

RADIO CONTROLLED ELECTRIC POWERED SPECIAL RACING BUGGY
OFF-ROAD RACER

TURBO ULTIMA II

- SUPER LIGHTWEIGHT FOR QUICK ACCELERATION.
- LONG SUSPENSION TRAVEL FOR TOP HANDLING ON EVEN THE WORST TRACKS.
- NEW KELRON-TYPE CHASSIS FOR HIGH STRENGTH AND LIGHT WEIGHT.
- PERFECT COMBINATION OF SUSPENSION DESIGN AND WEIGHT DISTRIBUTION FOR TOP HANDLING.
- MEGA "OUTLAW STOCK" MOTOR INCLUDED.
- INDEPENDENT SUSPENSION ON ALL FOUR WHEELS WITH NEW RACE-TESTED GEOMETRY.
- OIL-FILLED GOLD SHOCK ABSORBERS ON ALL FOUR WHEELS.
- HIGH PERFORMANCE BALL DIFFERENTIAL.
- FULL BALL BEARING SET IS INCLUDED.
- ADJUSTABLE RODS FOR QUICK "ON THE SPOT" CHANGES.

1:10 SCALE

BATTERY: 7.2V-1200mAh NiCd
RADIO: 2-Channel
(Not Included)



KYOSHO
THE FINEST RADIO CONTROL MODELS
KIT No.3120

WARRANTY INFORMATION

90 Day Limited Warranty

It is expressly understood that the standard replacement warranty of the seller, a copy of which is annexed to and made part of this agreement, shall be in lieu of any and all other warranties, including the warranties of merchantability and fitness for use. The sole responsibility of the seller shall be in its replacement obligations contained in this standard warranty.

Kyosho's "Turbo Ultima II" is warranted to the original owner to be free of defects in parts or workmanship for a period of 90 days from the date of purchase. During this time Kyosho's authorized U.S. repair facility, Hobby Services, will repair or replace at their option any defective parts without charge.

Limit of our Liability: Our liability under this warranty is limited to the repair or replacement of defect or defective parts by Hobby Services and does not include shipping expense.

Exclusion and/or Voidance of Warranty: This warranty does not apply to damage or defects resulting from misuse, abnormal service, damage in shipment, or damage resulting from a crash. The warranty is voided if the model is modified, altered, or repaired by anyone other than Hobby Services. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state within the United States.

PROOF OF DATE OF PURCHASE

It is the responsibility of the purchaser to show proof of the date of purchase if a model's warranty is to be honored. Your original purchase invoice or receipt will suffice for this. Your Kyosho "Turbo Ultima II" should be returned directly to Hobby Services for warranty work. The address is:

Hobby Services
1610 Interstate Drive
Champaign, Illinois 61821
Attn: Warranty Department
Phone: 217-398-0007

SHIPPING INFORMATION

Please follow steps 1 through 4 in "Repair Service" when returning a model to Hobby Services. (See Below).

We are sorry, but we cannot be responsible for crash damage and/or loss of kits, engines, accessories, etc.

REPAIR SERVICE

Should your model be past the 90 day warranty period, or should your kit be voided or excluded from warranty coverage, repairs are available for a nominal cost through Kyosho's authorized U.S. repair facility, Hobby Services. Since we want you to be happy with your purchase for a long time, Hobby Services employs a full time in-house service staff. They have the professional knowledge and the sophisticated equipment and parts available to service your model for years to come. When returning your model, whether for warranty or repair service, please be sure to follow the instructions below. This will help the technician troubleshoot the system, repair it, and return it to you as quickly as possible.

1. Under all circumstances, return the ENTIRE system.
2. Disconnect the receiver battery switch harness, and make sure the transmitter is turned off.
3. Send written instructions which include: proof of purchase date (your store receipt or purchase invoice), a list of all items returned, a THOROUGH explanation of the problem and the service needed, and your phone number where you can be reached during the day.
4. Also include your full return address.

Repair charges and postage may be prepaid or billed C.O.D. Additional postage charges will be applied for non-warranty returns. All repairs shipped outside the United States must be prepaid in U.S. funds only.

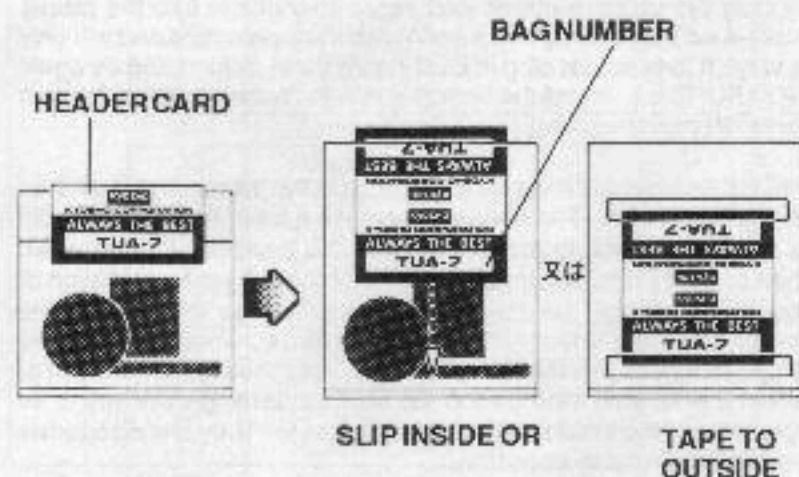
TURBO ULTIMA II™

IMPORTANT! BEFORE YOU BEGIN

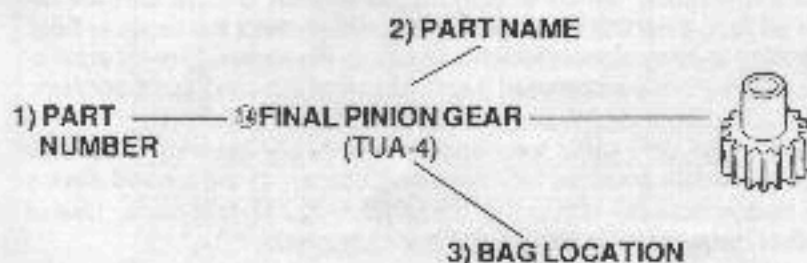
This is a sophisticated model with a large number of moving parts. Before you begin assembly, take a look through the box and these instructions carefully to decide whether or not you are ready for this challenge! If you do not think that this type of model is for you, it may be returned to the dealer as long as it is NEW and UNUSED. UNDER NO CIRCUMSTANCES CAN YOUR DEALER ACCEPT A KIT FOR RETURN IF ASSEMBLY HAS ALREADY BEGUN! If this is not what you bargained for, then go no further and return this kit to the dealer immediately. BUT, if a little maintenance doesn't bother you, and the thrill of high performance driving is for you, then don't hesitate another minute! IT IS VERY IMPORTANT TO read through this entire manual thoroughly to familiarize yourself with the parts and methods of construction used BEFORE actually starting to build.

HOW TO USE THIS MANUAL

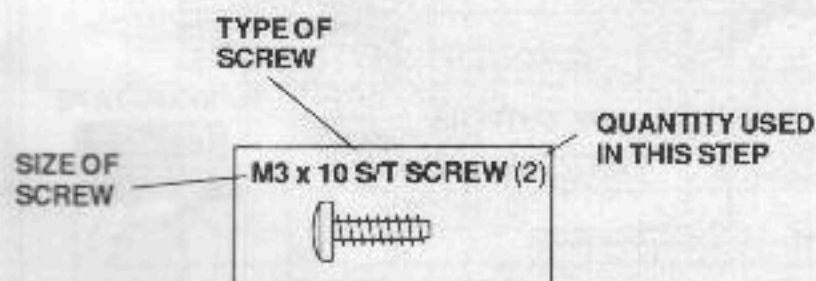
This Kyosho instruction manual uses a unique cross reference system to help you locate all of the bagged parts. DO NOT open each bag and dump out the parts. Carefully remove the header card from the bag and discard the staple. Slip the header card into the bag or tape it to the outside of the bag so that the bag number shows. These bag numbers will be used throughout the assembly process and will prove invaluable when locating parts.



In each step of assembly each part will be labeled with 1) The part number, 2) Part name, 3) Bag location.



On each page you find a directory of small parts that will be used in each step. For ease of identification, these parts are shown actual size enabling you to place a screw directly on the picture to ensure you have selected the appropriate size.

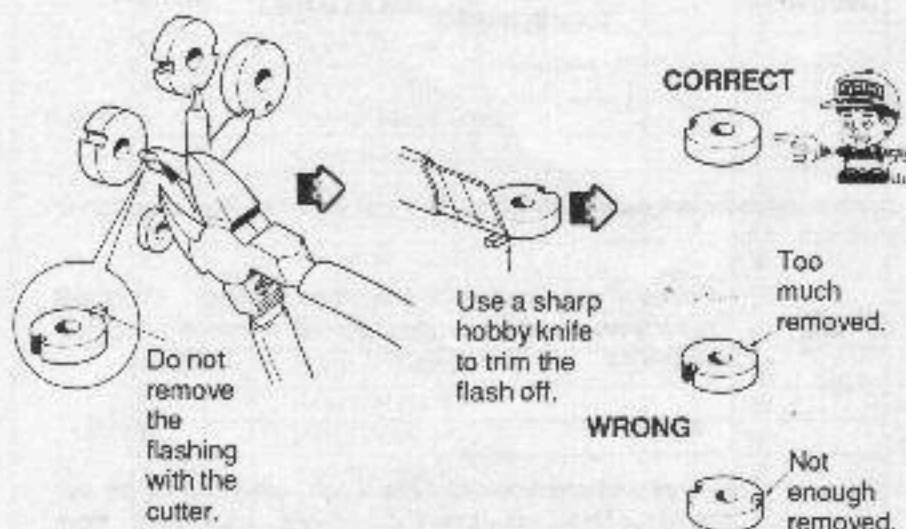


On page 26 you will find a complete list of parts used in this kit including the part number and total quantity supplied in the kit. On pages 5 and 6 you will find an inventory of how each part is bagged in this kit and in which step it is used. When ordering replacement or optional parts, see page 27 for a complete listing of parts and stock numbers.

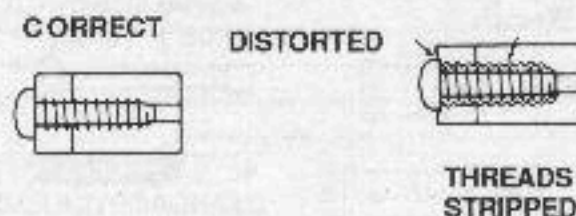
HELPFUL TIPS AND PRECAUTIONS

Some precautions need to be observed when building your model to avoid problems.

1. Use a muffin tin or egg carton to separate screws, nuts, washers, etc. This will make it easier to locate the correct part.
2. Place a mat or towel on the work surface where you will be building the kit. This will prevent parts from rolling off and will protect the work surface at the same time.
3. Try to avoid working over a shag carpet. In the event that a small part of screw should fall onto the carpet, it will be difficult to find.
4. Avoid getting products like engine cleaner or screw lock on the plastic parts. They can have a serious effect on your model.
5. Avoid running the "Turbo Ultima II" in very cold temperatures. Both plastic and metal parts become brittle at low temperatures. In addition, grease and oil become very thick causing premature wear and deficient performance.
6. Remove all flashing from parts before assembly as shown in the example below.



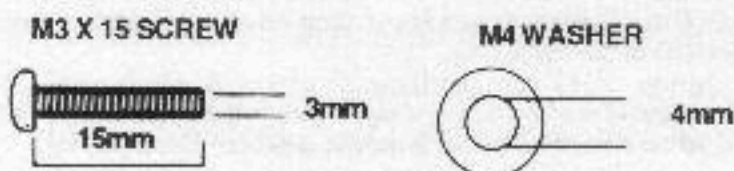
7. Trial fit all parts to ensure proper fit before attaching them permanently.
8. Do not use excessive force when tightening self-tapping type screws into plastic. Overtightening will cause the threaded portion of the plastic to strip. It is recommended to stop tightening when some resistance is felt after the threaded portion enters the plastic.



