

# REDCAT-RACING

## 1/10 4WD BRUSHLESS SHORT COURSE TRUCK MODEL NO.: CALEDRA SC 10E

### *Product Size:*

*Length: 450 mm*

*Width: 320mm*

*Height: 165mm*

*Wheelbase: 305mm*

*Tire size: 100 \* 51mm*

*Ground clearance: 25mm*

*Gear Ratio: 12.98:1*

*Brushless Motor*

*(RC 540 KV:3421) and*

*Brushless ESC*



## Instruction Manual

### Highlights:

- 4WD Drive System.
- Ready Assemble Ready to Run.
- High Performance RC-540 KV 3421 Brushless Electric Motor, More power!
- Brushless ESC 45A-SL
- 7.2V Ni-Mh Rechargeable Battery, Long Running Time!
- Assembled Chassis.
- Colored Coil Spring Damped Suspension System.
- Full Function Radio Control.
- Battery in Standing Position to Save Space, Keeping the Car in Perfect Balance!
- Waterproof and Dustproof Sealed Gearbox.
- Fast Easy Assembly and Disassembly Receiver and Battery Cover.
- Quality Differential with Four Bevel Gears.
- Precise Sealed Ball Bearing for the Whole Model.
- Aluminum Alloy Driveshafts.

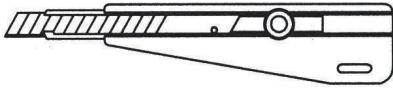
### ⚠ SAFETY PRECAUTIONS

- This radio controlled racing car is not a toy!
- This high-performance R/C model is recommended for ages 14 and older.
- First-time builders should seek the advice of experienced modellers before commencing assembly.
- Take enough safety precautions prior to operating this model.  
You are responsible for this model's assembly and safe operation!

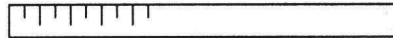
[www.redcatracing.com](http://www.redcatracing.com)

# Required equipment for operation

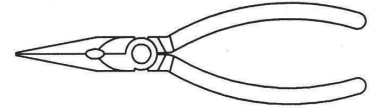
## 1. Tools required for building and maintenance:



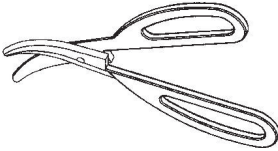
● Hobby knife



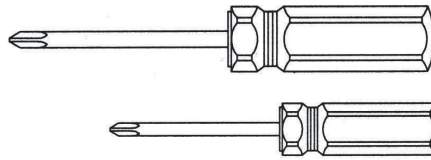
● Precision ruler



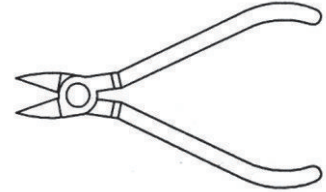
● Needle nose pliers



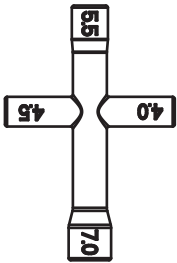
● Lexan scissors



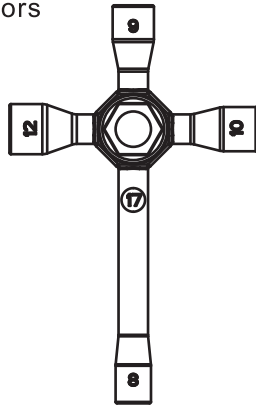
● Flat and Philips screwdriver



● Wire cutters



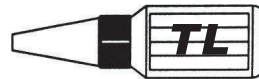
● Cross wrench



● Cross wrench



● CA glue & rubber cement



● Thread locking compound

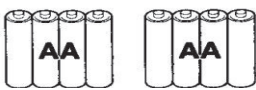


● Hex wrench

## WARNING!

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

## 2. Additional items needed for operation:



8pcs AA alkaline batteries for transmitter

## IMPORTANT!

Check all the screws are tight before playing the vehicle!  
Use thread lock on all screws that work loose.


# Please read the instruction carefully before starting the assembly.

1. Please assemble and install this car without children's reach. As it includes small and sharp parts.
2. Do not run the car on public streets or highways. As it might cause serious accidents, personal injuries and property damage etc.
3. During the middle of racing and after operation, the engine and exhaust will become HOT. Therefore please do not touch them before cooling down.
4. Please make sure everyone is using different frequencies while racing the car in the same area.


## 2.4GHz radio instructions

### Special symbols

Please pay attention to the following symbols, and read them carefully.

 **Danger:** If the operator does not operate according to the instructions, it may lead to serious injuries, even mortal danger.

 **Warning:** If the operator does not operate according to the instructions, it may lead to serious injuries, even mortal danger.

 **Attention:** If the operator does not operate according to the instructions, it may lead to serious injuries, even mortal danger. but generally it will not cause serious injuries to the operator.

### Safety guidelines

Don't drive the truck at night, bad weather such as rainy or thundering days. It will interfere the transmitter signal. Thereby it will cause out of control and unexpected accident.


Before you drive, please make sure the movement of servo corresponds with the direction of joysticks. If inconsistent, please adjust before drive.

You need to turn the throttle channel(ch2) and inching switch to the lowest before use. Then switch on the transmitter power, finally connect the receiver.

The sequence to shutdown is to turn off the receiver power first, and then the transmitter power.

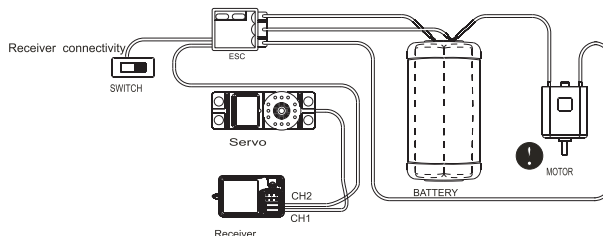
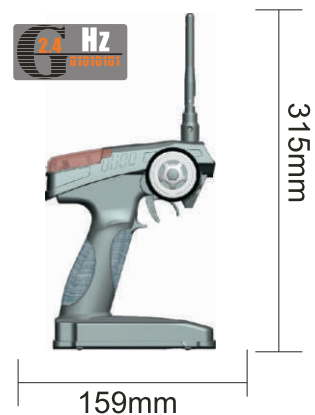
If the above operations are reversed, it might lead to out of control and cause accident.

### Battery charging

 If your transmitter, receiver use a nickel-cadmium, nickel-metal hydride rechargeable battery, you have to check it before use. If lack of electricity, it could cause inadequate control or out of control, resulting in accident. So please charge it immediately when the battery power is low.

