USER GUIDE

SE SPEED ENERGY

SENSORLESS BRUSHLESS MOTOR & ESC COMBO SET

Thank you for choosing the Speed Energy sensorless brushless motor and ESC combo set. High power system for RC models can be very dangerous, so we strongly suggest you read this manual carefully before using our product, thank you.

BEFORE STARTING

- *This product is not a toy. It is not suitable for children under 14 years old. Keep this product out of reach of children.*
- *This product is designed only for RC model car use. It is not suitable for any other purpose.*
- *Never leave this product unattended while it's connected to a power source.*
- *Make sure all cable on motor and ESC are well connected. Keep in mind that vibration during operation may loosen connections and cause lost of control. Do not connect in reverse polarity.*
- *To pervent short-circuits; please make sure that all cables and connectors are properly insulated.*
- *Keep this product away from water, oil, fuel or other conductive liquids. If this product becomes damp, immediately stop using it and let it dry completely.*
- *Avoid using excessive force when tightening the motor screws. Over tightening the motor screws may permanently damage the aluminum housing.*
- *Make sure to use suitable gear ratios,unsuitable gear ratios may overload and damage the Motor.*
- *Never run the motor in full throttle when it is not installed or without loading. Running the motor without load may cause damage and risk of fire or burn.*
- *When mounting the brushless motor in your model car, please pay attention to the length of the motor screw, longer screws will cause internal damage.*

BASIC CONNECTION:

**How to connect ESC to receiver:**
Connect the Rx connector to corresponding channel of the receiver (This is usually channel 2). Make sure that you connect with correct polarity.

Mounting motor:
To begin installation, please mount the motor in your model first. To avoid damage the motor, please use mounting screws with proper length. Make sure that screws are not touching any components inside the motor when fully fastened.

Connect battery to ESC:
Always turn on the transmitter first, then turn on the receiver. Position throttle trim to neutral and reverse switch to reverse.

SENSORLESS BRUSHLESS MOTOR

Turn	8T	10T	12T	22T
Input voltage	4.8 – 7.4V			
kV (rpm/V)	4900	3920	3280	1820
Rotor type	Sintered 12.5mm			
Magnet type	Neodymium			
Winding type	Star			
Features:	Aluminum alloy motor, low resistance dual layer PCB W/nickel plating, easy soldering tab, oversized low friction ball bearing, hand wound coil winding, precision hall sensor W/adjustable timing, maximum air flow ventilation openings, fully dismountable for easy maintenance.			

ESC

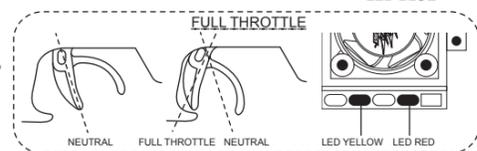|	
Burst current	100A
Output current	120A (maxinium)
Resistance	0.005 ohm
Battery	4-9 cell Ni-Mh or Ni-Cd / 2 cell Li-Po / 2 to 3 cell Li-Fe
BEC output	6.0V/BEC 2A
ESC type	Resistance
Motor type	540 size sensorless brushless motor
Dimension	46mm(L) X 30mm(W) X 30mm(h) w cooling fan
ESC fan	25 X 25mm

