Thanks for purchasing "SEAKING" series Electronic Speed Controller (ESC) for boat. High power system for RC model can be very dangerous, so please read this manual carefully. In that we have no control over the correct use, installation, application, or maintenance of our products, no liability shall be assumed nor accepted for any damages, losses or costs resulting from the use of the product. Any claims arising from the operating, failure of malfunctioning etc. will be denied. We assume no liability for personal injury, consequential damages resulting from our product or our workmanship. As far as is legally permitted, the obligation to compensation is limited to the invoice amount of the affected product.

**[Features]**

- Specially designed for RC boat, with excellent start-up, acceleration and linearity features.
- Use top quality electronic components to enhance the current endurance ability of the ESC.
- With water cooling heat-sink, the ESC is splash-proof (Note: Not 100% water-proof).
- 8 steps of timing adjustment, compatible with all kinds of sensorless brushless motor.
- Pocket-sized Program Card can be purchased separately for easily setting the programmable items.

**Note1:** The program card is an optional equipment for the ESC.

**[Specifications]**

<table>
<thead>
<tr>
<th>Class ESC (Supports 2-6 cells Lipo)</th>
<th>Model</th>
<th>Cont. Current</th>
<th>Burst Current</th>
<th>BEC Mode</th>
<th>BEC Output</th>
<th>Battery Cells</th>
<th>NiMH</th>
<th>Weight</th>
<th>Water Cooling Pipe</th>
<th>Size L<em>W</em>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal ESC</td>
<td>25A SEAKING-25A</td>
<td>25A</td>
<td>50A</td>
<td>Linear</td>
<td>6V/1.5A</td>
<td>2-3</td>
<td>5-9</td>
<td>49g</td>
<td>2.3</td>
<td>94<em>35</em>20</td>
</tr>
<tr>
<td></td>
<td>35A SEAKING-35A</td>
<td>35A</td>
<td>70A</td>
<td>Linear</td>
<td>6V/1.5A</td>
<td>2-3</td>
<td>5-9</td>
<td>50g</td>
<td>2.3</td>
<td>94<em>35</em>20</td>
</tr>
<tr>
<td></td>
<td>60A SEAKING-60A</td>
<td>60A</td>
<td>120A</td>
<td>Switch</td>
<td>6V/3A</td>
<td>2-6</td>
<td>6-18</td>
<td>76g</td>
<td>4-5</td>
<td>94<em>35</em>18</td>
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<tr>
<td></td>
<td>90A SEAKING-90A</td>
<td>90A</td>
<td>180A</td>
<td>Switch</td>
<td>6V/3A</td>
<td>2-6</td>
<td>6-18</td>
<td>81g</td>
<td>4-5</td>
<td>94<em>35</em>18</td>
</tr>
<tr>
<td></td>
<td>120A SEAKING-120A</td>
<td>120A</td>
<td>240A</td>
<td>Switch</td>
<td>6V/3A</td>
<td>2-6</td>
<td>6-18</td>
<td>91g</td>
<td>4-5</td>
<td>94<em>35</em>18</td>
</tr>
<tr>
<td></td>
<td>180A SEAKING-180A</td>
<td>180A</td>
<td>360A</td>
<td>Switch</td>
<td>6V/3A</td>
<td>2-6</td>
<td>6-18</td>
<td>165g</td>
<td>4-5</td>
<td>94<em>35</em>34</td>
</tr>
<tr>
<td>High Voltage ESC (Supports 5-12 cells Lipo)</td>
<td>25A-HV SEAKING-25A-HV</td>
<td>25A</td>
<td>50A</td>
<td>None</td>
<td>5-12</td>
<td>15-36</td>
<td>91g</td>
<td>4-5</td>
<td>94<em>35</em>18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35A-HV SEAKING-35A-HV</td>
<td>35A</td>
<td>70A</td>
<td>None</td>
<td>5-12</td>
<td>15-36</td>
<td>162g</td>
<td>4-5</td>
<td>94<em>35</em>23</td>
<td></td>
</tr>
</tbody>
</table>

**[Begin To Use The New ESC]**

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

**STEP #1.** Connect the ESC, motor, receiver, battery and servo according to the following diagram. The output wires of A, B, C of the ESC can be connected with the motor wires freely (without any order). If the motor runs in the opposite direction, please swap any two wire connections.

**STEP #2.** Throttle Range Setting (Throttle Range Calibration)

In order to make the ESC fit the throttle range, you must calibrate it for the following cases; otherwise the ESC cannot work properly.

- Begin to use a new ESC;
- Begin to use a new transmitter;
- Change the settings of neutral position of the throttle stick, ATV or EPA parameters, etc.

2.1 Turn on the transmitter, set the ‘EPA/ATV’ value of throttle channel to ‘100%’, and disable the ‘ABS brake function’ of your transmitter if it does has this function. If you are using a Futaba transmitter, please set the direction of the throttle channel to ‘REV’

2.2 If you are using a Handgun-style transmitter:

a) Move the throttle stick to the maximum position (that is: full throttle position), and then connect the battery pack to the ESC, after 2 seconds, “Beep-Beep- ” tone can be heard, that means the full throttle position has been confirmed.

b) Release the throttle stick to the neutral position, a “Beep” tone can be heard, that means the neutral position has been confirmed.

Now the throttle range setting process is finished.

2.2 If you are using a Flat-style transmitter:

a) Move the throttle stick to the top position (that is: full throttle position), and then connect the battery pack to the ESC, after 2 seconds, “Beep-Beep- ” tone can be heard, that means the full throttle position has been confirmed.

b) If you want to set it to half-range, please move the throttle stick to the neutral position, a “Beep” tone can be heard, that means the neutral position has been confirmed.

Now the throttle range setting process is finished.

