

Blitz Works
ZRC

Goblin

R/C Helicopter

Radio control helicopter

Instruction manual



www.bananahobby.com

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BRIEF INTRODUCTION

Goblin is a mini single rotor helicopter operating on a specially designed mechanical stable rotor head which makes the unit easy to control with great maneuverability and super stability. The Goblin can move forward, move backward, it also can finish the knife edge, hover and air route easily. With the great maneuverability and super stability, the beginners can manipulate this model easily. Our Goblin is the best choice for the hobby enthusiasts to learn from the coaxial level to the single-rotor helicopter level, and it is also suitable for indoor flying.



※This picture only for reference.

SPECIFICATIONS:

- ★Rotor Diameter: 270mm/10.6in
- ★Height: 148mm/5.8in
- ★Length (excluding rotor blades): 250mm/9.8in
- ★Weight: 71g/2.5 oz
- ★Flight time: >10minutes
- ★R/C System: EFLY-4BII 2.4G
- ★Motor: N50 brushed carbon high-magnetism motor
- ★Battery: 3.7V, 420 mAh Li-poly battery
- ★Servo: 3.6g×2

PRODUCT CHARACTER	
Ready Assembled	100%
Ease of Maintenance	★★★★☆
Ease of Control	★★★★☆
Strength	★★★★☆

1. With the unique mechanical balance structure, this model has the characteristics of superb stable flight which resembles the performance of a coaxial helicopter.
2. Equipped with a built-in piezoelectric gyro sensor to ensure that the head lock function will be more precise.
3. Configured with 4ch 2.4G digital R/C System and 2 micro proportional servos.
4. Configured with 3.7V 420mAh Li-poly battery, and flight time is more than 10 minutes.
5. Equipped with 3 micro ball bearings which makes the helicopter fly more quietly.
6. Equipped with high scale LED lighting system which makes the model more to scale.



WARNING:

This product is intended for users who are older than 14 years of age.
Children should be supervised prior to starting or flying this helicopter.
Do not touch the rotor blades when it is under rotation.



※Specifications may change without notice, please refer to the real one for configuration.
2011.09



CAUTION

R/C modeling is a hobby with advanced technology and should not be considered as a toy. There is risk involved during the operation of this product and the user should take all precautions necessary or serious body injury may occur. It is only suitable for users older than 14 years of age.

Improper disassembly, improper adjustments or setup may lead to unsatisfactory or unsafe operation. If you have any questions regarding the use, maintenance, or safe operation of this model, please contact your local retailer.



NOTE

As with any R/C product there are risks involved when flying this model. A beginner should seek the help of a skilled R/C pilot to ensure that the model is airworthy and capable of safe operation. Any damage, neglect, or unfamiliar use of this product can cause unexpected accidents or injury. Please fly with great care and we are not responsible for any accidents.

TIPS FOR SAFETY

1. Locate an appropriate place to fly your helicopter:

R/C helicopters are capable of flying at high speeds, thus posing a certain degree of potential danger to both the flyer and bystanders, so it is important to choose a right site for flying. First, the space of flying site should be big enough (at least 4*4*3m). Second, the flying site should be open enough and clear of obstacles. Do not fly your helicopter during bad weather conditions to avoid the unnecessary damage.

This RC helicopter, have the best performance in terms of control capability and scalability without wind. It may not fly properly outside due to inconsistent airflow so that it is not recommended to fly outdoor.

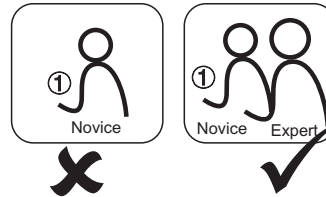


Without wind

TIPS FOR SAFETY

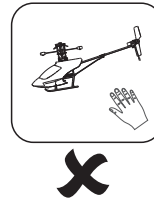
2. Obtain the assistance of an experienced pilot.

The help of an experienced pilot will ensure that you will have a well trimmed, correctly functioning helicopter for the first flight. It is strongly advised that you first practice on the simulator prior to making a flight with your new helicopter.