Synchronizing the ESC and transmitter:
Turn the receiver switch on while pressing the set button on the receiver switch. the LED "blue" color will turn on.
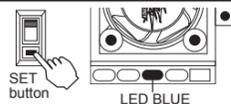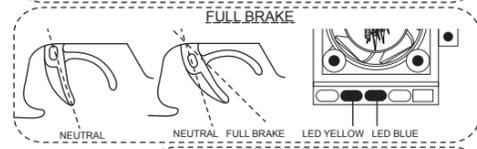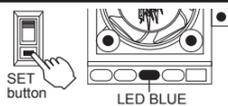
Full throttle setting:
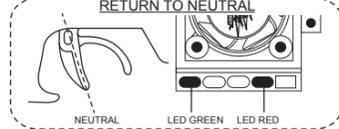Apply full throttle then LED "yellow" and "red" will turn on, and return to neutral.
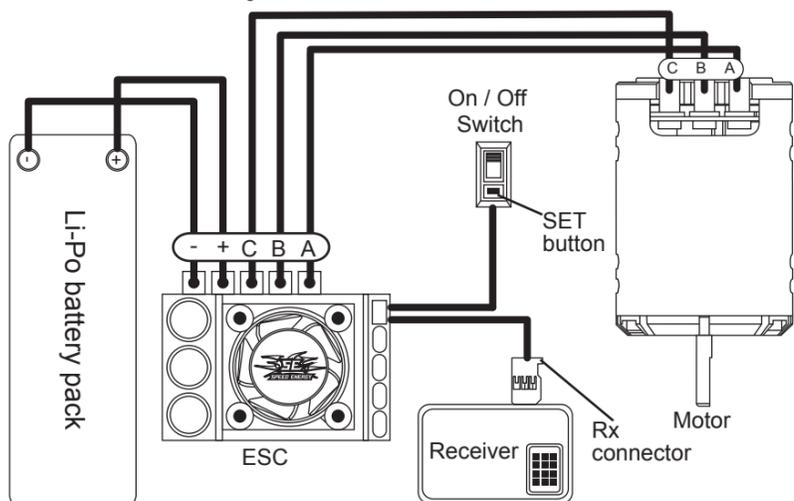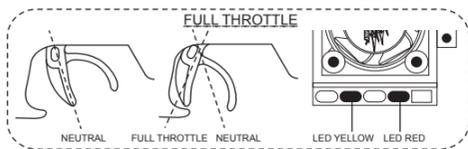
Full brake setting:
Apply full brake and LED "yellow" and LED "blue" turn on, and return to neutral.
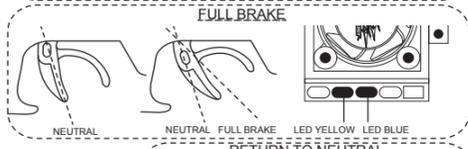
Return throttle to neutral position. LED "green" and LED "red" will flash. Set up process is complete when LED light turn off.
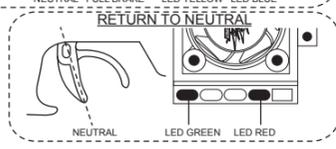
Turn off the speed controller, the setting will activated when its turn on again.
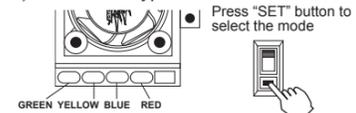

ESC SETUP PROCESS

After synchronizing the ESC and transmitter, you are now ready to be operated ESC the ESC is setup using the "SET" button. When you press and hold button down, different combination of LED flash represents a particular menu.

You can setup the following 6 parameters:

- Battery type (Ni-Cd / Ni-Mh, Li-Po) and Cut-off type
- Training journey / racing mode
- Initial braking action
- Setting the drag brake
- Level 1 - 5 dead band
- Driver profile 1 - 5: select with four pre-program setting for throttle and brake mode.

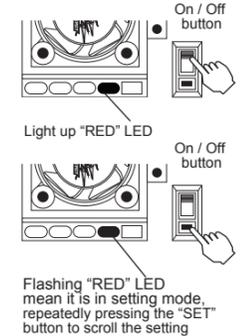Press "SET" button to select the mode

GREEN YELLOW BLUE RED

BATTERY TYPE

1. Switch On transmitter, keep throttle neutral.
2. Switch on ESC. Then hold "SET" button until the "RED" LED light up. Release set button.
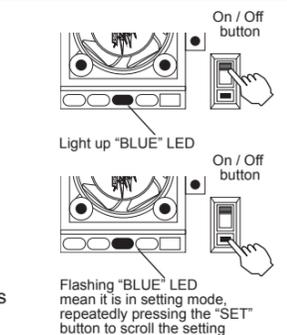3. The "RED" LED start flashing, it mean that it is in the "BATTERY TYPE" setting.

