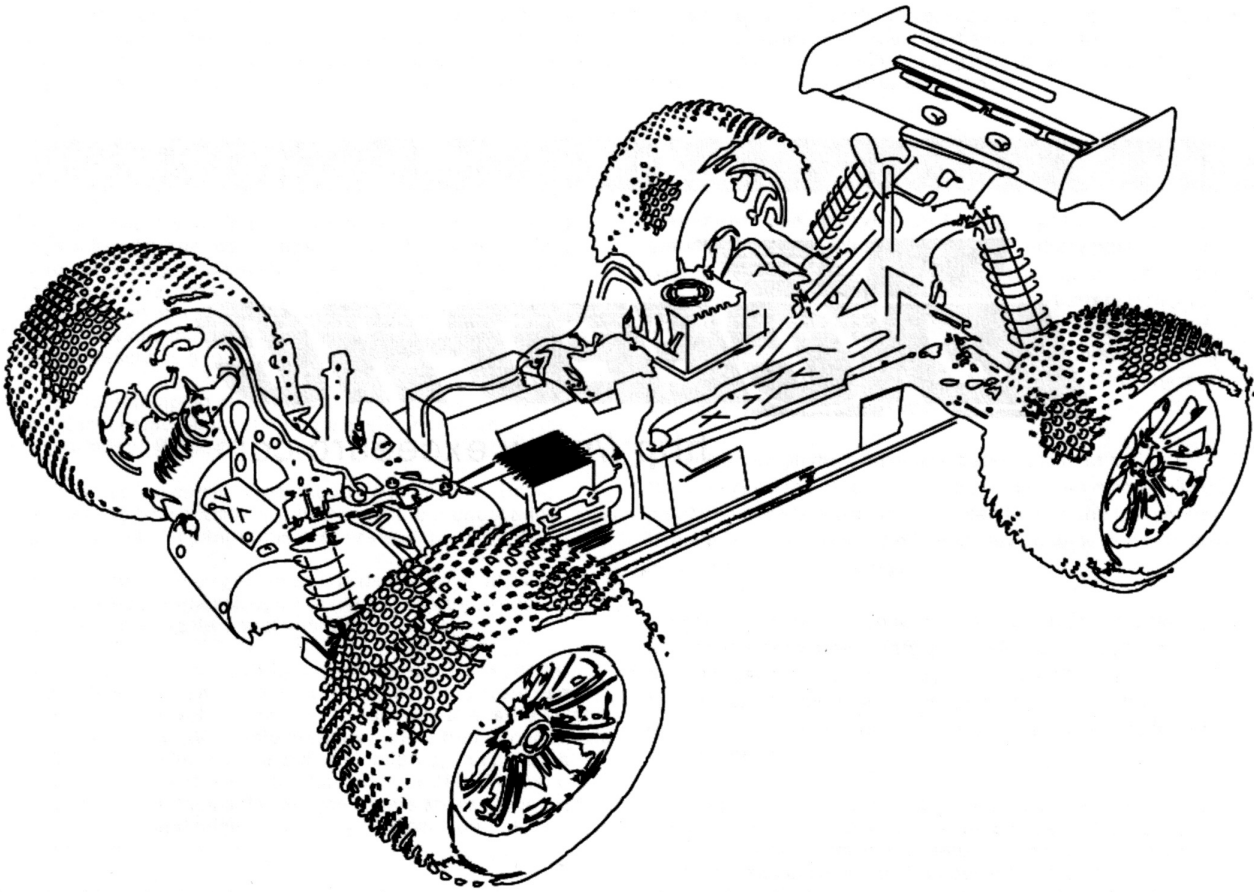


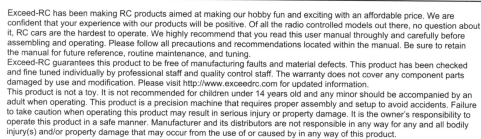
