RADIO CONTROLLED ELECTRIC POWERED SPECIAL RACING BUGGY

OFF-ROAD RACER

ULTIMA PRO

- LONG—TRAVEL WISHBONE/PARALLEL ARM FRONT AND REAR SUSPENSION.
- INDEPENDENT SUSPENSION ON ALL FOUR WHEELS WITH OIL—FILLED PRESSURE SHOCK ABSORBERS AND STABILIZER BARS.
- FOURTEEN BALL BEARING INCLUDED IN KIT.
- STRONG, LIGHT ITS ALLOY CHASSIS, PERFORATED FOR SADDLE PACK—TYPE BATTERIES.
- FINE—PITCH DRIVE GEARS FOR SMOOTH POWERFLOW STRONG ENOUGH FOR THE MOST POWERFUL MOTORS.
- LIGHT, LOW—LOSS BALL—TYPE DIFFERENTIAL.
- LOW—PROFILE TIRES WITH HIGH—GRIP SPIKE TREAD.
- MOTOR, 7.2v—1700mAh NiCd BATTERY, 2 CHANNEL RADIO. (NOT INCLUDED)

1:10 SCALE

KYOSHO
THE FINEST RADIO CONTROL MODELS

KIT NO.3117

BEFORE YOU BEGIN ASSEMBLY !

Thank you for purchasing the Kyosho's R/C "EP Off-Road Car Ultima Pro".

In order to keep your Ultima Pro in the tip top condition to enjoy the most pleasure from the R/C world, you should throughly read through this instruction manual and the operation instruction of the radio control units to keep the correct way of assembling, and handling.

《KIT FUTURES》

- Our new designed chassis from duralummin made for the saddle type battery, but stick type battery is also can be installed.
- For front new pin spike tires and for rear low-profile pin spike tires are included.
- For reduction gear this kit uses new gear type with module of 0.6 mm. This change made the possibility of setting the gear even finer for adjustment.
- This kit was made to use the 2 channel radio controller and electrical speed control.

CONTENTS

BEFORE ASSEMBLY

○ Read the instruction carefully.

You can assemble the kit more easily if you have grasped the general idea of steps and structure beforehand by reading it through to the end.

Instruction

○ Check the parts in the kits.

Check to see if all the parts are correctry bagged as they are listed in the "List of Bagged Parts" (page 4,5). Your through understanding of the assembly will enable you to build the kit without any difficulty.

List of bagged parts

Check the components in the kit prior to your startings of the assembly.

Any claims for replacements or refunds for the model in the process of assembly will not be accepted.

○ Learn the marks described in the instruction.

SW CEMENT ··· Place to put some locktite.

It will prevent the screws and nuts get loosen by vibration while running.

GREASE ··· Point where grease should applied.

It will reduce friction are assure ents.smooth movem

Steps where your paticular attention is required.

○ Be well aware of the different types of screws.

1 The difference between the TP screw (short form of self−tapping screw) and the ordinaly screw is .....

TP Screw  Some of them pointed tips.

Coarser Thread

Ordinary Screw 

Finer Thread

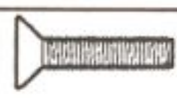
2 The kinds of screws which will be used in this instruction.

Round Head Screw 

Bind Screw 

Set Screw 

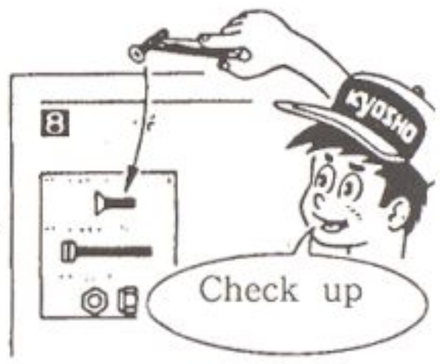
There are two kinds of thread, finer and coarser ones.

Flat Head Screw 

Truss Screw 

○ Pick up the correct parts and screw.
Copare the shape and size of small parts, such as screws, nuts, and washers.

○ Be sure about the location and direction of parts to install.

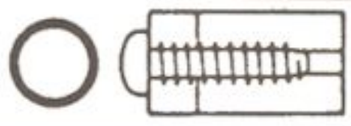
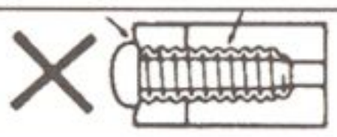


Double−check the location and orientation of parts with the illustration before installation. When necessary, assemble the parts themselves tentatively before proceeding to the next step.

○ Do not tighten the self−tapping screw too tight.

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 thread part on the screw goes into the plastic part and you feel some resistance from the tightening.

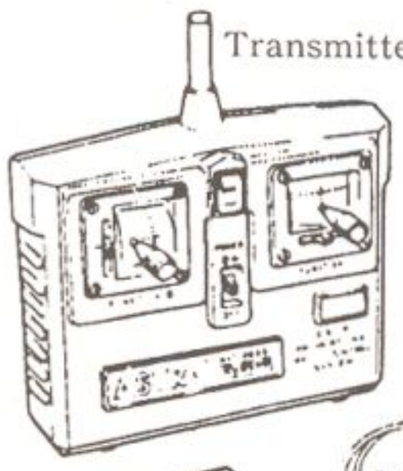
Over tighten may strip the thread in the plastic

Good  Wrong 

THINGS NEED BESIDES THE KIT

<2 Channel Radio System>

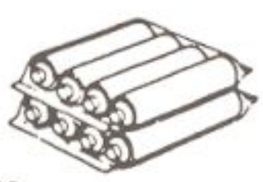
Two types of radio control set are on the market, the stick and the steering wheel type. Choose which ever you like.


Transmitter


Servo


Receiver


Speed Control Amp.


AA Size Battery
For Transmitter
.....8 pcs.

<NiCd Battery>

"Ultima Pro" is designed to use a rechargeable 7.2V NiCd Battery pack.

7.2V Sprint Battery and 7.2V Saddle Pack are ideal for the purpose.

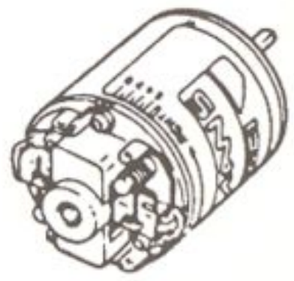

No.2331 7.2V−1200 SCR Battery (Saddle Pack)

No.2310 7.2V−1200 Sprint Battery

<Motor>

The Ultima Pro not come with a motor.
A Le Mans series type motor is recommended for top performance.

No.1986 Le Mans Speed 240T
No.1926 Le Mans H−240S
No.1925 Le Mans 360Gold
No.W1011 SPA 240WS



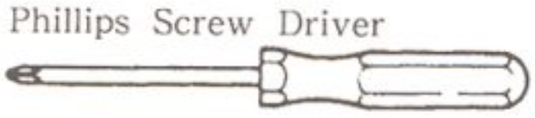
<Charger for NiCd Battery>

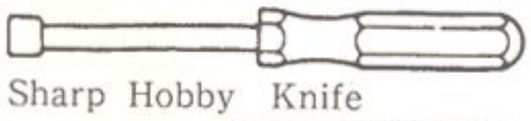
The Kyosho's NiCd battery is of high performance.
If it is charged correctly, it will operate for a considerable period of time.

Use one of the Chargers listed below which suits your need.

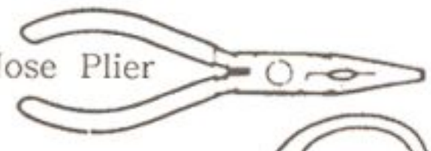
Model	Name	Time	Rate %	Features
No.2326	7.2V Power Charger	15 (min.)	70	For bigginer Built−in timer
No.1849	Multi Charger II	20 (min.)	100	Timer, Ammeter built in
No.1845	Lambda Quick Charger	20 (min.)	100	Trickle charging Automatic cut−off at peak of charge

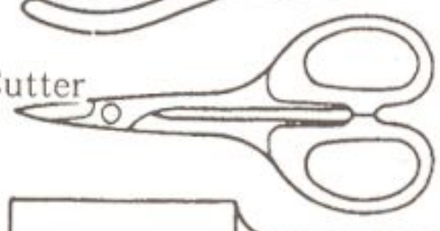
<Tools Required> A Hex Key, Grease and SW−cement are in the kit.

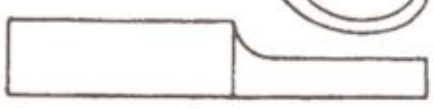
Phillips Screw Driver 

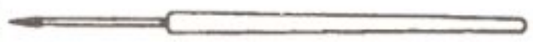
Box Driver (for M3, M4 Nut) 

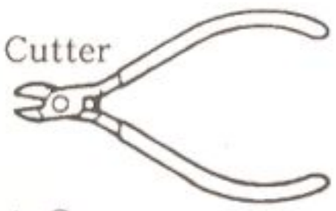
Sharp Hobby Knife 

Needle Nose Plier 

Round Cutter 

Sander 

Awl 

Wire Cutter 

Instant Grue 

Micro Line Tape

Police Paint 

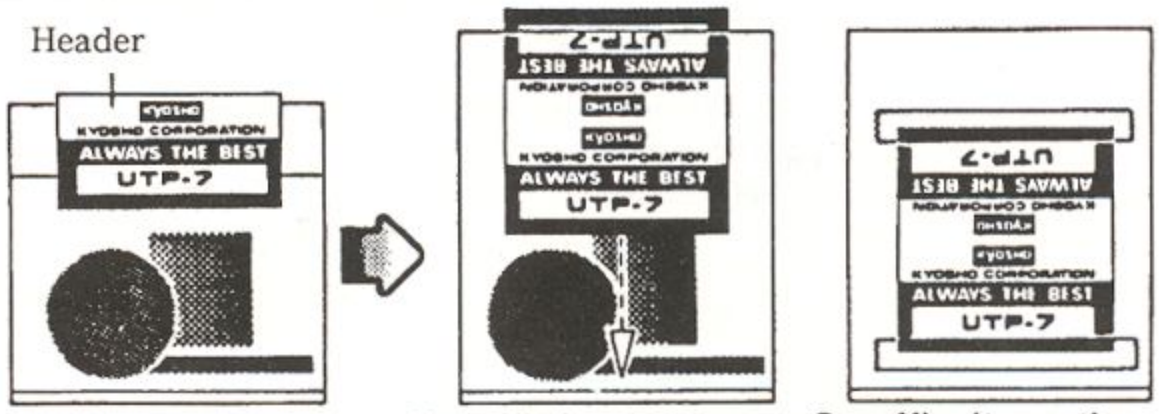
Brush 

LIST OF BAGGED PARTS (1)

The key numbers with ★indicated plastic parts on a runner. See page 6 for the layout drawing.

[Do not throw away a bag header]

- The symbol in the brackets after a name of parts in this instruction is the header number in which the part is contained.
- The header is the only thing to rely upon when looking for a part. Do not discard it until you finish the assembly.



Bag	Key #	Parts Name	Q'ty	Step
BLISTER (A)	1	Front Shock Stay	1	14
	2	Rear Shock Stay	1	8
	3	4 φ x8 Bearing	6	25 29
	4	5 φ x10 Bearing	6	5 7 10
	5	Center Gear Collar	1	25
	6	Motor Guard	1	24
	7	Motor Plate	1	5
BLISTER (B)	◎8	8 φ x14 Bearing	2	◎ 7
	◎9	Body of differential	1	
	◎10	Differential Shaft (A)	1	
	◎11	Differential Shaft (B)	1	
	◎12	Pressure Plate	2	
	◎13	8 φ x10 Collar	1	
	◎14	Torque Keeper	1	
	◎15	Tapered Washer	4	
	◎16	Differential Ball	10	
	◎17	Thrust Ball	8	
	◎18	Thrust Washer	2	
	●19	Front Shock Shaft	2	● 1
	●20	Rear Shock Shaft	2	
	●21	Front Shock Case	2	
	●22	Rear Shock Case	2	
	●23	Front Shock Spring	2	
	●24	Rear Shock Spring	2	
	●25	Spring Holder	4	
	●26	Shock Cap	4	
	●27	Spring Stopper	4	
	●28	Shock End	4	
	●29	E Ring (E2.5)	4	
	30	Final Pinion	1	6
	31	Center Gear	1	25
	32	Counter Gear	1	5
	33	Swing Shaft	2	11
	34	Wing Post	2	22
	35	Drive Washer	2	29
	36	Rear Wheel Shaft	2	10
	37	Front Suspension Arm	2	15
	38	Rear Suspension Arm	2	10
UTP-2	39	Radio Plate	1	22
	40	Gearbox (L)	1	7
	41	Gearbox (R)	1	5
	★42	Stabilizer Link (L)	2	12
	★43	Stabilizer Link (S)	2	16
	★44	Stabilizer Stopper	2	8
	45	Motor Cord	1	23
	46	Wing Stay	1	38
	47	Gear Cover Seal	1	27
	48	Double Sided Tape	1	32 33 37
	49	Strap (S)	2	32 33
	50	Ni-Cd Strap	2	34
	51	Antenna Pipe	1	33

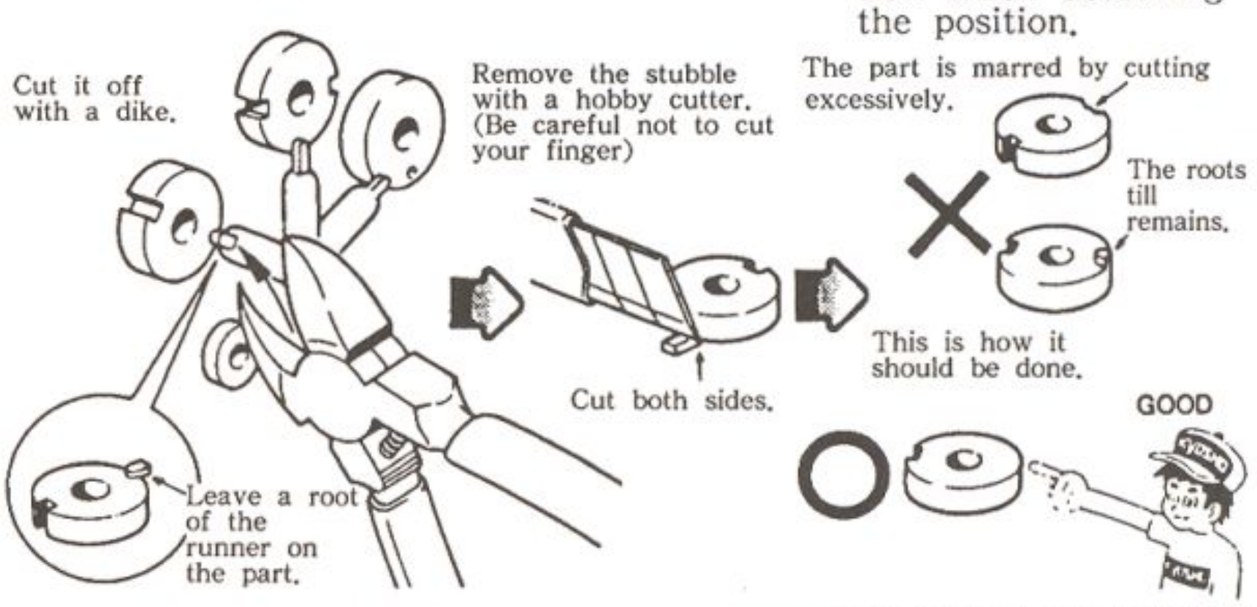
Bag	Key #	Parts Name	Q'ty	Step
UTP-2	52	Shock Oil (Green)	1	3
	53	Screw Locking Compoun	1	
	54	Silicon Grease	1	
	55	Condensor	1	23
UTP-3	56	Rear Wheel	2	28
	57	Front Wheel	2	28
UTP-4	58	Pinion Gear (20T)	1	26
	59	Center Gear Shaft	1	25
	60	Counter Gear Shaft	1	5
	61	2 φ x11 Pin	2	5
	62	Front Wheel Shaft	2	13
	63	Servo Saver Shaft	2	20
	64	Wing Stopper	2	38
	65	Radio Plate Post	2	22
	66	3 φ x32 Adjust Rod	4	4
	67	3 φ x50 Adjst Rod	2	4
	68	5.8 φ Ball (Black)	6	4
	69	O Ring (P3 • Black)	1	25
	70	Motor Guard Collar	2	24
	★ 71	Shock Piston	4	2
	72	Shock Collar (White)	4	2
	73	Shock Collar (Black)	4	2
	74	Pressure Top	4	3
	75	O Ring (P3 • Red)	8	2
	76	C Ring	8	2
	29	E Ring (E2.5)	8	2
		M3x18 Cap Screw	2	8 14
UTP-5	77	Front Stabilizer	1	16
	78	Rear Stabilizer	1	8
	79	Rear Suspension Shaft (B)	2	10
	80	Stabilizer Ball	2	10
	81	Adjust Ball	4	12 16
	82	Sponge Cap	1	7
	83	Motor Guard Plate	1	24
	84	Servo Saver Spring	1	19
UTP-6	85	Front Bulk Head	1	14
	86	Rear Axle Stopper	1	11
	87	Rear Bulk Head	1	8
	88	Gear Cover	1	27
	89	Bumper	1	17
	★ 90	Front Hub	2	13
	★ 91	Rear Hub	2	10
	★ 92	Knuckle Arm (L)	1	13
	★ 93	Knuckle (R)	1	13
	★ 94	Servo Saver (A)	1	19
	★ 95	Servo Saver (B)	1	19
	★ 96	Servo Saver (C)	1	19
	★ 97	Servo Saver (D)	1	19
	★ 98	Servo Saver Collar	2	20
	★ 99	Gearbox Hatch	1	9
	★100	M3 Plastic Nut	6	12 16

LIST OF BAGGED PARTS (2)

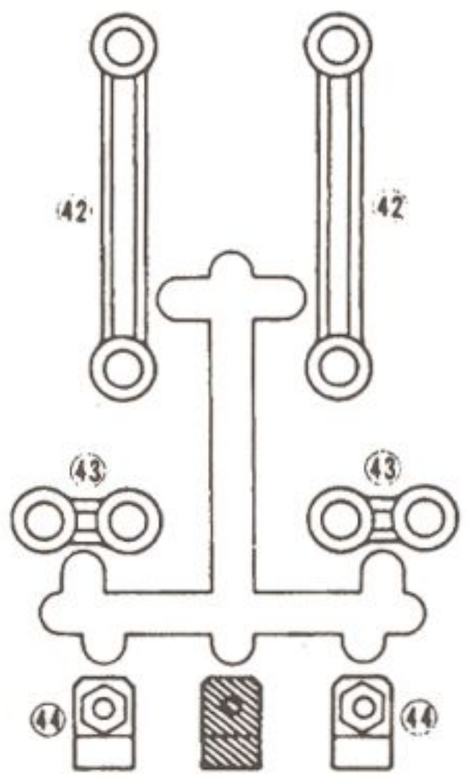
Bag	Key #	Parts Name	Q'ty	Step
UTP-6 PLASTIC PAR	★101	Servo Stay	4	20 Sparex2
	★102	Shock Collar	4	12 18
	★103	Antenna Post	1	22
	★104	Battery Stopper	2	34
	★105	Stopper Post	4	22
	★106	Stopper Washer (Thiner one)	2	
	★107	Stopper Washer (Thicker one)	2	22
	★133	Body Hook	1	22
UTP-7	108	Ball End (L)	12	4
	109	Ball End (S)	1	21
	110	Front Sus. Shaft (A) (Silver)	2	15
	111	Rear Sus. Shaft (A) (Black)	2	10
	112	Ball Nut	1	19
	113	5.8 ϕ Ball (Silver)	10	2 4
	114	4.8 ϕ Ball	2	16
	115	Front Suspension Shaft (B)	2	15
	116	King Pin	2	13
	117	Steering Rod	1	21
	118	Center Rod	1	19
	119	Motor Guard Joint	1	24
	120	Body	1	35
	121	Wing	1	35
	122	Front Tire	2	28
	123	Rear Tire	2	28
	124	Main Frame	1	9
	125	Decal	1	37
		Instruction	1	
UTP-1 SCREW, NUT, WASHER, OTHERS	29	E Ring (E2.5)	10	10 15 Spare x 2
	126	E Ring (E3) (Black)	3	13 Spare x 1
	127	E Ring (E4)	2	7 "
	128	Hook Pin	2	27 "
	129	Body Pin	7	34 38 page 20
	130	Hex Key (1.5mm)	1	16 26 page 22
	131	Hex Key (2mm)	1	6 7
	132	Hex Key (2.5mm)	1	8 14
		Bind Screw M2.6x6	8	
		" M3x6	11	
		" M3x18	2	
		" M3x35	1	
		" M3x45	2	
		Round Head Screw M2x10	2	
		" M3x33	1	
		Flat Head Screw M2.6x12	6	
		" M3x6	4	
		" M3x15	12	
		" M4x8	8	
		" M4x12	4	
		Truss Screw M4x8	4	
		TP Bind Screw M3x8	11	
		TP Round Head Screw M3x18	1	
		Nut M2.6 (3 Kinds)	10	
		Nut M3	8	
		Nylon Nut M4	4	
		Washer M3	2	
		Washer M4	2	
		Washer ϕ 8x12	2	
		Set Screw M3x3	5	
		Set Screw M4x4	1	

LAYOUT DRAWING OF PLASTIC PARTS ON RUNNERS

《When cutting off parts from a runner...》 *Pay particular attention when detaching the position.

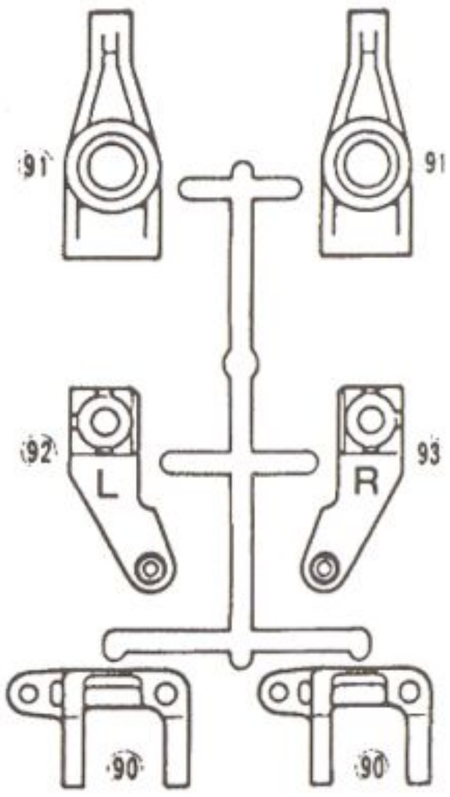


Stabilizer Parts
1 set



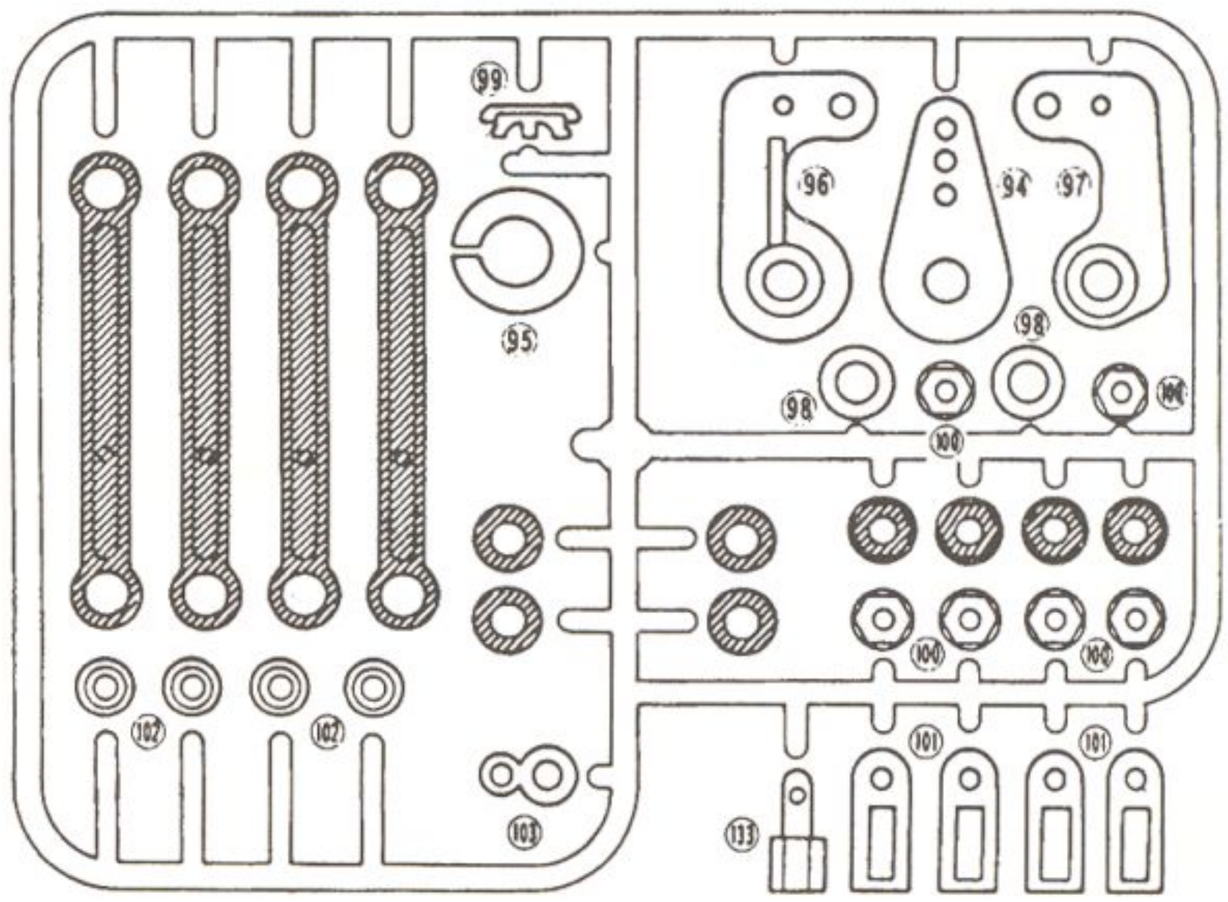
Shock Piston
4 set

Upright Parts
1 set

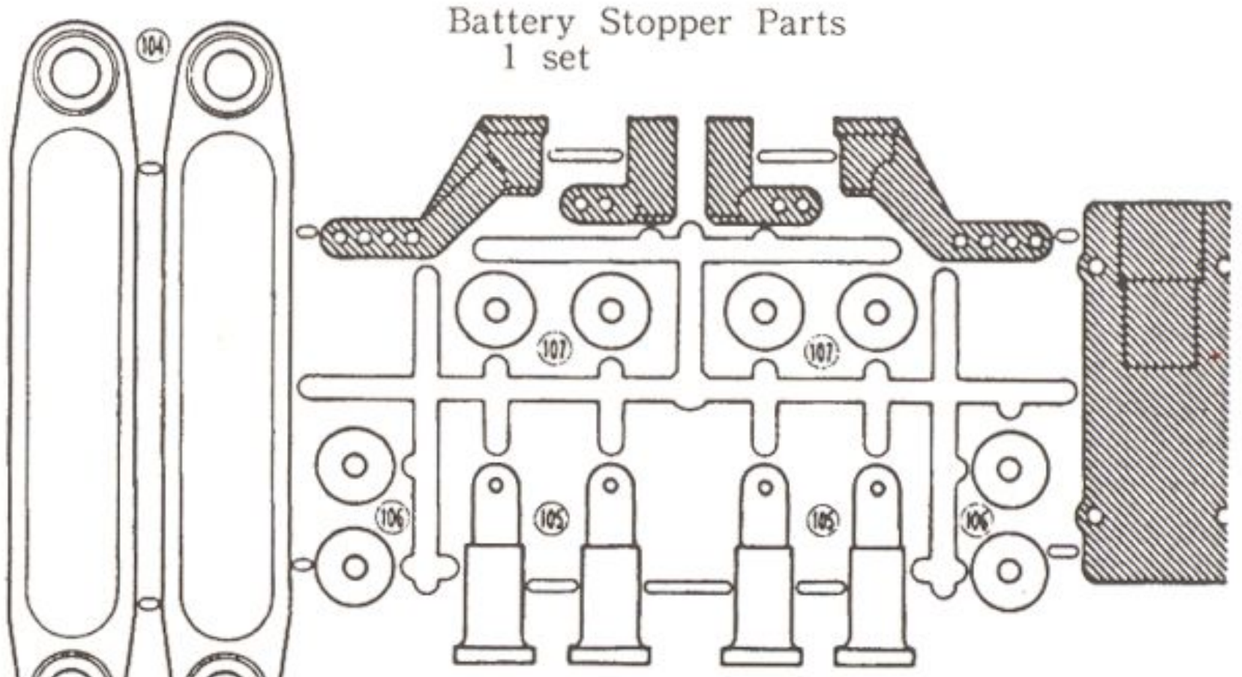


These parts are not used.

Servo Saver Parts and Others 1 set



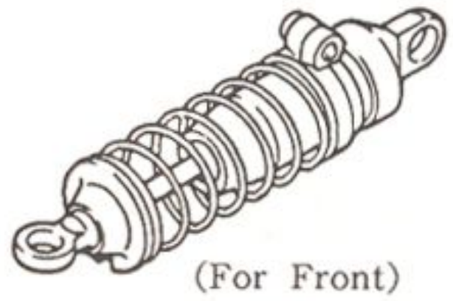
Battery Stopper Parts
1 set



1 DISASSEMBLY OF SHOCK

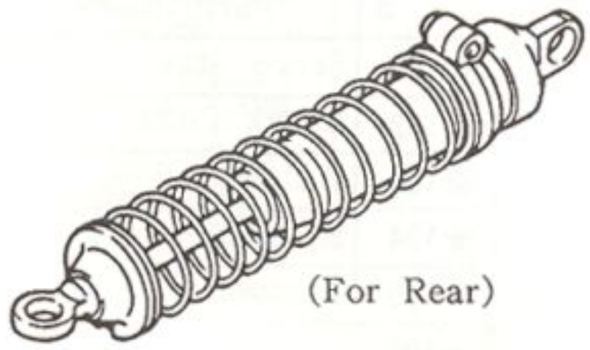
Shocks are assembled temporarily, and must be disassembled to add parts and oil.

Pressure Shock (S)



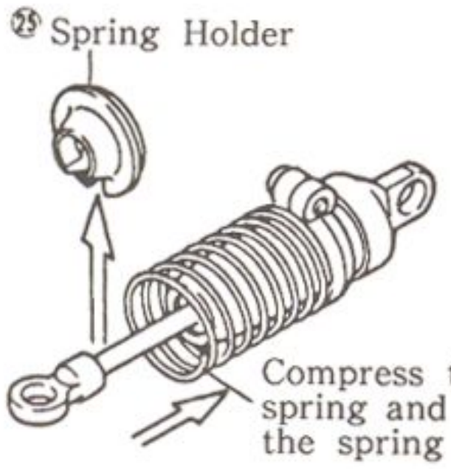
(For Front)

Pressure Shock (L)

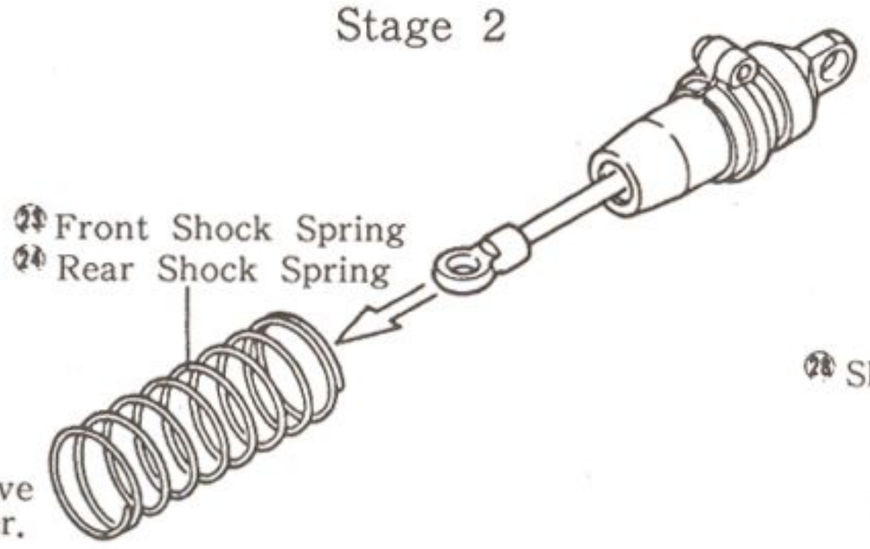


(For Rear)

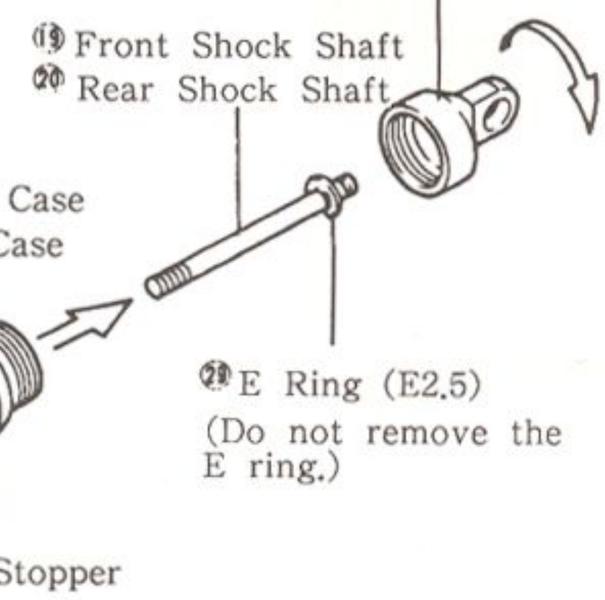
Stage 1



Stage 2

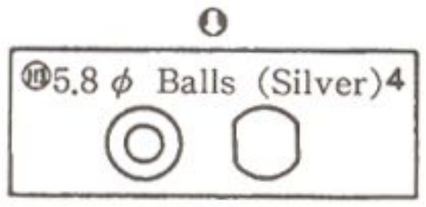


Stage 3



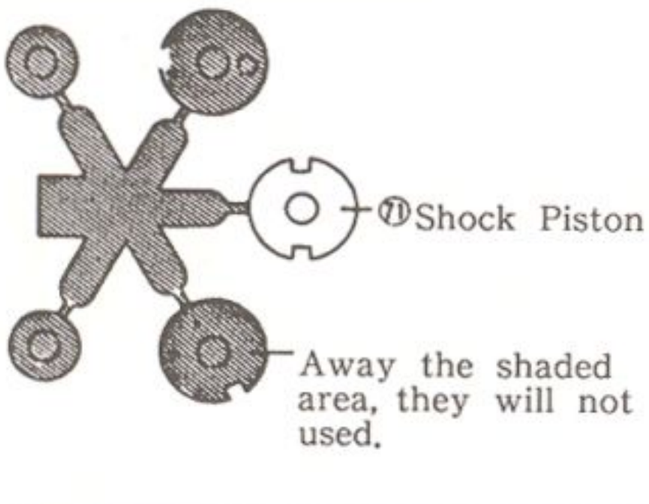
2 ASSEMBLY OF SHOCK

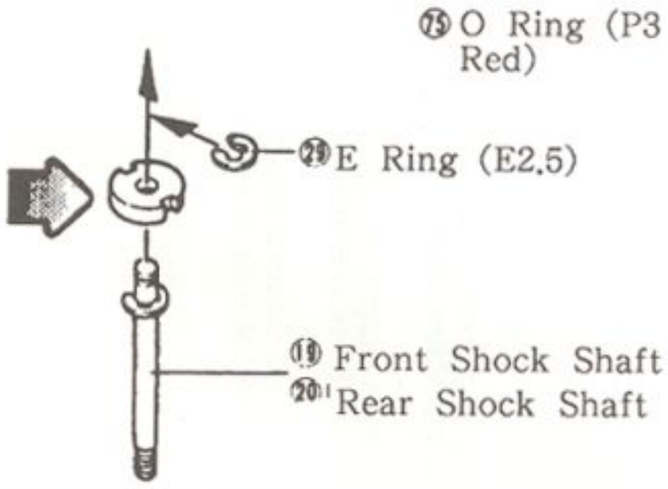
At each assembly stage, a drawing shows screws and other fasteners used in the actual size. Identify those reguired in each stage.



