REDCAT-RACING

1/10 SCALE NITRO POWERED TRUCK

MODEL NO.: CALDERA 3.0 2-Speed Transmission



Instruction Manual

Highlights:

- 4WD drive system.
- 18cxp powerful engine with two speed needles and slide carb.
- Waterproof and dustproof sealed gearbox.
- Auto-shifting 2-speed transmission.
- Sealed superduty plastic driveshaft.
- Fast easy assembly and disassembly receiver and battery cover.
- Super diff.with four bevel gears.
- Blue anodised 6061 T6 chassis.
- Sealed gearbox waterproof and dustproof, durable and stable.
- Adjustable threaded long oil-filled shock absorber.
- Fuel tank 75cc.
- Precise sealed ball bearing.

! SAFETY PRECAUTIONS

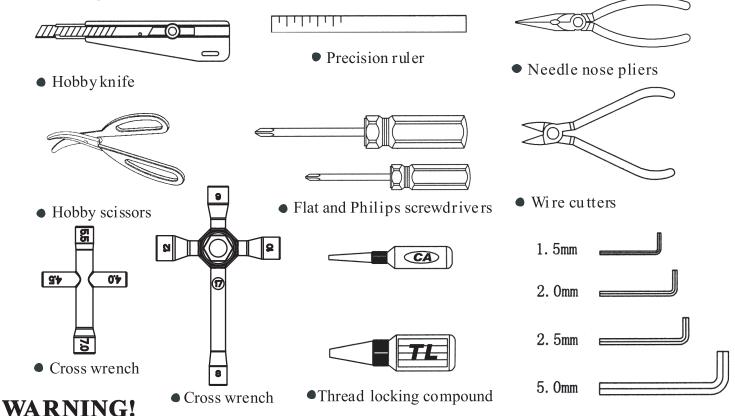
- •This radio controlled racing car is not a toy!
- •This high-performance R/C model is recommended for ages 14 and older.
- First-time builders should seek the advice of experienced modellers before commencing assembly.
- Take enough safety precautions prior to operating this model. You are responsible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

www.redcatracing.com

Engine:18#

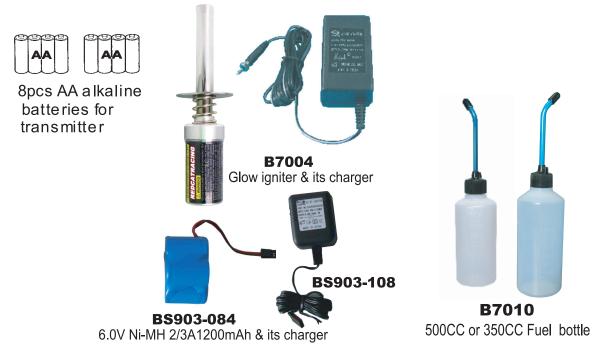
Required equipment for operation

1. Tools required for buildin and maintenance:



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:



IMPORTANT!!!

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

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)

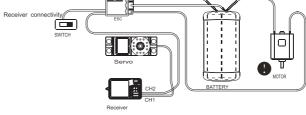
Charger Port: Yes

Power: 12vdc (1. 5AA*8)

Weight: 328g ANT Length: 26mm

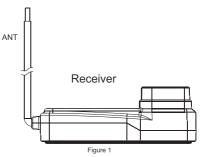
Size: 159*99*315mm

Color: Black Certificate: CE FCC



Note:

Place the antenna of the receiver vertically, and do not have contact with metal component. (See Figure 1)



159mm

315mm

Binding:

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

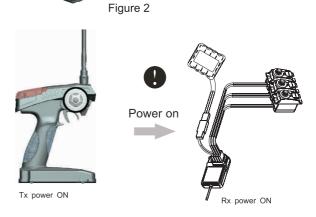
- 1. Install batteries into the transmitter and shut it down.
- 2. Insert the bind cable on to the bind channel (Ch3) on the receiver. (Figure.2)
- 3. Connect the receiver battery to the VCC port on the receiver .The two LEDs on the receiver should flash rapidly, indicating the receiver is in binding 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.