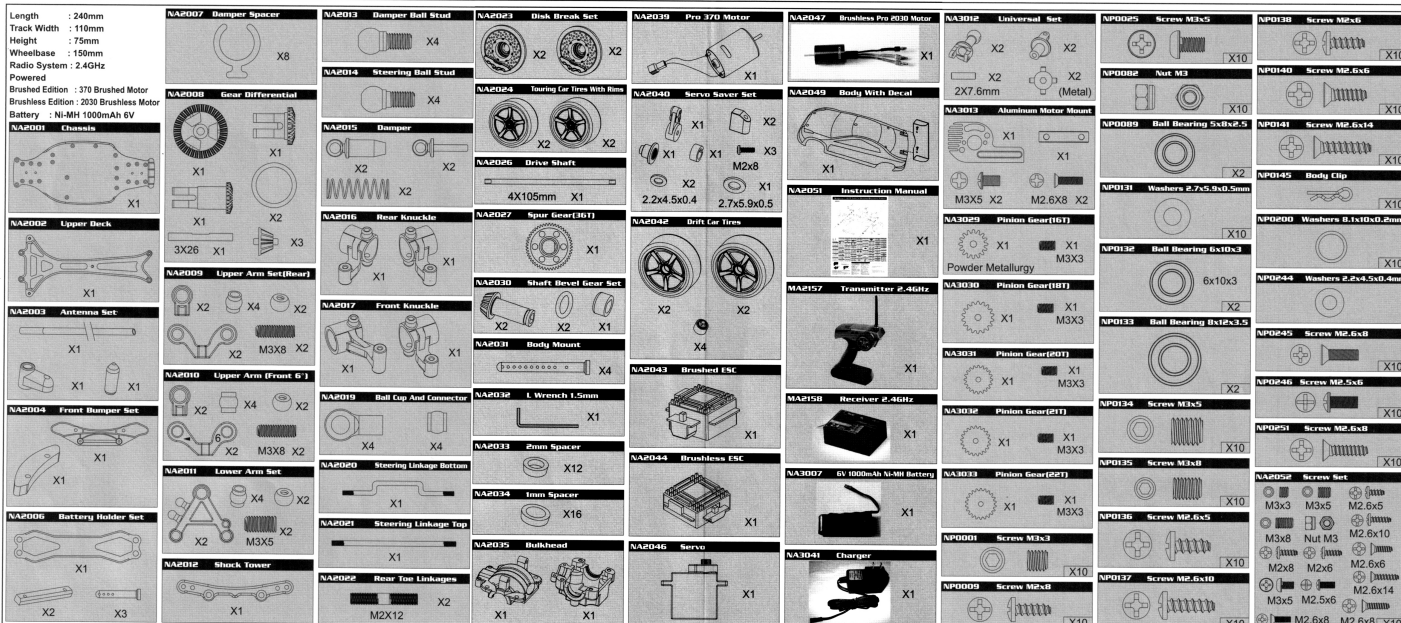
EXCEED-RC

USER MANUAL



<http://www.exceedrc.com>

ASSEMBLY:



