



# **768-1 Mustang P-51D**

## **USER MANUAL**

## WARNING

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product.

**CAUTION:** Procedures, which if not be properly followed, is able to create a possibility of physical property damage AND or possibility of injury.

Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Fail to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product and **NOT** a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Fail to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not attempt to disassemble, use with incompatible components or augment product in any way without the approval of VolantexRC Co., Ltd..

This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

**Age Recommendation:** Not for children under 14 years. This is not a toy.

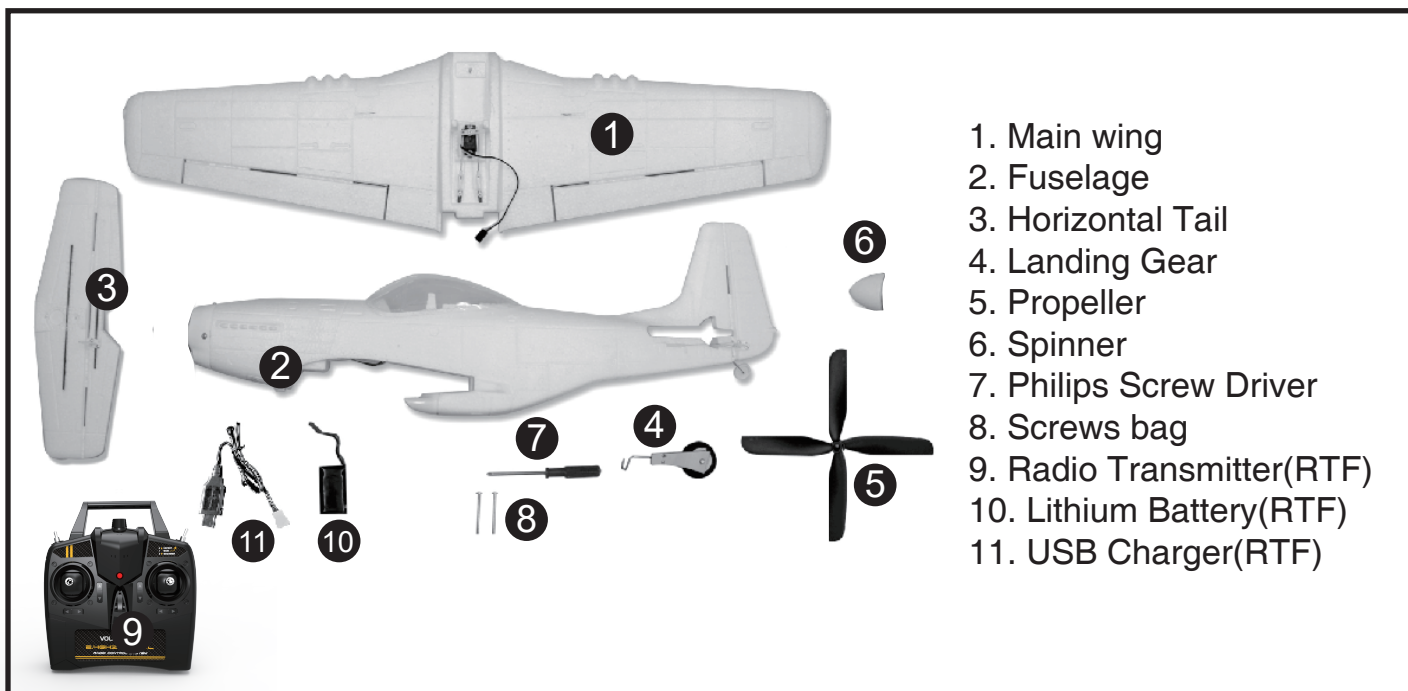
## Safety Precautions and Warnings

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As the user of this product, you are solely responsible for operating in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

- Always ensure all batteries have been properly charged before using the vehicle.
- Always check all servos and their connections prior to each run.
- Never operate your vehicle near spectators, parking areas or any other area that could result in injury to people or damage of property.
- Never operate your vehicle during adverse weather conditions. Poor visibility can cause disorientation and loss of control of your vehicle.
- Never point the transmitter antenna directly toward the vehicle. The radiation pattern from the tip of the antenna is inherently low.
- If at any time during the operation of your vehicle you observe any erratic or abnormal operation, immediately stop operation of your vehicle until the cause of the problem has been ascertained and corrected.

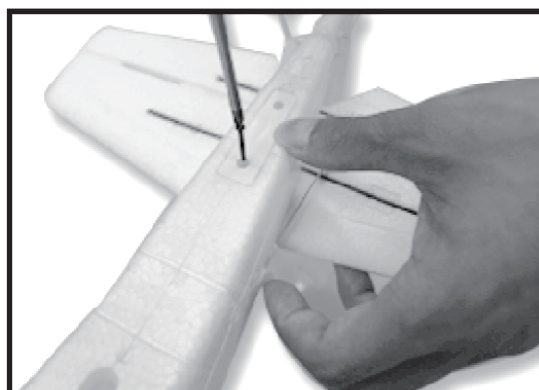
## Kit Contents



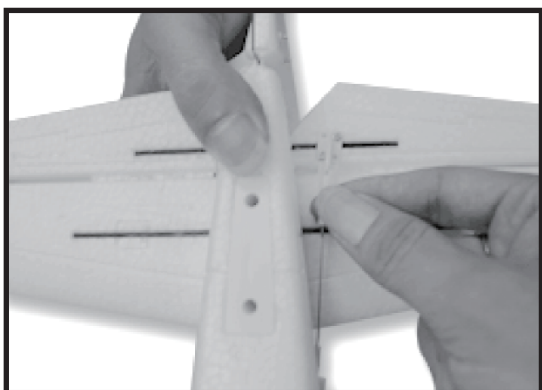
## Assemble The Plane



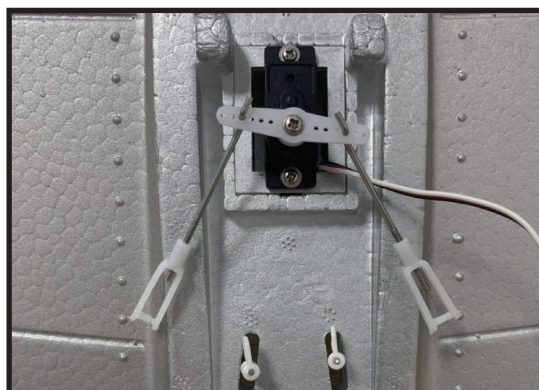
1. Insert the elevator through the fuselage.



