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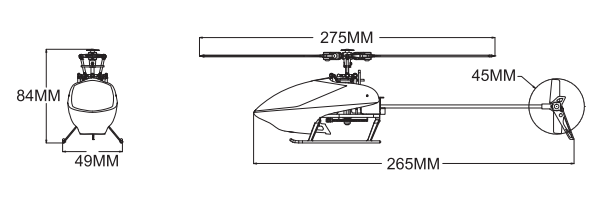
K120

INSTRUCTION MANUAL



K120 is compatible with FUTABA 2.4GHz S-FHSS.
Brushless motor supply power, compatible with 3-axis gyro and 6-axis gyro mode; 3D aerobatics is very stable; 6G mode can auto recovery the flying pose, so it is suitable for beginners especially.

sales@ xk-innovations.com

PACKAGING LIST

NO	PART NAME	QUANTITY
1	Gift box	1
2	Foam surface shell	1
3	Foam back shell	1
4	3D instruction Manual	1
5	Helicopter	1
6	Transmitter	1
7	charger	1
8	Adaptor	1
9	Li-po battery 7.4v 300mah 25C	1
10	Cross screwdriver / hex wrench	1
11	Main blade /Tail rotor	1 Set

Part No: XK.2.110.017 Part Name: Metal swashplate set	Part No: XK.2.110.018 Part Name: Metal rotor head set	Part No: XK.2.K120.016 Part Name: Tail bar set	Part No: XK.2.K120.017 Part Name: Tail turbines
Part No: XK.2.K120.018 Part Name: Oma Da frame group	Part No: XK.2.K120.019 Part Name: Tail motor frame set	Part No: XK.2.K120.020 Part Name: The wires	Part No: K.2.110.015 Part Name: Metal upgrades
Part No: XK.2.X6.001 Part Name: Remote control	Part No: K.2.110.014 Part Name: Gearset		

ACCESSORIES LIST

Part No: XK.2.K120.001 Part Name: Horizontal set	Part No: XK.2.K120.002 Part Name: Wing set	Part No: XK.2.K120.003 Part Name: Main shaft	Part No: XK.2.K120.004 Part Name: Steering plate set
Part No: XK.2.K120.005 Part Name: Motor set	Part No: XK.2.K120.006 Part Name: Rudder unit	Part No: XK.2.K120.007 Part Name: Base set	Part No: XK.2.K120.008 Part Name: Gearset
Part No: XK.2.K120.009 Part Name: Receiving unit	Part No: XK.2.K120.010 Part Name: Battery	Part No: XK.2.K120.011 Part Name: Housing set	Part No: XK.2.K120.012 Part Name: Landing gear set
Part No: XK.2.K120.013 Part Name: Tail turbines	Part No: XK.2.K120.014 Part Name: Tail rotor group	Part No: XK.2.K120.015 Part Name: Screws	Part No: XK.2.K100.003 Part Name: Rubber ring set
Part No: XK.2.K100.006 Part Name: Connecting rod set	Part No: XK.2.K100.012 Part Name: Bearing set	Part No: XK.2.K123.009 Part Name: Limit seat	Part No: XK.2.110.016 Part Name: Metal clip wing group

NOTICE

■ All instructions, warranties and other collateral documents are subject to change at the sole discretion of our company. For up-to-date product literature, visit Our website www.xk-innovations.com

WARNING

■ Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury. This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure 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. 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.

ADDITIONAL SAFETY PRECAUTIONS AND WARNINGS

1. Age Recommendation: Not for children under 14 years. This is not a toy.
2. Always operate your model in open spaces away from full-size vehicles, traffic and people.
3. Follow the operation notice, warning and any support equipment (charger, battery, etc) carefully.
4. Keep away from any chemicals; keep children away from any small parts and electrical equipment.
5. Always keeping away from water, especially for this product don't have waterproof function; It will be damaged by moisture.
6. Never place any portion of the model in your mouth as it could cause serious injury or even death.
7. Never operate your model with low voltage transmitter batteries.