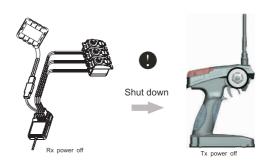
Turn On:

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

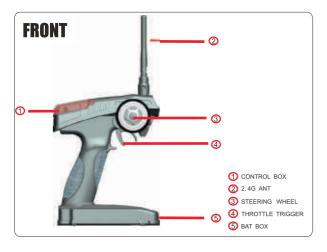


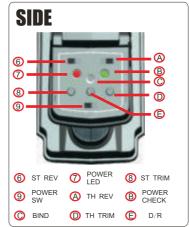
Shut Down:

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



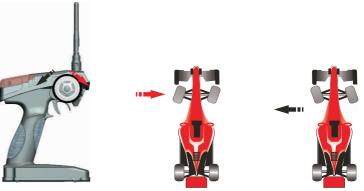
Transmitter Functions:



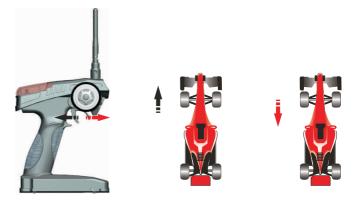




This function is to control the direction of the vechicle



This function is to control the throttle speed of the vechicle



ENGINE TUNING GUIDE

HIGH-SPEED NEEDLE

The "high-speed" needle is sticking up from the carburetor. This controls the fuel to air mixture of the carburetor. The needle is pre-set for break-in from the factory at 2-1/2 t--urns out from fully closed. Once the engine is broken-in, the high-speed needle would typically run from 2 to 2-1/2 turns out from closed, depending on the weather, humidity and altitude above sea level. To richen the mixture turn the needle counterclockwise. To lean it, turn the needle clockwise.



IDLE STOP

SCREW

The Low-Speed Needle (For 18# engine)

The "low-speed" needle is the screw in the carb body opposite the throttle arm.it controls the fuel to air mixture at low throttle settings. There is a simple way of adjusting the low-speed needle correctly called the "pinch test." With the engine at idle, pinch the fuel line and listen to how the engine speeds up or slows down. If the engine increases its speed for about 2 or 3 seconds and then loses speed, the needls is set correctly. If the engine loses RPM quickly, it is set too lean and the lowspeed needle needs to be opened (counterclockwise) to richen the mixture. Pinch again to check the mixture. If the engine takes longer than 4 seconds to slow down, lean (clockwise) the low-speed needle and then pinch again to check the mixture.

IDLE STOP SCREW

The "idle stop" screw is located on the backside of the carburetor. This increases or decreases the idle speed without changing the fuel mixture. The barrel should be approximately 1mm from fully closed.

IMPORTANT! To insure long life and good performance from your engine, you MUST break-in the engine. The break-in period is critical for long life of the internal parts of the engine. This should be done over the first 5 tanks of fuel.

RUNNING THE ENGINE

STARTING THE ENGINE

IMPORTANT!Your radio system must ALWAYS be turned on and the transmitter antenna fully extended when running the engine!

- 1. Fill the fuel tank.
- 2.Prime the engine-while the engine is cool,place your finger over the tuned pipe's exhaust hole and pull the recoil gently several times.Donot over-prime!Stop when you see fuel in the fuel line at the carb.
- 3.Install a "C" alkaline into the glow starter and attach the starter to the glow plug.
- 4. With the throttle at idle, start the engine by pulling the recoil using short, quick pulls. Do NOT pull the recoil starter's string to the end. You only need 10 to 12 inches of pull to s-tart the engine with the throttle at idle.

Sometimes it is helpful to start the engine at around half throttle. When the engine starts, immediately return the throttle to idle.if this is not done the engine can over-rev and cause engine damage.

STOPPING THE ENGINE

Pinch the fuel line that runs to the carburetor. Pinching this line will restrict fuel flow and the engine will quit within a few seconds. Never place your finger over the exhaust to stop the engine. This could result in serious burns on your finger. It also causes fuel to back up in the engine, making it harder to start the next time you run your truck.

IMPORTANT! FIXING A FLOODED ENGINE

If the engine is difficult to turn over with the recoil starter, especially if it is brand new, loosen the glow plug a half turn before starting the engine. This allows some compression to escape, but the engine will still start. Make sure you tighten the glow plug after the engine starts. If the recoil starter is still difficult to pull, the engine is flooded-there is too much fuel inside the engine. Remove the glow plug, then turn the the buggy upside down and pull the recoil 5 or 6 times. This will clear the engine of fuel, and you will notice the recoil pulls easier. Replace the glow plug and repeat the starting procedure.

