# GATOR

## The Super Off Road Racing Specialty



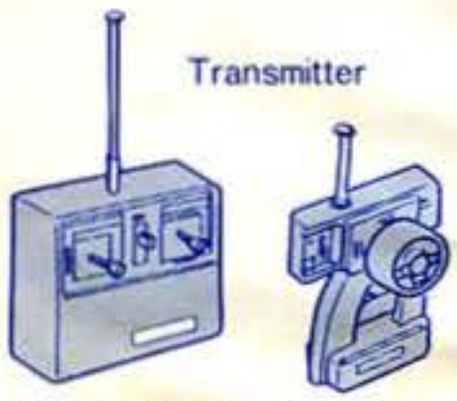
INSTRUCTION AND ASSEMBLY MANUAL

## RADIO CONTROL SYSTEM

A 2-channel digital proportional radio is required to opperate an RC car. Any standard system can be used, however,a3-8 channel system may not be applicable depending on the receiver size. Rechargeable nickel-cadium batteries (ni-cads), are highly efficient and can be used as many as 300 times or more.

There are two basic types of battery chargers. The more common of the two is a low rate or trickle charger which opperates off normal household current (110 volts) and requires approximately 15 hours to fully charge the system. A quick charger is also available, requiring only 15 minutes to fully charge the system. This type of charger opperates off a 12 volt power source such as an automobile or motorcycle battery.

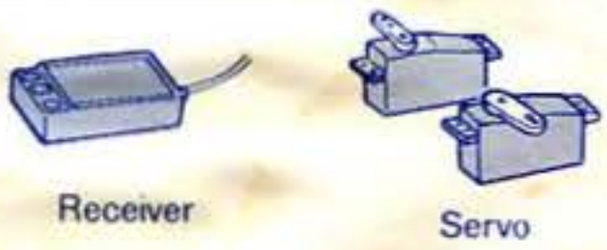
## NECESSARY ITEMS FOR ASSEMBLY (not included in kit)



Transmitter

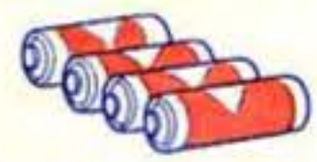
2-channel proportional radio control system required.

*Please read manufacturers instuctions before opperating radio system



Receiver

Servo



Battery for radio

charger

7.2V/1,200Ah ni-cad battery pack

Quick charger (TX-200)

## TOOLS REQUIRED FOR ASSEMBLY

Phillips screw driver

Nut driver

Hobby knife

Brush

Needle nose pliers

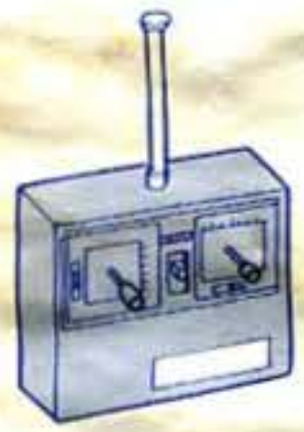
Scissors

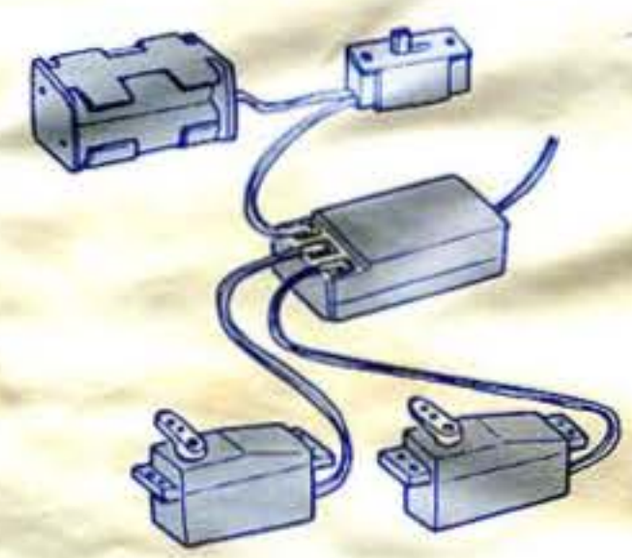
Gimlet

Liquid thread lock

Acrylic paint

## RADIO CHECK





### How to set neutral

1. Connect receiver, two servos and power source
2. Remove the servo horn (note: cut out unnecessary part of the servo horn)
3. Switch on the transmitter.
4. Set the trim lever of steering controller at the middle position.
5. Turn on the receiver and set up the the servo horn at the proper direction.
6. Turn the receiver off first then the transmitter.

## RECOMMENDATION FOR COURTEOUS OPERATION OF RADIO CONTROL VEHICLES

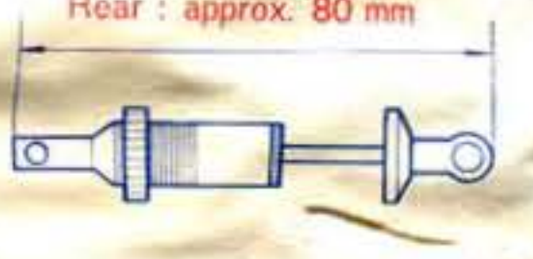
Before switching on the transmitter, make sure that there are no other radio controlled vehicles such as airplanes, cars, boats. etc. are being operated near by. Avoid the same frequency in use if any other radio controlled vehicles are nearby. (check frequency flag on transmitter antenna to check its frequency)

Do not turn on the transmitter while the same frequency is being used by others as it will cause loss of control due to conflicting transmitter signals.

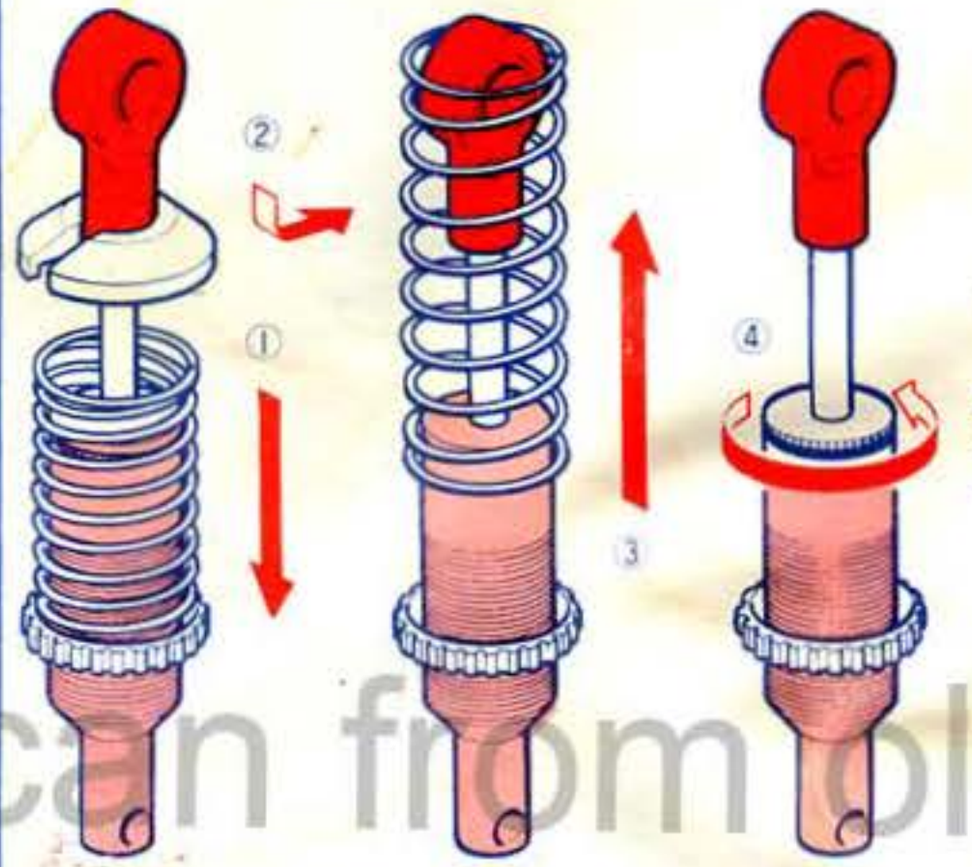
## 1 Assembly and Adjustment of Shock Absorber


Note: Apply oil in the shock and assemble parts back as before. Adjust the shock end in order to have the same length of the shock in front and rear as indicated below. (adjust in an extended state)

Front: approx. 80 mm
Rear : approx. 80 mm

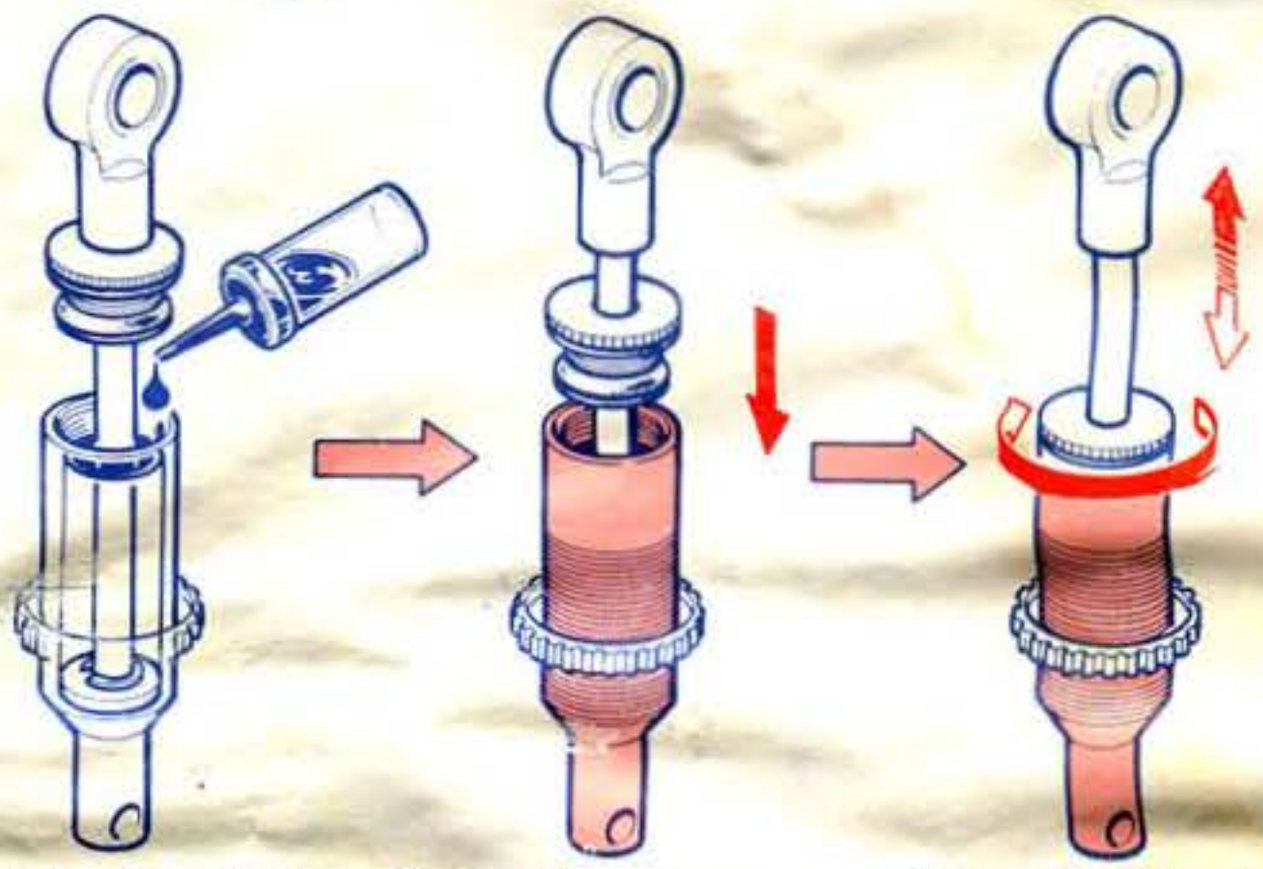


Shock absorbers come pre-assembled but must be disassembled in order to add oil.
To prevent mix-up of parts, dissassemble one shock at a time.



