

MUGEN BULLDOG AWDS

*1/10th SCALE
ELECTRIC POWERED RADIO CONTROLLED
SPECIAL OFFROADER*



*good performance even in the hands of a beginner
high-traction tires give good roadholding and stability*

■ 2CH. RADIO ■ MABUCHI RS540S ■ 7.2V-1200mAh NICAD BATTERY

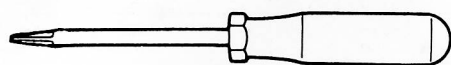
INSTRUCTION
MANUAL



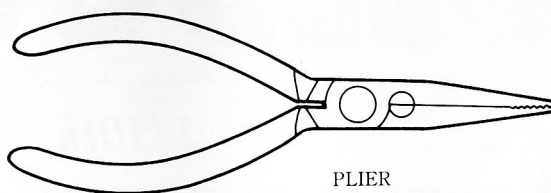
Mugen Engineering Co.,Ltd.

1395 TAKANE-CHO FUNABASHI, CHIBA 273, JAPAN
TEL: 0474-30-1663 FAX: 0474-30-1665

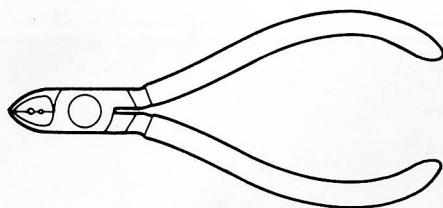
① NECESSARY TOOLS FOR ASSEMBLING



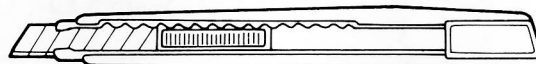
SCREW DRIVERS
(for both Slotted Head Screw & Cross Head Screw)



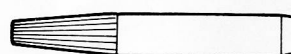
PLIER



CUTTING PLIER



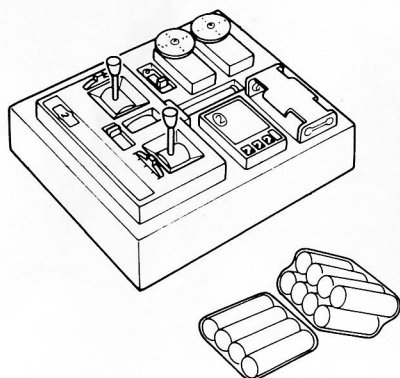
CUTTING KNIFE



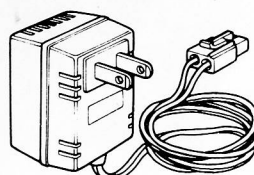
GLUE

② NECESSARY THINGS OTHER THAN THE KITS

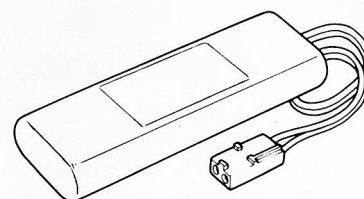
2-Channel Radio



Batteries for Radio



Battery Charger



Ni-Cd Battery either 7.2V or 6V

③ NEUTRAL SETTING OF THE RADIO

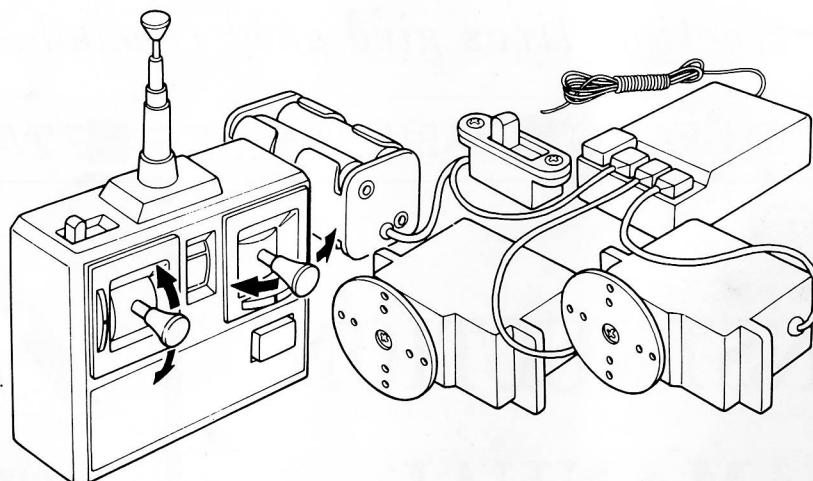
Radio has to be NEUTRAL when installing to the kit.

Sequence to set the neutral:

1. Power switch of the transmitter and the receiver ON.
2. Trim lever of the transmitter has to be set at the center.
3. Power switch of the receiver OFF.
4. Power switch of the transmitter OFF.

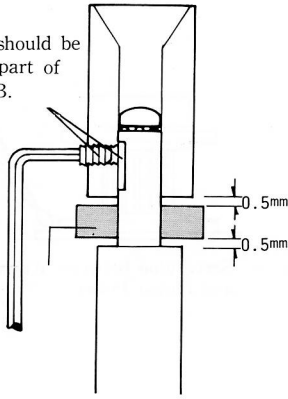
NOTE

Instruction manual of the 2-channel radio should be carefully read before using.

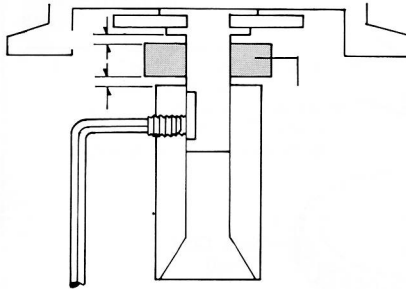


4 FRONT/REAR DIFFERENTIAL GEAR ASSEMBLY

Grub Screw should be set at D-cut part of Final Shaft B.

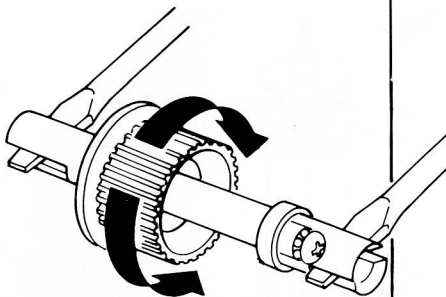


Grub Screw have to be loosen when Differential Gear is adjusted.

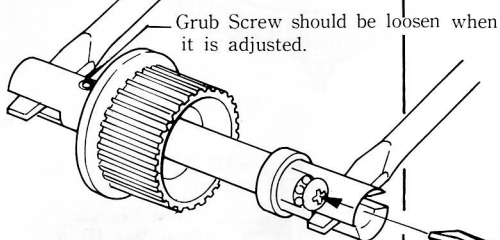


Confirm whether Metal revolves smoothly.

1. Driving Pulley should not be revolved.

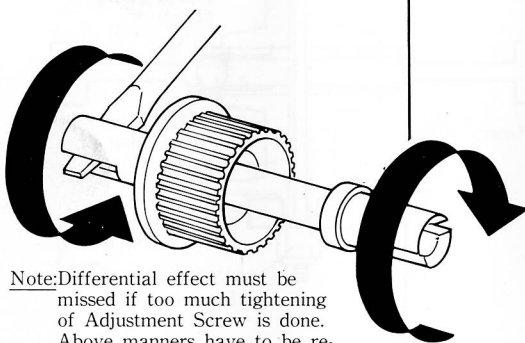


2. If Driving Pulley is revolved, tighten Adjustment Screw slightly. This grub screw has to be loosen in case of adjustment.



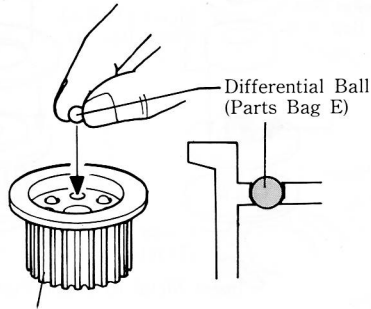
Grub Screw should be loosen when it is adjusted.

3. Hold Driving Pulley, and turn Joint. Confirm opposite Joint turns reversely.



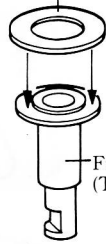
Note: Differential effect must be missed if too much tightening of Adjustment Screw is done. Above manners have to be repeatedly done for fine adjustment.

①



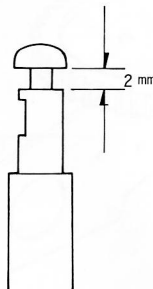
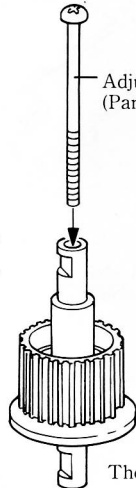
Differential Washer (Parts Bag E)

③



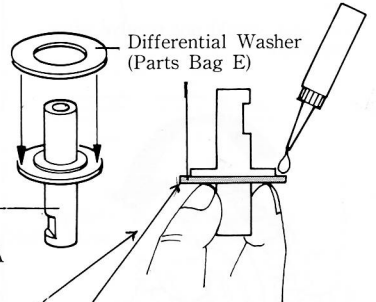
Adjustment Screw (Parts Bag A-3)

⑤



The gap should be reserved between Final Shaft and Screwhead as illustrated.

②

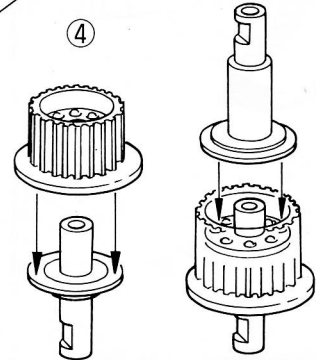


Final Shaft A (Tray)

Remove oil before assembly

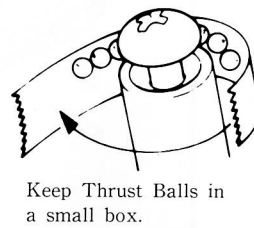
Do not give any glue droppings on this side.

④

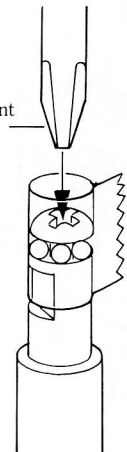


⑥

Remove scotch tape after Adjustment Screw is temporarily tightened.



Keep Thrust Balls in a small box.



Adjustment Screw

Thrust Ball

Final Shaft B (Tray)

Adjustment Screw

Thrust Ball

Differential Washer (Parts Bag E)

Final Shaft B

Final Shaft A (Tray)

Differential Ball (Parts Bag E)

Grub Screw 3x3 (Parts Bag A-3)

Joint (Parts Bag F)

Metal 12x6x4 (Parts Bag H)

Metal 12x6x4 (Parts Bag H)

Grub Screw 3x3 (Parts Bag A-3)

Joint (Parts Bag F)

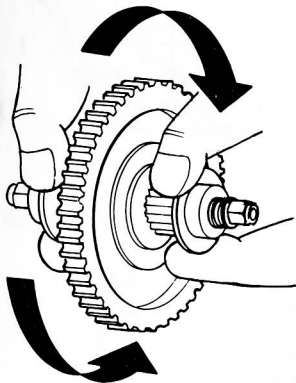
Metal 12x6x4 (Parts Bag H)

Grub Screw 3x3 (Parts Bag A-3)

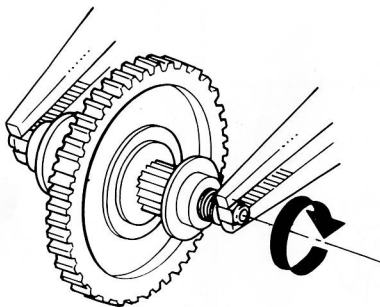
Joint (Parts Bag F)

Washer (small) have to be put on Final Shaft A & B firmly, then give a drop of glue as illustrated.

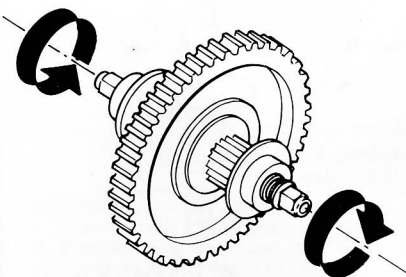
Spur Gear should not revolve after completion.



If the Spur Gear revolves, tighten nuts as illustrated.

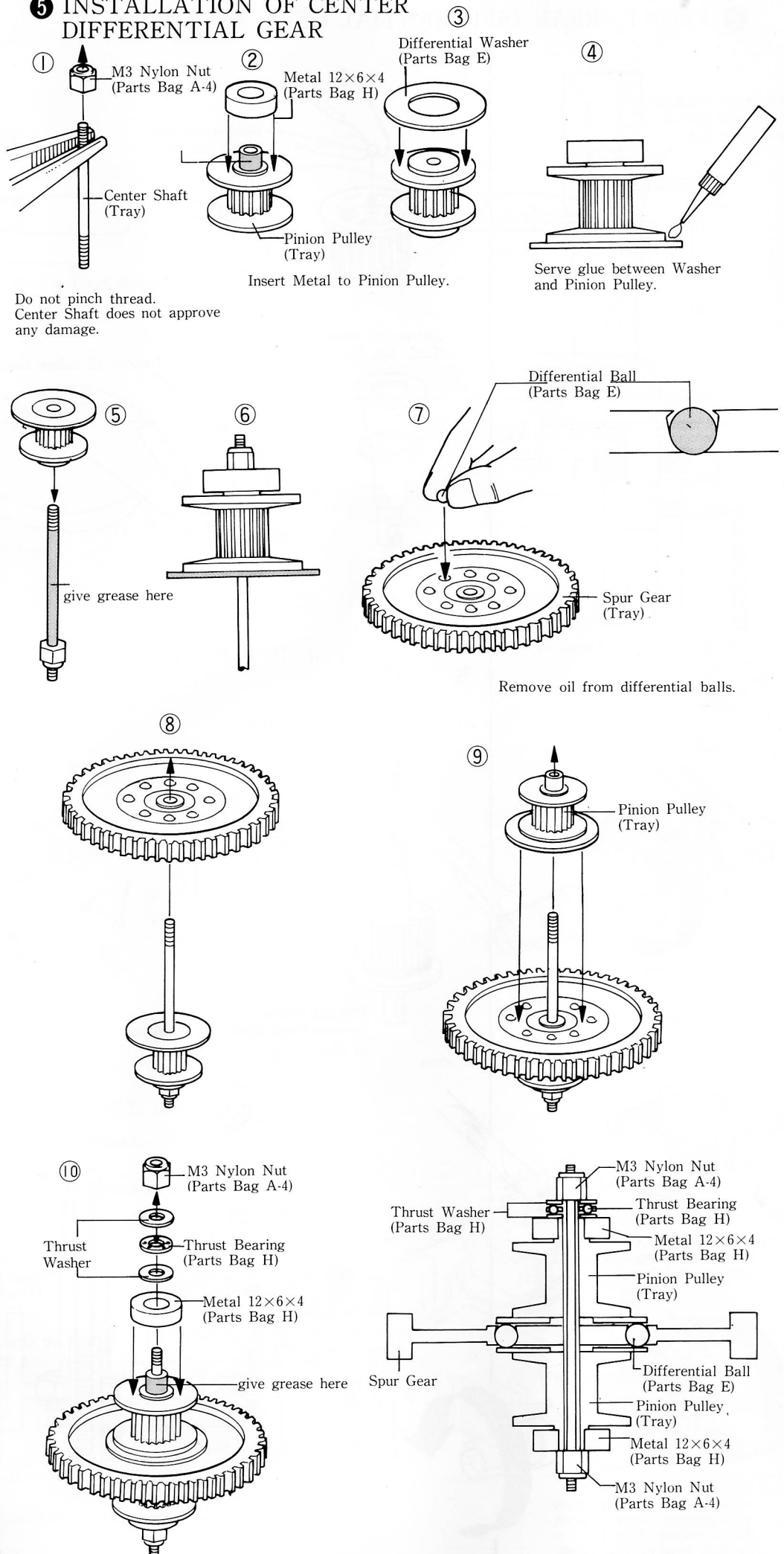


Hold the Spur Gear, and confirm whether Pinion Pulley turns reversely when opposite Pinion Pulley is turned.

