

**XFLY-MODEL**



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## Must-read

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### Warnings

Please read through the whole user manual carefully and follow the instructions strictly for product installation and operation. Improper operation may lead to product damage or property loss or even severe personal injury. Xfly-model and its distributors will not assume responsibility if damage or loss is caused by violating the instructions listed.

### Caution

This product is Not a toy! Flying experience is required by users. Beginners should only operate the product under the supervision of professionals.

This product is not intended for use by children under 14 years!

### Safety Precautions

This product is radio-controlled and subject to interference from other signal sources which may result in momentary loss of control or even crash. So please always keep a safe distance in all directions around your model in order to avoid unexpected collision or injury.

- NEVER operate your model with low transmitter batteries.
- Always operate your model in an open area with the sun behind you away from cars, traffic or people.
- Do not operate your model in bad weather such as wet weather, thunderstorm, strong wind or heavy snow.
- Always follow the instructions and pay attention to the warnings for this product and other associated devices you use (charger, rechargeable battery pack, etc.)
- Always keep all chemicals, small parts and electronic components out of reach of children.
- Do not expose the electronic components to moist environment in case of damage.
- This model kit contains small parts, plastic bags, and materials that can be harmful to children if swallowed.
- ALWAYS ensure the transmitter is turned ON with the throttle at its lowest setting before connecting model battery.

### Lithium-Polymer (Li-Po) Battery Use

Caution: Always follow the manufacturer's instructions for safe use and disposal of batteries. Improper use of Li-Po batteries may cause a fire, property damage, or severe injury.

- Do not use the battery that is swollen, or overcharged, or has been damaged. Keep in mind to discharge the battery to storage voltage (3.8-3.85V per cell) if they are not in use for a long time and as soon as possible after use for safe storage. Always store the battery at room temperature in a cool dry area to extend the lifespan of the battery. Do not store the battery in a car or expose it to direct sunlight. For maximum safety Xfly-Model recommends storing Li-Po batteries in a proper battery bunker, or sealed (not airtight) fire resistant container.
- Only use a Li-Po compatible charger to charge & discharge Li-Po batteries - NEVER try to use any other charger in case of personal injury and property damage.
- Do not discharge the Li-Po to below 3V per cell or irreversible damage can occur to the battery.
- NEVER leave charging battery unattended.
- Do not charge damaged battery - instead dispose of Li-Po batteries by fully discharging then taking to an appropriate disposal agent.

### Warning for Battery Charging

As stated previously ONLY use a Li-Po compatible charger to charge the battery. Be sure to read and understand the charger instruction manual carefully before charger use. Make sure battery is on a heat-resistant surface when being charged. It is highly recommended to place the Li-Po battery inside a fire-resistant charging bag readily available at hobby shops or online stores.

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## \ Product Overview /

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The famous close-air support A-10 Thunderbolt is well known as the "Warhog" or "Tank Killer" is now available at XFly Model--the XFly A-10 Thunderbolt II twin 50mm EDF jet . Powered by a single 4S 2200mAh-2600mAh, the 4S-compatible brushless motors and 40-amp ESCs that are matched to two 12-blade 50mm fans produces an abundance of top speed and thrust compared to other models in its class, while also delivering a wide range in flight times.

With included strong landing gear and steerable nose wheel, it can taxi, take off and land on paved, packed dirt or grass surfaces at large parks and fields. Or leave the landing gear off for more speed and vertical performance plus easy hand launches and landings on grass. With stability it's a scale jet that flies smooth and handles like a sport jet.

### Features

- Scale replica of the iconic aircraft flown by the U.S. Air Force for Close-Air Support and other missions.
- Gray camouflage trim scheme with shark teeth nose art.
- Twin powerful 4S-compatible outrunner motor with 12-blade 50mm fan delivers excellent top speed and vertical performance.
- Fits 4S 2200mAh-2600mAh which will provide a wide range in performance and flight times.
- Fast and precise factory-installed digital servos with ball-link equipped linkages give accurate movements.
- Strong removable landing gears and steerable nose wheel.
- Magnetic top hatch with clear canopy, cockpit detail and pilot figure.
- Convenient one-piece main wing with buried and reinforced composite.
- Lightweight yet strong and durable EPO construction.