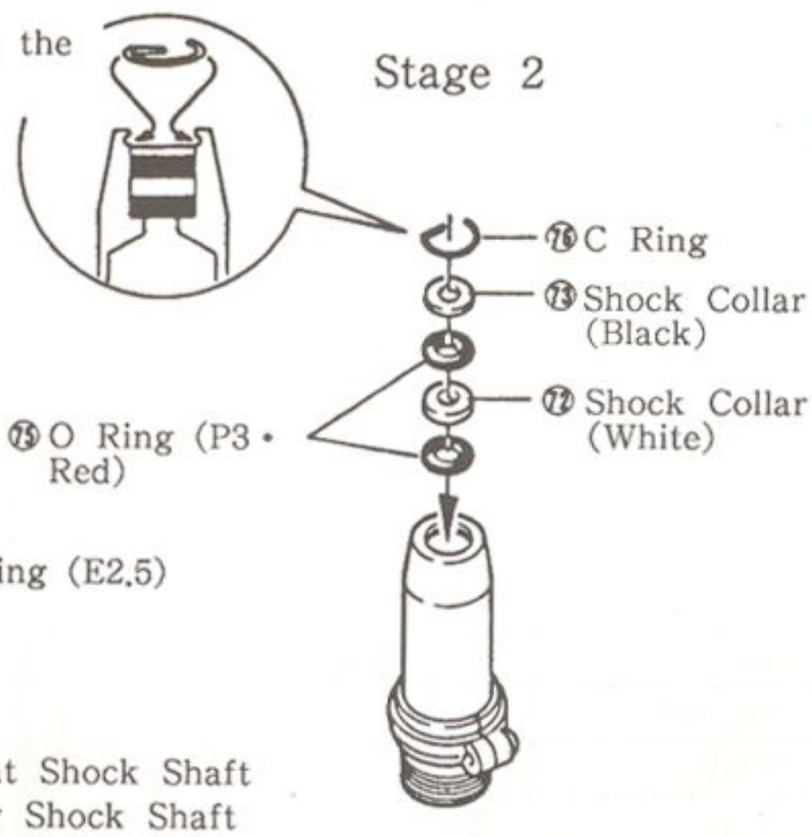
Shock parts included in (UTP−4)

Stage 1





Stage 2



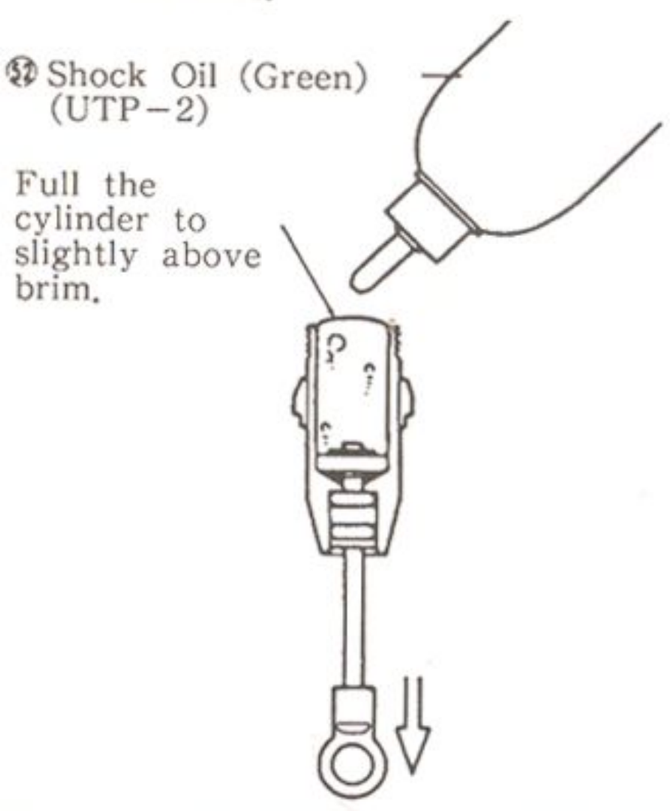
Stage 3

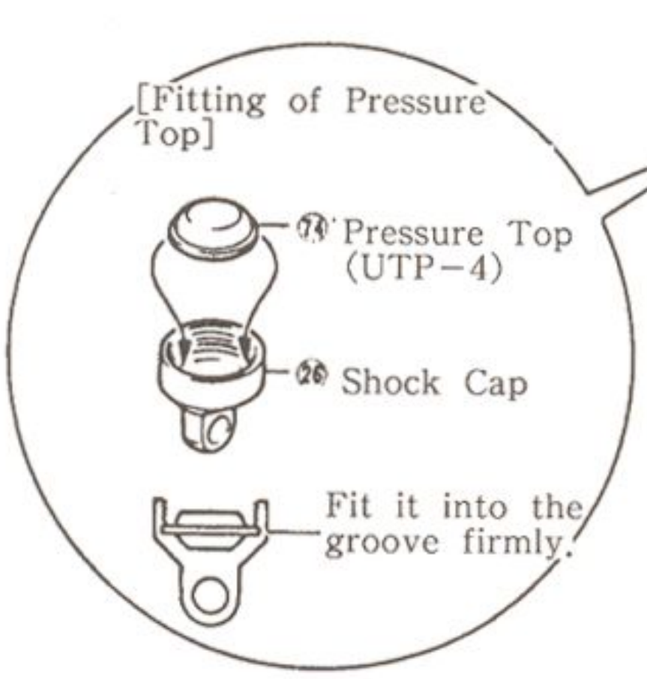
3 FILLING OF SHOCK

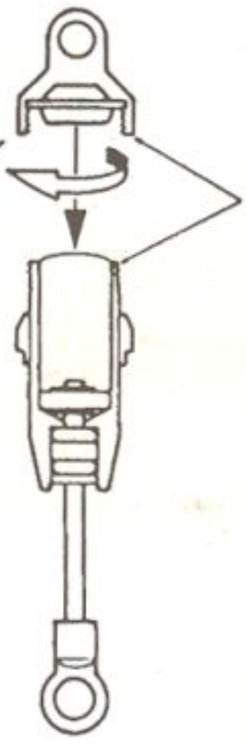
Stage 1 Pull down the piston to the bottom and pour oil slowly, Then move the piston up and down gently to get rid of air bubbles.

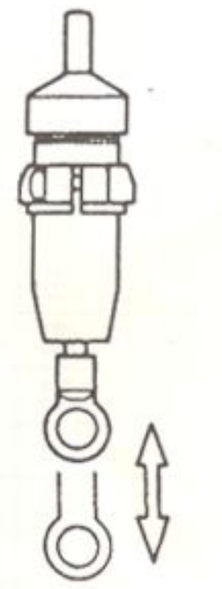
Stage 2 Keep the piston in the lowest position and tight 26 gradualy, then excessive oil will run over.

Stage 3 Confirm that it will work smoothly by moving the piston up and down.





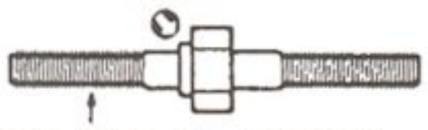




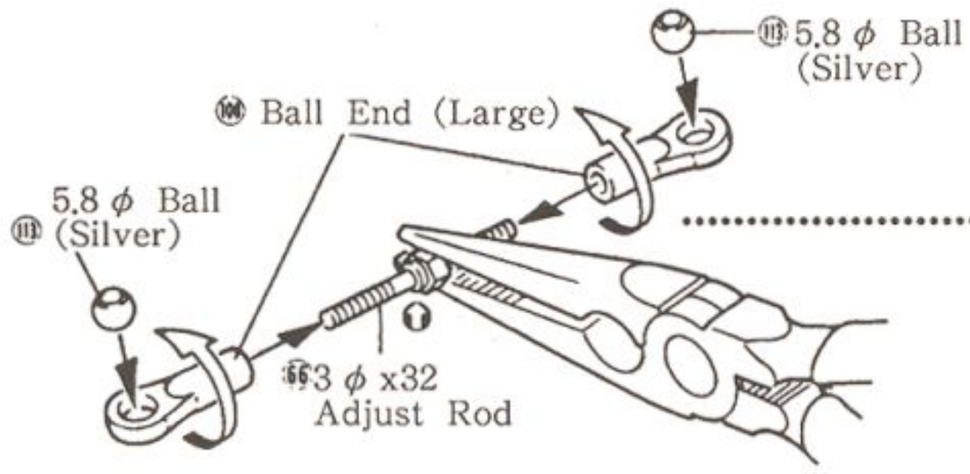
4 SCREW IN BALL END

Screw in each ball ends matching to the actual size drawings.

Assemble with caution making sure that the there is not mistake in the color of the 5.8 ϕ ball and the direction the rods should be facing.

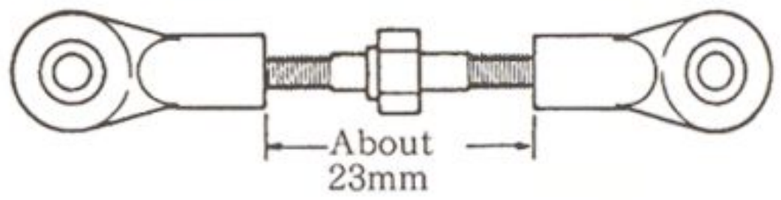


Side with the collar is a reverse thread. Screw in the ball end anti−clolckwise.



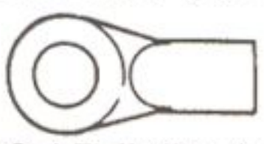
[Actual Size Drawing]

• Front Upper Rod Used in 14.



Included in [UTP−7]

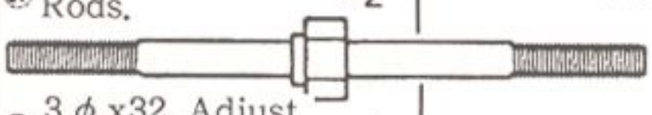
⑩4 Ball Ends (L).....12



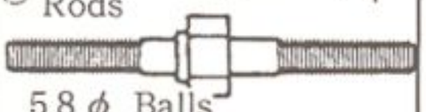
⑪1 5.8 ϕ Balls (Silver).....6

Included in [UTP−4]

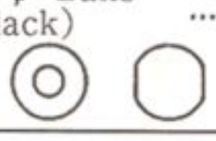
⑥7 3 ϕ x50 Adjust Rods. ..2



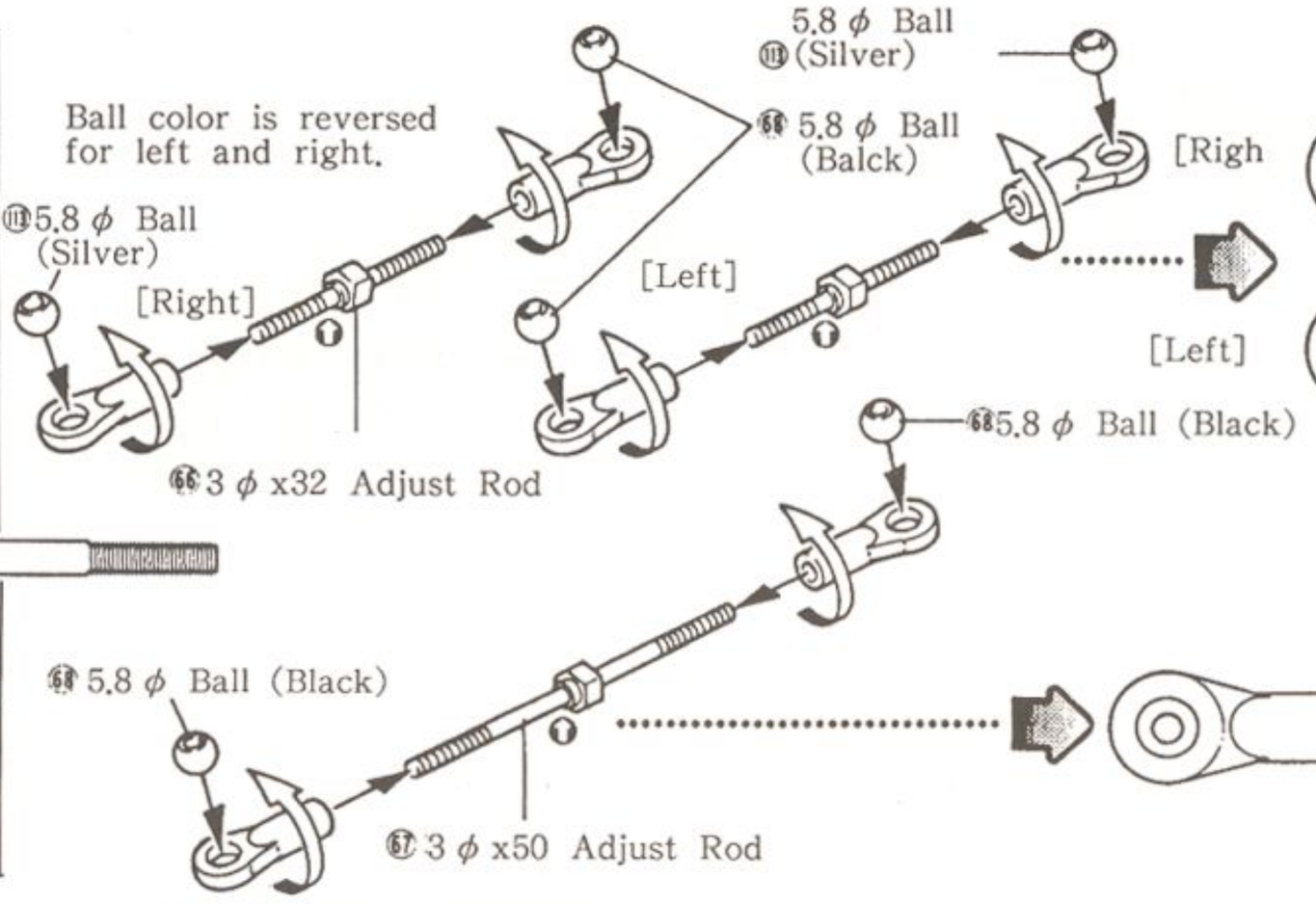
⑥6 3 ϕ x32 Adjust Rods ..4



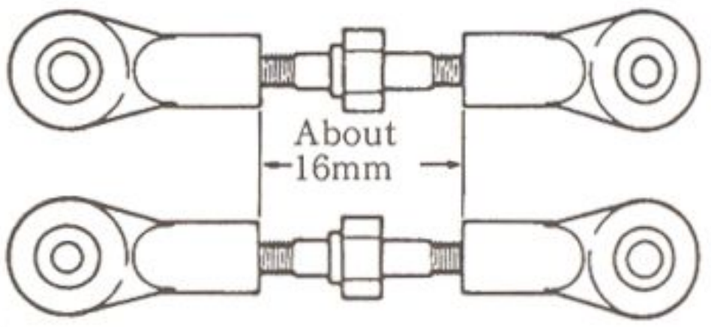
⑥8 5.8 ϕ Balls (Black) 6



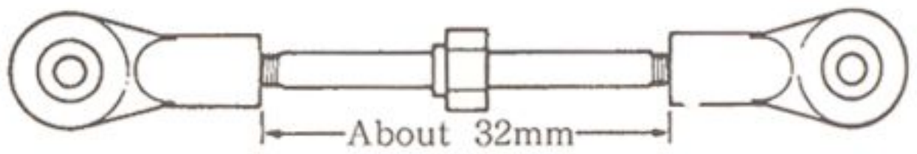
Ball color is reversed for left and right.



• Rear Upper rod Use in 8.



• Tie Rod Used in 21.

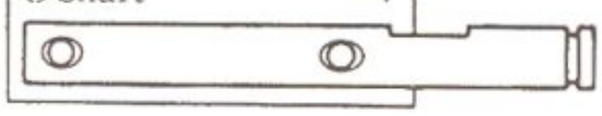


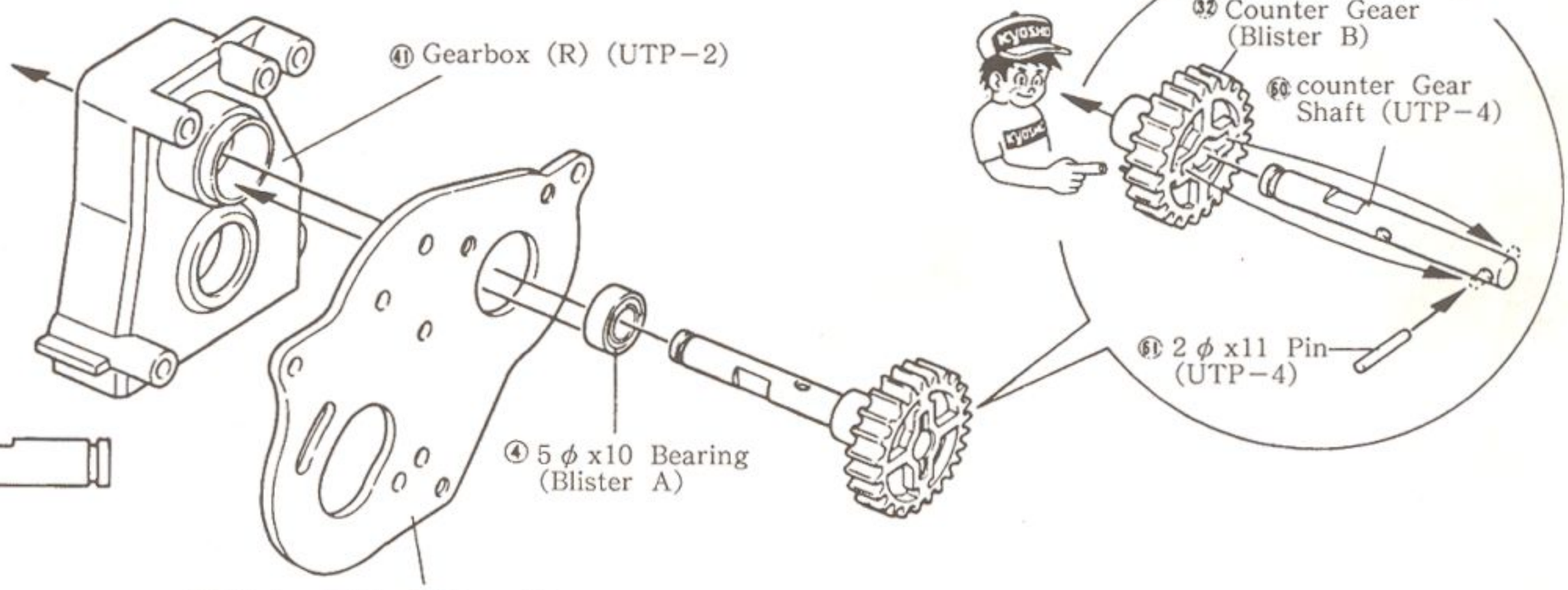
5 INSTALLATION OF COUNTER GEAR

④5 ϕ x10 Bearing 1

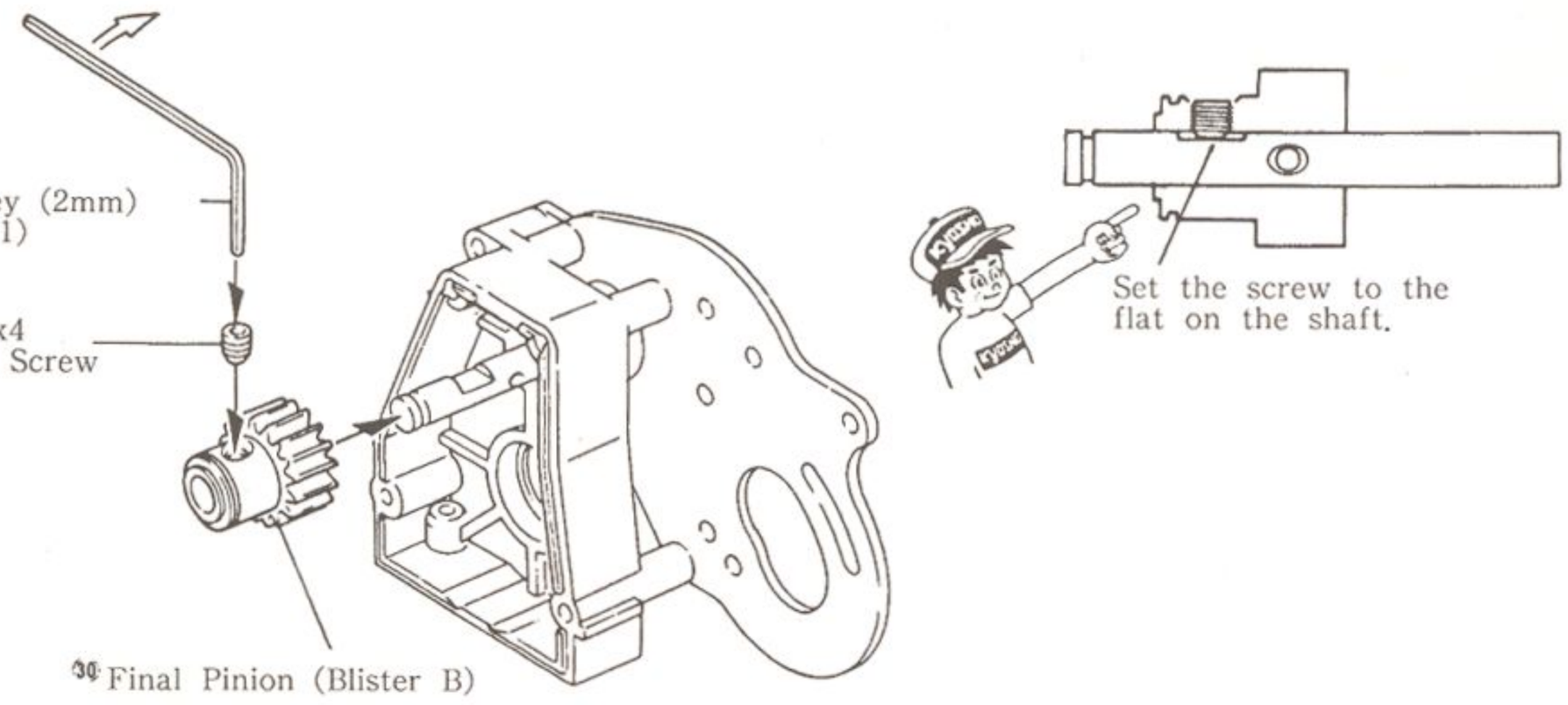
⑥1 2 ϕ x11 Pin..... 1

Counter Gear ⑤0 Shaft ... 1





6 INSTALLATION OF FINAL PINION GEAR



M4x4 Set Screw..... 1

7 ASSEMBLY OF GEARBOX

Stage 1

Ball differential is already assembled and is included in [Blister B] but before assembling it into the gear box, check ❶ and ❷.

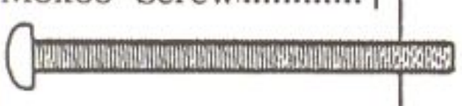
❶ DIFFERENTIAL ITSELF SHOULD NOT TURN FREELY

When the differential itself is turned with your hand with both end of the shaft is stabilized with a minus screw driver, does it turn freely?

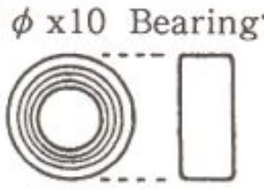
If it is turning freely, make adjustment as shown in the right diagrams.

M3x18 TP Screw..... 1

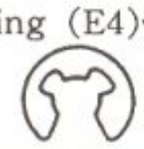
M3x33 Screw..... 1

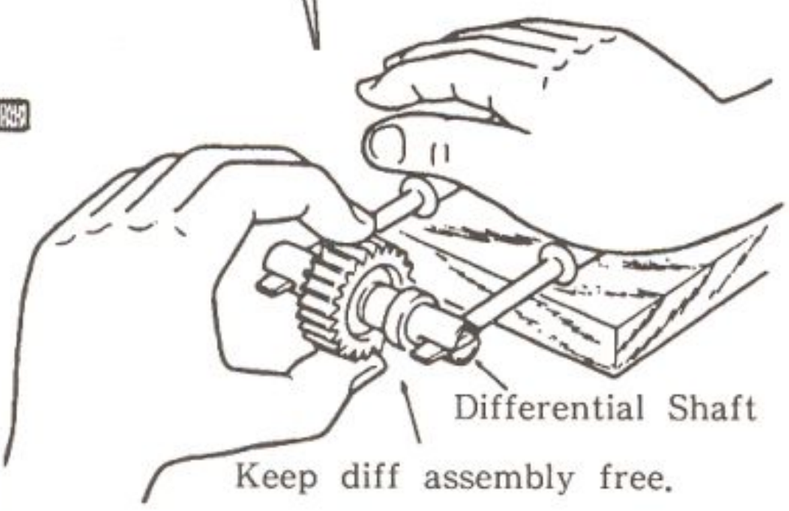


④ 5 φ x10 Bearing.... 1



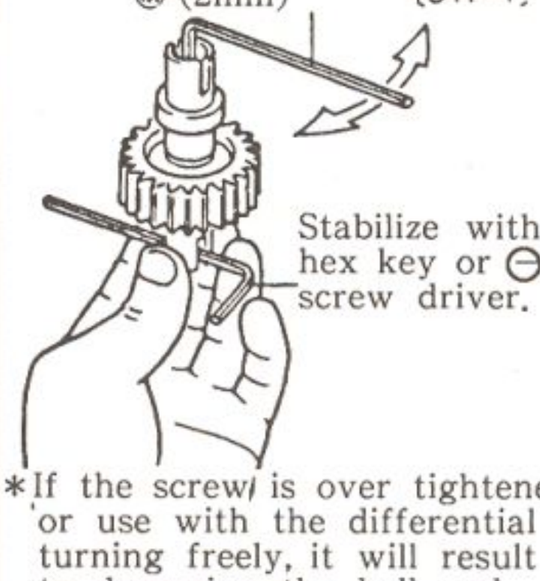
㉗ E Ring (E4)..... 1





The point of adjustment is how tight the cap screw is tightened. Adjust and re-adjust (1) and (2) are OK.

Hex Key ⑩ (2mm) (UTP-1)



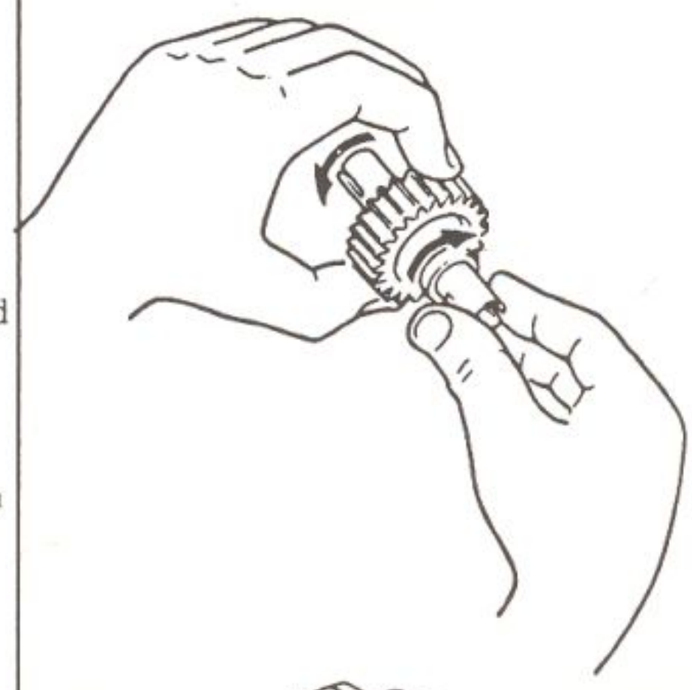
*If the screw is over tightened or use with the differential turning freely, it will result to damaging the ball and plates.

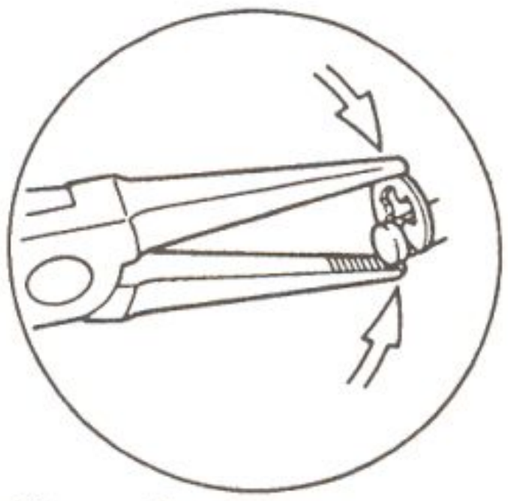
After the adjustment has been effective... ㉜ Sponge Cap (UTP-5)

❷ DIFFERENTIAL MUST BE EFFECTIVE

By holding the differential itself and by turning the differential shaft, does the opposite side shaft lightly turn in the opposite direction? (This is called the differential effectiveness)

The more you tighten the cap screw, the differential effect is lost.





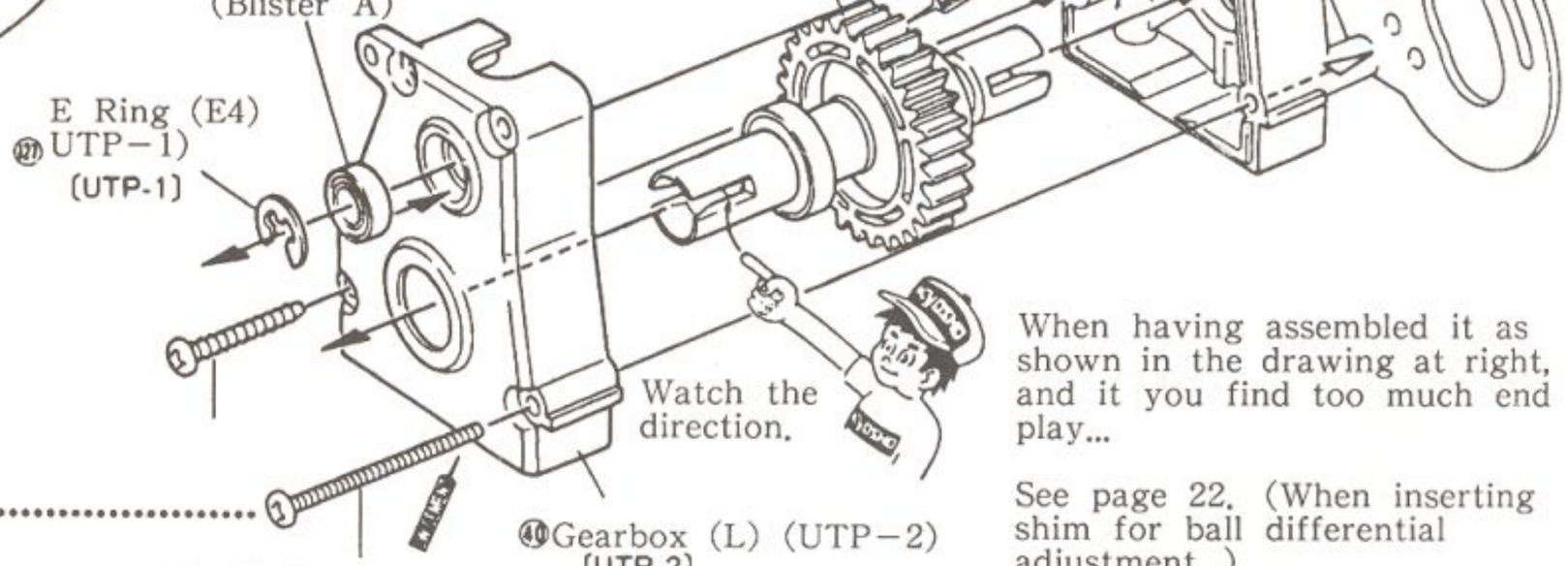
Fit an E-ring a pair of pliers.

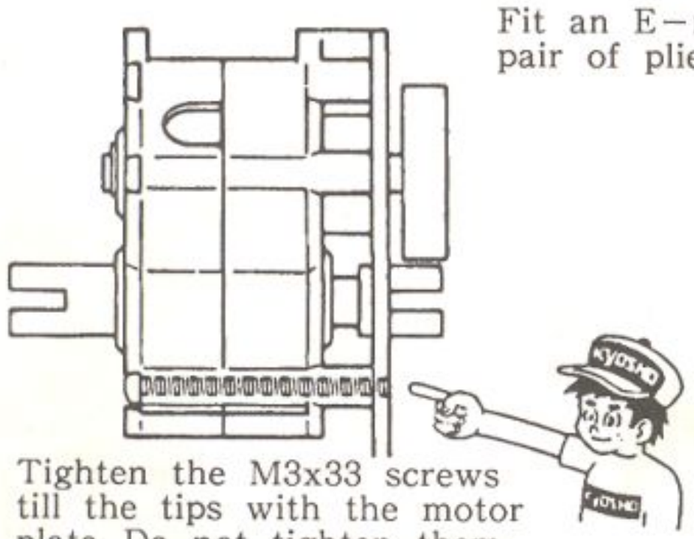
Stage 2

Apply grease all around the gear teeth.

④ 5 φ x10 Bearing (Blister A)

E Ring (E4) ㉗ UTP-1) (UTP-1)





Tighten the M3x33 screws till the tips with the motor plate. Do not tighten them further.

When having assembled it as shown in the drawing at right, and it you find too much end play...

See page 22. (When inserting shim for ball differential adjustment...)

