

Please completely read and understand the entire manual before using, assembling and/or disassembling your remote controlled car.

Thank for purchasing our product.

This product is an authentic remote controlled vehicle (RC vehicle). It is not a toy.

Read and understand this instruction manual thoroughly before operating the vehicle.

If you are not familiar with RC vehicles, we recommend that seek out RC experts for reliable advice.

VORTEX



1/12TH SCALE REAR WHEEL DRIVE ELECTRIC POWERED DUNE BUGGY

WARNINGS

- This R/C vehicle is intended for persons over 14 years of age. Children under 14 years of age should only operate this car under supervision by an adult.
- To avoid losing control of your car, do not operate near other electric remote controlled products.
- Please operate your vehicle in a spacious area. Never operate your vehicle in crowded street.
- This product is fully assembled at factory. We do not take any responsibility for damage and/or accidents that occur as the result of custom modifications and/or incorrect operation.

Please completely read and understand the entire manual before using, assembling and/or disassembling your remote controlled car.

1/12TH SCALE REAR WHEEL DRIVE ELECTRIC POWERED DUNE BUGGY

2.4GHz RADIO SYSTEM

INSTRUCTION MANUAL

VORTEX

READY TO RUN



ITEM NO.: 12881 (Brush)

ITEM NO.: 12881A (Brushless)

12881/12881A (DUNE BUGGY)

LENGTH	WIDTH	HEIGHT	WHEELBASE	WHEEL DIA.	WHEEL SPAN	GEAR RATIO	BATTERY
338mm	214mm	109mm	240mm	73.5mm	30mm(Fr.) 37mm(Rr.)	11.1:1	7.4V, 850mAh

Notification: This data is subject to change without the prior notice.

This 1:12th scale off road 2WD buggy, Vortex, features a clean, durable design with a strong, lightweight frame that is ready to run and ready to hit the dirt quick!

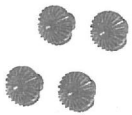








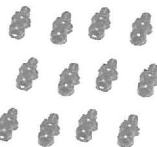
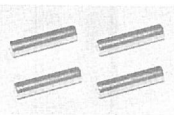



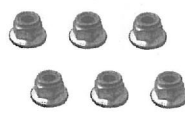
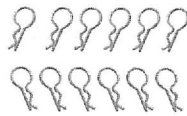
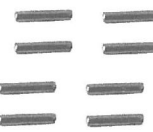

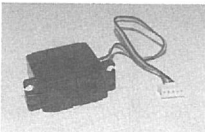
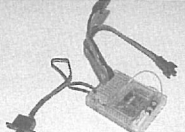
The Vortex comes out of the box fully assembled with a 2.4GHz radio installed. Just charge the included battery pack, install your 2 "AA" size batteries into the transmitter and it is ready to go!

The Vortex features adjustable independent suspension, a 390 size brushed motor, splash resistant ESC/Receiver with a 5 wire servo. The battery compartment is easily accessible from the bottom of the chassis, so there is no need to remove the body or roll cage. The chassis is completely countersunk and features side rails. The Vortex comes with a stylish dune buggy body and a driver in the cockpit...

Brushless Vortex comes with brushless system. There come many optional parts available at factory...

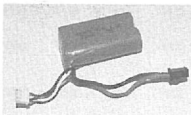
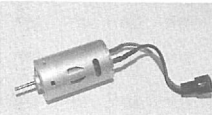



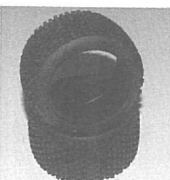


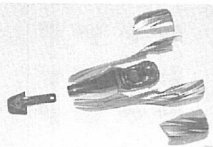
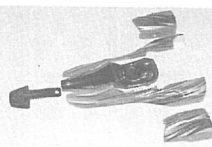


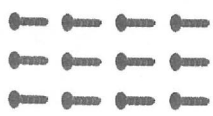
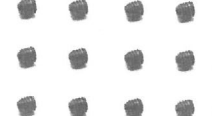

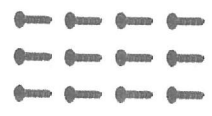

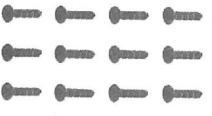
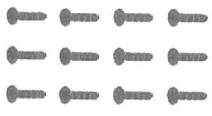
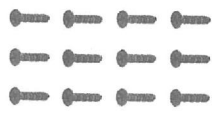
- This product is not a toy. It is not intended for persons under 14 years of age, unless closely supervised by an adult.
- This manual is subject to change without prior notice.

REPLACEMENT PART LIST-2

12019	12020	12021	12022
			
Diff. Pinion Gears	Front Upper Suspension Hinge Pins 3.3*37mm (4P)	Front Lower Suspension Hinge Pins 3.3*30mm (4P)	Rear Upper Suspension Hinge Pins 2.5*38mm (4P)
12023	12024	16003	12025
			
Rear Lower Suspension Hinge Pins 2.5*37.6mm (4P)	Battery Door Hinge Pins 2.5*56mm (2P)	Front/rear Hub Carrier Pins(4P)	Battery Door Springs (4P)
12026	12027	12028	12029
			
Motor Pinion Gears 13T + Set Screws 3*3mm(2P)	Ball Stud. $\phi 4.8$ (12P)	Gear Posts (4P)	Washers $\phi 2.5 \times 5.5 \times 0.5$ mm (12P)
16008	16010	H003	H021
			