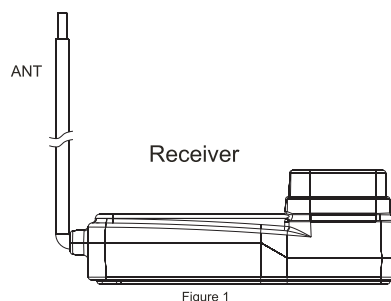
## Transmitter Specifications :

Channels: 2 channels  
 Model Type: Car/boat  
 RF Power: Less than 20dbm  
 Modulation: GFSK  
 Code Type: Digital  
 Sensitivity: 1024  
 Low Voltage Warning: Yes (less than 9V)  
 DSC Port: Yes (3.5mm)  
 Charger Port: Yes  
 Power: 12vdc (1.5AA\*8)  
 Weight: 328g  
 ANT Length: 26mm  
 Size: 159\*99\*315mm  
 Color: Black  
 Certificate: CE FCC



## Note:

Place the antenna of the receiver vertically, and do not have contact with metal component. (See Figure1)



## Binding:

The transmitter and receiver should already be bound by the factory by default .

1. Install batteries into the transmitter and shut it down.
2. Insert the bind cable on to the bind channel (Ch3) on the receiver. (Figure.2)
3. Connect the receiver battery to the VCC port on the receiver .The two LEDs on the receiver should flash rapidly, indicating the receiver is in binding state .
4. Press and hold the bind button on the transmitter , and then turn on the transmitter.
5. The LED on the receiver should stop flashing when the binding process completed (about 5 second)
6. Release the bind button on the transmitter , remove the bind cable from the receiver.
7. Install the servo and then test.
8. If the test succeeds , then remove the power supply from the VCC port.
9. The binding process completed.

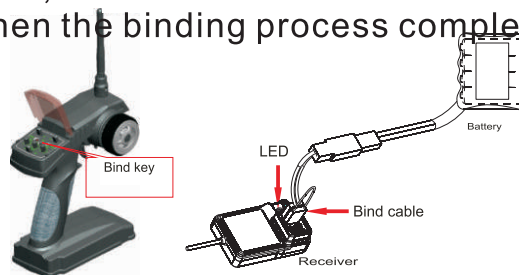
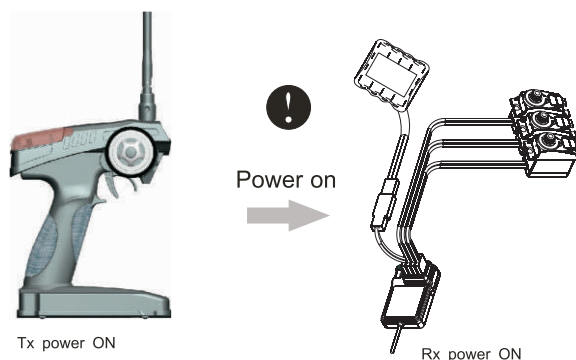


Figure 2

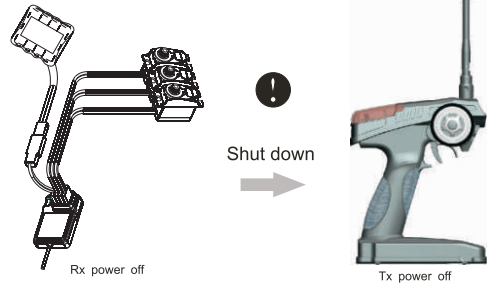
## Turn On:

1. Turn on the transmitter.
2. Connect the power supply of the receiver.
3. Receiver LED light should turn solid.
4. Ready to use.

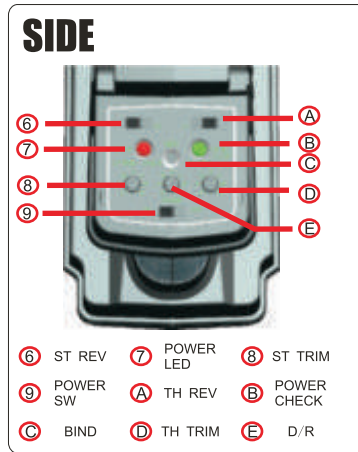
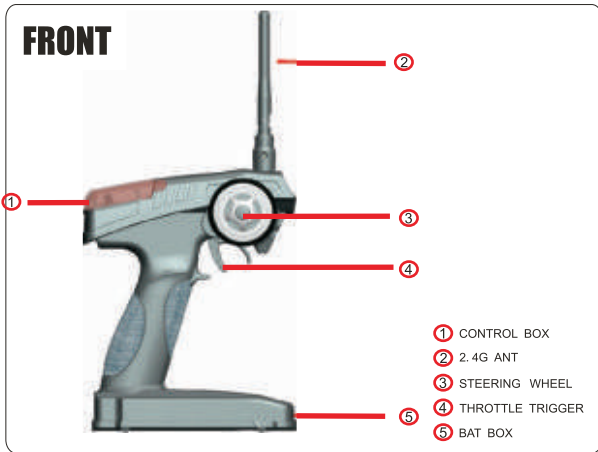


## Shut Down:

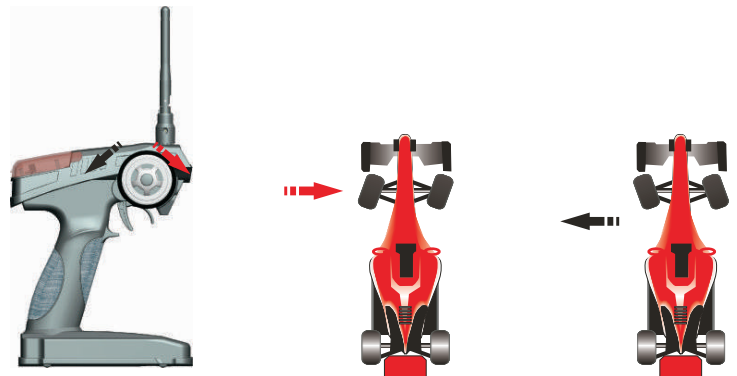
1. Disconnect the receiver's power supply.
2. Turn off the transmitter .



