

Aerocraft Maker

Manual for Wright Flyer

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

Contents

I.	Three-view diagram	2
II.	Numbering of Wright Flyer units	3
III.	Assembly steps.....	4
IV.	V7RC APP installation.....	10
V.	Functionality test	14
VI.	Tuning	17

I. Three-view diagram

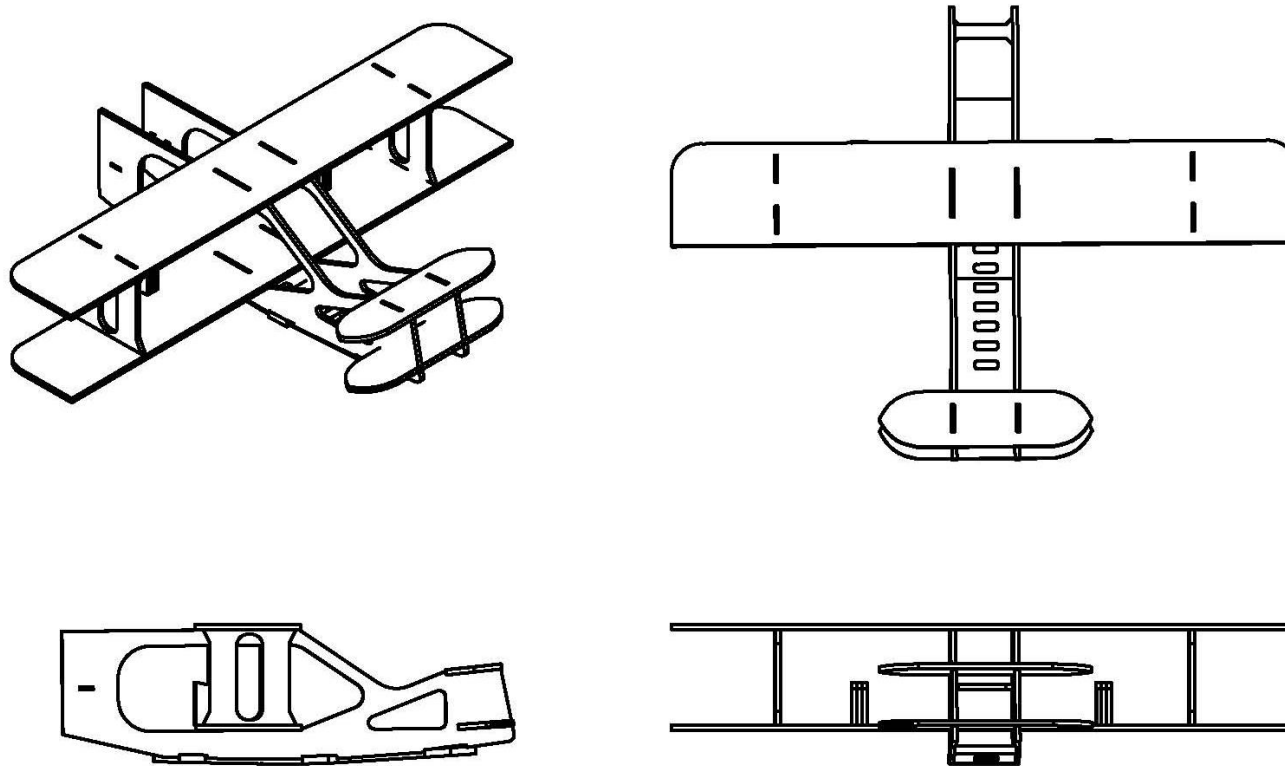


Figure 1 Three-view diagram of Wright Flyer

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

