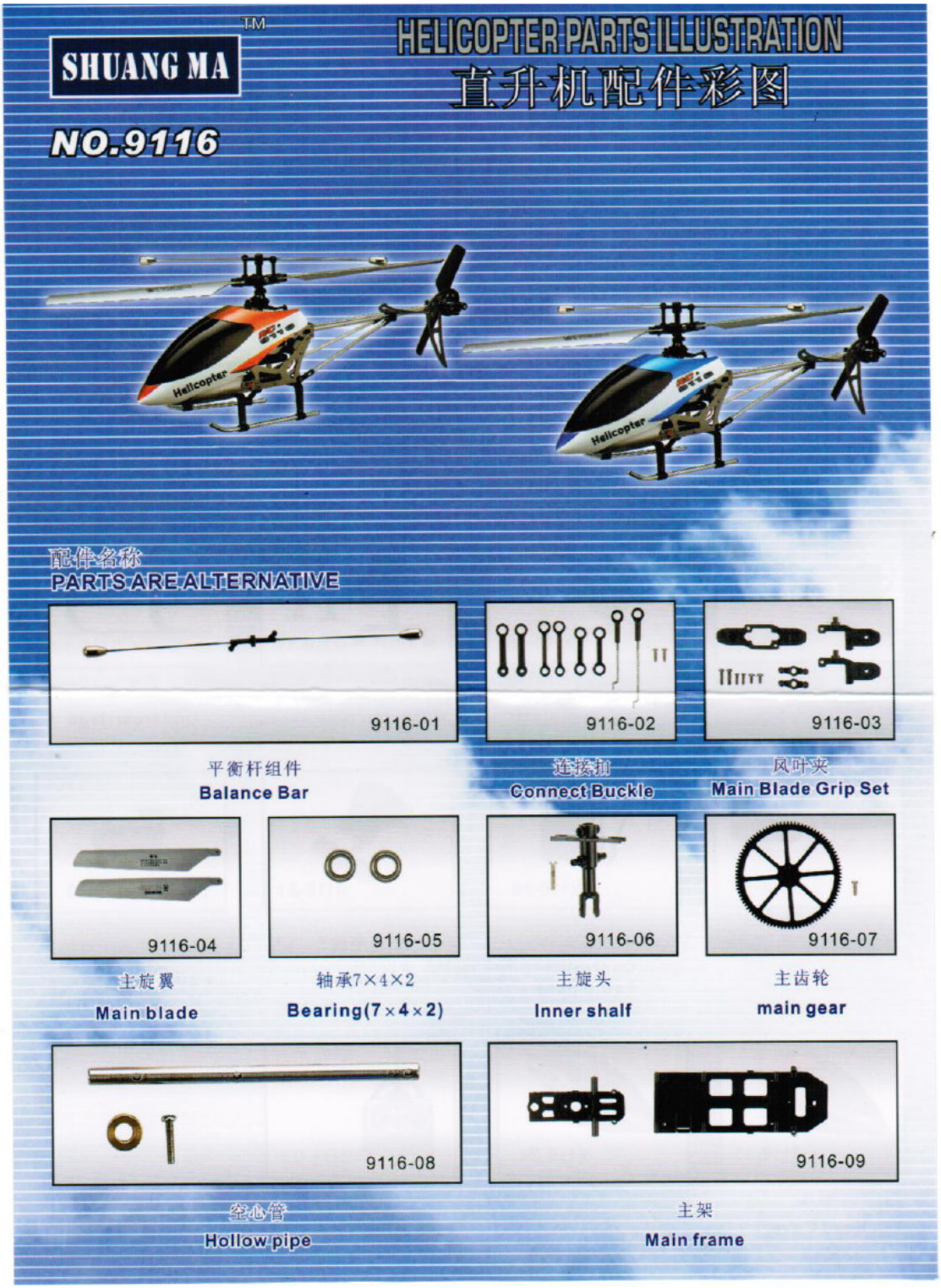
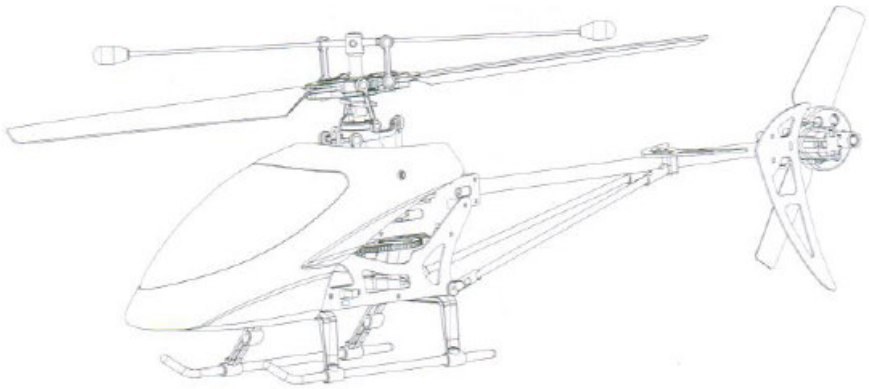
1.6 User Manual




9116-10
主电机
motor set
9116-11
主架装饰铝片
Main frame decorated aluminium plates
9116-12
平衡翼
Balance stabilizer
9116-13
装饰条
Decorative Bar
9116-14
机尾组件
Chopper Tail Unit
9116-15
伺服器
servo
9116-16
倾斜盘
swashplate
9116-17
机头、尾管固定座
Nose, tail tube fixed
9116-18
起落架
Undercarriage
9116-19
尾旋翼
Tail Blade
9116-20
电路板组件
Controller Equipment
9116-21
适配器
Charger
9116-22
7.4伏 锂离子电池
7.4V Li-ion batteries
9116-23
机头
Head Cover
9116-24
机头
Head Cover
9116-25
遥控器
remote control

DOUBLE HORSE

SHUANG MA™



WIRELESS RC HELICOPTER INSTRUCTION MANUAL

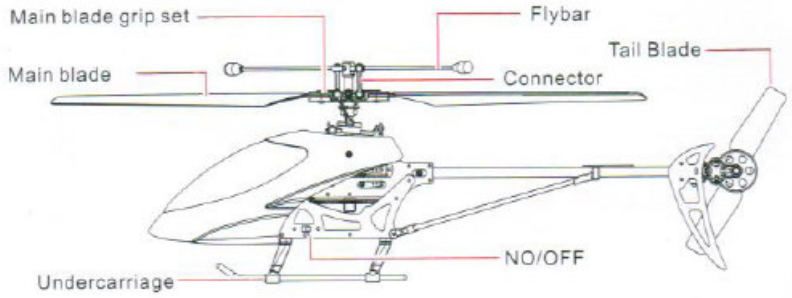
9116

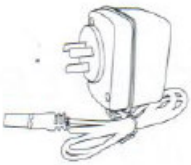
Attention:

Gyroscope technology is applied to this product.
Please read the following instructions before use.