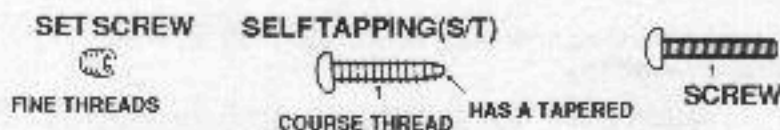
9. Ensure that all parts are well lubricated where the instructions indicate the use of grease.
10. Avoid using power screwdrivers when assembling your kit. They tend to overtighten screws.
11. Take your time and read the directions thoroughly. It's not how fast you can assemble the kit but how fast it goes once it is assembled.

METRIC NUTS AND BOLTS

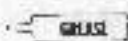
All nuts and bolts used throughout this kit are metric size. Therefore, some of the notations may not be familiar to you. An M3 nut is a 3 millimeter (3mm) nut. An M3 x 15 screw is 3mm diameter and 15mm long. Some round parts may be labeled as a "M4 Washer" (a washer with a 4mm inside diameter) or a "3mm Bushing" (a bushing with a 3mm inside diameter). At various points throughout the manual these parts are labeled and pictured in their actual size on the left hand side of the page. For your reference, 1 millimeter equals approximately .039 inches.





A few different types of screws are used in the construction of your model. Here are some examples and how they will be indicated in the instructions. For example, Self-Tapping will simply be S/T screw.



Certain symbols are used throughout the instructions. Pay attention to their location.

 Points where Grease/Oil should be applied. (This will reduce wear and friction and provide a smoother operating joint.)

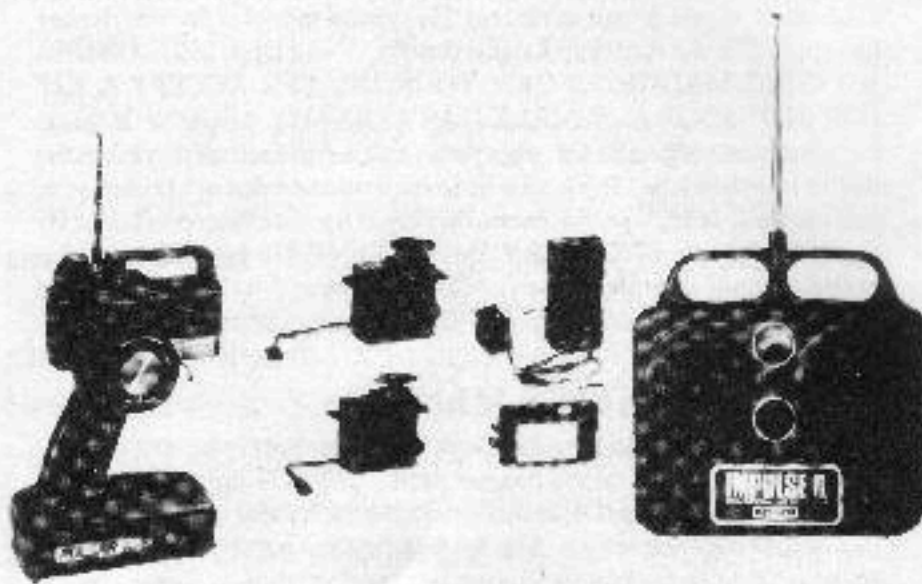
 Places where Lockite (Zap Lock, etc.) should be applied. (This will prevent screws and nuts from loosening up during operation due to the vibration of the model.)

 When you see this face, there are steps that you should pay extra particular attention to when building this model.

RADIO OPERATIONAL CHECK

Thoroughly read and follow the instructions supplied with your radio system. The following instructions are a general procedure for testing the operation of your radio system.

An operational check of your complete radio system prior to installation is a must. This check will locate possible defective components BEFORE they are installed in your model.



Gently plug the switch harness and servo connectors into the proper receptacles on the receiver. The connectors are polarized and will only fit one way. If they do not plug in easily, turn them around and try again (DO NOT FORCE.). Install the batteries into the battery holders for both the transmitter and receiver.

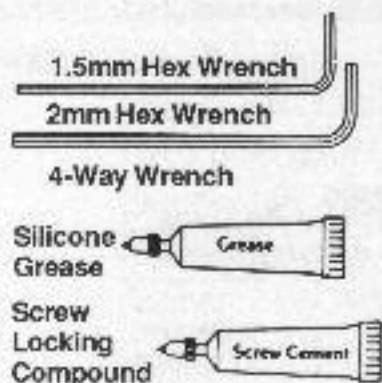
Unravel the receiver antenna wire and turn on the transmitter, then turn on the receiver switch. The servos may move a little bit at this point but this is normal. Check to make sure that the transmitter is on when switched on and if it is, continue. If it is not, recheck your installation of batteries. You should be able to move the servos' arms using the transmitter controls. Notice how the servos move. They should move the same amount as you move the controls. Also, notice the direction of rotation of the servos, then switch the servo reversing switches, if so equipped. See if the rotation of the servos change. They should operate in the opposite direction as before.

Decide whether your radio is in proper working order. If you decide that it is defective, check the warranty procedures described in the radio instruction manual. When turning off the system, always turn the receiver off first, then the transmitter. This will prevent the receiver from responding to stray signals which can cause the servos to react erratically and move to the extreme of their rotation which can cause damage.

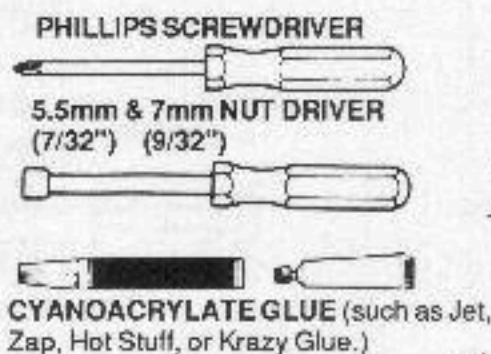
NOTICE: Use only radio frequencies specifically allowed to operate "surface" models such as R/C cars and boats. In the United States those frequencies fall within the "75 MHz" or "27 MHz" bands. Use of any other frequencies is both illegal and dangerous.

REQUIRED TOOLS

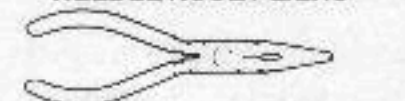
These ARE included with the kit.



These ARE NOT included with the kit.



NEEDLE NOSE PLIERS



LEXAN SCISSORS



PAINT BRUSH



WIRE CUTTERS



MASKING TAPE



AWL



PAINT



HOBBY KNIFE



LIST OF BAGGED PARTS (1)

Before assembly, open each bag one at a time and compare the parts in each bag to the parts listed below. Check the bag for the part and correct quantity. If you are not familiar with the names of some parts, turn to the step where that part is used, and refer to the labeled diagrams. Return all parts to the correct bag after checking the list. **NOTE:** The parts with a ★ by them are contained on a molded parts tree.

Bag #	Key #	Description	Qty	Step used in	
TUA-2	1	Suspension Rod (B)	2	☐	
	2	Motor Plate	1	☐	
	3	5.8mm Ball (Silver)	10	☐ ☐	
	4	Front Shock Tower	1	☐	
	5	Rear Shock Tower	1	☐	
	6	4 x 8mm Bearing	6	☐ ☐	
	7	5 x 10mm Bearing	6	☐ ☐ ☐	
	8	Bearing Spacer	1	☐	
	9	Sponge Cap	1	☐	
TUA-3	10	Front Rim	2	☐	
	11	Rear Rim	2	☐	
TUA-4	12	Rear Wheel Shaft	2	☐	
	13	Driver Washer	2	☐	
	14	Final Pinion Gear	1	☐	
	15	Pinion Gear (15T)	1	☐	
	16	Swing Shaft	2	☐	
	17	Center Gear Shaft	1	☐	
	18	Counter Gear	1	☐	
	19	Center Gear	1	☐	
	20	Front Wheel Shaft	2	☐	
	21	Counter Gear Shaft	1	☐	
	22	2 x 11mm Pin	2	☐	
	23	Servo Saver	2	☐	
	24	Plate Post	2	☐	
	25	M3 x 27 Rod	4	☐	
	26	M3 x 50 Rod	2	☐	
	27	O-Ring	1	☐	
	TUA-5	☆ 29	Front Shock	2	☆ - Shock Parts ☐
☆ 30		Rear Shock Shaft	2		
☆ 31		Front Shock Body	2		
☆ 32		Rear Shock Body	2		
☆ 33		Front Spring	2		
☆ 34		Rear Spring	2		
☆ 35		Spring Retainer	4		
☆ 36		Shock Cap	4		
☆ 37		Spring Adjuster	4		
☆ 38		Shock End	4		
☆ 39		E-Ring (E-2.5)	8		
☆ 40		Shock Plston Tree	4		
☆ 41		Shock Seal (A)	4		
☆ 42		Shock Seal (B)	4		
☆ 44		O-Ring Seal	8		
☆ 45		C-Ring	4		
43		Diaphragm	4	☐	
46		M3 x 18 Hex Head Screw	4	☐ ☐	
TUA-5		• 47	8 x 14mm Bearing	2	• - Ball Differential Parts ☐
		• 48	Differential Gear	1	
	• 49	Differential Shaft (A)	1		
	• 50	Differential Shaft (B)	1		
	• 51	Ball Plate	2		

Bag #	Key #	Description	Qty	Step used in	
TUA-5	• 52	Pressure Plate	2	• - Ball Differential Parts ☐	
	• 53	Collar	1		
	• 54	M2.6 x 15 Hex Head Screw	1		
	• 55	Cup Washer	4		
	• 56	Chrome Balls (Large)	10		
	• 57	Chrome Balls (Small)	8		
	• 58	Spacers	2		
	• 59	8 x 12mm Shims	2		
	TUA-6	★ 60	Front Hub		2
★ 61		Rear Hub	2	☐	
★ 62		Knuckle Arm (R)	1	☐	
★ 63		Knuckle Arm (L)	1	☐	
64		Front Bulk Head	1	☐	
65		Rear Axle Stopper	1	☐	
66		Rear Bulk Head	1	☐	
67		Gear Cover	1	☐	
68		Front Suspension Arms	2	☐	
69		Rear Suspension Arms	2	☐	
★ 70		Servo Saver (A)	1	☐	
★ 71		Servo Saver (B)	1	☐	
★ 72		Servo Saver (C)	1	☐	
★ 73		Servo Saver (D)	1	☐	
★ 74		Servo Saver Collar	2	☐	
★ 75		Gear Box Hatch	1	☐	
★ 76		Servo Mounts	4	☐	
★ 77		Shock Bushing	4	☐ ☐	
★ 78		Antenna Mount	1	☐	
★ 79		Front Body Mount	1	☐	
★ 80		Wing Mount	2	☐	
★ 81		Wing Adjuster	2	☐	
★ 82		Adjuster Retainer	2	☐	
★ 83		Wing Washer	2	☐	
★ 84		Battery Holder	2	☐	
★ 85		Battery Mount	4	☐	
★ 86		Battery Mount Spacer (A)	4	☐	
★ 87		Battery Mount Spacer (B)	4	☐	
TUA-7		88	Bumper	1	☐
		89	Ball End	12	☐
	90	4.8mm Ball End	2	☐	
	91	Ball Nut	1	☐	
	92	Suspension Rod (A)	2	☐	
	93	Suspension Rod (B)	2	☐	
	94	Suspension Rod (D)	2	☐	
	95	King Pin	2	☐	
	96	Center Rod	1	☐	
	97	Throttle Control Rod	1	☐	
	98	Steering Control Rod	1	☐	
	99	4.8mm Ball	1	☐	

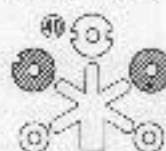
LIST OF BAGGED PARTS (2)

