

1/10TH SCALE 1:10TH NITRO ENGINE POWERED TROPHY TRUCK



INSTRUCTION BOOK AND COMPONENT LISTING



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# FTX TORRO 1/10TH SCALE 4WD READY-TO-RUN TROPHY TRUCK

**Congratulations on your purchase of the FTX 'FTX Torro 1/10th Scale 4wd Ready-To-Run Trophy 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, fuel, starting equipment, engine, 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.
- Although the model includes waterproof servos and receiver, the model and engine are not suited to extensive running in wet weather conditions. Long term damage can occur to the model and particularly the engine if run in prolonged wet conditions.
- 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 engine heatsink head and exhaust pipe, 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 or engine set-up.
- Prolong engine life by following the engine set-up and guidelines outlined within the manual.

## Contents:

- FTX Torro RTR Nitro Trophy Truck
- Transmitter - Etronix Pulse EX3G





## ITEMS NOT INCLUDED BUT REQUIRED EQUIPMENT FOR OPERATION



8 x AA batteries

Air Filter Oil



Fuel Bottle



Glow Igniter

Nitro Fuel



## RECOMMENDED TOOLS FOR COMPLETION

**FAST615**  
Fastrax 7-Piece Tool Set



Includes 1.5mm,  
2.0mm, 2.5mm,  
3.0mm hex wrenches,  
slotted and phillips screwdriver.



**FAST625 Cross Wrench**  
Five different hex sizes 7mm, 8mm,  
10mm, 12mm & 17mm meet a variety  
of tightening and loosening  
applications for glow plugs, wheel  
nuts and bolts. Can also store 4 glow  
plugs, in centre section.



**FAST691 Nitro Starter Set**  
The perfect set up pack includes glow starter and  
charger, fuel bottle, screwdrivers and  
cross wrenches.



## QUICK START GUIDE



**Step 1**  
Install 4 "AA" batteries into the transmitter as per the Etronix instruction booklet noting the proper direction of each cell.



**Step 2**  
Open the radio box and Install 4 "AA" batteries in the battery holder noting the proper direction of each cell.



**Step 3**  
Insert the antenna tube in the top of the radio box. Feed the receiver antenna through the tube until several inches extend out the top. Install the antenna tip. If you choose to cut the tube down to size, do so without the antenna installed.

### Step 4

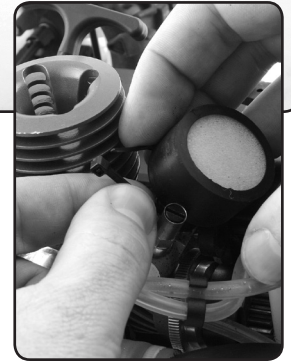
Turn on the transmitter and then the receiver. Check to make sure that the servos are operating correctly and that the carburetor closes when the throttle trigger is released.

**AT THIS POINT PLEASE FOLLOW THE SEPARATE ETRONIX RADIO INSTRUCTION BOOKLET FOR RADIO SET-UP. MAKE SURE THAT YOU SET THE FAILSAFE FEATURE ON THE TRANSMITTER.**



### Step 5

Apply air filter oil to help keep the dirt out. The best method is to remove the end cap (keep the filter connected to the carb) and remove the foam element. Dab the treatment all around the filter, put the filter in a plastic sandwich bag, and knead it until the filter is saturated, but not soaked.



### Step 6

#### Starting the Engine

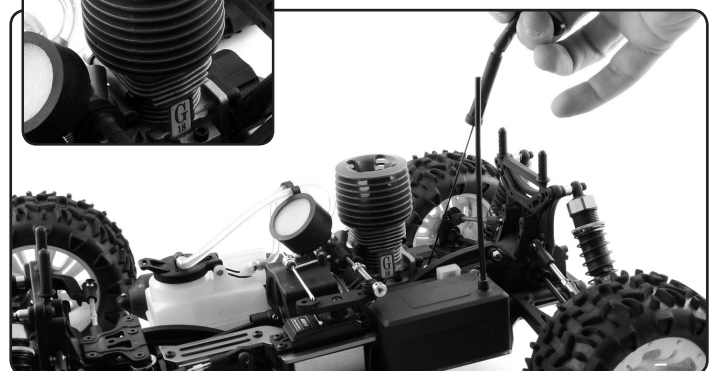
You MUST read the engine running in guidelines and set-up on pages 9-12 before trying to start your engine. Below is a quick overview of the starting procedure once the engine is RUN-IN.

1. Before attempting to start the engine from cold, remove the glowplug with an 8mm nut driver prime the engine with fuel pull the pullstarter rapidly with your finger over the exhaust pipe outlet (IMPORTANT- only when cold!) until the fuel has travelled to the carb, and then a further 10-20 times to lube the engine.



Do not extend fully the pull start beyond. Keep the extension to around 20cm with short sharp pulls.

Do not extend fully the pull start beyond.

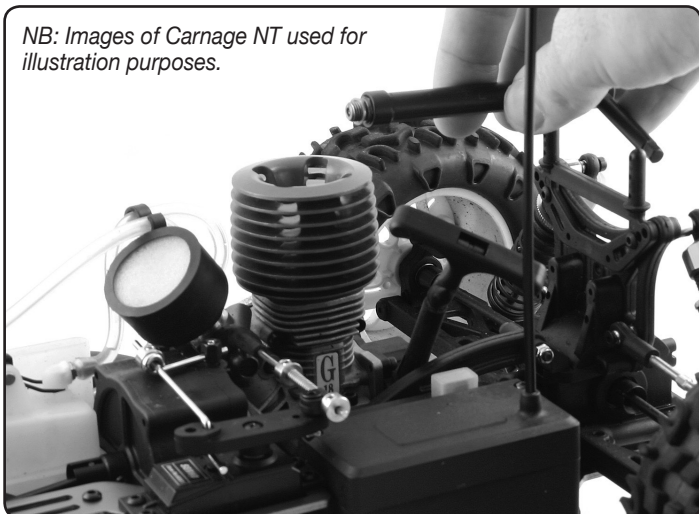




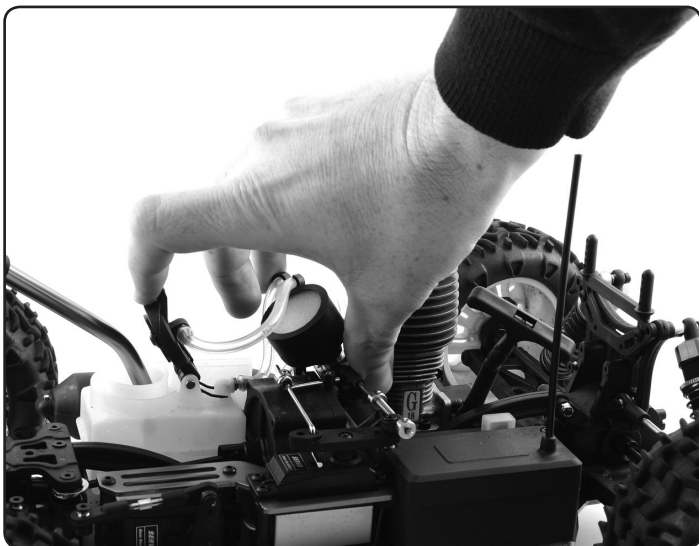
2. Then turn the car upside down and pull the pullstarter rapidly until all the excess fuel has emptied onto the floor through the glowplug hole. Make sure you do this outside safely. This process is really only necessary when the engine is cold or brand new and tight.

Refit the plug ensuring the copper gasket washer is also refitted. Wind it all the way in and then re-wind 1 to 1.5 turns. This allows gases to escape thus lowering the engines initial compression.

*NB: Images of Carnage NT used for illustration purposes.*



3. Start engine. Add fuel to the fuel tank using a suitable fuel bottle.



Use a glow plug heater to ignite the engine plug as illustrated and start to pull the the pull starter (be careful not to extend too far as mentioned previously). Ensure you have a small amount of carburetor open (around 2mm) to allow for air intake to help starting.



#### IMPORTANT

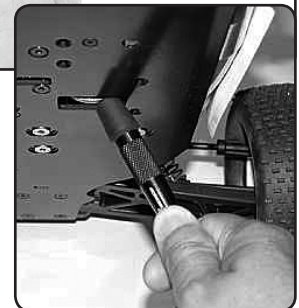
– make sure the car is secured or off the ground while attempting to start.

The engine will run “lumpily” or stop after a few seconds so try and keep it running by blipping the throttle. Tighten the glowplug while the engine is running if possible. If the engine has stalled restart with the plug tightened. The above procedure should always be followed from cold or if difficulty with starting is being experienced.



4. Stopping the engine. To stop the engine either use a stop tool to cover the exhaust outlet or use a flywheel stop tool.

**IMPORTANT** – Do not use fingers as the exhaust will be HOT and the flywheel ROTATING!



#### Warning! Flooding of the Engine

The most common cause of engine and pullstarter damage is from the “flooding” of the engine or a hydro-lock. More accurately this is too much fuel inside the engines crankcase causing the piston to lock. The piston rises to the top of the combustion chamber and instead of compressing a gas i.e. fuel/air mixture it has to try and compress a liquid, fuel only, which isn’t possible. This puts massive strain on the piston, conrod and crankshaft as well as the starter. Invariably one component will fail, usually the conrod causing massive damage to the engines internals.

To avoid flooding the engine, always start the engine from cold using the methods mentioned above and if at any time the engine becomes difficult to turn over with the pullstarter, then remove the glowplug and empty all excess fuel out and start again. The pullstarter assembly can only be damaged by either over extension or a flooded engine. So if you break a pull start this is possible warning of a flooded engine.



## Force .18 Nitro Engine Information

### IMPORTANT - READ THIS BEFORE STARTING YOUR ENGINE!

#### For your safety - Your engine is not a toy!

- You will be working with highly flammable fuel, so keep it away from exposed flames or any thing which might ignite it. Read the safety info on the fuel container.
- Do not use fuels that were not designed for glow plug engines.
- Keep the fuel out of reach of children!
- Deadly carbon monoxide gas will be released, so do not operate the engine in an enclosed area where exposed flames or sparks can ignite it, or where it causes you to inhale it for prolonged periods.
- During operation, the engine may be dangerously hot to the touch
- Do not use the engine for purposes other than in model cars designed for them.
- Mount the engine securely.



## Before Starting Your Engine

### Oiling the filter

The air filter is essential for keeping dirt out of the engine. A foam filter must be oiled before running the engine. We recommend using Fastrax FAST63 Filter Oil treatment. Dab the treatment all around the filter, put the filter in a plastic bag and knead it until the filter is saturated, but not soaked. NEVER RUN YOUR VEHICLE WITHOUT THE AIR FILTER.

### Adjustments

Your engine has come factory set to allow for an easy start and rich running . DO NOT alter any of the settings until the running in period has been completed.

### Putting fuel in the fuel tank

Squeeze the fuel bottle, put the bottle's tube into your fuel container, and draw out some fuel. Lift up the lid on the fuel tank, and slowly squeeze the fuel bottle until the tank is full. Be careful here. If you overflow the tank it might get on your radio gear or on your brakes and you may create an unsafe driving situation. Always keep your fuel bottle closed when not in use.