1. Push the transmitter switch to "ON" position and pull down the throttle stick to the end.
2. Connect the power on the fuselage and push the fuselage switch to "ON" position, then, lay the fuselage on a flat level. It takes 5 seconds to finish the gyroscope check before fly.

ALL PARTS INCLUDED:

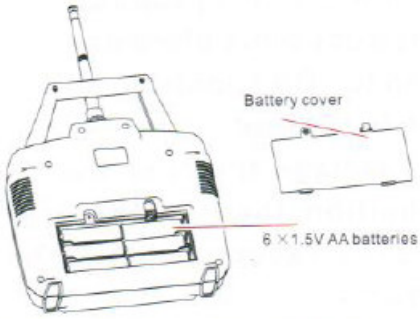




Charger

TO ASSEMBLE THE TRANSMITTER:

Install the batteries: open the battery case cover, and insert 6 batteries (1.5V AA) properly according to pole indications. (batteries to be purchased)



Attention:
1. Match the batteries with pole indications before installation.
2. Do not mix new batteries with used ones.
3. Do not mix different types of batteries.

-1-

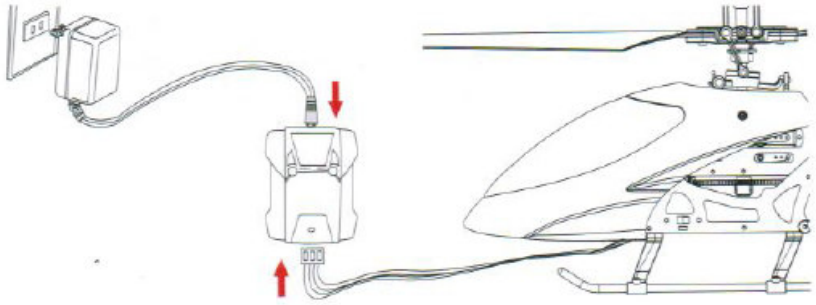
TO CHARGE THE FUSELAGE BATTERY:

Charge the power battery

1.Push the helicopter switch to OFF.

2.Insert the DC 12V output plug of the adapter into the input socket of the charging case, the light on the case turns red and this indicates that power switches on.

3.Insert the three-pin plug of the power battery into the output socket, the flickering of the green light shows that the charging begins. Charging is finished when the green light is on.



Attention:

1.Make sure the adapter fits the local electricity supply.

2.The battery is overcharged if it overheats. Please stop charging immediately for it could cause damage to the battery.

3.Do not leave the battery aside when charging.

4.The advanced balance charging mode is applied to the product. Do not use other chargers on the battery in consideration of safety.

5.Recharge the battery 30 minutes after flying, because the battery temperature could be too high and charging could damage the battery.

6.Do not leave the battery in the fire in consideration of safety.

7.Do not short circuit the battery. Do not leave the battery together with tiny medal parts in consideration of safety.

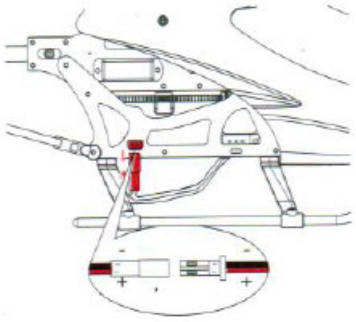
TO INSTALL THE FUSELAGE BATTERY:

Connect the battery wire with the circuit board socket carefully.

WARNING ⚠

1.If the helicopter is not in use, please push the fuselage switch to "OFF" position.

2.If the helicopter is not in use for a long time, please disconnect the battery wire from the circuit board.



-2-

ENVIRONMENT TO FLY:

1.Fly with good weather condition:

❶Do not fly with extreme temperatures.

Do not fly above 113℉/45℃, or below 50℉/10℃.

Flying with extreme temperatures may affect the performance and damage the product.

❷Do not fly in windy days.

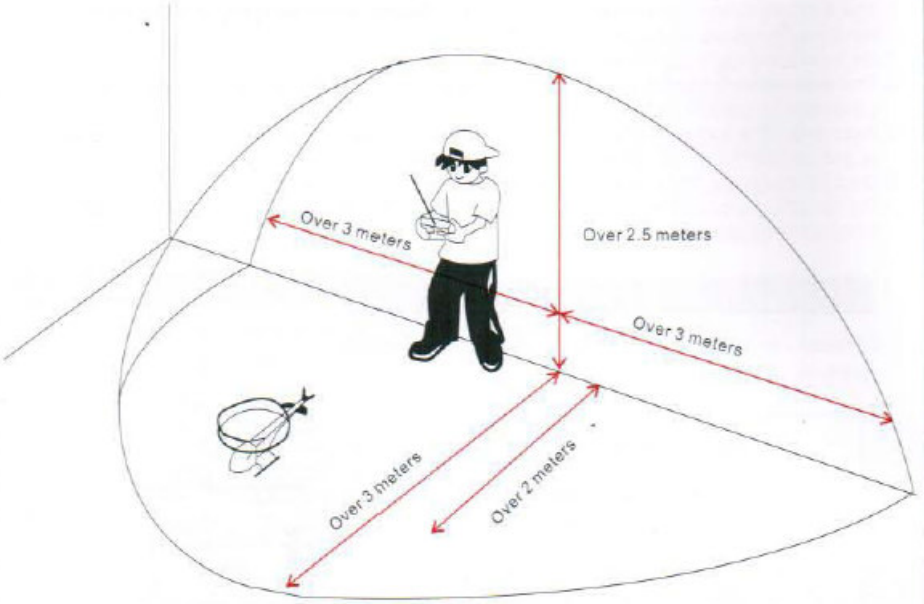
The performance and the control of the helicopter will be affected by winds.

Windy conditions may cause the missing and damage of the helicopter.