Oiled Brass Bearings (5*8*2.5mm) 12P	Oiled Brass Bearings (8*12*3.5mm) 12P	Flange Lock Nut M4	Body Clip A/B- Small
H022	P011	12030	12031
			
Wheel Hex. Pins (2*10mm) 8P	Zip Ties - Small (8P)	5-wire Steering Servo	ESC/Receiver Unit





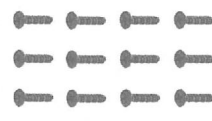
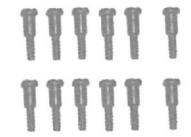
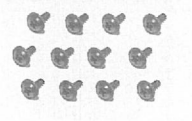

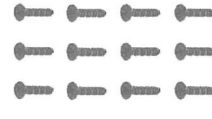

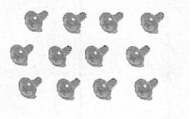


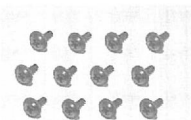



NOTE: THE PART IMAGES MAY VARY FROM THE ACTUAL PARTS.

REPLACEMENT PART LIST-3


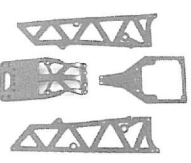

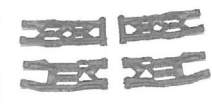
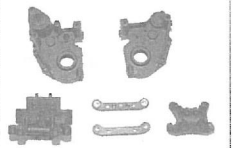




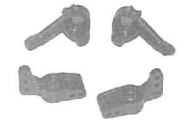

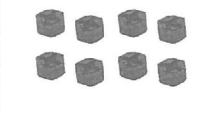
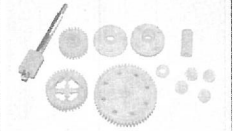
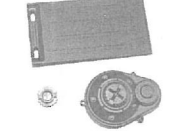
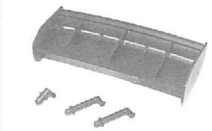
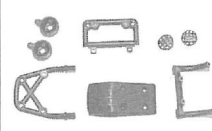
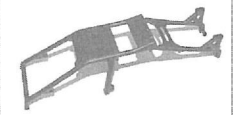



12032	12033	12034	12035
			
Battery Pack (7.4V, 850mAh)	RC 390 motor	Front Tires(Dune Buggy) 2P	Front Rims(Dune Buggy) 2P
12036	12037	12038	12039
			
Front Wheels Complete (Dune Buggy) 2P	Rear Tires(Dune Buggy) 2P	Rear Rims(Dune Buggy) 2P	Rear Wheels Complete (Dune Buggy) 2P
12040	12041	12042	12043
			
Dune Buggy Body (Red)	Dune Buggy Body (Green)	Ball Bearings($\phi 4 \times 9 \times 3$ mm) (6P)	Flange Lock Nut M3 (6P)
S011	S016	S018	S020
			
Countersunk Self Tapping Screw 2*15mm (12P)	Set Screw 3*3mm (12P)	Round Head Self Tapping Screw 2.6*8mm(12P)	Countersunk Self Tapping Screw 2.6*8mm (12P)
S029	S038	S061	S062
			
Round Head Self Tapping Screw 2.6*10mm(12P)	Countersunk Self Tapping Screw 2*9mm (12P)	Countersunk Self Tapping Screw 2.6*6mm (12P)	Countersunk Screw 3*10mm (12P)

NOTE: THE PART IMAGES MAY VARY FROM THE ACTUAL PARTS.

REPLACEMENT PART LIST-4

S071	S089	S093	S100
			
Round Head Self Tapping Screw 3*6mm(12P)	Round Head Self Tapping Screw 2.6*6mm(12P)	Round Head Self Tapping Screw 2*6mm(12P)	Round Head Screw 2.5*8mm(12P)
S138	S152	S160	S161
			
Countersunk Self Tapping Screw 2.6*10mm (12P)	Step Screws 3.5*4.5-3*4.6mm(12P)	Flange Head Self Tapping Screws 2.6*8mm (12P)	Round Head Self Tapping Screws 2.6*12mm (12P)
S162	S163	S164	S165
			
Countersunk Self Tapping Screw 2.6*18mm (12P)	Round Head Self Tapping Screws 2.6*18mm (12P)	Flange Head Self Tapping Screws 2*6mm (12P)	Cap Head Screws 2*6mm (12P)
S166	S167	P100	16014
			
Round Head Self Tapping Screws 2.3*16mm (12P)	Flange Head Self Tapping Screws 2.3*8mm (12P)	Body Post Pads (12P)	Steering Hub Step Screws(8P)
12044			
			
Switch Mount			

REPLACEMENT PART LIST-1

12001	12002	12003	12004
			
Bottom Chassis	Servo Cover + Motor Guard + Chassis Side Plates A	Front Upper Arms+Rear Upper Arms+Drive Shafts+Steering Linkage set +Servo Linkage Set	Front Lower Arms+Rear Lower Arms
12005	12006	12007	12008
			
Gear Case+ Suspension Mount	Chassis Side Plates B+ Shock Towers	Front Shock Set	Rear Shock Set
12009	16027	16028	12010
			
Steering Assembly+Servo Saver Assembly+ Battery Door Block/Lock	Steering Hubs (L/R) Rear Hub Carriers(L/R)	Front Hub Carriers(L/R)	Wheel Hex. (8P)
12011	12012	12013	12014
			
Spur Gear + Diff. Gears Assembly	Battery Door+ Motor/Gear Cover	Body Posts (Dune Buggy only)+ Off Road Wing	Braces Assembly+ Light Mounts(Dune Buggy only)
12015	12016	12017	12018
			