### Understanding the engine terms "rich" and "lean"

Your carburettor has screws that regulate how much air and fuel enter the engine together, the air/fuel mixture. An air/fuel mixture that is too "rich" means there is too much fuel, and a mixture that is too "lean" means that there is not enough fuel for the given amount of air. When the mixture is too rich, performance will be sluggish (one symptom of this, is excessive amounts of smoke from the exhaust). There is also a potential to foul the glow plug when the mixture is too rich. When the mixture is too lean, there is not enough fuel to cool or lubricate the internal engine components, and damage to the engine and/or glow plug is almost certain.

### CAUTION:

If, while you are driving, the engine stalls because of an overheating condition, severe damage may have already occurred. Overheating is caused by the following conditions.

- Fuel mixture is set too lean
- Air leak around carb
- Loss of muffler pressure (line falls off)
- Excessive nitro content in the fuel
- Incorrect oil content in the fuel
- No air filter
- Poor quality of fuel
- Contaminated fuel
- Excessive loads on the engine (locked drivetrain)

Your engine will be short-lived if any of the above conditions are allowed to exist for any length of time. During the first few tanks watch closely for any signs of overheating. These will include:

- Steam or smoke coming from the engine surfaces
- Cleaning out and then lagging during high-speed acceleration, as if it is running out of fuel.

- Popping or clattering sound when slowing down.  
Idle speed will surge or possibly diminish to the point of stalling.

### To Test For Overheating

It's important to check the head temperature during the operation of the engine. The best method for checking the head temperature is to use a head temperature gauge. There are several head temperature gauges available, and the temperature readings between these different brands of gauges vary. Due to this variance , the temperature readings will range between approximately 185 degrees and 225 degrees. About 185 degrees is the normal for the GO.18. If you don't have access to a head temperature gauge, you can use water to check the head temperature. Place a drop of water on top of the cylinder head. If it sizzles away immediately, shut down your engine. If it takes approximately 3-5 seconds for the water drop to boil away, then the engine is running within a normal temperature range.

## Start Your Engines

### Running-In

The modern model car engine requires relatively little running in, due to the use of ABC piston and liner assembly. The engine should be run on a rich setting for approximately 6-8 tanks of fuel, with another 6-8 at a slightly less rich setting. Once this has been completed, the internal engine components should be properly seated and a normal setting can be used.

A good idea is to use a running in fuel as it is especially designed for breaking in new engines without damage.

The best methods of checking on the running setting of the engine, is to first check the smoke trail coming out of the exhaust with the car is running. A very rich setting would allow the car to pull away slowly or sluggish with a momentary hesitation and lots of smoke from a standing start. When the car is accelerating at full throttle, the engine will never "Clean Out". When an engine cleans out, the speed and the rpms will increase suddenly and dramatically, as if the engine has switched to second gear. Also, the amount of smoke that comes from the exhaust will decrease. Cleaning Out is a desirable characteristic once the engine is fully broken in.

As the engine reaches normal operating temperature, it will speed up and performance will increase. This occurs because the fuel mixture is becoming leaner with the increased temperature. You will need to richen the fuel mixture so that the engine continues to run as described above. When the first tank is almost gone, bring the car in and shut off the engine. Allow the engine to cool for 8 to 10 minutes before starting the engine up again. Add more fuel. Start it back up and run the second tank of fuel. Again allow the engine to cool before starting it up again.

The key to breaking in your engine is patience. During the break in period , your engine may appear to malfunction with problems such as stalling, inconsistent performance, and fouling out glow plugs. Don't give up.



These are just a few things you may go through during the break in period. Just keep it running, apply the throttle on and off as smoothly as you can. Sudden bursts or quick releases of the throttle can stall your engine. Soon after break in your patience will pay off with a well running engine. The performance level of the engine will be limited by the "rich" fuel mixture which you will use all during the break-in process. Once the engine is fully broken-in the mixture can be "leaned out," and speed and acceleration will increase. Because of the rich fuel mixture and the wearing of the new parts, deposits will form on the glow plug causing it to fail. Expect to replace the glow plug during the break in period, and definitely when the engine is fully broken in and the fuel mixture is leaned out.

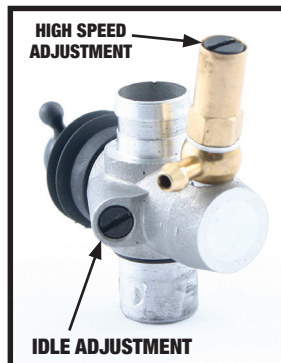
## Setting Engine for Normal Tuning High Speed

As you approach the first 6-8 tanks running you can start to GRADUALLY adjust you engine for normal performance. PLEASE NOTE any adjustments need to be very small at 1/8th turn increments. You can then begin adjusting the fuel mixture to maximize performance for your driving needs. To lean turn the main fuel control needle in a clockwise direction. This will allow the car to pull away faster and more cleanly, without hesitation and increase the top speed. There should however still be a noticeable smoke trail.

If the main needle is screwed in too far thus allowing the engine to run too lean, it will seem to run strong at first, but will bog, hesitate, or stall when running at high speed. The engine will also rapidly overheat when the setting is too lean. This is because fuel includes lubrication, and that lubrication is inadequate when the setting is too lean. CHECK THE ENGINE TEMPERATURE OFTEN AS YOU LEAN THE MIXTURE. DO NOT LET THE ENGINE OVERHEAT. You should always see smoke coming from the exhaust.

At the optimum setting, the engine will clean out; have a strong-sounding, high-pitched whine at full speed; and there will be a thin trail of whitish smoke coming from the exhaust. It is always better to set the engine a little rich rather than too lean.

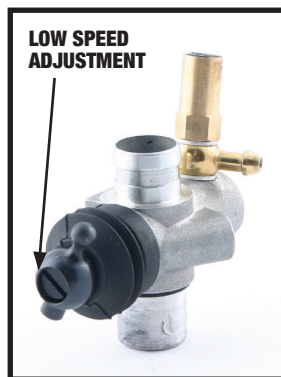
If the engine stalls on acceleration, begins to bog or slow down at full throttle, or if there is a reduction in exhaust smoke, then the engine is running too lean. Immediately turn the high speed mixture screw counterclockwise 1/4 of a turn and operate the car at medium speeds for 1 to 2 minutes to allow the engine to cool.



## Tuning Low Speed

The low-speed mixture affects how the engine will perform in the low to mid range rpms. Turning the low-speed needle clockwise will lean the mixture. As with the high-speed mixture, leaning the low-speed mixture increases performance. Again, if the mixture here is set too lean, the engine may be starved for lubrication in the low and mid-rpm ranges, thus causing overheating and excessive engine wear.

Perform the following test to determine if the low speed mixture is set correctly. With the engine warm and running, allow it to idle for approximately 15 seconds. Now quickly apply throttle and note the performance. If the engine bogs, accelerates erratically, and a large puff of blue smokes emitted, then the low speed mixture is too rich. Turn the low-speed screw clockwise 1/8 of a turn. If the engine speeds up for a moment then bogs, hesitates, or stalls, then the low speed mixture is too lean. Turn the screw counterclockwise 1/8 of a turn. Adjust the mixture screws in 1/8 of a turn increments, wait 15 seconds, and retest after each change. Adjust for the best acceleration without the car stalling.



## Care and Maintenance

When you are finished racing for the day, drain the fuel tank. Afterwards, energize the glow plug with your glow plug starter and try to restart the engine

in order to burn off any fuel that may remain inside the engine. Repeat this procedure until the engine fails to fire. Try to eject residue while the engine is still warm. Finally, inject some corrosion inhibiting oil, and rotate the engine to distribute the oil to all the working parts. Do not, however, inject the oil into the carburetor, for it may cause the O-rings inside to deteriorate. When cleaning the exterior of the engine, use WD-40. Do not use gasoline or any solvents that might damage the silicone fuel tubing.

Cleaning the air filter. When the air filter starts to get dirty, do the following steps:

- Step 1. Clean the foam with fuel. Do this by pouring a little fuel in a small can and kneading the filter in the fuel. When it looks cleaner, then dispose of the fuel.
- Step 2. Dry the filter. Squeeze out the fuel with a paper towel until it's dry.
- Step 3. Fastrax Fast63 Filer Oil to help keep the dirt out. Dab the treatment all around the filter, put the filter in a plastic sandwich bag, and knead it until the filter is saturated, but not soaked.



## Troubleshooting Glow Plug Problems

The glow plug in your engine is an inexpensive consumable item which must be replaced periodically to maintain peak performance and starting ease. Most often, any starting problems or erratic performance can be traced back to the glow plug. The glow plug should also be checked if the engine's acceleration and top speed performance suddenly becomes flat. The only sure way to test for a faulty glow plug is simply install a new one to see if the problem goes away. Remove the plug from the cylinder head with a 8mm nut driver. Make sure there is no dirt or debris on top of the head which could fall into the engine. Do not loose the copper gasket which seals the glow plug. Touch the glow plug to the contacts of the glow plug starter. All of the coils should glow white. Sometimes the first few coils will not glow while the rest are bright, most likely indicating a bad plug. If the glow is dim orange, then the glow starter battery should be replaced or recharged.

At the high rpm that the engines operate only a top quality plug will cut the mustard. Therefore we recommend the use of the Fastrax Platinum No.4 glowplug (FAST760-4).

## Fuel Mixture

The fuel mixture is the largest variable you have to control while operating your engine.

Fuel brand, ambient temperature, and humidity all effect how your mixture should be set. If the engine runs great one day but runs rich or lean the next day, it is probably the result of a change in the air quality and temperature. This should be expected and adjusted for.

Although there are many fuels on the market, very few are designed to perform and protect your engine at the likes of 35,000rpm that some of our engines can attain.

Keep between 16-20% nitromethene content for running and first use. The single most popular reason for engine failure or unreliability is poor or wrong fuel.





## Pull Starter Hints

The pull starter as fitted to most of the entry level engines is, if treated correctly, the easiest and most cost effective method of starting an engine. As with every silver lining, there is a cloud. The pullstart system is similar to that of a lawnmower to look at, but that is where the similarity ends. The pullstarter is susceptible to breaking if the engine is flooded or not lubricated enough. To ensure this does not happen, a few simple rules should be followed.

1. Before attempting to start the engine from cold, remove the glowplug and then prime the engine with fuel. For cars with a primer button on the tank, press this until the fuel has travelled along the fuel pipe to the carburettor and then a further 10-20 presses. For cars without a primer on the tank, pull the pullstarter rapidly with your finger over the exhaust pipe outlet until the fuel has travelled to the carb, and then a further 10-20 times to lube the engine.
2. Then turn the car upside down and pull the pullstarter rapidly until all the excess fuel has emptied onto the floor through the glowplug hole. Refit the plug ensuring the copper gasket washer is also refitted. Wind it all the way in and then re-wind 1 to 1.5 turns. This allows gases to escape thus lowering the engines initial compression.
3. Start engine. The engine will run "lumpily" or stop after a few

seconds so try and keep it running by blipping the throttle. Tighten the glowplug while the engine is running if possible. If the engine has stalled restart with the plug tightened.

The above procedure should always be followed from cold or if difficulty with starting is being experienced.