Bag #	Key #	Description	Qty	Step used in
TUA-8	100	Gear Box (R)	1	☑
	101	Gear Box (L)	1	☑
	102	Radio Plate	1	☑
	103	Double Sided Tape	1	☑
	104	Tie Straps (Small)	2	☑ ☑
	105	Battery Straps	2	☑
	106	Antenna Tube	1	☑
	107	Shock Oil	1	☑
	108	Screw Cement	1	
	109	Hobby Grease	1	
	110	4-Way Wrench	1	
	111	Gear Box Cover Seal	1	☑
	112	Speed Control	1	☑
	113	Resistor	1	☑
	114	Resistor Heatsink	1	☑
	115	Resistor Base	1	☑
	116	Resistor Bracket	1	☑
	117	Motor	1	☑
118	Motor Leads	1	☑	
	119	Front Tire	2	☑
	120	Rear Tire	2	☑
	121	Body	1	☑
	122	Chassis	1	☑
	123	Wing	1	☑
	124	Decal Sheet	1	☑
TUA-1	39	E-Ring (E-2.5)	8	☑ ☑
	125	E-Ring (E-3)	2	☑
	126	E-Ring (E-4)	1	☑
	127	Body Pins (Small)	7	☑ ☑ ☑
	128	Body Pins (Large)	2	☑
	129	Hex Wrench (1.5mm)	1	☑
	130	Hex Wrench (2mm)	1	☑ ☑
	131	Hex Wrench (2.5mm)	1	☑ ☑
		M2 x 4 Screw	1	
		M3 x 16 Screw	4	
		M3 x 33 Screw	3	
		M2.6 x 6 Screw	1	
		M3 x 6 Screw	10	
		M3 x 35 Screw	1	
		M4 x 8 Screw	4	
		M2.6 x 12 F/H Screw	4	
		M2.6 x 15 F/H Screw	2	
		M3 x 6 F/H Screw	4	
		M3 x 12 F/H Screw	6	
		M3 x 15 F/H Screw	2	
		M4 x 8 F/H Screw	8	
		M4 x 12 F/H Screw	4	
		M2 x 8 S/T Screw	1	
		M3 x 18 S/T Screw	1	
		M2.6 x 12 S/T Screw	4	
		M3 x 8 S/T Screw	18	
		M3 x 10 S/T Screw	3	
		M3 x 10 F/H, S/T Screw	2	
		M3 x 15 F/H, S/T Screw	5	
		M3 x 3 Set Screw	1	
		M4 x 4 Set Screw	1	
	M2.6 Nut	8		
	M3 Nut	10		
	M3 Nylon Nut	4		
	M4 Nylon Nut	4		
	M3 Washer	1		
	M4 Washer	2		

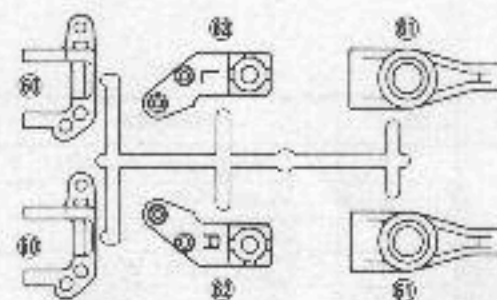
PLASTIC PARTS TREE LAYOUTS

The plastic parts trees are shown below to help identify the location of parts on the trees.

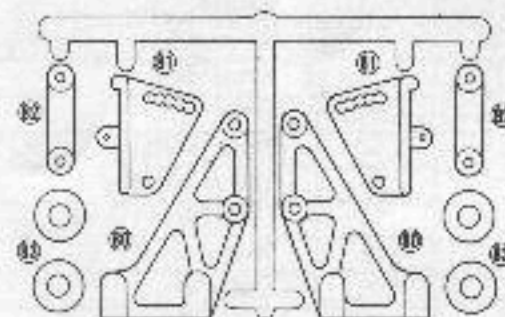
SHOCK PISTONS



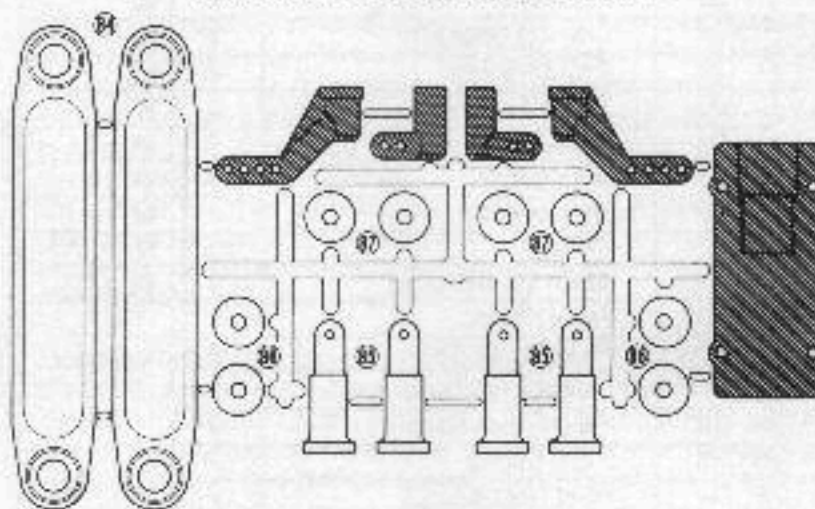
KNUCKLEARMS



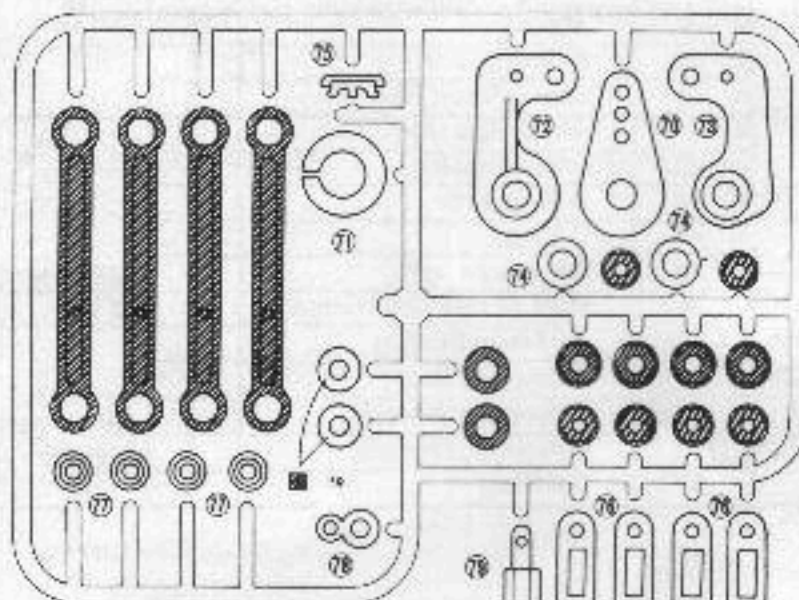
WING MOUNT



BATTERY MOUNTING ACCESSORIES



SERVO ACCESSORIES



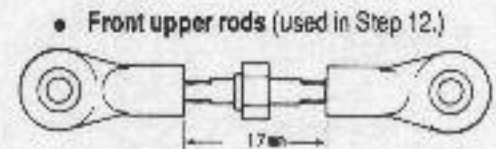
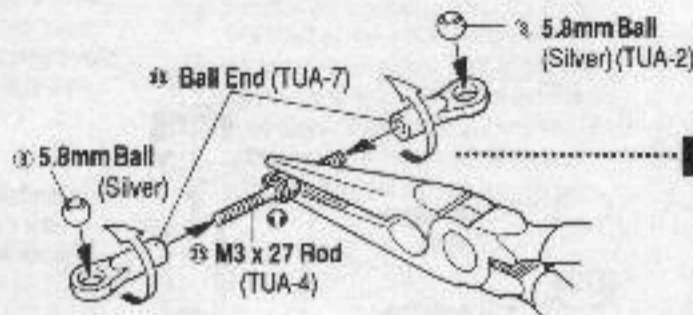
1 CONTROL ROD ASSEMBLY

The flanges on the rods represent the side with the reverse threads.



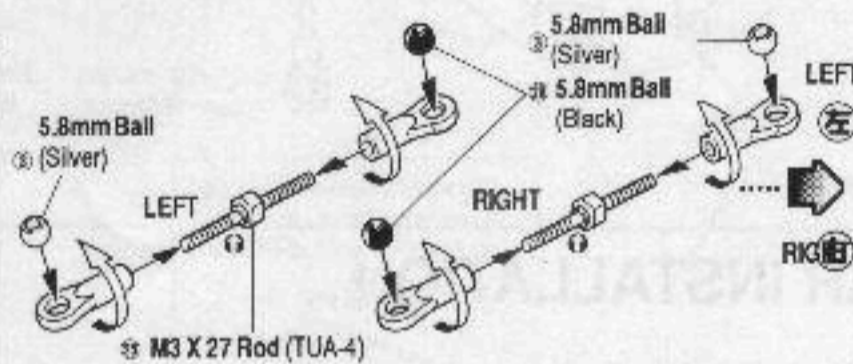
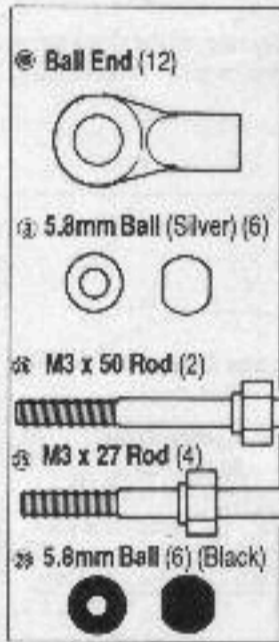
Reverse Threads

Make sure that the flange is facing the proper direction when building.



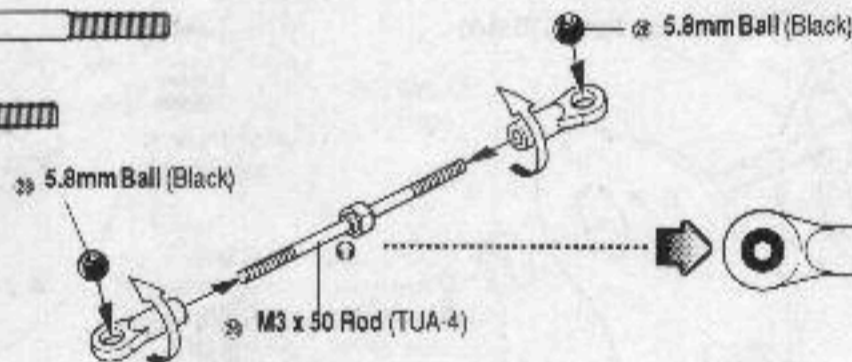
• Front upper rods (used in Step 12.)

Assemble two of the above rod.



• Right and Left Rear Upper Rods (used in Step 7.)

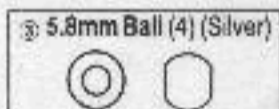
Assemble one each of the above rods.



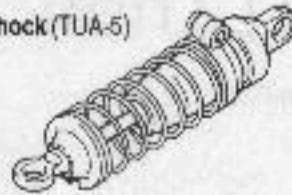
• Tie Rods (used in Step 17.)

Assemble two of the above rod.

