

**RADIO CONTROLLED ELECTRIC POWERED RACING BUGGY**

**OFF-ROAD RACER**

# OPTIMA PRO 4WD

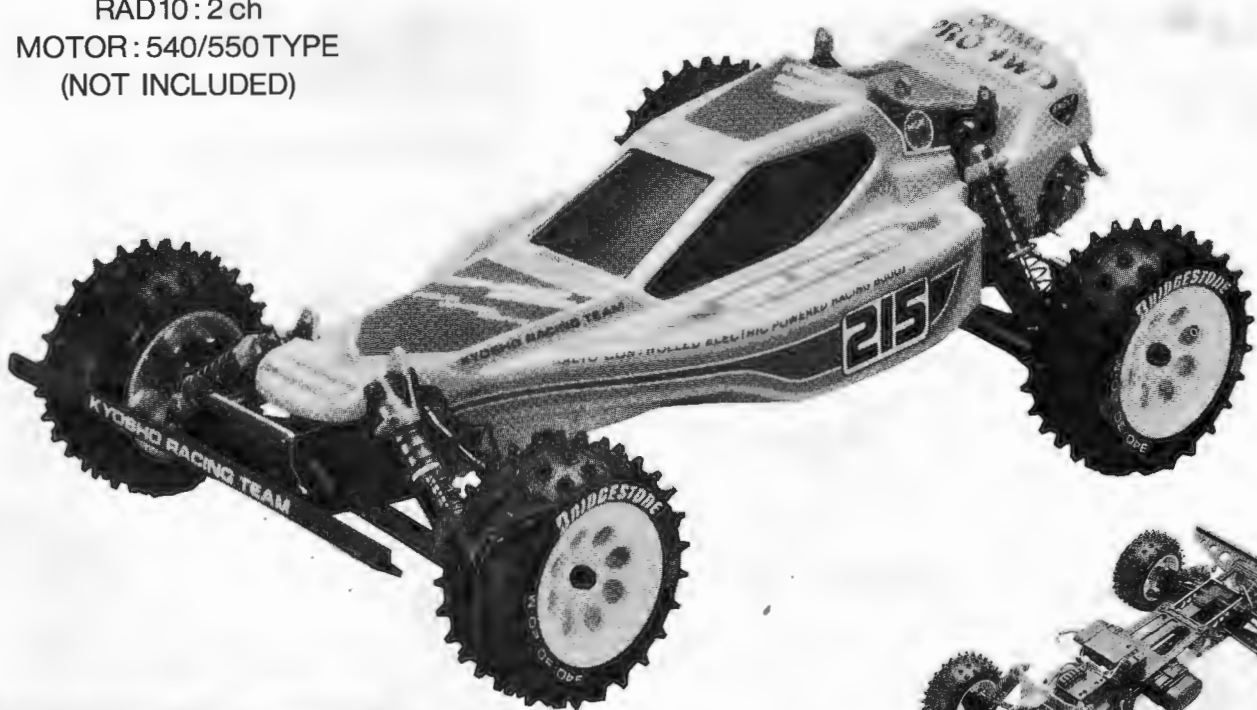
- EXTRA-LENGTH FRONT/REAR WISHBONE/PARALLEL-ARM SUSPENSION FOR LONG WHEEL TRAVEL AND MAXIMUM STABILITY.
- SUPER-EFFECTIVE OVERSIZE OIL-FILLED SHOCK ABSORBERS FOR BEST SUSPENSION ACTION.
- SUPERB HANDLING, EVEN AT THE HIGH SPEED POSSIBLE WITH A 7.2V BATTERY.
- FOUR WHEEL DRIVE FOR GETTING MAXIMUM POWER TO THE WHEELS. LIGHT, STRONG CHAIN DRIVE SYSTEM. SHIELED FROM DUST.
- TOP QUALITY MATERIALS, SELECTED FOR STRENGTH AND LIGHTNESS. ALLOY ALUMINUM CHASSIS.
- EASY ASSEMBLY AND ADJUSTMENT. SIMPLE MAINTENANCE.

## 1:10 SCALE

BATTERY : 7.2V-1200mAh

RAD10 : 2 ch

MOTOR : 540/550 TYPE  
(NOT INCLUDED)

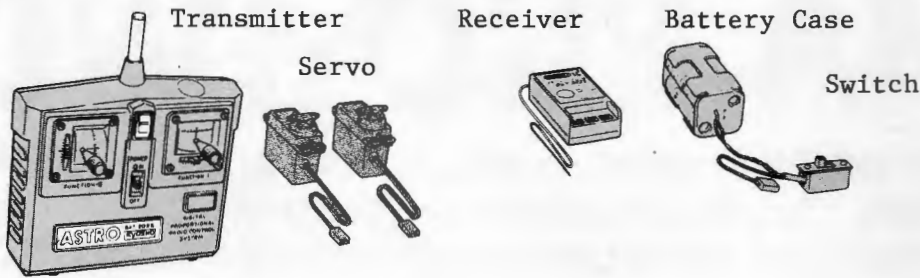


**KYOSHO**  
THE FINEST RADIO CONTROL MODELS

◀ KIT NO. 3029 ▶

## RADIO CONTROL SET

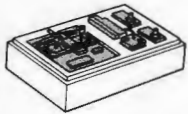
A 2 channel, 2 servo digital proportional radio control unit is required for driving this model car. A unit of such a radio can be used for any models with 2 channel control system.



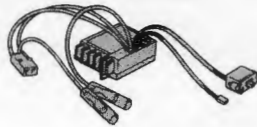
## THINGS TO BE PROCURED BESIDES THE KIT

(2 ch. Radio Control System)

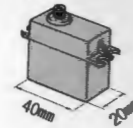
It is so designed that an electric speed controller amplifier is the only device to regulate its velocity. It is recommended to use the amplifier sold by your radio maker. Also a small receiver and servos are preferable to mount on the model.



2 ch. Radio Control System



Electric Speed Controller Amplifier



The Maximum Dimension to Mount

(Ni-Cad Battery)

The "Ni-Cad Battery 7.2V Racing Battery and Power Battery" are ideal for the purpose.



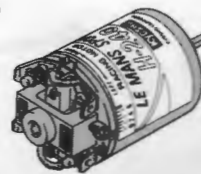
7.2V Power Battery



7.2V Racing Battery

(Motor)

The suitable motors are SPA 240WS, Le Mans Sport H-240S & Le Mans 240SB.

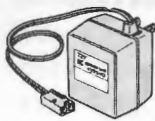


Cords, Condensers and installing bolts are included in the motor.

(Charger for Ni-Cad Battery)

There are two ways of charging the battery; one is to charge it with a 15 hour charger powered from a household 100V outlet, the other is through a quick charger powered by a car cigarette lighter or a 12V car battery. Use one of the chargers listed below which suits your need.

Model	Name	Charging Time	Charging Rate	Features
No. 2221	Super Ni-Cad Charger (AC100V)	14 to 16hrs.	100%	For beginners
No. 2326	7.2V Power Charger (DC12V)	15 minutes	about 70%	For beginners; Timer built in
No. 1846	Multi Charger (DC12V)	20 minutes	100%	Timer, Ammeter built in
No. 1845	Lambda Quick Charger (DC12V)	about 20 minutes	100%	Trickle charging Automatic cut-off at peak of charge.
No. 2232	Super Ni-Cad AC Rapid Charger (AC100V)	about 40 minutes	about 80%	Chargable from Household Outlet, Electronic Timer built in.



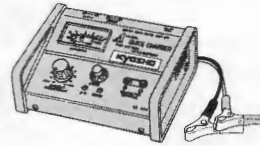
No. 2221



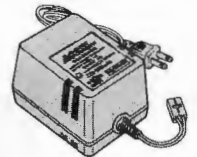
No. 2326



No. 1846



No. 1845



No. 2232

TOOLS REQUIRED

(The following tools are included in kit)

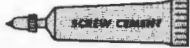


1.5mm Allen Wrench

2mm Allen Wrench



Silicon Grease



Screw locking Compound

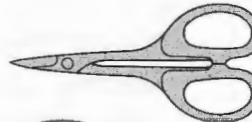
(The Following Tools are Required for Assembly)



Philips Screw Driver (L & S)



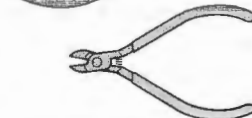
Box Driver (5.5mm & 7mm)



Round Cutters



Needle Nose Pliers



Wire Cutters



Awl



Sharp Hobby knife



Polyca Paint



Micron Line Tape

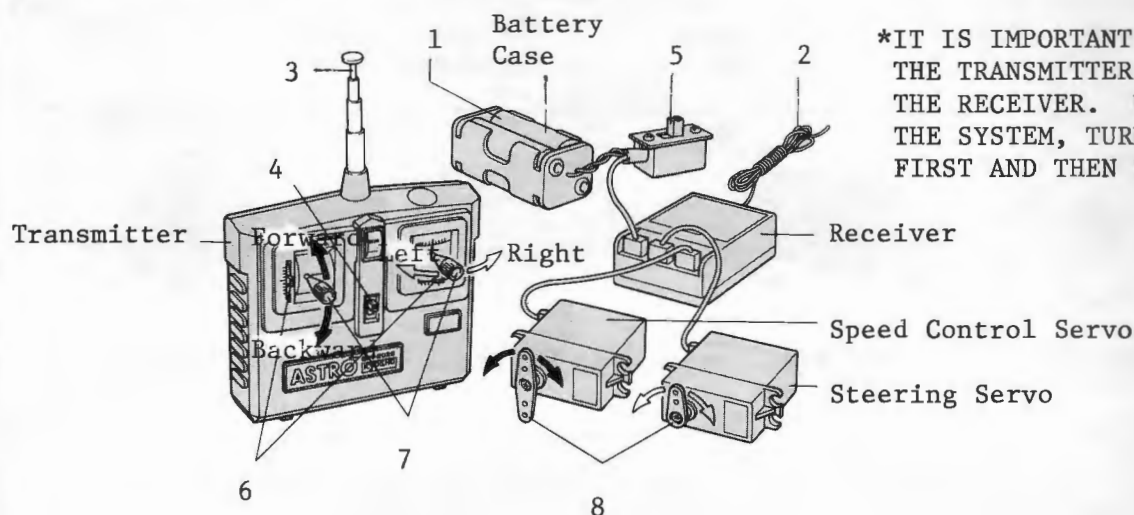
Brush



## HOW TO CHECK YOUR RADIO SYSTEM

Follow steps 1-8.

1. Install the batteries into both the transmitter and receiver. If your radio is a rechargeable system, charge it as outlined in the manual that came with your set.
2. Unravel the receiver antenna and plug the servo and battery connectors into the receiver.
3. Extend the transmitter antenna.
4. Turn On the power switch of the Transmitter.
5. Turn On the power switch of the receiver.
6. Set the small trim levers to the center position and make sure that both main control sticks are also centered.
7. Move both main control sticks slowly through their full travel. The servo horns should move in proportion to the movement of your sticks.
8. When trim levers and sticks are at their neutral positions, the servo horns should be centered. You may now turn off the transmitter, then the receiver and unplug the servos and battery from the receiver.



**\*IT IS IMPORTANT TO ALWAYS SWITCH THE TRANSMITTER ON FIRST... THEN THE RECEIVER. WHEN TURNING OFF THE SYSTEM, TURN OFF THE RECEIVER FIRST AND THEN THE TRANSMITTER.**

A 2-channel radio control system is composed of a transmitter, receiver, two servos and a battery holder (for the receiver).




- \*Transmitter ..... This is the part of the system that you hold in your hands to control the model. Information is sent to the receiver and servos via radio waves.
- \*Receiver ..... Receives the radio signals from the transmitter and sends them to the appropriate servo.
- \*Servos ..... It can be thought of as the "muscle" of the system. They actually move the controls of the model. The receiver tells them which direction to move and how much.
- \*Antenna ..... The transmitter antenna broadcasts the radio signal. The receiver antenna (which is no more than a small wire tuned to a precise length) picks up the signals so that the receiver can decode them.
- \*Trim Levers ..... Adjust the neutral position of the servos from the transmitter. Trim levers provide fine tuning of the steering and speed control.
- \*Battery Meter ... Allows you to see the condition of your transmitter batteries.
- \*Servo Horn ..... A small arm or wheel on a servo that transfers the movement of the servo.

## BEFORE ASEMBLY

Please read through these instructions before assembly. Your thorough understanding of the assembly will enable you to build the kit without difficulty. Check the components in the kit prior to your starting the assembly. Any claims for replacements or refunds for the model in the process of assembly will not be accepted.

(Please understand the following points before assembly)

### 1. Learn the Marks described in the Instruction

-  ..... Points where grease should be applied.  
(It will reduce friction and assure smooth movement.)
-  ..... Places to put some locktite.  
(It will prevent the screws and nuts get loosen by vibration while running.)
-  .. Steps where your particular attention is required.

### 2. Small Parts

The small parts to be used such as screws, nuts, washers are illustrated in the actual size on the attached sheet "The List of Small Parts". Pick up the correct ones referring the size, shape, and the assembly number.

3. Some Hints when screwing in a self-tapping-screw, (hereinafter referred to as TP Screw). This model uses a lot of plastic parts. And many TP Screws will be used for assembling. Do not use excessive force when tightening the self-tapping screws, or you may strip the thread in the plastic. It is recommended to stop tightening it when the threaded part on the screw goes into the plastic part and you feel some resistance from the tightening.

### 4. Shape of Screw

You can distinguish the ordinary screw from the self-tapping one by the shape of points and thread.

TP Screw



The points is sharpened.  
Coarse Thread

Ordinary Screw



Flat Head  
Finer Thread

Set Screw



Hexagonal  
Hollow

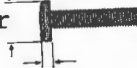
Flat Head SCrew



Shape of dish

Bind Screw

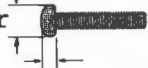
Larger



Thinner

Ordinary Screw

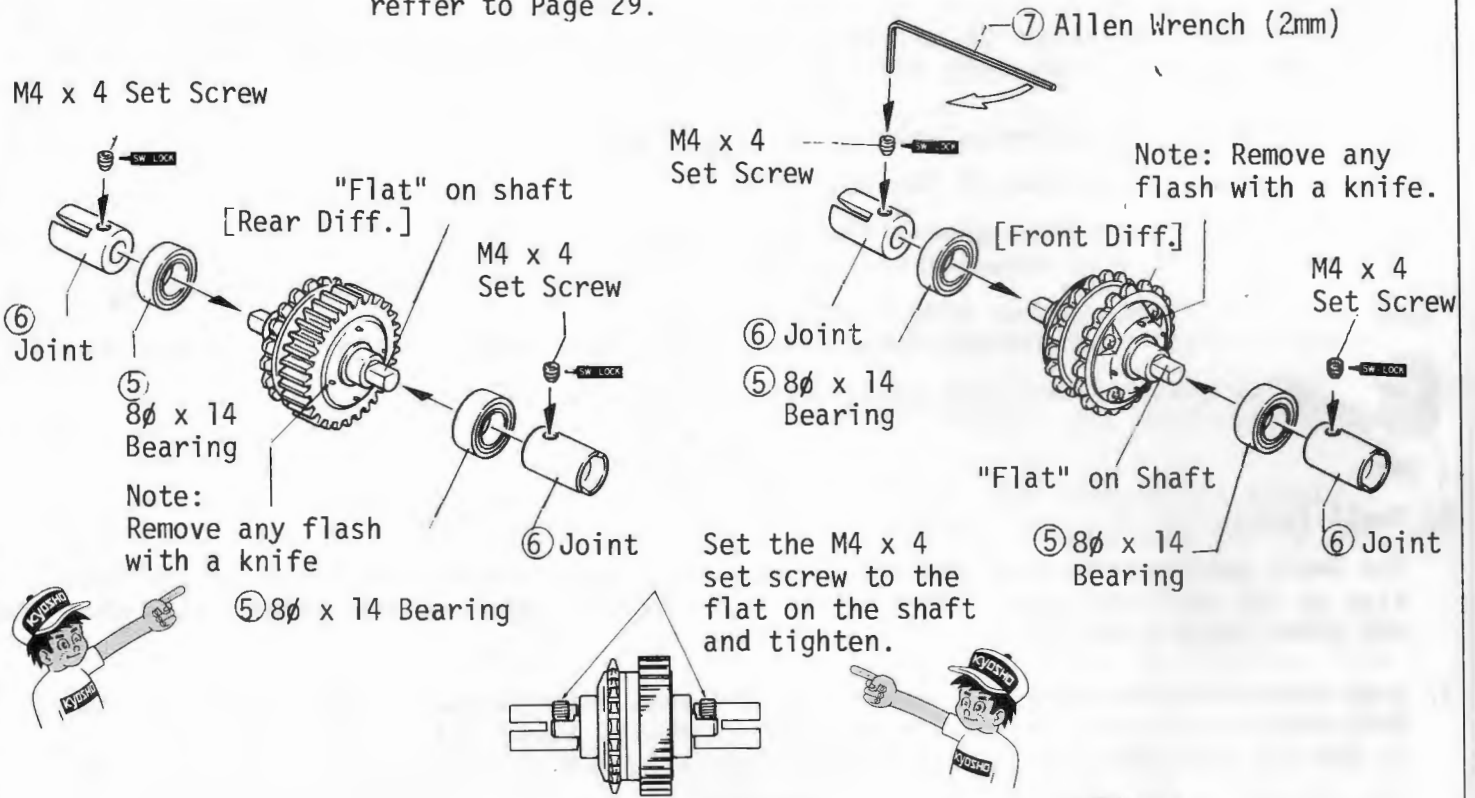
Smaller



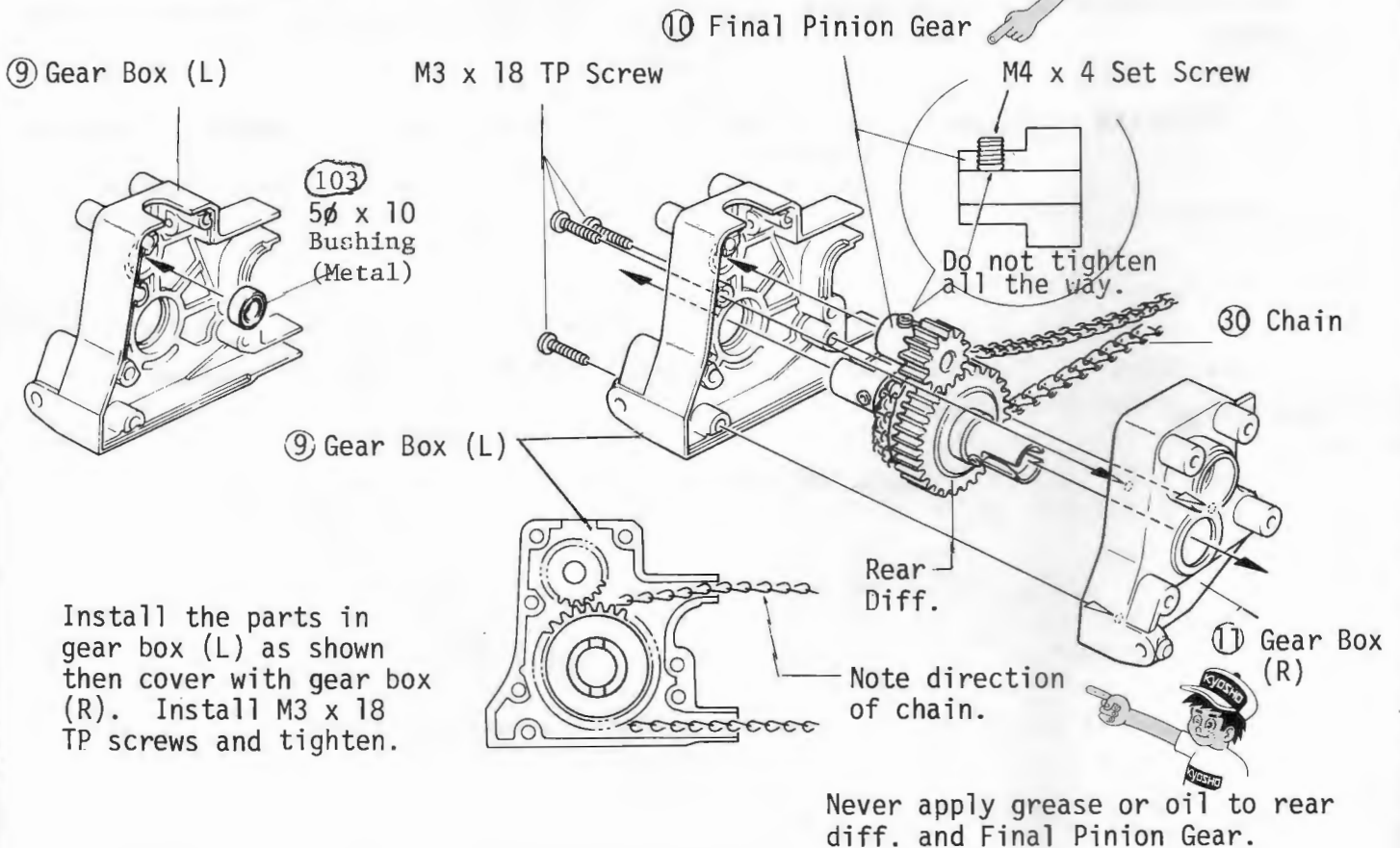
Thicker

# 1 INSTALLATION OF JOINT

Assembly drawing of Front and Rear Diff.  
refer to Page 29.



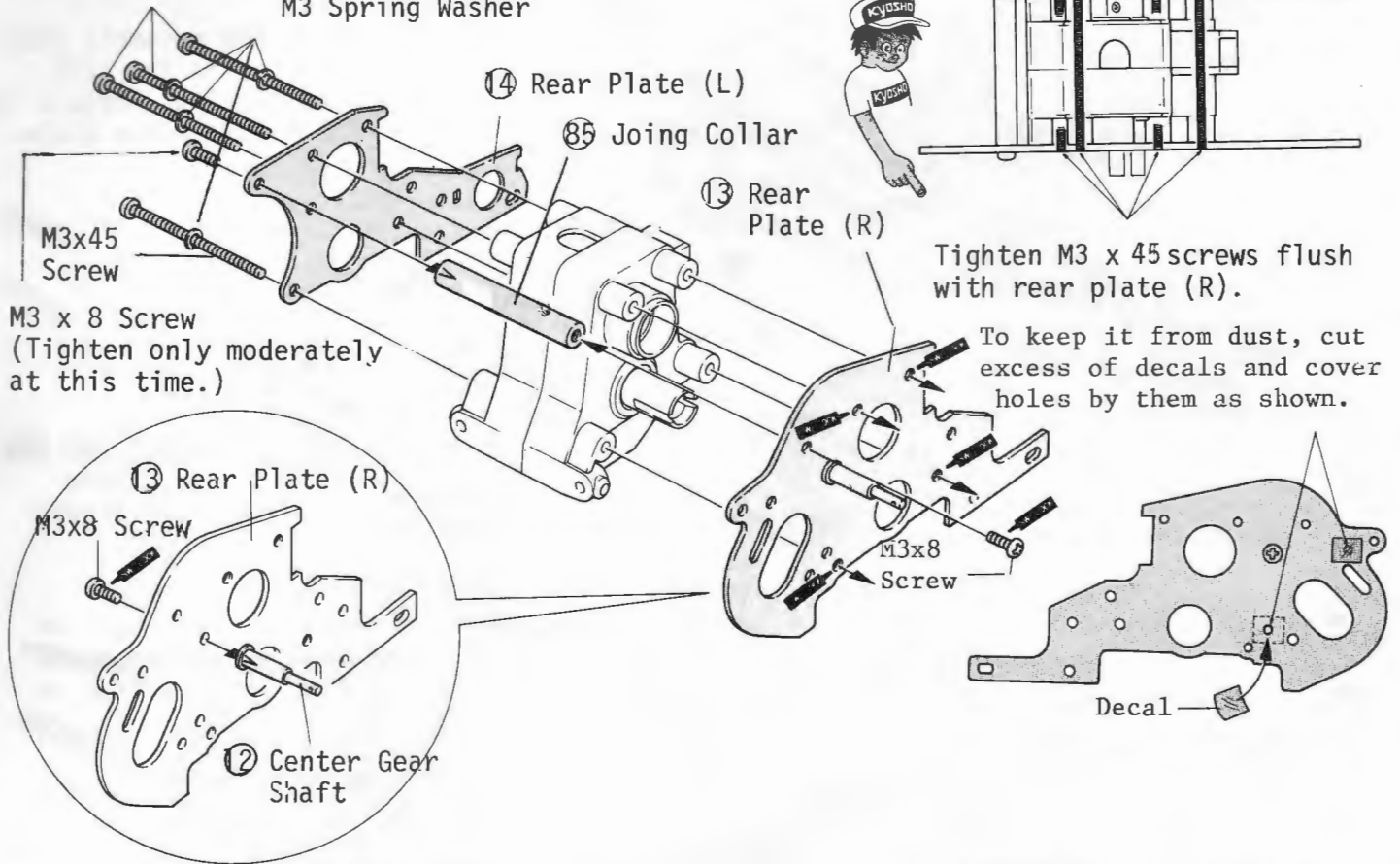
# 2 ASSEMBLY OF REAR GEAR BOX



### 3 INSTALLATION OF GEAR BASE

M3 x 45 Bind Screw

M3 Spring Washer

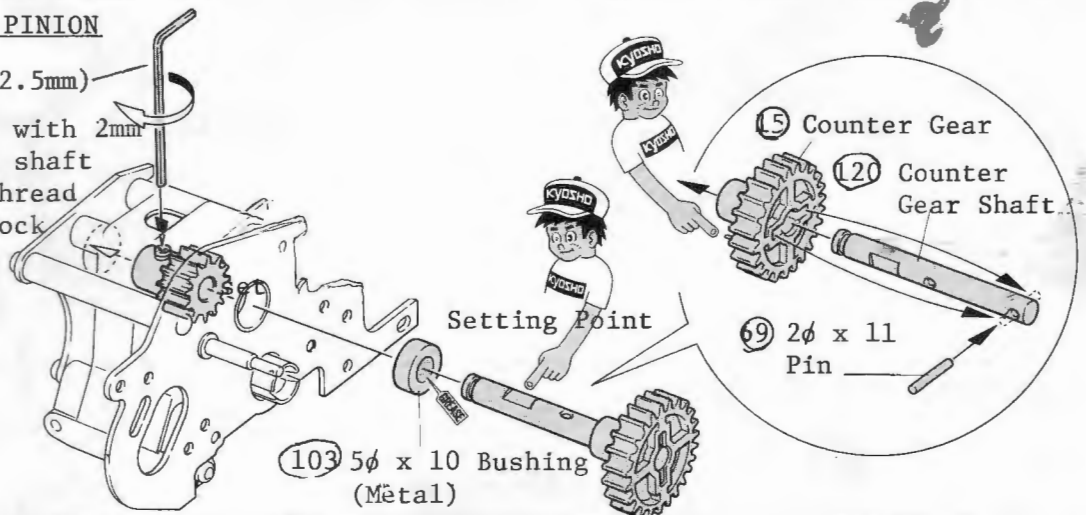


### 4 INSTALLATION OF FINAL PINION GEAR

GEAR

⑦ Allen Wrench (2.5mm)

Affix shaft to pinion with 2mm set screw. Lubricate shaft and carefully apply thread locking compound to lock set screw threads.