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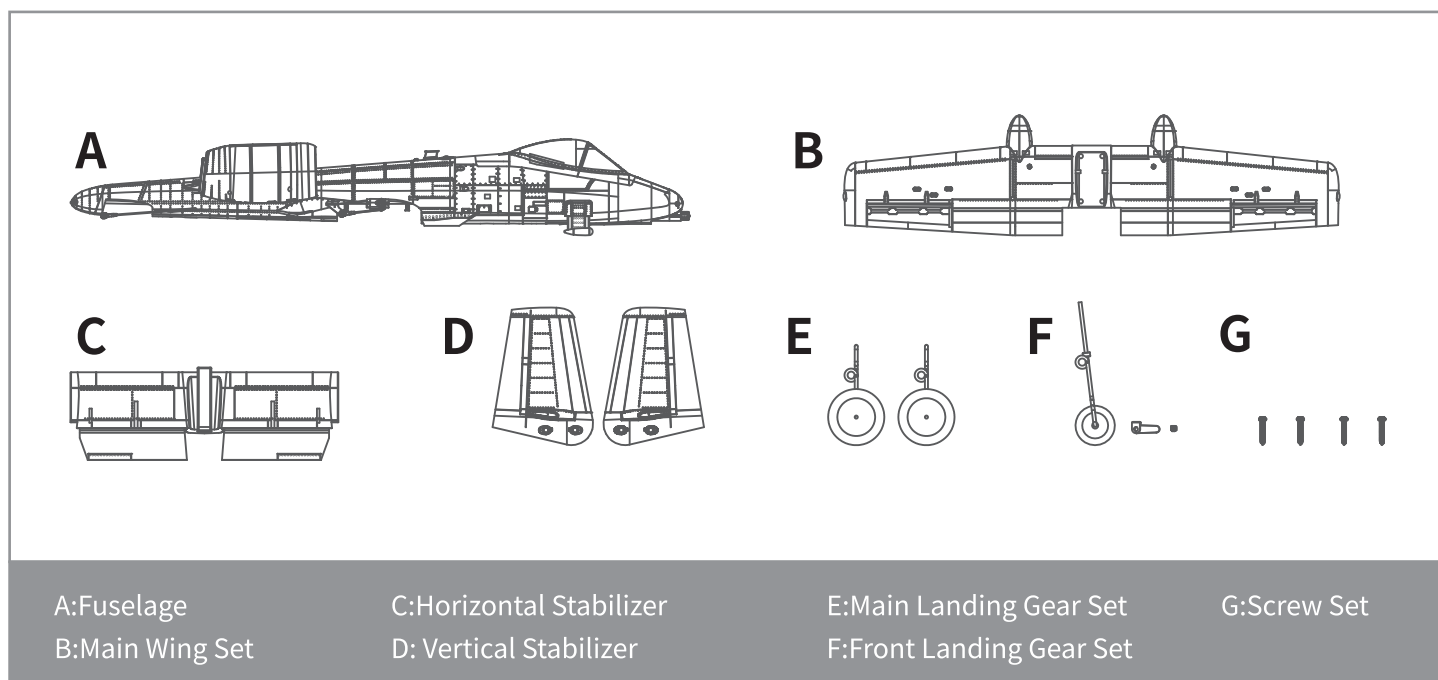
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## Product Packing List

Please check the below parts carefully before assembly. If anything appears missing or damaged, please contact your distributor in the first instance, or send us an email (support@xfly-model.com) and advise the item name or part number of the missing or damaged part(s). (Please refer to the spare parts list on Page 11 of this manual for full parts listing). Please note that different versions can sometimes include slightly different items inside the package.

