

# EBAR



## EBAR 无副翼系统 FLYBARLESS SYSTEM INSTRUCTION MANUAL 使用说明书

### KDS MODEL

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## Safety Precautions

⚠ Remote controlled (R/C) helicopters are not toys! Main blades rotate at high speed and pose potential risk, so all operations must follow and meet common security rules and abide by rules and stipulations of local R/C models associations. You can gather the relevant information from your local model clubs or national model airplane flying contest association in your country.

⚠ Pay attention to your own safety and the safety of other people and property; never use our products in close proximity to housing areas or crowds of people. R/C helicopters could have any possible accident during their flight due to several reasons like pilots' control mistakes or radio interference, and they may lead to other severe accidents. Pilots must bear full responsibility for their actions and all caused damage.

⚠ This KDS-EBAR system without the mechanical flybar is not suitable for beginners to use and adjust! It replaces the mechanical flybar and stabilizer system of traditional remote control helicopters. It is absolutely necessary that you must have some experience and independent adjustment technologies on flying and be familiar with some terminologies, such as, cycle pitch, collective pitch, and others. Otherwise, we recommend you to conduct the first flight of helicopter with KDS-EBAR with an experienced R/C helicopter pilot.

⚠ Please read the following instructions carefully before setting KDS-EBAR, and you must allow sufficient time to carefully set and check it. In addition, special attention should be paid on the rotor head without mechanical flybar to ensure it is assembled correctly, because a slight mistake or mechanical failure may lead to serious accidents.

⚠ Radio control model is assembled by many electronic components, it is necessary to take some necessary measures to protect these fragile electronic components, such as water-proof, dust-proof and other measures. The moisture may cause the malfunction of remote control models, so they shall never fly in rain or other environments with high humidity, because they may result in the permanent radio failure.

⚠ Do not fly KDS-EBAR as soon as possible after the extreme variations in environment, such as, from a warm room to the cold outdoors; it will take at least 20 minutes for the helicopter to adapt to the new environment, and it shall not be powered on until the moisture condensed on electronic components evaporates completely.

⚠ KDS-EBAR is composed of highly sensitive electronic components, so the shock and static electricity will affect its normal operation. If your model is working in such environment, please stop the operation of KDS-EBAR, and you shall try to change another environment until problems are solved.

⚠ Please ensure there is a sufficiently large and stable power supply for the receiver of KDS-EBAR in order to control your helicopter. NOTE: the swash plate servo is connected directly to the swash plate and main rotor, it is more strenuous to operate the model than the Bell Hill mixing rotor head. The servo used by the helicopter without the mechanical flybar consumes more power, so please ensure your power system is sufficient to power it.

⚠ If you are adjusting an electric helicopter, the throttle/ pitch stick will be moved frequently during the adjustment, so the cable of brushless motor shall be removed or ESC shall be removed directly to avoid the accidental turning of motor and main blade during the adjustment.

## 1.Introduction

Dear Customers, thank you for choosing KDS-EBAR product!

KDS-EBAR is an easy-to-use three-axis gyroscope system which helps players to flexibly control the helicopter without the mechanical flybar, its higher flight performance, such as the higher efficiency, longer flight time with less power (fuel) and higher motive force, makes it more flexible to be operated, and so that it can be adjusted to adapt to operator's handling habits.

KDS-EBAR has a built-in advanced tail gyroscope which adopts the latest MEMS technology to help you to lock and control perfectly the rudder of your helicopter while helping you to easily control the spinning.

KDS-EBAR is almost suitable for any size of electric or fuel powered helicopter. It is suitable for beginners due to its stable and flexible flight performance, and is also suitable for intermediate and professional pilots due to its high accuracy.



However, KDS-EBAR is not designed for beginners! If you are lack of the operation experience of remote control helicopters, please consult with an experienced pilot and let him help you install and adjust the helicopter, and it is best to let him help you conduct the first flight.

The manual will guide you to finish the installation step by step from the correct mechanical installation to the first flight.

Please carefully read the operation manual.

You may feel it is very complicated in the first place, but after the first adjustment, you will feel that KDS-EBAR adjustment is very simple.

Now, have fun and enjoy the pleasure flight of KDS-EBAR!