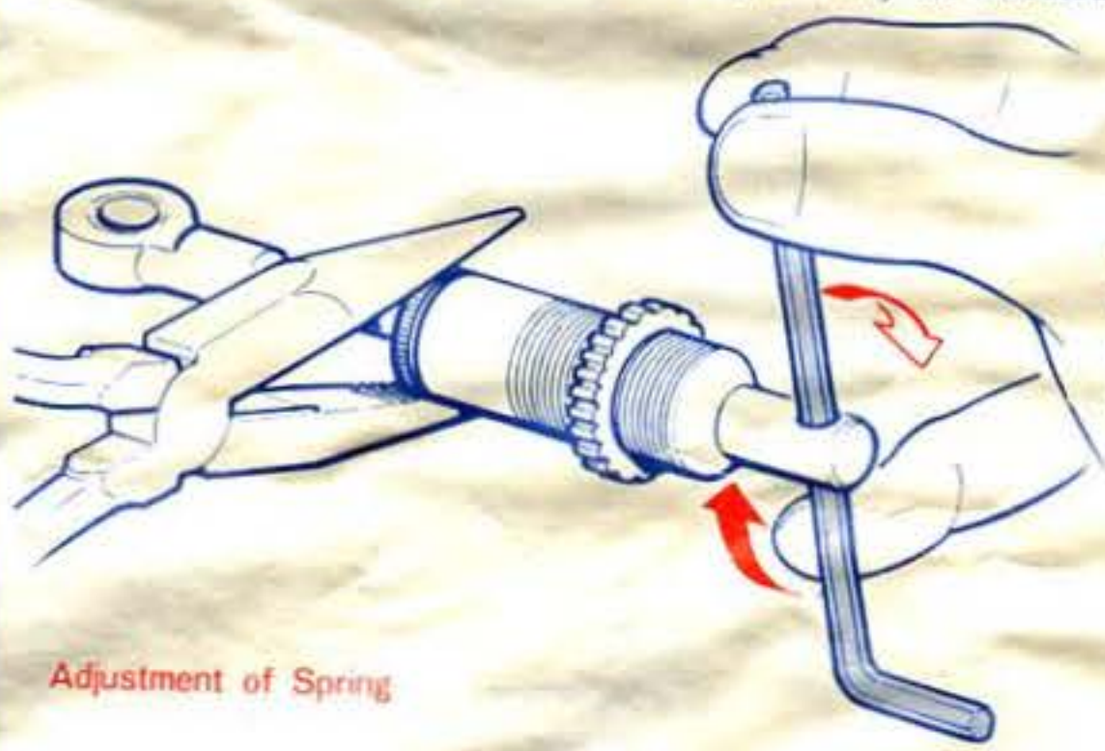

1) push down the spring as shown in the drawing.
2) slide out the spring cup A to remove.
3) take out the spring.
4) spin the stopper to remove.





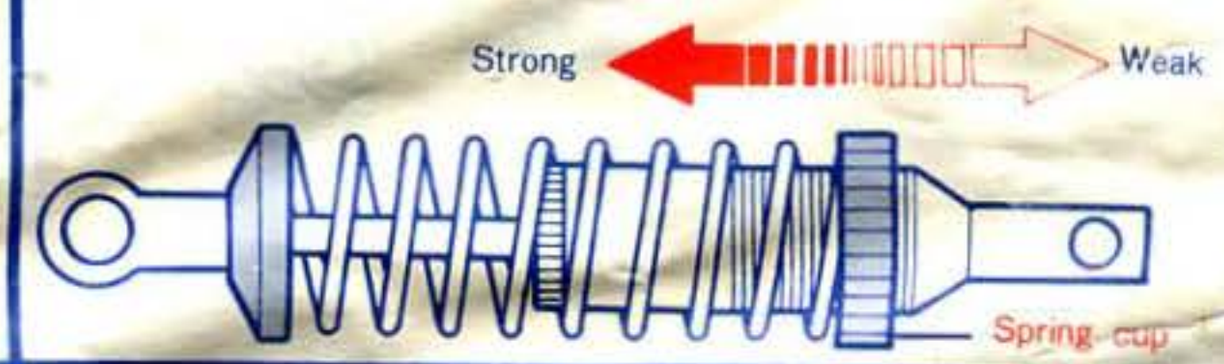
1. Push the piston all way down and pour oil in to the line shown in the drawing in order not to have air bubble inside.
2. Assemble parts as shown in the picture.
3. Move the piston up and down to see if it moves smoothly.

Apply oil in the shock and fasten the stopper firmly as indicated in the drawing.



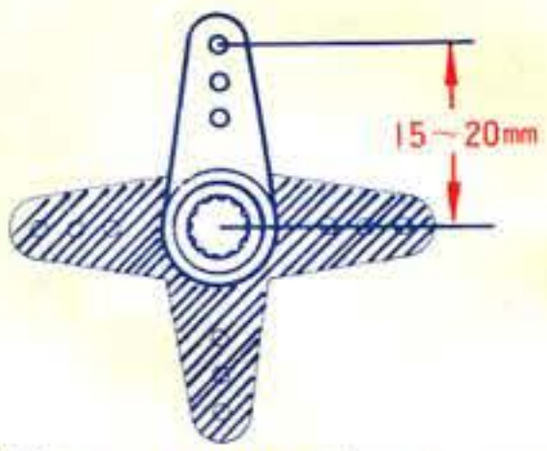
Adjustment of Spring

Note: Do not use pliers on shock case, only on stopper. The shock case has a thin wall and can be damaged easily.

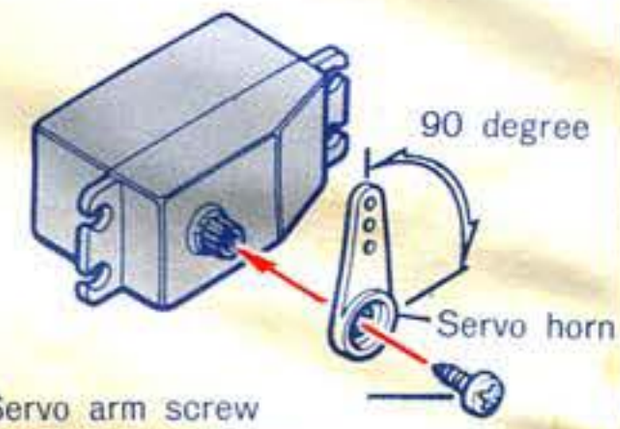



Tighten the spring cup B to increase strength and loosen it to decrease the same. Adjust it according to the racing condition.

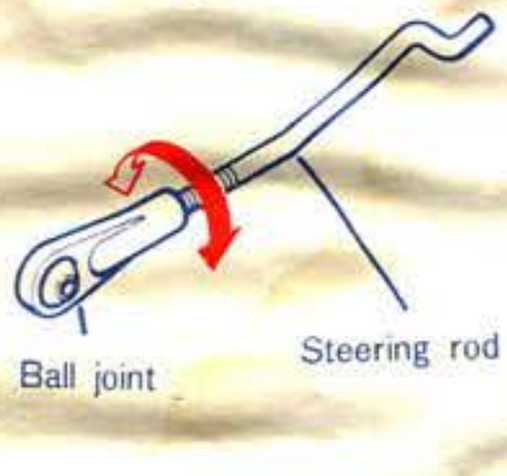
## 2 Mounting and Adjusting of Steering Servo

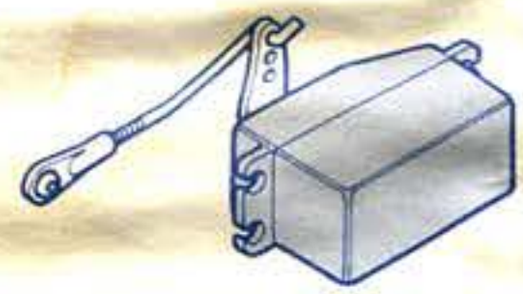



Modify servo arm as shown, removing parts covered by slash mark.



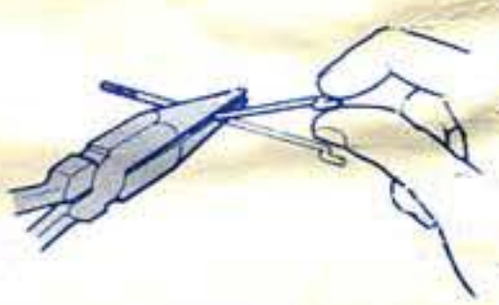

Plug the steering servo into the receiver and set the servo center at the neutral position.



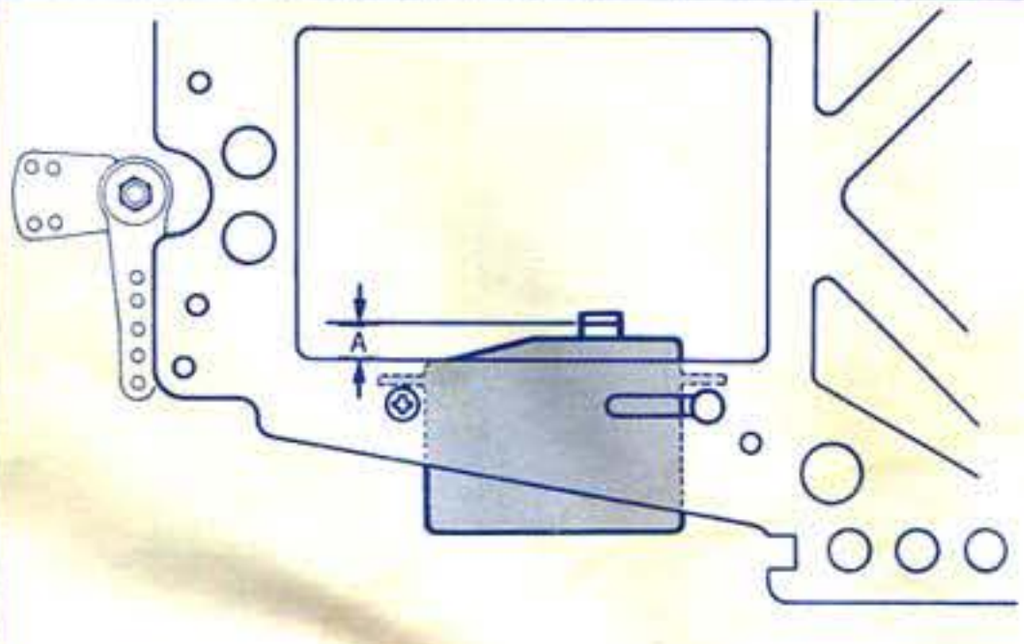



Set the steering rod in the servo horn.