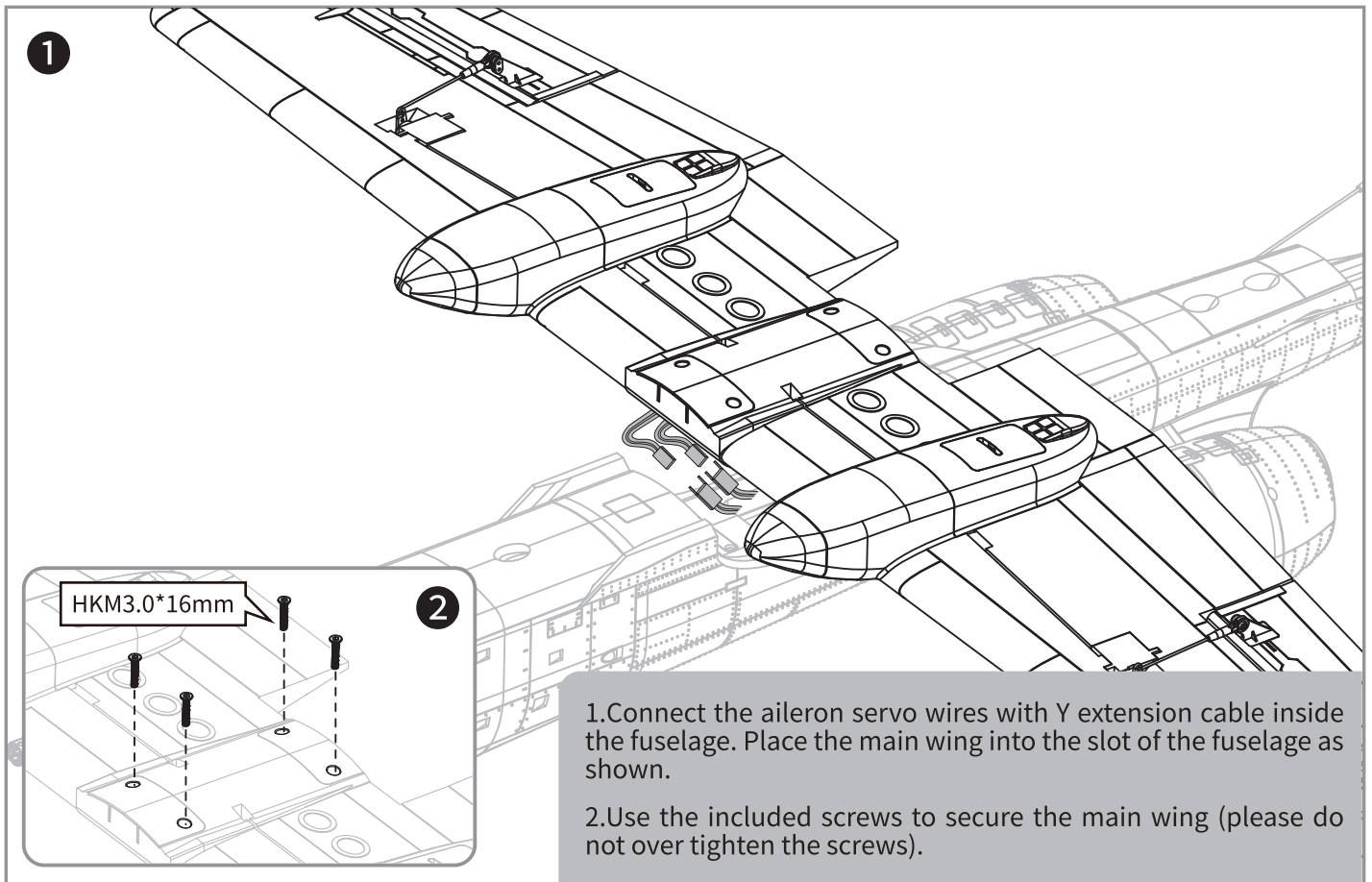


## Specifications

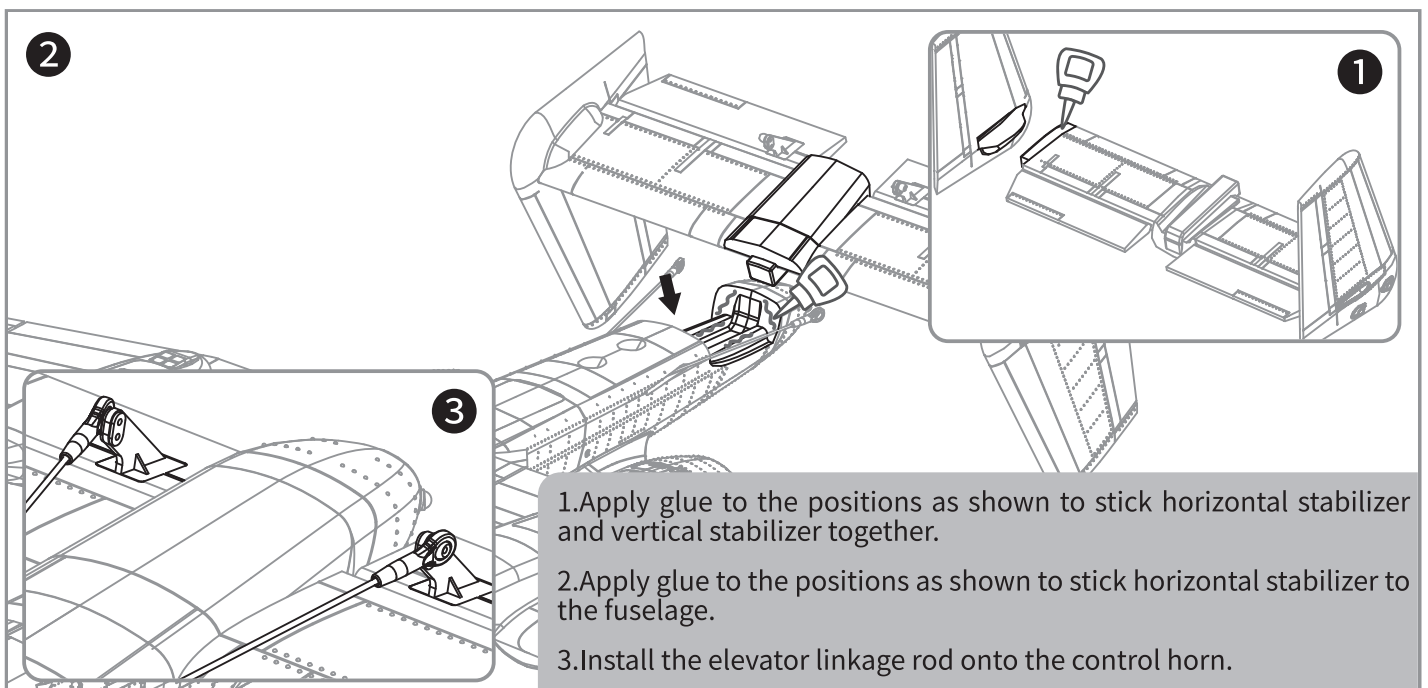
Material:	Lightweight yet strong EPO, ABS engineering plastics
Wingspan:	1000mm
Overall Length:	920mm
Wing Load:	74g/dm <sup>2</sup>
Wing Area:	16.1dm <sup>2</sup>
Flying Weight:	1190g
Propeller/EDF:	50mm 12-Blade Fan*2
Motor:	2627-KV4600 Brushless Inrunner Motor
ESC:	40A*2

Servos:	9g Digital Servo*4
Flying Duration:	6-8 minutes
Landing Gear:	Fixed main landing gear, steerable nose gear
Channels:	4CH-Throttle, ailerons, elevator and front gear
Skill Level:	Intermediate/Advanced
Recommended Battery:	14.8V 2200mAh-2600mAh
Build&Test Time:	~20 minutes