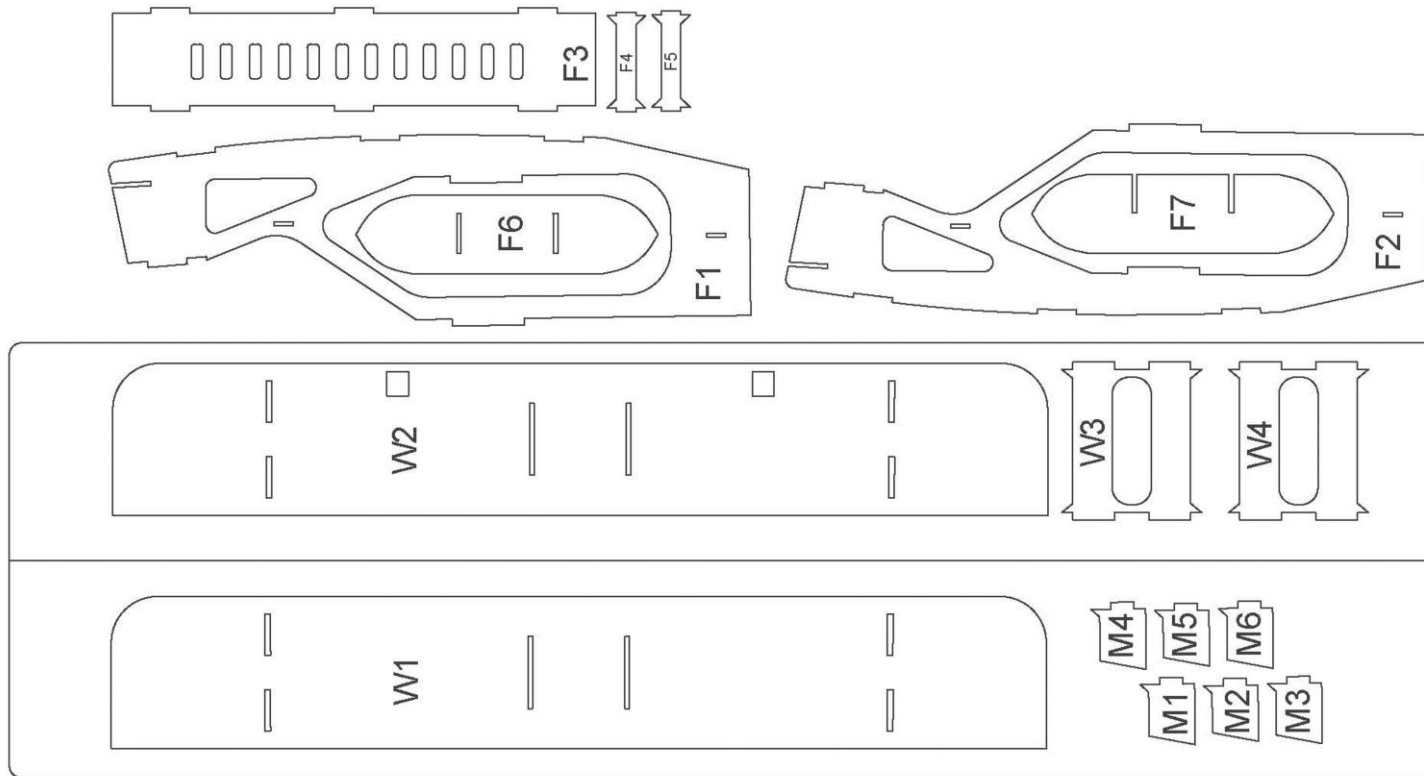
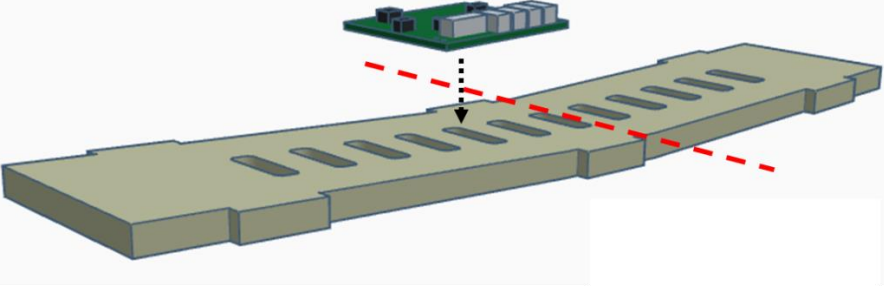
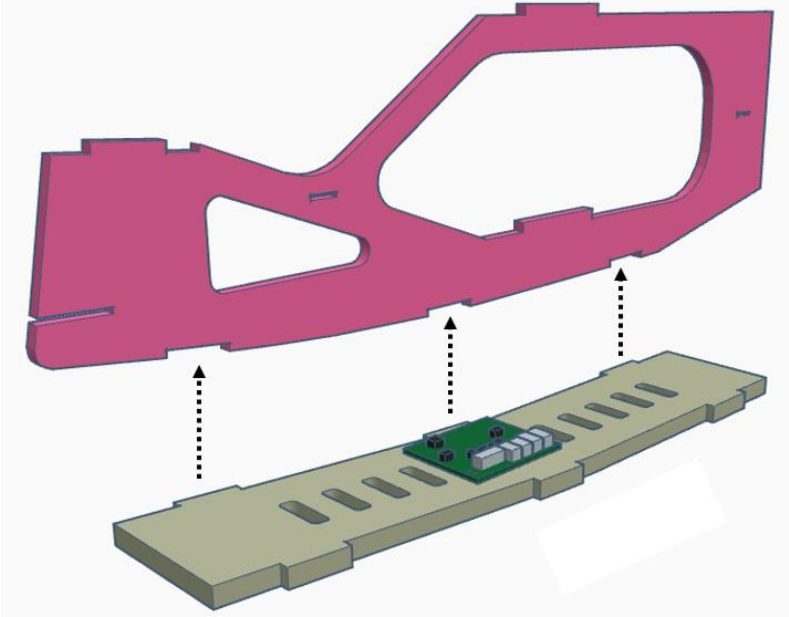
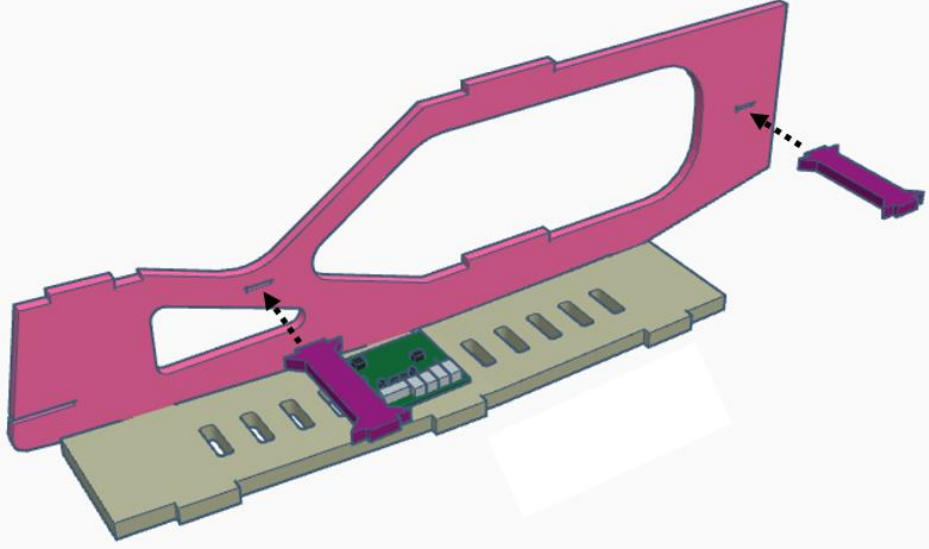
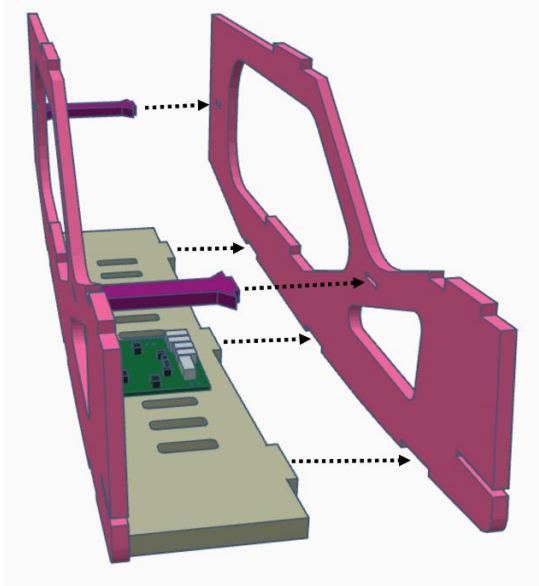