INTRODUCTION

■ This is a super classic helicopter with excellent flight performance. Flybarless design, decrease resistance of rotor head. Quote to aerodynamics, the blades can supply strong power and keep stability. Using new type gyro, compatible with 3D and 6G mode. You can make a variety of stunts by 3D mode; 6G mode is suitable for beginners especially.

■ After flying this mini helicopter, you will find other mini helicopters which you have flying are eclipsed, this is a incomparable and popularization helicopter. Beginners will find it is easily to fly, masters will find it is interesting. It is worth to be possessed.

■ This manual with detailed instruction ,will help you learn more about the product. Pls read it before your flying.

TABLE OF CONTENTS

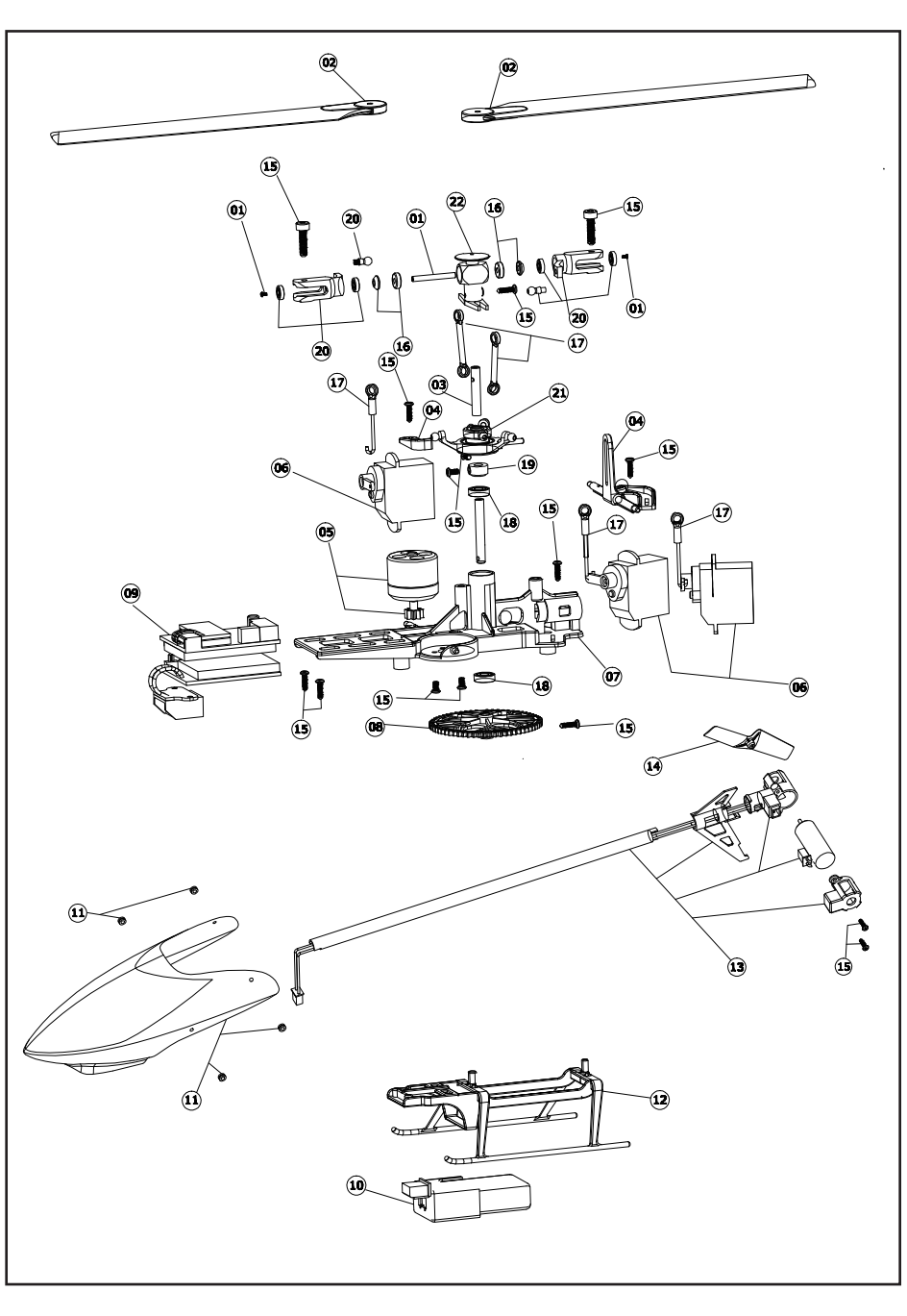
PARTS LIST

NO	PARA NAME	QUANTITY
1	Horizontal set	1
2	Wing set	2
3	Main shaft	1
4	Steering plate set	1
5	Motor set	1
6	Rudder unit	1
7	Base set	1
8	Gearset	1
9	Receiving unit	1
10	Battery	1
11	Housing set	1
12	Landing gear set	1
13	Tail turbines	1
14	Tail rotor group	1
15	Screws	14
16	Rubber ring set	4
17	Connecting rod set	5
18	Bearing set	2
19	Limit seat	1
20	Metal clip wing group	2
21	Metal swashplate set	1
22	Metal rotor head set	1
23	Tail bar set	1
24	Tail turbines	1
25	Oma Da frame group	1
26	Tail motor frame set	1
27	The wires	1
28	Metal upgrades	1
29	Remote control	1
30	Gearset	1

Notice for beginners:

1. Pls fly you models with guidance in the first time.
2. Before fly the models, you need to understand all the function of the transmitter and reaction cause by the rockers.
3. Don't use 3D mode hurried. Practice flying and hovering flight under 6G mode until you familiar are with it. Then you can practice flying and hovering flight under 3D mode. When you are familiar with these two mode, you can practice inverted flight with guidance.