## Flooding of the Engine

The most common cause of engine and pullstarter damage is from the "flooding" of the engine or a hydro-locked. More accurately this is too much fuel inside the engines crankcase causing the piston to lock. The piston rises to the top of the combustion chamber and instead of compressing a gas i.e. fuel/air mixture it has to try and compress a liquid, fuel only, which isn't possible. This puts massive strain on the piston, conrod and crankshaft as well as the starter. Invariably one component will fail, usually the conrod causing massive damage to the engines internals.

To avoid flooding the engine, always start the engine from cold using the methods mentioned above and if at any time the engine becomes difficult to turn over with the pullstarter, then remove the glowplug and empty all excess fuel out and start again. The pullstarter assembly can only be damaged by either over extension or a flooded engine. So if you break a pull start this is possible warning of a flooded engine.

Description	Problem	Solution
Engine will not start	Out of fuel Improper or contaminated fuel Glow starter not charged Glow plug bad Engine flooded Engine overheating Carburetor incorrectly adjusted Exhaust blocked Air cleaner blocked	Fill fuel tank Replace fuel Charge glow starter Replace glow plug, see "Glow Plug Problems" See "flooding" section. Allow engine to cool, richen fuel mixture, check airflow Readjust carburetor Clean exhaust system Clean air filter
Starter will not pull	Engine is flooded Rope is jammed Engine seized	Clear excess fuel, see "flooding" Section. Repair starter. Examine engine for damage.
Engine starts and then stalls	Idle speed set too low Air bubbles in fuel line Glow plug is fouled Engine is overheated Insufficient fuel tank pressure Blockage at exhaust header fitting	Increase idle speed. Check for holes in the fuel line. Replace glow plug, see "Glow Plug Problem" section. Allow engine to cool, richen fuel Mixture, check airflow Replace pressure hose- clear Check flow to and from the tank.
Engine sluggish / poor performance	High-speed fuel mixture is too rich Leaking glow plug Fuel bad or contaminated Carburetor dirty or blocked Engine overheating Engine over geared for application Clutch slipping Bound up drive train	Set high-speed mixture to a leaner setting Check glow plug gasket Replace fuel Clean Carburetor Stop the engine- find the cause Use a lower gear ratio Replace clutch shoes Find the bound item and repair
Engine overheats	High-speed fuel mixture is too lean Cooling air is being blocked Excessive nitro in the fuel Excessive load on the engine Low-speed mixture too lean	Richen high-speed mixture Get air to the head Use fuel with lower nitro Check for bound up drive train Richen low-speed mixture
Engine hesitates or stumbles	High-speed mixture too lean Low-speed mixture too rich Engine overheated Air bubbles in fuel line Glow plug fouled	Richen high-speed mixture. Lean low-speed mixture. Stop the engine and find the cause. Check for holes in fuel line. Test or replace plug
Engine stalls instantly when throttle is fully opened from idle	Glow plug fouled Low-speed mixture too lean High-speed mixture too rich	Replace glow plug. Richen low-speed mixture. Lean high-speed mixture.
Engine stalls while driving around turns	Fuel level is low Idle speed set too low	Add fuel Increase idle speed.





### Cooling Problems

Engine overheating is most often caused by running the engine too lean or because the cooling air for the cylinder head is blocked. If the mixture is too lean, simply allow the engine to cool, richen the mixture and try it again. Bodies must have holes cut in them to allow for cooling air to circulate over the surface of the cylinder head. On most bodies, it is a good idea to cut part of the wind-shield out and part of the back window to allow for additional cooling.

### Factory Settings for Force .18

All new engines are assembled with what we will term 'factory settings'. These settings should allow almost all engines to be started up and allow for minimal adjustment for running in purposes.

Bearing this in mind, we are offering you the opportunity of re-adjusting to the 'factory settings' based on engines currently held in stock.

### Main Needle Valve – High Speed Adjustment (HSA)

Screw down until resistance is met, and no further movement is apparent. RE-OPEN 3 1/4 TURNS.

### Throttle Adjustment Screw – Idle Adjustment (IA)

Gently shut off carburettor sliding body and slowly re-open by means of adjusting screw.

ADJUST SCREW UNTIL APPROX 1 or 1 1/4mm OF APERTURE APPEARS BETWEEN THE END OF THE THROTTLE BODY AND AIR INTAKE APERTURE.

### Sub Throttle Needle Valve – Low Speed Adjustment (LSA)

With adjustment screw setting in place, close off the throttle body against the screw. Very gently screw in the needle valve until it closes off the supply fuel nozzle and is prevented from re-opening by the entry of the needle valve into the centre hole of the fuel nozzle (work with great care with this one - we are only looking for minimal frictional contact between both parts).

RE-OPEN VALVE 2 1/2 TURNS.

### Glossary of Carburettor Functions

#### Main Needle Valve (High Speed)

The main needle mixture screw controls how much fuel enters the engine during mid- to high-speed operation. The screw is turned clockwise to lean (less fuel) and anti-clockwise to richen (more fuel)

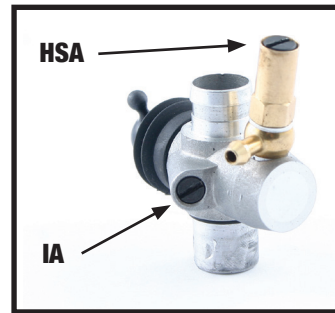
#### Sub Throttle Valve (Low Speed)

This screw meters the fuel at low speeds. The low-speed mixture screw is located in the end of the carburetor, inside the throttle arm.

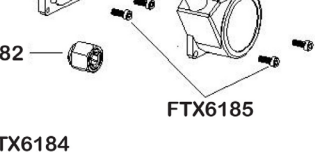
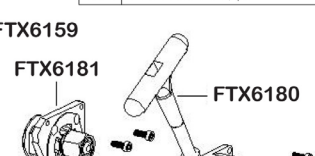
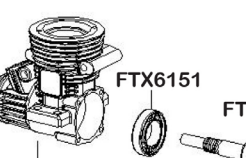
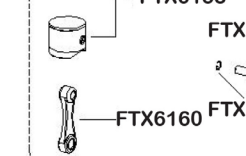
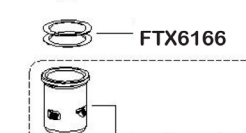
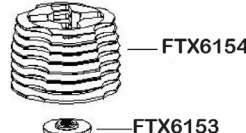
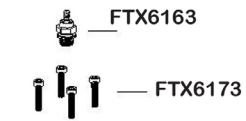
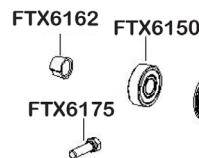
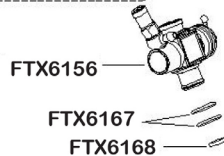
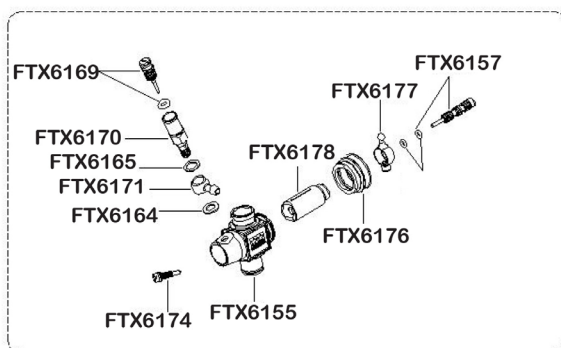
This screw controls how much fuel enters the engine at idle and low throttle. This adjustment will smooth the idle and improve the acceleration to mid speed. Make this adjustment with the throttle closed, after setting the idle. The screw is turned clockwise to lean (less fuel) and anti-clockwise to richen (more fuel)

#### Throttle Adjustment Screw

The throttle adjustment screw regulates the throttle opening to control the idle speed. The screw is turned clockwise for a higher idle speed and anti-clockwise for a lower idle speed.



## FORCE .18 PULL START ENGINE



FTX6150	FTX FORCE FG.18 BALL BEARING
FTX6151	FTX FORCE FG.18 BALL BEARING
FTX6152	FTX FORCE FG.18 CRANKCASE
FTX6153	FTX FORCE FG.18 BURN ROOM(UNDERHEAD)
FTX6154	FTX FORCE FG.18 CASTING CYLINDER HEAD
FTX6155	FTX FORCE FG.18 COMPOSITE CARB MAIN BODY
FTX6156	FTX FORCE FG.18 COMPOSITE CARB COMPLETELY SET
FTX6157	FTX FORCE FG.18 IDLE NEEDLE W/O RING
FTX6158	FTX FORCE FG.18 CYLINDER SLEEVE/PISTON
FTX6159	FTX FORCE FG.18 CYLINDER/PISTON/CONNECTING ROD SET
FTX6160	FTX FORCE FG.18 CONNECTING ROD
FTX6161	FTX FORCE FG.18 90 CRANKSHAFT
FTX6162	FTX FORCE FG.18 DRIVE BRASS WASHER
FTX6163	FTX FORCE FG.18 GLOW PLUG B4 HOT
FTX6164	FTX FORCE FG.18 WASHER,1PC
FTX6165	FTX FORCE FG.18 WASHER,1PC
FTX6166	FTX FORCE FG.18 CYLINDER HEAD WASHER 1pc
FTX6167	FTX FORCE FG.18 CARBURETOR O/R RING, 2pcs
FTX6168	FTX FORCE FG.18 O RING 1pc
FTX6169	FTX FORCE FG.18 MAIN NEEDLE W/O RING
FTX6170	FTX FORCE FG.18 MAIN NEEDLE VALVE HUB
FTX6171	FTX FORCE FG.18 FUEL NYLON
FTX6172	FTX FORCE FG.18 PISTON GUIDEON PIN
FTX6173	FTX FORCE FG.18 CYLINDER HEAD BOLT, 4pcs
FTX6174	FTX FORCE FG.18 ADJUST SCREW
FTX6175	FTX FORCE FG.18 CARB PINCH BOLT
FTX6176	FTX FORCE FG.18 DUST COVER
FTX6177	FTX FORCE FG.18 THROTTLE SCREW CAP
FTX6178	FTX FORCE FG.18 THROTTLE & COUNTER NEEDLE VALVE
FTX6179	FTX FORCE FG.18 O/R PIN SNAP RING, 2pcs
FTX6180	FTX FORCE FG.18 PLASTIC A PARTS ASSEMBLY W/SCREWS
FTX6181	FTX FORCE FG.18 B PARTS ASSEMBLY W/SCREWS
FTX6182	FTX FORCE FG.18 ONE WAY BEARING SET
FTX6183	FTX FORCE FG.18 STARTING PIN
FTX6184	FTX FORCE FG.18 PRESSURE SPRING
FTX6185	FTX FORCE FG.18 SCREWS, 4pcs



# ETRONIX

## PULSE

### EX3G 2.4GHz FHSS RADIO SYSTEM



#### SAFETY PRECAUTIONS

This radio system is designed for use in high quality radio-controlled models. To ensure your safety and that of other people around you, please follow these guidelines carefully.