## 2. Product Specifications

Input voltage: DC4. 8V~9V

Quiescent current: 50 mA

Size: 39 \* 30 \* 15mm (length \* width \* height)

Weight: 30g

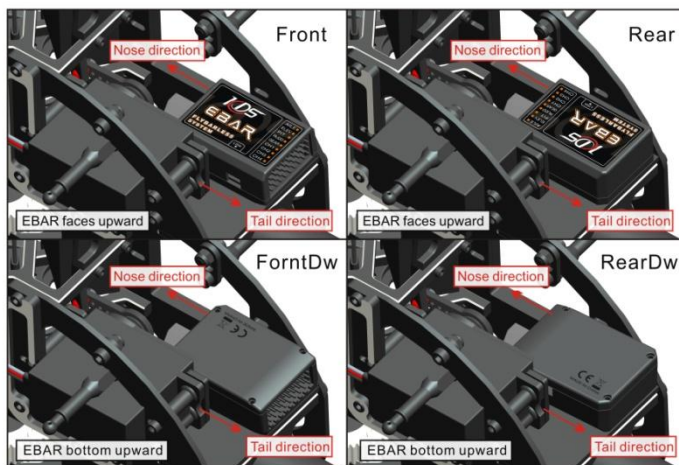
## 3.Package Contents



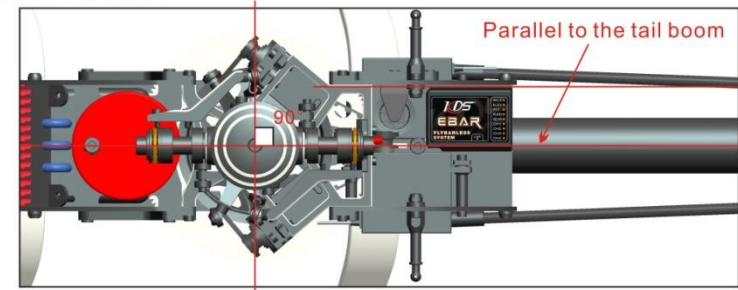
## 4.Installing and connecting

### 4.1 KDS-EBAR Installing

Please try not to install the KDS-EBAR on the fuselage with serious vibration, you can install KDS-EBAR on the position designated for the gyroscope of helicopter. There are four installing modes for KDS-EBAR, and you can select one of them according to your needs. KDS-EBAR must be fixed by the add-on special double-sided adhesive tape.

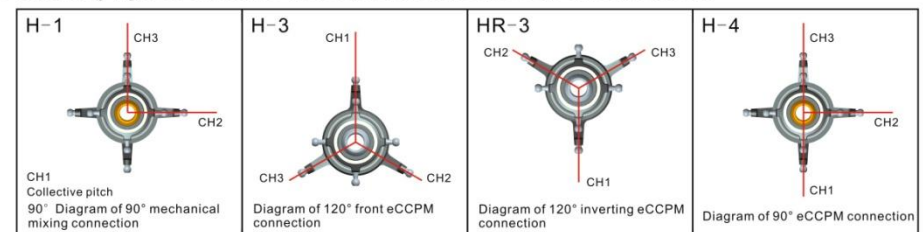


Please note there is a precise three-axis sensor in KDS-EBAR, the shell edge of KDS-EBAR shall be parallel to the tail boom during the installing, and the installing plane must be vertical to the main shaft.



### 4.2 Servo Connecting

The following figures show the helicopter with the nose up and tail down.



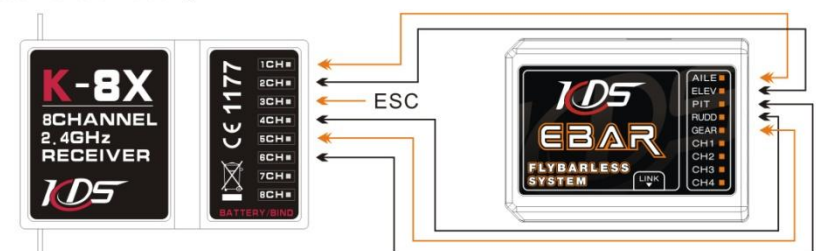
Note: the rudder servo is inserted in CH4 channel for fixation.

Note: KDS-EBAR only supports Digital Servo (such as: KDS N590, KDS N690, FUTABA S9255), please don't use the analog servo, or else your servo will be damaged. It is forbidden to insert the rudder servo into CH4 port before finishing the commission of KDS-EBAR, because the default type of rudder servo of KDS-EBAR may be not suitable for you, and then the servo may be damaged if it is inserted into CH4.

The connection cable shall not be too tight during KDS-EBAR installing, otherwise, it will transmit vibrations to KDS-EBAR.

During KDS-EBAR installing, please ensure there is enough room left for the shake of KDS-EBAR, and the magic tape also shall not be bound too tightly to cause the failure of vibration-suppressing.

### 4.3 Receiver Connecting



Now you can use the add-on plug of KDS-EBAR to connect the receiver, and the following parts must be connected including the aileron, elevator, pitch, rudder and the tail gain. In order to ensure the correct connection, please read carefully the receiver manual so that the signal cable can be inserted accurately into the appropriate channel.