Roll Rage (Dune Buggy Only)	Shock Tower Braces	Rear Axles+Diff. Outdrives	Front Axles

MAINTAINING YOUR CAR

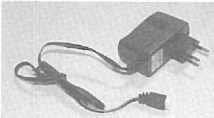
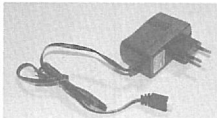
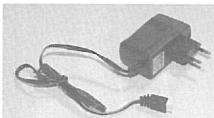
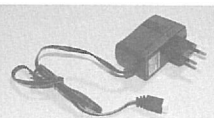
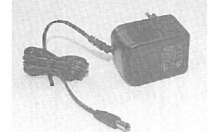
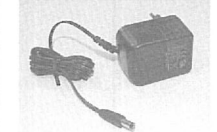
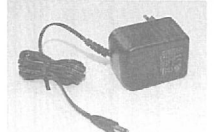
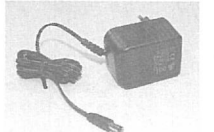

After running your car, the following procedures should be performed regularly and will help to maintain your car's performance.

- 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

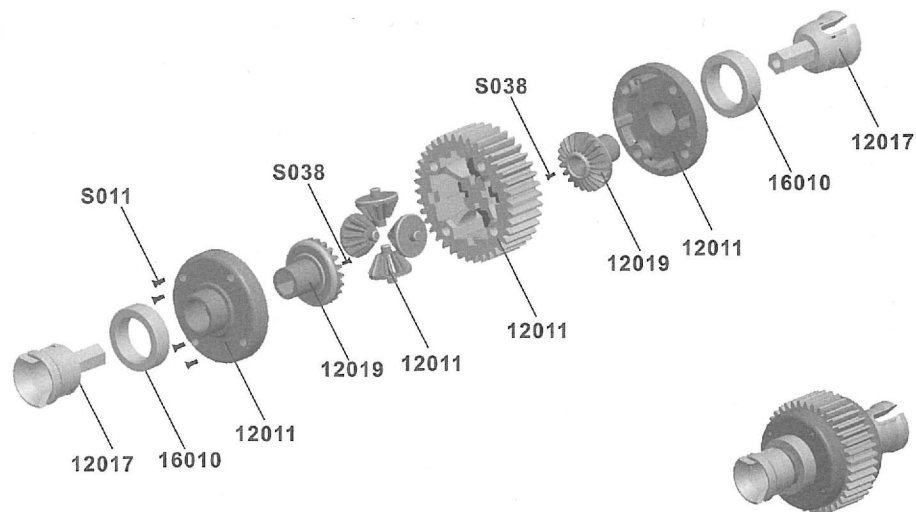
- | | | |
|---|--|--|
| A. The vehicle does not work at all. | | 1. Check to see if transmitter and car are on. |
| | | 2. Replace batteries. |
| | | 3. Check if there are damaged parts. |
| B. The vehicle runs slow. | | 1. Replace or charge the battery pack and/or the radio batteries. |
| | | 2. Make 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. |

REPLACEMENT PART LIST-5

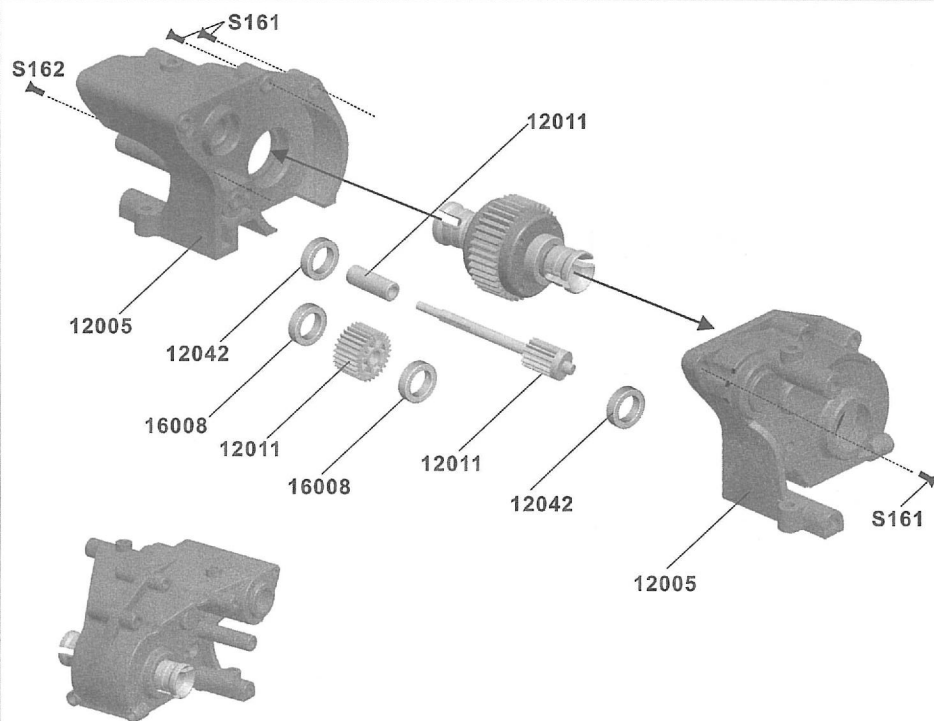
12110	12111	12112	12113
			
European Standard	American Standard	U.K. Standard	Australian Standard
Charger	Charger	Charger	Charger
16052	16053	16054	16055
			
European Standard	American Standard	U.K. Standard	Australian Standard
Charger, 9V, 600mA	Charger, 9V, 600mA	Charger, 9V, 600mA	Charger, 9V, 600mA
16070			
			
Used Only For Charger 9V, 600mA			
Charger Adapter			

NOTE: THE PART IMAGES MAY VARY FROM THE ACTUAL PARTS.