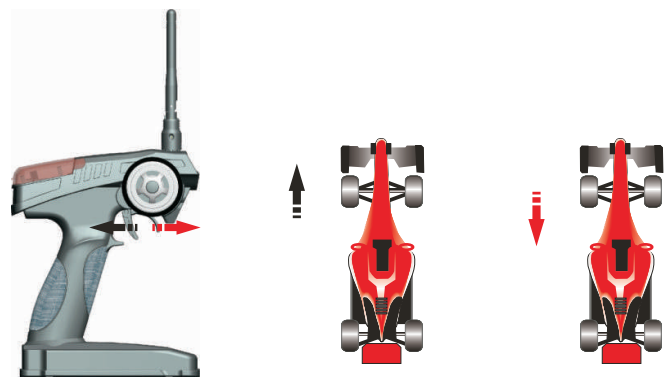
## Transmitter Functions:



This function is to control the direction of the vehicle



This function is to control the throttle speed of the vehicle



# PARTS LIST

Item No.	Description	Item No.	Description
BS701-001	Chassis	BS903-023	O-Washer 4pcs
BS701-004	Shock Absorber Unit (plastic) 2pcs	BS903-024	Front Suspension Arm Pin-Short 4pcs
BS701-007R	Brushless motor KV:3421	BS903-025	Suspension Arm Pin-Long 4pcs
BS701-010	Upper deck	BS903-026	Fr. Chassis
BS701-011	Front drive shaft	BS903-028	Lower Susp. Mount Block-Fr/Rr
BS701-012	Rear drive shaft	BS903-030	Steering Linkage Set 2pcs
BS701-015	Gear mount/Fr, screws/motor mount	BS903-031	Servo Saver Unit
BS701-016	Gear mount/Rear	BS903-037	Steering Servo Horn and Linkage
BS701-020	Washer 4pcs	BS903-058	Hub Rear Carrier
BS701-021	Upper deck /Front upper deck	BS903-059	Rr.Lower Susp.Arm-Lf/Rt
BS701-022	Steering servo mount	BS903-061	Rear Suspension Arm Pin-Short 4pcs
BS701-025	Side guard plate L/R	BS903-065	Flat Cross Screw(TPF2.6*10) 12pcs
BS701-026	Upper deck	BS903-067	Flat Cross Screw(TPF3*10) 12pcs
BS701-027	L/R mount block/screws	BS903-068	Flat Cross Screw(TPF3*14) 12pcs
BS701-028	Wire clip mount/Spring /Screws 2pcs	BS903-069	Flat Cross Screw(TPF3*16) 12pcs
BS701-035	Charger for 7.2V Ni-Mh battery	BS903-072	B-Head Cross Screw(BT3*8) 12pcs
BS701-036H	7.2V/3800mAh Ni-Mh battery	BS903-073	B-Head Cross Screw(BT3*12) 12pcs
BS701-037	Battery base & cover/Fr	BS903-074	B-Head Cross Screw(BT3*14) 12pcs
BS701-038	Battery base & cover/Rr	BS903-075	B-Head Cross Screw(BT3*16) 12pcs
BS701-041	6# Pin 6pcs	BS903-076	B-Head Cross Screw(BT3*20) 12pcs
BS702-047	Antenna mount	BS903-079	B-Head Cross Screw(BM3*10) 12pcs
BS703-013	Flat Cross Screw(TPF3*18) 12pcs	BS903-083	Diff. Outdrive D/Set Screw(M4*4)
BS903-005	Brace	BS903-086	Ball Bearing( $\phi 5 * \phi 10 * 4$ ) 2pcs
BS903-007	Body Pin 6pcs	BS903-087	Ball Bearing( $\phi 12 * \phi 18 * 4$ ) 2pcs
BS903-008	Upper Susp. Arm Set 2pcs	BS903-088	E-Clip( $\phi 4 * 0.6$ ) 12pcs
BS903-010	Suspension Arm Mount Block 2pcs	BS903-089	Pin( $\phi 2 * 9.5$ ) 12pcs
BS903-011	Upper susp. Arm Mount-Fr/Rr	BS903-091	Washer A( $\phi 5.2 * \phi 10 * 0.2$ ) 12pcs
BS808-001	Axle w/pin 2pcs	BS903-092	Washer B( $\phi 4.2 * \phi 8 * 0.2$ ) 12pcs
BS808-002	Rim hub w/pin 2*10 4pcs	BS903-094	Double Way Ball end(7*8) 6pcs
BS903-014	Ball Bearing( $\phi 6 * \phi 12 * 4$ ) 2pcs	BS903-095	Set Screw(M4*4) 6pcs
BS903-015	Lf/Rt Steering Arm	BS903-097	Diff. Gearbox
BS903-016	Ball Bearing( $\phi 10 * \phi 15 * 4$ ) 2pcs	BS903-098	Diff. Gearbox Bulkhead-Upper/Lower
BS903-017	Fr/Rr C-Carrier	BS903-104	Diff. Unit
BS903-018	Fr.Lower Susp.Arm-Lf/Rt	BS903-105	Driving/Driven Gear, Diff.Gear/Bevel Gears (alun)
BS903-019	Drive shaft set 2PCS	BS903-106	Screw Pin (M3*9.5)
BS903-020	Diff. Gearbox Unit		
BS808-003	M5 locknut 6pcs		



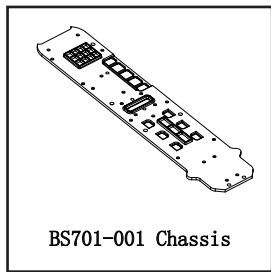
# PARTS LIST

Item No.	Description	Item No.	Description
BS904-109	Diff.outdrive A/Pin(2*10)	BS901-066	M3 locknut 5pcs
BS903-110	Diff.outdrive B/Pin(2*10)	BS901-067	Antenna Pipe W/Cap 3pcs
BS801-008	Fr/Rr body post	BS902-051	B-Head Cross Screw(BT3*10) 12pcs
BS904-003	Bumper 2pcs	BS909-001	Spur gear unit
BS908-004	Bumper brace-Fr	BS909-002	Central drive shaft/main gear
BS908-005	Bumper brace-Rr	BS909-003	Main gear-51T
BS908-006	Bumper chassis-Fr	BS909-004	Motor gear 13T/M3 screw
BS908-007	Bumper chassis-Rr	B7053	Radio Unit
BS901-048	E-Clip( $\phi 3*0.6$ ) 12pcs	B7054W	Receiver
BS804-001	Tire unit 2pcs	B7014W	3kgs Servo
BS909-006	Body	BS701-047	BRUSHLESS ESC 45A-SL
BS804-003	Bumper guard 1pcs		

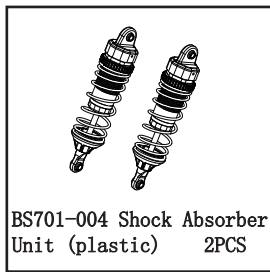
## Optional parts/Upgrade parts

BS701-004A	Shock Absorber Unit (alun) 2pcs
BS701-008	Motor heat sink
BS701-039	Connector wire ( NI-MH connector to LIPO battery connector)
BS903-029	Anti-roll bar fixation set 2pcs
BS903-096	(M4*8) Set Screw 6pcs
BS905-009	Rear Anti-roll bar set
BS803-028	7. 4V/20C LiPo battery
BS803-031	LiPo battery charger
MP0-01	Wheel hex set
MP0-02	C hub C hub pin
MP0-03	Kunckle Arm set-Lf/Rt
MP0-04	Rear hub set
MP0-05	Shock stay mount
MP0-06	Front suspension mount
MP0-07	Rear suspension mount
MP0-11	Steering link