### 5 INSTALLATION OF REAR SHOCK STAY

⑰ Rear Shock Stay

M3 x 16 Screw

(Use the under of the 2 holes.)

⑯ M3 Pivot Ball (Silver Color)

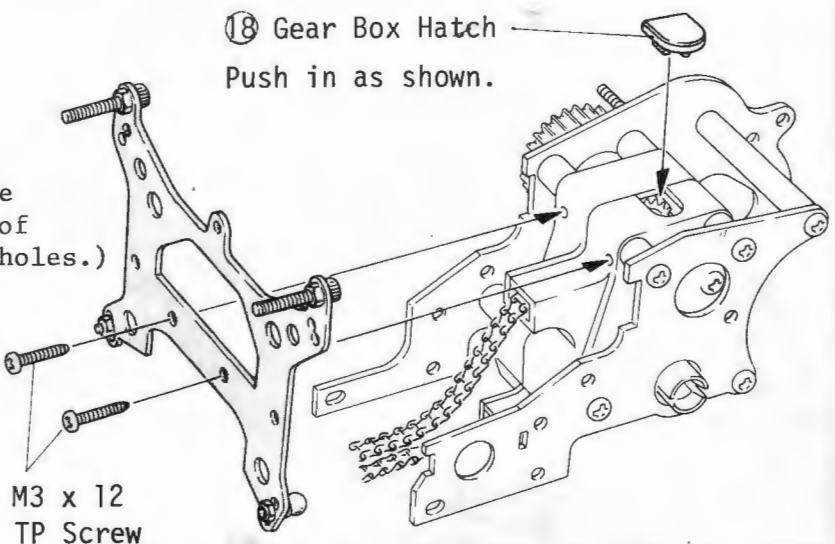
M3 Nut

(Use the middle of the 3 holes.)

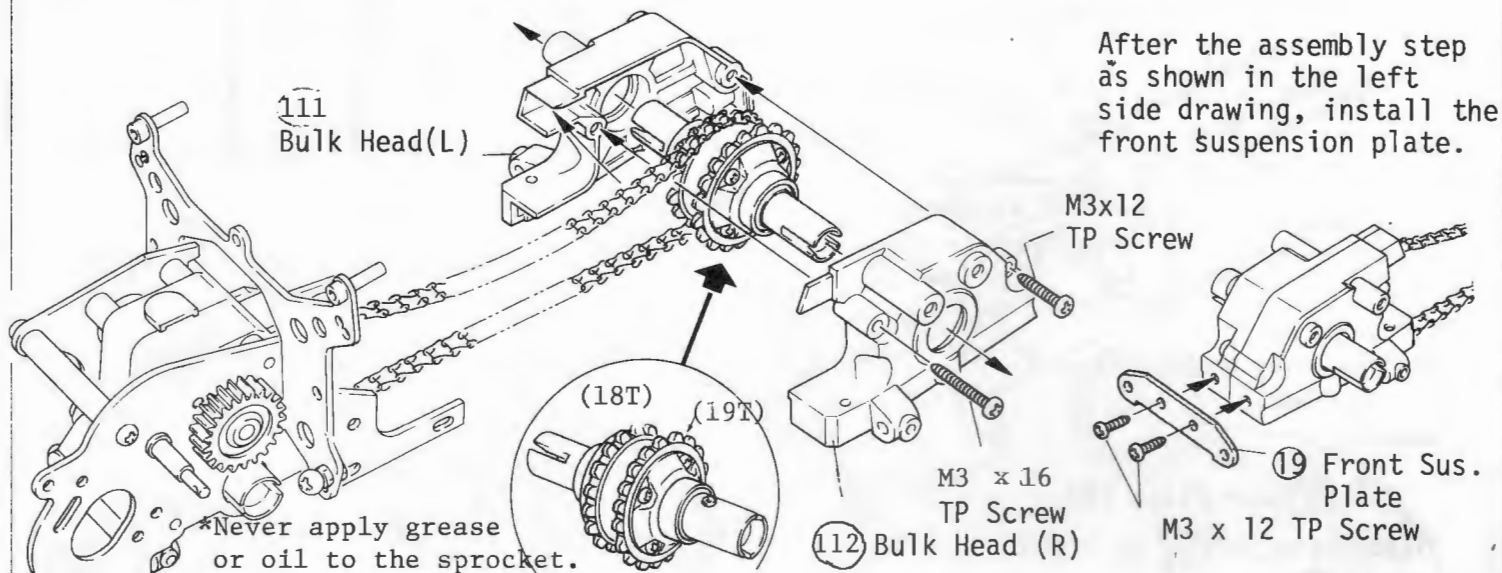
M3 Nut

⑱ Gear Box Hatch

Push in as shown.

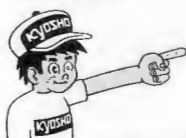


## 6 INSTALLATION OF FRONT GEAR BOX

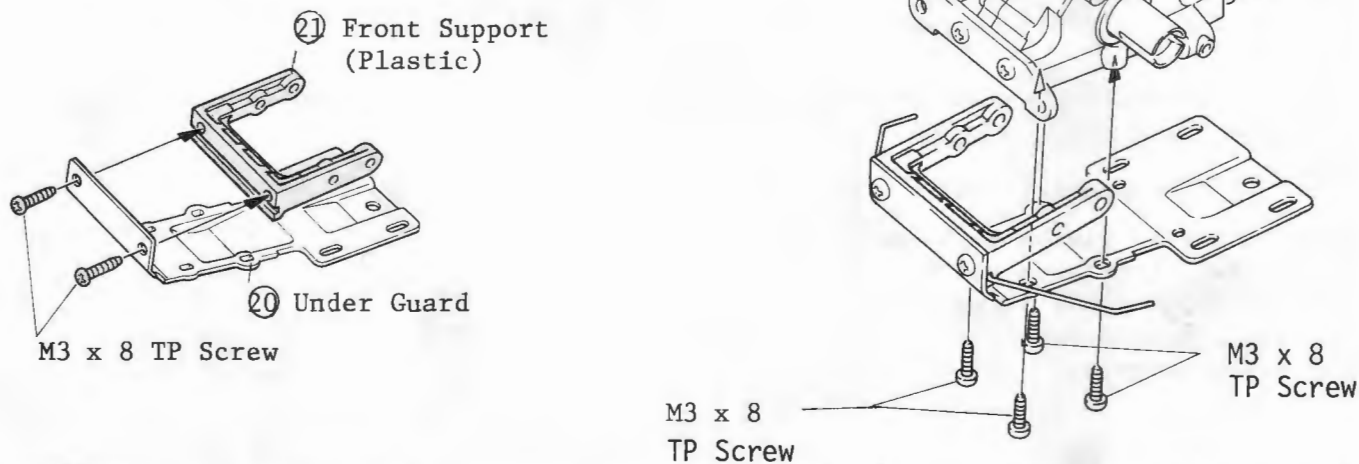


After the assembly step as shown in the left side drawing, install the front suspension plate.

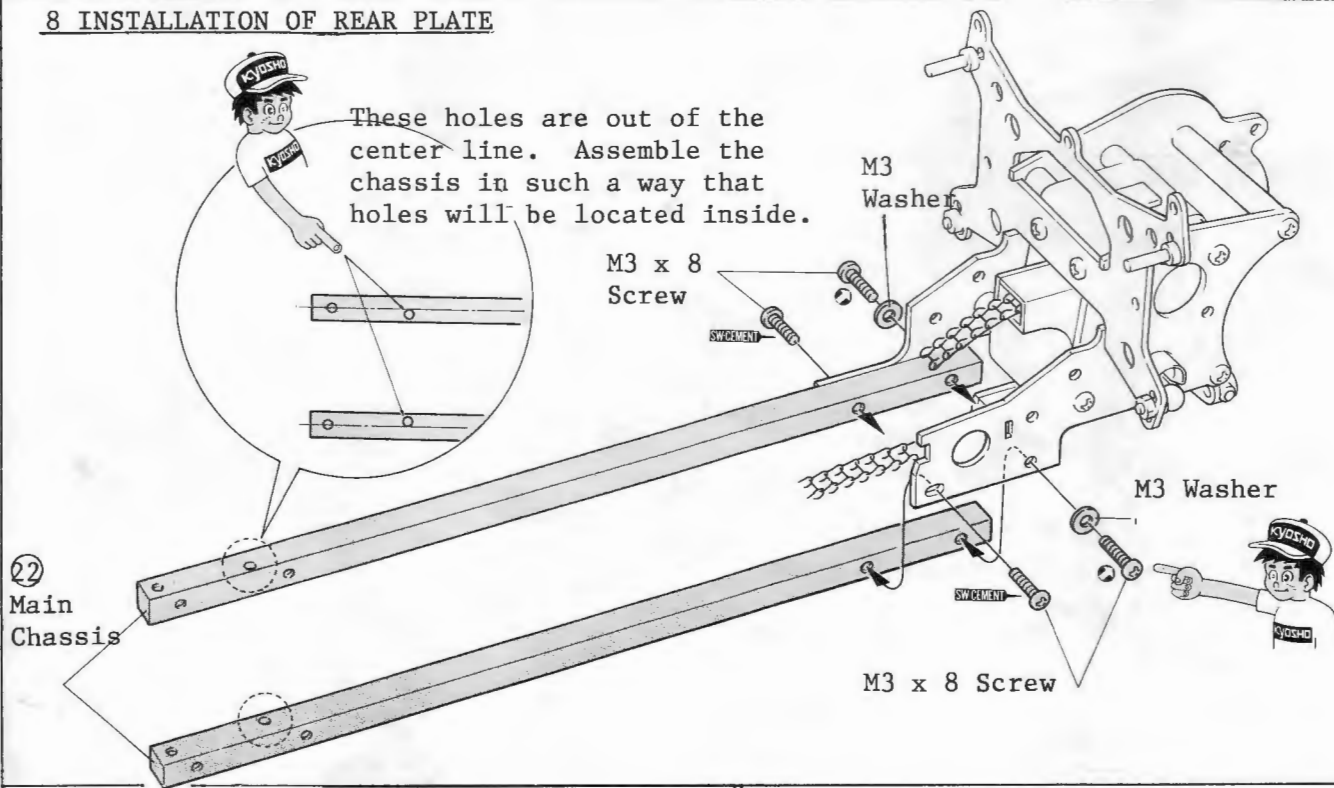
\*Two types of sprockets are available (18 and 19 teeth). For the standard process, use the 18 teethed one to engage the chain on.



## 7 INSTALLATION OF LOWER GUARD

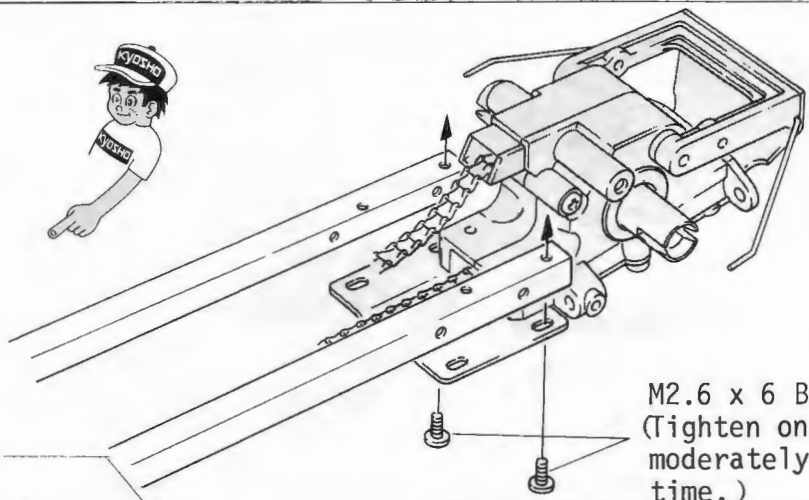


## 8 INSTALLATION OF REAR PLATE



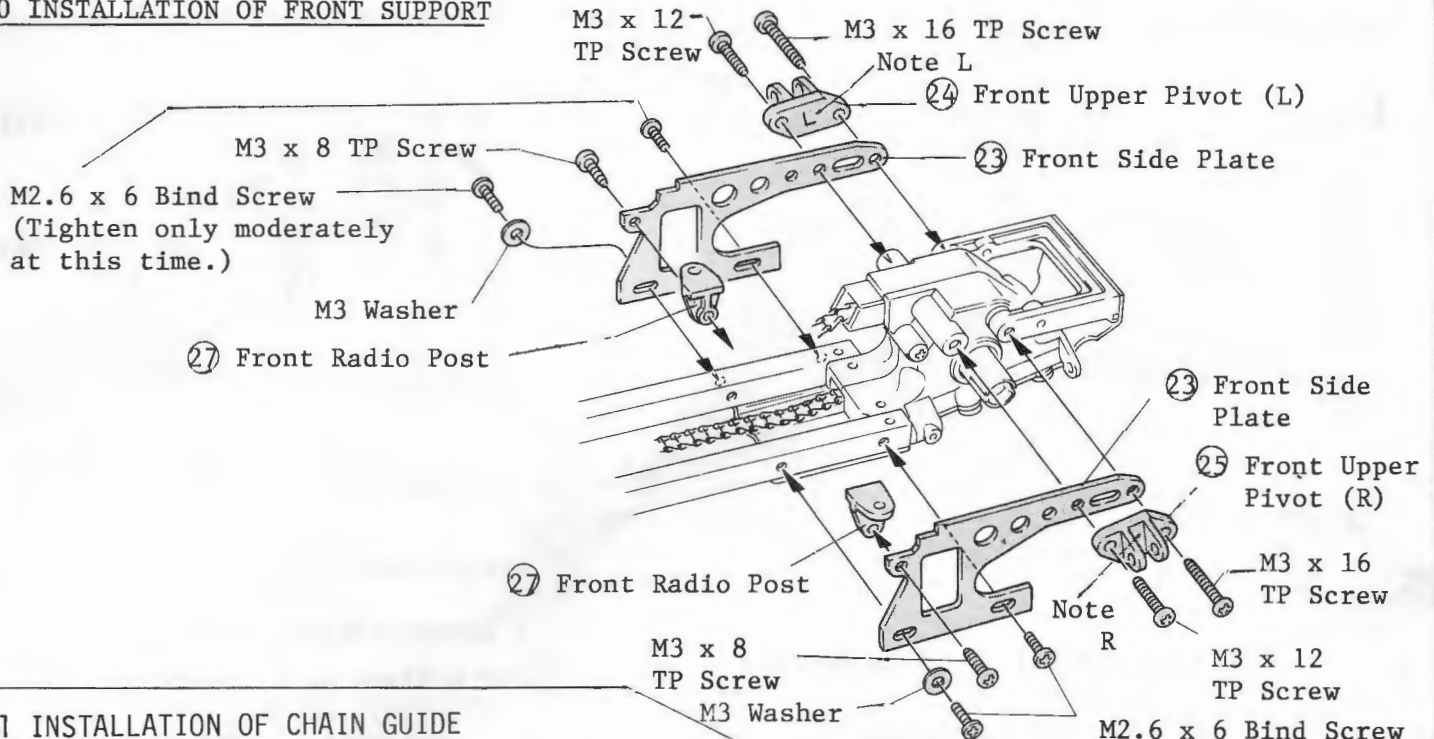


## 9 INSTALLATION OF BULK HEAD



M2.6 x 6 Bind Screw  
(Tighten only moderately at this time.)

## 10 INSTALLATION OF FRONT SUPPORT



M2.6 x 6 Bind Screw  
(Tighten only moderately at this time.)

M3 x 12 TP Screw

M3 x 16 TP Screw  
Note L

24 Front Upper Pivot (L)

M3 x 8 TP Screw

23 Front Side Plate

M3 Washer

27 Front Radio Post

27 Front Radio Post

M3 x 8 TP Screw

M3 Washer

Note R

23 Front Side Plate

25 Front Upper Pivot (R)

M3 x 16 TP Screw

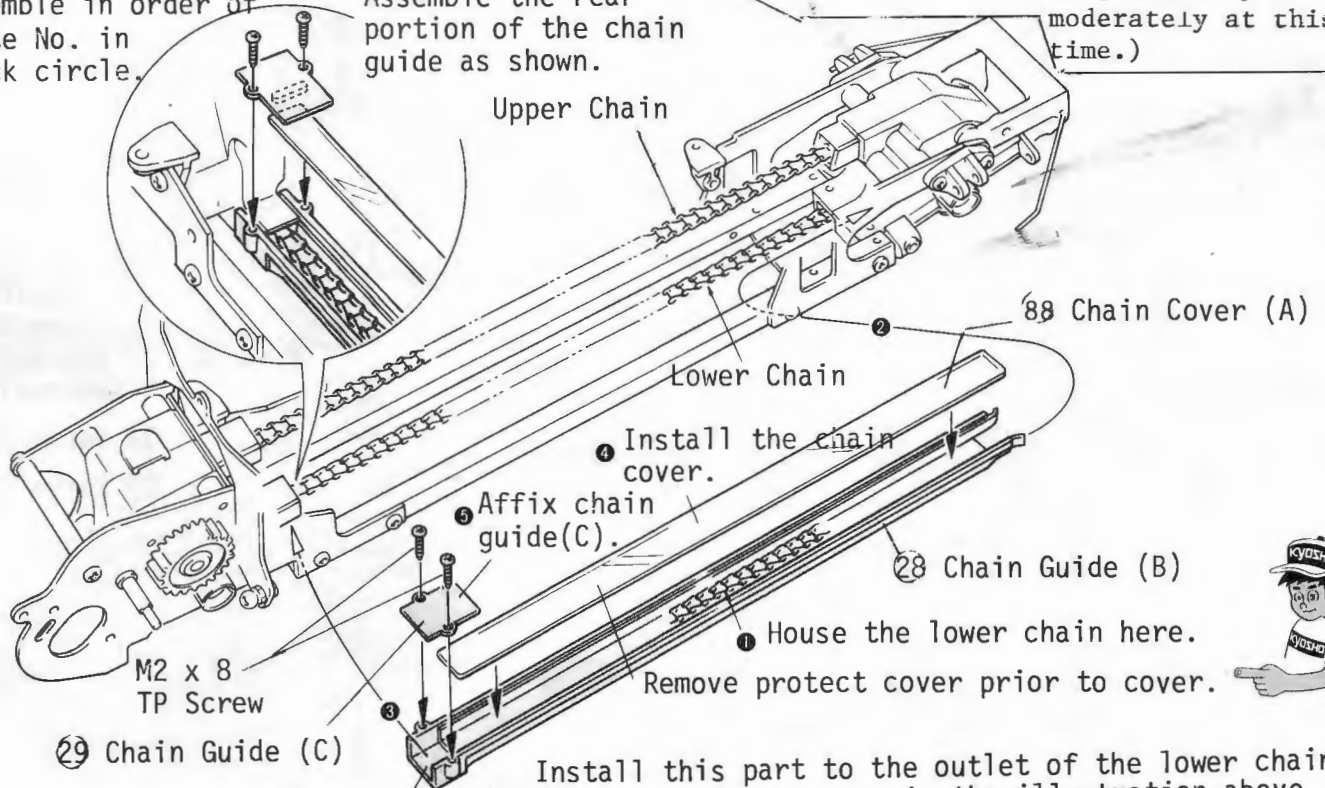
M3 x 12 TP Screw

M2.6 x 6 Bind Screw  
(Tighten only moderately at this time.)

## 11 INSTALLATION OF CHAIN GUIDE

Assemble in order of white No. in black circle.

Assemble the rear portion of the chain guide as shown.



Upper Chain

Lower Chain

88 Chain Cover (A)

4 Install the chain cover.

5 Affix chain guide (C).

28 Chain Guide (B)

1 House the lower chain here.

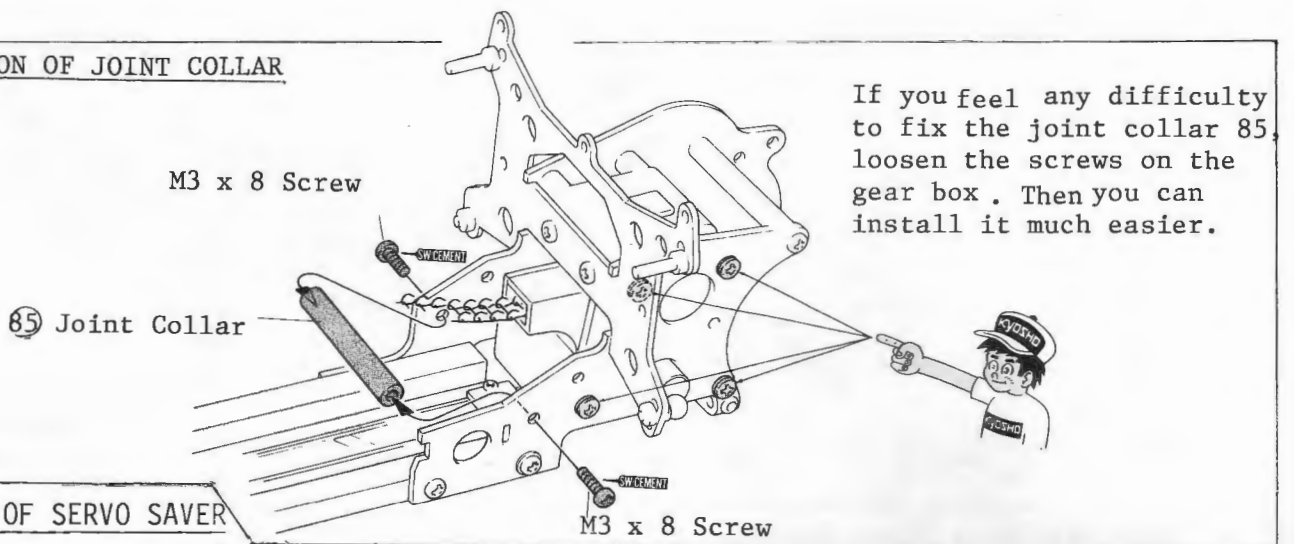
Remove protect cover prior to cover.