8 INSTALLATION OF REAR SHOCK STAY

Stage 1

M2.6x6BinD Screws· 2

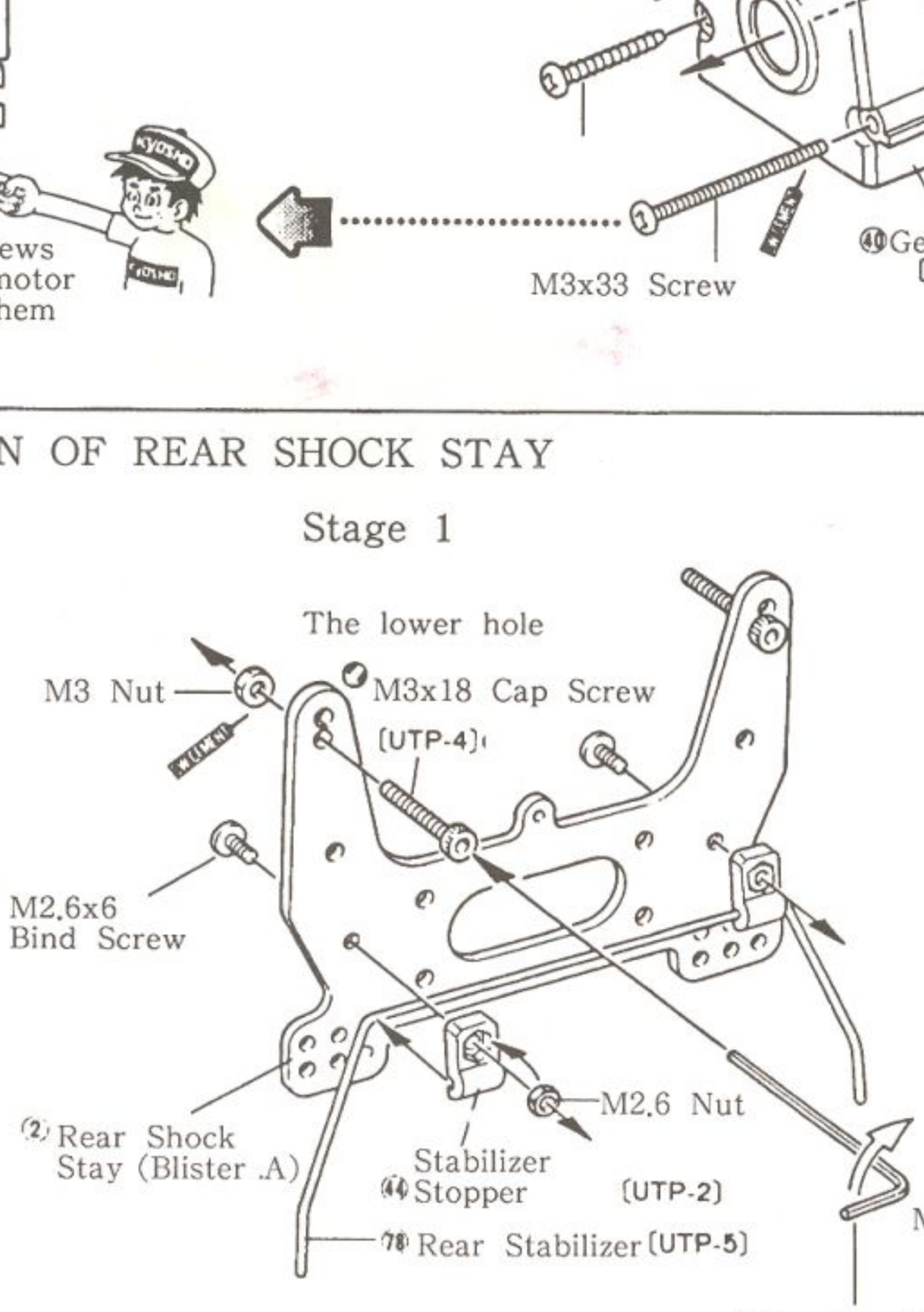
M3x18Cap Screws.... 2

M2.6x12 Flat Head Screws..... 2

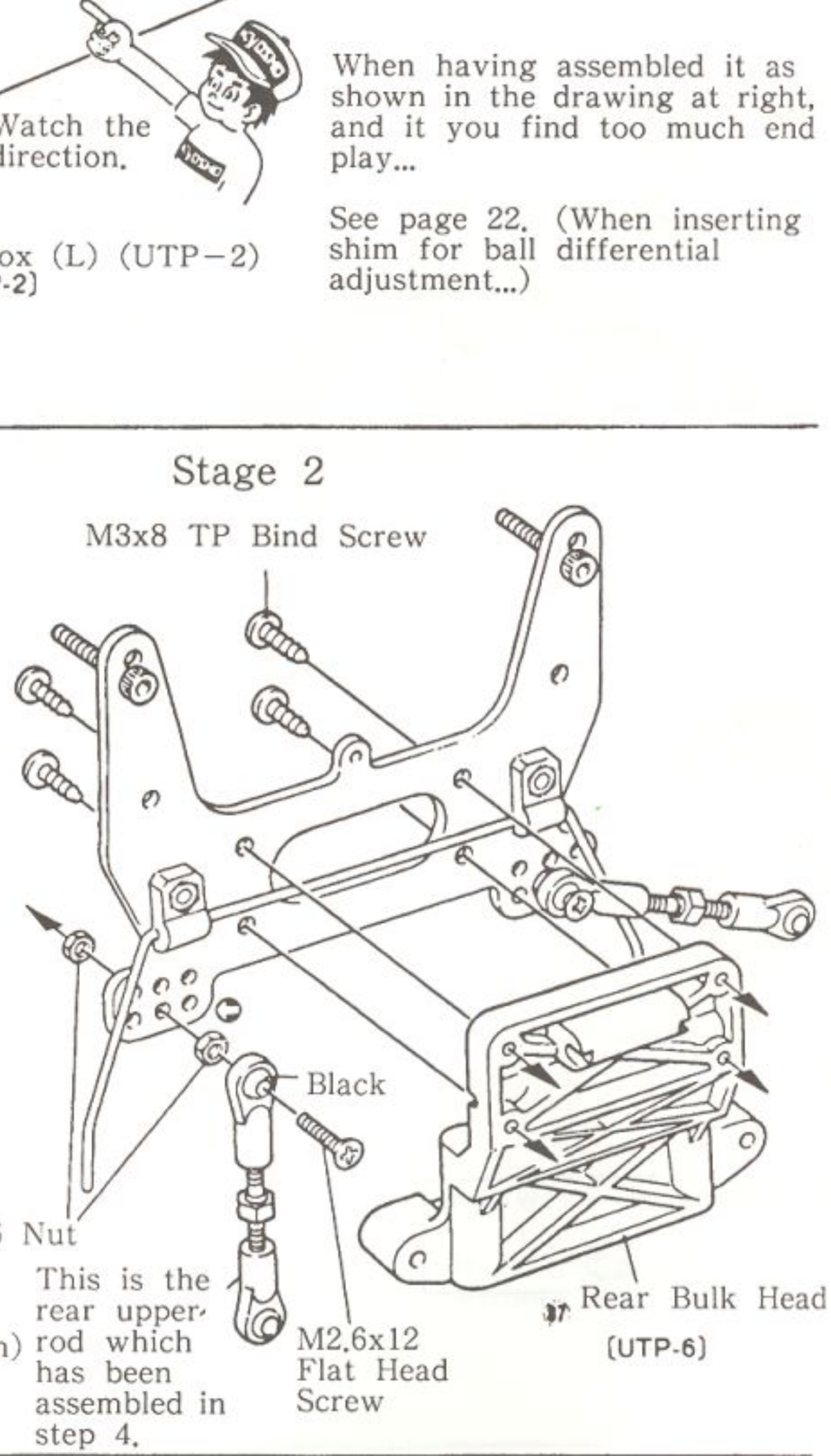
M3x8TP Bind Screws ... 4

M3 Nuts 2

M2.6 Nuts..... 6

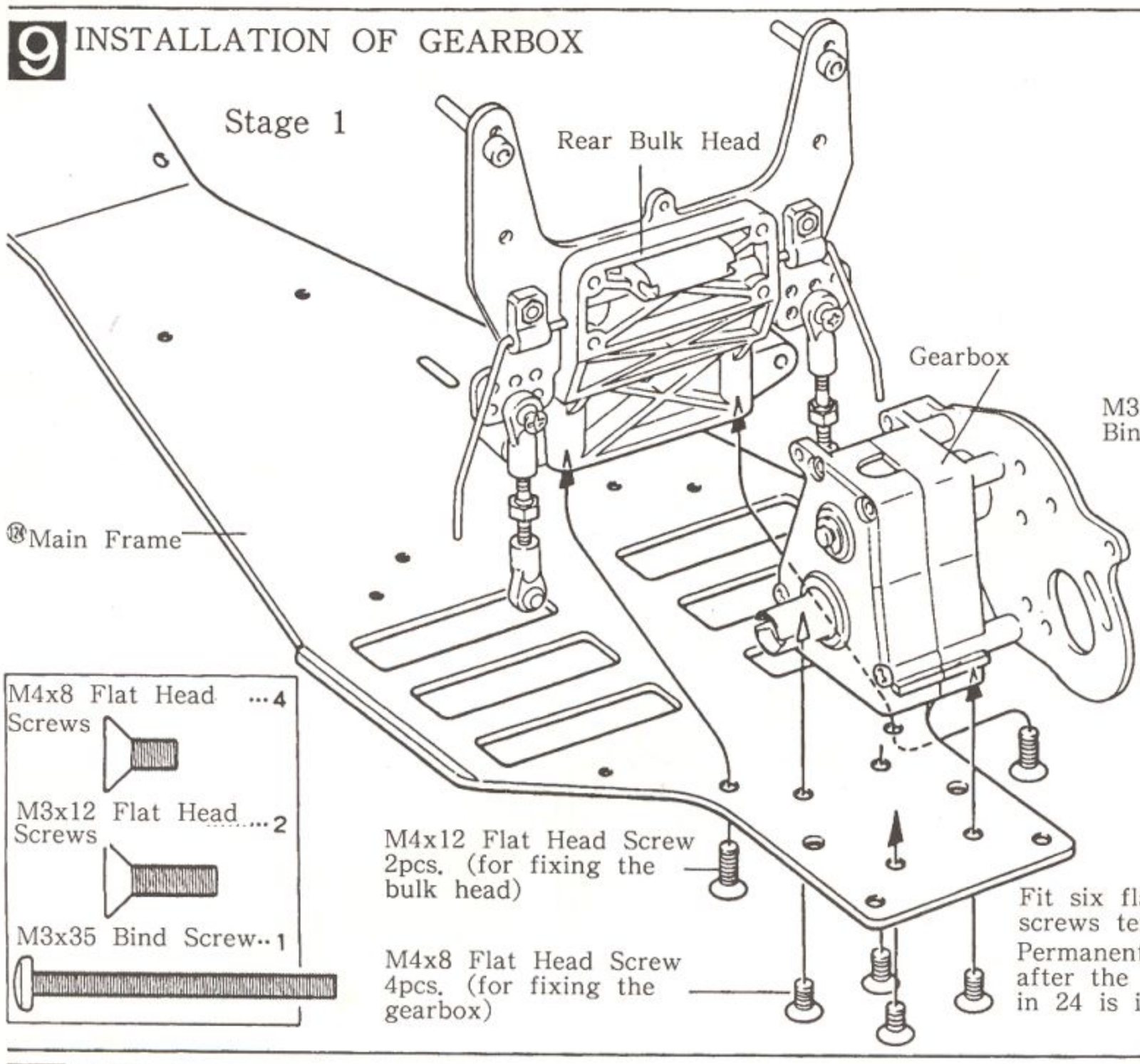


Stage 2

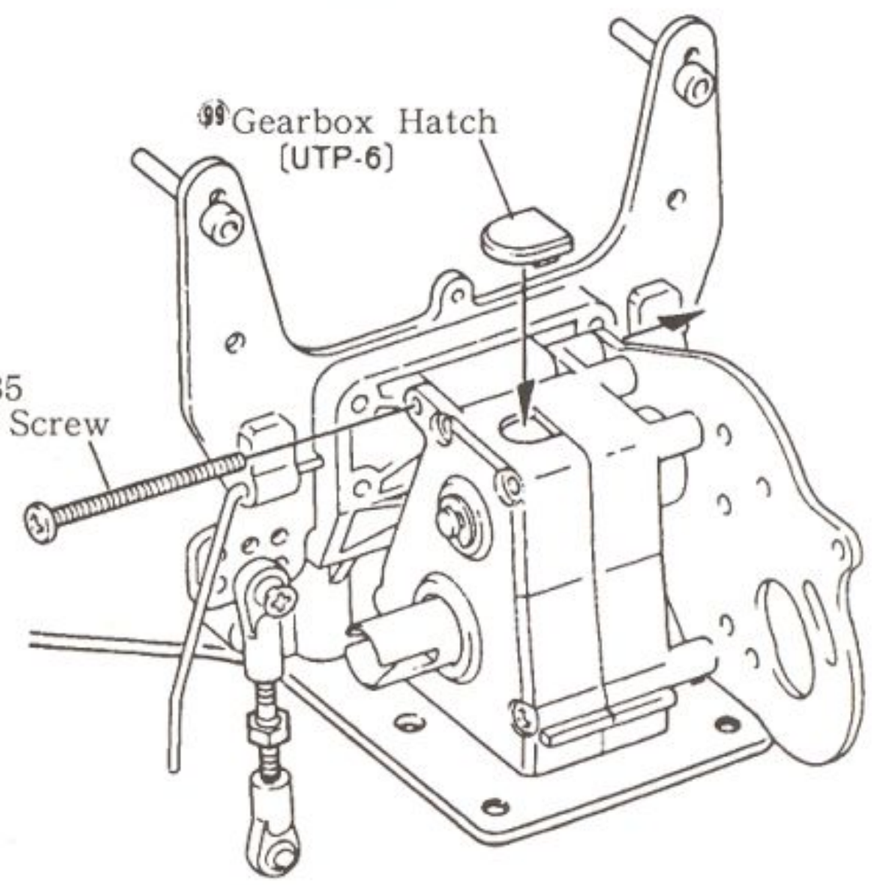


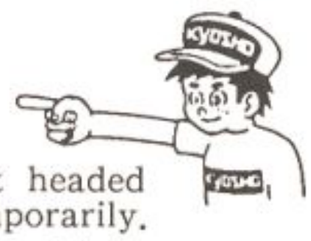
9 INSTALLATION OF GEARBOX

Stage 1



Stage 2



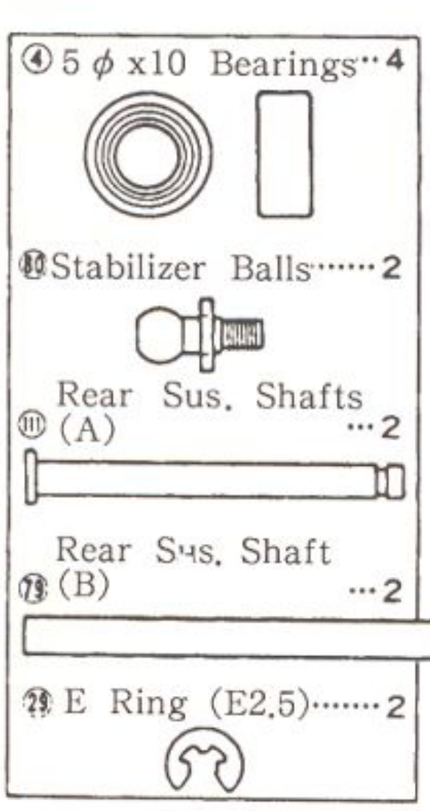


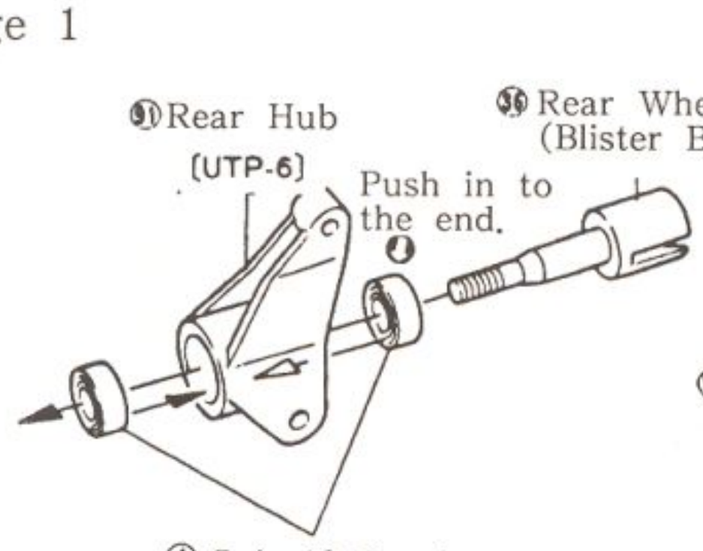
Fit six flat headed screws temporarily. Permanently tighten after the motor guard in 24 is installed.

Leave the clearance of 2mm here.

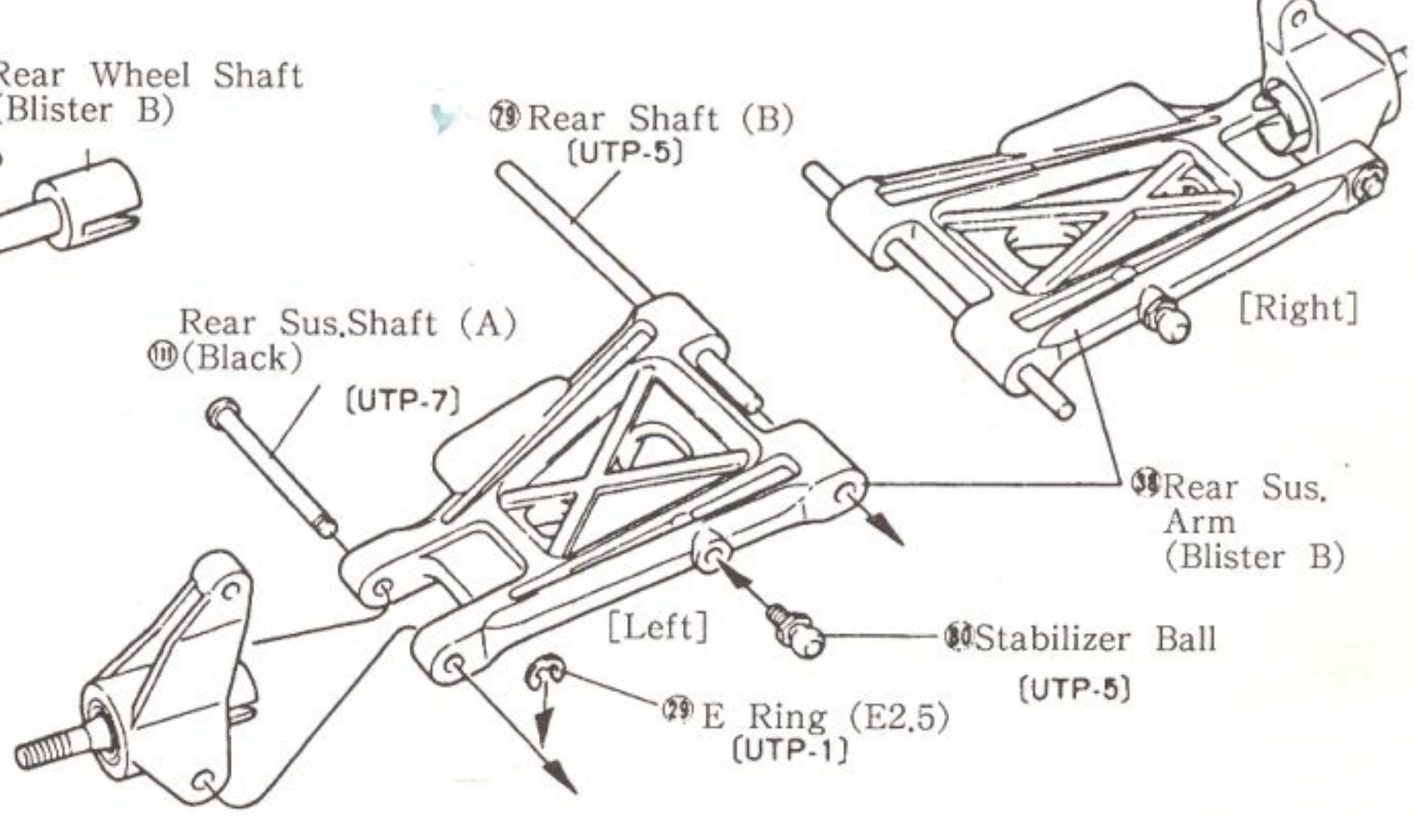
10 INSTALLATION OF REAR HUB

Stage 1

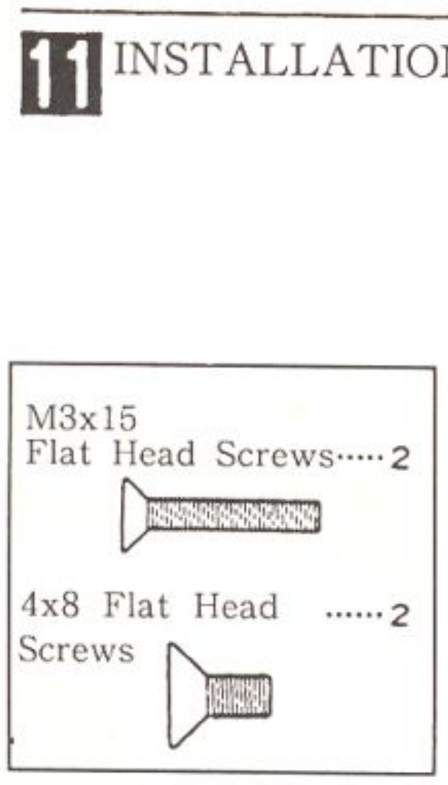


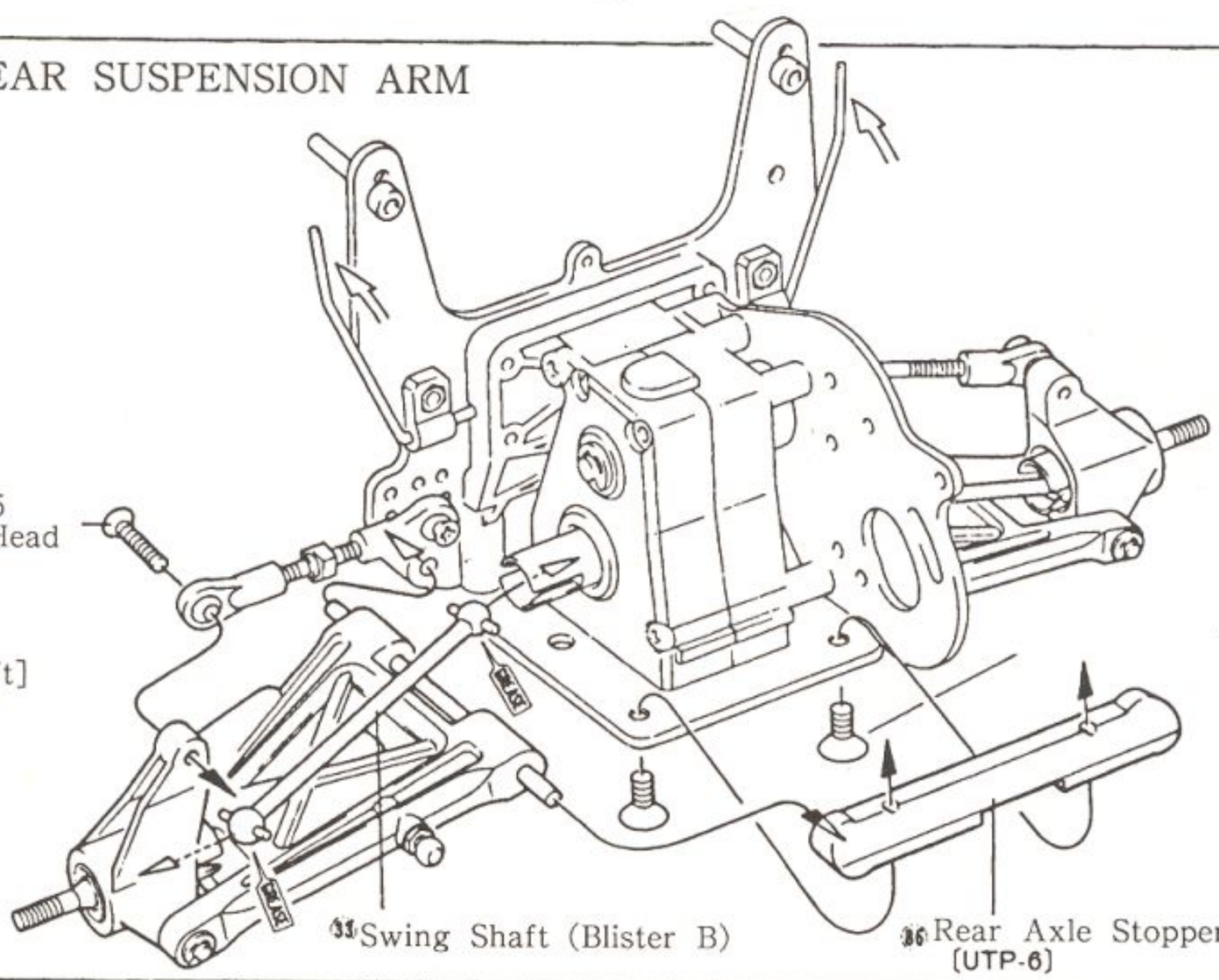


Stage 2



11 INSTALLATION OF REAR SUSPENSION ARM





Have these 2 flat screws temporarily tightened in the same way as 9. Permanently tighten after the motor guard in 24 is installed.

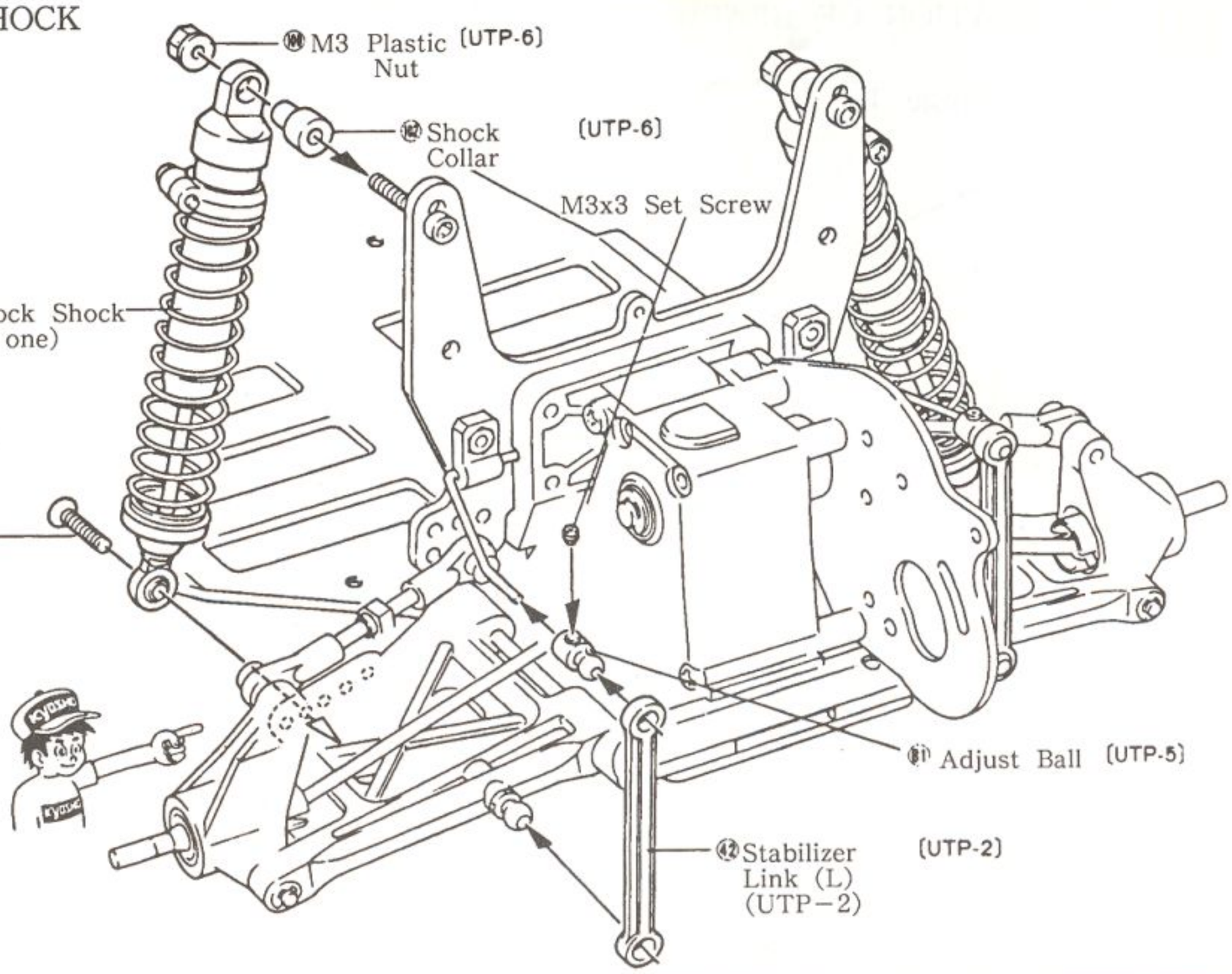
12 INSTALLATION OF REAR SHOCK AND REAR STABILIZER

M3x3 Set Screws····2

M3x15 Flat Head Screws ····2

⑩ M3 Plastic Nuts···2

⑫ Shock Collar·····2

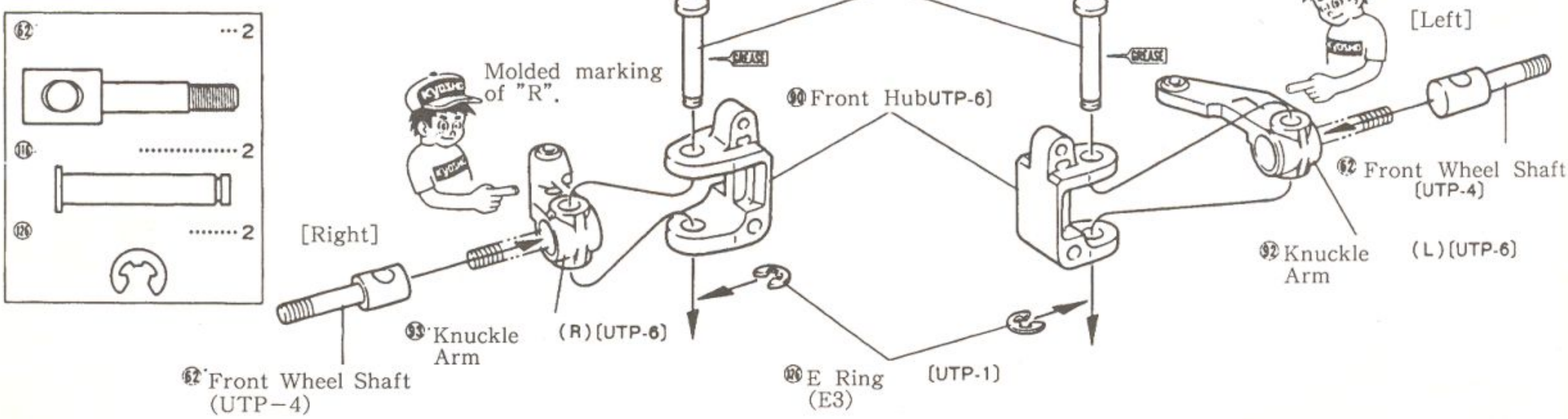


13 INSTALLATION OF KNUCKLE ARM

⑫ ···2

⑯ ·····2

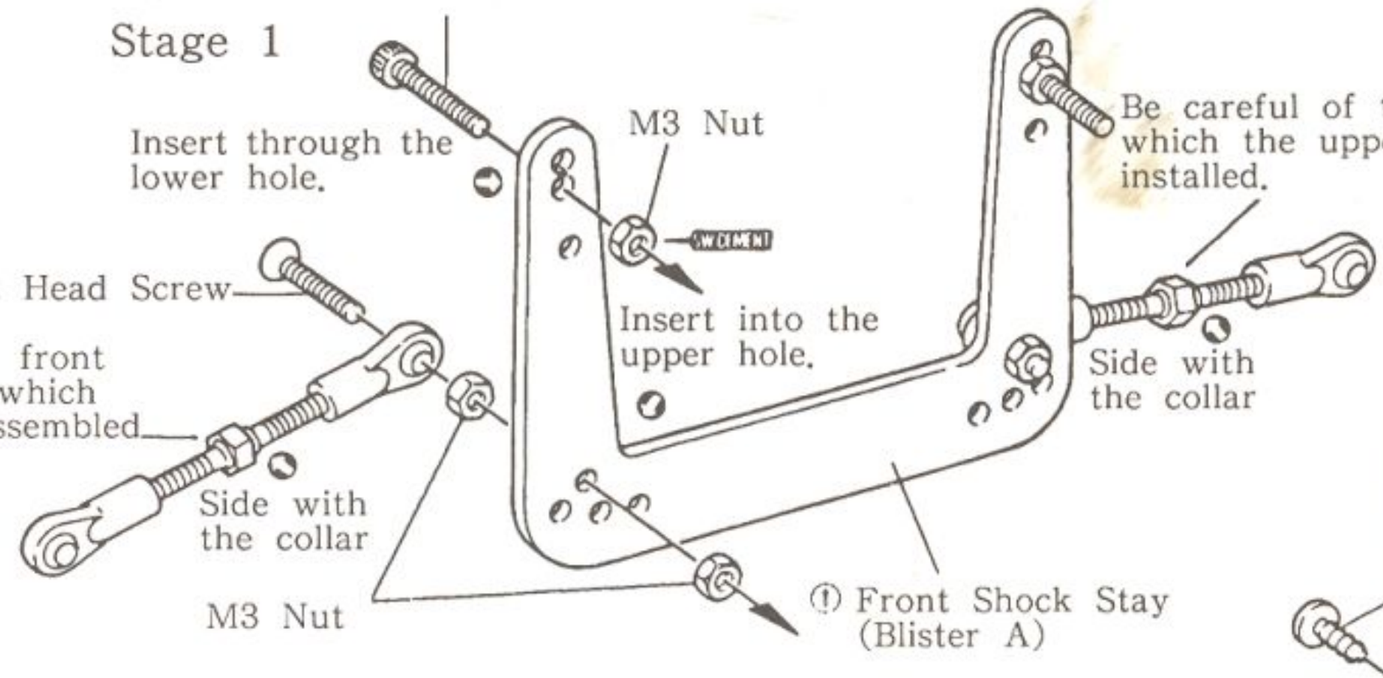
⑰ ·····2



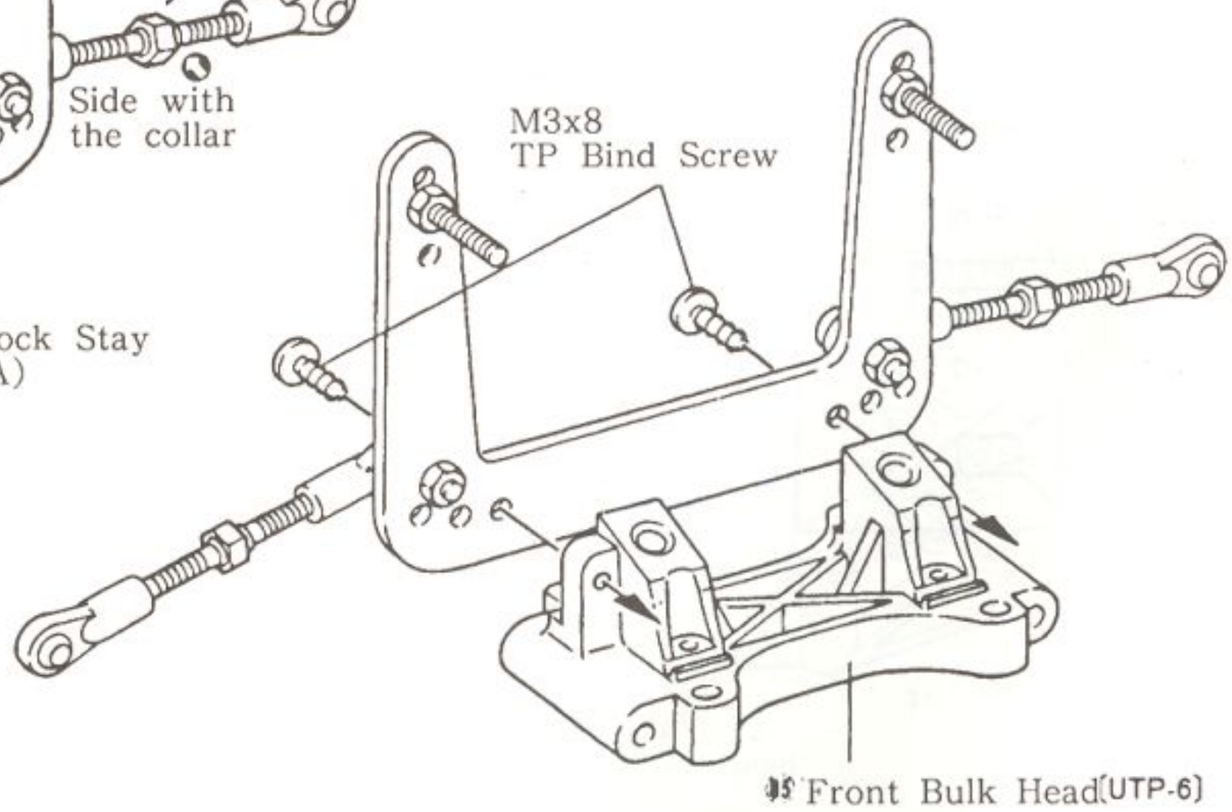
14 INSTALLATION OF FRONT SHOCK STAY

M3x18 Cap Screw (Small bag of UM-4)

