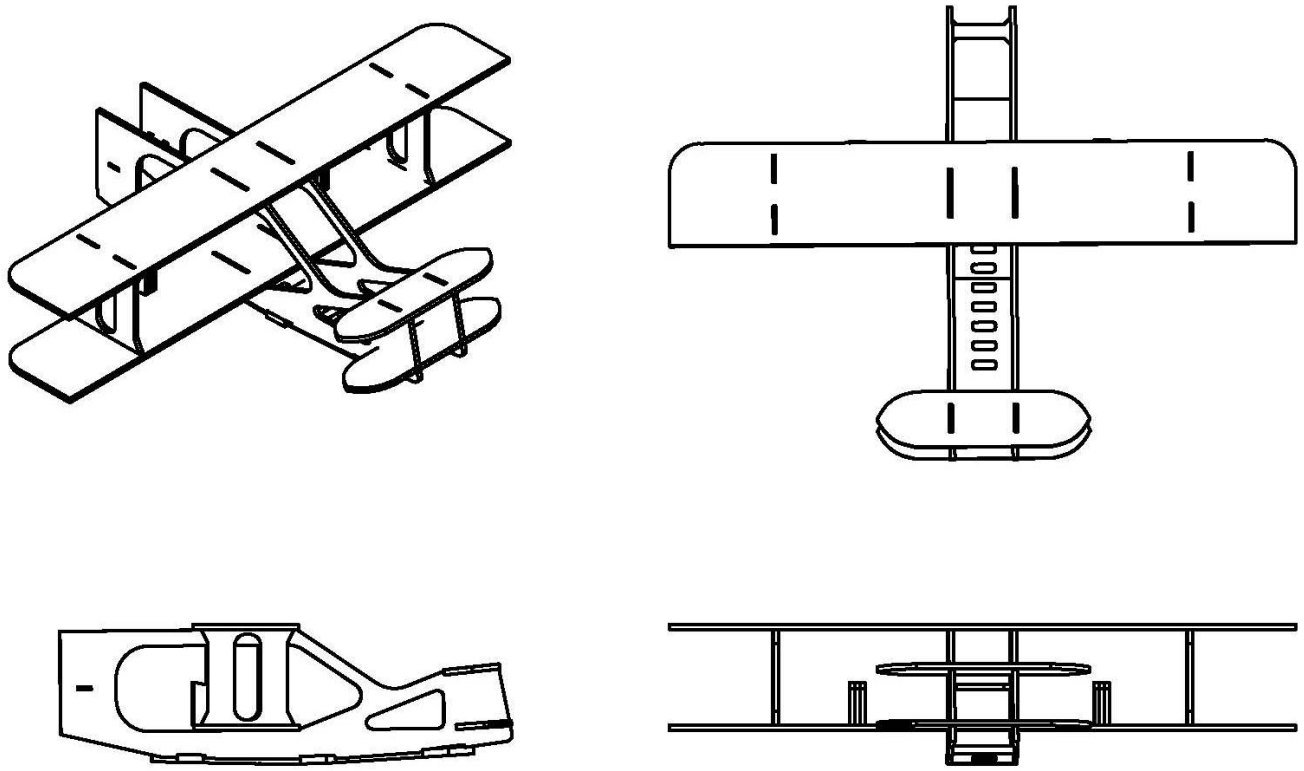


Figure 1 Three-view diagram of Wright Flyer

The dimensions of Wright Flyer are 264mm x 386mm x 78.5mm. H beam structure design is used to enhance the strength of the fuselage.