WARNINGS

- The product is not intended for those under 14 years of age without proper adult supervision. The product is not a toy and is not to be used for play. The product is not to be used to help prevent or respond to accidents and it is the responsibility of the user to operate this product in a safe manner as it can cause personal injury or property damage if used carelessly or misuse.
- Do not use the product without the warranty or the product components without the modification of an authorized service center.
- Only use the correct type of battery to operate. Using any wrong type of battery will damage the product and void the warranty. Do not use the wrong type of battery. This will prolong the life of your product. Always allow 10-15 minutes for the battery to warm up before using it. This will motor's may get hot during use. Always allow 10-15 minutes for the battery to warm up before using it.
- Do not use the product in the following circumstances:
 - In wet, damp, or rainy conditions
 - In areas with flammable, explosive, or highly volatile fumes, smooth ground, and clear open fields. Do not operate near highways, high voltage cable lines, or trees to ensure safety.
 - Do not use the product in areas where there are many RC models are prone to accidents, failures, and crashes such as crowded areas, parking lots, and streets.
 - Do not use the product in areas where there is a high risk of user injury, and/or damage. Users are responsible for any injury and/or damage and injury occurring during the operation.
- Do not operate in inclement weather, such as rain, wind, or snow.
- The product is composed of precision electrical components and is not designed to be used in areas with moisture and other contaminants. Do not allow them to be used in wet or damp areas or where could affect safety should operate.
- You should complete a successful pre-run check of your product before using it.
- After each use, always allow the battery to cool down before recharging. When charging the battery pack, do not overcharge it. If batteries get hot during charging, discontinue charging immediately. Do not use the battery pack if it is overcharged. Never leave battery unattended while charging. If it is overcharged, it may cause a fire. Do not use the battery of experienced RC users. Never let children charge the battery without adult supervision.
- Always turn on the transmitter before reconnecting the battery on the model. When turning off the model, always disconnect the battery first, and then turn off the transmitter. Do not use the transmitter if the battery is not fully charged and cause serious damage.
- Do not use the product if you are unable to operate the model, we strongly recommend that you seek assistance from experienced RC users or your local modeling club. Do not use the product if you are unable to contact the manufacturer and distributor, we assume no liability for the use of the product.
- Before turning on the model and transmitter, please check to make sure no one else is operating under the same name. Do not use the product if you are unable to contact the manufacturer or other models to crash. The guidance provided by experienced RC users will be valuable for the assembly, tuning, and operation of the model.
- Never allow batteries to run low or you might lose control of the model.
- Plastic is very susceptible to damage or deformation due to extreme heat and cold climate. Do not store the model near heat sources, such as radiators, stoves, or heaters, or indoors, in a climate-controlled, room temperature environment.

Charge the NI-MH battery pack

The battery should be fully charged in 2 hours. Disconnect the battery from the charger when the charging process completed. Do not charge the battery unattended at all time

NI-MH Battery Warnings

- Never charge Ni-MH battery with a charger designed for Li-Po, or any other type of battery chemistry. Use ONLY charger designed for Ni-MH battery.
- Do not use Ni-MH battery unless instructed during charging.
- Do not overcharge the battery.
- Always place the battery on a heat resistant surface when charging.
- Always use the correct polarity when connecting the battery to the container while charging.
- Do not allow Ni-MH cells to overheat at any time. Cells which reach greater than 140 °F (60 °C) should be removed from the container.
- Do not allow Ni-MH cells or on non combustible materials including paper, plastic, carpets, etc. If the battery is soaked in water, remove it from the water immediately.
- Do not over discharge Ni-MH, doing so will damage the battery.
- Do not use Ni-MH battery if it is damaged or leaking.
- Do not store battery near open flame or heater.
- Do not expose Ni-MH battery to fire.
- Always store Ni-MH battery in pre-assembled packs together with other Ni-MH cells or packs.
- Always store Ni-MH battery in a cool, dry location away from children.
- Always remove Ni-MH battery if flame is involved in any kind of crash. Carefully inspect the battery for damage.
- Do not use Ni-MH battery if it is damaged or leaking.
- Do not allow the electrolyte to get into eyes or on skin. Wash affected areas immediately with copious amounts of water.
- Always use the correct polarity when connecting the battery to the container while charging.
- Always use the correct condition of the battery before charging and operating.
- Do not short circuit the Ni-MH battery.
- Do not touch contact with the battery temperature directly.
- Do not charge battery out of recommended temperature range (0°-45°C)

Introduction

Exceed-RC would like to welcome you to the world of remote control cars. What are RC cars? The simple answer is that they are radio controlled cars that respond precisely to your command. The more complete answer is that they can be a great addition to your lifestyle. RC car building and racing teach valuable mechanical and electrical skills, promote teamwork and encourage racers to test their skills with other racers from around the world. Whether you are just having fun racing your car in your backyard or racing at the world competition contest, radio controlled car racing is a great hobby.