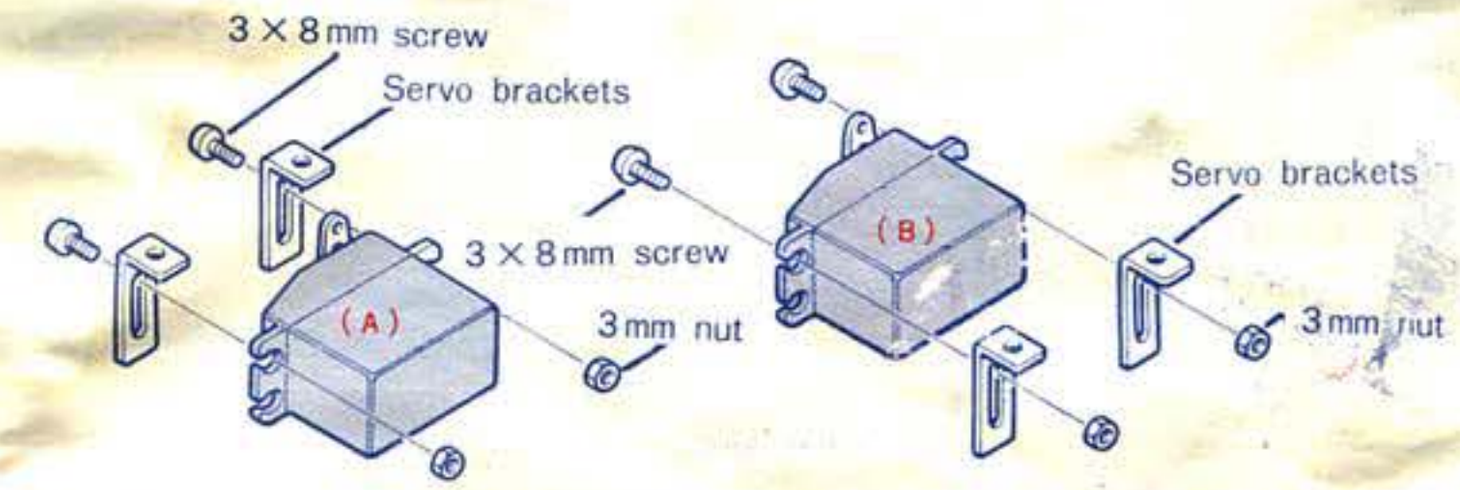
Bring the steering rod into line with the same angle as shown in the picture.



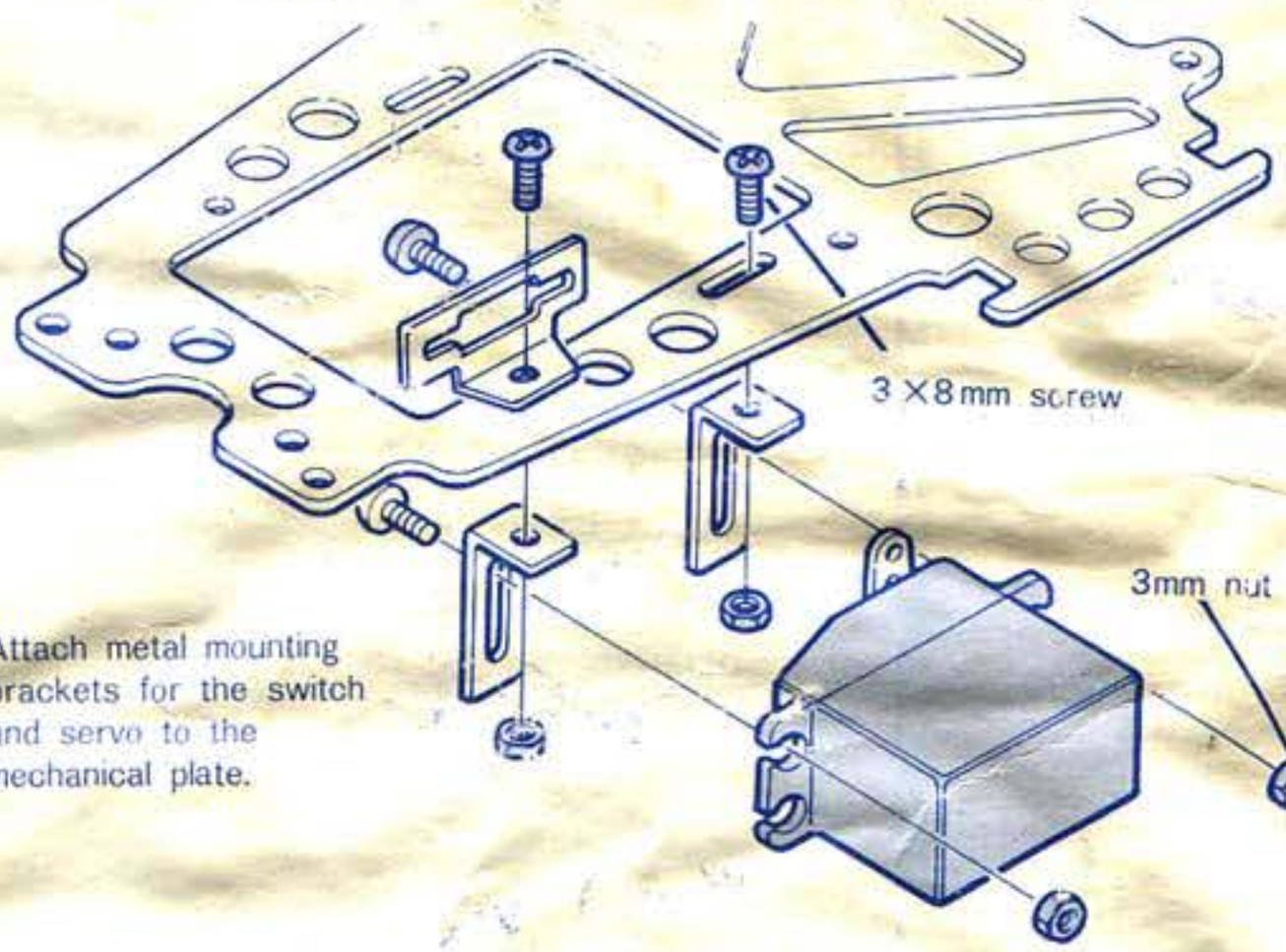
Bend it to match servo by needle nose pliers.




Adjust the width of A in order not to have servo horn contact the mechanical plate




Some servos may contact the mechanical plate (depending on the size or shape) Width "A" can be adjusted by placement of servo brackets as shown in figures A and B.



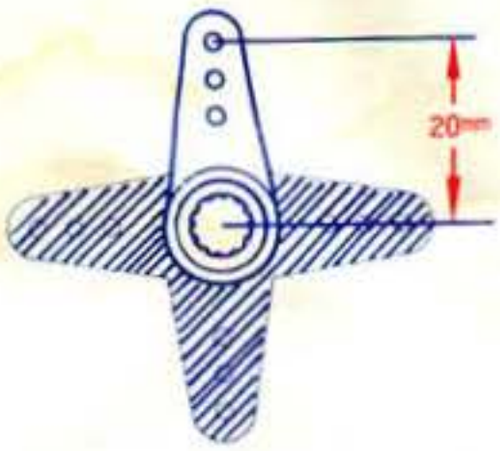

Attach metal mounting brackets for the switch and servo to the mechanical plate.


Use adjustable ball joint to place both servo horn and servo saver at the same angle of 90 degree.

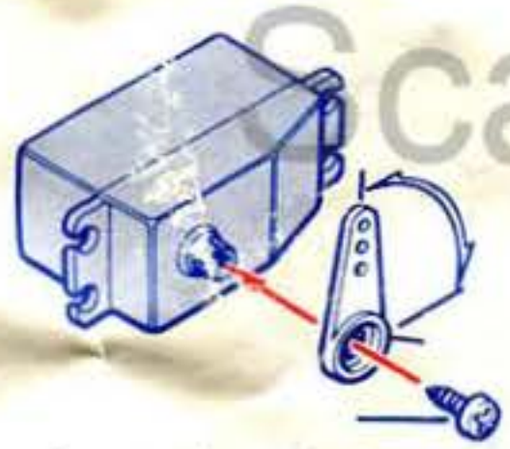
Moun
areas indica
marks.

After installing the steering servo, see if the st ctly.

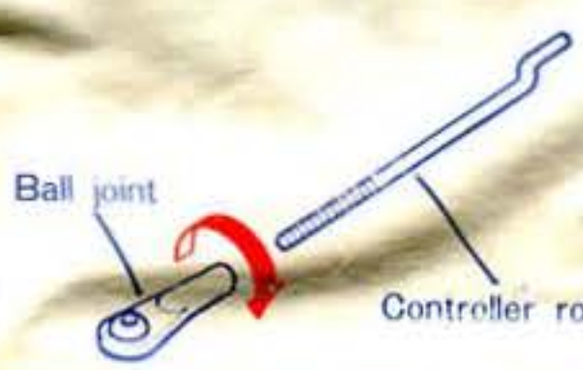
## 3 Mounting and Adjusting of Controller Servo



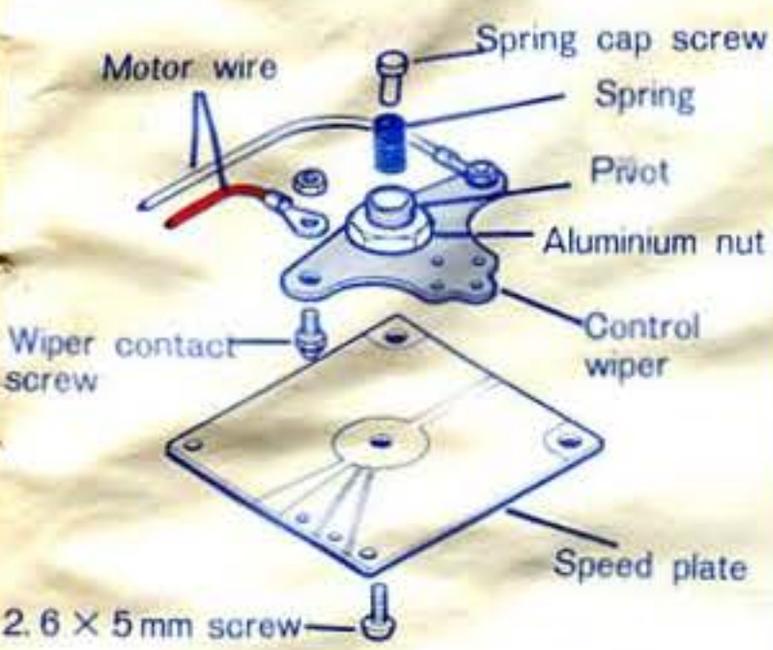

Modify servo horn by removing areas indicated by slash marks.



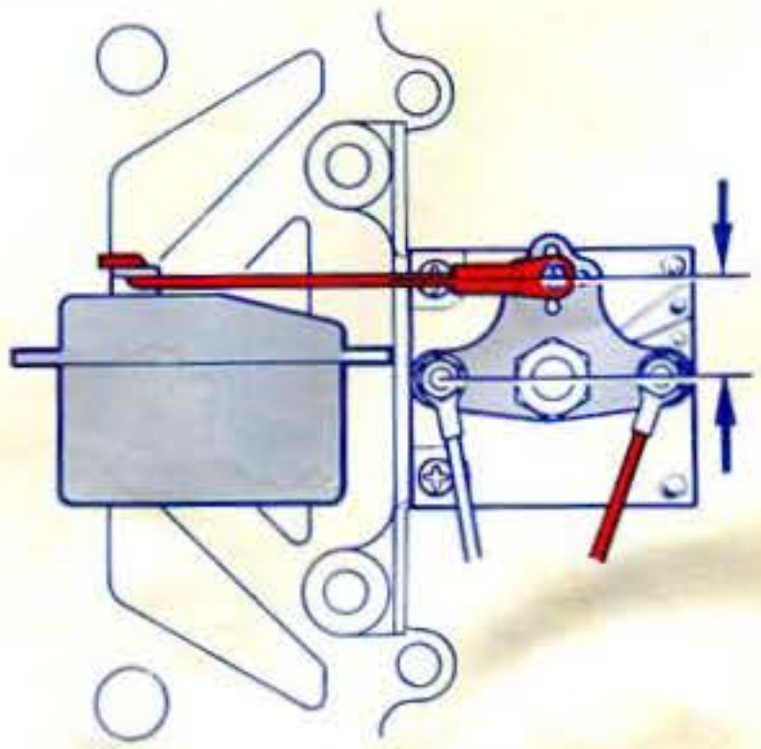
Plug the controller servo into the receiver and adjust servo's center at the neutral position.