II. Numbering of Wright Flyer units

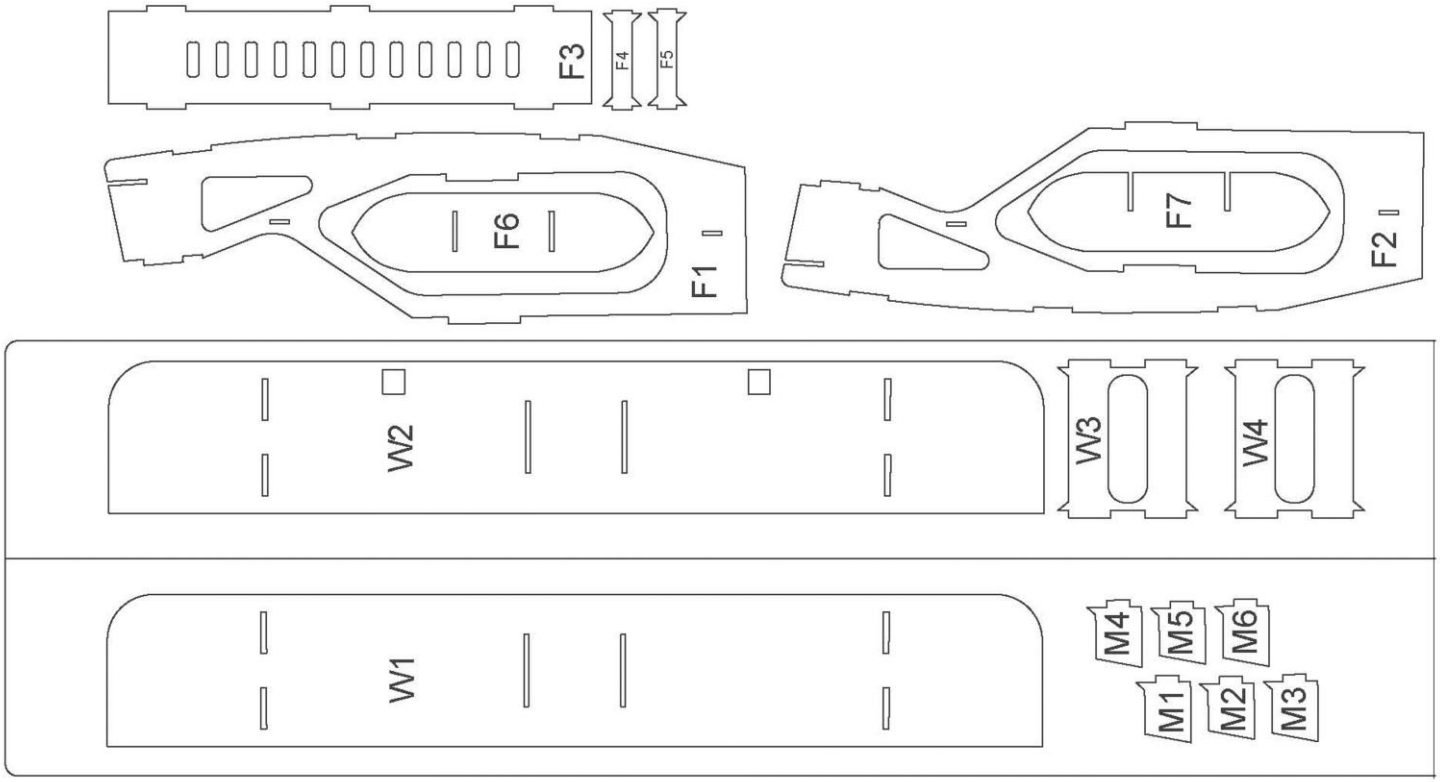
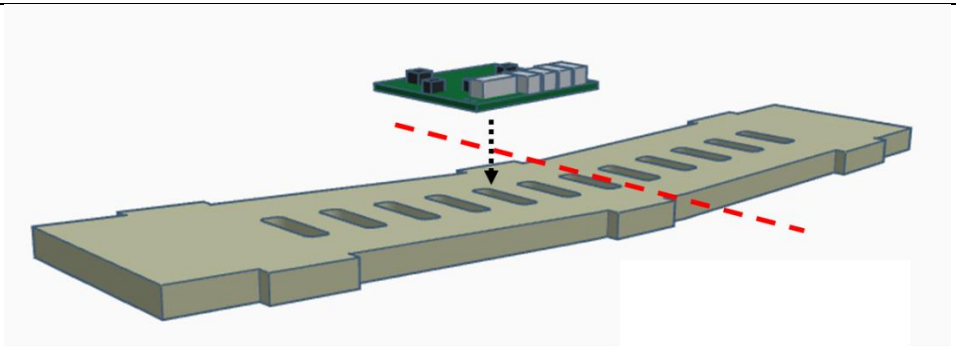
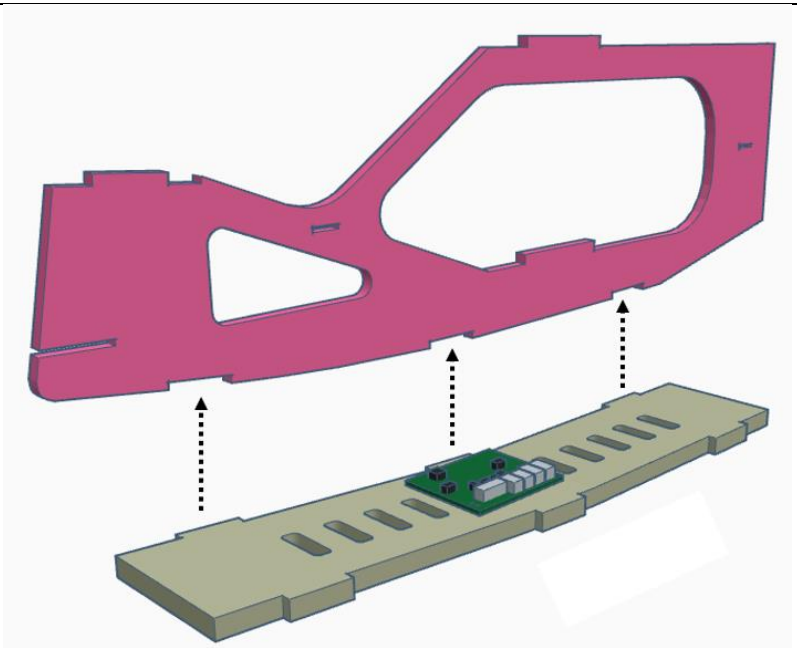
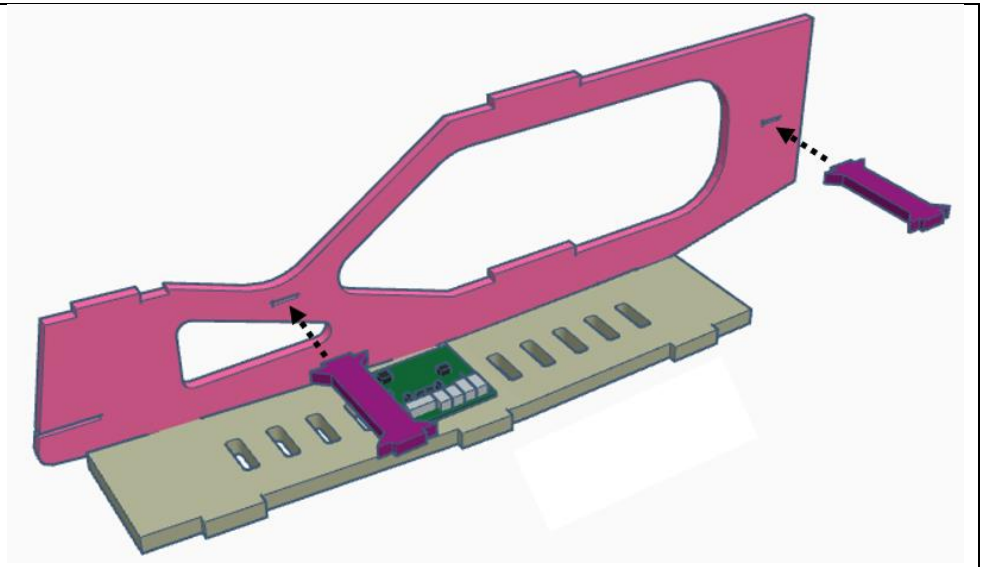
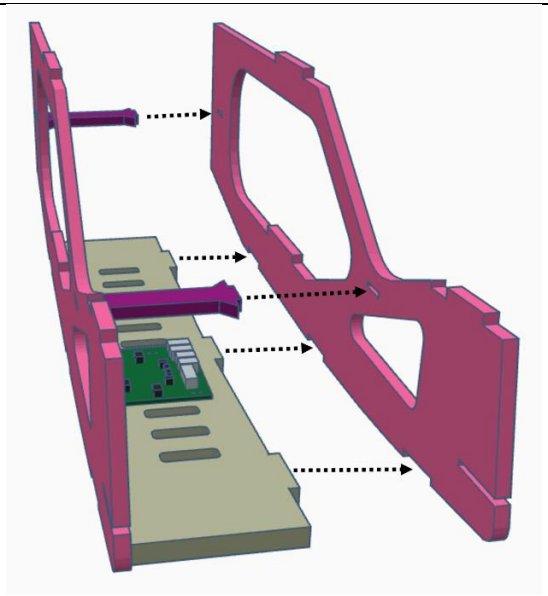