Exceed-RC has been making RC products aimed at making our hobby fun and exciting with an affordable price. We are confident that your experience with our products will be positive. Of all the radio controlled models out there, no question about it, RC cars are the hardest to operate. This user manual covers a wide range of topics from nitro powered remote control cars to electrical powered remote control cars. We highly recommend that you read this user manual thoroughly and carefully before assembling and operating. Please follow all precautions and recommendations located within the manual. Be sure to retain the manual for future reference, routine maintenance, and tuning.

Exceed-RC guarantees this product to be free of manufacturing faults and material defects. This product has been checked and fine tuned individually by professional staff and quality control staff. The warranty does not cover any component parts damaged by use and modification. Please visit <http://www.exceedrc.com> for updated product information.

This product is not a toy. It is not recommended for children under 14 years old and any minor should be accompanied by an adult when operating. This product is a precision machine that requires proper assembly and setup to avoid accidents. Failure to take caution when operating this product may result in serious injury or property damage. It is the owner's responsibility to operate this product in a safe manner. Manufacturer and its distributors are not responsible in any way for any and all bodily injury(s) and/or property damage that may occur from the use of or caused by in any way or this product.

Warnings

- The product is not intended for those under 14 years of age without proper adult supervision. The product is not a toy. It is a precision machine requiring proper assembly and setup to avoid accidents and it is the responsibility of the owner to operate this product in a safe manner as it can cause serious personal injury and damage to property due to carelessness or misuse.
- Do not attempt to disassemble or modify any of the product components without the assistance of an experienced RC user.
- Only use the correct type of battery to operate. Using any wrong type of battery will damage the product and possibly make it dangerous to operate.
- The motor(s) may get hot during use. Always allow 10-15 minutes between each operation for the motor to cool down. This will prolong the life of your product.
- Choose an appropriate operating site consisting of flat, smooth ground, and clear open field. Do not operate near buildings, high voltage cable lines, or trees to ensure safety operation. Operate in safe area only, away from other people. RC models are prone to accidents, failures, and crashes due to a variety of reasons including, lack of maintenance, user error, and radio interference. Users are responsible for their actions and damage or injury occurring during the operation.
- Do not operate in inclement weather, such as rain, wind, snow or darkness.
- The product is composed of precision electrical components. It is critical to keep the product away from moisture and other contaminants. Do not allow them to get wet. Electrical damage may occur that could affect safe operation.
- You should complete a successful pre-run check of your radio equipment and model prior to each run.
- After each use, always allow the battery to cool down before recharging. When charging the battery pack, do not overcharge! If batteries get hot during charging, discontinue charging immediately and disconnect the battery from the charger. Never leave battery unattended while charging. If you are unsure of how to charge this battery, please seek the advice of experienced RC users. Never let children charge the battery without adult supervision.
- Always turn on the transmitter before connecting the battery on the model. When turning off the model, always disconnect the battery first, and then turn off the transmitter. If the order is reversed, the model may become uncontrollable and cause serious damage.
- If you are in doubt of your ability to operate the model, we strongly recommend that you seek assistance from experienced RC users or join your local modeling club to gain the required knowledge and skill. As the manufacturer and distributor, we assume no liability for the use of this product.
- Before turning on your model and transmitter, please check to make sure no one else is operating under the same frequency. Frequency interference can cause your model, or other's models to crash. The guidance provided by experienced RC users will be valuable for the assembly, tuning, trimming, and actual first flight.
- Never allow batteries to run low or you might lose control of the model.
- Plastic is very susceptible to damage or deformation due to extreme heat and cold climate. Do not store the model near any source of heat such as oven or heater. Store the model indoors, in a climate-controlled, room temperature environment.

- Use replacement parts from the original manufacturer to ensure safe operation.
- Operate this product within your ability. Do not operate under tired condition

- Never shorten the receiver antenna; or this might affect the transmitting range of the radio system.
- This product is a RC hobby model, do not use for other purpose.