2.Select a wide-open space for flying and make sure no obstructions, animals or people nearby.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



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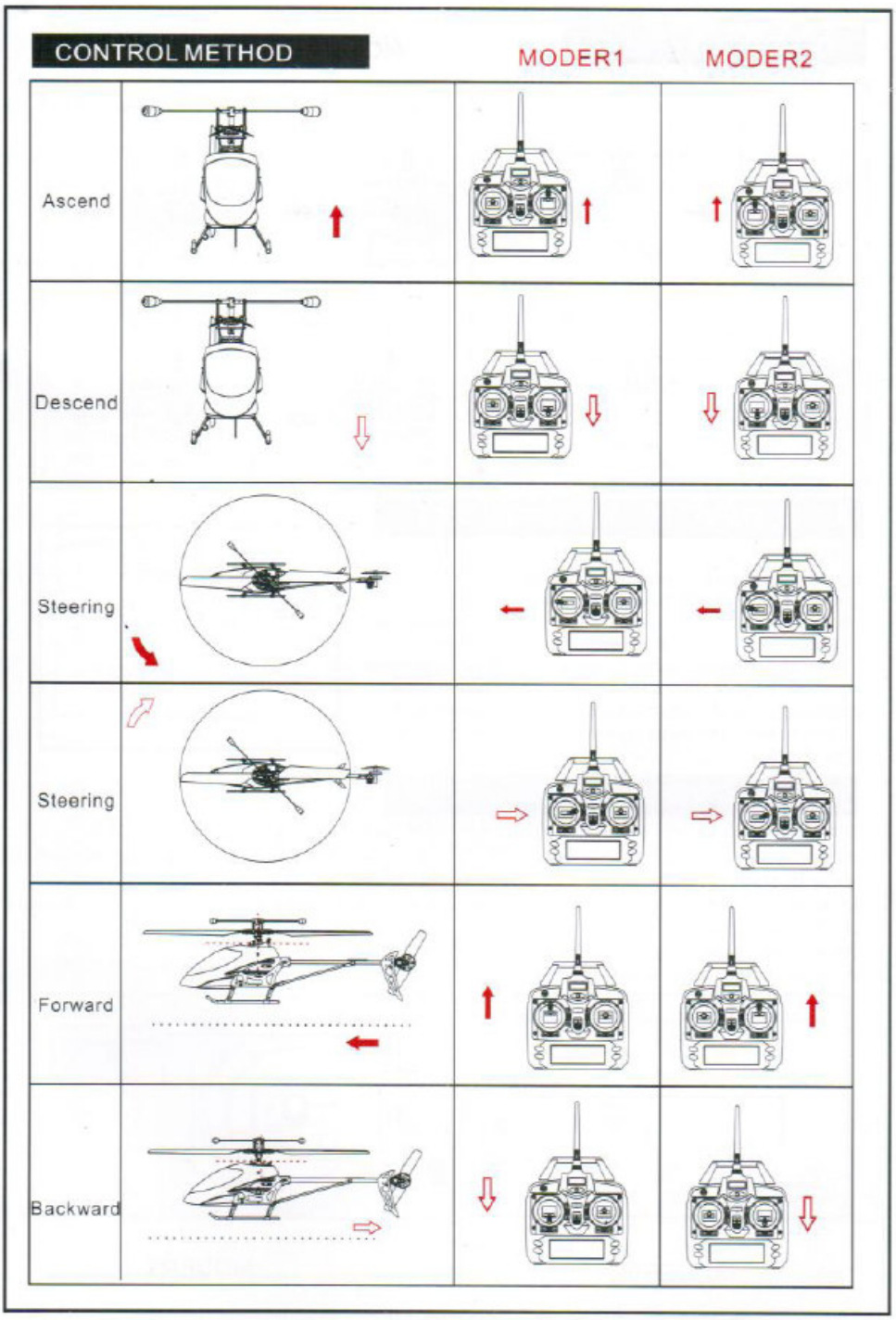
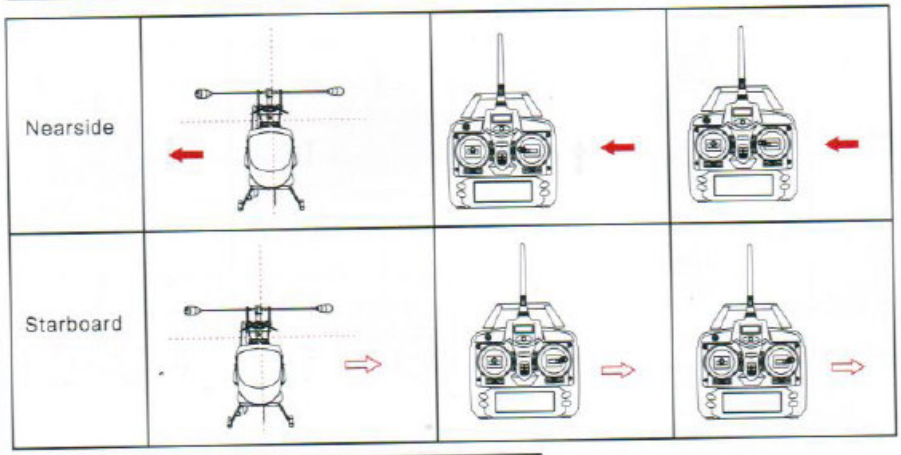

CONTROL METHOD
MODER1
MODER2
Ascend
Descend
Steering
Steering
Forward
Backward
-4-

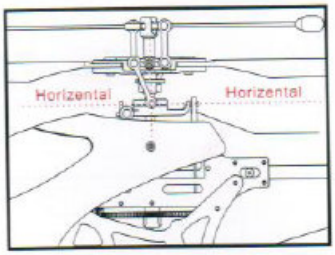
CONTROL METHOD

MODER0 MODER1



ADJUSTMENT OF SERVO PULL-ROD

When flying ,ensure throttle trimmer of the transmitterhas been regulated to the lowest position , other throttling are in position of centre .If the helicopter still lean to left or right ,please remove the canopy .and examine the balance of the cross swashplate under state of ready to fly, if not horizontal , you can regulate the servo pull-rod ,tighten or loosen correspondingly (as the picture above).Adjust both sides to keep the swashplate in horizontal and then test flight.

