

V18 PRO BRUSHLESS ESC

Thank you for purchasing the Venom™ V18 Pro Brushless ESC. It was designed to be compatible with sensorless brushless 2030 motors. This ESC truly is an all encompassing Electronic Speed Control. With the optional programming card, you can adjust eleven individual parameters including Forward/Brake, Forward/Reverse, Drag, Initial and Maximum Brake Force, Low Voltage Cut-Off, Start Mode, Maximum Reverse Force, Throttle Neutral Range, Motor Timing, Motor Type and Over-Heat Protection. The Venom™ V18 Pro Brushless ESC features an aluminum heat sink. Pre wired and a compact footprint of 31.5mm x 25mm makes the Venom™ V18 Pro Brushless ESC a perfect choice for all of your On and Off-Road 1/18 and 1/16 model applications.

I. Venom™ V18 Pro Brushless ESC Specs:

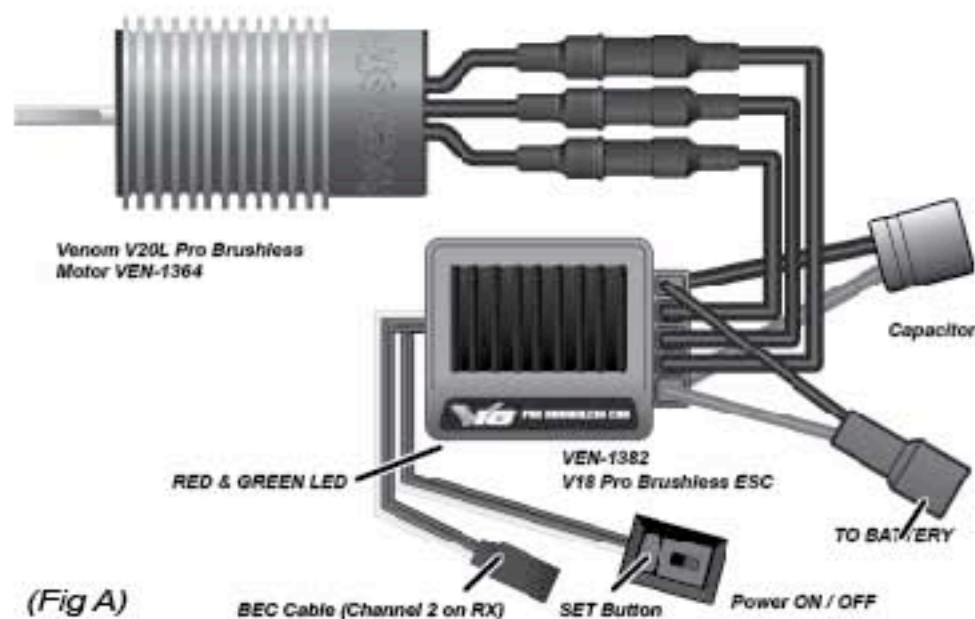
Continuous Current:	18A
Burst Current:	50A
Resistance:	0.01 ohm
Suitable Model:	1/18, 1/16 ON / OFF Road
Suitable Brushless Motor:	12T and Up
Battery:	LiPO / NiMH / NiCD
BEC Output:	6V / 1A
Motor Type:	Sensorless / Brushless
Dimensions:	31.5mm x 25mm x 15mm
Weight:	19g without wires
Voltage Range	4-9Cell NiMH (4.8V - 10.8V) 2-3Cell LiPO (8.4 - 12.6V)

II. V18 Pro Brushless ESC / V20L Pro Brushless Motor Setup

Before you begin with setting up the V18 ESC make the following things are covered

- Fully charge the running battery pack
- Make sure the transmitter batteries are new or recharged

- 1) Install the V18 BL ESC into your model. Connect the wires to the Motor, Receiver, and Battery - see diagram