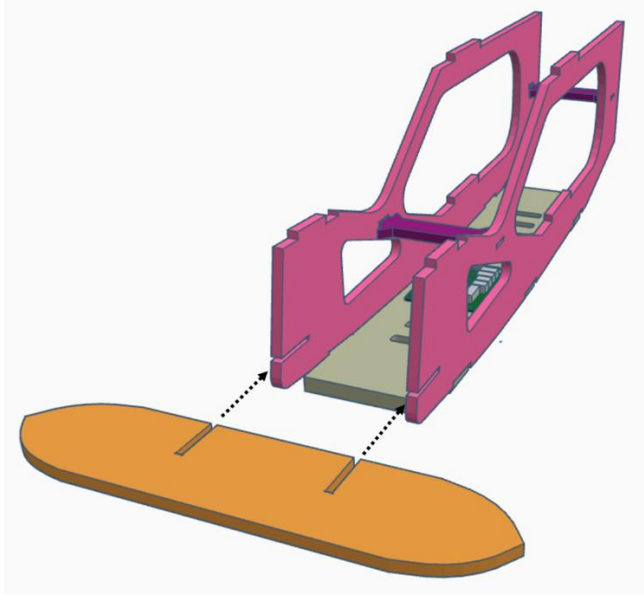
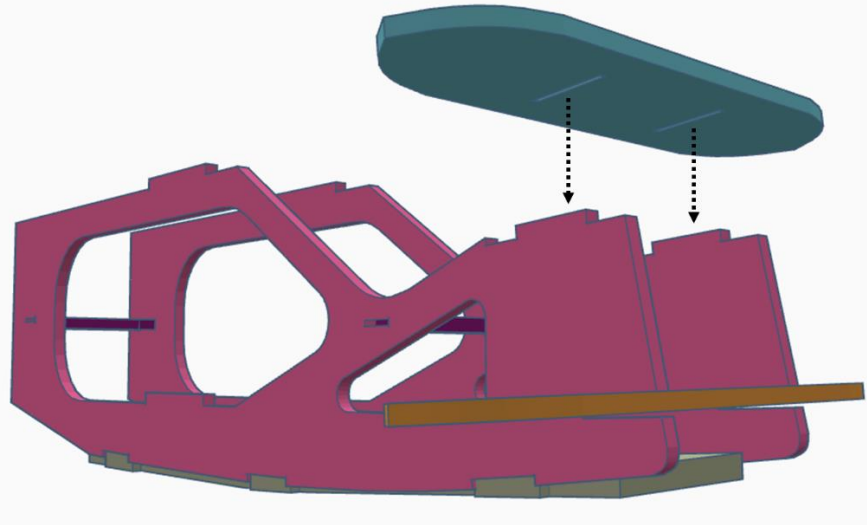
Figure 2. Numbering of Wright Flyer units