About the elevator, aileron, PIT, Rudder and Tail Gain that are connected to the receiver, please ensure all connection cables are inserted correctly to KDS-EBAR; the white signal cable is closed to the top plate, the black polar cable is closed to the bottom plate; and during



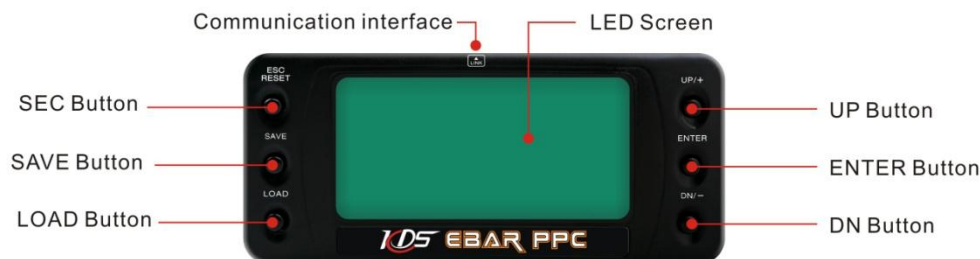
the insertion, please be careful not to distort pins, otherwise, they may cause the short circuit.

Note: we must stress once again that the servo of helicopter without the mechanical flybar runs away with more electricity than the traditional rotator head, the important connection cable between KDS-EBAR and the receiver shall be subject to the high current during the operation of BEC and servo, the quality of adopted material has a considerable impact on the security, please use the original KDS products to ensure the safety. If you want to use other cables, please note that the diameter and length of cable can affect the operational stability of the servo and KDS-EBAR, so be careful to select cables.

#### 4.4 Connecting of PPC



#### 4.5 Buttons instruction of PPC



ESC: exit from the current option without saving parameter or return to the main interface; hold it for 1 second to restore the factory settings.

Save: under the main interface, hold it for 1 second to save KDS-EBAR data.

Load: under the main interface, hold it for 1 second to read in the saved KDS-EBAR data.

UP: scroll up the menu or increase numbers or change the selected item

Enter: enter the menu or save the data

DN: scroll down the menu or decrease numbers or change the selected item

#### 4.6 Setting special information of system without mechanical flybar prepared for the remote controller

Firstly, create a new model saved in your remote controller, when using KDS-EBAR, you must disable all mixing functions of all parts including the swash plate and rudder. The traditional 90° mechanical swash plate mode is selected so that one action only corresponds to the operation of one channel.

Please ensure that all trims and neutral point trim (Sub-Trim) are usually conducted under the zero or disabled state, and all servo travels are based on 100%.

All types of swash plates of helicopter shall be set by KDS-EBAR, the remote controller must adopt the traditional 90° swash plate mode, and please try not to use the mixing swash plate (such as 120° CCPM); usually under the HELI mode, it is better to select H-1 or IServo swash plate.

The pitch curve of the remote control shall be maintained at its original state, and is generally a straight line between -100 ~ +100% (or between 0 and 100%, depending on remote controllers with different brands). Do not adjust the pitch curve before setting KDS-EBAR.

Reaffirm that all mixing functions are disabled (for example, the rudder compensation and the mixing of pitch to rudder must also be disabled). Other functions are not affected, such as the throttle curve, ESC or auxiliary functions.

Note: please remove the connection line between the brushless ESC and motor in order to adjust the electric powered helicopter, because the pitch stick / throttle stick will be moved during the KDS-EBAR adjusting; and the connection cable is disconnected in advance to avoid the danger caused by the rotation of motor during the adjusting!

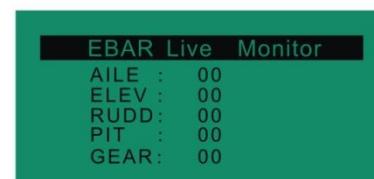
### 5. Setting processes and steps

Firstly, the remote controller is started, the PPC is connected to KDS-EBAR, then turn on the KDS-EBAR power, and then KDS-EBAR will be initialized. During the initialization, KDS-EBAR or helicopter can't be moved. At this time, the PPC displays: Connecting.... After KDS-EBAR system is ready, the servo of swash plate will move up and down twice, and PPC will display as follows:



Remark: the continuous up-and-down motion of swash plate indicates that the initialization fails, then the power shall be cut down for 5 seconds, and then it can be powered on for initialization again.