### Controller Disassembly Drawing

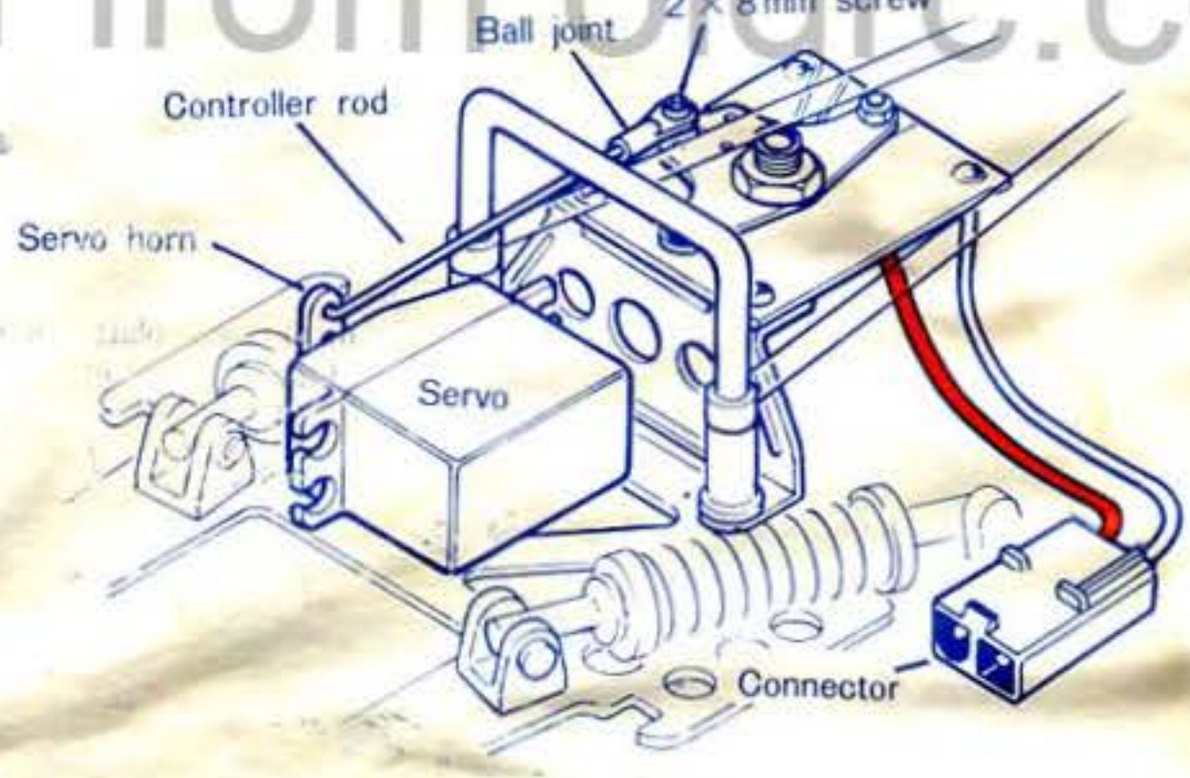


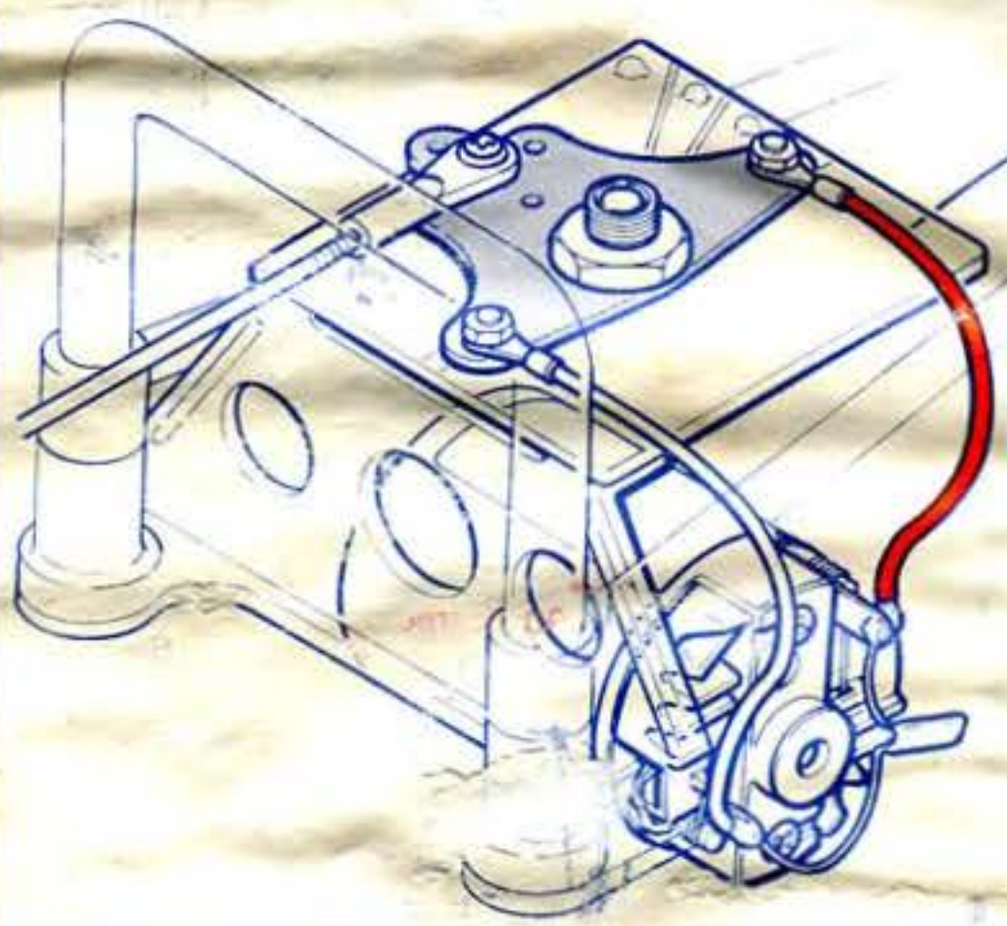

**Note:** Always keep the contacting point clean. AYK's Hi-speed 1200 cleaner is recommended to dust off the specks after each running.



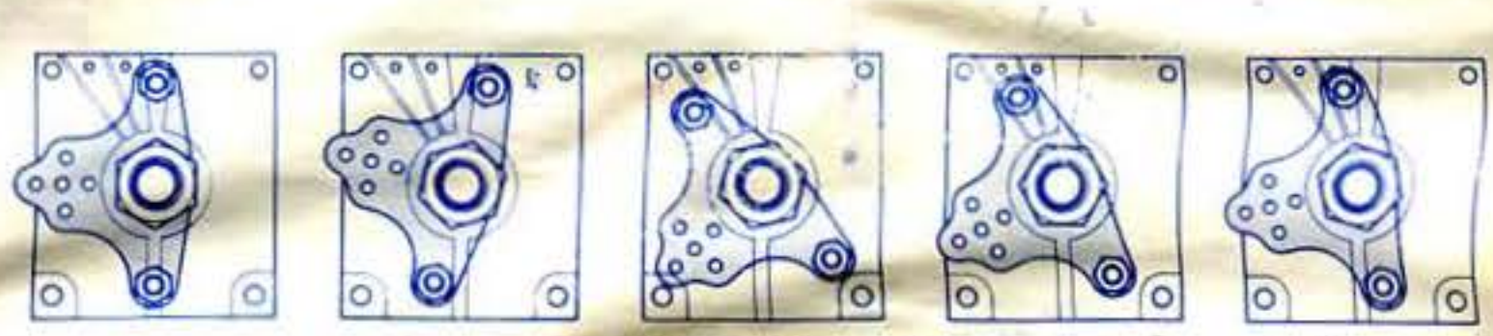
Mount the controller servo to the mechanical plate with double-sided adhesive tape. Make sure the controller rod is parallel to the control wiper.



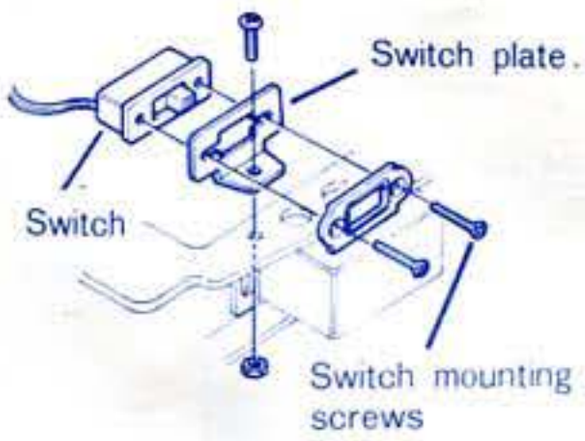


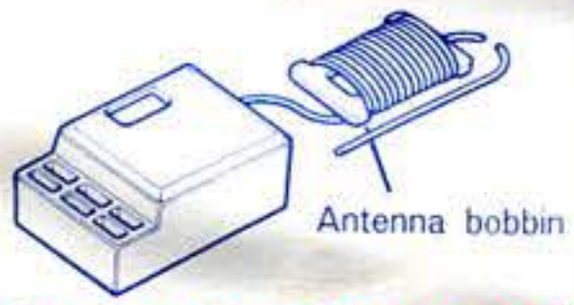

Wire the red cord to plus (+) and white to minus (−).