4. Practice hovering flight of inverted flight to lay a foundation for making more brilliant flying.
5. This model is not a toy. For reducing unnecessary damage, pls take a simulated flight by compute before 3D flying.

EXPLODING VIEW



HELICOPTER PARAMETERS

Length	265 mm
Height	84 mm
Weight	77.5 g
Propeller length	275 mm
Tail rotor blade diameter	45 mm
Battery specification	7.4v 300mah 25C
Flight time	5-7min
Main motor brushless	1106
Tail motor	8520

WARNING AND THE GUIDE OF USING BATTERY

CAUTION
Always use a charger compatible with batteries.
WARNING
Always charge Batteries away from flammable materials.
WARNING
Never leave charging Batteries unattended.
WARNING
Never charge damaged Batteries.
WARNING
Never Alter Batteries.
WARNING
120F/49C
Never touch or use hot Batteries.

To ensure safety, pls use the standard charger inside.

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

1. Can result in a fire, personal injury and property damage.
2. By handling, charging or using the included Li-Po battery you assume all risks associated with lithium batteries.
3. If at any time the battery begins to balloon or swell, discontinue use immediately. If charging or discharging, discontinue and disconnect. Continuing to use, charge or discharge a battery that is ballooning or swelling can result in fire.
4. Always store the battery at room temperature in a dry area for best results.
5. Always transport or temporarily store the battery in a temperature range of 40–120° F. Do not store battery or model in a car or direct sunlight. If stored in a hot car, the battery can be damaged or even catch fire.
6. Never use a Ni-CD or Ni-MH charger. Failure to charge the battery with a compatible charger may cause fire resulting in personal injury and/or property damage.
7. Never exceed the recommended charge rate.
8. Never cover warning labels with hook and loop strips.