3. Always distance yourself from moving parts

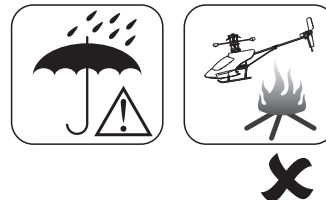
During the operation of your helicopter the rotor will be spinning at high speeds. Don't touch any moving parts and please keep an appropriate distance with them. Be cautious of your actions and be careful to keep your hands, face, eyes, and loose clothing away from the blades and gears to avoid being hurt or causing any damage to the model.



4. Keep your helicopter away from humidity.

Your new Goblin helicopter is a hi-tech electronic device, so try to keep the model away from the humid conditions which may result in the operation errors or some other undesirable damages to the model.

Never subject your model to severe weather, such as rain and thunder.



5. Operate your helicopter moderately

The helicopter will give a prompt response to the controlling action, so try to operate the helicopter moderately. Try to avoid the excessive operation as this may lead to the helicopter to go out of control.

6. Flight protection

While your helicopter may fly into obstructions and crash, you must close the throttle immediately to avoid avoid any further damages such as stressing out the main rotors, overloading the controlling circuit and/or damaging other parts.



CHARGE MODE AND WARNING

Operation manual for AC charger

Specifications:

Output voltage: DC 4.2V

Charge current: 650mA (Can be continuously adjusted)

Indicator state:

Green: Charge complete or no battery

Red: Charging

Separated battery detection: The voltage of any battery reaches 4.2V, the charge of it will cease automatically.

Using method:

1. Plug the charger into the electric socket (Note: the electric voltage must be compatible with the charger. The voltage standard is different in different countries.) If the indicator light is green, it indicates that the charger works normally and is ready to charge the battery.
2. Connect the battery to charger per its interface mark. The indicator becomes red which means the battery is charging.
3. When LED is flashing, the charger will enter the stage of drip current charging. The LED turns green when fully charged and the battery is ready for use.



Notice

1. Do not change the construction and function of the charger
2. Please do not place it near flammable materials while charging is in process.
3. This charger is not to be used for other kinds of batteries other than Li poly batteries.
4. Please keep it out of the reach of children while charging.
5. When this charger is in use, please do not leave the area or leave it unattended. If any abnormality occurs (such as the power indicator is off, the temperature of the battery rise rapidly, etc.) stop charging immediately.
6. Please do not disassemble the charger or its accessories.
7. When the battery is hot, please do not charge it until it cools down.



SAFETY INSTRUCTIONS FOR LI-POLY BATTERIES

01. Do not disassemble or reconstruct the battery.
02. Do not short-circuit the battery.
03. Do not use or leave the battery nearby a fire, stove or heated place.
04. Do not submerge the battery in water or sea water; do not get it wet.
05. Do not charge the battery nearby the fire or under the blazing sunlight.
06. Do not drive a nail into the battery, strike it by hammer or tread on it.
07. Do not impact or throw the battery.
08. Do not use the battery with conspicuous damage or deformation.
09. Do not make the direct soldering on the battery.
10. Do not reverse charge or over discharge the battery.
11. Do not reverse charge or reverse connection.
12. Do not use the battery for unspecified equipment.
13. Do not touch the leaking battery directly, please wash your skin or clothes with water if they come in contact with the liquid leaking from the battery.
14. Do not mix the Li-Poly battery with other un-chargeable battery .
15. Do not continue charging the battery over the prescribed time.
16. Do not put the battery into the microwave oven or high-pressure container.
17. Do not use the abnormal battery.
18. Do not use or keep the battery under the sunlight.
19. Do not use the battery nearby the place where generates static electricity (over 64V).
20. Do not charge the battery when the environmental temperature is under 0°C or over 45°C .
21. If you find the battery leaking, smelling or abnormal, stop using it .
22. Keep the battery away from the children.
23. Use the specified charger and observe charging requirement (under 1A).
24. Parents should supervise and show the children the correct way to charge.



