



1/10 Scale Brushless Electric 4WD Truggy

INCLUDED

Valkyrie TR 4S: 4WD Truggy assembled with electronics.
Radio System: 2.4GHz 4-Channel radio system.

REQUIRED

Rechargeable Battery: 2S or 4S LIPO battery pack. (4S Maximum)
Battery Charger: Suitable for battery being used.
Transmitter Batteries: Four AA batteries.

IMPORTANT LINK:

- To view the most up-to-date full length manual with ESC guide, radio guide, exploded views and parts lists, go to:
www.redcatracing.com/pages/manuals



Warnings

AGE WARNING! You must be 14 years of age or older to operate this vehicle. It is the buyer's responsibility to ensure that this product is safely operated. This radio controlled (RC) vehicle is not a toy. It is the responsibility of the parents or guardian to ensure that minors receive appropriate guidance and supervision when operating or working on this product.

The buyer assumes all risks associated with the use of this product. Namero LLC d/b/a Redcat Racing and their retail partners, dealers, distributors, manufactures and affiliates cannot control the use and operation of this product and as such shall not be held responsible or liable for any injury, accident or damage resulting from the use of this product.

Always perform a prerun inspection to ensure that there is no damage and that all screws and wheel nuts are secure. If damage is found, repair or replace prior to use.

Fully read all instructions, manuals and warnings for this vehicle, included in the box, online, and for any accessories required to operate the product.

Never operate your RC vehicles on public roads, near bystanders, children, pets other animals. Never lose sight of your vehicle while it is in operation and always leave a safe distance around your RC vehicles when driving so that in the event you lose control you don't damage the vehicle, hurt yourself or others. Always keep clear of the wheels or other moving parts on the vehicle and never attempt to pick up the vehicle if the wheels are in motion. Do not attempt to touch the motor, ESC, battery or other electrical components during or immediately after use as these items will get hot during operation.

Always allow the vehicle time to cool down between runs. Overheating the electronics can shorten the life of your electronic components.

Never leave the battery connected when not in use and store batteries in accordance with the manufactures instructions.

Never leave a battery unattended while being charged. Never charge batteries while they are inside of the RC vehicle.

There is a risk of fire and explosion when dealing with batteries. Rechargeable batteries may become hot and catch fire if left unattended, charged too quickly, charged too often, if overcharged, if over discharged or if previously damaged. Never charge at a rate higher than 1C. (2000Mah pack = 2 amp charge rate). Always use a LIPO safe charging pouch when charging LIPO batteries. Only use a LIPO specific charger when charging LIPO batteries.

Never use a LIPO battery that has previously overheated and/or shows signs of damage or swelling. If you suspect the battery to be damaged, immediately discontinue use and properly dispose of the battery. Never dispose of a LIPO battery with regular trash, check with local authorities for proper disposal.

Always check the ESC settings to ensure that they match the battery type during operation. If using a LIPO battery, the ESC must be set to LIPO or damage may occur.

Never mix old and new batteries. Do not change or charge batteries in a hazardous location. Do not mix alkaline, lithium, standard (carbon zinc), or rechargeable (NiMh, cadmium) batteries in the transmitter.

If you do not agree with or are unable to follow these warnings and are not willing to accept full and complete liability for the use of this RC product; immediately return the product to your place of purchase in new and unused condition.

Start Up

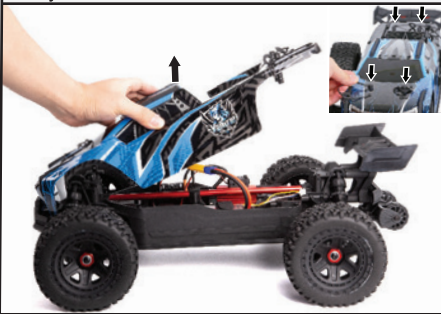
Attention: The ESC is set to LIPO from the factory.
Note: When using a LIPO battery, the ESC MUST be set to LIPO or damage to the battery may occur. See full online manual.

Attention: The ESC is designed to run a single LIPO battery. If using the Y-adapter, you can plug in two matching 2S battery packs to achieve a total of 4S power. Both packs being used must have the same voltage and MAh ratings.

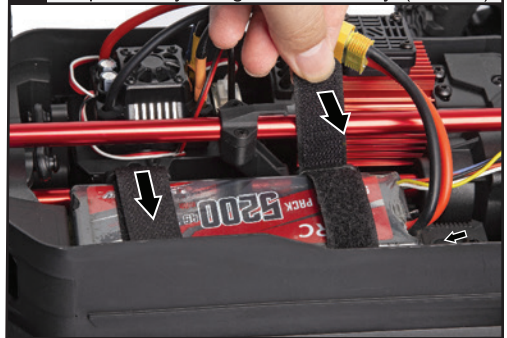
1. Insert 4 brand new AA batteries into the controller. Be sure to line up the positive (+) side of the battery with the (+) mark inside the battery compartment. (see above warnings)



2. Remove the four body clips and lift the body off of the chassis.



3. Strap in a fully charged LIPO battery. (4S Max)



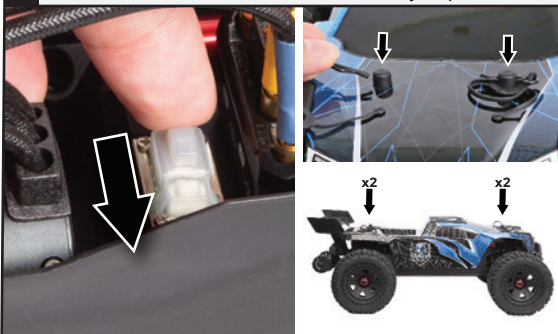
4. Plug in the battery pack. CAUTION! Do not turn on the ESC yet!



5. Turn on the radio.



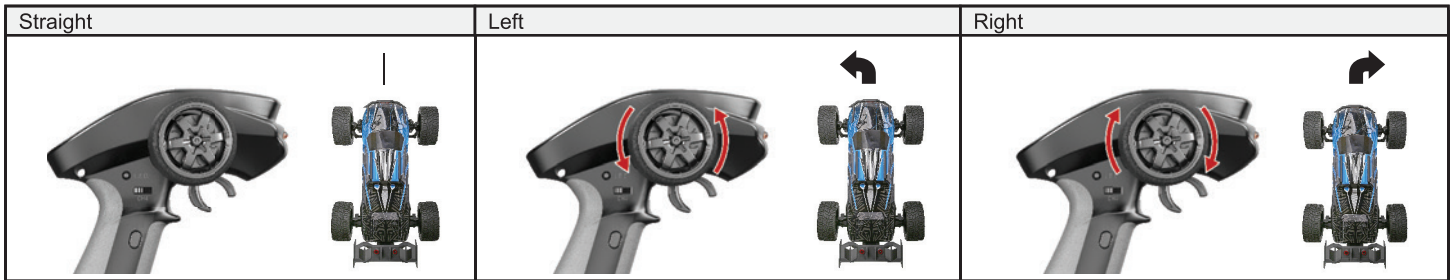
6. Switch on the ESC and secure the body in place.



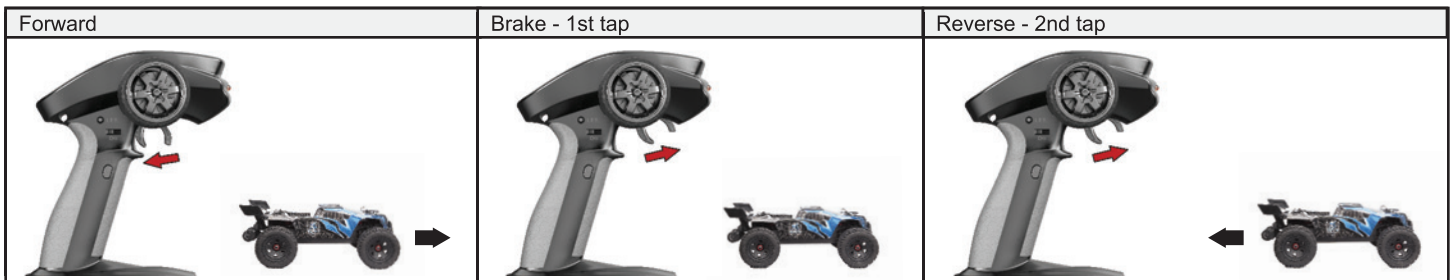
NOTE: You can also operate the ON/OFF switch by reaching under the right side of the body.