BREAK IN PROCEDURE

SOME THINGS TO REMEMBER DURING BREAK-IN

- 1.Run with the body off. This will keep the engine cooler.
- 2.Keep the air cleaner on at ALL time.
- 3. Run on a smooth, hard surface. An empty parking lot is Perfect.
- 4.Use the same fuel that you will use for normal running.
- 5. Resist the urge to accelerate and decelerate quickly.
- 6.Break-in puts stress on the glow plug or two on hand.
- 7.DO NOT overheat the engine. You can check the head temperature by using one of the temperature gauges .

TANK 1

Your first tank of fuel should be running the truck at a very rich needle valve setting. This allows the fuel to carry as much oil as possible into the engine to properly lubricate the internal parts during the break-in.

- 1.Open the high speed needle valve 4-1/2 turns from fully closed (counterclockwise). This is factory set already. But check it to make sure. When closing the high-speed needle, close until you feel some resistance. DO NOT overtihgten or you will damage the engine.
- 2. Fill the fuel tank and start the engine.
- 3.Run the buggy on a smooth surface with the body off.
- 4. Run back and forth at medium speeds, slowly accelerating and decelerating the car.
- 5.Run the car until the tank is almost out of fuel.Do not allow the tank to run out of fuel during break-in. This leans out the engine and can cause overheating.
- 6.Stop the engine and allow it to cool. This noumally takes around 10-15 minutes.

NOTE: if your engine does not stay running consistently, increase the idle speed by turning the idle stop screw clockwise.

TANK 2

Lean the high-speed needle 1/2 turn from "tank 1" setting.Run the car for the complete tank and then let cool.

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TANK 3

Lean the high-speed needle another 1/2 turn from "tank 2" setting. Run the car for the complete tank and then let cool.

TANK 4

Lean the high-speed needle another 1/2 turn from "tank 3" setting. Run the car for the complete tank and then let cool. You should notice the engine running much better at this point.

TANK 5

Lean the high-speed needle another 1/2 turn from "tank 4" setting.Run the car for the complete tank and then let cool. The engine is now ready to be performanced tuned. **Important!** At this point, the engine will likely be running at a faster idle than needed (This is typical after break-in). Adjust the idle stop screw to lower the idle speed so that the w-heels do not.or just barely, rotate when you lift the car off the ground.

TUNING TIPS

After break-in,run the truck where you plan to do most of your driving (grass,street,track, etc). Tune the high speed needle so the engine makes good power without everheating. Us-ing a temperature gauge, tune the engine so that it will consistently stay under 270 F (132 C). Keep in mind.RC engines usually take a minute or two to warm up. It is common not to reach full power right away. Never tune a cold engine!