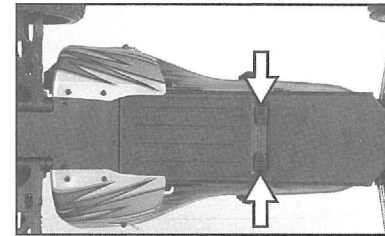
REAR DIFF. ASSEMBLY-1



REAR DIFF. ASSEMBLY-2



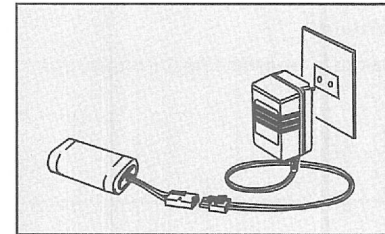
CHARGING BATTERY PACK



The battery cover is located on the bottom of the chassis.

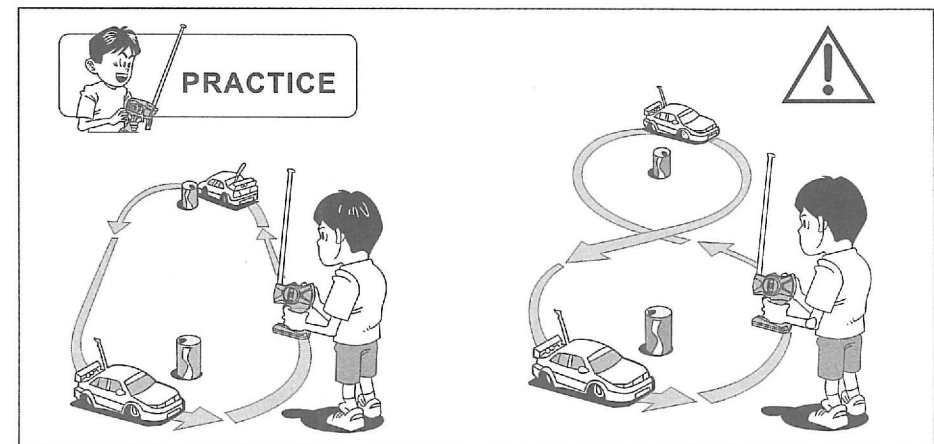
- 1) Pinch the battery cover blocks as shown to open the battery cover.
- 2) Remove the battery pack.
- 3) Connect the battery pack to the charger and charge the battery as shown in the figure.

(Note: Battery with a damaged connector can not be charged.)



- 4) Do not overcharge the battery pack.
Charging time is around 2 hours.
- 5) Do not charge the battery pack unattended.
- 6) Always use the battery after it is fully charged.
- 7) Dispose of the damaged battery pack in the recycling dustbin.

RUNNING PRACTICE



Once you become conformable driving the vehicle, perform driving practice on the tracks as shown in the figure.

Keep practising until you feel comfortable with the steering, throttle and brake at low speeds. Once you are feeling comfortable try operating on another track.

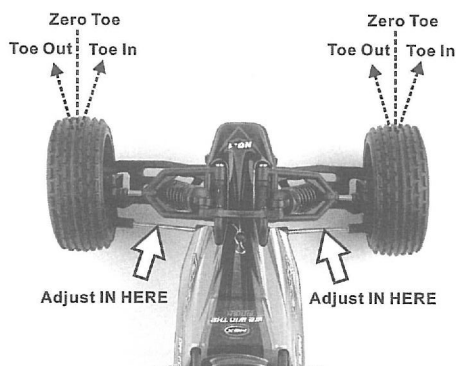
When you have mastered the basics you will be able to drive at higher speeds in a more controlled fashion.

ADJUSTING TOE ANGLE AND CAMBER ANGLE

Your model can be customized to enhance speed and performance. Simple adjustment and easily maintained setting will assure optimum operation and performance. When making adjustments, do so only in small increments and always check for other parts of the vehicle that are affected. Many after market options are available to make your R/C vehicle faster and stronger. Please read the section carefully and it always make sure you write down your base settings in case you need to refer to them at a later date.

Front Steering Toe Angle Adjustment

The front steering toe angle has a dramatic on how your car performs and how your tires wear. You can have toe-in, zero toe or toe-out. This can be adjusted by tuning the length of the steering linkage screwbolts as shown in the figure below. Before tuning, the steering linkage screwbolts should be removed from the vehicle. Measure the desired length by unscrewing or screwing in. After adjustment is complete, re-install them to the car.



Toe-in will be less reactive and cause the vehicle to under steer (the front wheels push straight on while turning).

This can be advantageous for operators struggling to get to grips with the driving of the vehicle.

Toe-out will be more aggressive on the steering response especially on small steering inputs. This will make the car want to over steer (rear wheels slide on small steering inputs). This is useful as a race tuning aid to gain extra steering.

Zero toe will make the front wheels run straight and make the car very neutral. Tire wear will also be reduced and the vehicle will feel easier to drive.

