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B4733

CAR Brushless ESC Manual

Specification

	1/10 TOURING CAR	1/10 BUGGY	1/10 TRUCK	1/8 TRUGGY	1/8 MONSTER TRUCK
7.2V/7.4V	540S5000KV	540S5000KV	540S5000KV	540L4000KV	540L3500KV
11.1V/12V	540S4000KV	540S4000KV	540S4000KV	540L3300KV	540L3000KV
14.4V/14.8V	540S3000KV	540S3000KV	540S3000KV	540L1700KV	540L1500KV

1.Input Voltage:(as above)
2.Output:Rating 75A, Peak:150A
3.Out max power:75A/7.4V(MAX 555W)
4.Size/Weight:45mmX44.7mmX42.9mm/149g
5.BEC:5V 2A
6.MOTOR:Support 540L Brushless Motor/11.1V under 2000KV

Low power battery auto-cut off

Battery / Volt	7.2V	7.4V	11.1V
AUTO	Initial Detected voltage x75%		
NI-CD/NI-MH	5.4V		
LI-PO		6.0V	9.0V

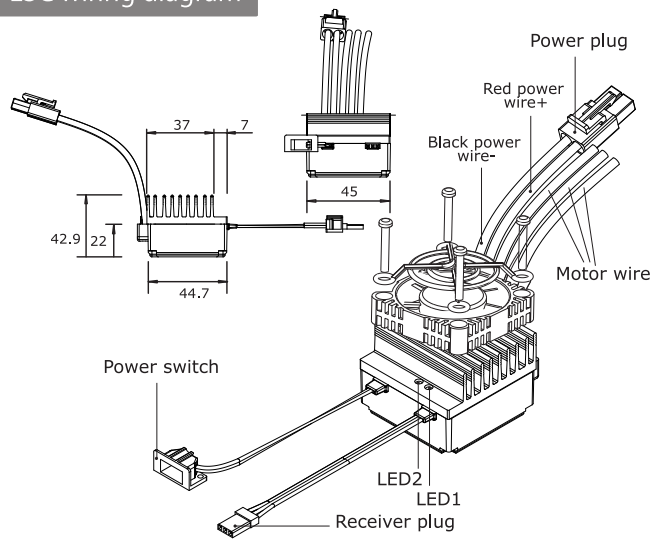
Over temperature protection

Motor will be intermittently turned off & on when the temperature reaches around (98 +- 3~5)°c
(LED2 is red when turn on over temperature protection)

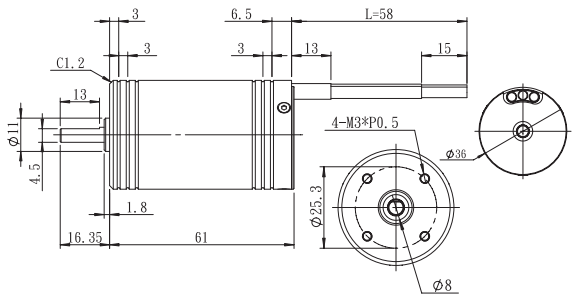
Warning

1.Avoid touching ESC heat sink or motor casing right after operation for not burning your body or skin.
2.To avoid poor contact or overheat melting of connector and power abnormal cut off be sure to always use better current rated connector & wires while replacing the original ESC connector or elongating the connecting wires.
3.Connect the battery pack just before driving,disconnect & take it out the car immediately after termination.Don't solder ESC wires directly to the battery.A proper connector is a must to be used in between.
4.When using programming card(B6091-1), please turn off ESC Power and take the servo wire out of the receiver, then insert the set up card according to the electrode sign on the card. After setting programming card, needs to turn off power at the same time, then take servo wire into of the receiver.
5.Always make sure connecting the ESC to a proper power source that has the correct voltage & polarity.Incorrect voltages or reversed polarity will damage the ESC.Don't solder ESC wires directly to the battery.A proper connector is a must to be used in between.

ESC wiring diagram



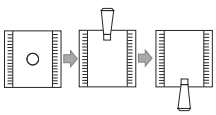
Motor specification



1.Rated Voltage	11.1	DCV
2.Terminal resistance	30±1	mΩ
3.Terminal inductance	16.5 (ref.)	μH
4.KV (No load)	1700±100	rpm／V
5.Max operating current	25	A
6.Max operating speed	30000	rpm
7.Max efficiency	85%	ηmax.
8.Back-EMF-constant	0.6168	mv／3000rpm
9.Torque constant	59.9	g-cm／A
10.Weight	265	g

Test of throttle direction coincidence

1 Wiring ESC according to above diagram. → 2 Switch on the transmitter. → 3 ESC denotes a sound and starts setting neutral. → 4 Denoted by another confirmation sound after succeed in setting neutral.