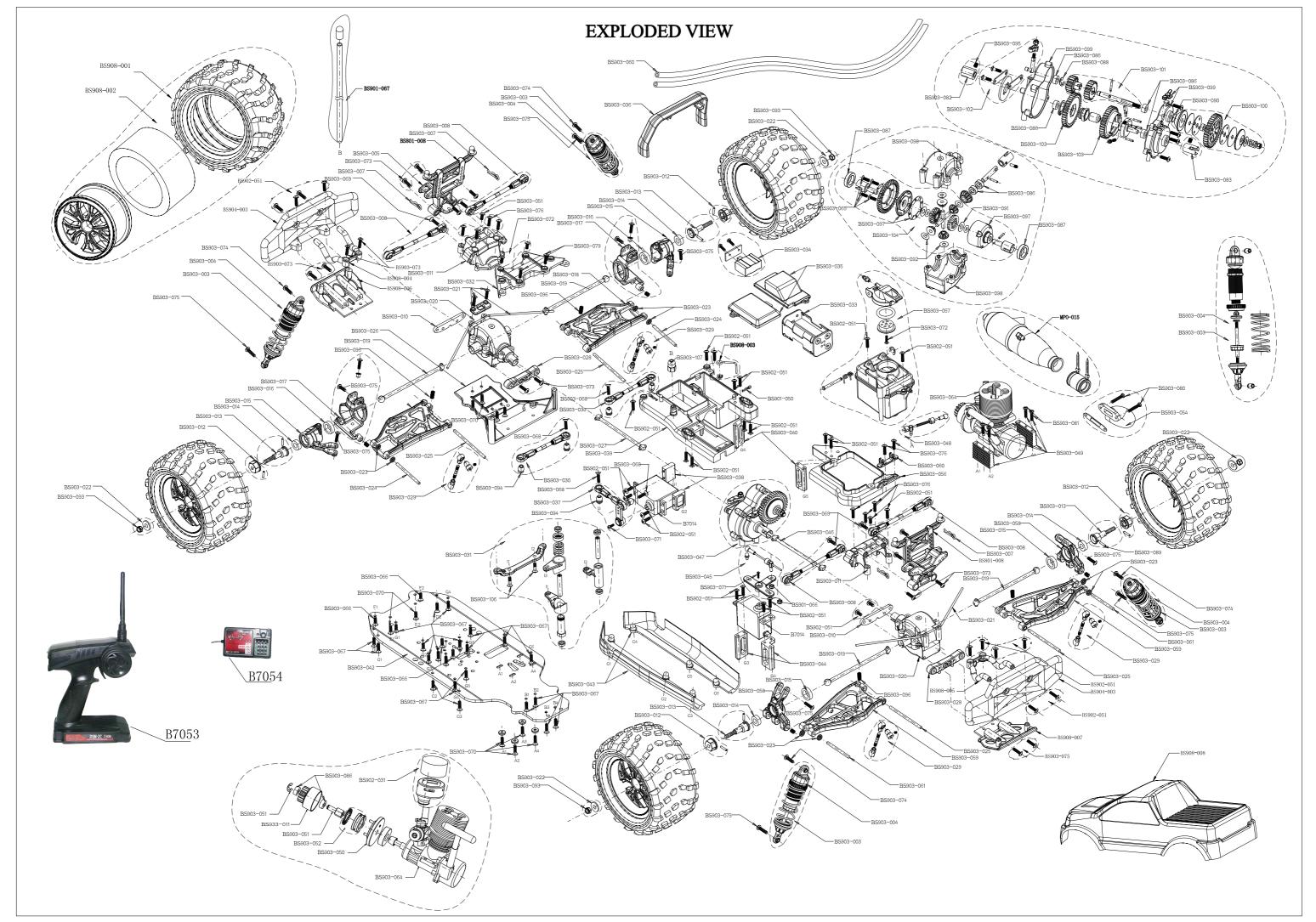
ENGINE CARE

Never store your car with fuel in the tank. We recommend that after the final run of the day, you empty the fuel tank and then run the engine at idle until all the fuel is out of the fuel lines and engine. Remove of air filter and glow plug. Then place two drops of the After Run Engine Oil in the carburetor and two into the cylinder to help prevent corrosion. Pull the recoil a few times to circulate the oil.

10 WAYS TO ENSURE LONG LIFE FROM YOUR ENGINE

- 1.Keep your engine and air filter clean.Dirt will act as insulation on an engine. it will not be able to shed heat as easily.Clean and re-oil the elenent often.
- 2.Do not over-lean your engine.
- 3.Do not run your engine with little or no load.Don't throttle up the engine to full throttle when the wheels are not in contact with the ground.
- 4.Do not overheat the engine.
- 5.Do not use a fuel with a low oil content. Make sure you use a model car fuel from a reputable manufacturer, such as O'Donnell Fuels.
- 6. Avoid using old fuels in the engine.
- 7.Do not use a fuel with a nitromethane(often called niteo) content over 20%.
- 8.Do not scratch the piston or cylinder sleeve. Avoid jamming something into the exhaust port when removing or re-installing the clutch or flywheel. Use a special tool called the Ultimate Flywheel Wrench to keep the crankshaft from moving.
- 9.Do not use silicone sealer on the engine joints. Silicone sealer contains acetic acid, which is corrosive if it gets inside your engine.
- 10.Do not allow any water to get inside the engine. This sounds easy, but temperature changes can cause condensation inside the engine. This is a good reason to use an after-run oil. Store your engine inside the house, not in a garage or shed where will be temperature extremes.