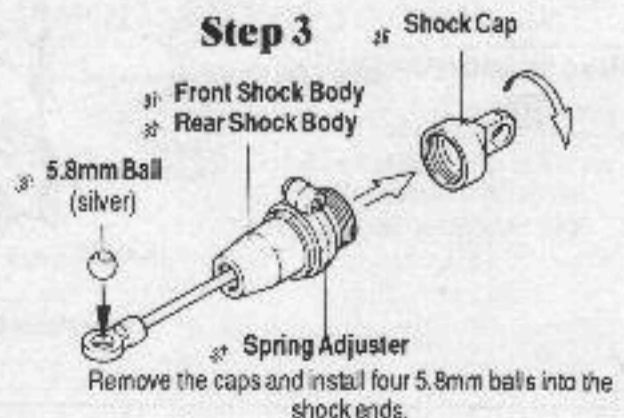
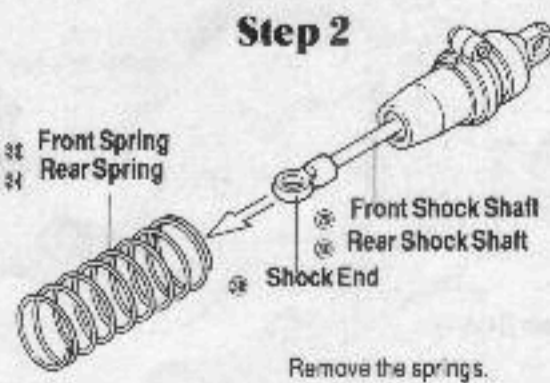
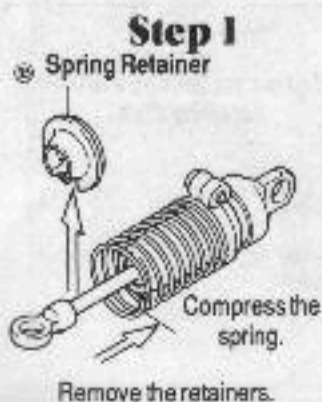
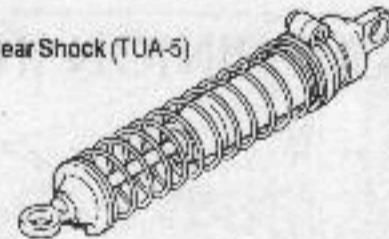
2 SHOCK PREPARATION



Front Shock (TUA-5)

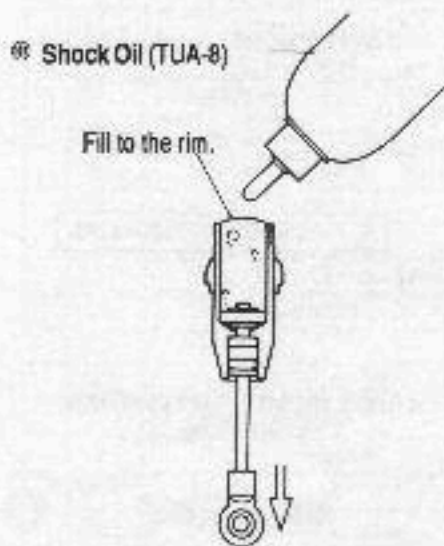


Rear Shock (TUA-5)

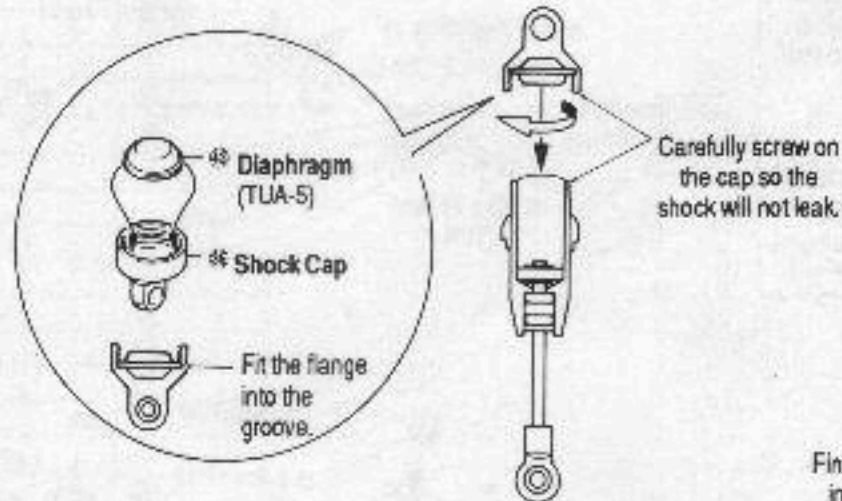


3 FILLING THE SHOCKS WITH OIL

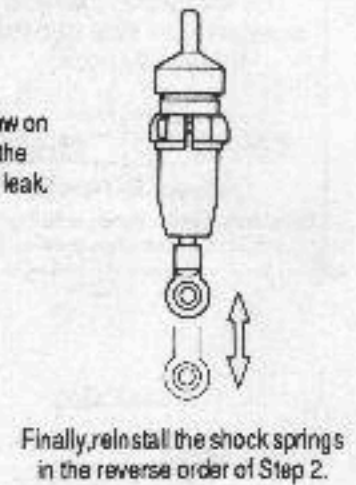
Step 1 Pull the piston all the way down and fill with oil. Next, slow excersize the piston to allow any air bubbles to escape.



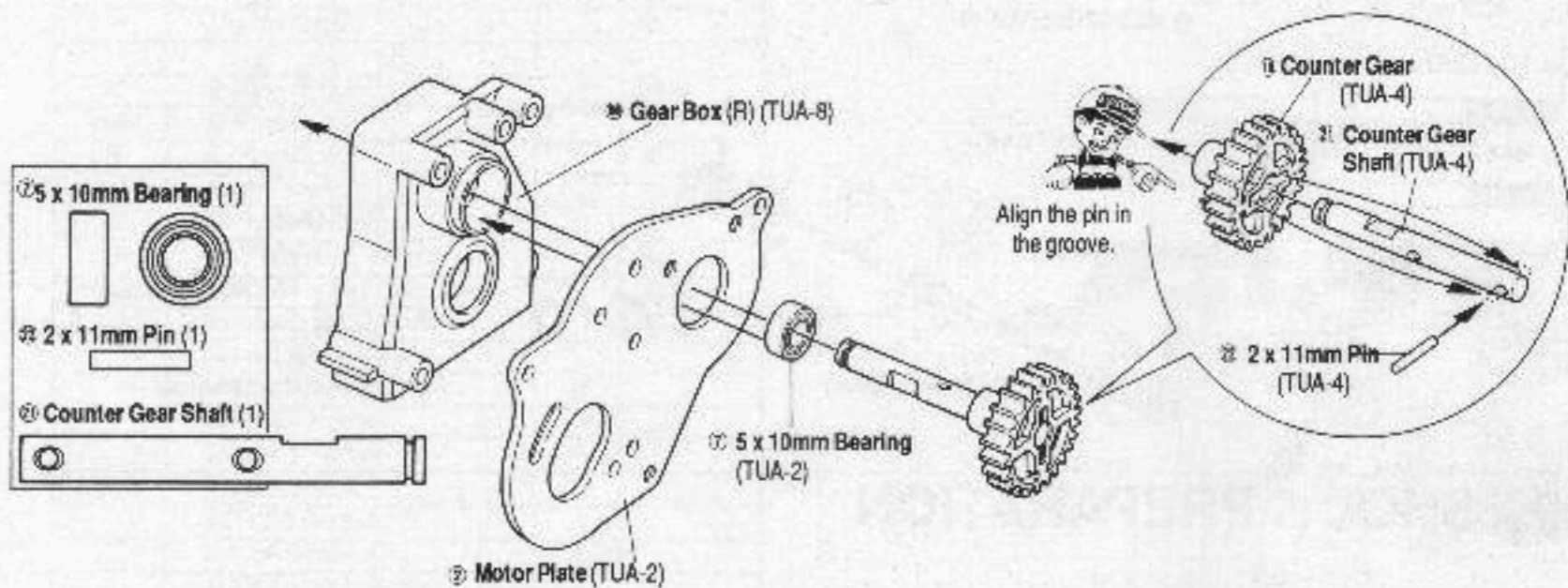
Step 2 Carefully install the shock cap and tighten so it will not leak.



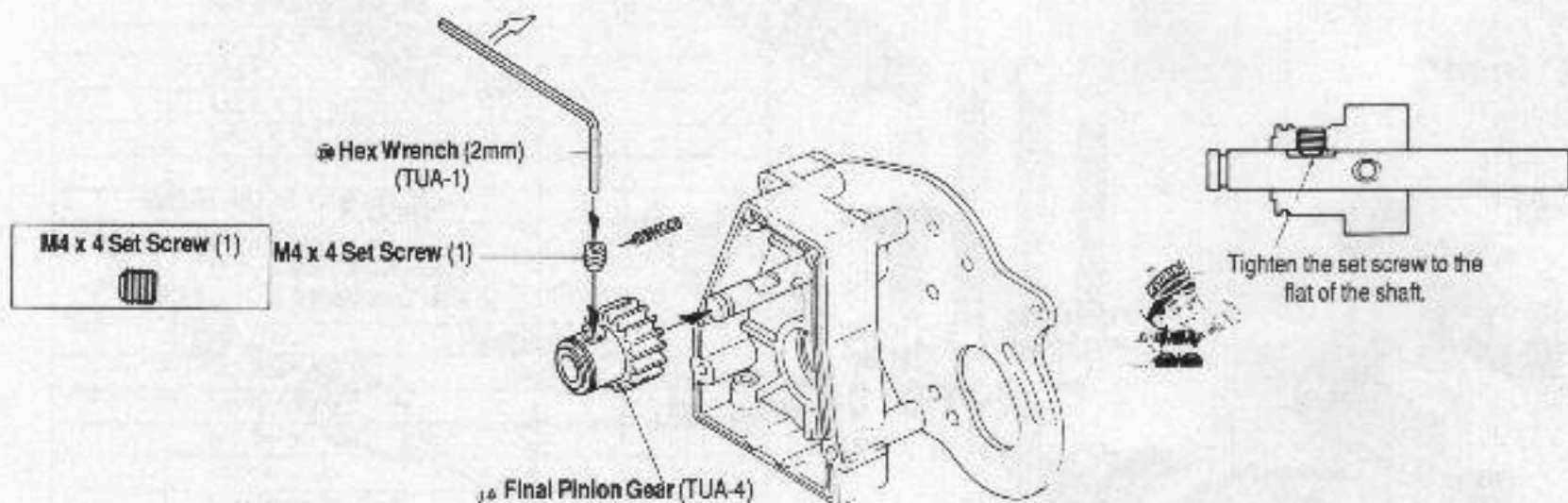
Step 3 Excersize the piston once again to make sure it is smooth and quiet. If not, refill and double check to make sure all air bubbles are removed.



4 COUNTER GEAR INSTALLATION



5 FINAL PINION INSTALLATION



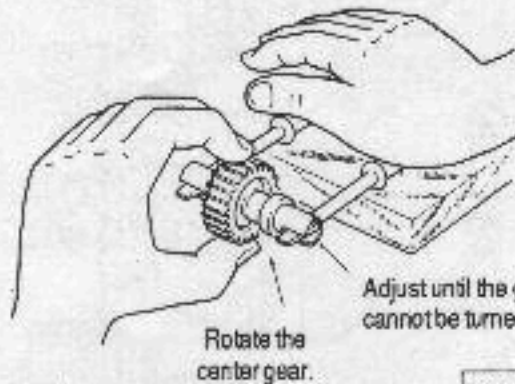
6 BALL DIFFERENTIAL ASSEMBLY AND INSTALLATION

Step 1

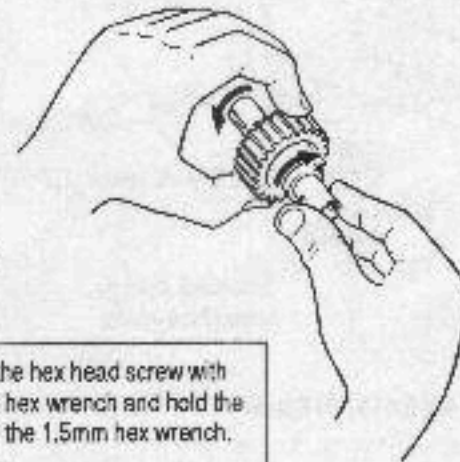
The Ball Differential is located in bag (TUA-5).

- 1 Hold the differential with two screwdrivers as shown. Slowly tighten the hex head screw until the gear does not rotate freely. Do not over-tighten or the differential may be damaged.

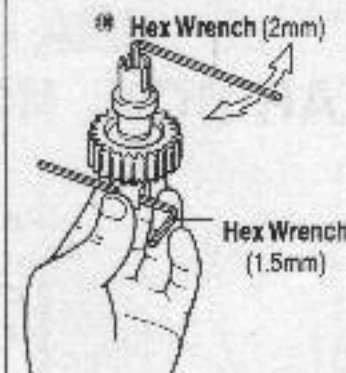
- 2 Hold the differential and turn the shaft. The shaft on the other side should turn in the opposite direction. This is called the differential effect. The tighter the hex head screw, the less the differential effect becomes. If the hex head screw is too tight, the shaft will be very hard to turn.



