

• READY TO ASSEMBLY MODEL KIT • FRONT DOUBLE WISHBONE DIVIDED AXLE • REAR FULL TRAILING LINK
 DIVIDED AXLE • 4 WHEEL INDEPENDENT SUSPENSION / ADJUSTABLE OIL DAMPER & COIL SPRING UNIT /
 FRONT & REAR STABILIZERS • SEALED GEAR BOX with DIFFERENTIAL • INTERNAL GEAR and RING BEVEL
 GEAR for POWER TRAIN • DUSTPROOF MONOCOQUE CHASSIS-FRAME • POLYCARBONATE COWL BODY and
 WING • 3 STEP FORWARD & 3 STEP REVERSE SPEED CONTROLLER with 6v REGULATOR for RECEIVING SET
 • FRONT & REAR HIGH GRIP SUPER BLOCK TIRES • REQUIRES TWO CHANNEL TWO SERVO R/C EQUIPMENT
 & 7.2v RACING FLAT PACK Ni-Cd BATTERY (NOT IN KIT)
 • INCLUDES MABUCHI RS-540S MOTOR • with RADIATOR for MOTOR

NICHIMO

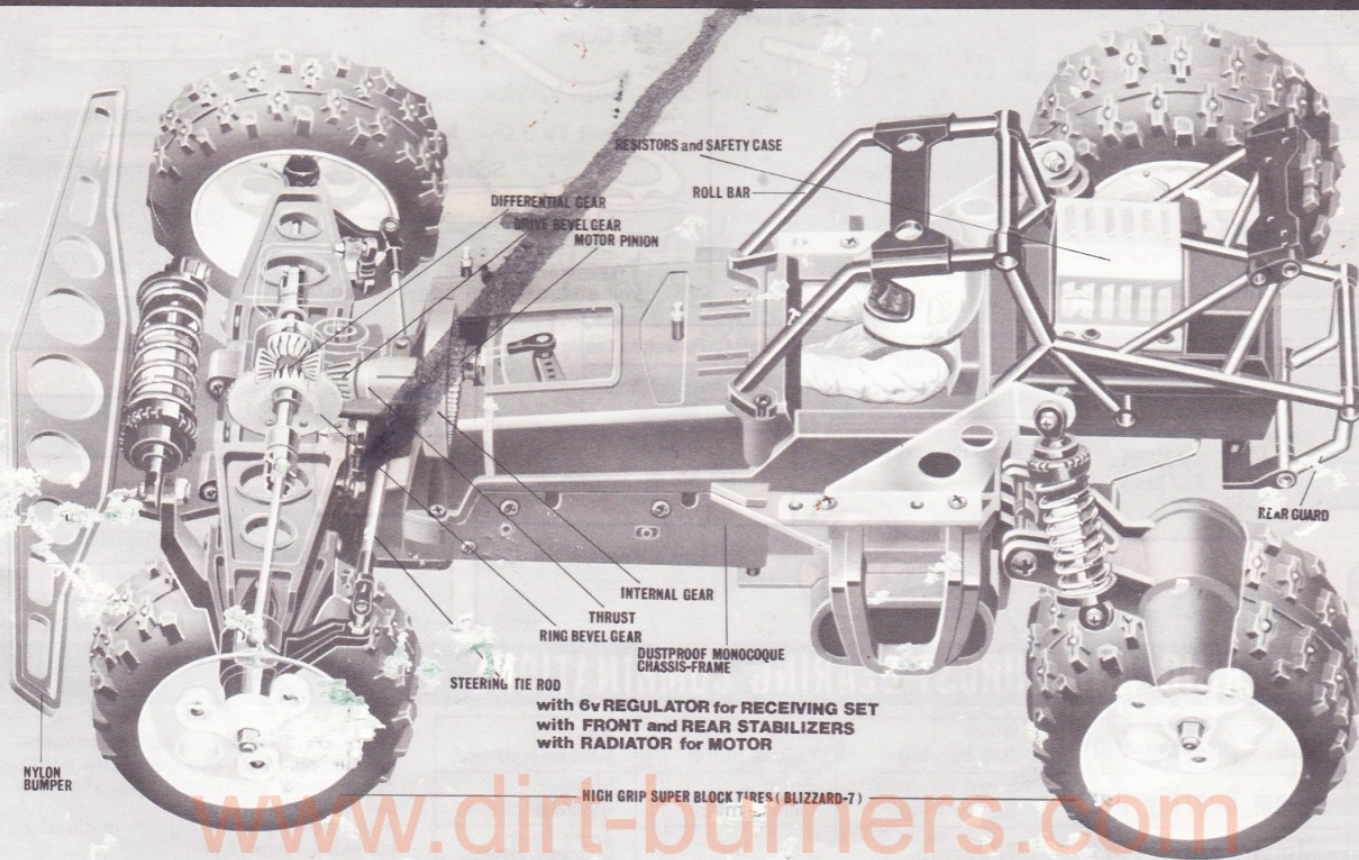
THE NEWEST TECHNOLOGY
 THE FINEST MATERIAL R.C.



FF DRIVE OFF ROAD RACER

SPIRIT FF

1/10 SCALE FF RADIO CONTROL
 OFF ROAD HIGH PERFORMANCE RACER



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NICHIMO CO., LTD. 135 KUBOCHO, SANO-CITY, TOCHIGI-KEN, 327 JAPAN

RCスピリットFF(英文)

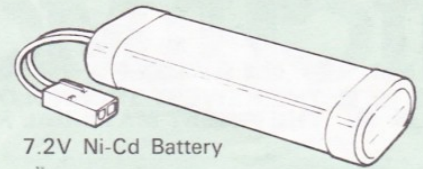
Read the following instructions carefully before assembly.

This kit is designed for a 2 channel 2 servo digital proportional radio control system. Almost any 2 channel radio may be used. But, some old 2 channel and 3 or more channel sets are unsuitable, because their units will not fit into the space provided. Refer to the radio control equipment instructions for further details.

- (d) Receiver with1
- (e) Steering servo1
- (f) Switch (speed controller) servo1

<7.2V Ni-Cd Battery>

Need 7.2V Ni-Cd Battery and Charger.



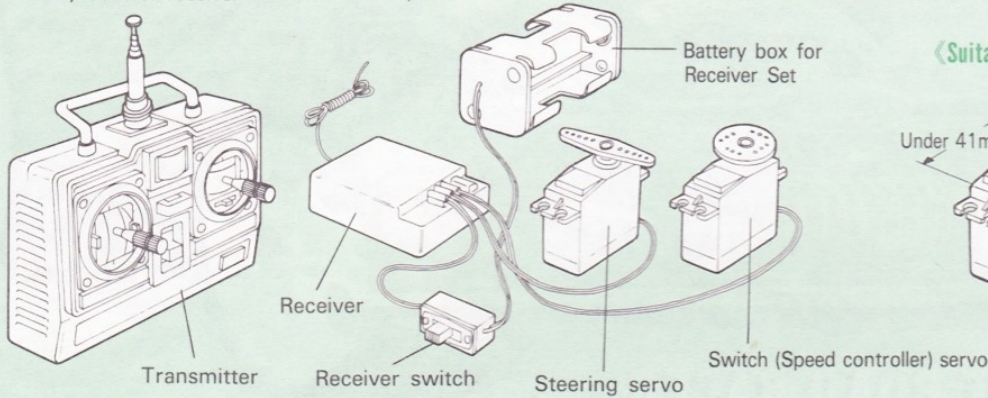
7.2V Ni-Cd Battery

<Necessary goods (Not included in this kit)>

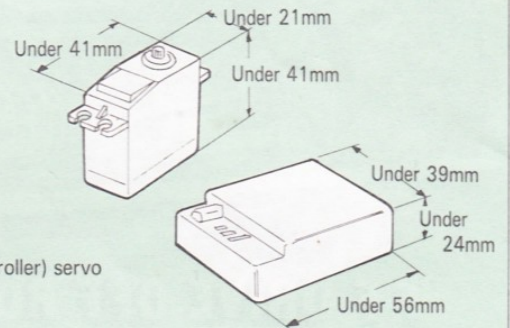
- (1) 2 channel radio control system
- (2) UM-3 Batteries for radio control unit
- (3) 7.2V Ni-Cd Battery-Flat type

2 channel radio control unit (Regular type)

- (a) Transmitter1
- (b) Receiver1
- (c) Battery box for receiver1

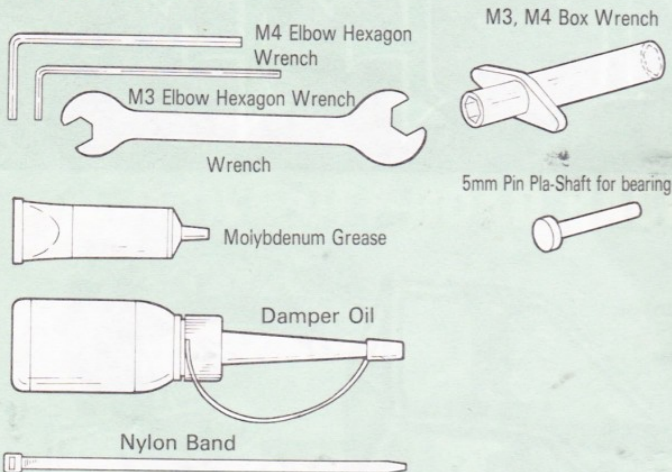


<Suitable Servo and Receiver Size>

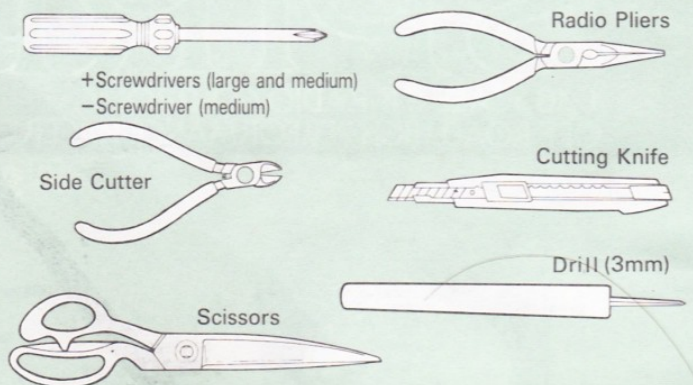


<Radio control Equipment>

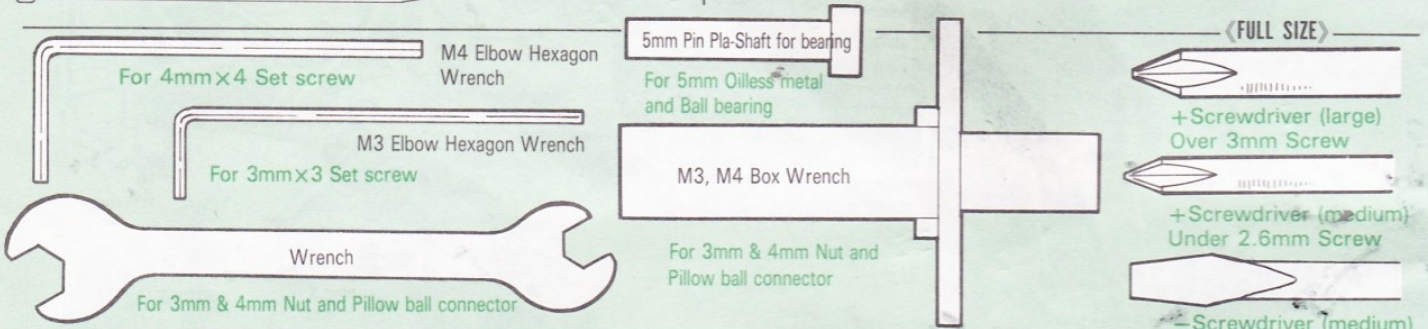
<Tool in this kit>



<Tool Not in this kit (Required for assembly)>



Tweezers, Hairdrier, Instant-Adhesive and Cellophane tape will also assist in construction.



◆ BEARING AND THRUST-BEARING COMBINATIONS

4mm Bearing Part	4mm Ball bearing	4mm Oilless metal	4mm Molybdenum pla-metal
5mm Bearing Part	5mm Ball bearing	5mm Oilless metal	5mm Molybdenum pla-metal
4mm Thrust Part	4mm Thrust ball bearing		4mm Thrust molybdenum pla-metal
5mm Thrust Part	5mm Thrust ball bearing		5mm Thrust molybdenum pla-metal

There are 3 bearing types, a good molybdenum pla-metal with flange, the better oilless metal with flange and the best ball bearing with flange. A ball bearing is the highest grade double sided flange type. The thrust 2 types: a good molybdenum thrust and the highest grade thrust ball bearing. Can be used.

Read the following instructions carefully before assembly

SCREWDRIVER

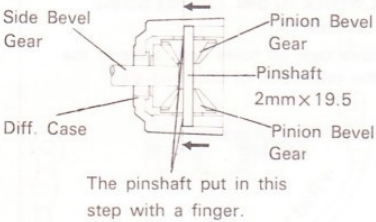
Be sure to use the proper size screwdriver for each size screw. (See page 2)

Apply molybdenum grease to the parts as shown by this mark. This is important to prevent excessive wear.

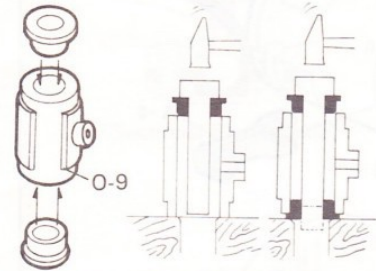
SELF TAPPING SCREWS

Be careful when using the self tapping screws. Do not overtighten as the screw head can break.

Position of Pinshaft



5mm Oilless Metals



Use the 5mm Pin Pla-Shaft in this kit when 5mm Oilless Metals put in O-9 both ends. (Refer to an upper figure.)

It is important to use this tool to insure proper bearing alignment.

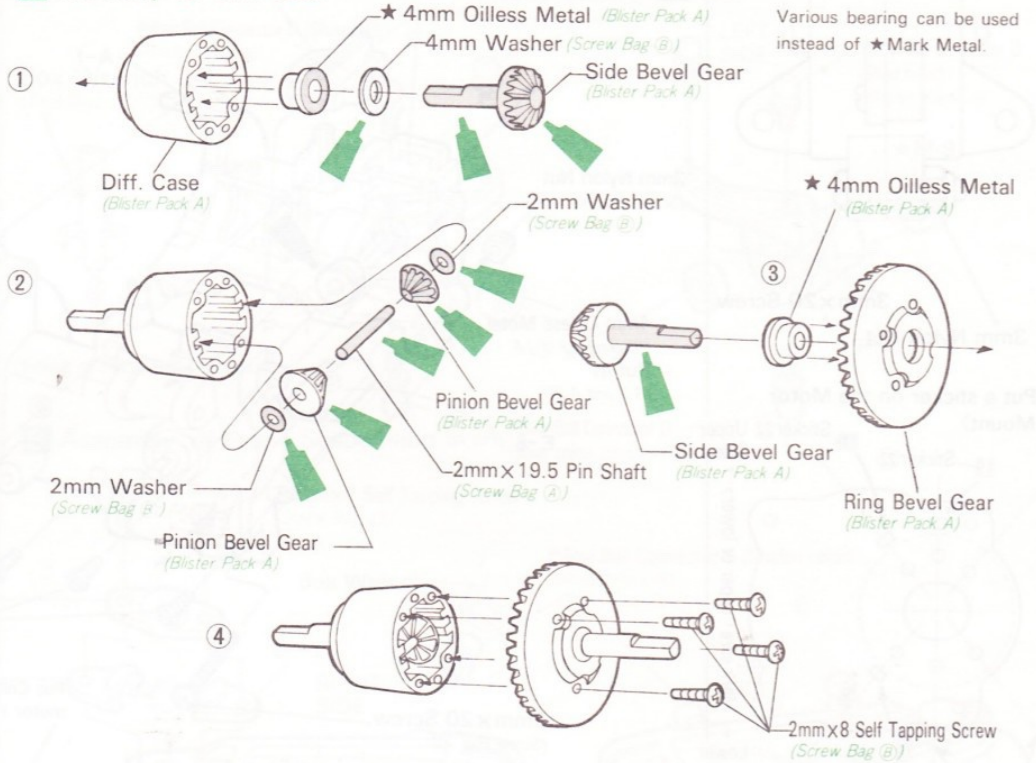
Ball Bearing & Thrust Bearing

ACCESSORY BEARINGS (Not included in kit.)

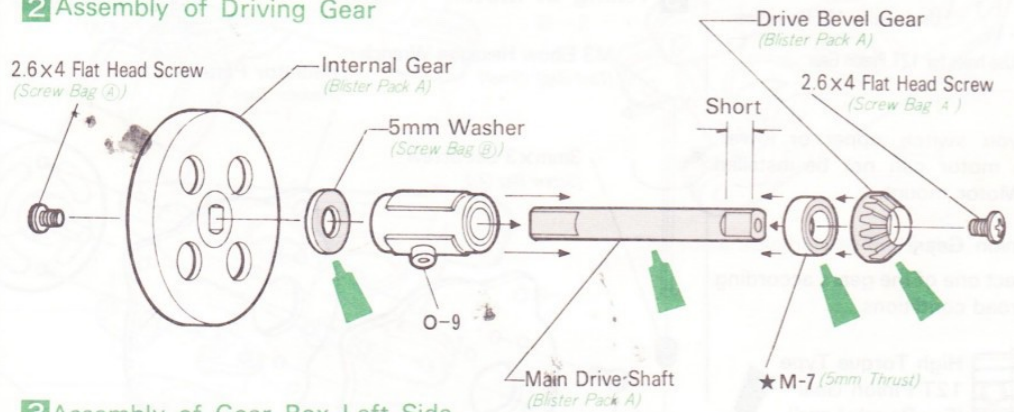
For improved performance, high performance bearings (see below) can be substituted for stock bearings (M Parts).

- No.A07 4mm Ball Bearing (2 pcs.)
- No.A08 5mm Ball Bearing (2 pcs.)
- No.A09 4mm Thrust Bearing (2 pcs.)
- No.A10 5mm Thrust Bearing (2 pcs.)
- No.A11 4mm Oilless Metal (8 pcs.)
- No.A12 5mm Oilless Metal (8 pcs.)

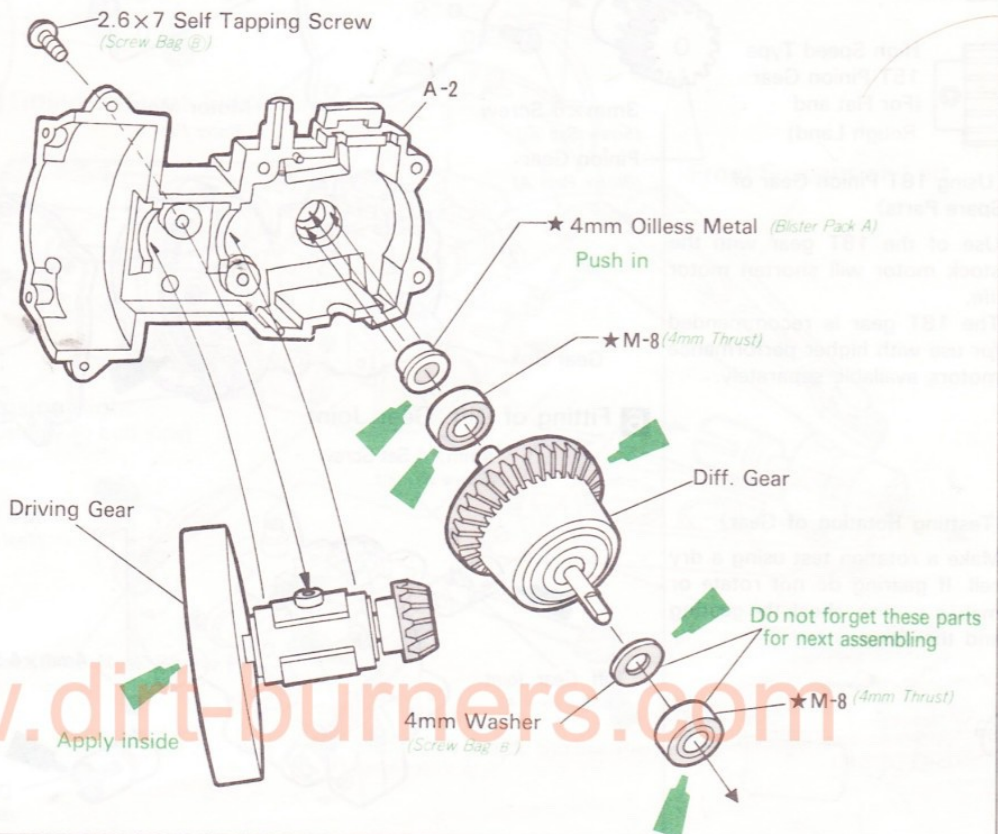
1 Assembly of Diff. Gear

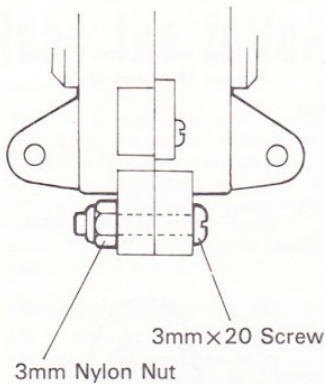


2 Assembly of Driving Gear

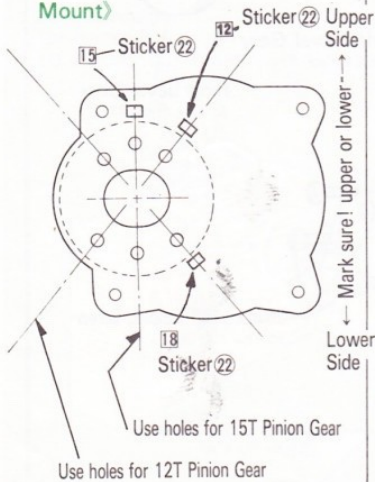


3 Assembly of Gear Box Left Side





Put a sticker on the Motor Mount



If you switch upper or lower, the motor can not be installed in Motor mount.