## Main Wing Installation

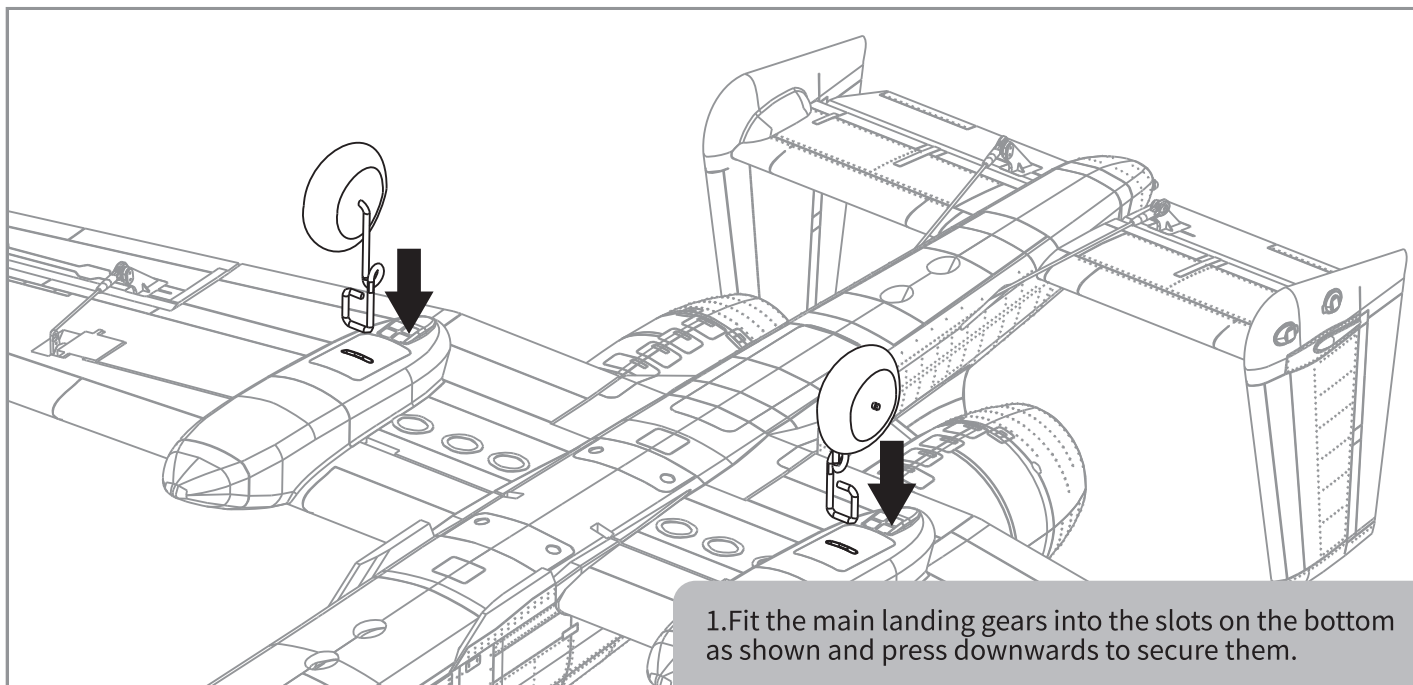


## Horizontal Stabilizer and Vertical Stabilizer Installation

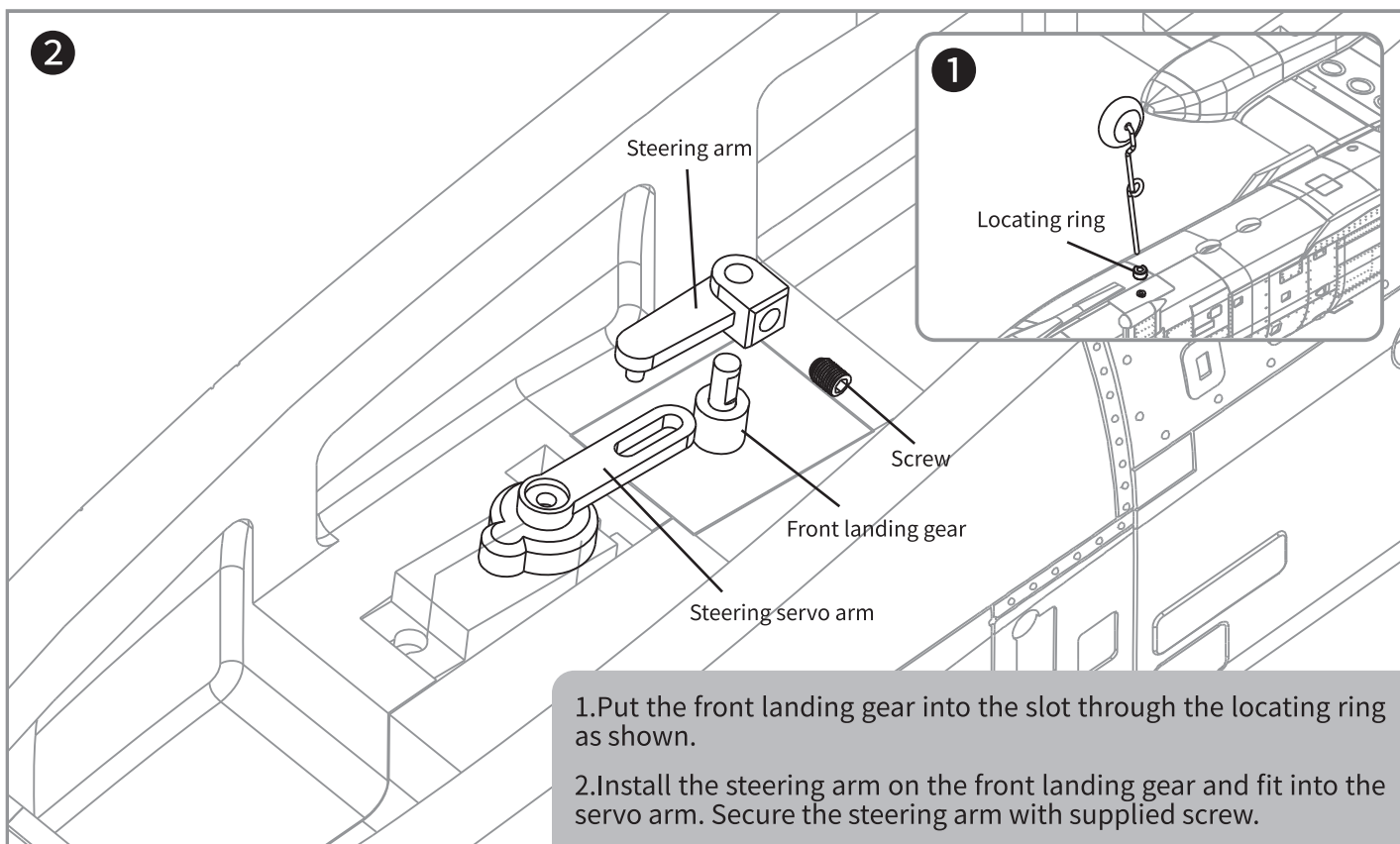


## Assembly Instructions

### Main Landing Gears Installation



### Front Landing Gear Installation

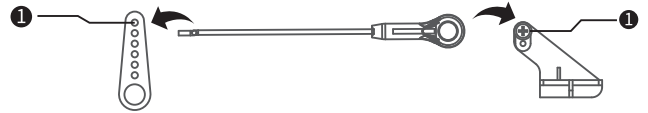


## Control Horns Installation

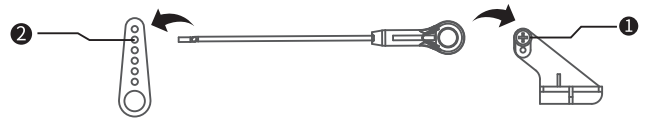
Make sure all servos are in their central position and adjust the linkages to the indicated positions.