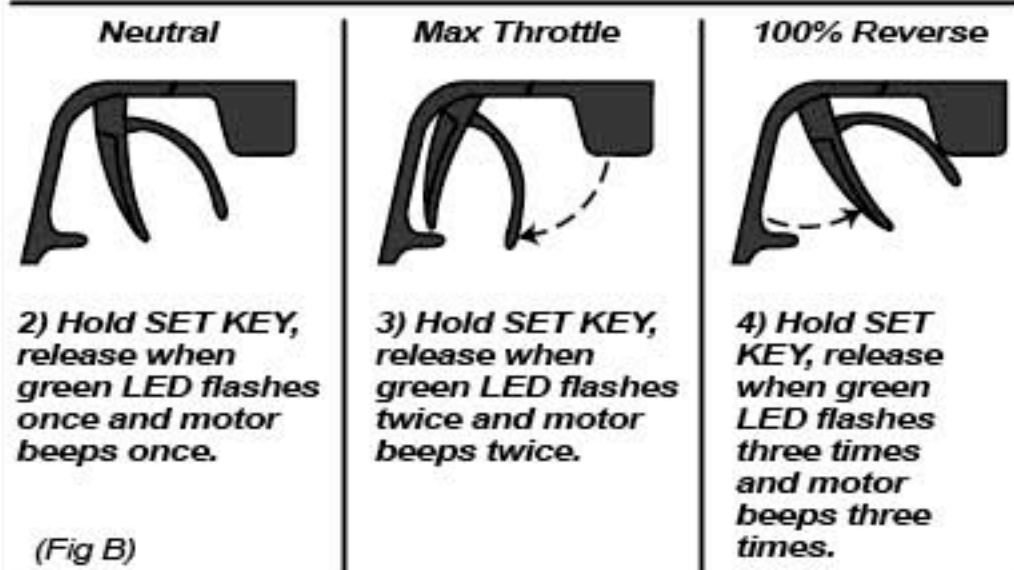
(Fig A)

- 2) Turn on the Transmitter
- 3) Turn on the V18 BL ESC power switch
- 4) Make sure the motor is turning in the correct direction. If not disconnect any two wires of the 3 connected to the motor and reverse them. This will change the direction the motor rotates.

III. Setting the Throttle Range

- 1) Turn on the Transmitter and leave the Throttle (trigger or stick) in the neutral position
- 2) Hold the V18 BL ESC Set key on the ON/OFF switch and turn ON the ESC. The RED LED will flash. This is the programming mode. Release the "SET" Key

- 3) Set the Neutral position - leave the Throttle in the neutral position and press the "SET" Key once. The ESC will beep once and the green LED will flash once.
- 4) Set the Full Throttle position - Hold the Throttle at 100%. Press the "SET" Key once. The ESC will beep twice and the green LED will flash twice.
- 5) Set the Full Brake position - Hold the Throttle at 100% brake. Press the "SET" Key once. The ESC will beep three times and the green LED will flash three times.
- 6) The V18 ESC is ready to use. You can now program the ESC with the Programming Card or manually.



(Fig B)

IV. Sensor LED KEY In Normal Use

- 1) When throttle is in the neutral range, neither red or the green LED will be lit.
- 2) The red LED light is ON in run forward or backward mode and it will flash when the car is braking.
- 3) The green LED is ON when the throttle is at 100%.

V. Alert Tones

- 1) Out of range tone: 2 beeps 1sec interval 2 beeps.
- 2) Throttle signal interruption: 3 beeps 3sec interval 3 beeps