CAUTION

1. Use the original charger. Never charge the battery at more than 1 amp.
2. Never discharge the battery at more than 5C. Do not discharge too long as this will damage the battery.
3. For full flight time to be achieved please cycle the cells through three flights.
4. Never charge the battery on a carpet floor. This can cause a fire!
5. In order to maintain the voltage and ensure the life time of the battery, please recharge it if it has not been used for more than three months.

PARTS LIST

The helicopter includes the following parts. Please check to make sure that all of the parts are included in your kit. If there is anything missing please contact your local dealer.



Fuselage



Transmitter



AC Charger



Li-po battery

OPERATIONS



Please follow the following process before starting, Otherwise, it may lead to the helicopter to not work.

1. Put the helicopter on the flat ground and put the transmitter one meter away from the helicopter.
2. You can find that the indicator light of PCB flash by the transparent window in the right side of fuselage after connecting the power.
3. Turn on the transmitter, then the indicator light of transmitter will start to flash in red and green in sequence.
4. If the indicator light of the PCB turns solid red and the indicator light of the transmitter turns solid green after 7 seconds and you can hear servos adjusting (the servo will move to the center), it means the helicopter is ready for flying. After performing pre-flight check, you can start to fly. Otherwise, power down the helicopter and transmitter and then repeat the step from 1 to 4.

Caution!

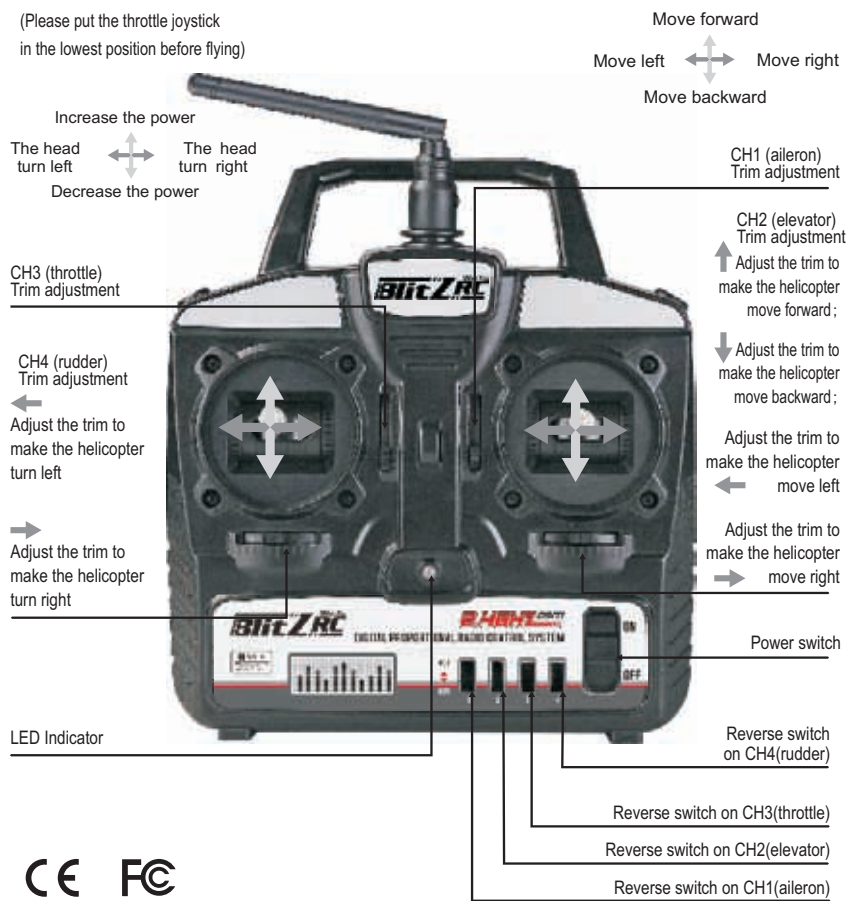
1. Do not move or shake the helicopter during the process of starting up, which may lead to abnormal flight.
2. Before starting the helicopter, it should be confirmed that there are no RC aircraft doing the same operation inside 30 meters, otherwise, the helicopter may lose control.

