SPARE PARTS LIST

Use belowing parts number in the parts list to order spare parts for Alpha boat.

890101	11.1V 5000mAh 40C LiPo pack
890102	7.4V 5000mAh 40C LiPo pack
890103	Red color hull only with decals and painting
890104	Yellow color hull only with decals and painting
890105	Red color hatch with decals and painting
890106	Yellow color hatch with decals and painting
890107	Water proof gasket(PK2)
890108	Out-runner brushless motor
890109	Water cooling motor mount set
890110	Motor coupler
890111	Flex shaft set
890112	Aluminum shaft tube
890113	CNC aluminum alloy rear shaft struct and plastic support set
890115	Bearing set(4 bearing+2 flange bearing)
890116	CNC aluminum alloy rudder with plastic rudder support set
890118	Back plate plastic mount for hardware installation
890119	Stainless steel turn fins and plastic stand set
890121	Stainless steel trim tabs and plastic stand set
890123	P1.4xD60mm two blade metal propeller (4S LiPo racing)
890124	P1.4xD56mm two blade metal propeller (6S LiPo racing)
890125	Water cooling silicone tube with spring
890126	Components plastic mount set(Motor/ESC/Servo/battery plastic mount)
890127	Connected rod of Rudder (with carbon tube)
890128	Display boat stand set with cusion
890129	Water cooling outlet set
890130	6mm gold plugs set for battery
92035	Water cooled 90A Brushless ESC W/ BEC
93017	water-proof rudder pushing rod tube(PK2)
950102	Water proof powerful 9kg high torque metal gear servo
930512	Velco strap set
880536	Rubber bung (PK4)
930518	J2C93 2.4GHz 2CH Transmitter
930519	J2C91R 2.4GHz 4CH Receiver

Upgrade metal parts list

12

890114	CNC aluminum alloy rear shaft struct and support set(Upgrade metal part)
890117	CNC aluminum alloy rudder and support set(Upgrade metal part)
890120	CNC aluminum alloy turn fins and stand set(Upgrade metal part)
890122	Stanless steel trim tabs and CNC aluminum alloy stand set(Upgrade metal part)



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FCC REQUIREMENT

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.

CAUTION: Changes or modifi cations to this product not expressly approved by the party responsible forcompliance may void the user's authority to operate the equipment.

Alpha ARTR Brushless EP Racing Boat

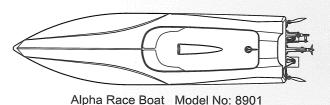






ASSEMBLY AND OPERATION MANUAL

Specifications:



Hull Length	950mm
Total Length	1060mm
Beam	260mm
Speed	80+KPH
Hull Material: Plastic with water t	ransfer printing
stickers and painting finished	

Universal Assembly:

	Water cooled Powerful Out-runner brushless Motor(included)
Radio System	2.4G 2CH Digital Proportional Transmitter(Included)
Speed Control	Water Cooled 90A Brushless ESC w/BEC (Included)
Servo	Powerful steering 9kgs high torque servo (Included)
Propeller	Two pcs of two blade metal propeller (Included)
Drive System	5mm Flex Cable Direct Drive
Battery	Two packs of 11.1V 5000mAh 40C LiPo Pack(Not Included)
OR	pr-r
Battery	Two packs of 7.4V 5000mAh 40C LiPo Pack(Not Included)
Charger	2S/3S Balance chager and adapter(Not Included)

IMPORTANT: THIS MODEL ARE CAPABLE OF OVER 80 KPH, PERSONAL INJURY OR PROPERTY

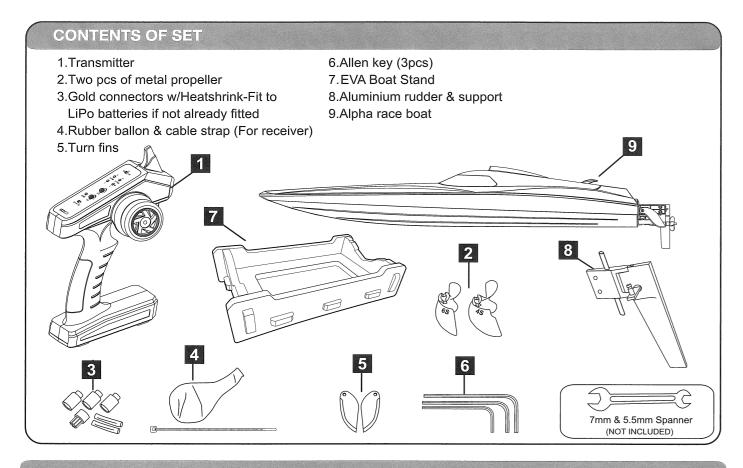
DAMAGE MAY RESULT FROM MISUSE OF THESE PRODUCTS, TAKE CARE AND ENJOY OUR

MODEL RESPONSIBLY.