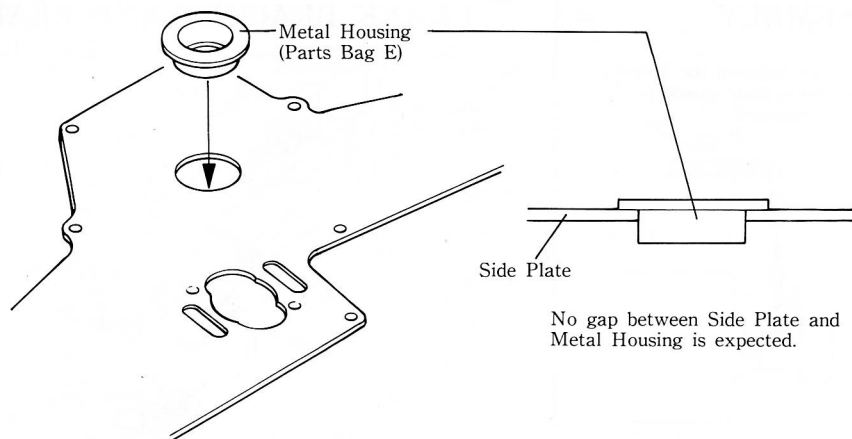


Note: Differential effect must be missed if excess tightenings of nuts are done.

5 INSTALLATION OF CENTER DIFFERENTIAL GEAR

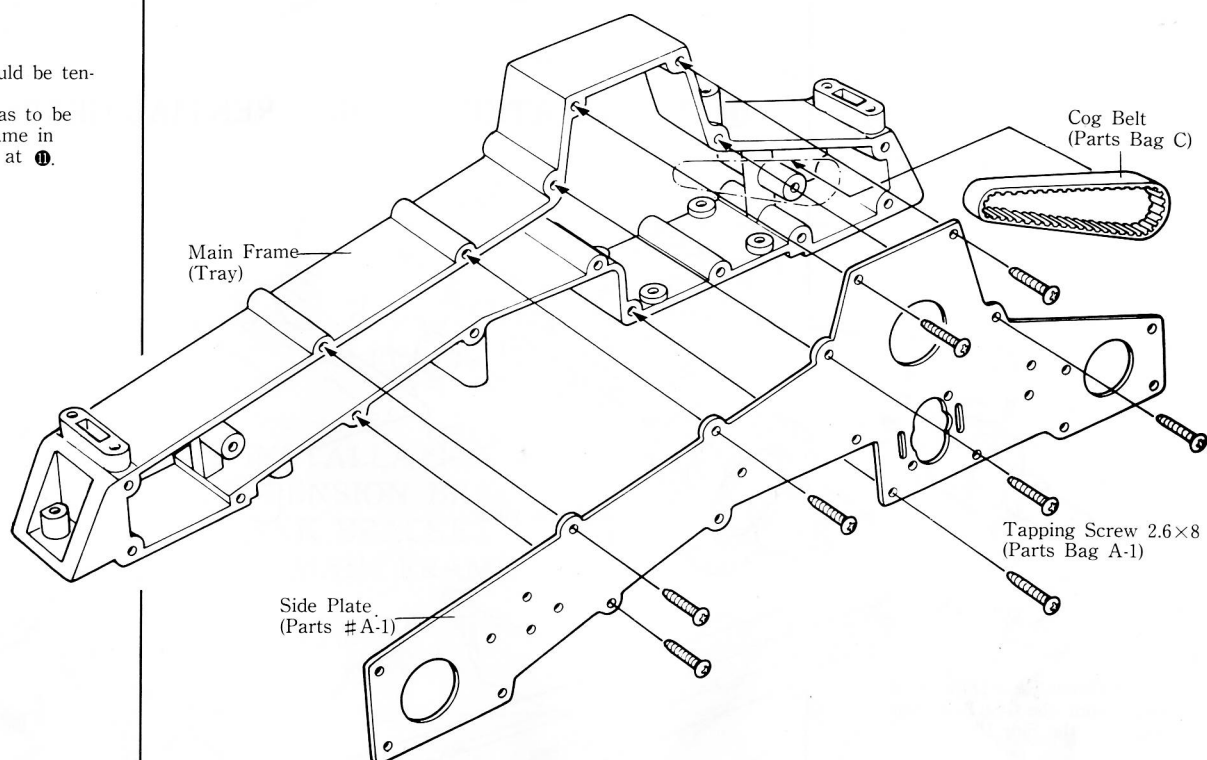


⑥ ASSEMBLY OF METAL HOUSING

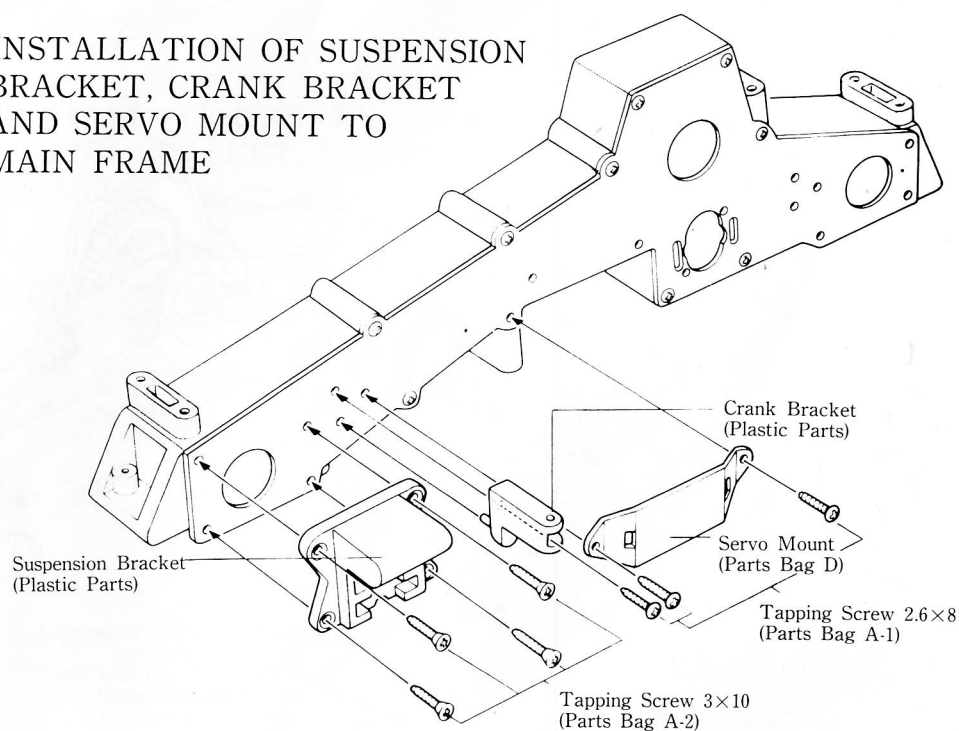


⑦ MAIN FRAME & SIDE PLATE ASSEMBLY

1. Tapping Screws should be tentatively tightened.
2. Cog Belt (Parts#C) has to be put into the Main Frame in advance as illustrated at ①.

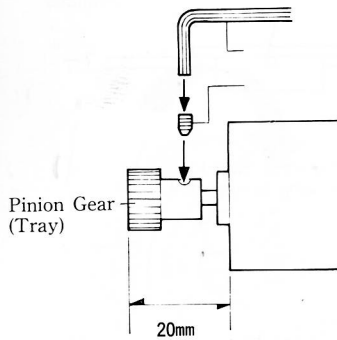


⑧ INSTALLATION OF SUSPENSION BRACKET, CRANK BRACKET AND SERVO MOUNT TO MAIN FRAME

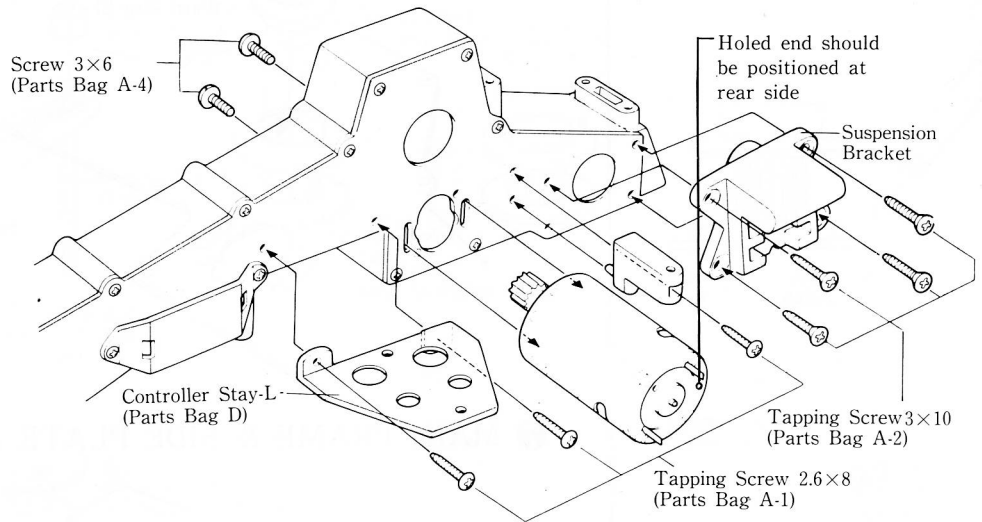


9 PINION GEAR ASSEMBLY

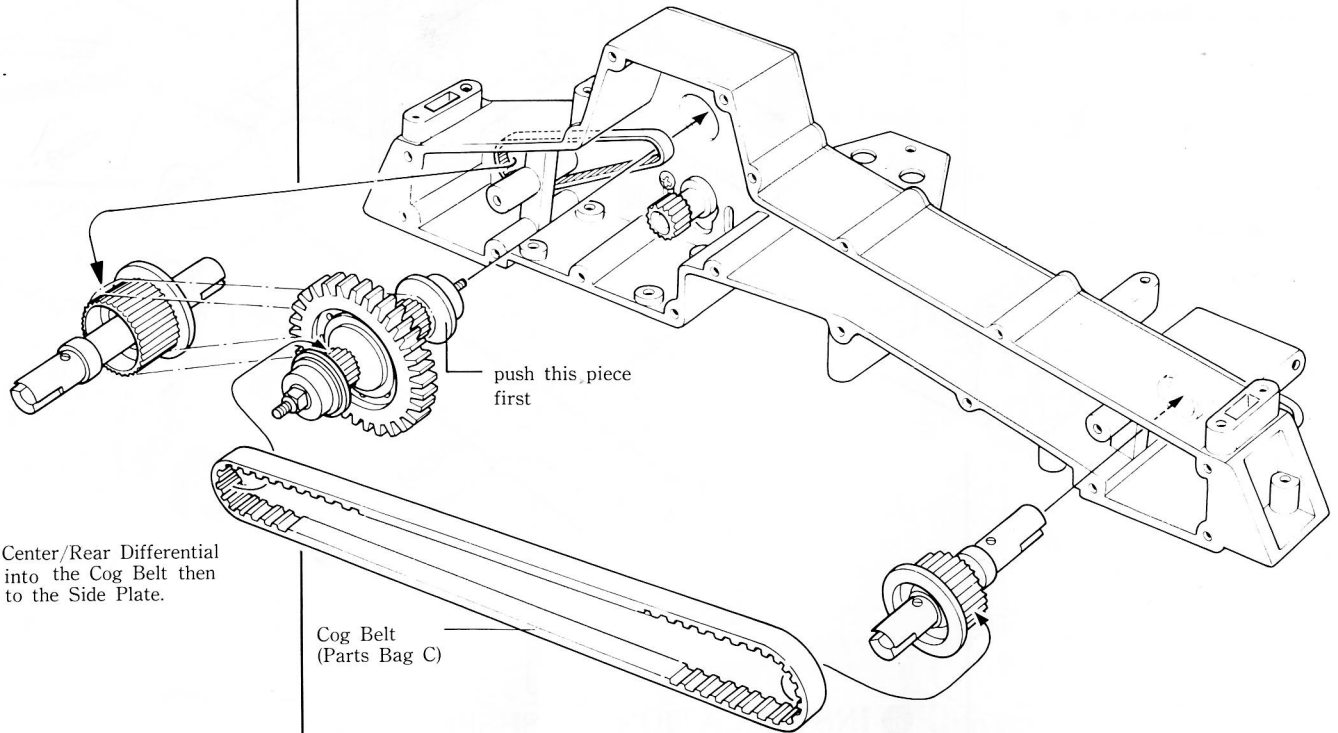
The distance between the Motor and the Pinion Gear should be 20mm as illustrated.