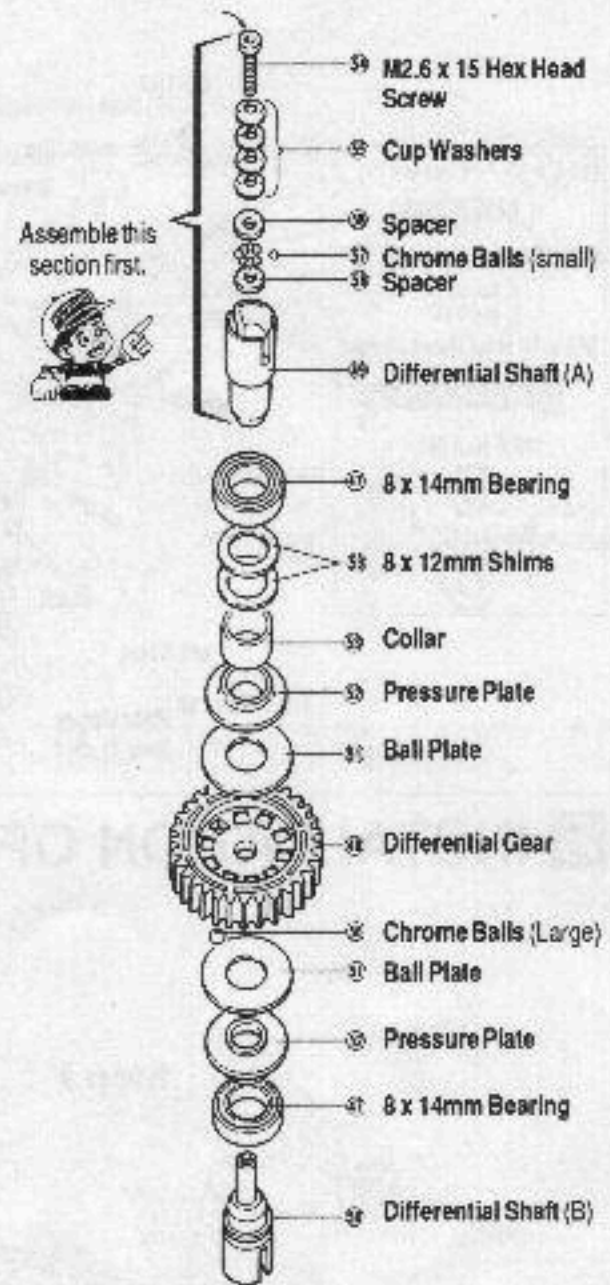
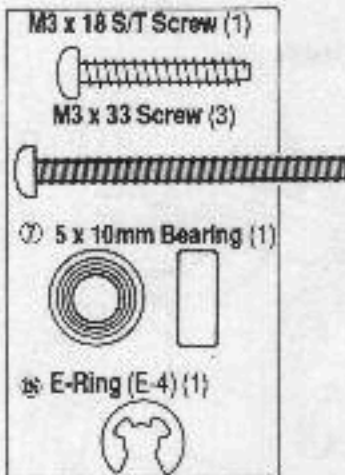
Adjust until the gear cannot be turned.



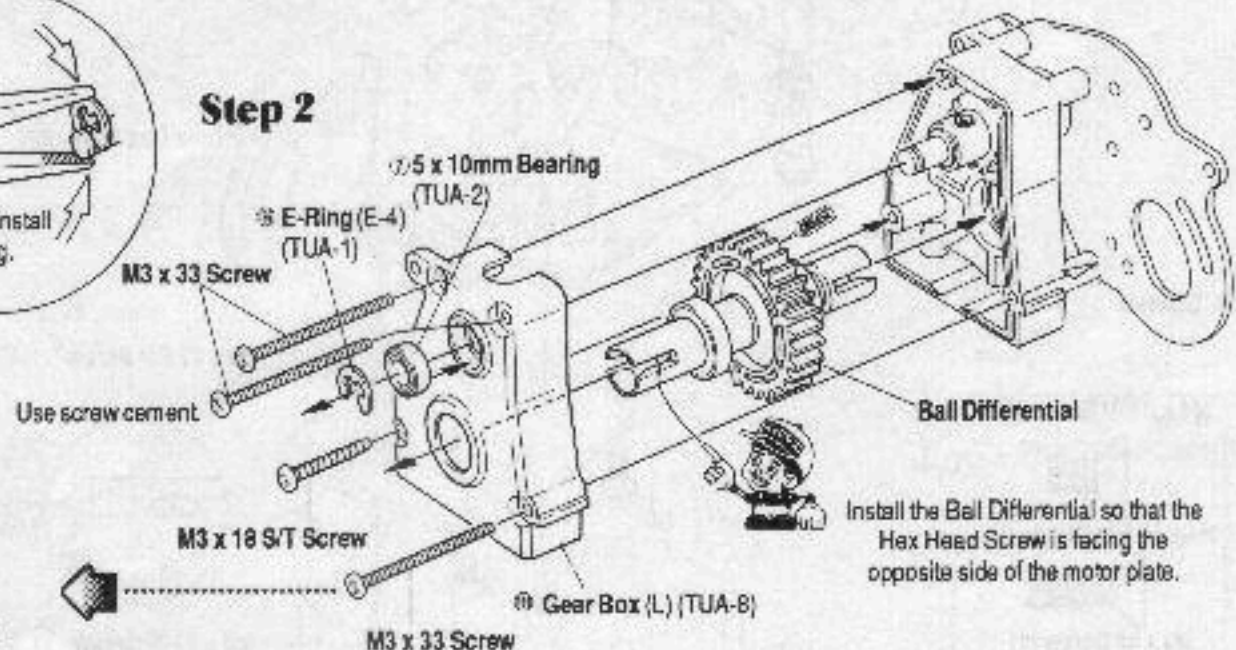
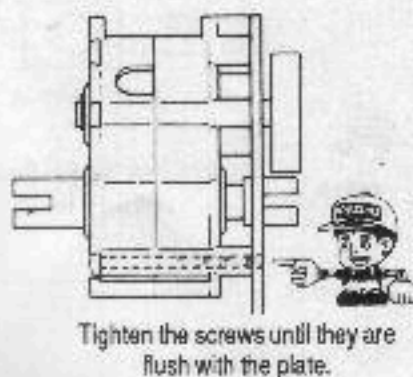
Tighten the hex head screw with the 2mm hex wrench and hold the joint with the 1.5mm hex wrench.



Repeat Steps 1 and 2 until the adjustment feels correct, then install the sponge cap into the end of the shaft that the hex head screw is in.



Step 2

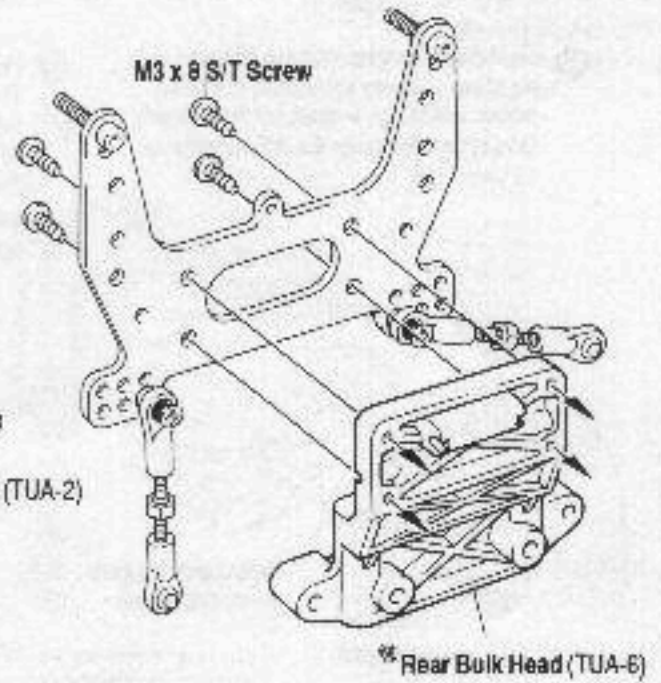
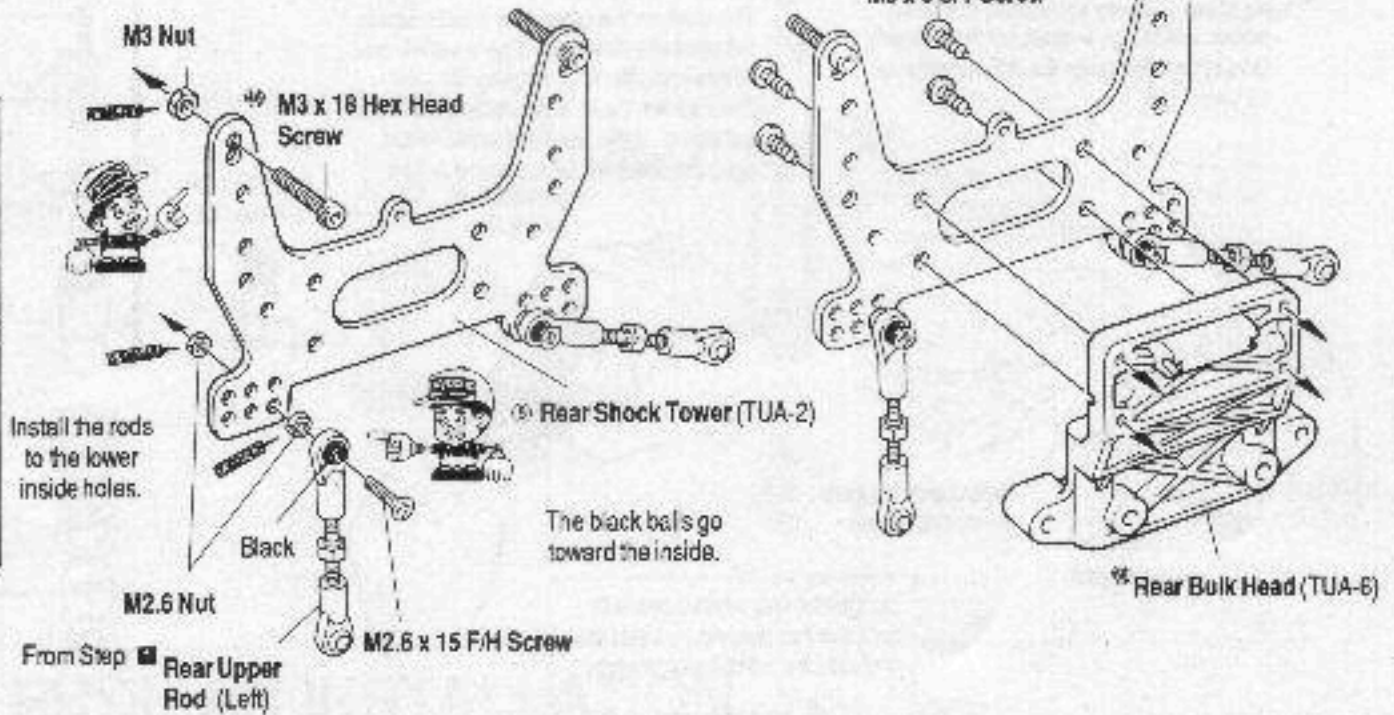