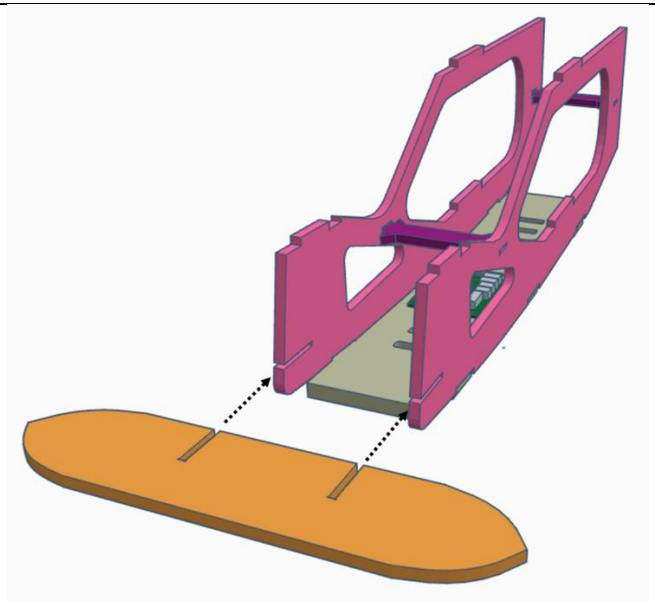
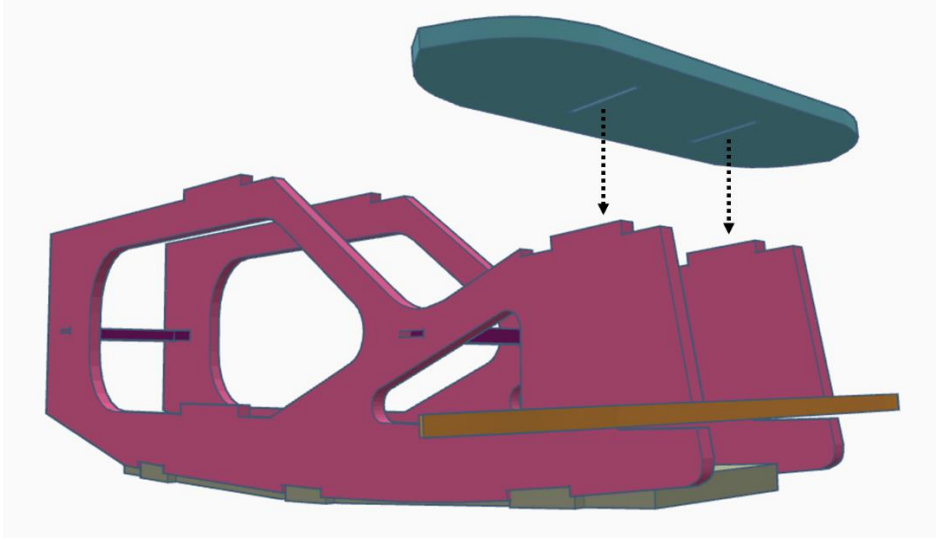
Figure 2. Numbering of Wright Flyer units

