

VANTAGE CARNAGE

**1/10 SCALE 4WD READY-TO-RUN BRUSHED
ELECTRIC MOTOR POWERED RACING BUGGY/TRUGGY**



INSTRUCTION MANUAL

www.ftx-rc.com





Carnage & Vantage RTR Brushed 2.4GHz Truggy/Buggy

Congratulations on your purchase of the FTX 'Vantage' 4WD electric buggy or FTX 'Carnage' 4WD Monster Truck.

This 1/10th scale model has been factory assembled and all electrics installed and set up to make it the easiest possible introduction to the sport of driving RC cars.



WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is NOT a toy and must be operated with caution and common sense.

Failure to operate this product in a safe and responsible manner could result in damage, injury or damage to other property.

This product is not intended for use by children without direct adult supervision.

It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, set-up or use, in order to operate correctly and avoid damage or serious injury.

Safety Precautions and Warnings

- You are responsible for operating this model such that it does not endanger yourself and others, or result in damage to the product or the property of others.
- This model is controlled by a radio which is possibly subject to interference which can cause momentary loss of control so it is advisable to always keep a safe distance to avoid collisions or injury.
- Age Recommendation: 14 years or over. This is not a toy. This product is not intended for use by children without direct adult supervision.

Carefully follow these directions and warnings, plus those of any additional equipment associated with the use of this model, chargers, ESC and motors, radio etc.

- Never operate your model with low transmitter batteries.
- Always operate your model in an open area away from cars, traffic or people.
- Never operate the model in the street or in populated areas.
- Always keep the vehicle in direct line of sight, you cannot control what you cannot see!
- Keep all chemicals, small parts and anything electrical out of the reach of children.
- Avoid water exposure, moisture causes damage to electronics and may result in the loss of control or permanent damage.
- Avoid injury from high speed rotating parts, gears and axles etc.
- Novices should seek advice from more experienced people to operate the model correctly and meet its performance potential.
- Exercise caution when using tools and sharp instruments.
- Do not put fingers or any objects inside rotating and moving parts.
- Take care when carrying out repairs or maintenance as some parts may be sharp.
- Do NOT touch equipment such as the motor, electronic speed control and battery, immediately after using your model because they can generate high temperatures.
- Always turn on your transmitter before you turn on the receiver in the car. Always turn off the receiver before turning your transmitter off.
- Keep the wheels of the model off the ground, and keep your hands away from the wheels when checking the operation of the radio equipment.
- Prolong motor life by preventing overheat conditions. Undue motor wear can result from frequent turns, rapid change of direction forwards/backwards, continuous stop/starts, pushing/pulling objects, driving in deep sand and tall grass, or driving continuously up hill.

Contents:

Vantage/Carnage 1/10th 4WD RTR Electric Vehicle.

Transmitter: 2.4GHz Steerwheel.

Charger: Input Mains 240V AC. Output 300mA DC

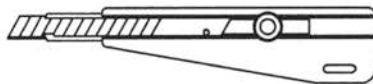
Battery: 7.2V 1800mAh NiMH

Aerial Tube

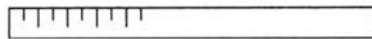


Required equipment for operation

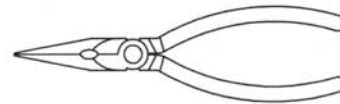
1. Tools required for building and maintenance:



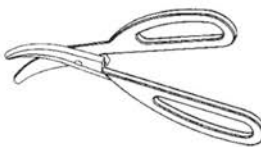
● Hobby knife



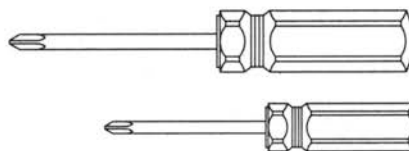
● Precision ruler



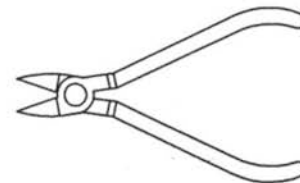
● Needle nose pliers



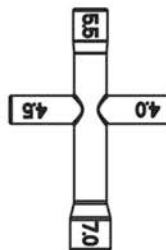
● Lexan scissors



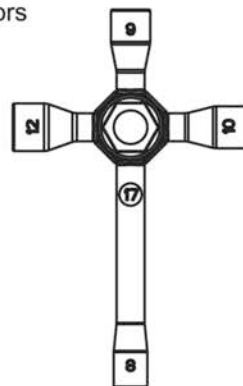
● Flat and Philips screwdriver



● Wire cutters



● Cross wrench



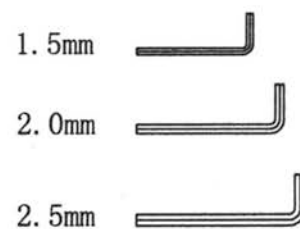
● Cross wrench



● CA glue&rubber cement



● Thread locking compound



● Hex wrench

WARNING!

Do not use a power screw driver to install screws into nylon or plastic materials. The fast locking may heat up the screws being installed that may break the molded parts or strip the threads during installation.

2. Additional items needed for operation:



8 pcs AA Alkaline batteries for transmitter

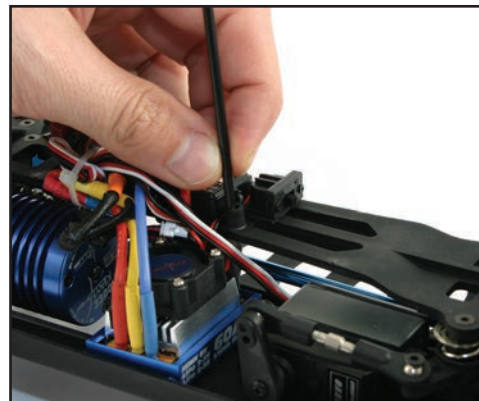
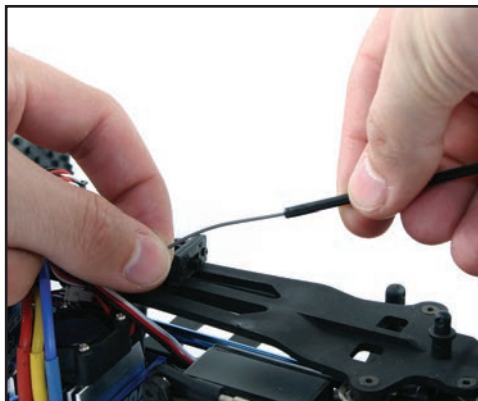
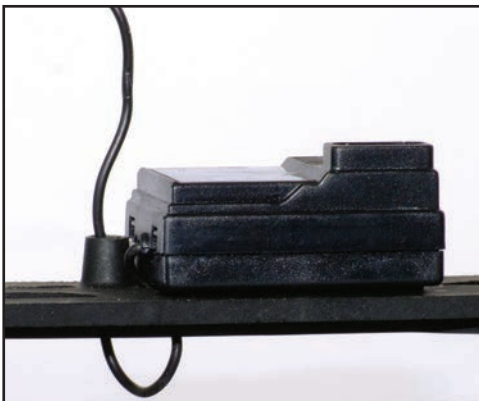
IMPORTANT!

Check that all screws and nuts are tight before each use.



Aerial Assembly.

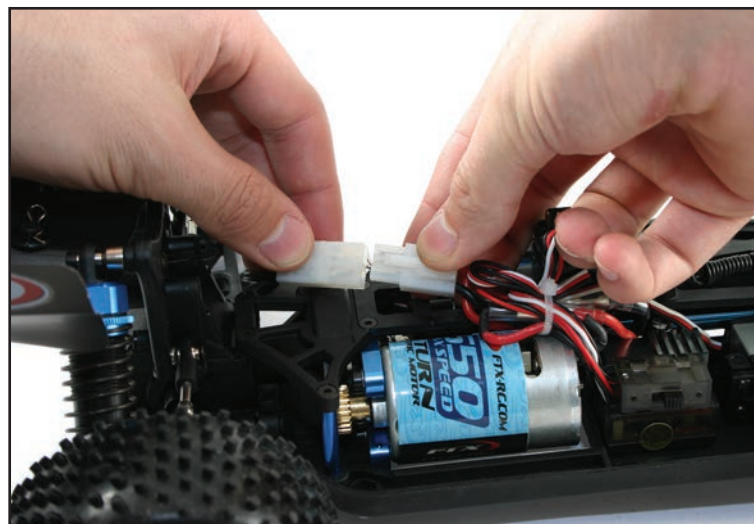
Uncoil the aerial wire carefully so as not to kink or knot it in anyway, and first be sure to insert the wire up through the top chassis aerial mount hole from below. Pull the rubber tube cap off the aerial tube and push the wire all the way through the aerial tube until the first 5mm of wire shows out of the other end. Fold the wire down over the end of the tube and be sure to insert the rubber tube cap so that it traps the protruding wire to hold it firmly in the tube. Push Aerial tube into mounting hole in upper chassis until firmly seated. Bundle any excess aerial wire neatly away from rotating components on the chassis.



