



Thank you for purchasing our brushless electronic speed controller (ESC). Any improper use or operation may cause personal injury and equipment damage. This high power system for RC models can be dangerous, we strongly suggest users read the instructions carefully and thoroughly before use. We will not assume any responsibility for personal injury, property damage, or any consequential damages resulting from the use of our product.

01 Main features

- Uses a powerful & high performance MCU, users can set the functions as required, fully embodied intelligent characteristics. Unique circuit design with strong interference rejection properties.
- Waterproof design (Note: if the ESC does get immersed in water then please ensure you dry the connectors).
- Start mode can be set to fast throttle response fast or very smooth speed control linearity. This makes it suitable for use with scale and racing boats.
- Low-voltage protection threshold values can be set.
- Built-in 5 amp switching BEC, lower power dissipation.
- Multiple protection functions: input voltage abnormal protection/low-voltage cutoff protection/over-thermal protection and throttle signal loss protection, these make the ESC more reliable.
- High power safety feature: wherever the throttle lever is set above the off position the motor will not start when power is connected.
- Over thermal protection: If the ESC temperature goes over 100°C then the output power will automatically reduce. When it becomes lower than 80°C the output power will return to normal.
- Menu settings are a simple operation. Settings can be changed with program box or via your transmitter.

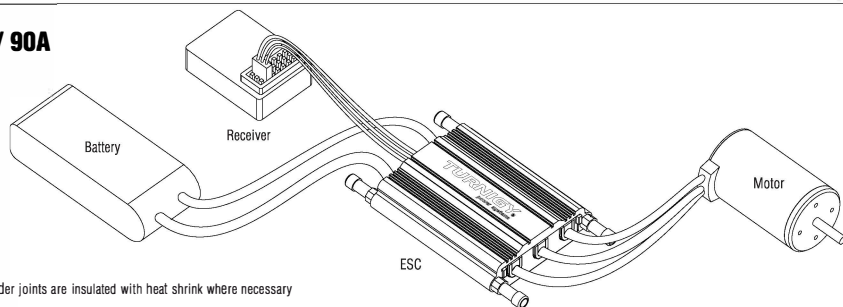
02 Specification

MODEL	50A	70A	90A	120A	150A
Cont. Current	50A	70A	90A	120A	150A
Burst Current	300A	420A	540A	720A	900A
LiPO Cells	2-6S	2-6S	2-6S	2-6S	2-6S
BEC Type	Switch BEC	Switch BEC	Switch BEC	Switch BEC	Switch BEC
BEC Output	5.5V/5A	5.5V/5A	5.5V/5A	5.5V/5A	5.5V/5A
Weight	90g	101g	102g	155g	169g
Dimension (Exclude water pipe)	57*49*18mm	57*49*18mm	57*49*18mm	76*56*25mm	76*56*25mm
Application	Boat length < 55cm	Boat length < 70cm	Boat length < 100cm	Boat length < 120cm	Boat length < 135cm

03 Wiring Diagrams

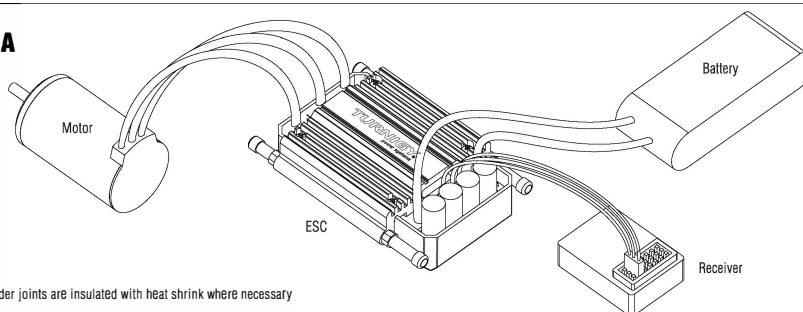
Note: We strongly advise the use of battery connections that do not allow reverse polarity or the ESC will be damaged. Please disconnect the battery from the ESC when not in use.