#### 5.1 Bar Monitor Menu

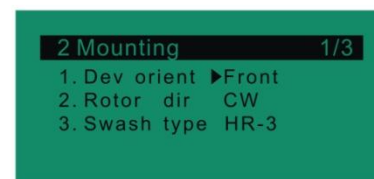


It is used to monitor the neutral points of all channels and reference values of maximum travel. This menu will display all neutral points of all channels, maximum and minimum reference value of corresponding receivers. Firstly, all sticks of the remote controller are put in the middle position, then enter the neutral point setting menu of remote controller (the name of the menu differs depending on remote controllers with different brands, such as Sub-Trim), and then the corresponding channel is adjusted to set the neutral point as 00 (GEAR can be ignored).

Finally, all channels are adjusted to set the maximum left/right and up/down travel as 100, or 120 at highest, but there is no minimum travel; and the lower number indicates the smaller servo travel, otherwise the servo travel is larger.

#### 5.2 Mounting Menu

It is used to set KDS-EBAR installation mode, rotation direction of main rotor head and type of swash plate.



##### 5.2.1 Dev orient

Select KDS-EBAR installation modes from four modes; it can be installed at the front or rear

part of main shaft to achieve the best control effect, and to minimize the vibration transmitted to the KDS-EBAR. The drift or out-of-control of helicopter during the flight may be caused by the improper operation of KDS-EBAR due to the serious vibration.

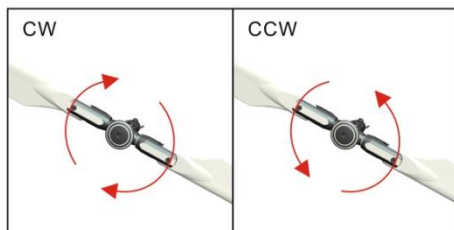
Press UP or DN to move the triangular arrow to the option, and press Enter to select this option; press UP or DN to change the value; select your needed option, and then press Enter to save it and exit; or press ESC to exit, but not save it.



### 5.2.2 Rotor dir

Select the rotation direction of rotator head; KDS-EBAR needs to know the rotation direction of main rotor to correct the flight attitude, main rotors of most helicopters rotate in clockwise (top view of helicopter), but there are also some helicopters which main rotors rotate in counterclockwise, please select correctly the rotation direction of main rotors, otherwise KDS-EBAR will fail to correct the flight attitude.

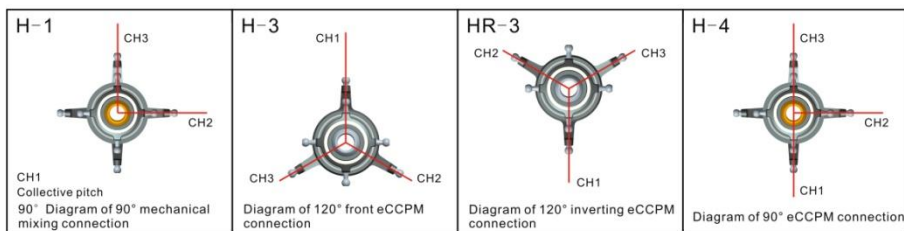
Press UP or DN to move the triangular arrow to the option, and press Enter to select this option; press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but do not save it.



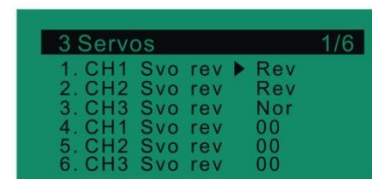
### 5.2.3 Swash type

It is used to select the type of swash plate, and the following figures show the helicopter with the nose up and tail down.

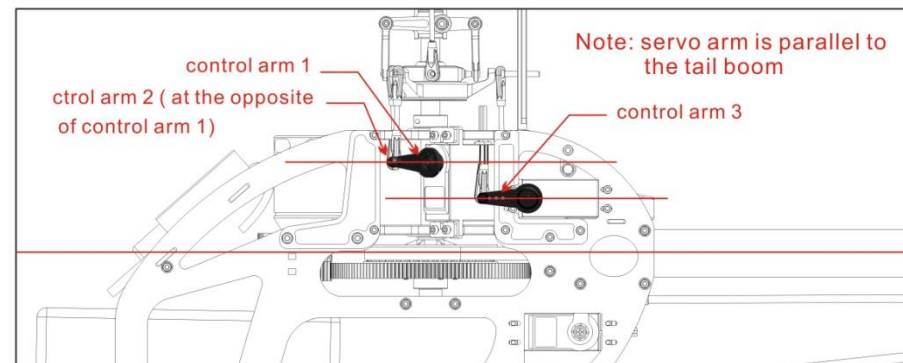
Press UP or DN to move the triangular arrow to the option, and press Enter to select this option; press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.