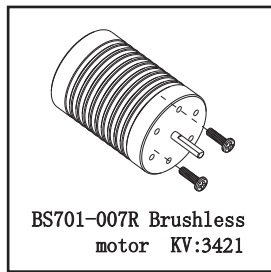




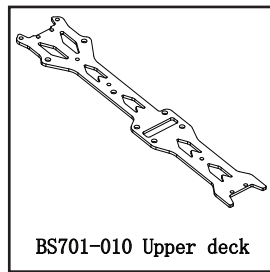
BS701-001 Chassis



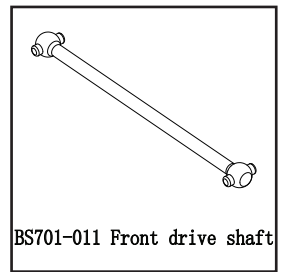
BS701-004 Shock Absorber Unit (plastic) 2PCS



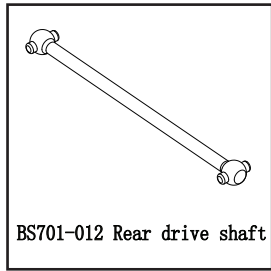
BS701-007R Brushless motor KV:3421



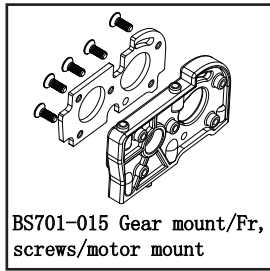
BS701-010 Upper deck



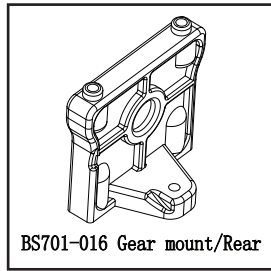
BS701-011 Front drive shaft



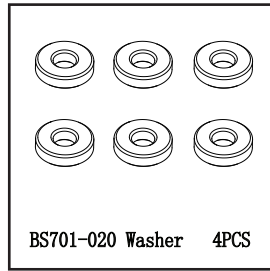
BS701-012 Rear drive shaft



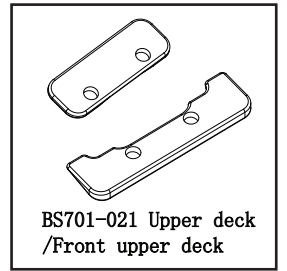
BS701-015 Gear mount/Fr, screws/motor mount



BS701-016 Gear mount/Rear



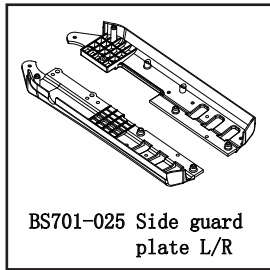
BS701-020 Washer 4PCS



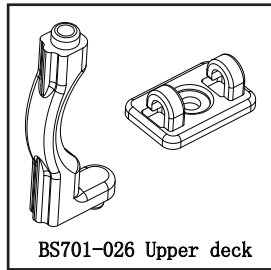
BS701-021 Upper deck /Front upper deck



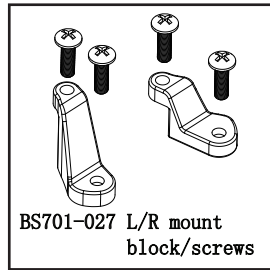
BS701-022 Steering servo mount



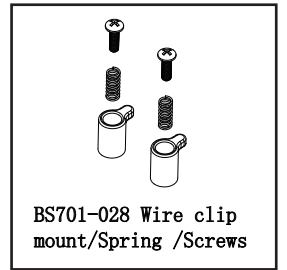
BS701-025 Side guard plate L/R



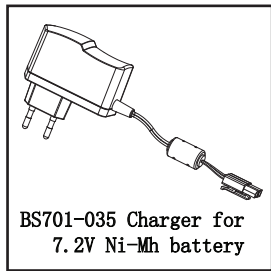
BS701-026 Upper deck



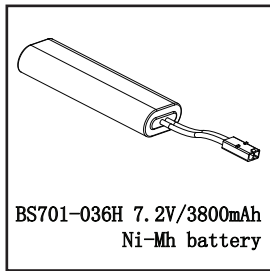
BS701-027 L/R mount block/screws



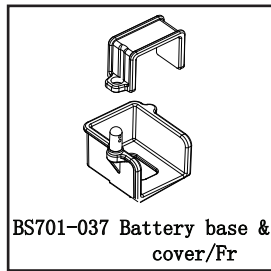
BS701-028 Wire clip mount/Spring /Screws



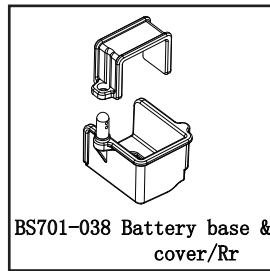
BS701-035 Charger for 7.2V Ni-Mh battery



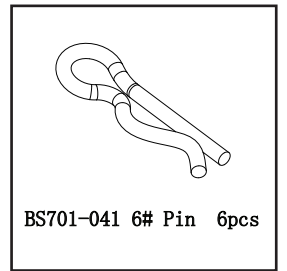
BS701-036H 7.2V/3800mAh Ni-Mh battery



BS701-037 Battery base & cover/Fr



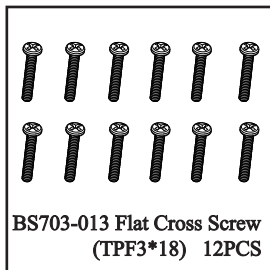
BS701-038 Battery base & cover/Rr



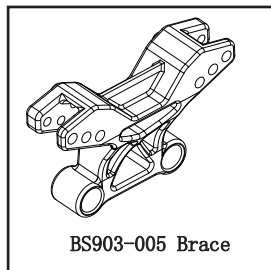
BS701-041 6# Pin 6pcs



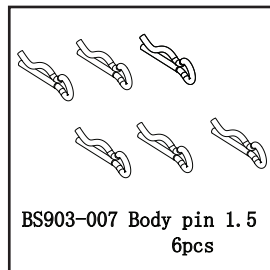
BS702-047 Antenna mount



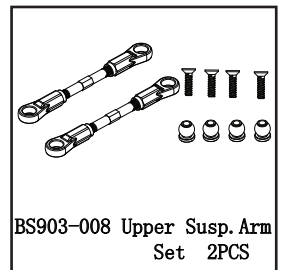
BS703-013 Flat Cross Screw (TPF3\*18) 12PCS