Stage 1



Stage 2



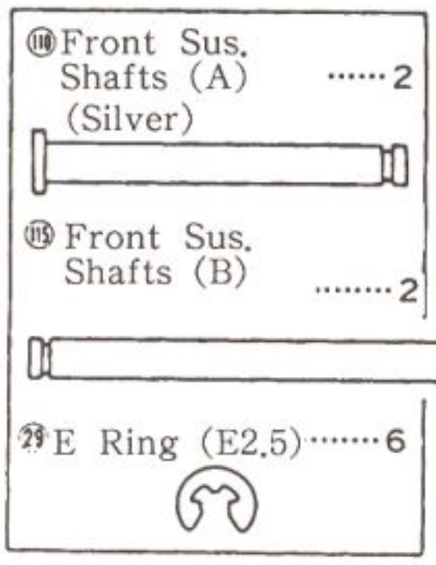
M3x18 Cap Screws··2

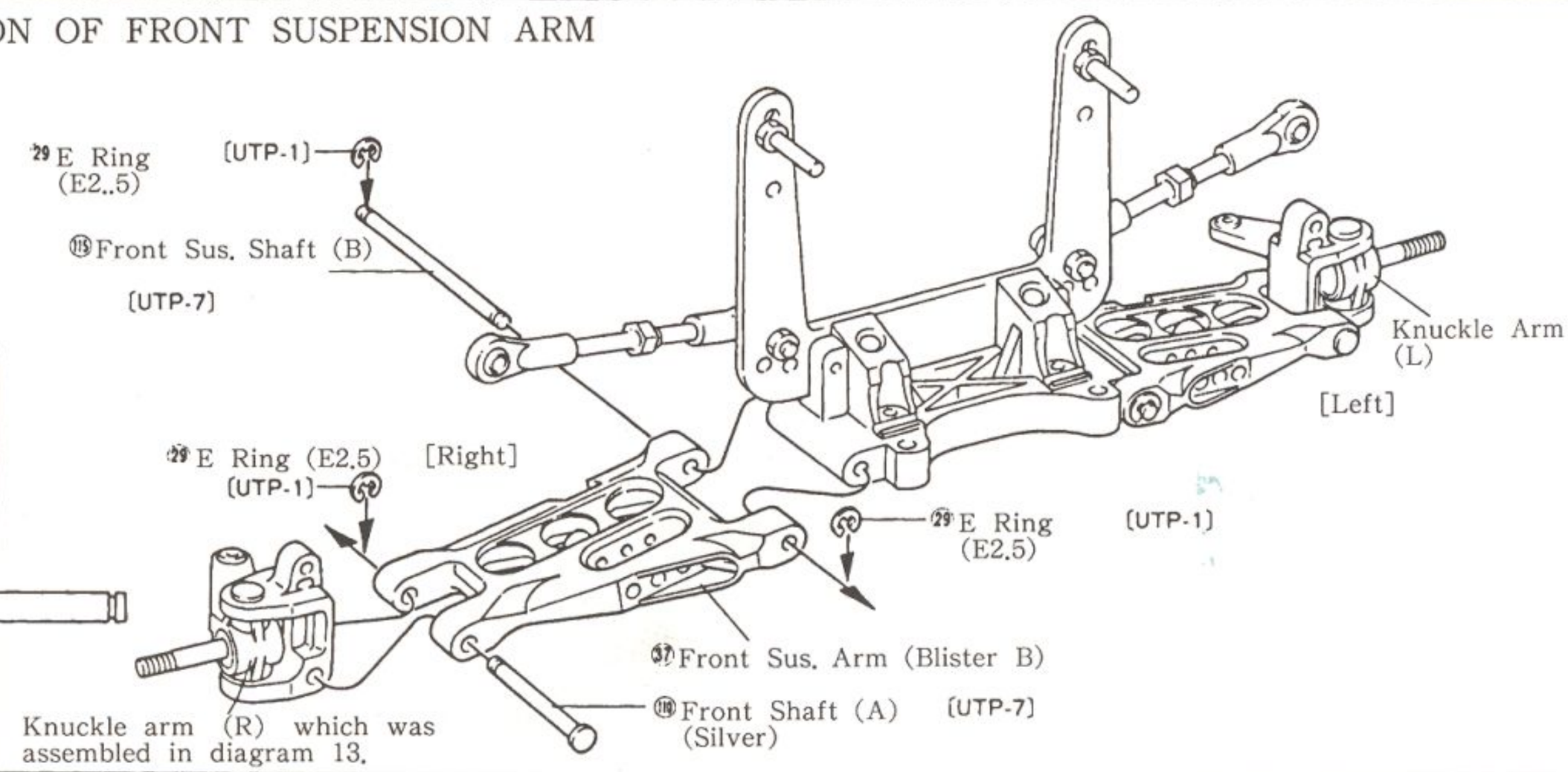
M3x8 TP Bind Screws 2

M3x15 Flat Head Screws ·····2

M3 Nuts ·····6

15 INSTALLATION OF FRONT SUSPENSION ARM

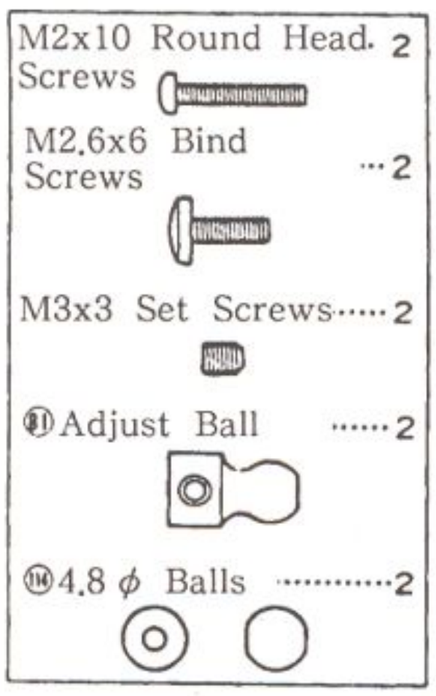


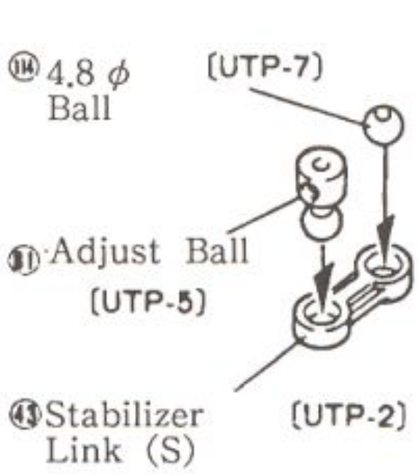


16 INSTALLATION OF FRONT STABILIZER

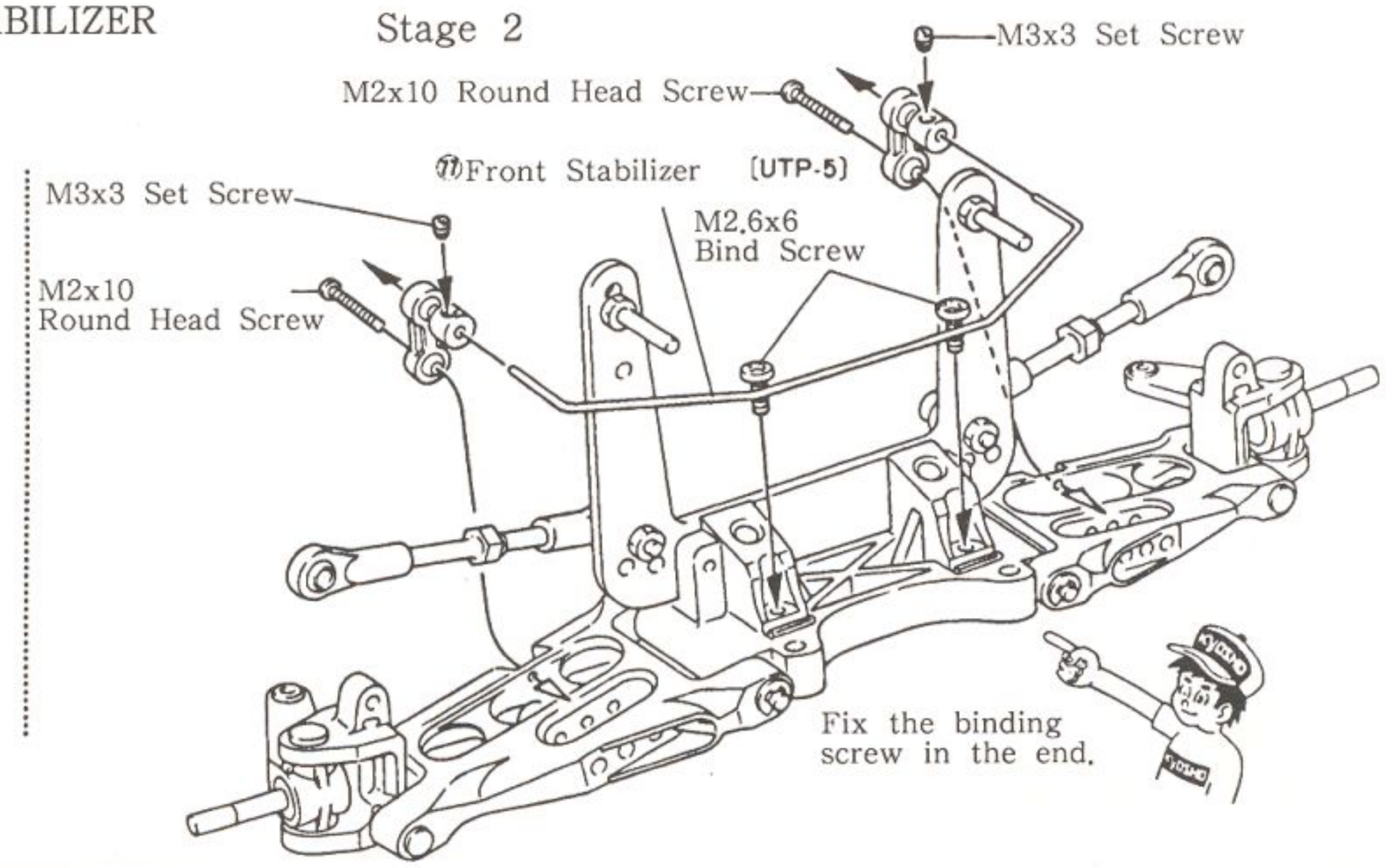
Stage 1

Assemble two of these for right and left.

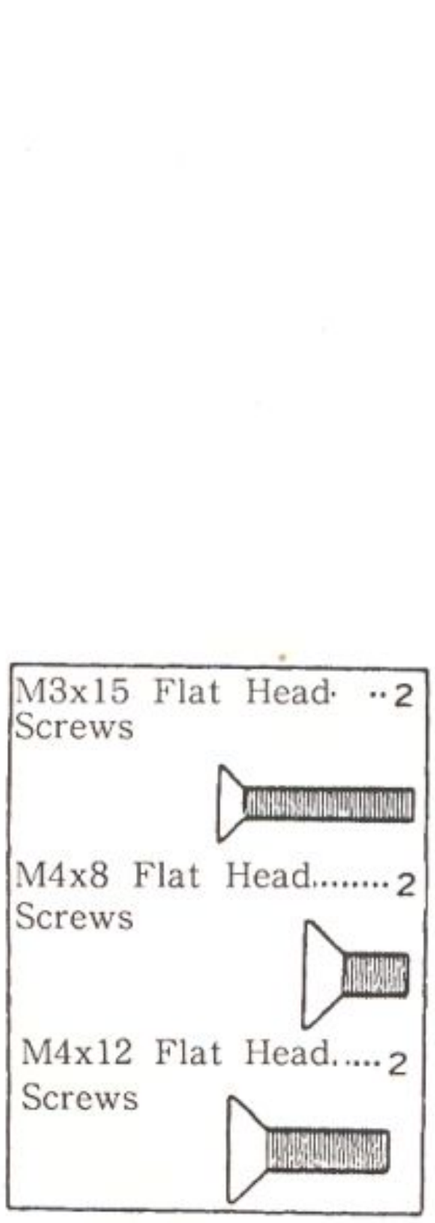


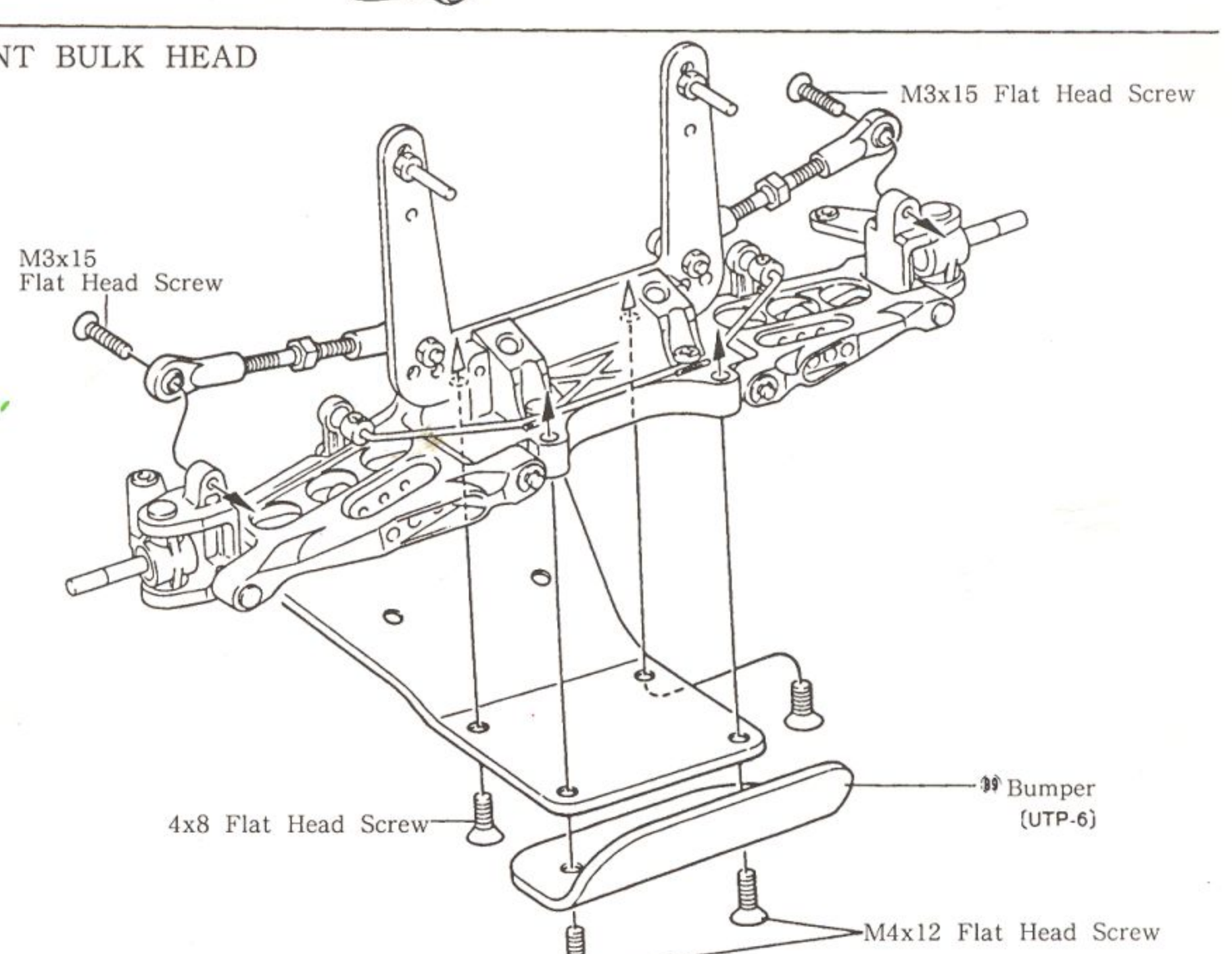


Stage 2



17 INSTALLATION OF FRONT BULK HEAD



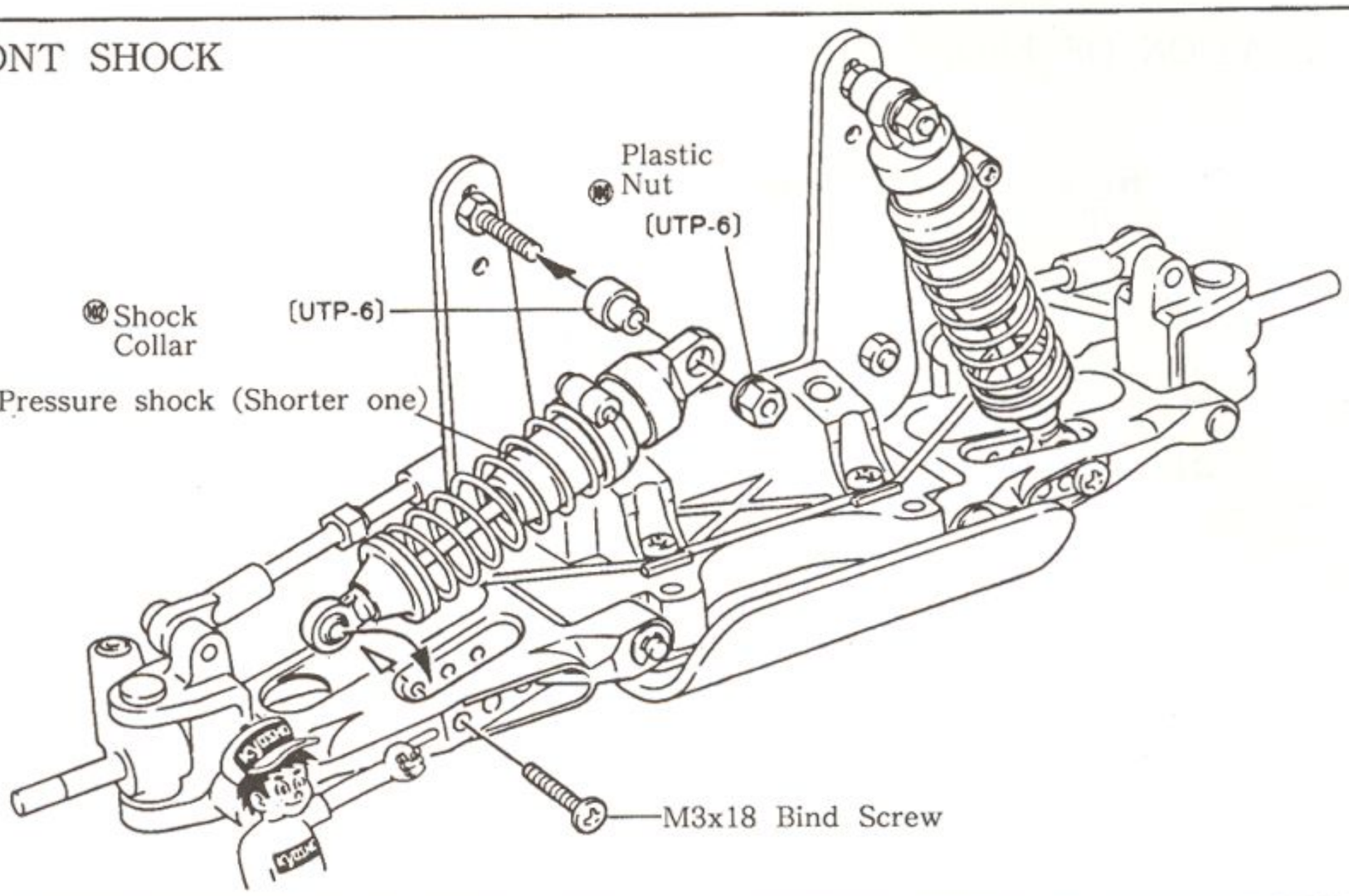


18 INSTALLATION OF FRONT SHOCK

M3x18 Bind Screws·2

M3 Plastic Nuts···2

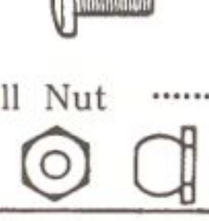
Shock Collar 2

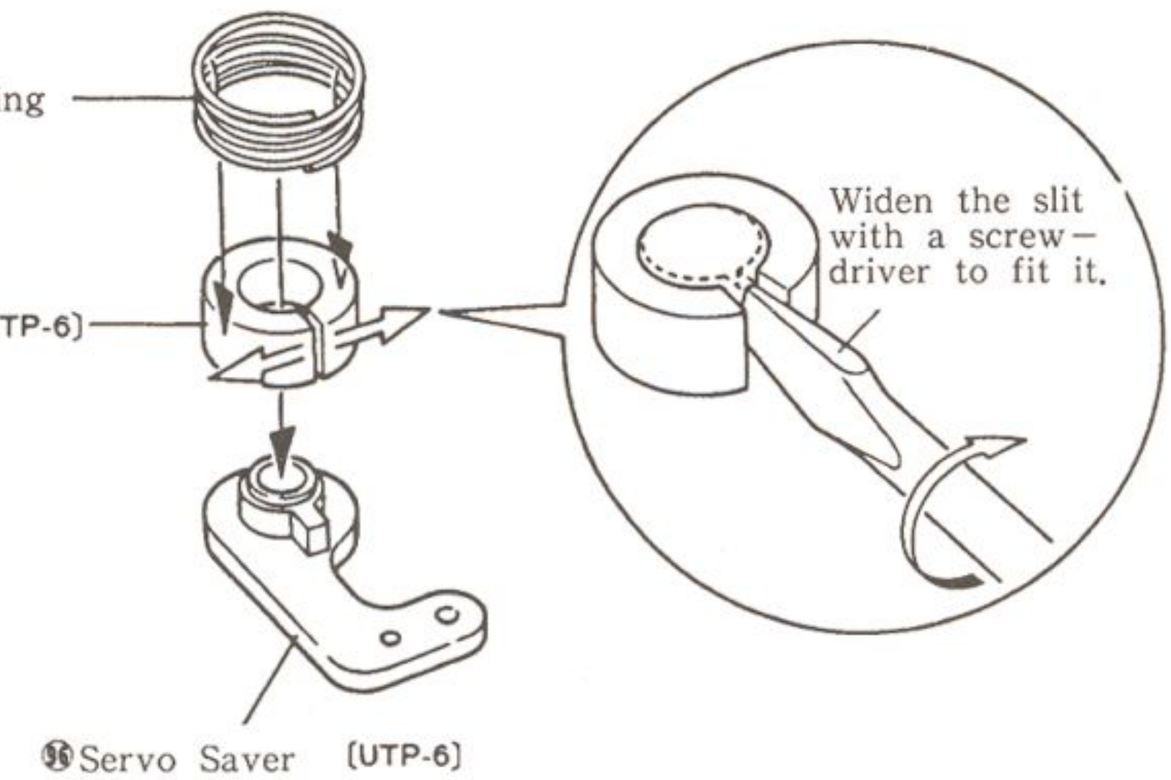


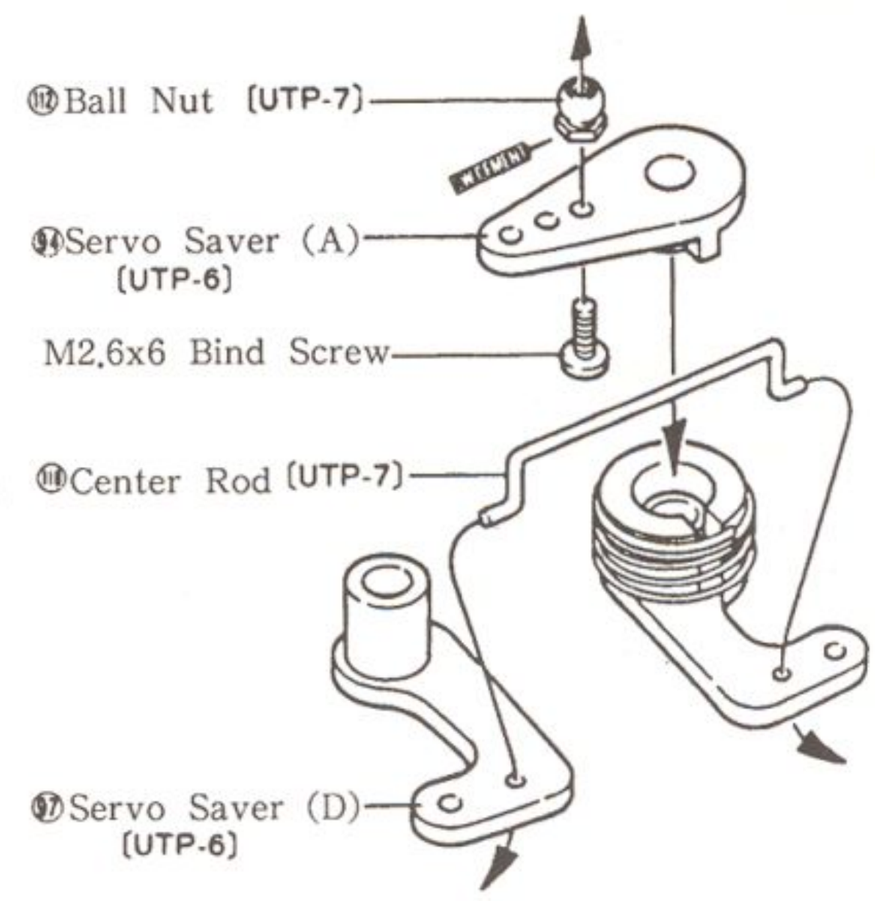
19 ASSEMBLY OF SERVO SAVER

M2.6x6 Bind Screw··1

Ball Nut 1



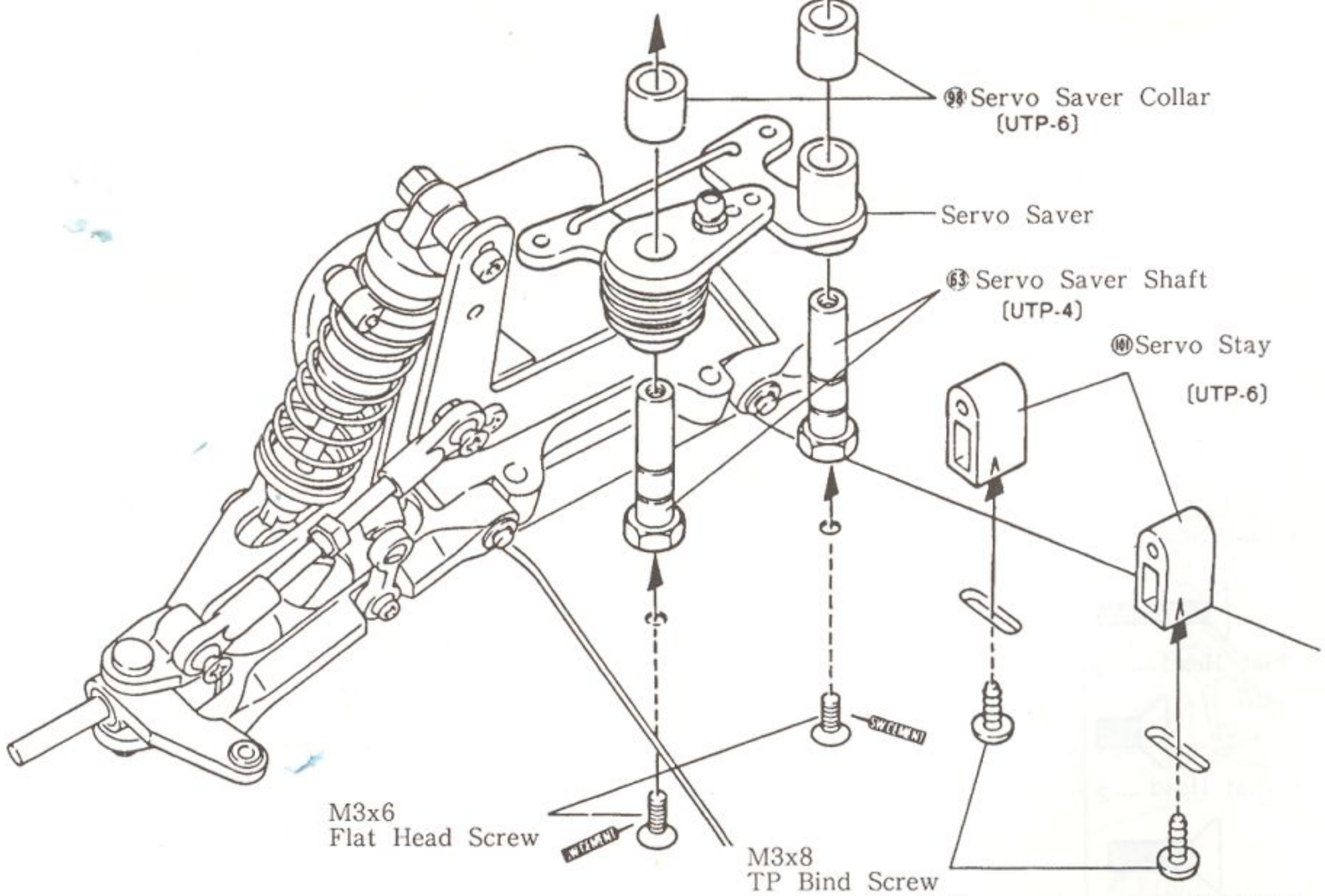




20 INSTALLATION OF SERVO SAVER

M3x6 Flat Head Screws 2

M3x8 TP Bind Screws ··2



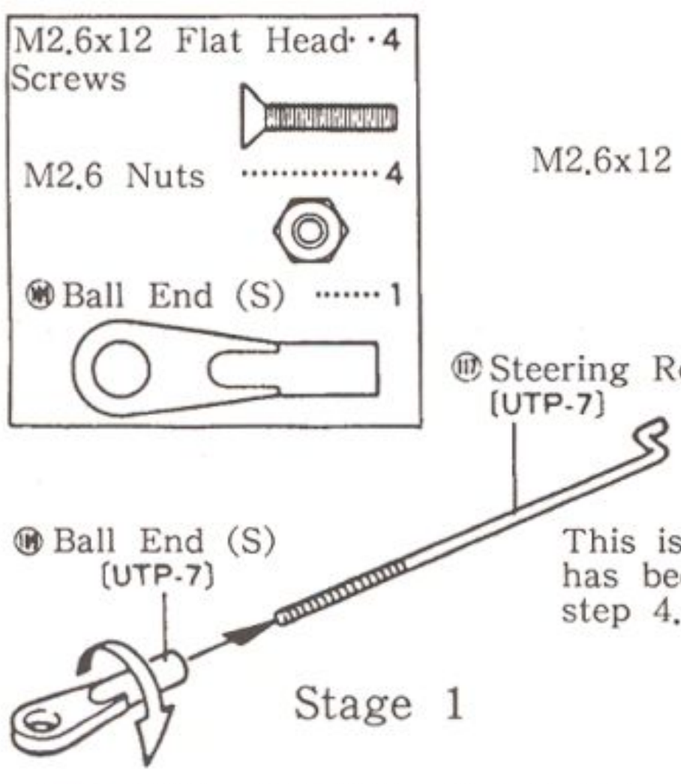
Temporarily tighten and permanently tighten in 31.

21 INSTALLATION OF TIE ROD

M2.6x12 Flat Head Screws ··· 4

M2.6 Nuts ··· 4

Ⓜ Ball End (S) ··· 1



M2.6x12 Flat Head Screw

Ⓜ Steering Rod (UTP-7)

Ⓜ Ball End (S) (UTP-7)

This is the tie rod which has been assembled in step 4.

Stage 1

The more you screw in, the length of the rod becomes shorter.

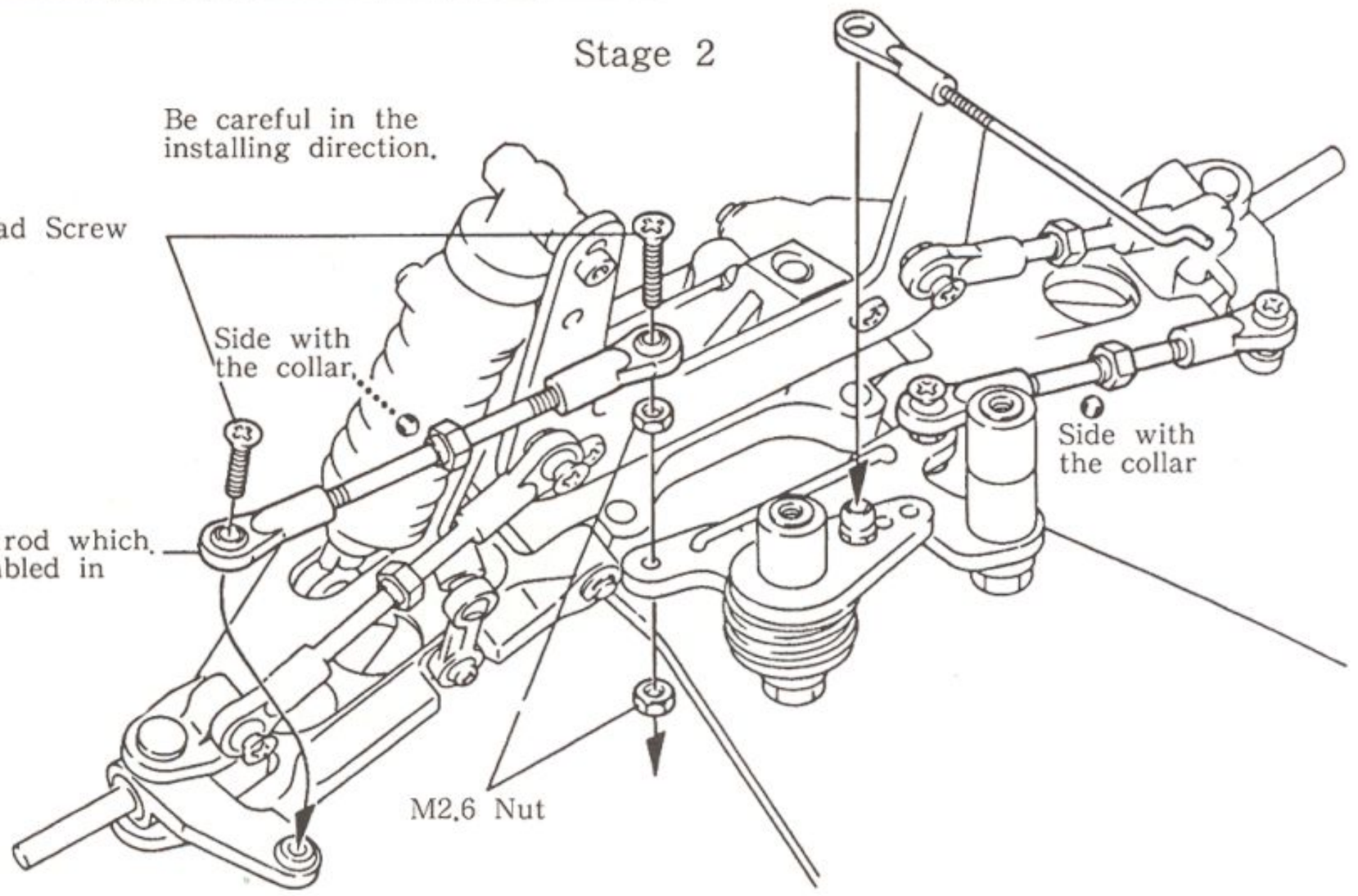
Stage 2

Be careful in the installing direction.

Side with the collar.

Side with the collar

M2.6 Nut



22 INSTALLATION OF RADIO PLATE

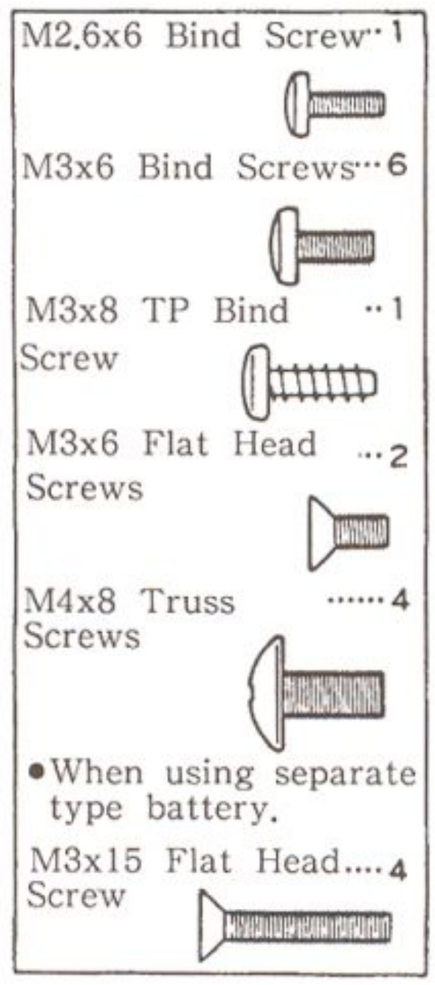
M2.6x6 Bind Screw ·· 1

M3x6 Bind Screws ··· 6

M3x8 TP Bind Screw ·· 1

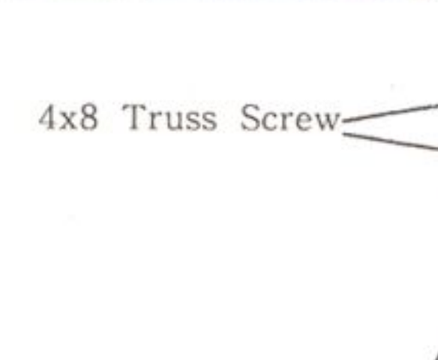
M3x6 Flat Head Screws ··· 2

M4x8 Truss Screws ····· 4



- When using separate type battery.

M3x15 Flat Head Screw 4



Stsage 1

Ⓜ Antenna Post (UTP-6)

㉝ Wing Post (Blister B)

㊴ Radio Plate (UTP-2)

Install in parallel.

㉛ Body Hook (UTP-6)

M3x8 TP Bind Screw

M2.6x6 Bind Screw (Temporarily tighten and permanently tighten after the antenna has been passed through in 33.)

M3x6 Bind Screw

M4x8 Truss Screw

Stsage 2

3x6 Bind Screw

4x8 Truss Screw

Install in parallel.