## 4 Installation of Receiver, Switch, Battery case, 7.2V/1200m AH Ni-cad Battery Pack

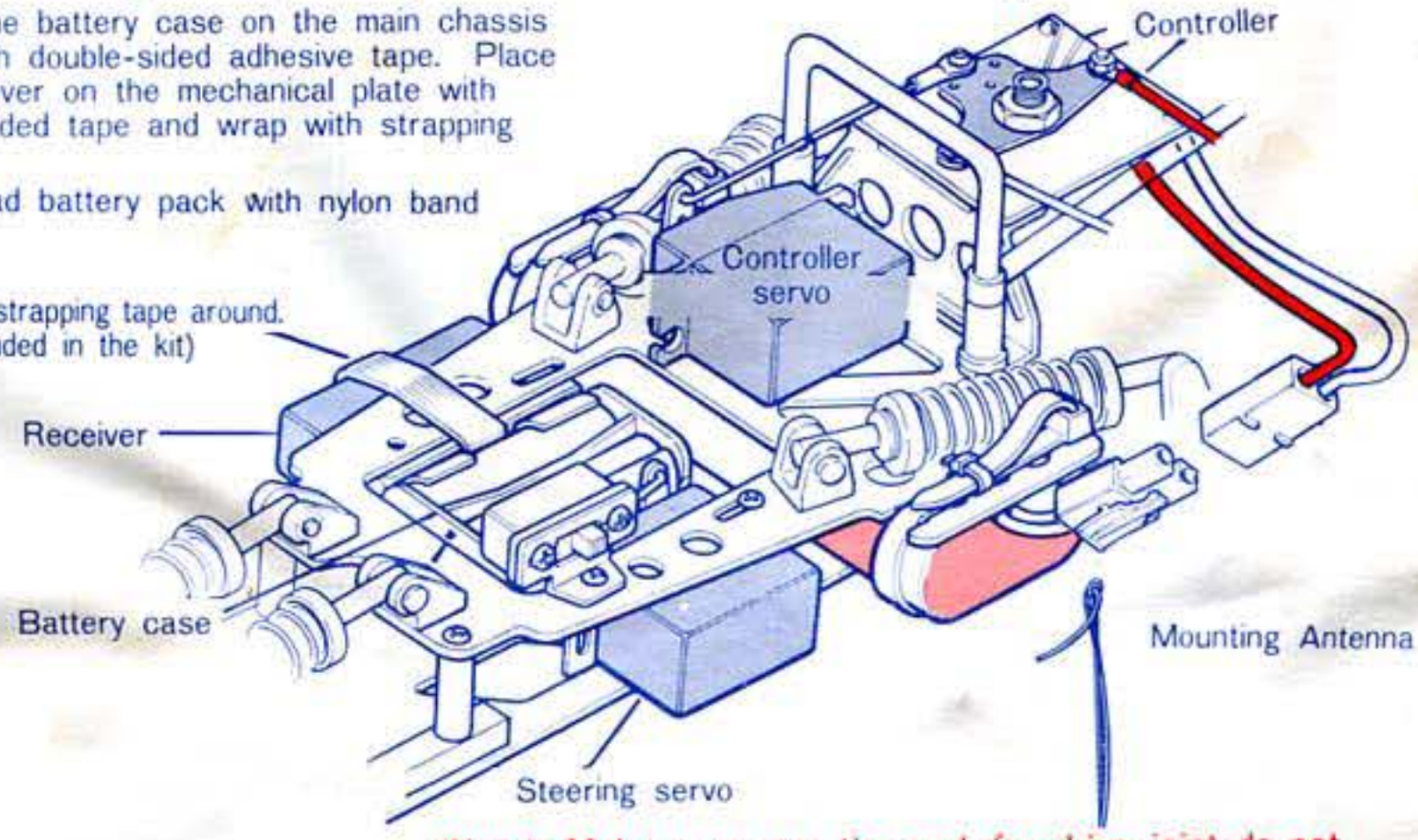



Wind up extra antenna around bobbin

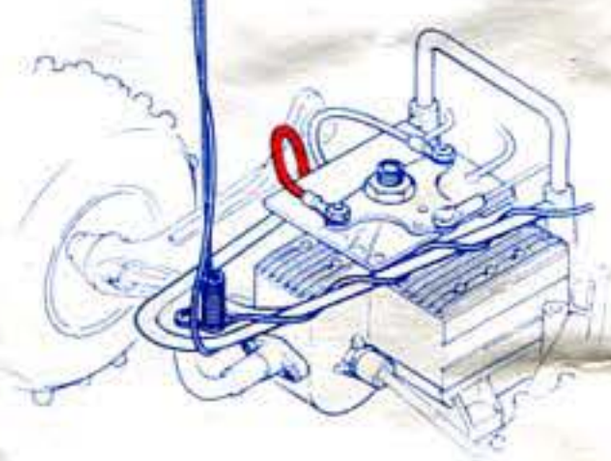



Mount the battery case on the main chassis plate with double-sided adhesive tape. Place the receiver on the mechanical plate with double-sided tape and wrap with strapping tape.

Fix ni-cad battery pack with nylon band (large).



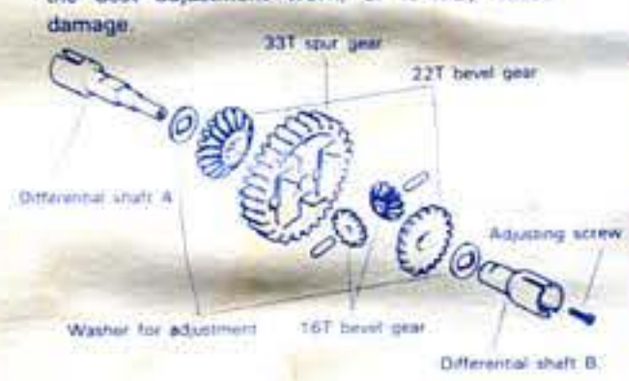

(Note): Make sure rear tire and/or drive joint do not get caught in the antenna.



## 5 Removing Motor and Adjusting Gear Case

### DIRECTIONS FOR USE OF WASHER FOR DIFFERENTIAL GEAR

16T bevel gear should engage with 22T bevel gear well to prevent damage. Insert one or two washers for adjustment on the right and left side between differential gear and 22T bevel gear. Make sure to use the right screwdriver to fit perfectly to the + part of the screw for the best adjustment work, or it may cause damage.

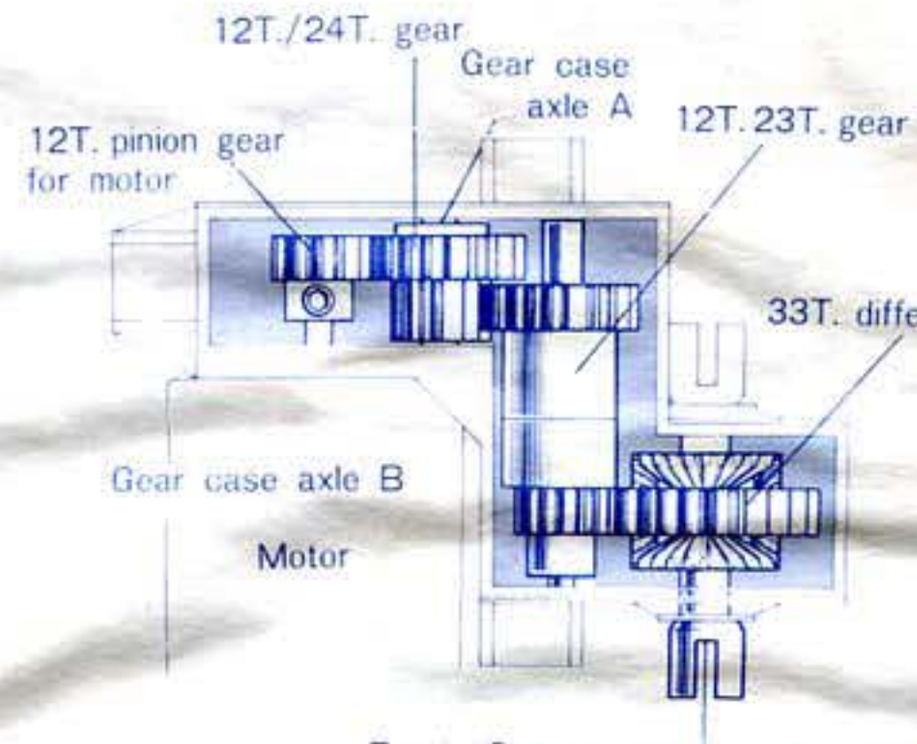



This kit includes a 12T. motor pinion gear. A 13T. and 14T. gear are also available as accessories to allow tunning for all track conditions.

| Pinion Gear | Gear Ratio |
|---|---|
| 12T. | 10 : 1 |
| 13T. | 9 : 1 |
| 14T. | 8 : 1 |

Fill oil in the gear case.

Mount oilete bearings or other optional bearings to the case with cyano-acrylate adhesive.




Improper adjustment of motor pinion gear may cause damage to the motor, controller, or gear due to possible binding. Adjust as shown below.

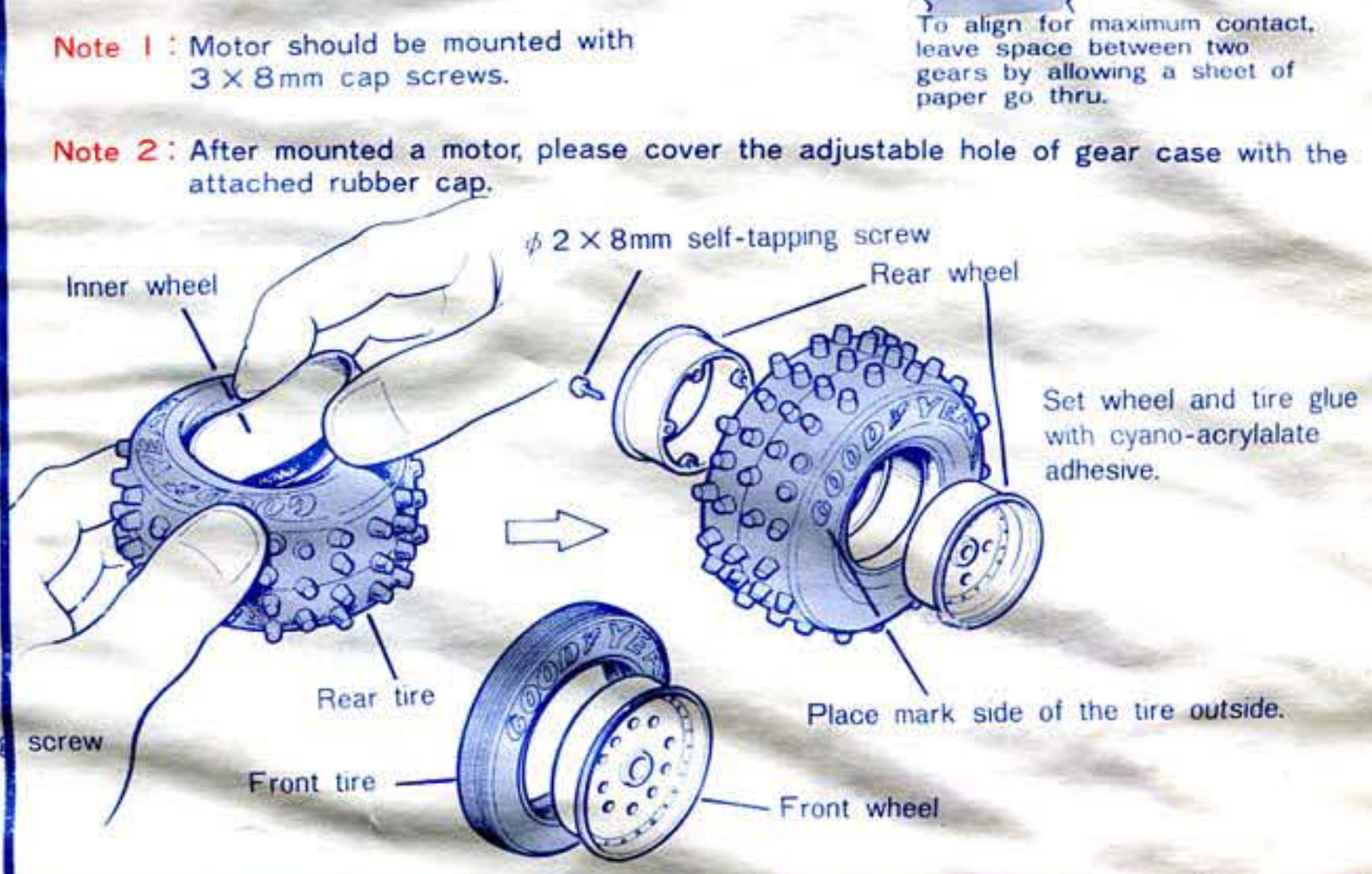

To align for maximum contact, leave space between two gears by allowing a sheet of paper go thru.