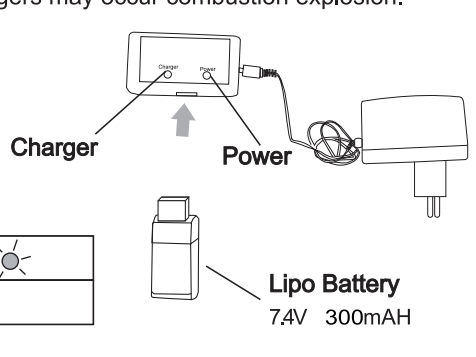
WARNING: Only use the charger supplied by our company, or it would cause damage.

Notice: When a Li-Po battery is discharged below 3.7 V, the battery may be damaged and may no longer accept to charge. Please land the helicopter immediately and recharge the lipo battery.

BATTERY CHARGING

1.Connect charger with power adapter.
2.Insert the plug into the AC outlet,then charger indicator(green) long light.
3.Insert the battery plug into the charger, the charge indicator (red) long bright,red light turn off when complete.

Warning
1.To ensure safety, do so in the case of someone custody.
2.Children should charge the battery under adult assistance.
3.Use XK standard charger, other chargers may occur combustion explosion.



LED Indicator LED

Red light off	Red light
Charge Complete	Charging

FIRST FLIGHT PREPARATION CAUTION

1. Make sure the battery power is full both for TX and helicopter.
2. Before open the power of TX, please make sure the TH. Stick at the bottom and the switch of TH.HOLD and 3D mode in back position (back cover direction).
3. Make sure the TX is binding with helicopter ,or please rebind them.
4. Please open TX first, then connect the battery with the RX board on helicopter to bind with TX. When close, please cut the power of helicopter first, and then turn off the TX.
5. Keep away from crowd, cars, high-tension towers and pond. Then you can start your flying.

	Problem	Possible Cause	Solution
7	Main rotor blades are shaking in flying.	Lateral axis is bent Latreral axis screw is not tight .There are some debris in the servo, causing shakes . The loose between the swashplates. Deformed or damaged t ail rotor blades.	Replace the lateral axis. Tighten the lateral axis screw. Change the Bearing. Remove the servo, and clear debris. Compress the swash plates. change the tail rotor blades.
8	The sound of the main rotor becomes smaller.	Low battery voltage of helicopter.	Charge the battery or change a fully charged battery.
9	Helicopter has no reaction or can not fly smoothly.	Failure of binding	Rebind the helicopter and transmitter, make sure you place the helicopter static level next to the transmitter.
10	3D/6G model helicopter appeared yaw	Swashplate servos not g yrus or damage	Length adjustment rod, so thatthe vertical spindle swashplate Replace the servo
11	Helicopter yaw occurs in 6G mode,	Helicopters hover need to reconfigure	Reference helicopter 6G mode setting
12	Helicopter took off spin to the left.	Tail motor power shortage loose blades Tail motor damage	Check with the tail rotor blades and the motor shaft, If loose replacement tail rotor blade. Motor damage Replace the tail motor.
13	Helicopter power is turned supreme speed governor electric sound	Brushless speed governor fault or poor contact	Check the connectors replace speed governor

TROUBLESHOOTING GUIDE

	Problem	Possible Cause	Solution
1	LED on receiver flashes constantly and operating no function after connecting batteries to transmitter.	Transmitter is not bound to receiver.	Bind transmitter to receiver(Refer to P.6, Programming your Transmitter)
2	The helicopter do not response after connecting batteries to receiver.	Check whether the transmitter and receiver connecting to power; check the voltage of transmitter and receiver; Battery pole flake contact is not good.	Open the transmitter, make sure the batteries connecting is good Replace and charge transmitter batteries Make sure the battery pole flake contact is good.
3	When push the throttle pole, the rotor do not rotate and the LED on Receiver flashes constantly.	Low battery voltage; batteries connection is not good.	Replace and charge the batteries, reconnect the batteries to the receiver board.
4	Helicopter takes off immediately, once the batteries and receiver connected.	Didn't put the throttle to the lowest	Put the throttle pole at the lowest position before open the transmitter.
5	Turn on the helicopter after binding successfully, the propeller rotate constantly but the helicopter can not take off.	Low charge in aircraft batteries or main gear loose.	Replace and charge the batteries ; press the spindle with gear tightly.
6	Helicopter vibrates or shakes in flight.	Damaged rotor blades and lateral axis blade grips too tight causing the movement of the main rotor isn't smooth.	Change the main rotor blades, and lateral axis Loosen the blade grips properly.