㊺ Radio Plate Post

(UTP-4)

M3x6 Flat Head Screw

Install only when using separate type battery. (In case of stick type it is not installed)

㊻ Stopper Post (UTP-6)

㊼ Stopper Washer (Thicker one) (UTP-6)

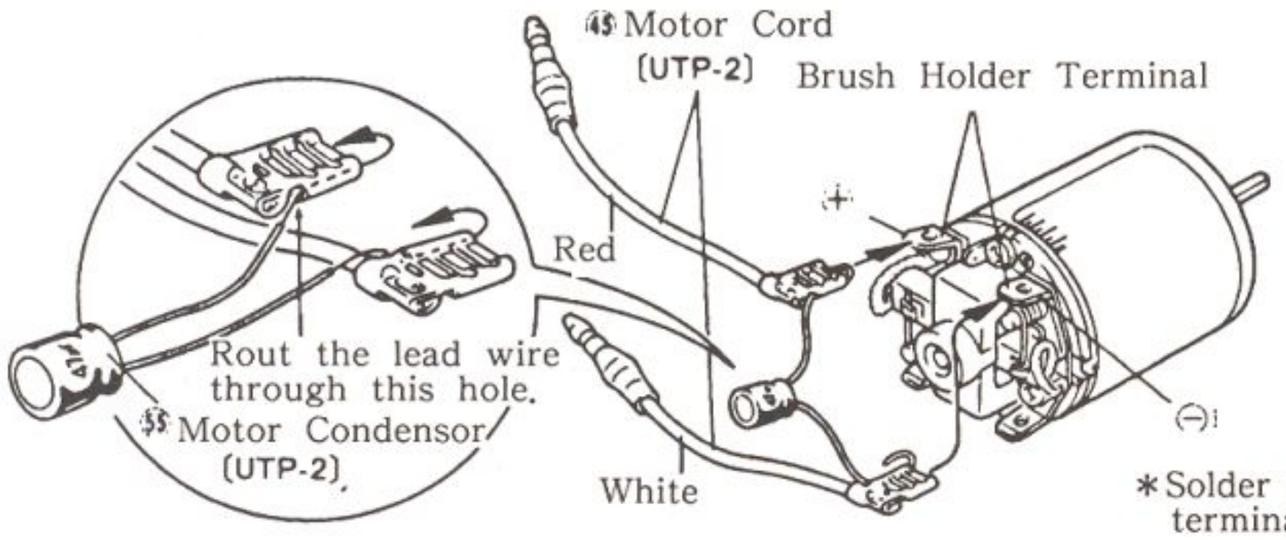
M3x15 Flat Head Screw

23 INSTALLATION OF MOTOR CORD

Motor is not included. Recommended motors are :

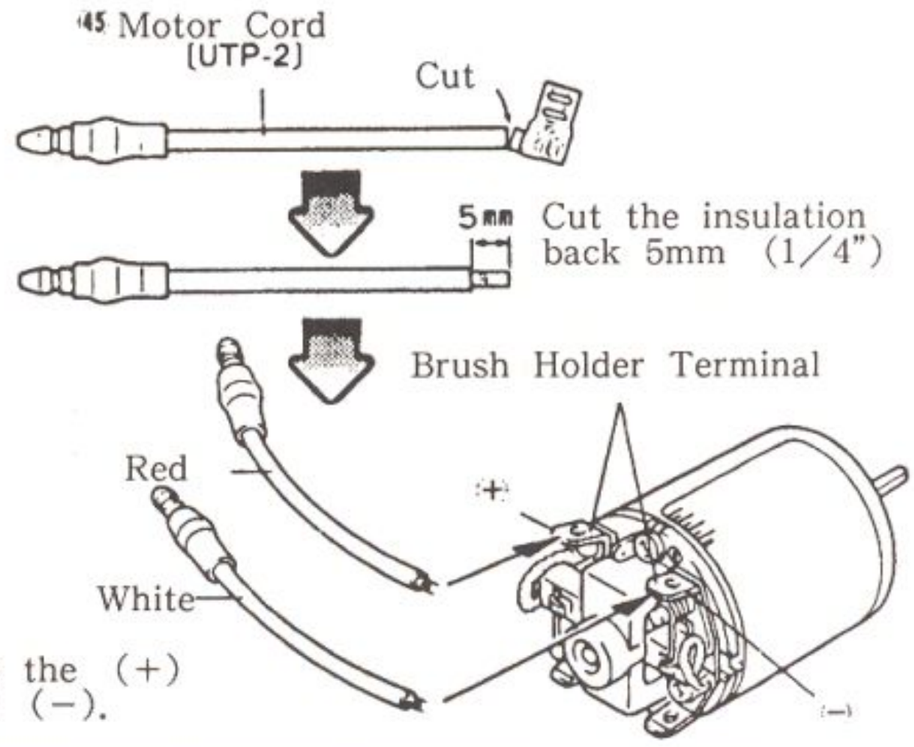
- SPA 240WS
- Le Mans H240S
- Le Mans Speed 240T
- Le Mans 360GOLD
- Le Mans 240SB

SPA240WS/Le MansH-240S/Le Mans Speed 240T/Le Mans 360 GOLD



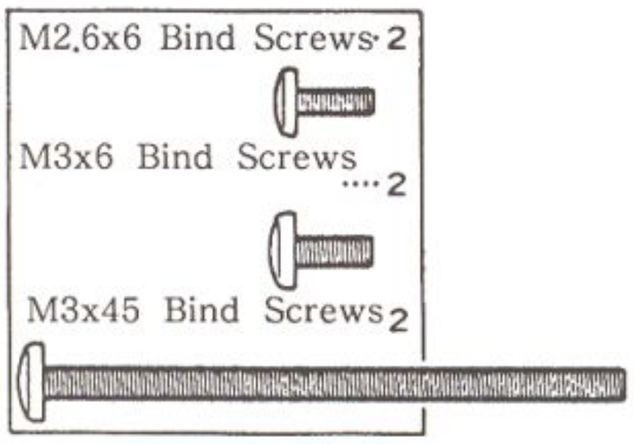
Le Mans 240SB

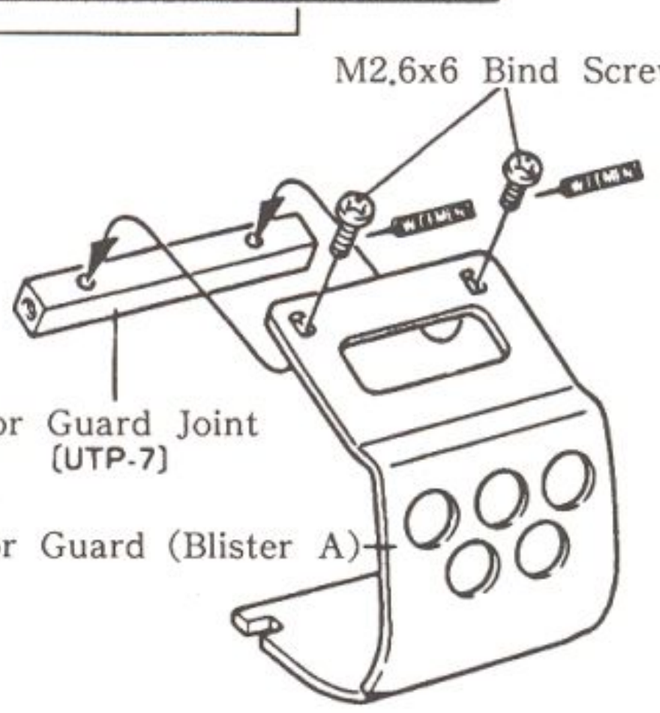
Repare the motor leads as shown below.

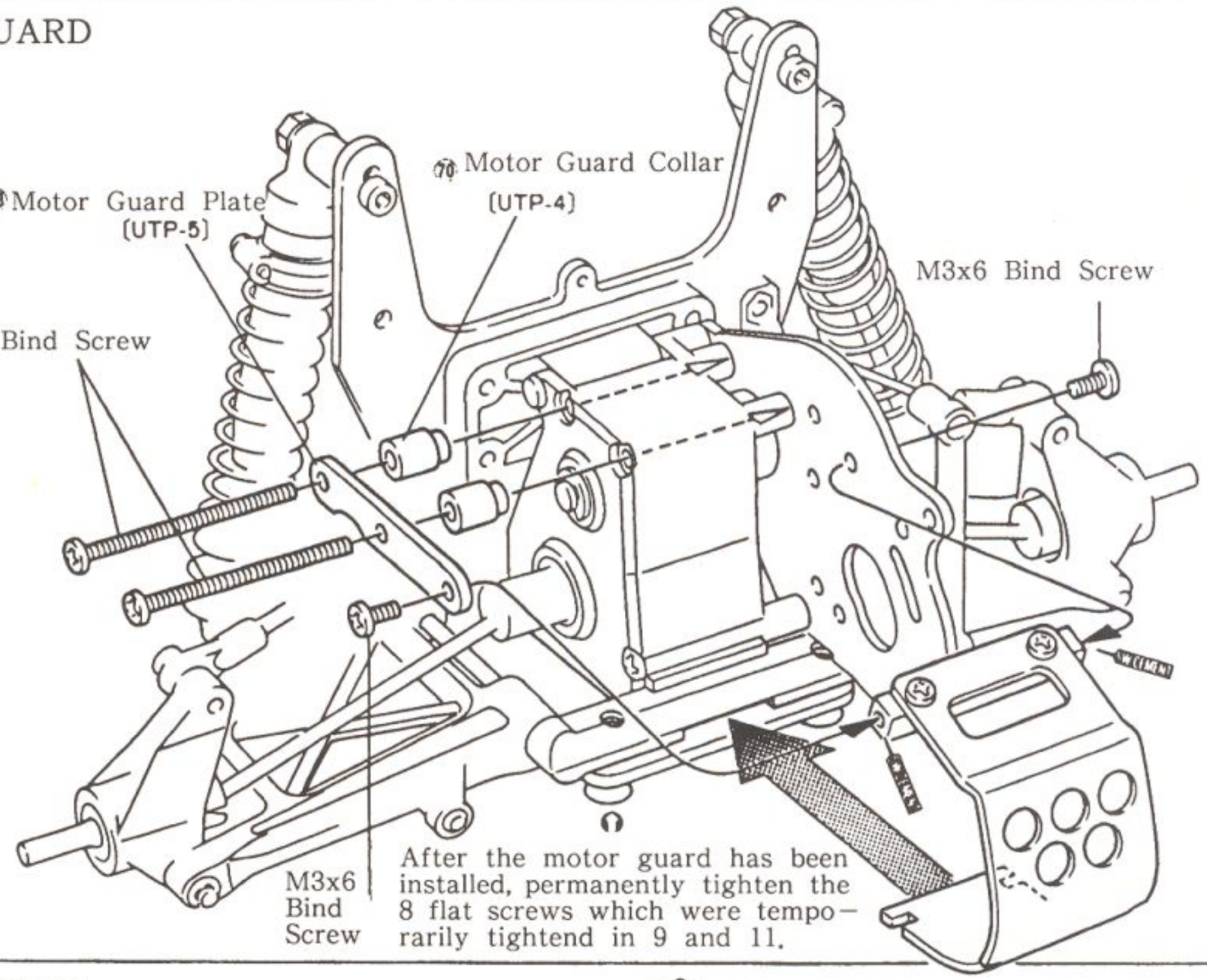


* Solder the red lead to the (+) terminal, the white to (-).

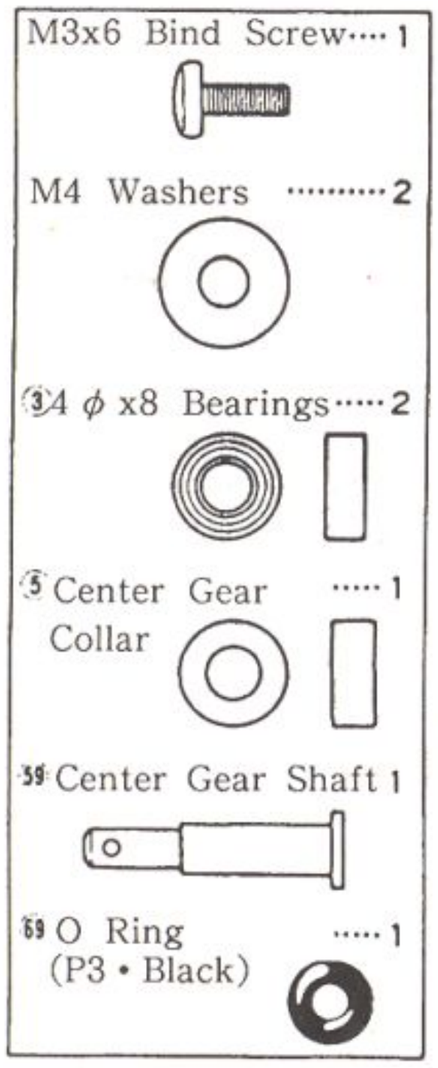
24 INSTALLATION OF MOTOR GUARD

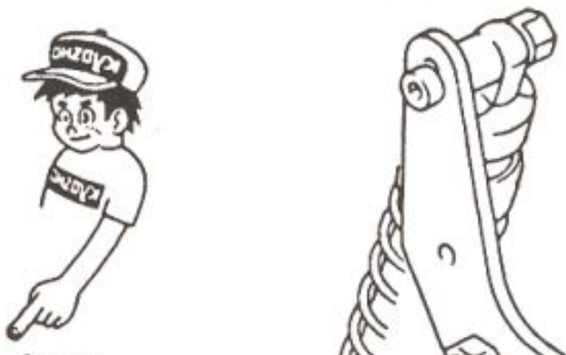






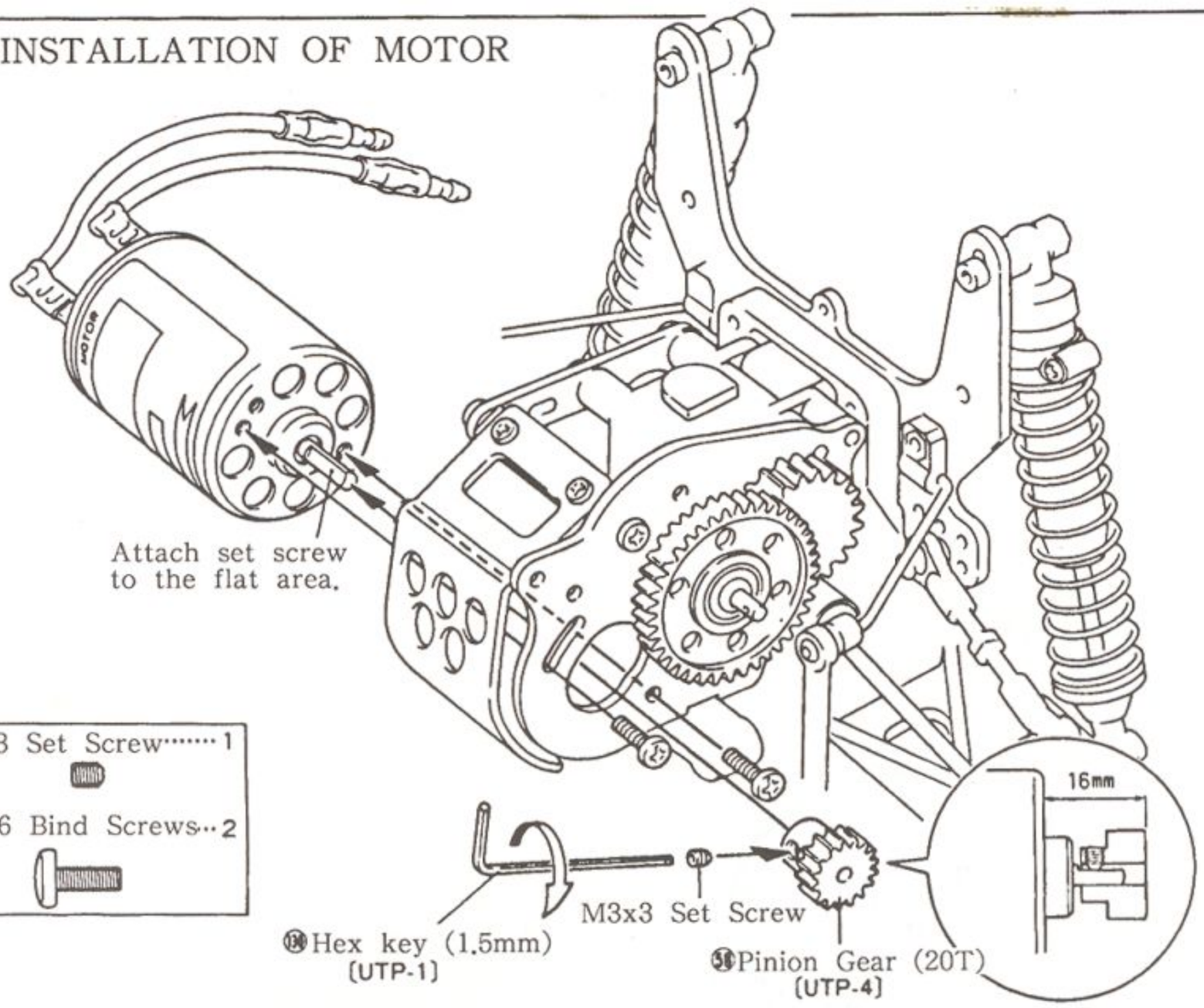
25 INSTALLATION OF CENTER GEAR

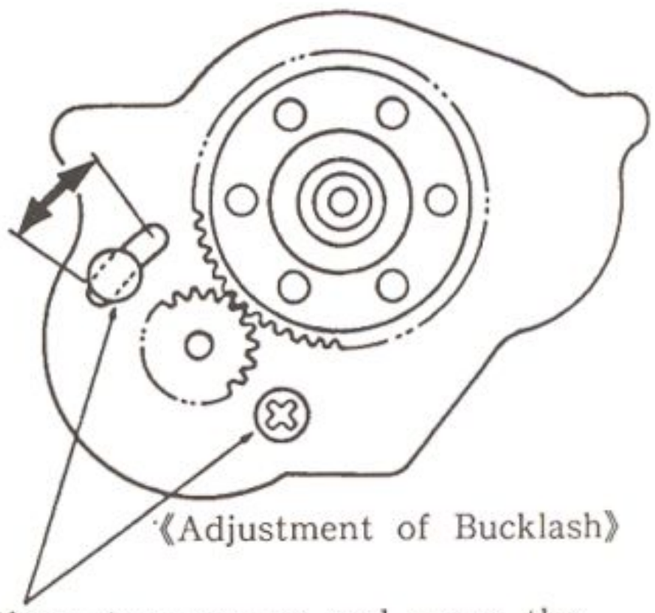




To avoid dust from entering through this hole, stick left over piece of a decal scrap.

26 INSTALLATION OF MOTOR




《Adjustment of Bucklash》

Loosen these two screws and move the upper screw in the way of the arrow to adjust backlash (meshing degree of the gear teeth.)

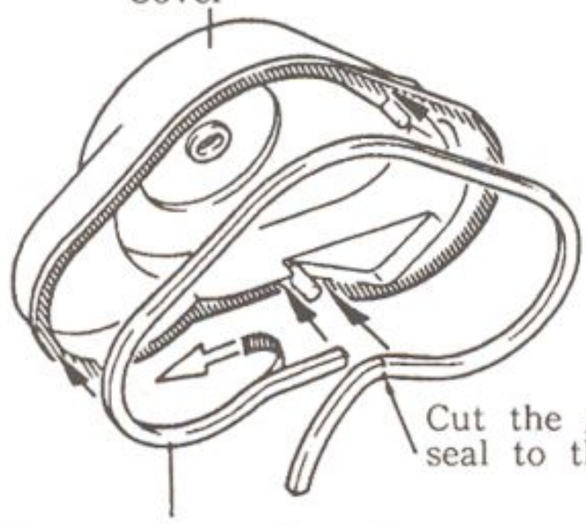
M3x3 Set Screw ····· 1

M3x6 Bind Screws ·· 2

27 INSTALLATION OF GEAR COVER

Stage 1

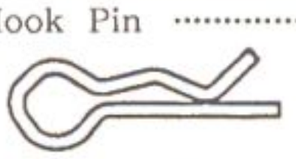
㊾Gear Cover [UTP-6]



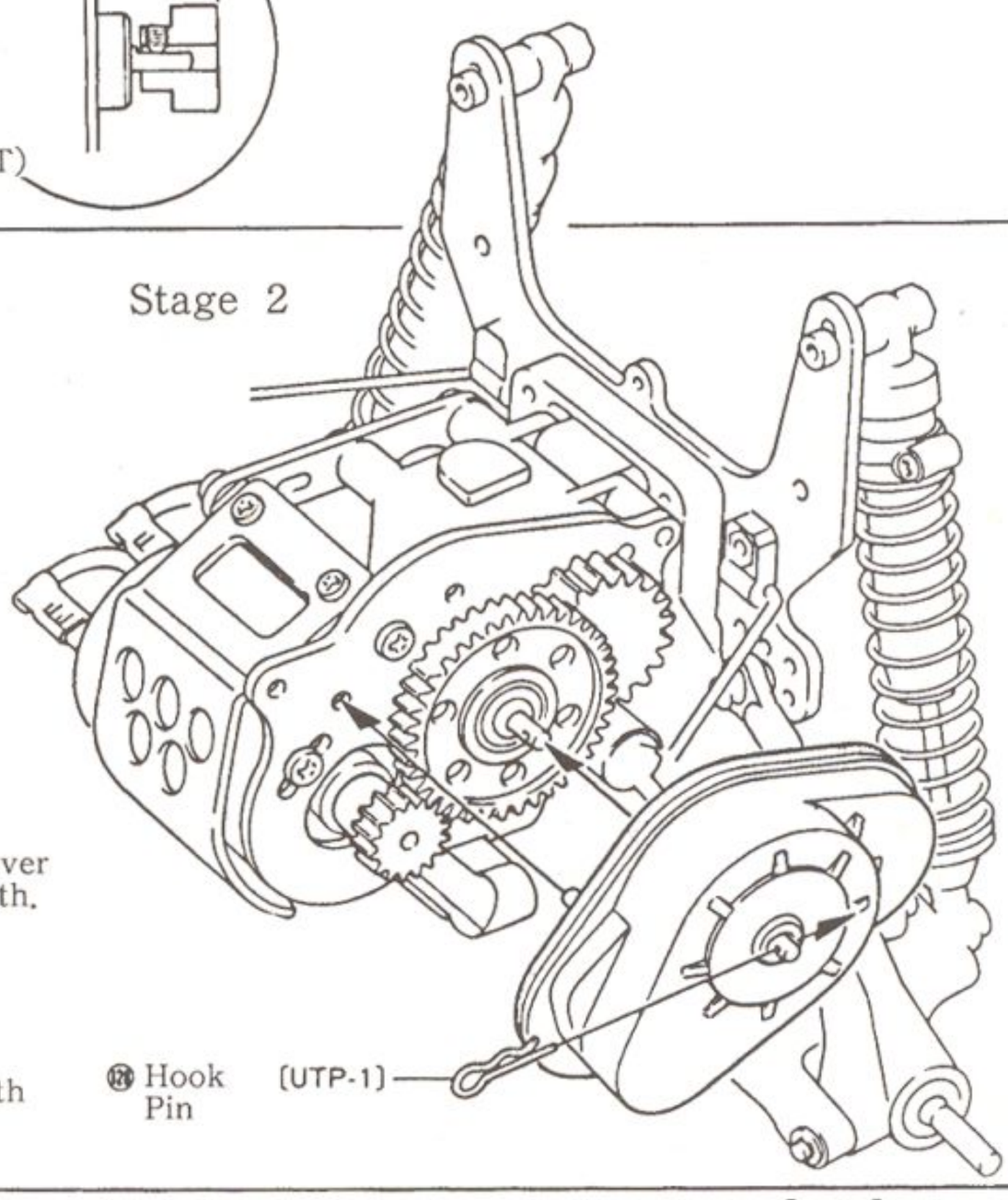
㊼Gear Cover [UTP-2] Foam Rubber Seal

(Remove the backing paper and put the seal along the area indicated with diagonal lines.)

㉘Hook Pin ····· 1

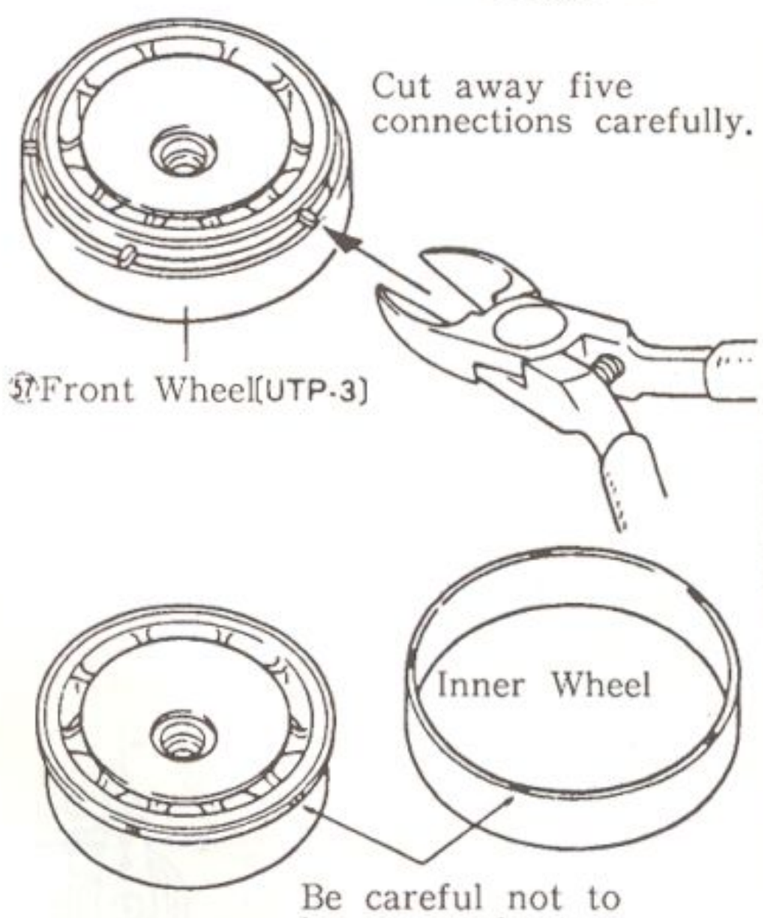


Stage 2



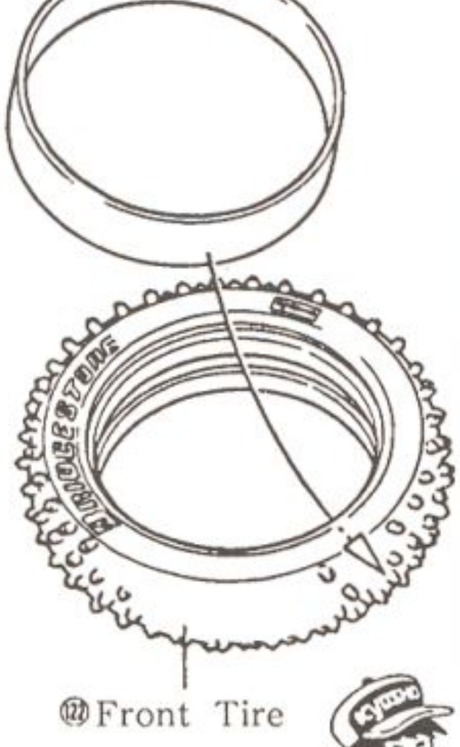
28 ASSEMBLY OF WHEEL AND TIRE

[Front] Stage 1

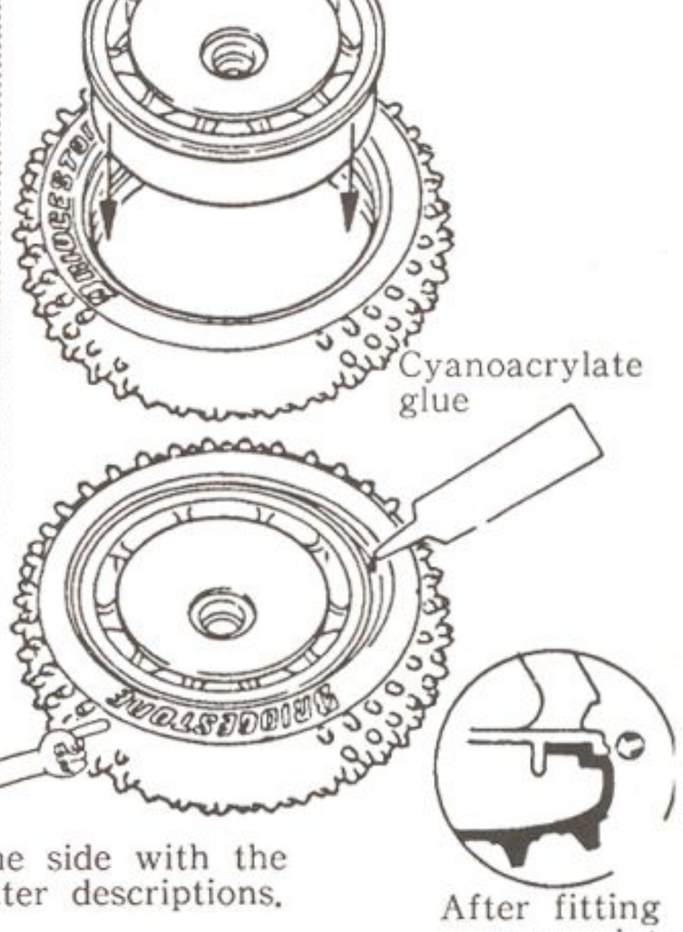


Stage 2

Inner wheel

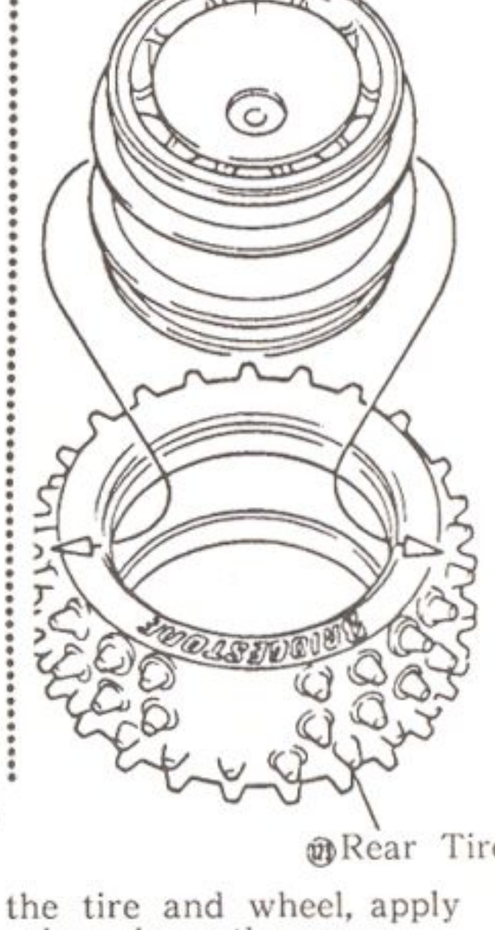


Stage 3



[Rear]

㊻Rear Wheel [UTP-3]

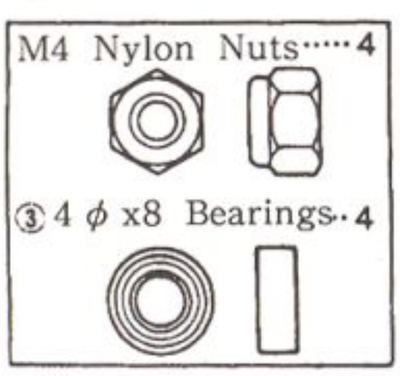


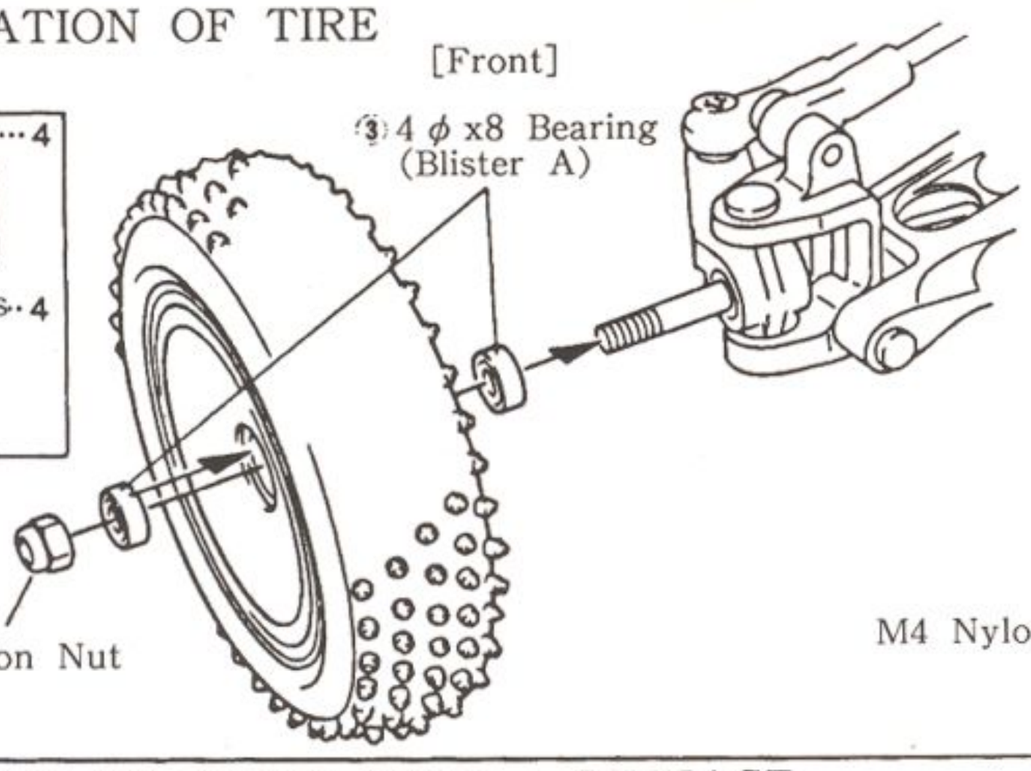
After fitting the tire and wheel, apply cyanoacrylate glue along the seam.

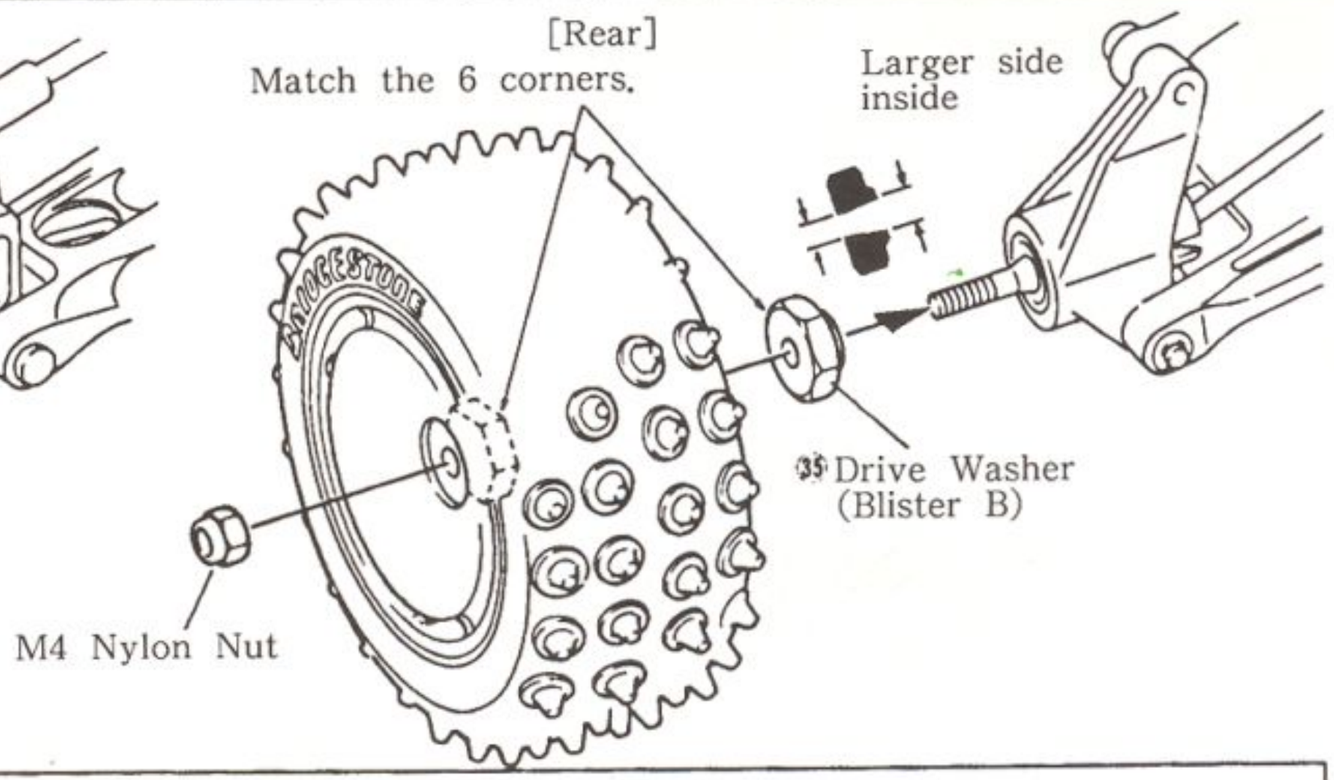
29 INSTALLATION OF TIRE

M4 Nylon Nuts·····4

③ 4 φ x8 Bearings··4

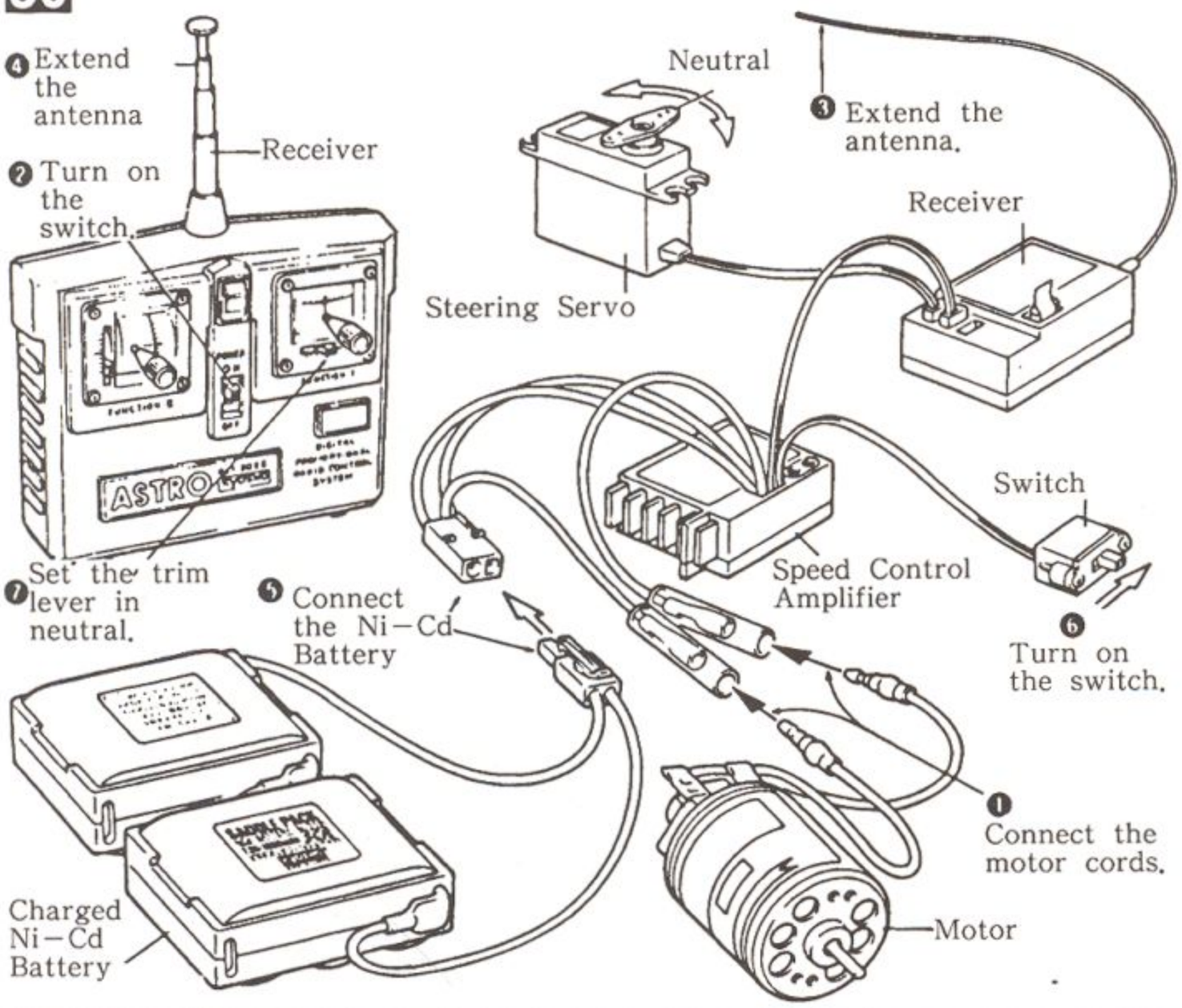






INSTALLATION OF RADIO UNIT · LINKAGE 30~34

30 HOW TO CHECK RADIO SYSTEM



*Operate the radio control units in order of the neumerical figures.