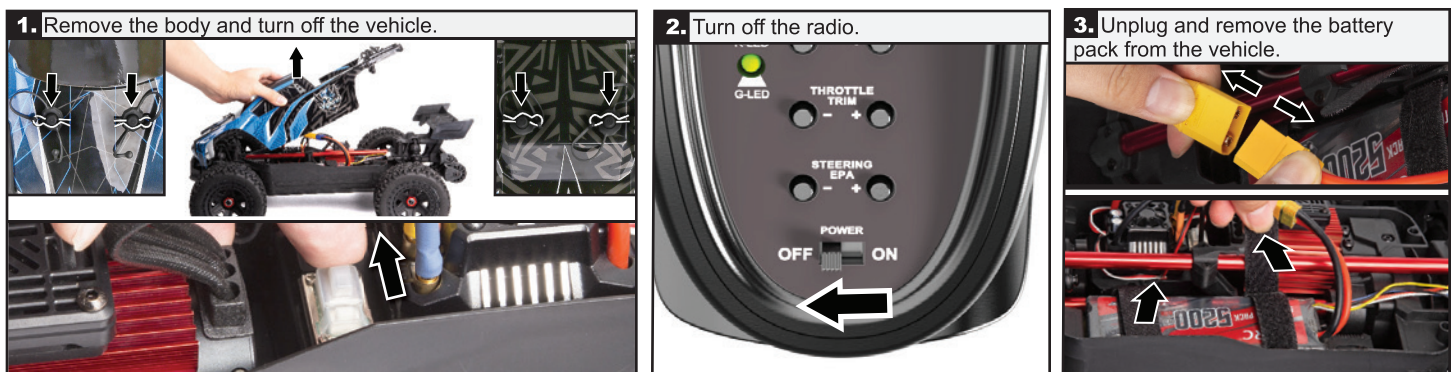
Steering



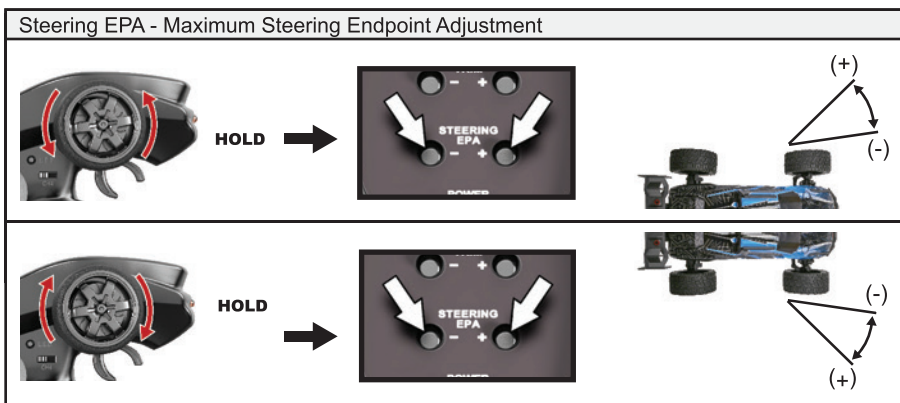
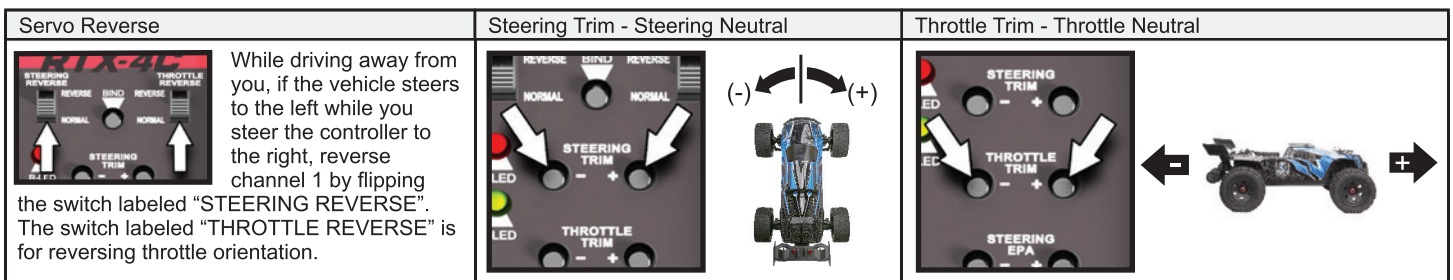
Throttle



Shut Down



Radio Adjustments



RTX-4C RADIO - WARNINGS & COMPLIANCE



DoC Declaration: Hereby, [Redcat Racing] declares that the Radio Equipment [RTX-4C] is in compliance with RED 2014/53/EU.

The full text of the EU DoC is available at the following internet address: www.flysky-cn.com.

CE: GTS2023060192EV1
FCC ID: 2A2UNRTX4C00

CE Warning: The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

FCC This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) This device must accept any interference received, including interference that may cause undesired operation.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Caution!

- The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.
- The 2.4GHz radio band is limited to line of sight. Always keep your model in sight as a large object can block the RF signal and lead to loss of control.
- To ensure the best signal quality make sure that the receiver antenna is mounted perpendicular to the model body in an upright position. Be sure the receiver antenna is not touching or right next to conductive materials, such as metal or carbon fiber.
- Low battery alarm: When the battery is lower than 4.2v, the G.LED on the transmitter panel will flash slowly. Turn off the vehicle and stop operation immediately when the batteries are low. Replace the transmitter batteries with (4) new AA batteries before further use.
- Do not cut, kink, damage or alter the antennas at any time. If an antenna is damaged, stop use immediately.



WARNINGS & COMPLIANCE

Old electrical appliances must not be disposed of along with regular household residual waste, but have to be disposed of separately. Find a local communal collection point that specializes in the disposal of electrical appliances and devices. These collection points may be free or they may charge a fee, depending on your location. The owner of old or unused appliances is responsible for bringing the appliances to these specialized collection points. With a little personal effort, you can contribute to recycling valuable raw materials and the treatment of toxic substances.

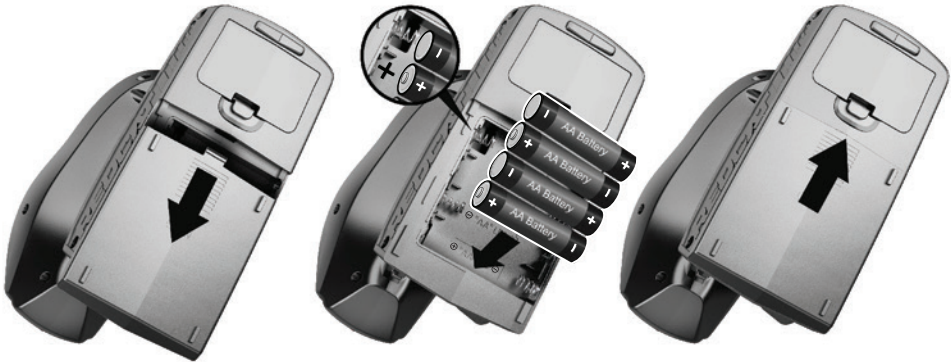


SPECIFICATIONS

Product Model:	RTX-4C
Channels:	4
Model Type:	Surface Vehicles
RF:	2.4GHz
Maximum Power:	<20dBm (e.i.r.p.) (EU)
2.4GHz Protocol:	2A-BS
Distance:	>300m (Ground)
Channel Resolution:	1024
Battery:	6V DC - (x4) AA Batteries
Low Voltage Warning:	<4.2V
Antenna Type:	Built in Single Antenna
Temperature Range:	-10 deg. C - +60 deg. C
Humidity Range:	20% - 95%
Size:	160 x 193 x 97mm
Weight:	220g
Certification:	CE, FCC ID: N4ZG4P00

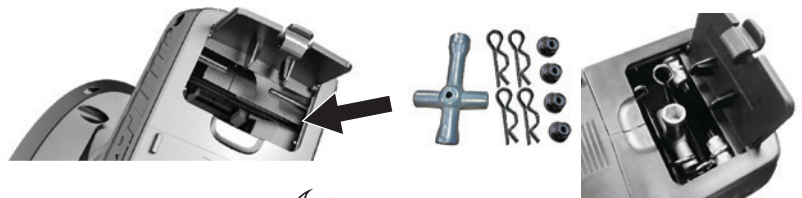
INSTALL TRANSMITTER BATTERIES

WARNING! When installing transmitter batteries, be sure the positive and negative polarity is oriented correctly. The negative side of the battery will contact the spring inside the radio tray. See image below.