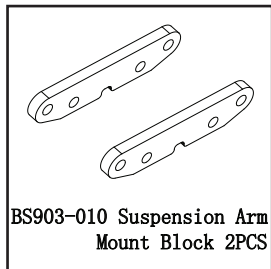
BS903-005 Brace



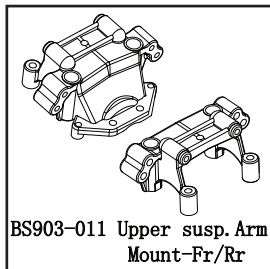
BS903-007 Body pin 1.5 6pcs



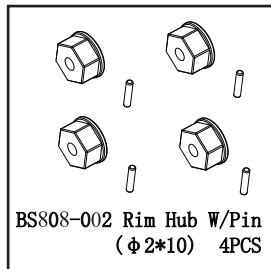
BS903-008 Upper Susp. Arm Set 2PCS



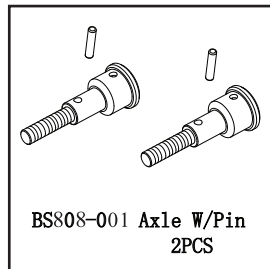
BS903-010 Suspension Arm Mount Block 2PCS



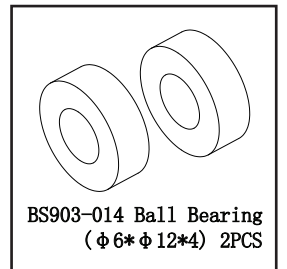
BS903-011 Upper susp. Arm Mount-Fr/Rr



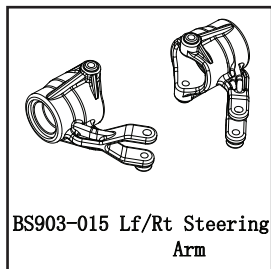
BS808-002 Rim Hub W/Pin (φ 2\*10) 4PCS



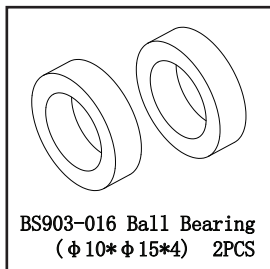
BS808-001 Axle W/Pin 2PCS



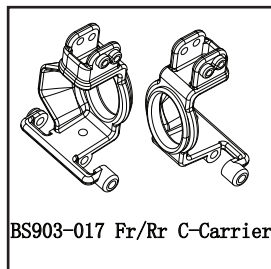
BS903-014 Ball Bearing (φ 6\*φ 12\*4) 2PCS



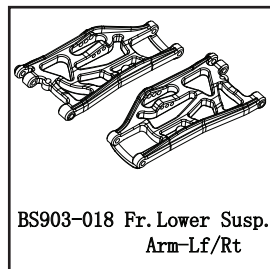
BS903-015 Lf/Rt Steering Arm



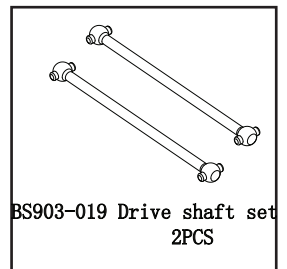
BS903-016 Ball Bearing (φ 10\*φ 15\*4) 2PCS



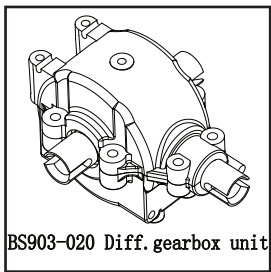
BS903-017 Fr/Rr C-Carrier



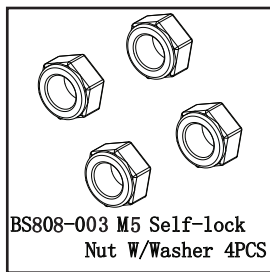
BS903-018 Fr. Lower Susp. Arm-Lf/Rt



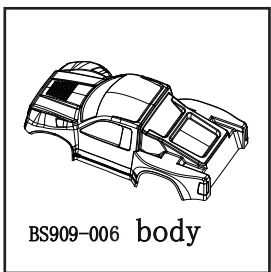
BS903-019 Drive shaft set 2PCS



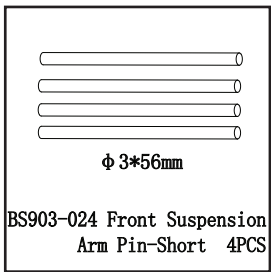
BS903-020 Diff. gearbox unit



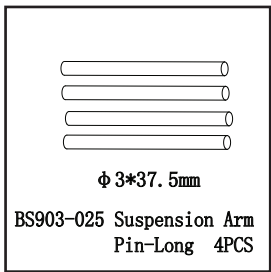
BS808-003 M5 Self-lock Nut W/Washer 4PCS



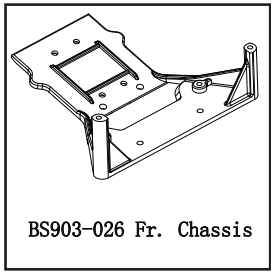
BS909-006 body



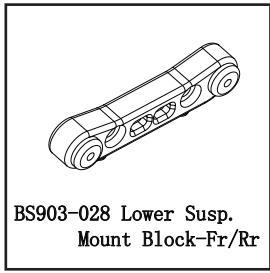
BS903-024 Front Suspension Arm Pin-Short 4PCS



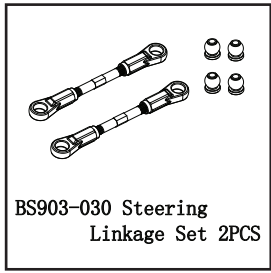
BS903-025 Suspension Arm Pin-Long 4PCS



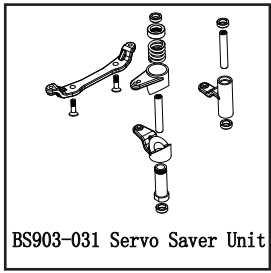
BS903-026 Fr. Chassis



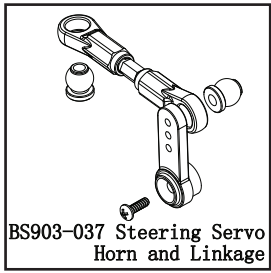
BS903-028 Lower Susp. Mount Block-Fr/Rr



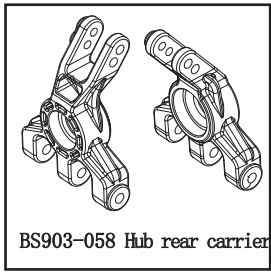
BS903-030 Steering Linkage Set 2PCS



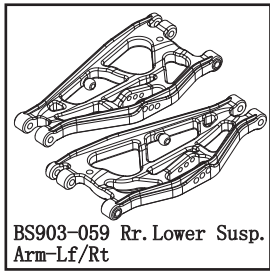
BS903-031 Servo Saver Unit



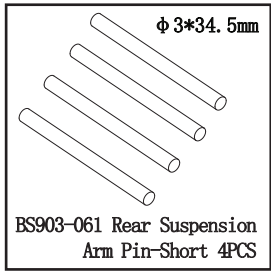
BS903-037 Steering Servo Horn and Linkage