## 5.3 Servos Menu



It is used to set the motion direction of swash plate servo and neutral point trim; please correctly set the movement direction of each servo, and they shall be trimmed to ensure the servo arm becomes parallel with the tail pipe.



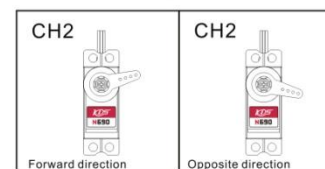
### 5.3.1 CH1 SVO rev

It is used to set the direction of CH1 servo; press UP or DN to move the triangular arrow to the option, and press Enter to select this option; press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.



### 5.3.2 CH2 SVO rev

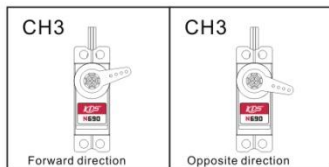
It is used to set the direction of CH2 servo; press UP or DN to move the triangular arrow to the option, and press Enter to select this option; press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.



### 5.3.3 CH3 SVO rev

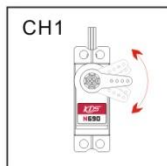
It is used to set the direction of CH3 servo; press UP or DN to move the triangular arrow to the option, and press Enter to select this option; press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.





#### 5.3.4 CH1 SVO neu

It is used to trim CH1 servo, press UP or DN to move triangular arrow to the option, then three servos on the swash plate run simultaneously to a fixed position, adjust the rudder arm of servo to make it parallel to the tail boom, if there are errors, press ENTER to select the option, and press the UP or DN to adjust its value until the rudder arm is parallel to the tail pipe; after the adjustment, press ENTER to save it and exit; or press ESC to exit, but not save it.



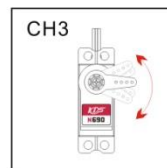
#### 5.3.5 CH2 SVO neu

Trim CH2 servo, press UP or DN to move triangular arrow to the option, then three servos on the swash plate run simultaneously to a fixed position, adjust the rudder arm of servo to make it parallel to the tail boom, if there are errors, press ENTER to select the option, and press the UP or DN to adjust its value until the rudder arm is parallel to the tail pipe; after the adjustment, press ENTER to save it and exit; or press ESC to exit, but not save it.



#### 5.3.6 CH3 SVO neu

Trim CH3 servo, press UP or DN to move triangular arrow to the option, then three servos on the swash plate run simultaneously to a fixed position, adjust the rudder arm of servo to make it parallel to the tail boom, if there are errors, press ENTER to select the option, and press the UP or DN to adjust its value until the rudder arm is parallel to the tail pipe; after the adjustment, press ENTER to save it and exit; or press ESC to exit, but not save it.



### 5.4 Controls Menu

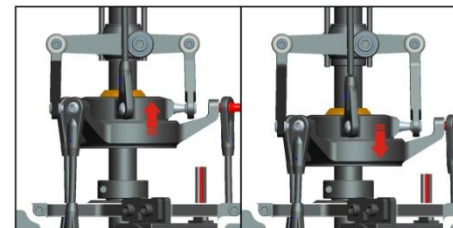
4. Controls 1/4	
1. Coll. dir	Nor
2. Coll. pitch	100
3. Cycle pitch	Zero
4. Cycle travel	100

It is used to set collective direction, collective pitch, cycle pitch and cycle travel.

#### 5.4.1 Coll. dir

In order to set the collective direction, you can select the correct pitch movement direction through the menu, and you can also make the selection through the PIT channel corresponding to the remote controller.

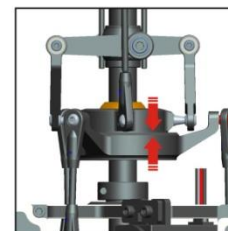
Press UP or DN to move the triangular arrow to the option, and press Enter to select this option; press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.



#### 5.4.2 Coll. Pitch

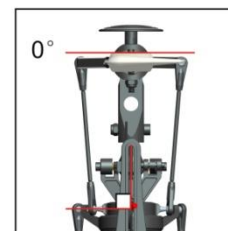
It is used to set the collective pitch at the maximum throttle, 10° to 14° pitch travel is recommended, and the maximum and minimum pitch differences can be adjusted mechanically or by the servo travel of servo.

Press UP or DN to move the triangular arrow to the option, and press Enter to select this option; press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.



#### 5.4.3 Cycle pitch. Menu

Press UP or DN to move the triangular arrow to the option, then the swash plate will run to the 0 degree point, at this time, the large main blade is adjusted to the position above the tail boom; and now it shall be 0 degree, if not, the mechanical screw rod shall be adjusted to reach 0°.