Lithium Polymer (LiPo) Battery Warnings

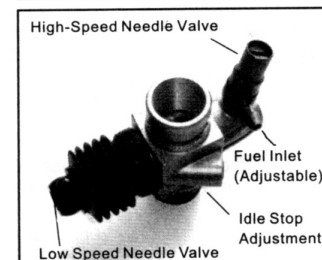
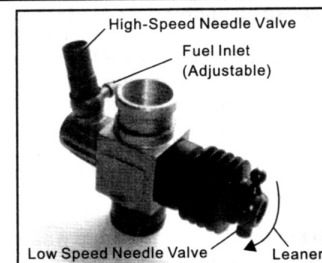
- Never charge a lithium polymer battery with a charger designed for NiCd, NiMH, or any other type of battery chemistry. Use ONLY charger designed for LiPo battery.
- Do not leave LiPo battery unattended during charging.
- Do not overcharge the battery.
- Always place the battery on a heat resistant surface alone when charging.
- Always put the LiPo battery inside a charging protection container while charging.
- Do not allow LiPo cells to overheat at any time. Cells which reach greater than 140 Fahrenheit (60C) will usually become damaged and will catch fire.
- Do not charge LiPo cells on or near combustible materials including paper, plastic, carpets, vinyl, leather, and wood. inside an R/C model or full size automobile.
- Do not discharge LiPo; doing so will damage the battery.
- Do not expose LiPo cell to water or moisture at any time.
- Do not store battery near open flame or heater.
- Do not assemble LiPo cells or pre-assembled packs together with other LiPo cells or packs.
- Always store LiPo battery in a secure location away from children.
- Always remove the LiPo battery if model is involved in any kind of crash. Carefully inspect the battery and connectors for even the smallest damage. CAUTION: cells may be hot!
- Do not allow the electrolyte to get into eyes or on skin. Wash affected areas immediately if they come into contact with electrolyte. Do not alter or modify connectors or wires of a LiPo battery pack.
- Always inspect the condition of the battery before charging and operating.
- Do not short circuit the LiPo battery.
- Do not have contact with a leaky/damaged battery directly.
- Do not charge battery out of recommended temperature range (0C - 45C).

Using The Proper Fuel And Glow Plug

Using the proper fuel and glow plug is important to achieve maximum performance and reliability. You must use fuel, glow plugs and air filters that are specifically designed for remote control model car. The engine is brand new, it must go through proper break-in procedure to perform reliable and achieve maximum performance. During the break-in procedure, it is common to go through one or two glow plugs failure. All car engines must use a properly oiled air filter to keep dirt out of the engine. Any dirt that enters the carburetor can immediately damage your engine. Clean the air filter after every hour of running, You can wash the foam filter with warm water. Dry the filter then re-apply air filter oil to the foam filter. (Please check out www.exceedrc.com for detail instructional video)

Engine Adjustments

Take a moment to review the figures on the right to familiarize yourself with the various functions of the engine. Although preset at the factory, some changes in the needle setting can occur during shipping. (Please check out www.exceedrc.com for detail instructional video)



Starting Your Engine For The First Time

The first start of your engine is the most important time of the engine's life, dictating how well it will perform. Do not skip the break-in process of a new engine! Without proper break-in procedures, you risk damaging your engine during the first tank of fuel. Your patience during these procedures will be rewarded by an engine that performs reliably and to its maximum power potential. Patient and knowledge are the key for a successful break-in process. Glow plug failure is a common occurrence when breaking in a new engine. When tuning the needle valves for maximum performance, adjust them in small increments, 1/16 turn at a time. An engine should not be run too lean; doing so severely shortens the life of the engine. It is better to run a little rich than too lean. (Please check out www.exceedrc.com for detail instructional video)

Engine Maintenance

You need to perform periodic maintenance in order to keep your engine in proper operating condition. After each day of running, it's important to do the following steps:

- 1) Empty all fuel from the tank and fuel lines.
- 2) Remove the glow plug and air filter and add 5 to 6 drops of a quality after-run oil into the carburetor and cylinder head openings.
- 3) Turn the engine over a few times to distribute the oil throughout the engine.
- 3) Clean and inspect the engine, air cleaner and fuel system.