1. Always follow local laws or regulations regarding the operation of radio-controlled models.
2. Always turn on the transmitter first, followed by the receiver. When finished, turn off the receiver first followed by the transmitter.
3. Please do not attempt to modify this product. Etronix cannot be held responsible for any damage that might occur to the product as a result of an unauthorised modification.
4. Please make sure the batteries in the transmitter and those used to power the receiver have sufficient power before using your model. Using batteries with insufficient power will reduce the range of the radio and may result in a loss of control.
5. Make sure that any servos and/or ESC are securely connected to the receiver at all times.
6. Please keep the radio system away from moisture, heat, fire and sources of electronic interference at all times.
7. Please do not make any adjustments to transmitter settings while the model is in motion. Always wait until the model is standing still before making any adjustments to the transmitter settings.
8. The low voltage warning will activate when the battery in the transmitter is below 4.4v. The LED on the transmitter will flash blue and will be accompanied by a beeping sound. Please stop using your model immediately if the low voltage warning activates to prevent loss of control.
9. Etronix will not be held liable or responsible for any damages caused by the operation of your radio-controlled model.

#### QUICK OPERATION GUIDE

##### Transmitter/Receiver Binding

1. Turn on the transmitter while holding down the '3CH' button located on the hand grip. Release the button when the LED on the transmitter starts flashing blue and you hear a beeping noise. The transmitter is now in it's binding mode.
2. Turn on the receiver. The LED on the receiver will be flashing green slowly. Place the transmitter next to the receiver then press the 'Bind' button on the receiver until you see the green LED on the receiver flash rapidly then return to a slow flash. Release the button on the receiver.
3. Turn the transmitter off then switch it back on again; the LED on the receiver should become solid green. The binding process is now complete.



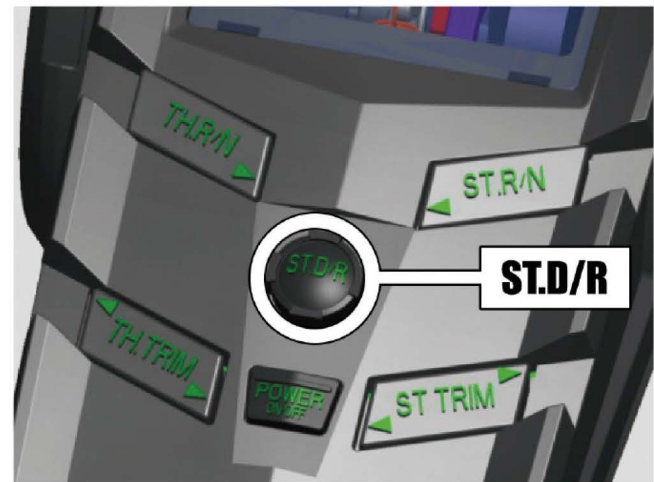
### Aux Channel (3CH) :

Press the 3ch one time to activate it and press it again to return the servo back to neutral position.



### Steering Dual Rate Adjustment

The dial marked 'ST D/R' on the transmitter controls the amount of servo travel. You should adjust this to give maximum steering travel without the servo straining. Turning the dial clockwise gives more travel and turning it anti-clockwise gives less travel.



Important – incorrect Dual Rate settings can reduce the life of servos connected to your radio. If in doubt use slightly less travel.

### Channel Reversing

1. To reverse the direction of servo travel, please press and hold the 'ST R/N' (for Channel 1) or 'TH R/N' (for Channel 2) on the transmitter for a few seconds until you hear a beeping sound, then release the button. It is not possible to reverse the direction of operation of Channels 3 and 4.



### Failsafe Setup

1. Put the throttle trigger to the desired failsafe position (we advise 50% brake for nitro models and neutral for electric models) then press the 'F/S' button on the receiver until the LED on the receiver flashes green then returns to solid. Once the LED is solid the failsafe has been set. The failsafe position needs to be reset every time the transmitter and receiver have been through the binding process.

2. The failsafe will return Channel 2 to the set position in the event of signal loss from the transmitter or in the event of low battery voltage supply to the receiver. If battery power to the receiver is lost completely then the failsafe cannot operate.

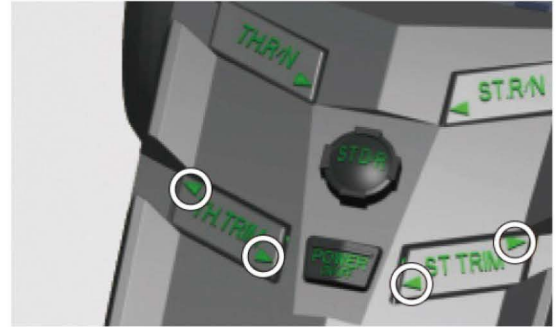


F/S button



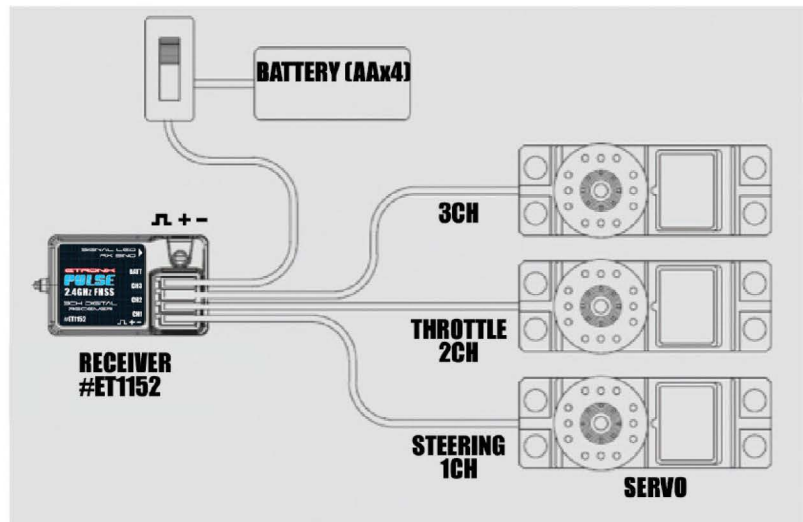
### TH/ST Trim Adjustments

1. The buttons on the transmitter marked 'TH Trim' and 'ST Trim' allow you to make fine adjustments to the neutral point of the servo on your model. The neutral position of the trim adjustments is identified by a long beep.



### Receiver Connections

1. The steering servo should be connected to Channel 1 of the receiver, with the throttle servo or ESC connected to Channel 2.
2. Channel 3 of the receiver operates as a two-position switch, so would normally be used to control a forward and reverse gearbox (if available) on a nitro powered model, or a Hi/Low ratio transmission (if available). Please consult the manufacturer of your model for details of option parts available.

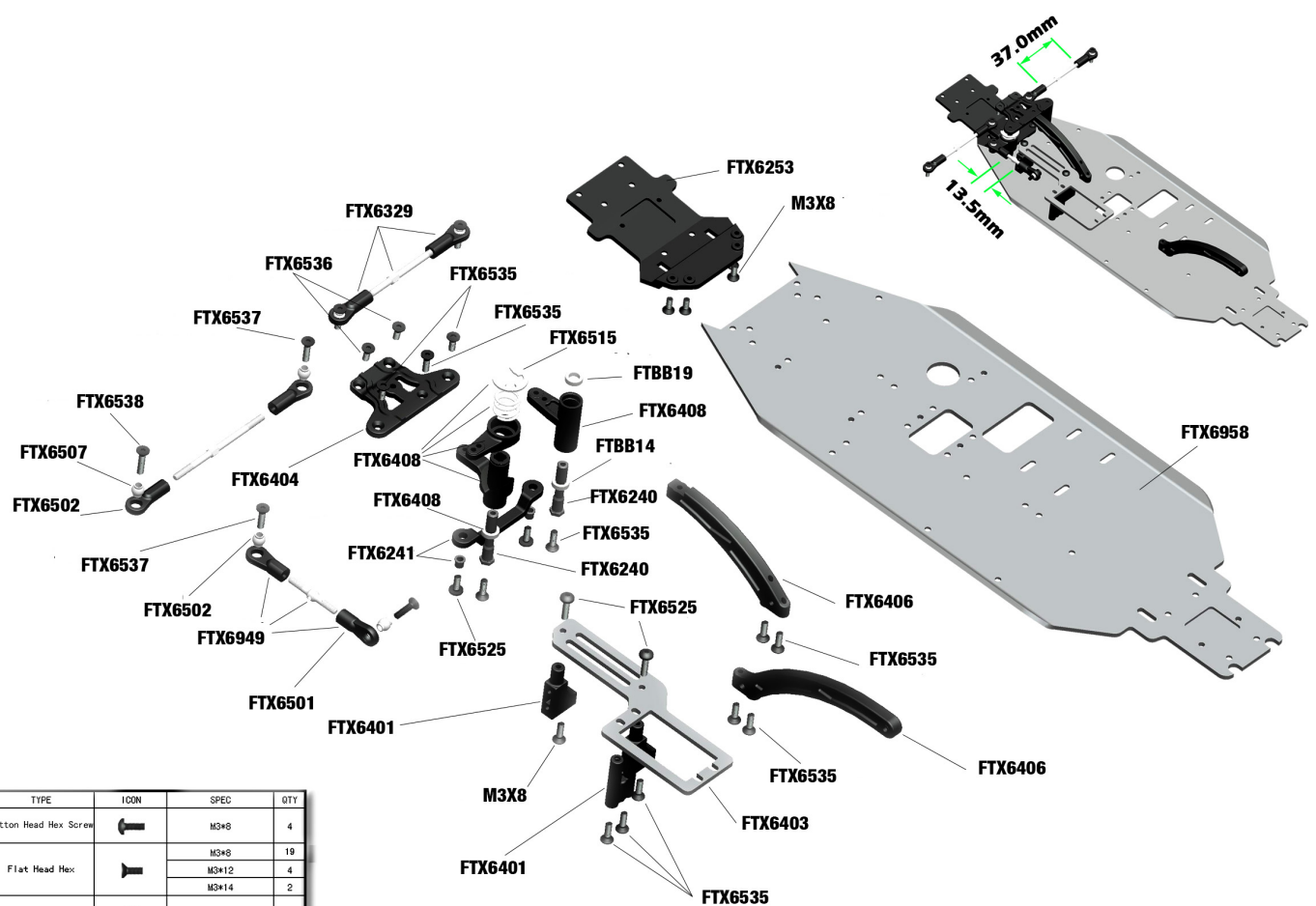
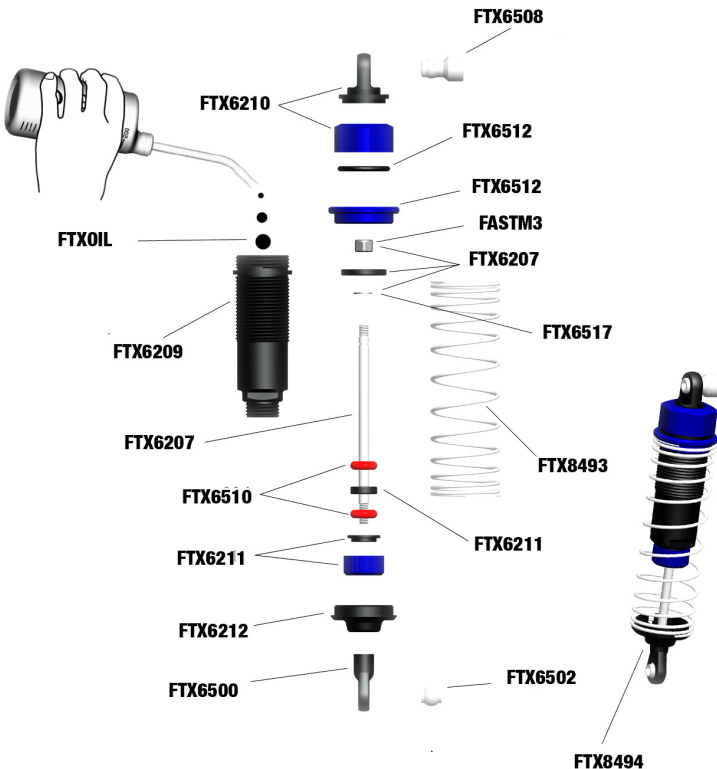
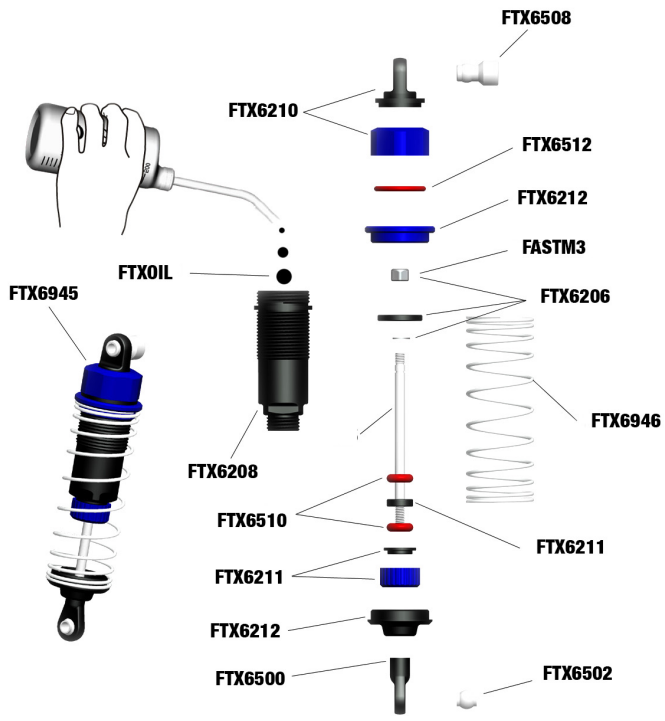