Flashing frequency	1	2	3
Battery type	NI-Cd / Ni-Mh	Li-Po (2S)	Li-Po (3S)

4. Press the "SET" button again to select next setting value.
5. After confirm your setting, hold set button about 2 seconds.
6. LED will illuminate from left to right when the setting is completed.

Light up "RED" LED

Flashing "RED" LED mean it is in setting mode, repeatedly pressing the "SET" button to scroll the setting
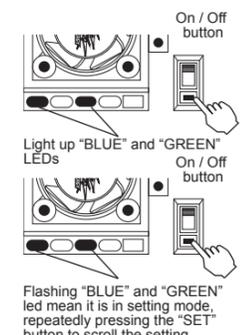
TRAINING JOURNEY / RACING MODE

1. Press "SET" button until the "BLUE" LED light up.
2. The "BLUE" LED start flashing, it mean that it is in the "*TRAINING JOURNEY / RACING MODE*" setting.
3. Press the "SET" button again to select next setting value.
4. Once you have well select the setting, press down the "SET" button about 2 seconds, then the setting will saved.
6. LED will illuminate from left to right when the setting is completed.

Light up "BLUE" LED

Flashing "BLUE" LED mean it is in setting mode, repeatedly pressing the "SET" button to scroll the setting

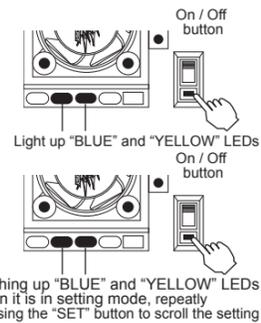| Flashing frequency	1	2
Travel direction	only forwards "racing mode"	Training journey

INITIAL BRAKING ACTION

1.Press "SET" button until the "BLUE" and "GREEN" LEDs light up.
2. When the "BLUE" and "GREEN" LEDS start flashing, it mean that it is in the "*MAXINIUM BRAKING ACTION*" setting.
3. Press the "SET" button again to select next setting value.
4. Hold down the "SET" button approx 2 seconds, then your setting will stored.
5. LED will illuminate from left to right when the setting is completed.

Light up "BLUE" and "GREEN" LEDs

Flashing "BLUE" and "GREEN" led mean it is in setting mode, repeatedly pressing the "SET" button to scroll the setting

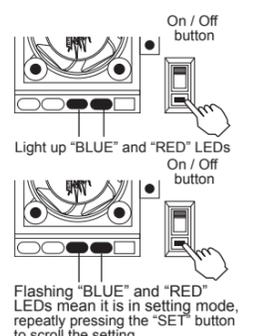| Flashing frequency	1	2	3	4	5	6	7	8	9	10
Direction of travel	10	20	30	40	45	50	55	60	65	70

NEUTRAL BAKE SETTING

1.Press the "SET" button until the "BLUE" and "YELLOW" LEDs light up.
2. When the "BLUE" and "YELLOW" LEDS start flashing, it mean that it is in the "*SETTING THE DRAG BRAKE*" setting.
3. Press the "SET" button repeatedly until you scroll the correct setting.
4. Hold down the "SET" button approx. 2 seconds, then your setting will stored.
6. LED will illuminate from left to right when the setting is completed.

On / Off button

Light up "BLUE" and "YELLOW" LEDs

Flashing up "BLUE" and "YELLOW" LEDs mean it is in setting mode, repeatly pressing the "SET" button to scroll the setting

Flashing Frequency	1	2	3	4	5	6	7	8	9	10
Drag Brake (%)	OFF	5	10	15	20	25	30	35	40	45

SETTING THE DEAD BAND

1.Press the "SET" button until the "BLUE" and "RED" LEDs light up.
2. When the "BLUE" and "RED" LEDS start flashing. it mean that it is in the mode setting.
3. Press the "SET" button repeatedly until you scroll the correct setting.
4. Hold down the "SET" button approx. 2 seconds, then your setting will stored.
5. LED will illuminate from left to right when the setting is completed.