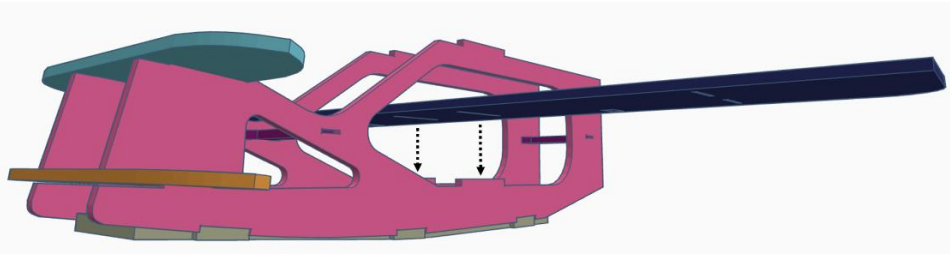
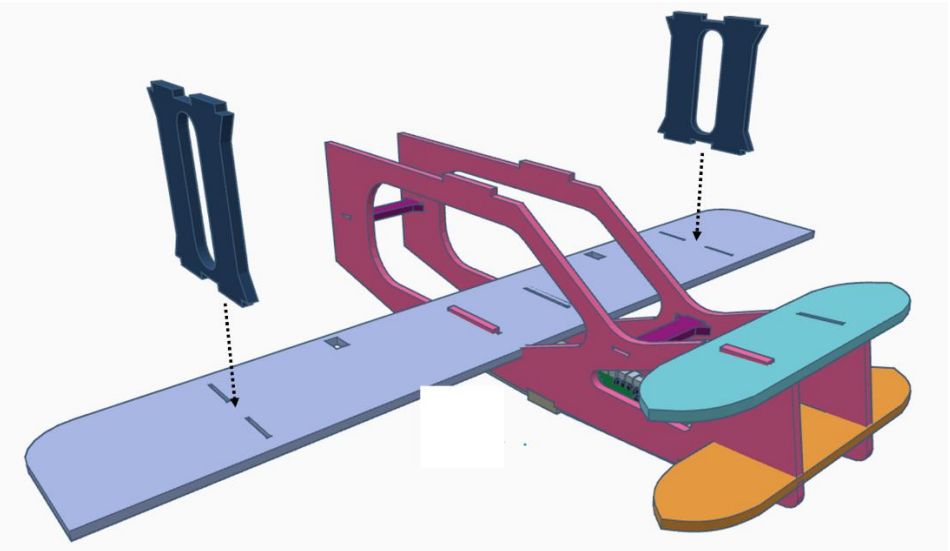
Figure 2 shows the numbering of Wright Flyer units. Units are numbered based on the following rules. The numbers of the units of fuselage start with initial of “F”. The numbers of the units of wing start with initial of “W”. The numbers of the units of motor start with initial of “M”.