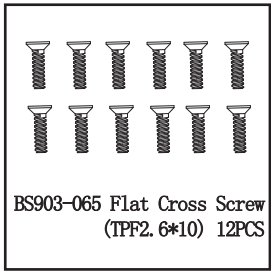
BS903-058 Hub rear carrier



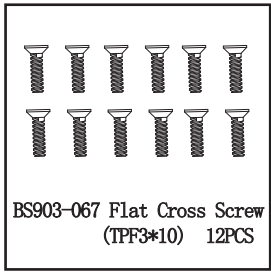
BS903-059 Rr. Lower Susp. Arm-Lf/Rt



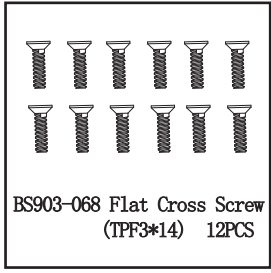
BS903-061 Rear Suspension Arm Pin-Short 4PCS



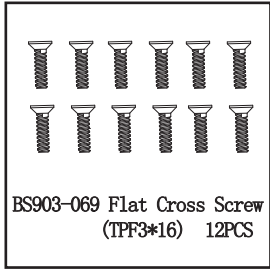
BS903-065 Flat Cross Screw (TPF2.6\*10) 12PCS



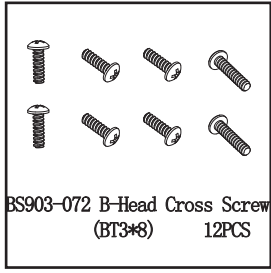
BS903-067 Flat Cross Screw (TPF3\*10) 12PCS



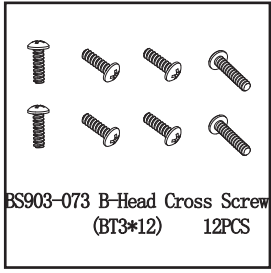
BS903-068 Flat Cross Screw (TPF3\*14) 12PCS



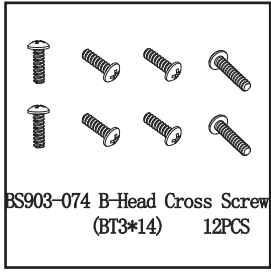
BS903-069 Flat Cross Screw (TPF3\*16) 12PCS



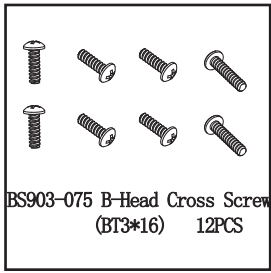
BS903-072 B-Head Cross Screw (BT3\*8) 12PCS



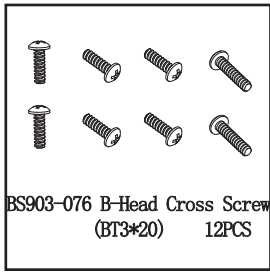
BS903-073 B-Head Cross Screw (BT3\*12) 12PCS



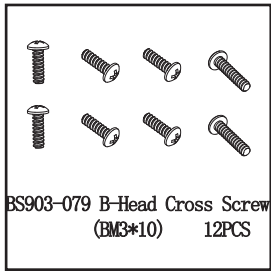
BS903-074 B-Head Cross Screw (BT3\*14) 12PCS



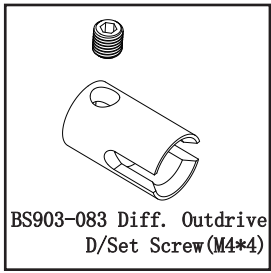
BS903-075 B-Head Cross Screw (BT3\*16) 12PCS



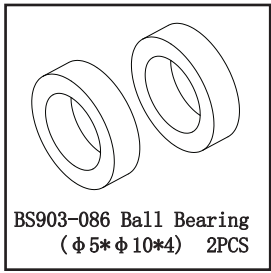
BS903-076 B-Head Cross Screw (BT3\*20) 12PCS



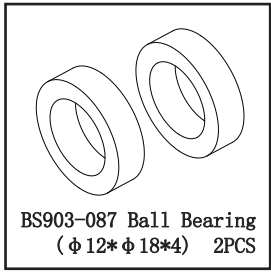
BS903-079 B-Head Cross Screw (BM3\*10) 12PCS



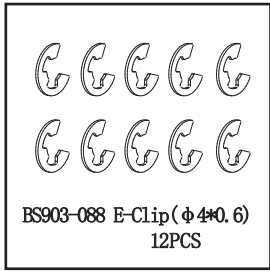
BS903-083 Diff. Outdrive D/Set Screw (M4\*4)



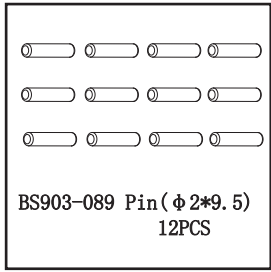
BS903-086 Ball Bearing (φ 5\* φ 10\*4) 2PCS



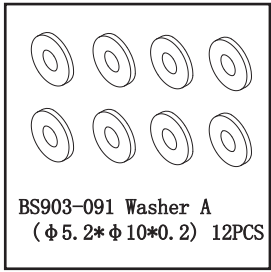
BS903-087 Ball Bearing (φ 12\* φ 18\*4) 2PCS



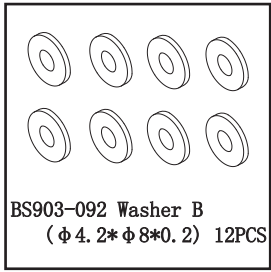
BS903-088 E-Clip (φ 4\*0.6) 12PCS



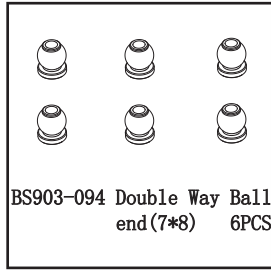
BS903-089 Pin (φ 2\*9.5) 12PCS



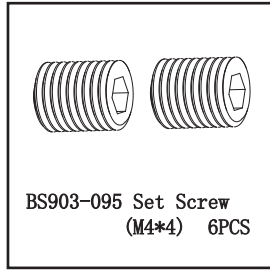
BS903-091 Washer A (φ 5.2\* φ 10\*0.2) 12PCS



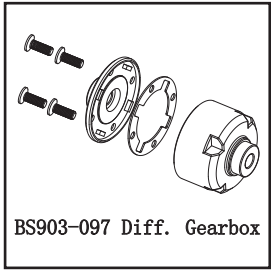
BS903-092 Washer B (φ 4.2\* φ 8\*0.2) 12PCS



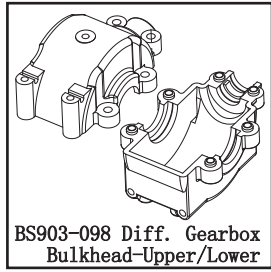
BS903-094 Double Way Ball end (7\*8) 6PCS