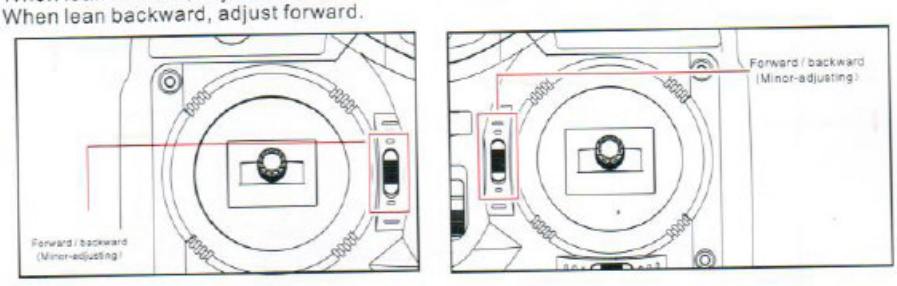


PLANE ACTION MINOR-ADJUSTING:

Slowly operate accelerator boom. After helicopter flies to 1 meter high, please slightly adjust its action if it is found to lean in different direction. All adjusting booms are auto-back while re-starting up the remote control after it was turned off.

After taking off, nose of helicopter may lean forward or backward without operating the forward and backward boom.

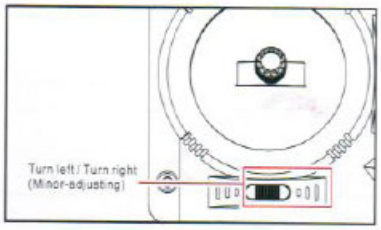
When lean forward, adjust backward.
When lean backward, adjust forward.



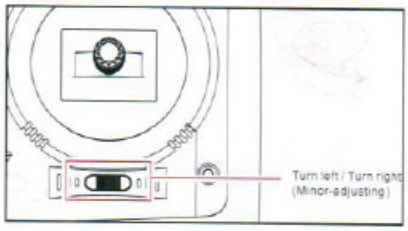
MODER0 MODER1

-5-

2.After taking off, nose of helicopter may turn to left side or right side without operating the left-turn or right-turn boom.
When turn to left side, adjust to right side.
When turn to right side, adjust to left side.

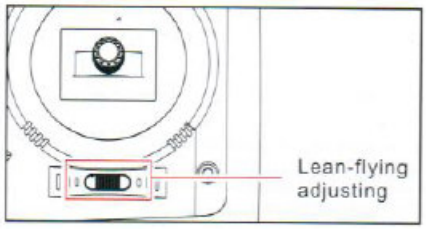


MODER1

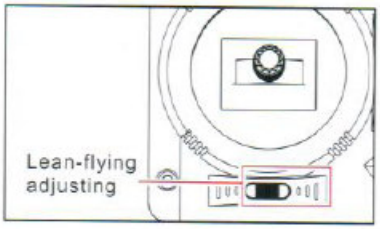


MODER2

3.After taking off, nose of helicopter may lean to left side or right side without operating the left-lean or right-lean boom.
When lean to left side, adjust to right side.
When lean to right side, adjust to left side.

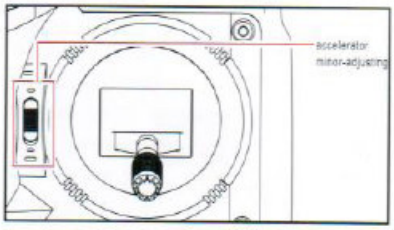


MODER1

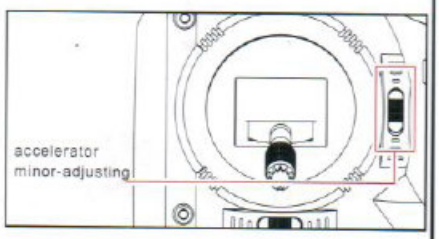


MODER2

4.After turning on remote control, the accelerator boom sits in the middle. If adjust it to upper position, this may cause the accelerator boom sit in the lowest position, and the rotor blade will still rotate. If adjust it to lower position, the rotor blade start to rotate when operate the accelerator boom too much to upper position.
When the accelerator boom sits in the lowest position, the rotor blade still rotates, please adjust to lower position.
When the accelerator boom is operated too much to upper position, the rotor blade starts to rotate, please adjust to upper position.



MODER1



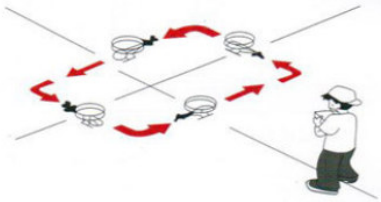
MODER2

-6-

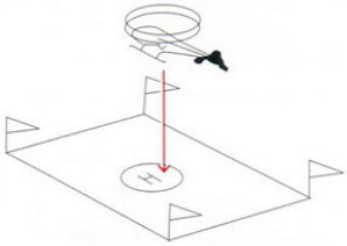
FLYING PRACTICE

To master the helicopter, please attempt the following flying practices.