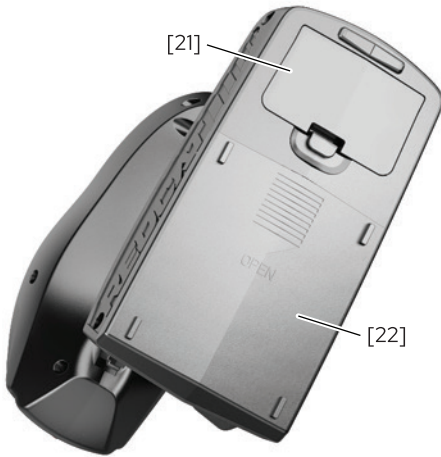
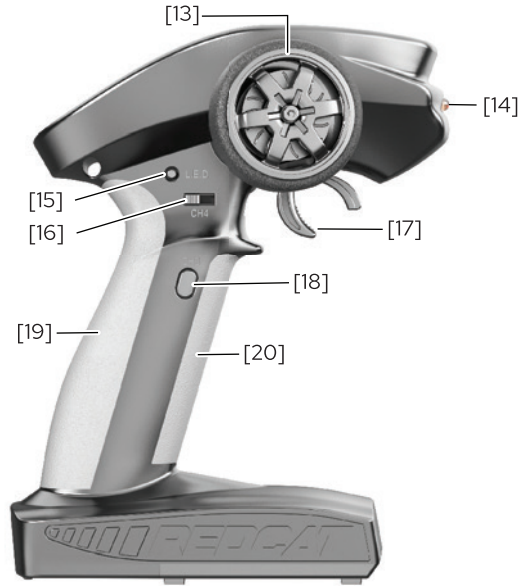
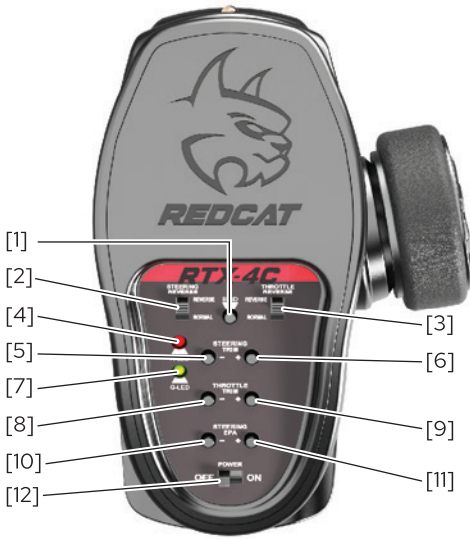


WARNING! Do not mix old and new batteries. Do not mix alkaline, lithium, standard (carbon zinc), or rechargeable (Nickel-cadmium) batteries. Do not change or charge batteries in a hazardous location.

NOTE: There is a storage compartment in the bottom of the transmitter. This can be used to store (1) mini cross wrench (4-7mm), (4) 4mm nylock nuts and body clips.

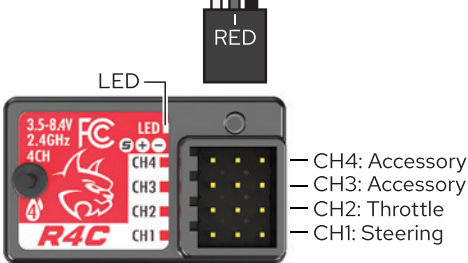


OVERVIEW



1.	Bind Button
2.	Steering Reverse
3.	Throttle Reverse
4.	Power Indicator LED - RED (R. LED)
5.	Steering Trim (-)
6.	Steering Trim (+)
7.	Status Indicator LED - Green (G.LED)
8.	Throttle Trim (-)
9.	Throttle Trim (+)
10.	Steering End Point Adjustment (-) (EPA)
11.	Steering End Point Adjustment (+) (EPA)
12.	Power Switch
13.	Steering Wheel. (CH1)
14.	LED Light
15.	LED Light (ON/OFF) Button
16.	Three Position Switch (CH4)
17.	Throttle Trigger (CH2)
18.	Button (CH3)
19.	Rubber Grip Rear
20.	Rubber Grip Front
21.	Tool & Spare Parts Compartment
22.	Battery Compartment - 4 AA Batteries

WHITE / YELLOW — BLACK



TURN ON/OFF

TURN ON:

Warning! Always turn on the transmitter BEFORE powering on the vehicle.

1. Be sure four new AA batteries are installed correctly into the transmitter.
2. Turn on the transmitter by moving the ON/OFF switch to the ON position. The red LED will light up when the transmitter is on.
3. Plug a fully charged battery into the ESC and power on the vehicle.

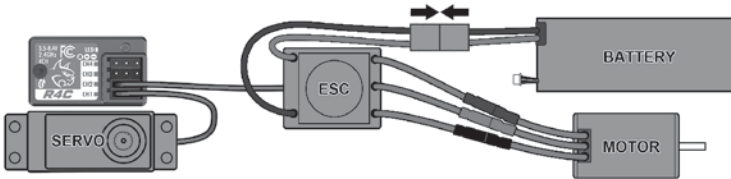
TURN OFF:

Warning! Always turn off the vehicle BEFORE turning off the transmitter.

1. Turn off the vehicle and unplug the battery pack.
2. Turn off the transmitter by setting the ON/OFF switch to the OFF position.

BINDING INSTRUCTIONS

Follow the wiring diagram below to install the receiver into the vehicle. CH3 & CH4 can be used for accessories, such as 3-speed transmission servo, winch, etc.

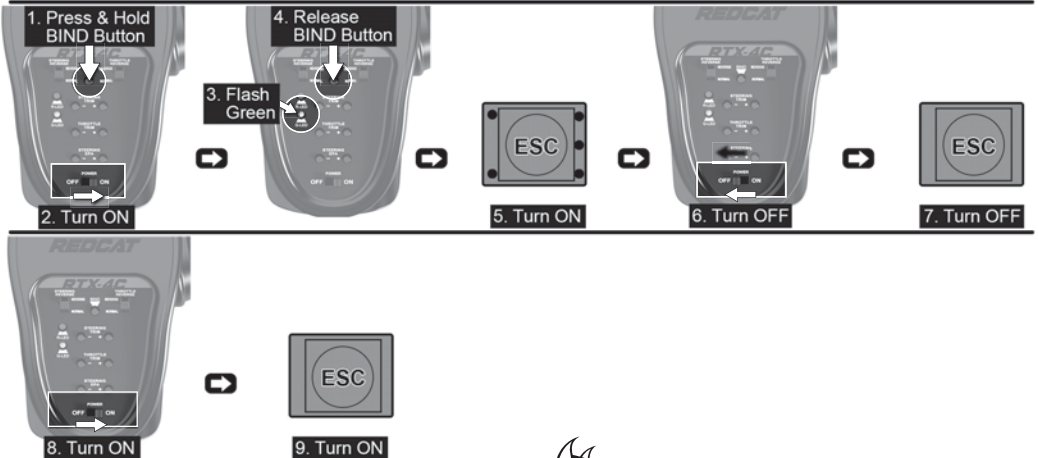


Generic illustration for BINDING the radio: Please refer to the ESC section of this manual for an accurate, vehicle specific, illustration of the included electronics and how they connect.

The transmitter and receiver are bound at the factory but if binding is needed, follow these steps.