The following pictures show the default factory settings for the control horns and linkages recommended for use for initial flight.

Hole reference for aileron servo linkage



Hole reference for elevator servo linkage



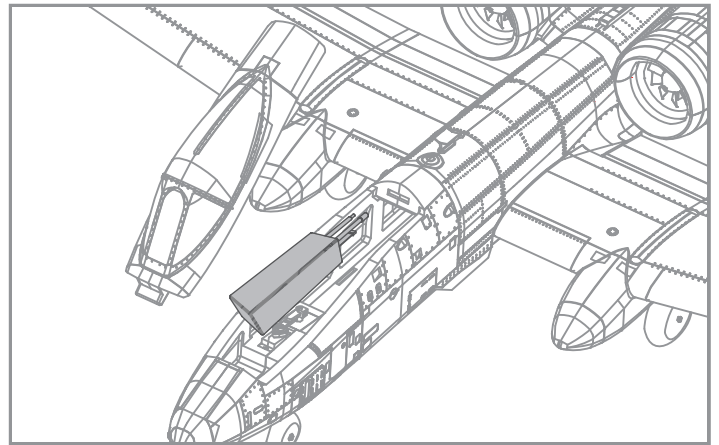
## Battery Installation

1. Before connecting the battery to the plane, power on the transmitter and ensure throttle lever in the lowest position.

2. Remove the battery hatch.

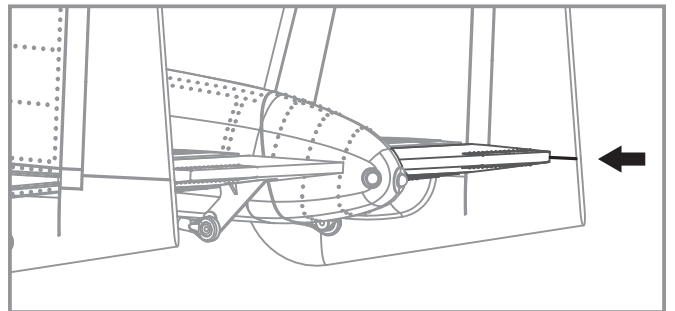
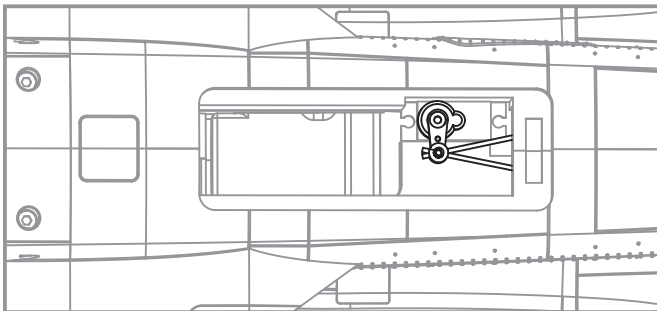
3. Insert battery into the battery compartment with the power cable towards the rear of the plane and use straps to secure the battery.

4. If necessary reposition battery to adjust the center of gravity (CG) by moving the battery forward or backward.



## Horizontal Stabilizer Back to Neutral

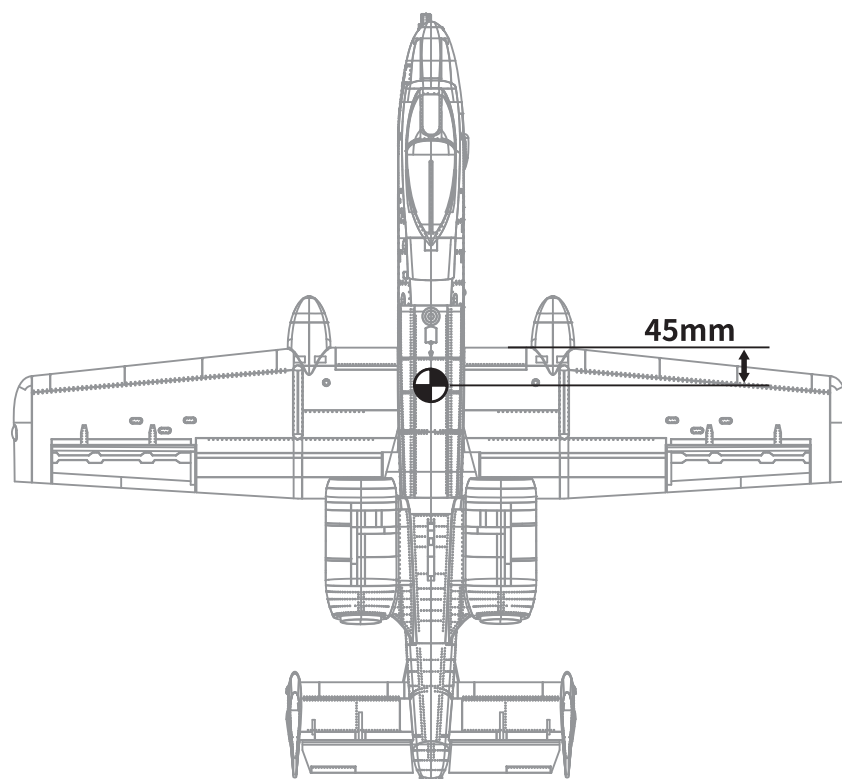
Get the horizontal stabilizer back to neutral by adjusting the metal link stop or the ball link. Neutral position is marked and indicated by the arrow of the below diagram.