# EXPLODED DIAGRAM PARTS LISTING

## FRONT SHOCK ABSORBERS

## REAR SHOCK ABSORBERS



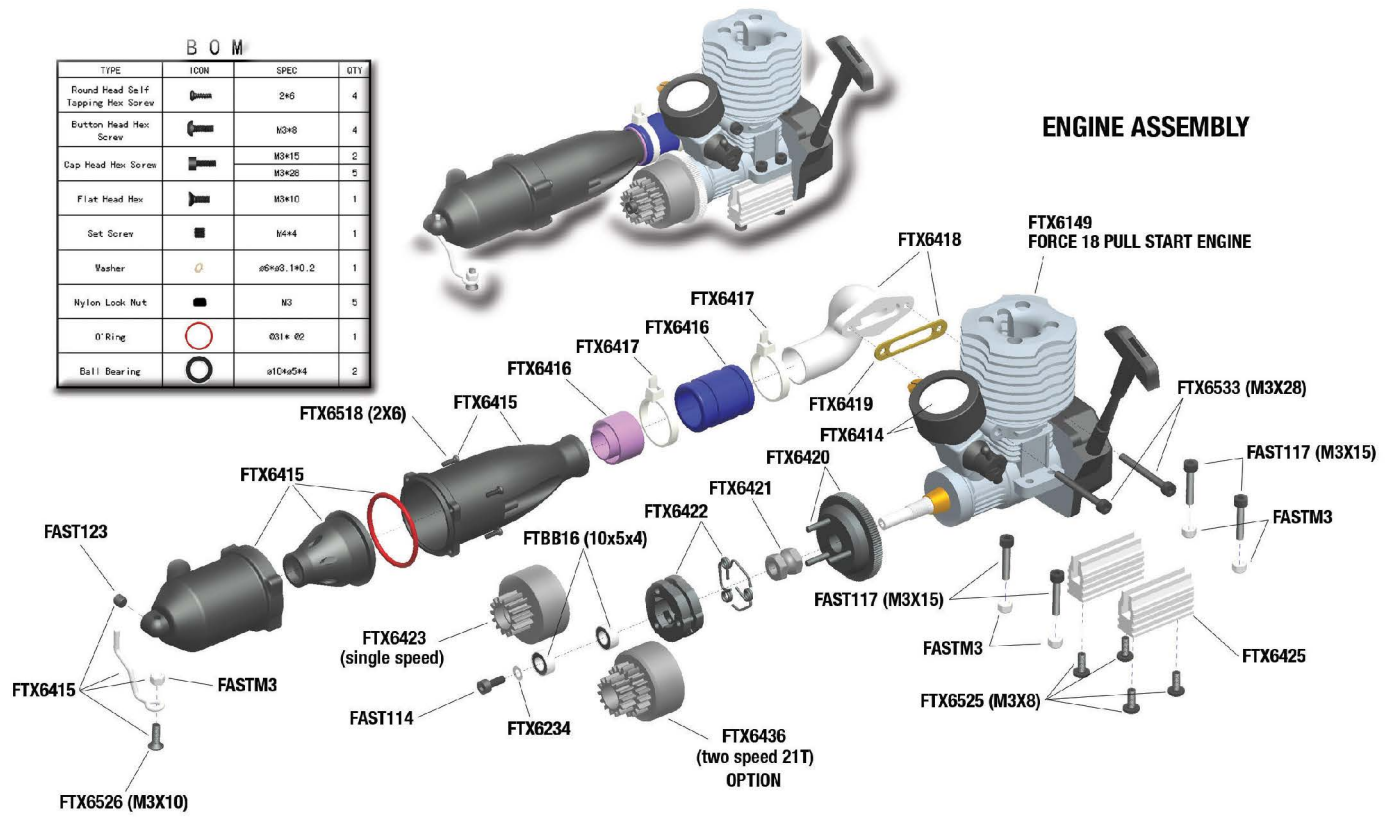
TYPE	ICON	SPEC	QTY
Button Head Hex Screw		M3x8	4
		M3x8	19
Flat Head Hex		M3x12	4
		M3x14	2
		ø8	1
Ball Bearing		ø8x5x2.5	3



**B O M**

TYPE	ICON	SPEC	QTY
Round Head Self Tapping Hex Screw		2#6	4
Button Head Hex Screw		M3x8	4
Cap Head Hex Screw		M3x15	2
		M3x28	5
Flat Head Hex		M3x10	1
Set Screw		M4x4	1
Washer		ø6xø8.1x0.2	1
Nylon Lock Nut		M3	5
O'Ring		Ø31 x Ø2	1
Ball Bearing		ø10xø5x4	2

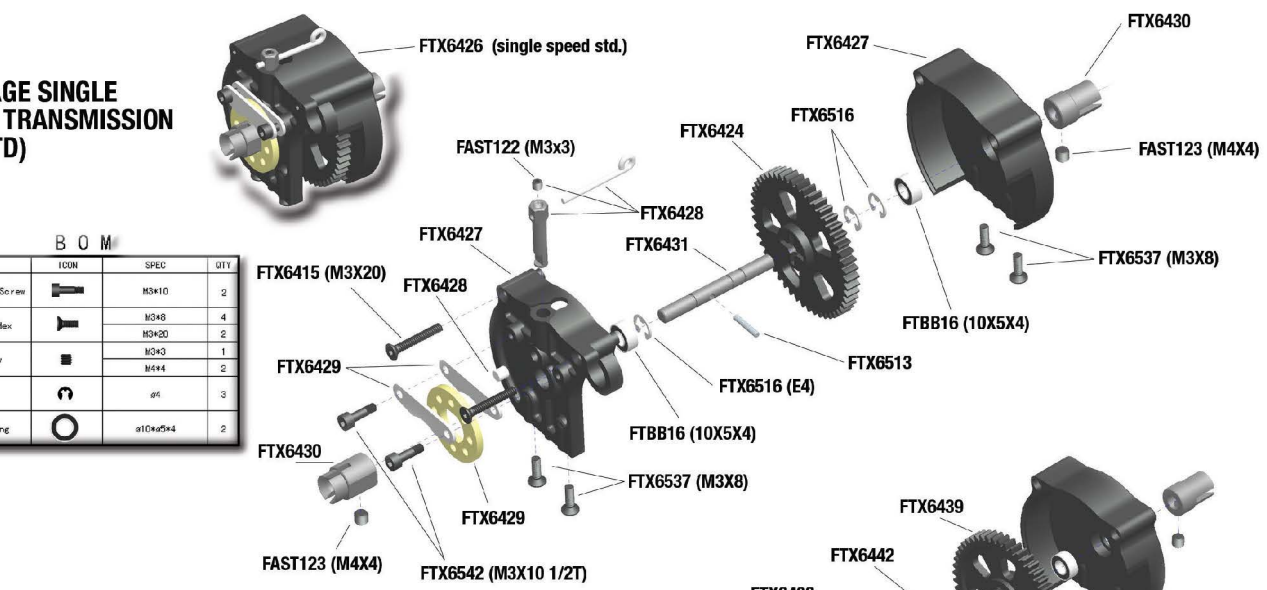
**ENGINE ASSEMBLY**



**CARNAGE SINGLE SPEED TRANSMISSION (KIT STD)**

**B O M**

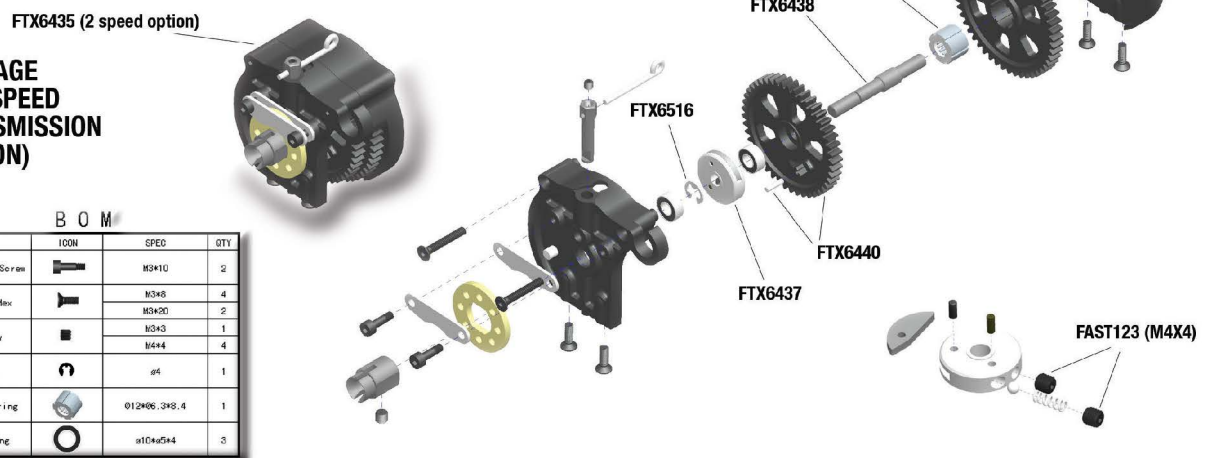
TYPE	ICON	SPEC	QTY
Cap Head Hex Screw		M3x10	2
Flat Head Hex		M3x8	4
		M3x20	2
Set Screw		M3x3	1
		M4x4	2
E o lip		ø6	3
Ball Bearing		ø10xø5x4	2