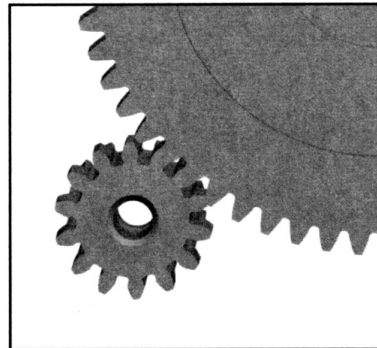
(Please check out www.exceedrc.com for detail instructional video)

Shock Maintenance

After each day of running, you should check your shocks for adequate fluid. If the fluid is low, or it is getting dirty, you should change the fluid in the shocks. To achieve better performance, you may also want to change the shock fluid and or the pistons. (Please check out www.exceedrc.com for detail instructional video)

Setting The Gear Mesh

Gear mesh is the clearance between the pinion and spur in an electric car or clutch bell and spur in a nitro car. It has impact on the vehicles performance. If the gear mesh is not set properly you may also damage the clutch bell and spur or the pinion gear and spur gear as soon as the vehicle starts running. (Please check out www.exceedrc.com for detail instructional video)



Electronic Speed Controller Caution

Always turn on the transmitter first then the ESC to prevent an out-of-control vehicle. Disconnect the battery from the ESC after use. Never leave the vehicle unsupervised while it is switched on, in use or connected to a power source. If there are exposed wires, do not use the ESC until you have installed shrink-wrap or replaced the wire. If there is a short-circuit or product defect, it could result in fire. When programming your ESC or calibration function, disconnect motor or remove the pinion gear. The Electronics in this vehicle are not waterproof and you must avoid running the vehicle in or through standing water, wet grass, mud or snow. If your vehicle gets caught or stuck, do not pull the throttle in either forward or reverse. This will overload the ESC and/or motor, resulting in damage to one or possibly both, and is not covered by your warranty. After running a battery pack, allow the electronics several minutes to cool, before running the next battery pack. (Please check out www.exceedrc.com for detail instructional video)

Pre-run Check

- Keep your vehicle clean by using a brush to remove dirt and dust.
- Check for cracks in the suspension arms and other molded parts.
- Check the tires are still glued to the wheels.
- Check all the wheel bearings are clean and lubricated.
- Check all the screws and nuts are tightened.
- Check all the camber links and steering linkage are not bent.
- Check all the toe and camber settings are as desired and equal.
- Check the spur gear.
- Check the pinion gear.
- Check the slipper pads.
- Check the shocks, if they appear leaking, rebuild them.
- Check all the wiring and connections for bare wire or any place which could lead to a short circuit.
- Check all the electronic components are securely mounted to the chassis.
- Check the receiver is still securely mounted to the chassis.
- Turn on the radio. If the battery LED is off or dim, replace the batteries in the transmitter.
- Keep safe distance from your vehicle while you are making adjustment.

(Please check out www.exceedrc.com for detail instructional video)

Specifcation

- 1.Input Voltage:
7.2V~8.4V(NI-CD/MH) 7.4V(LI-PO) 6.6V(LI-FE)
- 2.Output:Rating 15A, Peak:20A
- 3.Out max power:15A/7.2V(MAX 108W)
- 4.Size/Weight:28mm×25mm×11mm/17.9g
- 5.BEC:5V 2A
- 6.P.W.M:9.5KHz
- 7.MOTOR:
Support 300 Brushless Motor/7.4V under 4000KV

Low power auto-cut table

| Battery \ Volt | 7.2V | 7.4V | 6.6V |
|----------------|-------------------------------|------|------|
| AUTO | Initial Detected voltage x70% | | |
| NI-CD/NI-MH | 5.4V | | |
| LI-PO | | 6.0V | |
| LI-FE | | | 4.8V |