BINDING TX AND RX

You buy the original model, the factory has been completed on the code, if you need to re-code, do as following.

1. **First open the remote control, make sure the throttle stick in the bottom position, 3D / IDLE switch in the OFF position**
2. **Take down the canopy for touching the code switch.**
3. **Charge the helicopter, the red lamp flashes slowly, press the code button for 1 second, then the red lamp go out and into a state of binding of code.**
4. **Complete the binding of code when red and blue lamp are brighten for long time.**
5. **The determination of when the code is not the same type of remote control to turn around, so as not to impact on the code.**

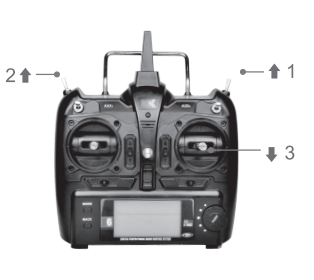
Tip: This product is common to all FUTABA 2.4GHZ S-FHSS remote control.
Note: The transmitter throttle is not at its lowest position, the throttle hold switch and 3D effects switch in the open state, emitting the opportunity to send a warning by bit, Unable to enter the code program.

Gyroscope calibration

Aircraft factory has passed the flight testing, gyroscope go awry in individual cases, by calibrating the gyro, makes more stable flight
1. **Open the remote control, make sure the throttle stick at the lowest position, 3D switch is in the OFF position.**
2. **Power to the plane, to be self-test is complete, the lights lit.**
3. **Push the throttle rocker, by the hovering of rocker control, the plane landed.**
4. **Move the throttle stick to the bottom left corner of breaking while breaking into the lower right corner of the lift rocker 3-4 seconds, then flash lights appeared to enter the gyroscope calibration. The lights stay lit after the self-test is complete, you can fly.**

Notice:

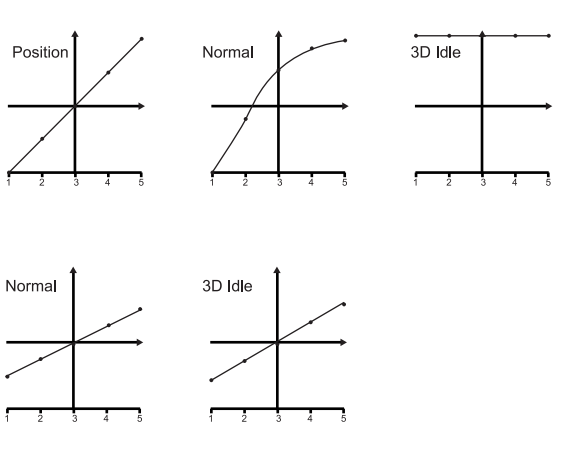
Pls make throttle hold switch button and 3D switch button on "OFF" position, and the throttle stick at the lowest position when turn on the transmitter,otherwise transimitter will send constant "DiDi" alarm sound.