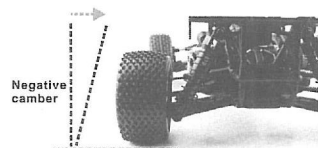
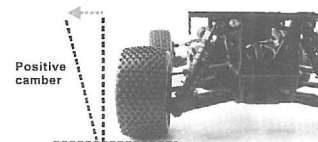
Camber Adjustment

Camber can be adjusted on all 4 wheels of the car. You can have negative camber or positive camber which will affect the contact patch of the tire both statically and while cornering. Camber is mainly used to control the wear of the tire.

You should adjust the camber to equal the wear all across the surface of the tire. Camber is adjusted by the upper linkage screwbolts.

Note: Before tuning, the screwbolts should be removed from the vehicle.

Measure the desired length by unscrewing or screwing in. After adjustment is complete, re-install them to the car.



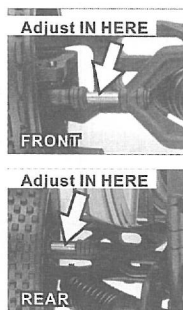
This is an example of positive camber. This is when the bottom of the wheel is closer to the centre of the car compared to the top of the wheel.

Positive camber will give less contact area in the corner and less grip. Excessive amounts will cause less grip and uneven wear.

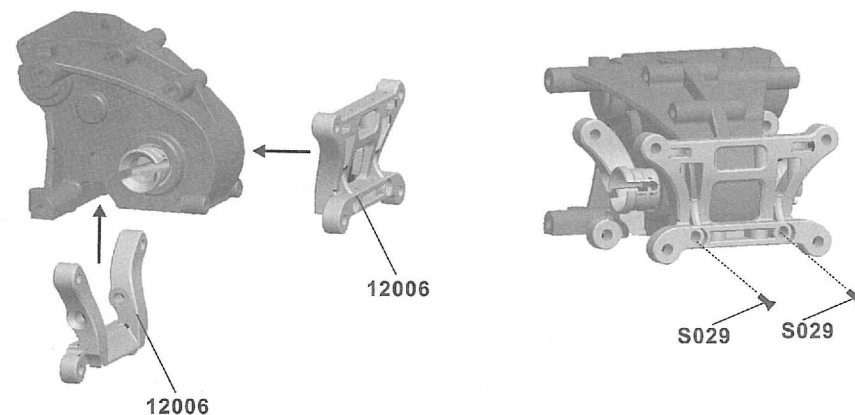
This is an example of negative camber.

This is when the top of the wheel is closer to the centre of the car compared to the bottom of the wheel.

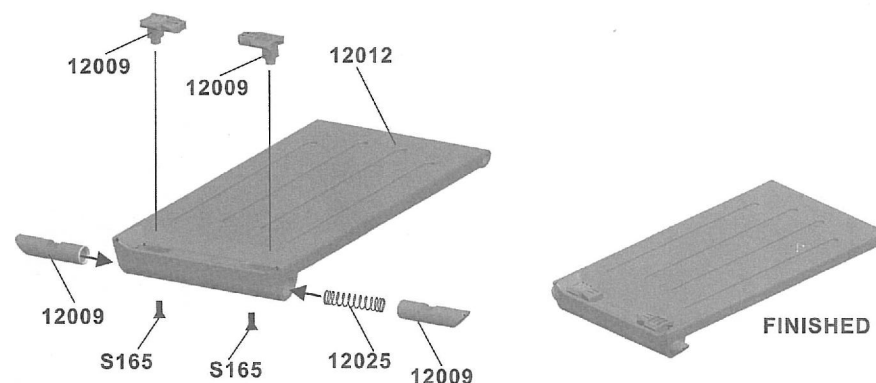
Negative camber will give more contact area in the corner and more grip. Excessive amounts will cause less grip and uneven wear.



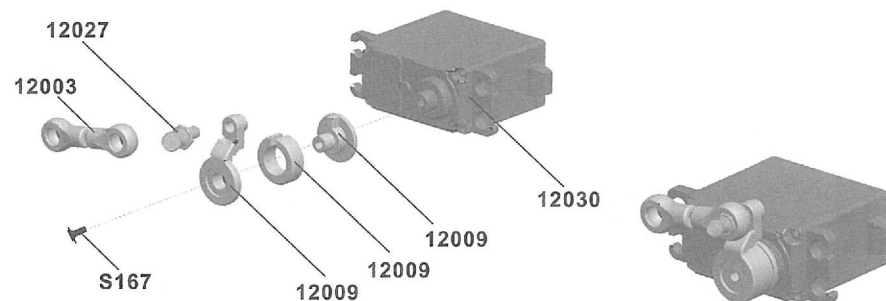
REAR DIFF. ASSEMBLY-3



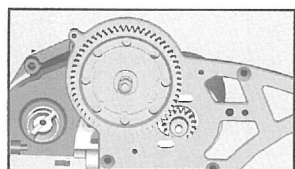
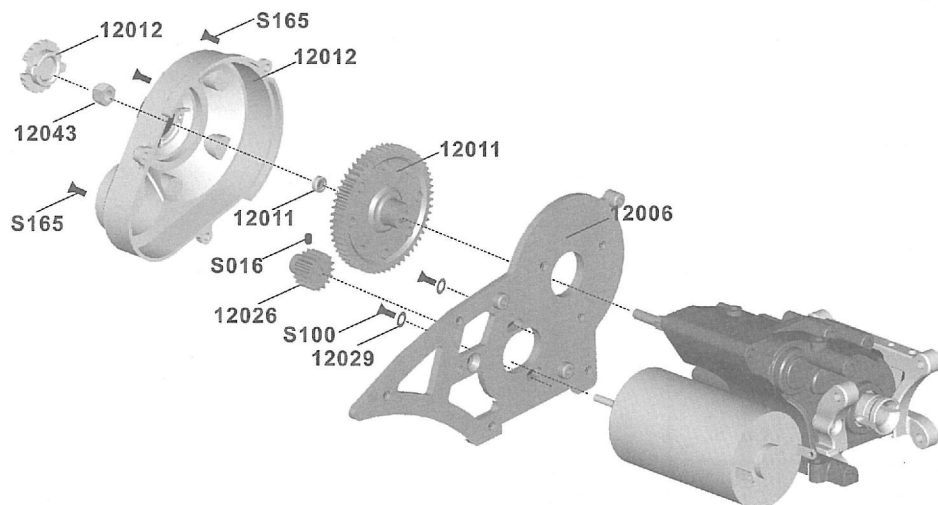
BATTERY COVER ASSEMBLY