2. Install the screw through the bottom of fuselage to secure the elevator.



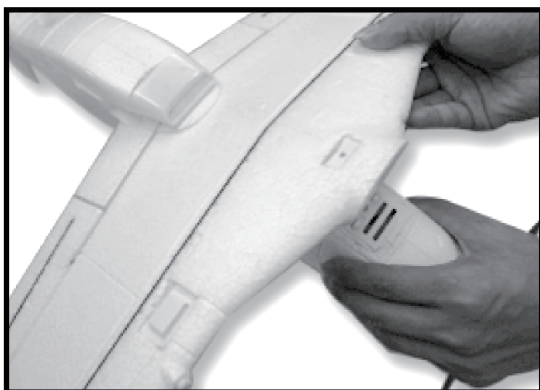
3. Install control horns to preserved position on control surfaces.



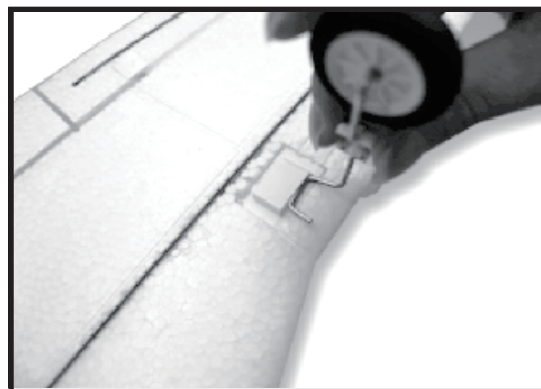
4. Install the servo, control arm and push rods in package to the reserved position on the mainwing.



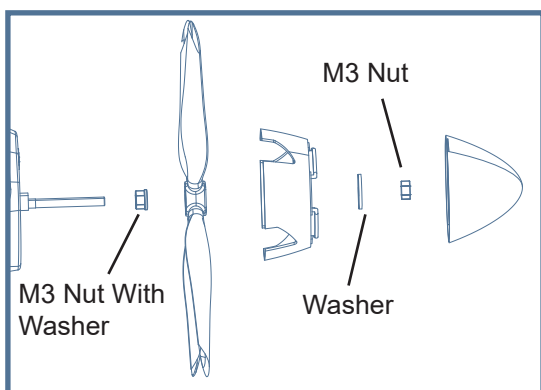
5. Install the push rod clips to the tips. If you find the mainwing hinges are not centered, loosen the clips and rotate to adjust the length, until the mainwing hinges are centered.



6. Install the mainwing to the fuselage with the screw in package.



7. Install the landing gear to the gap on the battery cover and fix it by screw .



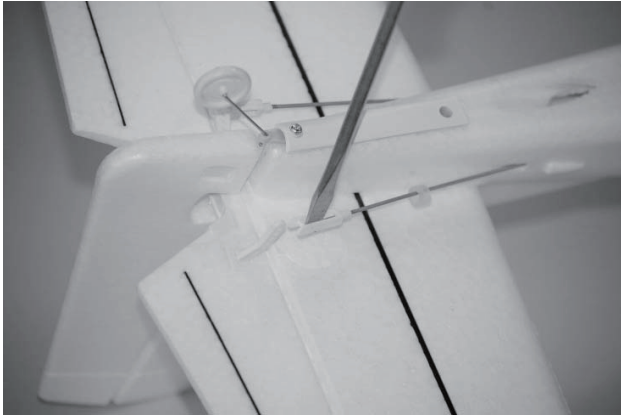
8. Install the propeller and spinner to the motor shaft by the order as shown.

## Center the control surfaces

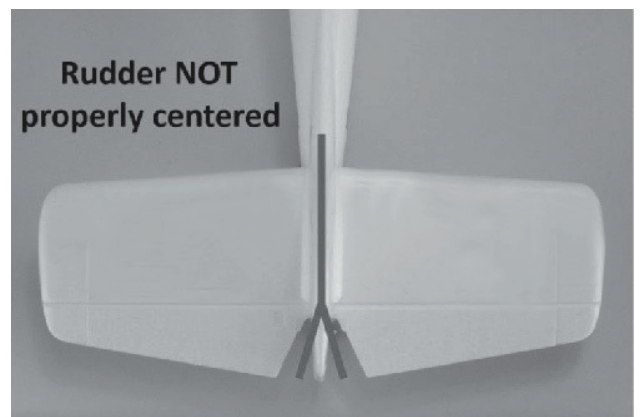
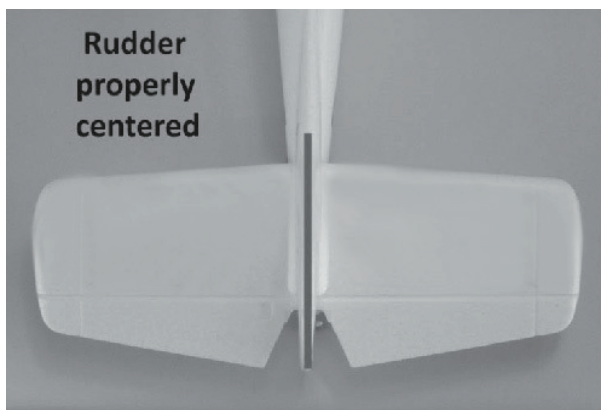
With the transmitter turned on and the LiPo flight battery connected to the ESC (and installed in the battery compartment) it's now possible to connect the push rods to the rudder and elevator control surfaces and to 'center' the surfaces accordingly. First, be sure to center the elevator and rudder (aileron) trim levers. See the 'Transmitter Details' and 'Flight Controls and Trimming' sections of this manual for more information on the trim levers and their functions.