## CG Setting

**Correct center of gravity is very essential for a successful flight. Please refer to the below diagram to adjust the CG of the plane.**

—Adjust the CG position by moving the battery forwards or backwards. If necessary add ballast weight to achieve the correct CG position before flight.



## Control Surface Testing

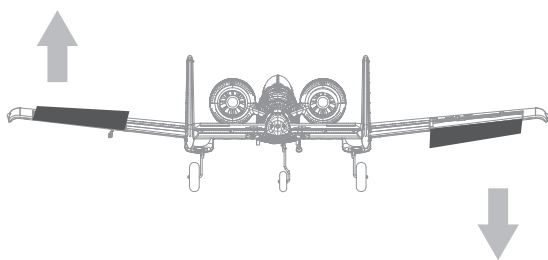
Before each flight turn on the transmitter BEFORE connecting a fully charged battery and perform a full pre-flight functional check-pay attention to all control surfaces for correct direction of operation.

Xfly-Model Strongly recommends you also perform a full range test prior to each flight!

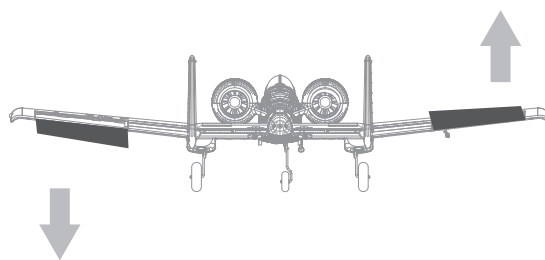
Note: SAFETY FIRST!! Please remove the propeller(where applicable) before carrying out any pre-flight maintenance to the power system to prevent potential injury from unintended propeller operation.

**ALWAYS CHECK CONTROL SURFACE DIRECTION FROM BEHIND THE MODEL LOOKING FORWARD TO ENSURE CORRECT OPERATION**

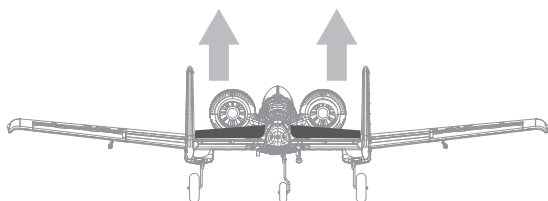
Aileron control lever moving leftward



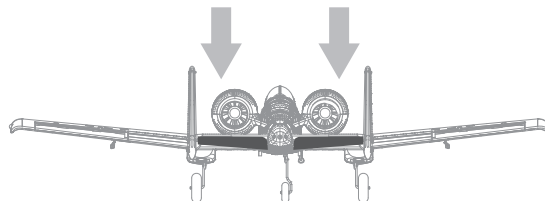
Aileron control lever moving rightward



Elevator control lever moving downward



Elevator control lever moving upward



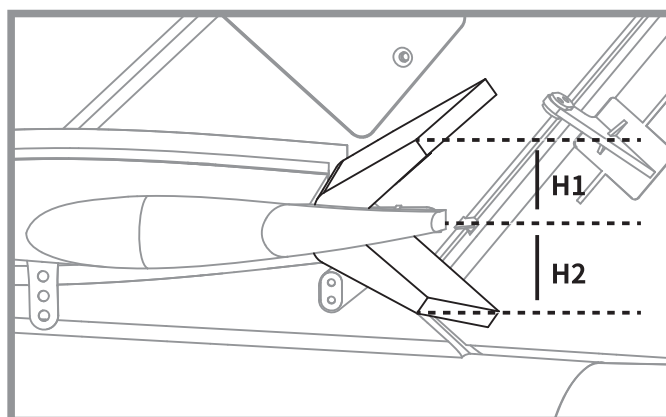
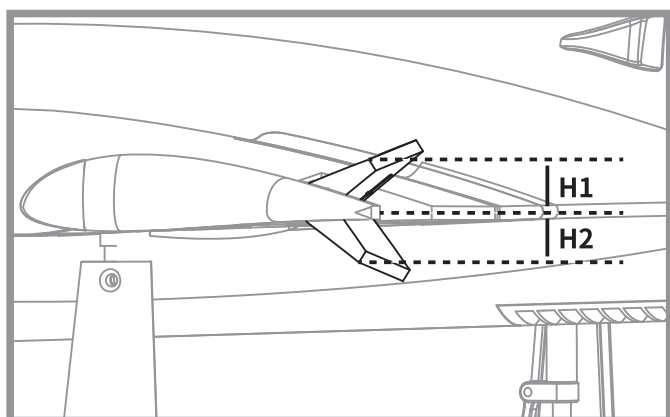


## Dual Rate Setting

Based on Xfly-Model's testing experience, the following rates are recommended for optimum performance. It is suggested that initial flights are carried out using low rates until you are comfortable with the flight characteristics of the plane.