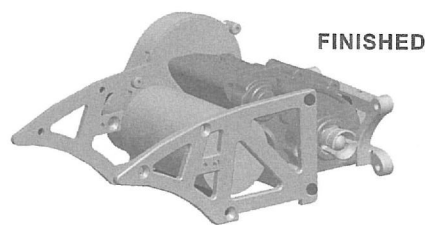
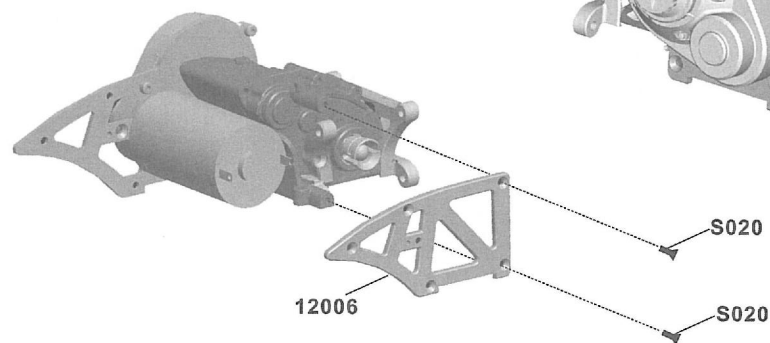
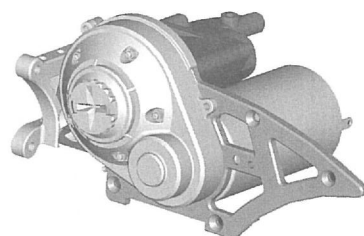
SERVO ASSEMBLY



MOTOR/SPUR GEAR INSTALLATION

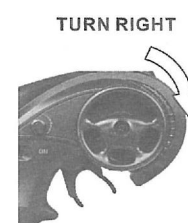
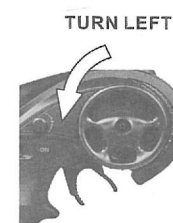
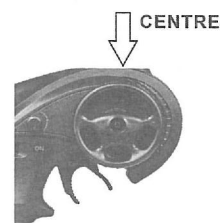


Make sure the gear mesh is set properly. Double-check the motor pinion screw and the spur gear nut are tightened firmly.

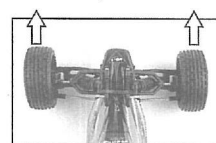


3 CHECK STEERING PERFORMANCE

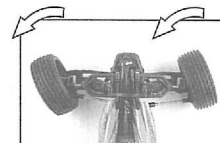
- Ensure good steering performance.



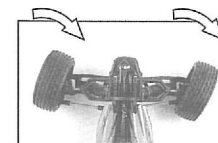
- 1) To keep the car run straight in line, do not move the control wheel. (Keep it at centre)



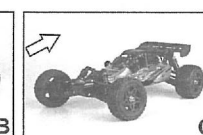
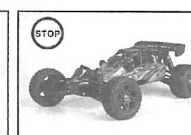
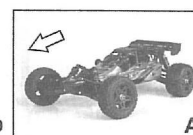
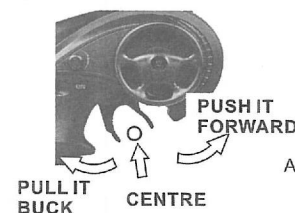
- 2) Turn it left to allow your vehicle turn to left.



- 3) Turn it right to allow your vehicle turn to right.



4 CHECK TRIGGER RESPONSE

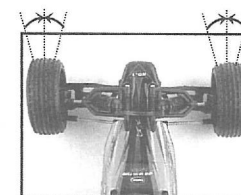


- A. Pull the trigger back to accelerate, release it to decelerate and push it to brake.
- B. To stop running your car, release the trigger to Neutral.
- C. Pushing the trigger a second time activates the reverse feature.

5 TO TUNE THE STEERING TRIM



STEERING TRIM



Gently pull the trigger to allow your car to run slowly. Meantime, tune the steering trim to allow the front wheels to be aligned.

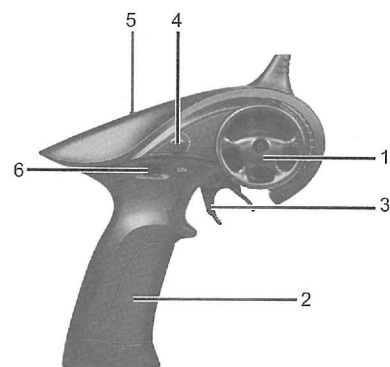
6 TO REVERSE THE STEERING

The steering reverse switch is located on the top of the radio controller.