M2 x 8 TP Screw

29 Chain Guide (C)

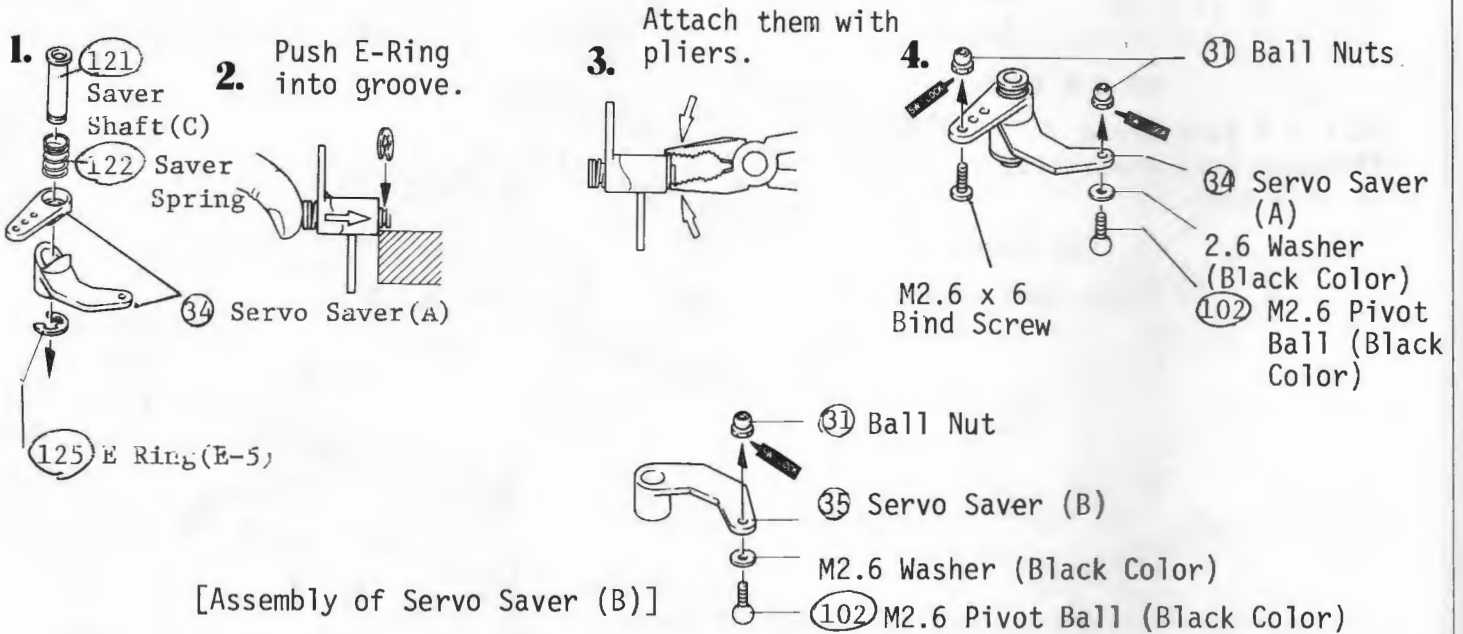
Install this part to the outlet of the lower chain and insert it as shown in the illustration above.

## 12 INSTALLATION OF JOINT COLLAR



## 13 ASSEMBLY OF SERVO SAVER

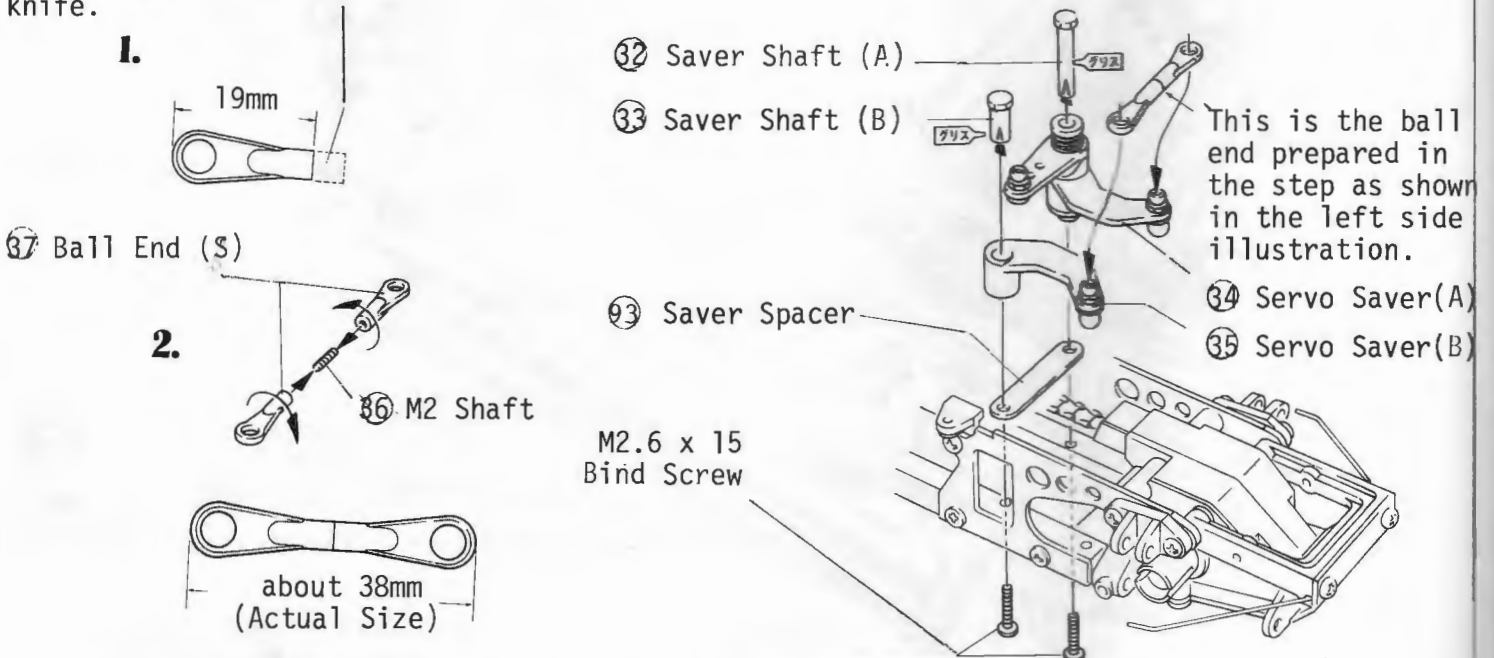
[Assembly of Servo Saver (A)]



## 14 INSTALLATION OF SERVO SAVER

[Screw in the Ball End]

Remove this portion with knife.



**15 ASSEMBLY OF KNUCKLE ARM**

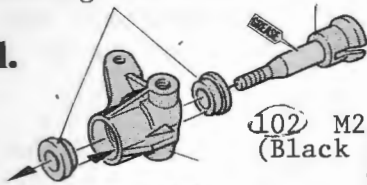
⑧ Plastic Bushing

④① Front Shaft

\*Assemble the knuckle arm 2(R) ④② in the same way.

④② Knuckle Arm 2(R)

1.



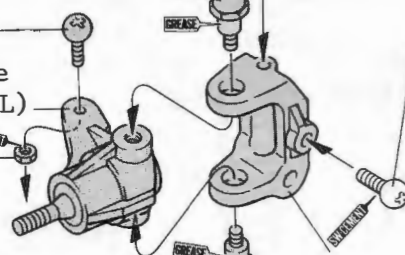
①② M2.6 Pivot (Black Color)

③⑨ Knuckle Arm 1(L)

M2.6 Nut

2.

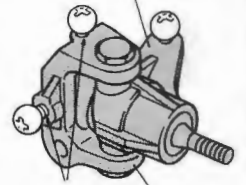
③⑧ King Pin



③⑧ King Pin

④③ Front Hub (R) (Plastic)

①⑥ M3 Pivot Ball (Silver)

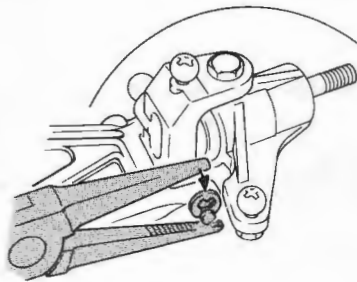


④② Front Hub (L) (Plastic)

Leave a gap of 1mm.

Be careful in difference between Knuckle Arm 1(L) and 2(R).

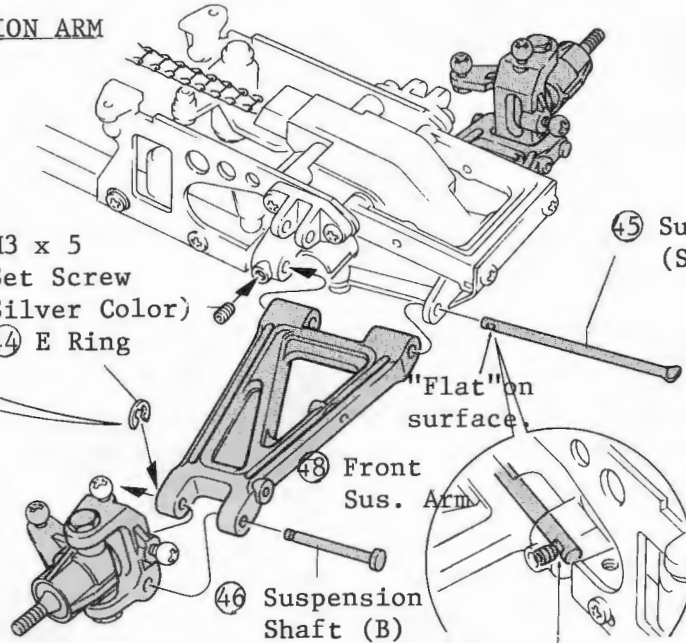
**16 INSTALLATION OF FRONT SUSPENSION ARM**



Attach the E-ring with needle nose pliers.

M3 x 5 Set Screw (Silver Color) ④④ E Ring

④⑤ Suspension Shaft (A) (Shorten One)



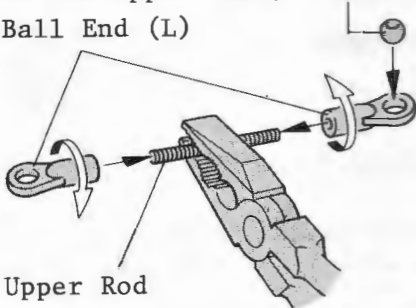
"Flat" on surface

Fix the suspension shaft in such a way that the setscrew will hit on a flat on the shaft.

**17 INSTALLATION OF FRONT UPPER ROD**

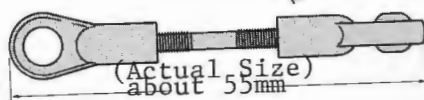
(Make two Upper Rods) ④⑨ 5.8φ Ball

⑤① Ball End (L)



This is the upper rod prepared in the step as shown in the left side illustration.

⑤① Upper Rod



(Actual Size) about 55mm

This is the front shock prepared in the step as shown in the left side illustration.

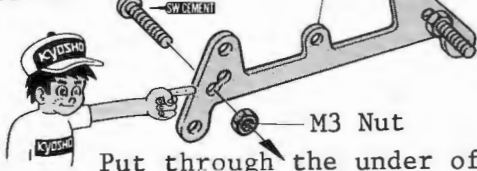
M3 Nylon Nut

Push Ball End onto pivot ball.

M3 Nylon Nut

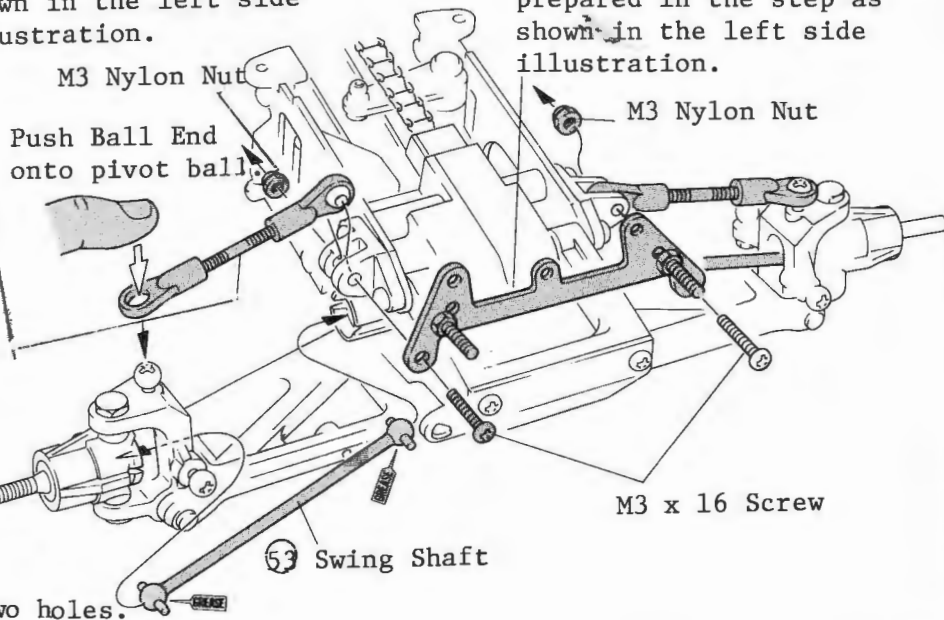
(Attach M3 x 16 Screw to the front shock stay)

M3 x 16 ⑤② Front Shock Stay Screw



M3 Nut

Put through the under of two holes.

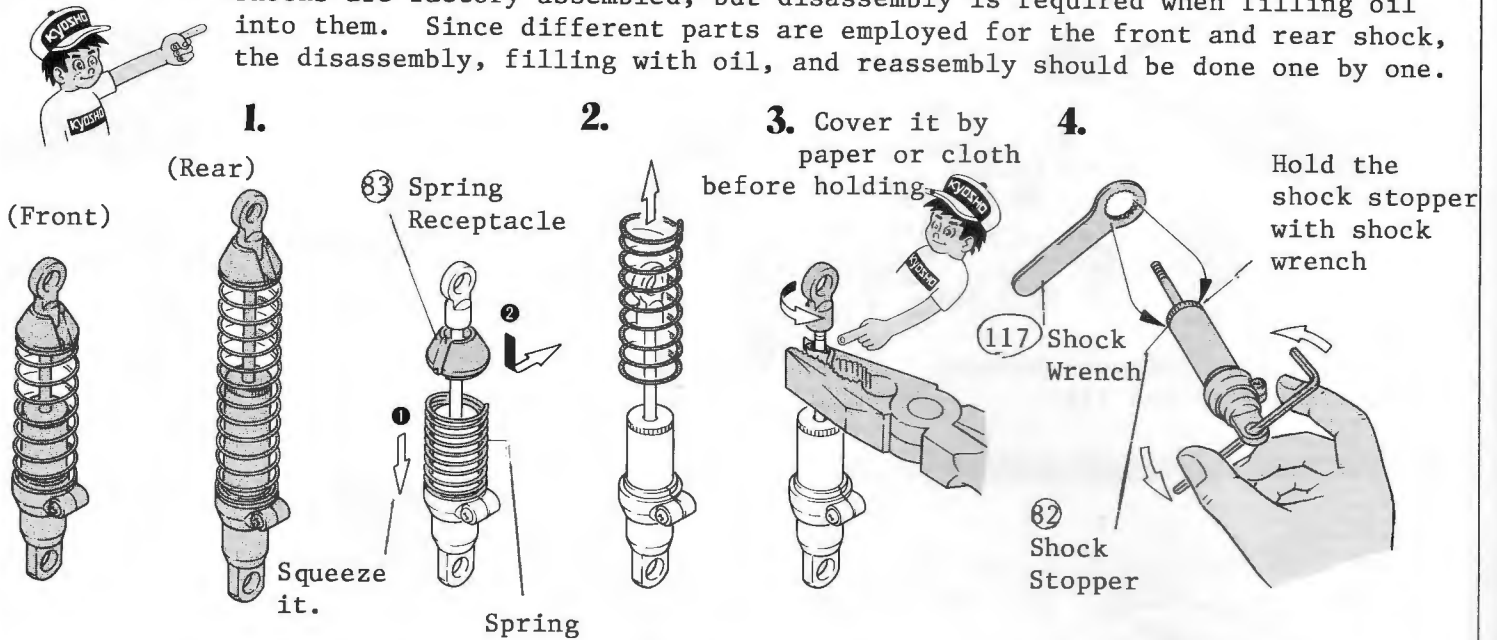


M3 x 16 Screw

⑤③ Swing Shaft

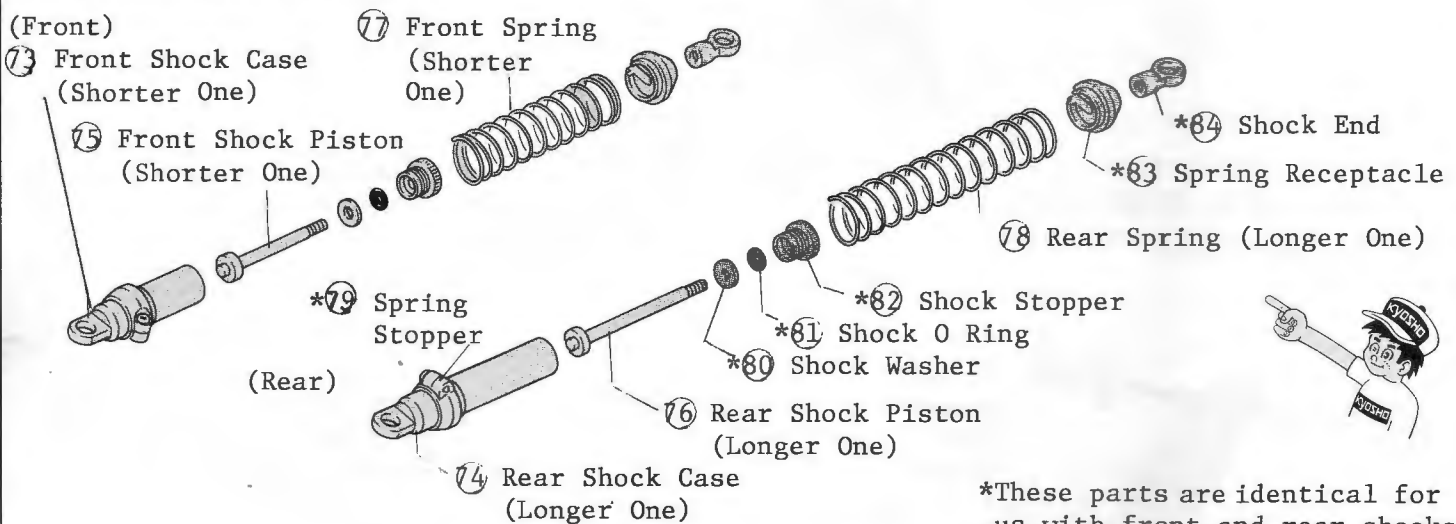
## 18 ASSEMBLY OF OIL-SHOCK

Shocks are factory assembled, but disassembly is required when filling oil into them. Since different parts are employed for the front and rear shock, the disassembly, filling with oil, and reassembly should be done one by one.

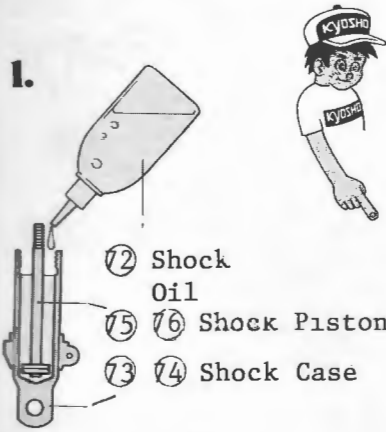


1. Press down the spring and dismantale the spring receptacle by sliding its sideways.
2. Pull off the spring.
3. Hold the shock shaft with a pair of needle nose pliers and remove the shock end as shown in the drawing.
4. Remove the shock stopper by unscrewing.

## 19 EXPLODED VIEW OF OIL-SHOCK

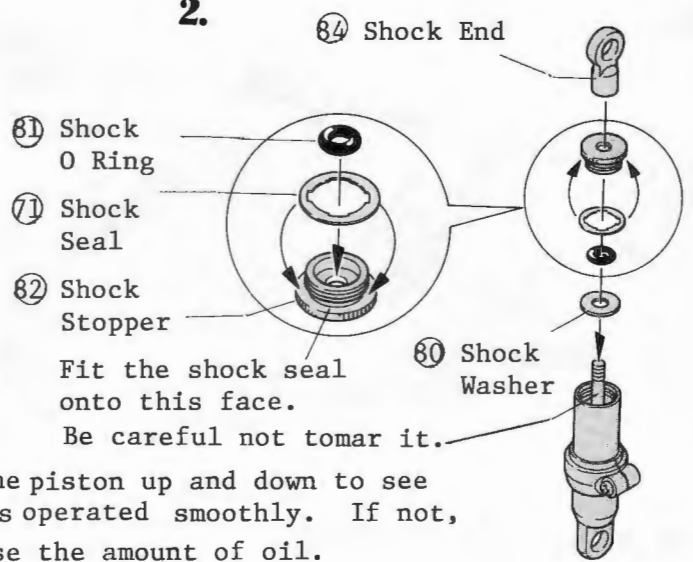


**20 FILLING SHOCK WITH OIL**



After filling the shock with oil, assemble them as they were again. The front and rear shocks have different sized piston, spring, and cylinder. Make sure to pick up the correct parts when assembling.

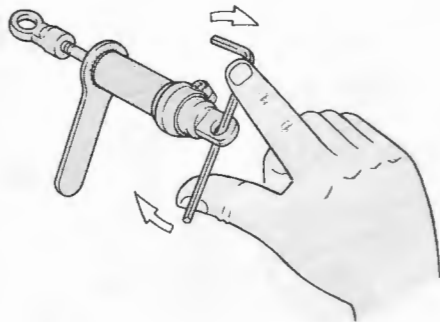
**2.**



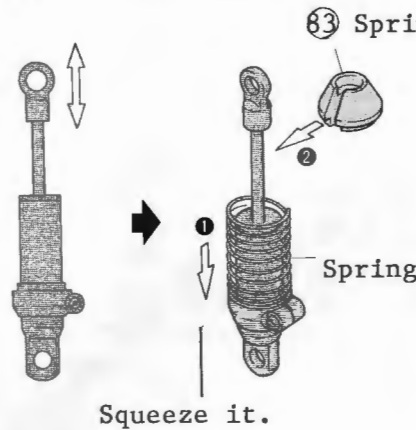
Fit the shock seal onto this face. Be careful not to damage it.

Move the piston up and down to see if it is operated smoothly. If not, decrease the amount of oil.

**3.**

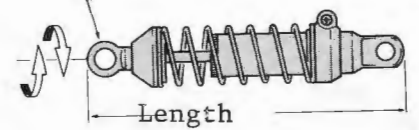


**4.**



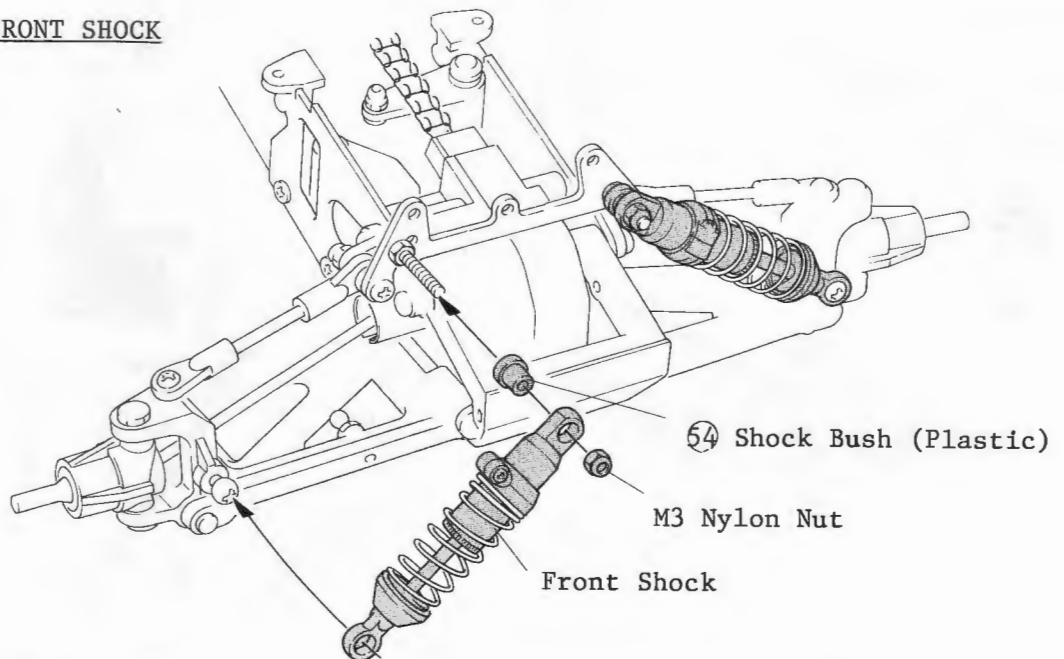
Squeeze it.

**5.** Adjust the length by screwing the shock end out or in.



1. Press down the piston all the way to the bottom. Pour the oil to the point as shown in the diagram. Care should be taken not to get an air bubble in the oil.
2. Assemble the shock in the sequence as shown in the drawing to completion.
3. Tighten the shock stopper firmly as illustrated.
4. Measure each length of the front and rear shocks to make them the same length.
5. Note that the rears are longer than the fronts.