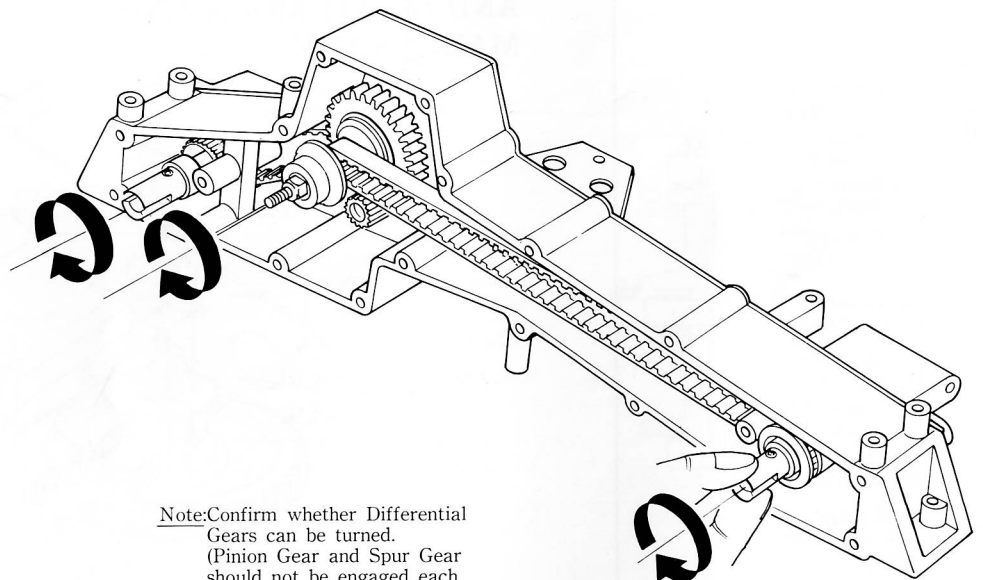
10 INSTALLATION OF CONTROLLER STAY, MOTOR, CRANK BRACKET AND REAR SUSPENSION BARCKET



11 INSTALLATION OF DIFFERENTIAL GEARS AND BELTS

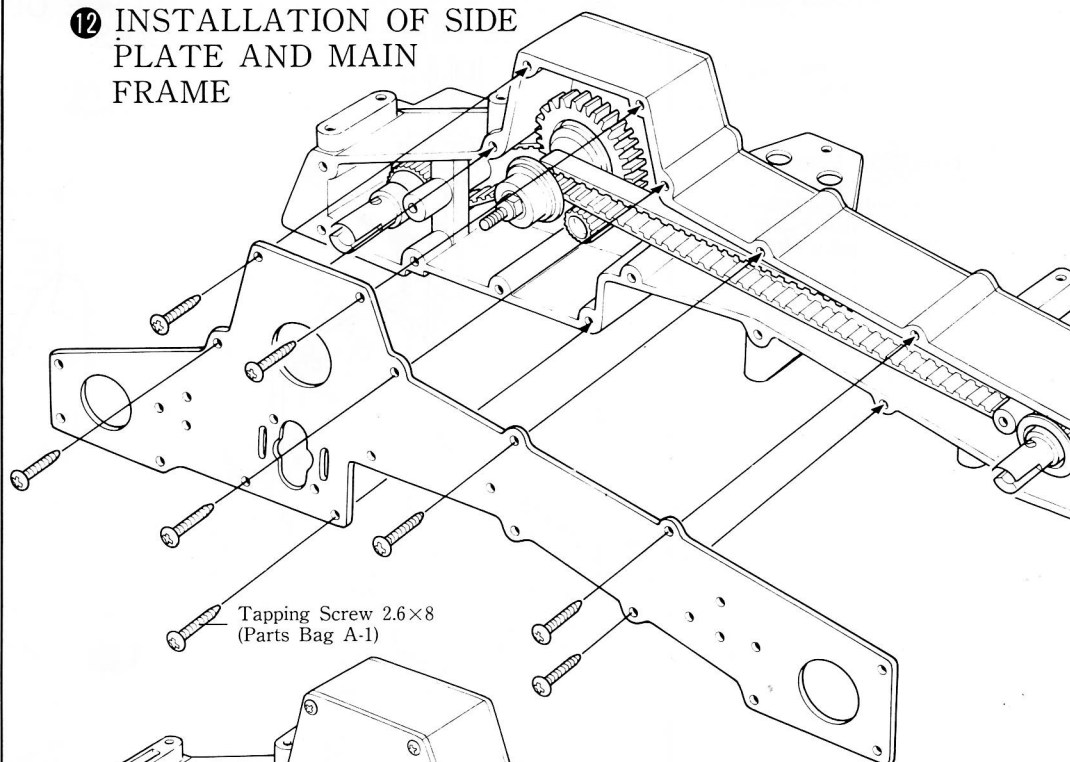


Insert Center/Rear Differential Gears into the Cog Belt then install to the Side Plate.

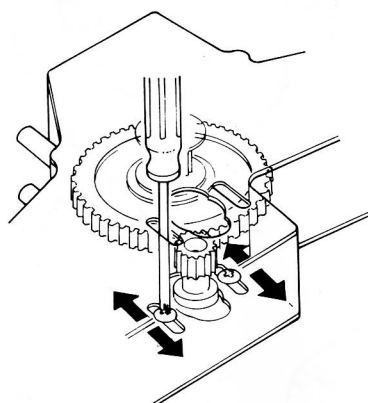


Note: Confirm whether Differential Gears can be turned. (Pinion Gear and Spur Gear should not be engaged each other.)

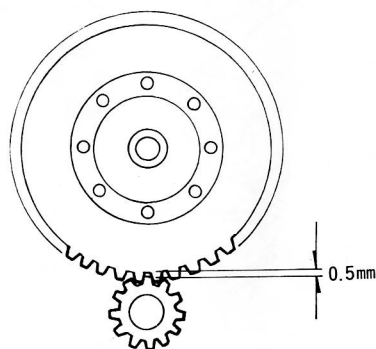
12 INSTALLATION OF SIDE PLATE AND MAIN FRAME



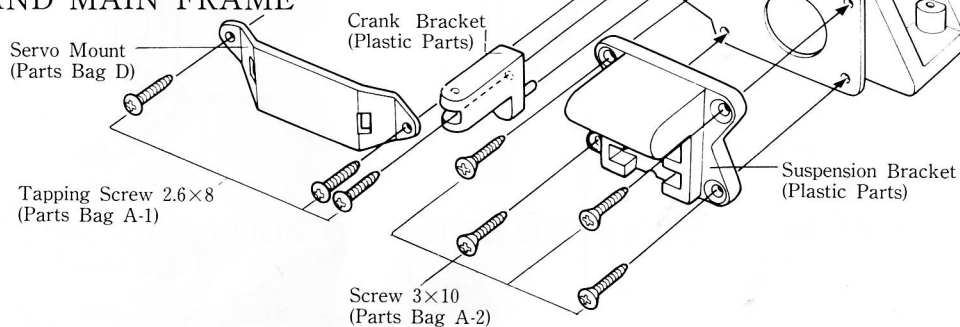
Do not tighten tapping screws strongly.



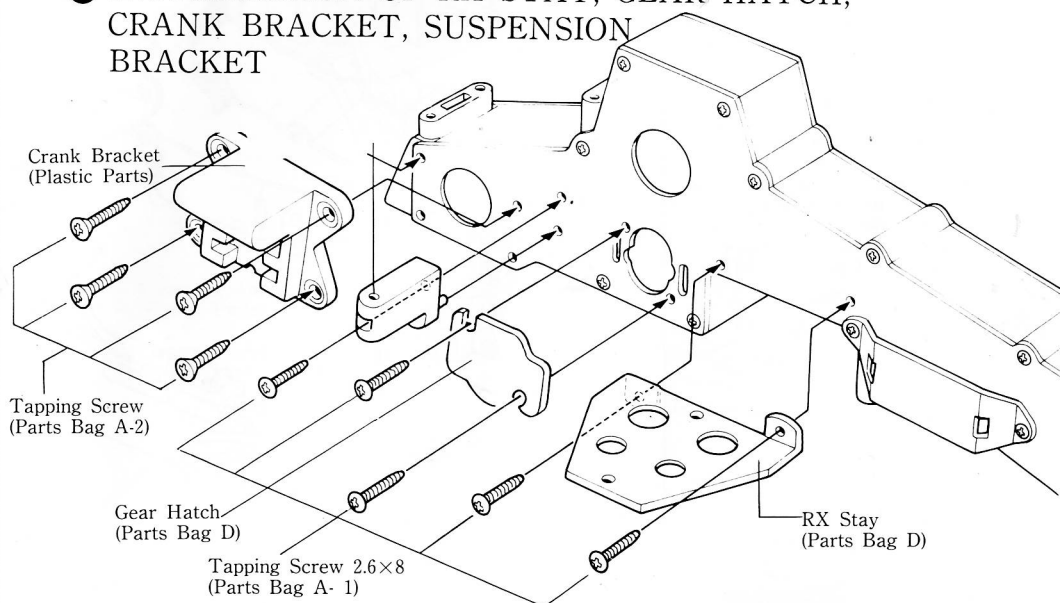
Adjust the backlash of the gear before installation of Gear Hatch