Note 1 : Motor should be mounted with 3 × 8mm cap screws.

Note 2 : After mounted a motor, please cover the adjustable hole of gear case with the attached rubber cap.

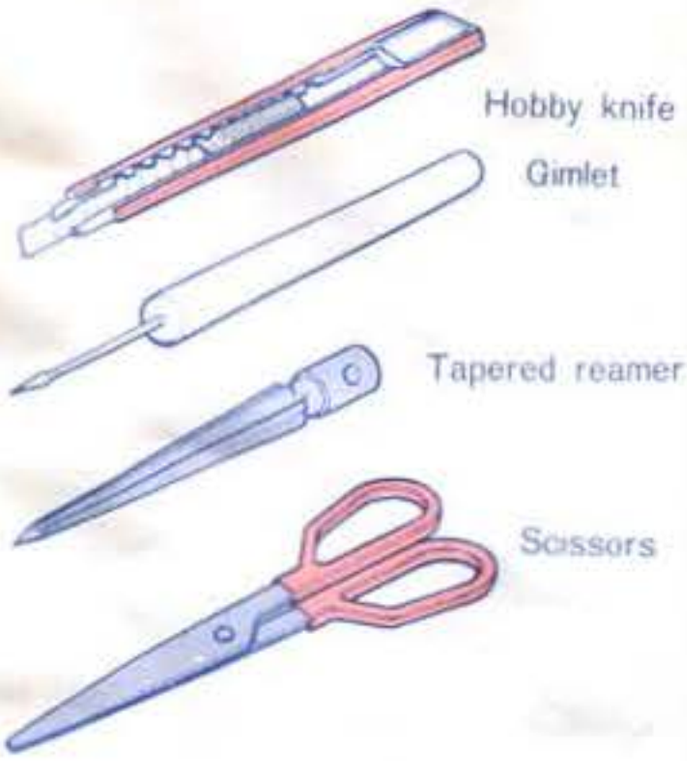
## 6 Tire Assembly

Cross-sectional view of the tire

# 7 Body Trimming and Mounting

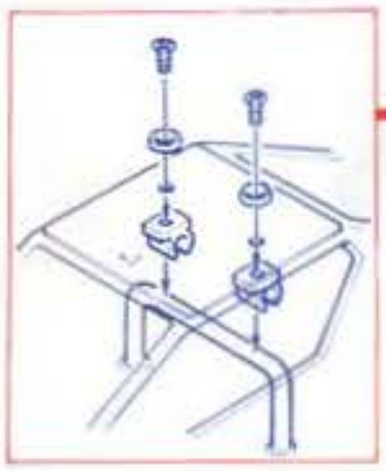
Scissors, hobby knife, gimlet and tapered reamer are required.

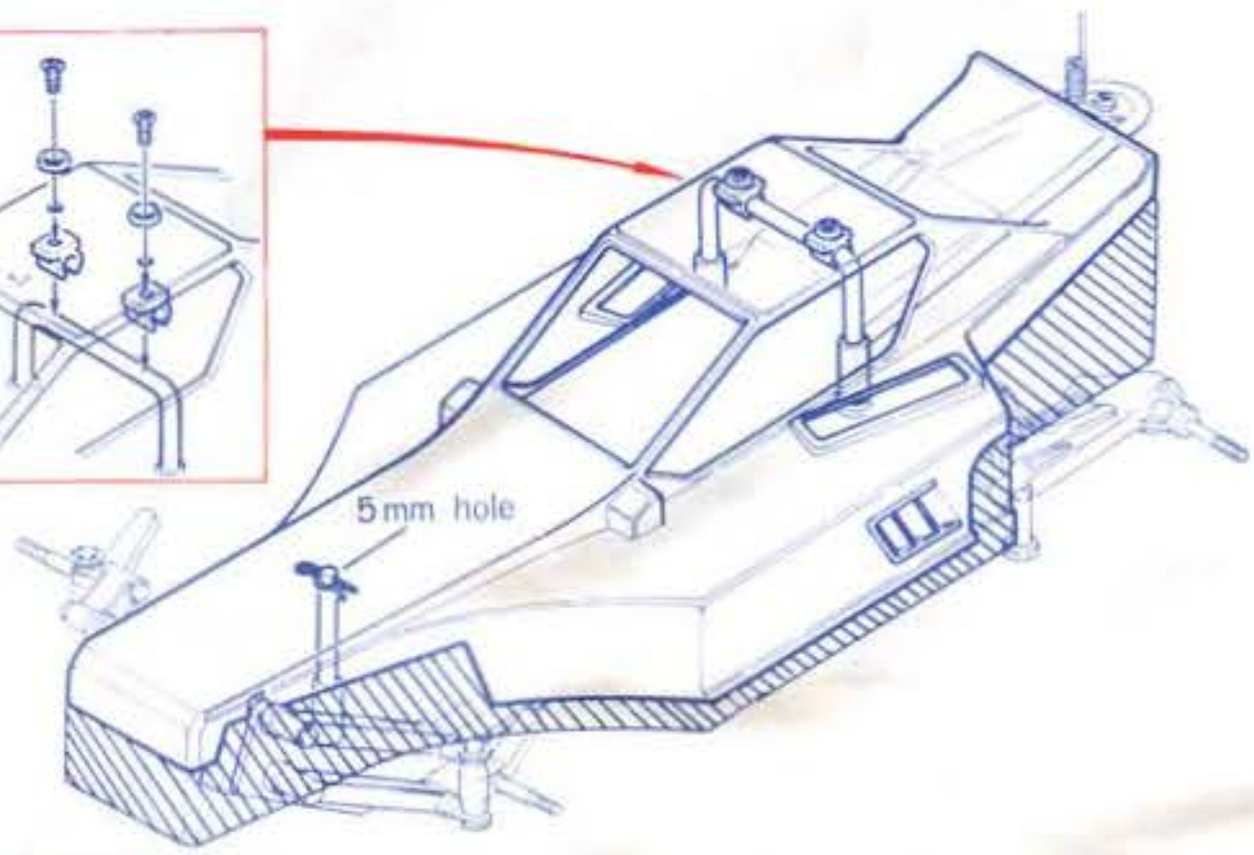



## Trimming the body and cutting out opening

〈Body-shell type〉

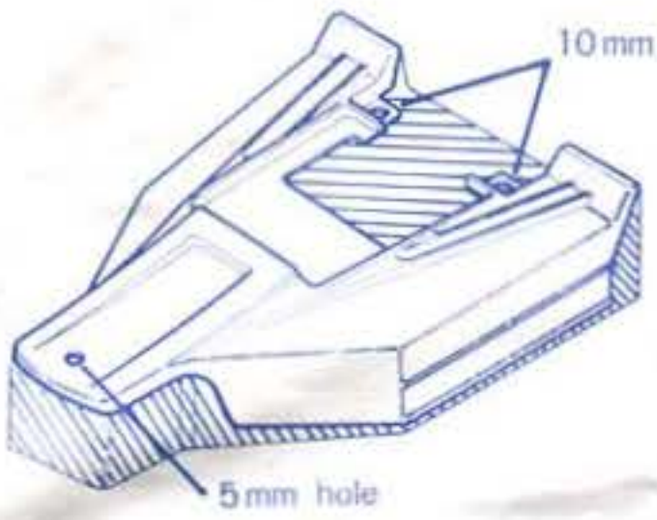
Mount rear body post on the reverse side.






〈Pipe framed type〉

Mount rear body post on the reverse side.

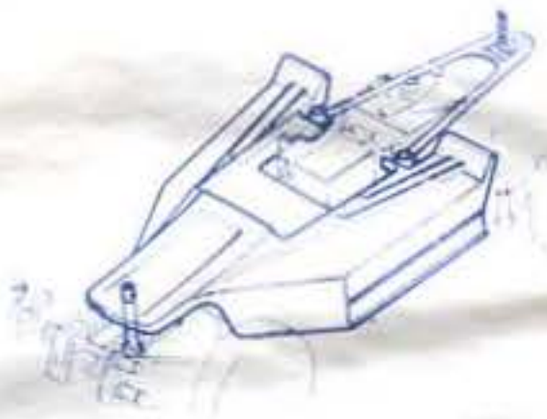




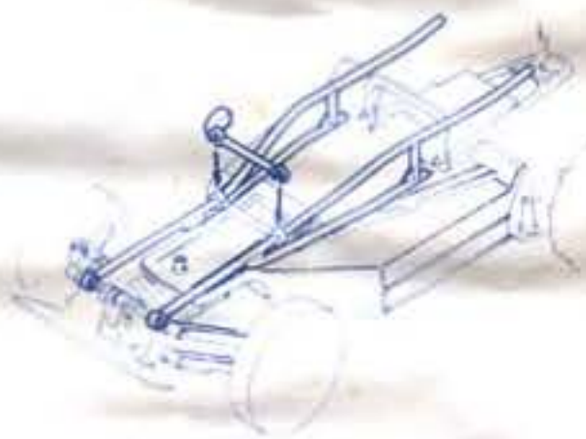
1. Bodies can be trimmed with scissors or by scoring along trim lines with a hobby knife.
2. Drill holes as marked in a body with a gimlet or rimmer.
3. Mount the rear body post on the body with 3 × 4mm tapping screws as shown in the drawing.

(Pipe framed type-Body Mounting)

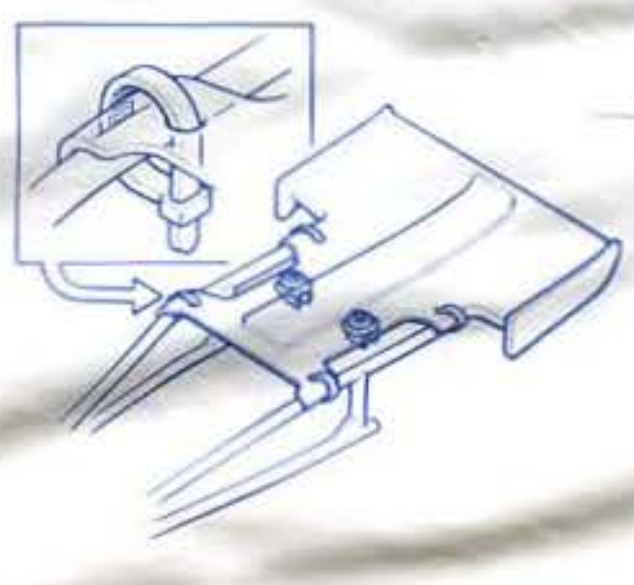
1. Attach semi cowl using roll bar holder and front body post.



2. Fix the edge on the front upper axle.

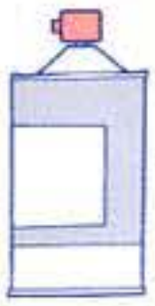


3. Fix the roof wing on the roll bar and use nylon band (small) to fix pipe frame as shown in the picture.



## 8 Painting the Body

The body is made of durable polycarbonate. Paint the inside first for the best finishing.
Brush on acrylic paint as designed. Use masking tape for stripping windows and apply spray lacquers (for polycarbonate) to entire body.



Spray lacquers

Acrylic paint

Masking tape

Brush

## 9 Adjustment Body Heights and Steering

〈Adjusting front body height〉

Unfasten the set screw of shock mount to adjust the body height. In principle, set the chassis parallel to road surface.