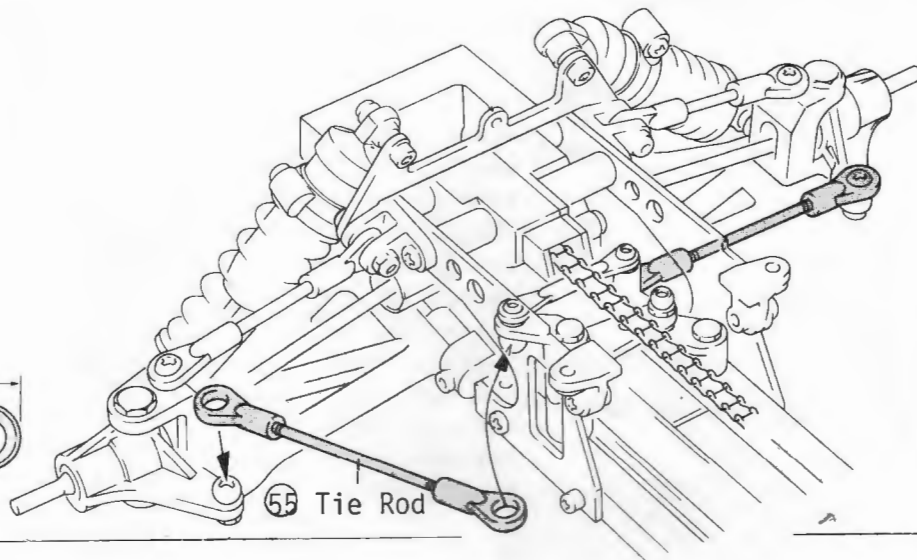
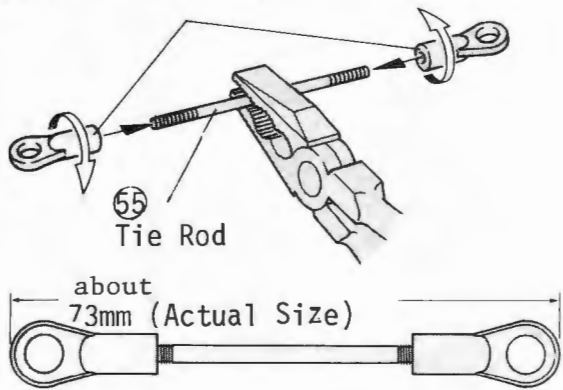
**21 INSTALLATION OF FRONT SHOCK**



## 22 INSTALLATION OF TIE ROD

[Make two Tie Rod]

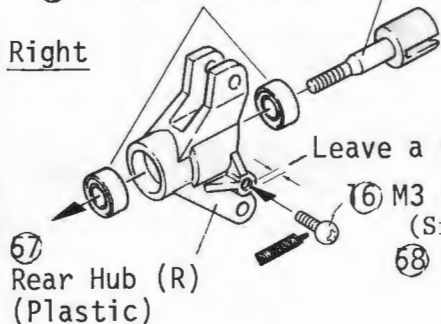
60 Ball End (Large)



## 23 INSTALLATION OF REAR HUB

8 Plastic Bushing  
56 Rear Shaft

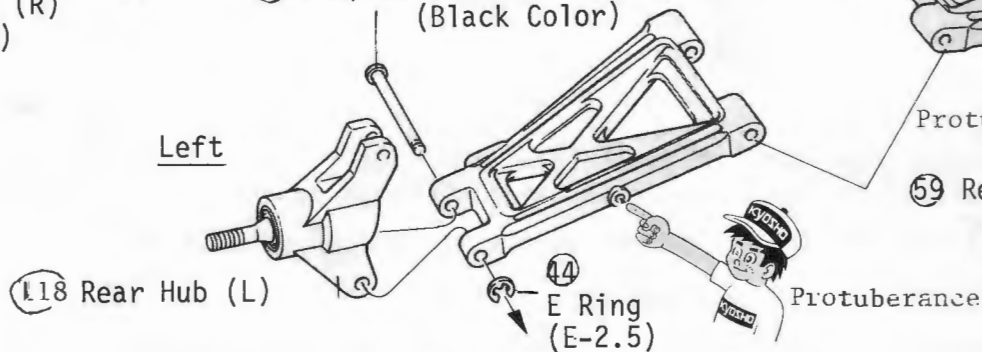
Right



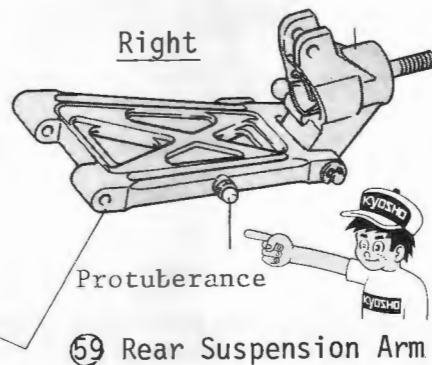
\*Assemble the left side rear hub (L) (118) in the same way.

57 Rear Hub (R)

Left



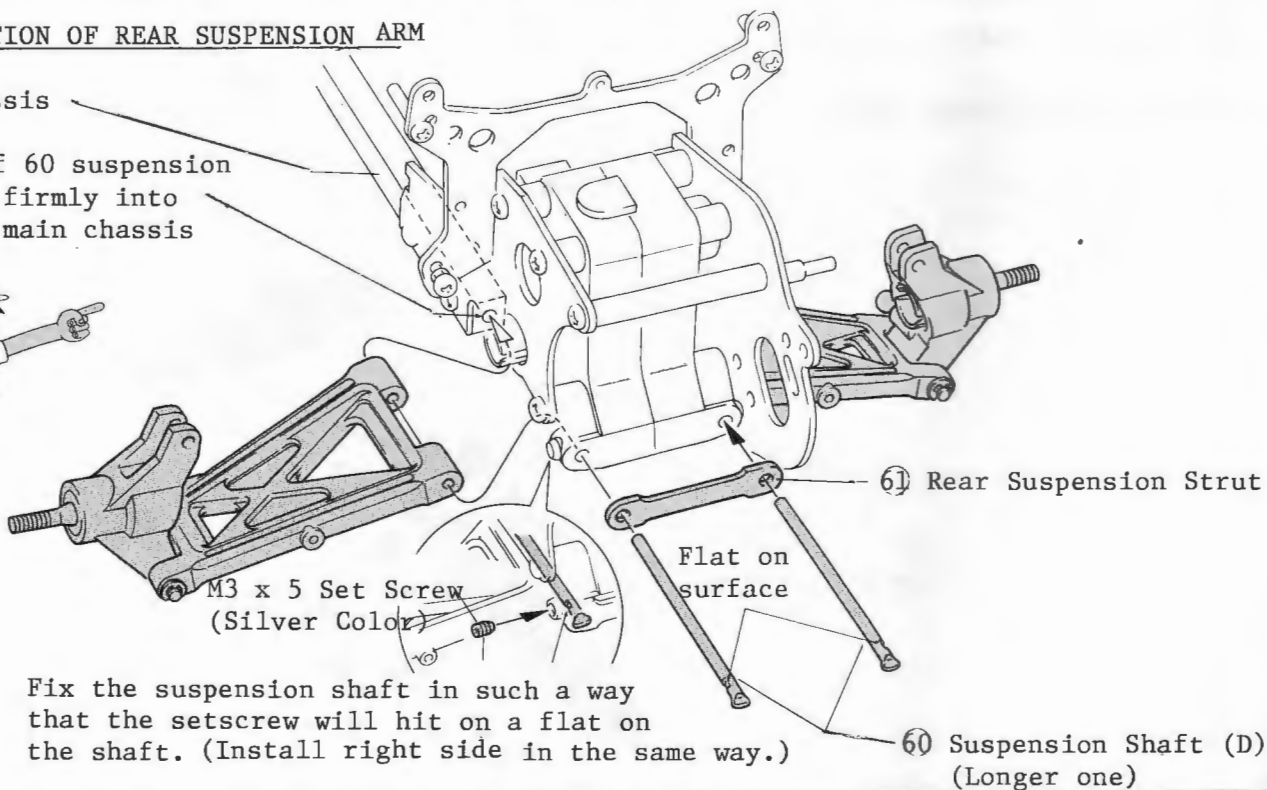
Right



## 24 INSTALLATION OF REAR SUSPENSION ARM

22 Main Chassis

Make sure if 60 suspension shaft seats firmly into hole on the main chassis



Fix the suspension shaft in such a way that the setscrew will hit on a flat on the shaft. (Install right side in the same way.)

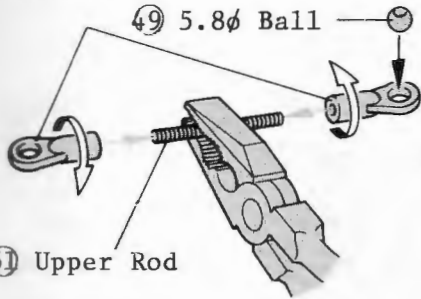
**25 INSTALLATION OF REAR UPPER ROD**

(Make two Upper Rod)

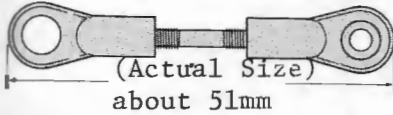
Install upper rod after setting swing shaft.

50 Ball End (L)

49 5.8φ Ball

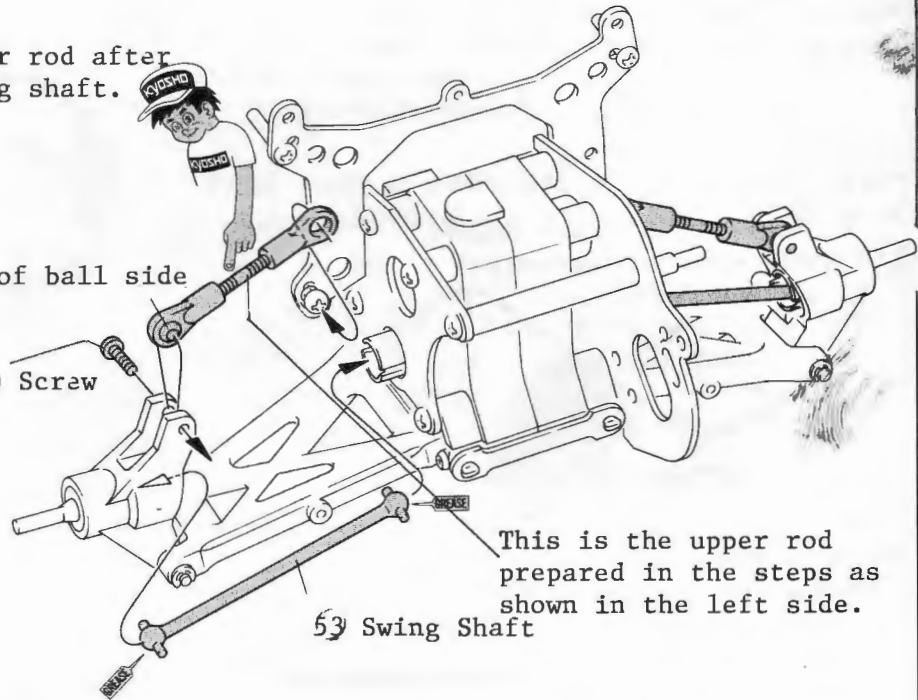


51 Upper Rod



Be sure of ball side

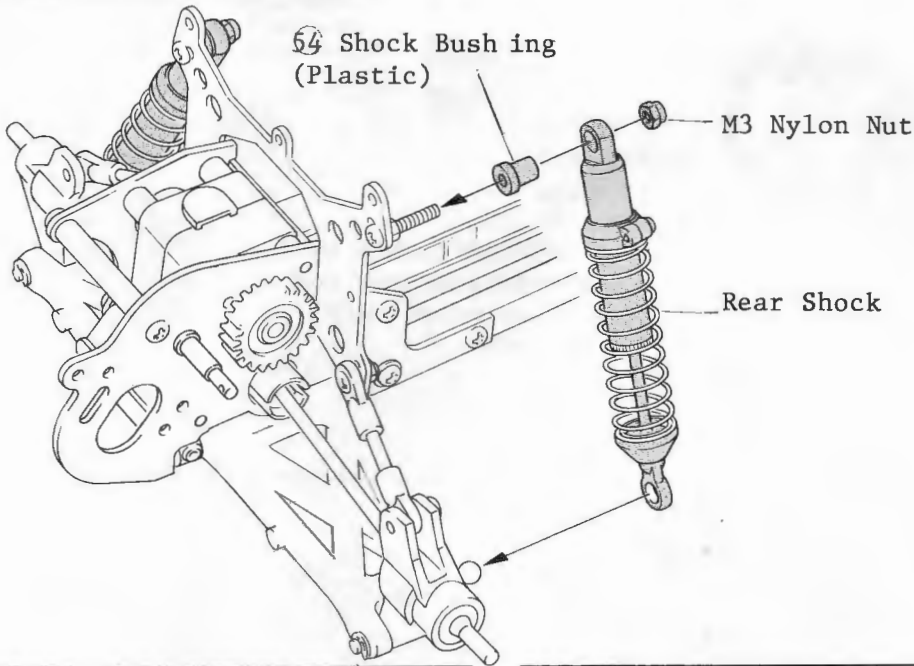
M3x10 Screw



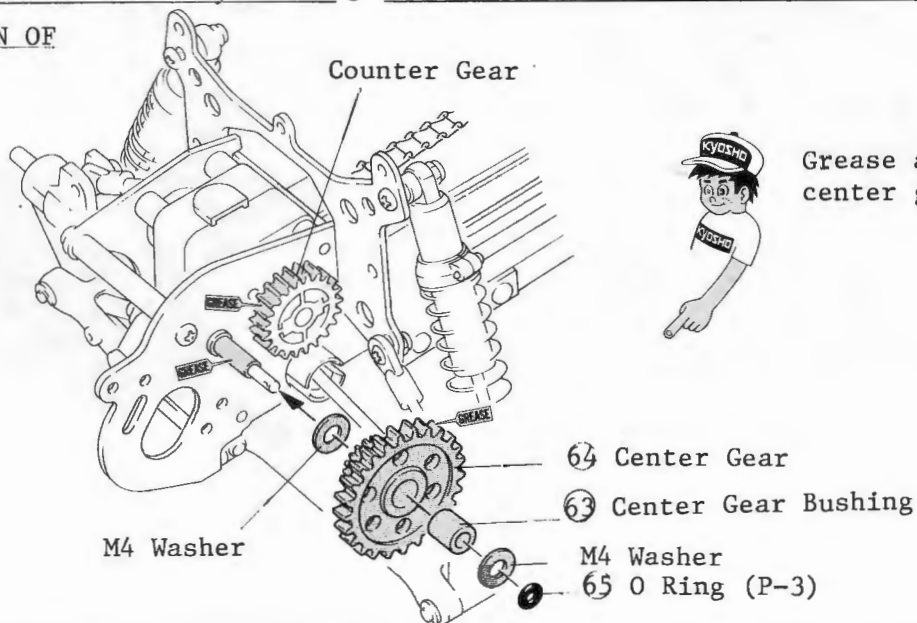
This is the upper rod prepared in the steps as shown in the left side.

53 Swing Shaft

**26 INSTALLATION OF REAR SHOCK**



**27 INSTALLATION OF CENTER GEAR**



Grease a little in case of center gear and counter gear.



## 28 MOUNTING OF MOTOR

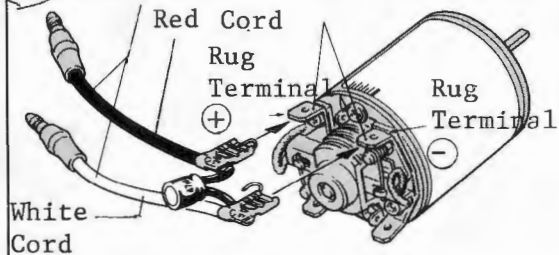
\*Motor is not included in the kit.

The suitable motors are SPA 240WS  
Le Mans Sport H-240S  
Le Mans 240SB

(Wiring Motor Cord)

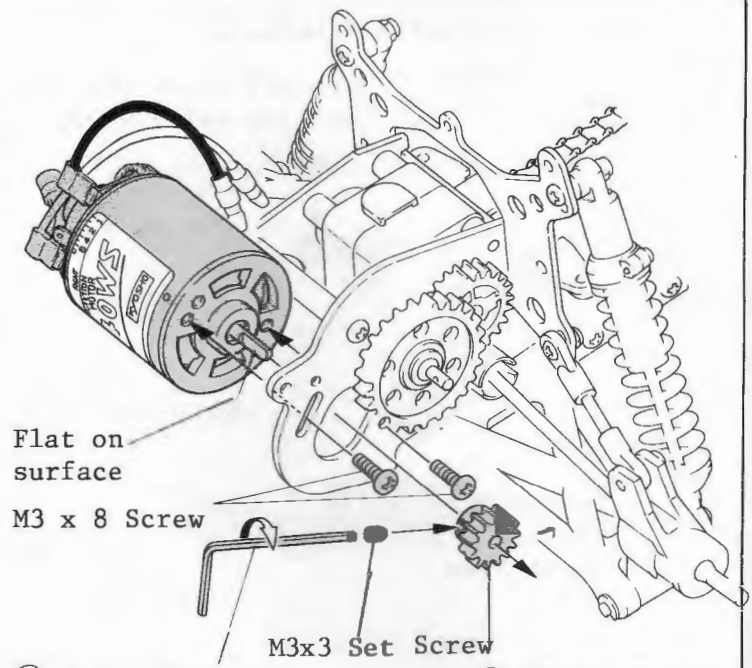
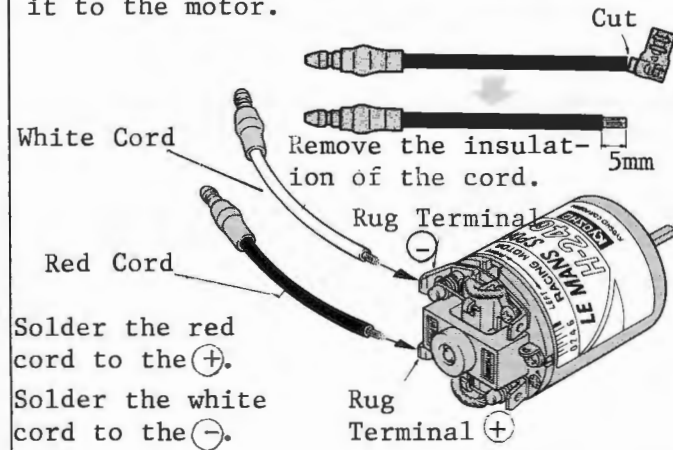
\*With motors such as SPA240WS, Le Mans Sport H-240S;

119 Motor Cord      Brush Holder  
Terminal



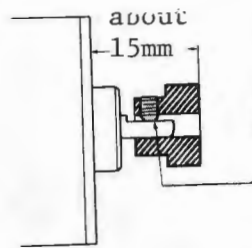
\*With Le Mans 240SB Motor;

Cut the motor cord as shown below and solder it to the motor.



47 Allen Wrench  
(1.5mm)

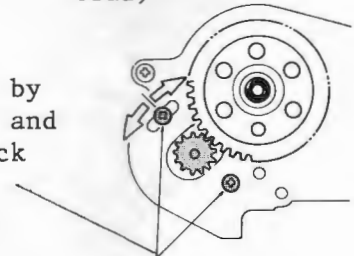
67 Pinion Gear  
12T



Tighten set screw to flat surface on motor shaft.

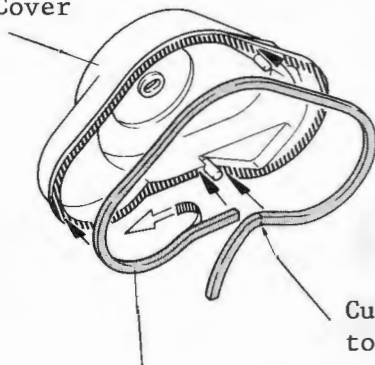
(Adjustment of rolling Gear)

Adjust gear lash by loosening screws and sliding motor back and forth.



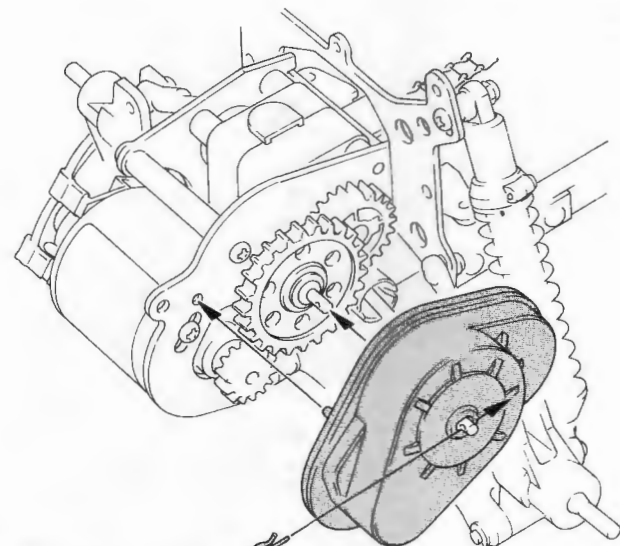
## 29 INSTALLATION OF GEAR COVER

86 Gear Cover



Cut the seal to length.

87 Gear Cover Seal (Foam Rubber)  
(Unseal them from backing and seal them on striped portion.)

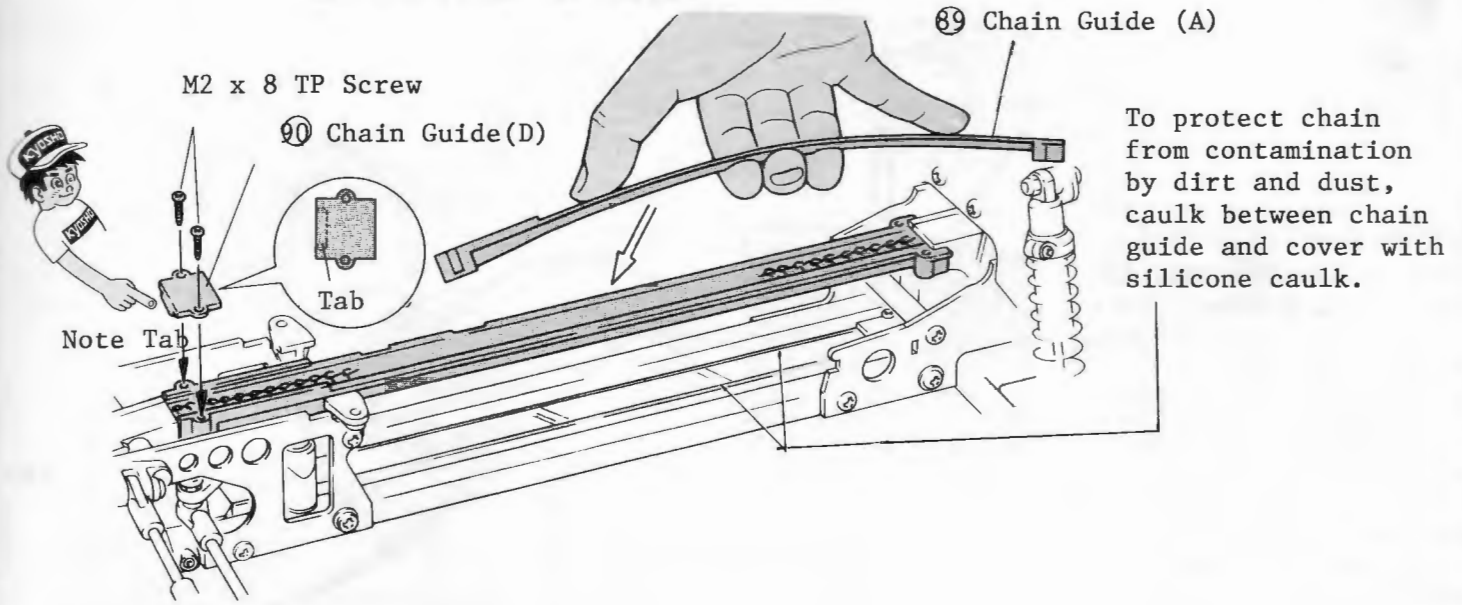


66 Hook Pin



### 30 INSTALLATION OF CHAIN GUIDE (A)

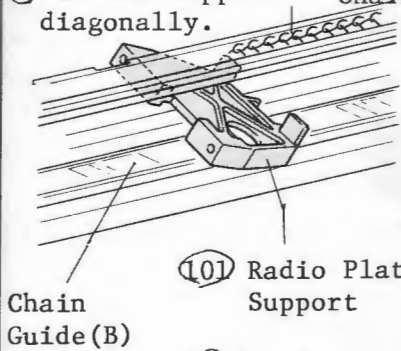
Bend the chain guide (A) as shown and install front end first.



### 31 INSTALLATION OF RADIO PLATE

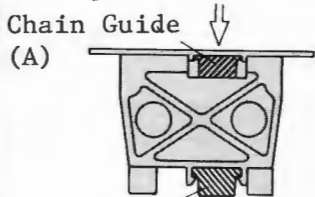
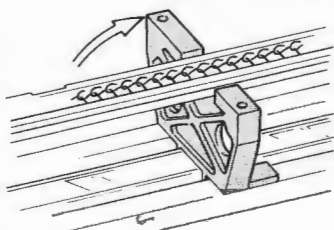
(Setting the Radio Plate support)

① Put the support diagonally.