13 INSTALLATION OF SUSPENSION BRACKET, CRANK BRACKET AND MAIN FRAME

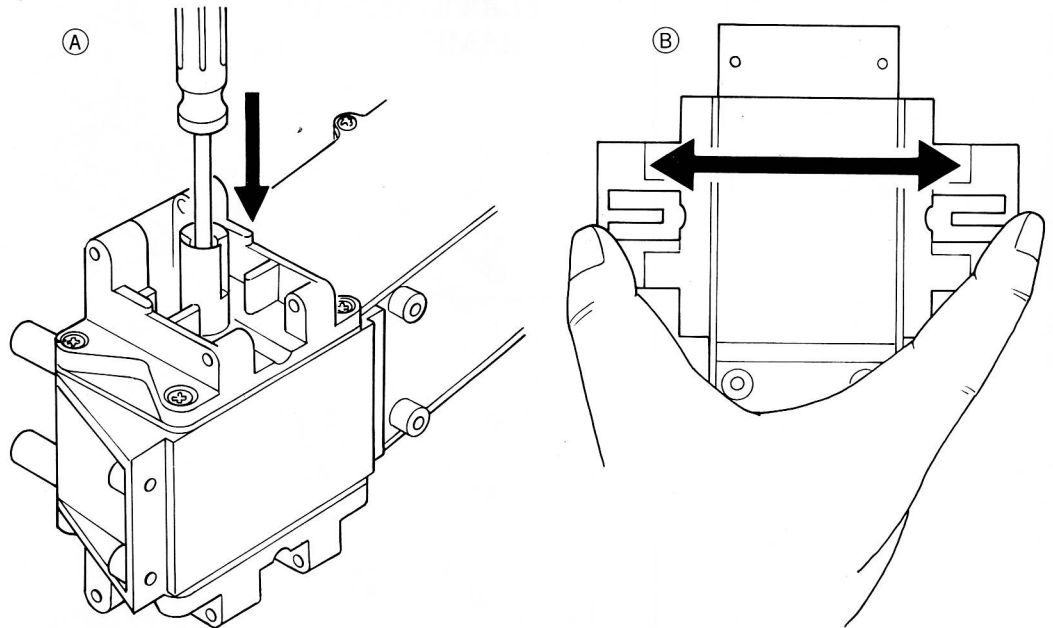


14 INSTALLATION OF RX STAY, GEAR HATCH, CRANK BRACKET, SUSPENSION BRACKET

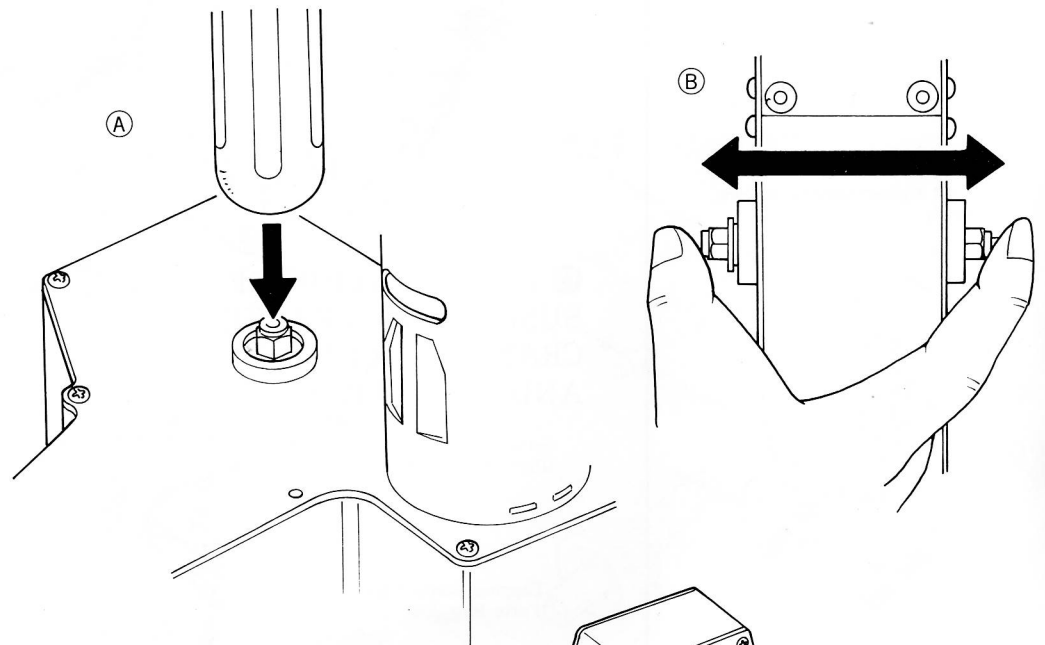


15 ADJUSTMENT OF CLEARANCE OF FRONT / CENTER / REAR DIFFERENTIAL GEARS

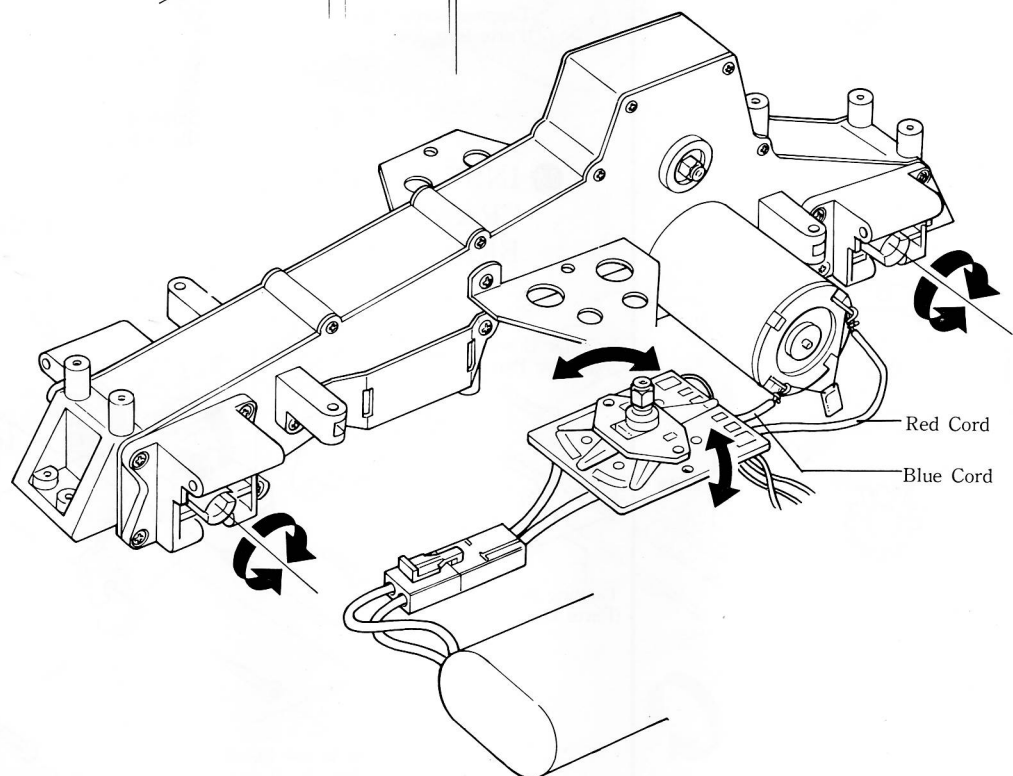
1. Press Front/Rear Differentials strongly with Screw Driver or with similar tools (illustration A), and confirm whether Differentials slightly move (illustration B).



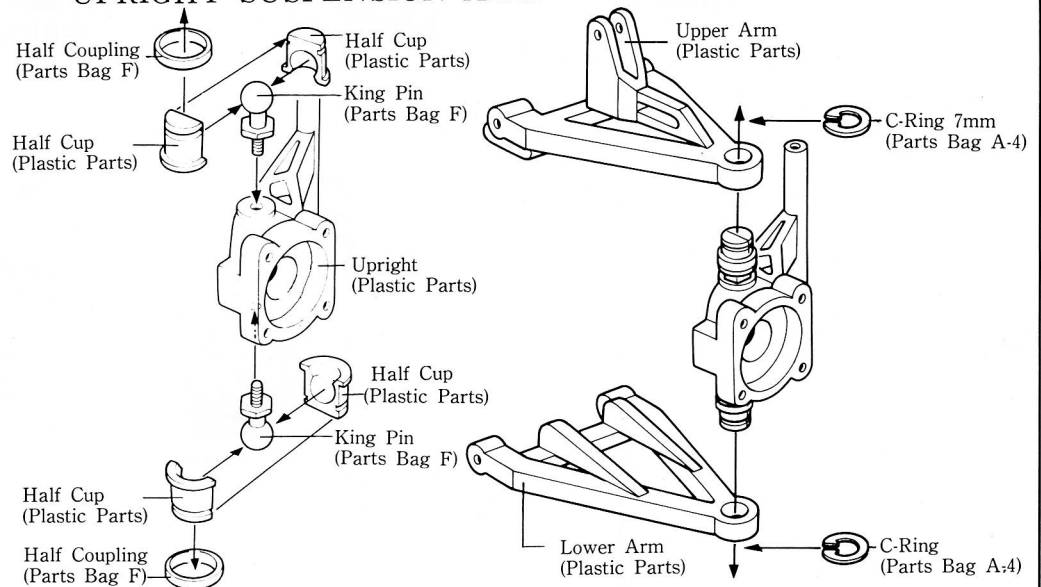
2. Press Center Differential Assembly gently with handle of crew driver. (illustration A), and confirm moving of Differential.



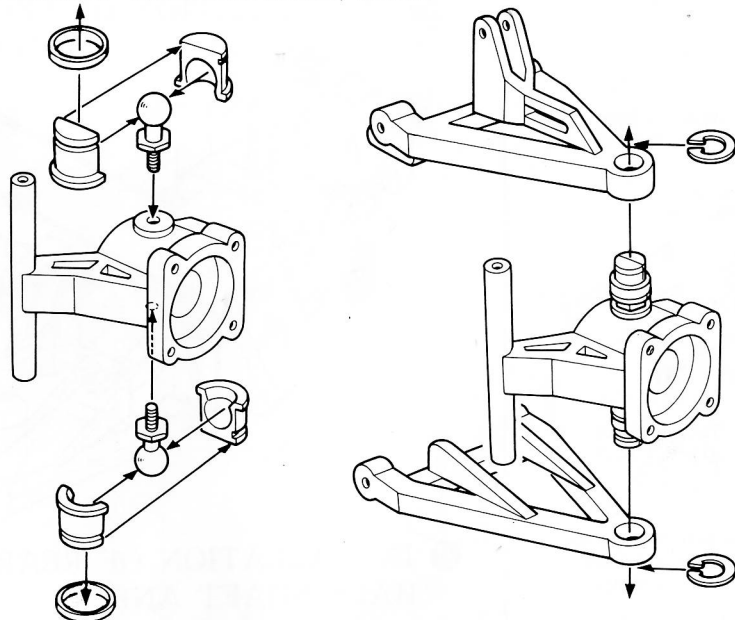
3. After finished of above process, tentatively install Controller and Battery to Main Frame. Manually operate Controller, and confirm revolving of Front and Rear Joints. If the revolving does not work smoothly, repeat processes 11 through 15.