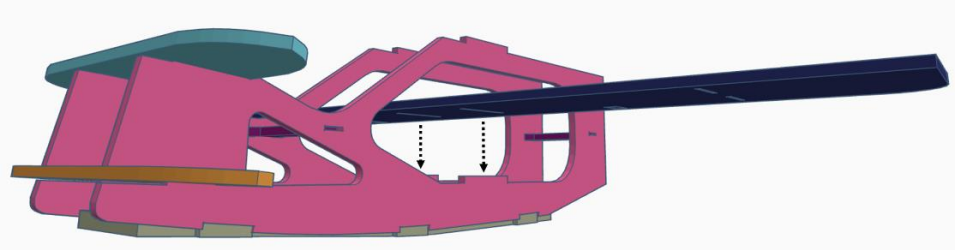
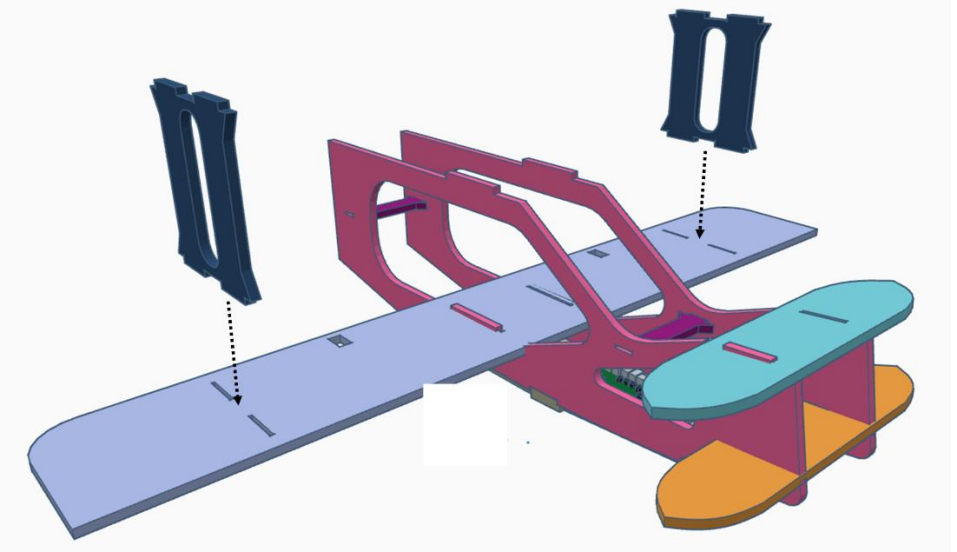
Figure 2 shows the numbering of Wright Flyer units. Units are numbered based on the following rules. The numbers of the units of fuselage start with initial of “F”. The numbers of the units of wing start with initial of “W”. The numbers of the units of motor start with initial of “M”.