www.Joysway-Hobby.com ————

ALPHA ARTR BRUSHLESS EP RACING BOAT

THESE INSTRUCTIONS SHOULD BE READ BY A SUPERVISING ADULT



REQUIRED FOR (NOT INCLUDED)

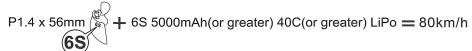
- 1) 2packs of 7.4V 5000mAh(or greater) 40C(or greater) LiPo or
- 2) 2packs of 11.1V 5000mAh(or greater) 40C(or greater) LiPo
- 3) LiPo battery charger
- 4) 5.5 and 7mm spanner
- 5) 4pcs AA alkaline batteries (for transmitter)

Note: Li-Po batteries should have Gold connectors fitted. If not supplied with Li-Po batteries, solder included Gold connectors to Li-Po battery wires noting correct polarity (+/-).

PROPELLER

Two metal propeller included in the kit bag

P1.4 x 60mm + 4S 5000mAh(or greater) 40C(or greater) LiPo = 60km/h



IMPORTANT NOTE:

2

Please don't misused the propeller to race inappropriate batteries cells, otherwise, This action will lead to motor and ESC overloaded.

Alpha ARTR Brushless EP Racing Boat

IMPORTANT

Before using this Alpha model and its radio control system, and to ensure the safety of yourself and others, it is very important that you read these instructions thoroughly and understand them.

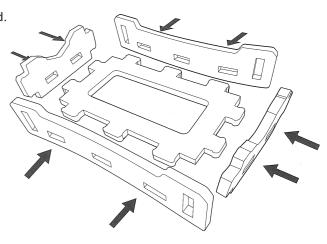
Alpha model is capable of speeds in excess of 80+km/h! Care should be taken to avoid the possibility of injury and/or property damage.

Alpha model is designed for use in fresh water only. They are not designed for use in salt water!

Alpha model is not intended for persons under 14 years of age, unless closely supervised by an adult.

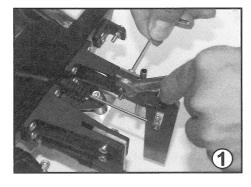
ASSEMBLING THE BOAT STAND

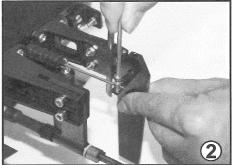
Supplied EVA boat stand, easily assembled by hand.

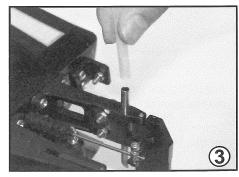


INSTALLING THE RUDDER AND PROPELLER AND TURN FINS

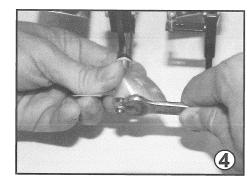
- 1) Slide the rudder assembly into its mount and secure with the cap screws and nuts provided using the included 3.0mm Allen key and a 5.5/7mm spanner. See 'ADJUSTING THE REAR SHAFT STRUT' section overleaf for details of position.
- 2) Slide the rudder connecting rod through the mount in the rudder arm and secure it using the 2.5 mm Allen Key.
- 3) Take the silicone cooling tube that exits the right rear side of the hull and push it onto the water inlet nipple on top of the rudder.
- 4) fit a propeller to the propeller shaft and secure with the intended nylon nut. Do not overtighten as the nylon insert will prevent the nut from accidentally working loose!
- 5) Install adjustable turn fins on the turn fins stand using 3.0mm allen key and 5.5/7mm spanner. The optimum angle of adjustment is 45 degrees to the hull.

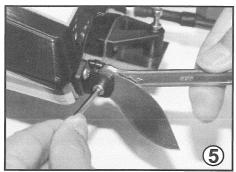


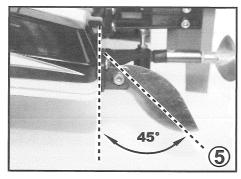




Alpha ARTR Brushless EP Racing Boat

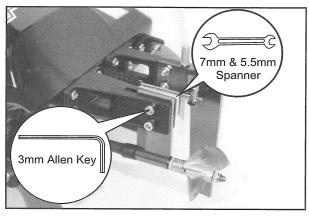


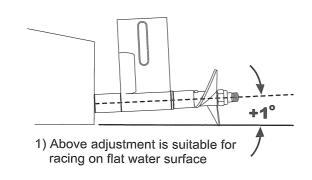


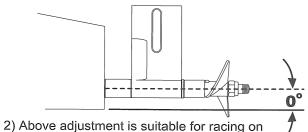


ADJUSTING THE REAR SHAFT STRUT

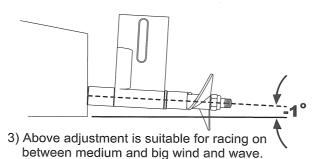
The position of the rear shaft strut to the hull will have an effect on the way your boat performs.







between light and medium wind and wave.