Fixed-point revolving



Rectangle flying & Circular flying



Fixed-point landing

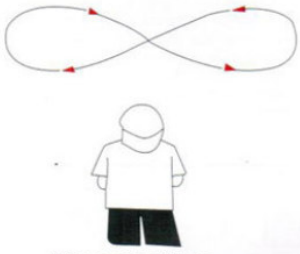


Figure eight flying

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

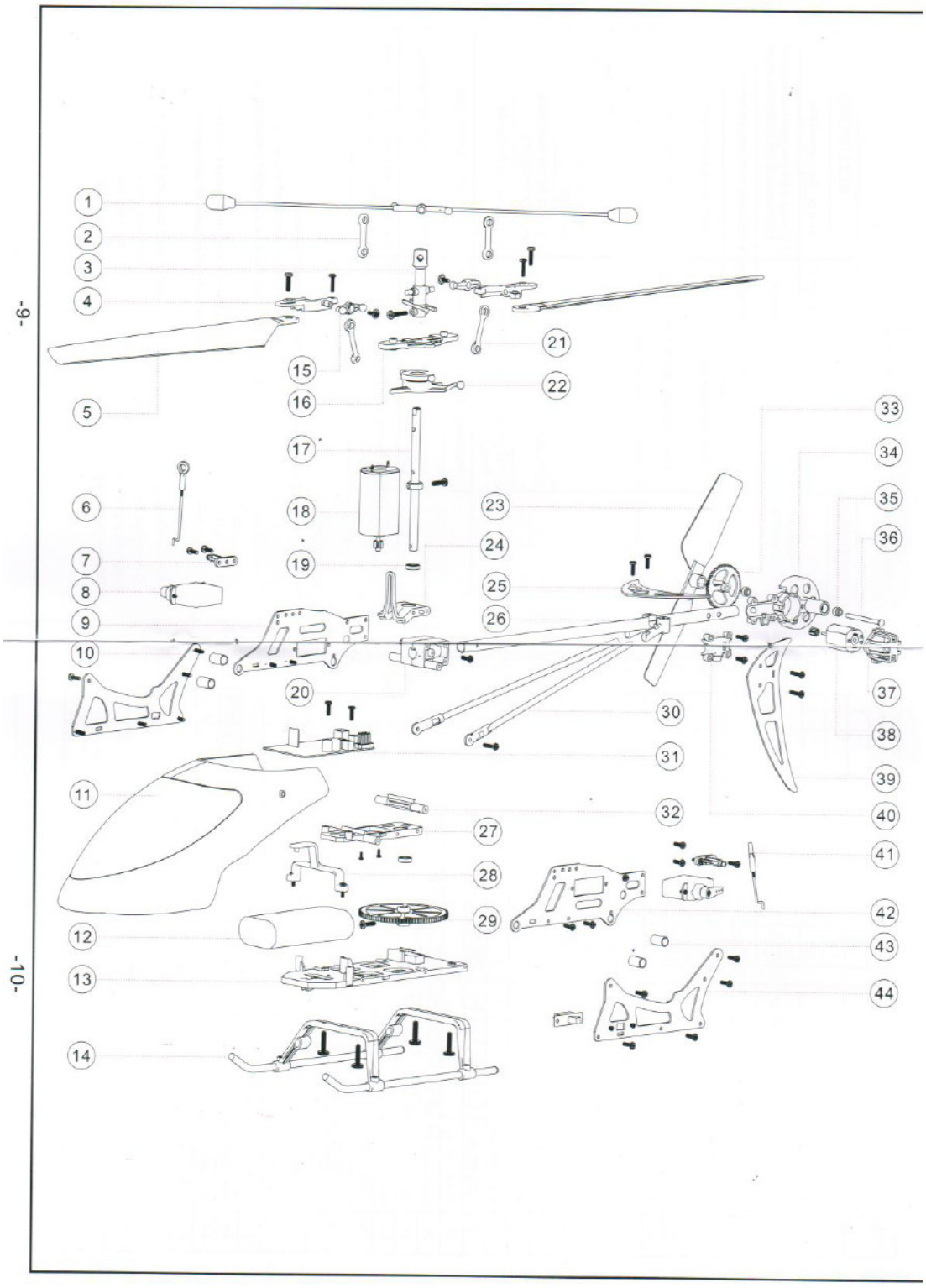
—Consult the dealer or an experienced radio/TV technician for help.

PROBLEMS AND SOLUTIONS

PROBLEMS	CAUSES	SOLUTIONS
Transmitter not working	1.The transmitter switch is on "OFF"	1.Turn on the transmitter
	2.Install the batteries improperly	2.Check with the pole indications and reinstall the batteries again
	3. Batteries are completely consumed	3.Replace with new batteries
Control failure	1.The transmitter switch is on "OFF"	1.Turn on the transmitter
	2. The fuselage switch is on "OFF"	2.Turn on the fuselage
	3. Code alignment is not successful.	3. Turn on the remote control switch and then the plane switch to make another code alignment. Turn the control rod of the throttle to the lowest position.
	4.Fly with strong winds	4.Do not fly the helicopter in windy conditions
	5.The transmitter indicator is flashing	5. replace the batteries
Ascending failure	1.The rotation of main blades is too slow	1.Push up the throttle stick
	2.The fuselage battery is well consumed	2.Recharge the fuselage battery
Landing too soon	The throttle stick is pulled down too fast	Pull down the throttle stick slowly to perform a smooth landing

PRECAUTIONS:

1.Insufficient electricity power will shorter the control distance.
2.Insufficient electricity power will lead to difficulties in taking off and ascending.
3.Fix the helicopter in time if there is any damage. Flying a damaged helicopter could cause injuries.
4.Remove the transmitter batteries if not in use for a long time in case of battery leakage.
5.Avoiding dropping and crashing the helicopter for it will lead to damages and shorten the use life.
6.Before flying, always turn on the transmitter switch first, then the fuselage switch. Otherwise, the helicopter will be confused with extraneous signal and be out of control.
7.After flying, always turn off the fuselage switch first, then the transmitter switch. Otherwise, the helicopter will be confused with extraneous signal and be out of control.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NO	Description	Dosage
1	Balance Bar	1
2	Balance Bar Connect buckle	2
3	Inner shalf	1
4	Fan clip	2
5	main blade	2
6	Sets of right steering rod	1
7	Cabin Lock	2
8	Servo	2
9	right top aluminium	1
10	right aluminium plates	1
11	Cover	1
12	7.4V battery	1
13	Main frame	1
14	Undercarriage pipe	1
15	Stabilizer	2
16	Main Blade Grip Set	1
17	principal axis	1
18	main blade	1
19	7X4X2 Bearing	2
20	tail holder	1
21	swashplate joint	2
22	swashplate parts	1
23	tail blade	1
24	principal axis holder	1
25	stabilizer aluminium piece	1
26	tail tube	1
27	main moter holder	1
28	battery holder	1
29	main motor gear	1
30	Tail rod	2
31	PCB	1
32	aluminium piece stand	1
33	tail blade gear	1
34	tail safekeeping	1
35	axes sleeves	2
36	tail gear wheel shaft	1

NO	Description	Dosage
37	tail moter cover	1
38	tail power parts	1
39	upright tail blade	1
40	erect empennage fixing component	1
41	left servo lever parts	1
42	left upper aluminium	1
43	adorning aluminium sleeve	4
44	left nether aluminium	1
45		
46		
47		
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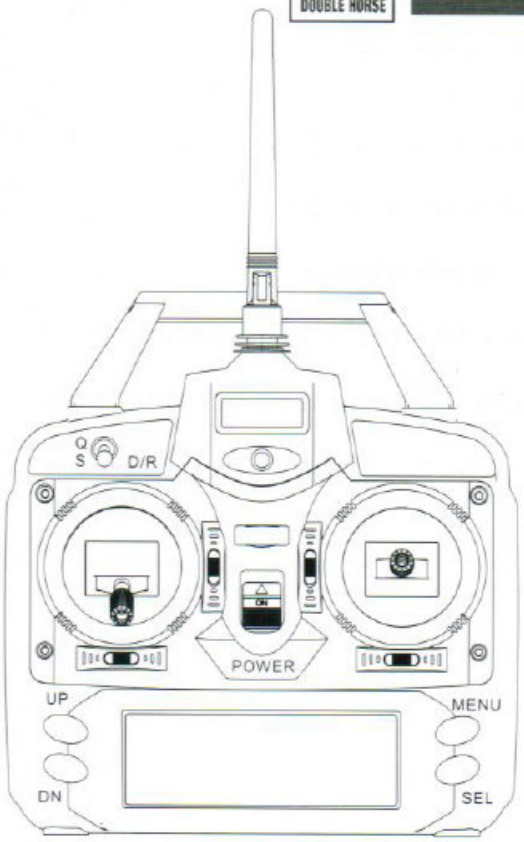
49		
50		