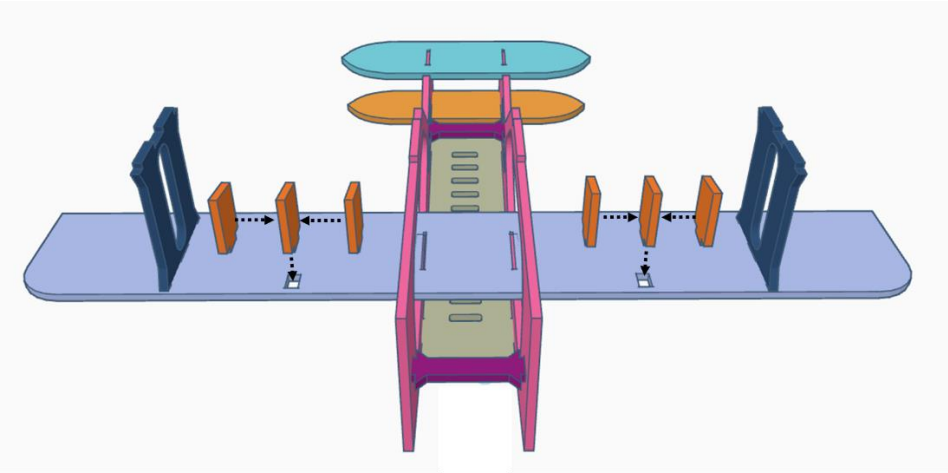
III. Assembly steps

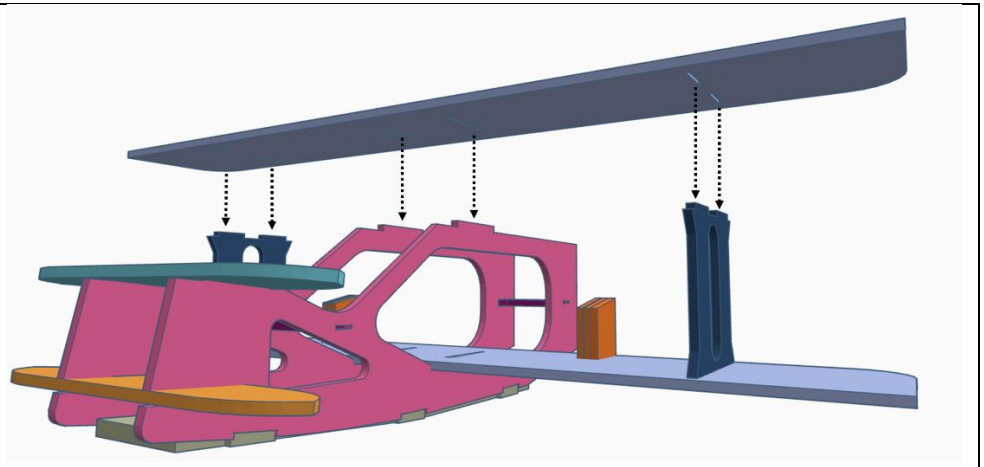
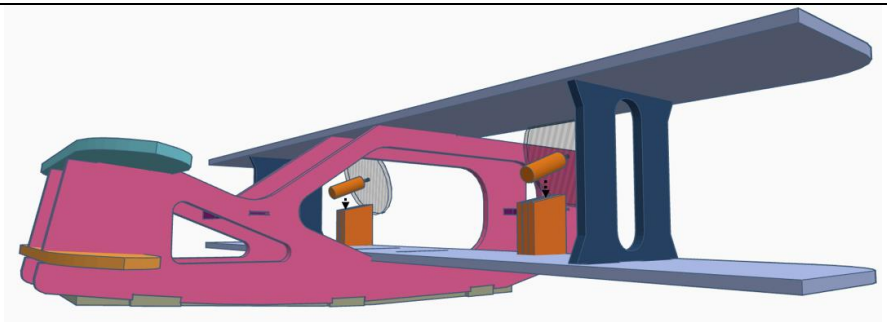
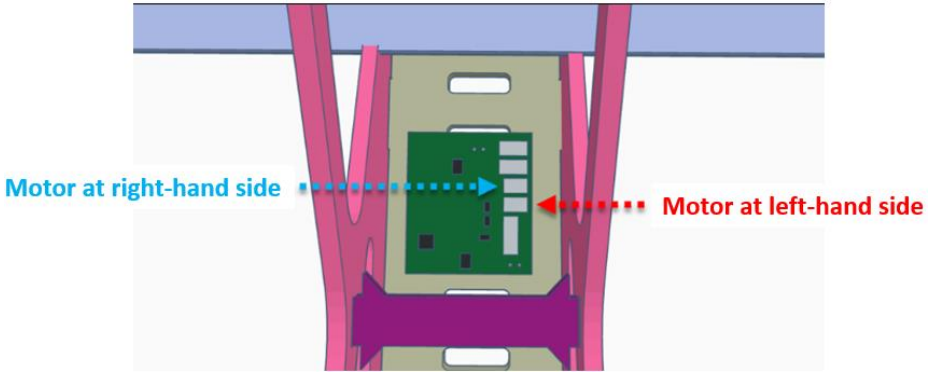
1	Use hot glue to attach Li-Gyro flight controller on the bottom part of fuselage (F3). Please ensure that Y axis of Gyro is pointing to the front of the fuselage and the rear edge is aligned with the dash line in red.	
2	Use polystyrene glue to attach the right-hand part of the fuselage (F1) to the bottom part of the fuselage (F3). You just need to drop a litter bit of glue on the contact area, put it on the bottom part of the fuselage, and hold them for 30-40 seconds.	