1. Press and hold the BIND button on the transmitter.
2. While holding the BIND button, turn on the transmitter.
3. The G.LED will start flashing quickly indicating it is in bind mode.
4. Once in bind mode, release the bind button.
5. Turn on the ESC, this will power the receiver. The receiver will enter bind mode automatically when powered on.
6. Turn off the transmitter.
7. Turn off the receiver (ESC).
8. Turn the transmitter back on.
9. Turn on the receiver (ESC). After the power cycle the transmitter will bind to the receiver. Once binding is successful the receiver's LED will flash slowly and the transmitter's LED will remain solid.

Note: When binding, put the transmitter into bind mode first, then power on the receiver (ESC).



CALIBRATION

This function is used to set the neutral position for the throttle trigger and steering wheel.

Every transmitter is calibrated before leaving the factory, however if recalibration is required, please follow these steps:

1. Turn and hold the wheel as far clockwise as it will turn, hold the throttle all the way forward and turn on the transmitter. If done correctly, both Red and Green LEDs will double flash on and off.
2. Calibrate wheel: Turn the wheel completely clockwise, then completely counterclockwise.
 - When calibration is completed the Red LED will turn off.
3. Trigger calibration: Pull the trigger back then forward as far as it will go.
 - When calibration is completed the Green LED will turn off.
4. Once calibration is complete press the bind button to save the settings and exit calibration mode.

FUNCTIONS

CHANNEL DESCRIPTION

The transmitter outputs a total of 4 channels, which are allocated as follows:

CH1: Steering Wheel

CH2: Throttle Trigger

CH3: Accessory Button (2 Position button)

CH4: Accessory Switch (3 Position Switch)

Note: By default the output of CH3 is in the position of 1000us. Pressing the button will toggle between 1000 and 2000us.

CHANNEL REVERSE

This function is used to adjust each channel's direction of movement in relation to its input. The STEERING REVERSE and THROTTLE REVERSE switches directly effect CH1 and CH2. If the switch is up, the channel is reversed. If the switch is down, the channel is in its normal orientation.

TRIMS

The STEERING TRIM buttons are used to center the steering servo (CH1). If the vehicle steers without transmitter steering input, use these buttons to adjust the vehicle so that it drives straight without steering input from the transmitter. STEERING TRIM can be multiplexed to trim CH3 and CH4. For multiplexing instructions, refer to the [Mode Switching] section.

The THROTTLE TRIM buttons are used to ensure the vehicle remains still while there is no transmitter throttle input (CH2). If the vehicle drives forward or backward without transmitter throttle input, use these buttons to trim the throttle until the vehicle is completely still.

Adjustment range: -120us- + 120us, each step is 4us.

STEERING TRIM + / THROTTLE TRIM +: Increases adjustment steps.

STEERING TRIM- / THROTTLE TRIM -: Decreases adjustment steps.

LED Indicator:

- While using the trim buttons, the G.LED flashes slowly on short presses and quickly on long presses.
- When the trim adjustment value is in the neutral position, the G.LED will flash twice slowly.
- When the trim adjustment value is at its maximum setting (+ 120us / -120us), the G.LED will no longer flash with each press of the button, indicating it is at its maximum value.

END POINT ADJUSTMENTS (EPA)

STEERING EPA is used to set the steering servo's maximum amount of travel. This is used to ensure the steering servo provides enough throw to steer the front wheels to their maximum capacity without damaging the servo. To set the steering end points, press the "STEERING EPA (-)" button several times, then turn and hold the transmitter's steering wheel all the way to one side. Gradually press the "STEERING EPA (+)" button



FUNCTIONS

until the front wheels have reached their maximum steering capacity. If you hear the steering servo buzzing, press the "STEERING EPA (-)" until the buzzing stops.

The end point adjustments can be multiplexed to adjust CH2 (throttle), CH3 and CH4. For multiplexing instructions, refer to the [Mode Switching] section.

Adjustment range: 0-120% (the default is 100%), the step value is 5%.

STEERING EPA +: Increases servo travel.

STEERING EPA -: Decreases servo travel.

LED Indicator:

- When using the trim keys the G.LED will flash slowly on short presses and quickly on long presses.
- When the end point adjustment value is at its maximum setting, the G.LED will no longer flash with each press of the button.

MODE SWITCHING

This function is for reusing the STEERING TRIM and STEERING EPA buttons for different channels. Refer to the [Trims] and [END POINT ADJUSTMENTS (EPA)] sections on the previous page to view their effect on the vehicle.

Function settings:

After turning on the transmitter, quickly press the Bind button twice (within 1 second) to cycle through modes 1, 2, 3, and 4. The default setting when powered on is mode 1.

Mode 1: G.LED flashes slowly once, STEERING TRIM adjusts CH1 and STEERING EPA adjusts CH1.

Mode 2: G.LED flashes twice slowly, STEERING TRIM adjusts CH1 and STEERING EPA adjusts CH2.

Mode 3: G.LED flashes three times slowly, STEERING TRIM adjusts CH3 and STEERING EPA adjusts CH3.

Mode 4: G.LED flashes slowly four times, STEERING TRIM adjusts CH4 and STEERING EPA adjusts CH4.

FAILSAFE

This function dictates what the receiver will do in the event that it loses signal from the transmitter, this includes servo position, throttle position, etc.

Function settings:

1. Turn on the transmitter and make sure it is connected to the receiver.
2. Hold the control surface at the desired failsafe position.
3. Press and hold the bind button for 3 seconds, the G.LED will flash for 2 seconds, indicating that the settings were saved.

Note: The failsafe function is not set at the factory by default. If no failsafe setting has been set, the receiver will maintain the output of the last signal when the signal is lost. Failsafe is intended as a safety measure during transmitter signal loss and will not work if the receiver loses power.

BEGINNER MODE

Beginner mode is designed for the people who are new to the hobby.

In this mode the throttle is limited to 50 percent and the channel range defaults are set to 1250~1500~1750us.

Function settings:

To switch between beginner and normal modes, press and hold the CH3 button while turning the steering wheel completely counterclockwise, as far as it can go. While holding, turn on the transmitter.

Note: By default, the system is set to normal mode. When set to beginner mode, the G.LED will double flash for 3 seconds after turning on the transmitter.



Specs:

Model:	WP-MAX10-SCT-120A-4S-RTR
Cont./Peak Current:	120A/830A
LIPO/NiMH Cells:	6-12 Cells NiMH, 2-4S LiPo
Applications:	Land Vehicles Only
Built in BEC:	6V/7.4V Switchable, 4A (Switch-mode)
Size / Weight:	49 x 39.5 x 34.7mm (W/Fan) / 105g
Programming Port:	FAN / PRG Port
Motor Type:	Sensored / Sensorless Brushless Motor (only in sensorless mode)
Motor Limit:	2S LiPo / 6 Cell NiMH: 36XX size motor, KV≤6000 3S LiPo / 9 Cell NiMH: 36XX size motor, KV≤4000 4S LiPo / 12 Cell NiMH: 36XX size motor, KV≤3000
Cooling Fan:	Powered by the stable BEC voltage of 6V/7.4V

FEATURES:

- Water-proof and dust-proof. (Remove the cooling fan when running car in wet conditions. If the ESC gets wet, clean and dry thoroughly to avoid damage from the oxidation of copper connectors).
- External Programming Port (EPP), easily connect to a program card, and also works as power port for cooling fan.
- Advanced programming via portable LED program card. Program card available separately.
- Excellent start-up, acceleration and linearity features.
- The built-in switching mode BEC is powerful enough to supply all electronic equipment with a reliable power source.
- Proportional ABS brake function with 9 steps of maximum brake force adjustment and 9 steps of drag-brake force adjustment. Also compatible with the mechanical disc-brake system.
- Innovative Capacitor Protection effectively protects capacitors from exploding and causing irreversible damage to the ESC from overloading.
- Multiple protective features: Low voltage cut-off protection / Over-heat protection / Throttle signal loss protection / Motor blockage protection / Failsafe (throttle signal loss protection).
- Single-button ESC programming and factory reset.