THROTTLE CURVE AND PITCH CURVE SET

	Position	Normal	3D Idle
Throttle Curve	1	0	100
	2	50	100
	3	60	100
	4	70	100
	5	80	100

	Position	Normal	3D Idle
Pitch Curve	1	40	30
	2	45	40
	3	50	50
	4	65	60
	5	80	70



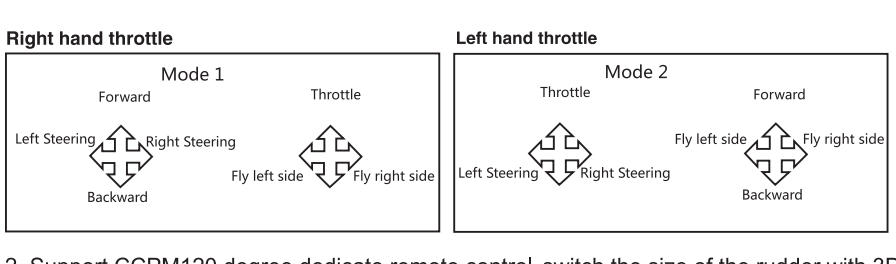
The above information is for your reference only, you can set freely according to your demand

GYRO PARAMETER SETTING AND 3D/6G FLIGHT TRANSFORM

For convenience of user operation, reduce the setting steps, through 5channel switch to set value, then cut 3D locked mode and 6G pose mode.
For example,
Gyro switch button up, becoming 6G pose mode when the gyro setting value is between 70-100.
Gyro switch button down, becoming 3D locked mode when the gyroscope setting value is between 0-30.

Notice:
1.The RTF products have already set 3D and 6G switch mode, does not support gyro switch change. If the user need to transform the position of 3D and 6G switch, referring to X6 instruction manual into the gyroscope parameters settings and according to your own needs to set value of the switch position.
2.Using FUTABA original remote controller, please first set 5 channel gyro switch in accordance with the manual, then according to own needs to set value of 3D locked mode and 6G pose mode.

Right hand throttle / Left hand throttle

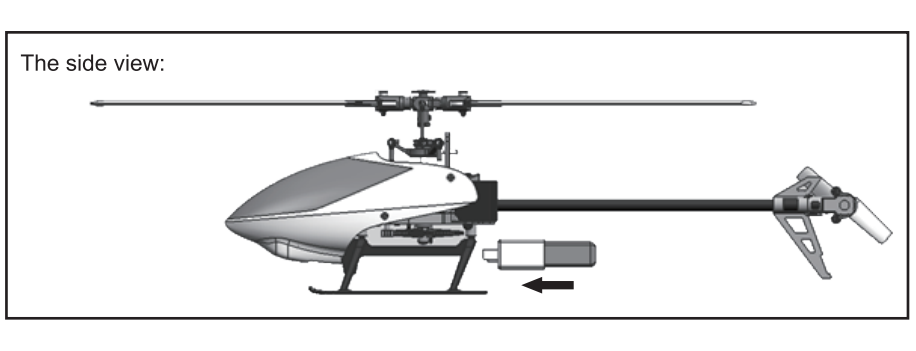


2. Support CCPM120 degree dedicate remote control; switch the size of the rudder with 3D 6G convert four kinds of joystick mode; Flameout switch(TH.HOLD) and other models; large screen LCD display.

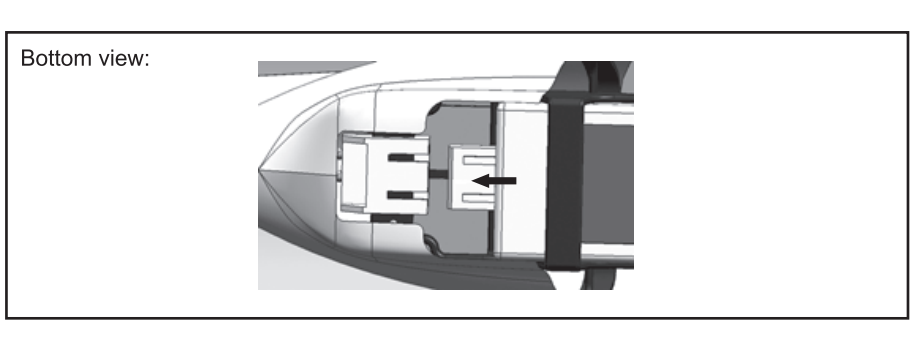
INSTALLING THE FLIGHT BATTERY

1. first open the remote control, confirm the throttle stick in the position and 3D idle switch and accelerator keep (TH.HOLD) switch in the position of the 0FF.
2. will battery through the battery storehouse of landing gear, is inserted into the receptacle of a plane, the plane sent 1 2 3 voice, the power supply is switched on, once again issued a long drop sound, signal receiver identified.
3. a remote control aircraft with rocker rocker, the corresponding channel direction, confirm each channel correctly, you can fly.