7 ASSEMBLY OF THE REAR SHOCK TOWER

Step 1

Step 2

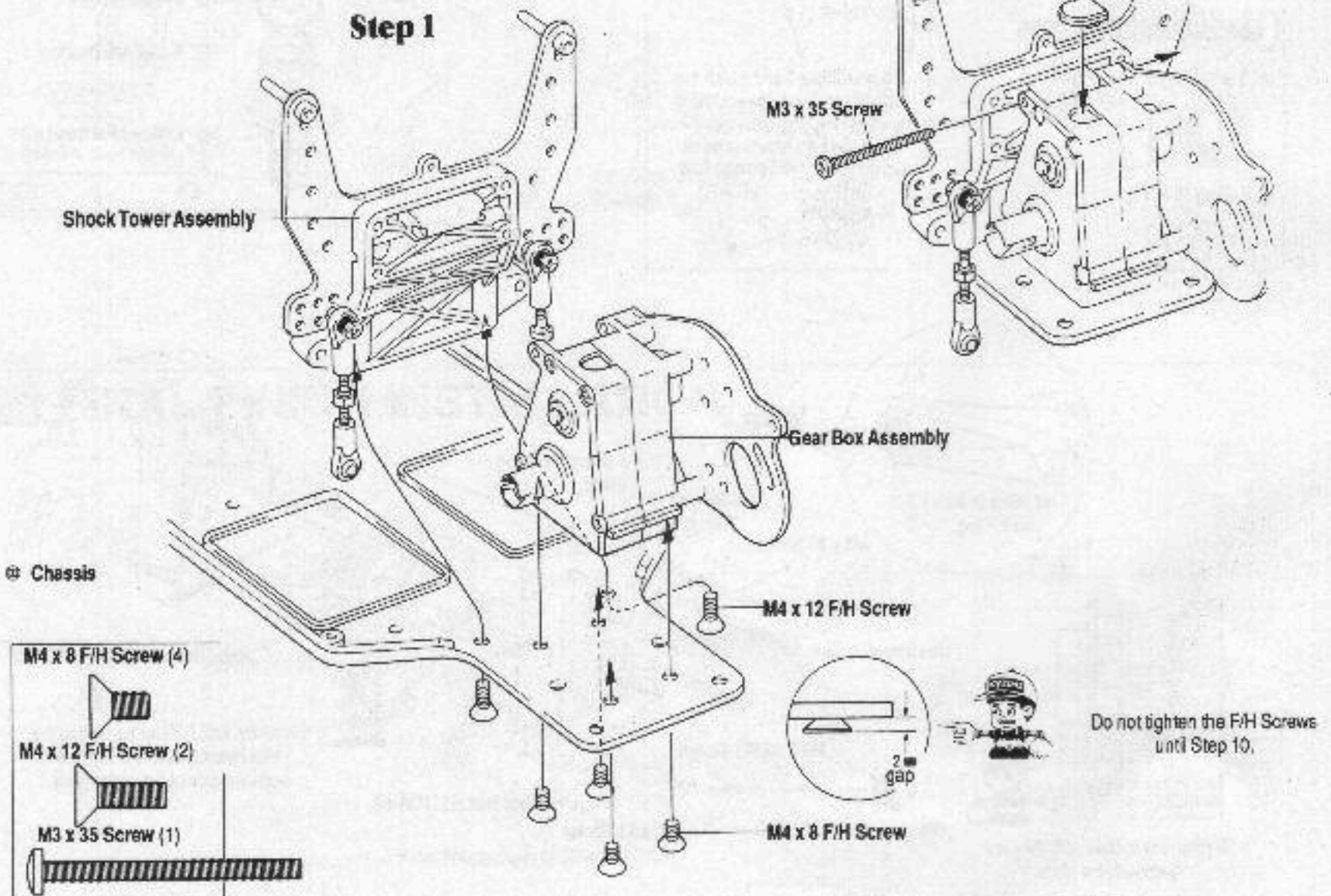
- M2.6 x 15 F/H Screw (2)
- M3 x 8 S/T Screw (4)
- M3 x 18 Hex Head Screw (2)
- M2.6 Nut (4)
- M3 Nut (2)



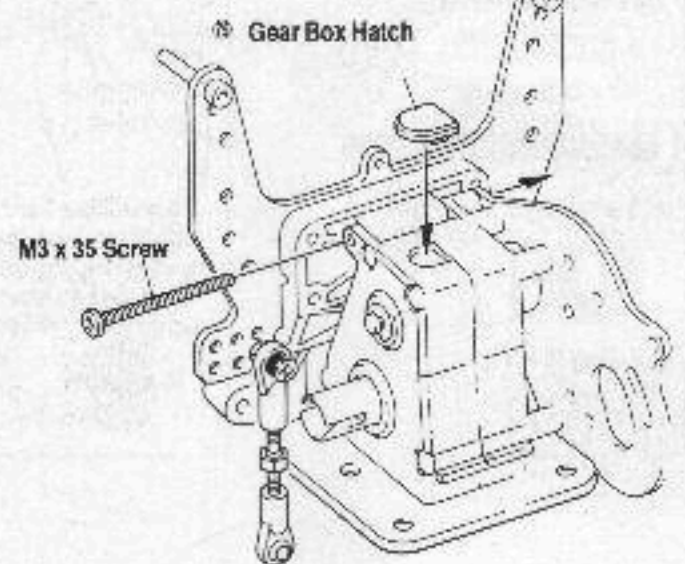
8 INSTALLATION OF THE GEAR BOX

Step 1

Step 2

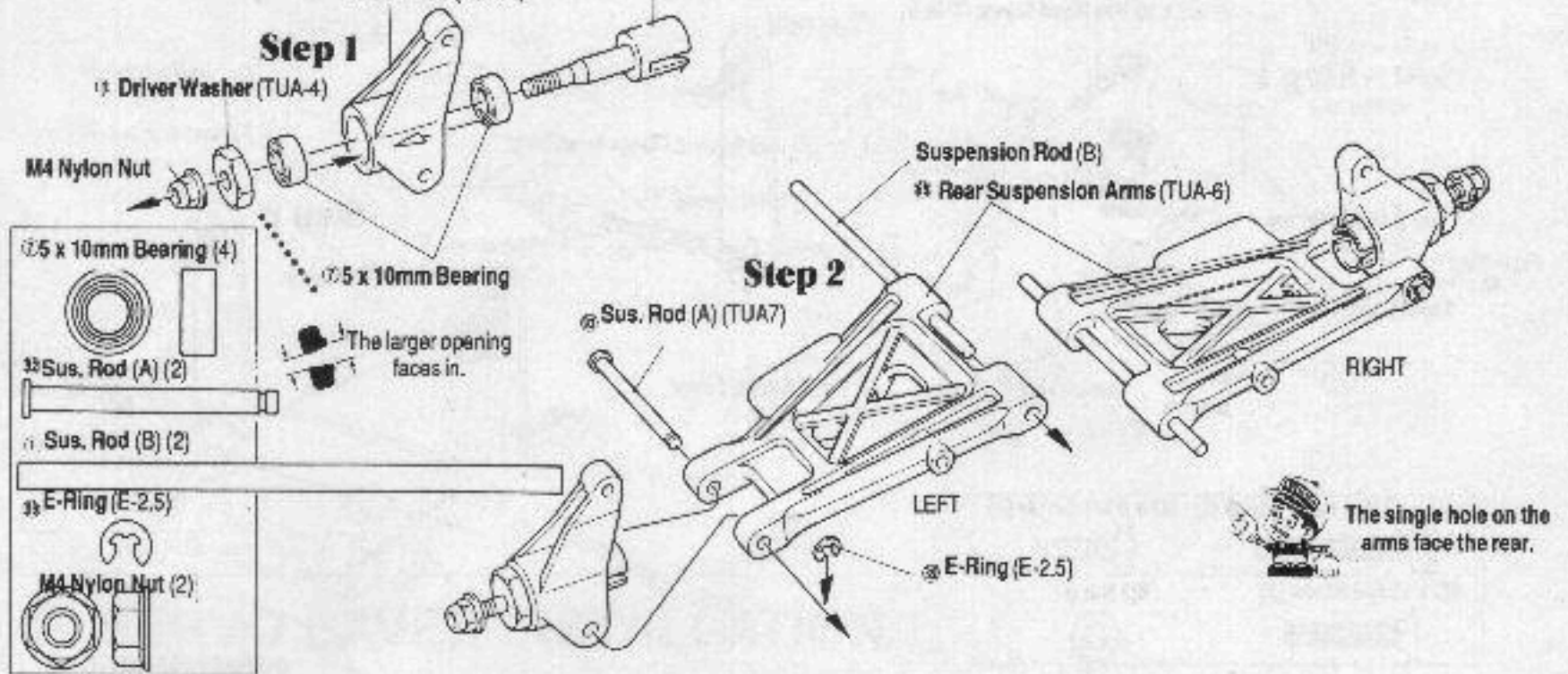


- M4 x 8 F/H Screw (4)
- M4 x 12 F/H Screw (2)
- M3 x 35 Screw (1)

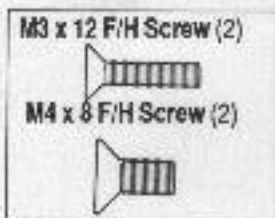


9 SUSPENSION ARM ASSEMBLY

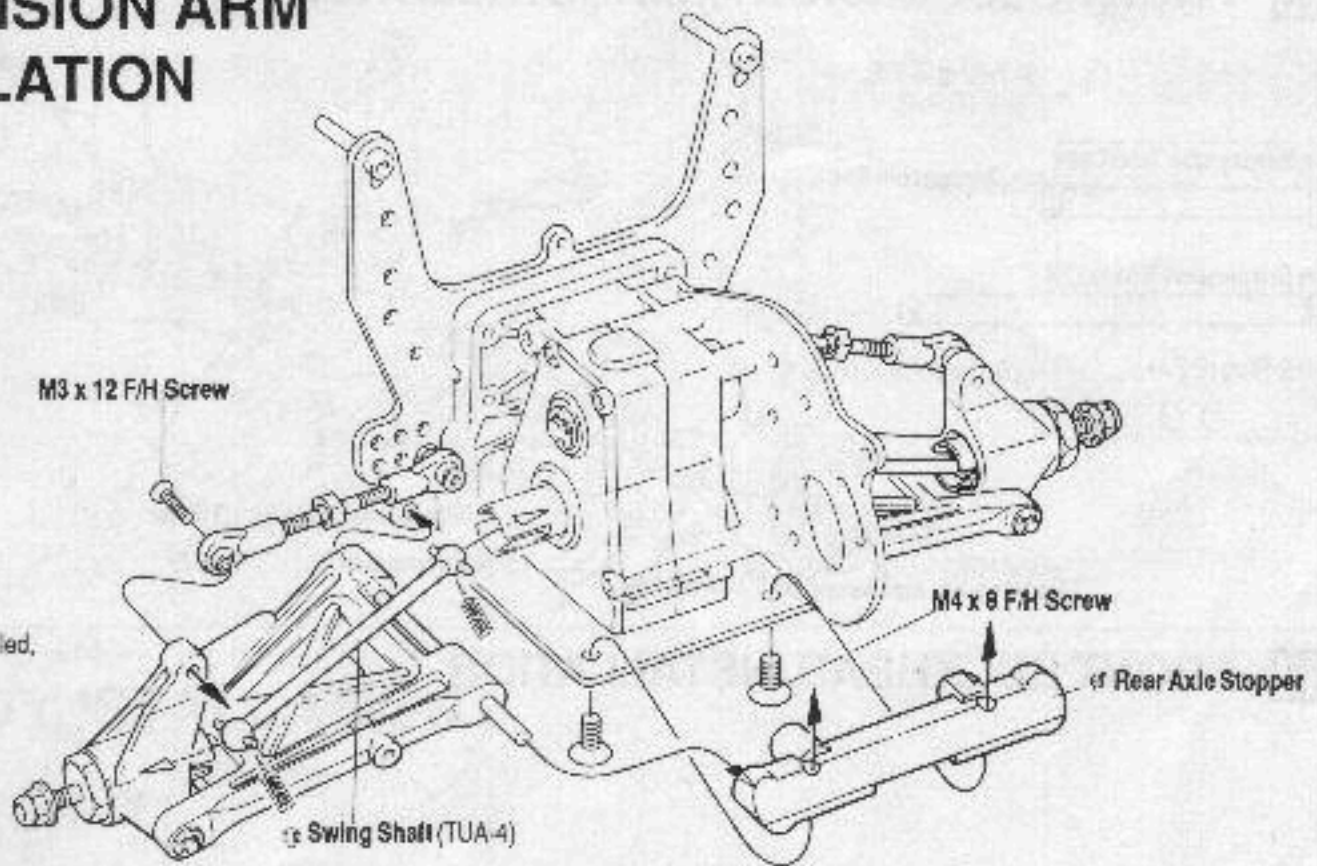
11 Rear Hub (TUA-6) 12 Rear Wheel Shaft (TUA-4)