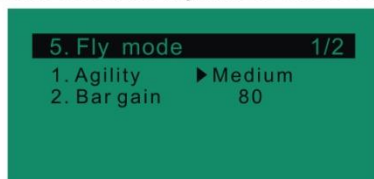
#### 5.4.4 Cycle travel Menu

In order to set the angle of large main blade, it shall be adjusted to the position above the tail boom, press UP or DN to move the triangular arrow to the option, then the swash plate will run to a fixed angle, press Enter to select the option, and press UP or DN buttons to adjust parameters change the angle of large main blade, and the recommended value is 7 degrees. After the adjustment, and press ENTER to save it and exit; or press ESC to exit, but not save it.



## 5.5 Fly mode menu

It is used to select the flight mode and set the gyro gain.



### 5.5.1 Agility menu

KDS-EBAR provides three flight modes including the Precise, Medium and Vivid. Press UP or DN to move the triangular arrow to the option, and press Enter to select this option and press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.

Precise mode: it is suitable for junior players due to its stable handling.

Medium mode: it is suitable for junior and intermediate players due to its stable and flexible handling.

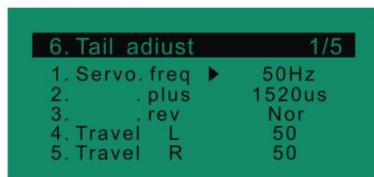
Vivid mode: it is suitable for advanced players due to its flexible operation with fast respond.

### 5.5.2 Bar gain menu

It is used to set the gyro gain of elevator and aileron; the higher the gain, the more stable the helicopter, and the more accurately the angle of left/right and forward/backward tilt; if the gain is too high, the helicopter will rebound during the flight, so please adjust the gain appropriately. Press UP or DN to move the triangular arrow to the option, and press Enter to select this option and press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.

## 5.6 Tail adjust Menu

It is used to set the working frequency, pulse width, motion direction and the left/right travel for the rudder servo.



### 5.6.1 Servo.freq

It is used to set the operating frequency of rudder servo, and most digital servos support 200Hz ~ 333HZ (e.g. Futaba S9253 S9254 S9257), but analog servos only support 50Hz. Details can be found in the servo information.

Press UP or DN to move the triangular arrow to the option, press Enter to select this option and press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.

### 5.6.2 Servo.plus

It is used to set the pulse width at the neutral point of rudder servo, and is commonly known

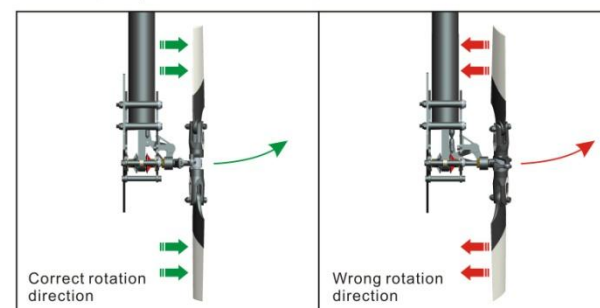
as "Narrowband / Broadband". In the market, most rudder servos are working in 1520uS, which is known as the "Broadband". 1520uS is applicable to these servos including Futaba S9253, S9254 and S9257; and 760uS with high performance which is the so-called "narrowband" servo is suitable for these servos including Futaba S9251, S9256, BLS251; Details can be found in the servo information.

Press UP or DN to move the triangular arrow to the option, press Enter to select this option and press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.

### 5.6.3 Servo rev menu

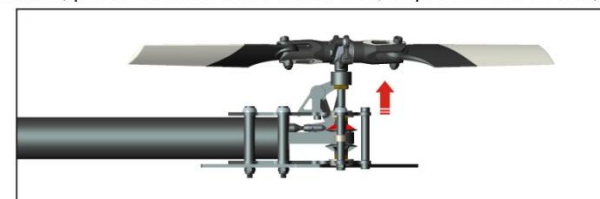
It is used to set the motion direction of rudder, as shown in figures; the tail is pushed along the direction indicated by the arrow, and if the motion direction is wrong, then the value of the item shall be changed.

Press UP or DN to move the triangular arrow to the option, press Enter to select this option, and press UP or DN to change the value; select your needed options, and then press Enter to save it and exit; or press ESC to exit, but not save it.



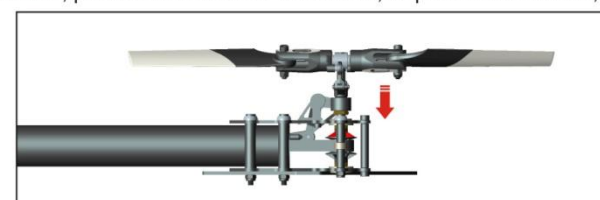
### 5.6.4 Travel L

It is used to set the left travel of servo. Press UP or DN to move the triangular arrow to the option, and press Enter to select this option; push the rudder stick to the left side, press UP or DN to change the value, and then the travel of left rudder is increased or decreased, but the maximum travel shall not go beyond the operation range of the slide; after the adjustment, press Enter to save it and exit; or press ESC to exit, but not save it.