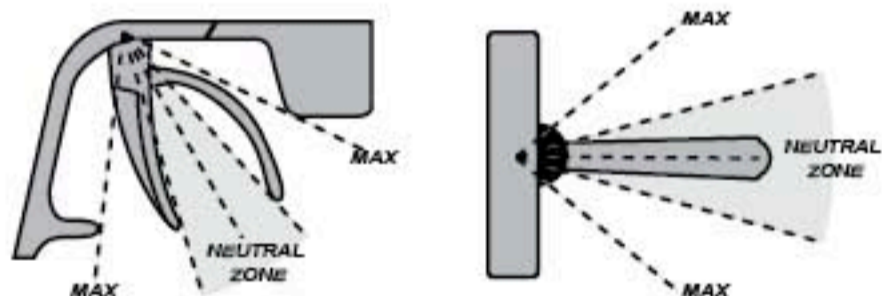
VII. Programing ESC Setup

This section explains step by step instructions on how to set up the model operations such as brakes, timing and voltage cut-off. There are two different ways of programing the ESC. One is using the V18 Pro Brushless Programming Card and the second is by manually selecting through the ESC with the help of the LEDs and a series of beeps that will be produced from the motor. To better understand the ITEMS and their characteristics, we have listed a series of definitions below.

- 1) **Running Mode: Forward / Brake** - Models can go forward and brake without being able to go in reverse. Forward / Reverse with Brake - models can go forward and brake as well as reverse. Note: Forward / Reverse with Brake uses the "Treble-click" method to make the model backup.
Treble Click Forward → Brake → Neutral → Reverse (brake)
- 2) **Drag Brake Force:** This gives the user the ability to set the amount of braking that occurs in the neutral position, or how far it will roll in neutral, until it comes to a complete stop.
- 3) **Low Voltage Cut-off:** This option is very important when using a LiPO Battery Pack setup. This prevents the lithium battery pack from discharging too low.

NOTE: When using a LiPO battery Pack this function should NEVER be set to the "Non-Protection" setting, doing so could cause the LiPO battery pack to swell and catch fire. When the Low Voltage is set, the ESC will detect the LiPO Battery Pack voltage and if it has reached its threshold, it will cut-off the power and stop the model.

- 4) **Start Mode:** Is an advanced Setting that has 4 choices Soft, Normal, Aggressive, and Very Aggressive. This will determine how the model takes off from a dead stop. When choosing the Aggressive or Very Aggressive settings you will need to have a powerful battery that is able to handle the high current needed to start. **NOTE:** If the motor is trembling heavily it may be caused from the low discharge rate that is being pulled from the power supply. This can easily be fixed by changing the gear ratio or replacing the battery pack with a higher performance battery pack.
- 5) **Brake Force:** This will determine the braking force within the braking application range. The choices are 50%, 75%, and 100%. At 100% the brake force will be great and the gears may become damaged under the stress.
- 6) **Reverse Force:** This setting will change how fast the model will travel in full reverse. Keep in mind, the smaller the percentage the easier it will be to steer the model in reverse.
- 7) **Initial Brake Force:** refers to the amount of drag force the brake is applying. The choices for DRAG BRAKE FORCE, 0%, 20%, and 40%. The higher the percentage the more the drag brake will be applied.
- 8) **Neutral Range:** Please refer to the following illustrations. This will determine the area at which the radio is in neutral.



- 9) **Timing:** The parameters of most brushless motors vary, so it is difficult to find the compatibility between the ESC and the motor. Setting this parameter will be determined by the motor size being used. It is important to remember that the higher the timing is set at, the higher the amount of power will be pulled from the battery pack.
- 10) **Motor Type:** Select the brushless motor. **NOTE:** The V18 ESC Can only be used with a brushless motor.
- 11) **Over Heating Protection:** This function will cut-off all power to the model when the temperature of the ESC or the motor is higher to than 120°F for more than 5 seconds. When this happens the green LED located on the ESC will flash. The amount of flashes and the sequence of flashing will determine if the ESC or the motor has over-heated.

* Over-heated Motor: ■-----■-----■-----■
 * Over-heated ESC: ■-----■-----■-----■

NOTE: This Advanced setting is only available when the ESC and Motor both Venom™ products.
RESET: At any time you can reset to the default settings. This is done one of two ways. One is with the program card by pushing the RESET button and the other is manually holding the "SET" key on the ESC for three seconds this will be followed by both RED, and GREEN LEDs to flash at the same time.