With the trim levers centered, carefully spread open each 'clevis' (the white color plastic part installed on the threaded end of the metal pushrod) so you can insert the pin in the OUTERMOST hole on each control horn. It may be helpful to insert a flat blade screwdriver (not included) into the clevis then carefully 'twist' it until

it disengages the pin from the hole in the clevis. Also, it is not necessary to 'snap' the clevis back together until the centering adjustments are complete.



After connecting the clevises to the control horns view the vertical tail and rudder from directly above. The rudder should be 'in line' with the vertical tail when it's properly 'centered'. However, if the rudder is angled off to the right or left you can adjust the length/position of the pushrod/clevis so the surface is centered 'mechanically' while the trim lever on the transmitter is centered.



If the rudder is angled off to the left, carefully remove the clevis from the control horn and screw it 'in' (clockwise) one half to one full turn then insert the pin back into the outermost hole in the control horn. Or, if the rudder is angled off to the right carefully remove the clevis from the control horn and screw it 'out' (counter clockwise) one half to one full turn then insert the pin back into the outermost hole in the control horn. View the vertical tail and rudder from directly above again and continue adjusting the length/position of the pushrod/clevis until the rudder is centered appropriately.

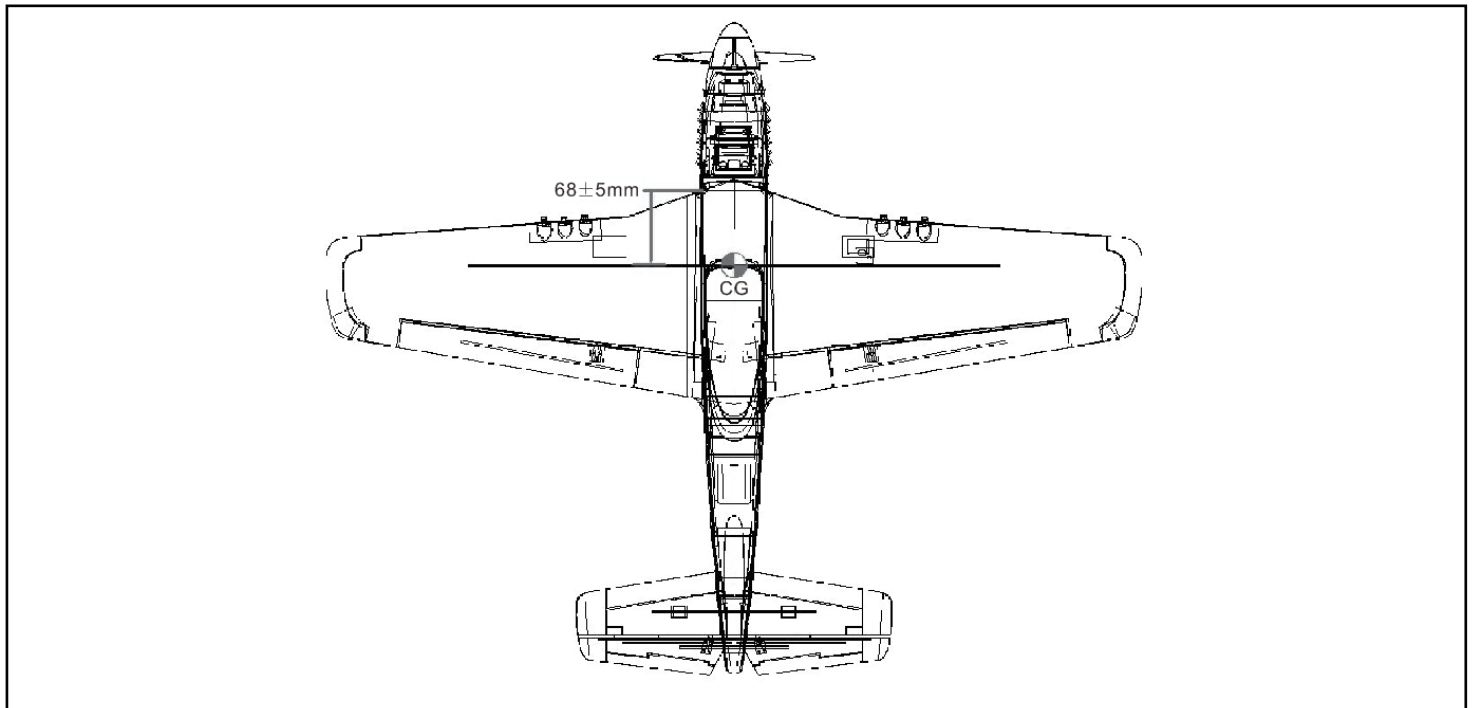
**NOTE:** You should always rotate the clevis until the pin is perpendicular with the control horn to ensure the pin is not under any excessive load/pressure when inserted in the hole and during operation. In some cases it may not be possible to 'exactly' center the surface mechanically while properly aligning the pin. In these cases be sure the pin is properly aligned then adjust the position of the trim lever slightly as needed. Also, it will likely be necessary to make further adjustments to the position of the trim lever during flight as most surfaces do not end up in exactly

the centered position when an airplane is trimmed properly for actual flight (but 'centered' is still the best starting point). Follow the same steps outlined for centering the rudder to center the elevator as well.



