Thanks for purchasing our electronic speed controller (ESC). The power system for RC model can be very dangerous, 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.

【FEATURES】

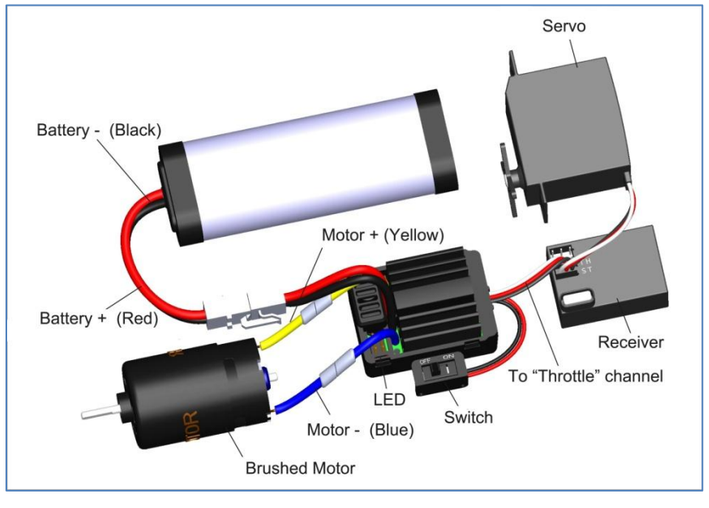
1. Water-proof and dust-proof for all weather races.
2. Small size with built-in capacitor module.
3. Automatic throttle range calibration, easy to use.
4. Multiple protections: Low voltage cut-off protection for Lipo or NiMH battery / Over-heat protection / Throttle signal loss protection.
5. Easily programmed with the jumpers.

【SPECIFICATIONS】

		WP-1040-BRUSHED WP-1040-BRUSHED-CRAWLER	WP-1625-BRUSHED WP-1625-BRUSHED-CRAWLER
FWD Cont. / Burst Current **BWD Cont. / Burst Current**		Forward: 40A / 180A Backward: 20A / 90A	Forward: 25A / 100A Backward: 25A / 100A
Input		2-3S Lipo, 5-9 Cells NiMH/NiCd	
Cars Applicable		1:10 on-road, off-road Buggy, SCT, Truggy 1:10 Crawler, Tank & Boat	1:18 & 1:16 on-road, off-road Buggy, SCT, Truggy 1:18 & 1:16 Crawler, Tank and Boat
Motor Limit	**2 Lipo or 6 NiMH**	540 or 550 size motor ≥12T RPM < 30000 @7.2V	280, 370 or 380 size motor RPM < 30000 @7.2V
	3 Lipo or 9 NiMH	540 or 550 size motor ≥18T RPM < 20000 @7.2V	280,370 or 380 size motor RPM < 20000 @7.2V
Resistance		FWD: 0.002 Ohm; BWD: 0.004 Ohm	FWD: 0.003 Ohm; BWD: 0.003 Ohm
Built-in BEC		2A/5V (Linear mode BEC)	1A/5V(Linear mode BEC)
PWM Frequency		1KHz	
Dimension		46.5mm*34mm*28.5mm	34mm*24mm*14mm
Weight		WP-1040-BRUSHED: 65g WP-1040-BRUSHED-CRAWLER: 70g	23.5g

【BEGIN TO USE】

1. Connect the ESC, motor, receiver, battery and servo according to the following diagram



"+" and "-" wires of the ESC are connected to the battery pack.
Attention: The incorrect polarity will damage the ESC immediately.

The control cable of the ESC (trio wires with black, red and white color) is connected to the throttle channel of the receiver (Usually CH2).
The "Motor +" and "Motor –" wires are connected to ESC without any order. If the motor runs in the opposite direction, please swap these two wire connections.

2. Set the Transmitter

Please set the "D/R", "EPA" and "ATL" to 100% for throttle channel (for transmitter without LCD, please turn the knobs to the maximum value), and set the "TRIM" of the throttle channel to 0 (for transmitter without LCD, please turn the TRIM knob to its neutral position).
For Futaba™ and the similar transmitters, the direction of throttle channel shall be set to "REV", while other radio systems shall be set to "NOR".
The "Fail Save" function of the radio system is strongly recommended to be activated. Please make sure that the motor can be stopped when the "Fail Save" happens.

3. Throttle Range Setting (Throttle Range Calibration)

In order to make the ESC match the throttle range of different transmitters, the calibration of the ESC is necessary.
To calibrate the ESC, please turn on the transmitter, keep throttle stick at its neutral position, wait for 3 seconds to let the ESC execute self-test and automatic throttle calibration. When the ESC is ready to run, a long beep sound is emitted from the motor.
Note: Please calibrate the throttle range again when using a new transmitter or changing the settings of the neutral position of throttle channel, D/R, ATV, ATL or EPA parameters, otherwise the ESC may not work properly.