On / Off button

Light up "BLUE" and "RED" LEDs

Flashing "BLUE" and "RED" LEDs mean it is in setting mode, repeatly pressing the "SET" button to scroll the setting

Flashing Frequency	1	2	3	4	5
Dead Band (%)	2	3	4	5	6

PRE-PROGRAMMED DRIVER PROFILES

1.Press the "SET" button until the "ALL" LEDs light up.
2. When the "ALL" LEDS start flashing. it mean that it is in the mode setting.
3. Press the "SET" button repeatedly until you are scroll the correct setting.
4. Hold down the "SET" button approx. 2 seconds, then your setting will stored.
5. When well setting, the status LEDs flash, it show that you are leaving the programming mode.

On / Off button

Light up "ALL" LEDs, release the "SET" button

"All" LEDs start flashing, it show you that you are setting the driver profile, repeatedly pressing the "SET" button to scroll the setting

Driver profile	1	2	3	4	Reset to factory setting 5	5
Cut-off	as selected	as selected	as selected	as selected		Ni-Mh
Reverse travel	NO	YES	YES	NO		YES
% Reverse travel	0	50	50	0		25
Max brake performance	30%	40%	40%	40%		30%
Parking brake	15%	10%	15%	-		10%
Dead band	3	3	4	4		3

ESC SETUP PROCESS

After synchronizing the ESC and transmitter, you are now ready to be operated ESC the ESC is setup using the "SET" button. When you press and hold button down, different combination of LED flash represents a particular menu.

You can setup the following 6 parameters:

- *Battery type (Ni-Cd / Ni-Mh, Li-Po) and Cut-off type*
- *Training journey / racing mode*
- *Initial braking action*
- *Setting the drag brake*
- *Level 1 - 5 dead band*
- *Driver profile 1 - 5: select with four pre-program setting for throttle and brake mode.*
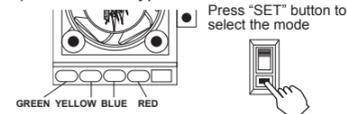
Press "SET" button to select the mode
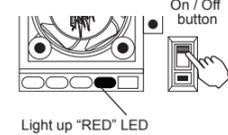
GREEN YELLOW BLUE RED

BATTERY TYPE

1. Switch On transmitter, keep throttle neutral.
2. Switch on ESC. Then hold "SET" button until the "RED" LED light up. Release set button.
3. The "RED" LED start flashing, it mean that it is in the "BATTERY TYPE" setting.

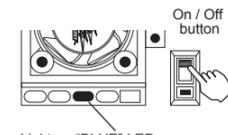| Flashing frequency	1	2	3
Battery type	NI-Cd / Ni-Mh	Li-Po (2S)	Li-Po (3S)

4. Press the "SET" button again to select next setting value.
5. After confirm your setting, hold set button about 2 seconds.
6. LED will illuminate from left to right when the setting is completed.

Light up "RED" LED

Flashing "RED" LED mean it is in setting mode, repeatedly pressing the "SET" button to scroll the setting

TRAINING JOURNEY / RACING MODE

1. Press "SET" button until the "BLUE" LED light up.
2. The "BLUE" LED start flashing, it mean that it is in the "*TRAINING JOURNEY / RACING MODE*" setting.
3. Press the "SET" button again to select next setting value.
4. Once you have well select the setting, press down the "SET" button about 2 seconds, then the setting will saved.
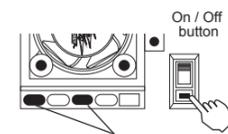6. LED will illuminate from left to right when the setting is completed.