## Center of Gravity

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The ideal C.G. position is  $68 \pm 5$ mm behind the leading edge measured at where the wing meets the fuselage. The C.G. has a GREAT effect on the way of the model flight. If the C.G. is too far aft (tail heavy), the model will be too responsive and difficult to control. If the C.G. is too far forward (nose heavy), the model will be too stable and not responsive enough. In order to obtain the C.G. specified, add - weight to the fuselage or move the battery position. Check the C.G. before flying.

## Battery Warnigs

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**CAUTION:** All instructions and warnings must be followed exactly. Mishandling of Li-Po/Li-Ion/Ni-Mh batteries can result in fire, personal injury, and/or property damage.

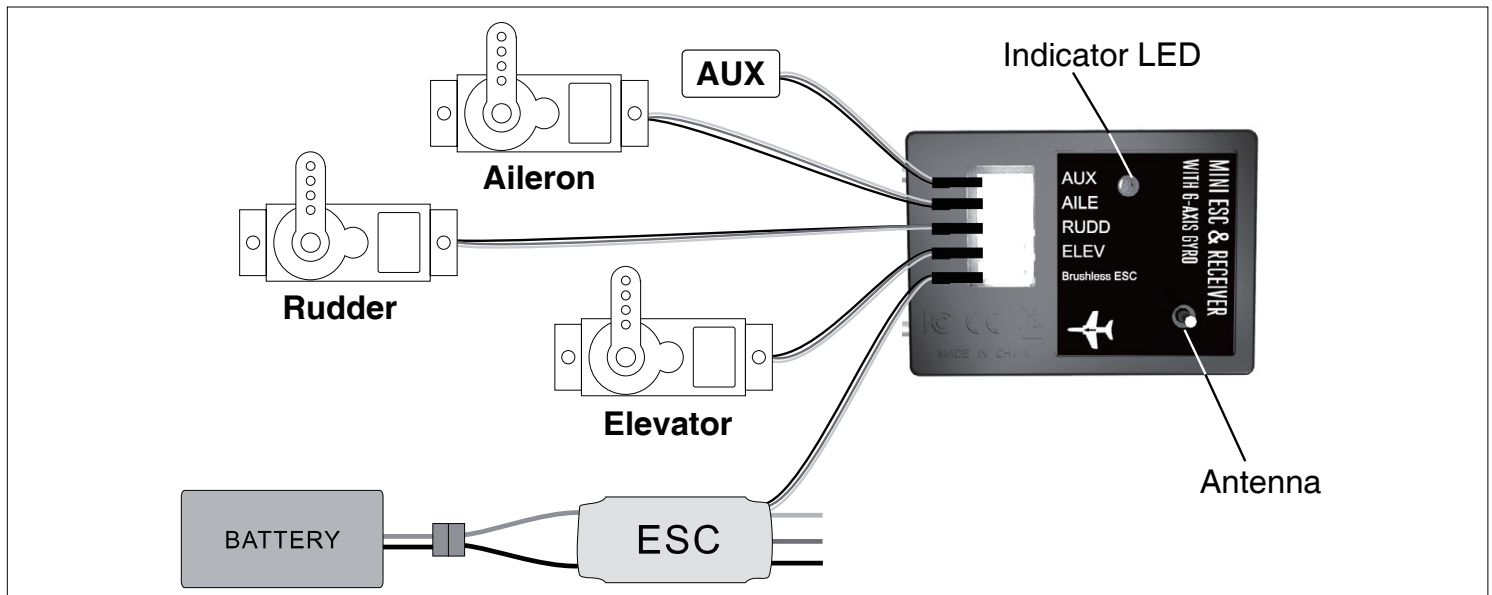
- The battery charger included with your plane(if there be) is designed to safely balance and charge the specific Li-Po/Li-Ion/Ni-Mh battery.
- By handling, charging or using the included battery, you shall assume all risks associated with Li-Po/Li-Ion/Ni-Mh battery.
- If at any time the battery begins to balloon or swell, discontinue use immediately. If charging or discharging, you should discontinue and disconnect. Continue to use, charge or discharge a battery that is ballooning or swelling can result in fire.
- Always store the battery at room temperature in a dry area for best results.
- Always transport or temporarily store the battery in a temperature range of 40-120 Fahrenheit degrees (5-49 degrees centigrade). Do not store battery or your plane in a car or direct sunlight. If stored in a car with high temperature, the battery can be damaged or even cause fire.
- Always charge a battery away from flammable materials.
- Always inspect the battery before charging and never charge damaged batteries.
- Always constantly monitor the temperature of the battery pack while charging.
- Never discharge Li-Po cells till below 3V under load.
- Never cover warning labels with hook or loop strips.
- Never leave charging batteries unattended.
- Never charge batteries outside recommended levels.
- Never attempt to dismantle or alter the charger.
- Never allow minors to charge battery packs.
- Never charge batteries in extremely hot or cold places(recommended between 40-120 Fahrenheit degrees / 5-49 degrees centigrade) or in direct sunlight.

## Transmitter Details

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## Setup Your Receiver



Install the receiver in your vehicle using double-sided tapes. The tapes will hold the receiver in place and help keep it from vibrations.

Make sure the receiver is installed at a level plate so that the gyro works normally.



**CAUTION:** Do NOT cut the antenna.

## Binding

1. Keep the plane steady to activate the gyro.
2. Connect the battery to the plane.
3. Power on transmitter, keep the throttle stick at lowest position.
4. The receiver LED will flash then to solid in several seconds.
5. Now the plane is bound to the transmitter.