Charging/Installing the Battery.

Always store your model with the battery pack unplugged and removed. Always charge your battery away from the vehicle. The included 300mAh mains charger will take approx 6 hours to charge a fully discharged battery, but always remove it from the charger if it becomes warm to the touch. Always disconnect the charger from the mains supply and the battery pack when not in use. Keep children away from charger and battery during the charging process.

To install a charged battery, remove the body clips and remove the bodyshell. Remove the battery retainer clips, insert battery and reinstall retainer with the flat side facing the battery and re-insert clips. When connecting battery and turning car on, ensure it is off the ground, with wheels away from objects.



Notes on Battery use:

Always allow the battery cool after use, before recharging.

Always inspect the battery before charging.

Any bare wires, split heat shrink or leakage is a sure sign of abuse.

Never attempt to charge dead or damaged batteries.

Do not disassemble the battery or cut the connector wires.

If the battery connector gets hot enough to melt there is most likely a serious problem with your model, driveline, battery wires or speed controller. Find and correct the problem before installing another charged battery pack.

NEVER charge the battery unattended incase of overcharging, you need to be able to monitor the battery during charging

Charge away from flammable objects and on a non-flammable surface incase the battery becomes too hot.



Speed Control Set Up

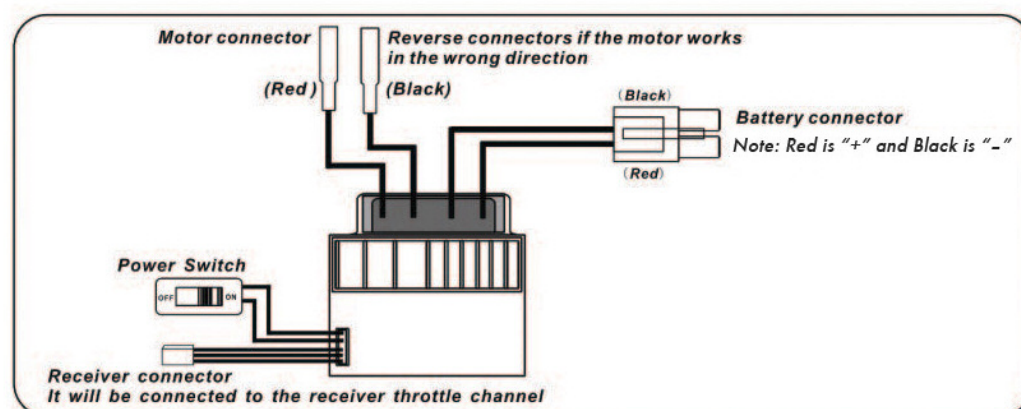
FEATURES:

This ESC is set up in a simple way for easy operation. When switched on, it automatically searches the neutral point. When the automatic setup is finished, the motor sends out "DO" "RE" "MI" music indicating it snatches the neutral point. It's easy to operate.

SPECIFICATIONS:

- ▲ INPUT: 7.2v 6-cell NiMH DC (not LiPO compatible)
- ▲ BEC: 5V 1A
- ▲ Current Drain: 20A, Max Forward 300A (instantaneous), Max Reverse 150A (instantaneous)
- ▲ Size: 35mm(L) X 33mm(W) X 30mm(H) Weight: 48.2g
- ▲ Applicable: 540/15T motor and above.