GETTING FAMILIARIZED WITH YOUR 2.4GHz RADIO SYSTEM

Your car is equipped with the new 2.4GHz radio system. Please read and understand all instructions below before operating.



- | | |
|------------------------|----------------------------|
| 1) Steering Wheel | 4) Steering Trim |
| 2) Battery Compartment | 5) Steering Reverse Switch |
| 3) Trigger | 6) Power ON/OFF Switch |

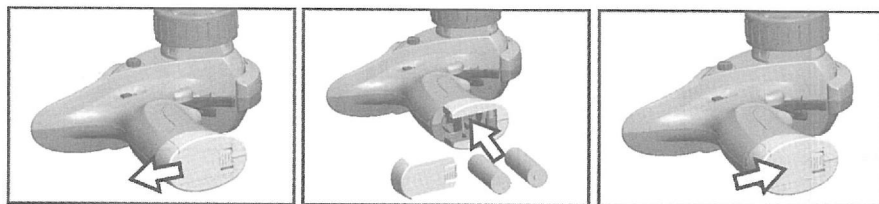
Steering Wheel: It proportionally operates the right and left steering control of the model.

Battery Case: It requires 2pcs of AA size batteries.

Power Switch: It is used to turn the radio controller ON/OFF.

Steering Trim: It is used to adjust the center trim of the steering channel.

Steering Reverse: It allows you to electronically switch the direction of steering servo travel. For example, if you move the steering wheel to the right and the steering servo moves to the left, flip the Steering Reverse Switch to make the steering servo move to the left.



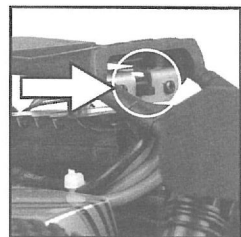
The battery cover is located on the bottom of the radio controller. Slide the battery cover as shown in the photos, install two AA size batteries into the battery compartment, and replace the battery cover.

Battery Precautions:

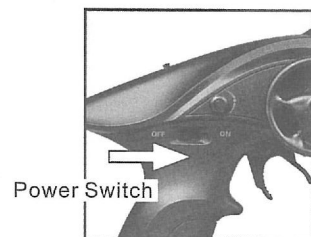
- 1) Do not mix new and old batteries.
- 2) Use batteries of same brand.
- 3) Always remove batteries when not in use.
- 4) Before using your car, make sure the radio controller is of enough battery power. Low battery power will lead to the loss of control of your car.

RUNNING YOUR CAR

1) TURN ON THE RECEIVER ON YOUR CAR

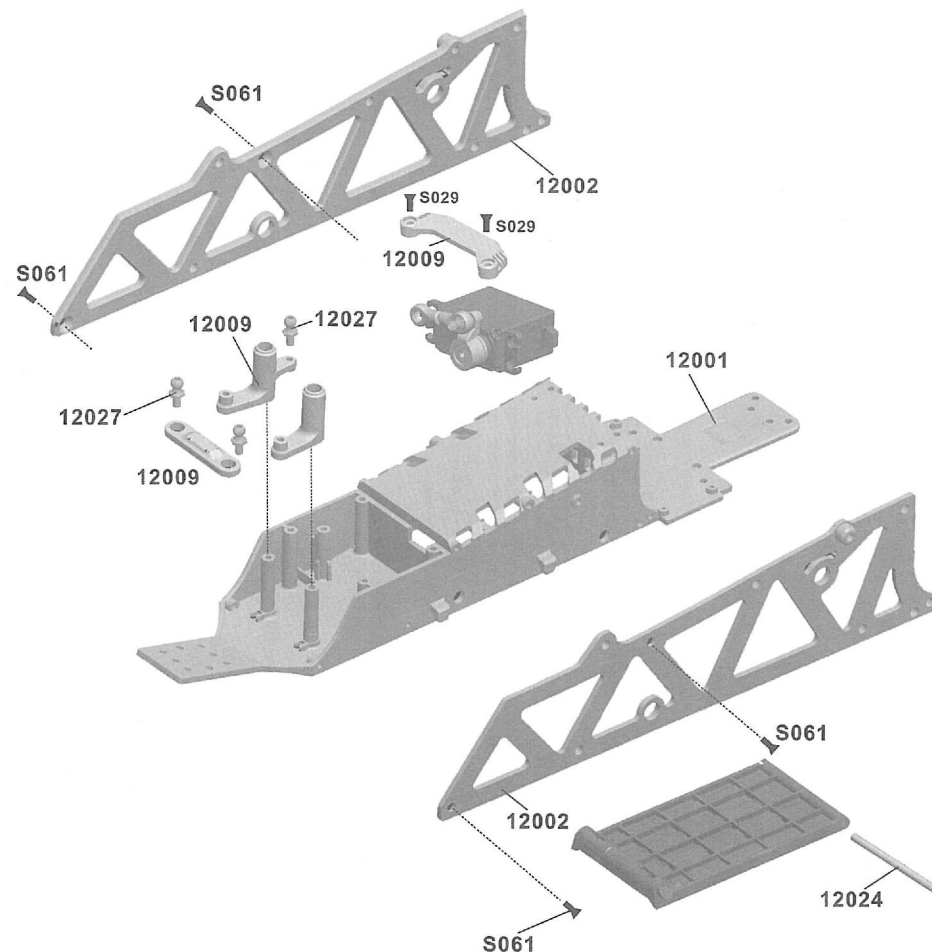


2) TURN ON THE RADIO CONTROLLER

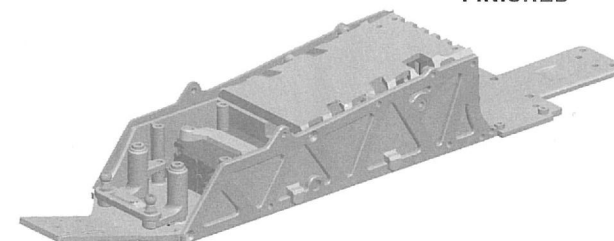


Always turn on the radio controller within 5 seconds of turning on the receiver on your car. The receiver and the radio controller will be automatically bound up.