A two channel radio is composed of things like a transmitter, receiver, servos, and battery.

*Transmitter	It is in effect a control box. Signal waves are transmitted through an antenna according to the stick movements.
*Receiver	Receives the signals from the transmitter and send them to the servos.
*Servo	They really move the control mechanism of a model car in accordance with the signals from the receiver.
*Antenna	An antenna on the transmitter sends signals, and
*Trim Lever	They will adjust the neutral position of servos, thus regulate the steering and advancing controls finely.
*Battery Meter	You can tell the amount of electricity in a battery and how the signals are emitted.
*Servo Horns	They are intermediate devices on the servos to activate the controls. There are several types in shape. They should be selected depending upon the usage.

When switch on the radio...
Get the switches in order from transmitter to receiver.

When switch off the radio...
In order from receiver to transmitter.

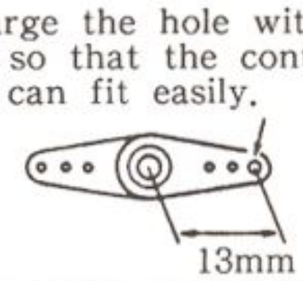
31 INSTALLATION OF STEERING CHECK

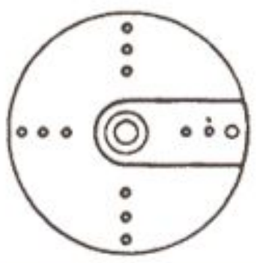
Stage 1 Cut off shaded part.

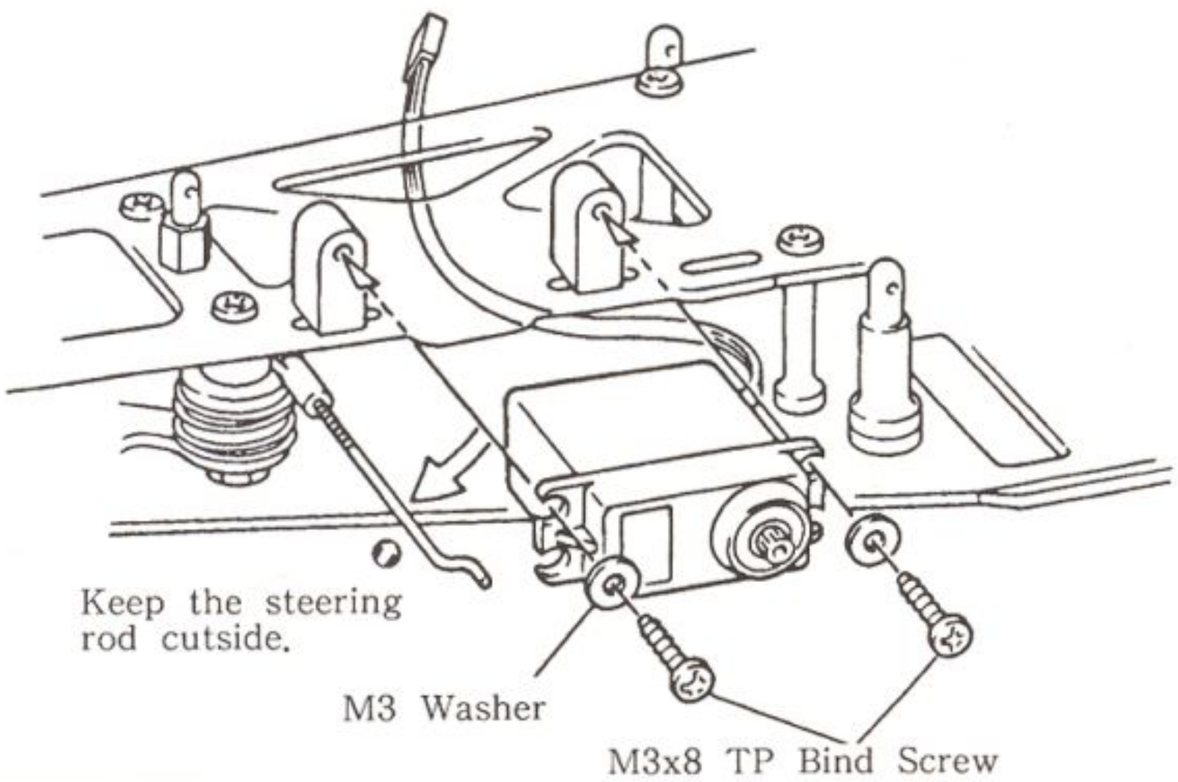
M3x8 TP Bind Screws ··2

M3 Washers ·····2

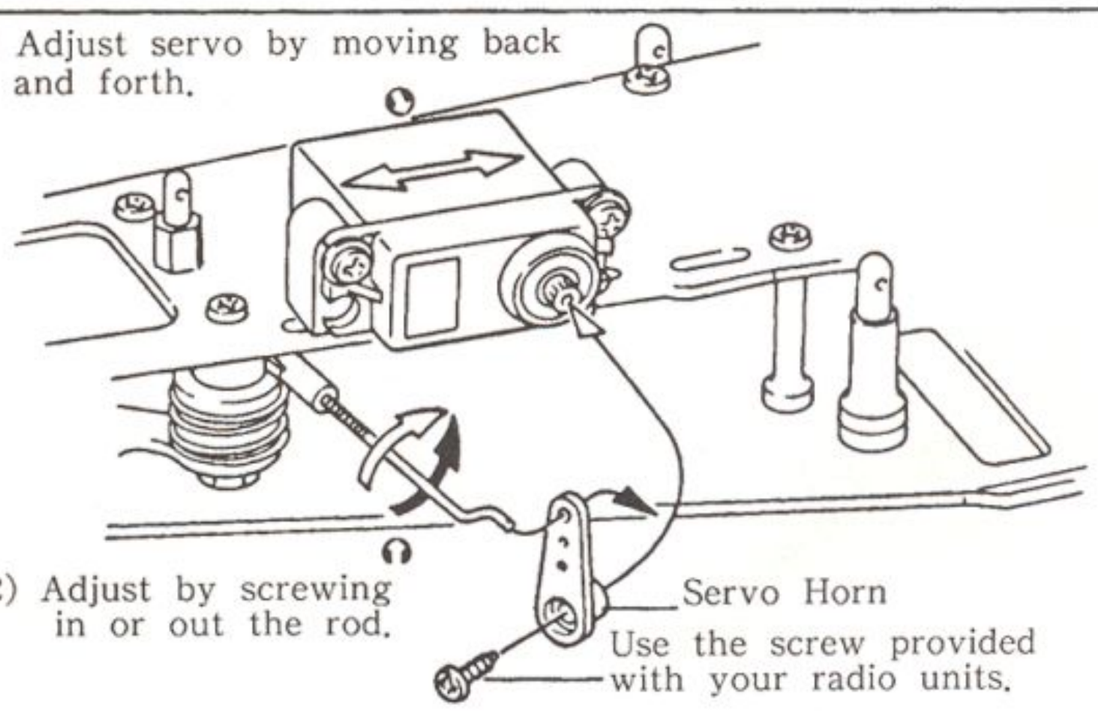
Enlarge the hole with an awl so that the control rod can fit easily.





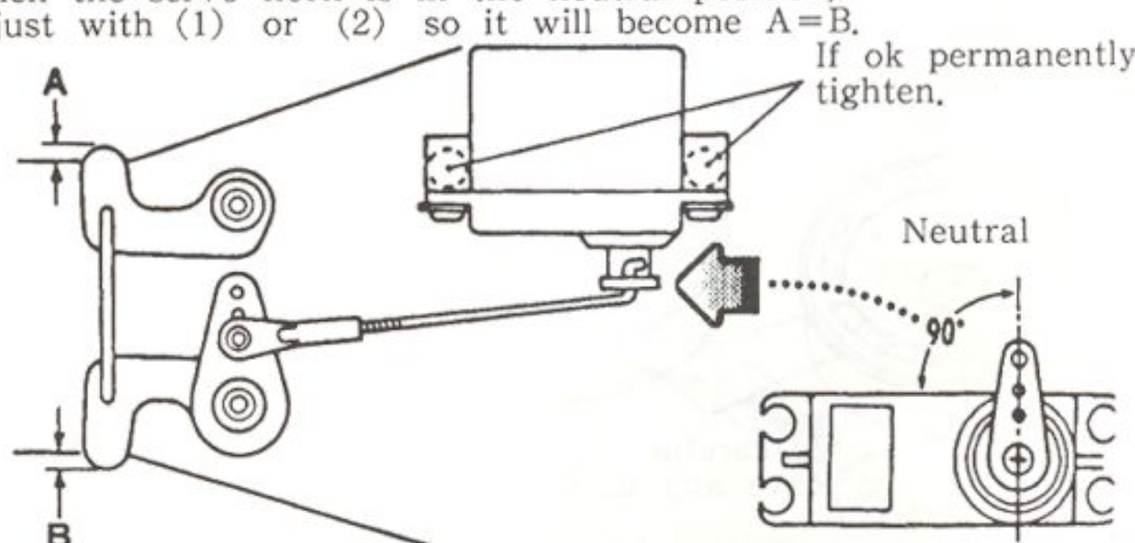


(1) Adjust servo by moving back and forth.



(2) Adjust by screwing in or out the rod.

When the servo horn is in the neutral position, adjust with (1) or (2) so it will become A=B.



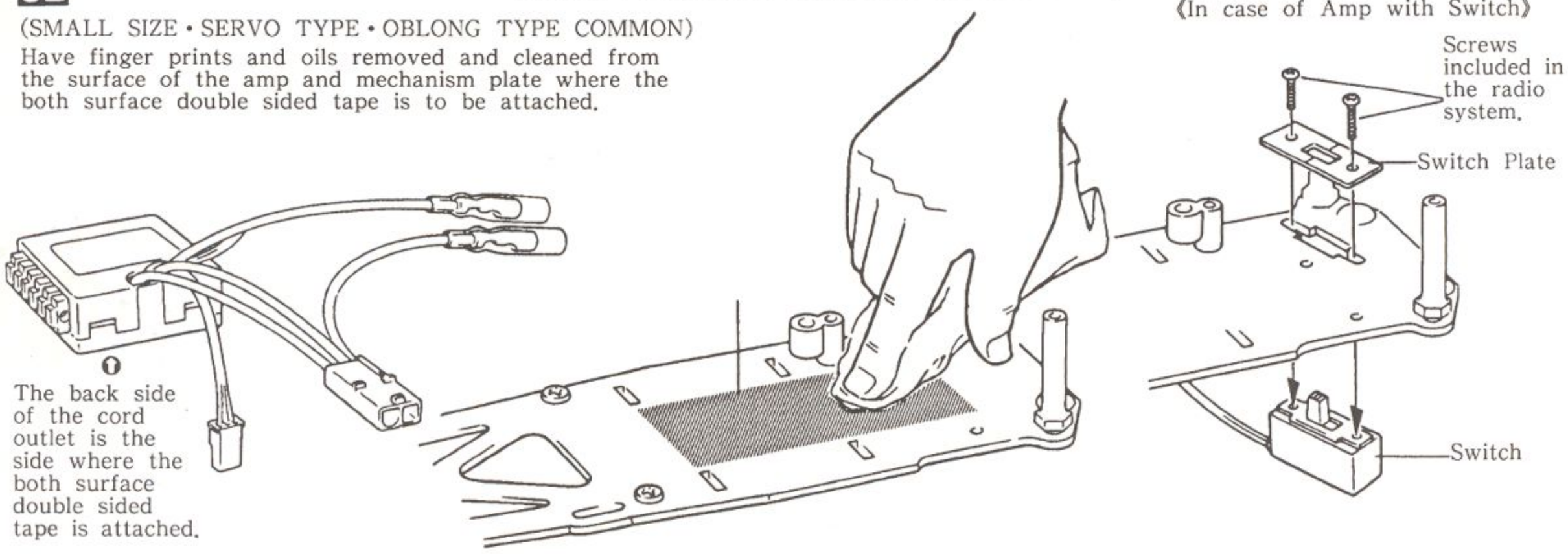
32 INSTALLATION OF AMP

IN GENERAL THERE ARE 3 TYPES OF SPEED CONTROL AMP, SMALL TYPE, SERVO TYPE AND OBLONG TYPE.

(SMALL SIZE • SERVO TYPE • OBLONG TYPE COMMON)

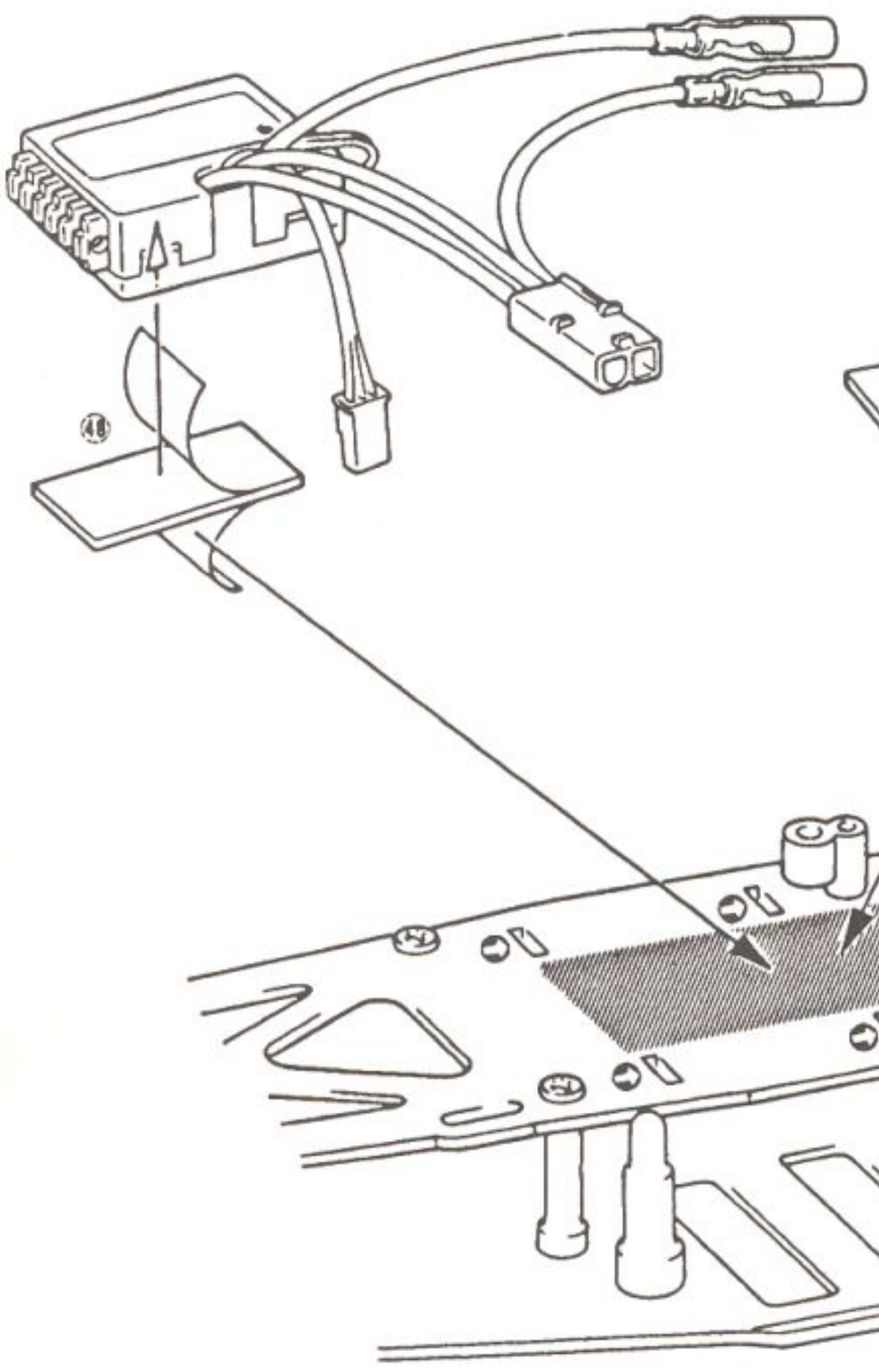
Have finger prints and oils removed and cleaned from the surface of the amp and mechanism plate where the both surface double sided tape is to be attached.

《In case of Amp with Switch》

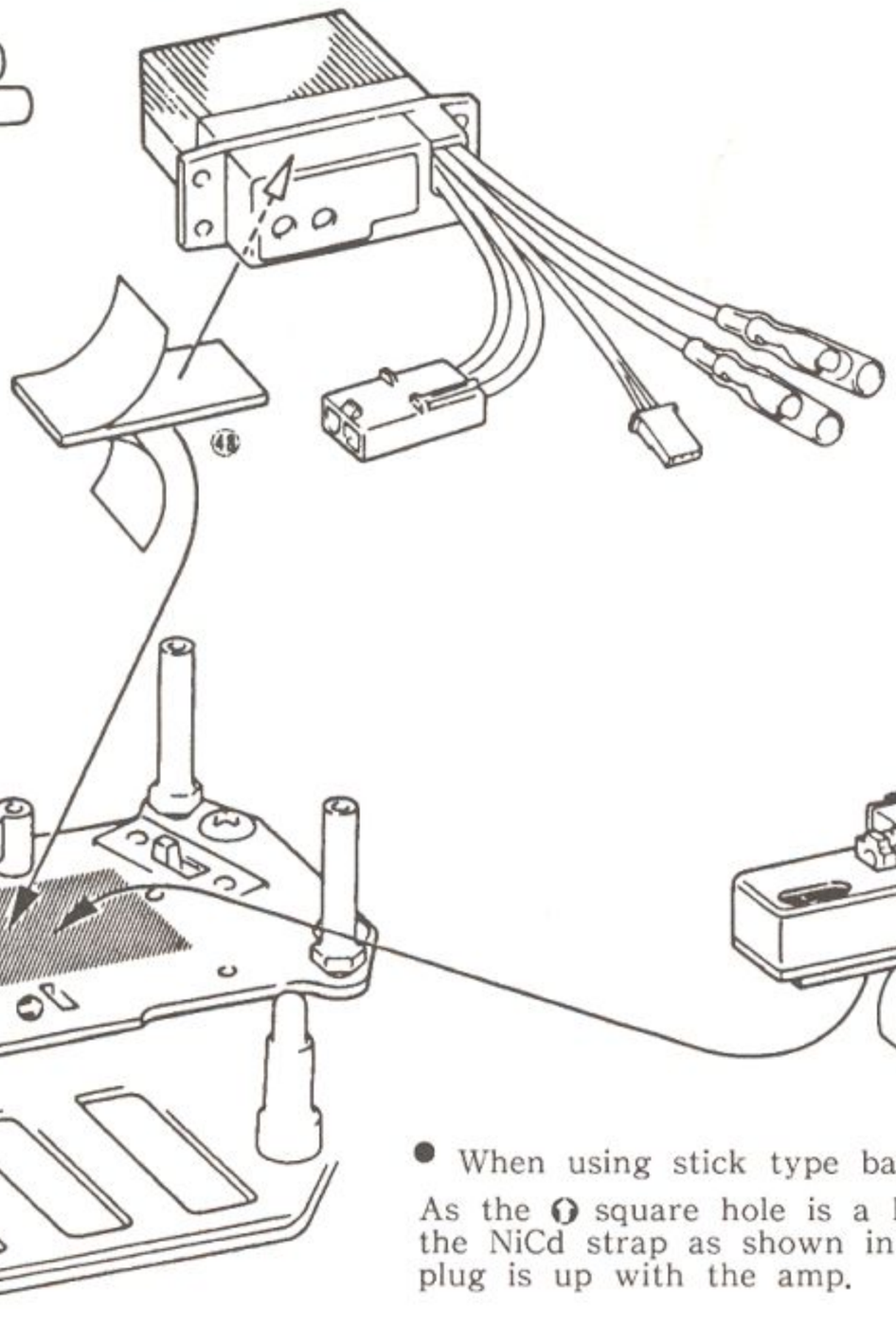


• Install so that the cords exit will come to the left side. • Cut the (48) double sided tape (UTP−2) to match the amp and switch.

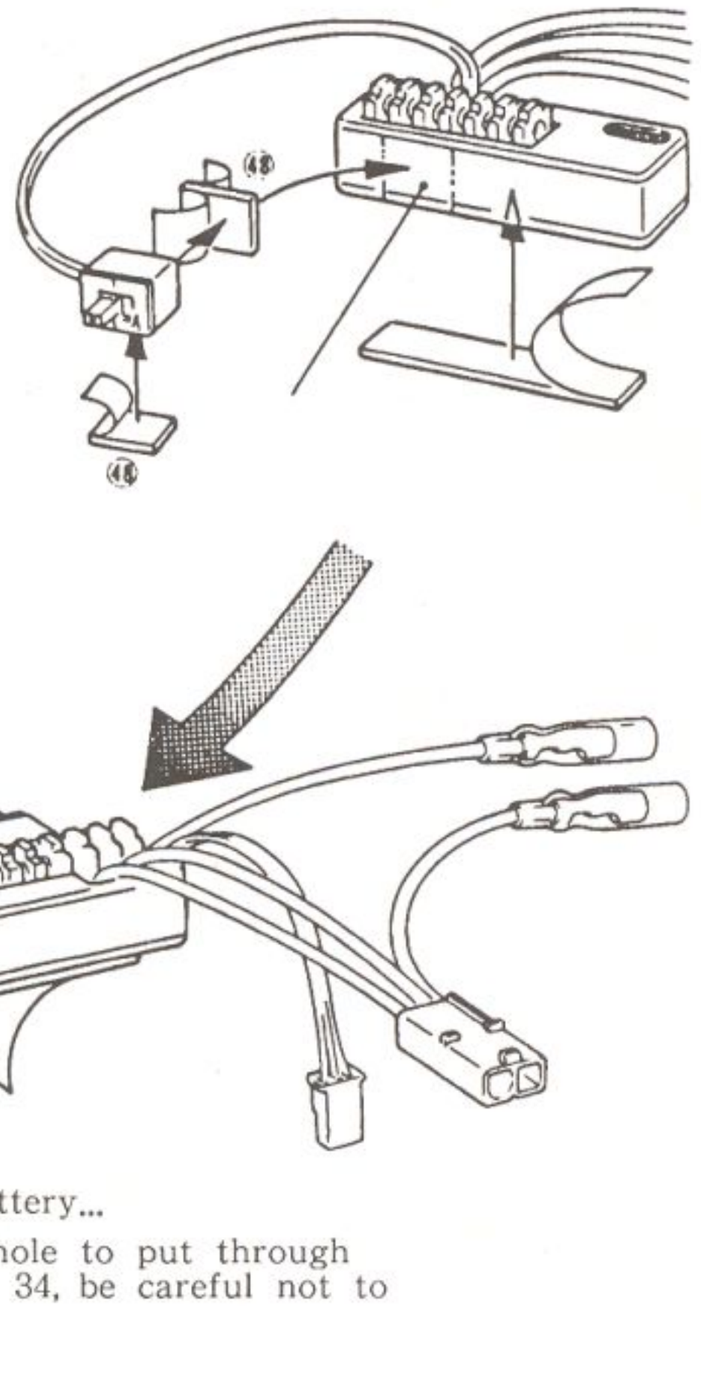
(SMALL TYPE)



(SERVO TYPE)



(OBLONG TYPE)

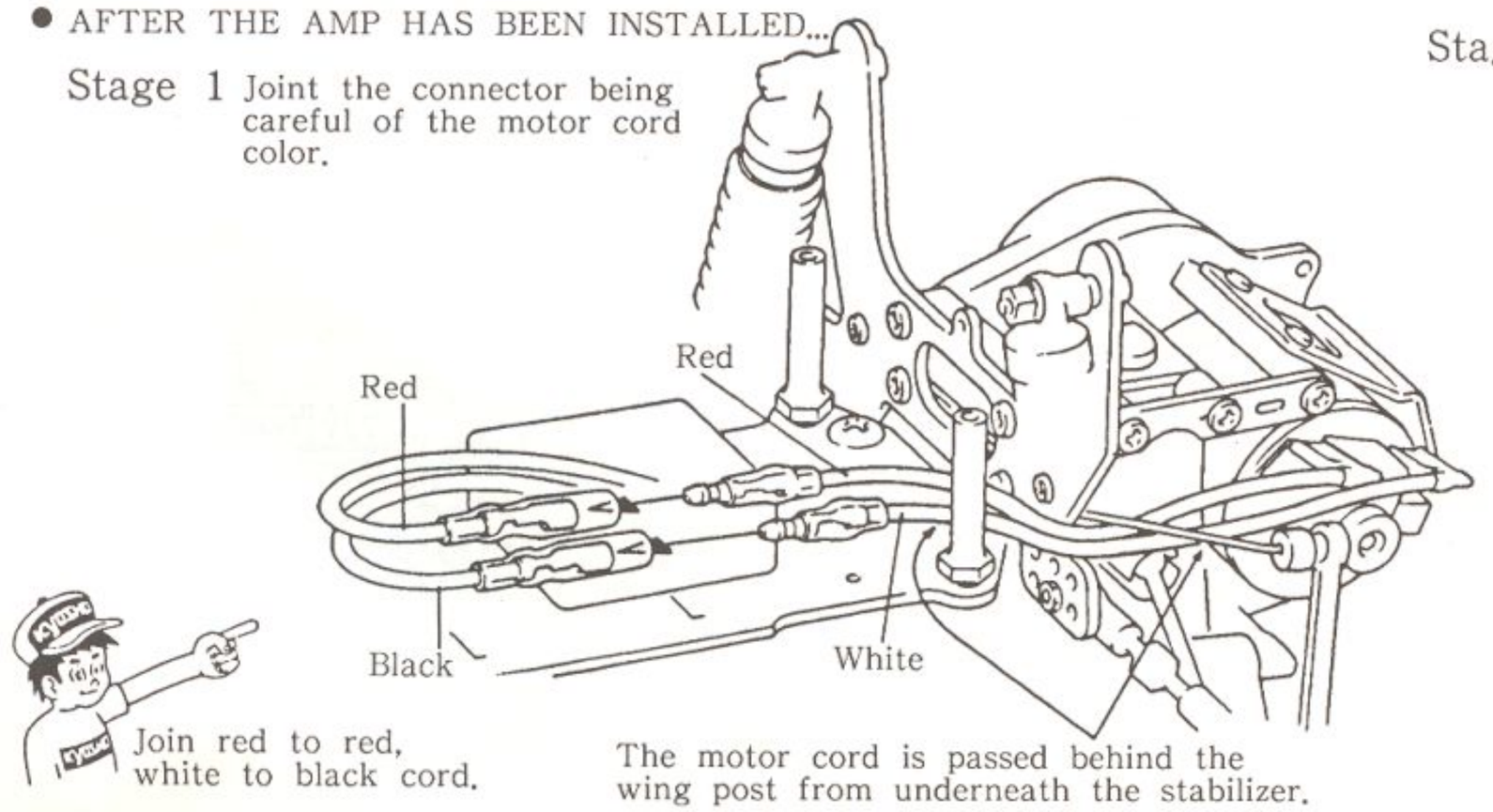


• When using stick type battery...

As the ❶ square hole is a hole to put through the NiCd strap as shown in 34, be careful not to plug is up with the amp.

• AFTER THE AMP HAS BEEN INSTALLED...

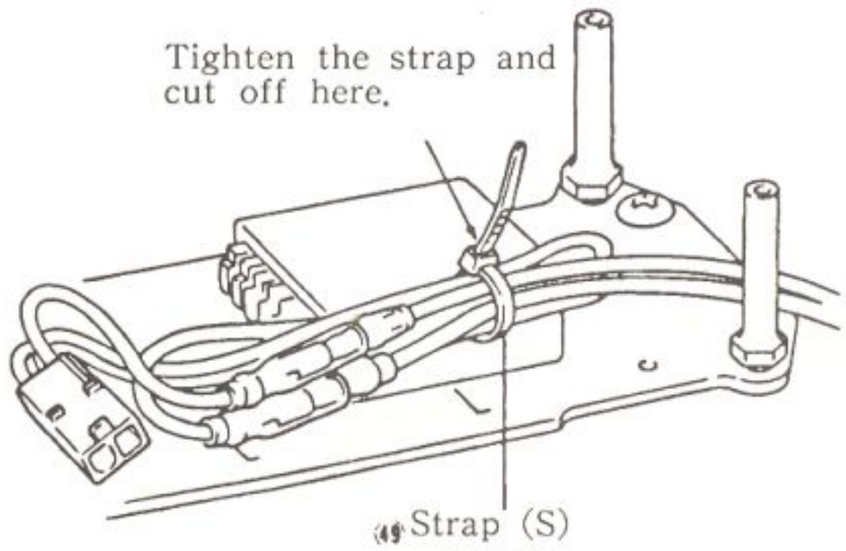
Stage 1 Joint the connector being careful of the motor cord color.



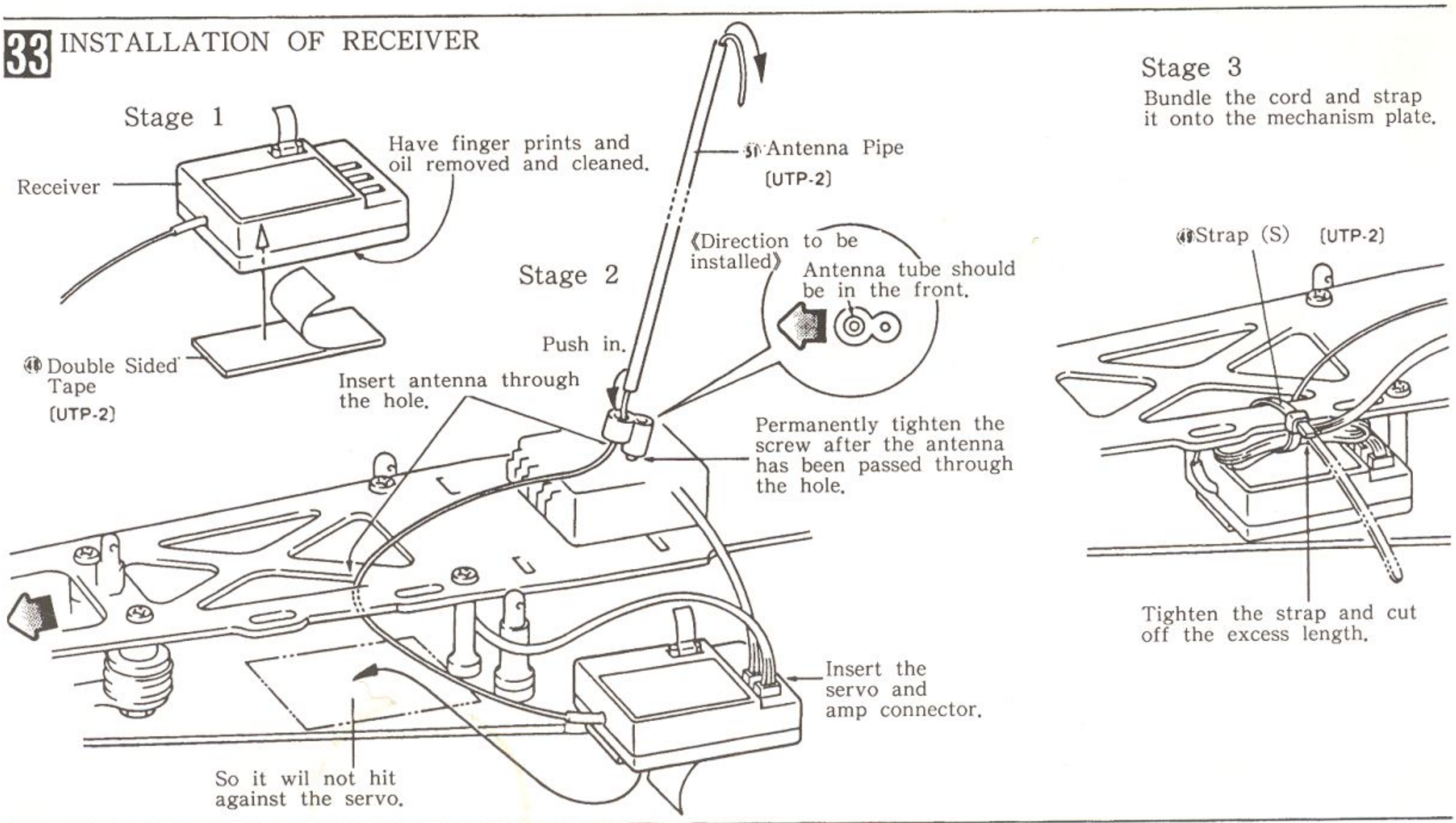
Join red to red, white to black cord.

The motor cord is passed behind the wing post from underneath the stabilizer.

Stage 2 In case the cord is too long, bundle it neatly with the strap.



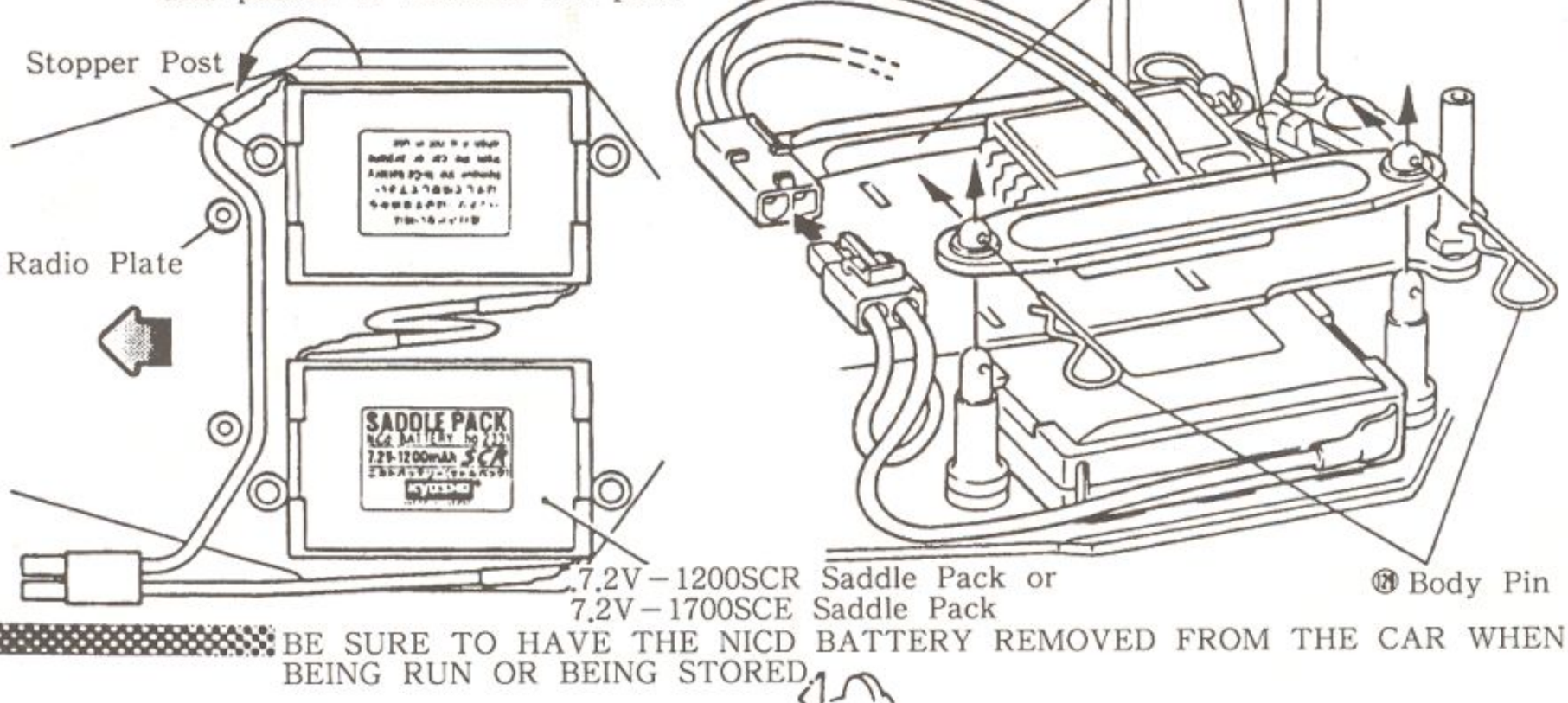
33 INSTALLATION OF RECEIVER



34 INSTALLATION OF BATTERY

Stage 1 Set the saddle pack onto the chassis in the direction shown in the diagram.