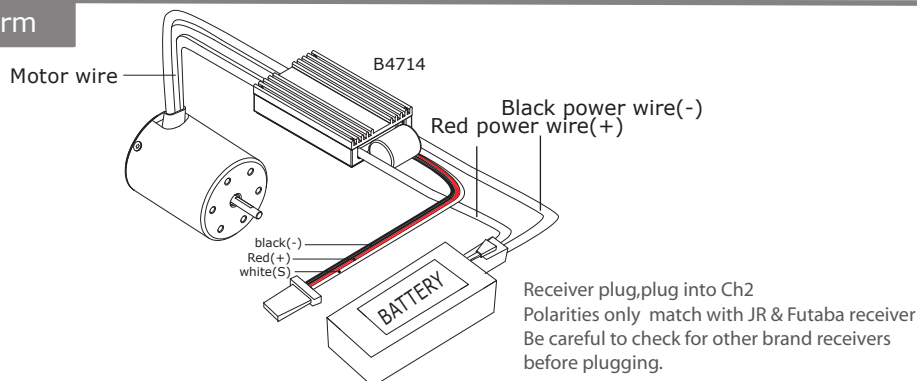
Over temperature protection

The motor will be intermittently turned off when the temperature reaches around $98^{\circ}\text{C} \pm 3 \sim 5^{\circ}\text{C}$. Optional vent fan is available for selection to enhance the ESC ventilation.

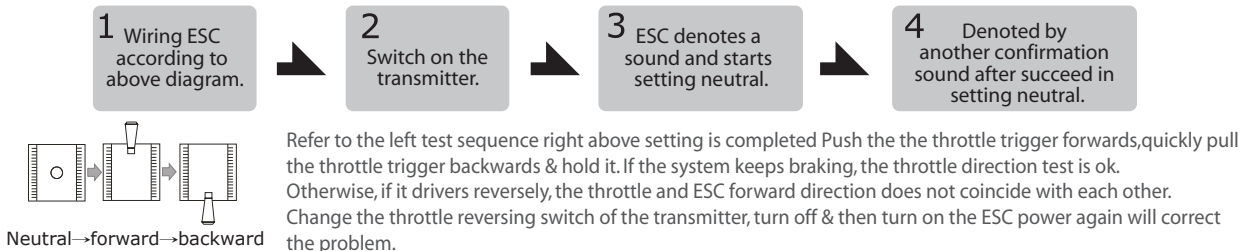
Warning

- 1.Avoid touching ESC heat sink or motor casing right after operation for not burning your body or skin.
- 2.To avoid poor contact or overheat melting of connector and power abnormal cut off be sure to always use better current rated connector & wires while replacing the original ESC connector or elongating the connecting wires.
- 3.Connect the battery pack just before driving, disconnect & take it out of the car immediately after termination. Don't solder ESC wires directly to battery. A proper connector is a must to be used in between.
- 4.Always make sure connecting the ESC to a proper power source that has the correct voltage & polarity. Incorrect voltages or reversed polarity will damage the ESC. Don't solder ESC wires directly to the battery. A proper connector is a must to be used in between.

ESC wiring diagram



Test of throttle direction coincidence



Safe gear ratio test

| Input voltage | resistance | waste current |
|---------------------------|------------|---------------|
| 7.2V | 0.18Ω | 40A |
| 11.1V | 0.18Ω | 61.6A |
| (V/R=1 7.2V/0.18Ω=40A) | | |
| (V/R=1 11.1V/0.18Ω=61.6A) | | |

※Firstly, trial running starting with a small gear motor for 2~3 minutes, measure the temperatures of both ESC & motor. If both temperatures are close with each other, they are at good match. The gear ratio can then be properly adjusted to optimum according to the features of the courses. However, It's very important to always keep both temperatures under 100°C , while adjusting the gear ratio. Otherwise the demagnetization of the motor will happen, the motor efficiency will drop dramatically & the temperature will also raise up very quickly. Most battery power is now wasted on heat nothing on motor efficiency.

※It's ok to replace a higher gear ratio or a higher KV motor while the temperature of the ESC is under 80°C . But it should be done according to para 6 described, from small to bigger. Unless the KV value of the original motor is very low enough, It should replace a motor with lower KV value when the input battery voltage is changed to a higher level. The ESC will be burnt if the motor doesn't be properly changed while input voltage is changed. See example by the side of left on the current changed inside motor while input voltage is changed.