IMPORTANT NOTE:

- 1. It is not suitable to race boat in too strong wind and wave.
- 2. Model can achieve high speed, must slow down when steering.

Adjusting the rear strut to a higher position will increase top-end speed, but reduce steering response and could cause cavitation (unwanted vibration) if excessivley adjusted, which can cause harm to the motor and ESC. It will also result in a decrease of top-end speed.

Adjusting the rear shaft down will increase steering response, but could cause the model to oversteer and reduce overall speed. This adjustment can be beneficial when running on rougher water however.

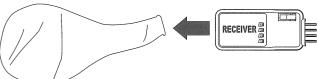
Generally, it is better to make small adjustments either way and see what effect this has on the opperation of the model.

Alpha ARTR Brushless EP Racing Boat

WATERPROOFING TIPS

You should take steps to ensure that your Alpha model and its radio control equipment are adequately protected against the possibility of water damage. Place your model's receiver inside the included rubber bag (balloon) and tie the end off with a cable tie or similar.

Ensure the propeller's flexible shaft is properly lubricated (see below) as this too will reduce the possibility of water entering the hull during operation.

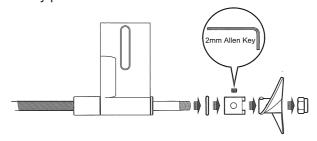


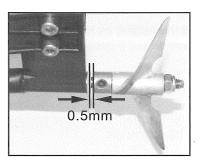
LUBRICATING THE PROPELLER SHAFT

Lubricating the Alpha model's flexible propeller shaft is vital to its smooth operation and lifespan. The lubricant also acts as a water seal, helping to prevent water from entering the hull via the propeller tube.

It is recommended that you lubricate the propeller shaft and tube every 2~3 hours of operation.

- 1) Used 2.0mm allen key to loose the set screw on motor coupler.
- 2) Next, remove the propeller nut, propeller and nylon washer. The flexible shaft shroud can now be pulled off the end of the flexible shaft.
- 3) Lubricate the flexible shaft and shroud with waterproof marine grease and re-install. Re-installation is the reverse of the disassembly procedure.





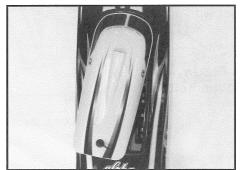
IMPORTANT NOTE:

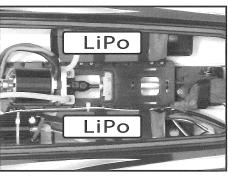
It is very vital that leave 0.5mm gap between nylon washer and propeller support. Neglect to do this will lead to overloaded.

INSTALLING BATTERY PACKS IN ALPHA MODEL

(Model should be placed on its supplied boat stand with the transmitter switched 'ON')







- 1) Remove the Alpha model's upper deck by rotate the plastic lock at its rear section.
- 2) Insert battery packs into the hull as shown below and secure with the hook and loop strap inside the hull.
- 3) Attach the battery pack's connectors to the matching connectors in the model. Do not force them together they only attach one way!
- 4) Re-position the upper deck, securing with the plastic lock.

Attention: Before replacing the Alpha model's upper deck, check to ensure that the water-cooling tubing that connects to the motor is not obstructed or kinked, as this can cause the motor and speed controller to overheat and potentially burn out.

Note 1: Alpha models will typically run for around 7 minutes on fully charged Li-Po battery packs, although this will vary depending on the type and capacity of Li-Po packs you choose. As soon as you notice a drop off in speed you should bring the model back to shore or control may be lost.

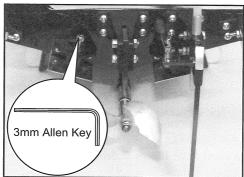
Note 2: If you want to run your Alpha model for extended periods, you can purchase additional Li-Po battery packs. However, continuous running of the model will generate high heat levels which will lead to premature wear of the brushless motor. Once your Li-Po battery packs are exhausted, we recommend that you let the model cool down for 5~10 minutes before installing fresh ones.

TRIM TABS

Your Alpha model features an adjustable trim tab. Trim tabs allow the boat to operate at its optimum hull-to-water configuration and enable you to adjust the hull for best operation in differing conditions from flat calm to choppy water. It can also be used to adjust when the boat leans (lists) to one side when moving and act like an adjustable wing which allows the boat to get up on plane at slower speeds, which is more efficient.

To adjust the trim tab, you only need to turn in or turn out the adjusting screw (using the included Allen key) and lock off the setting by tightening the included nut. The more you screw in and extend the trim tab, the more the boat's bow (nose) will be pushed towards the water.