Neutral→forward→backward

Refer to the left test sequence right above setting is completed Push the throttle trigger forwards, quickly pull the throttle trigger backwards & hold it. If the system keeps braking, the throttle direction test is ok.
Otherwise, if it drives reversely, the throttle and ESC forward direction does not coincide with each other.
Change the throttle reversing switch of the transmitter, turn off & then turn on the ESC power again will correct the problem.

PS.LED1 will add speed of blinking when speed up.

	Neutral	Forward	Full throttle	Brake	Backward	Full throttle
LED1	red and yellow blinking each other	red blinking slowly	red	red and yellow blinking each other	yellow blinking slowly	Yellow
LED2	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Safe gear ratio test

Input voltage	resistance	waste current
7.2V	0.18Ω	40A
11.1V	0.18Ω	61.6A

(V/R=1 7.2V/0.18Ω=40A)
(V/R=1 11.1V/0.18Ω=61.6A)

※Firstly, trial running starting with a small gear motor for 2~3 minutes, measure the temperatures of both Esc & motor. If both temperatures are close with each other, they are at good match. The gear ratio can then be properly adjusted to optimum according to the features of the courses. However, It's very important to always keep both temperatures under 100 °c, while adjusting the gear ratio. Otherwise the demagnetization of the motor will happen, the motor efficiency will drop dramatically & the temperature will also raise up very quickly. Most battery power is now wasted on heat nothing on motor efficiency.

※It's ok to replace a higher gear ratio or a higher KV motor while the temperature of the ESC is under 80 °c. But it should be done according to para 6 described, from small to bigger. Unless the kv value of the original motor is very low enough, It should replace a motor with lower kv value when the input battery voltage is changed to a higher level. The ESC will be burnt if the motor doesn't be properly changed while input voltage is changed. See example by the side of list on the current changed inside motor while input voltage is changed.

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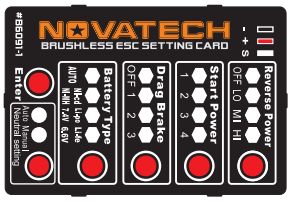
B6091

Brushless Setting Card

1.The setting parameters displayed after plugging on the programming board are the parameters programmed last time not the parameters inside current ESC.
2.Please press "Enter "button after setting all prarmeters , a sownd of "Di Di Di Di Di" indicates that setting is successfully completed.



Set process

1.Turn off the "ESC" power and take the servo wire out of the receiver, then insert the set-up card according to the electrode sign on the card, and then turn on "ESC" power.
2.The set-up card will transfer the last setting to ESC, a series of sound denoted from motor to confirm the finish of the setting transfer.
3.There are 5 adjustable parameters designed in this card for user adjustment. By pressing the right button of each parameter, let indicating led stay at the level you desired & then press the red enter button, the specific parameter is now set-up completed. The motor will then give series sound for confirmation.

(Reverse Power) Set for Reverse Power.

●○○○	○●○○	○○●○	○○○●
OFF	LO	MI	HI
Disable	Low ← Power →		High

(Start Power) Set for power strength from rest to start.

●○○○	○●○○	○○●○	○○○●	●○●○	●○○●	○●●○	○●○●
1	2	3	4	5	6	7	8
Low ← Power →							High

※While you setting start power more lower, then start smoother. Otherwise, while you setting start power higher, and then start faster.

(Drag Brake) Set of brake strength while the throttle gets bach to the contra position.

●○○○	○●○○	○○●○	○○○●	●○●○	●○○●	○●●○	○●○●
OFF	1	2	3	4	5	6	7
Disable	Low ← Drag Brake →						High

(Battery Type)

Press down the right nand side button to select the battery type used.

(Neutral Setting)

1. Manual (Neutral setting): - The ESC default set at "Au-to" support transmitter with 50-50 and 70-30 throttle.
2. Adjust the throttle of transmitter to the factory default setting, insert the set-up card & press "manual" button. Plug the servo wire back into receiver. Turn on the ESC, sound of "Bi Bi Bi" denotes. Move the throttle to the forward full, stay 2 second & get a sound of "Bi Bi Bi". Move the throttle to the reverse full, stay 2 second & get a long and quick sound of "Do Ra Mi Fa So". Release the throttle to the central point, & get a sound of "Do Mi Do Mi". The manual set up of the ESC neutral is now completed. Be sure to strictly follow the set up steps at the sequence of forward full, reverse full & then neutral. Otherwise the manual set up can't work properly.

LED showing for Manual setting:

Switch on		Forward Setting		Rererse Setting		Neutral Setting	
LED2 ○	LED1 ○	LED2 ○	LED1 ○	LED2 ○	LED1 ○	LED2 ○	LED1 ○
Red blinking	Red blinking	Green blinking	Green blinking	Green	Red blinking quickly	Green	Red blinking slowly

3. Once after press down the manual button, the set-up process should be completed within 15 sec; otherwise, the ESC will be reset to the auto-neutral detecting.

If you use other mode on the programming card (ex: Start Power) after set the manual setting mode, you have to change neutral setting from Manual to Auto, and then it won't affect the manual setting as before as you setting.

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