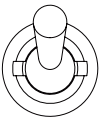
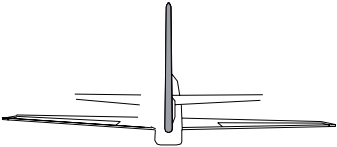

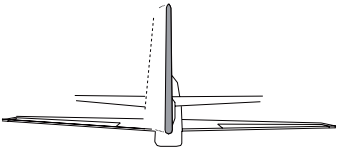

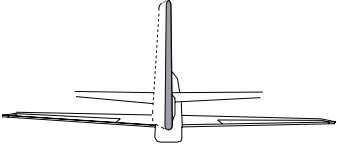
## Throttle Unlock(Arming)

**Notice:** To prevent from damages, the throttle channel is locked each time when power on your transmitter.

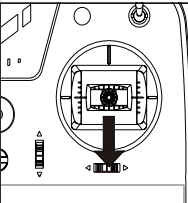
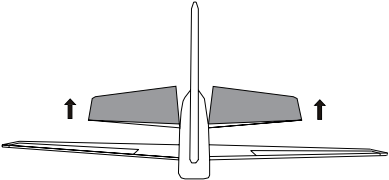
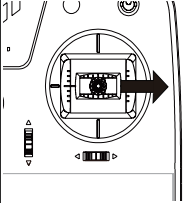
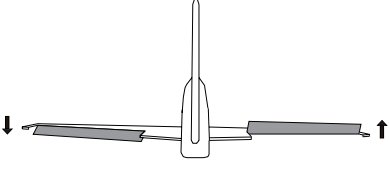
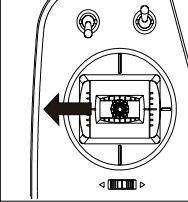
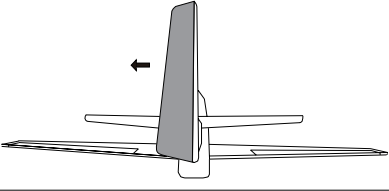
**Keep the propeller in distance for your safety.**


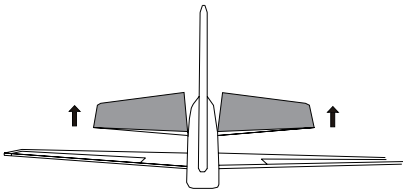

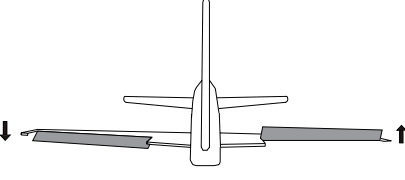

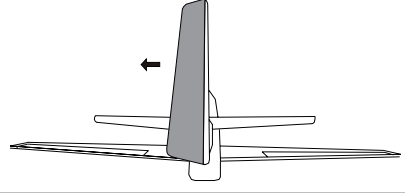
To unlock the throttle, turn the throttle stick up to max until you hear a "beep" sound. Then turn the throttle stick down to min until you hear a "beep" sound. Now the throttle is unlocked.

# Gyro Switch(Flight Control) Instruction

		Expert (Manual Control)
		Medium (Regular Flight Control)
		Beginner (Strong Flight Control)

## Channels Reactions Checking Gyro Test

Transmitter Operaton	Reaction
	
	
	

Swing The Plane	Reaction
	
	
	

Place your plane in a neutral position, follow below steps to check the channels reactions.

Move the sticks(except the throttle stick) to see if all servo surfaces react correctly as shown in the left diagram(left throttle for example).

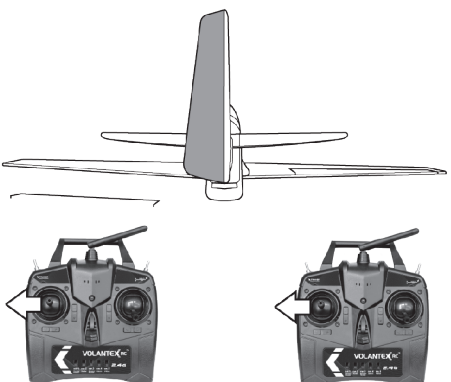
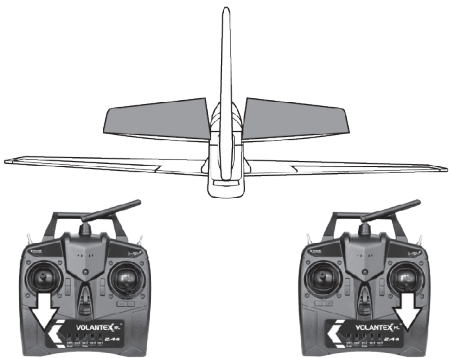
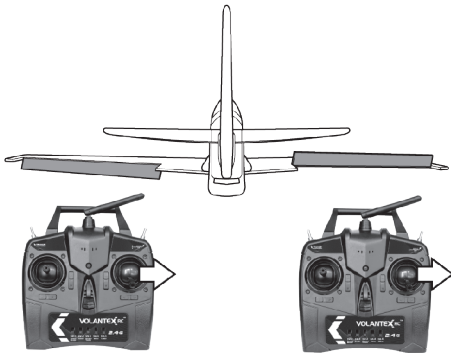
Swing your plane to check if all servo surfaces react correctly as shown in the right diagram.