Wire diagram:



SETUP:

Connect all wires according to the diagram, then switch on the radio. (Put to default setting for Programmable Radio). Switch on the power of the ESC, and you'll hear "DO, RE, MI" music. The music indicates that the transmission is on, and the neutral point is set up. If the motor does not stop running a short while after the neutral point is set, please switch off the ESC and then switch it on again to get the neutral point.

FUNCTIONS:

- ▲ Forward: Press the trigger and the car will move forward. If the car is moving a little then adjust the trim (No.8 on Transmitter picture).
- ▲ Brake: To brake allow the trigger to return to neutral point
- ▲ Reverse: Push the trigger forward and the car will go into reverse. The car must be stationary before reverse engages. This protects the esc from excessive forward/backwards action.
- ▲ LED indicator is always on during forward, reverse and brake mode. When the ESC is not working and the car stops, LED indicator is off. When the radio is switched off, LED indicator on the ESC flashes.

Warning:

- ▲ Although this esc is waterproof the rest of the vehicle is not. Do not run the model in excessively wet conditions or submerge as long term damage and wear can occur.
- ▲ It is dangerous to touch the motor after running as it emits heat during running and the cooling plate remains hot after running.
- ▲ This ESC is not LiPO battery compatible. Use with Lipo will damage the ESC permanently



2.4GHZ RADIO SET-UP

Etronix Pulse EX2 Sport

2 Channel 2.4GHz Steer Wheel Transmitter

1) INTRODUCTION.

Thank you for choosing this Etronix 2.4GHz radio system, it has been designed for land use but could also suit any 2 channel boat. If you are using this type of product for the very first time, please make sure you read all the information provided before installing in your vehicle. Please take special care of any warning notices to ensure safe operation.

2) SERVICE.

If you experience any difficulties please refer back to the manual, and if problems persist contact your retailer or distributor for further assistance.

3) SAFETY.

If you do not read, fully understand, then follow the advice and instructions in this manual properly, you risk damaging your radio or your model irreparably, even injury, or causing harm to another person or their property.

4) USER GUIDES.

Do Not drive at night, in bad weather, thunder and lightning, during rain, or on wet roads.

Do Not drive in the street between parked cars, near people or children, or dog walkers.

Always check the proper operation of your model. If it does not respond properly or reacts unpredictably please check the installation and condition of your equipment.

Ensure the throttle trigger is at the neutral position before powering up, to avoid your model running away before you get proper control.

Never turn off the transmitter before the receiver, although fitted with a failsafe device, it is good practice to keep the model under control at all times.

Remember :- Transmitter on first. Receiver off first!

5) BATTERY CARE.

If your transmitter or receiver is being power by rechargeable Nickel Cadmium or Nickel Hydride batteries, be sure to always check they are fully charged and in good condition before use. Loss of control could soon result if part charged, discharged or damaged batteries are installed. When charging NiCd or NiMH batteries always use a dedicated charger, never try to recharge dry cells. If at any time during use or charging your transmitter or receiver batteries show signs of severely over heating, swelling or leaking, disconnect immediately, dispose of properly and replace!



6) TRANSMITTER CHARGING.

Connect a dedicated transmitter charger to the power supply.

Connect the charger to the charging socket on the rear of the handset.

When charging is complete, disconnect.

If using dry (alkaline) cells do not attempt to connect a charger to the transmitter!



Install eight 1.5V (AA size) rechargeable batteries in the transmitter base and re-fit the bottom cover.

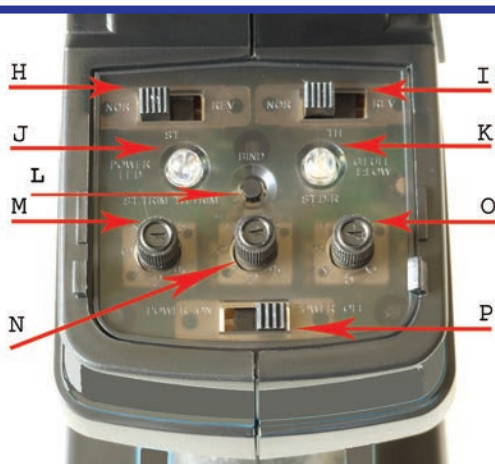
7) TRANSMITTER SPECIFICATION.