Pinion Gear

Select one of the gears according to road conditions.



Using 18T Pinion Gear of Spare Parts

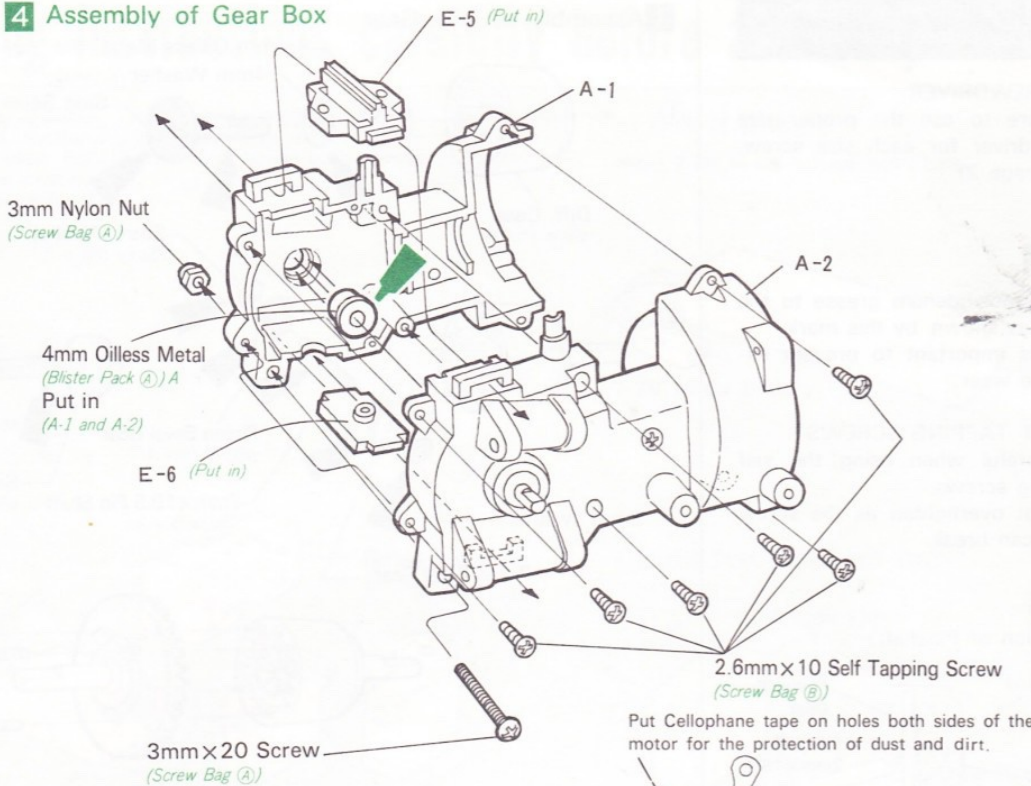
Use of the 18T gear with the stock motor will shorten motor life. The 18T gear is recommended for use with higher performance motors available separately.

Testing Rotation of Gear

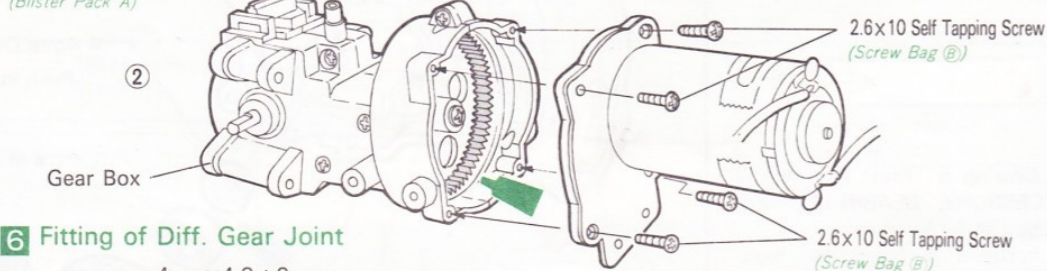
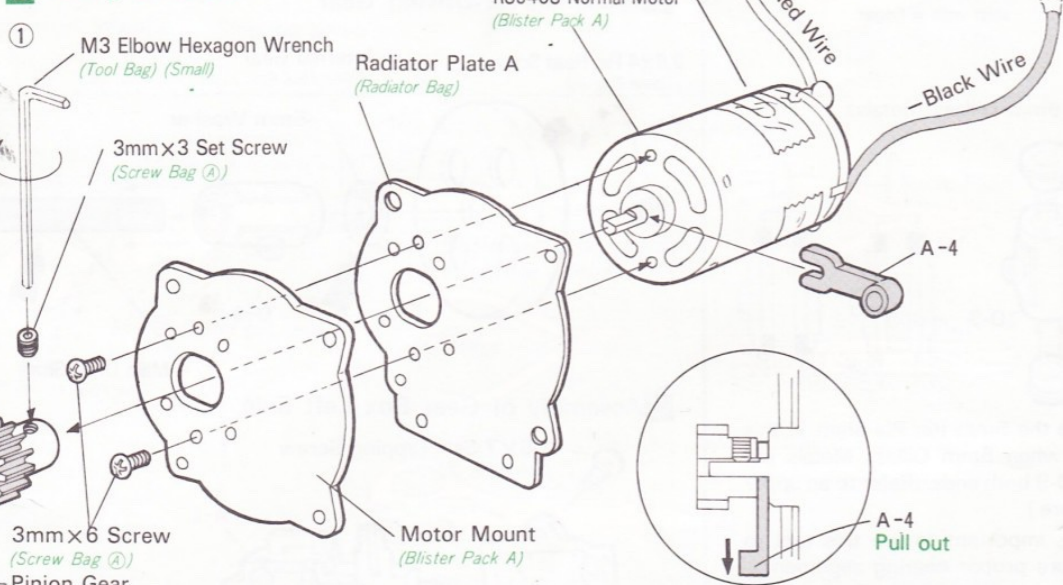
Make a rotation test using a dry cell. If gearing do not rotate or makes a noise, check the gearing and the suspension.



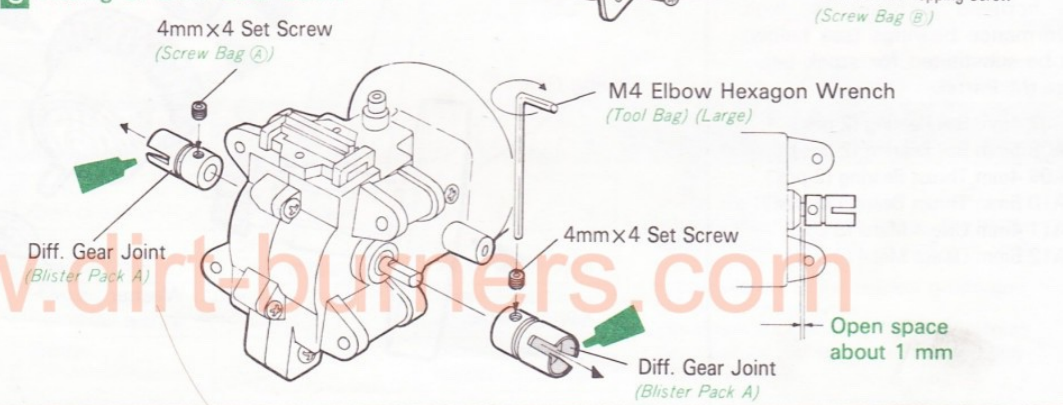
4 Assembly of Gear Box



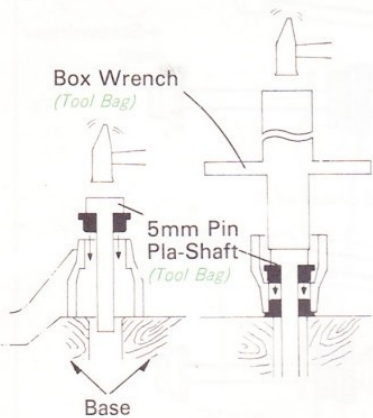
5 Fitting of Motor



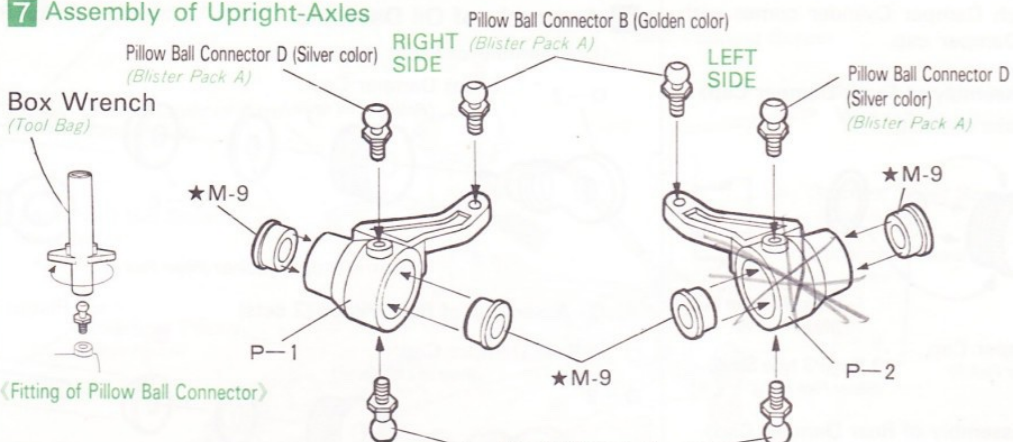
6 Fitting of Diff. Gear Joint



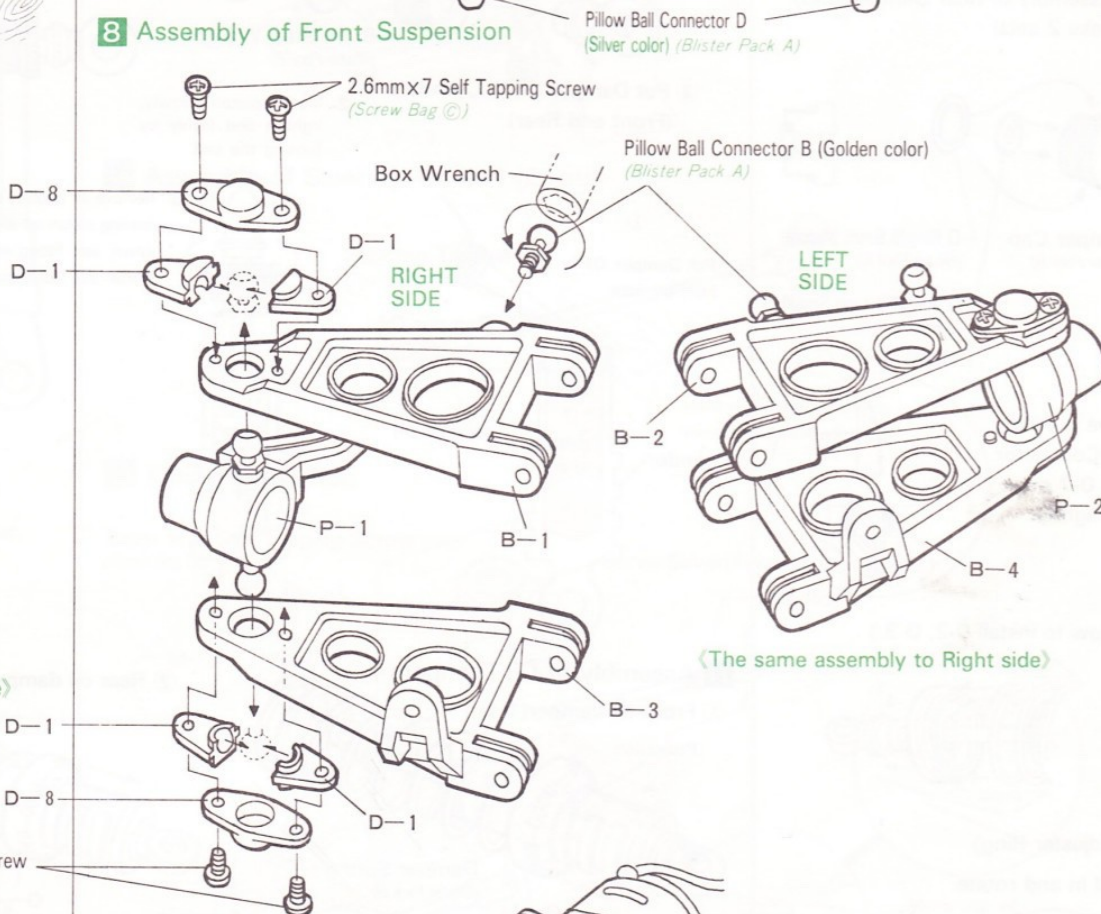
Use the 5mm Pin Pla-Shaft in this kit when M-9 parts put in P-1 and P-2 both ends. (Refer to a lower figure.)



7 Assembly of Upright-Axes

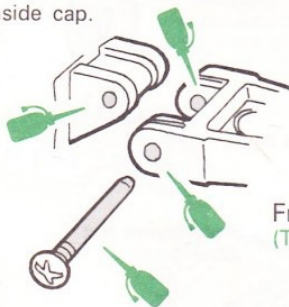


8 Assembly of Front Suspension

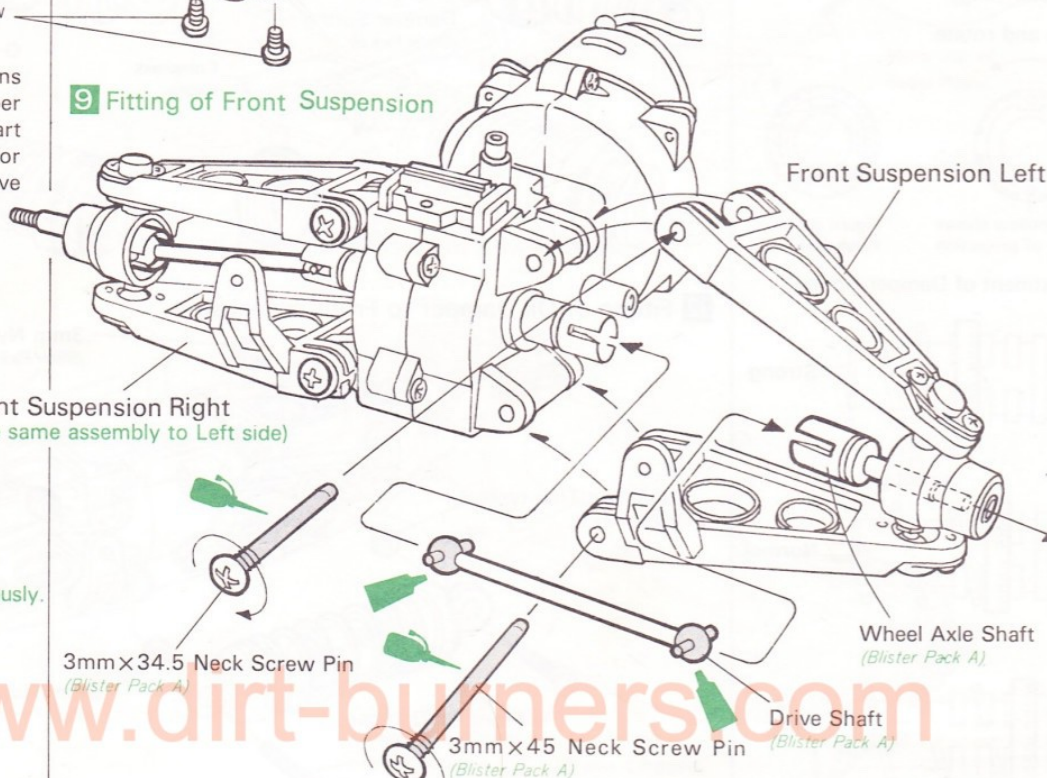


《Sectional Plan of axle》

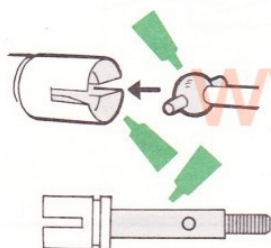
Apply Damper Oil to the positions shown by this mark. Using Damper Oil on these parts will extend part life. When using Damper Oil for the first time, be sure to remove inside cap.



9 Fitting of Front Suspension

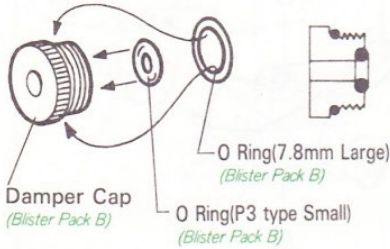


Apply Molybdenum grease generously.

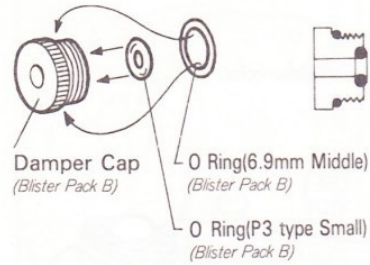


Each Damper Cylinder comes with a Damper cap.

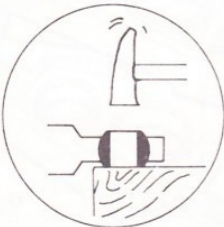
Assembly of Front Damper Cap
(Make one set)



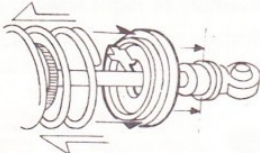
Assembly of Rear Damper Cap
(Make 2 sets)



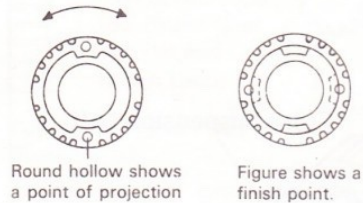
Drive a Pillow Ball Connector into O-7 or O-8 lightly.



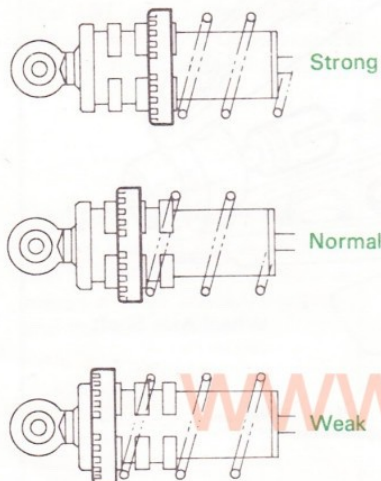
How to install O-2, O-3.