VII. Using the Programing Card to setup ESC.

The Programming Card is the fastest and easiest way to set up the V18 Pro Brushless ESC. To use the Programming Card (VEN-1383) follow these steps.

- 1) Turn the power **OFF** to the ESC.
- 2) Plug the Input BEC into the slot provided at the top of the Programing Card. **NOTE:** Refer to illustration for correct slot.



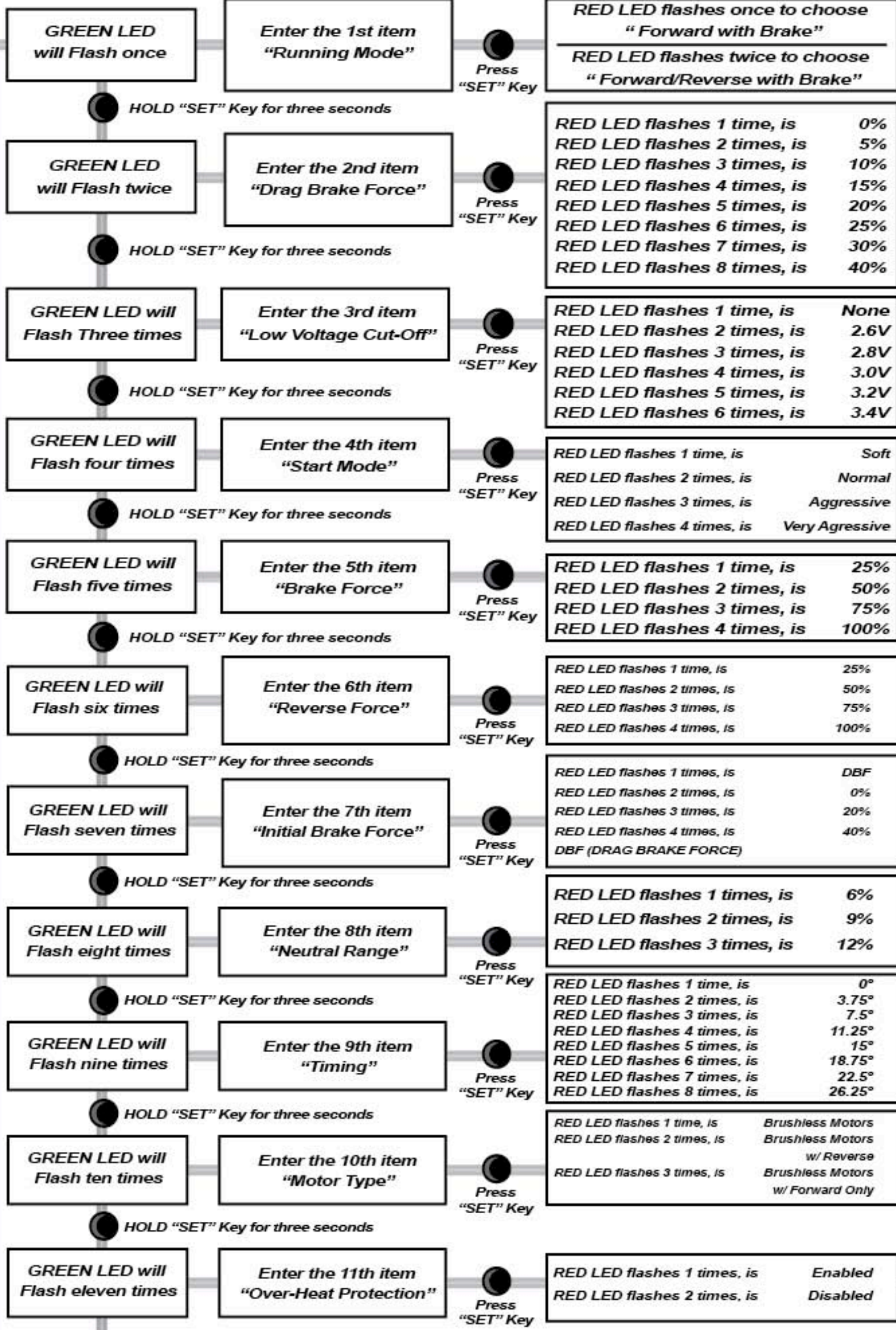
To find the BEC Cable refer to Figure 1 drawing on page 1