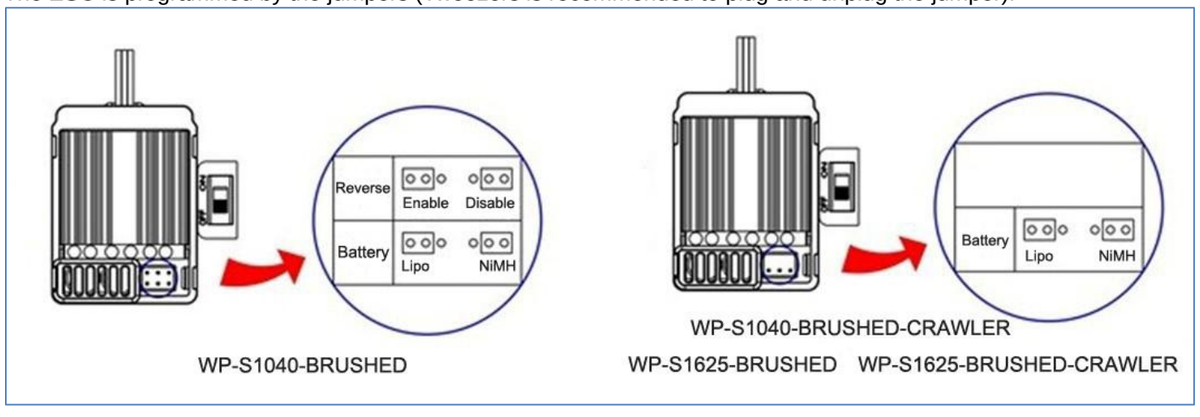
【BEEP SOUND AND LED STATUS】

The Meaning of Beep Sound	LED Status
● 1 short Beep: The battery is NiMH/NiCd ● 2 short Beeps: The battery is 2S Lipo ● 3 short Beeps: The battery is 3S Lipo ● 1 long Beep: Self-test and throttle calibration is OK, the ESC is ready to run	● When the throttle stick is in neutral range, red LED is off ● Forward, brake or reverse at partial throttle, red LED blinks ● Forward, brake or reverse at full throttle, red LED is solid

【THROTTLE STICK POSITION】

【SET THE ESC】

The ESC is programmed by the jumpers (Tweezers is recommended to plug and unplug the jumper).



【PROTECTION FUNCTIONS】

1. Low voltage cut-off protection: If the voltage of battery pack is lower than the threshold for 2 seconds, the ESC will reduce and finally cut off the output power. The threshold for Lipo battery is listed below:
   2S Lipo,: 6.2V; 3S Lipo: 9.3V; 5 to 9 cells NiMH/NiCd: 4.5V.
   When the car stops, the red LED blinks to indicate the low voltage cut-off protection has been activated.
2. Over-heat protection: When the internal temperature of the ESC is higher than a factory preset threshold for 5 seconds, the ESC will reduce and cut off the output power.
   When the car stops, the red LED blinks to indicated the over-heat protection has been activated. If the ESC cools down to 80 Celsius degree, the output power is recovered to normal state.
3. Throttle signal loss protection: The ESC will cut off the output power if the throttle signal has been lost for 0.1 second. The "Fail Save" function of the radio system is strongly recommended to be activated.

【THE DIFFERENCE BETWEEN "BRUSHED" AND "BRUSHED-CRAWLER" ESC】

1. "Brushed" and "Brushed-Crawler" ESCs have different backward-running modes.
   "Brushed" ESC uses "Double-Click" method to make the car go backward. When you move the throttle stick from forward zone to backward zone for the first time, the ESC begins to brake the motor, the motor speeds down but

still running, so the backward action is NOT happened at this moment. When the throttle stick is moved to the backward zone again (The 2nd “click”), if the motor speed is slowed down to zero (i.e. stopped), the backward action will be activated. The “Double-Click” method prevents mistakenly reverse when the brake function is frequently used in steering.
“Brushed-Crawler” ESC uses “Single-click” to make the car go backward. When you move the throttle stick from forward zone to backward zone, the car will go backward immediately. This mode is common for the Rock Crawler and tank.

2. The maximum reverse force (for backward-running) is 50% for the “Brushed” ESC, and 100% for the “Brushed-Crawler” ESC.

【TROUBLE SHOOTING】

Trouble	Possible Reason	Solution
After power on, motor can’t work, no sound is emitted, and LED is off.	The ESC doesn’t get its working voltage; Connections between battery pack and ESC are broken.	Check the battery wires connection or replace the defective connectors.
	Switch is damaged.	Replace the switch.
After power on, motor can’t work; red LED blinks.	Throttle signal is abnormal.	Check the throttle wire connection; make sure it is plugged into the throttle channel of the receiver.
	Automatic throttle range calibration is failed.	Set the “TRIM” of throttle channel to 0 or turn the knob to its neutral position.
The car runs backward while giving throttle. (The motor runs in the opposite direction)	The wire connections between ESC and the motor need to be changed.	Swap two wire connections between the ESC and the motor.
The car can’t go backward.	The jumper position is wrong.	Check the jumper and plug it to the correct position.
	The neutral point of throttle channel is changed or drifted.	Set the “TRIM” of throttle channel to 0 or turn the knob to its neutral position.
The car can’t go forward, but can go backward.	The direction of throttle channel is not correct.	Reset the direction of throttle channel from original “NOR” to “REV”, or from original “REV” to “NOR”.
The motor doesn’t work, but the LED in the ESC works normally.	The connections between motor and ESC are broken.	Check the connections and replace the defective connectors.
	Motor is damaged.	Replace the motor.
The motor suddenly stops running while in working state	The throttle signal is lost.	Check the transmitter and the receiver. Check the throttle wire connection.
	Low voltage cut-off protection or Over-heat cut-off protection has been activated.	Replace the battery pack, or cool down the ESC.
The car cannot get top speed and the red LED doesn’t solid on at full throttle	Some setting in the transmitter are incorrect.	Check the settings. Set D/R, EPA, ATL to 100% or turn the knobs to maximum value. Set TRIM to 0 or turn the knob to its neutral position.
Motor is cogging when accelerated quickly.	The battery has limited discharge ability.	Use battery with better discharge ability.
	Motor RPM is too high, the gear ratio is too aggressive.	Use motor with lower RPM, or use smaller pinion to get softer gear ratio.
	Something wrong in the driving system of the car.	Check the driving system of the car.