Adjuster Ring
Pull in and rotate.

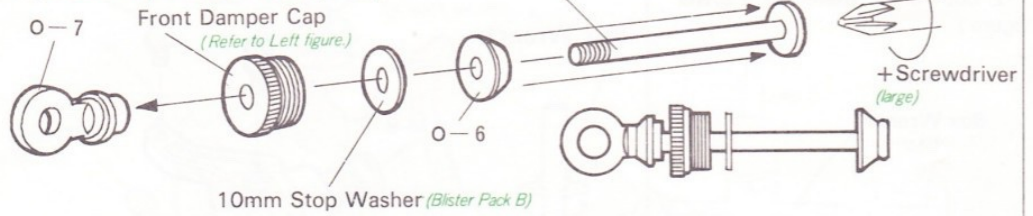


Adjustment of Damper Spring

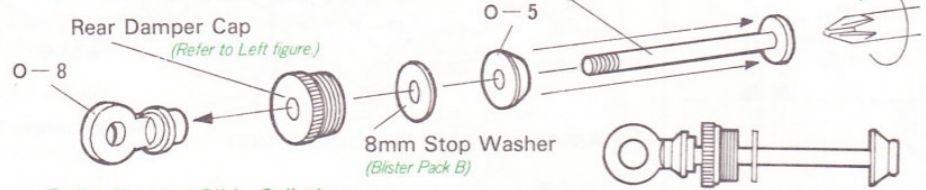


10 Assembly of Oil Dampers

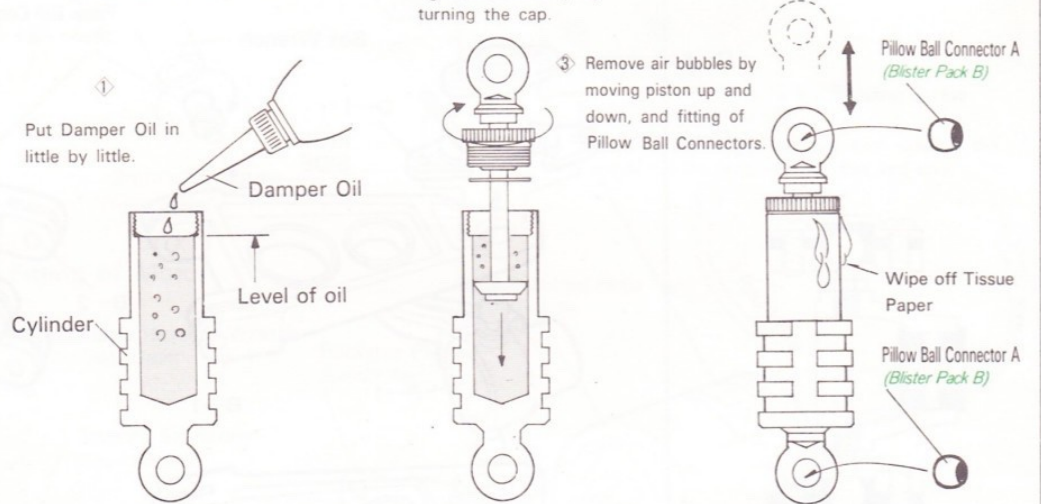
1 Assembly of Front Piston (1 set)



2 Assembly of Rear Piston (2 sets)

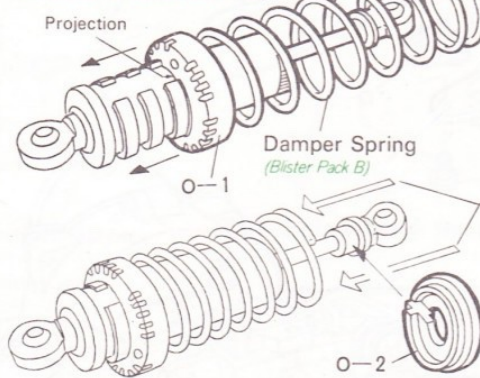


3 Put Damper Oil in Cylinders
(Front and Rear)

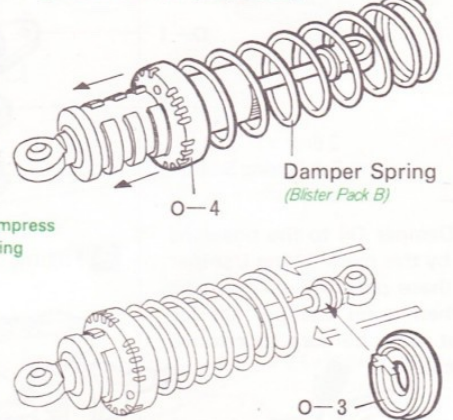


11 Assembly of Oil Dampers

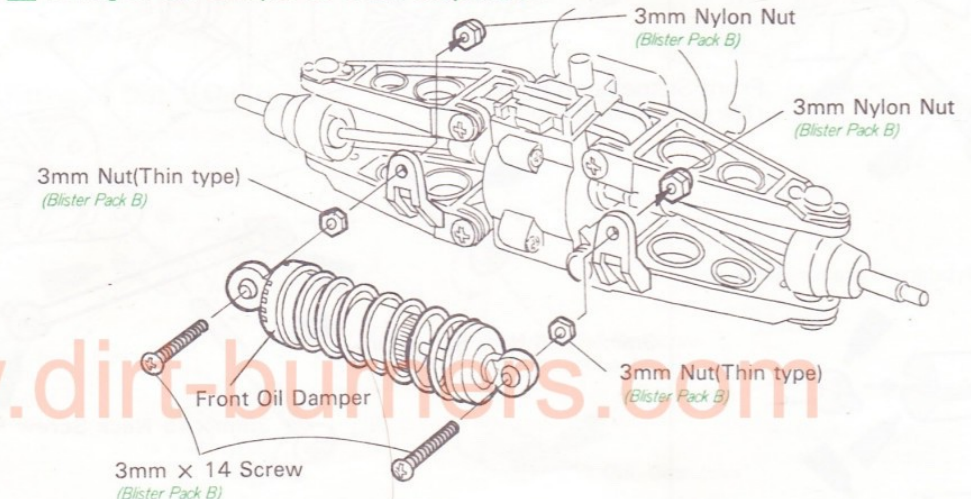
1 Front oil damper (1 set)



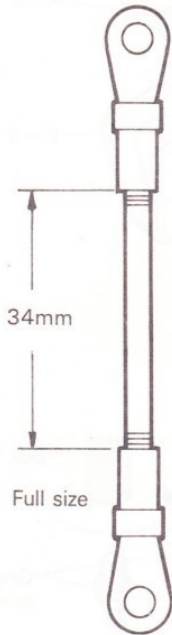
2 Rear oil damper (2 sets)



12 Fitting of Oil Damper to Front suspension

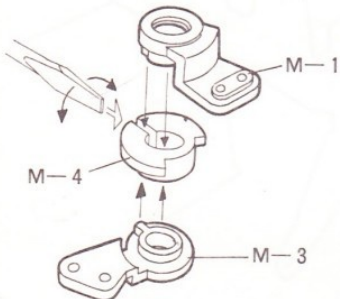


《Adjustment of Steering Tie Rod》

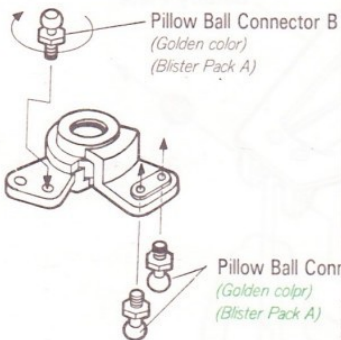


《Assembly of servo saver》

Spread by rotating screwdriver.

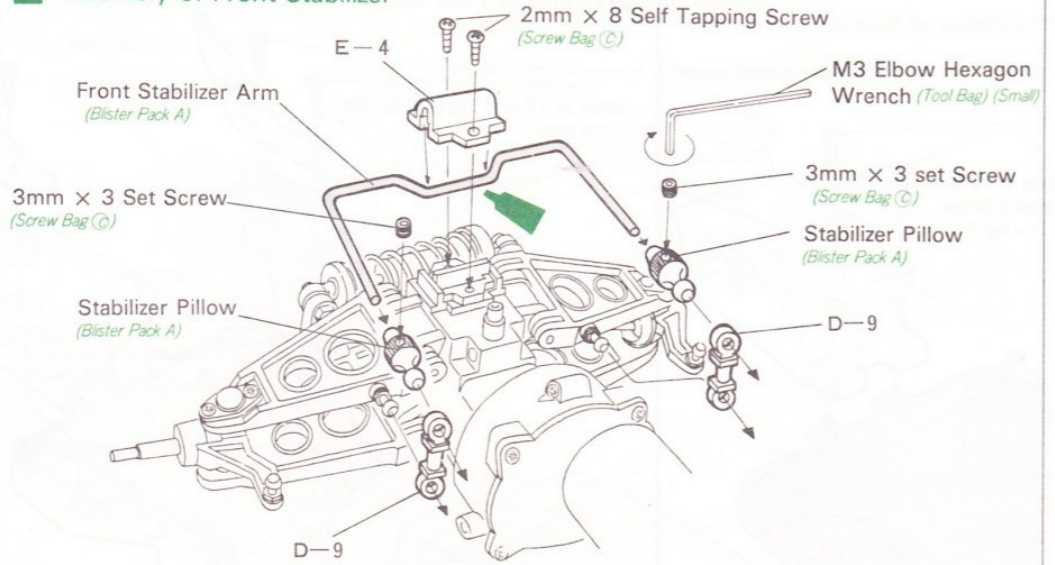


《Fitting of Pillow Ball Connector》

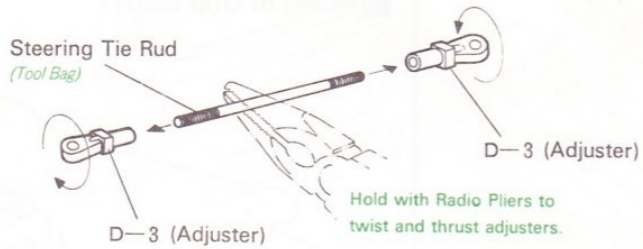


Make use of Box Wrench.

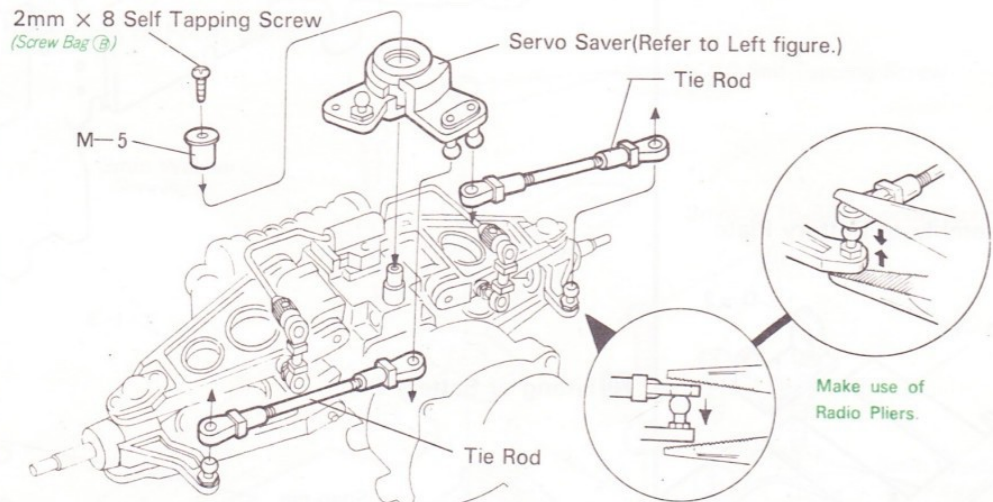
13 Assembly of Front Stabilizer



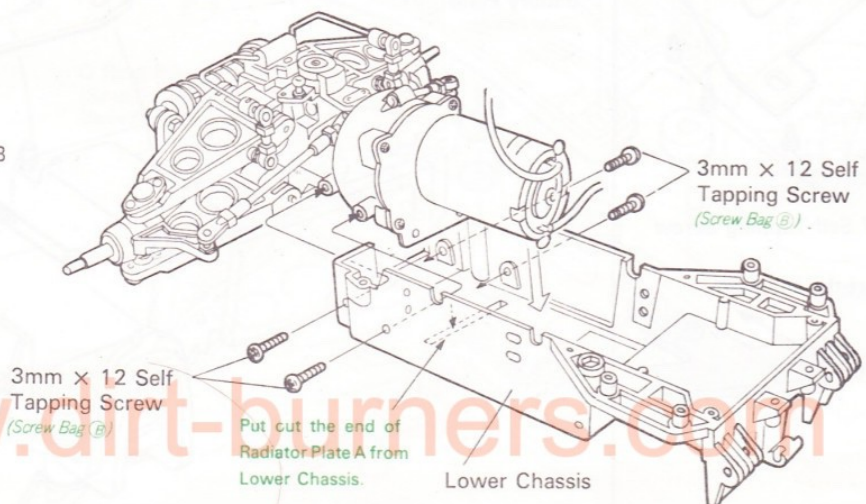
14 Assembly of Steering Tie Rod (2 sets)



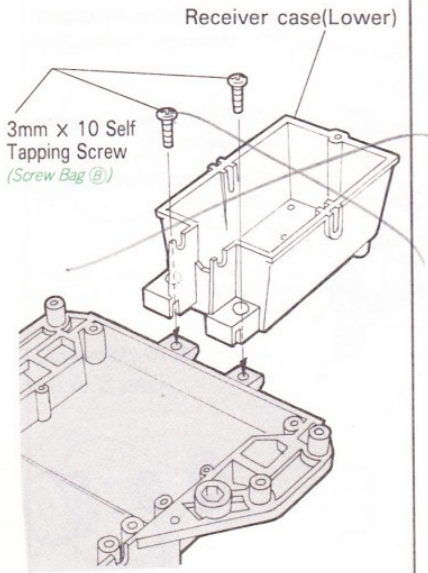
15 Fitting of Tie Rod



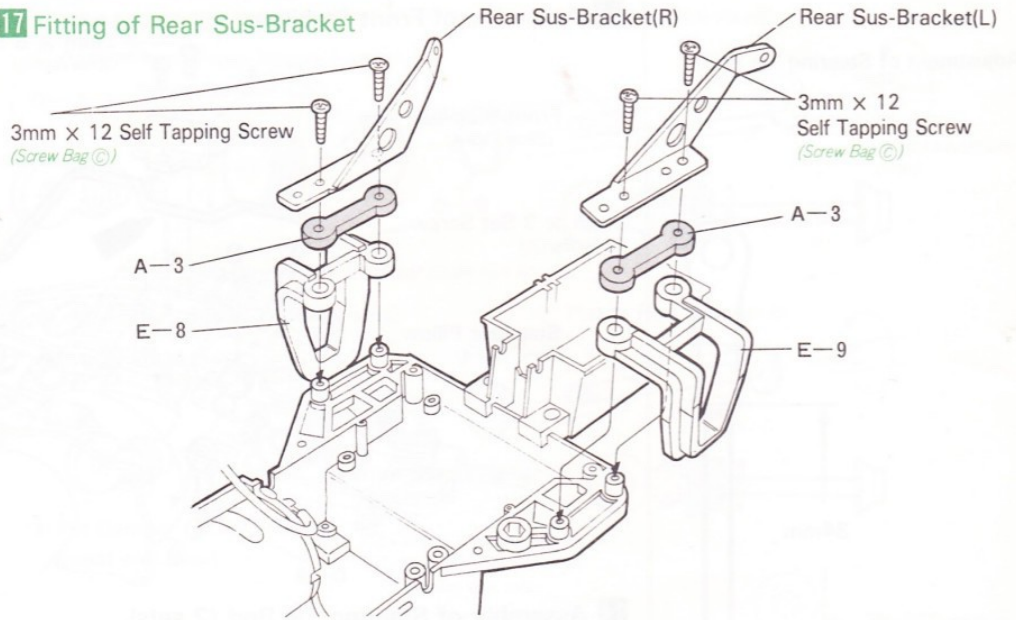
16 Fitting of Front suspension to Lower Chassis



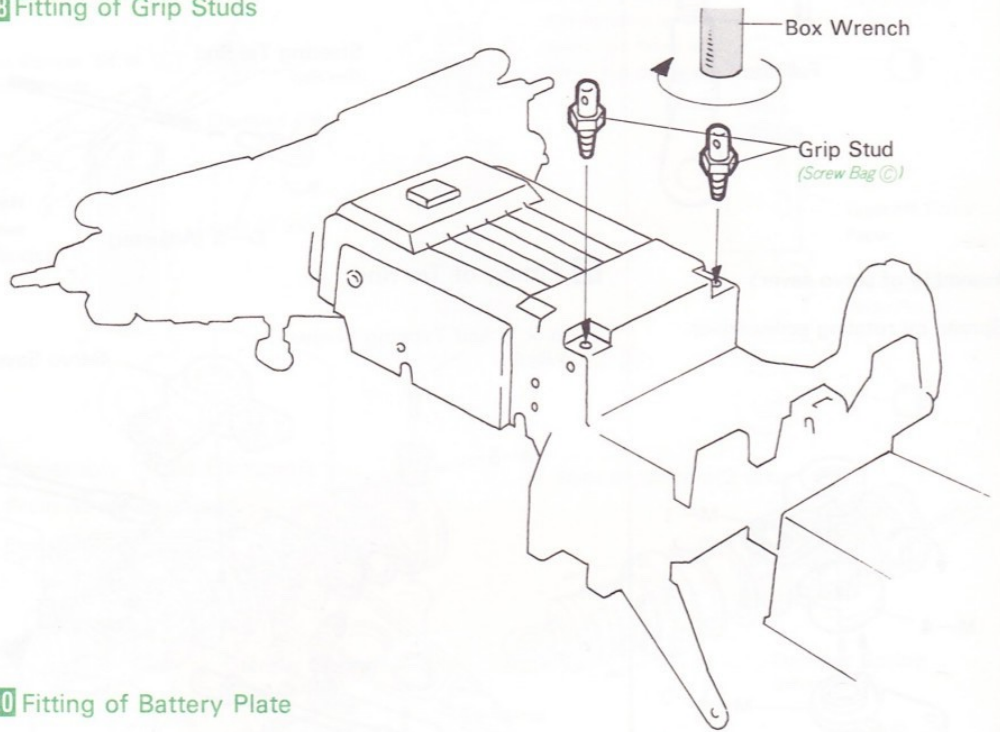
Installation of Receiver case(Lower)