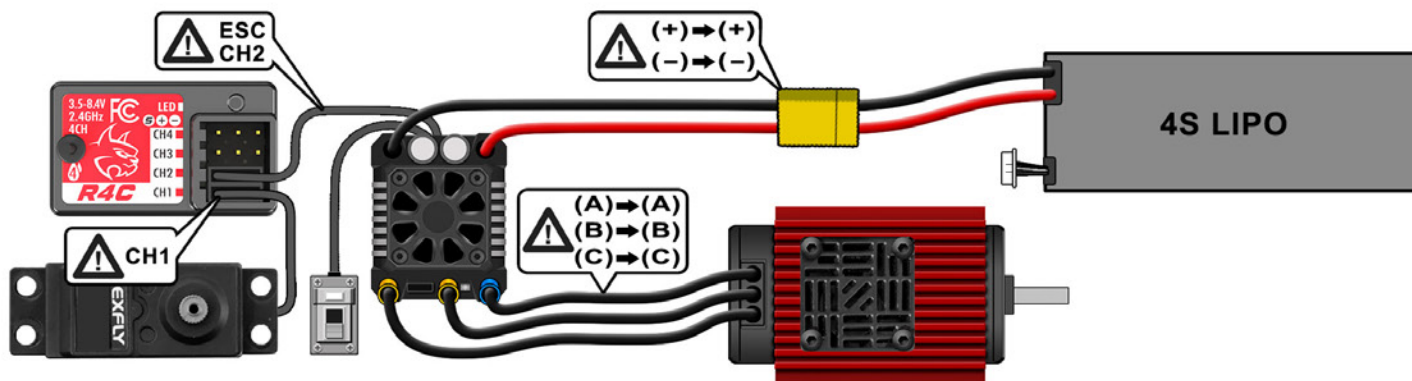
WARNING:

To avoid short circuits, ensure that all wires & connections are well insulated and there is proper contact at all connections. Read through the entire manual before operating and ensure all electronics are installed correctly. To avoid accidents, we recommend setting the vehicle on a stand, with the tires free from any contact, while connecting and adjusting electronics. Do not hold the vehicle in the air while applying full throttle; the tires can "expand" to extreme size or even crack, causing serious injury.

Stop usage and unplug the battery immediately if the ESC exceeds 90°C/194°F as this may damage both the ESC and motor. We recommend setting the "ESC Thermal Protection" to 105°C/221°F (this refers to the internal temperature of the ESC).

Disconnect the battery after use. The ESC continuously draws current from the battery (even if the ESC is turned off). If left plugged in for long periods of time, the battery will completely discharge, which may result in damage to the battery or ESC. This WILL NOT be covered under warranty.

ESC



Calibration

Press and hold the SET button

Turn ON the ESC

Release the SET button once the LED flashes.

1. Turn on the transmitter, set parameters on the throttle channel like "D/R", "EPA" and "ATL" to 100% and the throttle "TRIM" to "0". Disable the "ABS braking function".
2. Start with the transmitter on and the ESC turned off but connected to a battery. While holding the SET button, Turn ON the ESC, then release the SET button when you see the RED LED on the ESC start to flash (Note: the motor beeps at the same time). (The ESC will enter the programming mode if the SET button is not released within 3 seconds, which will then require you to restart from step 1.)

Move the throttle trigger to the neutral position and press the SET button.

The Green LED flashes once and motor emits "Beep" tone.

Pull the throttle trigger to the end position of forward and press the SET button.

The Green LED flashes twice and motor emits "Beep-Beep" tone.

Push the throttle trigger to the end position of reverse and press the SET button.

The Green LED flashes three times and motor emits "Beep-Beep-Beep" tone.

3. To set the neutral point, leave the throttle trigger at the neutral position, press the SET button. The RED LED dies out and the GREEN LED flashes 1 time and the motor beeps 1 time to accept the neutral position.
4. To set the full throttle endpoint, pull the throttle trigger to the full throttle position and press the SET button. The GREEN LED blinks 2 times and the motor beeps 2 times to accept the full throttle endpoint, then release the set button.
5. To set the full brake endpoint, push the throttle trigger to the full brake position, press the SET button. The GREEN LED blinks 3 times and the motor beeps 3 times to accept the full brake endpoint. Release the trigger back to the neutral point. (The motor can be started 3 seconds after the ESC/Radio calibration is complete)

Programming

Press and hold the SET button

Turn ON the ESC

The Red LED flashes

The Green LED flashes

1. Turn on the transmitter.
2. Press and hold the set button on the ESC ON/OFF switch.
3. Turn ON the ESC.
4. Continue to hold the set button until the Green LED flashes the number of times that corresponds with the item # you wish to adjust. Refer to the "Item #" column of the chart to determine the number of Green LED flashes needed. (1 flash = Running Mode, 2 flashes = Drag Brake Force, etc.)

Programmable Items	Programmable Value								
	1	2	3	4	5	6	7	8	9
1. Running Mode	Fwd/Br	Fwd/Rev/Br							
2. LiPo Cells	Auto	2S	3S	4S					
3. Low Voltage cut-off	Disabled	Auto (Low)	Auto (Intermediate)	Auto (High)					
4. ESC Thermal Protection	105°C/221°F	125°C/257°F							
5. Motor Thermal Protection	Disabled								
6. Motor Rotation	CCW	CW							
7. BEC Voltage	6.0V	7.4V							
8. Max Brake Force	12.5%	25%	37.5%	50%	62.5%	75%	87.5%	100%	Disabled
9. Max Reverse Force	25%	50%							
10. Start Mode (Punch)	Level 1	Level 2	Level 3	Level 4	Level 5				
11. Drag Brake	0%	2%	4%	6%	8%	10%	12%	14%	16%

NOTE: The shaded boxes are default settings

Programming (Continued)

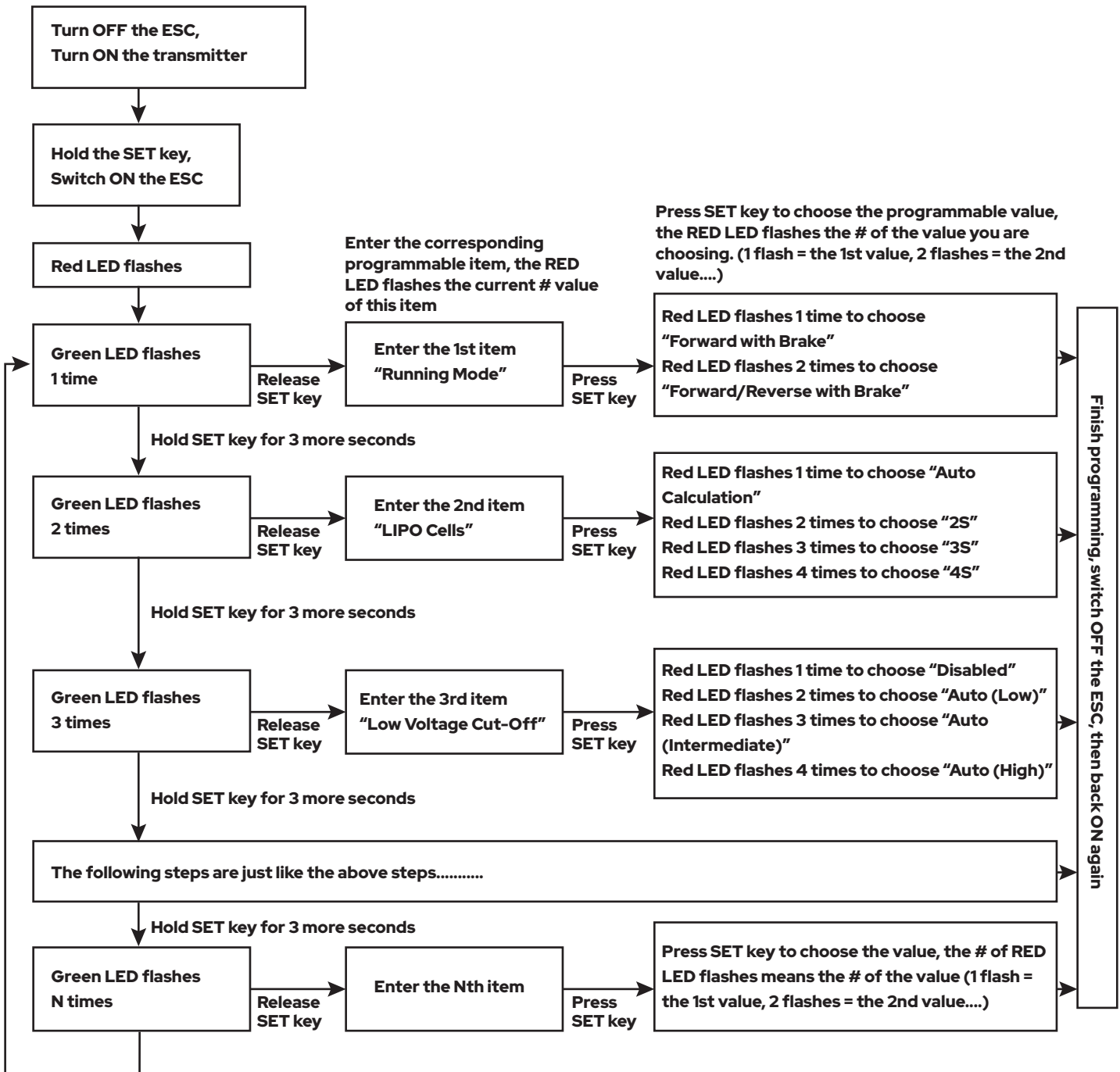
The Red LED flashes. The number of flashes indicates the program option on the chart.