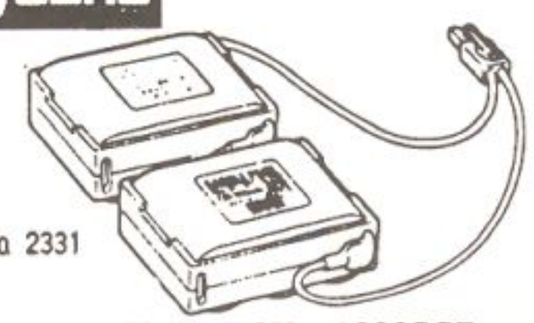
Stage 2 The terminal of the battery connector black cord should be bent as shown in the diagram and passed in between the post.



* Electricity flows through the chassis being used for this car so be very careful of battery and wires short circuiting.

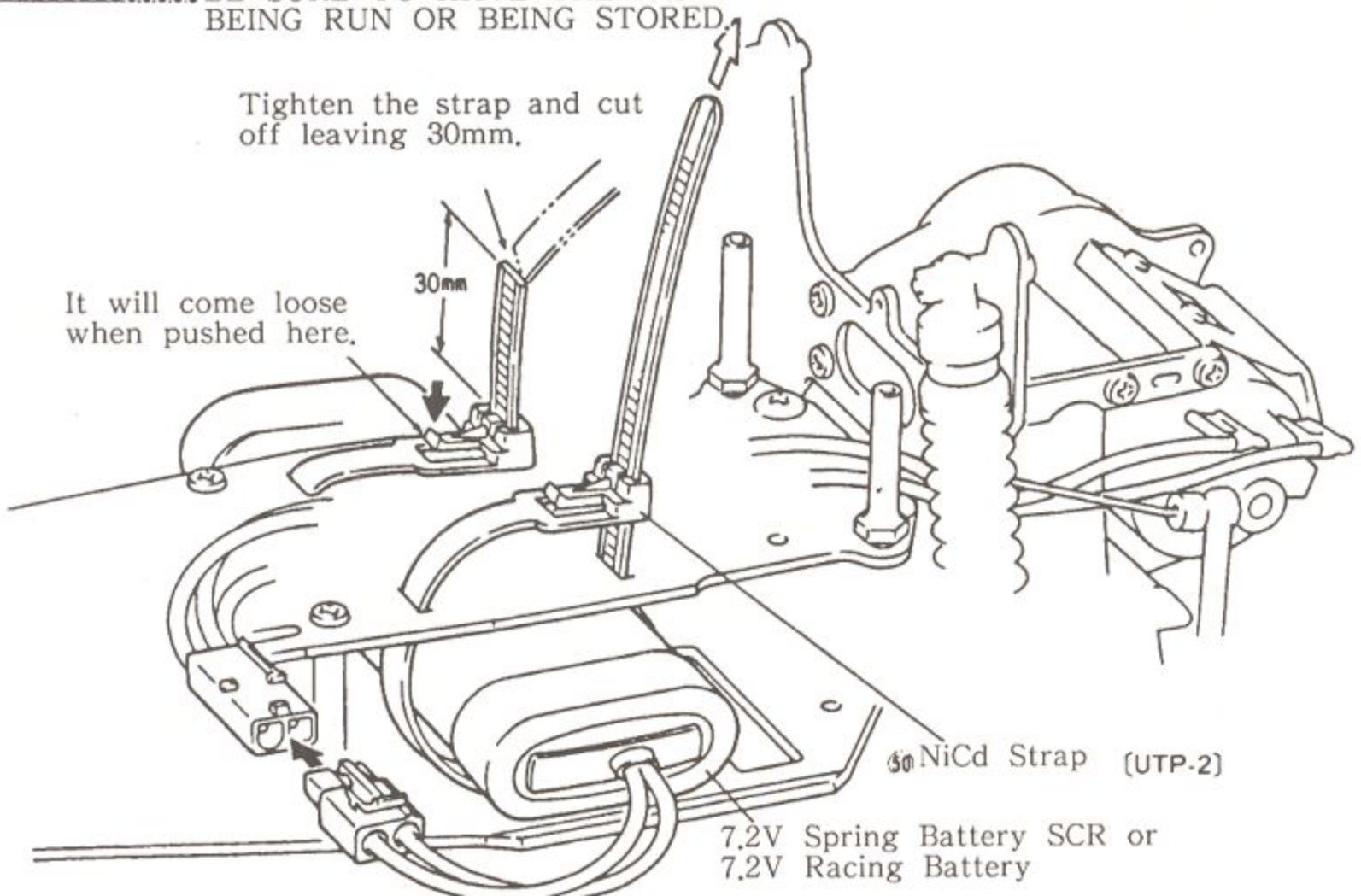
㊽ Battery Stopper (UTP-6)

KYOSHO



Kyosho offers 7.2V−1200SCR and 7.2V−1700SCE Saddle Pack as recommended battery for experienced driver. (Incl. Hard battery case)

BE SURE TO HAVE THE NICD BATTERY REMOVED FROM THE CAR WHEN IT IS NOT BEING RUN OR BEING STORED.

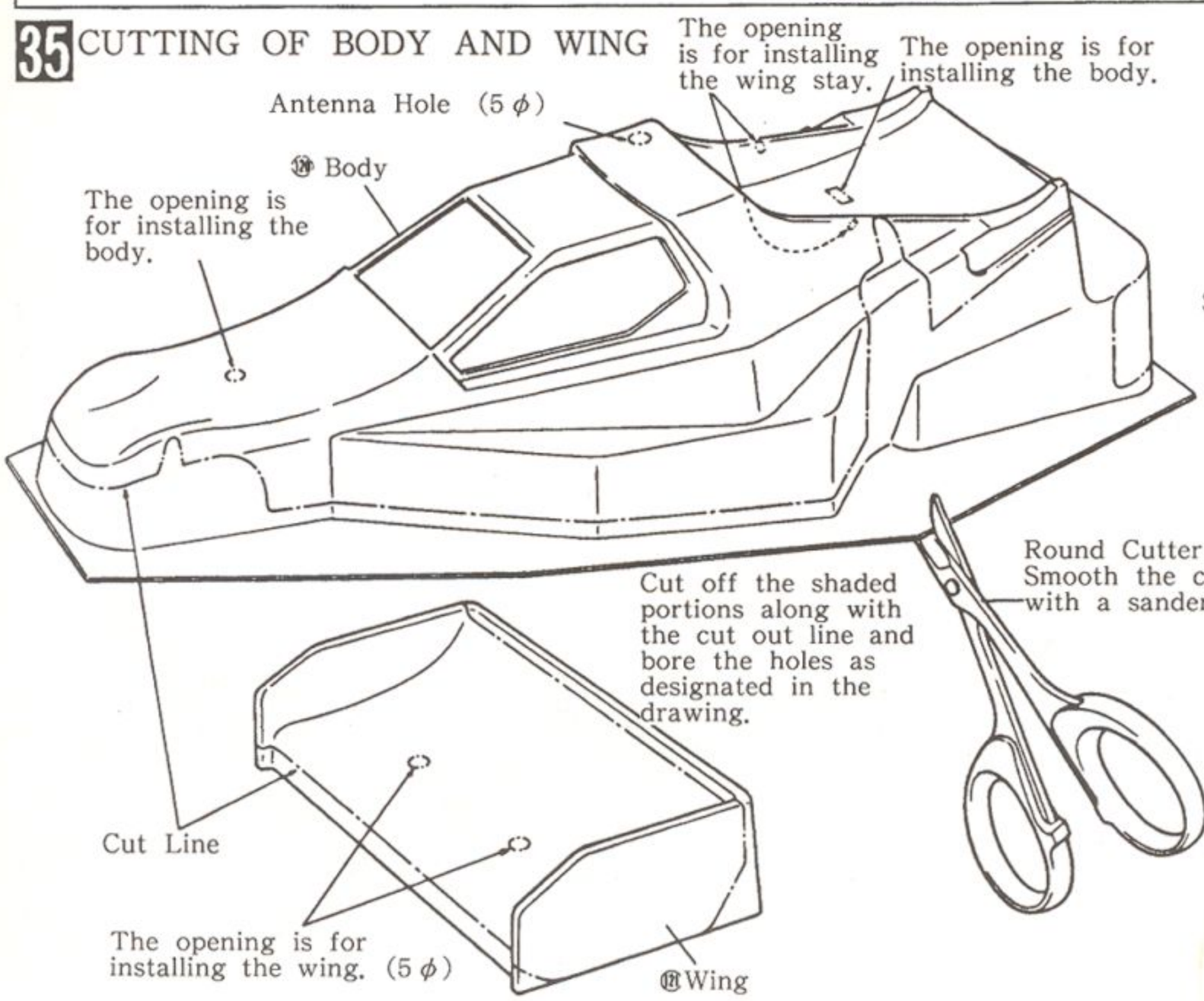


KYOSHO

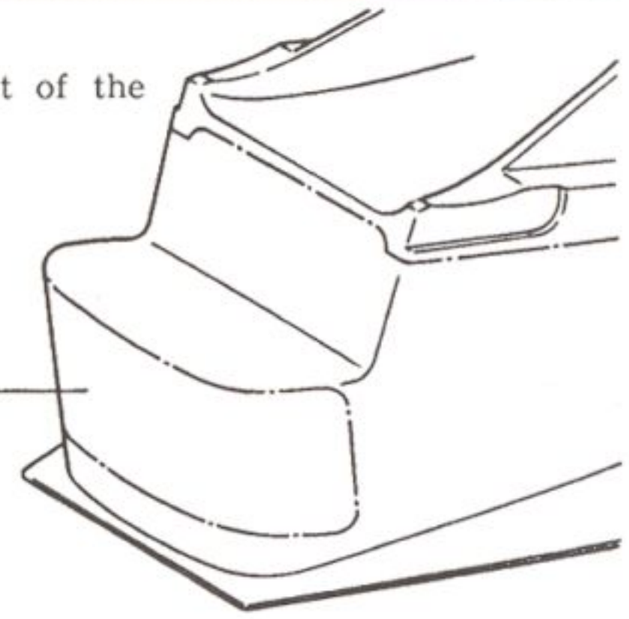
•Select a high performance NiCd battery pack •which is powerful enough to drive a model •buggy car vigorously. Kyosho offers the •7.2V Sprint Battery SCR which is prepared •for the buggy car specially.

No 2310

35 CUTTING OF BODY AND WING

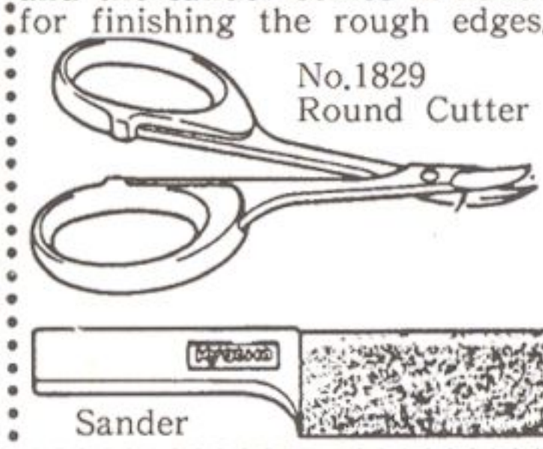


《Rear Part of the Body》



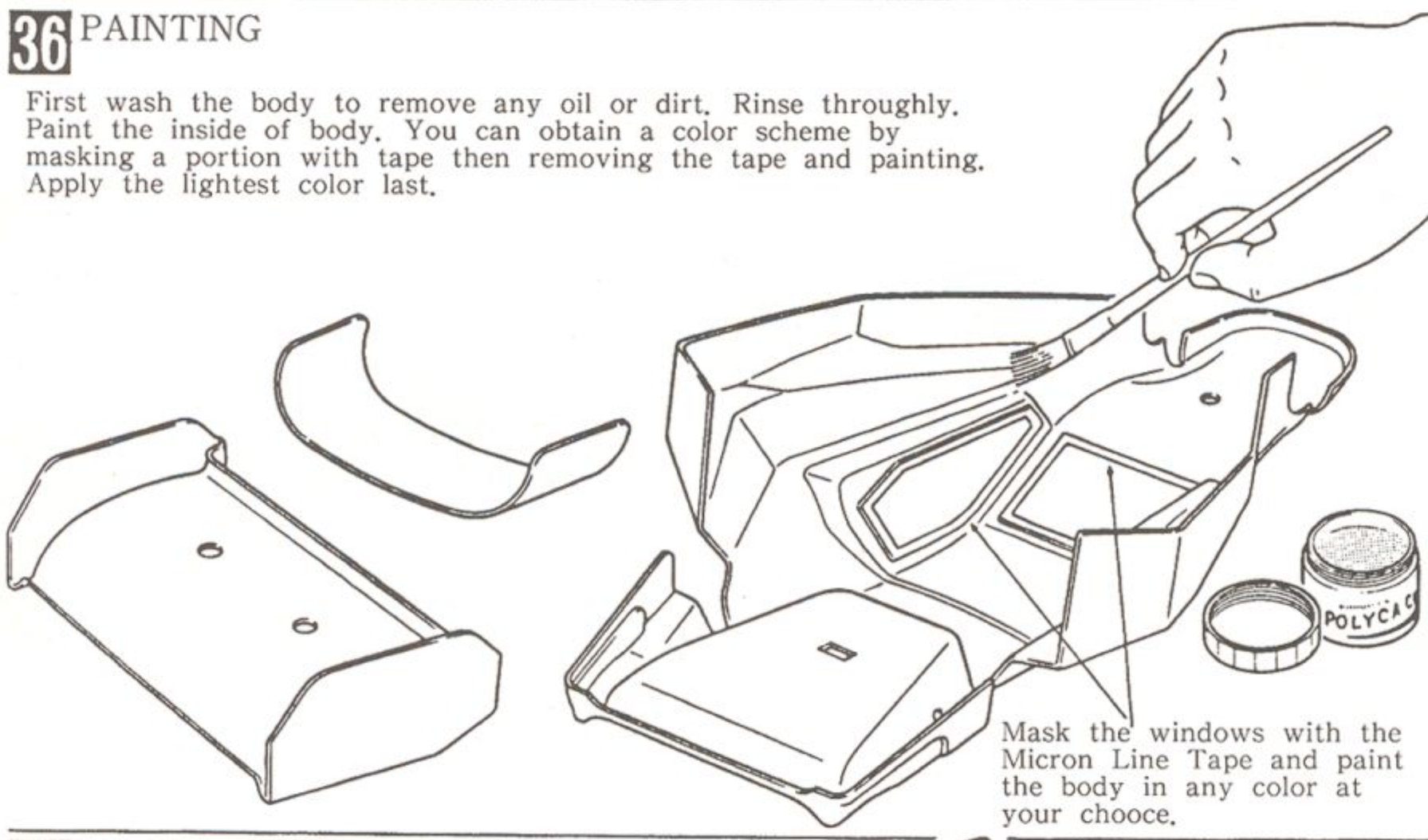
KYOSHO

- These special Lexan Scissors make trimming bodies a breeze and the sander comes in handle for finishing the rough edges.



36 PAINTING

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



KYOSHO

- Micron Line Tape
  - No.1841...1mm
  - No.1842...1.5mm
  - No.1843...2.5mm
  - Color
  - White, Red
  - Yellow, Green
  - Blue & Black

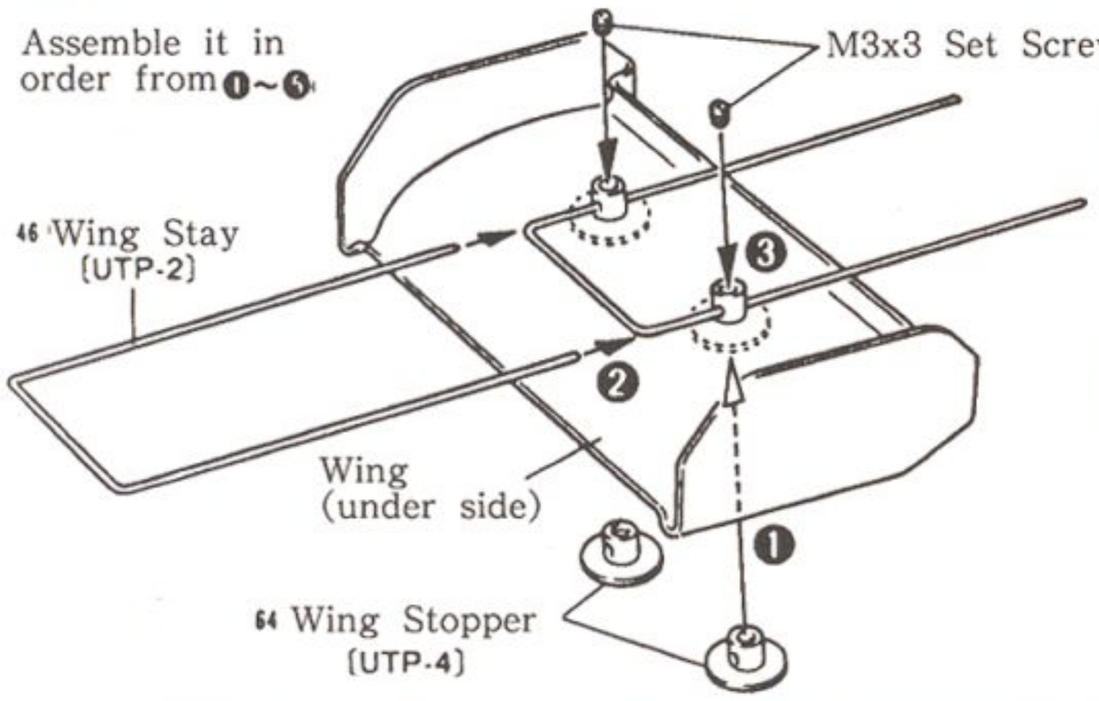
KYOSHO

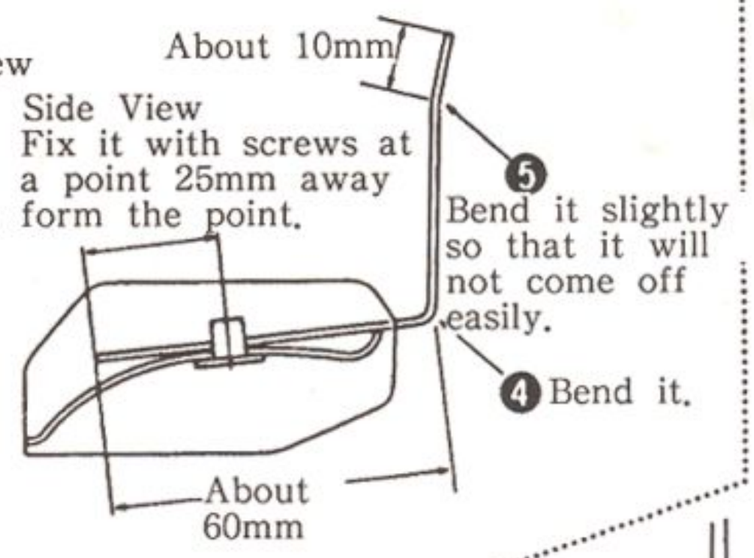
- Polica Color No.2230
- White,Red,Yellow,
- Green,Blue,Sky Blue,
- Orange,Black,Violet,
- F.Pink,Yellow Green
- & Orange

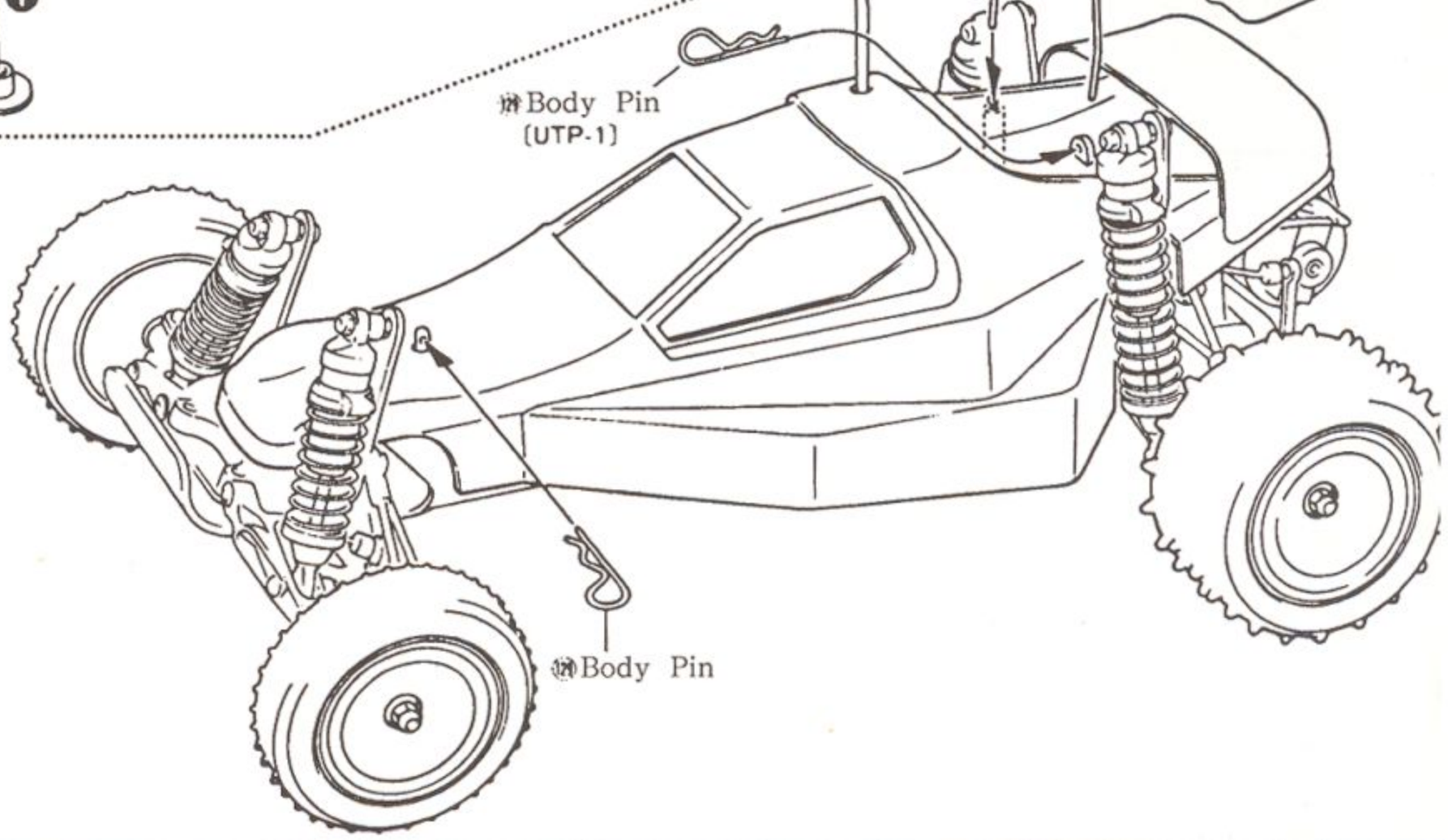
37 APPLY OF DECAL

Cut off the decals with a scissors without leaving any blank space. The below decals should be attached in one area (block). Do not cut off in scattered pieces.
Do not rush to attach the decal without planning. Attach after determining the position by placing it on the location you would like to attach with the back protector sheet still on and then attach.
To prevent air bubbles from forming start by sticking the center part of the decal onto the surface first and then rub towards the outside and attach. (Special care is necessary when attaching large size decals.)

38 ASSEMBLY OF WING AND INSTALLATION OF BODY

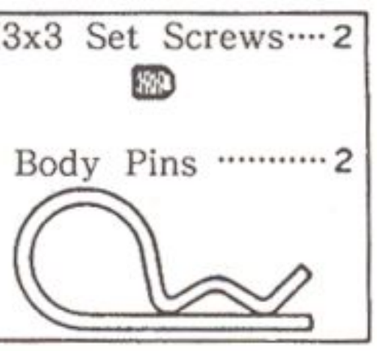






M3x3 Set Screws····2

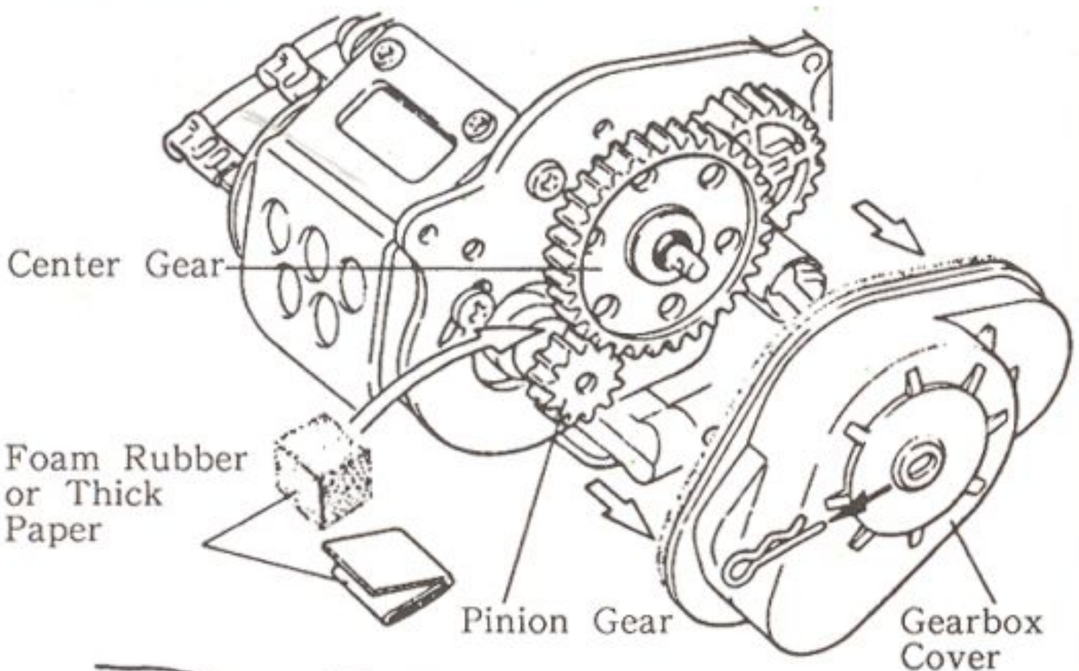
Body Pins ·····2



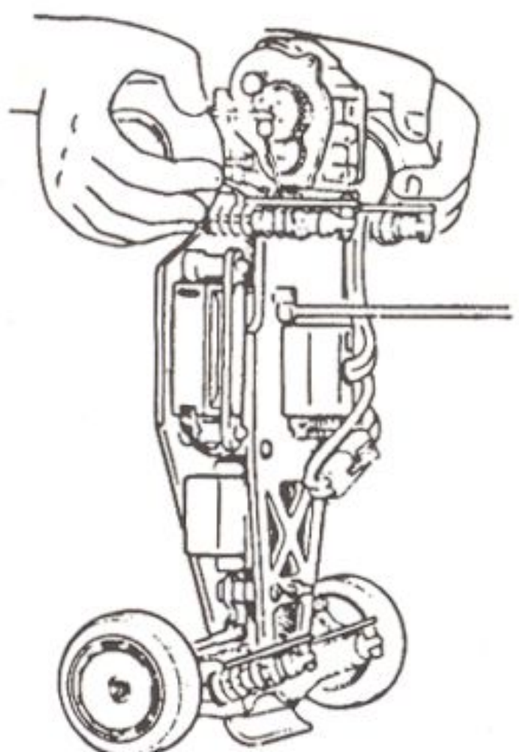
[Adjustment of Ball Differential after Assembly]

The ball differential gear has been adjusted as shown at the left column. But after the assembly, take a look in the following ways if the cap screw is tightened properly.

❶ Remove the gearbox cover first, then put a piece of foam rubber of thick paper between the center gear and the pinion gear to lock them.

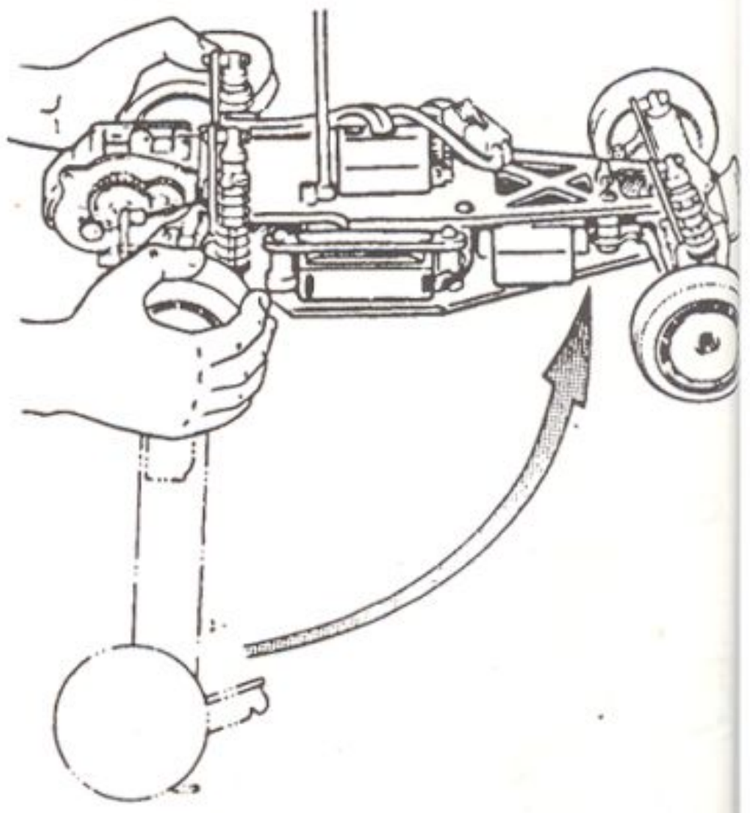


❷

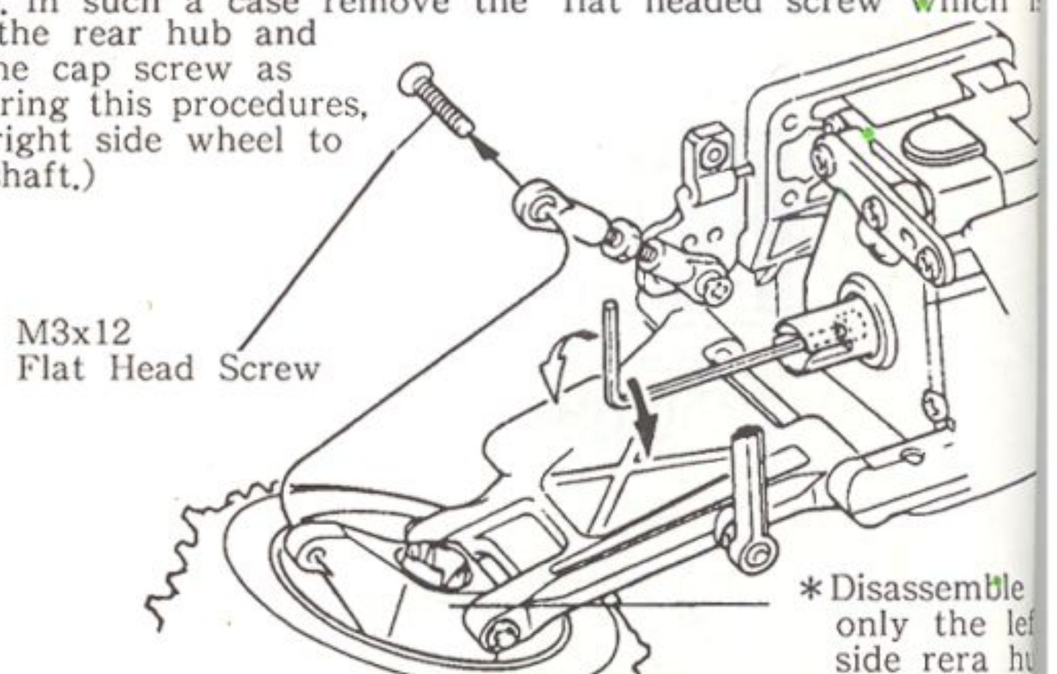


Hold the rear wheels with your both hands and raise the model vertically.

❸ Swing the model car upward by holding the rear wheels. The best adjusted model will be raised to become horizontal and not farther.

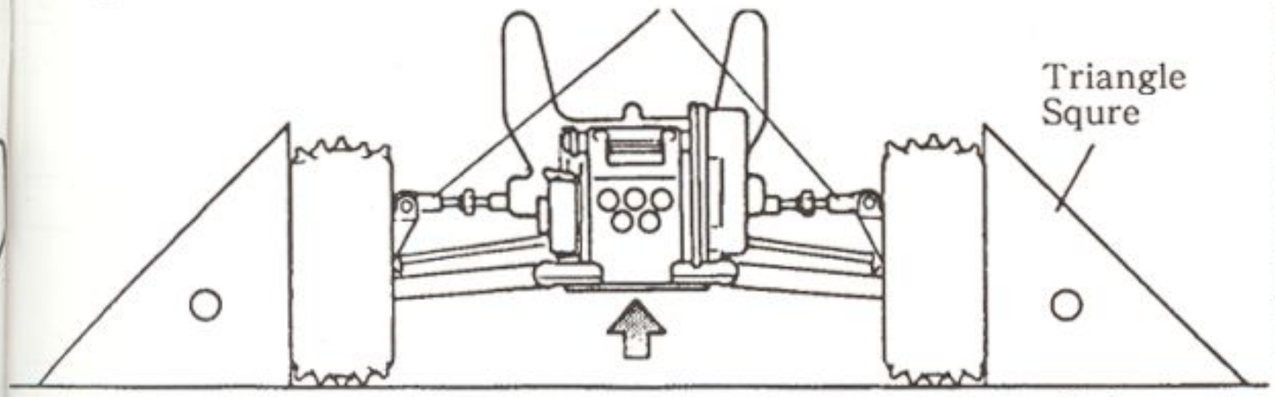


❹ If the model goes up beyond the horizontal position, it indicates that the cap screw has been tightened excessively. Conversely if it does not reach to the horizontal line,tightening of the cap screw is inadequate. In such a case remove the flat headed screw which is fastening the rear hub and readjust the cap screw as shown.(During this procedures, hold the right side wheel to lock the shaft.)

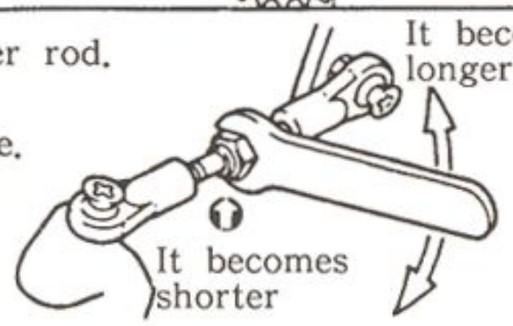


SETTING GUIDE (1)

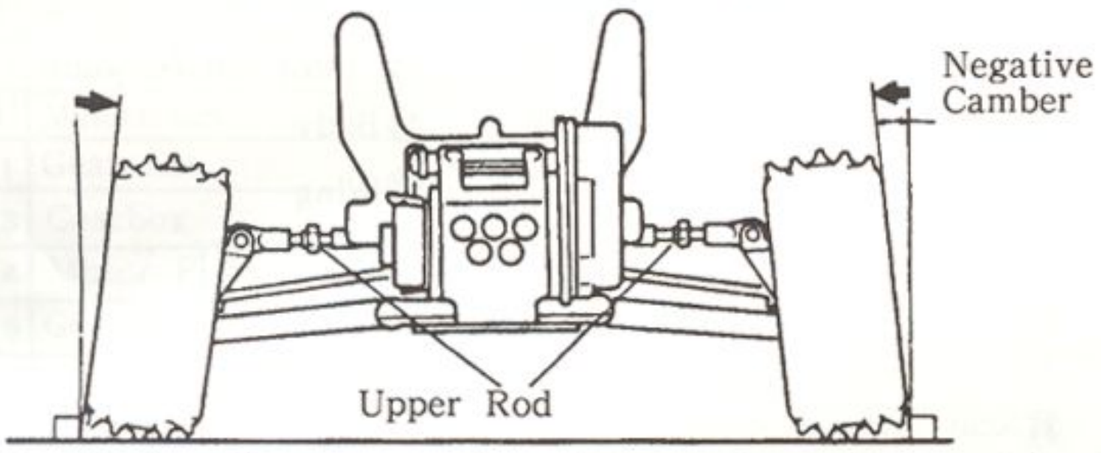
[Basic Setting 1]
Place the model car on a flat surface, and keep the car with the maximum body clearance, and adjust length of the front and rear upper rods so that the wheels stand at a right angle to the ground.



• The way of adjustment of uppeer rod.
As same as tie rod, it can be adjusted in the way right picture.