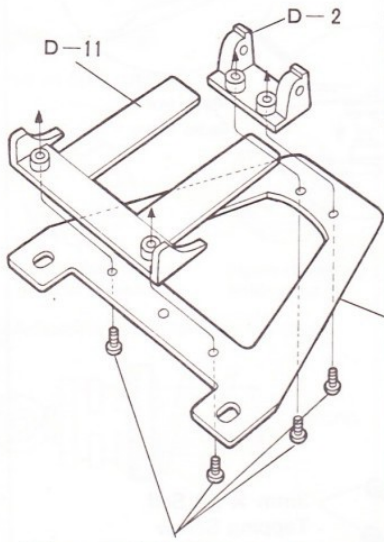
17 Fitting of Rear Sus-Bracket



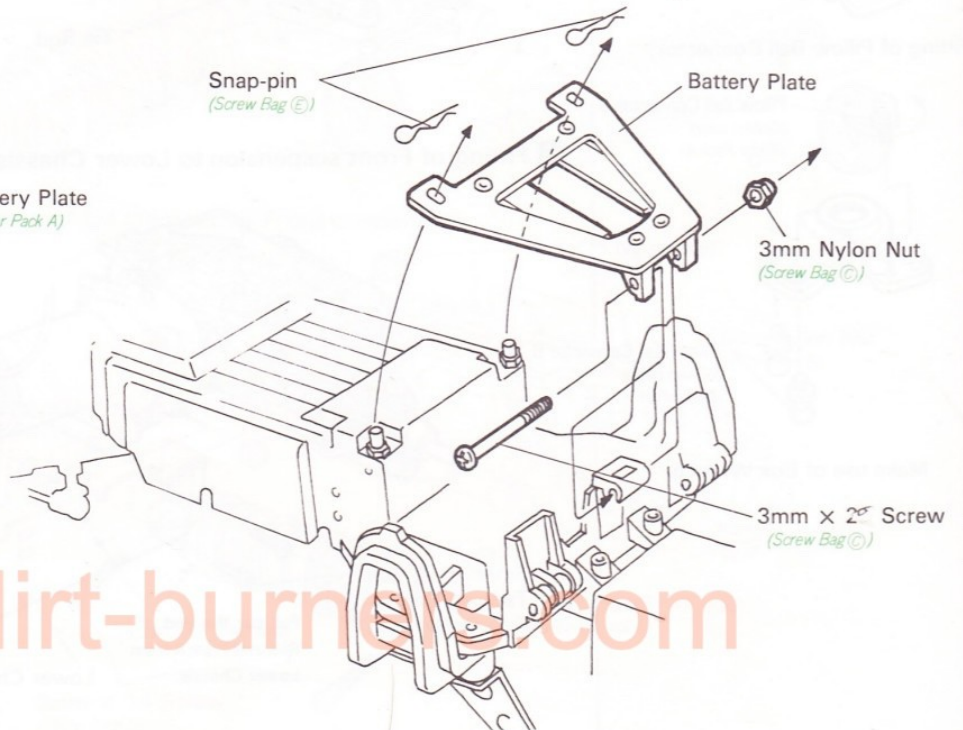
18 Fitting of Grip Studs



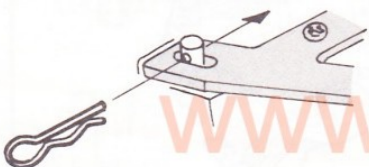
19 Assembly of Battery Plate



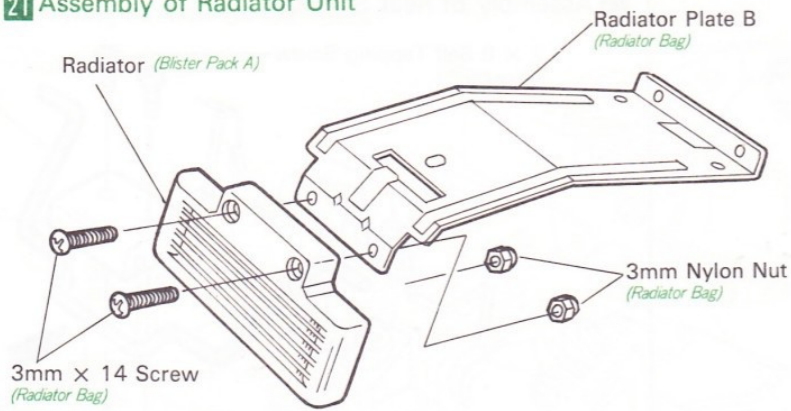
20 Fitting of Battery Plate



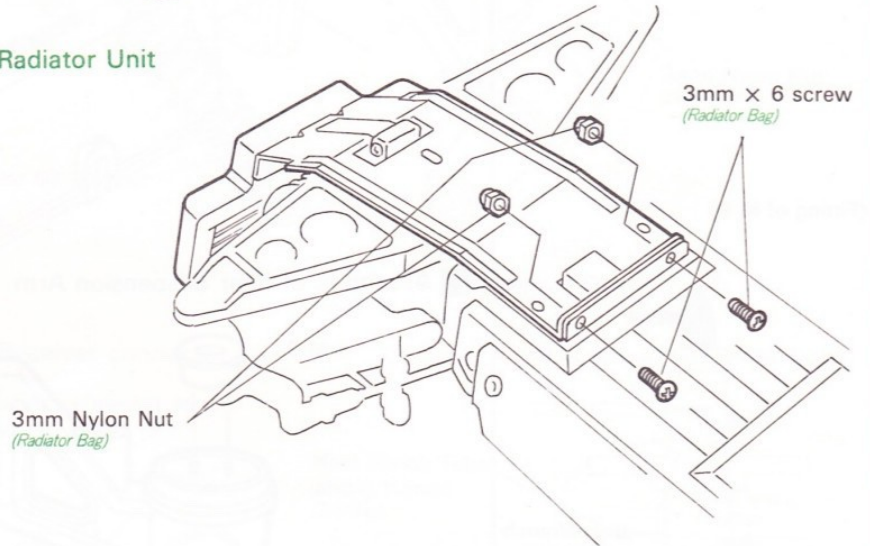
How to insert the snap-pin.



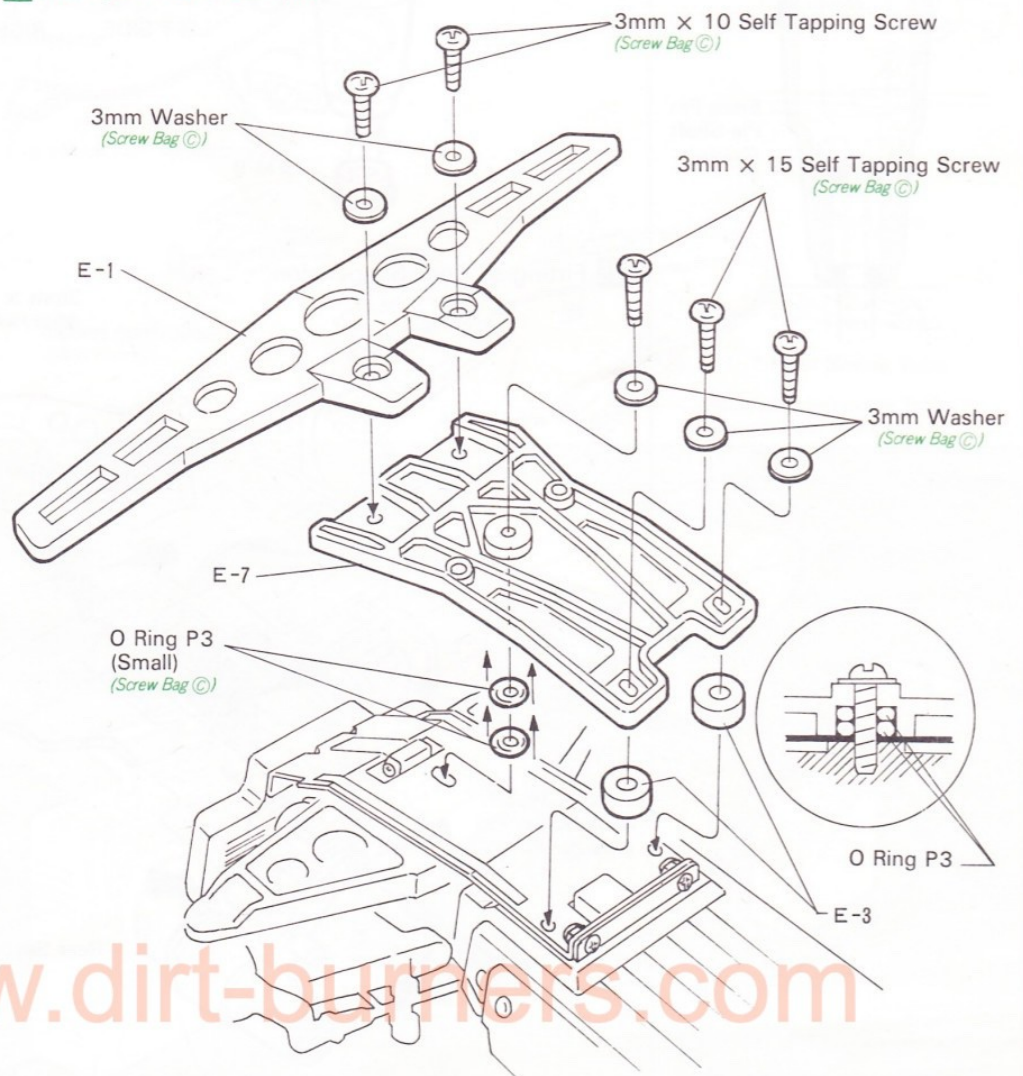
21 Assembly of Radiator Unit



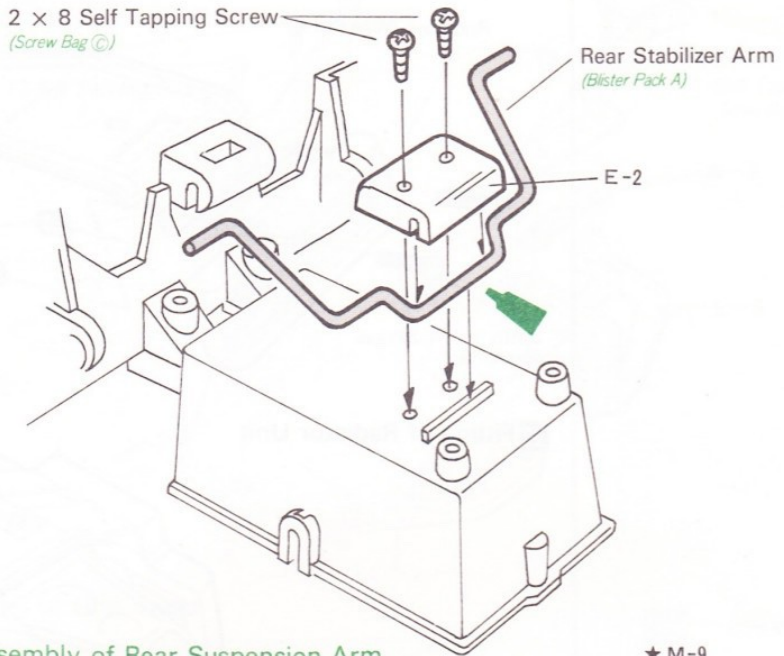
22 Fitting of Radiator Unit



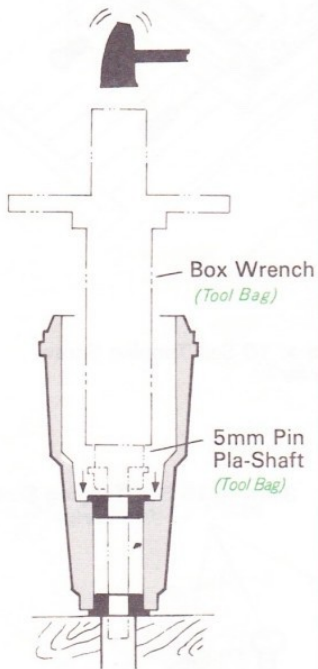
23 Fitting of Front bumper



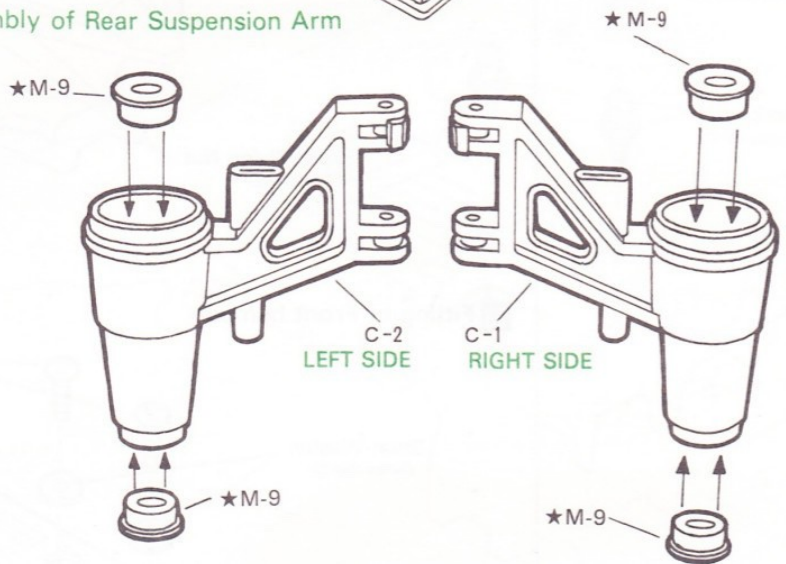
24 Assembly of Rear Stabilizer



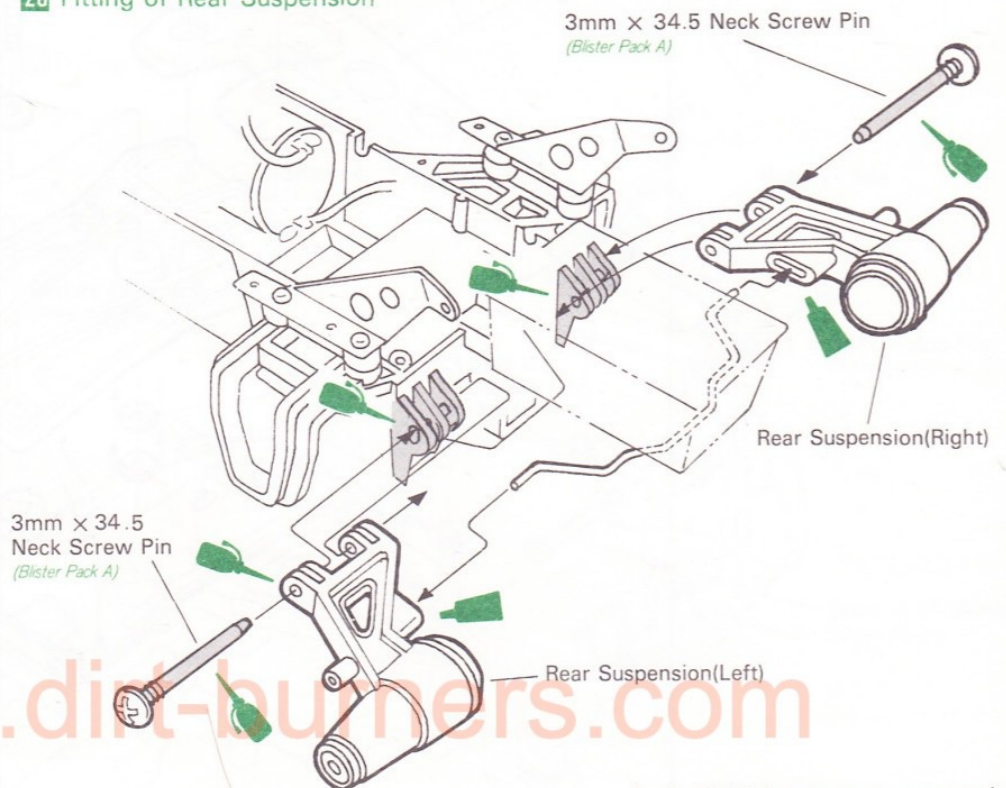
⟨Fitting of M-9⟩



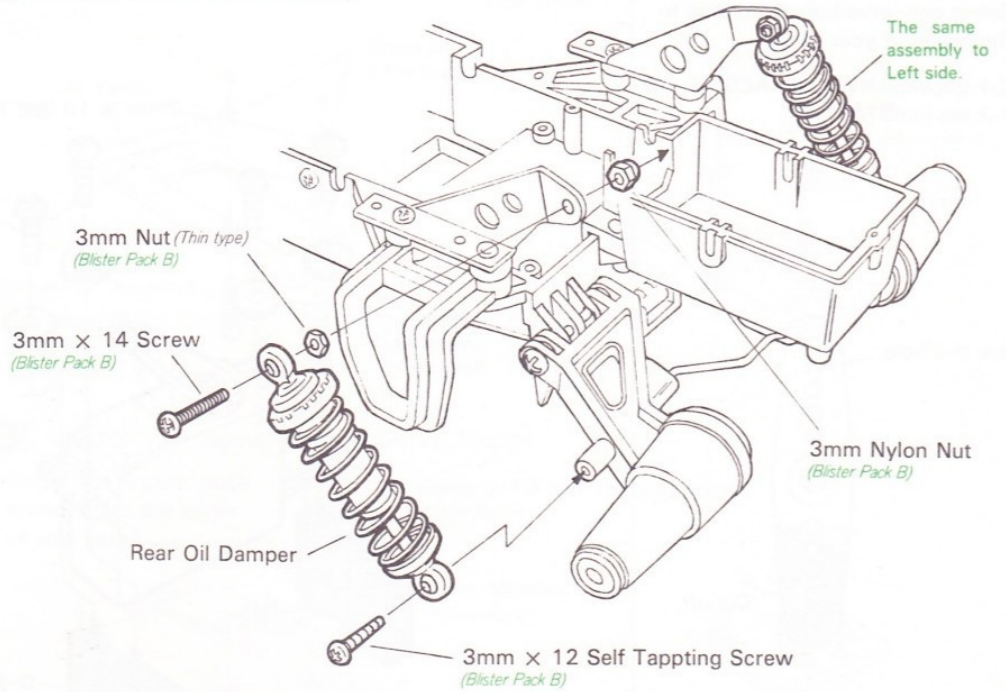
25 Assembly of Rear Suspension Arm



26 Fitting of Rear Suspension



27 Fitting of Rear Oil Dampers



<Radio Control Unit>

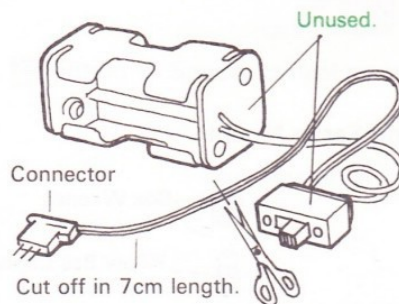
This kit is designed for a 2 channel 2 servo digital proportional radio control system. Refer to the radio control equipment instructions for further details.

< Heat Shrink Tube >

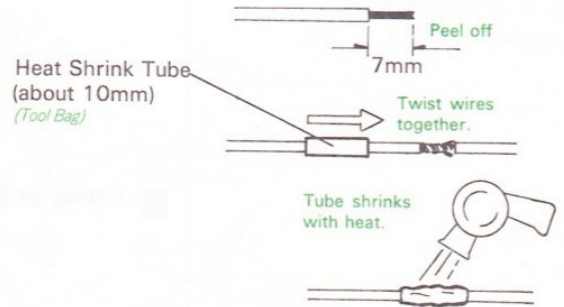
Divide heat Shrink type Tube into halves.

28 Fitting of Receiver connector

Cut off Receiver connector as shown below.



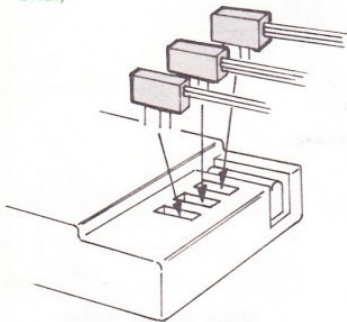
<How to use Heat Shrink Tube>



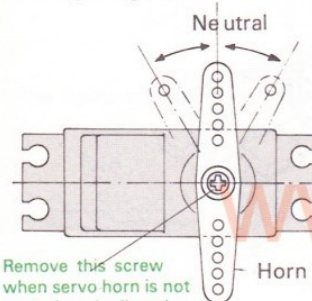
CAUTION!!

Never reverse polarity of red(+) and black (-) wires from switch to receiver connector. If you make a mistake, receiver and servo are damaged. If the colors of connector wires vary, see your RC unit manual.

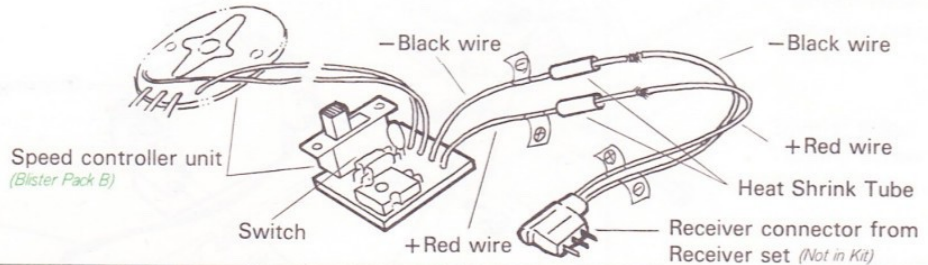
Fitting of Connectors to receiver. (Refer to R/C equipment instructions.)