Press and release the SET button once the desired number of Red flashes is reached.

Turn off the ESC.

- The Red LED will flash the number of times that corresponds to the number of the option listed along the top of the chart. (1 flash = Option 1, 2 flashes = Option 2, etc.)
- Press and release the set button until the desired number of Red flashes is achieved.
- To finish set up, turn OFF the ESC.
- You can now power the ESC back on. The settings should now be saved.
- Repeat steps 1-8 for each setting you wish to adjust.

Programming Flow Chart



Programming (Continued)

In the program process, the motor will emit a "Beep" tone when the LED flashes.

A long flash and long "Beep---" tone is used to represent the number "5", to easily identify items of a large number.

"A long flash" (Motor sounds "B---") = the No. 5 item

"A long flash + a short flash" (Motor sounds "B---B") = the No. 6 item

"A long flash + 2 short flashes" (Motor sounds "B---BB") = the No. 7 item

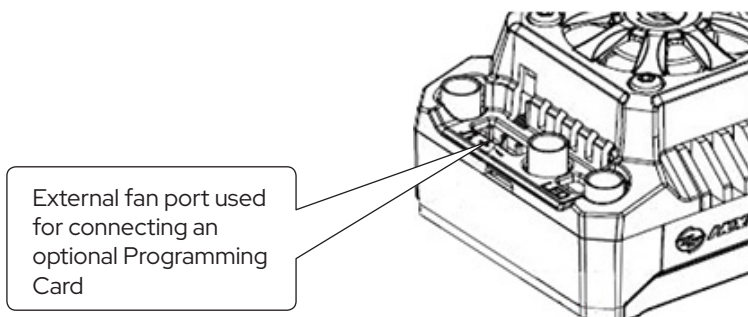
"A long flash + 3 short flashes" (Motor sounds "B---BBB") = the No. 8 item

"A long flash + 4 short flashes" (Motor sounds "B---BBBB") = the No. 9 item

Using an Optional Program Card (Not Included)

The Program Card is optional equipment which needs to be purchased separately. It has 3 digital LEDs to display the programmable items' number and the options' number. (Please refer to the user manual of the program card for detailed info)

Attention! The Rx wire of the ESC (for connecting receiver) CANNOT be used to connect with the LED Program Card. Only use the fan port between the terminals ABC to connect the Program Card to the ESC.



Programmable Items Description

1. Running Mode: In "Forward with Brake" mode, the car can go forward and brake, but cannot go backwards, this mode is suitable for competition. "Forward/Reverse with Brake" mode provides the reverse function.

Note: "Forward/Reverse with Brake" mode uses "Double-click" method to enter reverse. When you move the throttle trigger from the forward zone to the reverse zone for the first time (The 1st "click"), the ESC begins to brake the motor, the motor slows down but it is still running, not completely stopped, so the reverse function does NOT happen immediately. When the throttle trigger is moved to the reverse zone again (The 2nd "click"), if the vehicle is stopped, the reverse function will engage, driving the vehicle backwards. The "Double-Click" method prevents accidentally sending the vehicle into reverse while trying to brake.

Note: Any time during braking or reversing, if the throttle trigger is moved to forward zone, the motor will run forward immediately.

2. LIPO Cells: "Auto Calculation" is the default setting. If only using LiPo batteries with the same cell count, we recommend setting this item manually to avoid an incorrect "calculation" (For instance, the ESC may mistake a partially discharged 3S LiPo as a fully charged 2S LiPo) which may cause the low-voltage cut-off protection to not function ideally.

3. Cut-off Voltage: Sets the voltage at which the ESC lowers or removes power to the motor in order to keep the battery at a safe minimum voltage (for LiPo batteries). The ESC monitors the battery voltage all the times and will immediately reduce the power to 50% and cut off the output 10 seconds later when the voltage goes below the cut-off threshold. The RED LED will flash a short, single flashes that repeat (, ,) to indicate the low-voltage cut-off protection is activated. Set the "Cut-off Voltage" to "Disabled" if you are using NiMH batteries.

Option 1: "Disabled" The ESC does not cut the power due to low voltage. This is for NiMH batteries ONLY. If using this option while using LIPO batteries, permanent damage to the battery will occur.

Option 2: "Auto (Low)" Low voltage detection is activated, but is not sensitive and may over discharge batteries. This setting is generally used with a weak battery that is prone to activate the low voltage cut-off prematurely. We do not recommend this setting. Use at your own risk.

Option 3: "Auto (Intermediate)" Low voltage detection is activated and working at normal sensitivity. This is the recommended setting.

Option 4: "Auto (High)" Low voltage detection is activated and is most sensitive in this mode. The LVC may prematurely activate with normal LIPO packs. This setting is used if primarily for packs with an extremely high discharge rate (C-rating).

Warning: Never set the Cut-off Voltage to Disabled when using a LiPo pack. The LiPo pack could discharge to an unsafe level causing risk of fire, damage, injury and/or death.

4. ESC Thermal Protection: The ESC will automatically cut off output power and the GREEN LED will flash (, ,) when the temperature of the ESC reaches the preset value. This indicates the ESC Thermal Protection has been activated. Power output will resume once the ESC cools down to a safe running temperature.

Programmable Items Description (Continued)

5. Motor Thermal Protection: This feature is permanently set to "Disabled" and is not applicable.

6. Motor Rotation: With the motor shaft facing you, applying throttle will cause the motor to spin clockwise if set to CW. If set to CCW, the motor will spin counter clockwise. This may vary with different motor manufacturers. This setting allows you to adjust the rotation of the motor without swapping the motor's wires.

7. BEC Voltage:

Option 1 : 6.0V - Use with standard 6V servos. If using a high voltage servo, set the BEC voltage to 7.4V.

Option 2 : 7.4V - Use with high voltage servos. If using a standard servo, set the BEC voltage to 6.0V to avoid servo damage.

8. Maximum Brake Force: The ESC provides proportional braking. This setting increases or decreases the maximum amount of braking. On the lowest setting, the vehicle will gradually come to a stop while full brake is applied on the transmitter. On the highest setting, the vehicle will screech to a halt while full brake is applied on the transmitter. A high setting can potentially damage gears, so use caution while setting this option. The "Disable" option inhibits the inherent brake function of the speed controller. "Disable" is used mostly in nitro or gas vehicles using a mechanical disc-brake system driven by a servo.

9. Max. Reverse Force: Adjusts to top speed while driving in reverse. For the safety of your vehicle, a low setting is recommended.