3	Stick fuselage supporters (F4 and F5) to the right-hand part of the fuselage (F1). Again, you just need to drop a litter bit of glue on the contact area, insert them into the right-hand part of the fuselage, and hold them for 30-40 seconds.	
4	Stick the left-hand part of the fuselage (F2) to the part completed at Step 3. You just need to drop a litter bit of glue on the contact area, attach it to the part completed at Step 3, and hold them for 30-40 seconds.	

5	Attach aircraft head (F7) to the part completed at Step 4. You just need to drop a litter bit of glue on the contact area, attach it to the part completed at Step 4, and hold them for 30-40 seconds.	
6	Attach aircraft head (F6) to the part completed at Step 5. You just need to drop a litter bit of glue on the contact area, attach it to the part completed at Step 5, and hold them for 30-40 seconds.	

7	Attach lower wing (W2) to the part completed at Step 6. You just need to drop a litter bit of glue on the contact area, attach it to the part completed at Step 6, and hold them for 30-40 seconds.	
8	Stick the wing supporters (W3 and W4) to the lower wing (W2). You just need to drop a litter bit of glue on the contact area, insert them to the lower wing, and hold them for 30-40 seconds.	

9	Attach two sets of motor mount (M1, M2, M3, M4, M5, and M6) to the lower wing. M1, M2, and M3 are for the motor mount at left-hand side. M4, M5, and M6 are the motor mount at right hand side. Please be aware of that M2 is shorter than M1 and M3. So is M5 to M4 and M6. You just need to drop a litter bit of glue on the contact area, insert them to the lower wing, and hold them for 30-40 seconds.	

10	Stick upper wing to the part completed at Step 9. You just need to drop a litter bit of glue on the contact area, put it on the part competed at Step 9, and hold them for 30-40 seconds.	
11	Use glue to stick left and right DC motors on the motor mounts. Then, use tape to hold them tight.	
12	Plug motors on Li-Gyro flight controller according to the figure on the right.	

IV. V7RC APP installation

1	Install V7RC APP (with hyperlinks listed at the end of this chapter). Enter the control page of V7RC APP, and click gear icon to enter control center.	
2	In control center, set parameters according to the following information: Connect method: WIFI IP: 192.168.4.1 Port: 6188 Control interface: tank (Note: please click Save button after IP and Port have been filled)	

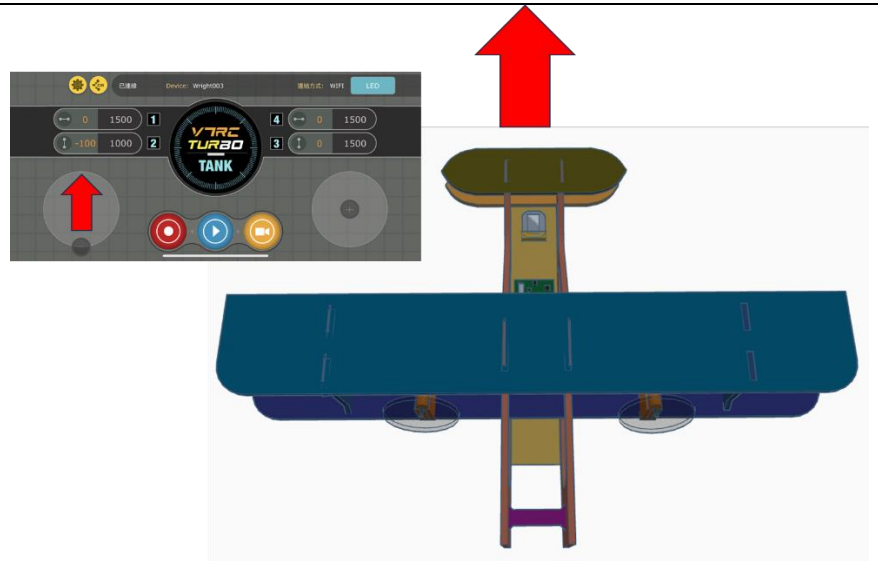
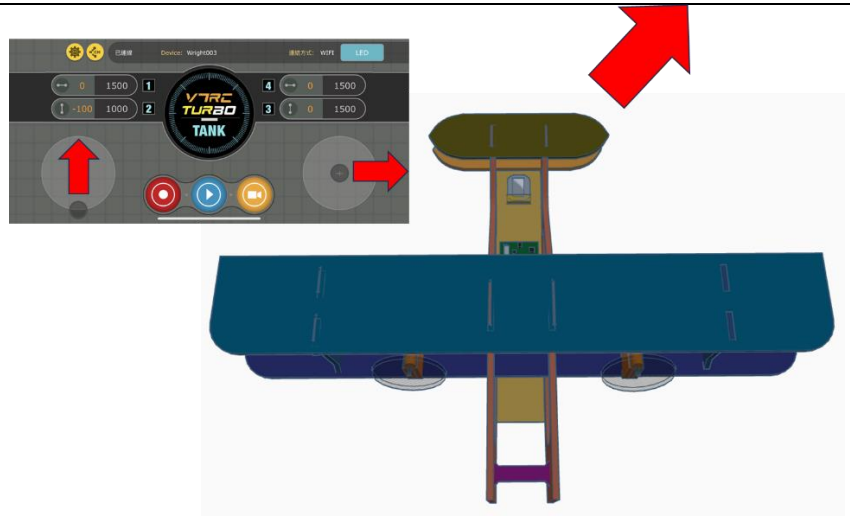
3	Click connect device and enter Wi-Fi configuration page. Search SSID for name with initial of “Wright”, like Wright001. Click connect and fill password (which is the same as SSID). If there is a warning popped up to indicate that there is not internal connection for Wi-Fi, please ignore it and click confirm directly in order to keep Wi-Fi connection to Li-Gyro.	
4	Scroll down to find servo configuration and click “enter configuration page”. First, pick the tag “channel 2”. Set hold on as ON and starting position as LOW.	