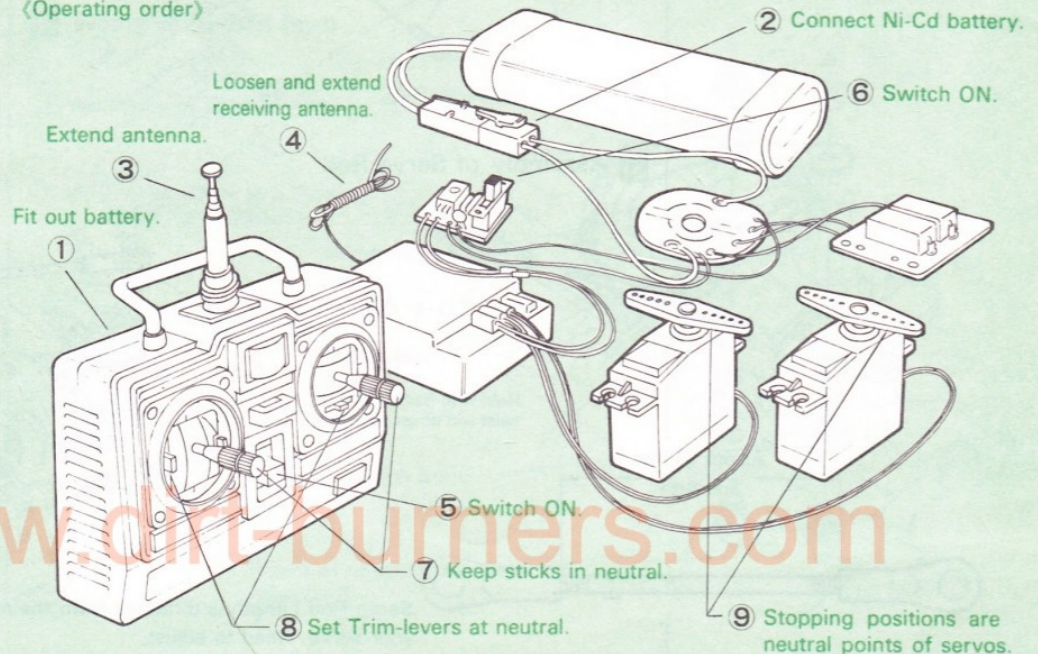
You can take neutral position of servo to operate in accordance with right figure.



Heat Shrink Tube (about 10mm) (Tool Bag)



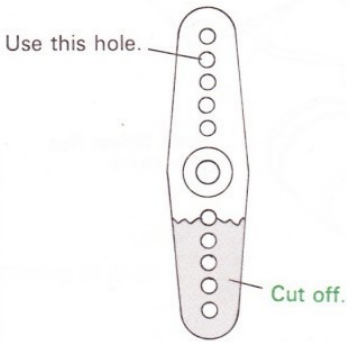
<Operating order>



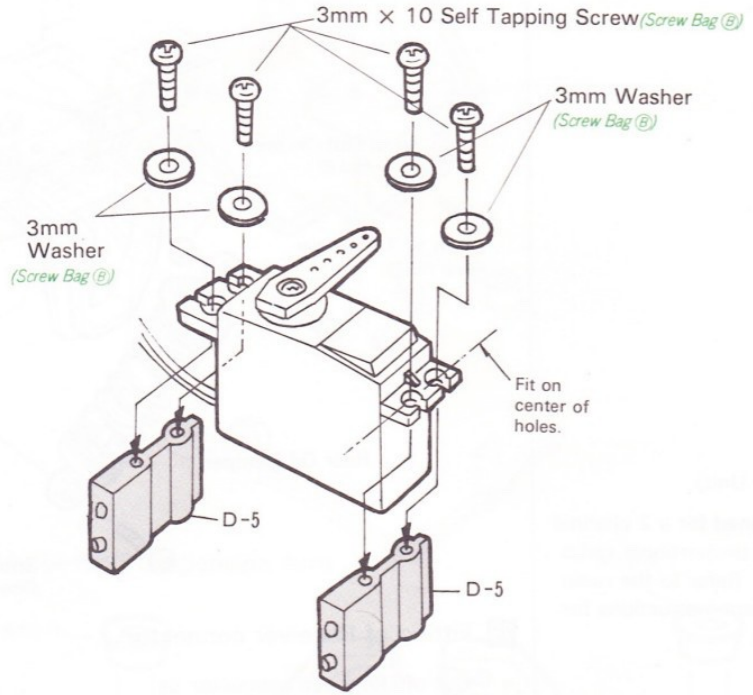
《Servo Horn》

Select one servo horn according to the maker of your servo.

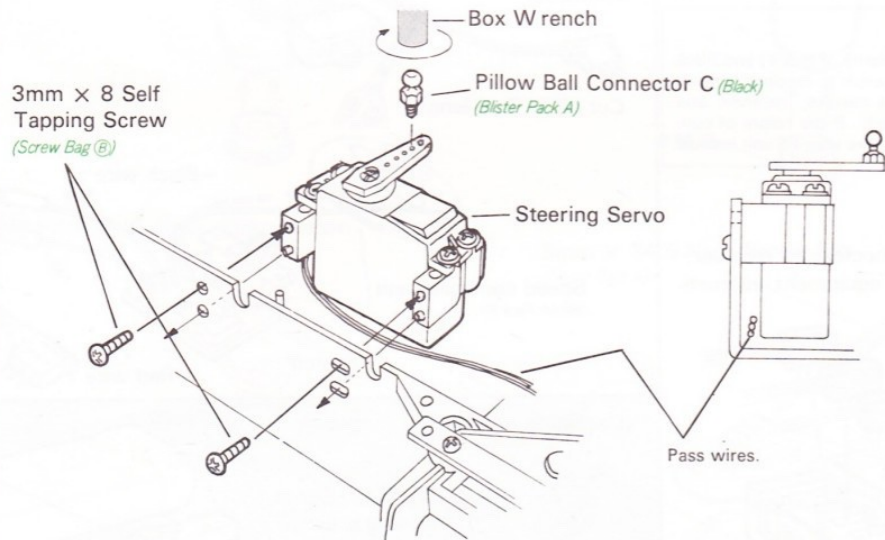
Z-1 fits in SANWA, JR, ACOMS, KO
Z-2 fits in FUTABA.



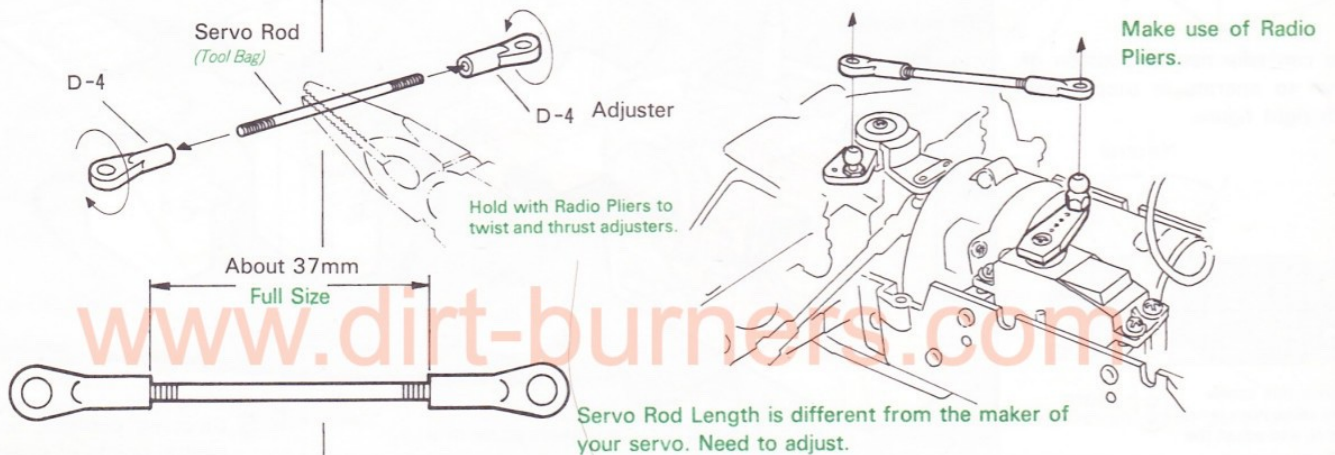
29 Assembly of Steering Servo Mount



30 Fitting of Steering Servo Mount



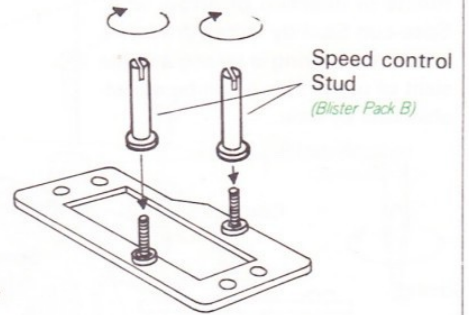
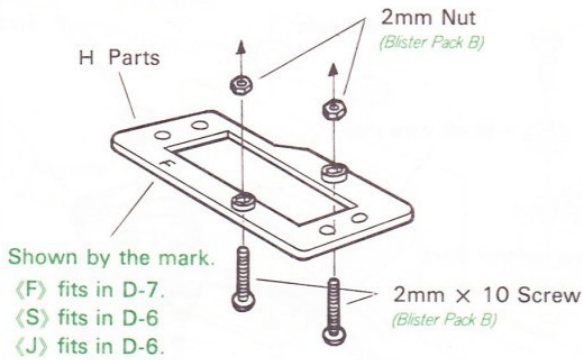
31 Assembly of Servo Rod



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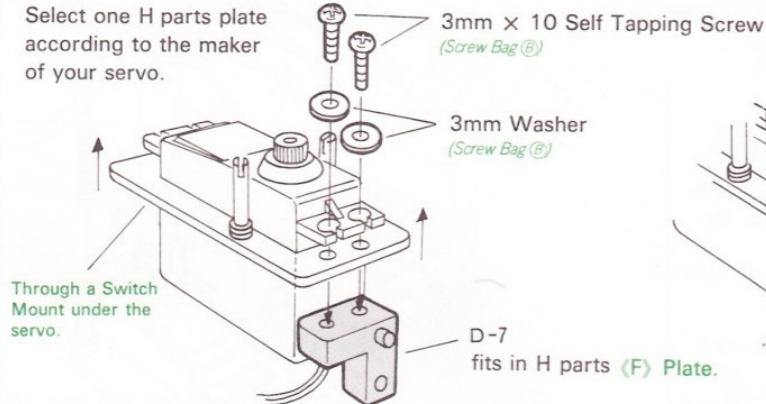
32 Assembly of Switch Mount

Select one H parts plate according to the maker of your servo.

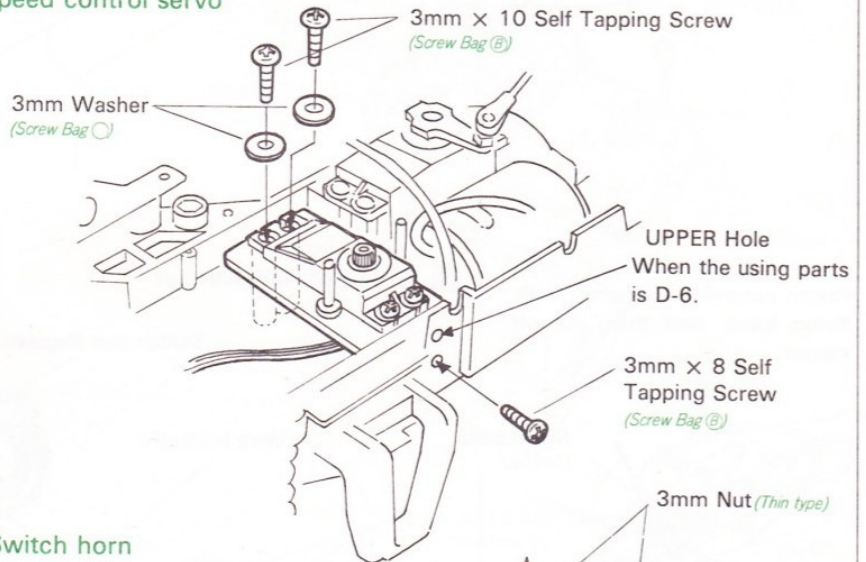


33 Assembly of Speed control Servo Mount

Select one H parts plate according to the maker of your servo.

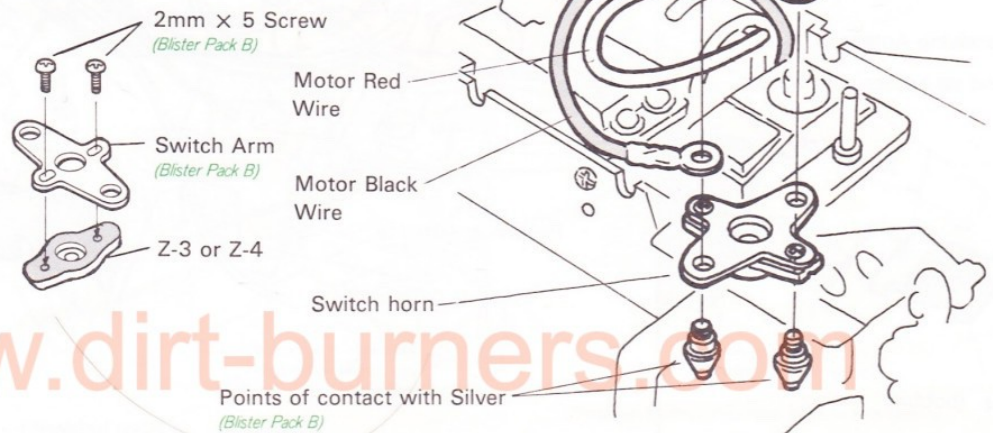


34 Fitting of Speed control servo



35 Fitting of Switch horn

- 1 Assembly of Switch horn
- 2 Connection



(Servo Horn) (Speed controller)

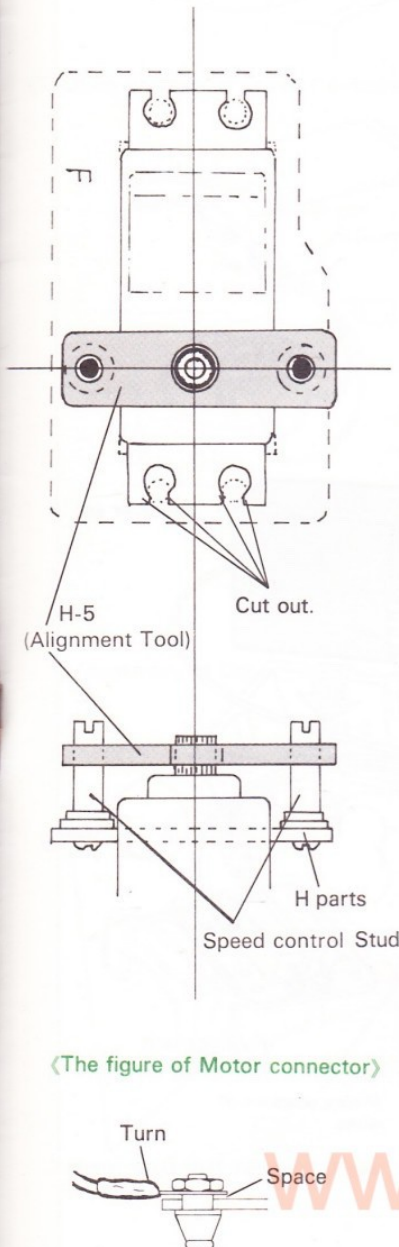
Select one servo horn according to the maker of your servo.

Z-3 fits in SANWA, JR, ACOMS, KO
Z-4 fits in FUTABA.

(Select one H parts plate)

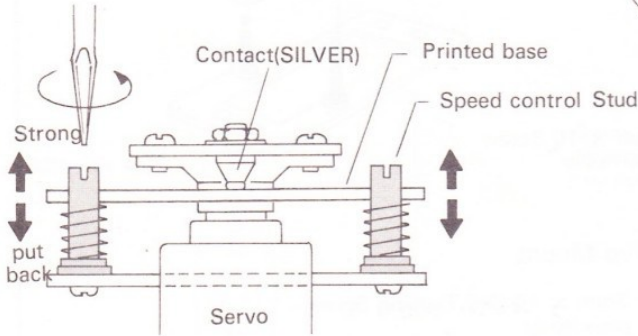
Use H-5 (Alignment tool) to accurately position servo shaft to speed control studs.

After tightening screws, remove H-5 tool.



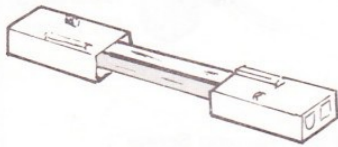
Adjustment of Contact pressure

Adjustment not normally required. Rotate in direction of arrow with Spee-con Stud by screwdriver(-), pressure of spring is strong and the slant of printed base can be adjustable little by little.

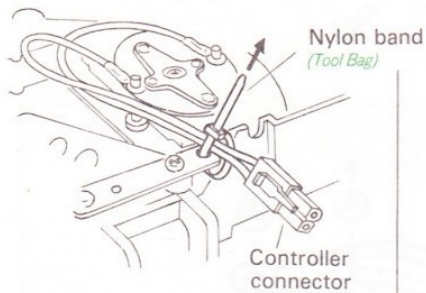


7.2V Connector for spare part

Can be used for connector of different Ni-Cd battery. (Not in kit. No.A05)

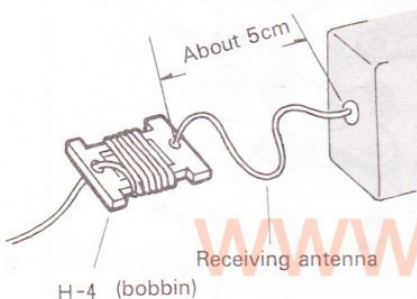


Fasten controller connector with Nylon band. And then, cut off excess.

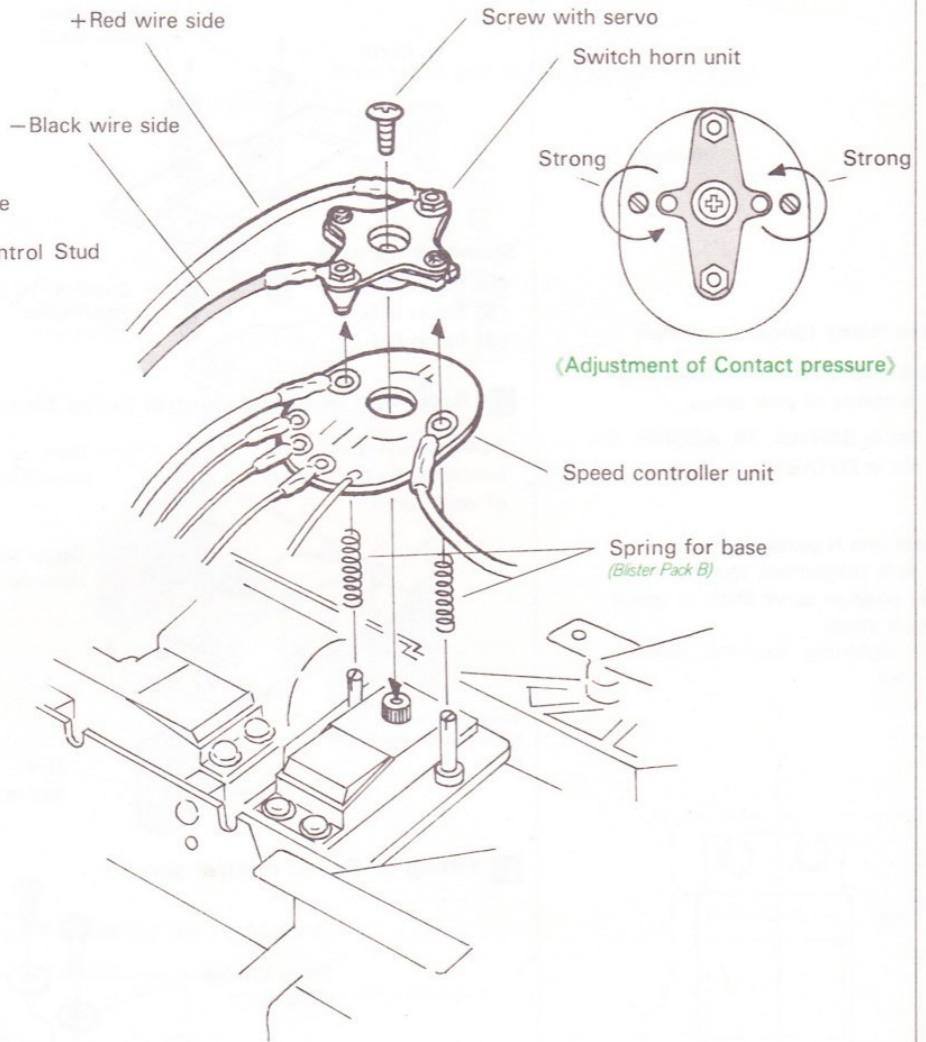


Receiving Antenna

Wind up excess with bobbin.