50A / 70A / 90A



*Please ensure all solder joints are insulated with heat shrink where necessary

120A / 150A



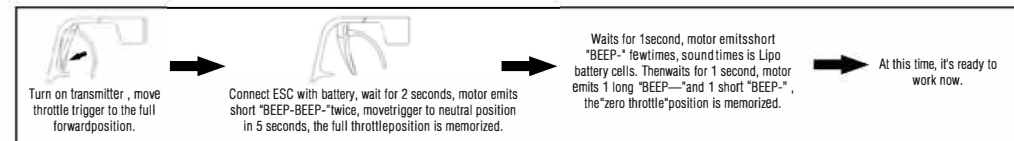
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04 Operation Instruction

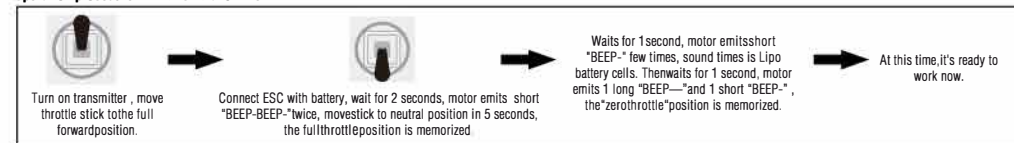
1. Set throttle range

Please set the throttle range when using the ESC for the first time. This ensures the Turnigy ESC is set correctly to your transmitter to give a smooth and linear throttle range. The process below only needs to be done once, it will then memorize this setting for your transmitter. If changing transmitters the process will need to be repeated.

Operation procedure with Pistol Transmitter

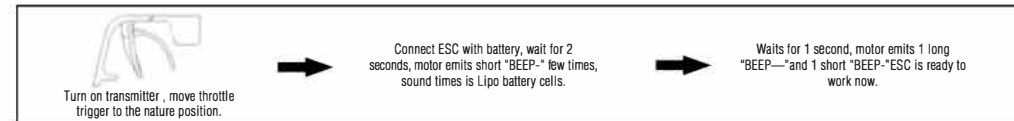


Operation procedure with Stick Transmitter

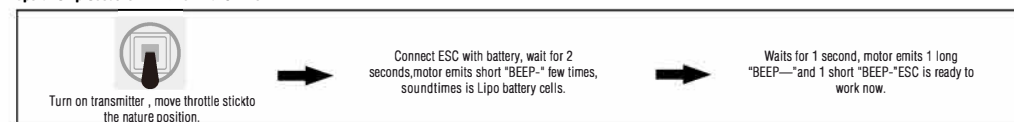


2. Normal working mode

Operation procedure with Pistol Transmitter



Operation procedure with Stick Transmitter



05 Programming

1. Enter programming mode:

- 1.1 Turn on transmitter, move throttle to the full forward position.
- 1.2 Connect ESC with battery, wait for 2 seconds, motor emits short 'BEEP-BEEP' twice, it means power up normally.
- 1.3 Wait for 5 seconds, motor emits special tone '12321', it has entered programming mode.

2. Select setting options:

After entering programming mode, you will hear 5 groups tone which emits in a loop as following sequence After motor emits a group of tone, move the throttle to the neutral (pistol transmitter) / the full down throttle position (the stick transmitter), it enters this option.

(Note: there is a special tone '12321' before the loop tone, '12321' is the start of selecting option.)

- 2.1 Running Mode (1 short tone) "beep--"
- 2.2 Motor direction adj. (2 short tone) "beep-beep--"
- 2.3 Low voltage protection (3 short tone) "beep - beep - beep -"
- 2.4 Start Mode (Punch) (4 short tone) "beep-beep- beep-beep -"
- 2.5 Timing (1 long tone) "beep --"

Note: Usually, 1 long tone "beep--" equals to 5 short tone "beep-", for example: 1 long tone "beep--" and 1 short tone "beep-" equals to 6.

3. Select parameter:

Goes into some one setting option, motor will emit tone in a loop, move the throttle to the forward full position after a certain tone, so the parameter of this option has selected, then motor emits special tone '1212', this parameter has stored. (If don't select other options, move throttle to the neutral position in 3 seconds, then motor emits special tone '12121212', exit the program mode. If go on selecting other options, please return to procedure 2, and select other options).

*Shadow parts are factory default value

	1s hort tone	2s hort tone	3s hort tone	4s hort tone	1 long tone	1 long 1 short	1 long 2 short	1 long 3 short	1 long 4 short
Running mode	Forward	Forward & Reverse							
Motor direction adj.	CW	CCW							
Low voltage protection	Non-protection	2.6V	2.8V	3.0V	3.2V	3.4V			
Start mode (Punch)	Level 1	Level 2	Level 3	Level 4	Level 5				
Timing	0°	3.75°	7.5°	11.25°	15°	18.75°	22.5°	26.25°	