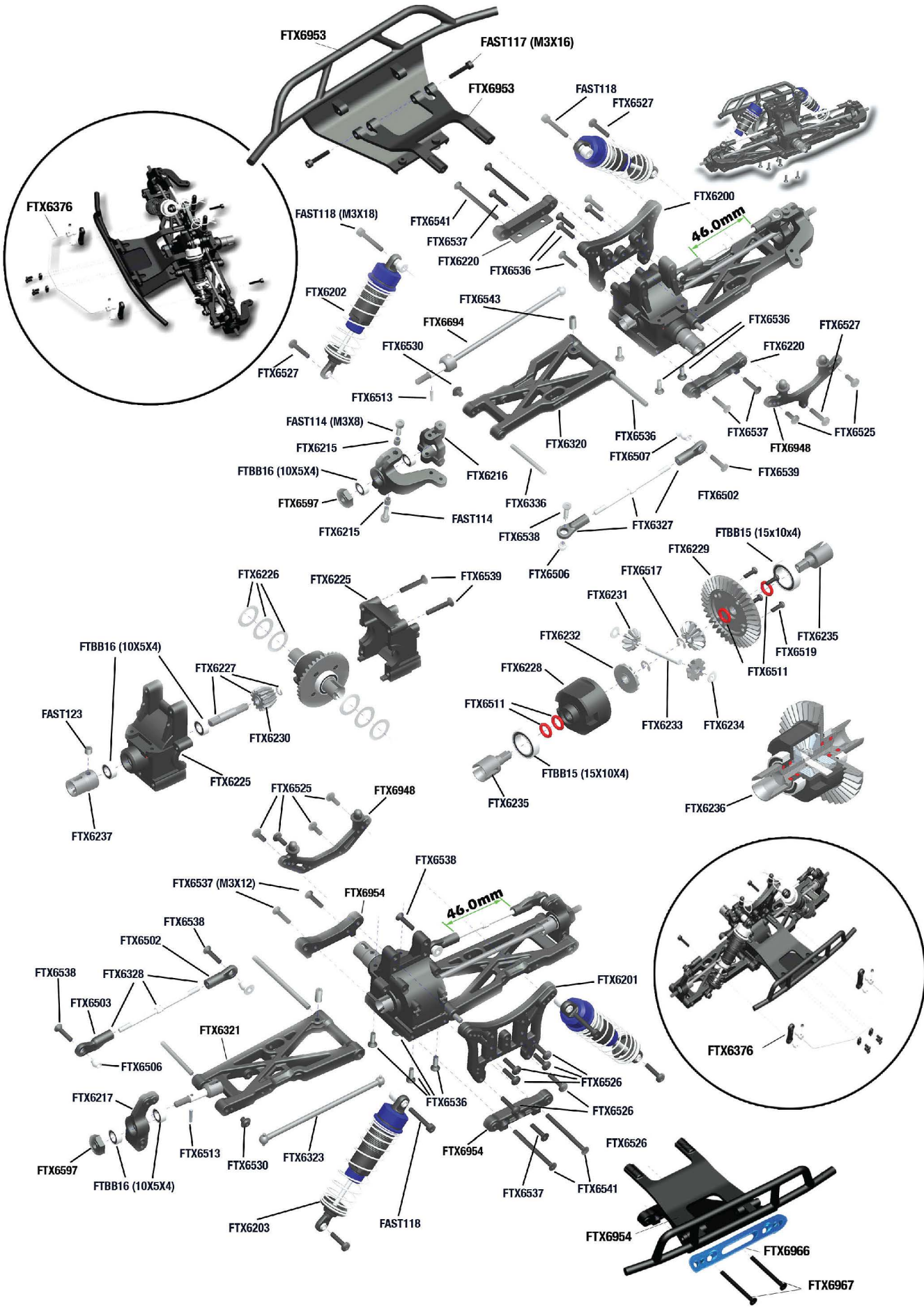


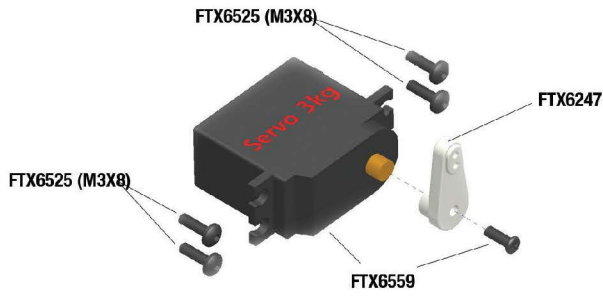
**CARNAGE TWO SPEED TRANSMISSION (OPTION)**

**B O M**

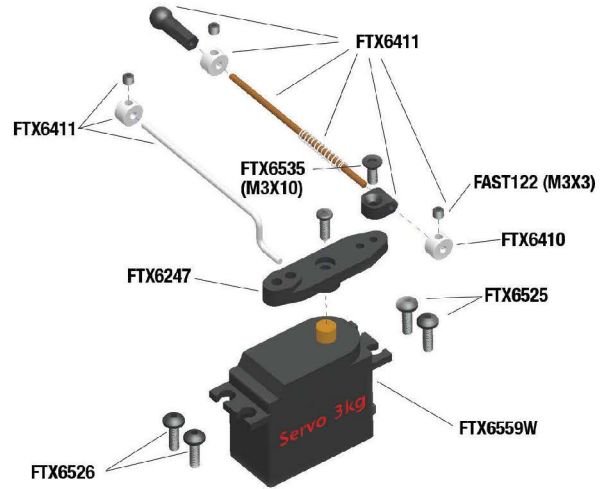
TYPE	ICON	SPEC	QTY
Cap Head Hex Screw		M3x10	2
Flat Head Hex		M3x8	4
		M3x20	2
Set Screw		M3x3	1
		M4x4	4
E o lip		ø6	1
One Way Bearing		Ø12xØ6.3x8.4	1
Ball Bearing		ø10xø5x4	3



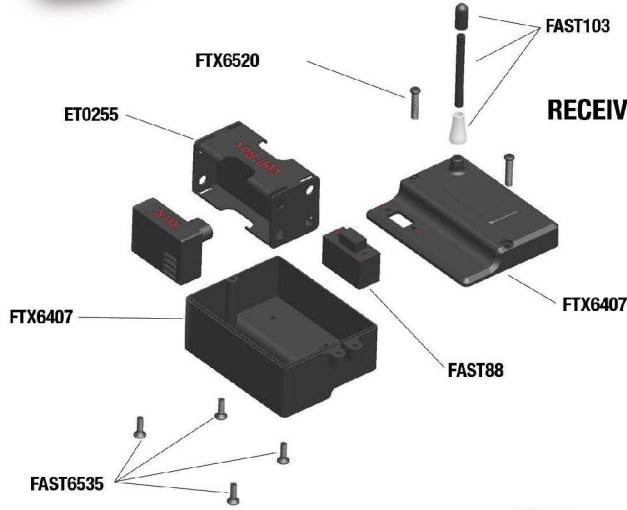




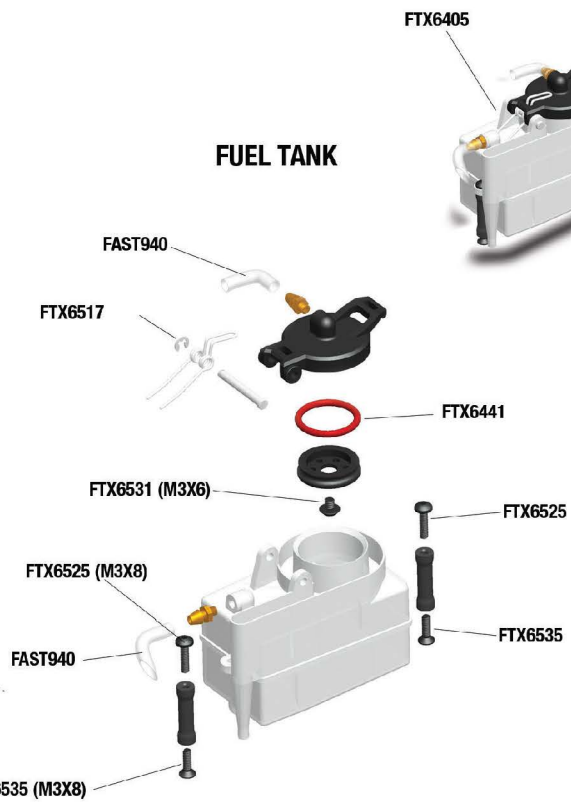
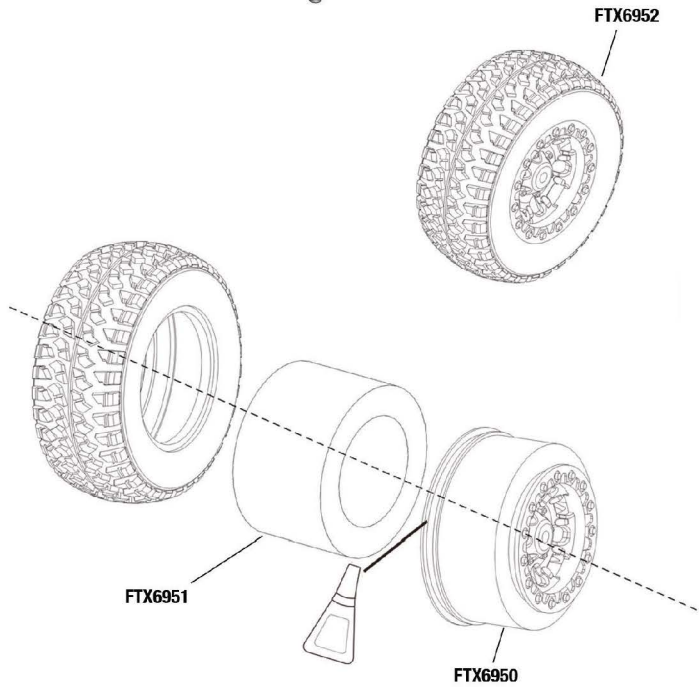
### STEERING SERVO