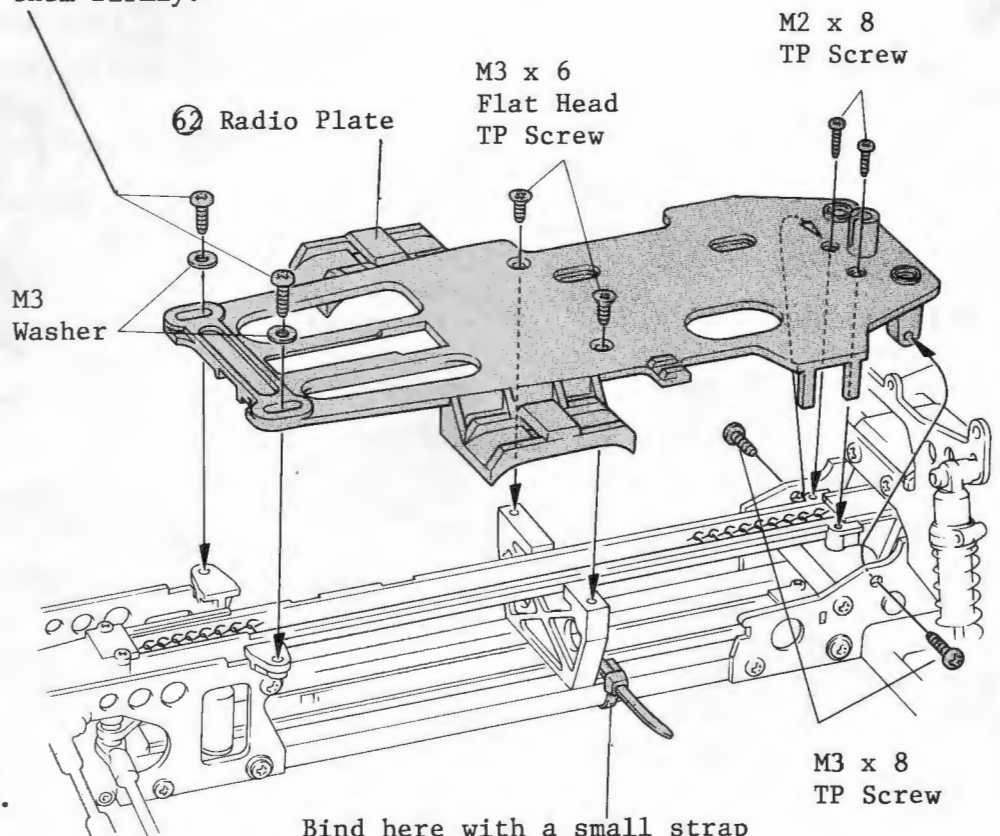
M3 x 8 TP Screw  
Tighten these screws loosely. After the step of (Adjustment of Chain) on page 18, tighten them firmly.

② Set it upright.



③ Push it into the location.

Chain Guide (B)

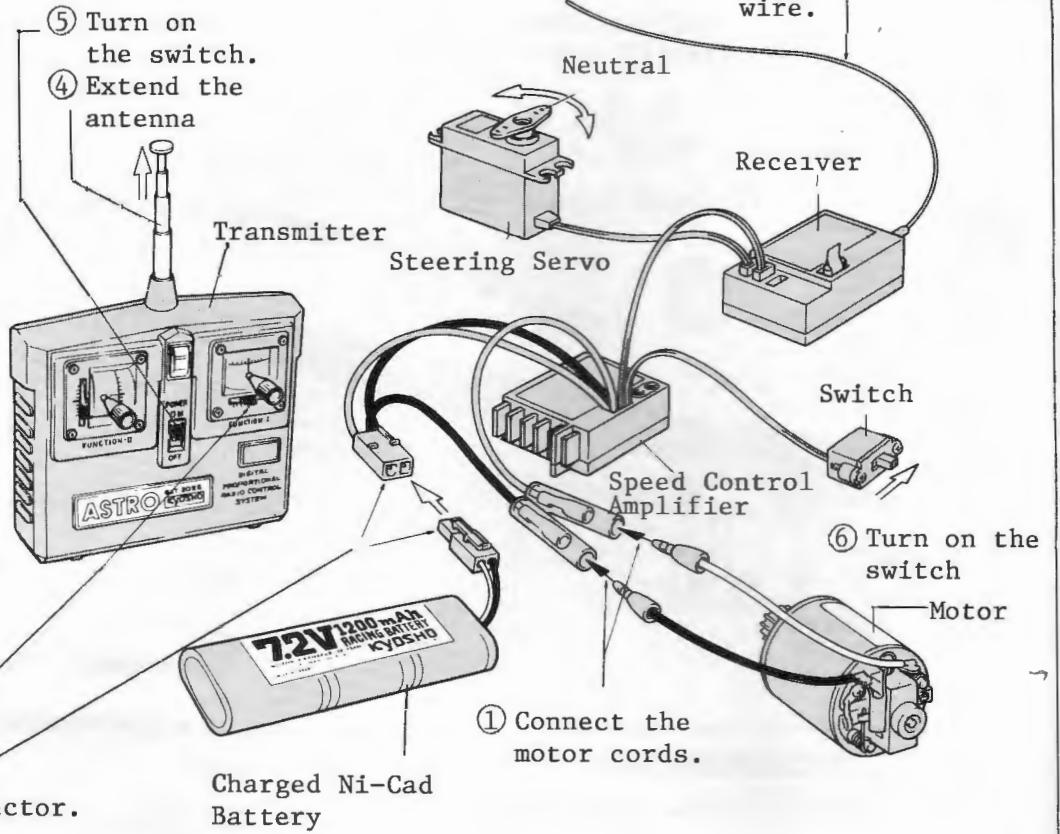


### 32 TESTING RADIO CONTROL UNITS



(Radio Control Units)  
 This kit is designed to apply only a speed control amplifier. Use the speed control amplifier designated by your radio manufacturer for controlling the motor speed. Before testing it read the instruction carefully which came with your amplifier.

- ⑦ Set the trim lever in neutral.
- ② plug in the battery connector.



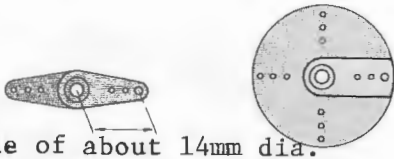
- ③ Stretch the antenna wire.
- ④ Extend the antenna
- ⑤ Turn on the switch.
- ① Connect the motor cords.
- ⑥ Turn on the switch

### 33 FIXING OF STEERING CONTROL ROD

(Trimming of Servo Horn)

**1.**

Cut away the shaded area.

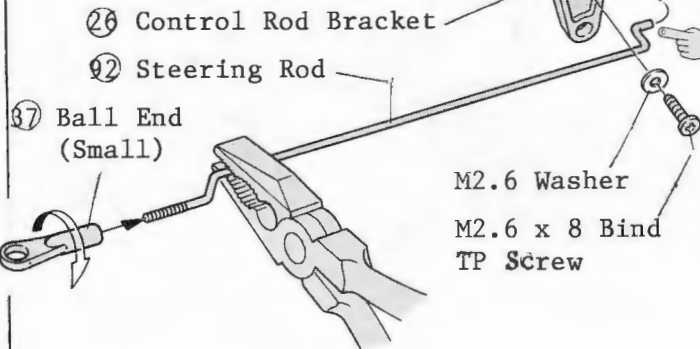


Hole of about 14mm dia.

**2.**

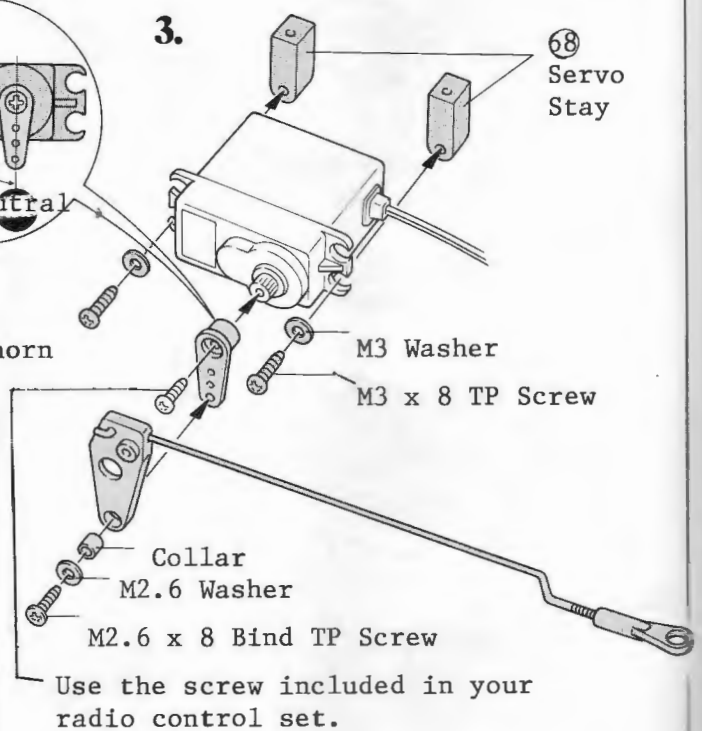


Fix the servo horn in neutral.



M2.6 Washer  
 M2.6 x 8 Bind TP Screw

**3.**



Use the screw included in your radio control set.

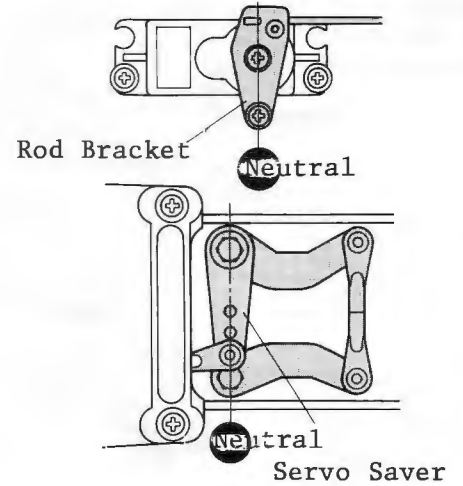
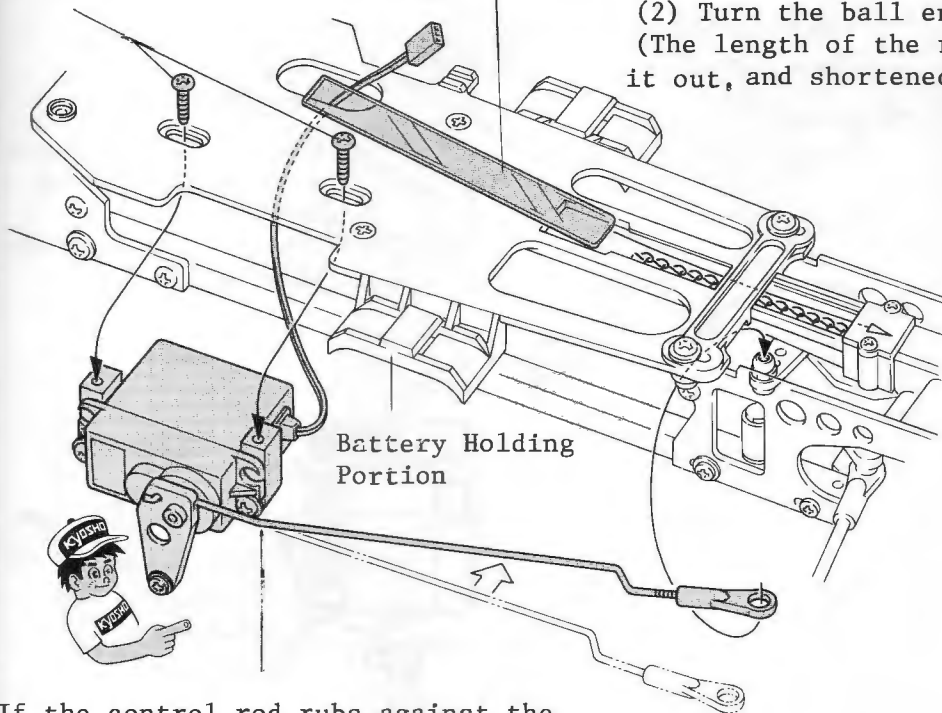
### 34 LINKAGE OF STEERING CONTROL

M3 x 8  
TP Screw

① Chain  
Cover (B)

Adjust it in such a way that the rod bracket and the servo saver will keep in neutral position as listed below;

- (1) Slide the M3 screws back and forth.
  - (2) Turn the ball end out or in.
- (The length of the rod will be prolonged by turning it out, and shortened by screwing it in.)



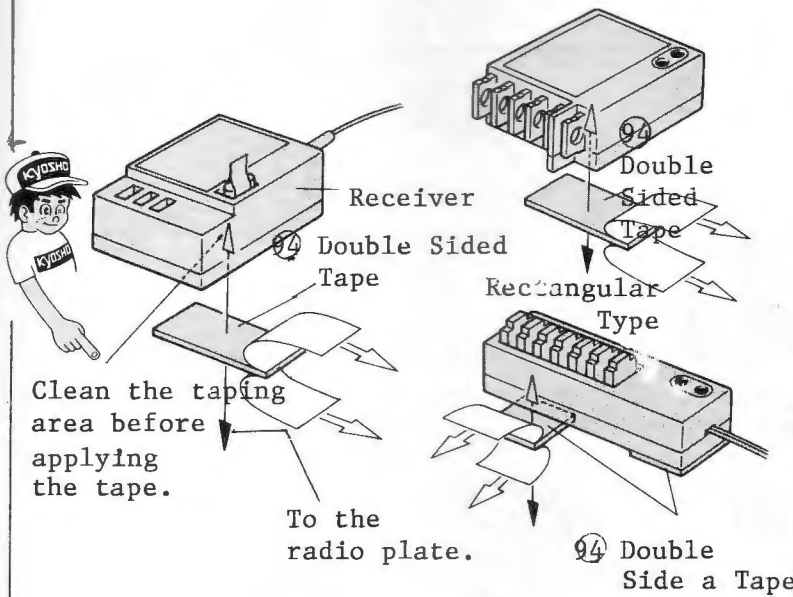
If the control rod rubs against the battery holder, bend the rod inward.

### 35 MOUNTING OF RECEIVER AND SPEED CONTROL AMPLIFIER

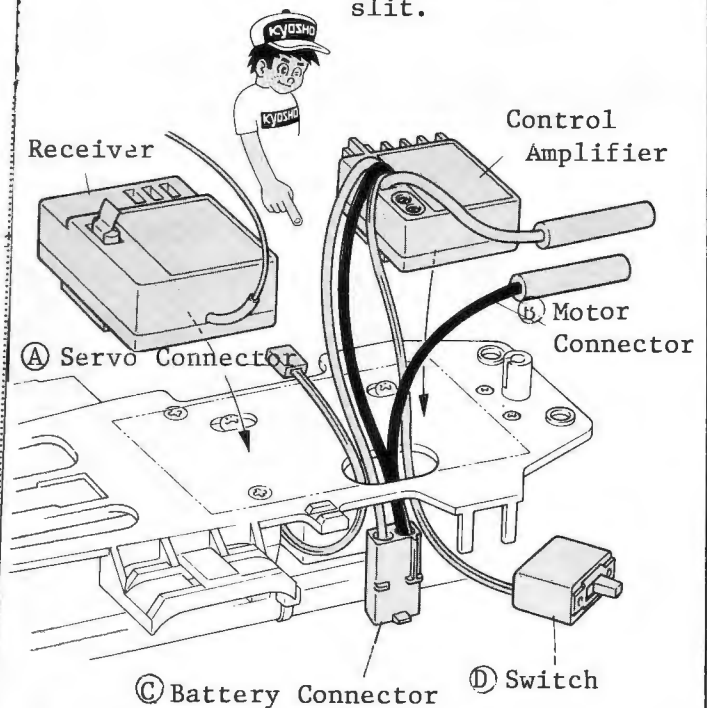
\*Fix each radio control unit to the radio plate with double sided sponge tape.

(Mounting of receiver) (Fixing of Control amp.)

Square Type



Lead out the cords of the units, A to D, through the oblong slit.



### 36 FIXING OF SWITCH AND CONNECTOR

Insert the antenna wire into the antenna pipe.

Plug in the connectors into the right socket on the receiver respectively.

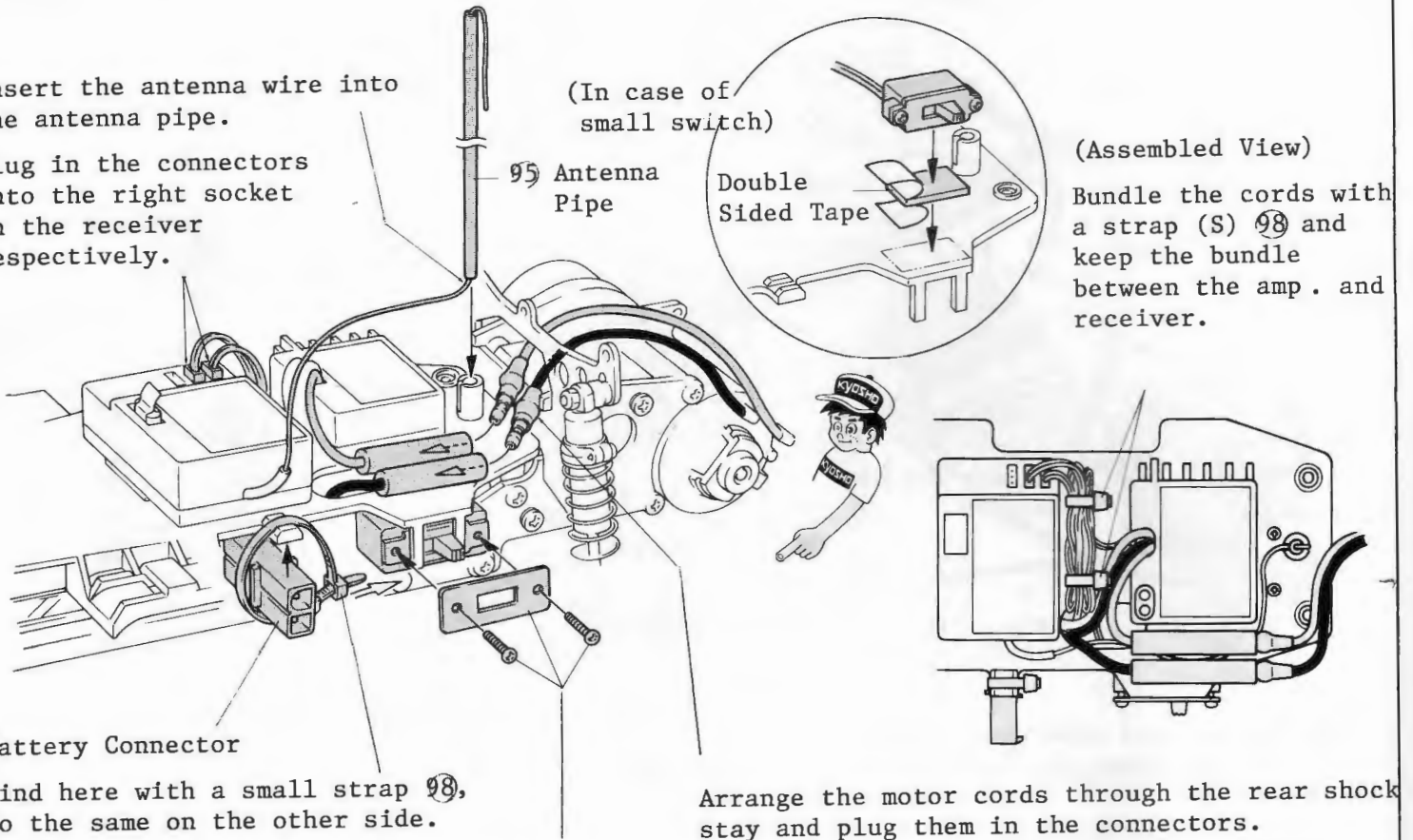
(In case of small switch)

95 Antenna Pipe

Double Sided Tape

(Assembled View)

Bundle the cords with a strap (S) 98 and keep the bundle between the amp. and receiver.



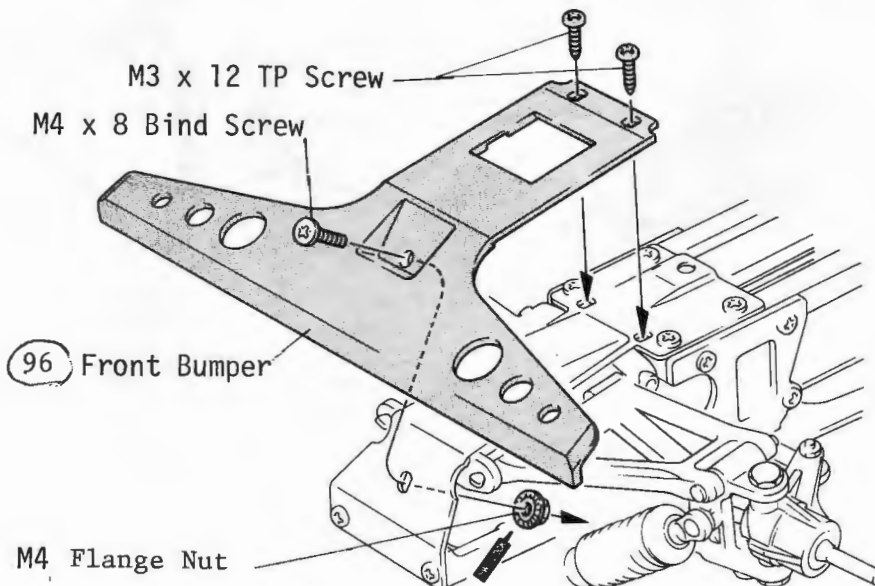
Battery Connector

Bind here with a small strap 98, do the same on the other side.

Use the screws which came with your radio control units.

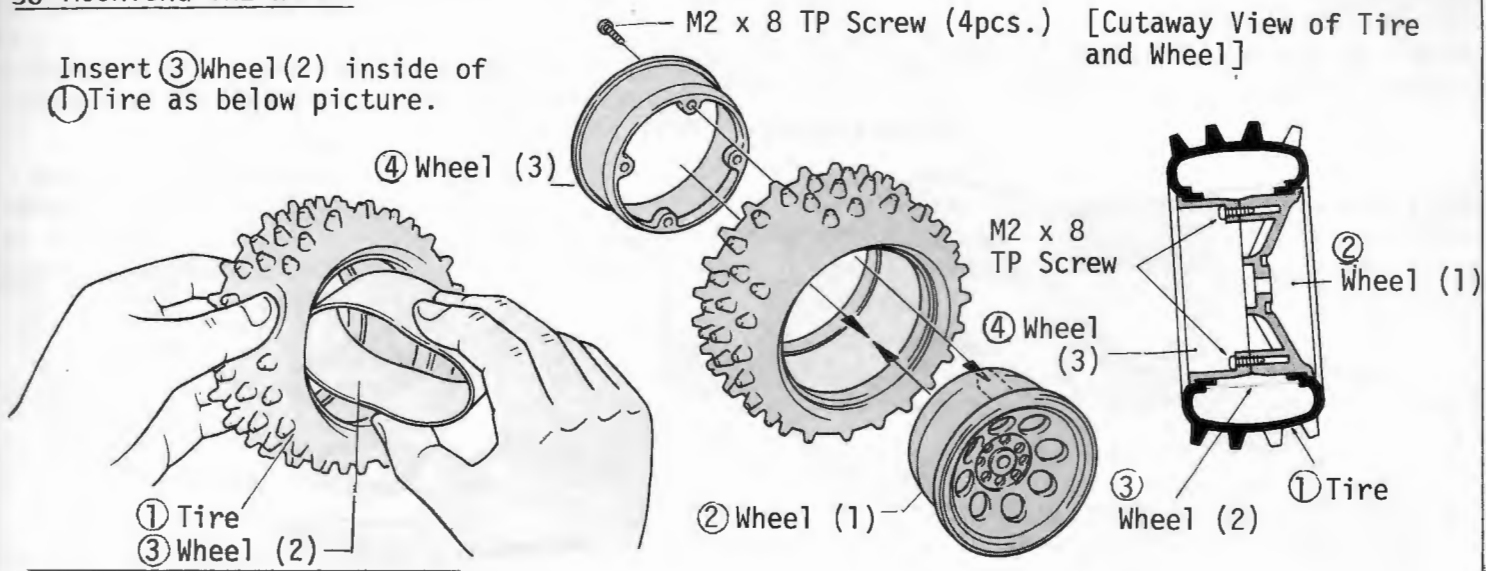
Arrange the motor cords through the rear shock stay and plug them in the connectors.