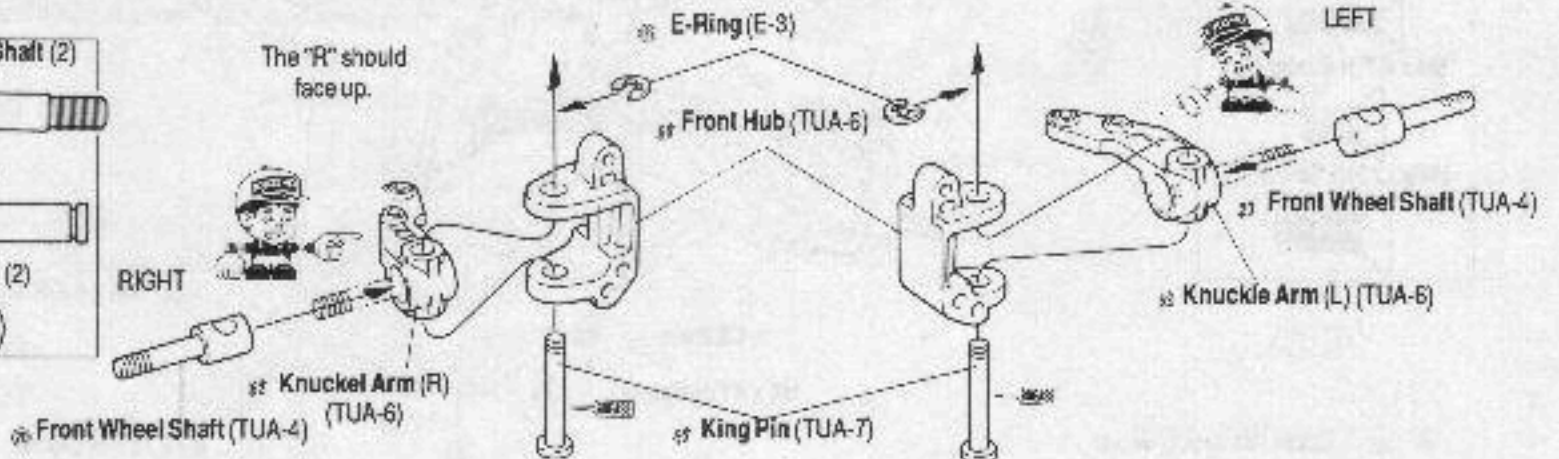
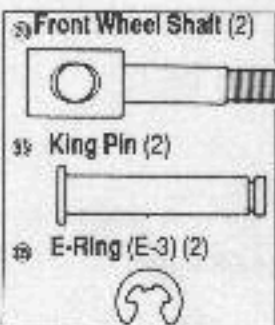
10 SUSPENSION ARM INSTALLATION



Once the arms are installed, tighten up all the F/H Screws from Step 9

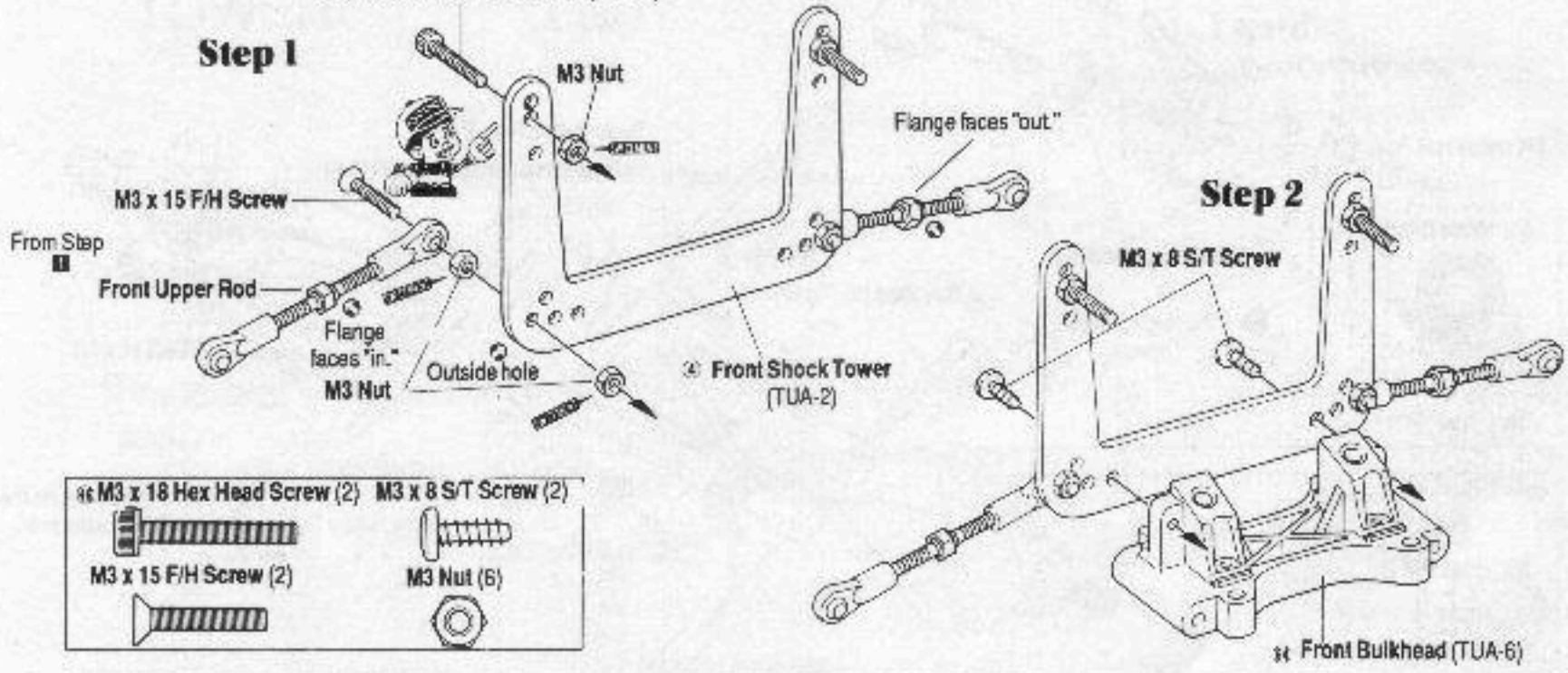


11 FRONT KUNCKLE ARM ASSEMBLY

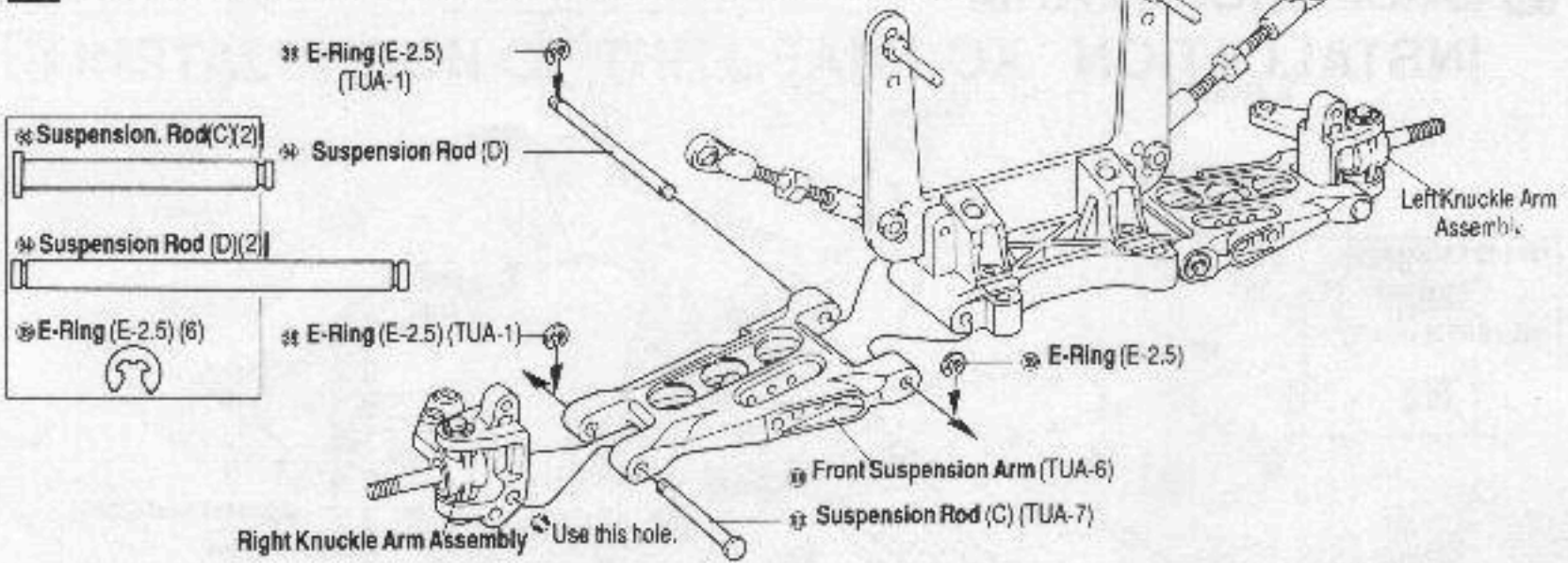


12 FRONT SHOCK TOWER ASSEMBLY

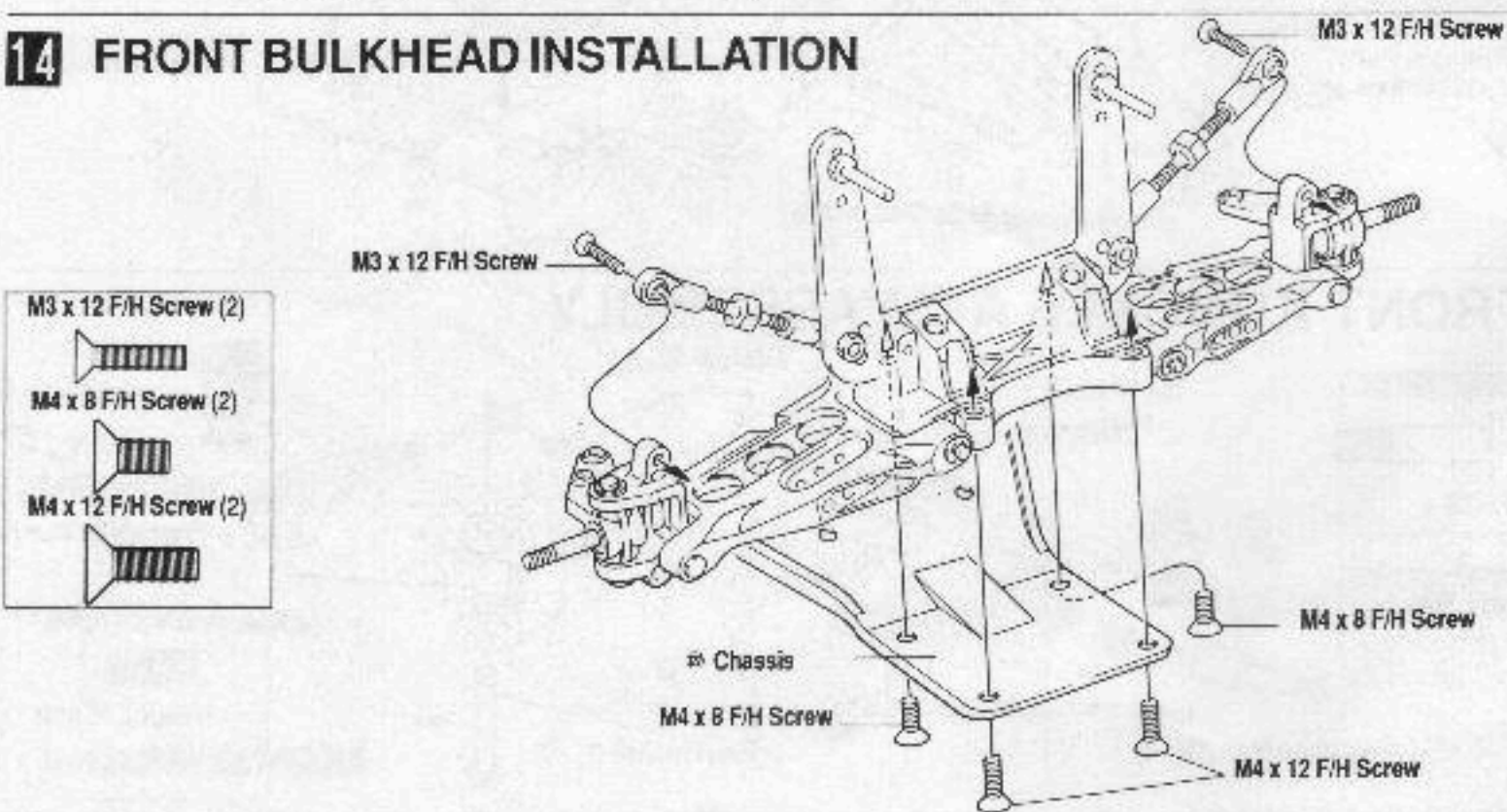
⊗ M3 x 18 Hex Head Screw (TUA-5)