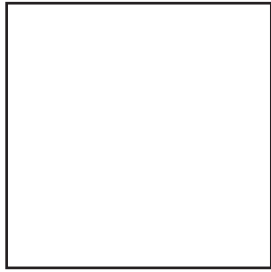
BS903-095 Set Screw (M4\*4) 6PCS

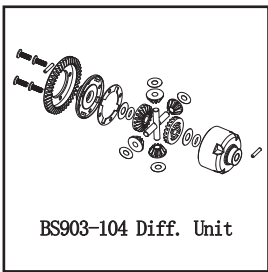


BS903-097 Diff. Gearbox

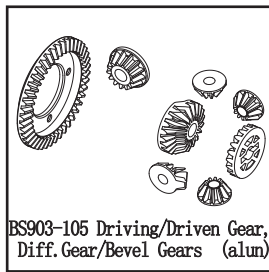


BS903-098 Diff. Gearbox Bulkhead-Upper/Lower

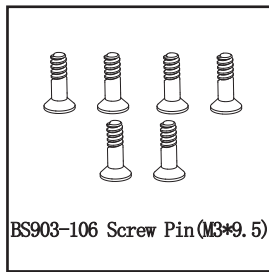




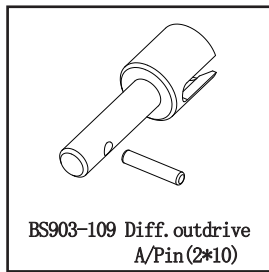
BS903-104 Diff. Unit



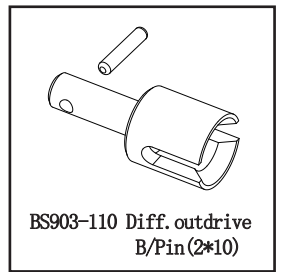
BS903-105 Driving/Driven Gear, Diff. Gear/Bevel Gears (alun)



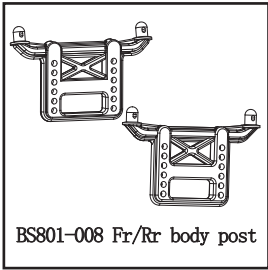
BS903-106 Screw Pin (M3\*9.5)



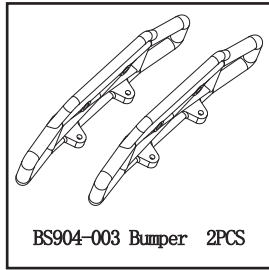
BS903-109 Diff. outdrive A/Pin (2\*10)



BS903-110 Diff. outdrive B/Pin (2\*10)



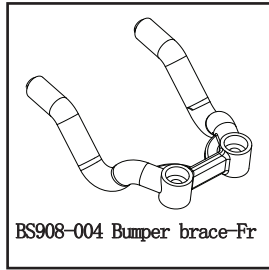
BS801-008 Fr/Rr body post



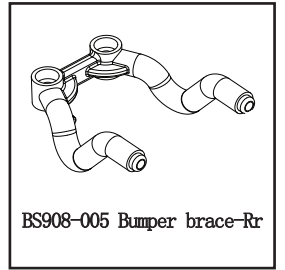
BS904-003 Bumper 2PCS



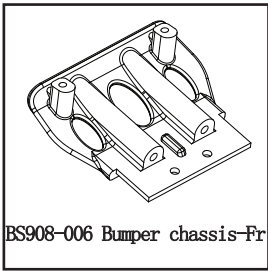
BS804-001 Tire Unit 2PCS



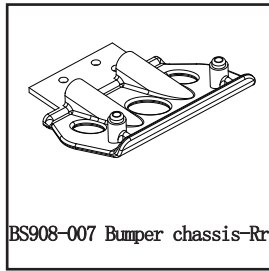
BS908-004 Bumper brace-Fr



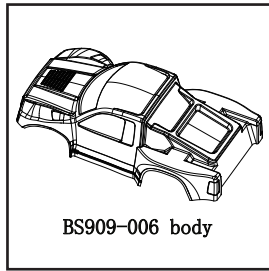
BS908-005 Bumper brace-Rr



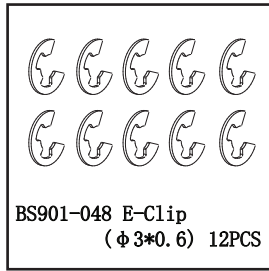
BS908-006 Bumper chassis-Fr



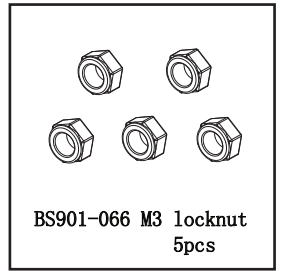
BS908-007 Bumper chassis-Rr



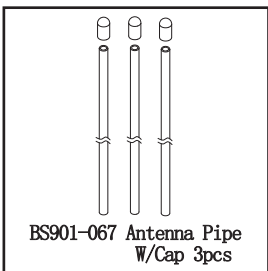
BS909-006 body



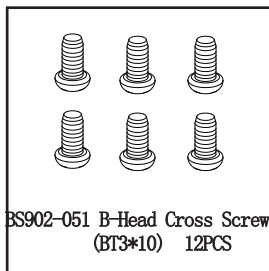
BS901-048 E-Clip (φ 3\*0.6) 12PCS



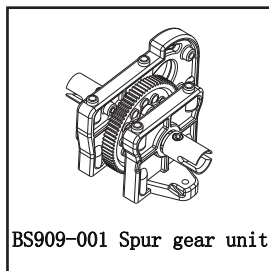
BS901-066 M3 locknut 5pcs



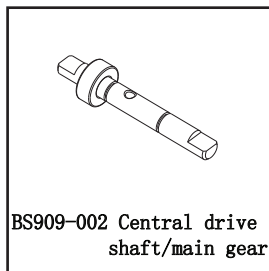
BS901-067 Antenna Pipe W/Cap 3pcs



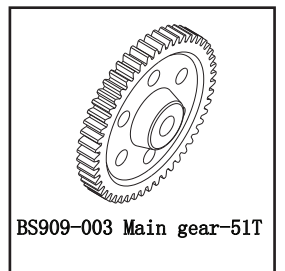
BS902-051 B-Head Cross Screw (BT3\*10) 12PCS