10. Start Mode (Also called "Punch"): Select from "Level 1" to "Level 5". Level 1 has a very soft start (minimum wheel spin), while level 5 has a very aggressive start (maximum wheel spin). From Level 1 to Level 5, the start force increases. Please note that if you choose "Level 5", you must use a good quality battery with a high discharge rating (C-rating), otherwise the motor to tremble and hesitate. If this is happening, lower the "Punch" level, or use a battery with a higher "C-Rating".

11. Drag Brake Force: Set the amount of drag brake applied at neutral throttle to simulate the slight braking effect of a brushed motor while coasting.

Reset All Items To Default Values

At any time when the throttle is located in neutral zone (except in the throttle calibration or parameters program process), hold the "SET" key for over 3 seconds, the red LED and green LED will flash at the same time, which means each programmable item has be reset to its default value. The ESC will need to be powered OFF and back ON again to complete the process.

ESC

TROUBLE	POSSIBLE CAUSE	POSSIBLE SOLUTIONS
NiMH battery charge doesn't last as long as it should.	<ol style="list-style-type: none"> ESC is set to LiPo battery. NiMH battery is not charged completely. NiMH battery is not holding a charge. 	<ol style="list-style-type: none"> Refer to the ESC Guide to set the ESC to NiMH battery. 3. Completely charge the NiMH battery with an appropriate NiMH charger.
LiPo battery won't recharge after running the vehicle.	<ol style="list-style-type: none"> ESC is set to NiMH battery and the LiPo battery was discharged below the safe level. Bad LiPo battery. 	<ol style="list-style-type: none"> Refer to the ESC Guide and set the ESC to LiPo battery. Properly dispose of the LiPo battery, as it is no longer safe to use. Replace the LiPo battery with a fully charged, brand new battery. Dispose of the bad battery in accordance to your local laws.
The ESC will not power on and the ON/OFF switch was turned ON.	<ol style="list-style-type: none"> No power is being supplied to the ESC. The ESC switch may be damaged. 	<ol style="list-style-type: none"> Check if all ESC & connections are well soldered and firmly connected. Contact Redcat support.
The vehicle ran backward when you pulled the throttle trigger towards you.	<ol style="list-style-type: none"> The radio "Throttle Reverse" switch may be improperly set. The motor rotation is incorrectly. 	<ol style="list-style-type: none"> Switch the radio "Throttle Reverse" switch. Set the rotation in the ESC according to the included instructions.
Vehicle moves with no throttle input.	<ol style="list-style-type: none"> Throttle trim is not set properly. Did not follow proper start-up instructions. 	<ol style="list-style-type: none"> Set transmitter throttle trim. Follow Quick Start Guide for proper start-up sequence.
The motor suddenly stopped working, but the steering still works.	The LVC protection or the thermal protection may have been activated.	Check the battery voltage and the ESC temperature. Let cool and recharge battery.
The motor accelerated suddenly, stuttered or stopped during the starting-up process.	<ol style="list-style-type: none"> The discharge capacity of the pack is insufficient. The RPM is too high, the gear ratio or final drive ratio is incorrect. Gear mesh too tight. 	<ol style="list-style-type: none"> Use another pack with better discharge capability. Use stock motor, stock gearing, and don't pull heavy loads. Reset gear mesh.
After powered on, the motor doesn't work, but emits "beep-beep-, beep-beep-" alert tone. (Every "beep-beep-" has a time interval of 1 second)	Input voltage is abnormal, too high or too low	Check the voltage of the battery pack
Grinding sound.	<ol style="list-style-type: none"> Gear mesh too loose. Gears worn. 	<ol style="list-style-type: none"> Reset gear mesh. Replace gears.
Clicking noise while steering.	<ol style="list-style-type: none"> Servo gears stripped. Servo horn stripped. 	<ol style="list-style-type: none"> Replace servo. Replace servo horn.
Vehicle won't steer or move.	<ol style="list-style-type: none"> Battery pack not charged. Battery wires loose. Did not follow proper start-up instructions. 	<ol style="list-style-type: none"> Charge battery pack. Plug in battery securely. Follow Quick Start Guide for proper start-up sequence.
Vehicle turns to the side automatically.	<ol style="list-style-type: none"> Steering trim needs adjusting. Steering servo horn needs realigning or replaced. Servo gears stripped. Too much toe-out in front wheels. 	<ol style="list-style-type: none"> Adjust transmitter steering trim. Check servo horn, replace if worn or stripped. Replace servo. Adjust steering linkage to lessen toe amount.
Vehicle steers to the left when you steer to the right.	<ol style="list-style-type: none"> Steering reverse (on transmitter) is set incorrectly. You are driving towards yourself and it just seems like it's backwards. 	<ol style="list-style-type: none"> Set the steering reverse on transmitter. Practice driving the vehicle to get used to steering with different vehicle orientations. When driving towards yourself, it just seems like the steering is backwards.
After the ESC was powered on and finished LiPo cells detection (the GREEN LED flashed N times), and then the RED LED flashed rapidly.	<ol style="list-style-type: none"> The ESC didn't detect any throttle signal. The neutral throttle value stored on your ESC is different from the value stored on the transmitter. 	<ol style="list-style-type: none"> Check if the throttle wire is reversely plugged in or in the wrong channel and if the transmitter is turned on. Re-calibrate the throttle range after you release the throttle trigger to the neutral position.



RER33253 - 17mm Wheel Nuts (4pcs)



RER32451 - Pre-Mounted Valkyrie 1/10th Truggy Tires w/ Wheels (1pr)



RER32452 - 17mm Wheel Hex (Aluminum)(4pcs)



150814 - 8x14x4mm Ball Bearings (2pcs)



RER32453 - Fr. Left C Hub Unit (1pc)



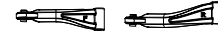
RER32454 - Fr. Right C Hub Unit (1pc)



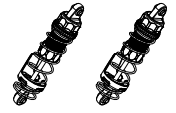
RER32455 - Rr Hub Unit (1pc)



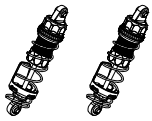
BS903-087 - 12x18x4mm Ball Bearings (2pcs)



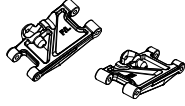
RER32456 - Fr/Rr Upper Arms (2pcs)



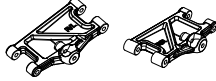
RER32457 - Fr Shock Absorber Truggy (2pcs)



RER32458 - Rr Shock Absorber Truggy (2pc)



RER32459 - Front Lower Suspension Arms (2pc)



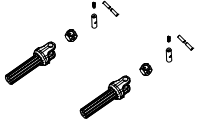
RER32460 - Rear Lower Suspension Arms (2pc)



RER32461 - Fr/Rr Driveshaft Assembly (Female)(2pc)



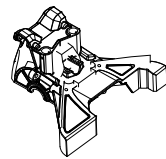
RER19473 - Center Differential Cups (2pcs)



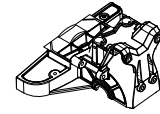
RER32462 - Fr/Rr Driveshaft Assembly (Male)(2pc)



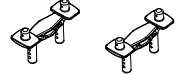
RER32463 - Fr/Rr Differential Assembly (1pc)



RER32464 - Front Shock Tower Truggy (1pc)



RER32465 - Rear Shock Tower Truggy (1pc)



RER32466 - Body Mounts (Truggy) (2pc)



RER32467 - Lower Suspension Arm Pins (4x73mm)(4pc)



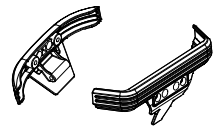
RER32468 - Fr/Rr Lower Hinge Pin Brace (1pc)



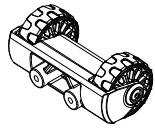
RER32469 - Fr/Rr Bumper Mount (1pc)



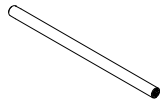
RER32470 - Bumper Recoil (1pc)



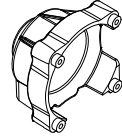
RER32471 - Fr/Rr Bumper (Truggy) (1pc)



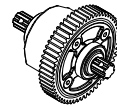
RER32472 - Wheelie Bar w/ Wheels (1set)



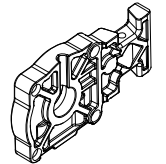
RER32473 - Center Drive Shaft (1pc)