### 37 INSTALLATION OF BUMPER

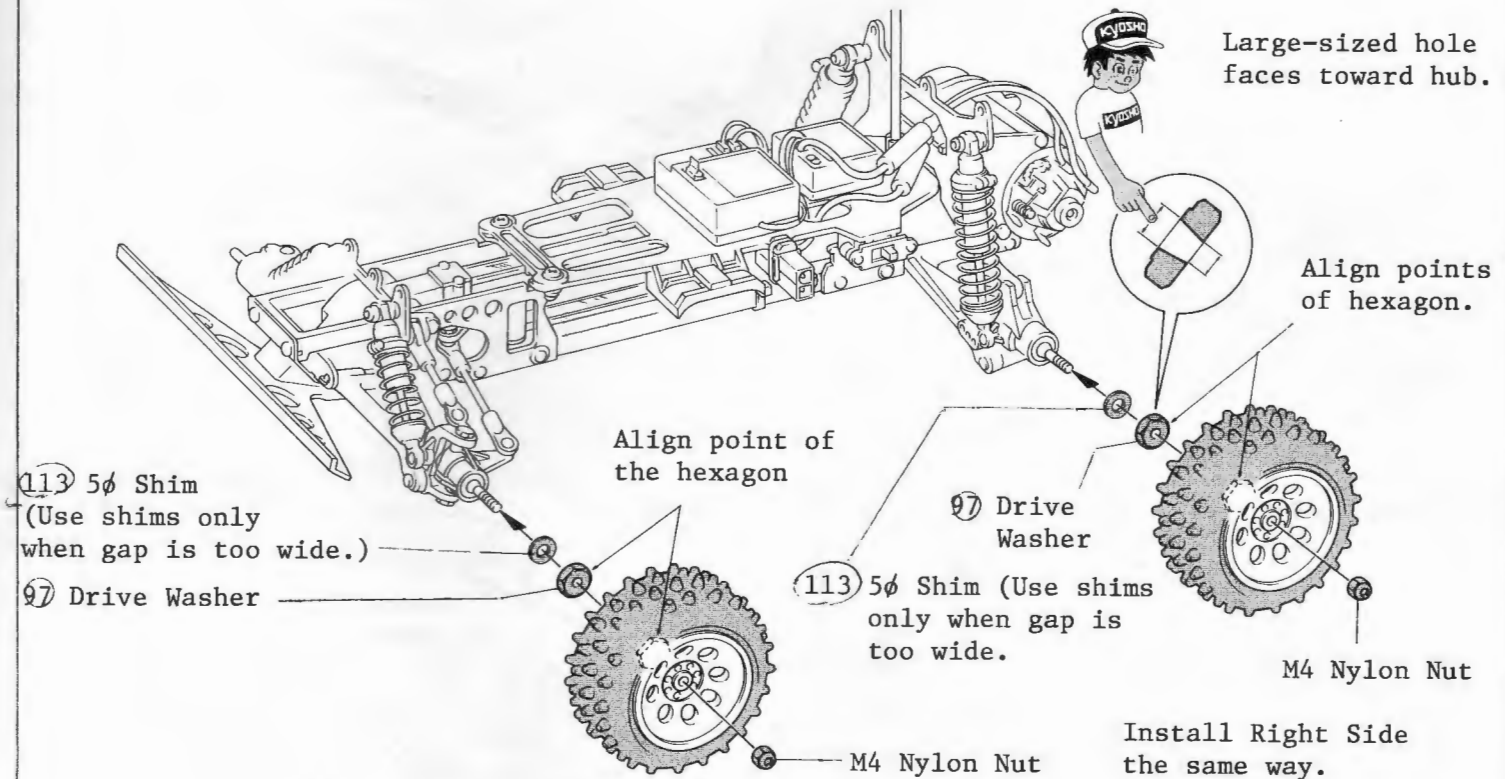


38 MOUNTING THE WHEEL

Insert ③ Wheel (2) inside of ① Tire as below picture.



39 INSTALLATION OF TIRE



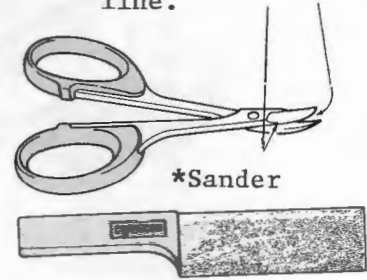
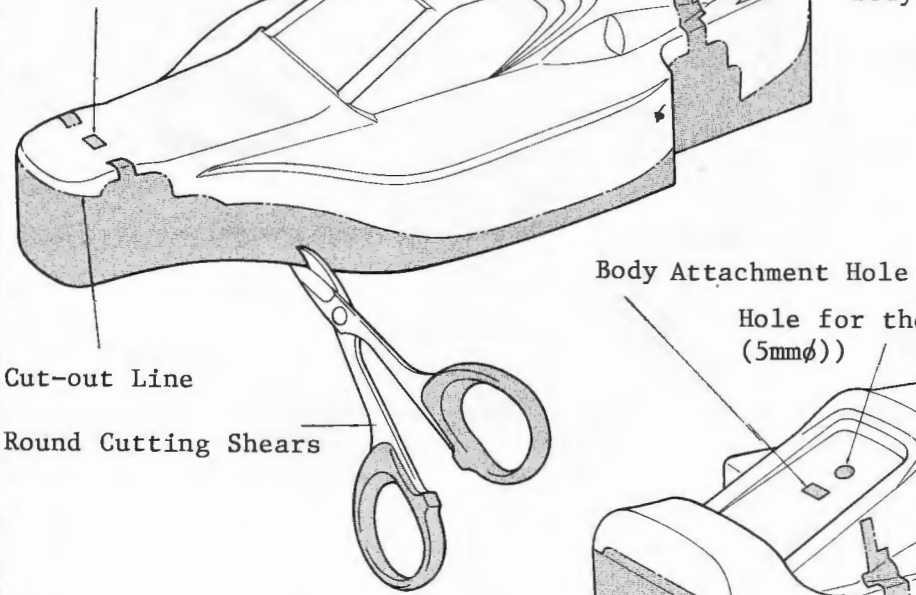
#### 40 CUTTING OUT BODY

\*Cut out the shaded portions with a knife, scissors, or an awl.

Kyosho offers a set of sander and the round cutting shears which is exclusively cutting polycarbonate resin body. No.1829

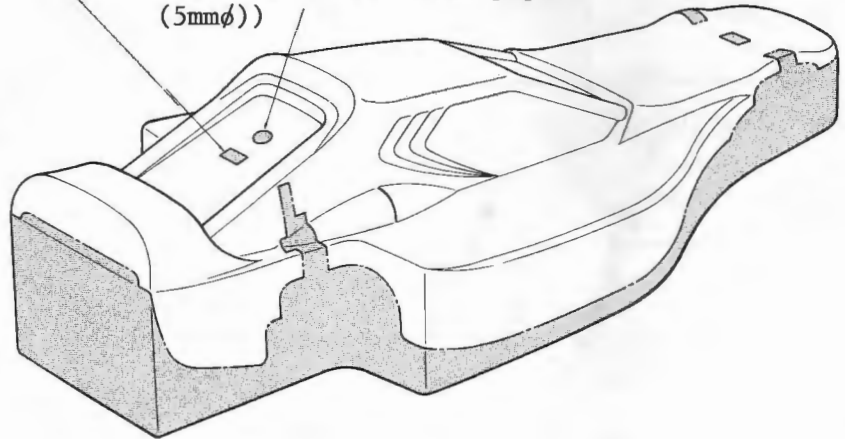
\*Round Cutter  
Use the tips of the blades to cut curved line, and the foot of the blades for straight line.

Body attachment hole (Front)



Body Attachment Hole (Rear)

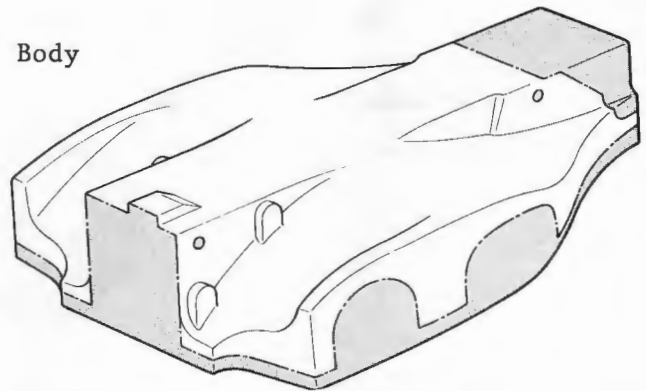
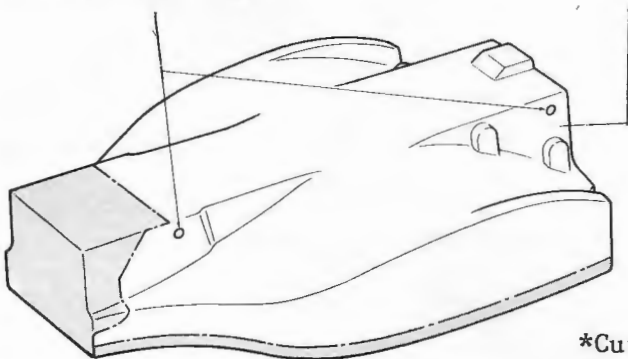
Hole for the antenna pipe (5mmφ)



#### 41 CUTTING OUT UNDERBODY

Attachment hole (3φ)

⑦ Under Body

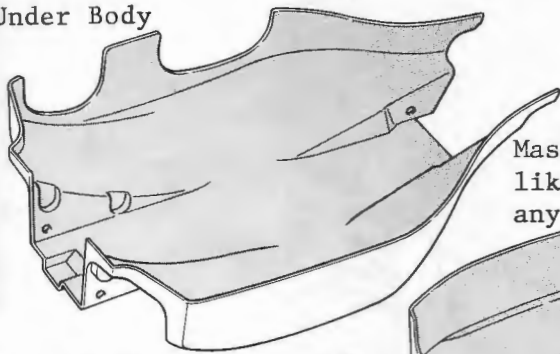


\*Cut out the under body in the same as done with the body.

## 42 PAINTING OF BODY

First, wash the body to remove any oil or dirt. Rinse thoroughly. Paint the inside of the body. You can obtain a color scheme by masking a portion with tape then removing the tape and painting. Apply the lightest color last.

### \*Under Body



Cut out the under body in the same as done with body.

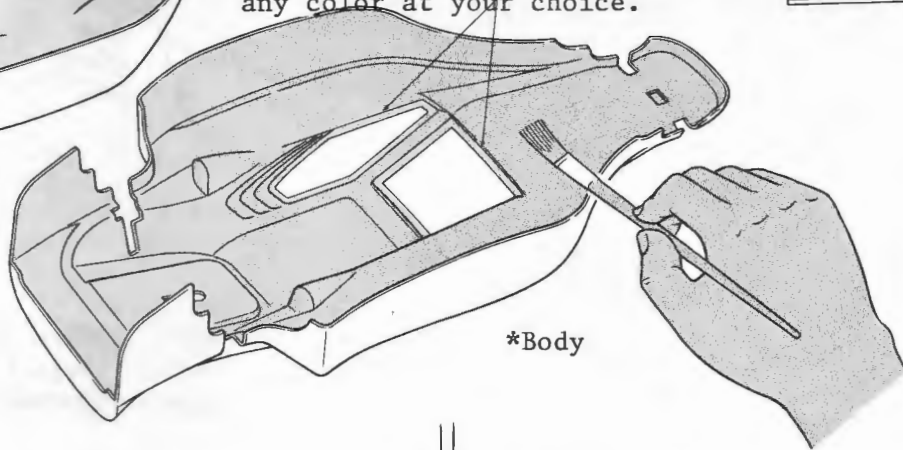
Mask the windows with something like Micron Line Tape and paint it any color at your choice.

Micro-Line tape enhances the appearance of any model.



Polyca Color paint is available for painting your Lexan Bodies. 12 great looking colors!

Polyca Color

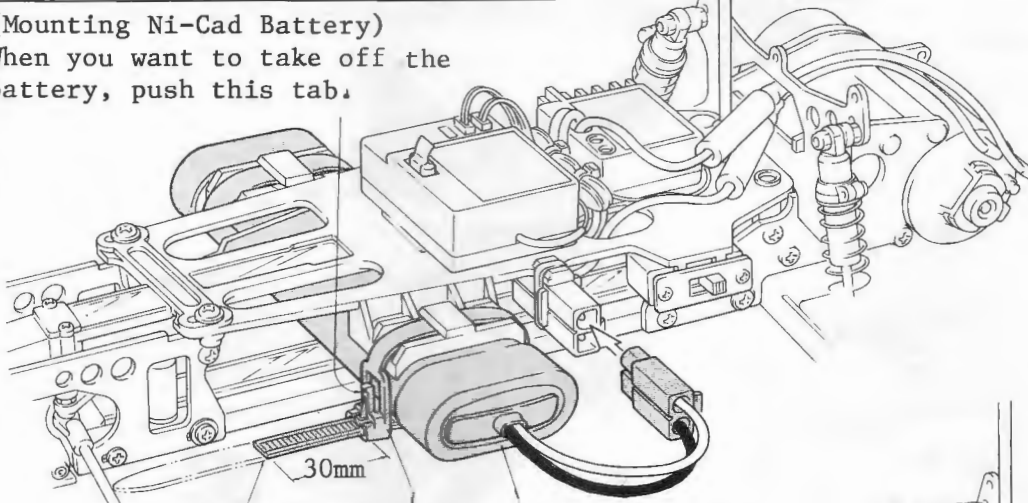


\*Body

## 43 MOUNTING OF UNDERBODY AND BATTERY

(Mounting Ni-Cad Battery)

When you want to take off the battery, push this tab.



⑨ Ni-Cad Strap

Ni-Cad Battery  
(Not included in the kit)

For maximum performance of car, a high performance battery is recommended. (Not included in kit)



7.2V Power Battery No. 2306



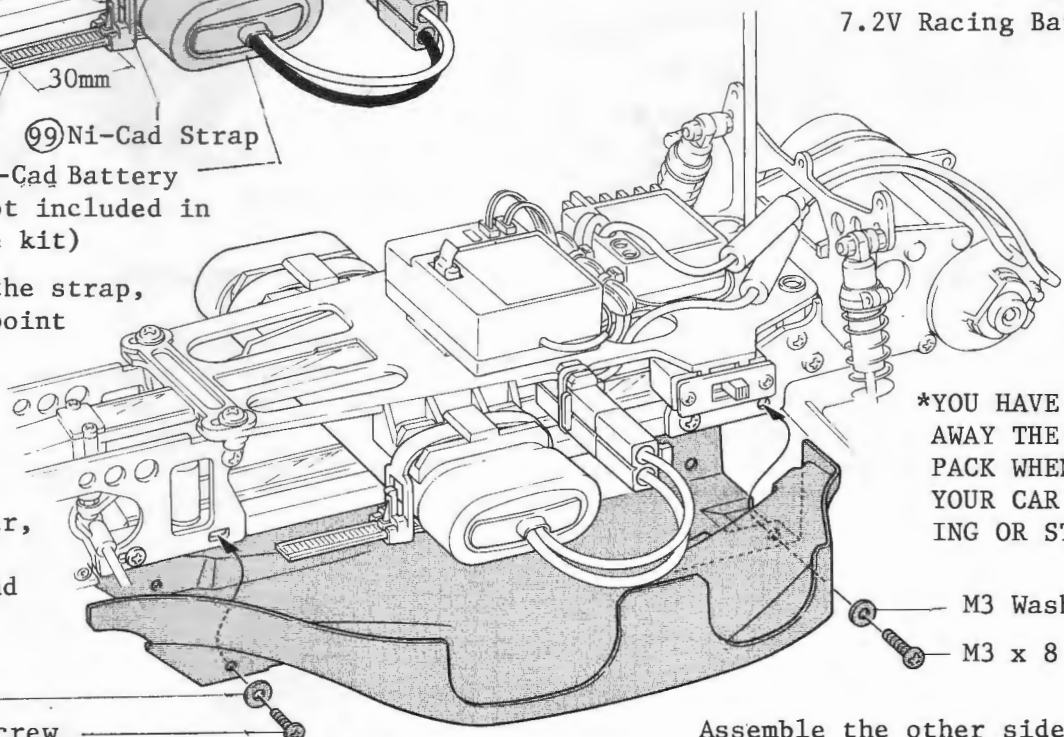
7.2V Racing Battery...  
No. 2218

After fastening the strap, cut it off at a point of 30mm from the knot.

(Mounting of Under Body)

\*Remove the four screws and washer, which have been fixed loosely and mount the under body.

M3 Washer  
M2.6 x 6 Bind Screw



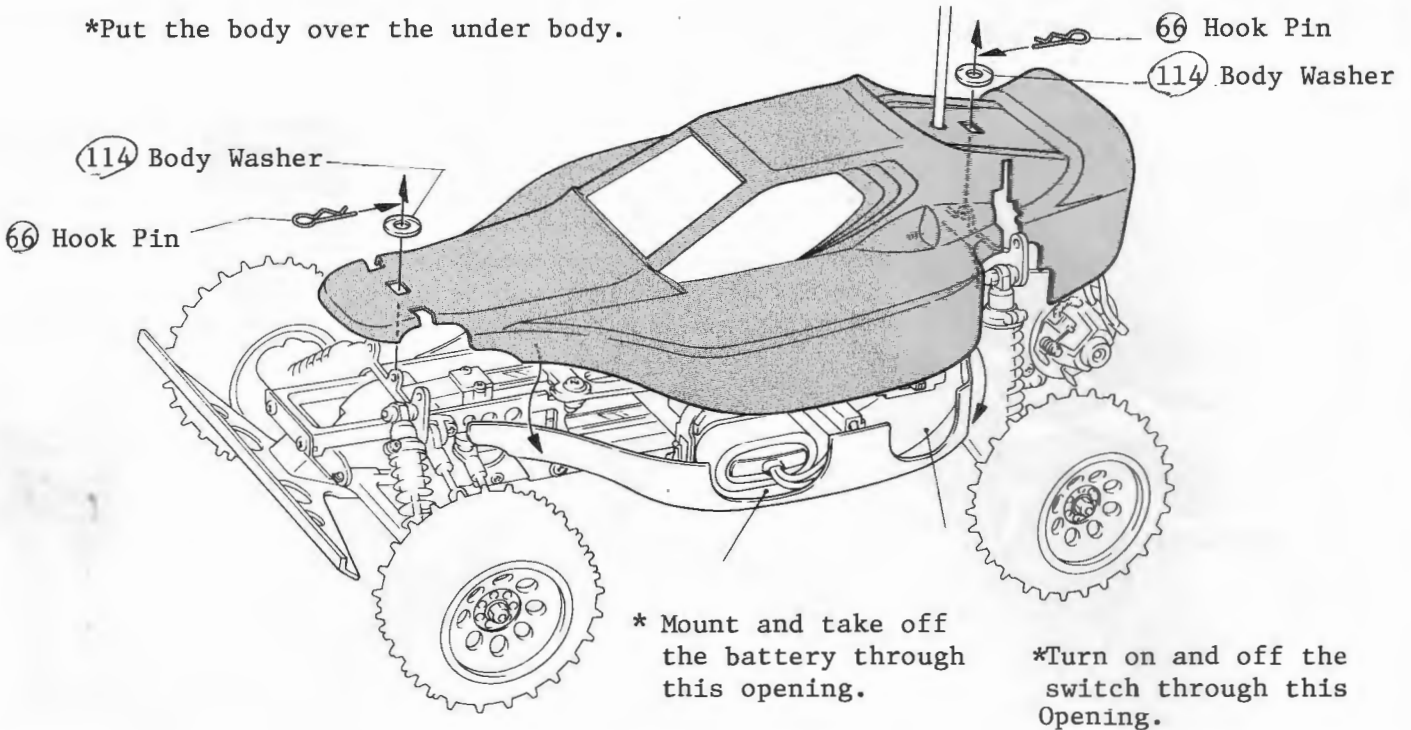
\*YOU HAVE TO TAKE AWAY THE BATTERY PACK WHEN YOU KEEP YOUR CAR NOT RUNNING OR STORE IT.

M3 Washer  
M3 x 8 Screw

Assemble the other side in the same way.

## 44 MOUNT OF BODY

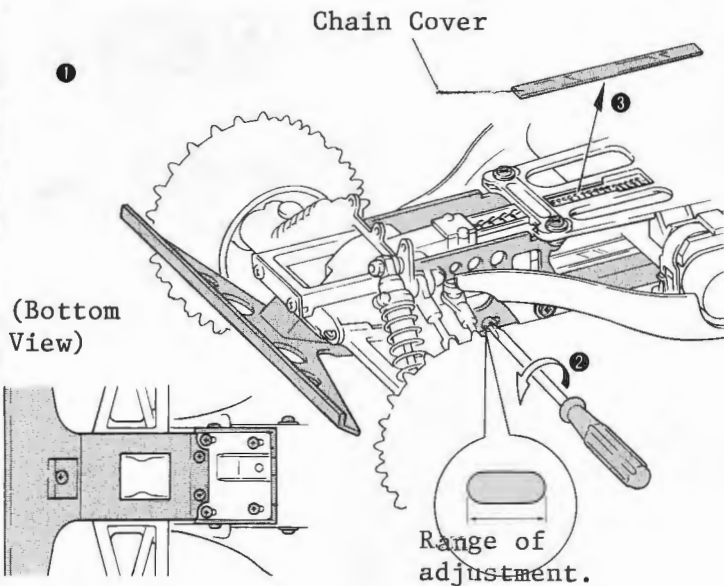
\*Put the body over the under body.



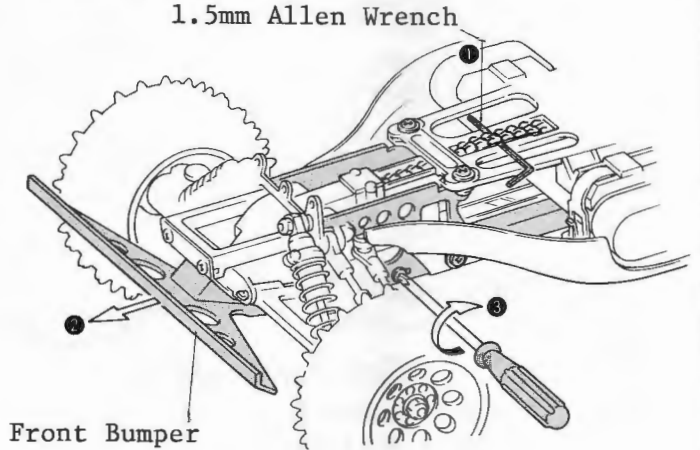
## ADJUSTING THE CHAIN

To avoid any damage to sprockets, adjust the chain every 5-6 runs.

1. Remove the chain Cover



2. Adjust the Chain

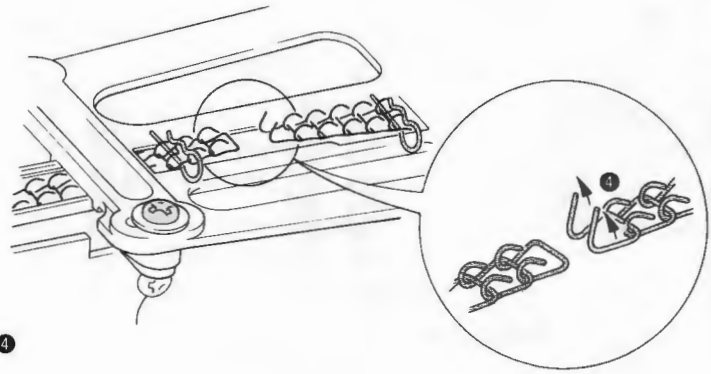
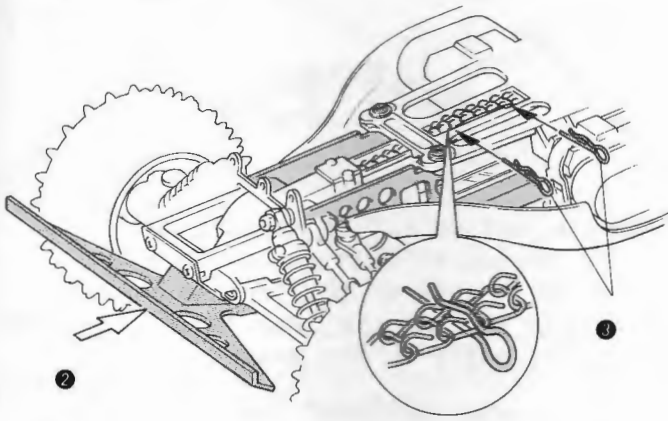


- ① Insert a 1.5mm allen wrench under chain as shown.
- ② Pull bumper forward.
- ③ Keep tension on bumper and tighten the 10 screws firmly.

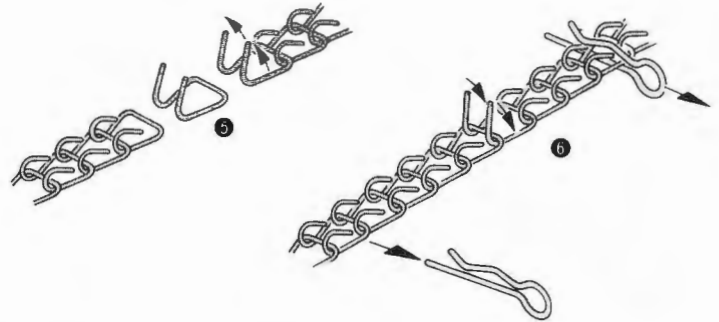
- ① Remove the body.
- ② Loosen 10 (darkened) screws 1/2 turn each.
- ③ Remove the chain cover.



\*When chain is stretched beyond range of adjustment.

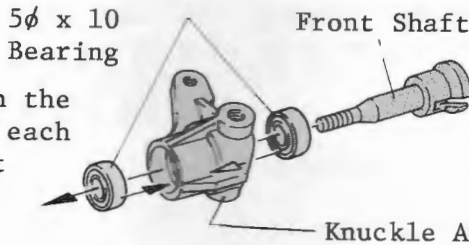


- ① Loosen the 10 screws.
- ② Push bumper rearward to loosen chain fully.
- ③ Hold the chain with hook pins as shown in inset drawing.
- ④ Bend up the link.
- ⑤ Remove one link.
- ⑥ Connect the chain again by bending the link ends down. Readjust the chain.