## Check The Control Surface and Channel Condition

Before trying to fly the airplane, please carefully check to make sure the transmitter and the servos work normally. **CAUTION: Make sure that you must turn on the transmitter firstly and then you can connect the battery plug. If you want to turn off the transmitter you must ensure that the battery of the plane must be cut off first.**

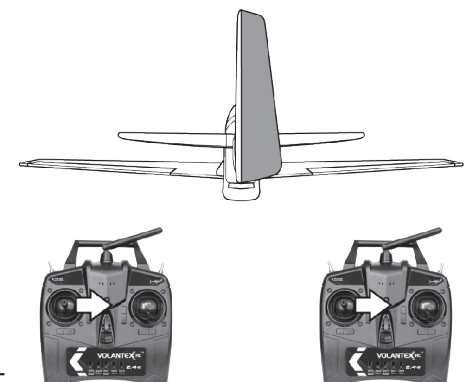
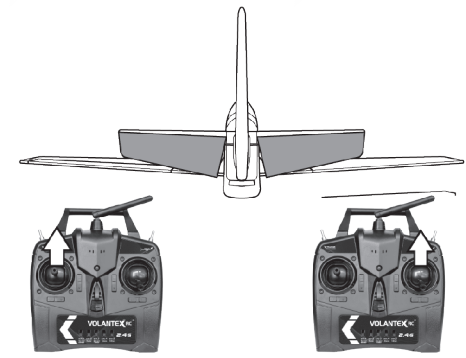
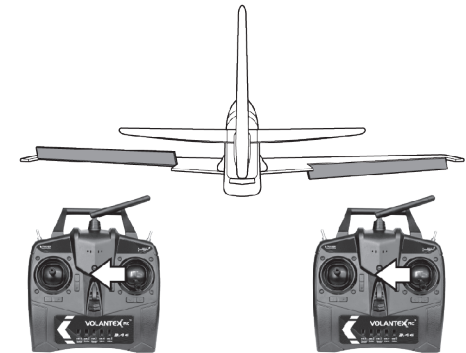
**Mode I**  
(Right Throttle)

**Mode II**  
(Left Throttle)



**Mode I**  
(Right Throttle)

**Mode II**  
(Left Throttle)



**Mode I**  
(Right Throttle)

**Mode II**  
(Left Throttle)

Throttle Input



## Flight Control System Calibration

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1. Turn the throttle stick to min position.
2. Power on the transmitter and the receiver.
3. Do NOT unlock the throttle.
4. Keep the sticks as above picture for several seconds.
5. When you hear a “beep” sound, it means the flying control system is calibrated based on the horizontal level you are keeping it.

## One-key U-turn Instruction

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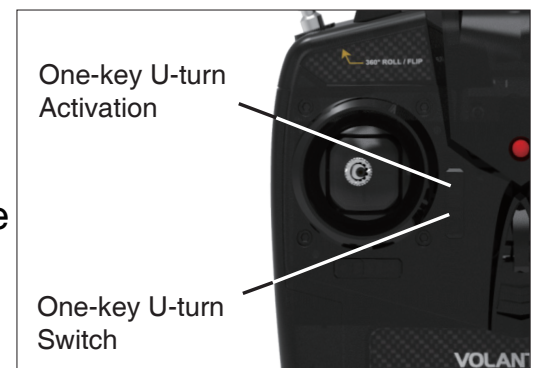
The airplane comes with one-key U-turn function, which enable the plane to U-turn by the opposite direction that the plane takes off.

Follow below steps to activate the function.

1. Place your plane heading to the take-off direction.
2. Do NOT unlock the throttle, press the activation button and hold for several seconds until you hear a "beep" sound, the rudder surface will respond, meaning the one-key U-turn function is now activated.

**NOTE:** Every time when you power on the plane, it requires to activate the one-key U-turn function. To use this function during flight, press the one-key U-turn switch button, the plane will turn around automatically, back to the opposite direction where it takes off. To quit, just press again the switch button, or control any servo stick (rudder/elevator), the plane will back to your control immediately. No matter you fly the plane under manual control or gyro assist mode, when you turn on the one-key U-turn function, the plane will enter gyro assist mode automatically to help stable flying back. When you quit this function, the plane will back to the what the control mode it was.

**NOTE:** This function is bound to the receiver, instead of to the transmitter. That means the plane will U-turn ONLY to the opposite direction that the plane takes off. It also means when the plane U-turns and passes the position where you activated the function, the one-key U-turn function will NOT U-turn the plane back to the take-off position.



## Channels Reverse

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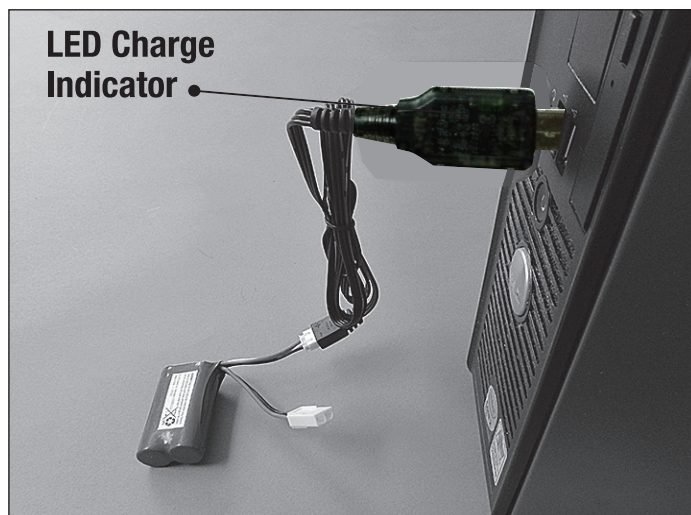
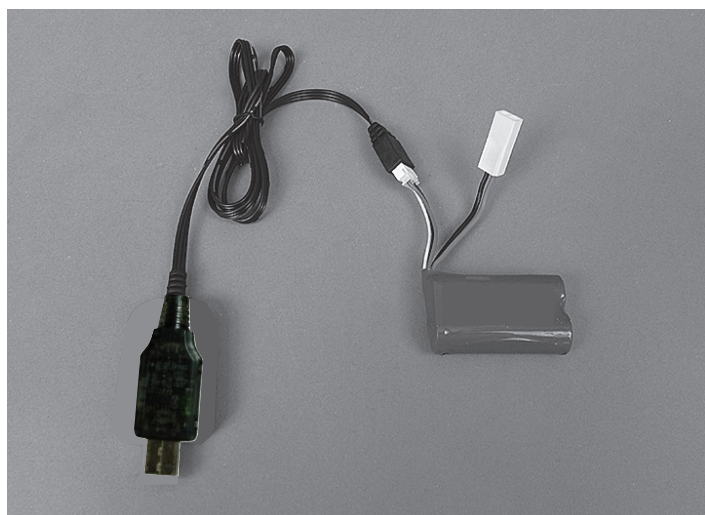
**WARNING:** Normally this function is not necessary to be operated. Only operate the below steps when you understand completely of the channel reverse function.