Note: Trim tabs are factory-set level with the bottom of the hull, or zero degrees. Adjustments should not be made no more than 3 degrees, or performance/control will be adversely affected. Make small adjustments at a time and see what effect this has on performance.

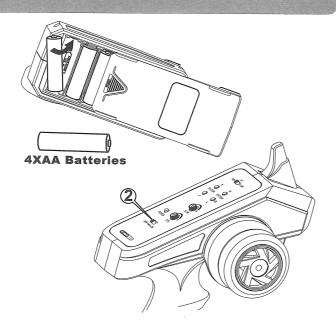


INSTALLING TRANSMITTER BATTERIES

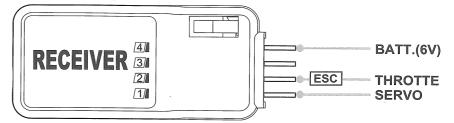
NOTE: The transmitter is not water resistant and should never come in contact with water.

1.Install four fresh "AA" batteries.Follow the diagram located in the bottom of the battery tray for prope battery orientation.

2.Turn the transmitter "ON". The battery light should glow bright RED.



RECEIVER CONNECTION DIAGRAM

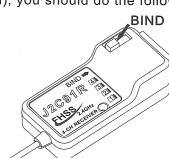


Note: If ESC with BEC function, no need to connect battery with receiver.

TRANSMITTER/RECEIVER BINDING

The binding process effectively ties the transmitter and receiver together. Under normal circumstances, both items are supplied like this from the factory. If, however, you find that your transmitter and receiver are not bound(receiver's red LED is on), you should do the following:

- 1) Switch "ON" the transmitter.
- Switch "ON" the receiver by connecting battery to ESC, and ESC cord is plug into Receiver properly(Note:ESC has BEC function).
- 3) Press down the "BIND" button on the receiver, the receiver's green LED will be on to indicate that binding has been successful and the receiver will now accept commands from the transmitter.



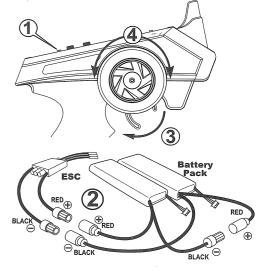
- Note 1: During binding process, transmitter and receiver should be no more than one meter apart and no other similar devices should be within 10 meters.
- Note 2: if the green light flashing, showing the binding failure, please do again as above indication.

GETTING READY TO USE YOUR ALPHA MODEL

(Model should be placed on its supplied boat stand)

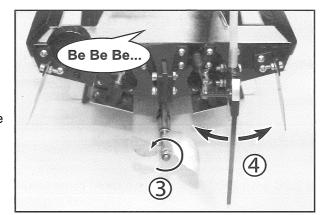
Checking the radio system

- 1. Always turn the power "ON" to the transmitter before connecting the batteries with the ESC.
- 2.Plug the battery into the ESC plugs and listen for three continuous >Be<>Be< . (Signal noise of auto etected ESC)



Alpha ARTR Brushless EP Racing Boat

- 3. Pull the throttle & motor rotate in anticlockwise direction, your motor is now armed and ready for operation.
- 4. Check the direction of the rudder, the trailing edge of the rudder should turn right when right input is given. Conversely, when left input is given, the trailing edge of the rudder should turn left.



AFTER USE

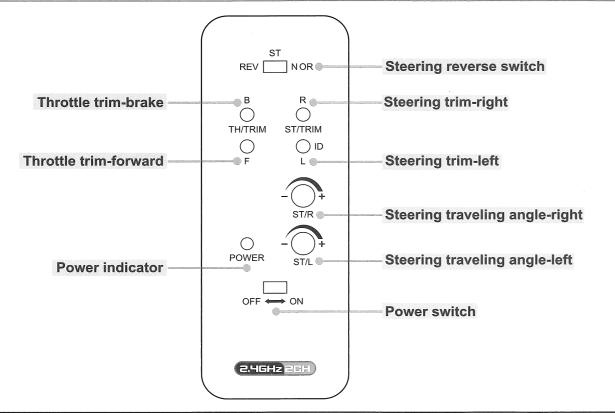
8

- 1) When you have finished using your Alpha model, you should first switch 'OFF' the model (disconnect the Li-Po battery packs), then switch 'OFF' your transmitter.
- 2) Remove all batteries from the transmitter and model
- 3) Leave the Alpha model's upper deck off to allow moisture to evaporate. Also, temporarily remove the receiver from its rubber bag. Ideally, place the model in this way in a warm and dry place, like an airing cupboard, until you are sure it is dry and then store it away.
- 4) Periodically grease the Alpha model's propeller shaft and tube as this will reduce wear and also help prevent water from entering the hull.

ESC (ELECTRONIC SPEED CONTROLLER) CALIBRATION & SPECIFICATION

NOTE: Please read separatedly supplied ESC instruction manual.