-11-

DOUBLE HORSE

SHUANG MA ™



INSTRUCTION MANUAL OF 8211 LCD REMOTE CONTROL

Contents

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

1. Preface

2.4GHz frequency modulation technology is adopted in 8211 remote control to realize automatic frequency alignment and automatic ID distribution, thus enhancing the anti-interference performance; LCD display presents the functions clearly, and the operation is simple and easy to understand.

(1). Important Statements

1). The product is suitable for people with the age above 14;
2). The application place must be legal remote controlled plane flying yard in the local;
3). Once the product is sold, we bear no safety-related responsibilities incurred due to operation, application, control and other related aspects;
4). If problems related to application, operation, maintenance, etc., please contact with the local dealer.

(2). Safety Cautions

1). Keep away from obstacles, pets and crowd;
When the remote controlled model is flying, it will have uncertain flying speed and state, thus presenting potential danger. During the flying, it must be kept away from people, high-rise buildings, high-tension cables, etc.. Meanwhile, avoid using the product in severe weathers like wind, rain and thunder to guarantee the safety of the flying personnel, and people and property around.

2). Keep away from moist environment;
This product is composed of many precise electronic components and mechanical components. Therefore, moisture or steam shall be prevented from entering the machine body to avoid mechanical and electronic component failures to lead to accidents!

3). Use this product in a rightful manner
Please do not refit or repair on your own; operate and use product functions within the allowable scope, and do not use the product for other illegal purposes beyond the safety order.

4). Safety operation
Please operate the remote control model according your own status and flying skills. Fatigue, poor spirit or improper operation will increase the probability of accidental risks.

5). Keep away from heat source
This product is composed of many precise electronic components and mechanical components. Therefore, it shall be kept away from the heat source and the sun. Avoid deformation or even damage caused by high temperature.

(3). Considerations before Flying

1). Make sure the battery of the remote control and the receiver is in saturated.
2). Confirm that the throttle rocker of the remote control is at the lowest position before startup.
3). The order of startup and shutdown of the power supply must be abided by before the startup. During startup, turn on the remote control switch first and connect to the power supply of the plane; during shutdown, disconnect the power supply of the plane first and turn off the remote control switch. Incorrect order of startup and shutdown may lead to the condition that the model is out of control so as to affect the safety of the flying personnel and others. Please develop a habit for correct startup and shutdown.

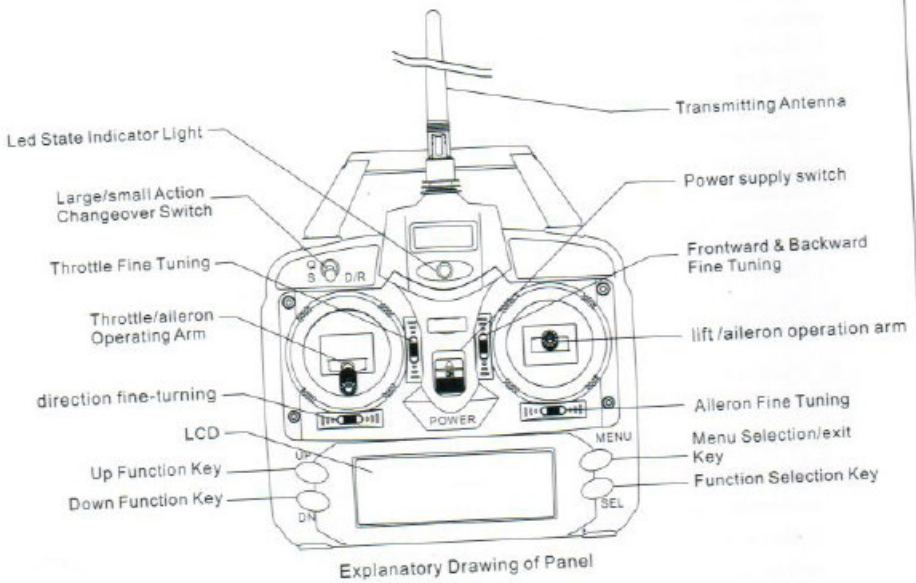
2. Product Characteristics

1. The product adopts 2.4G frequency hopping technology. It can automatically align codes and distribute ID upon startup and thus easily realize the interchange of frequency points.
2. The LCD display function menu presents direct and clear functions. The setting is simple and easy to understand.
3. The exterior design shall conform to Human Engineering. The holding is convenient. The LCD is equipped with background light and picturesque display bars are more personalized.
4. The left-hand and right-hand turning and switchover of aileron functions can be automatically realized through setting.
5. The throttle control curve adjustment is suitable for the flying personnel in different stages.

3. Product Specifications

Coder----------4-channel microcomputer system
Frequency----------2.4GHz frequency hopping
Output power----------≤10Mw
Consumption current----------≤120mA
Applicable battery---1.2VX6AA nickel-cadmium battery (7.2V 600mAh) or
1.5VX6AA alkaline cell