**WARNING:** Do NOT reverse throttle otherwise serious damage would cause!

1. Turn the throttle stick to min position.
2. Power on the Transmitter and the receiver.
3. Do NOT unlock the throttle.
4. Turn the channel stick to max position of any side and hold for several seconds.
5. When you hear a “beep” sound, it means the channel is reversed.

## Charging Instruction

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1. Unplug the battery from your plane.
2. Carefully plug the charger into the USB port on your computer or USB adapter.
3. Connect battery into the charger.
4. The charging process takes about 3.5 hours. For safety reasons, never charge the battery for longer than 4 hours. While charging, the red LED indicator will be on. When charging is finished, the red LED will be off.

## Flight Checklist

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**NOTE:** This checklist is NOT intended to replace the content included in this instruction manual. Although it can be used as a quick start guide, we strongly suggest reading through this manual completely before proceeding.

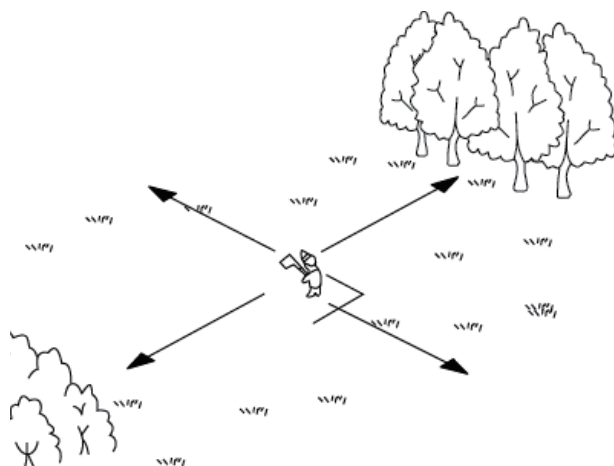
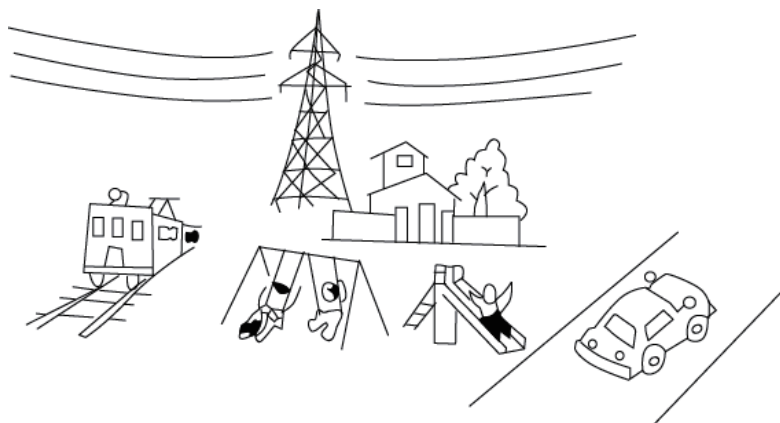
- Always turn on the transmitter first.
- Ensure the throttle control stick is on the button position then plug the battery.
- Fly the model (hand launch or take off from a flat/level surface).
- Land the model (land on a flat/level surface).
- Unplug the Lipo flight battery from the ESC.
- Always turn off the transmitter last.

## Find a Flight Field

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Based on the size and weight of the plane it's typically considered to be a 'park flyer' class model. As a result it's best to fly the plane at a local park, schoolyard, flying field or other area that's large enough and free of people and obstructions. We recommend an area the size of at least one football/ soccer field, however, even larger areas are better suited and preferred especially when learning how to fly. **DO NOT fly in parking lots, crowded neighborhood areas or in areas that are not free of people and obstructions.**

We also suggest flying over grass as it's a much more forgiving surface that causes less damage in the unfortunate event of a crash. Short grass is better for takeoffs and landings as grass that is too long can cause the airplane to nose-over /flip and be damaged. An ideal flying area allows for takeoffs and landings on a smoother surface (such as asphalt) and flying over grass.



Fly in spacious ground without obstacles and boskage.

Never fly the plane near Highway, railway, high tension line, crowded people, Flying Area, and residential area.

**PLEASE NOTE: THE PLANE IS DESIGNED TO BE FLOWN OUTDOORS ONLY**

## Flying Conditions

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It's typically best to fly on days that are calm with no wind, especially when learning how to fly. We strongly suggest flying only in calm conditions until you're familiar with the controls and handling of the model. Even light winds can make it much more difficult to learn to fly, and in some cases can even carry the model beyond your line of sight.

**Also, if you are a first-time or low - time pilot we highly recommend allowing a more experienced pilot to test fly and properly trim the model before attempting your first flight. A proven flyable and properly trimmed model is significantly easier and more enjoyable to fly! Please contact your local hobby shop and/or flying club to find a more experienced pilot near you.**

After you've properly trimmed the airplane in calm conditions and become familiar with its handling / capabilities you'll be able to fly in light winds, or depending on your experience and comfort level, in winds up to 5–7 mph.