### Aileron

### Elevator



	Aileron	Elevator	Rudder	Flaps
Low dual rate(H1/H2)	10mm	10mm	/	/
High dual rate(H1/H2)	15mm	15mm	/	/

## \ Trouble Shooting /

Problem	Possible Cause	Solution
Aircraft not responding to the throttle but responding to other controls	-ESC not calibrated -throttle deactivated on radio -motor wire disconnected	-Calibrate ESC according to manual -activate throttle on radio -check motor wires and connect/repair as required
Excessive propeller noise or Excessive vibration	-Propeller/EDF loose or damaged -Propeller/EDF out of balance -Propeller/EDF fan incorrectly installed or mounting loose	-Tighten and/or Replace damaged parts -balance propeller/EDF unit -Remove and install the propeller correctly -ensure mounting tight and parts correctly fitted
Reduced flight times or aircraft underpowered	-Low battery charge -ESC overheating -Defective battery	-Recharge battery -Ensure adequate cooling to ESC -Replace battery with new one
Control surface not moving, or responds slowly to control inputs	-Control surface, control horn, linkage or servo damaged -Wire damaged or connector loose	-Replace or repair damaged parts and adjust controls -Check all wires and ensure connections are secure -Repair/replace damaged wires or connectors
Control surface reversed	Channels reversed on the transmitter	-Check transmitter settings and adjust as required
Motor losing power in flight	-ESC not calibrated correctly -ESC LVC low voltage cutoff activated -Defective motor, ESC, or battery	-Recalibrate ESC -Check the battery, transmitter, receiver, ESC, motor and replace it if defective -Get the aircraft land immediately and recharge the battery
Slow LED flash on the receiver	Receiver power loss	-Check the connection between ESC and receiver -Check if servo is damaged -Check if the linkages are in place

## \ Spare Parts List /

XF104-01	Fuselage	XFKV4600	2627-KV4600 Motor
XF104-02	Main Wing Set	XFESC40A-1	40A ESC Set(2pcs)
XF104-03	Horizontal Stabilizer	XF SER9PP-100	9g Digital Gear Servo Positive with 100mm Lead
XF104-04	Vertical Stabilizer		
XF104-05	Twin Engine Compartment	XF SER9PP-330	9g Digital Gear Servo Positive with 330mm Lead
XF104-06	Cockpit		
XF104-07	Wheel Set	XF SER9PP-580	9g Digital Gear Servo Positive with 580mm Lead
XF104-08	Linkage Rods		
XF104-09	Screw Set		
XF104-10	Control Horns		
XF104-11	Landing Gear Set(front and rear)		
XF104-12	Decal Sheet		
XFPILOT003	Pilot 003		
XF-DF001	50mm Ducted Fan		

# User Manual of Brushless Speed Controller

Thanks for purchasing our Electronic Speed Controller (ESC). High power system for RC model is very dangerous, please read this manual carefully. In that we have no control over the correct use, installation, application, or maintenance of our products, no liability shall be assumed nor accepted for any damages, losses or costs resulting from the use of the product. Any claims arising from the operating, failure or malfunctioning etc. will be denied. We assume no liability for personal injury, property damage or consequential damages resulting from our product or our workmanship. As far as is legally permitted, the obligation to compensation is limited to the invoice amount of the affected product.

## Specifications

Model	Cont Current	Burst Current	BEC Mode	BEC Output	Battery Cell	Weight	Size
Skywalker-6A	6A	8A	Linear	5V/0.8A	2S	5.5g	32*12*4.5
Skywalker-12A	12A	15A	Linear	5V/1A	2-3S	9g	38*18*6
Skywalker-12AE	12A	15A	Linear	5V/2A	2-3S	10g	38*18*7
Skywalker-15A	15A	20A	Linear	5V/2A	2-3S	16.5g	48*22.5*6
Skywalker-20A	20A	25A	Linear	5V/2A	2-3S	19g	42*25*8
Skywalker-30A	30A	40A	Linear	5V/2A	2-3S	37g	68*25*8
Skywalker-40A	40A	55A	Linear	5V/3A	2-3S	39g	68*25*8
Skywalker-40A-UBEC	40A	55A	Switch	5V/3A	2-4S	43g	65*25*12
Skywalker-50A-UBEC	50A	65A	Switch	5V/7A	3-6S	41g	65*29*10
Skywalker-50A-OPTO	50A	65A	N/A	N/A	3-6S	41g	65*29*10
Skywalker-60A-UBEC	60A	80A	Switch	5V/7A	3-6S	63g	77*35*14
Skywalker-60A-OPTO	60A	80A	N/A	N/A	3-6S	60g	77*35*14
Skywalker-80A-UBEC	80A	100A	Switch	5V/7A	3-6S	82g	86*38*12
Skywalker-80A-OPTO	80A	100A	N/A	N/A	3-6S	79g	86*38*12
Skywalker-100A-UBEC	100A	120A	Switch	5V/7A	3-6S	82g	86*38*12
Skywalker-100A-OPTO	100A	120A	N/A	N/A	3-6S	79g	86*38*12

## Programmable Items (The option written in bold font is the default setting)

- Brake Setting: Enabled / **Disabled**
- Battery Type: **Lipo** / NiMH
- Low Voltage Protection Mode(Cut-Off Mode): **Soft Cut-Off (Gradually reduce the output power)** /Cut-Off (Immediately stop the output power)
- Low Voltage Protection Threshold(Cut-Off Threshold): Low / **Medium** / High
  - For lithium battery, the battery cell number is calculated automatically. Low / medium / high cutoff voltage for each cell is: 2.85V/3.15V/3.3V. For example: For a 3S Lipo, when "Medium" cutoff threshold is set, the cut-off voltage will be:  $3.15 \times 3 = 9.45V$
  - For NiMH battery, low / medium / high cutoff voltages are 0%/50%/65% of the startup voltage (i.e. the initial voltage of battery pack), and 0% means the low voltage cut-off function is disabled. For example: For a 6 cells NiMH battery, fully charged voltage is  $1.44 \times 6 = 8.64V$ , when "Medium" cut-off threshold is set, the cut-off voltage will be:  $8.64 \times 50\% = 4.32V$ .
- Startup Mode: **Normal** /Soft /Super-Soft (300ms / 1.5s / 3s)
  - Normal mode is suitable for fixed-wing aircraft. Soft or Super-soft modes are suitable for helicopters. The initial acceleration of the Soft and Super-Soft modes are slower, it takes 1.5 second for Soft startup or 3 seconds for Super-Soft startup from initial throttle advance to full throttle. If the throttle is completely closed (throttle stick moved to bottom position) and opened again (throttle stick moved to top position) within 3 seconds after the first startup, the re-startup will be temporarily changed to normal mode to get rid of the chance of a crash caused by slow throttle response. This special design is suitable for aerobatic flight when quick throttle response is needed.
- Timing: **Low** / Medium / High,( 3.75° /15° /26.25° )  
Usually, low timing is suitable for most motors. To get higher speed, High timing value can be chosen.