FUNCTIONS FOR CONTROL SET



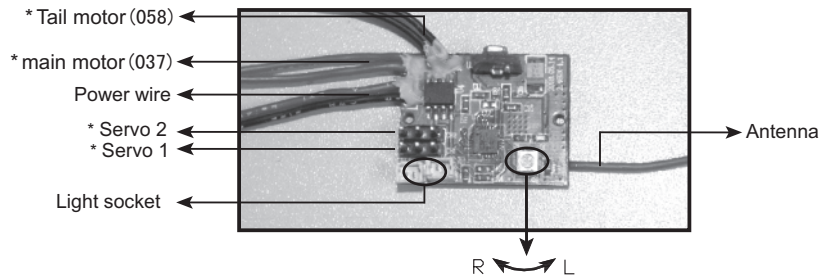
Mode 2(left hand throttle)

Configured with 2.4G radio control system from about 40 meters.



ADJUST THE NEUTRAL POINT OF HEAD LOCK BY CONTROLLING THE PCB BOARD

If the head cannot point to one direction stably during the flying, please adjust it as per the following method:



* Please refer to the page 13 for the position of servos and motor

1. Function of knob: Adjust the flying gesture of the helicopter by changing the speed of tail blades.

(1). If you turn the knob clockwise, the speed of the tail blades will increase and the helicopter will turn right.

(2). If you turn the knob counter clockwise, the speed of the tail blades will decrease and the helicopter will turn left.

2.PCB is well adjusted before shipment, so the end-customer need not adjust it.

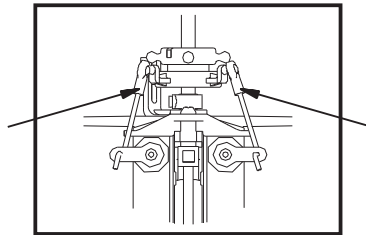
SWASHPLATE ADJUSTMENT

When the helicopter cannot hover stably and you also cannot adjust the trim to make it better, then please adjust the swash plate linkage as per the following method:

First, please take off the ball buckle and make the relevant adjustment.

When you loosen the linkage C-Clockwise, then the helicopter will move forward;

When you tighten the linkage clockwise, then the helicopter will move backward.



Look from the back of helicopter to the front

When you loosen the linkage C-Clockwise, then the helicopter will move left;

When you tighten the linkage clockwise, then the helicopter will move right.

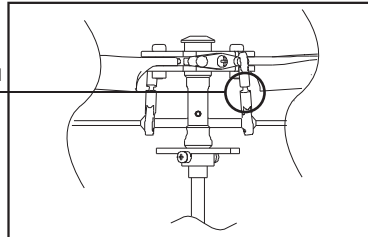
MAIN ROTOR BLADE ADJUSTMENT

1. Main rotor blade inspection.
 - (1) Inspect whether the fixed screws of the main rotor blades are too tight or too loose. Over tightening or over loosening of the blades will result in unstable flight.
 - (2) Inspect for the blade tracking problems. Blade tracking problem will lead to unstable flight.
2. Adjustment for the main rotor blade
 - (1) Keep the fixed screw of the main rotor blades not too tight or too loose.
 - (2) Lengthen or shorten the ball linkage rod if the blade tracking problem is exists.



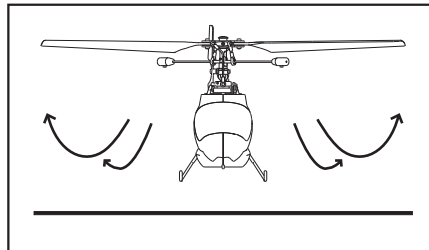
The trims of the transmitter may be displaced caused during the transportation and flying. Please adjust the trim properly before you fly the model. The position of transmitter trim may changed slightly due to transportation. Please check the positioning of the trim and adjust the trim according to the helicopter.

ball connector rod



GROUND EFFECT

Helicopter will be influenced by the airflow when helicopter is flying 30 centimeters above ground which is called 'ground effect'. This effect can increase the lift and also make the helicopter difficult to control in the situation. It will be difficult for the helicopter to take off and land in this situation. The best way to reduce the 'ground effect' is to increase the flight altitude.