III. Assembly steps

1	<p>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.</p>	 A 3D perspective diagram showing a green Li-Gyro flight controller board being positioned above a long, thin, olive-green fuselage part (F3). A dashed red line runs along the length of the fuselage, indicating the alignment for the rear edge of the board. A black dashed arrow points from the board down to the fuselage.
2	<p>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.</p>	 A 3D perspective diagram showing a pink, complex-shaped fuselage part (F1) being positioned above the olive-green fuselage part (F3). The F3 part now has the green Li-Gyro board attached to its top surface. Three black dashed arrows point from the F3 part up to the F1 part, indicating the attachment points for the glue.

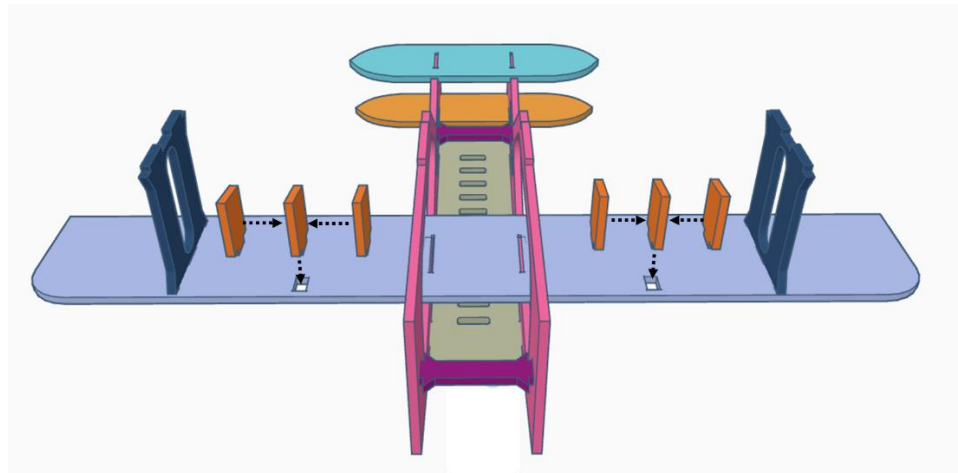
3	<p>Stick fuselage supporters (F4 and F5) to the right-hand part of the fuselage (F1). Again, you just need to drop a litter bit of glue on the contact area, insert them into the right-hand part of the fuselage, and hold them for 30-40 seconds.</p>	
4	<p>Stick the left-hand part of the fuselage (F2)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

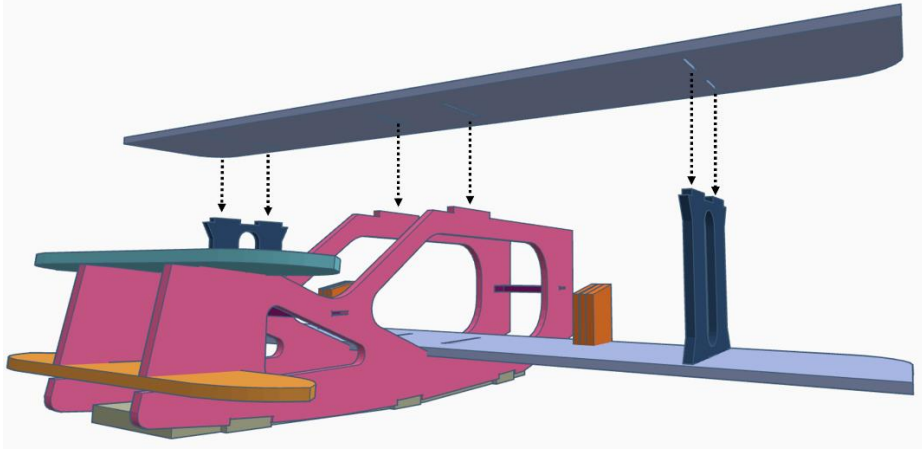
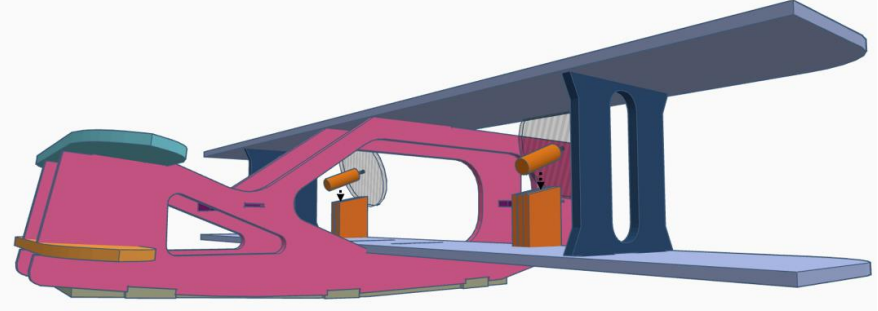
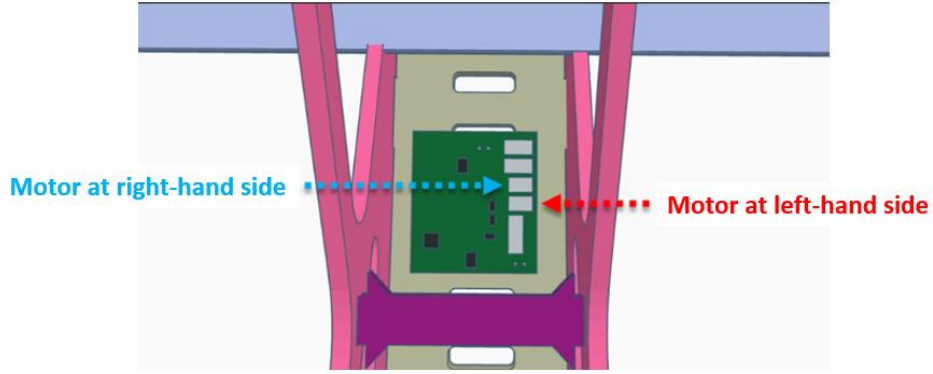
<div data-bbox="219 148 257 188">5</div>	<p data-bbox="309 148 1041 387">Attach aircraft head (F7) to the part completed at Step 4. You just need to drop a litter bit of glue on the contact area, attach it to the part completed at Step 4, and hold them for 30-40 seconds.</p>	 <p data-bbox="1220 148 1861 746">A 3D perspective diagram showing a pink, multi-part aircraft fuselage assembly. Below it is a flat, orange, oval-shaped base plate. Two dashed lines with arrows point from the base plate up to the bottom of the fuselage assembly, indicating the attachment points for the aircraft head (F7).</p>
<div data-bbox="219 775 257 815">6</div>	<p data-bbox="309 775 1041 1015">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.</p>	 <p data-bbox="1099 783 1962 1310">A 3D perspective diagram showing a pink, multi-part aircraft fuselage assembly. Above it is a dark blue, oval-shaped aircraft head (F6). Two dashed lines with arrows point from the head down to the top of the fuselage assembly, indicating the attachment points. A thin, brown, rectangular piece is shown lying horizontally across the front of the fuselage assembly.</p>