### RECEIVER ASSEMBLY



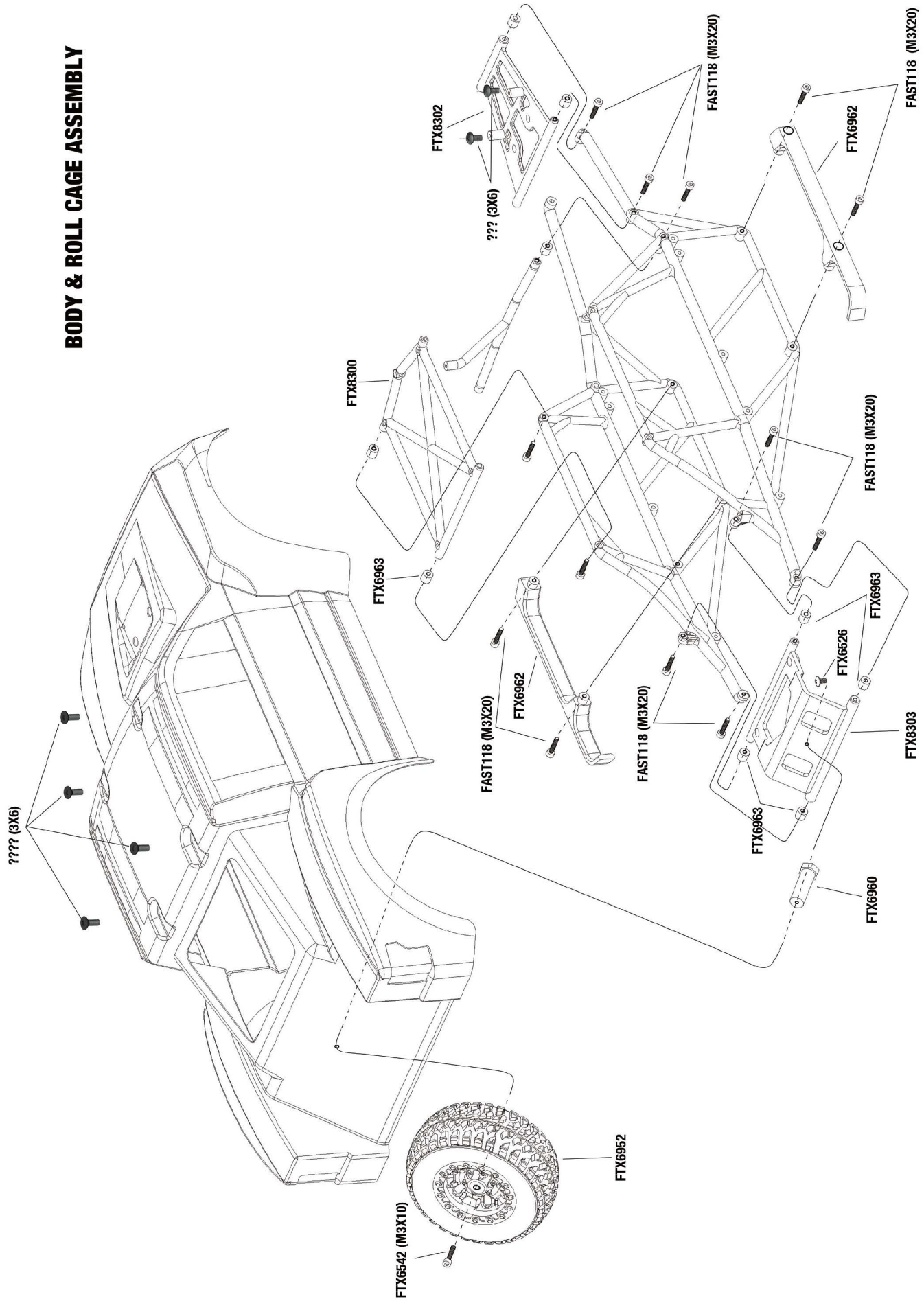
### FUEL TANK











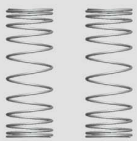
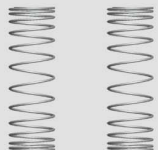




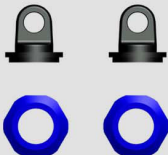
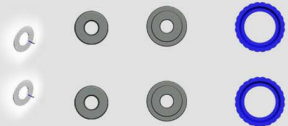

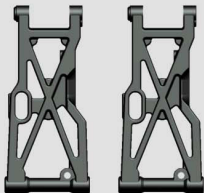
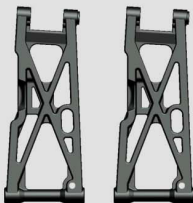






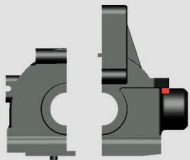


# BODY & ROLL CAGE ASSEMBLY






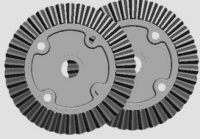
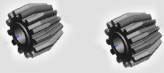
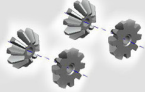
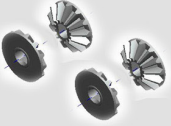


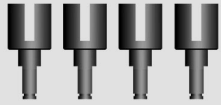

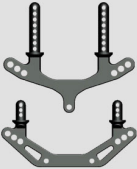

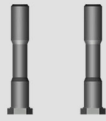
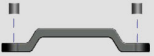


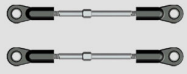




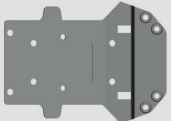



# PARTS LISTING

## PARTS LISTING

<p>FTX6200- Front Shock Tower 1pc</p> 	<p>FTX6201 -Rear Shock Tower 1pc</p> 	<p>FTX6945 -Front Shocks 2pc</p> 	<p>FTX8494 - Rear Shock Tower 2pc</p> 
<p>FTX6946-Front Shock Spring 2pc</p> 	<p>FTX8493 - Rear Shock Spring 2pc</p> 	<p>FTX6206-Front Shock Shaft &amp; Piston Set 2sets</p> 	<p>FTX6207-Rear Shock Shaft &amp; Piston Set 2sets</p> 
<p>FTX6208-Front Shock Body 2pc</p> 	<p>FTX6209 -Rear Shock body 2pc</p> 	<p>FTX6210 -Shock Upper Cap 2sets</p> 	<p>FTX6211 -Shock Lower Caps 2sets</p> 
<p>FTX6212-Shock Lower holder &amp; Adjust Ring 2sets</p> 	<p>FTX6320 -Front Lower Susp. Arm 2pc</p> 	<p>FTX6321-Rear Lower Susp. Arm 2pc</p> 	<p>FTX6215-Steering Knuckle Arm 1set</p> 
<p>FTX6216 -Uprights 2pc</p> 	<p>FTX6947 -Front CVD 2pc</p> 	<p>FTX6217-Rear Hub Carrier 2pc</p> 	<p>FTX6213-Rear Drive Shaft 2pc</p> 
<p>FTX6323 -Rear Dogbones 2pc</p> 	<p>FTX6225 -Gearbox Housing Set 2pcs</p> 	<p>FTX6226-Diff 16T Gear Washer 6pcs</p> 	<p>FTX6227-Diff. Drive Gear w/pin 2sets</p> 



### PARTS LISTING

<p>FTX6228 -Diff Case 2pcs</p> 	<p>FTX6229 -Diff Drive Spur Gear 2pcs</p> 	<p>FTX6230-Diff Drive Gear 2pcs</p> 	<p>FTX6231-Diff Bevel Gear S. 4pcs</p> 
<p>FTX6232-Diff Bevel Gear B. 4pcs</p> 	<p>FTX6233 -Diff Pin 2pcs</p> 	<p>FTX6234 -Washer 6pcs</p> 	<p>FTX6235 -Diff Drive Cup 4pcs</p> 
<p>FTX6237-Center Coupler 3pcs</p> 	<p>FTX6948 -Body Post 2pcs</p> 	<p>FTX6408 -Servo Saver (GP) 1set</p> 	<p>FTX6240 -Servo Saver Post 2pcs</p> 
<p>FTX6241 -Steering Ackerman</p> 	<p>FTX6327-Front Upper Susp. Arm 2sets</p> 	<p>FTX6328-Rear Upper Susp. Arm 2sets</p> 	<p>FTX6329 -Steering Arm 2sets</p> 
<p>FTX6949 -Servo linkage 1set</p> 	<p>FTX6597 - Wheel hub 4pcs</p> 	<p>FAST103B-Antenna Pipe Set 2sets</p> 	<p>FTX6220 - Front Arm Holders</p> 
<p>FTX6253 -Chassis Front Part 1pc</p> 	<p>FTX6950 - Rim 2pcs</p> 	<p>FTX6951 - Tyres &amp; foam 2sets</p> 	<p>FTX6952 - Preassembled Tyres 2sets</p> 



### PARTS LISTING

<p>FTX6953 -Front bumper Set 1set</p> 	<p>FTX6954 -Rear bumper Set 1set</p> 	<p>FTX6236 -Diff Gearbox Set 1set</p> 	<p>FTX6956 -Rear suspension arm pins w/screws 2pcs</p> 
<p>FTX6419 -Manifold Gasket 6pc</p> 			<p>FTX6401-Servo &amp; Upper Plate Mounts 1set</p> 
<p>FTX6403 -Upper Plate 1pc</p> 	<p>FTX6404 -Upper Steering Plate</p> 	<p>FTX6405 -Fuel tank Set 1set</p> 	<p>FAST940 -Fuel Line 2pcs</p> 
<p>FTX6406 -Front/Rear Chassis Brace</p> 	<p>FT6407 -Receiver Box 1set</p> 	<p>FAST88 -Switch Cover 2pcs</p> 	<p>FTX6247 -Servo Horns</p> 
<p>FTX6409 -Chassis Brace mount 1pc</p> 	<p>FTX6410 -Stopper 6pcs</p> 	<p>FTX6411 -Throttle Linkage 1set</p> 	<p>FTX6957 -Central Dongbone F. 1pc</p> 
<p>FTX6149 -FC.18 Engine 1pc</p> 	<p>FTX6414 -Air filter 1Set</p> 	<p>FTX6415 -Tuned Pipe 1Set</p> 	<p>FTX6416 -Silicone Coupler 1Set</p> 



### PARTS LISTING

<p>FTX6417 -Zip Tie 6pcs</p> 	<p>FTX6418 -Manifold 1Set</p> 	<p>FTX6420 -Flywheel 1pc</p> 	<p>FTX6421 -Clutch Nut 2pcs</p> 
<p>FTX6422-Clutch Shoes &amp; Springs</p> 	<p>FTX6423 -Clutch Bell (14T) 1pc</p> 	<p>FTX6436-Clutch Bell (two speed) 1pc</p> 	<p>FTX6425 -Engine mount 2pcs</p> 
<p>FTX6426-Central Transmission Complete 1Set (Single Speed)</p> 	<p>FTX6427-Central Transmission Bulkheads 2pcs</p> 	<p>FTX6428 -Brake Post 1Set</p> 	<p>FTX6429 -Brake Set 1set</p> 
<p>FTX6430 -Brake Cup 2pcs</p> 	<p>FTX6431-Single Speed Shaft w/pin</p> 	<p>FTX6424-50T Gear (Single Speed) 1pc</p> 	<p>FTX6958-N1/N2 Chassis Plate 1pc</p> 
<p>FTX6959-Central Dongbone R. 1pc</p> 	<p>FTX8300 - Roll cage Top Frame</p> 	<p>FTX8301 - Roll cage side Frame 2pcs</p> 	<p>FTX8302 - Roll cage Front 1pc</p> 
<p>FTX8303 - Roll cage rear plate 1pc</p> 	<p>FTX8307 - Roll cage window frame 1pc</p> 	<p>FTX6960 - Spare wheel support 1pc</p> 	<p>FTX8336B - Driver helmet 2pcs FTX8336R</p> 