NORMAL FLIGHT





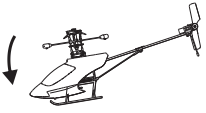

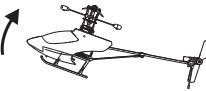

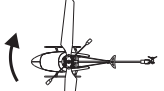

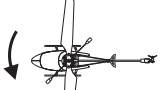



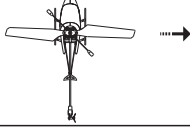

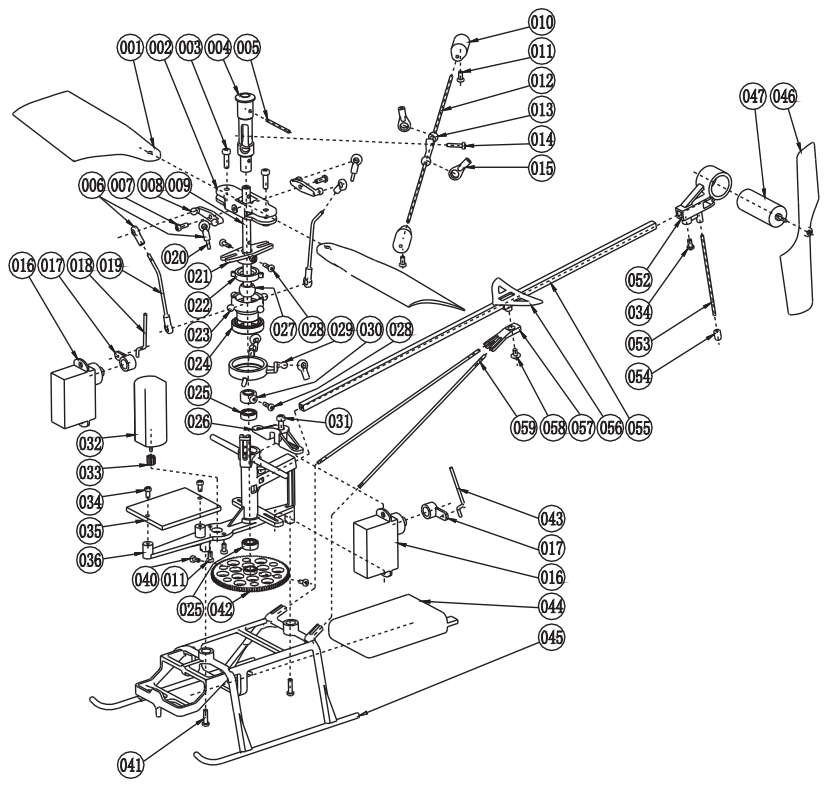
Ascending			Left stick pushing up
Descending			Left stick pulling down
Head forward			Push the left stick upward
Head backward			Pull the left stick downward
Head turning right			Left stick moving right
Head turning left			Left stick moving left
Helicopter moving left			Right stick moving left
Helicopter moving right			Right stick moving right

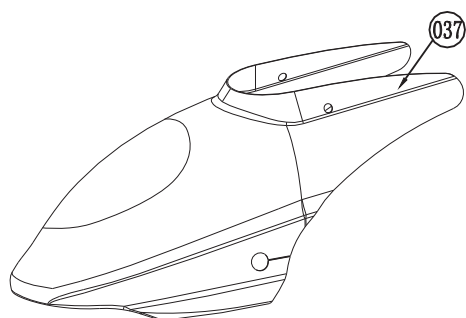


Chart for R/C mode 2(left hand throttle)