TRANSMITTER INTRODUCTION



Alpha ARTR Brushless EP Racing Boat

EPA ADJUSTMENT

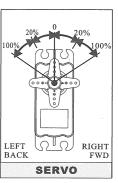
Function

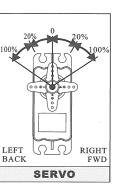
Use this when performing left and right steering angle adjustments. End Point Adjustment (EPA) adjusting value range: 0%-100%

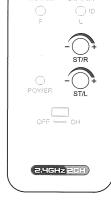
Setting

- 1. Steering (right side) angle adjustment Rotate "ST/R" knob to the left end point means minimum value 0%, right end point means maximum value 100%.
- 2. Steering (left side) angle adjustment Rotate "ST/L" knob to the left end point means minimum value 0%, right end point means maximum value 100%.

Steering reverse switch







REV NOR

CAUTION:

When adjusting this function, make sure the direction is in agreement with the boat direction, you can adjust by the STEERING "REV-NOR" button.

TRIM ADJUSTMENT

Steering trim

Adjust "ST/TRIM" "R/L" so that rudder is centered prior to operation, you may adjust this control to make the boat run straight during operation.

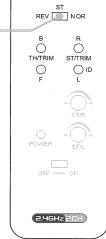
Steering reverse switch

CAUTION:

When adjusting steering trim, make sure the direction is in agreement with the boat direction, you can adjust by the STEERING "REV-NOR" button.

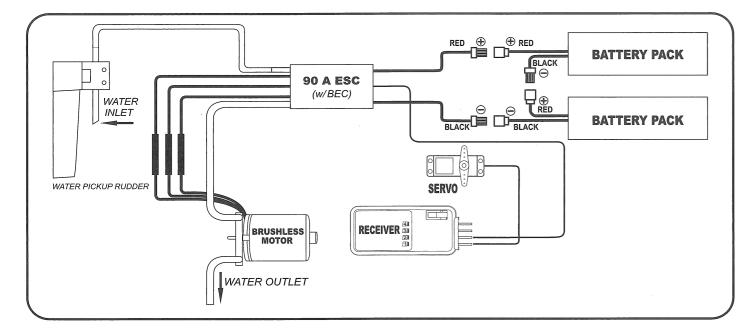
Throttle trim

Adjust "TH/TRIM" "B/F" to stop propeller from turning while the throttle trigger is in the neutral position.



CIRCUIT & COOLING SYSTEM DIAGRAM FOR ALPHA BOAT

Each Alpha model is supplied from the factory with radio and cooling systems already set up. However, if you have cause to maintain, repair or replace parts in your model in the future, this chart can be of help when it comes time to re-installing/re-connecting everything.



Alpha ARTR Brushless EP Racing Boat

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CAUTION!

Please observe the following warnings

DURING OPERATION

- Ensure that all batteries are correctly installed and that the Li-Po battery packs are fully charged.
- Do not touch moving parts during operation, especially the propeller.
- If you lose control of your Alpha model, never wade into deep water or water with strong currents to retrieve it. First, hold the transmitter as high as you can to try to re-establish control. If this does not work, find another way to move closer to the model, but do not endanger yourself in the process!

CARE WITH RECHARGEABLE BATTERIES (THE LI-PO BATTERY PACKS)

Care must be taken when handling rechargeable batteries (the Li-Po battery packs) to avoid the possibility of injury and/or damage to property. Do not short circuit, disassemble or incinerate rechargeable batteries. It is very dangerous to disregard these warnings.

GENERAL INFORMATION FOR THE SAFE OPERATION OF YOUR ALPHA MODEL

Please follow these simple rules to ensure safe operation and gain the maximum enjoyment from your model.

- This model is not a toy and should not be treated as such. Children under 14 years of age should not use this product unless closely supervised by an adult.
- Because this model is operated by radio control, it is important to ensure you always use fresh and/or fully charged batteries. Never allow the batteries to run low or you could lose control of the model!
- Never run your model in a public space where it might upset or endanger people or wildlife.
- Immediately switch 'OFF' your model and transmitter if you see lightning or hear thunder. Never use your model in the rain.

Do not dismantle or tamper in any way with this R/C vehicle and its transmitter. The manufacturer and distributor will accept no responsibility, expressed or implied, for accidents or injuries caused as a result of disassembly, modification and/or usage against the Instructions for this product.

Tampering or modification will also invalidate the guarantee.

TROUBLE SHOOTING

Check using the chart below before returning your Alpha model for repair as many problems can be easily solved.