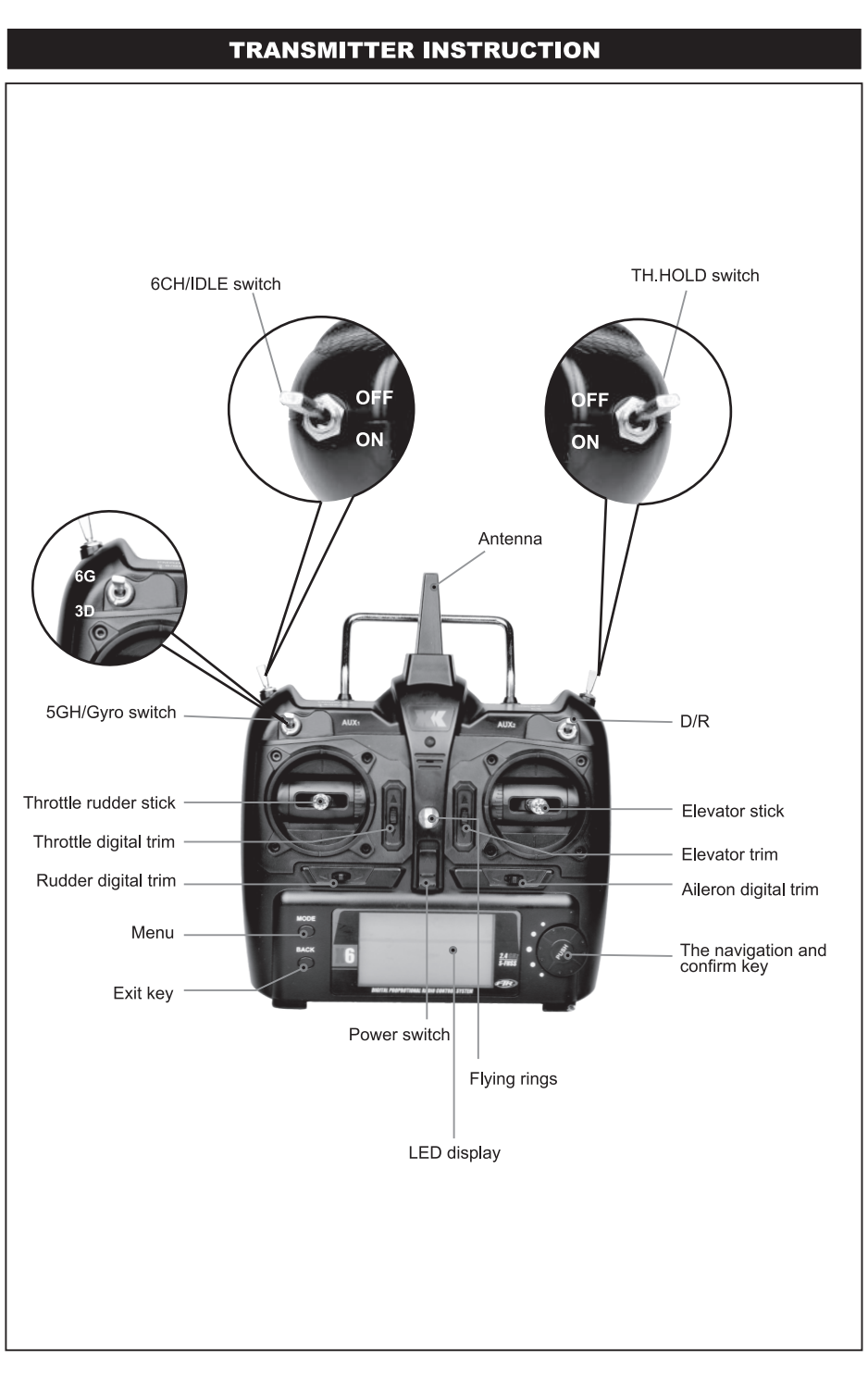
The side view:



Bottom view:



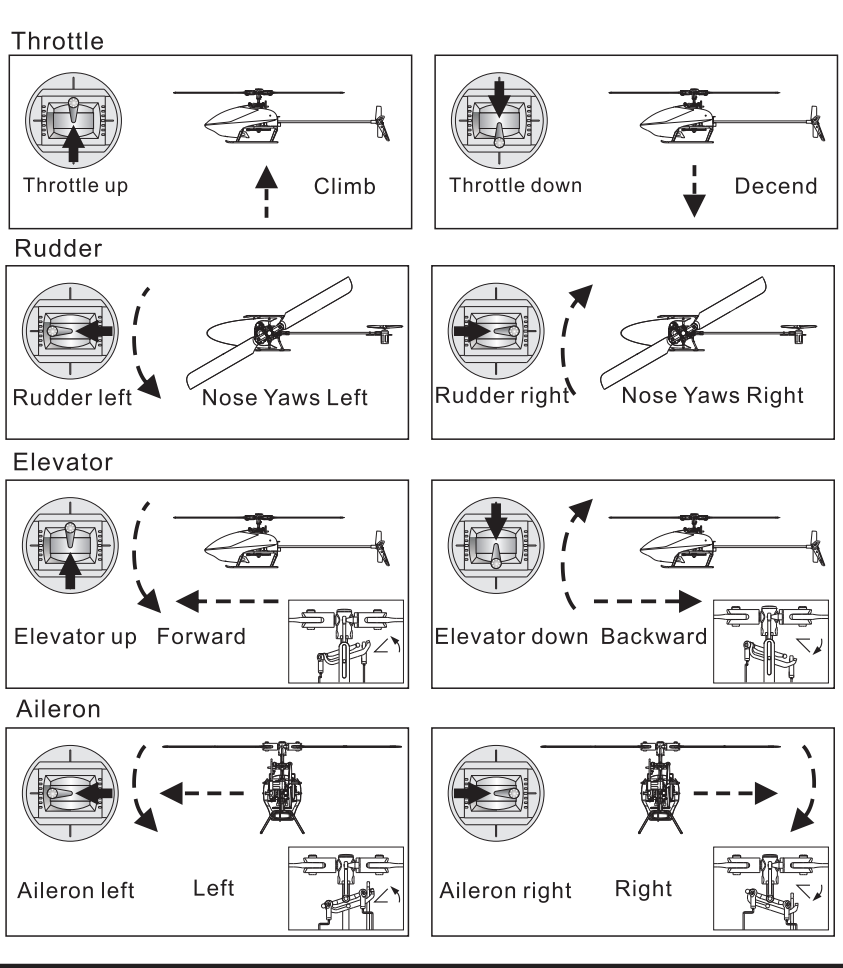
TRANSMITTER INSTRUCTION



6CH/IDLE switch
OFF
ON
TH.HOLD switch
OFF
ON
6G
3D
Antenna
5GH/Gyro switch
D/R
Throttle rudder stick
Throttle digital trim
Rudder digital trim
Menu
Exit key
Elevator stick
Elevator trim
Aileron digital trim
The navigation and confirm key
Power switch
Flying rings
LED display

FIRST FLIGHT INSTRUCTION

If you are not familiar with the controls of your K120 , take a few minutes to familiarize yourself with them before attempting your first light.



RECEIVER INTERFACE DIAGRAM