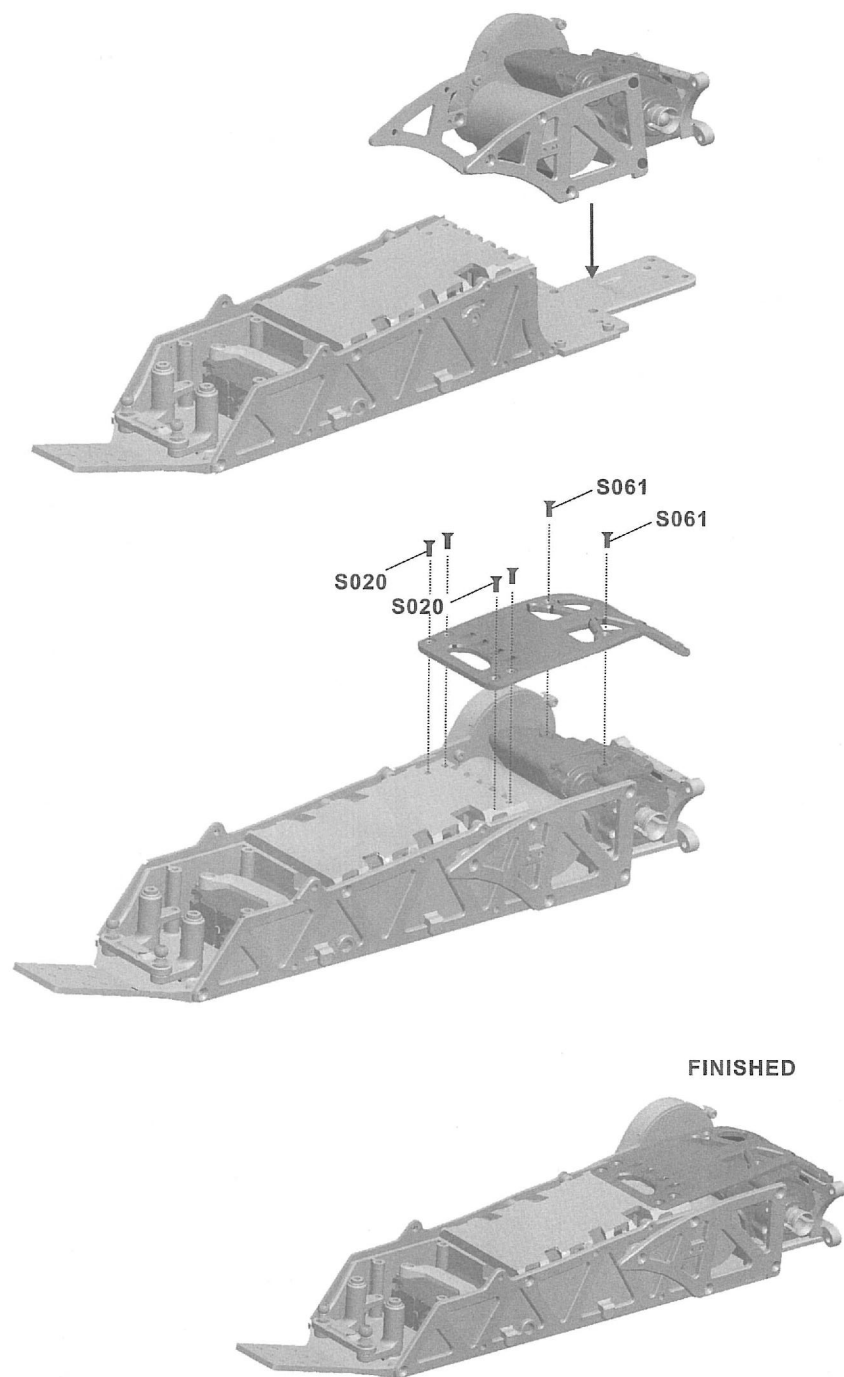
MAIN UNIT ASSEMBLY-1



FINISHED



MAIN UNIT ASSEMBLY-2



SAFETY INFORMATION

We want users to enjoy our RC vehicles and to operate them with care. Failure to operate your vehicle in a safe and responsible manner may result in injury to yourself, others or damage to property around you.

- Read and understand all instructions carefully before use and assembly/disassembly.
- Do not run your vehicle on public roads or any area where you may encounter pedestrian or vehicle traffic.
- Do not operate in a congested area or in crowds.
- Do not operate your vehicle with obstructed line of sight, at night, or near water.
- Your vehicle is radio controlled. Radio waves are subject to interference. Radio interference can cause loss of control of your vehicle.
- Take care not to cut yourself while using tools to adjust or upgrade your vehicle.
- Since the model contains many small parts, keep out of reach of children while assembling and/or disassembling.
- If your vehicle becomes stuck, release the throttle, then retrieve it by hand.
- Do not continue to apply the throttle or you may damage the motor and/or the ESC/receiver unit.
- Turn off your vehicle and discontinue use if it runs erratically. Not do you run it again until the issue has been found and resolved.