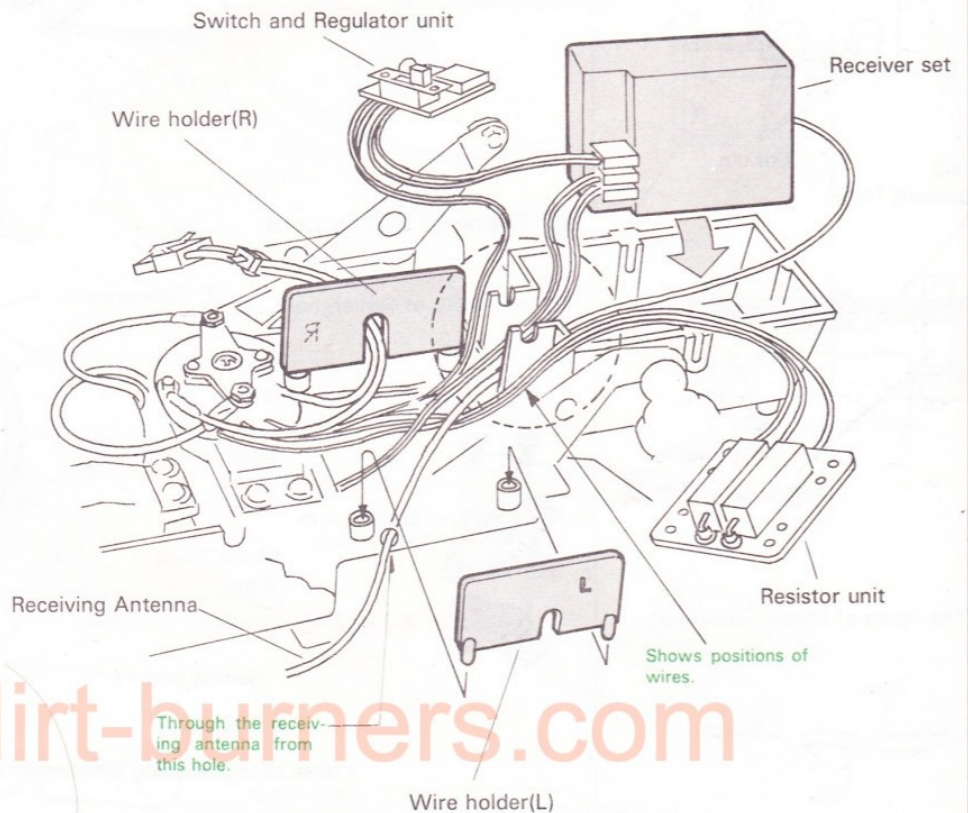


36 Assembly of Speed controller



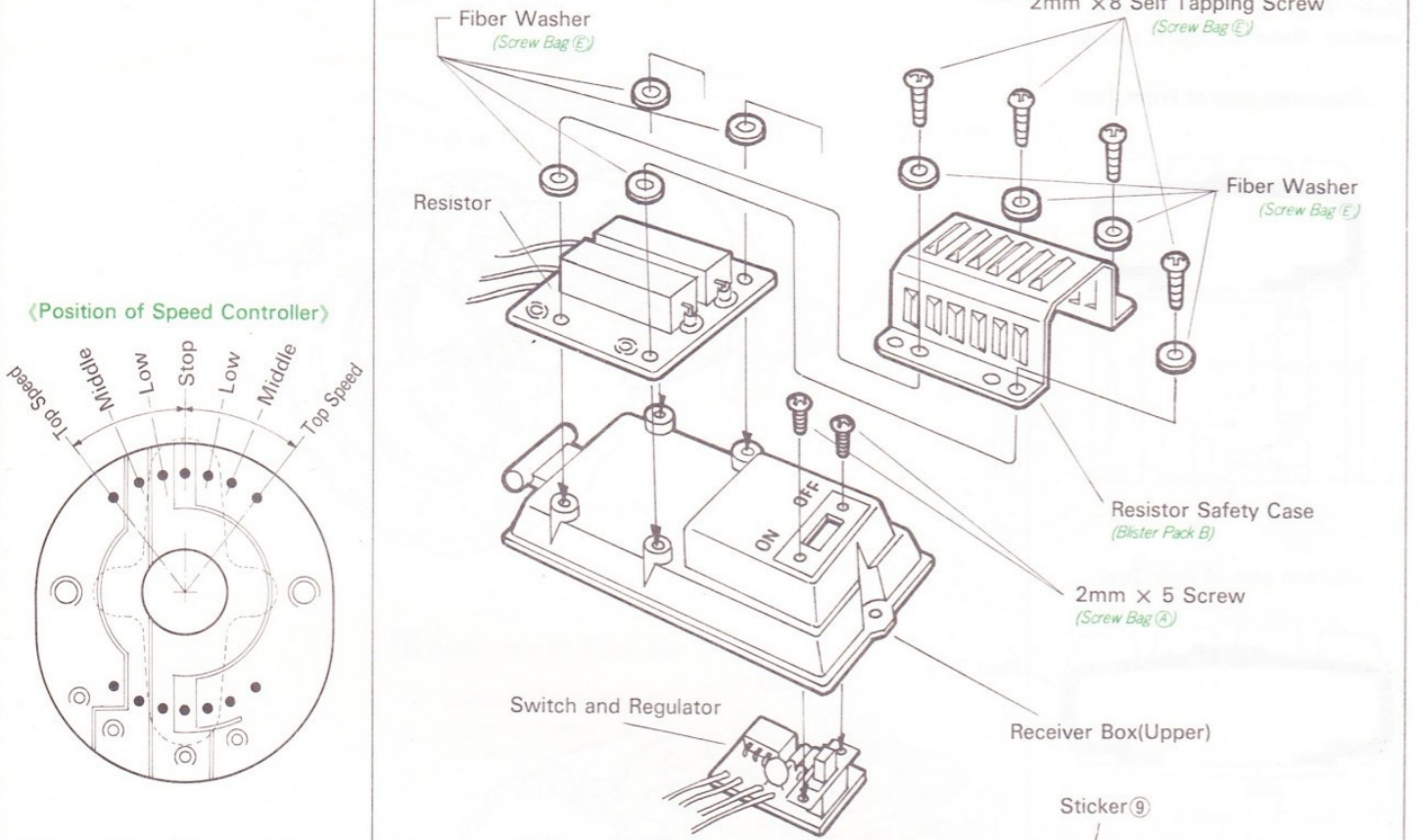
Adjustment of Contact pressure

37 Fitting of Receiver set

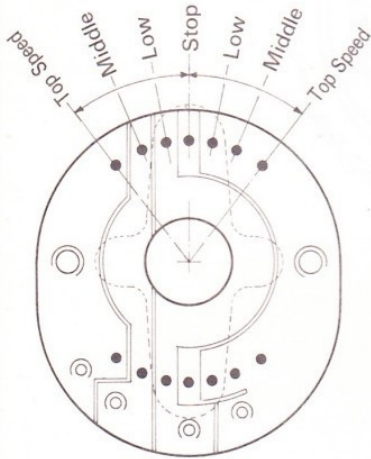


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38 Assembly of Resistors

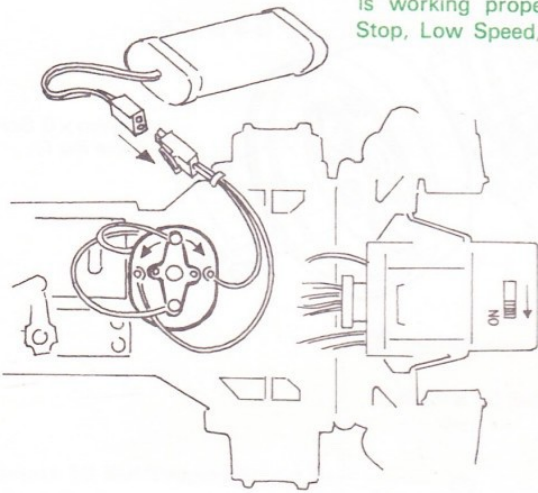


《Position of Speed Controller》

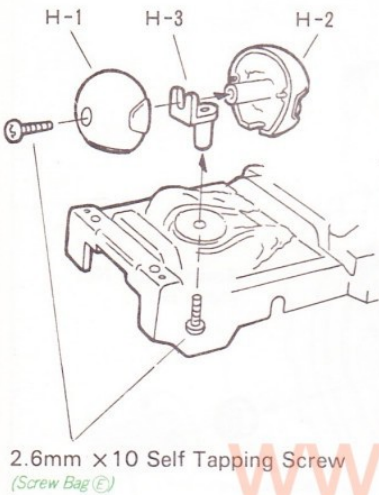


《Testing position of Speed Controller》

Be sure that the speed controller is working properly. Stop, Low Speed, etc.

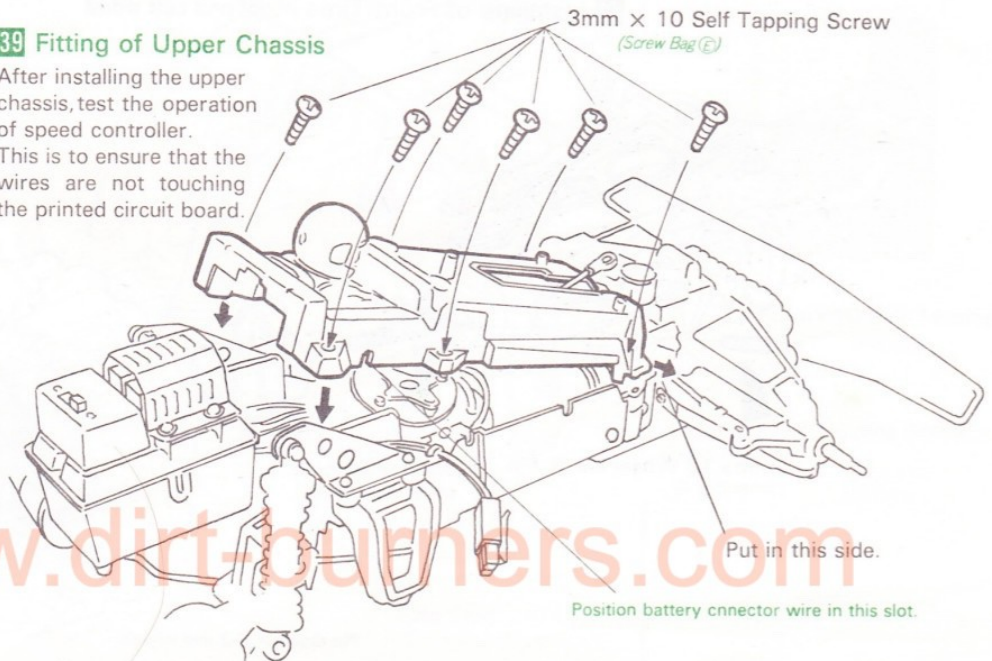


《Assembly of Driver Figure》



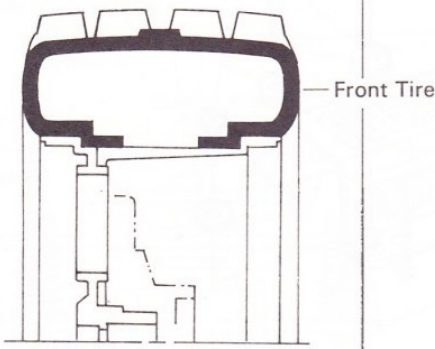
39 Fitting of Upper Chassis

After installing the upper chassis, test the operation of speed controller. This is to ensure that the wires are not touching the printed circuit board.

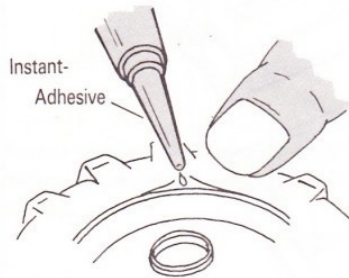
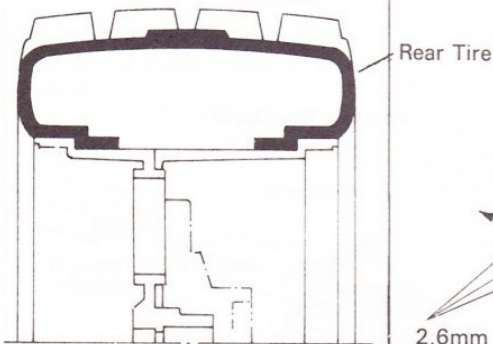


Assembly of Front Tires and Rear Tires are by the same method. Refer to figure below.

《Sectional plan of Front Tire》

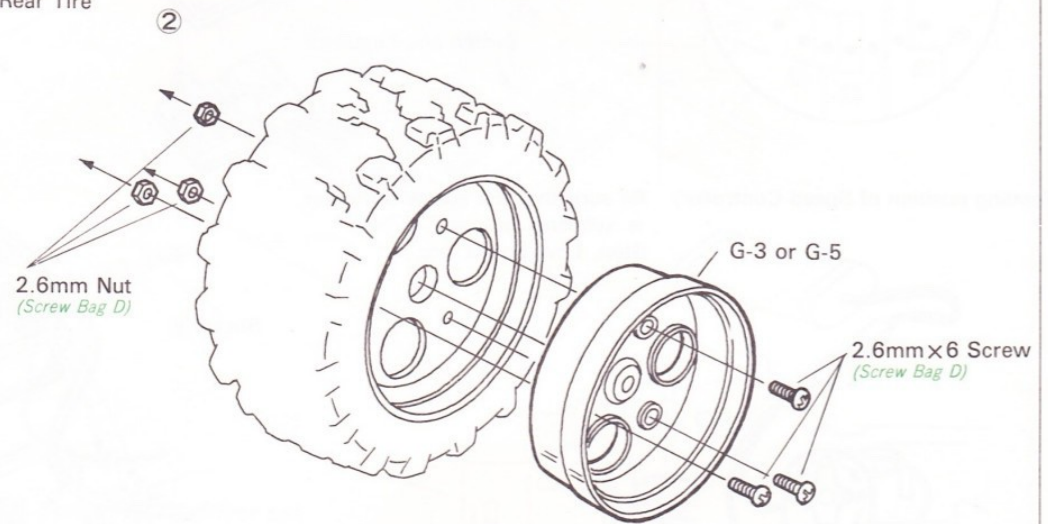
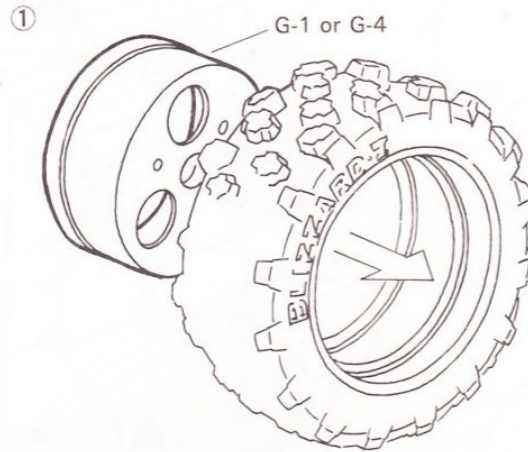


《Section plan of Rear Tire》

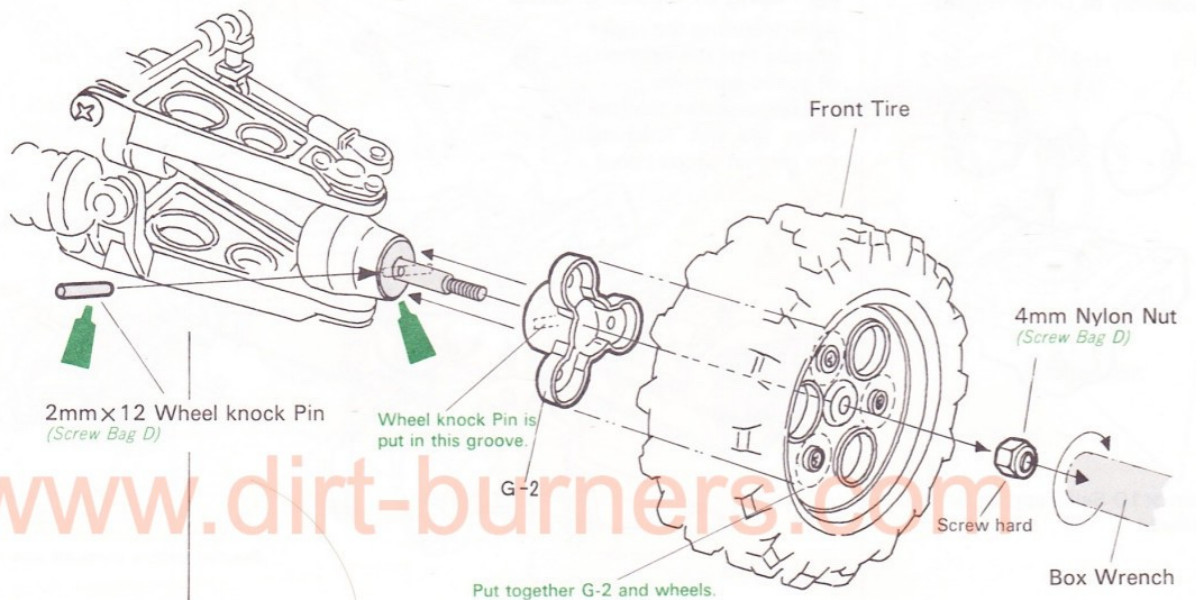


Open a corner of wheel, use the Instant-Adhesive both sides.

40 Assembly of Tires

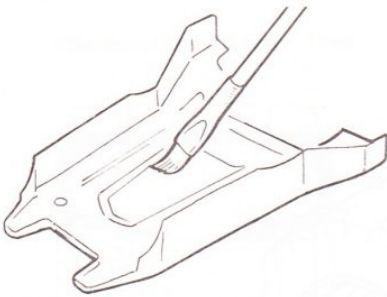


41 Installing of Front Tires (Right and Left sides)

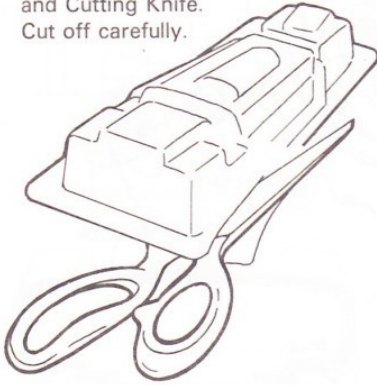


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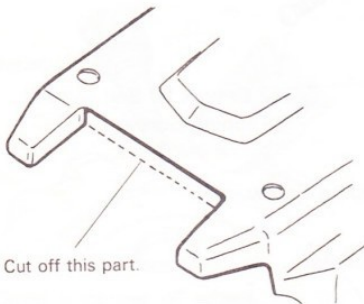
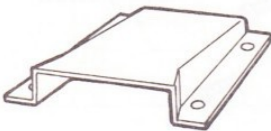
This Cowl Body is polycarbonate. Paint body from inside with polycarbonate paints.



Make use of Scissors and Cutting Knife. Cut off carefully.

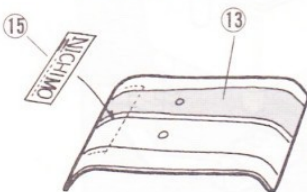


Finished Air-Intake



Cut off this part.