### 5.6.5 Travel R

It is used to set the right travel of servo. Press UP or DN to move the triangular arrow to the option, and press Enter to select this option; push the rudder stick to the right side, press UP or DN to change the value, and then the travel of right rudder can be increased or decreased, the maximum travel shall not go beyond the operation range of the slide; after the adjustment, press Enter to save it and exit; or press ESC to exit, but not save it.





## 6. Restoring factory defaults

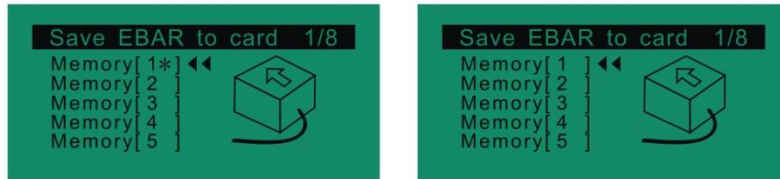
In the main interface, press ESC for more than 1 second to display the following interface, press UP or DN to choose whether to restore factory settings, select YES and then press ENTER to restore the factory default, or select NO and then press ENTER to give up the restoring.



## 7. Saving the data

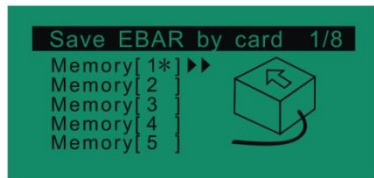
In the main interface, hold SAVE for more than 1 second to display the following interface; the set card can save 8 sets of data, press UP or DN to move the triangular arrow to the group number of data to be saved, and press Enter to save them.

Note: \* items indicate the saved data. Items without \* indicate the data group is empty.



## 8. Read-in data

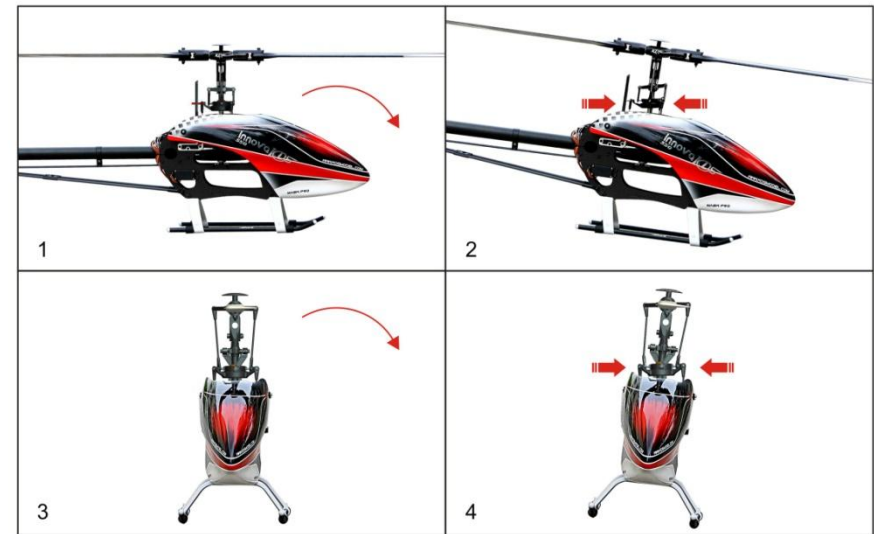
In the main interface, hold LOAD for more than 1 second to display the following interface; press UP or DN to move the triangular arrow to the group number of saved data, and press Enter to read in KDS-EBAR. After the read-in, KDS-EBAR will restart.



## 9. First flight and check

Before the power-on, place the helicopter on a stable platform; please do not move or touch it before finishing the initialization; KDS-EBAR sensor is very sensitive, and the initialization can be affected when the wind is heavy to shake the helicopter. If the wind is a little heavier, you can lay the helicopter on the ground to avoid the wind from disturbing the initializing. After the helicopter is stable, it can be powered on for the initializing. After KDS-EBAR initializing is complete, the swash plate will shake several times to indicate that the initializing is complete.

Hold the helicopter to tilt the fuselage a little, and now the swash plate shall tilt to the direction which is opposite to the fuselage. When the helicopter tilts forwards, the swash plate shall tilt backwards (Figure 2). When the helicopter tilts backwards, the swash plate shall tilt forwards. Similarly, when the helicopter tilts transversely, the swash plate shall tilt to the opposite direction for correction (Figure 4). If the helicopter flies improperly, please check the installing direction of KDS-EBAR or servo direction.