PROBLEM	CAUSE	REMEDY
Model will not move	No batteries in transmitter/model Battery installation is incorrect Weak batteries in transmitter Weak batteries in model	Install batteries Install batteries correctly, checking polarity (+/-) Replace/recharge batteries Recharge Li-Po battery packs
No control of model	Weak batteries in transmitter	Replace/recharge batteries
Limited radio range	Weak batteries in transmitter	Replace/recharge batteries

- The water-proof level of the "SEAKING V3 RTR" series has reached IP67, indicating the speed controllers can operate directly use them without taking any precaution measures. (Note: please fully dry all the connectors after use for avoid The Copper Bar Heat Conduction technology (exclusively patented), water-cooling system and MOSTET with resistance, all these greatly upgrade the over-current withstanding capability and reliability of the speed controllers. Branchnew software specially designed for RC boats, featured by excellent start-up & acceleration performance. In add adaptability to sudden bad change caused by the hull blumping in sailing.

 2 running modes: "Forward Only" and "Forward and Backward" for different applications.

 Multiple protections like low-voltage cutoff protection, over-heat protection and throttle signal loss protection, the designed for RC boats are reasonable and personalized.

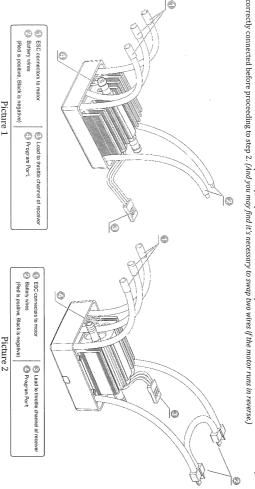
 8 options for timing adjustments, compatible with most kinds of sensorless brushless motors. ate in water and users can voiding rustiness.)
 h extremely low internal
- addition, it has

Wodel	Current (Continuous / Peak)	BEC Output	Lipo (s)	Weight	Water CoolingPipe Inside / Outside (mm)	Size L*W*H (mm) Incl. the Water Cooling Pipe	Applicable
SEAKING-30A-V3-RTR	30A / 180A	Linear Mode , 6V/1A	2-38	419	Ф2.0/4.0	54.5*28.3*18.7	Length<45cm
SEAKING-60A-V3-RTR	60A / 360A	Linear Mode , 6V/2A	2-38	93g	Ф2.0/4.0	60.5*38.5*25.6	Length<70cm
SEAKING-60A-V3.1-RTR	60A / 360A	Switch Mode, 6V/3A	2-38	95g	Ф2.0/4.0	60*38.5*25.6	Length<70cm
SEAKING-90A-V3-RTR	90A / 540A	Switch Mode , 6V/5A	2-68	140g	Ф3.0/5.4	68.5*39.4*32	Length<95cm
SEAKING-120A-V3-RTR	120A / 720A	Switch Mode , 6V/5A	2-68	150g	Ф3.0/5.4	68.5*39.4*32	Length<110cm
SEAKING-180A-V3-RTR	180A / 1080A	Switch Mode , 6V/5A	3-6S	207g	Ф3.0/5.4	72*48*36.6	Length<130cm
SEAKING-130A-HV-V3-RTR	130A / 720A	Without BEC	5-12S	1829	Ф3.6/5.0	88*58*23	Length<150cm

[Begin to Use a New ESC]

Warning! For safety, please always keep the propeller away from human body or any otner objects.

STEP 1. Connect the ESC, motor, receiver, battery and servo according to the wiring diagram below (Picture 1&2). Three wires 0 from the ESC to the motor have no polarity, so you can connect them freely. Please recheck all the connections and ensure they a correctly connected before proceeding to step 2. (And you may find it's necessary to swap two wires if the motor runs in reverse.)



Picture 1

Picture 1

Picture 2

Picture 3

Picture 3

Picture 4

Picture 4

Picture 4

Picture 5

Picture 5

Picture 5

Picture 5

Picture 6

Picture 6

Picture 6

Picture 6

Picture 7

Picture 7 battery

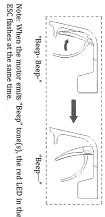
STEP 2. Throttle Range Calibration
Attention! Users need to recalibrate the throttle
like the Throttle Trim, D/R, EPA or other paramet using a new ESC or a used transse the ECS cannot work properly

2.1 Turn on the transmitte the knob to the maximum) For FubabaTM radio ransm "NOR". We strongly recom "Neutral Position" to ensur Note: If the transmitter h please turn the throttle channel like "D/R", "EPA" and "ATL" to 100% (for transmitter without LCD, please turn the throttle "TRIM" to 0 (for transmitter without LCD, please turn the corresponding knob to the neutral position). Ind similar ones, the direction of throttle channel shall be set to "REV", while other radio systems shall be set to activating the "Fail Save" function of the radio system and set it (F/S) to "Output OFF" or set its value to the total be stopped when there is no signal received from the transmitter.

ABS brake function, please disable it.