Channels :	2
Frequency:	2.4GHz
RF Power :	<20 dbm
Modulation:	GFSK
Code Type:	Digital
Sensitivity:	1024
Power:	12V DC (8 x 1.5V AA)
Low Voltage Warning:	<9V DC
Charger Port:	5mm Centre Positive (Charger Not Included)
DSC Port:	3.5mm (for Optional USB Game Interface – NOT USED/SUPPORTED)
Antenna Length:	120mm
Weight:	328g
Size:	159 x 99 x 315mm
Colour:	Black
Certification:	CE, FCC.



8) KEY TO TRANSMITTER FEATURES.

- A – Folding/Rotating 2.4GHz Aerial
- B – Steering Wheel
- C – Throttle Trigger
- D – Control Panel Cover
- E – Battery Box
- F – DSC (Simulator) Port (NOT USED/SUPPORTED)
- G – Charger Port
- H – Steering Reverse Switch
- I – Throttle Reverse Switch
- J – Power (RED) LED
- K – Bind/Battery Condition (Green) LED
- L – 'Bind' Button
- M – Steering Trim Dial
- N – Throttle Trim Dial
- O – Steering Dual Rate Dial (D/R)
- P – Power On/Off Switch



9) TRANSMITTER FUNCTIONS.

A vertical aerial achieves maximum range, so the short 2.4GHz aerial (A) can be folded and rotated to achieve the most vertical position once you are holding the handset comfortably. Then it allows you to fold the aerial away for safe storage.



The aerial folds down for storage
The aerial base also rotates 180 degrees so once you have a comfortable grip on the transmitter the aerial can be moved to the most vertical position to maximise range.

The Steering Wheel (B) operates Channel 1 and when turned anti clockwise the model should steer to the left and vice versa. If not, simply flick the Steering Reverse Switch (H) to the "Rev" position. The Throttle Trigger (C) operates Channel 2 and when pulled towards the handset the model should move forwards, when pushed away it





When at the mid position the model should remain stationary, if it creeps slightly adjust the throttle neutral dial accordingly.



When pulled back to the handset the model should move forwards, if not flick the Throttle switch to the 'Rev' position.



When pushed away the model should brake (and then move in reverse if applicable) if not simply flick the throttle switch to the 'Rev' position.

should brake (and then reverse if available), otherwise simply flick the Throttle Reverse switch (I) to the "Rev" position.

Beneath the folding Control Panel Cover (D) you will find an array of useful adjustments, plus the Power Switch (P).

When the Power Switch (P) is moved left to the 'On' position, the RED LED (J) lights up, as does the Green LED (K), this shows a good battery condition.



far that you struggle to negotiate the tightest corner on the course. If the servo is connected to the receiver correctly but the model does not steer at all, double check the Steering Dual Rate Dial is not at Zero, before checking for any more serious faults!

10) RECEIVER SPECIFICATION.

Channels: 3

Failsafe: Throttle Set Point Adjustable.

Frequency: 2.4GHz

Modulation: GFSK

Sensitivity: 1024

RF receiver sensitivity: -100dbm

Power: 4.5 to 6V DC

Weight: 5g

Antenna Length: 176mm

Size: 37.6 x 22.3 x 13mm

Colour: Black

Certification: CE, FCC.



If the transmitter batteries are weak and the voltage drops below 9V DC, the green LED flashes to alert you to the possibility that range will be limited and control might be lost, so new batteries (or a recharge) are advisable.

If the model does not track straight, adjust the Steering Trim Dial (M).

If the model creeps forwards or doesn't sit at Neutral, adjust the Throttle Trim Dial (N).

The Steering Dual Rate Dial (O) controls the total amount of steering available. If the servo is straining against the steering end stops, turn it down (clockwise) until it only just achieves maximum steering lock. If the vehicle exhibits excess steering, or when at high speed you feel it over reacts to the slightest adjustments, turn the Steering Dual Rate Dial down yet further until the model becomes more controllable, but not so



away from any electronic devices and metal work as reasonably possible, with at least the last half of the aerial wire in a vertical aerial tube to maximise control and range.

For Nitro or Petrol powered models connect the receiver battery (noting correct polarity) into the socket marked "VCC" or via a suitable power switch.