INSTALLATION



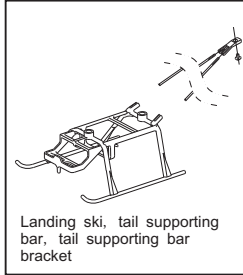
INSTALLATION



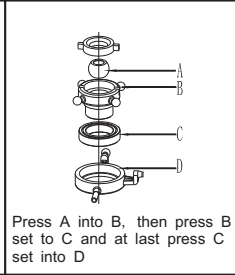
1 Main blades	16 3.6g servo	31 Screw PB1.7x10xD3	52 Tail frame
2 Blade grip	17 Arm	32 Main motor	53 Balance stay bar
3 Screw PB1.7x6xD3	18 Connecting steel for aileron servo	33 Motor gear	54 Tail support part
4 Rotor head	19 Grip connecting steel	34 Screw PB1.4x4xD2.5	55 Tail pole
5 Across shaft	20 Stabilizer linkage steel	35 Control board	56 Horizontal wing
6 Stabilizer buckle	21 Protection fork	36 Frame	57 Fixed slice for horizontal wing
7 Screw PB1.4x4xD2.5	22 Versatile board	37 Canopy	58 Screw PWA1.4x2.5xD3.5
8 Seesaw	23 Inner swash plate	40 Screw PM1.2x3xD2.5	59 Inclined stay bar
9 Main shaft	24 Swash plate bearing	41 Screw PB1.4x5xD2.5	
10 Stabilizer	25 Bearing	42 Slowness gear	
11 Screw PM1.4x3xD2.5	26 Servo slice	43 Elevator connecting steel	
12 Balance bar steel	27 Ball connector	44 Lipo battery	
13 Balance bar	28 Screw PM1.2x4xD2.5	45 Landing gear	
14 Screw PB1.2x5xD2.5	29 Outer swash plate	46 Tail blades	
15 Mall ball buckle	30 Spacing sleeve	47 Tail motor	