RER32474 - Gearbox Housing (Center)(Plastic)(1pc)



RER32475 - Center Diff Complete (1pc)



RER32476 - Motor Plate (1pc)



RER32484 - Spur Gear 46T (Mod 1) (1pc)



RER32477 - Center Driveshaft Short (Rear)(1pc)



RER32478 - Motor Mount A (1pc)



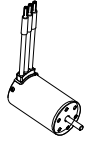
RER32479 - Motor Mount B (1pc)



RER19572 - 16 tooth Steel Pinion Gear (Mod1)(1pc)



RER32480 - Motor Support (1pc)



RER32481 - 4S Brushless Motor (1pc)



RER18607 - Motor Heat Sink (3674) (1pc)



RER18614 - Heatsink Cooling Fan 4S (1pc)



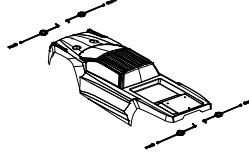
RER32482 - Ackerman Link (1pc)



RER32483 - Servo Saver Unit (1set)



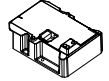
RER32531 - Turnbuckles (40mm) (2pcs)



RER32485 - Valkyrie Truggy Body (1pc)



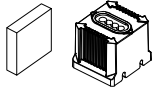
BS901-067 - Antenna Pipe W/Cap (3pcs)



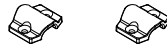
RER32486 - Receiver Case (1pc)



BS903-095 - 4x4mm Set Screw Machined Thread (6pcs)



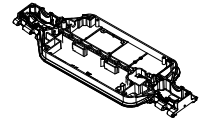
RER32488 - Battery Stop Block (1pc)



RER32489 - Center Brace Covers (2pc)



RER32490 - Center Brace Middle Mount (1pc)



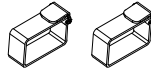
RER32491 - Main Chassis (Plastic) (1pc)



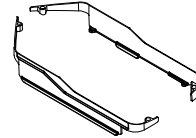
RER11373 - 5x10x4mm Rubber Sealed Ball Bearings (6pcs)



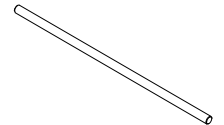
RER32492 - Plug (2pc)



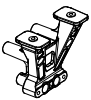
RER32493 - Battery Straps (2pc)



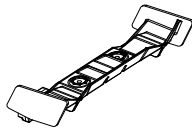
RER32494 - Side Guards (2pc)



RER32495 - Center Brace (1pc)



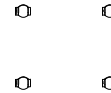
RER32496 - Wing Mount (1pc)



RER32497 - 1/10th Wing (Plastic) (1pc)



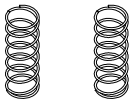
BS903-093 - 4x4mm Steel Nylon Insert Locknuts (6pcs)



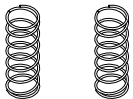
RER32498 - Pivot Balls (9x10mm) (4pcs)



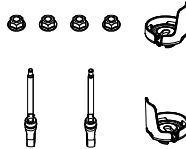
RER33254 - Wing Washers (Aluminum)(2pcs)



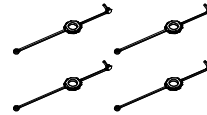
RER32499 - Front Shock Springs (Truggy)(2pcs)



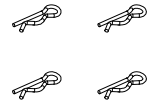
RER32500 - Rear Shock Springs (Truggy)(2pcs)



RER32501 - Lower Spring Cup (Truggy)(2pc)



RER32502 - Body Clip Retainer (4pc)



BS903-007 - 8th Body Clips(6pcs)



RER32503 - F/R Outer Gearbox Housing (1pc)



RER32504 - Differential Output Shaft (2pc)



RER32505 - Differential Ring Gear (41T)(1pc)



RER32506 - Diff Spider Gear Set (1set)



RER32507 - F/R Complete Differential (1pc)



BS903-016 - 10x15x4mm Ball Bearings (2pcs)



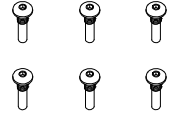
RER18402 - 120 Amp ESC W/ XT90 Plugs (1pc)



RER16244 - HEXFLY Torque Spec Metal Gear Servo (Waterproof)(1pc)



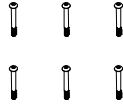
RER20924 - RCR-T4C 4 Channel 2.4Ghz Radio W/ Receiver(1pr)



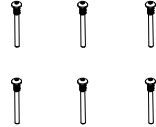
RER32508 - 5x21mm Button Head Hex Machine Thread Screws (6pc)



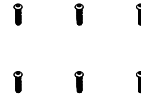
RER32509 - Idler Gear (15T)(1pc)



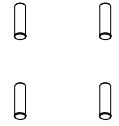
RER32510 - 4x35mm Button Head Hex Machine Thread Screws (6pc)



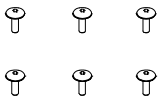
RER32511 - 5x45mm Button Head Hex Machine Thread Screws (6pc)



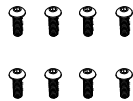
RER32530 - 4x24mm Button Head Machine Thread Screws (6pc)



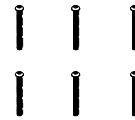
RER32512 - Idler Gear Shaft (4pc)



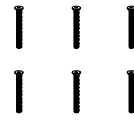
RER32513 - 3x10mm Button Head Shoulder Screws (6pc)



50102 - 4x12mm Button Head Hex Machine Thread Screws (8pcs)



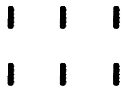
RER32515 - 4x45mm Button Head Hex Machine Thread Screws (6pc)



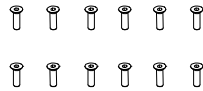
RER19111 - 4x40mm Countersunk Hex Machine Thread Screws (6pcs)



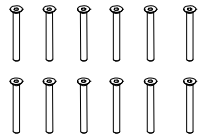
RER32514 - 2.5x10mm Hex Screw (12pcs)



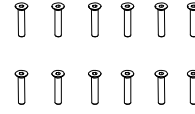
RER19108 - 2.5x12mm Set Screws (6pcs)



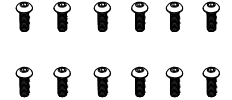
50084 - 4x12mm Countersunk Hex Machine Thread Screws (12pcs)



BS502-033 - 3x30mm Shoulder Button Head Hex Machine Thread Screws (12pcs)



BS502-031 - 3x16mm Countersunk Hex Machine Thread Screws (12pcs)



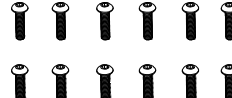
50101 - 3x12mm Button Head Hex Machine Thread Screws (12pcs)



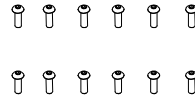
BS819-032 - 4x12mm Cap Head Hex Machine Thread Screws (12pcs)



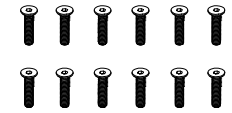
RER27425 - 4x10mm Button Head Machine Screws (12pcs)



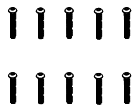
BS501-057 - 4x16mm Button Head Hex Machine Thread Screws (12pcs)



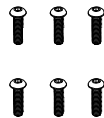
BS502-022 - 3x10mm Button Head Hex Machine Thread Screws (12pcs)



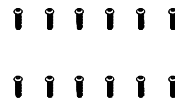
BS810-097 - 4x18mm Countersunk Hex Machine Thread Screws (12pcs)



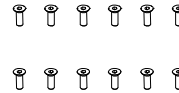
RER19112 - 4x30mm Button Head Hex Machine Thread Screws (12pcs)



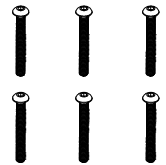
RER18714 - 3x18mm Button Head Hex Machine Thread Screws(6pcs)



BS501-058 - 4x20mm Button Head Hex Machine Thread Screws (12pcs)



BS502-027 - 3x10mm Countersunk Hex Machine Thread Screws (12pcs)



RER32517 - 4x36mm Button Head Hex Machine Thread Screws (6pc)



RER32518 - Diff Pinion (14T)(1pc)



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