**[The Normal Start Process]**

1. Move the throttle stick to the neutral position or the bottom position, and then turn on the transmitter.
2. Connect the battery pack to the ESC.
3. The motor emits several “Beep” tones to represent the cells number of your lithium battery pack. Please make sure that the number is correct. If only one “Beep” tone is emitted, that means the “Low Voltage Cutoff Threshold” (Please refer to the Programmable Items in the following form) is set to “No protection”; this is only suitable when you are using a NiMh battery pack. Please never use “No protection” mode for lithium battery, otherwise the battery is very easy to be damaged.
4. Move the throttle stick upwards, the motor begins to run and speeds up.

**[The LED Status]**

There is a red LED in the ESC, the usages are:

1. The LED lights when the throttle stick is moved to the maximum position (full throttle).
2. When setting the throttle range or setting the programmable items of the ESC, the LED flashes at the same time when the motor beeps.

**[Programmable Items]**  

<table>
<thead>
<tr>
<th>Programmable Items</th>
<th>Note2: The basics texts in the following form are the default settings.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Running Mode</td>
<td>Note3: Seaking-130A-HV only has option #1(Forward Only). It hasn’t option #2(Forward and Backward)</td>
</tr>
<tr>
<td>2. LiPo Cells</td>
<td>Note4: The parameters in this line are available for normal voltage ESC (Supports 2-6 cells lipo)</td>
</tr>
<tr>
<td>3. Low Voltage Cutoff Threshold</td>
<td>Note5: The parameters in this line are available for high voltage ESC (Supports 5-12 cells lipo)</td>
</tr>
</tbody>
</table>

2.1 Turn on the transmitter, set the ‘EPA/ATV’ value of throttle channel to ‘100%’, and disable the ‘ABS brake function’ of your transmitter if it does has this function. If you are using a Futaba transmitter, please set the direction of the throttle channel to ‘REV’.
1. **Program the ESC with you transmitter**

**4 Steps:** Enter program mode → Select programmable item → Choose the new value of the selected item → Exit

### Step #1. Enter the program mode

1. Switch on the transmitter, move the throttle stick to maximum position (Full throttle position), and then connect the battery pack to the ESC.

2. Wait for 2 seconds, the motor emits “Beep-Beep-” tone.

3. Wait for 5 seconds, the motor emits “*Beep*” special tone, that means the program mode is entered.

### Step #2. Select the programmable item

You will hear 4 groups of “Beep” tone circularly, if you move the throttle stick to bottom position or the neutral position with 3 seconds after one kind of tones, this item will be selected.

1. “Beep-” Running Mode
2. “Beep-Beep-” Lipo Cells

### Step #3. Choose the new value for the selected item

After entering an item, you will hear several tones in loop. Set the value matching to a tone by moving the throttle stick to the maximum position (Full throttle position) when you hear the tone, then a special tone “*Beep*” emits, means the value is chosen and saved in the ESC. (Keep the throttle stick at the maximum position (Full throttle position), you will go back to step #2 and you can select other items; Move the stick to bottom or neutral position within 2 seconds will exit program mode directly.)

<table>
<thead>
<tr>
<th>Tone</th>
<th>Items</th>
</tr>
</thead>
</table>

- **Running Mode:** Forward Only, Forward & Backward
- **Lipo Cells:** Auto Calculate, 2 Cells, 3 Cells, 4 Cells, 5 Cells, 6 Cells
- **Low Voltage Cutoff Threshold:** No Protection, 2.8V/Cell, 3.0V/Cell, 3.2V/Cell, 3.4V/Cell
- **Timing:** 0°, 3.75°, 7.5°, 11.25°, 15°, 18.75°, 22.5°, 26.25°

**Note:** One long “Beep-” = 5 short “Beep”. For example, “Beep-Beep-” tone means the No.6 value. 5+1 = 6.

### Step #4. Exit program mode

There are 2 methods to exit the program mode:

1. In Step #3, after choosing the value, the motor will emit special tone “*Beep*”, move the throttle stick to the bottom position or the neutral position in 2 seconds to exit the program mode.

2. Disconnect the battery pack from the ESC to exit the program mode forcibly.

### 2. Program the ESC with the Program Card

Program card is an optional equipment for boat ESC, it has 3 digital LEDs to show the programmable items and their values, so the user interface is very friendly. It is quite easy for programming the ESC with this small equipment. Please read the user manual of program card for more information.

#### Troubleshooting

<table>
<thead>
<tr>
<th>Trouble</th>
<th>Possible Reason</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>After power on, motor does not work, no sound is emitted</td>
<td>The connection between battery pack and ESC is not correct</td>
<td>Check the power connection. Replace the connector.</td>
</tr>
<tr>
<td>After power on, motor does not work, such an alert tone is emitted: “beep-beep-, beep-beep-”</td>
<td>Input voltage is abnormal, too high or too low.</td>
<td>Check the voltage of battery pack</td>
</tr>
<tr>
<td>Throttle signal is irregular</td>
<td>The ESC has entered the low voltage cutoff threshold</td>
<td>Calibrate the throttle range again according to the instructions on page 1</td>
</tr>
<tr>
<td>The boat cannot run backward</td>
<td>The ESC is not set to &quot;Forward and Backward&quot; running mode</td>
<td>Program the ESC correctly</td>
</tr>
<tr>
<td>Direction of the throttle channel is reversed, so the ESC has entered the low voltage cutoff protection mode</td>
<td>Set the direction of throttle channel correctly</td>
<td></td>
</tr>
<tr>
<td>The ESC is over heat</td>
<td>Replace the battery pack as soon as possible Stop running the boat for several minutes to cool the ESC</td>
<td></td>
</tr>
</tbody>
</table>