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PARTS LIST

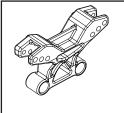
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Item No. Description	Item No. Description
BS903-003 Shock absorber unit(plastic) 2pcs	BS903-044 Throttle servo mount-A/B
BS903-004 Shock absorber unit(alum.) 2pcs	BS903-045 Throttle servo horn and linkage set
BS903-005 Brace 1pcs	BS903-046 Centre drive shat-Rr 1pcs
BS903-007 Body pin 6pcs	BS903-047 Centre gearbox unit
BS903-008 Upper susp. Arm set	BS903-048 Throttle linkage set
BS903-010 Supension arm mount block 2pcs	BS903-049 Engine mount
BS903-011 Upper susp.arm mount-Fr/Rr	BS903-050 Engine flywheel w/pin
BS903-012 Rim hub w/pin 2*10 4pcs	BS903-051 Engine crankshaft w/E-clip
BS903-013 Axle w/pin 2pcs	BS903-052 Clutch show w/spring
BS903-014 Ball bearing(6*12*4) 2pcs	BS903-054 Exhaust manifold
BS903-015 Steering arm	BS903-056 Upper deck-rear 1pcs
BS903-016 Ball bearing(10*15*4) 2pcs	BS903-057 Fuel tank unit
BS903-017 C-carrier	BS903-058 Hub rear carrier
BS903-018 Fr.lower susp.arm-Lf/Rt	BS903-059 Rr.lower susp.arm-L/R
BS903-019 Transverse driver shaft set	BS903-060 Fuel pipe & hoop
BS903-020 Diff.gearbox unit	BS903-061 Rear suspension arm pin-short
BS903-021 Anti-roll bar set	BS903-064 Engine 18#
BS903-022 M4 selt-lock nut w/washer 4pcs	BS903-065 TPF2.6*10 flat cross screw 12pcs
BS903-023 O-washer 4pcs	BS903-066 TPF3*8 flat cross screw 12pcs
BS903-024 Front suspension arm pin-short 4pcs	BS903-067 TPF3*10 flat cross screw 12pcs
BS903-025 Suspension arm pin-long 4pcs	BS903-068 TPF3*14 flat cross screw 12pcs
BS903-026 Fr.chassis	BS903-069 TPF3*16 flat cross screw 12pcs
BS903-027 Centre drive shaft-Fr	BS903-070 ISO3*10 flat cross screw 12pcs
BS903-028 Lower susp.mount block-Fr/Rr	BS903-071 BT2.6*6 B-head cross screw 12pcs
BS903-029 Anti-roll bar fixation set	BS903-072 BT3*8 B-head cross screw 12pcs
BS903-030 Steering linkage set 2pcs	BS903-073 BT3*12 B-head cross screw 12pcs
BS903-031 Servo saver unit	BS903-074 BT3*14 B-head cross screw 12pcs
BS903-032 Upper deck-Fr	BS903-075 BT3*16 B-head cross screw 12pcs
BS903-033 Battery case 1pcs	BS903-076 BT3*20 B-head cross screw 12pcs
BS903-034 Switch/switch cover/screw	BS903-079 BM3*10 B-head cross screw 12pcs
BS903-035 Receiver/battery case cover	BS903-080 HM3*25 Cap head hexagon
BS903-036 Handle 1pcs	screw 6pcs
BS903-037 Steering servo horn and linkage	BS903-081 HM3*10 Cap head hexagon
BS903-038 Steering servo mount-A/B	screw 6pcs
BS903-039 Upper deck-centre 1pcs	BS903-082 Diff.outdrive D /M4*4set screw
BS903-040 Upper deck mount 1pcs	BS903-083 Diff.Outdrover C/M4*4 set screw
BS903-040 Chassis 1pcs	BS903-084 Battery pack 6V NI-MH 1pcs
BS903-043 Side guard plate-L/R	BS903-086 Ball bearing (5*10*4) 2pcs
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PARTS LIST