(Marking of Roof)

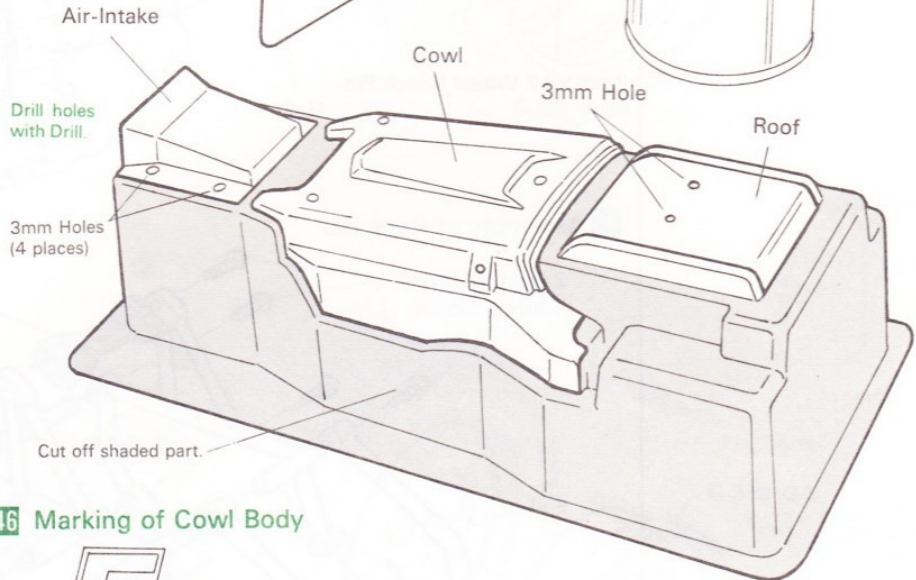
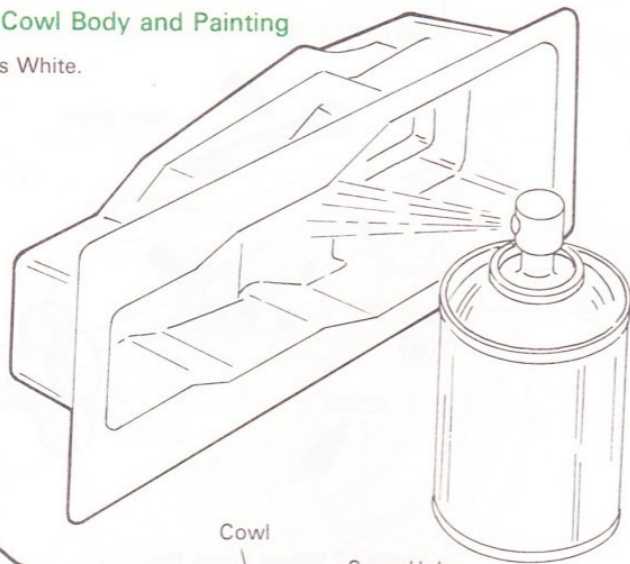


3mm Hole
Drill holes with Drill.

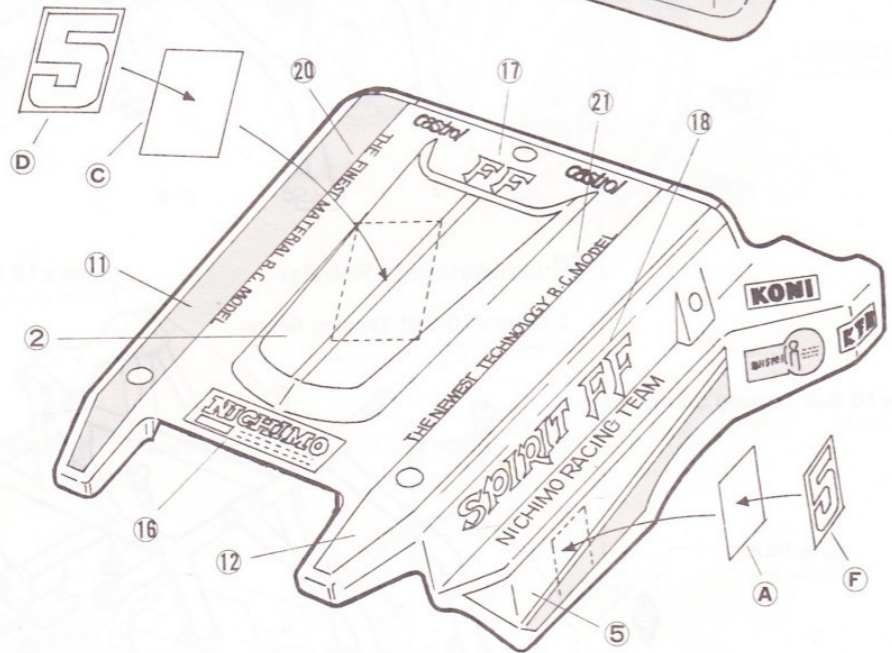


45 Trimming of Cowl Body and Painting

Painting color is White.

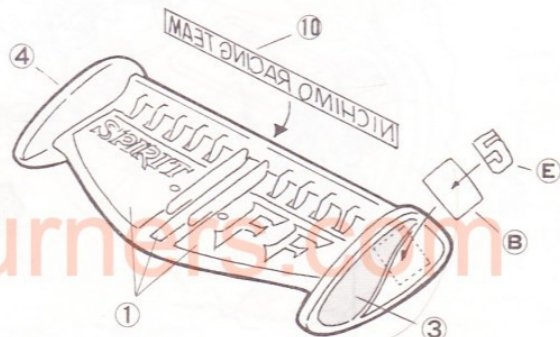


46 Marking of Cowl Body



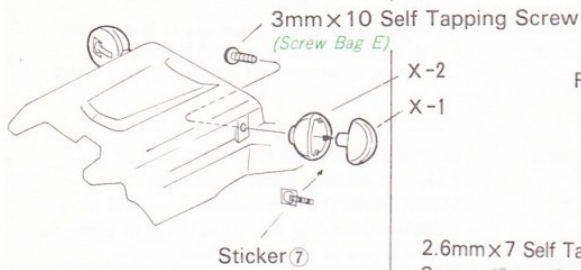
47 Trimming of Wing and Marking

Wing

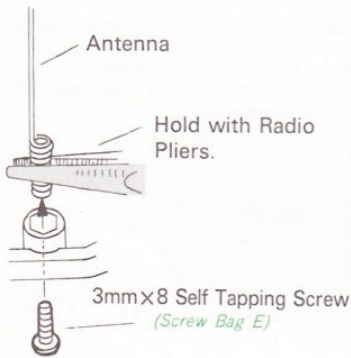


<Fitting of Lamps (both sides)>

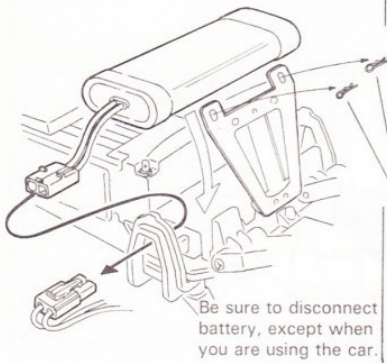
Drill holes with Drill.



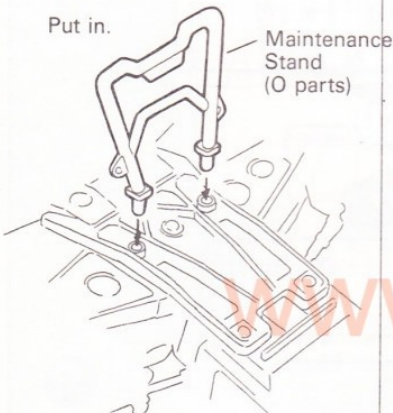
<Fitting of Antenna>



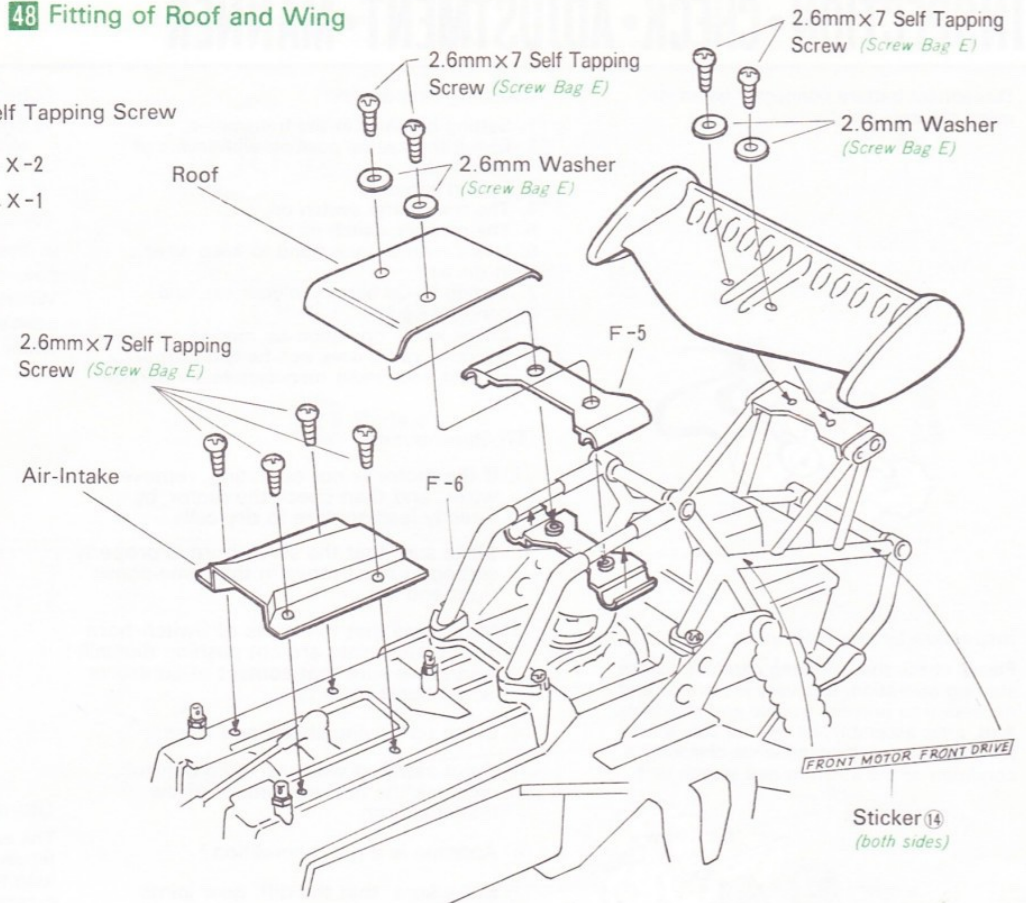
<Fitting of Ni-Cd Battery>



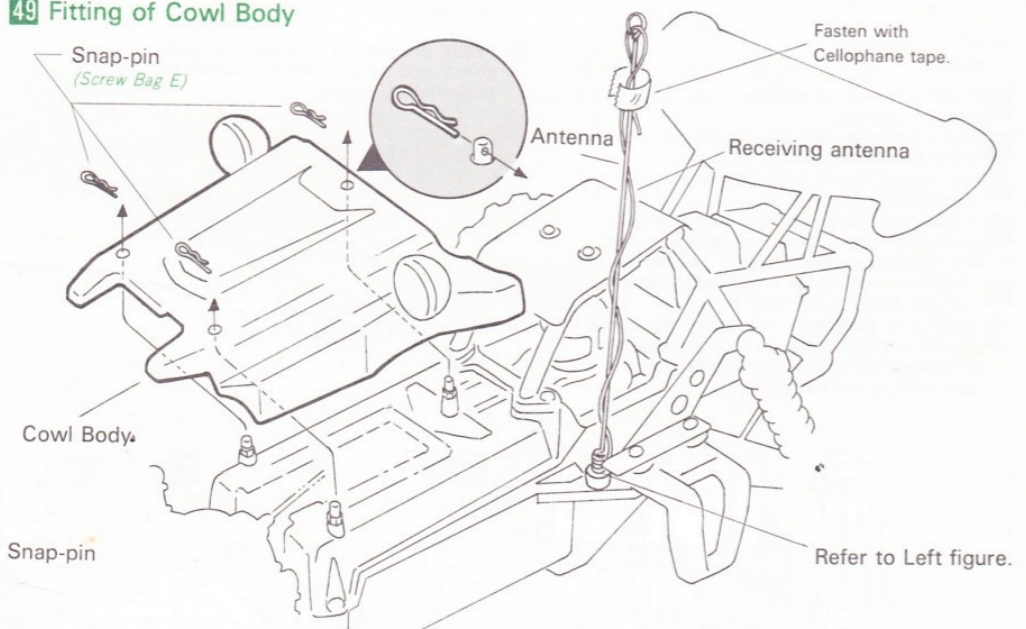
<Maintenance Stand>



48 Fitting of Roof and Wing

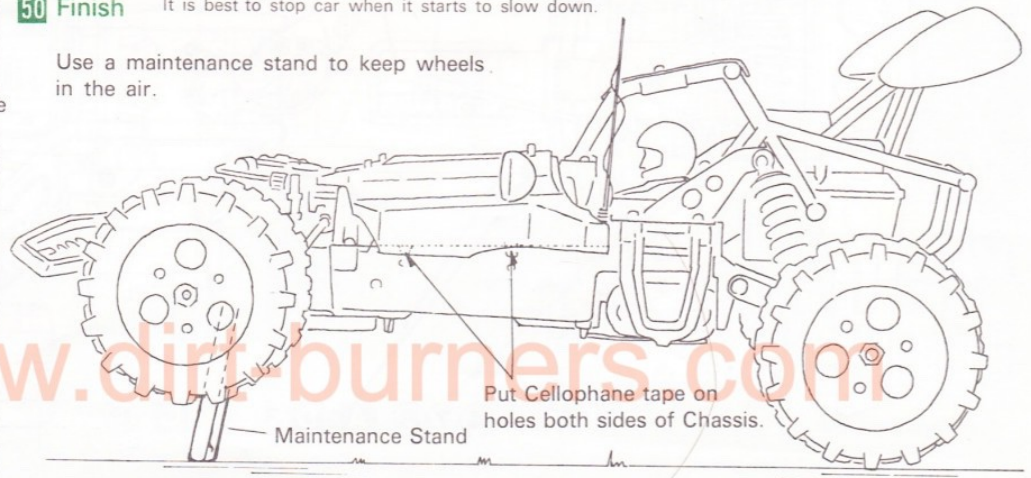


49 Fitting of Cowl Body



50 Finish

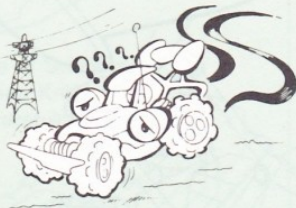
Use a maintenance stand to keep wheels in the air.



In this car, the receiver and motor are powered by the same batteries. When battery power stops, you will be unable to control car. It is best to stop car when it starts to slow down.

INSPECTION • CHECK • ADJUSTMENT • MANNER

Disconnect battery connector when not using the car.



Inspection before Operation

Please check the following carefully before starting operation. It is very important and necessary to prevent trouble and accidents. And, after assembly, let the car run slowly for the first two minutes while checking a condition of the steering and switch unit.



- A** Make sure that all screws, nuts, set screws are tight enough.
- B** Make sure that Um-3 batteries for the transmitter are charged enough.
- C** Make sure that Ni-Cd battery is properly recharged.
- D** Make sure that the speed controller is changing speed. It can be switch on the top speed and take the stop position? Check the wiring for breaks and short circuits. Repair with vinyl tape.
- E** Make sure that the steering operate correctly.
- F** If your car does not run straight, adjust steering lever trim toward the reverse direction of the car's drift.

Starting preparation

1. Setting batteries in the transmitter.
2. Check the neutral position with levers of transmitter.
3. Extend antenna.
4. The transmitter switch on.
5. The receiver switch on.
6. Use a maintenance stand to keep wheels in the air.
7. Setting Ni-Cd battery in your car, and connecting it.
8. Check servo operation by moving control levers. If radio does not function properly, contact your radio manufacture for service.

Troubleshooting

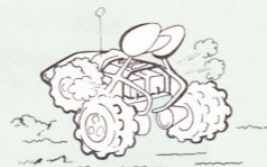
- ① If the motor is not operating, remove wires, and then check the motor by directly leading wire to dry cells.
- ② Make sure that the servo horn is properly setting. It must move in the same phase right and left.
- ③ Make sure that the wires of Switch-horn and Switch-plate are not pushing mutually. And make sure that contact of controller is not burnt or dirty.
- ④ Clean up driving shafts and axles.
- ⑤ If not satisfied with the radio control unit, ask the R/C equipment of the manufacturer.
- ⑥ Antenna is a good condition?
- ⑦ Make sure that the diff. gear joints and propeller joints are in the proper position.
- ⑧ Apply grease on bearings, thrusts, gears and oil up moving points of suspension, etc..

Check after operation

- 1) The maintenance after use is important to take care through and through.
- 2) Check to remove all batteries once more.

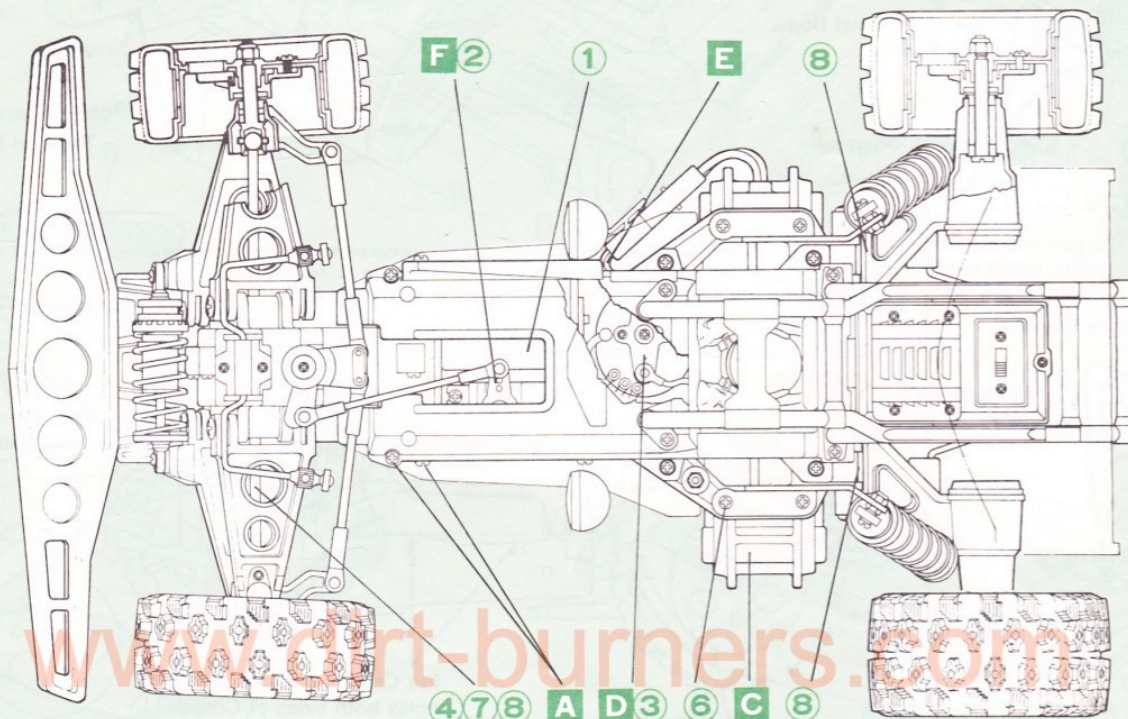
When battery power drops off

In this car, the receiver and motor are powered by the same batteries. When battery power stops, you will be unable to control car. It is best to stop car when it starts to slow down.



Burn out resistor and motor

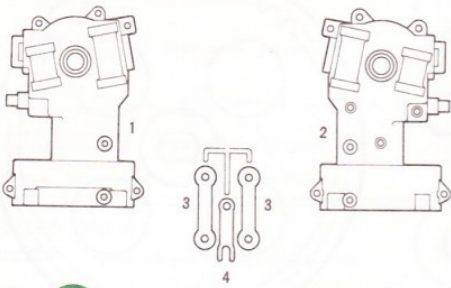
The excessive driving can burn out the resistor and the motor, for instance, driving for a long time in the 1st or 2nd speeds, the excessive stopping the wheels from rotating, insufficient assembly, etc..