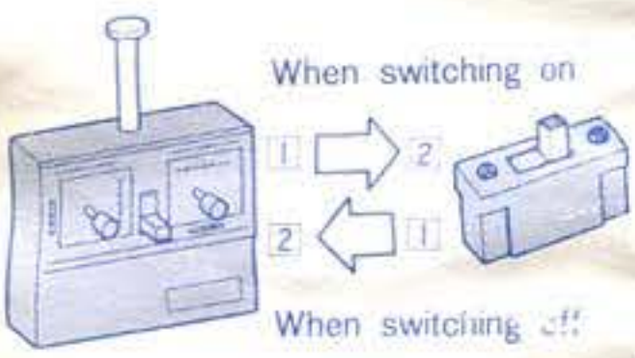
under-steering

over-steering

Neutral

## 10 Checking Points before Running a Trial

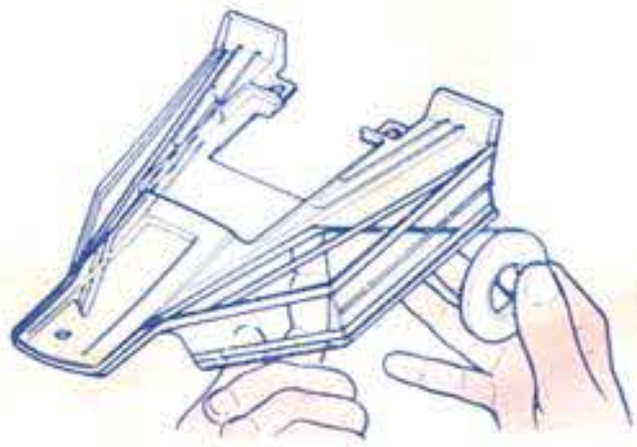
Make sure to switch on both transmitter and receiver in order.




Be sure to follow the right order. In case receiver is turned on prior to the transmitter, mixing up with other radio wave may occur and cause reckless running of the car.

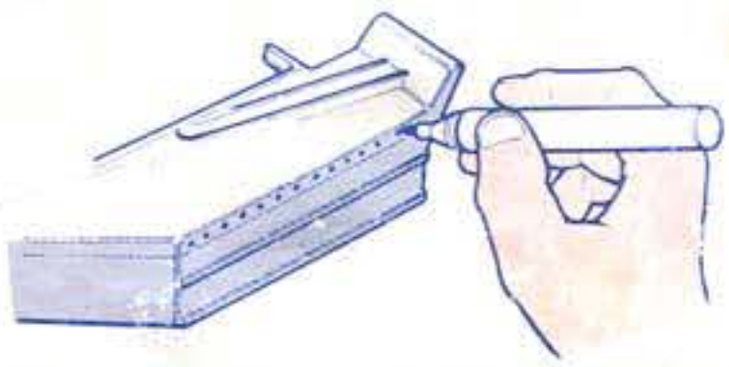
① Wash the inside of the body thoroughly in a neutral detergent water.

② Design your coloring pattern.



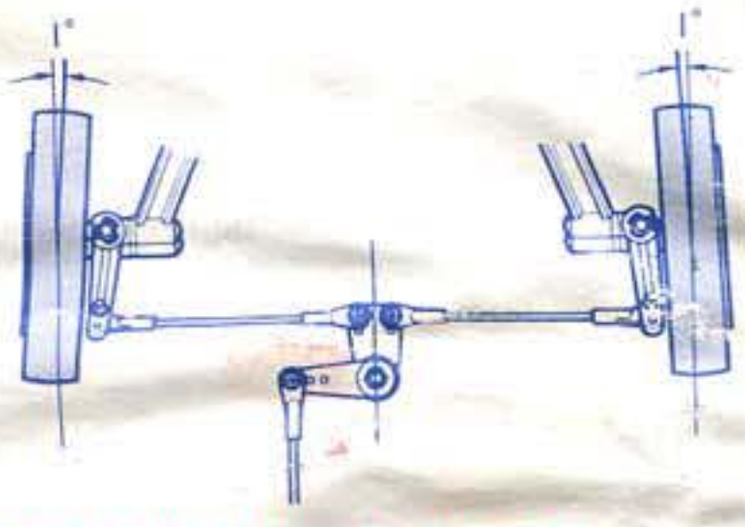
③ Coat the reverse side first. Use masking tape to prevent overflowing of the paint.

④ After coating gets dry, you may use an oil marker pen to draw design for the sake of accentuation.



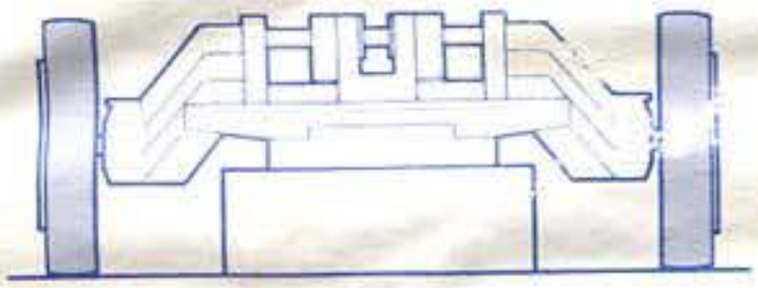
### Steering Adjustment

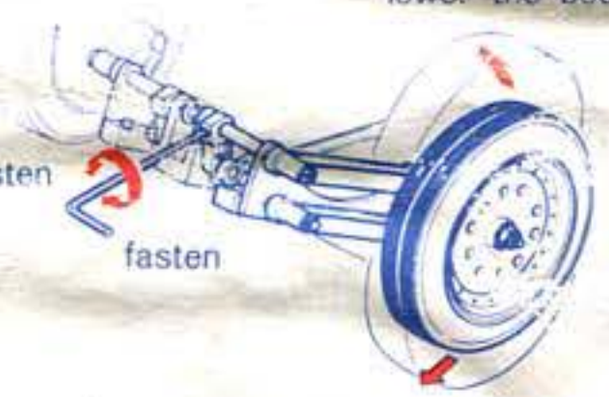
This is an important point to improve straight-driven efficiency and steering quality in cornering.




As shown in left, set 1 degree to 2 degree toe-in for both sides. Adjustable ball joint must be used while holding the servo saver at neutral position.

Body height adjustment in front end






Check following points before racing:

1. Check all screws and nuts to be secure.
2. See if battery capacity for transmitter and receiver is enough.
3. Make sure ni-cad battery has been charged sufficiently.
4. Check steering servo and controller servo for correct response.

# RO SIDEWINDER TUNING

## 1 Motor

AYK presents following motors and parts from which you can choose right ones according to the road surface and type of race.

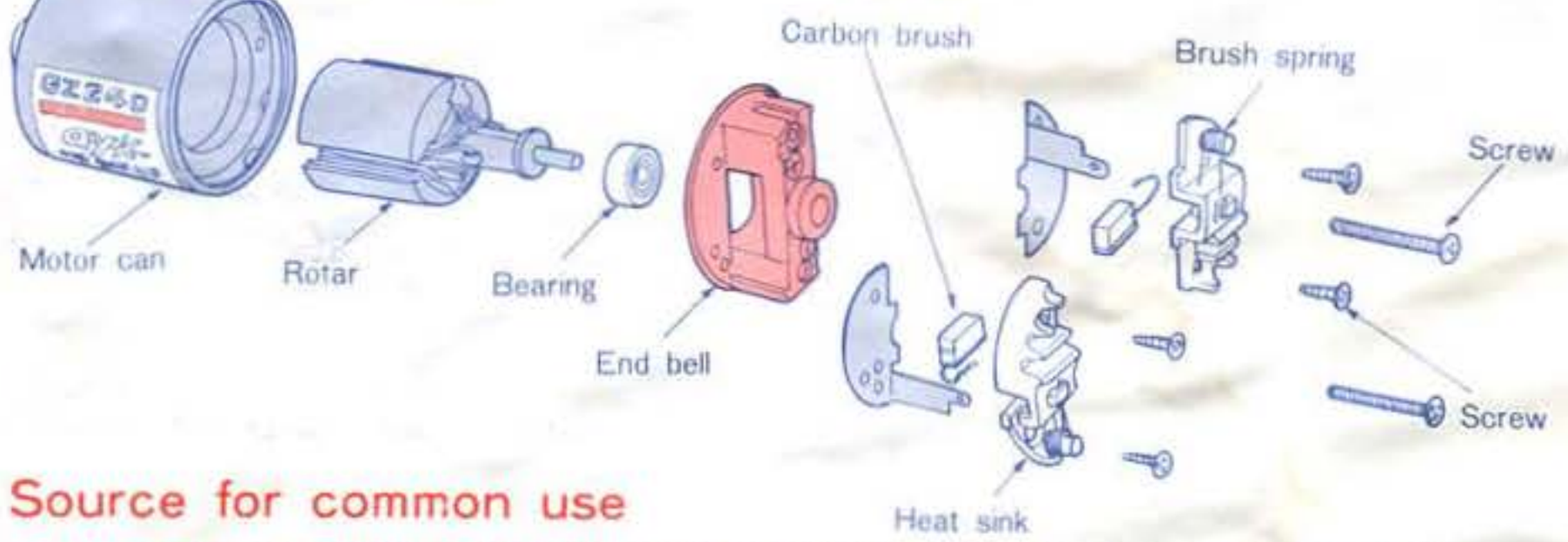
**GZ-480 Motor:**
It features economic consumption of current, so that it is most appropriate for many hours run and long race.

**GZ-480 Magnum Rotar:**
It is especially made for racing with highly efficient performance on the small current consumption.

**GZ-240 Motor:**
This high-powered motor promises you dynamic performance. Most appropriate for sprint race for short distance.

**GZ-240 Magnum Rotor:**
Developed for sprint race use with the best torque and rotational frequency.

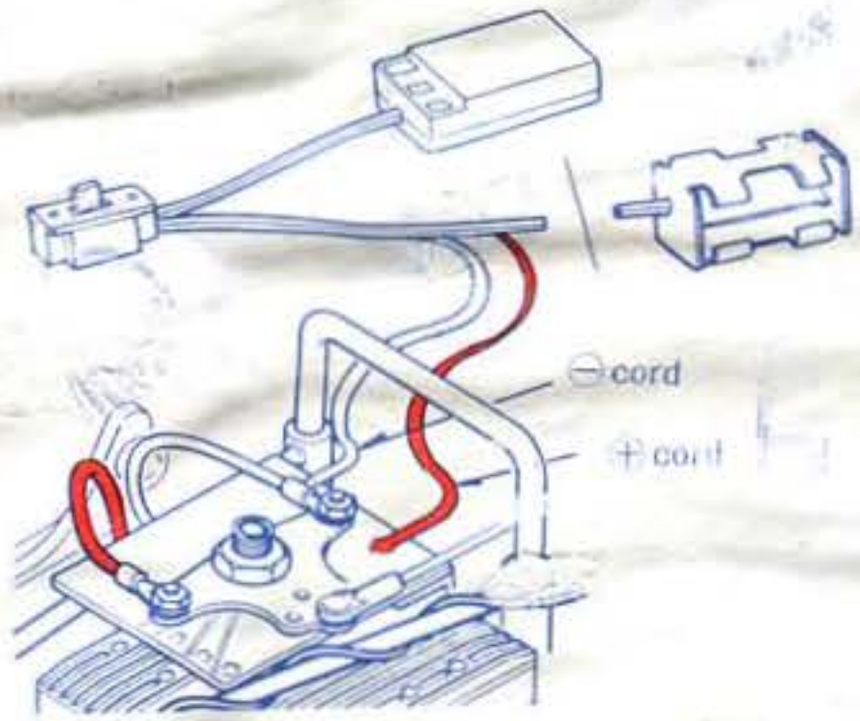
Disassembly Drawing of Motor




## 2 Power Source for common use

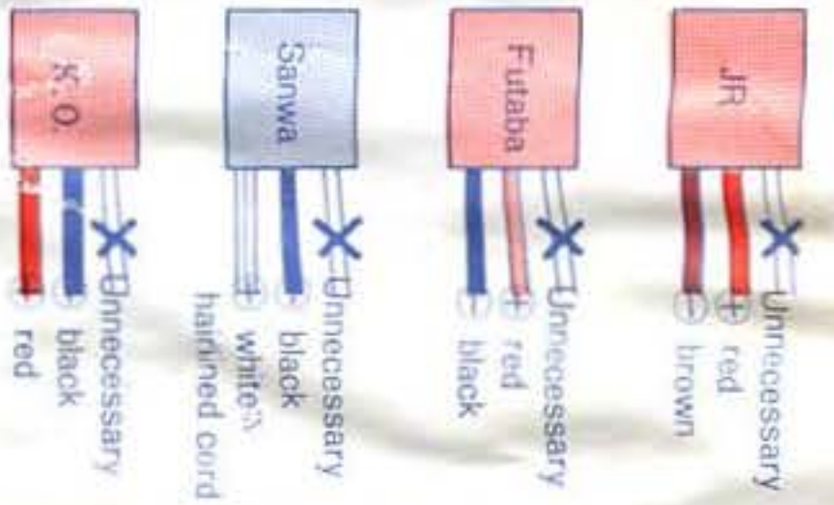
Using one power source for both receiver and battery serves the purpose of lightening a car weight since battery case is not required.