2.2

- If you are using a pistol transmitter: a) Pull the throttle trigger to the top forward position (/full throttle), connect the ESC to the battery pack; 2 seconds later, a row of "Beep- Beep-" can be heard, that means the full throttle position has been confirmed.
- b) Release the throttle trigger to the neutral position, a steady and long "Beep—" can be heard, that means the neutral position has been confirmed.



If you are using a stick transmitter:

a) Push the throttle stick to the top position (/full throttle), connect the ESC to the battery pack; 2 seconds later, a row of "Beep-" tone can be heard, that means the full throttle position has been confirmed. b) If you want to set the throttle range to half-range mode, please move the throttle stick to the neutral position, a steady and bng "geep—" can be heard that means the neutral position has been

you want to set it to **full-range mode** (In such a case, the boat you want to set it to **full-range mode** (In such a case, the bottom mnot run backward), please pull the throttle stick to the bottom sition, a steady and long "Beep—" can be heard, that means the ottom position has been confirmed.

"Beep- Beep-"
Note: When the motor emits "Beep" to bilinks at the same time.
Note: If you want to run the boat forwathe throttle range to half-range mode.

"Beep"-" "Beep" tone(s), the i vardly and reversely, you in the must set ESC

The Normal Start Process Move the throttle stick to the

- (the
- Connect the battery pack to the ESC.

 The motor emits several "Beeps" to denote the cells number in your Lipo battery pack. Please make sure that the nu one "Beep" tone is emitted, that means the "Low-voltage Cutoff Threshold" (Please refer to the "Programmable Items' is set to "No protection", and it's only allowed when you are using a NIMH battery pack. Please never use the "No pro battery, otherwise the Lipo battery will be damaged irreversibly.

 One second later, the motor emits a steady and long "beep—" to confirm the zero-speed position of the throttle. If the position, the motor will emit the continuous "beep-beep-beep." till the throttle returns to the zero-speed position. Move the throttle stick upwards, the motor starts spinning and speeds up gradually.
- e. If the ottle is not at tha

L Programmable Items <i>Note2: The italics in the following form are the default settings.</i>	ns Note2: The	italics in the follov	wing form are ı	he default sett	ings.			
Programmable Items	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8
1. Running Mode	Forward Only	Forward and Backward						
5	Auto Calculato	28	38	4S	58	68		
Z. Libo cells	Auto Calculate	58	68	88	108	128		
3. Low-voltage Cutoff Threshold	No Protection	2.8V/Cell	3.0V/Cell 3.2V/Cell 3.4V/Cell	3.2V/Cell	3.4V/Cell			
4. Timing	0.00°	3.75°	7.50°	11.25°	15.00 °	18.75°	22.50°	26.25°

- Running Mode: With the "Forward Only" mode, forward and reverse, which is suitable for some backward.

 Lipo Cells: We strongly suggest setting the "Lipo the boat can only go forward; specially-designed boats, Plea nd line of Lipo ce thile in the "For read the user celk is for SEAKING-130A-HIV-V3-RTR
 orward and Backward" mode, the boat can go
 ar manual of your boat to check if it can run
- 2. setting the "Lipo Cells" sure the battery

June or "SEANING V3 RTR" Series Brushless Speed Controller for Boat ye the moment it is connected to the controller, then the ESC counts the cells number. For example, if the battery voltage is lower than it will be identified as 25 Lipo battery. In order to ensure the ESC calculate the cells number correctly, please always use a fully charged by to connect the ESC. If the battery is not fully charged or partly discharged, then the "Auto Calculate" may get a wrong result. In the startup process, the motor will emit several "Beeps" to indicate the Lipo cells number; it is helpful for you to check if it is stent with the actual cells number in your battery pack. If you often use Lipo battery packs with the fixed number of cells, then we jly suggest you to set the "Lipo Cells" to a fixed value instead of using the "Auto Calculate", as this can ensure the low-voltage cutoff thon works normally all the time.

[Multiple Protections]

1. Low Voltage Cutoff Protection: output and stop working, then the

: when the battery he Red LED blinks s

voltage falls below the preset cutoff threshold for over 1 sec slowly. The controller can be reoperated at the halved power

- Program the ESC with a Program Card
 Program card is an optional equipment for boat ESCs, it has 3 digital LEDs to display values, so the user interface is very intuitive. It's quite easy to program ESCs with this read its operation manual y the programmable is small equipment. I items and corresponding para For more detailed information,

voltage Cutoff Threshold: This function prevents the Lipo battery pack from over-discharging. The ESC detects the battery voltage cutoff re-operated at the halved power after the throuthe returns to zero, then phase replace the battery pack as soon as possible. Ingl If you ignore the low voltage cutoff warning and keep running, the Lipo battery will be damaged irreversibly! Sow to calculate the cutoff threshold of a whole battery pack:

The cutoff threshold of a battery pack = the threshold of each cell x cells number for example, if the threshold of each cell is set to "3.2V/Cell", and the battery pack is a 3S (3 Cells), then the cutoff threshold of this attery pack is 3.2x3=9.6V.