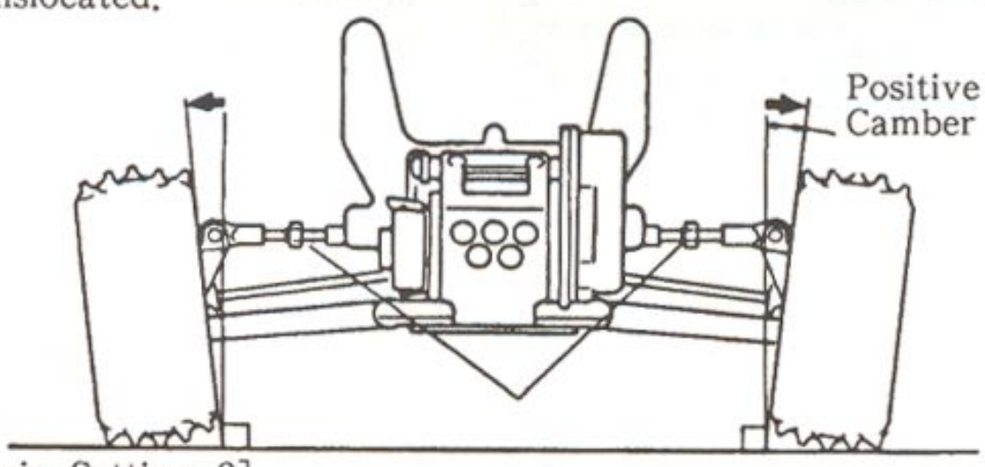


• By adjusting the upper rod shorter, you will have a trait of negative camber. With negative camber adjustment on the front wheels, you will have sharper steering tendency, while on the rear wheel, the gripping power becomes higher.

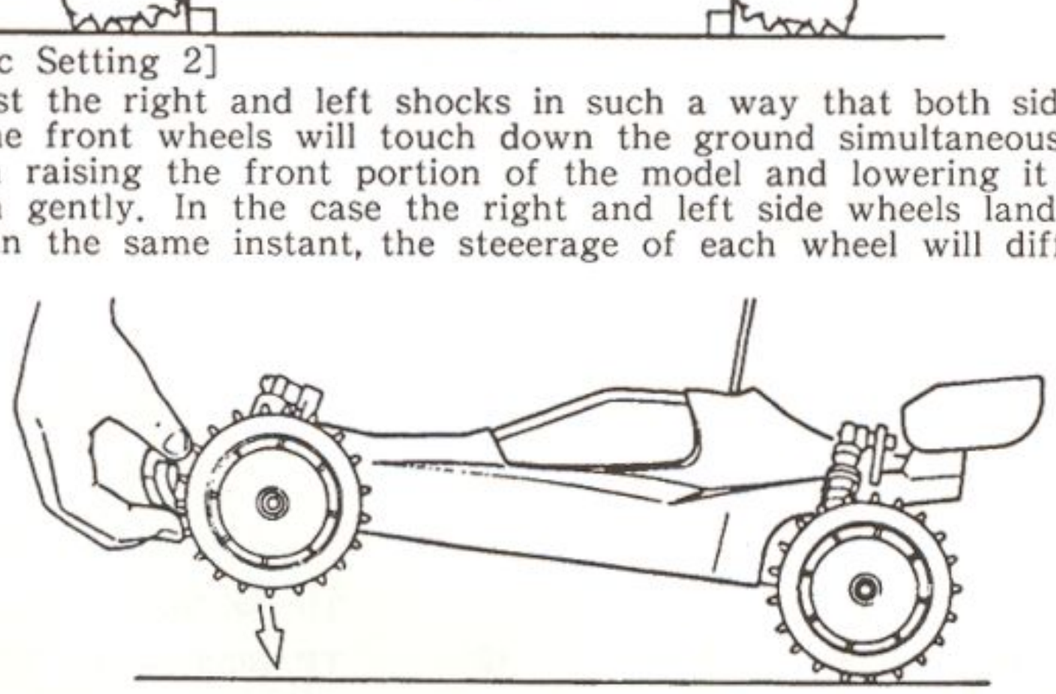


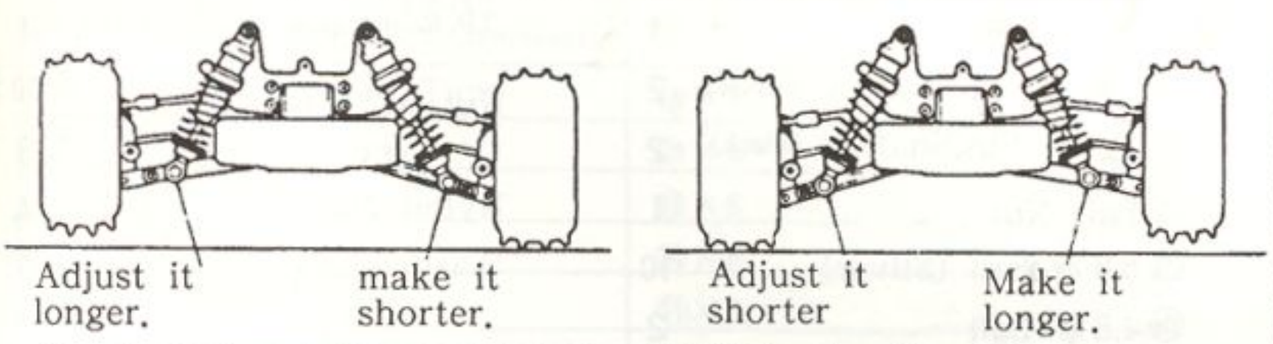
• By lengthening the upper rod, positive camber adjustment is gained. With positive camber on the front wheels, you will have a trait of under steering, while on the rear wheel you will have the car with over steering traits.

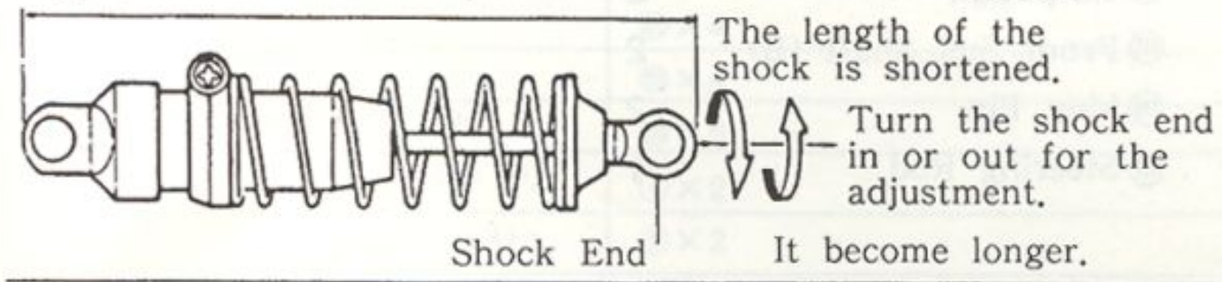
*Excessive positive camber adjust may make the swing shaft dislocated.



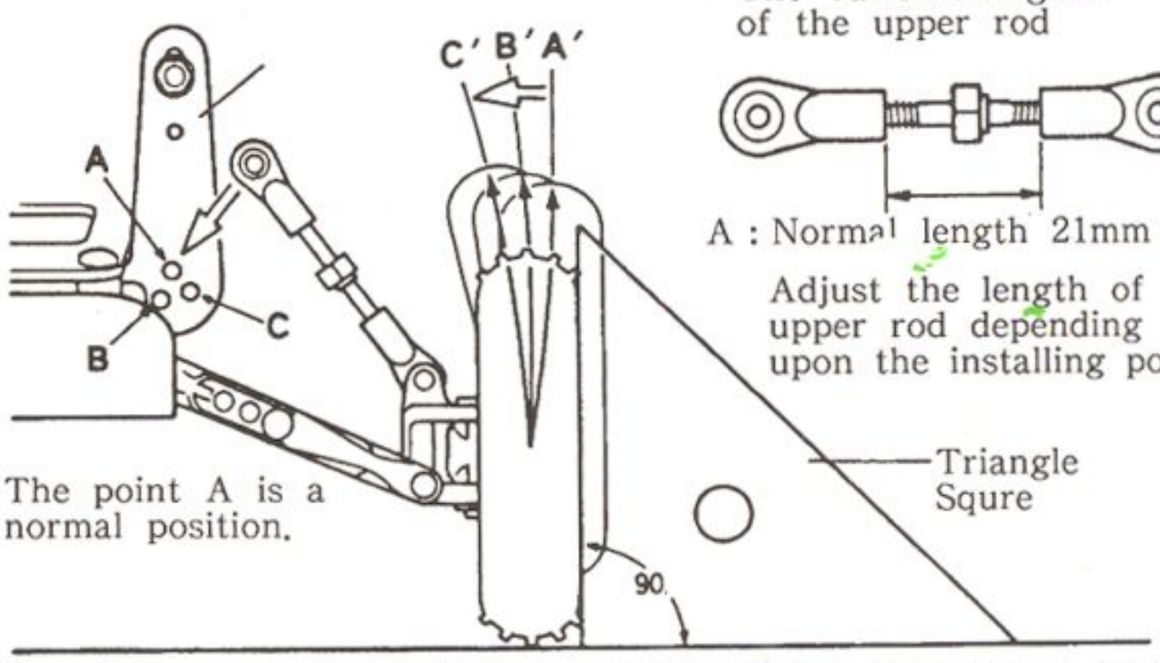
[Basic Setting 2]
Adjust the right and left shocks in such a way that both sides of the front wheels will touch down the ground simultaneously when raising the front portion of the model and lowering it down gently. In the case the right and left side wheels land not in the same instant, the steeerage of each wheel will differ.







[Correlation between instsalling Position of Front Upper Rod and Camber Angle]
The installing points A,B, and C on the front shock stay for the upper rod correspond to A',B' and C' which are the maximum camber angle when the front suspension arms swing down to the lowest position.

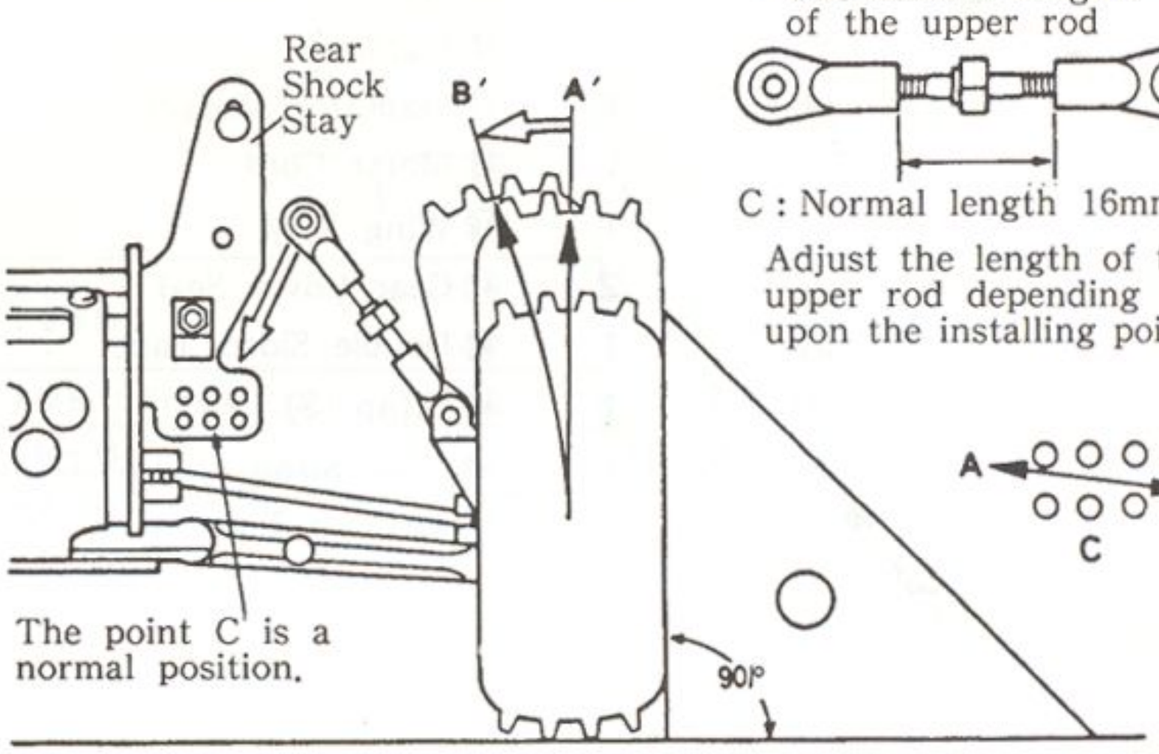


• The various lengths of the upper rod

A : Normal length 21mm

Adjust the length of the upper rod depending upon the installing point.

[Correlation between installing position of the Rear Upper Rod and Camber Angle]
The installing points A and B on the upper rod plate will result in the positions of the rear camber angle A' and B' when the rear suspension, arms sink the most.

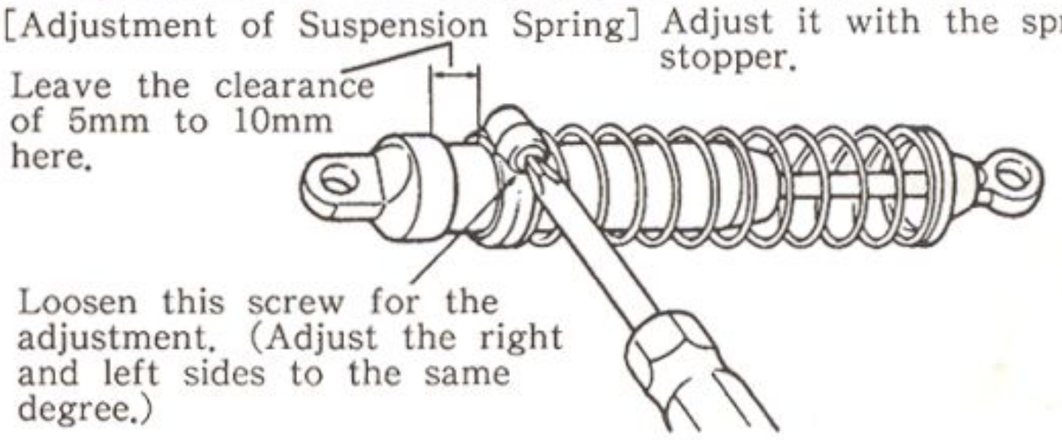


• The various lengths of the upper rod

C : Normal length 16mm

Adjust the length of the upper rod depending upon the installing point.

[Adjustment of Suspension Spring] Adjust it with the spring stopper.



[Adjustment of Shock Oil and Spring]

Front (With lighter shock oil / With less spring tension) → Quicker steering response

Front (With heavier shock oil / With more spring tension) → Slower steering response

Rear (With lighter shock oil / With less spring tension) → More traction

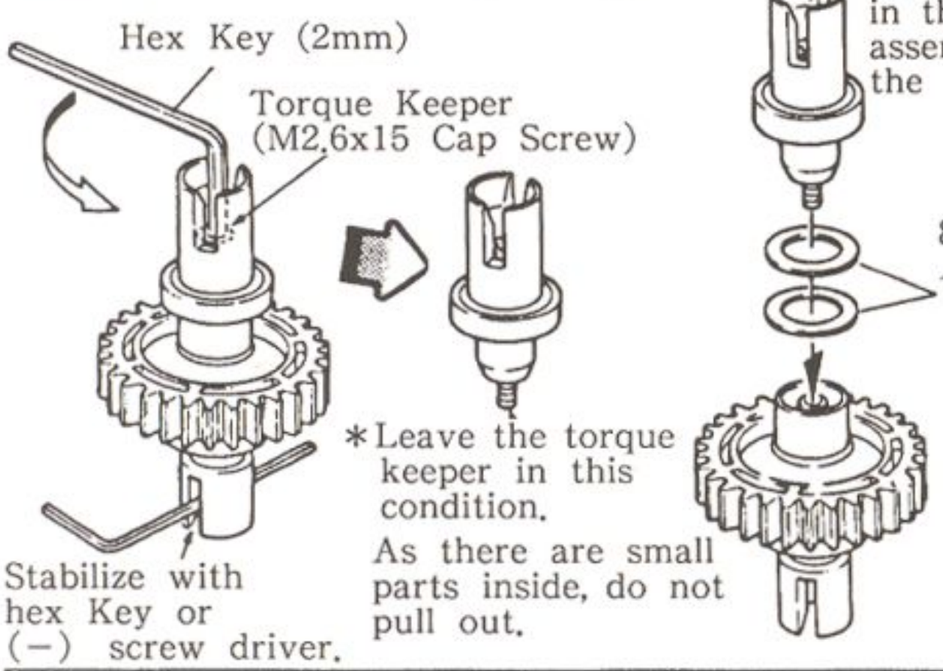
Rear (With heavier shock oil / With more spring tension) → less traction

[Adjustment of Hardness of Shock Action]
*Take this chart just as general indication.

No.1951 Oil Set	Yellow	Green	Yellow	Red	Green	Red
Piston	○	○	○	○	○	○
Hardness	← Harder					Softer →

SETTING GUIDE (2)

[When inserting Shim for Ball Differential adjustment...]
With the torque keeper side facing up, disassemble up to the extentas shown in the diagram.
Stage 1 Remove the torque keeper.



*Leave the torque keeper in this condition.
As there are small parts inside, do not pull out.

Depending on the amount of play, add one or two shims in the location shown in the diagram and assemble it back to the original form.

[Relation between Gear Ratio and the Motor]

Pinion Gear (No.of Teeth)	15T	16T	17T	18T	19T	20T	21T	22T	23T	24T	25T
Gear Ratio	11.1	10.4	9.8	9.2	8.7	8.3	7.9	7.5	7.2	6.9	6.6
Proper Motor	Le Mans Speed 240T SPA 240WS										
			Le Mans 240ST, H240S								
						Le Mans 360GOLD					

MEMO

PARTS LIST

Key #	Parts Name	Q'ty
①	Front Shock Stay	1
②	Rear Shock Stay	1
③	4 φ x8 Bearing	6
④	5 φ x10 Bearing	6
⑤	Center Gear collar	1
⑥	Motor Guard	1
⑦	Motor Plate	1
◎⑧	8 φ x14 Bearing	2
◎⑨	Differential Body	1
◎⑩	Differential Shaft (A)	1
◎⑪	Differential Shaft (B)	1
◎⑫	Pressure Plate	2
◎⑬	8 φ x10 Collar	1
◎⑭	Torque keeper M2.6x15 Cap Screw	1
◎⑮	Tapered Washer	4
◎⑯	Differential Ball	10
◎⑰	Thrust Ball	8
◎⑱	Thrust Washer	2
●⑲	Front Shock Shaft	2
●⑳	Rear Shock Shaft	2
●㉑	Front Shock Case	·2
●㉒	Rear Shock Case	·2
●㉓	Front Shock Spring	·2
●㉔	Rear Shock Spring	·2
●㉕	Spring Holder	·4
●㉖	Shock Cap	·4
●㉗	Spring Stopper	·4
●㉘	Shock End	·4
●㉙	E Ring (E2.5)	※16
㉚	Final Pinion	1
㉛	Center Gear	1
㉜	Counter Gear	1
㉝	Swing Shaft	2
㉞	Wing Post	2
㉟	Drive Washer	2
㊱	Rear Wheel Shaft	2
㊲	Front Suspension Arm	2
㊳	Rear Suspension Arm	2
㊴	Radio Plate	1
㊵	Gearbox (L)	1
㊶	Gearbox (R)	1
㊷	Stabilizer Link (L)	2
㊸	Stabilizer Link (S)	2
㊹	Stabilizer Stopper	2
㊺	Motor Cord	1
㊻	Wing Stay	·1
㊼	Gear Cover Seal	·1
㊽	Double Sided Tape	·1
㊾	Strap (S)	·2
㊿	NiCd Strap	·2
(51)	Antenna Pipe	·1
(52)	Shock Oil (Green)	·1
(53)	Screw Cement (Locktite)	·1
(54)	Silicon Grease	·1
(55)	Condensor	1
(56)	Rear Wheel	2
(57)	Front Wheel	·2
(58)	Pinion Gear (20T)	·1
(59)	Center Gear Shaft	·1
(60)	Counter Gear Shaft	1
(61)	2 φ x11 Pin	·※1
(62)	Front Wheel Shaft	·2
(63)	Servo Saver Shaft	·2
(64)	Wing Stopper	·2
(65)	Radio Plate Post	·2
(66)	3 φ x32 Adjust Rod	·4
(67)	3 φ x50 Adjust Rod	·2
(68)	5.8 φ Ball (Black)	·6
(69)	O Ring (P3・Black)	1
(70)	Motor Guard Collar	2
(71)	Shock Piston	4
(72)	Shock Collar (White)	4
(73)	Shock Collar (Black)	4
(74)	Pressure Top	4
(75)	O Ring (P3・Red)	8
(76)	C Ring	※4
(77)	Front Stabilizer	1
(78)	Rear Stabilizer	1
(79)	Rear Suspension Shaft (B)	2
(80)	Stabilizer Ball	2
(81)	Adjust Ball	4
(82)	Sponge Cap	1
(83)	Motor Guard Plate	1
(84)	Servo Saver Spring	1
(85)	Front Bulk Head	1
(86)	Rear Axle Stopper	1
(87)	Rear Bulk Head	1
(88)	Gear Cover	1
(89)	Bumper	1
(90)	Front Hub	2
(91)	Rear Hub	2
(92)	Knuckle Arm (L)	1
(93)	Knuckle Arm (R)	1
(94)	Servo Saver (A)	1
(95)	Servo Saver (B)	1
(96)	Servo Saver (C)	1
(97)	Servo Saver (D)	1
(98)	Servo Saver Collar	2
(99)	Gearbox Hatch	1
(100)	M3 Plastic Nut	·※4
(101)	Servo Stay	·※2
(102)	Shock Collar	·4
(103)	Antenna Post	·1
(104)	Battery Stopper	·2
(105)	Stopper Post	·4
(106)	Stopper Washer (Thiner one)	2
(107)	Stopper Washer (Thicker one)	2
(108)	Ball End (L)	12
(109)	Ball End (S)	1
(110)	Front Sus.Shaft (A) (Silver)	2
(111)	Front Sus.Shaft (A) (Black)	2
(112)	Ball Nut	1
(113)	5.8 φ Ball (Silver)	10
(114)	4.8 φ Ball	2
(115)	Front Sus. Shaft (B)	2
(116)	king Pin	2
(117)	Steering Rod	1
(118)	Center Rod	1
(119)	Motor Guard joint	1
(120)	Body	1
(121)	Wing	1
(122)	Front Tire	2
(123)	Rear Tire	2
(124)	Main Frame	1
(125)	Decal	1
(126)	E Ring (E3) (Black)	※2
(127)	E Ring (E4)	※1
(128)	Hook Pin	※1
(129)	Body Pin	※6
(130)	Hex Key (1.5mm)	1
(131)	Hex Key (2mm)	1
(132)	Hex Key (2.5mm)	1
(133)	Body Hook	1
	Bind Screw M2.6x6	8
	" M3x6	11
	" M3x18	2
	" M3x35	1
	" M3x45	2
	Round Head Screw M2x10	2
	" M3x33	1
	Flat Head Screw M2.6x12	6
	" M3x6	4
	" M3x15	12
	" M4x8	8
	" M4x12	4
	Thruss Screw M4x8	4
	TP Bind Screw M3x8	11
	TP Round Head Screw M3x18	1
	Nut M2.6 (3 kinds)	10
	" M3	8
	Nylon Nut	4
	Washer M3	2
	" M4	2
	" φ 8x12	2
	Set Screw M3x3	5
	" M4x4	1

PURCHASABLE PARTS FOR YOUR KIT

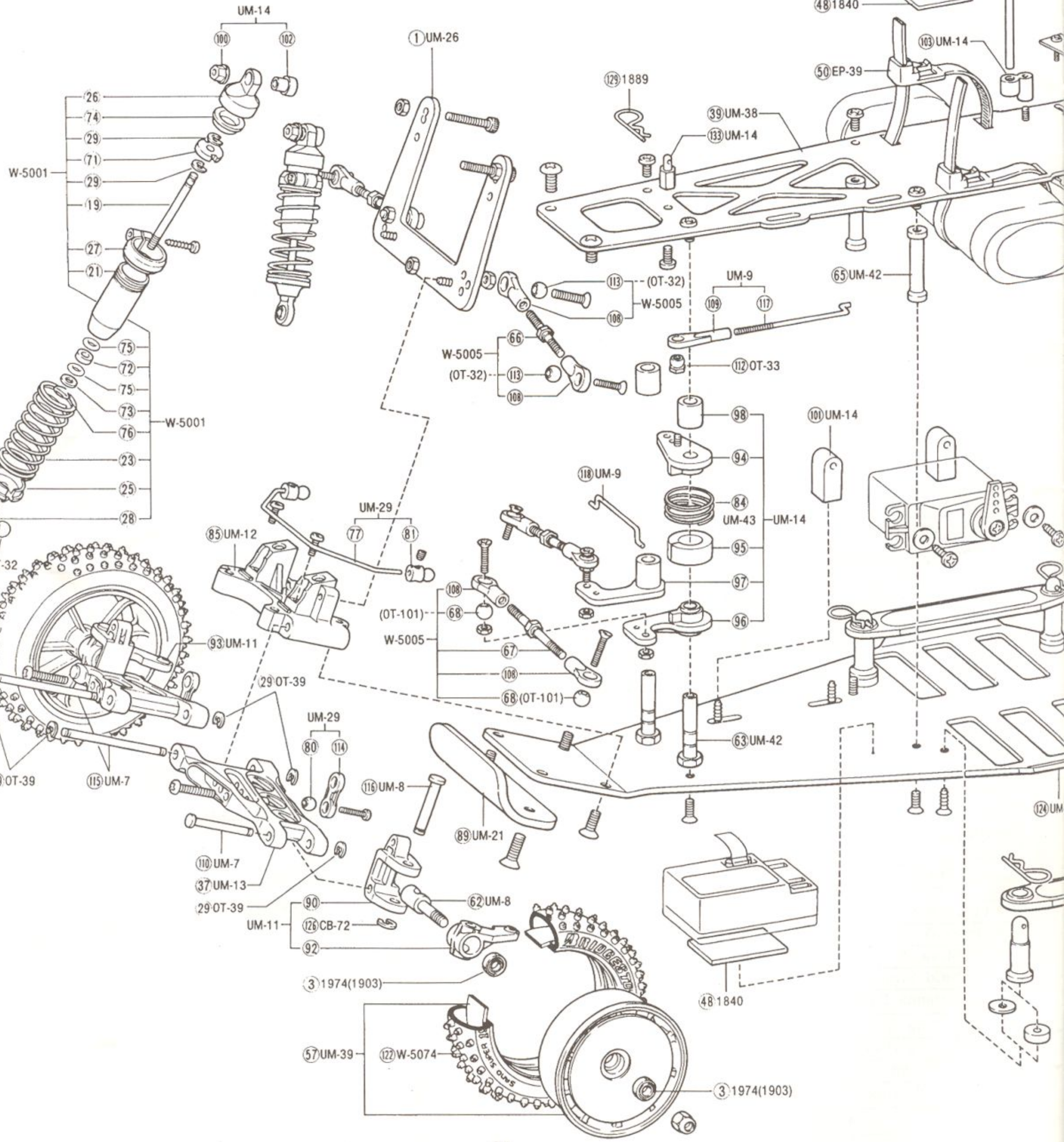
You can purchase replacement and optional parts for your kit. All of the part identified by key number are usually not available singularly, but we offer these parts in convenient parts "packs" which can be purchased separately. To figure out which parts pack you need, find the key number for that part whith the manual.

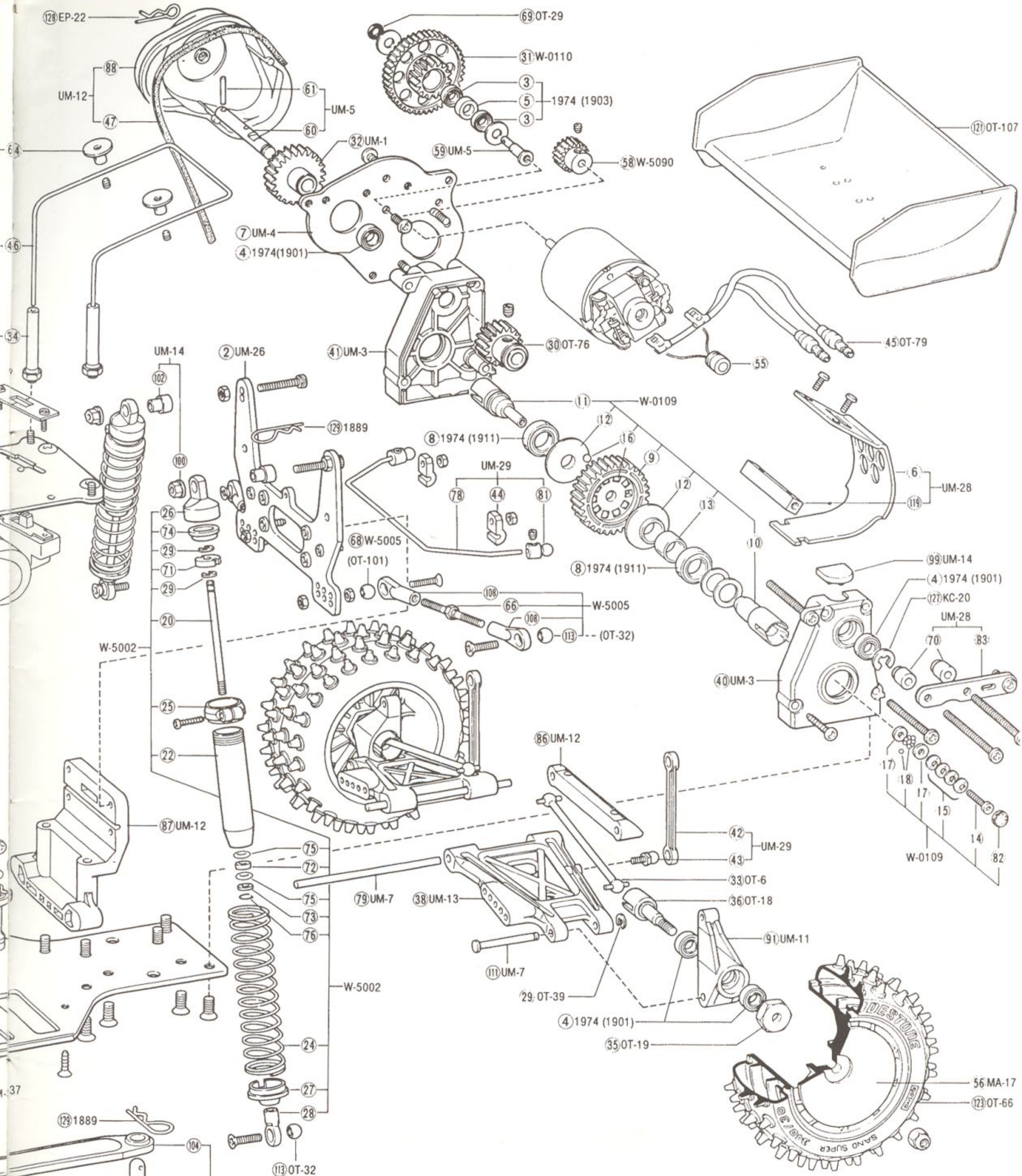
Then consult out parts pack guide below. When referring to the parts you need, always use the Parts Pack Number. For example, if you need a Center Gear Shaft (Key #59) ask your dealer for Kyosho Parts Pack UM-5 (Gear Shaft Set).

OT-6	Swing Shaft	㉝×2
OT-18	Rear Shaft	㊱×2
OT-19	Drive Washer	㉟×4
OT-29	O Ring	㊶×10
OT-32	5.8 φ Ball	㊴×10
OT-33	Ball Nut (M2.6)	㊷×10
OT-38	Silicon Grease	㉞×1
OT-39	E Ring (E2.5)	㉙×10
OT-65	Wing Stay Set	㊻×1 ㉞ ㊹×2
OT-66	Low Profile Tire	㉑×2
OT-76	Hard Final Pinion	㉚×1
OT-79	Motor Cord Set	㊺×1 Set
OT-101	5.8 φ Ball (Black2.6Hole)	㊽×10
OT-107	Wing	㉘×1
OTW-9	Plastic Parts Set	㊿ ㊻ ㊼×2 ㊸×4
MA-17	Wheel Set	㊽×4
UM-1	Gear Set	㉜×1
UM-3	Gearbox	㊵ ㊶×1
UM-4	Motor Plate	⑦×1
UM-5	Gear Shaft Set	㊾ ㊿×1 ㊶×2
UM-7	Suspension Shaft Set	㉗ ㊾ ㊶ ㊺×2
UM-8	Front Shaft Set	㊷ ㊵×2
UM-9	Rod Set	㊶ ㊷×1 ㊾×2
UM-11	Up Light Set	㊷ ㊸×1 ㊾ ㊶×2
UM-12	Bulk Head Set	㊼ ㊸ ㊾ ㊼ ㊵×1
UM-13	Suspension Arm Set	㊼ ㊽×2
UM-14	Servo Saver Set	㊹ ㊸ ㊻ ㊼ ㊾ ㊿ ㊶×1 ㊶×2 ㊿ ㊷×4 ㊿×6
UM-21	Front Bumper	㊸×1
UM-26	Special Shock Stay	① ②×1
UM-28	Motor Guard	⑥ ㊸ ㊿×1 ㊿×2
UM-29	Stabilizer Set	㊼ ㊽×1 ㊷ ㊸ ㊹ ㊾ ㊾×2 ㊶×4
UM-34	Body (Ultima Pro)	㊽×1
UM-37	Chassis	㊾×1
UM-38	Upper Plate	㊾×1
UM-39	Front Wheel Set (Yellow)	㊼×2
UM-40	Decal (Ultima Pro)	㊽×1
UM-41	Screw Set (Ultima Pro)	Screw,Nut & Hex Key Set
W-0109	Ball Diff.	⑨ ⑩ ⑪ ⑬ ⑭ ㊷×1 ⑫ ⑱×2 ⑬×4 ⑰×8 ⑯×10
W-0110	Special Spur Gear	㊶×1
W-5005	Special Rod Set	㊼×2 ㊻ ㊽×4 ㊶×8 ㊿×12
W-5001	Pressure Shock (S)	⑲ ㉑ ㉓ ㉕ ㉖ ㉗ ㉘ ㉑ ㉒ ㉓ ㉔×2 ㉙ ㉕ ㉖×4
W-5002	Pressure Shock (L)	⑳ ㉒ ㉔ ㉕ ㉖ ㉗ ㉘ ㉑ ㉒ ㉓ ㉔×2 ㉙ ㉕ ㉖×4
W-5074	Front Tire S-H (Pin Spike。・ Hard Compound)	㊷×2
1840	Double Sided Tape	㊽×1
EP-22	Hook Pin	㊸×5
EF-37	Strap (S)	㊶×6
EF-39	NiCd Strap	㊾×6
SD-79	Antenna Pipe	㊶×5
CB-72	E Ring (E3)	㊻×4
KC-20	E Ring (E4)	㊼×4
1889	Body Pin	㊷×5
1901	Ball Bearing (5 φ x10)	④×2
1903	" (4 φ x8)	③×2
1911	Ball Bearing (8 φ x14)	⑧×2
1878	Screw Cement (Locktite)	㊾
1974	Bearing Set (For Ultima)	⑤×1 ⑧×2 ③ ④×6
UM-42	Saver Shaft Set	㊶ ㊷×2
UM-43	Servo Saver Strong Ring	㊿×2
	OPTIONAL PARTS	
UM-17	Wheel Set	Front • Rear x 2
OT-90	Wheel	One piece type 4pcs.
FD-2	Wheel	"
EF-103	Racing Wire	4 φ Silicon Cord
LM-15	Motor Cooling Plate	For Lemans
RK-15	Low Profile Tire	Rear Tire x 2
1863	Sponsor Sticker	Decal Sponsor Mark
SC-90	Front Tire	
SC-26	"	
1872	Sponge Tire (A)	
1883	Frontier Hobby Oil	30cc.
1953	Silicon Oil (S)	Viscosity 100SC,200SC x 1 (Same as 1951S)
1954	" (M)	Viscosity 300SC,400SC x 1 (Same as 1951M)
1955	" (H)	Viscosity 500SC,600SC x 1 (Same as 1951H)
1951	Shock Oil (S.M.H)	Soft,Midium,Hard
LM-18		㊺
WBD-1	Ball Diff. Shaft Plate Set	⑩ ⑪ ⑬×1 ⑫×2
WBD-2	Ball Diff. Ball Set	⑭ ⑫×1 ⑱×2 ⑬×10 ⑯ ⑰×12
WBD-3	Ball Differential (Body)	⑨×1 Others x 4
W-5003	Adjustable Shock (S)	
W-5004	Adjustable Shock (L)	
W-5021	Low profile Wheel	Silver Plate x 2
W-5022	Narrow Wheel	"
W-5023	Low Profile Wheel (Yellow)	
W-5024	Narrow Wheel (Yellow)	
OT-121	Narrow Wheel	
1875	Front Tire (A)	
W-5031	Low Profile Tire (Hard)	2pcs.
W-5032	Low Profile Tire (Soft)	2pcs.
W-5033	Narrow Wheel (Pin Typ)	2pcs.
W-5034	Narrow Wheel (Hard)	2pcs.
W-5071	Front Tire M-S	
W-5072	" M-H	
W-5073	" S-S	Pin Spike Soft Compound 2pcs.
W-5075	Narrow Wheel SS-M	
W-5076	" MH-M	Multi Spike x 2
W-5077	Low Profile Wheel SS-M	
W-5078	" MH-M	Multi Spike x 2
W-5085 ~ W-5095	Hard Pinion Gear (15T-25T)	Hard Aluminum
W-0111	Special Counter Gear	㉜ Strong Type
W-5061	Universal Swing Shaft	㉙ ㉚

ULTIMA PRO

EXPLODED VIEW





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