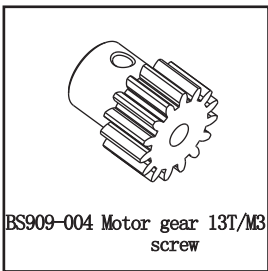
BS909-001 Spur gear unit



BS909-002 Central drive shaft/main gear



BS909-003 Main gear-51T



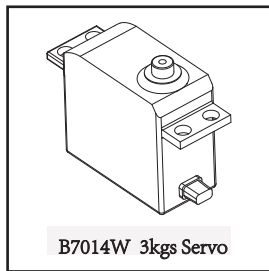
BS909-004 Motor gear 13T/M3 screw



BS7053 Radio Unit



B7054W Receiver



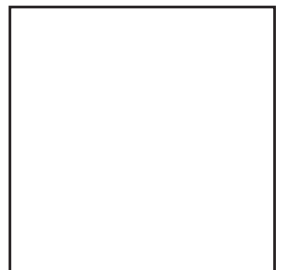
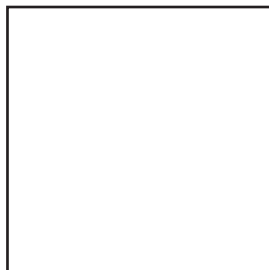
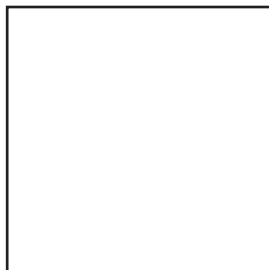
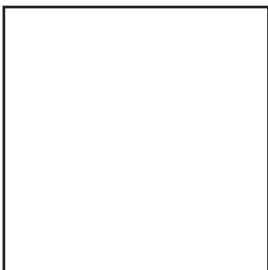
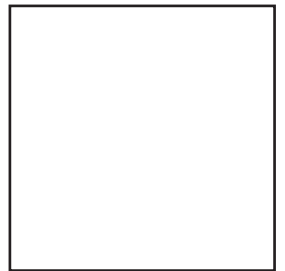
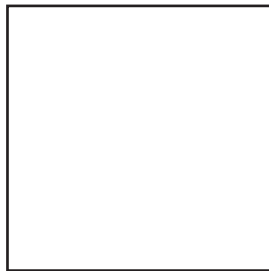
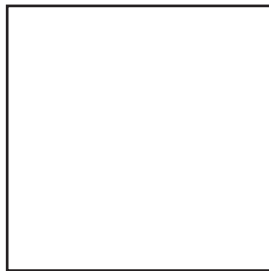
B7014W 3kgs Servo



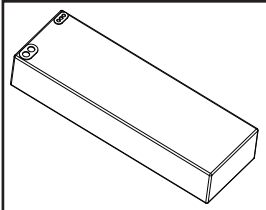
BS701-047 Brushless ESC 45A-SL



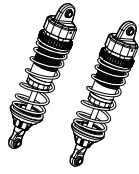
BS804-003 Bumper guard 1pcs



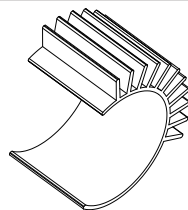
# OPTIONAL PARTS/UPGRADE PARTS



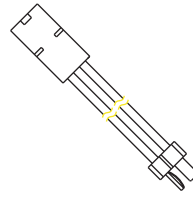
BS803-028 7.4V/20C LiPo battery



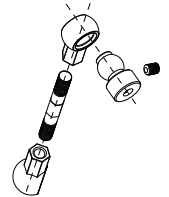
BS701-004A Shock Absorber Unit (alun) 2pcS



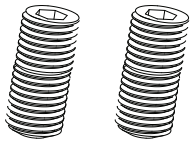
BS701-008 Motor heat sink



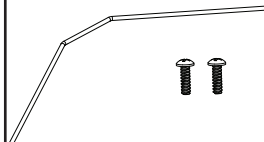
BS701-039 Connector wire (NI-MH connector to LIPO battery connector)



BS903-029 Anti-roll bar fixation set 2pcs



BS903-096 (M4\*8) Set Screw 6pcs



BS905-009 Rear Anti-roll bar set



Stainless steel AL6061

MPO-11 Steering link



BS803-031 LiPo battery charger



Stainless steel AL6061

MPO-01 Wheel Hex Set

Stainless steel AL6061



MPO-02 C HUB C HUB W/Pin

Stainless steel AL6061



MPO-03 Knuckle Arm Se

Stainless steel AL6061



MPO-04 Rear Hub set

Stainless steel AL6061



MPO-05 Shock stay mount

Stainless steel AL6061



MPO-06 Front suspension mount

Stainless steel AL6061



MPO-07 Rear suspension mount

# Precautions and Warnings for Use and Handling of Lithium Polymer Battery

## Preface

In order to get the optimum performance and reliable safety, consumers shall read and take the following instructions and precautions when use and handle the Lithium Polymer (Li-Po) batteries.

## 1. Charging

1-1 Charging current should not be more than the maximum charge current specified in the Product Specification (normally 0.5C-1.0C or lower). Charging with higher current may damage the cell or even lead to safety problem, e.g. overheating or leakage.

1-2 Charging voltage shall not be more than that specified in the Product Specification (4.2V/cell). 4.25V is the maximum charging voltage for each cell. Never charge the battery in series and be sure that each single cell has a separated charging circuit with a max. charging voltage of 4.25V. Or the battery may be overcharged, and lead to fire or explosion. The user is fully responsible to the result of misusing the battery.

1-3 Charging temperature: The cell should be charged within the range of temperatures specified in the Product Specification. Stop charging immediately when the surface temperature of the battery is over 50°C.

1-4 Reverse charging: Please make sure the polarities of cells are connected properly before charging. Reverse charging is strictly prohibited. Reverse charging cannot charge the cells but will deteriorate their charging/discharging and safety characteristics, or even lead to fire or explosion.

## 2. Discharging

2-1 Discharging current: The cell shall be discharged at the current no more than the maximum discharging current specified in the Product Specification. Over current discharging may damage the battery and cause over-heat.

2-2 Operation temperature: Use the battery within the temperature range specified in the Product Specification. Stop using when temperature is over 70°C.

2-3 Over-discharging: Over-discharging will deteriorate the cell's performance and characteristics. Do not over-discharge a battery below 2.75V/cell.

## 3. Storage

If you intend to keep the battery for a long time (3 months or longer), it is strongly recommended that the battery shall be stored under the environment with temperature 10-25°C, low humidity and without corrosive gas. The battery should be charged every six months to ensure that each cell's storage voltage is 3.6~3.9V.

## Others

>The aluminum packing foil is very soft that it will be easily left scratches. Please do not hit the cell with any sharp edge parts.

>Don't fall, hit or bend the battery. It may cause fire or explosion.

>Short circuit the battery is strictly prohibited, it may damage the battery seriously.

>Never disassemble the battery. It may cause fire.

>Never dispose of the battery in fire. It is very dangerous and strictly prohibited.

>To place the battery into liquid such as water is strictly prohibited.

>Always remove battery from car when charging. Charging the battery in a car is forbidden and is dangerous.

>Avoid vibration, shock or extruding the battery. Handle carefully when moving it.

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