Electric vehicles equipped with an ESC should power the radio (via the BEC) when plugged into channel 2, and receiver power is usually controlled by the ESC switch.

The third channel is not used on this transmitter, so the third (bind) socket can be used to power a cooling fan or Personal Transponder (PT).



12) MATCHING THE RECEIVER TO THE TRANSMITTER. (BINDING)

To make sure only one transmitter can control the receiver they need to be matched, and to do so you need to "Bind" them together so they only recognise each others signature code. There is a 'Bind' plug included with the receiver, and this is inserted in the third channel (Bind socket) before power is supplied to the receiver for the first time. The red LED on the receiver will begin to blink to indicate the bind process has begun. Now hold down the transmitter bind button (L) before it is switched on. The transmitter's green LED (K) begins to blink and the receiver's red LED stops flashing and turns solid red to indicate the bind process has been achieved. Before you can operate the model, both the receiver and transmitter should be switched off and the bind plug removed from the receiver for safe keeping. Now switch on the transmitter before the receiver and the model should respond normally. If the receiver's red LED does not go solid when it is powered up and the transmitter is on, then 'Binding' has failed, so begin the matching process again.

Remember if this is the first time you have set up the radio in your model, the steering and throttle will need correctly adjusted neutral positions before you will have proper control, and the throttle failsafe position should also be set before your first run.

13) RECEIVER FAILSAFE OPERATION.

This Etronix receiver incorporates a digital protection system known as a failsafe. If the model goes beyond the usable range, or the signal is interrupted, the failsafe will automatically set the



Hold down the transmitter "Bind" button before switching the power on.



With the power on you can release the bind button once the green LED begins to flash to indicate the "Bind" process has initiated.

throttle (channel 2) to a preset position so long as power is still supplied to it. Set up the failsafe before first use, by turning on the transmitter, then supplying power to the receiver. A pointer is supplied (on the bind Plug) which can be used to hold down the failsafe button on the receiver for three seconds until the red LED flashes several times to indicate successful setting of the failsafe position. Now, wherever the throttle channel was positioned, will be the throttle servo failsafe set point.

To test the failsafe, hold the model clear of the ground and apply a little throttle before turning the transmitter off. Within a second, the throttle servo (or speed controller) should have repositioned to the failsafe position, which is typically throttle neutral position so the vehicle just rolls safely to a halt if the signal is lost. Note:- if the receiver is re-matched to the transmitter for any reason (See 'Binding' as above) the failsafe position is lost so it will need to be reset again.

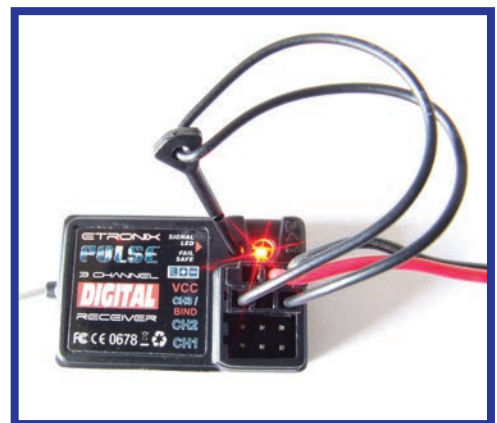
Thank you for choosing Etronix, used properly and observing the information in this manual we believe the Pulse EX2 Sport will achieve a strong connection with your model, utilising all the benefits of crystal free 2.4GHz technology for exceptional control and interference free operation.



Unless a battery powered model using an ESC with BEC, a receiver pack should be plugged into the VCC socket via a suitable power switch, making sure to check for correct polarity.



To 'Bind' the receiver to the transmitter the supplied Bind Plug should be installed channel 3/bind socket before power is applied. The red LED should begin to flash to indicate the 'Bind' process has begun, and go solid red once 'Bind' is complete. Now remove the 'Bind' plug and restart the power up procedure.



Once the 'Bind' process is complete, the throttle failsafe position can be set by pressing the button using the pointer provided.



Getting Started

Switch on transmitter. Hold vehicle clear of the ground, connect battery pack and switch on receiver. Bind the Transmitter and receiver if required. Test the transmitter to check control of the vehicle with wheels off the ground. Start driving slowly and if the vehicle does not go straight, adjust steering trim dial on Transmitter. For the very first run use the throttle gently, to gradually bed in the motor brushes and help the driver become accustomed to the vehicles behaviour and controls.