Light up "BLUE" LED

Flashing "BLUE" LED mean it is in setting mode, repeatedly pressing the "SET" button to scroll the setting

Flashing frequency	1	2
Travel direction	only forwards "racing mode"	Training journey

INITIAL BRAKING ACTION

1. Press "SET" button until the "BLUE" and "GREEN" LEDs light up.
2. When the "BLUE" and "GREEN" LEDS start flashing, it mean that it is in the "*MAXINIUM BRAKING ACTION*" setting.
3. Press the "SET" button again to select next setting value.
4. Hold down the "SET" button approx 2 seconds, then your setting will stored.
5. LED will illuminate from left to right when the setting is completed.

Light up "BLUE" and "GREEN" LEDs

Flashing "BLUE" and "GREEN" led mean it is in setting mode, repeatedly pressing the "SET" button to scroll the setting

Flashing frequency	1	2	3	4	5	6	7	8	9	10
Direction of travel	10	20	30	40	45	50	55	60	65	70

NEUTRAL BAKE SETTING

1. Press the "SET" button until the "BLUE" and "YELLOW" LEDs light up.
2. When the "BLUE" and "YELLOW" LEDS start flashing, it mean that it is in the "*SETTING THE DRAG BRAKE*" setting.
3. Press the "SET" button repeatedly until you scroll the correct setting.
4. Hold down the "SET" button approx. 2 seconds, then your setting will stored.
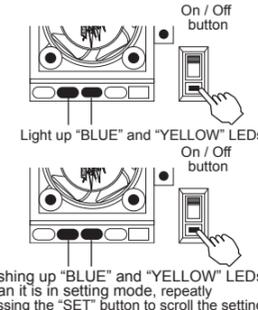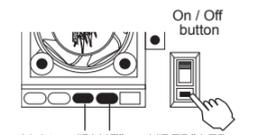6. LED will illuminate from left to right when the setting is completed.

On / Off button

Light up "BLUE" and "YELLOW" LEDs

Flashing up "BLUE" and "YELLOW" LEDs mean it is in setting mode, repeatly pressing the "SET" button to scroll the setting

Flashing Frequency	1	2	3	4	5	6	7	8	9	10
Drag Brake (%)	OFF	5	10	15	20	25	30	35	40	45

SETTING THE DEAD BAND

1. Press the "SET" button until the "BLUE" and "RED" LEDs light up.
2. When the "BLUE" and "RED" LEDS start flashing. it mean that it is in the mode setting.
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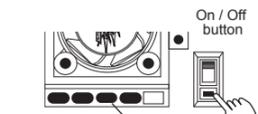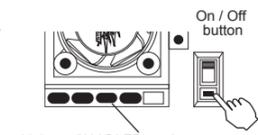5. LED will illuminate from left to right when the setting is completed.

Light up "BLUE" and "RED" LEDs

Flashing "BLUE" and "RED" LEDs mean it is in setting mode, repeatly pressing the "SET" button to scroll the setting

Flashing Frequency	1	2	3	4	5
Dead Band (%)	2	3	4	5	6

PRE-PROGRAMMED DRIVER PROFILES

1. Press the "SET" button until the "ALL" LEDs light up.
2. When the "ALL" LEDS start flashing. it mean that it is in the mode setting.
3. Press the "SET" button repeatedly until you are scroll the correct setting.
4. Hold down the "SET" button approx. 2 seconds, then your setting will stored.
5. When well setting, the status LEDs flash, it show that you are leaving the programming mode.

Light up "ALL" LEDs, release the "SET" button

"All" LEDs start flashing, it show you that you are setting the driver profile, repeatedly pressing the "SET" button to scroll the setting

Driver profile	1	2	3	4	Reset to factory setting	5
Cut-off	as selected	as selected	as selected	as selected		Ni-Mh
Reverse travel	NO	YES	YES	NO		YES
% Reverse travel	0	50	50	0		25
Max brake performance	30%	40%	40%	40%		30%
Parking brake	15%	10%	15%	-		10%
Dead band	3	3	4	4		3

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