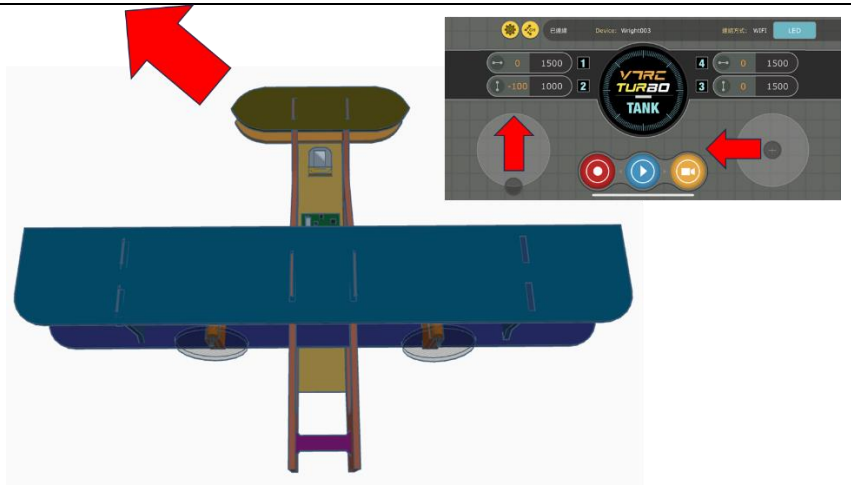
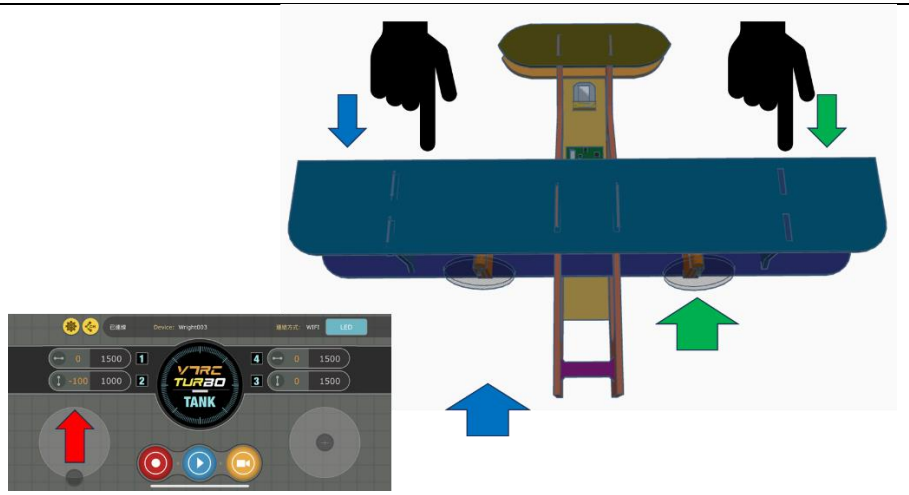
5	Then, pick tag “channel 4”. Set hold on as OFF and starting position as middle.	
6	Return back to control page and enjoy the fly.	