PLEASE NOTE:

Although the electronics are waterproof the rest of car can be subjected to damage if running in excessively wet or submerged conditions.

After Run.

Switch off the receiver power, switch off the transmitter and lower the aerial. Disconnect the battery and remove it from the vehicle, allow it to cool before recharging. If you have a second charged battery all ready to use, still allow the vehicle to cool slightly before continuing.

Regular maintenance.

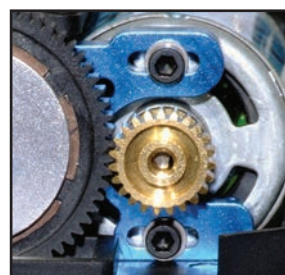
Frequently check the whole vehicle for loose or missing fixings. Use thread lock on any replacement screws into metal threads.

Frequently check rotating parts are free from grass, string etc. that might bind their motion and over stress the motor or speed controller. Remove the wheels occasionally and check behind the mounting hex for obstructions or anything that might have been wrapped around the axle and caused extra drag.

Check the gear mesh frequently and remove any stones or grit from gear teeth to prevent premature wear and damage.

If the motor moves, or is removed for maintenance/exchange, the gear mesh will need to be set. Simply slacken the motor retaining screws and adjust the motor until there is just discernable backlash between pinion and spur teeth. If the gear is too tight or too loose the gears will be noisy and could be damaged.

Shock absorbers will wear prematurely if used in dirty dusty conditions. Replace oil and seals as required to keep a smooth dampening action.



Trouble shooting guide.

Short Runtime:	Sluggish Action:	Motor/ESC overheat:	Motor spins but vehicle refuses to move:	Poor Range or fails to operate:
Battery damaged/not charged	Motor dirty or brushes worn	Over-gear	Gears damaged.	Transmitter batteries low
Motor dirty or brushes worn	Bind in drive train	Binding transmission.	Gears loose on shaft.	Vehicle Battery Low.
Drivetrain binding	Battery running low on power	Seized axle bearing.	Slipper clutch too loose.	Transmitter switched off
		Motor binding	Drive shaft broken or missing.	Transmitter/receiver aerial not extended.
				ESC switched off or battery not connected.
				Loose connectors/wires.
				Water damage. Model electronics are not waterproof.

Warranty

Due to the nature of this product and potential use FTX warrants it to be free of material and workmanship defects when new. FTX will at its sole discretion repair or replace defective components free of charge within 30 days from date of purchase. This warranty does not cover wear and tear, crash or impact damage, modifications, component water damage failure to perform maintenance or damage from improper use. Proof of purchase date will be required to action any warranty claims. In no case shall FTX's liability exceed the original cost of the purchased kit.

Instructions for disposal.

Environmental Protection Notes & WEEE

The crossed-out wheeled bin symbol shown here, which may be found on the product itself, in the operating instructions or on the packaging, is in accordance with the Waste Electrical and Electronic Equipment (WEEE) Directive. Individual markings indicate which materials can be recycled and re-used. You can make an important contribution to the protection of our common environment by re-using the product, recycling the basic materials or recycling redundant equipment in other ways.

When this product comes to the end of its useful life, you must not dispose of it in the ordinary domestic waste. Many electrical items that we throw away can be repaired or recycled. Recycling items helps to save natural resources and also reduces the environmental and health impacts that are linked with sending electrical goods to landfill. The correct method of disposal is to take it to your local collection point for recycling electrical and electronic equipment. You can go to recycle-more.co.uk for details of locations. Alternatively FTX can offer our customers free take-back of their WEEE on a like-for-like basis when they buy a new Electrical or Electronic product from us.

For example, if a customer bought a new radio system from us or a dealer, we would accept their old radio and prevent it going into a landfill site by disposing of it safely. Customers must return their old WEEE item to us within 28 days of purchasing their new item.

Remove batteries from your device and dispose of them at your local collection point for batteries. If you don't know the location of your nearest disposal centre, please enquire at your local council office.



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WEE/GB4215VX