Now it is time to operate your KDS-EBAR.

Firstly, you need to find out the critical value of rudder gain for the normal flight, and then it shall be trimmed based on needs.

Select your desired flight mode, we recommend that you start your first flight in the Precise mode. Before the helicopter takes off, please ensure the swash plate is horizontal; and the tail pitch sleeve should also be closed to the central position; you can shake a little bit the rudder stick before the helicopter takes off so that the tail pitch sleeve can be located at the central position, and this way can reduce the instantaneous rudder offset correction during the take-off. Do not operate the rudder too much during the take-off in order to avoid the helicopter from overturning.

The correction of helicopter without flybar paddle starts from taking off; When the helicopter has not take off completely, KDS-EBAR correction may cause the bad flight attitude. The best way to change the attitude is to push the pitch stick quickly and accurately to make the helicopter take off quickly. Players who only operated helicopter with flybar paddle shall practice more to control the helicopter without flybar paddle proficiently.

## 10. Common Faults and Solutions

Fault phenomenon	Reasons	Solutions
KDS-EBAR fails to be initialized.	Wiring error or failed initialization of some sensor in KDS-EBAR.	1. Ensure connection cables are connected correctly, and the power is connected.
		2. Ensure the wind doesn't shake the helicopter to impact the initialization of KDS-EBAR. It is better to let the helicopter lie on its side for the initialization.
		3. It is forbidden to put the helicopter on the shaking platform for the initialization.
		4. Damaged sensors in KDS-EBAR shall be returned to the factory for maintenance.



It is failed to remotely control the direction of rudder, or it is failed to shake the swash plate of fuselage.	Wiring line error or setting error	1. Check ELEV, AILE, RUDD and PIT interface to ensure they are connected correctly.
		2. Correctly set the direction of all channels of the remote controller, or set them in Servo and Controls menu.
		3. Correctly set the installing mode of KDS-EBAR in Mounting menu, and to correctly set the direction of three servos of the swash plate.
Swash plate is completely horizontal, the trim of remote control is 0, and all mixing control functions are disabled, but the helicopter still drifts or is uncontrolled.	Helicopter vibration affects the normal operation of KDS-EBAR.	1. Comprehensive inspection on the balance of entire helicopter.
		2. Check and ensure the main spindle of rotator head is free of the deformation, the gear is fixed correctly, and the bearing is intact.
		3. Check and ensure the large main blade of main rotor is sculling, and the tail rotor is balanced.
		4. Check the tension of drive belt.
		5. Change the installing position of KDS-EBAR or replace the double-sided adhesive tape for fixation.
The rudder servo slowly or wrongly or fails to correct the rudder offset.	Select wrongly the correction direction for the rudder or the value of gyro gain in the remote controller is too low.	1. Select rightly the correction direction in the Tail Adjust menu.
		2. Increase the gain of head lock gyro with the help of the remote controller.
		3. Check and ensure the rudder is intact and the line of gain channel is connected correctly.
During the hovering, the helicopter tail rapidly sways	The gain of head lock gyro is too high or the mechanical failure.	1. Decrease the gain of head lock gyro with the help of the remote controller.
		2. Check and ensure the tie bar of rudder and the tail pitch system run smoothly.
The fuselage shakes when the aileron and elevator are operated.	KDS-EBAR is wrongly set about the gain and angle.	1. Properly decrease the value of Bar gain in Fly Mode Menu
		2. Check and ensure the Cycle Travel angle in Controls menu is adjusted to the recommended value.
The ailerons and elevator continue to shake after the swash plate and the elevator are decreased.	The power or speed of Swash plate servo is not enough, the rotor head doesn't run smoothly or there is the false displacement for some tie bars.	1. Replace faster and more powerful servo.
		2. Check and ensure the large main blade clip runs smoothly, the thrust bearing in the large main blade clip is intact, and there is no loose or false displacement in all tie bars.
During the spinning, the helicopter deflects.	Set wrongly the rotation direction of rotator head.	1. Set correctly the rotation direction of rotator head in Rotor dir of Mounting menu.

## Legal provisions

The Chinese instruction has been checked carefully. But we can not guarantee all contents are correct and complete. If you have any suggestions, please send an email to [kds@model.com](mailto:kds@model.com).

## Disclaimer

The accuracy and completeness of information provided in this manual have been checked, but there still may be the potential errors including operating errors, failure or accident caused by peripheral equipments, so we don't assume any compensation for any one of above failures.