In this programmable item or "No Protection".

zero. Overheat Protection: when the ESC temperature goes above the factory preset value (100°C or 212°F), the ESC will cut off the output and stop running, then the Green LED flashes slowly. The controller can be reoperated at the halved power after the throttle returns to zero, the output will resume if the temperature decreases below 80°C (176°F).

Throttle Signal Loss Protection: when the receiver detects no throttle signal (from the transmitter) for over 0.1 second, the ESC will cut off the output. The controller will not resume running until the signal is detected again. Hereby, we suggest users setting the no signal protection (or F/S Protection) on the Throttle channel (on the transmitter) to "Output off" or "Neutral position" to ensure that the motor can be stopped when the throttle signal is bst.

the

while pushing the throttle to the

- sly for easy observation. means the Low-Voltage
- LED Indications I
 There are two LED indicators in the ESC, a Green one and a Red one.
 When the throttle is above the zero-speed position, the Red LED will come on and the motor starts to spin; maximum position (/ full throttle), the motor runs at its full speed and both the Red & Green LEDs light up.
 When setting the throttle range and parameters of the ESC, the motor beeps and Red LED flashes simultaneous.
 Green LED blinks slowly denoting the ESC has entered the overheat protection, Red LED flashes slowly brotection is activated.

STEP 2. Select programmable After entered the programming

you will hear the followi after one kind of "Beep'

Lipo Cells

oltage Cutoff Threshold

(1 short "beeps")
(2 short "beeps")
(3 short "beeps")
(4 short "beeps")

Program the ESC with your transmitter

By 4 Steps: Enter the programming mode → Select programmable

'EP 1. Enter the programming mode
Switch on the transmitter, move the throttle stick to the top position (/full throttle).
Connect the battery pack to the ESC, wait for 2 seconds, the motor emits "Beep-Beep-" tone.
Wait for 5 more seconds, the motor emits a special tone "risis", that means the controller enters

[Program the ESC]

to "No Protection". ing: Please select the most suitable othly. Generally speaking, higher timi

timing option according to the motor you are using. The correct timing makes ng brings out higher output power, higher speed and also higher temperature.

V 11 outhernooning a		
Trouble	Possible Cause	Selution
After powered on, the motor doesn't emit any beep tone and the LED doesn't light up.	No battery voltage is inputted to the ESC or got the polarity reversed.	Check the connection between the battery and ESC, please re-solder if poor soldering exists.
	1	If the polarity is reversed, please cut off the power immediately. Otherwise, the ESC will be damaged irreversibly.
After powered on, the motor doesn't work, but the following alert tone is emitted:	The battery voltage is abnormal, or the startup temperature of the ESC is above 80°C	Check the battery voltage; Check whether the water cooling system
ne time interval	(176°F).	runs smoothly or not, or change another ESC with greater amperage capability.
Pulling the throttle trigger, while the boat goes backward	Wrongly connected the ESC and motor wires.	Swap any two wires connections between the ESC and the motor.
The boat cannot run backward	The ESC is not set to "Forward and Backward" running mode;	Set the running mode to "Forward and Backward";
	The ESC cannot recognize the throttle neutral point.	Recalibrate the throttle range according to instructions on page 1.
	The throttle range is set to "Full-Range" mode for a stick transmitter.	Set the throttle range to "Half-Range " mode for the stick transmitter.
The output power suddenly weakens.	The Low-Voltage Cutoff Protection or the Overheat Protection is activated.	Replace another fully-charged battery; Cool the ESC down before using it again.
The motor cannot be started normally, and it only stutters.	The ESC and motor wire are not well connected or the ESC / motor is damaged	Check all the connections; replace the ESC or the motor. (Note: phease test with a small throttle value first, then increase the value after the motor returns to normal Otherwise, the ESC/motor may get damaged again.

STEP 3. Choose a new value for the selected item

After entered a certain item, the motor will beep in a bop. Set the corresponding value by moving the throttle stick to the top position (/full throttle) when you hear the tone, then a special tone "ȳisis" emits, which means the value has been chosen and saved into the ESC. (If keep the throttle stick at the top position (/full throttle) for over 2 seconds, you can return to STEP 2 and set other items; if move the stick to the bottom position (/full brake) within 2 seconds, then you will exit this programming mode directly.)

Note5: One long "Beep..." = 5 short "Beep". F STEP 4. Exit the programming mode There are 2 methods to exit the programming mode 1. In STEP 3, the motor emits the special tone "f" "= 5 short "Beep". For ex

2.8V/Cell

3.0V/Cell

3.2V/Cell

3.4V/Cell

18.75° s the No.6

- "fisis" after chosen the
- (/full brake) in 2 seconds to exit the prograr the battery pack from the ESC to exit the program.