PARTS REPLACING

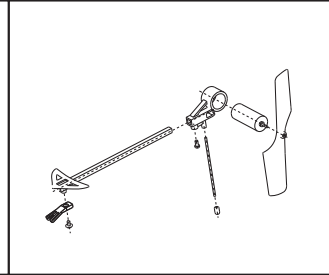
Landing ski assembly



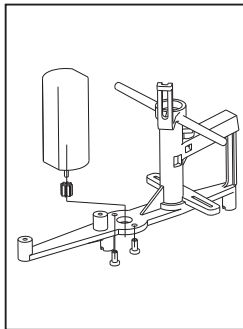
Swash plate assembly



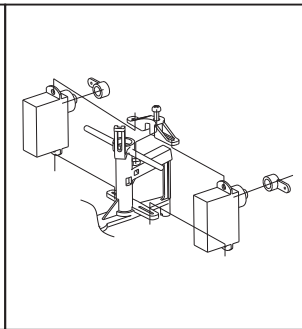
Tail beam assembly



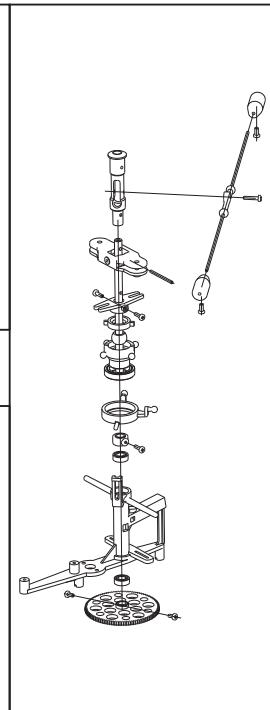
Motor installation



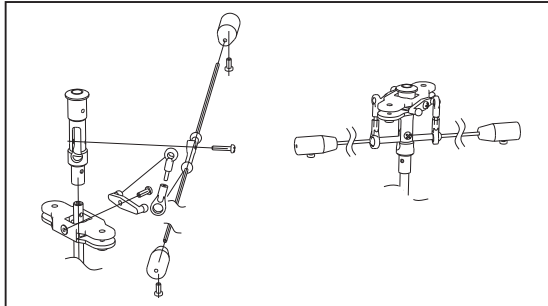
Servo installation



Main shaft and shaft core assembly



Stabilizer assembly



THE POSSIBLE PROBLEMS AND SOLUTIONS

Problem	Cause	Solutions
The model does not move	Check the battery voltage of transmitter and receiver	Use completely charged batteries
	Check the wire connection inside the model	Contact the local dealer
	Throttle protection function switched on	Minimize the right joystick of throttle (See page 9)
	Improper starting operation	Restart the model (See page 9)
The model is out of control or the flight is unstable	The model flies beyond the control distance	Control the flying distance
	The ball buckle of stabilizer is off	Assemble the stabilizer linkage correctly (please see page 10 and page 14)
The model moves only forwards/ backward	The adjustment of the swash plate is not good	Correct the trim on the transmitter (CH 2) (See page 9)
		Adjust the swash plate (please see page 10)
The model slides left/right always	The adjustment of the swash plate is not good	Correct the trim on the transmitter (CH 1) (See page 9)
		Adjust the swash plate (please see page 10)
The model is spinning all the time	The tail motor is damaged	Just change the tail motor
	The tail blades is damaged	Change the tail blades
	Debugging is not in place helicopter	1. Slight spinning could be corrected by adjusting the trim of CH4 (rudder) 2. If the problem is serious, first neutral the trim slider and then adjust the knob of the PCB board. (see page 9) The two methods should be used together to solve the problem.
The model vibrates severely with noise	There is too much friction between the gears	Apply some lubricating oil
	Rotor blades are twisted	Change the rotor blades
	Check the rotor blades to see if there is any inconsistent phenomena during the rotation	Adjust the pull rod properly and adjust the blades to correct the blade tracking (see page 10)
	Check the connection of the body and the frame	Make sure the connection of the body and frame is firm enough
Short control distance	The battery of transmitter is not sufficient	Change the battery
The model moves forwards/ backward and sidewise, but does not hover	Check whether the helicopter is exposed to a draught, e.g. by an opened window or an air conditioner. Hover flight is not possible when there is a draught	Close the window / door, switch off the air conditioner or select a more suitable place

SPARE PARTS LIST



No:41017
Tail motor frame set



No:41027
Landing gear set



No:41037
Main frame set



No:41047
Main shaft set



No:41067
Stabilizer set



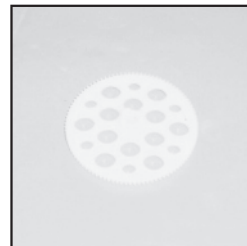
No:41077
Main rotor grip set



No : 3A02A
Main motor set



No : 3A02B
Tail motor set



No : 41107
Slowness gear set

SPARE PARTS LIST



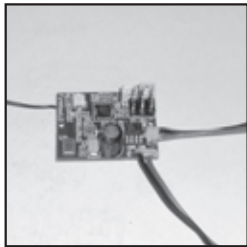
No: 41117
Swash plate set



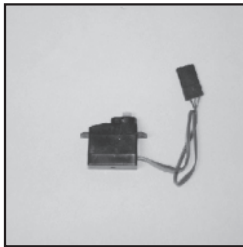
No: 41127
Ball buckle set



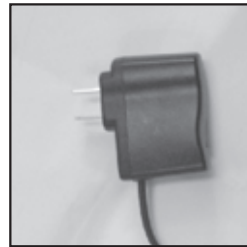
No: 3F02C
Li-Poly Battery set
(3.7V 420mAh)



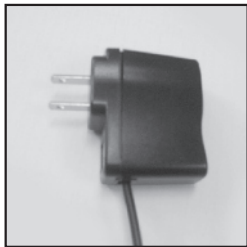
No: 3R071
Control board



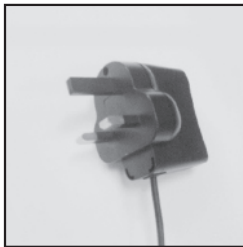
No: 35071
Servo set



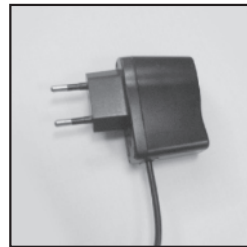
No: 36075
Chinese type charger



No: 36076
American type charger



No: 36077
UK type charger



No: 36078
European type charger

SPARE PARTS LIST



No:41227
Green Canopy set



No:41237
Green main blades set



No:41247
Green Tail



No:41227
Blue Canopy set



No:41237
Blue main blades set



No:41247
Blue Tail



No:41227
Red Canopy set



No:41237
Red main blades set



No:41247
Red Tail



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