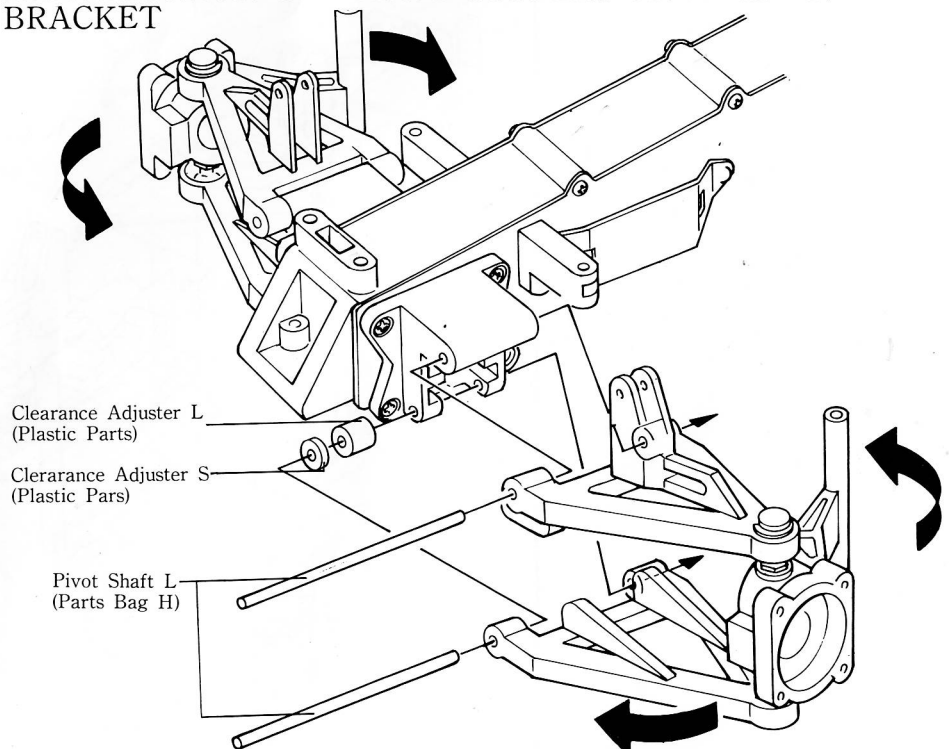
16 INSTALLATION OF FRONT LEFT, REAR RIGHT, UPRIGHT SUSPENSION ARM



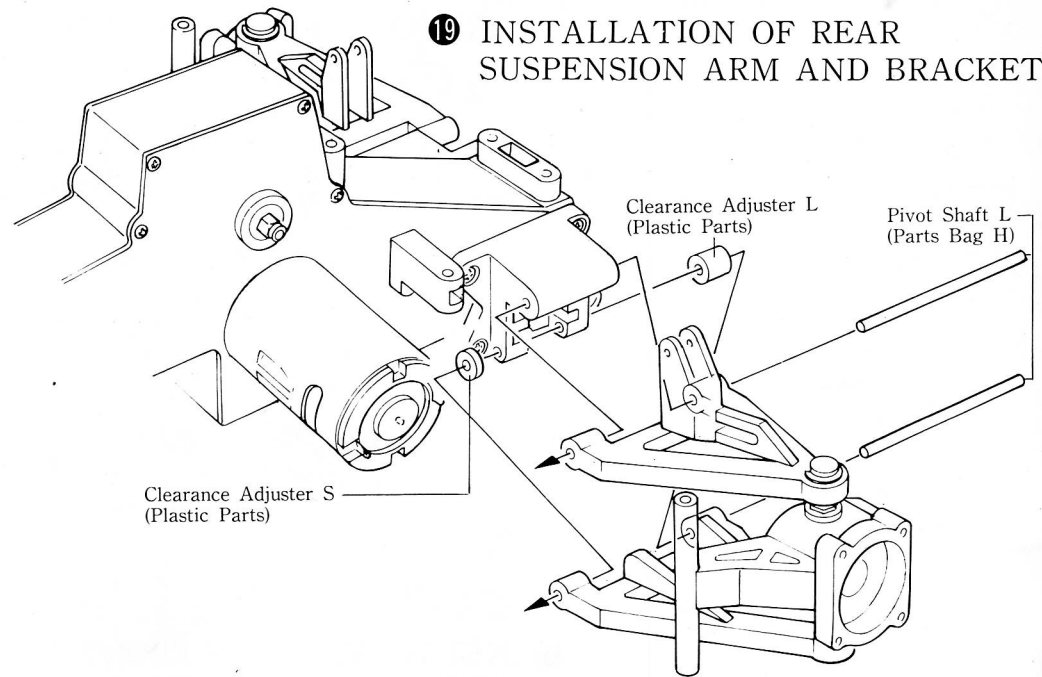
17 INSTALLATION OF FRONT RIGHT, REAR LEFT, UPRIGHT SUSPENSION ARM



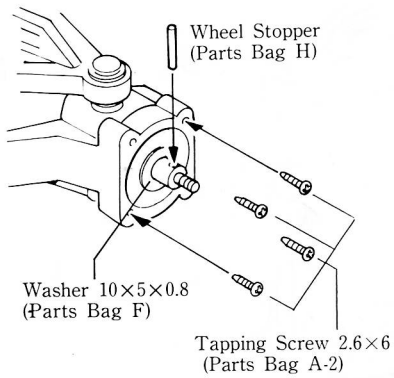
18 INSTALLATION OF FRONT SUSPENSION ARM AND BRACKET



19 INSTALLATION OF REAR SUSPENSION ARM AND BRACKET

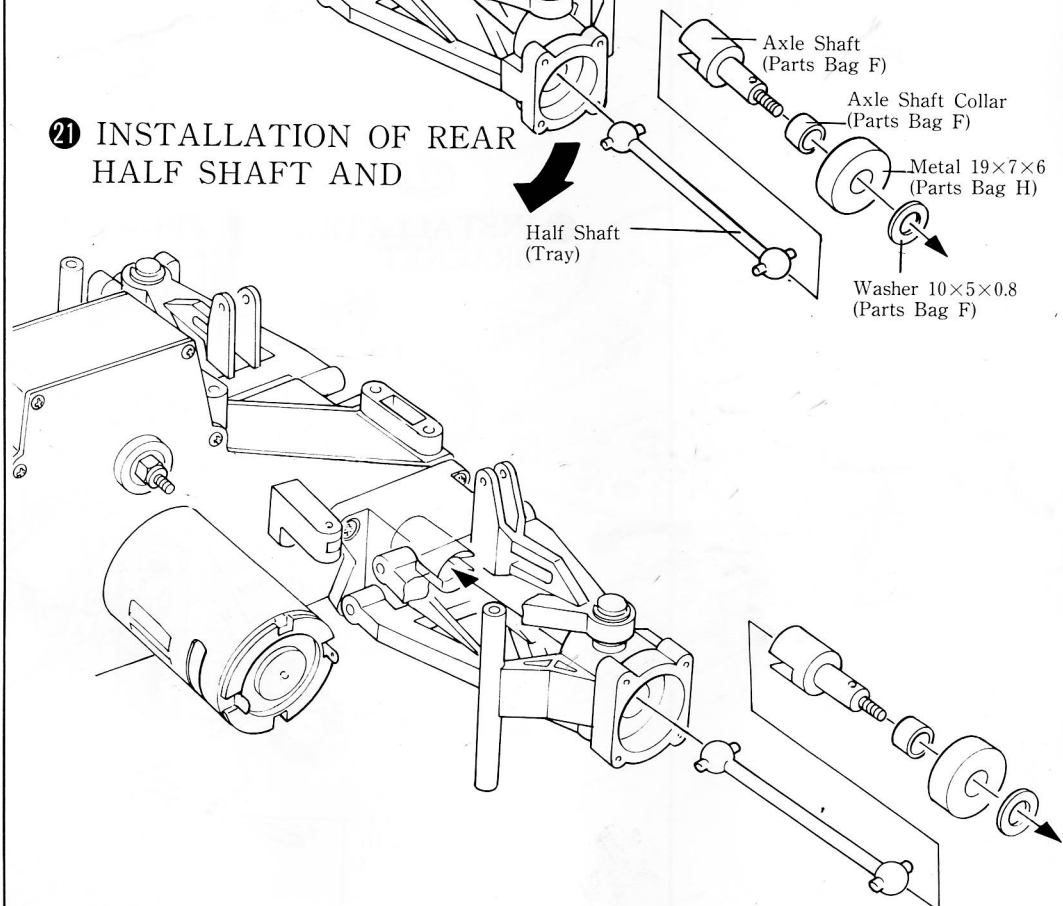


20 INSTALLATION OF FRONT HALF SHAFT AND AXLE SHAFT

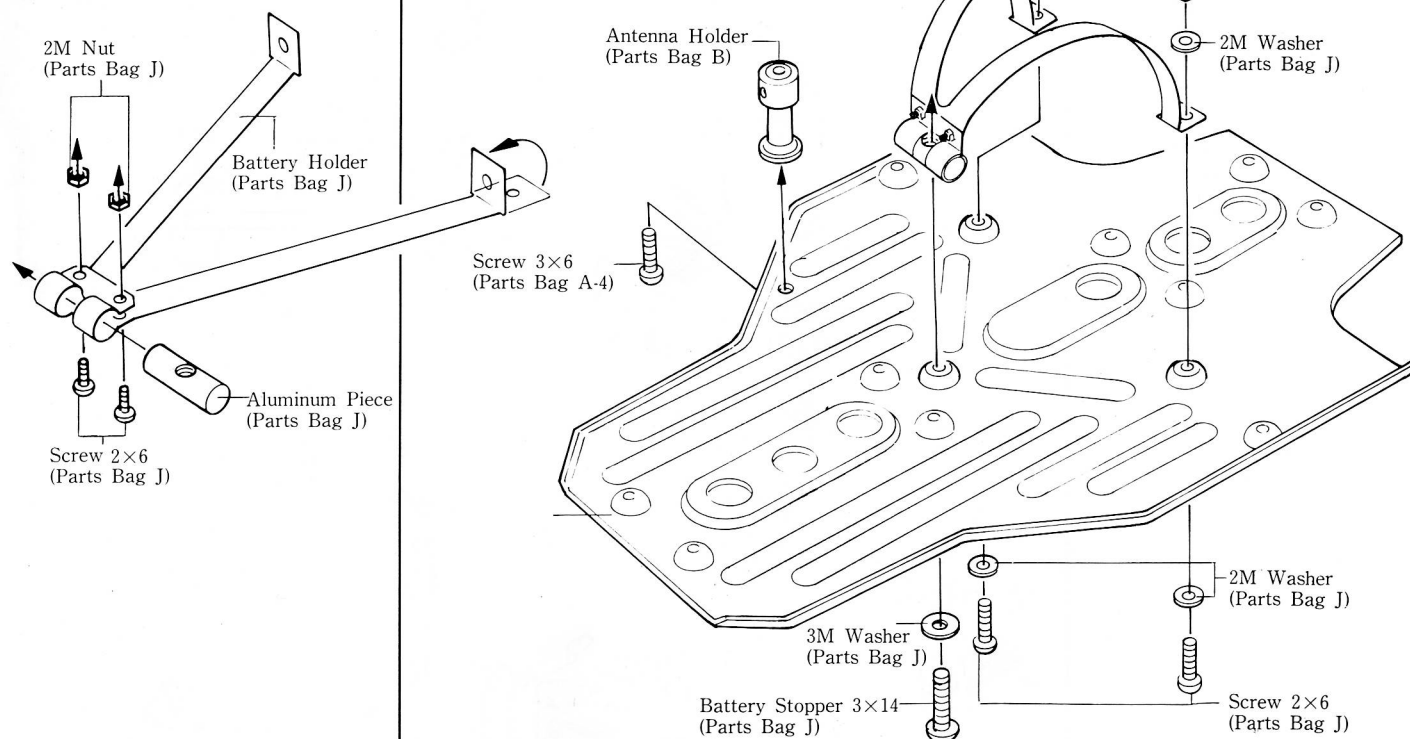


Note: Suspension actions, indicated by arrows, have to be confirmed after completion.

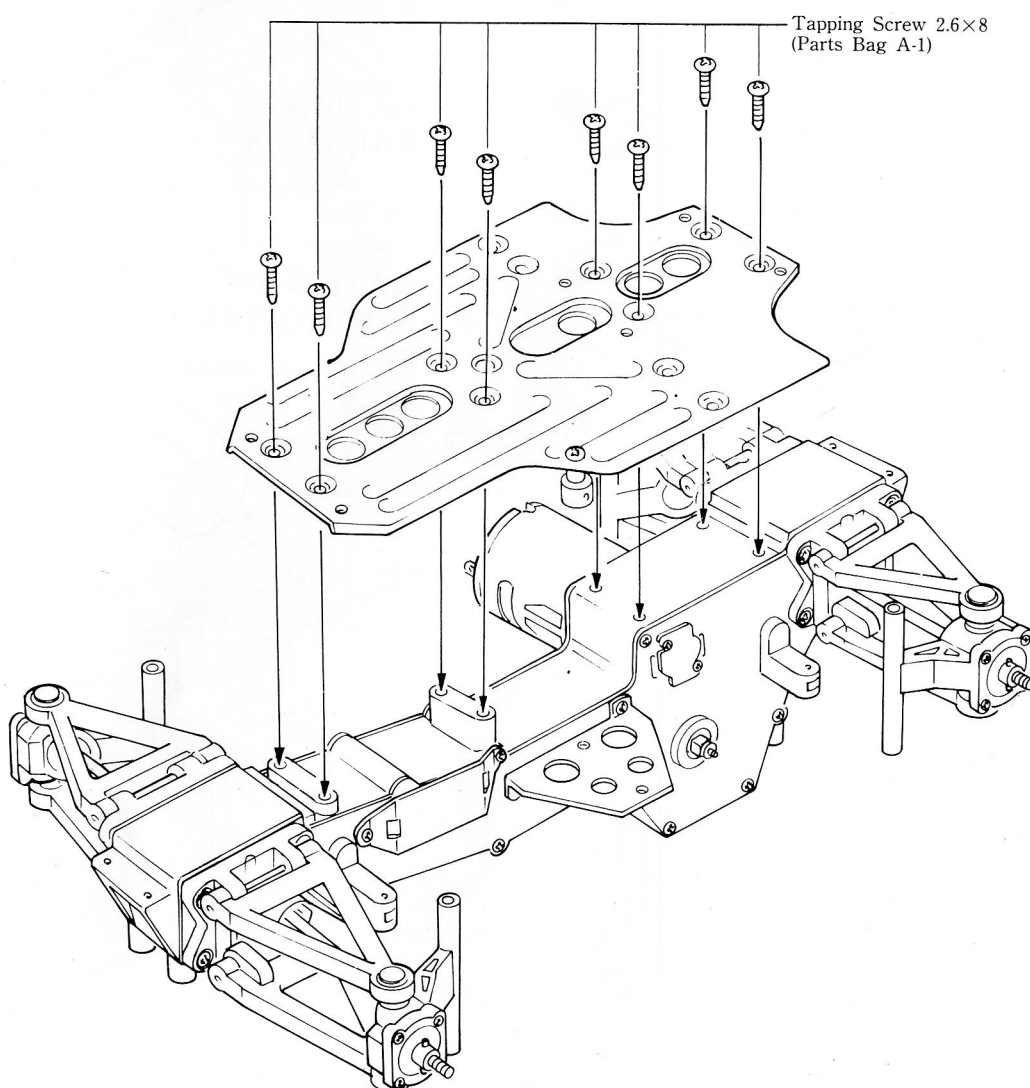
21 INSTALLATION OF REAR HALF SHAFT AND



22 INSTALLATION OF BATTERY HOLDER AND UNDER GUARD

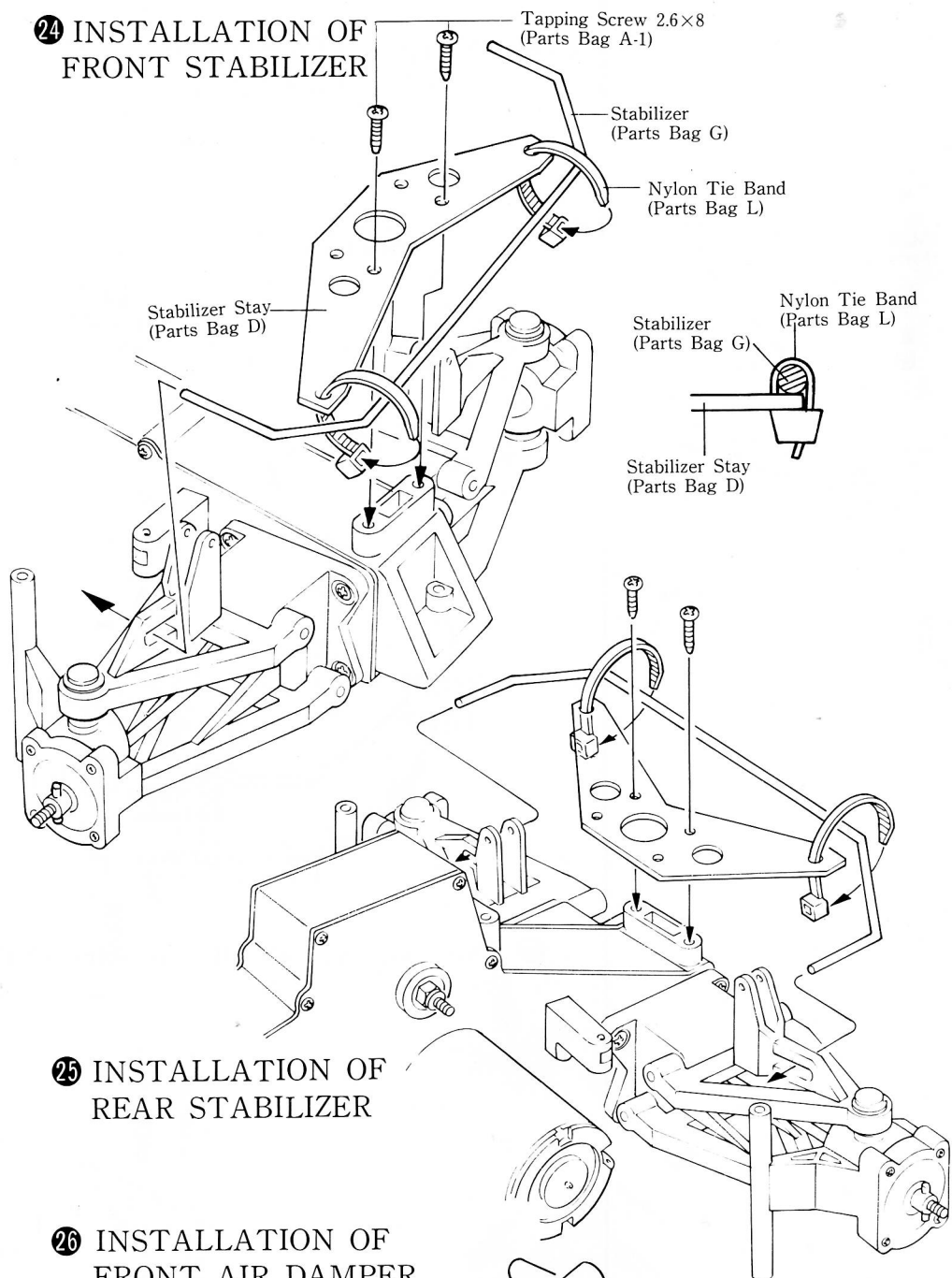


23 INSTALLATION OF FRAME AND UNDER GUARD



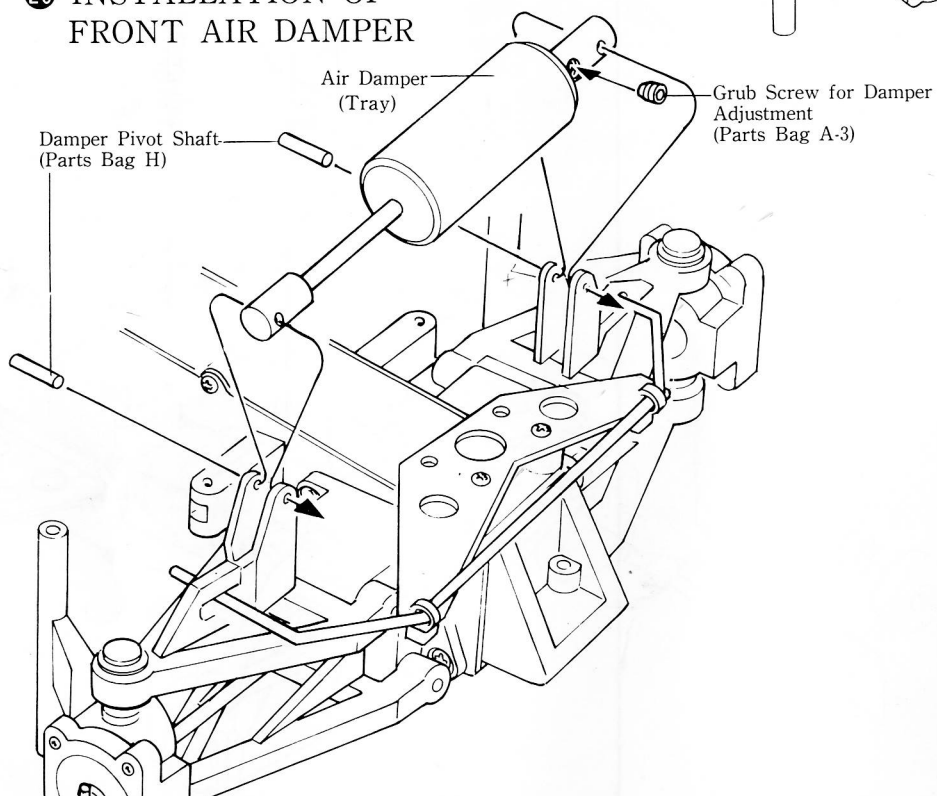
Install the Stabilizer to the Stabilizer Stay with Nylon Tie Band as illustrated, and cut out excess length of the Nylon Band.