(1) Cut off battery case as shown.




Wire the connector cords and solder them according to the wiring diagram above:
Note: Be sure put ⊕ code thru diode

(2) Confirm plus and minus cord of each maker:




Note 1: Direct wiring of ⊕ cord without diode would damage servo and receiver. Also confirm the direction of current as diode lets current flow only in one direction.


While sharing power source, voltage drop of battery may lead out of control state. Stop the car immediately when it starts slowing down.

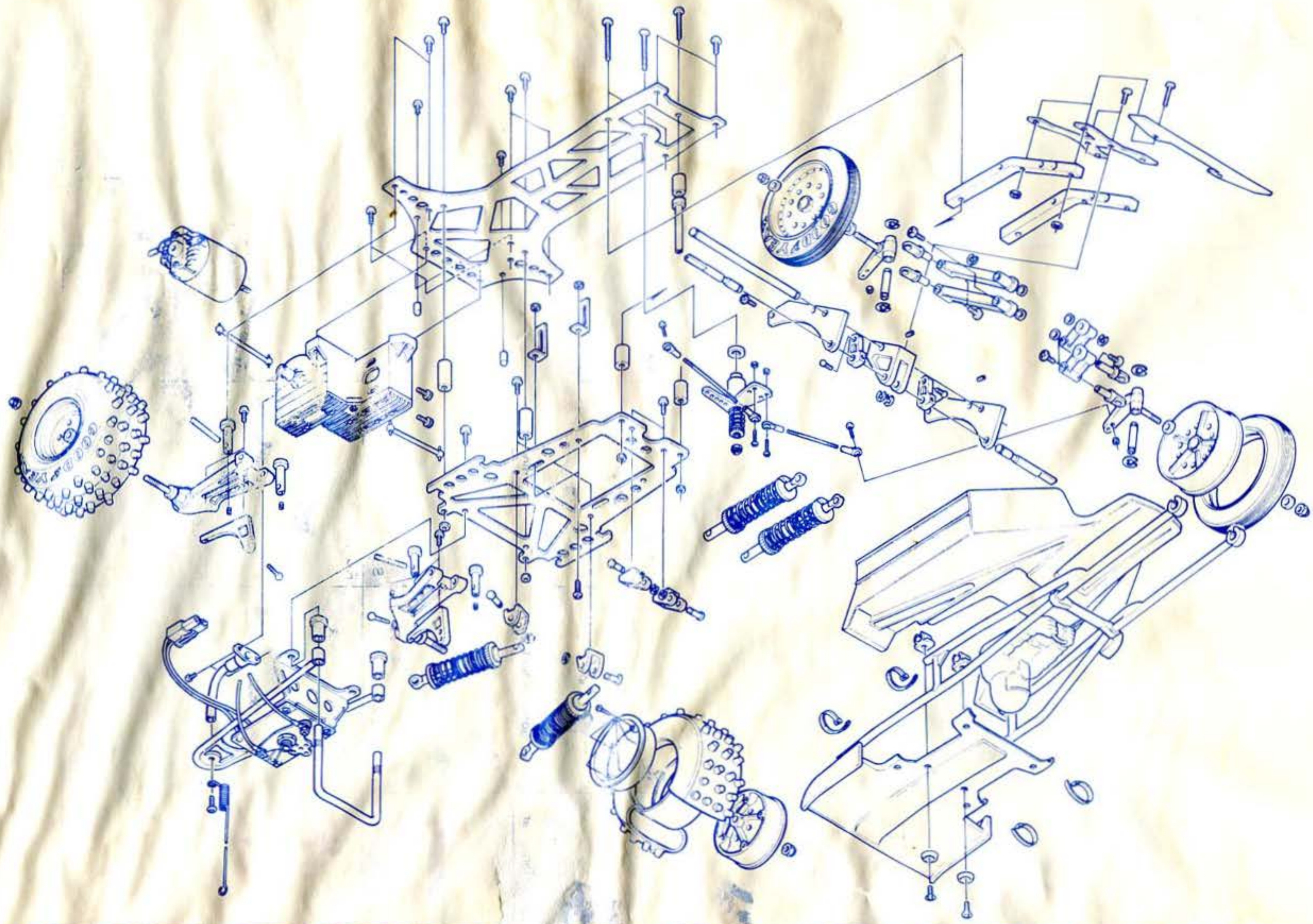
## 3 Light weight Advantage

Light weight is an important element for improving the speed, traveling time and performance. Described below are three ways of lightening weight:

① **Aluminium screw**
Using aluminium screws has decreased the total weight which would gain y[illegible]ry over a race.

② **Electric amplifier**
Many of highly efficient electric amplifiers are available on sale. Use of electric amplifier eliminates troublesome linkage work. When an amplifier is applied, battery case for the receiver, controller and controller servo are not required.

③ **Mini servo**
Any mini servo on the market can be used. Since mini servo weighs only half of general servo, that it enables to decrease car weight further.



RO-1 Check eBay

Main chassis

RO-1A Check eBay

Front guard and frame rails

RO-2 Check eBay

Mechanical plate

RO-3 Check eBay

Gear case

RO-4 Check eBay

Front bumper

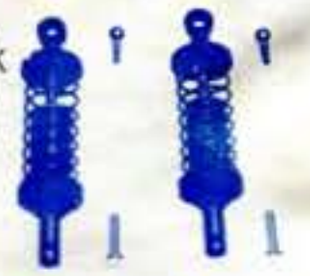
RO-5 Check eBay

Axle for front suspension arms

RO-6 Check eBay

Plastic parts set

RO-7 Check eBay



Front shock set

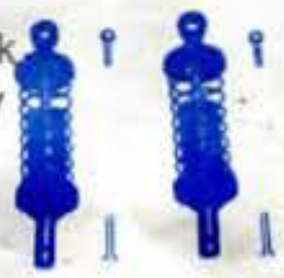
RO-8 Check eBay

Front tire

RO-8A Check eBay

Front wheel

RO-9 Check eBay



Rear shock set

RO-10 Check eBay

Rear tire

RO-10A Check eBay

Rear wheel

RO-11 Check eBay

5mm ball bearings

RO-12 Check eBay

6mm ball bearings

RO-13 Check eBay

Front block and shock mount set

RO-14 Check eBay

Front suspension arms

RO-15 Check eBay

Front side plate

RO-16 Check eBay

Supporter for steering arm

RO-17 Check eBay

Steering arm set

RO-18 Check eBay

n gea

RO-19 Check eBay

13T. motor pinion gear

RO-20 Check eBay

14T. motor pinion gear

RO-21 Check eBay

12T.X24T. gear

RO-22A Check eBay

12T.X23T. gear and axle

RO-4A Check eBay

Front bumper (large type)

RO-24 Check eBay

Differential gear set

RO-25 Check eBay

peed controller set

RO-26 Check eBay

Speed plate and wiper

RO-26A Check eBay

Resistor

RO-27 Check eBay

Rear wheel axle

RO-27A Check eBay

Half shaft

RO-28 Check eBay

Rear trailing arm set

RO-29 Check eBay

Rear arm mount and link axle

RO-30 Check eBay

Roll bar, bumper and guards

RO-31 Check eBay

Threaded rods and ball joints

RO-32 Check eBay

Shock end set

RO-33 Check eBay

Driver

RO-34 Check eBay

King-pin

RO-35 Check eBay

Antenna

RO-36 Check eBay


Decals

RO-37 Check eBay

GATOR body shell

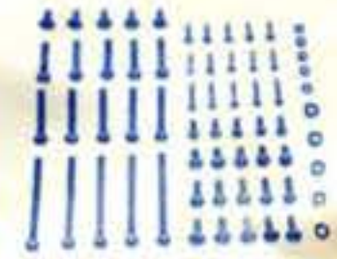
RO-38 Check eBay

Pipe framed body

RO-39 Check eBay

E-clip set

RO-40 Check eBay

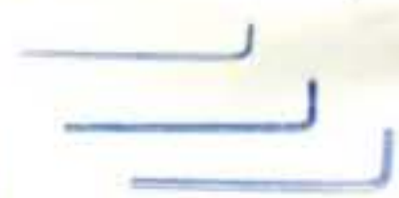


Screw set

RX-18EX Check eBay

Servo saver

RX-28 Check eBay



Hexagon wrench set

RX-36 Check eBay

2mm lock nut and
2×8mm cap screw

RX-38 Check eBay

4×4mm set screw

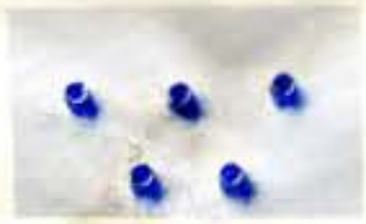
61AL Check eBay

Servo holder

RB-26 Check eBay

Double-sided
adhesive tape

RB-44 Check eBay



3mm lock nuts

RB-46 Check eBay

4mm lock nuts

RS-39 Check eBay

Set screw 3×3mm
3×5mm

RS-73 Check eBay

Shock oil

GZ-240 Check eBay

Motor for short race

GZ-480 Check eBay

Motor for long race

GZ-240E Check eBay

Economical motor

GZ-480B Check eBay

Basic motor

Check eBay

Magnum rotar GZ-240

Check eBay

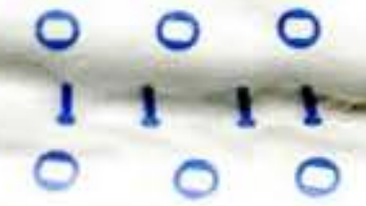
Magnum rotar GZ-480

GS-1200

7.2V/1200mAh NiCad
pack

TX-200

Quick charger



Washers for adjusting of
differential gear and screws

RO-5A

Check
eBay

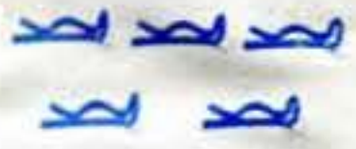
Speciall axle for front
suspension arms

Slim cowling body

Inequal space spring set

Rear tire spikes
(40pcs)

RX-44



Body catch pins

CIRCUS HOBBIES

AYK RACING