## Begin To Use Your New ESC

**IMPORTANT!** Because different transmitter has different throttle range, please calibrate throttle range before flying.

**Throttle range setting (Throttle range should be reset whenever a new transmitter is being used)**

Switch on the transmitter, move throttle stick to the top position

Connect battery pack to the ESC, and wait for about 2 seconds

The "Beep-Beep-" tone should be emitted, means the top point of throttle range has been confirmed

Move throttle stick to the bottom position, several "beep-" tones should be emitted to present the amount of battery cells

A long "Beep-" tone should be emitted, means the lowest point of throttle range has been correctly confirmed

## Normal startup procedure

Move throttle stick to bottom position and then switch on transmitter.

Connect battery pack to ESC, special tone like "♪ 123" means power supply is OK

Several "beep-" tones should be emitted to present the amount of lithium battery cells

When self-test is finished, a long "beep-----" tone should be emitted

Move throttle stick upwards to go flying

### Protection Function

1. Start up failure protection: If the motor fails to start within 2 seconds of throttle application, the ESC will cut-off the output power. In this case, the throttle stick **MUST** be moved to the bottom again to restart the motor. (Such a situation happens in the following cases: The connection between ESC and motor is not reliable, the propeller or the motor is blocked, the gearbox is damaged, etc.)
2. Over-heat protection: When the temperature of the ESC is over about 110 Celsius degrees, the ESC will reduce the output power.
3. Throttle signal loss protection: The ESC will reduce the output power if throttle signal is lost for 1 second, further loss for 2 seconds will cause the output to be cut-off completely.

### Trouble Shooting

Trouble	Possible Reason	Action
After power on, motor does not work, no sound is emitted	The connection between battery pack and ESC is not correct	Check the power connection. Replace the connector.
After power on, motor does not work, such an alert tone is emitted: "beep-beep-, beep-beep-,beep-beep-" (Every "beep-beep-" has a time interval of about 1 second)	Input voltage is abnormal, too high or too low.	Check the voltage of battery pack
After power on, motor does not work, such an alert tone is emitted: "beep-, beep-, beep- "(Every "beep-" has a time interval of about 2 seconds)	Throttle signal is irregular	Check the receiver and transmitter Check the cable of throttle channel
After power on, motor does not work, such an alert tone is emitted: "beep-, beep-, beep-" (Every "beep-" has a time interval of about 0.25 second)	The throttle stick is not in the bottom (lowest) position	Move the throttle stick to bottom position
After power on, motor does not work, a special tone "♪ 567i2" is emitted after 2 beep tone (beep-beep-)	Direction of the throttle channel is reversed, so the ESC has entered the program mode	Set the direction of throttle channel correctly
The motor runs in the opposite direction	The connection between ESC and the motor need to be changed.	Swap any two wire connections between ESC and motor

### Program the ESC with your transmitter (4 Steps)

**Note:** Please make sure the throttle curve is set to 0 when the throttle stick is at bottom position and 100% for the top position.

1. Enter program mode
2. Select programmable items
3. Set item's value (Programmable value)
4. Exit program mode

#### 1. Enter program mode

- 1) Switch on transmitter, move throttle stick to top position, connect the battery pack to ESC
- 2) Wait for 2 seconds, the motor should emit special tone like "beep-beep-"
- 3) Wait for another 5 seconds, special tone like "♪ 567i2" should be emitted, which means program mode is entered



#### 2. Select programmable items

After entering program mode, you will hear 8 tones in a loop with the following sequence. If you move the throttle stick to bottom within 3 seconds after one kind of tones, this item will be selected.

1. "beep" brake (1 short tone)
2. "beep-beep-" battery type (2 short tone)
3. "beep-beep-beep-" cutoff mode (3 short tone)
4. "beep-beep-beep-beep-" cutoff threshold (4 short tone)
5. "beep-----" startup mode (1 long tone)
6. "beep-----beep-" timing (1 long 1 short)
7. "beep-----beep-beep-" set all to default (1 long 2 short)
8. "beep-----beep-----" exit (2 long tone)

**Note:** 1 long "beep-----" = 5 short "beep-"



#### 3. Set item value (Programmable value)

You will hear several tones in loop. Set the value matching to a tone by moving throttle stick to top when you hear the tone, then a special tone "♪ i5i5" emits, means the value is set and saved. (Keeping the throttle stick at top, you will go back to Step 2 and you can select other items; or moving the stick to bottom within 2 seconds will exit program mode directly)

Items	Tones	"beep-" 1 short tone	"beep-beep-" 2 short tones	"beep-beep-beep" 3 short tones
Brake		Off	On	
Battery type		Lipo	NiMH	
Cutoff mode		Soft-Cut	Cut-Off	
Cutoff threshold		Low	Medium	High
Start mode		Normal	Soft	Super soft
Timing		Low	Medium	High



#### 4. Exit program mode

There are 2 ways to exit program mode:

1. In step 3, after special tone "♪ i5i5", please move throttle stick to the bottom position within 2 seconds.
2. In step 2, after tone "beep-----beep-----"(that is: The item #8), move throttle stick to bottom within 3 seconds.