24 INSTALLATION OF FRONT STABILIZER



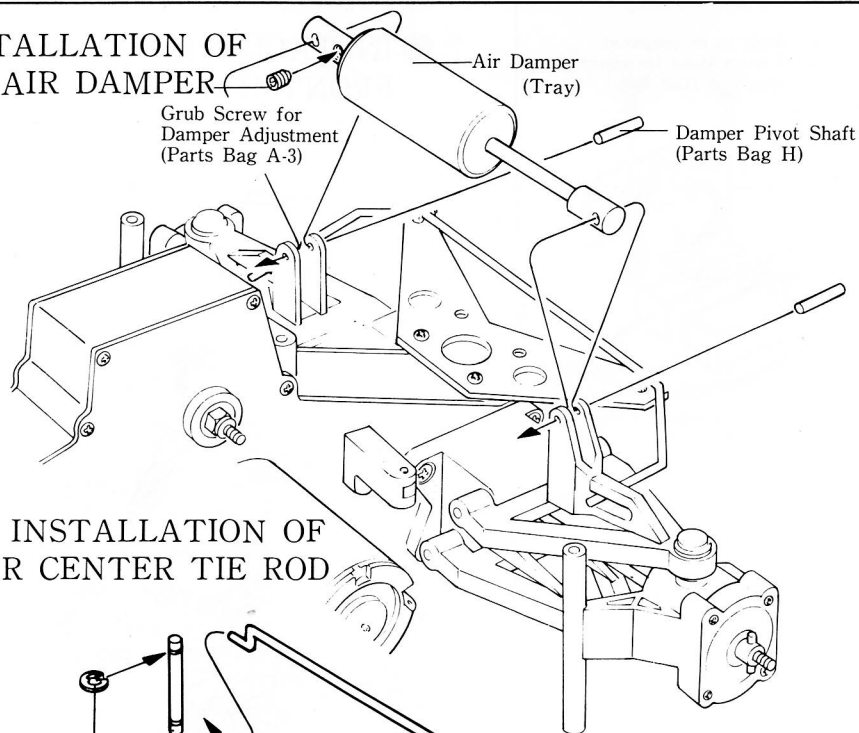
25 INSTALLATION OF REAR STABILIZER

26 INSTALLATION OF FRONT AIR DAMPER

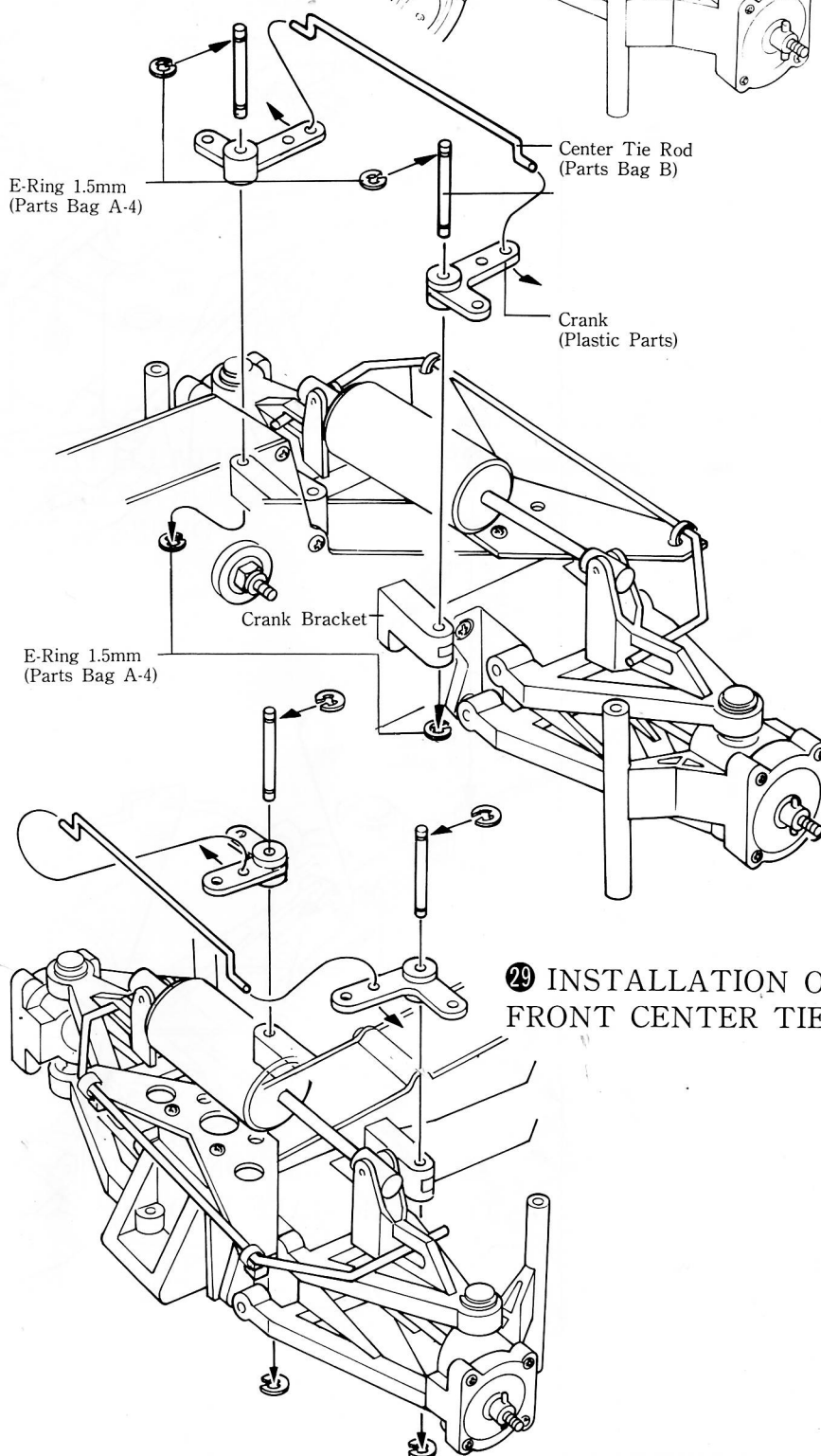


Damper is hardened if the grub screw is tightened, and is softened if the screw is loosened. Proper damper function, matching to the road condition, has to be selected.

27 INSTALLATION OF REAR AIR DAMPER



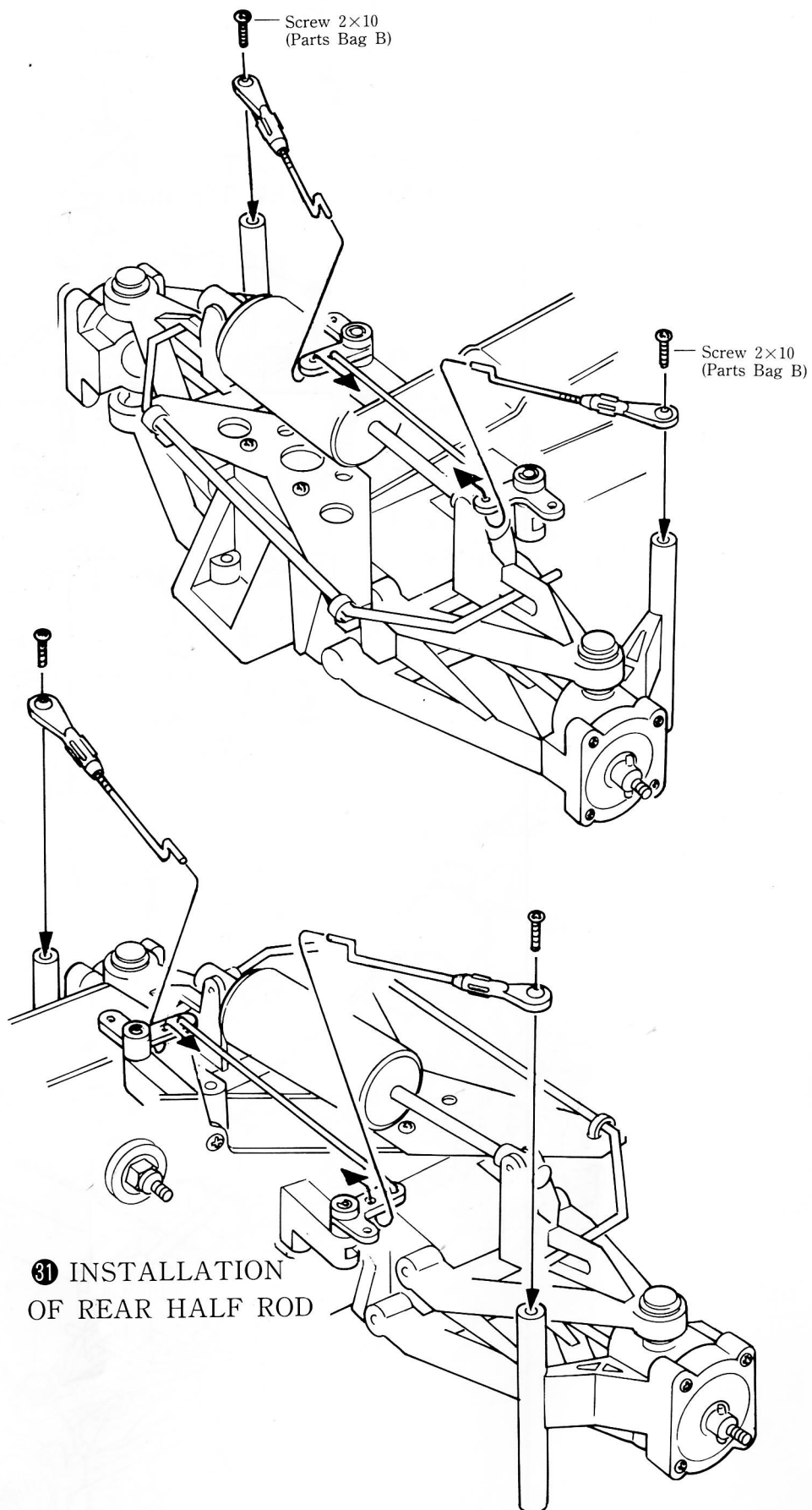
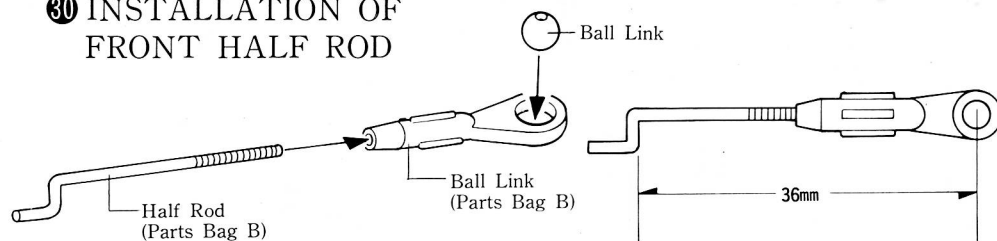
28 (25) INSTALLATION OF REAR CENTER TIE ROD



29 INSTALLATION OF FRONT CENTER TIE ROD

1. 4 Half Rods to be prepared.
2. Toe-in/Toe-out must be adjusted by the length of Half Rods.

30 INSTALLATION OF FRONT HALF ROD



31 INSTALLATION OF REAR HALF ROD

Wires of the condenser and the motor should be soldered.

32 ASSEMBLING OF CONTROLLER

Screw 3×6
(Parts Bag A-4)

Radiator
(Parts Bag D)

Radiator Stay
(Parts Bag D)

M3 Nut
(Parts Bag A-4)

Controller
(Parts Bag K)

Spacer
(Parts Bag K)

Controller Stay

Motor Wire

Condenser for Motor

M2 Nut
(Parts Bag K)

Rod should be adjusted
as two lines A and B
are paralleled.

33 INSTALLATION OF CONTROLLER AND SERVO

90°

Controller Rod
(Parts Bag B)