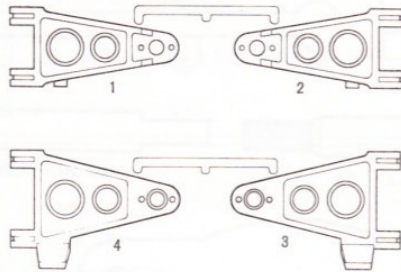
PARTS

Polycarbonate cowl body × 1
 Sticker..... × 1

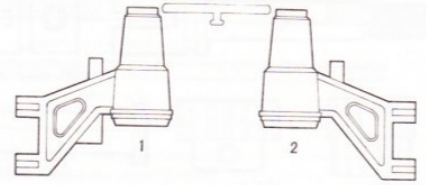
● There are any parts out of use on this kit.



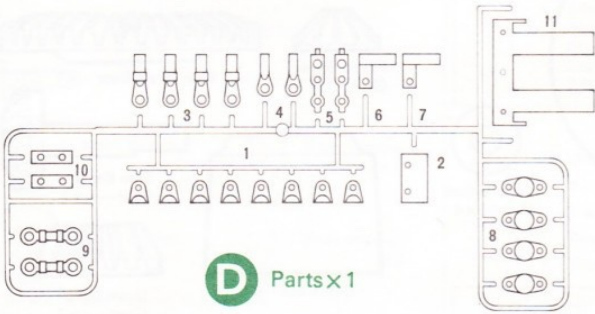
A Parts × 1



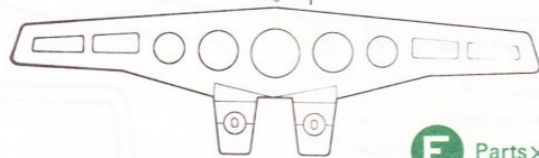
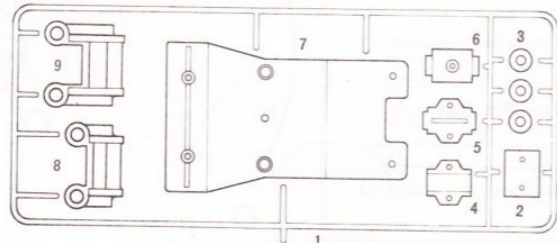
B Parts × 1



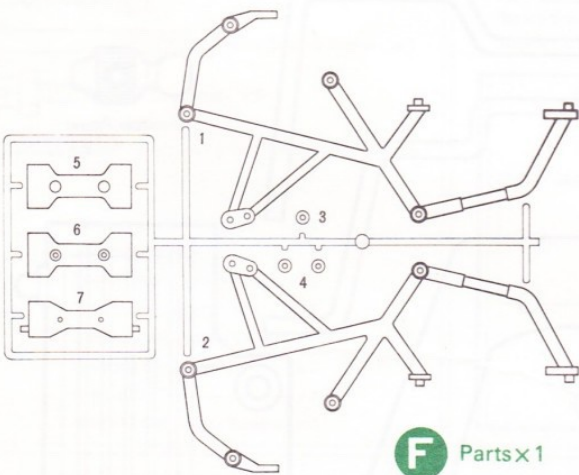
C Parts × 1



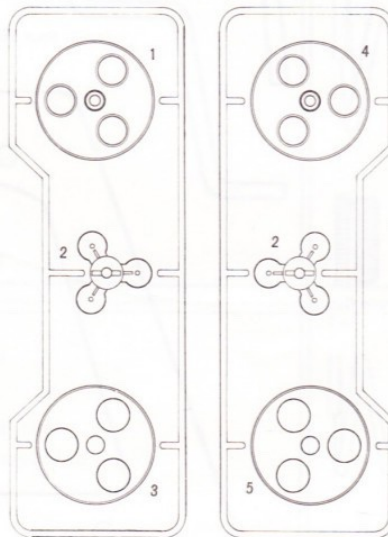
D Parts × 1



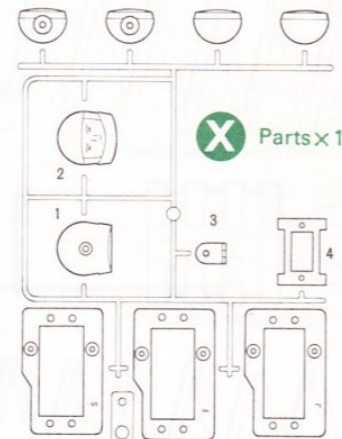
E Parts × 1



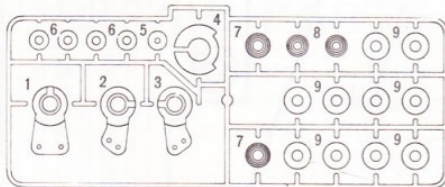
F Parts × 1



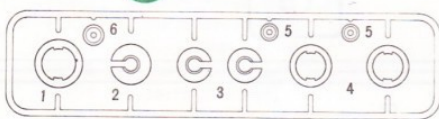
G Parts × 2



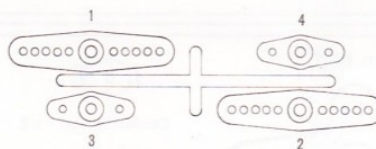
H Parts × 1



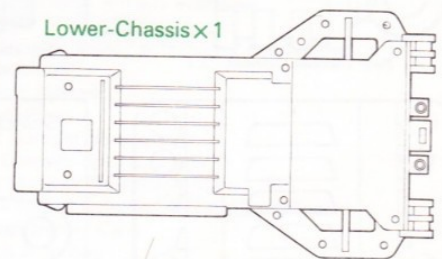
M Parts × 1



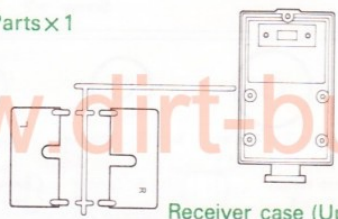
O Parts × 1



Z Parts × 1



P Parts × 1



Receiver case (Upper) × 1

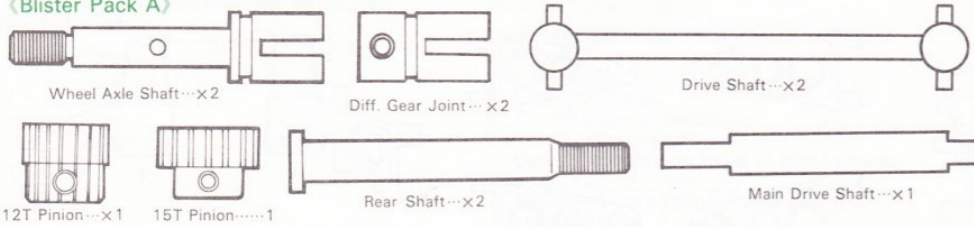


Receiver case (Lower) × 1

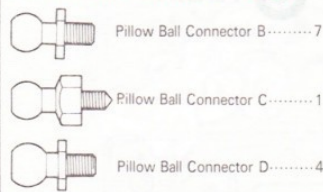
Upper-Chassis × 1

PARTS

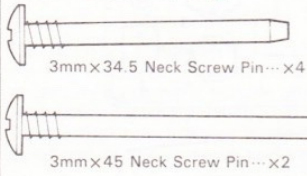
Blister Pack A



Pillow Ball Connector Bag

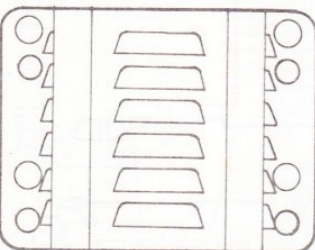
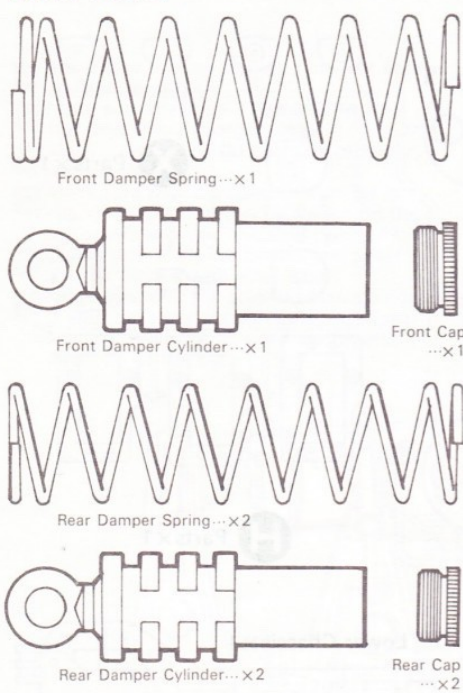


Neck Screw Pin Bag

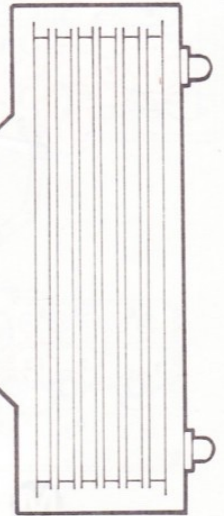
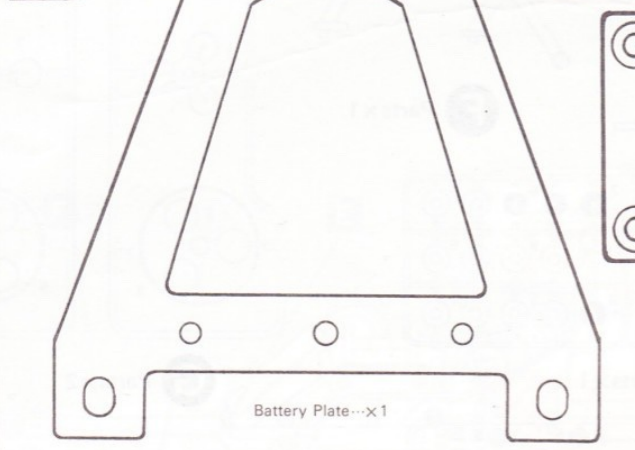
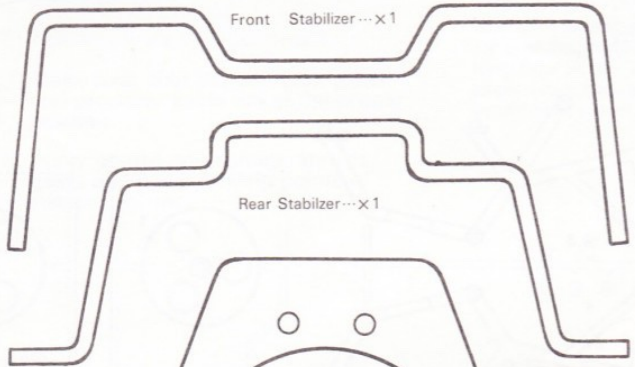
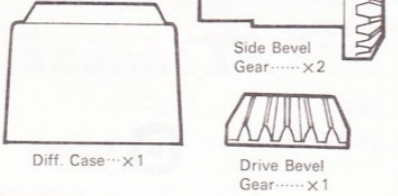
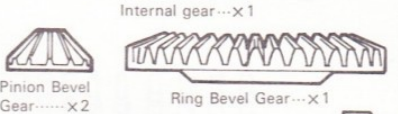
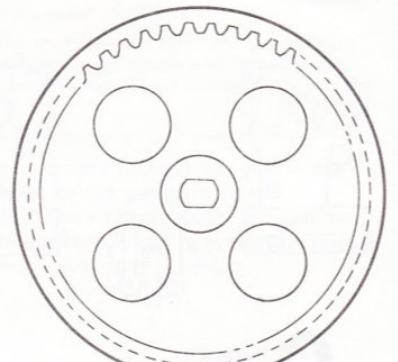
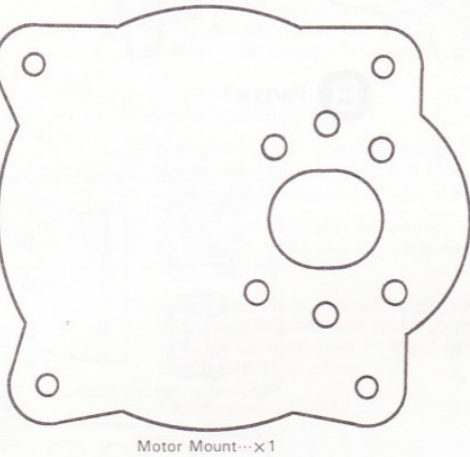


- RS540S Motor...x1
- Rear sus Bracket (Right)...x1
- Rear sus Bracket (Left)...x1

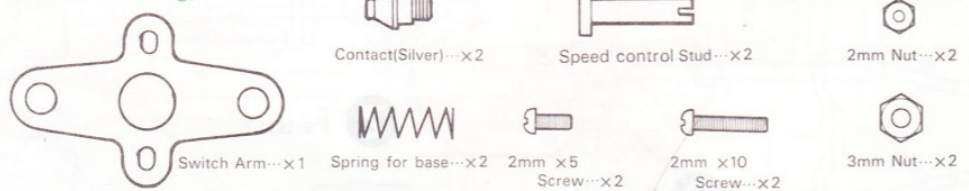
Blister Pack B



- Speed Controller...x1
- Damper Oil...x1
- Molybdenum Grease...x1



Switch Arm Bag



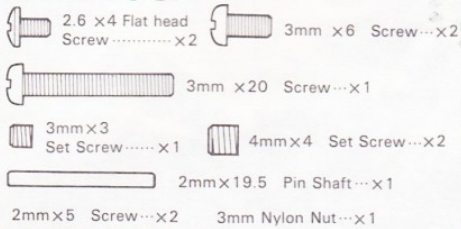
Damper Bag



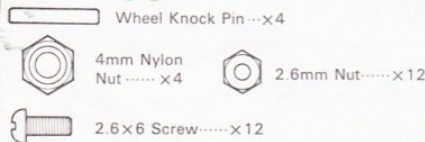
PARTS

Extra screws and nuts are included. Use them as spares.

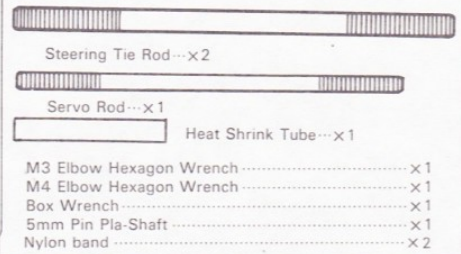
Screw Bag (A)



Screw Bag (D)



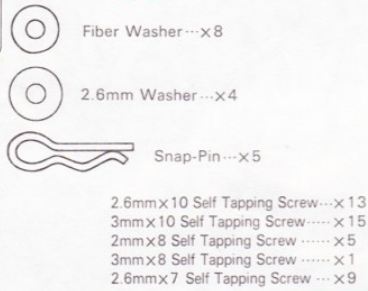
Tool Bag



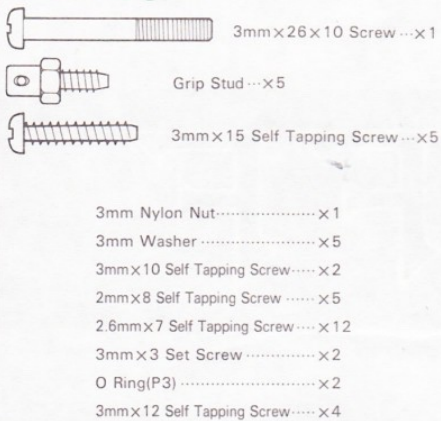
Screw Bag (B)



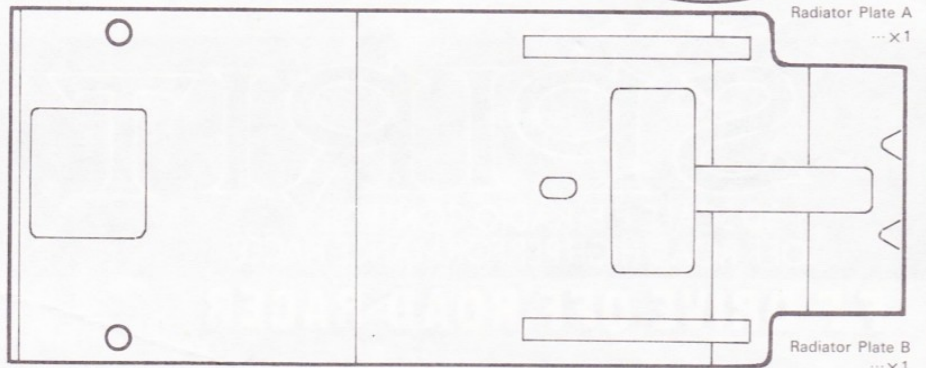
Screw Bag (E)



Screw Bag (C)



Radiator Bag



REPAIR PARTS LIST

Below is the list of spare parts available for your car.
Please contact your local dealer for these parts and also,
for optional performance parts.

No.	Description	No.	Description
P001	Upper and Lower Chassis + Upper and Lower Receiver parts	P025	Front Stabilizer + Rear Stabilizer
P002	A parts (Front Diff. Case)	P026	Stabilizer Pillow (2 pcs.)
P003	B parts (Front Arm)	P027	540 Normal Motor with round connectors
P004	C parts (Rear Arm)	P028	Motor Mount
P005	D parts (Adjuster)	P029	Radiator (Metal)
P006	E parts (Bumper)	P030	Battery Plate
P007	F parts (Roll bar)	P031	Front Damper Spring
P008	O parts (Oil damper)	P032	Rear Damper Spring (2 pcs.)
P009	Screw Bag A	P033	Front Damper Cylinder + Cap
P010	Screw Bag B	P034	Rear Damper Cylinder + Cap (2 pcs. each)
P011	Screw Bag C	P035	Resistor Safety Case
P012	Screw Bag D	P036	Switch Arm Bag
P013	Screw Bag E	P037	Damper Bag
P014	Tool Bag	P038	Pillow Ball Connector Bag
P015	Radiator Bag	P039	Neck Screw Pin Bag
P016	Antenna	P040	Snap-Pin (5 pcs.)
P017	Wheel Axle Shaft (2 pcs.)	P041	Damper Oil, Molybdenum Grease Sat
P018	Diff. Gear Joint (2 pcs.)	P044	Z parts (Servo Horn for this kit)
P019	Drive Shaft (2 pcs.)		
P020	Rear Shaft (2 pcs.)		
P021	Internal Gear + Main Drive Shaft		
P022	Side Bevel Gear + Pinion Bevel Gear (2 pcs. each)		
P023	Diff. case + Ring Bevel Gear + Drive Bevel Gear		
P024	Rear Sus Bracket (Right and Left each)		

FFWD



SPIRIT FF

1/10 SCALE FF RADIO CONTROL
OFF ROAD HIGH PERFORMANCE RACER

FF DRIVE OFF ROAD RACER



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RC Parts



A01 Speed Controller (2WD FF)	A02 Speed Controller (4WD)	A03 Silver Contact Piece (2pcs)	A04 Controller Servo Holber Set
A05 Change-over 7.2V Connector Unit	A06 Bearing & Servo Saver Set	A07 4mm Flange Ball Bearings (2pcs)	A08 5mm Flange Ball Bearings (2pcs)
A09 4mm Thrust Bearings (2pcs)	A10 5mm Thrust Bearings (2pcs)	A11 4mm Flange Oilless Metals (8pcs)	A12 5mm Flange Oilless Metals (8pcs)
A13 Front Super Block Tires (2pcs)	A14 Rear Super Block Tires (2pcs)	A15 Front Wheel Set	A16 Rear Wheel Set
A17 Motor Silicon Cord Set	A19 15T, 18T Motor Pinions (FF)	A20 15T, 18T Motor Pinions (4WD)	A21 Spirit FF Upright L, R Set
	 <small>aluminium gear</small>	 <small>aluminium gear</small>	
A22 Spirit FF Spare Body Set	A23 Exceed 443 Upright L, R Set	A24 Exceed 443 Spare Body Set	A25 Center Diff LSD Ring Set
A26 Center Diff LSD/Gear Set	A27 12T, 15T Motor Pinions (FF)	A28 12T, 15T Motor Pinions (4WD)	A29 Super Pin-Spike Tire and Wheel Set (2pcs)
	 <small>aluminium gear</small>	 <small>aluminium gear</small>	