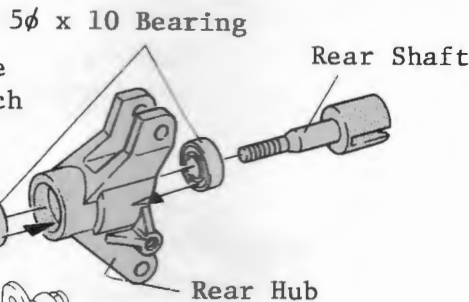
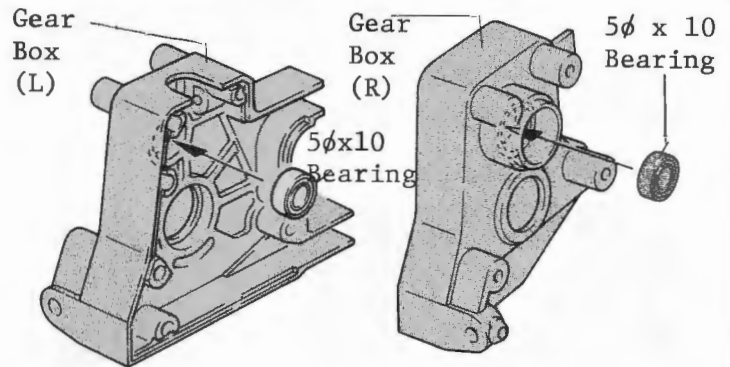


(Bearing)

By employing the optional ball bearing, you can expect smoother rotation and longer duration of running.

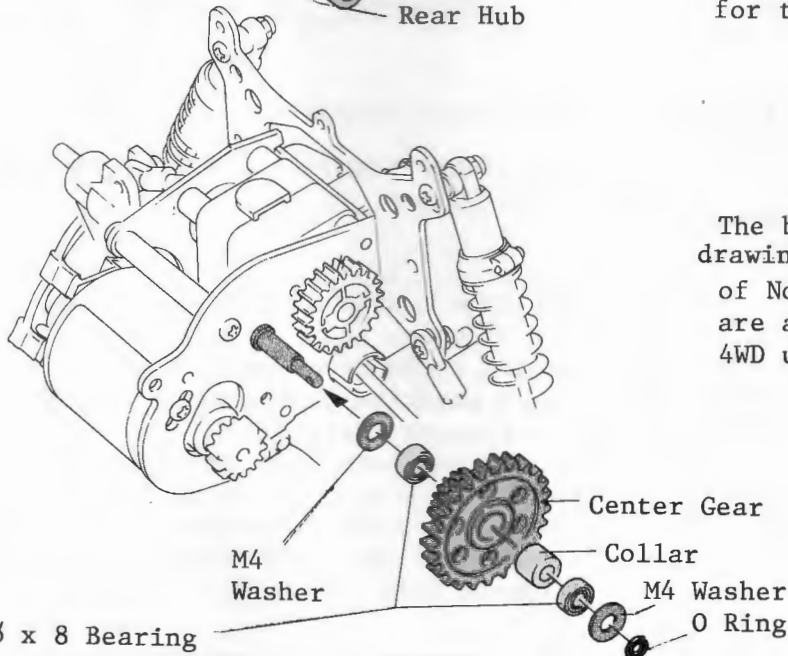


(4 bearings on the front shaft 2 each right and left sides.)



(4 bearing on the rear shaft, 2 each right and left sides.)

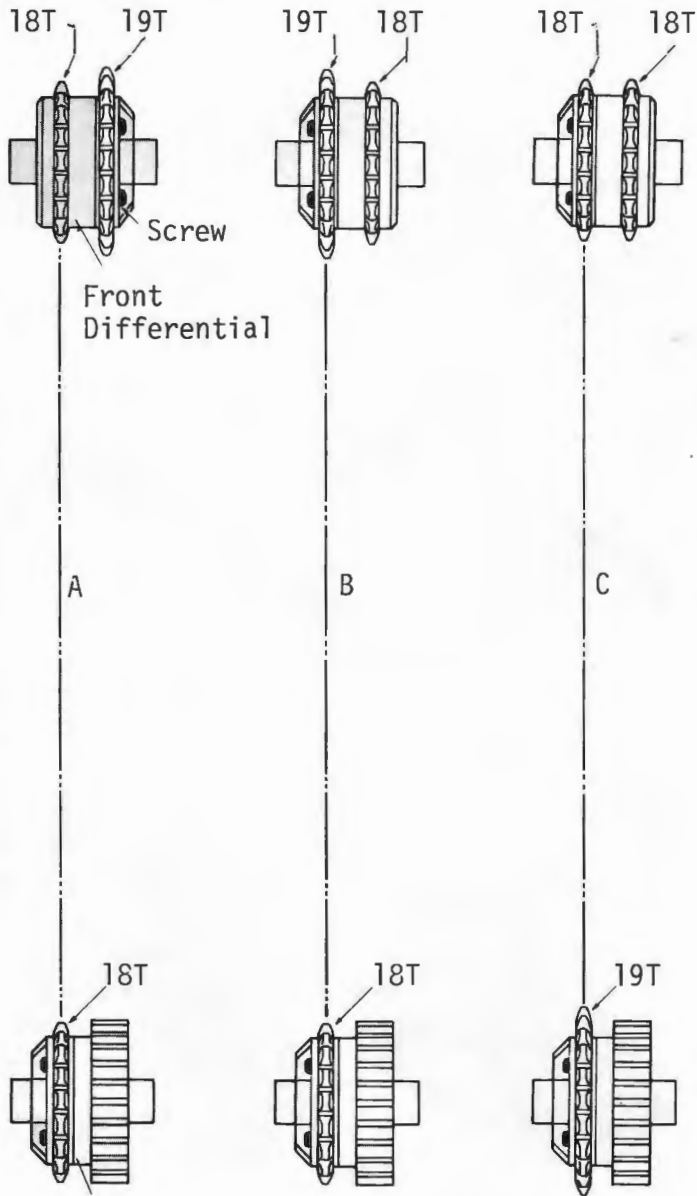
In the illustration above, 10 ball bearings (5φ x 10φ) are adopted. Kyosho sells a set of NO.1901 ball bearings, containing 2 each, in the market. So, 5 sets of it are required for the Optima Pro 4WD.



The ball bearings identified in the left drawing (4φ x 8φ) are used in 2 each. A set of No.1903 ball bearings, containing 2 each, are available from Kyosho. The Optima Pro 4WD uses one set.

[Adjusting Front/Rear Power Ratio]

By changing the front and rear sprockets, you can change the power ratio.



Rear Differential

- A. Normal: Front and rear turn at same rate.
- B. Rear wheels have slightly more power.
- C. Front wheels have slightly more power.

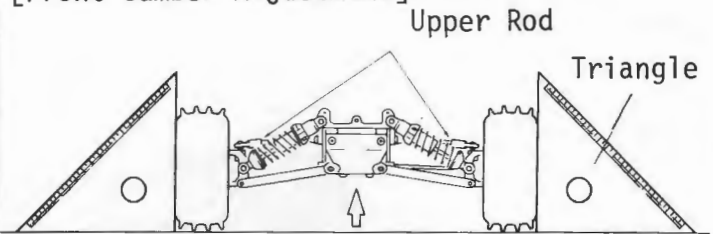
[Keeping the Chain Clean]

Be careful not to let sand and dust in through the chain cover and chain guide. Seal the openings around the chain cover and guide with cellophane tape or silicone sealer. Remove the gearbox hatch cover and hold the car upside down to remove any dirt.

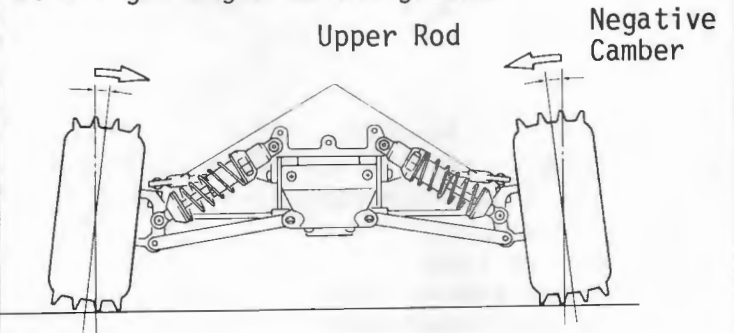
[Replacing the Chain]

To replace the chain, remove the chain cover (B); and holding the model vertically with the front upward, feed the chain from the front sprocket to the rear. It may require a few tries to get it right.

[Front Camber Adjustment]

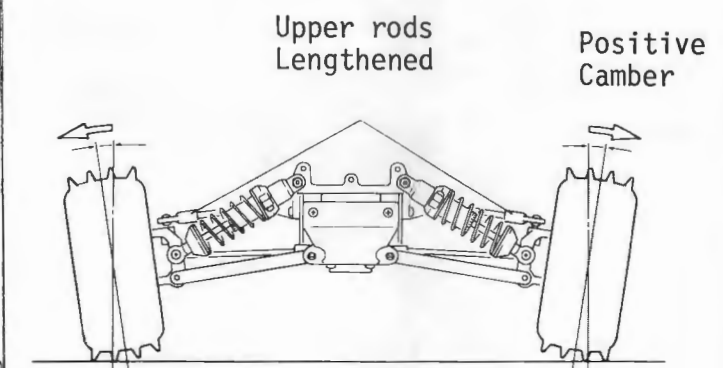


Place the car on a flat surface with the chassis raised as high as possible and adjust the length of the front and rear upper rods in a way so that the tires stand at a right angle to the ground.



Negative camber results when you make the upper rods shorter.

With negative camber at front, you can get better steering. In case of rear, you can get higher grip of rear tire.

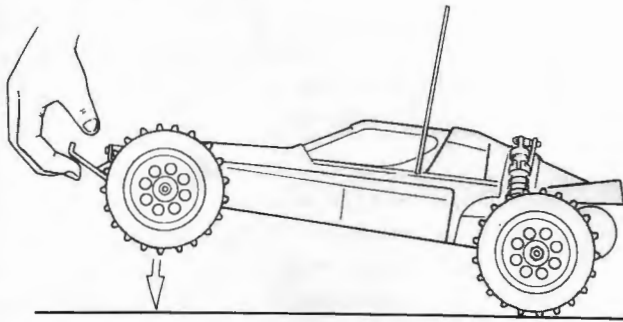


Positive camber results when you make the upper rods longer

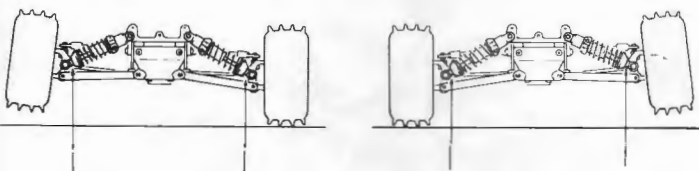
With positive camber at front, you can get tendency of under stair. In case of rear, you can get tendency of over stair.

\* Too much positive camber will be cause of coming off swing shaft.

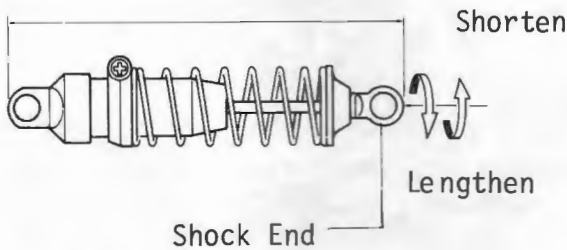
[Front Wheel Height]



Place the car on a flat area, raise the front end and then lower the front wheels slowly to see whether they will touch the ground evenly. If not, adjust the length of the shocks. If they are uneven, steering to the right and left will not be the same.



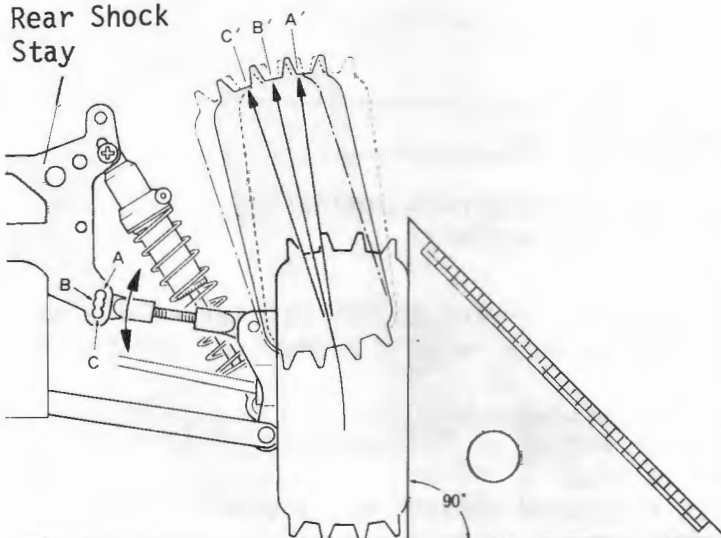
Lengthen Shorten Shorten Lengthen



Adjust the length by turning the shock end.

[Rear Camber Adjustment]

Rear Shock Stay



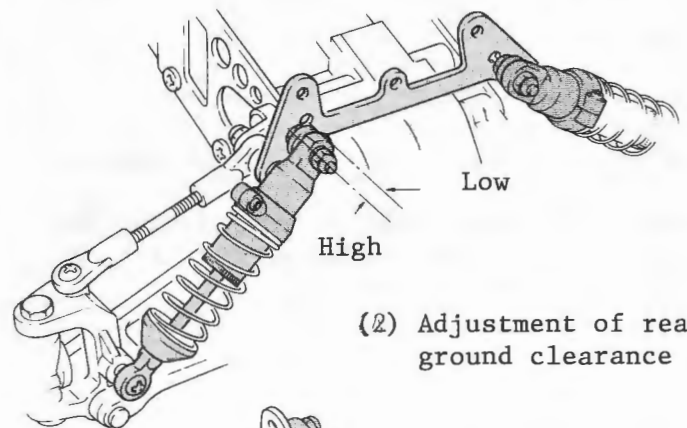
You can alter the rear wheel camber by shifting the bolt hole location of the upper rod. Hole "A" provides more positive camber while hole "C" provides more negative camber. The middle hole "B" should be used normally.

(Adjustment of Shock Oil and Spring)

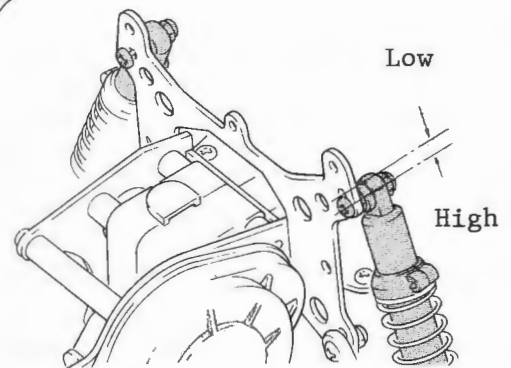
- Front (With lighter shock oil, or by loosening the spring tension)
  - ... The steering becomes more effective.
- Front (With heavier shock oil, or by hardening the spring tension)
  - ... The steering becomes less effective.
- Rear (With lighter shock oil, or by loosening the spring tension)
  - ... The traction increases.
- Rear (With heavier shock oil, or by hardening the spring tension)
  - ... The traction decreases.

(Adjustment of Ground Clearance)

(1) Adjustment of front ground clearance



(2) Adjustment of rear ground clearance



According to running place you can adjust the ground clearance. For example, on lawn by low clearance, on worse grip place by higher ground clearance.

(Gear Ratio and Motor)

Pinion Gear	9T	10T	11T	12T	13T	14T
Gear Ratio	13.8	12.4	11.2	10.3	9.5	8.8
Le -	← 240WS →					
Man 5	← 240SB →					
Motor	← H-240S →					

\* Use higher teeth of pinion gear than 14T in case of using SPA & Le Mans 360 system.

### (Customizing the Tire 1)

You can increase performance for various track conditions by trimming the knobs of the tires. Consult the chart below.

Track	Amount of Trim
Grass	1/2
Concrete	2/3
Sand	None
Hard Dirt	1/3
Soft Dirt	None

### (Customizing the Tires 2)

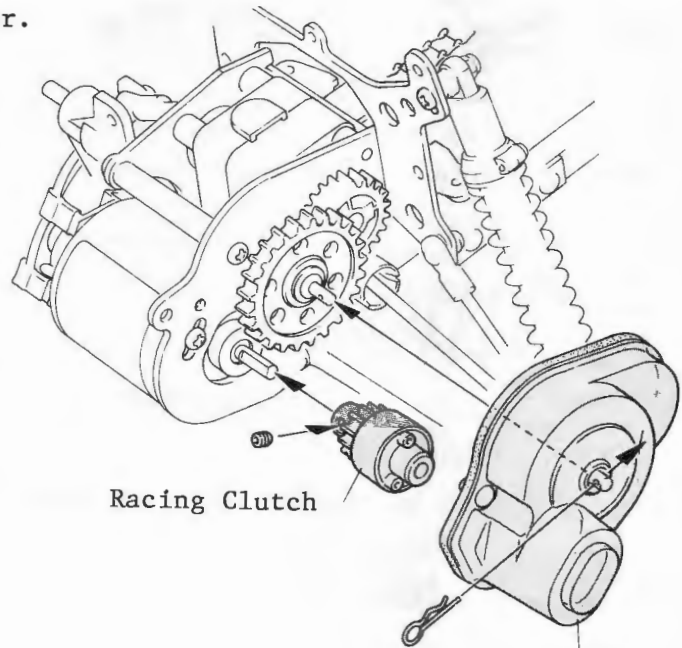
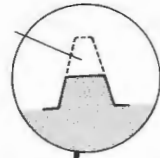
Besides these items, tires for hard and soft road surfaces are available from the Optima House.

### (Optional Racing Clutch)

This is a centrifugal clutch for the electric buggy car with a function of the torque limiter. You can control your car much more easily on the slippery road surface with this optional item employed. Also the device will protect the motor and the gear train from percussion.

\*There are five kinds of racing clutches available. Please refer to the list of optional parts on page 31.

Trim the knob



Racing Clutch

Gear Cover

### WARNING FOR RUNNING THE CAR

The electric R/C powered by a highly efficient Ni-cad battery runs unexpectedly fast. So great care is required when you handle the car and the battery.

- \*Do not run the car in the crowd and on the road.
- \*Check the frequency bands when you see someone else also trying to run his car at a time with you. Radio control systems on the same frequency will respond each other and causing them to go out of control.
- \* If your car suddenly stalled, or being caught by some obstacles, do not try to move the car further. It may result in burning the motor or wiring or in damage on other parts.
- \*Do not try to hold the rotating wheels forcibly.
- \*When connecting the Ni-Cad battery, be sure that the speed controller is positioned in neutral.
- \*Any binding or drag on the bearing portion of driving system imposes heavy load to the motor and battery, thus causing overheating of the components or that the car does not gain speed. So check to see always if the driving system will turn smoothly. Application of oil and grease is also very important.
- \*With those cars which have only one battery powering both the motor and the radio control units, the cars come to be out of control as the battery voltage is being dropped down. So whenever you will find your car losing speed, discontinue the operation.

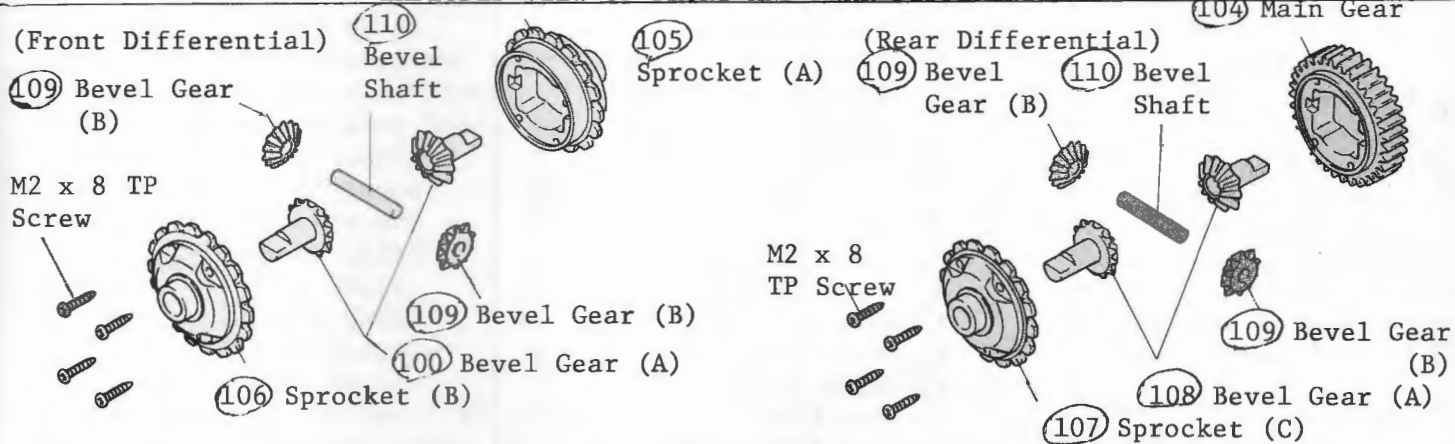
## MAINTENANCE AFTER RUNNING

- \*After a run of the radio controlled car, remove the Ni-cad battery from the car and store it separately.
- \*When you have finished running the car, clean dirt off the car.
- \*Turn off the switches of the radio control units without fail.
- \*Apply grease on the moving parts regularly.
- \*Check that all screws and nuts are tightened properly.

## HANDLING THE MOTOR

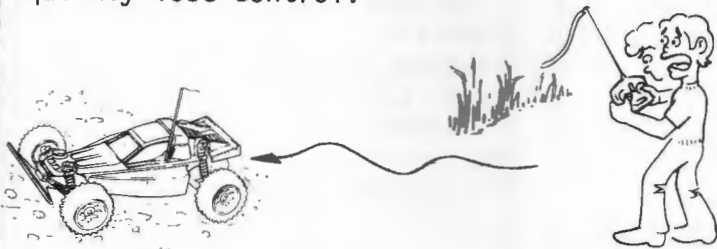
- \*The motor becomes hot after each run. So continuous running may shorten its life. Do not run the car until the motor gets cool after each operation.
- \*After several runs the motor may lose its power. This is because of carbon accumulated on the commutator of motor. In such a case, remove the pinion gear and run it idly for 15 minutes under 7.2 volts.
- \*Oil the bearings of motor periodically.

## EXPLODED VIEW OF FRONT AND REAR DIFFERENTIAL

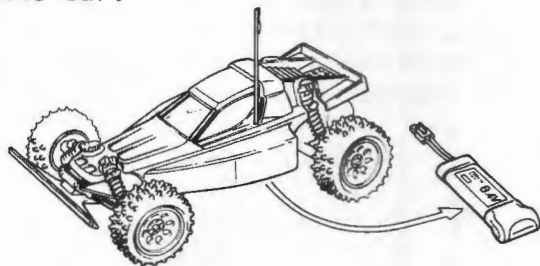


## RUNNING THE OPTIMA PRO 4WD

The same battery powers the radio and motor. As soon as the car starts to slow down, recharge the battery. Otherwise you will quickly lose control.



After running, always remove the battery from the car.



### [Check Before Every Run]

1. Check to see if all bolts and nuts are tightened firmly.
2. Check to see Ni-cad battery is fully charged.
3. Check to see if the steering and speed control is in proportion to your control of the transmitter.
4. Check to see that all wiring is properly insulated.
5. Check to see if parts are moving smoothly.

### [Operating Procedures]

1. Turn transmitter switch on.
2. Switch on the receiver.
3. Check to see if the radio system is working properly.

NOTE: When turning off the switches, turn off the receiver first then transmitter. Otherwise, the servos may be left in a position other than neutral.

### [TROUBLE SHOOTING IF THE CAR DOES NOT START]

1. Check contact of connectors of batteries, connector, and speed control
2. Check to see if the Ni-cad battery is fully charged.
3. Check to see shortage of battery power for the transmitter.
4. Signal jamming from other radios.