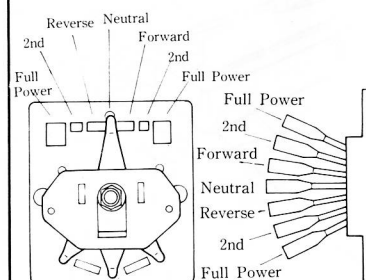
Servo Horn

Servo for Controller

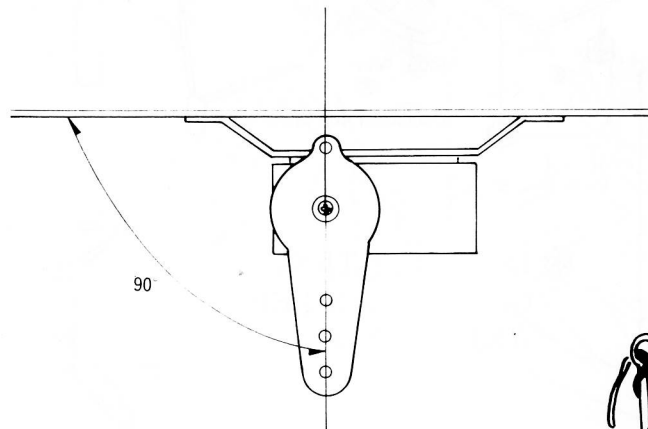
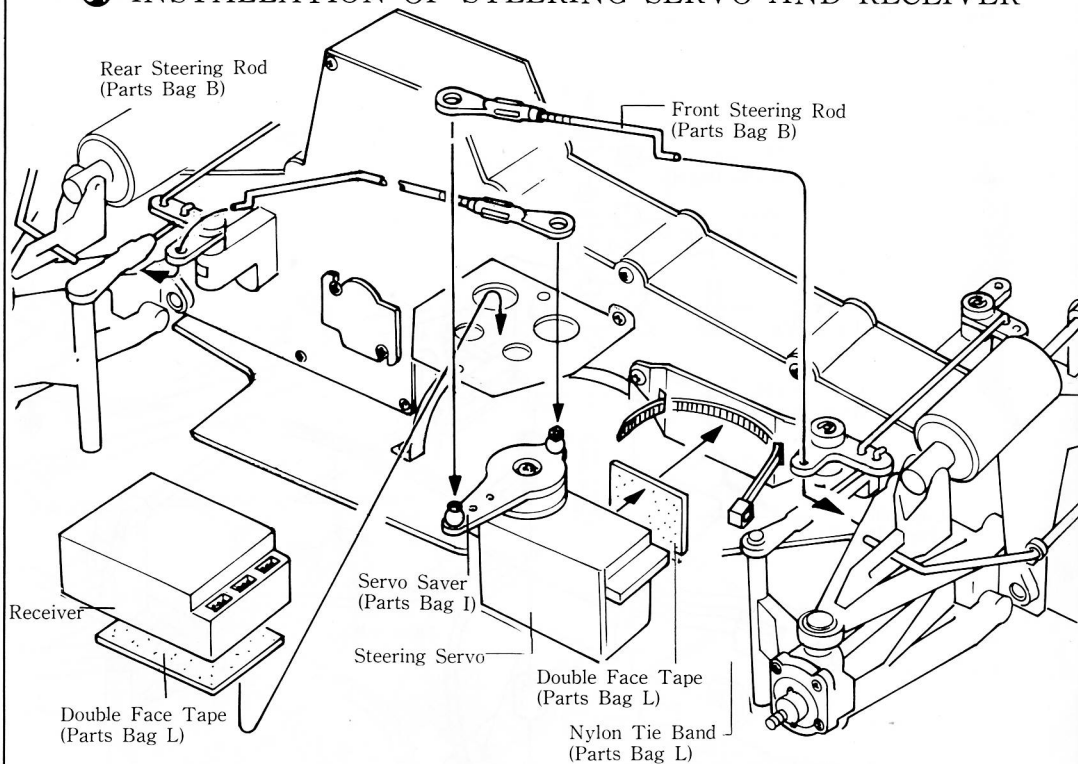
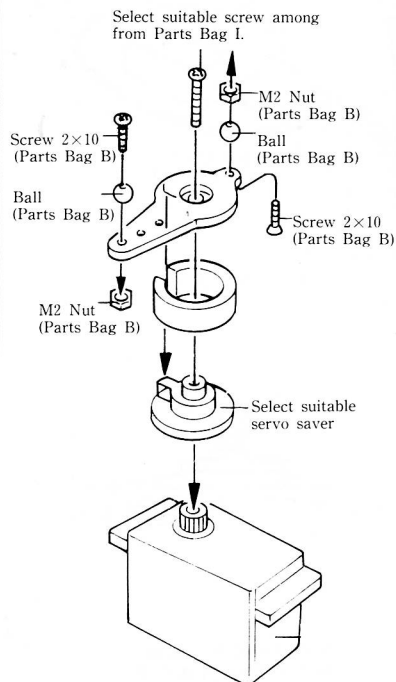
Double Face Tape

Nylon Tie Band
(Parts Bag L)

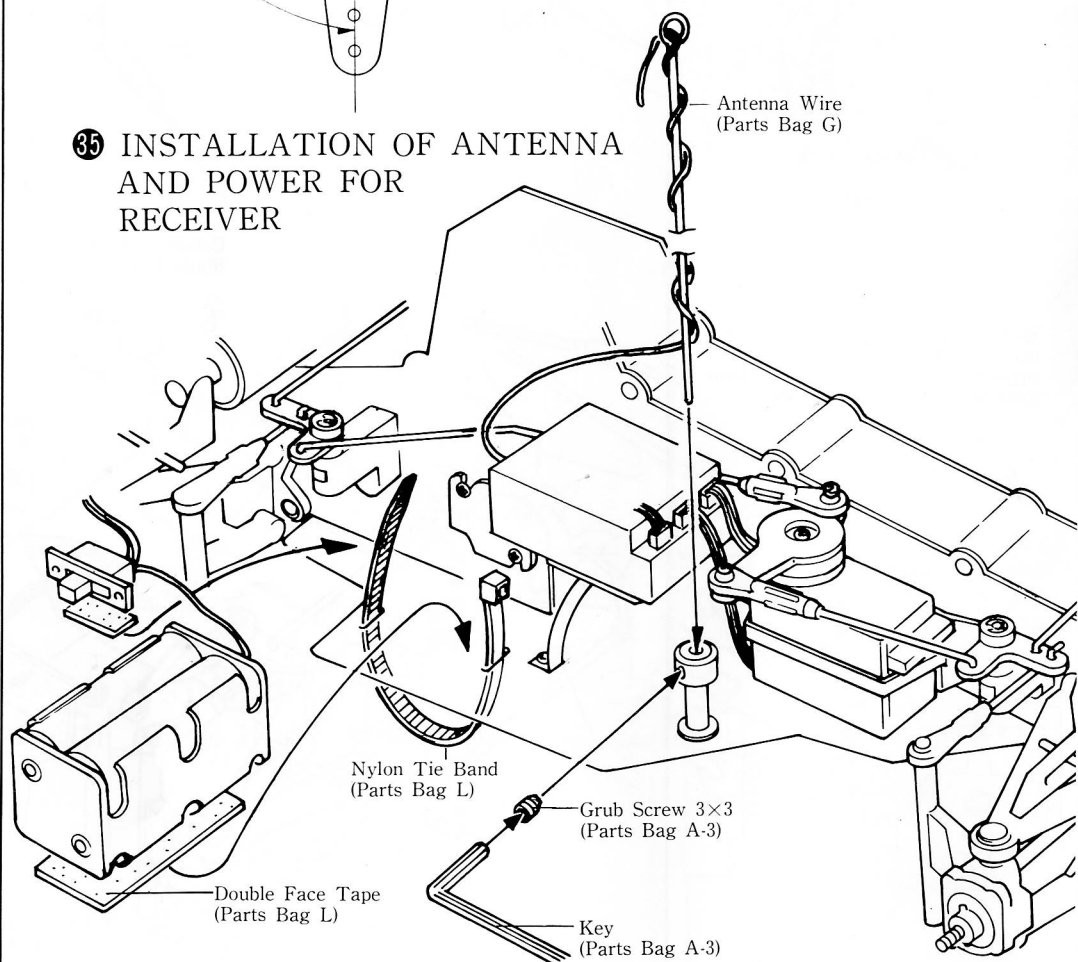
Relation between the Servo Motor
and the Adjusting Rod should be
figured as illustrated. *Servo Motor
must be at NEUTRAL position.



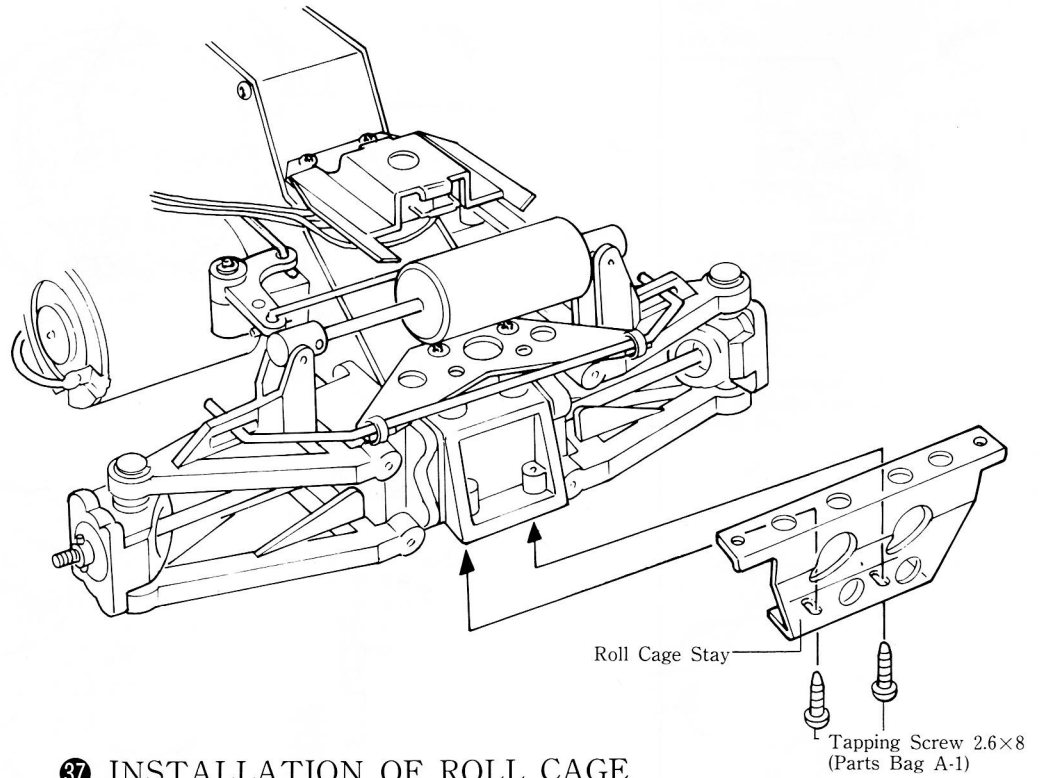
34 INSTALLATION OF STEERING SERVO AND RECEIVER