- 3) Turn the power back **ON**. **NOTE: DO NOT CHANGE THE SEQUENCE IN STEPS OR THE PROGRAMMING CARD WILL NOT WORK.**
- 4) After the digital numbers appear in the two windows provided on the front of the card. **PRESS** the "ITEM" button to scroll through the 11 programmable "ITEMS"
- 5) **PRESS** the "VALUE" button to scroll through the sub categories, they range from 1 through 8 depending on how many programmable values there are in that particular "ITEM".
- 6) To apply a desired setting to the ESC push the "OK" button. A (-) should appear in the Value window. This means that the setting has been programmed **NOTE:** At any time you may return the ESC to the default settings by pressing the "RESET" button.

IV. Programing manually through ESC.

This section will help setup the ESC without the use of the V18 Pro Brushless Programing Card.

- 1) Turn **OFF** the power to the ESC.
- 2) Turn Transmitter **ON**.
- 3) hold the "SET" Key down on the ESC and at the same time turn **ON** the power switch on to the ESC. This will cause the RED LED to flash. Make sure to hold down the "SET" Key after the flashing has started.
- 4) Wait for the GREEN LED to start flashing. After releasing the "SET" Key the initial setup will begin. Continue to diagram on the next page.



After programming the ESC, Turn it OFF and then Turn it back ON

Trouble Shooting

Problem	Cause	Solution
Turn ON ESC and motor does not work.	Loss of connection. Wrong Polarity	Check polarity and connections. Check main programming setup
Motor is not working and only beeps continuously with 1 sec between.	Input voltage is wrong,	Check the voltage of the LiPO, NiMH/NiCD Battery Pack.
Motor is not working and only beeps continuously with 2 sec between.	Throttle signal is wrong	Check the transmitter and receiver. Check the connection to the throttle channel.
The brushless motor is running in the opposite direction.	The polarity between the ESC and motor is reversed.	Correct the polarity by swapping any two of the three wires between the ESC and motor. NOTE: this can only be done with a sensorless brushless motor.
The motor suddenly cuts out and stops running.	Transmitter signal has been lost	Check the transmitter and receiver. Check the connection to the throttle channel.
	The ESC has switched to the voltage protection Mode	Replace the battery pack. Check the Protection Function.
Random stops or restarts or irregular glitching	Unreliable connection	Check all connections.
	Radio interference from an unknown location.	Move to a different location to run model or reset ESC to a different frequency

Venom™ Limited Warranty

Venom™ warrants this product to be free of material and workmanship defects when new. If a component is defective or was not correctly made, Venom™ will, at its sole discretion, repair or replace it free of charge within 90 days from date of purchase. If you believe a defect became evident only after operation, please contact us to discuss the situation.

A dated & itemized sales receipt must accompany any product returned for warranty work. Before returning any product, please contact Venom™ Customer Service at 800-705-0620 to receive a Return Merchandise Authorization Number (RMA#).

GUARANTEE:

We guarantee this product to be free of manufacturing faults and material defects. This product has been checked and adjusted individually before leaving the manufacturer. Please contact your local hobby shop for replacement parts and technical support or contact Venom™ Customer Service at 800.705.0620 or customerservice@venom-group.com.

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Parts List

Venom V18 Pro Brushless ESC VEN-1382
 Venom Pro Brushless ESC Programming Card VEN-1383
 Venom V20L 5200kv Pro Brushless Motor VEN-1364

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