## KEY NUMBERS FOR PARTS

No.	Parts Name	Q'ty	No.	Parts Name	Q'ty	NO.	Parts Name	Q'ty
1	Tire	4	61	Rear Sus. Strut	1	120	Counter Gear Shaft	1
2	Wheel (1)	4	62	Radio Plate	1	121	Saver Shaft (C)	1
3	" (2)	4	63	Center Gear bushing	1	122	Saver Spring	1
4	" (3)	4	64	Center Gear	1	123	E Ring (E-5)	1
5	8φ x 14 Bearing	4	65	O Ring	1	124	Pinion Gear (15T)	1
6	Joint	4	66	Hook Pin	4			
7	Allen Wrench(2mm)	1	67	Pinion Gear (12T)	1			
8	Plastic Bushing	8	68	Servo Stay	2			
9	Gear Box (L)	1	69	2φ x 11 Pin	1			
10	Final Pinion	1	70	Under Body	1			
11	Gear Box (R)	1	71	Shock Seal	4			
12	Center Gear Shaft	1	72	Shock Oil	1			
13	Rear Plate (R)	1	73	Front Shock Case	2			
14	" (L)	1	74	Rear Shock Case	2			
15	Counter Gear	1	75	Front Shock Piston	2			
16	M3 Pivot Ball	8	76	Rear Shock Piston	2			
17	Rear Shock Stay	1	77	Front Spring	2			
18	Gear Box Hatch	1	78	Rear Sping	2			
19	Front Sus. Plate	1	79	Spring Stopper	4			
20	Under Guard	1	80	Shock Washer	4			
21	Front Support	1	81	Shock O Ring	4			
22	Main Chassis	2	82	Shock Stopper	4			
23	Front Side Plate	2	83	Spring Holder	4			
24	Front Upper Pivot(L)	1	84	Shock End	4			
25	" (R)	1	85	Joint collar	2			
26	Rod Bracket	1	86	Gear Cover	1			
27	Front Radio Post	2	87	Gear Cover Seal	1			
28	Chain Guide (B)	1	88	Chain Cover (A)	1			
29	" (C)	1	89	Chain Guide (A)	1			
30	Chain	1	90	" (D)	1			
31	Ball Nut	3	91	Chain Cover (B)	1			
32	Saver Shaft(A)	1	92	Steering Rod	1			
33	" (B)	1	93	Saver Spacer	1			
34	Servo Saver(A)	1set	94	Double Sided Tape	1			
35	" (B)	1	95	Antenna Pipe	1			
36	M2 Shaft	1	96	Front Shock	1			
37	Ball End (S)	3	97	Drive Washer	1			
38	King Pin	4	98	Strap (S)	5			
39	Knuckle Arm (L)	1	99	Ni-Cad Strap	2			
40	" (R)	1	100	Body	1			
41	Front Shaft	2	101	Radio Plate Support	1			
42	Fornt Hub (L)	1	102	M2.6 Pivot Ball	4			
43	" (R)	1	103	5φ x 10 Bushing (Metal)	2			
44	E Ring(E-2.5)	4	104	Main Gear	1			
45	Sus. Shaft(A)	2	105	Sprocket (A)	1			
46	" (B)	2	106	" (B)	1			
47	Allen Wrench(1.5mm)	1	107	" (C)	1			
48	Front Sus. Arm	2	108	Bevel Gear (A)	4			
49	5.8φ Ball	4	109	" (B)	4			
50	Ball End (L)	12	110	Bevel Shaft	2			
51	Upper Rod	4	111	Bulk Head (L)	1			
52	Front Shock Stay	1	112	" (R)	1			
53	Swing Shaft	4	113	5φ Shim	4			
54	Shock Bushing	4	114	Body Washer	2			
55	Tie Rod	2	115	Decal	1			
56	Rear Shaft	2	116	Grease	1			
57	Rear Hub (R)	1	117	Shock Wrench	1			
58	Sus. Shaft (C)	2	118	Rear Hub (L)	1			
59	Rear Sus. Arm	2	119	Motor Cord	2			
60	Sus. Shaft (D)	2						

PURCHASING PARTS FOR YOUR KIT

You can purchase replacement and optional parts for your kit. All of the part identified by key numbers (see page 30 for a complete list) are usually not available singularly, but we offer these parts in convenient parts "pack" which can be purchased separately. To figure out which parts pack you need, find the key number for that part within the manual. Then consult our parts pack guide, below. When referring to the parts you need, always use the parts pack number. For instance, if you need a Center Gear Shaft (Key #12) ask your dealer for Kyosho Parts Pack OT-7 (Rear Plate Set).

Parts Pack #	Description	Includes These Key Numbers
OT- 1	Gear Box	9 11 111 112 x 1
OT- 2	Chain	30 x 1
OT- 4	King Pin	38 x 4
OT- 5	Joint	6 x 2
OT- 6	Swing Shaft	53 x 2
OT- 7	Rear Plate Set	12 13 14 x 1, 85 x 2
OT- 8	Front Side Plate	23 x 2
OT-11	Suspension Shaft	45 46 58 60 x 2
OT-14	Under Guard	20 x 1
OT-15	Front Bumper	96 x 1
OT-16	Knuckle Arm	39 40 x 1
OT-17	Front shfat	41 x 2
OT-18	Rear Shaft	56 x 2
OT-19	Drive Washer	97 x 4
OT-20	Main Chassis	22 x 2
OT-22	Body Washer	114 x 10
OT-23	Pinion Gear 12T	67 x 1
OT-27	Sprocket, Gear Set	15 64 69 104 105 106 107 120 x 1
OT-28	Diff. Gear Set	110 x 2, 108 109 x 4
OT-29	O Ring	65 x 10
OT-31	M3 Pivot Ball	16 x 10
OT-32	5.8ø Ball	49 x 10
OT-33	Ball Nut (M2.6)	31 x 10
OT-34	Plate Set	19 61 93 x 1
OT-35	Upper Rod Set	36 x 1, 37 51 x 4, 50 x 8
OT-36	M2.6 Pivot Ball	102 x 10
OT-38	Silicon Grease(2pcs.)	116 x 2
OT-39	E Ring (2.5)	44 x 10
OT-41	Final Pinion	10 x 1
OT-42	Servo Saver Set	32 33 35 121 122 123 x 1 34 1set
OT-43	Rear Shock	117 x 1 49 71 74 76 78 79 80 81 82 83 84 x 2
OT-45	Rear Hub	57 118 x 1
OT-46	Chain Guide Set	28 88 89 91 x 1
OT-49	Gear Cover Set	21 86 87 x 1
OT-55	Front Hub Set	24 25 42 43 x 1
OT-57	Special Shock Stay	17 52 x 1
OT-66	Low Profile Tire (Pin Type)	1 x 2
OT-67	Wheel (For Low Profile Tire)	2 3 4 x 2
OT-69	Suspension Arm Set (Hardened)	48 59 x 2
OT-79	Motor Cord	119 x 2
OT-80	Radio Plate Set	18 26 29 62 90 92 101 x 1 27 68 x 2 54 x 4
OT-81	Screw Set	Screw, Nut Wrench Set
OT-82	Body	70 100 x 1
OT-83	Decal	115 x 1
SC-46	Double Sided Tape	94 x 1
SC-89	Tie Rod	55 x 2 50 102 x 4
SC-101	Rear Shaft Shim	113 x 10
AB-30	Front Shock	117 x 1 71 73 75 77 79 80 81 82 83 84 x 2
EF-37	Strap (S)	98 x 6
EF-39	Ni-Cad Strap	99 x 6

Parts Pack #	Description	Includes These Key Numbers
SD-79	Antenna Pipe	95 x 5
OT-24	Pinion Gear 15T	124 x 1
OT-10	Bushing Set	63 x 1 103 x 2 8 x 10
1911	8φ x 14 Bearing	5 x 2
1889	Body Pin	66 x 5

\* OPTIONAL PARTS \*

W-5009	Hard Pinion Gear 9T	Gear Ratio (13.8:1)	Hardened Alumite
W-5010	" 10T	" (12.4:1)	"
W-5011	" 11T	" (11.2:1)	"
OT-50	Pinion Gear 13T	" (9.5:1)	"
OT-51	" 14T	" (8.8:1)	"
OT-52	" 16T	" (7.7:1)	"
OT-53	" 17T	" (7.3:1)	"
OT-76	Hard Final Pinion Gear, Hardened Alumite		
SC-40	Motor Cover		
W-5040	Racing Clutch 10T		
W-5042	" 12T	"	
W-5044	" 14T	"	
W-5046	" 16T	"	
W-5048	" 18T	"	
OT-64	Special Wing (Silvered)	Polycarbonate	
OT-65	Wing Stay Set	For attachment of OT-64	
OT-54	Stabilizer Set	Frot, Rear	
OT-74	Limiter Gear Set		
1901	Bearing 5φ x 10	2pcs. Replacement for Bushing 8	
1903	4φ x 8	2pcs. Replacement for Bushing 63	
1971	Bearing Set	8 x 10 pcs. 63 x 2	
OT-56	Light Weight Aluminum TP Screw Set	Tapping (Aluminum), Nylon Nut Set	
OT-47	Front Hub Set (low angle)	For better steering response	
W-5021	Low Profile Wheel	Silver	
LM-15	Cooling Plate	For Le Mans Motor & SPA Motor	
1951	Shock Oil Set (S,M.H.)	3 different weights	
1952	Differential Oil		
W-0101	Motor Guard	Protecting of Case your motor	
W-5001	Pressure Oil Shock (S)	High performance, Large φ 12 shock.	
W-5002	" (L)	"	
W-5005	Special Rod Set	Upper Arm, Tie Rod,	
W-5061	Universal Swing Shaft	Wheel Shaft, Swing Shaft Set	
W-5031	Low Profile Tire, Allround Type	For Hard Truck	
W-5032	" , High Grip "	For Soft Truck	
W-0103	Gold Plate Set	For Ornament of your model	
W-1001	High Carbon Plate 1.7	For Material of Mecha Plate	
1863	Sponser Sticker		
W-5003	Adjustable Shock (S)	Adjustable damping action	
W-5004	" (L)	"	



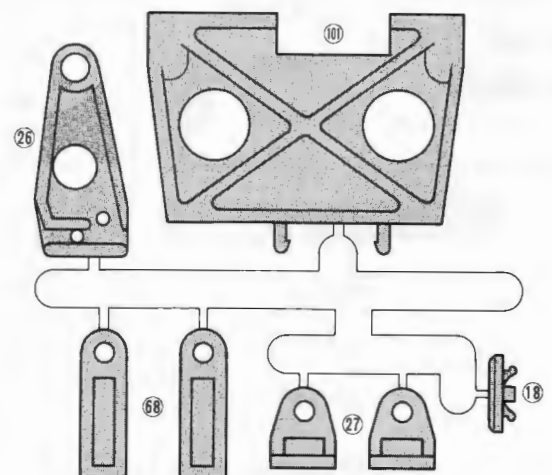
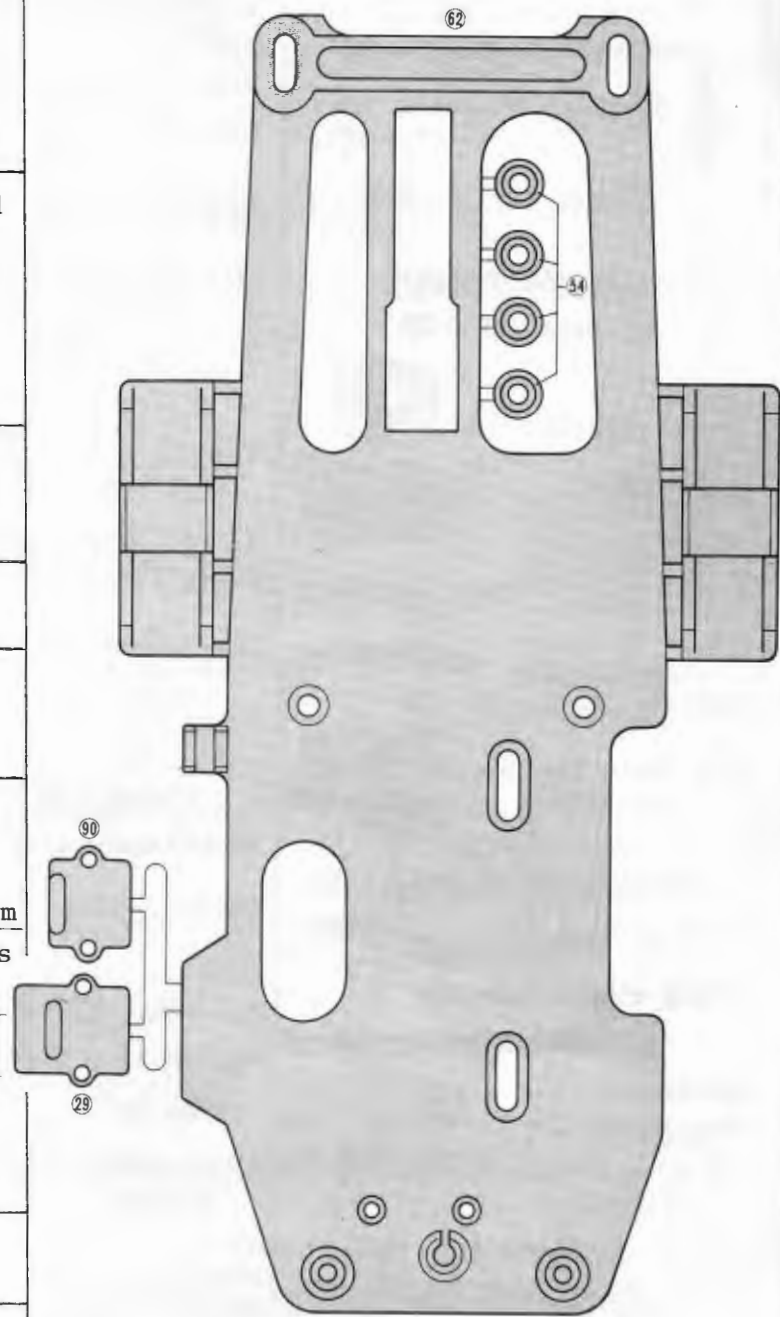
LIST OF BAGGED PARTS

Bag No.	Key No.	Name of Parts	Q'ty	Parts No. used in instruction
Blister	Assembling	Front Diff.	1	1
	"	Rear Diff.	1	1
	"	Front Shock	2	18 19
	"	Rear Shock	2	18 19
	5	8 $\phi$ x 14 Bearing	4	1
	10	Final Pinion Gear	1	2
	20	Under Guard	1	7
	22	Main Chassis	2	8
	39	Knuckle Arm (L)	1	15
	40	" (R)	1	15
	41	Front Shaft	2	15
	48	Front Suspension Arm	2	16
	56	Rear Shaft	2	23
	59	Rear Suspension Arm	2	23
67 (124)	Pinion Gear (12T), (15T)	12x1 15x1	28	
96	Front Shock	1	37	
97	Drive Washer	4	39	
PRO-2	9	Gear Box (L)	1	2
	11	" (R)	1	2
	30	Chain	1	2
	71	Shock Seal	4	20
	72	Shock Oil	1	20
	111	Bulk Head (L)	1	6
	112	" (R)	1	6
	116	Silicon Greases	1	
117	Shock Wrench	1	18	
		Screw Locking Compound	1	
PRO-3	2	Wheel (1)	4	38
	3	" (2)	4	38
	4	" (3)	4	38
PRO-4	6	Joint	4	1
	12	Center Gear Shaft	1	3
	15	Counter Gear	1	4
	16	M3 Pivot Ball	2	5
	61	Ball Nut	3	13
	62	Saver Shaft (A)	1	14
	63	" (B)	1	14
	68	King Pin	4	15
	49	5.8 $\phi$ Ball	4	17 25
	53	Swing Shaft	4	17 25
	63	Center Gear Bushing	1	27
	64	Center Gear	1	27
	65	O Ring	1	27
	69	2 $\phi$ x 11 Pin	2	4 (1 pc. for Spare)
	85	Joint Collar	2	3 12
	103	5 $\phi$ x10 Bushing	2	2 4
114	Body Washer	2	44	
120	Counter Gear Shaft	1	4	
121	Saver Shaft (C)	1	13	
122	Saver Spring	1	13	
PRO-5	13	Rear Plate (R)	1	3
	14	" (L)	1	3
	17	Rear Shock Stay	1	5

Bag No.	Key No.	Name of Parts	Q'ty	Parts No. used in instruction	
PRO-5	19	Front Suspension Plate	1	6	
	23	Front Side Plate	2	10	
	52	Front Shock Stay	1	17	
	61	Rear Suspension Strut	1	24	
	88	Chain Cover (A)	1	11	
	91	" (B)	1	34	
	93	Saver Spacer	1	14	
PRO-6	8	Plastic Bushing	10	15 23 (2pcs. spare)	
	21	Front Support	1	7	
	24	Front Upper Pivot (L)	1	10	
	25	" (R)	1	10	
	28	Chain Guide (B)	1	11	
	34	Servo Saver (A)	1 set	13	
	35	" (B)	1	13	
	42	Front Hub (L)	1	15	
	43	" (R)	1	15	
	57	Rear Hub (R)	1	23	
	86	Gear Cover	1	29	
	89	Chain Guide (A)	1	30	
	118	Rear Hub (L)	1	23	
PRO-7	16	M3 Pivot Ball	6	15 23	
	36	M2 Shaft	1	14	
	37	Ball End (S)	3	14 33	
	45	Suspension Shaft (A)	2	16	
	46	" (B)	2	16	
	50	Ball End (L)	12	17 22 25	
	51	Upper Rod	4	17 25	
	55	Tie Rod	2	22	
	58	Suspension Shaft (C)	2	23	
	60	" (D)	2	24	
	102	M2.6 Pivot Ball	4	13 15	
	PRO-8	18	Gear Box Hatch	1	5
		26	Rod Bracket	1	33
		27	Front Radio Post	2	10
		29	Chain Guide (C)	1	11
54		Shock Bushing	4	21 26	
62		Radio Plate	1	31	
68		Servo Stay	2	33	
87		Gear Cover Seal	1	29	
90		Chain Guide (D)	1	30	
92		Steering Rod	1	33	
94		Double Sided Tape	1	35	
95		Antenna Pipe	1	36	
98		Strap (S)	5	31 36	
99		Ni-Cad Strap	2	43	
101		Radio Plate Support	1	31	
119	Motor Cord	2	28		
Others	1	Tire	4	38	
	70	Under Body	1	41	
	100	Body	1	40	
	115	Decal	1		
		Instruction	1		

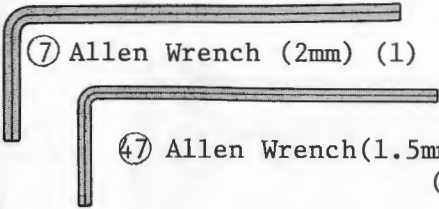
Bag No.	Parts Name	Size	Q'ty	Note
PRO-1 Screw, Nut, Others	TP Screw	M2x8	22	Round Head
		M3x8	16	"
		M3x12	9	"
		M3x16	6	"
		M2.6x8	2	Bind
		M3x6	2	Flat Head
	Screw	M3x8	11	Round Head
		M3x10	2	"
		M3x16	6	"
		M2.6x6	7	Bind
		M2.6x15	2	"
		M3x45	4	"
		M4x8	1	"
	Nut	M2.6	2	w/flange
		M3	8	
		M4	1	
	Nylon Nut	M3	6	
			4	
Set Screw	M3x3 M3x5 M4x4	1		
		4		
		5		
Washer	M2.6 M3 M4 M5	4		
		8		
		2		
		4		
E Ring	E-2.5 E-5	6	2 x spare s	
		1		
Hook Pin	M6	4		
Allen Wrench	1.5mm 2mm	1		
		1		
Spring Washer	M3	4		
Collar		1		

DISTRIBUTIVE VIEW OF PLASTIC PARTS



SMALL PARTS NEEDED (1)

⑦ Allen Wrench (2mm) (1)



④⑦ Allen Wrench(1.5mm) (1)

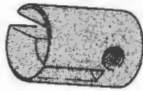
1 INSTALLATION OF JOINT

M4x4 Set Screws(4)

⑤ 8φx14 Bearings(4)



⑥ Joints(4)



2 ASSEMBLY OF REAR GEAR BOX

M3x16 TP Screws (3)



M4x4 Set Screw(1)



⑩③ 5φx10 Bushing (Metal) (1)



3 INSTALLATION OF GEAR BASE

M3x8 Screws (3)



M3x45 Bind Screws(4)



M3 Spring Washers(4)



⑫ Center Gear Shaft(1)



③⑤ Joint Collar(1)



4 INSTALLATION OF FINAL PINION GEAR

⑥⑨ 2φx11 Pin(1)



⑩③ 5φx10 Bushing (Metal) (1)



⑫⑩ Counter Gear Shaft(1)



5 INSTALLATION OF REAR SHOCK STAY

M3x12 TP Screws(2)



M3x16 Screws(2)



M3 Nuts(6)



⑬⑥ M3 Pivot Balls (Silver) (2)



⑬⑧ Gear Box Hatch (Plastic) (1)



6 INSTALLATION OF FRONT GEAR BOX

M3x12 TP Screws(3)



M3x16 TP Screw(1)



7 INSTALLATION OF LOWER GUARD

M3x8 TP Screws(6)



8 INSTALLATION OF REAR PLATE

M3 x 8 Screws(4)



M3 Washers(2)



9 INSTALLATION OF BULK HEAD

M2.6x6 Bind Screws (2)



10 INSTALLATION OF FRONT SUPPORT

M2.6x6 Bind Screws(4)



M3x8 TP SCrews(2)



M3x12 TP Screws(2)



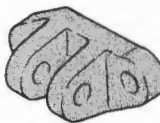
M3x16 TP Screws(2)



M3 Washers(2)



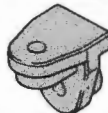
⑭④ Front Upper Pivot(L) (Plastic) (1)



⑭⑤ Front Upper Pivot(R) (Plastic) (1)



⑭⑦ Front Radio Posts(2) (Plastic)

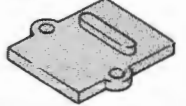


11 INSTALLATION OF CHAIN GUIDE

M2x8 TP SCrews(2)



⑲ Chain Guide(C) (Plastic) (1)



12 INSTALLATION OF JOINT COLLAR

M3 x 8 Screws(2)



⑳ Joint Collar(1)



13 ASSEMBLY OF SERVO SAVER

M2.6x6 Bind Screw(1)



M2.6 Washers (Black) (2)



⑳ Ball Nuts(3)



⑩② M2.6 Pivot Balls(Black) (2)



⑫① Saver Shaft(C) (1)



⑫② Saver Spring (1)



⑫③ E Ring(E-5) (1)



14 INSTALLATION OF SERVO SAVER

M2.6x15 Bind Screws(2)



⑳ Saver Shaft(A) (1)



⑳ saver Shaft (B) (1)



⑳ M2 Shaft(1)



⑳ Ball Ends(S) (2)



⑳ Saver Spacer(1)



**15 ASSEMBLY OF KNUCKLE ARM**

M2.6 Nuts(2)



8 Plastic Bushings (4)



16 M3 Pivot Balls (Silver)(4)



88 King Pins(4)



41 Front Shafts(2)



102 M2.6 Pilot Balls (Black) (2)



**16 INSTALLATION OF FRONT SUSPENSION ARM**

M3x5 Set Screws(2)



44 E Rings(E-2.5)(2)



45 Sus. Shafts(A)(2) (shorter one)



46 Sus. Shafts(B)(2) (Shorter one, Silver)



**17 INSTALLATION OF FRONT UPPER ROD**

M3x16 Screws(4)



M3 Nuts(2)



M3 Nylon Nuts(2)



49 5.8φ Balls(2)



50 Ball Ends(L)(4)



51 Upper Rods(2)



**20 FILLING SHOCK WITH OIL**

71 Shock Seals(4)



**21 INSTALLATION OF FRONT SHOCK**

M3 Nylon Nuts(2)



54 Shock Bushes(2) (Plastic)



**22 INSTALLATION OF TIE ROD**

50 Ball Ends(L)(4)



55 Tie Rods(2)



**23 INSTALLATION OF REAR HUB**

8 Plastic Bushings (4)



16 M3 Pivot Balls (Silver)(2)



44 E Rings(E-2.5)(2)



56 Rear Shafts(2)



58 Sus. Shaft(C)(2) (Longer one, Black)



**24 INSTALLATION OF REAR SUSPENSION ARM**

M3x5 Set Screws(Silver)(2)



60 Sus. Shafts(D) (Longer one)(2)



**25 INSTALLATION OF REAR UPPER ROD**

M3x10 Screws(2)



49 5.8φ Balls(2)



50 Ball Ends(L)(4)



51 Upper Rods(2)



**26 INSTALLATION OF REAR SHOCK**

M3 Nylon Nuts(2)



54 Shock Bushes(2) (Plastic)



**27 INSTALLATION OF CENTER GEAR**

M4 Washers(2)



63 Center Gear Bushing(1)



65 O Ring(P-3) (Rubber, Black)



**28 MOUNTING OF MOTOR**

M3x3 Set Screw(1)



M3x8 Screws(2)



**29 INSTALLATION OF GEAR COVER**

66 Hook Pin(1)



**30 INSTALLATION OF CHAIN GUIDE (A)**

M2 x 8 TP Screws (2)



90 Chain Guide(D) (1)(Plastic)



**31 INSTALLATION OF RADIO PLATE**

M2x8 TP Screws(2)



M3x6 Flat Head TP Screws(2)



M3x8 TP Screws(4)



M3 Washers(2)



**33 FIXING OF STEERING CONTROL ROD**

M3x8 Tp Screws(2)



M2.6x8 Bind TP Screws(2)



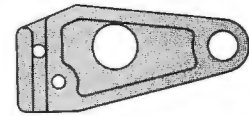
M3 Washers(2)



M2.6 Washers(Black)(2)



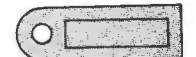
26 Rod Bracket (Plastic) (1)



37 Ball End (Small)(1)



68 Servo Staiies (Plastic)(2)



92 Steering Rod (1)



Collar(1)



**34 LINKAGE OF STEERING CONTROL**

M3x8 TP Screws(2)



**37 INSTALLATION OF BUMPER**

M3x12 TP Screws(2)



M4x8 Bind Screw(1)



M4 Flange Nut(1)



**38 MOUNTING THE WHEEL**

M2x8 TP Screws(16)

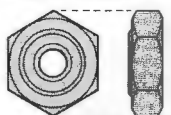


**39 INSTALLATION OF TIRE**

M4 Nylon Nuts(4)



97 Drive Washers(4)



113

5φ Shims(4)



(Use as moving unstably)

**44 MOUNT OF BODY**

66 Hook Pins(2)



114 Body Washers (Transparent plastic washer)(2)