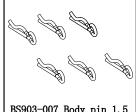
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BS903-087 Ball bearing (12*18*4) 2pcs	BS902-031 Air filter w/insert
BS903-088 E -clip (4*0.6) 12pcs	BS902-051 BT3*10 B-heag cross screw 12pcs
BS903-089 Pin (2*10) 12pcs	B7053 Transmitter complete
BS903-090 Pin (2*12.5) 12pcs	B7054 Receiver
BS903-091 Washer A (5.2*10*0.2) 12pcs	B7014 servo (3Kg)
BS903-092 Washer B (4.2*8*0.2) 12pcs	BS904-003 Bumper 1pcs
BS903-093 M4 nylon self-lock nut 6pcs	BS801-008 Fr/Rr body post
BS903-094 Double way ball end 6pcs	BS933-011 clutch bell(15T)
BS903-095 M4*4 set screw 6pcs	BS908-001 tire unit(plastic)
BS903-096 M4*8 set screw 6pcs	BS908-002 tire unit(chromed)
BS903-097 Diff.gearbox	BS908-003 exhaust fixation set
BS903-098 Diff.gearbox bulkhead-upper/lower	BS908-004 front dumper upper bracket
BS903-099 Gearbox bulkhead-Fr/Rr	BS908-005 rear dumper upper bracket
BS903-100 Spur gear/spring/nylon self-lock nut	BS908-006 front dumper buttom bracket BS908-007 rear dumper bottom bracket
BS903-101 Pinion gear18T/19T /pin	BS908-008 body
BS903-102 Brake set	,
BS903-103 Gear-40T/37T	
BS903-104 Diff.unit	MP0-02 C hub/c hub w/pin
BS903-105 Driving/driven gear, Diff.gear/bevel	MP0-03 Kunckle arm set
gears	MP0-04 Rear hub set
BS903-106 Screw pin (M3*9.5) 12pcs	MP0-05 Shock stay mount
BS903-107 Antenna mount 3pcs	MP0-06 Front suspension mount
BS903-108 Charger 1pcs	MP0-07 Rear suspension mount
BS901-066 M3 locknut 5pcs	MP0-08 Steel brake disk
BS901-067 Antenna pipe w/cap 3pcs	MP0-09 Special brake pads
	MP0-10 Brake post
	MP0-11 Steering link
	MP0-12 Engine mount
	MP0-13 Sipper system(hard anodized)
	MP0-15 Metal pipe



BS903-003 Shock absorber unit(plastic) 2pcs BS903-004 Shock absorber unit(alum.) 2pcs