7	<p>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.</p>	 <p>A 3D perspective view of a pink plastic fuselage. A long, thin, dark blue wing (W2) is being positioned horizontally across the top of the fuselage. Two vertical dashed arrows point downwards from the wing towards the fuselage, indicating the contact area for attachment. A brown rectangular piece is visible on the left side of the fuselage.</p>
8	<p>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.</p>	 <p>A 3D perspective view of the assembly from a different angle. The pink fuselage is shown with a light blue wing (W2) attached. Two dark blue wing supporters (W3 and W4) are shown being inserted into slots on the underside of the wing. Dashed arrows point from the supporters to the wing, indicating the insertion points. The fuselage has a teal-colored nose and orange-colored landing gear.</p>



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	<p>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.</p>	
11	<p>Use glue to stick left and right DC motors on the motor mounts. Then, use tape to hold them tight.</p>	
12	<p>Plug motors on Li-Gyro flight controller according to the figure on the right.</p>	 <p>Motor at right-hand side →</p> <p>← Motor at left-hand side</p>

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)	

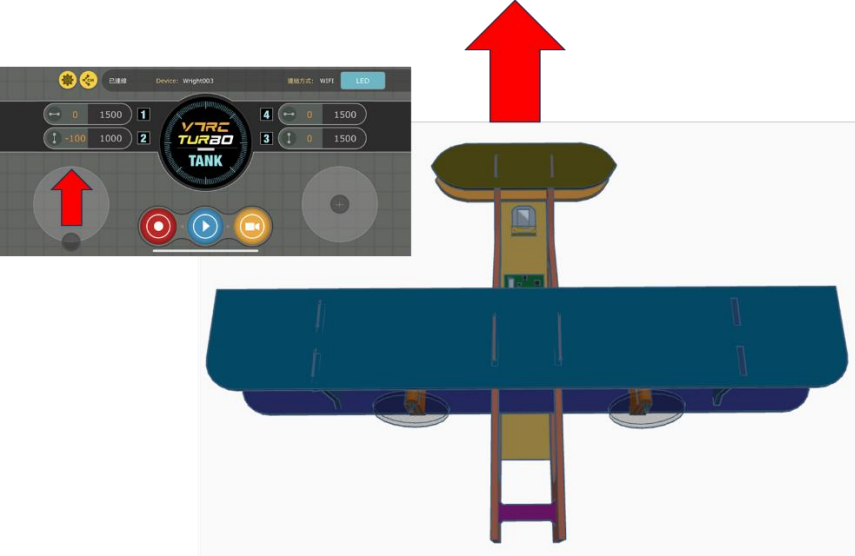
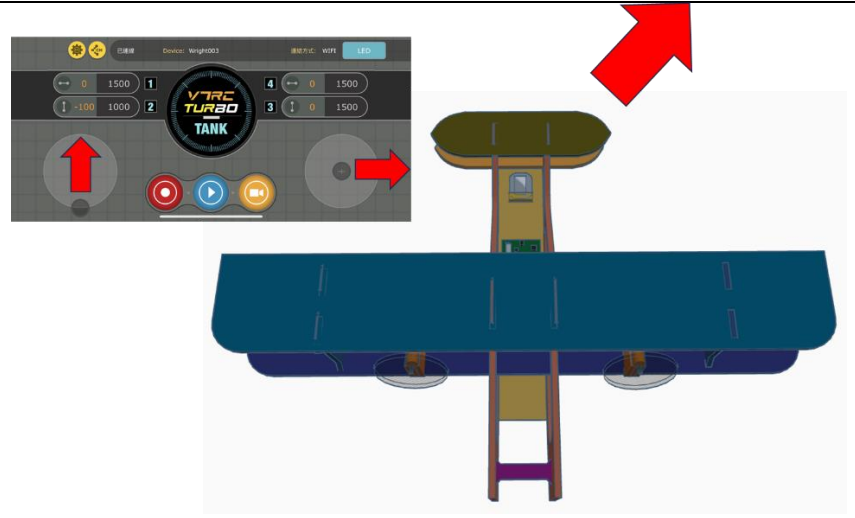
3	<p>Click connect device and enter Wi-Fi configuration page. Search SSID for name with initial of “Wright”, like Wright001. Click connect and fill password (which is the same as SSID). If there is a warning popped up to indicate that there is not internal connection for Wi-Fi, please ignore it and click confirm directly in order to keep Wi-Fi connection to Li-Gyro.</p>	
4	<p>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.</p>	

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

V7RC APP link:

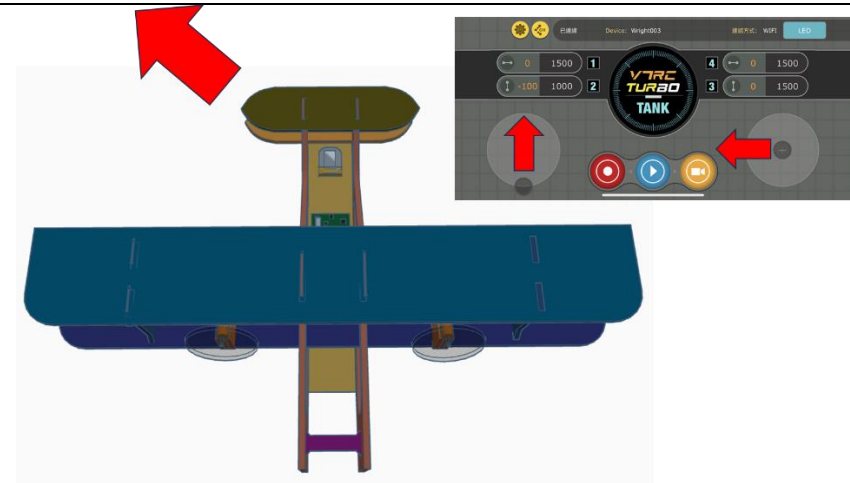
- Android: https://play.google.com/store/apps/details?id=com.v7idea.v7rcliteandroidsdkversion&hl=zh_TW&gl=US
- iOS: <https://apps.apple.com/tw/app/v7rc/id1390983964>

V. Functionality test

<p>1</p>	<p>Throttle test: put Wright Flyer on the ground. Push throttle up and ensure that Wright Flyer is moving straight (as the red arrow shows).</p>	
<p>2</p>	<p>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).</p>	

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:

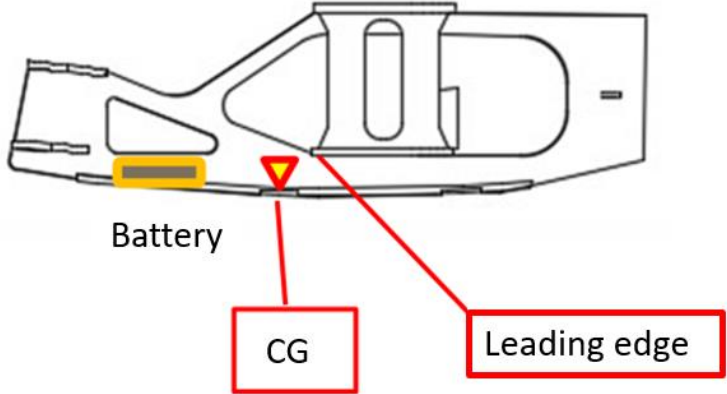
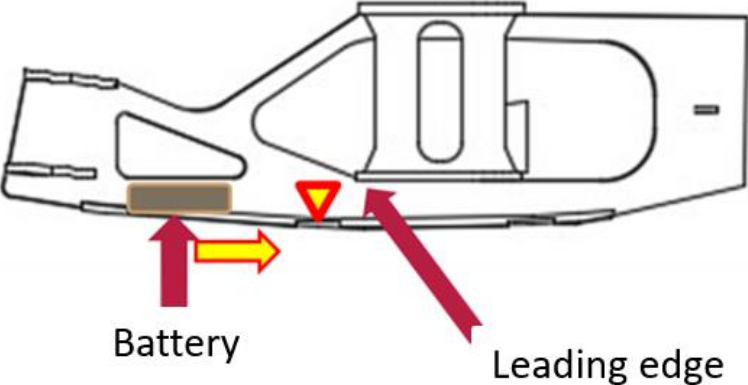
- Preamble: put Wright Flyer on the ground. Push throttle up to make DC motors turning but do not have enough power to make Wright Flyer moving.
- Compensation test for bias to the right: use your finger to push the leading edge of the right-hand side of the wing and observe that the turning speed of 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

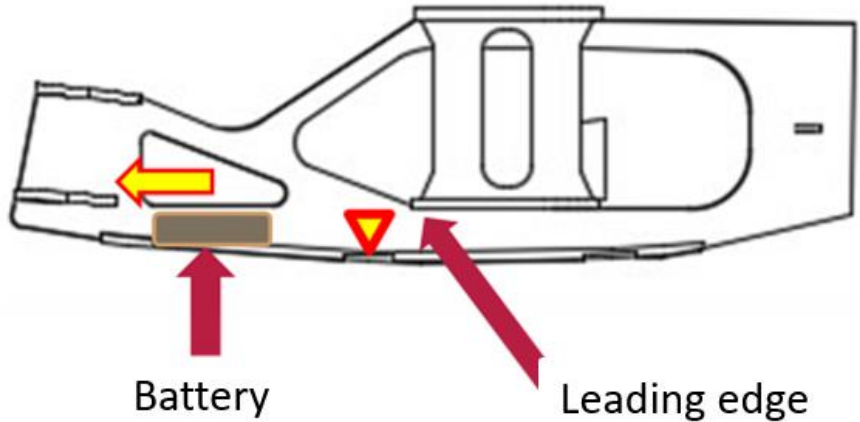



<p>the turning speed of the left motor increases to pull Wright Flyer back to the center (as the blue arrow shows).</p>	
---------------------------------------------------------------------------------------------------------------------------------	--



VI. Tuning

1	<p>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.</p>	 <p>The diagram shows a side profile of an aircraft. A yellow rectangular battery is positioned on the fuselage. A red triangle labeled 'CG' is located just behind the leading edge of the wing. A red line points from the 'CG' label to the triangle, and another red line points from the 'Leading edge' label to the front of the wing. The battery is positioned such that the CG is approximately 1cm in front of the leading edge.</p>
2	<p>Do launching and landing to see if the aircraft can glide well. If the plane 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.</p>	 <p>The diagram shows the same aircraft profile. The battery is now a brown rectangle and is shifted forward, closer to the nose. A red triangle labeled 'CG' is also shifted forward, closer to the battery. A red line points from the 'CG' label to the triangle, and another red line points from the 'Leading edge' label to the front of the wing. A yellow arrow points from the battery towards the leading edge, indicating the direction of movement. A red arrow points from the leading edge towards the battery, indicating the direction of movement.</p>

<p>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.</p>	 <p>The diagram shows a side profile of a model airplane. A yellow arrow points from the battery location towards the nose, indicating the direction to move the battery forward. A red arrow points from the leading edge towards the battery location. A red triangle is placed on the fuselage, likely indicating the current center of gravity (CG) position.</p> <p>Battery</p> <p>Leading edge</p>
<p>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.</p>	 <p>The illustration shows a wide, green grassy field in the foreground. In the background, there is a dark silhouette of a city skyline with various buildings and a crane. The sky is a light blue color.</p>