Introduction to Product Functions



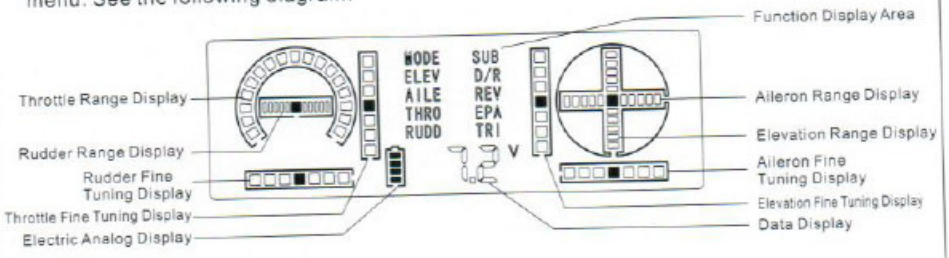
Explanatory Drawing of Panel

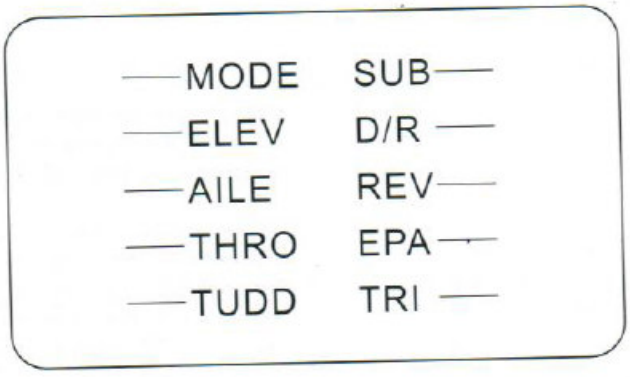
1. LED state indicator light: after the remote control switch is turned on, the indicator light blinks quickly and code alignment alarm sound begins automatic code aligning; the alarm sound indicating completion of code alignment stops, and the indicator light is on normally to enter the startup menu. When low-tension alarm occurs, the indicator light will blink slowly.
2. Big/small action changeover switch (D/R): it is used to quickly switch big and small forward/backward, side flying and turning actions.
3. Up function key (UP): adjust value upward.
4. Down function key (UP): adjust value downward;
5. Menu selection/exit key (MENU): press on this key for 2 seconds to enter the menu where various menu functions can be selected in order; long press the key for 2 seconds after the setting is complete to save and exit to startup menu.
6. Function selection key (SEL): select various functions including ELEV\AILE\THRO\RUDD after entering the menu.

Introduction to Function Menu

Startup menu

After the remote control switch is turned on, the indicator light blinks quickly and code alignment alarm sound begins automatic code aligning; the alarm sound indicating completion of code alignment stops, and the indicator light is on normally to enter the startup menu. See the following diagram:

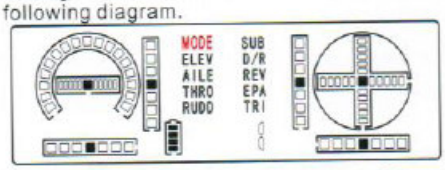


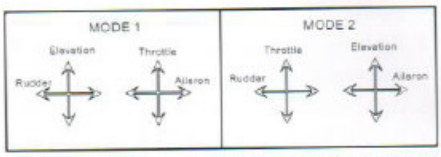


Function menu adjustment

In the startup menu, press on MENU for 2 seconds, and MODE begins to blink to enter function menu setting. After the setting is complete, press the key for 2 seconds, then save and exit to startup menu.

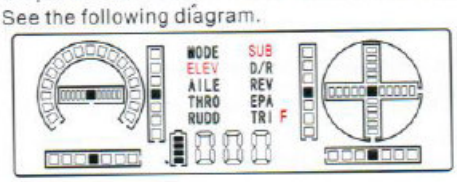
1. MODE: Mode switchover. When MODE begins to blink, UP or DN shall be pressed shortly for setting. The left-hand throttle is MODE 1 while the right-hand throttle is MODE 2. See the following diagram.

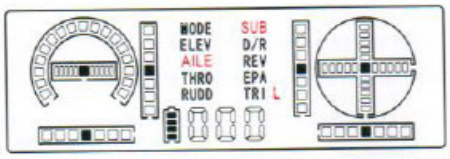




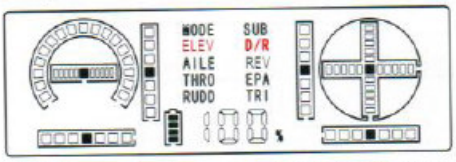
MODE value must be in line with the left-hand throttle and right-hand throttle matched with the remote control; otherwise, it may cause injury. When the remote control adopts left-hand throttle, MODE 1 is set; when the remote control adopts right-hand throttle, MODE 2 is set.

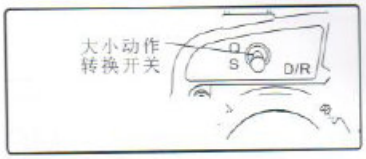
2. SUB: memory fine tuning. After entering the function menu setting, press MENU shortly. Then, SUB begins to blink. The channels needing modification including ELEV\AILE\THRO\ RUDD can be selected through the adjustment of SEL. Relevant channel will blink after selection. The value of relevant channel will be adjusted by adjusting UP or DN. (Adjustment scope: ELEV\THRO: F120~0~B120; AILE\RUDD: L120~0~R120. The default value is F0\L0.) See the following diagram.



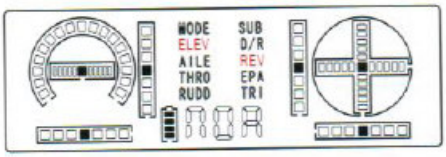


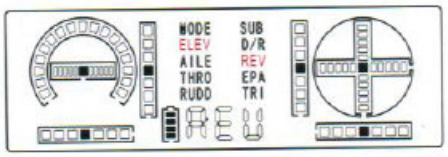
3. D/R: Big and small actions. After entering the function menu, press MENU shortly and ELEV and D/R will blink simultaneously. The channels needing modification including ELEV\AILE\ RUDD can be selected through the adjustment of SEL. Relevant channel will blink after selection. The value of relevant channel will be adjusted by adjusting UP or DN. Adjustment scope: 0-100. See the following diagram. When the big/small action changeover switch is in big action (Q), the parameters of the big action will be set; when the big/small action changeover switch is in small action (S), the parameters of the small action will be set.