BS903-005 Shock tower



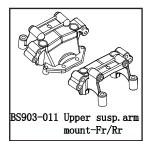
BS903-007 Body pin 1.5 6pcs

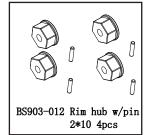


BS903-008 Upper susp. Arm 2set

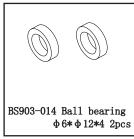


arm mount block 2pcs

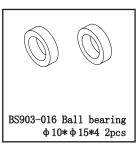


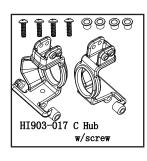


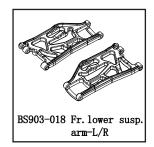




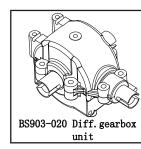






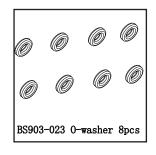


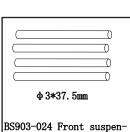




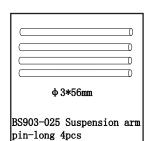


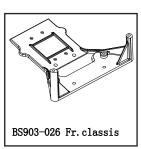


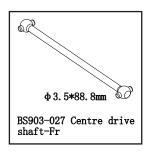


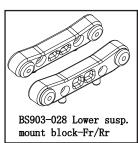


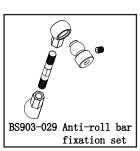
-sion arm pin-short 4pcs





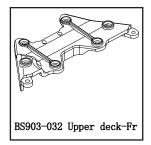




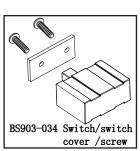




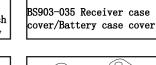


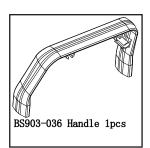






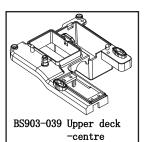




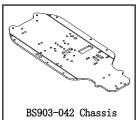






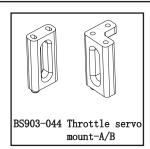




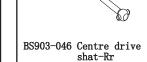


(AL6061T) 1pcs

BS903-043 Side guard



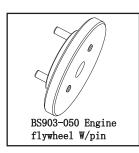












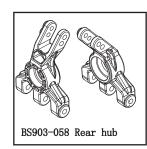




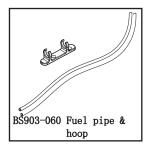


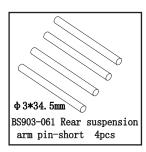


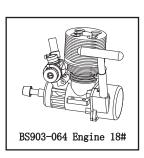


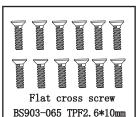




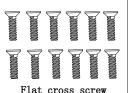


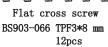


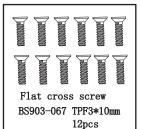


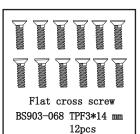


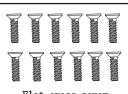
12pcs







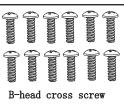




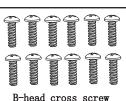
Flat cross screw BS903-069 TPF3*16 mm 12pcs



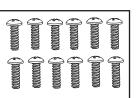
B-head cross screw BS903-071 BT2.6*6 mm 12pcs



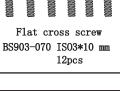
BS903-072 BT3*8 mm 12pcs

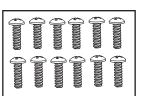


B-head cross screw BS903-073 BT3*12 mm 12pcs



B-head cross screw BS903-074 BT3*14 mm 12pcs





B-head cross screw BS903-076 BT3*20 mm 12pcs



B-head cross screw BS903-079 BM3*10 mm 12pcs



BS903-080 HM3*25 Cap head hexagon screw 6pcs



Socket head cap screw BS903-081 M3*10 mm 6pcs



B-head cross screw

BS903-075 BT3*16 mm

12pcs

BS903-082 Diff. outdrive D/set screw



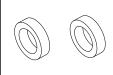
BS903-083 Diff.outdrive C/set screw



BS903-084 Battery pack 6V ni-mh



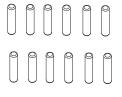
BS903-086 Ball bearing Φ5*Φ10*4 2pcs



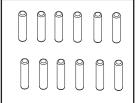
BS903-087 Ball bearing Φ12*Φ18*4 2pcs



BS903-088 E-cilp Φ4*0.6mm 12pcs



BS903-089 Pin φ 2*10mm 12pcs



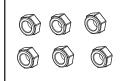
BS903-090 Pin Φ 2*12.5mm 12pcs



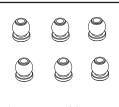
BS903-091 Washer Φ5.2*Φ10*0.2 12pcs

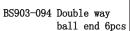


BS903-092 Washer Φ 4. 2* Φ 8*0. 2 12pcs

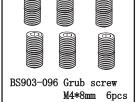


BS903-093 M4mm Nylon lock -nut 6pcs

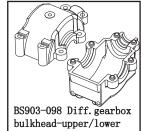








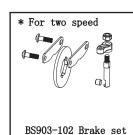


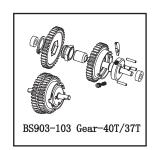




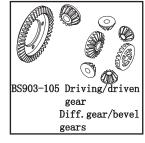


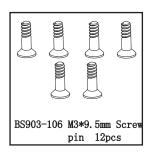


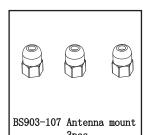




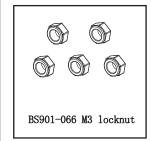


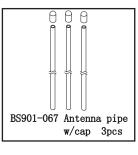


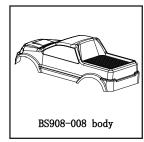




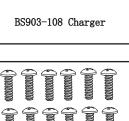








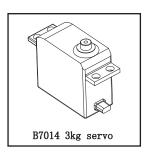


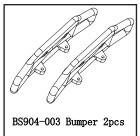


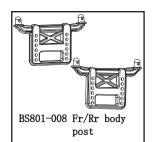
B-head cross screw
BS902-051 BT3*10 mm
12pcs













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