**DO NOT fly on days when significant moisture, such as rain or snow, is present.**

## Perform a Range Check

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As a precaution, an operational ground range test should be performed before the first flight each time out. performing a range test is a good way to detect problems that could cause loss of control such as low batteries defective or damaged radio components or radio interference. This usually requires an assistant and should be done at actual flying site you will be using.

First turn on the transmitter. Then, install the fully charged battery into the fuselage and hold it in place with the hook-and-loop strap. Connect the battery and install the hatch.

**Remember, carefully not to “bump” the throttle stick. Otherwise, the propeller will rotate, possibly causing damage or injury.**

With the antenna on the transmitter collapsed (not extended) , begin walking away from the model operating the controls in a predictable pattern (for example: Up, then down elevator. Right, then left aileron. Right, then left rudder). While moving the control surfaces, also vary motor rpm.

Have your assistant alert you if the controls fail to respond or if they move suddenly or erratically. You should be able to maintain control up to a distance of approximately 100' [30m].

If the controls respond erratically or if anything else seems wrong, make certain all the servo wires are securely connected to the receiver and that the transmitter and receiver batteries are fully charged. If you cannot find a mechanical problem with the model , it is slightly possible that there is radio interference somewhere in the area. One option would be to try another range check at an alternate flying site.

After the range check, fully extend the antenna.

Monitor and limit your flight time using a timer such as the one on your wrist watch. When the batteries are getting low you will usually notice a performance drop before the ESC cuts off motor power, so when you notice the plane flying slower you should land. Often (but not always!), power can be briefly restored after the motor cuts off by holding the throttle stick all the way down for a few seconds.

To avoid an unexpected dead-stick landing on your first flight set your timer to a conservative 4 minutes. When the alarm sounds you should land your model

When you learn how much flight time you are getting you can adjust your timer accordingly. Always be conservative so the motor won't quit unexpectedly and you will have enough battery to land under power.

## Take off

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**Until you have become comfortable with flying your plane, do not fly if the wind speed is greater than 10 mph [ 16 kilometers /hr].**

One final check before takeoff : **always double - check the flight control response to your inputs from the transmitter before every flight.** Be certain the ailerons , elevator and rudder respond correctly and that none of the controls have inadvertently become reversed.

**Don' t forget to fully extend the transmitter antenna.**

If the surface is smooth ( such as paverment or blacktop) the plane can take off from the ground. But most grass is probably too tall, so if flying from grass the model will have to be hand launched.

## ROG(Rise off Ground) Take off

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If taking off from the ground, place the model on your “ runway ” with the nose pointing into the wind--this will reduce the ground speed that must be reached and automatically provide “ heading assist ” making steering and takeoff easier. Slowly advance the throttle, adding rudder correction as needed to keep the model rolling straight. When the plane become “ light ”continue to apply throttle until you are at full power all this will happen in a few seconds. When sufficient liftoff speed has been reached, gradually apply “up ”elevator allowing the model to leave the ground. Do not “ yank ” up on the stick rather, be smooth and allow the plane to establish a gentle climb.

Once you have reached a safe flying speed at a comfortable altitude (approximately 50' [15m]), work the controls as necessary to establish a gentle turn away from the runway.

## Hand-Launch

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Until you have become efficient at flying your plane, always use an assistant to hand-launch your model.

Have your assistant hold the model by the bottom of the fuselage. When both of you have signaled “ready”, advance the throttle to full power. Your assistant should run a few steps with the plane held high above his head, and then give the model a swift, but controlled toss at a level, or slightly nose - up attitude. Initially, the model will gently ascend, but within a few seconds it will reach enough speed to climb. Gently add “up” elevator to establish the climb.

Once you have reached a safe flying speed at a comfortable altitude ( approximately 50' [15m] ), work the controls as necessary to establish a gentle turn away from the runway.

## Flying

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One thing to remember is that, when the plane is flying away from you, moving the aileron stick to the right will make the plane bank to your right.

However, when the model is flying toward you, moving the aileron stick to the right will make the plane move to your left. Of course, the plane is still responding the same way, it's just that your orientation has reversed. This must be kept in mind while learning to fly (and is also a good reason to take flight lessons from an experienced pilot!).

To establish a turn, “up” elevator( pulling back on the stick ) is usually required along with aileron input to get the model into a bank. To stop the turn, apply a small amount of opposite aileron.

Once you get the plane into the air and have climbed to a comfortable altitude, the first “order of business” will be to “trim” the model for straight - and - level flight. The model flies best at approximately 3/4-throttle. Adjust the trims on the transmitter to make minor control surface adjustments as necessary until the plane will fly straight without any control inputs. Often, your assistant can reach over and adjust the trims for you.

Remember to keep the model high enough to give yourself time to make corrections, but don't let it get too far away. Otherwise, it will be difficult to detect its attitude and which way it is going.

One final check before landing: see how the model will react when it's time to land and you cut the power. To do this, while still at altitude, cut the motor power. The model should establish a gentle, downward glide path.

This is how the model will react when it's actually time to land. Add power and climb back up to your original altitude. Try again, this time adding flaps.

To climb, add throttle and immediately take the flaps back out. Practice a few of these “climb and glides” to judge how far out you will need to be when its time to land.

## Landing

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Make sure that the airplane initiates an ascending glide path. If necessary, add power to extend the glide path to reach control the glide path and altitude.

Continue to apply elevator until the model touches down at which time you should be holding full, or nearly full up elevator. This will cause the airplane to slow and settle to the ground.

**CAUTION: If, during a rough landing, the propeller becomes jammed and cannot rotate, the battery and speed control will become very hot if you attempt to add power .**

**Immediately move the throttle down to stop the motor. If you fail to do this, the motor, speed control and /or battery will be damaged.**

## After Flight

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Disconnect the battery and remove it from the airplane. Then, turn off the transmitter. Allow the battery to cool airplane to make sure nothing has become loose or damaged.

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