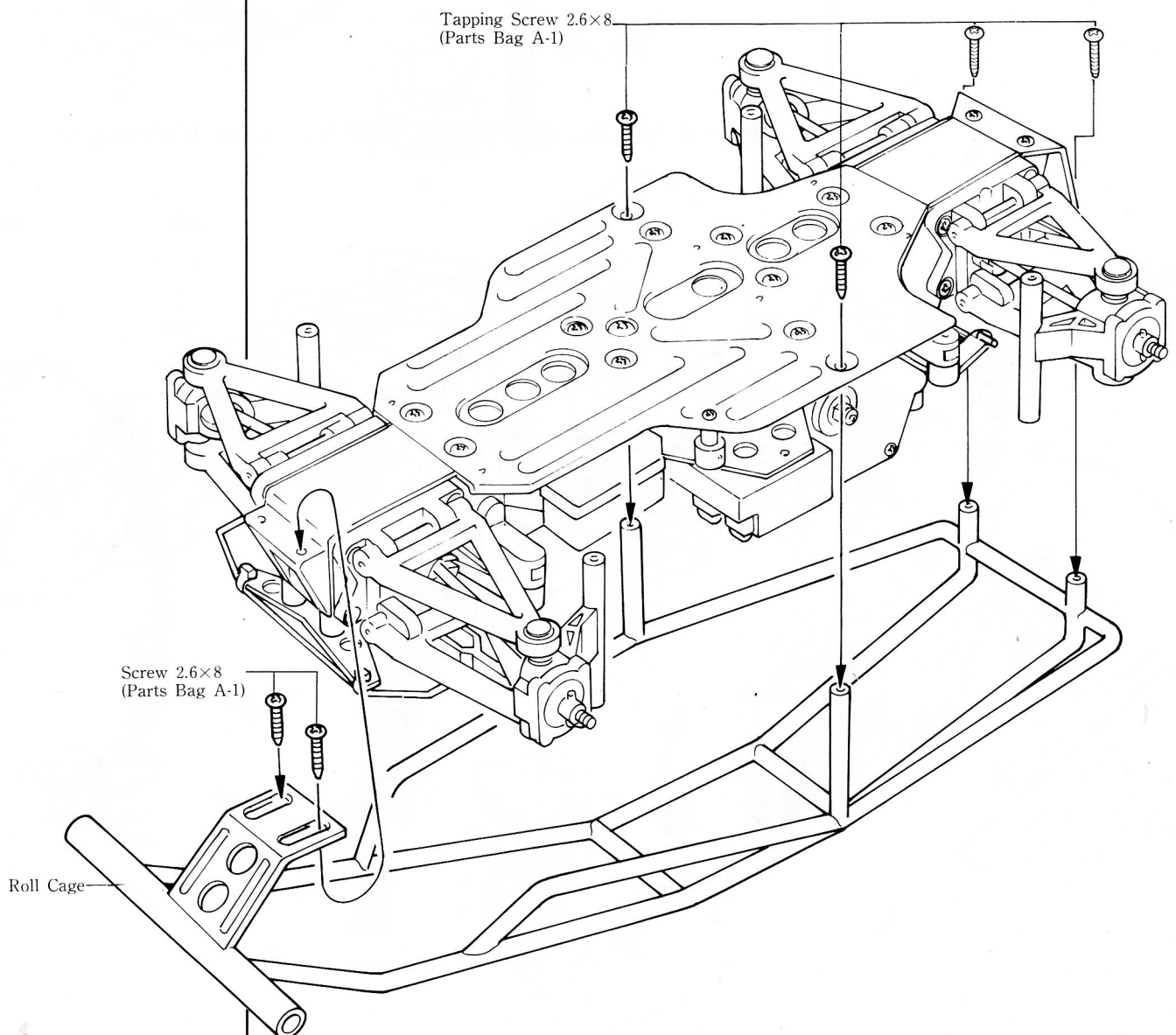
35 INSTALLATION OF ANTENNA AND POWER FOR RECEIVER



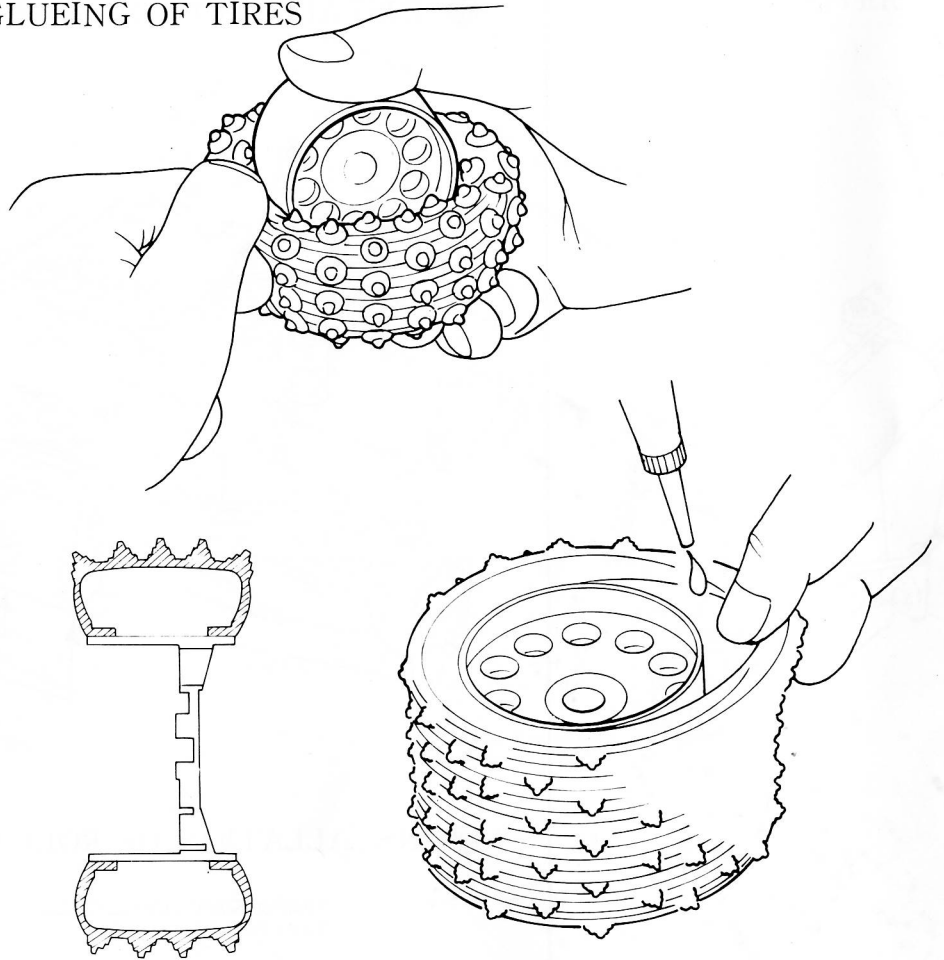
36 INSTALLATION OF ROLL CAGE STAY



37 INSTALLATION OF ROLL CAGE

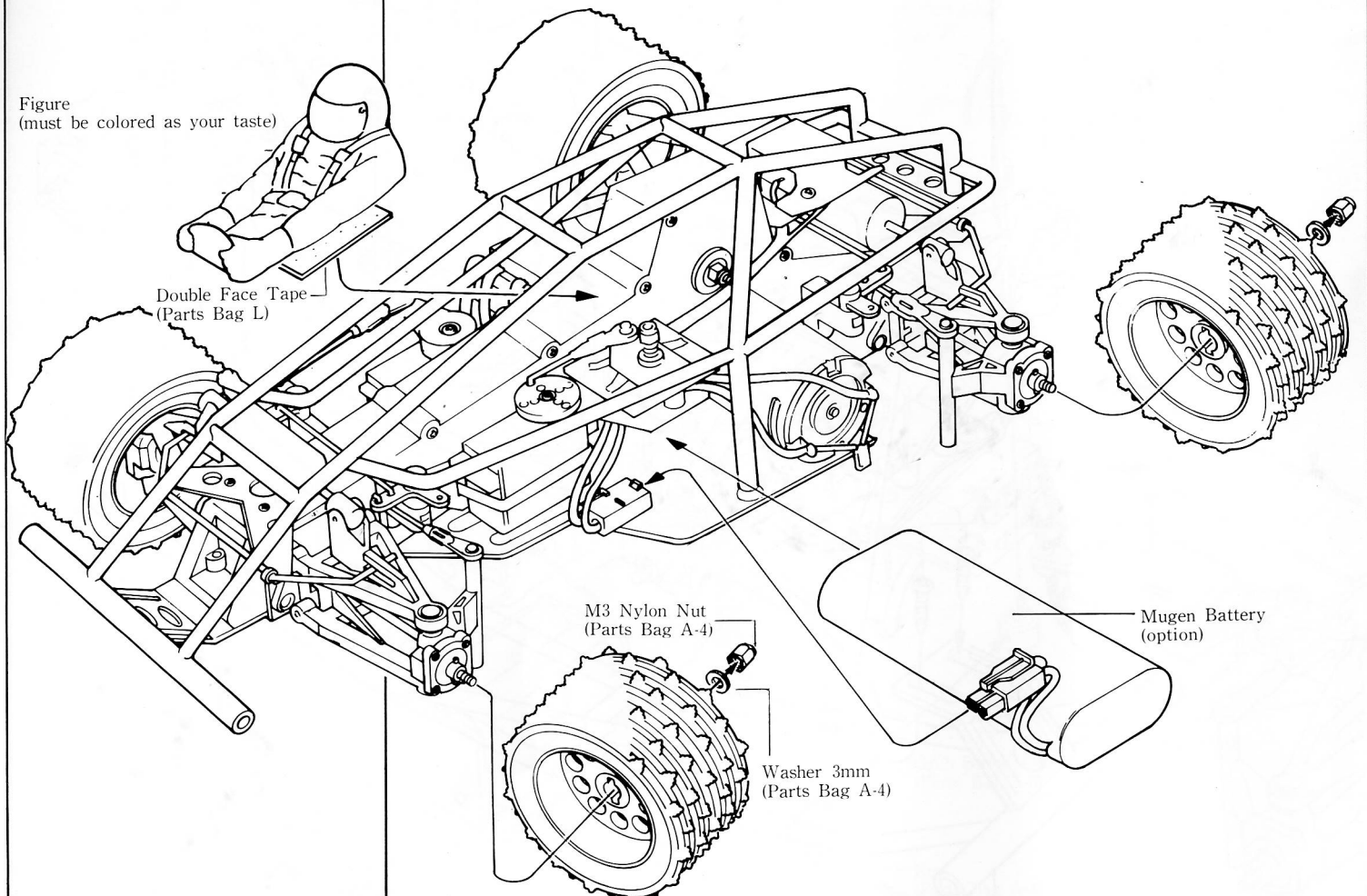


38 GLUEING OF TIRES



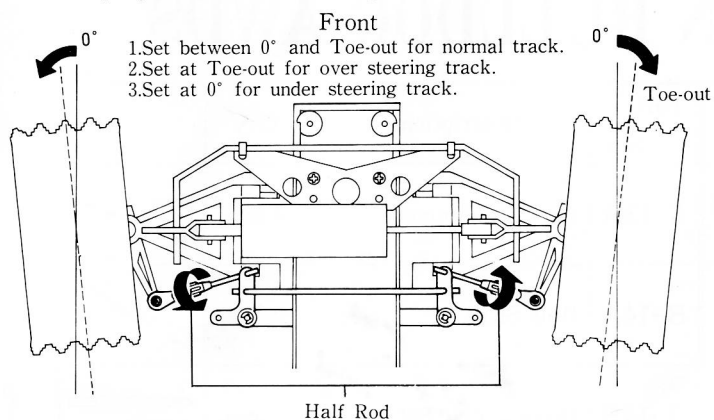
39 MOUNTING OF TIRES, FIGURE AND BATTERY

Figure
(must be colored as your taste)

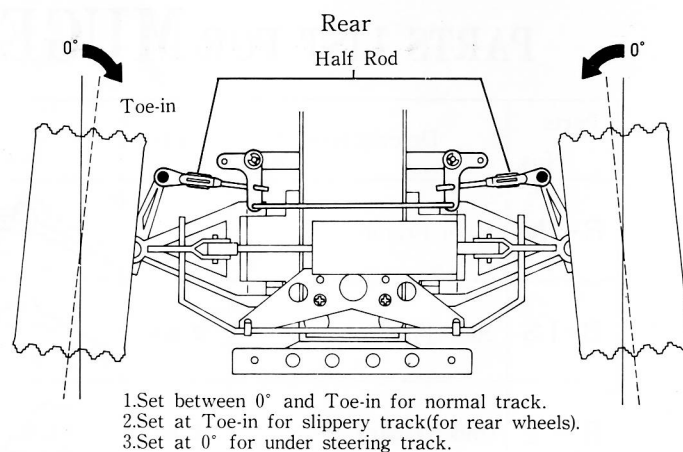


40 FINAL ADJUSTMENT FOR DRIVING

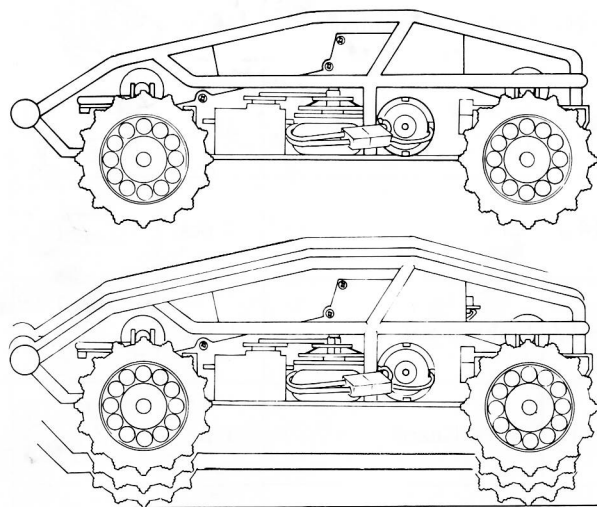
■ Adjustment of Toe Angle of Front Wheel (Adjustment of the length of Half Rod)



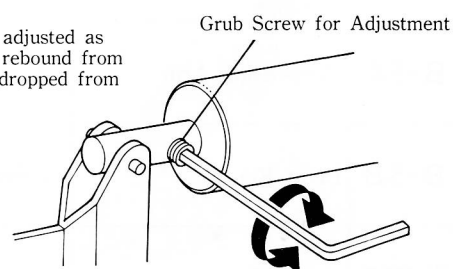
■ Adjustment of Toe Angle of Rear Wheel



■ Adjustment of Air Damper

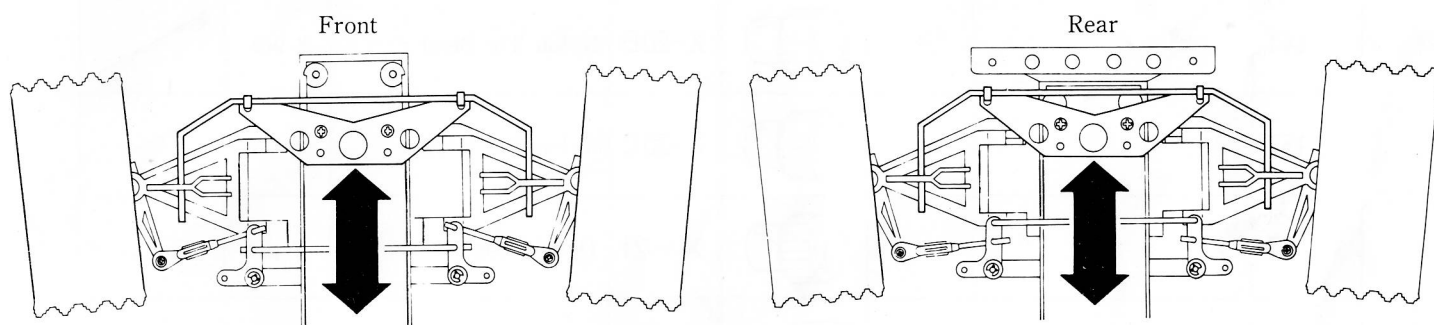


Air Damper should be adjusted as the car body does not rebound from the ground when it is dropped from 15cm high.



air pressure will be stronger when screw is turned clockwise.

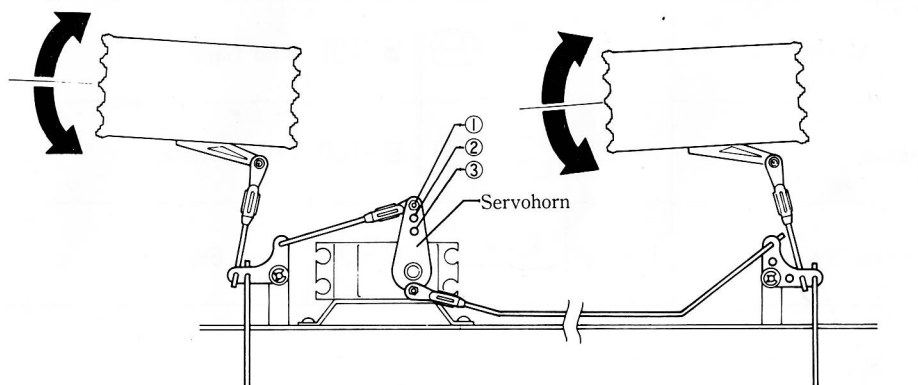
■ Setting of Front/Rear Stabilizers



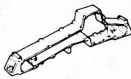


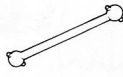

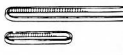

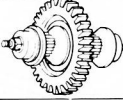

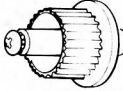
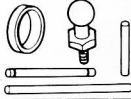

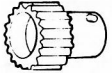
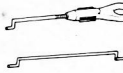
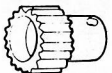
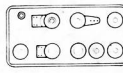
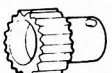
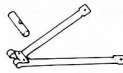





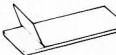
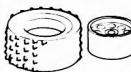







■ Adjustment of Steering Angle

Guidance of Servohorn Holes

- ① Maximum Steering
- ② Medium Steering
- ③ Minimum Steering



PARTS LIST FOR MUGEN BULLDOG AWDS

Parts Nos.	Descriptions	Q'ty		Parts Nos.	Descriptions	Q'ty	
B-1M	Main Frame	1 pc.		X-13A	Wire for Antenna	2 pcs.	
B-1S	Side Plate	2 pcs.		B-14A	Half Shaft	2 pcs.	
B-2	Under Guard	1 pc.		B-14B	Driving Belt Set	2 pcs.	
B-3	Controller	Ass'y		B-14C	Center Differential Gear	Ass'y	
B-5A	Suspension Arm	1 Set.		B-14FR	Front/Rear Differential Gear	Ass'y	
B-5B	Pivot Pin	1 Set.		B-14J	Joint	4 pcs.	
B-811T	Pinion Gear	1 pc.		B-17	Linkage Set	1 Set.	
12T	〃	〃		C-18	Servo Guard	1 pc.	
13T	〃	〃		C-20A	Battery Holder	1 Set.	
14T	〃	〃		X-20B	Nylon Tie Band	8 pcs.	
15T	〃	〃		X-20C	Nylon Tie Band	8 pcs.	
16T	〃	〃		X-21	Double Face Tape	2 pcs.	
B-10	Tire/Wheel	2 sets		B-25	Air Damper	2 pcs.	
B-11	Axle Shaft	1 Set.		B-26	Stabilizer Set	1 Set.	
B-12	Oiless Metal	1 Set.		B-101	Roll Cage	1 Set.	
B-12S	Bearing	2 pcs.		B-100	Sticker Label	1 sheet	
X-13	Antenna Set	1 set		B-OS	Screw Set	1 set	