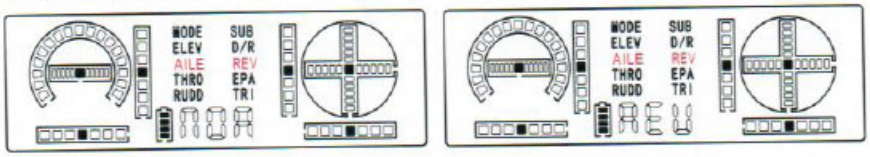


4. REV: forward and reverse. After entering the function menu, press MENU shortly and ELEV and REV will blink simultaneously. The forward direction and reverse direction of relevant channel will be adjusted by adjusting UP or DN. Adjustment value NOR: normal; REV: reverse. See the following diagram. Default: REV

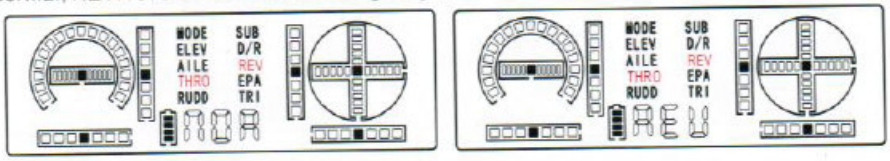




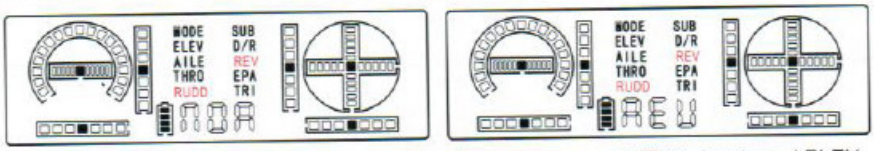
Press SEL shortly and AILE and REV blink simultaneously. The forward direction and reverse direction of relevant channel will be adjusted by adjusting UP or DN. Adjustment value NOR: normal; REV: reverse. See the following diagram. Default: REV



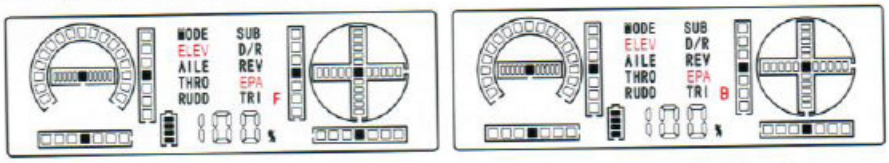
Press SEL shortly and THRO and REV blink simultaneously. The forward direction and reverse direction of relevant channel will be adjusted by adjusting UP or DN. Adjustment value NOR: normal; REV: reverse. See the following diagram. Default: NOR



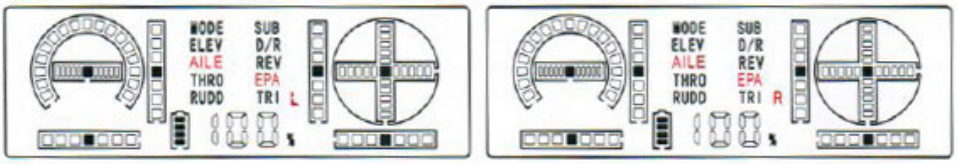
Press SEL shortly and RUDD and REV blink simultaneously. The forward direction and reverse direction of relevant channel will be adjusted by adjusting UP or DN. Adjustment value NOR: normal; REV: reverse. See the following diagram. Default: REV



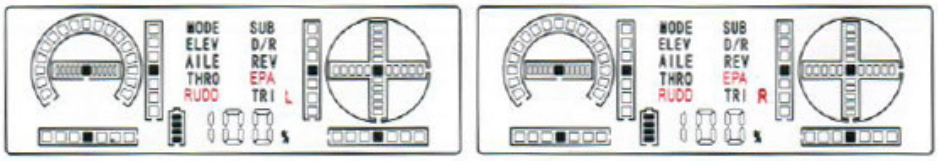
5. EPA: maximum stroke. After entering the function menu, press MENU shortly and ELEV and EPA will blink simultaneously. The channels needing modification including ELEV\AILE\ RUDD can be selected through the adjustment of SEL. Relevant channel will blink after selection. Take MODE 2 as the example. Switch the big/small action changeover switch to Gear Q. ELEV channel rocker is slid upward through the right operating arm. When the back-down direction of EPA displays F, adjust the maximum stroke for advancing; Slide the rocker downward. When B is displayed, adjust the maximum stroke for drawing back; adjust the value of the relevant channel by adjusting UP or DN. Adjustment scope: 0-120. See the following diagram. Default: 100%



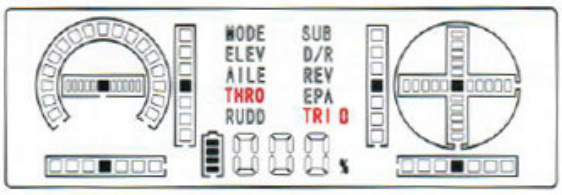
AILE channel rocker is slid towards the left through the right operating arm. When the back-down direction of EPA displays L, adjust the maximum stroke for left-side flying; Slide the rocker towards the right. When R is displayed, adjust the maximum stroke for left-side flying; adjust the value of the relevant channel by adjusting UP or DN. Adjustment scope: 0-120. See the following diagram. Default: 100%

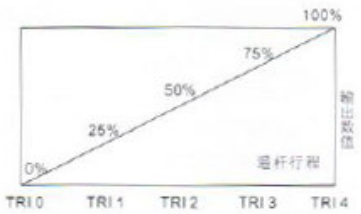


RUDD channel rocker is slid towards the left through the left operating arm. When the back-down direction of EPA displays L, adjust the maximum stroke for left-turning flying; Slide the rocker towards the right. When R is displayed, adjust the maximum stroke for left-turning flying; adjust the value of the relevant channel by adjusting UP or DN. Adjustment scope: 0-120. See the following diagram. Default: 100%



6.TRI: throttle curve. After entering the function menu, press MENU shortly and THRO and TRI 0 will blink simultaneously. Adjust the control points TRI 0 to TRI 4 of the throttle curve by adjusting SEL; adjust the values of relevant control points by adjusting UP or DN. Adjustment scope: 0-100%. See the following diagram. Default: TRI0:0%; TRI1:25%; TRI2:50%; TRI3:75%; TRI4:100%





7. Low-tension alarm: when the voltage of the battery is relatively low, the LCD analog electric quantity displays that the electric quantity is used up. LED state indicator light slowly blinks and makes □beep□ low-tension alarm sound.

Code alignment

Before code alignment, check if MODE value is in line with left-hand throttle and right-hand throttle matched with the remote control. When the remote control adopts left-hand throttle, MODE 1 is set; when the remote control adopts right-hand throttle, MODE 2 is set. After it is confirmed as consistent, the remote control switch shall be turned off.

Turn on the remote control switch and the plane switch, and the LED state indicator light of the remote control blinks quickly. The buzzer sends code alignment alarm sound to carry out automatic code alignment.

During code alignment, please turn the control rod of the throttle to the lowest position. If it is not in the lowest position, the remote control will in a non-emission protection state. The code alignment succeeds when the rocker of the throttle is turned to the lowest position.