V7RC APP link:

- Android: https://play.google.com/store/apps/details?id=com.v7idea.v7rcliteandroidsdkversion&hl=zh_TW&gl=US
- iOS: https://apps.apple.com/tw/app/v7rc/id1390983964

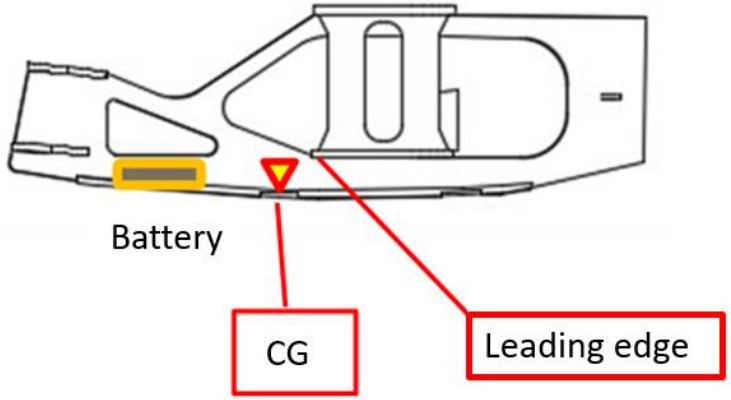
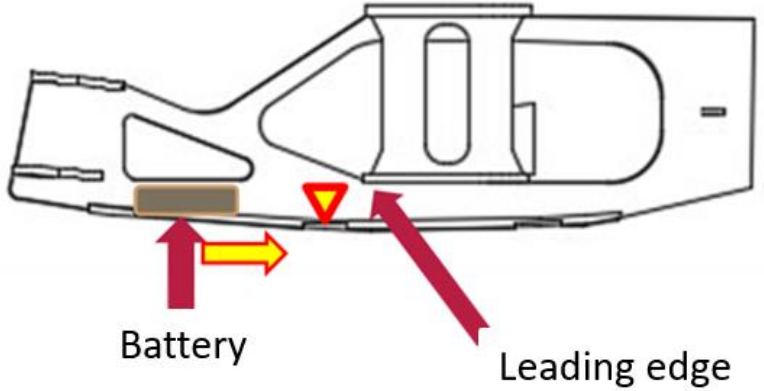
V. Functionality test

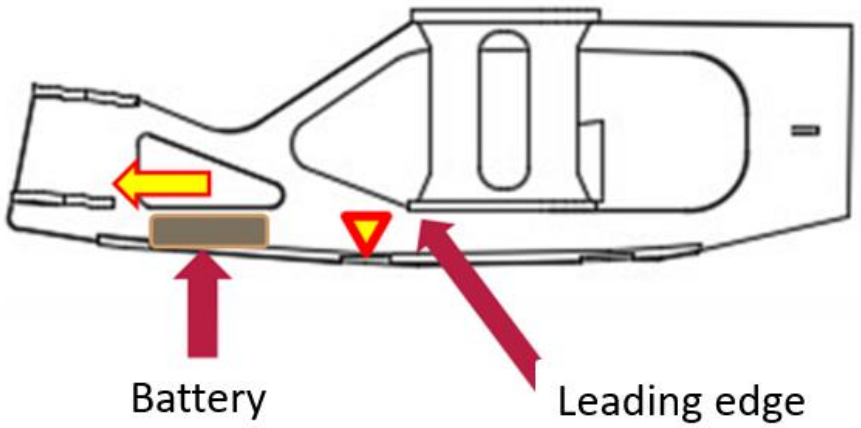
1	Throttle test: put Wright Flyer on the ground. Push throttle up and ensure that Wright Flyer is moving straight (as the red arrow shows).	
2	Right turn test: put Wright Flyer on the ground. Push throttle up and push aileron to the right. Ensure that Wright Flyer is turning right (as the red arrow shows).	

3	Left turn test: put Wright Flyer on the ground. Push throttle up and push aileron to the left. Ensure that Wright Flyer is turning left (as the red arrow shows).	
4	Gyro test: ➢ Preamble: put Wright Flyer on the ground. Push throttle up to make DC motors turning but do not have enough power to make Wright Flyer moving. ➢ Compensation test for bias to the right: use your finger to push the leading edge of the right-hand side of the wing and observe that the turning speed of the right motor increases to pull Wright Flyer back to the center (as the green arrow shows). ➢ Compensation test for bias to the left: use your finger to push the leading edge of the left-hand side of the wing and observe that	

the turning speed of the left motor increases to pull Wright Flyer back to the center (as the blue arrow shows).	

VI. Tuning

1	Before flying, you need to adjust the location of the battery to locate CG (Center of Gravity) at the right position, which is about 1cm in front of leading edge of the wing.	
2	Do launching and landing to see if the aircraft can glide well. If the plan flies toward the ground, it means that the location of CG is too close to the front. As such, the battery should be move backward.	

3	If the plane ascends too quickly, it means that the location of CG is too close to the back. Therefore, the battery should be moved forward.	
4	Find an open area to practice launching and landing. Do not fly too high for your first trials. Moreover, do not fly an aircraft when it is windy.