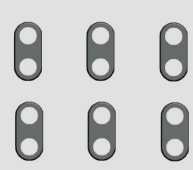





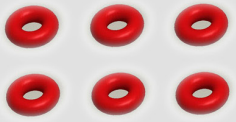
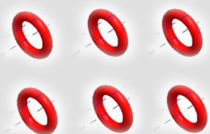

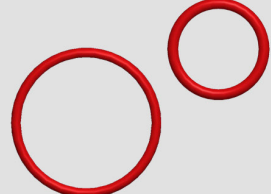




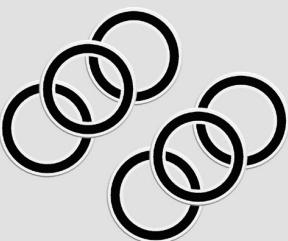


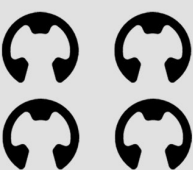





### PARTS LISTING

<p>FTX6376 -Sway Bar 2Sets</p> 	<p>FTX6500 -Shock Ball End 6pcs</p> 	<p>FTX6501 -Servo Link Ball End 6pcs</p> 	<p>FTX6551-Body Clip (Small Size) 6pcs</p> 
<p>FTX6550 -Body Clip (Medium Size) 6pcs</p> 	<p>FTX6537 -Flat Head Hex Screw M3*12 6p</p> 	<p>FTX6538 -Flat Head Hex Screw M3*14 6p</p> 	<p>FTX6540 -Flat Head Hex Screw M3*20 6p</p> 
<p>FTX6541 -Flat Head Hex Screw M3*36 6p</p> 	<p>FTX6539 -Flat Head Hex Screw M3*18 3p</p> 	<p>FTX6961 -Flat Head Hex Screw M4*10 6p</p> 	<p>FTX6962 - Body supporting bar 1set</p> 
<p>FTX6963 - Roll cage spacer 14pcs</p> 	<p>FTX8337- Driver Blister set w/decal</p> 	<p>FTX6964 - clear body</p> 	<p>FTX6965B - Printed body(Blue)</p> 
<p>FTX6965O - Printed body(orange)</p> 	<p>FTX6966 Rear bumper Fix plate(alloy) w/ screws 2pcs</p> 	<p>FTX6967 - Flat hex screw M3*40 6pcs</p> 	<p>ET0255 - Battery Case 1pc</p> 
<p>ET0873- Receiver Switch 1pc</p> 	<p>FTX6559W - 3kg Servo</p> 	<p>ET1106 - Etronix EX3G Radio Set</p> 	<p>ET1152 - Etronix 2.4Ghz Receiver</p> 














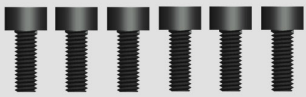
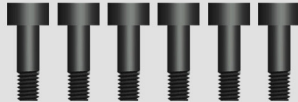
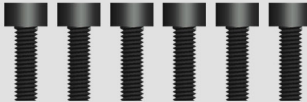
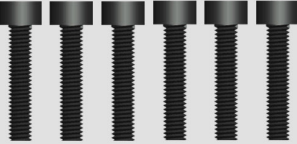
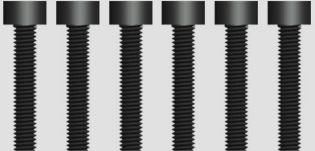
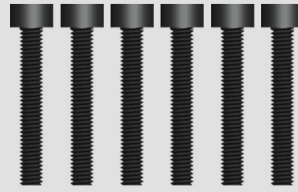
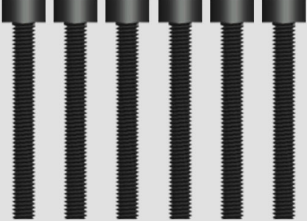
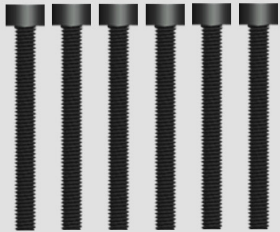





### PARTS LISTING

<p>FTX6502-Steering Linkage Ball End 6pcs</p> 	<p>FTX6503-Rear Upper Linkage Ball End 6pcs</p> 	<p>FTX6504-Sway Bar Fix Plate 6pcs</p> 	<p>FTX6505-Sway Bar Holders 6pcs</p> 
<p>FTX6502-Ball A 6pcs</p> 	<p>FTX6507-Ball B 6pcs</p> 	<p>FTX6508-Ball C 6pcs</p> 	<p>FTX6509-Ball D 6pcs</p> 
<p>FTX6510 -Shock O-ring (Lower) 6pcs</p> 	<p>FTX6511-Diff O-ring Seal 6pcs</p> 	<p>FTX6512-Shock O-ring (upper) 6pcs</p> 	<p>FTX6441-Tuned Pipe Seal &amp; Fuel Tank Seal 1set</p> 
<p>FTX6513-Pin <math>\phi</math>2*10 6pcs</p> 	<p>FTX6514-Pin <math>\phi</math>2*11 6pcs</p> 	<p>FTX6336-Hinge Pins (long &amp; short) 2sets</p> 	<p>FTX6968-One Way Bearing 3pcs</p> 
<p>FTBB10-Ball Bearing 15*10*4 1pcs</p> 	<p>FTB120-Ball Bearing 10*5*4 2pcs</p> 		<p>FTBB14-Ball Bearing 8*5*2.5 1pcs</p> 
<p>FTX6515-E clip-8mm 4pc</p> 	<p>FTX6516-E clip-4mm 6pc</p> 	<p>FTX6517-E clip-2.5mm 6pc</p> 	<p>FASTM3-Nylon Lock Nut M3 6pc</p> 



### PARTS LISTING

<p>FTM4BF-Nylon Lock Nut-M4 6pc</p> 	<p>FTX6518-Round Head Self Tapping Hex Screw 2*6 4pcs</p> 	<p>FTX6519-Round Head Self Tapping Hex Screw 2*10 6pc</p> 	<p>FTX6520-Round Head Self Tapping Hex Screw 3*15 8pc</p> 
<p>FTX6522 -Round Head Self Tapping Hex Screw M3*6 6pc</p> 	<p>FTX6525 -Button Head Hex Screw M3*8 6pc</p> 	<p>FTX6526-Button Head Hex Screw M3*10 6pc</p> 	<p>FTX6527 -Button Head Hex Screw M3*12 6pc</p> 
<p>FTX6528-Button Head Hex Screw M3*14 6pc</p> 	<p>FTX6530-Ring Self Tapping Screw 3*4 4pc FTX6531-Ring Self Tapping Screw 3*6 6pc</p> 	<p>FAST122 -Set Screw M3*3 6pc</p> 	<p>FAST123A -Set Screw M4*4 6pc</p> 
<p>FTX6543 -Button Head Hex Screw M4*10 6pc</p> 	<p>FAST114-Cap Head Hex Screw M3*8 6pc</p> 	<p>FAST6542 -Cap Head Hex Screw M3*10 6pc</p> 	<p>FAST115 -Cap Head Hex Screw M3*10 6pc</p> 
<p>FTX6532 -Cap Head Hex Screw M3*14 6pc</p> 	<p>FAST117 -Cap Head Hex Screw M3*16 6pc</p> 	<p>FAST118 -Cap Head Hex Screw M3*18 6pc</p> 	<p>FAST119 -Cap Head Hex Screw M3*25 6pc</p> 
<p>FTX6533 -Cap Head Hex Screw M3*28 6pc</p> 	<p>FTX6535-Flat Head Hex M3*8 6pc</p> 	<p>FTX6536-Flat Head Hex Screw M3*10 8pc</p> 	<p>FTX6523 - Flat Head Hex Self Screw 3x10 8pc</p> 







### UPGRADE OPTION PARTS LISTING

<p>FTX6351 - Front Shock Plate (Carbon) 1Set</p> 	<p>FTX6352 - Rear Shock Plate (Carbon) 1Set</p> 	<p>FTX6355 -Body Post (AL) 2pc</p> 	<p>FTX6971 -Front Shocks(AL)2pcs</p> 
<p>FTX8495 -Rear Shocks(AL)2pcs</p> 	<p>FTX6358 - Front Lower Susp. Arm (AL) 2pc</p> 	<p>FTX6359 -Rear Lower Susp. Arm (AL) 2pc</p> 	<p>FTX6360- Steering Ackerman (AL) 1pc</p> 
<p>FTX6312 - Front Susp. Holders (AL) 1Set</p> 	<p>FTX6378 - Front &amp; Rear Brace(AL) (AL) 1Set</p> 	<p>FTX6435 - 2-speed gearbox</p> 	<p>FTX6360- Rear Hub Carrier (AL) 2pc</p> 
<p>FTX6379 -Front Top Plate (Carbon) 1pc</p> 		<p>FTX6365W -Wheel hub (Al) 4pcs</p> 	<p>FTX6380 - Upper Plate(AL) 1pc</p> 
<p>FTX6381 - Tuned Pipe (AL) 1Set</p> 	<p>FTX6382 - Chassis Brace mount (AL) 1pc</p> 	<p>FTX6436 -Clutch Bell (two speed) 1pc</p> 	<p>FTX6367 - Alum Steering Arm 2pc</p> 
<p>FTX6368 - Alum Knuckle Arm 2pc</p> 	<p>FTX6361 - Alloy front suspension holders 1set(Optional)</p> 	<p>FTX6970 - Alloy rear suspension holders 1set(Optional)</p> 	



## MAINTAINING YOUR CAR

After running your car, the following procedures should be performed regularly and will help to maintain your car's performance.

- Inspect your car for any obvious damage.
- Check the gears for wear, debris or broken/slipping teeth.
- Check the wheels and tighten the wheel screws properly.
- Check for loose screws in the chassis.
- Check the wiring for frayed or damaged wires or connectors.
- Check the steering servo which will wear out over time and require replacement.
- Check all batteries.
- Keep the chassis clean and free of sand, dust and moisture.
- Remove and clean the motor if necessary. (Never attempt to re-assemble the motor, you will damage it and void the warranty).
- Clean the car body with a soft lint-free cloth.
- Remove all batteries when not in use.

## TROUBLESHOOTING

### SYMPTOM

### POSSIBLE CAUSE

A. The vehicle does not work at all.

1. Check to see if transmitter and car are on.
2. Replace batteries.
3. Check if there are damaged parts.

B. The vehicle runs slow.

1. Replace or charge the battery pack and/or the radio batteries.
2. Make sure the vehicle is geared properly and the pinion and spur gear are over tightened.
3. Clean all bushings or ball bearings.
4. Check for stripped or dirty gears.

C. The throttle works, but not the steering.

1. Check if the servo feels jammed – try centering it by hand.
2. Check the whole steering system.

D. It steers, but throttle is uncontrollable.

1. Check if there are damaged parts.
2. Replace or charge the battery pack and/or the radio batteries

E. The vehicle runs noisily.

1. Check gear mesh between spur gear and pinion.
2. Check for stripped and/or dirty gears.
3. Clean and oil bushings or ball bearings.



FTX  
**TORRO**  
TROPHY TRUCK



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