13 FRONT SUSPENSION ARM INSTALLATION



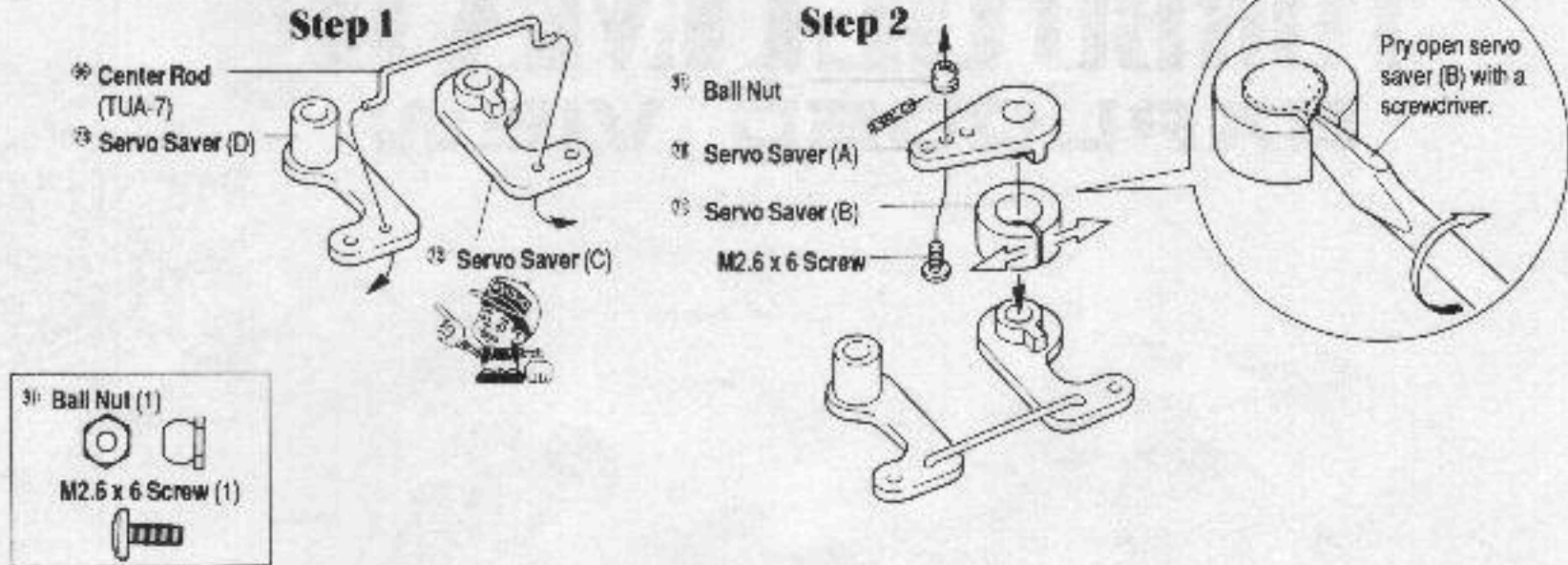
14 FRONT BULKHEAD INSTALLATION



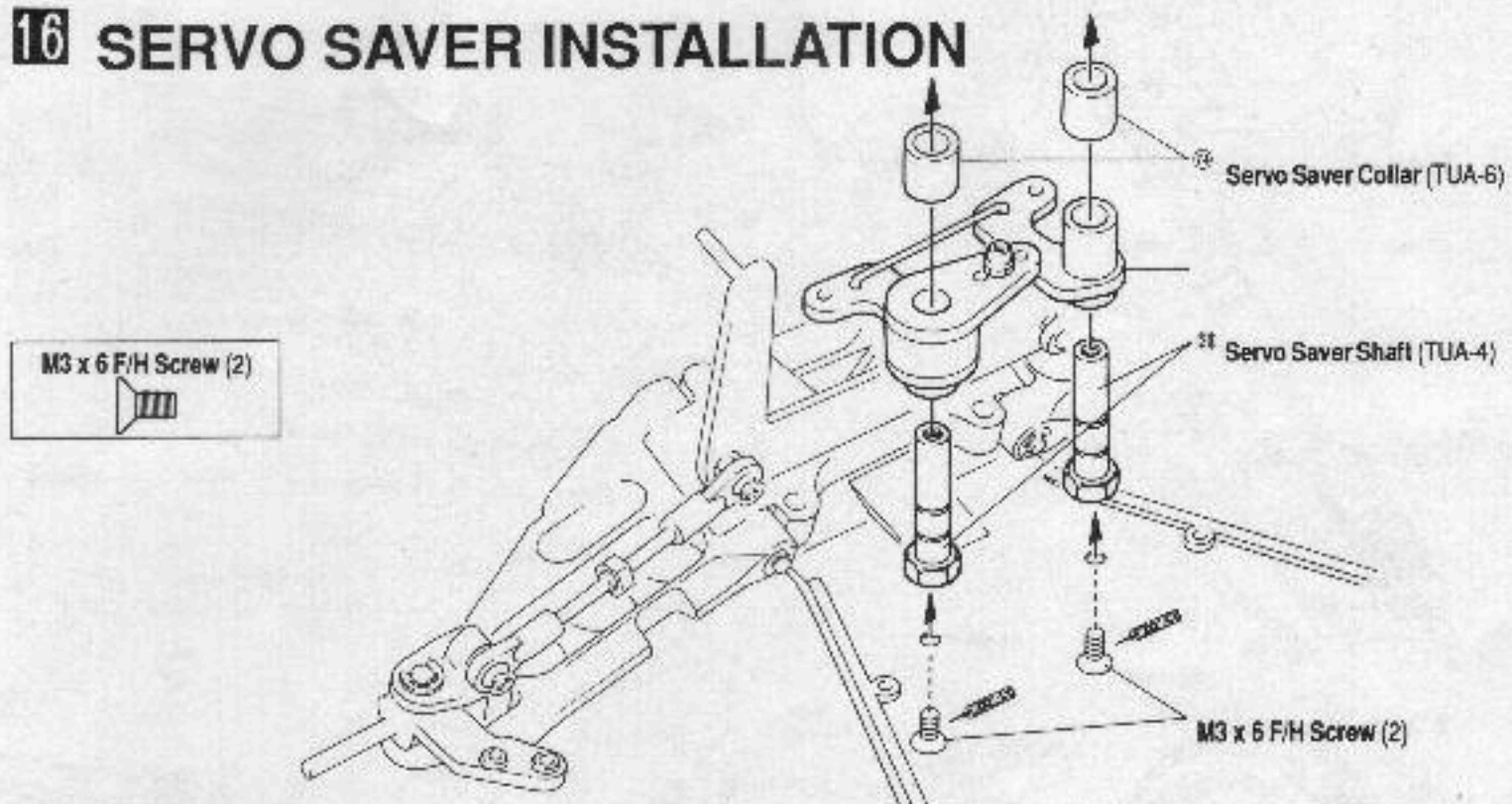
- | |
|-----------------------|
| M3 x 12 F/H Screw (2) |
| M4 x 8 F/H Screw (2) |
| M4 x 12 F/H Screw (2) |

15 SERVO SAVER ASSEMBLY

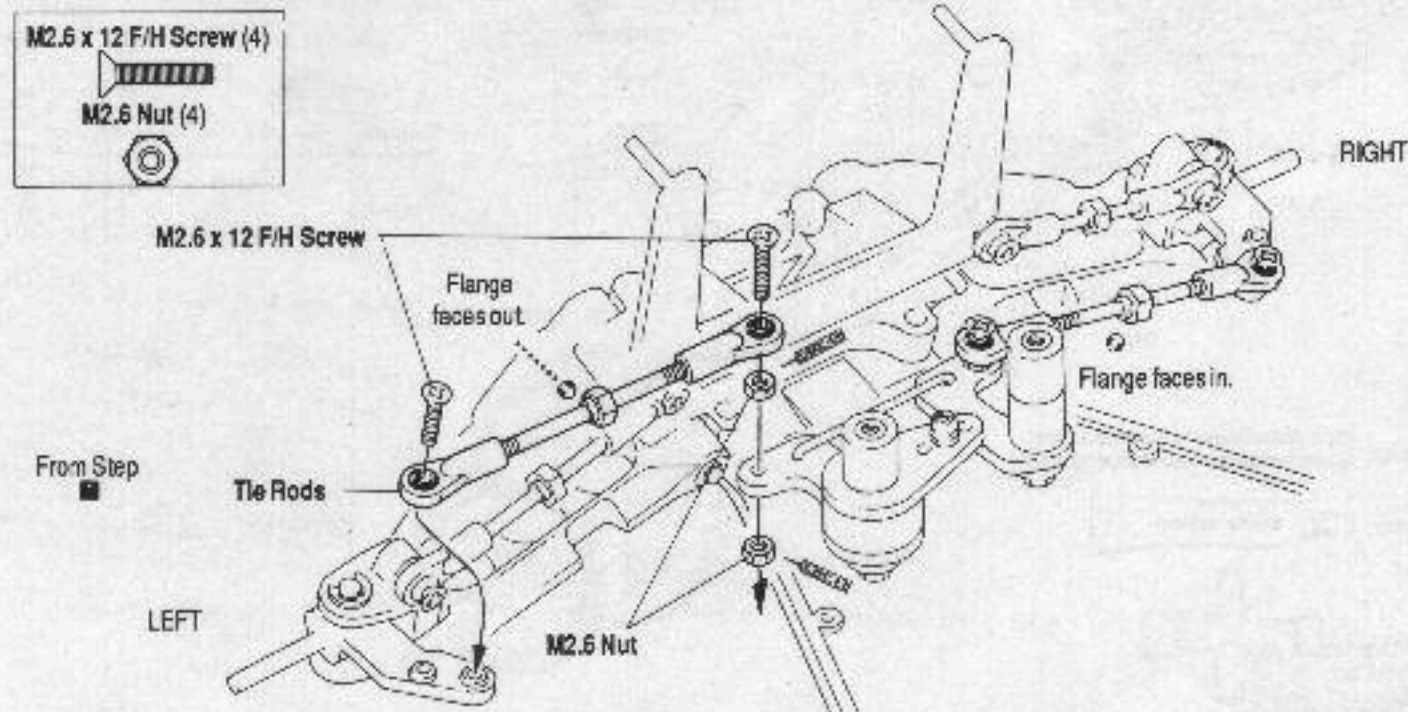
⑫ ⑬ are located in bag TUA-6)



16 SERVO SAVER INSTALLATION

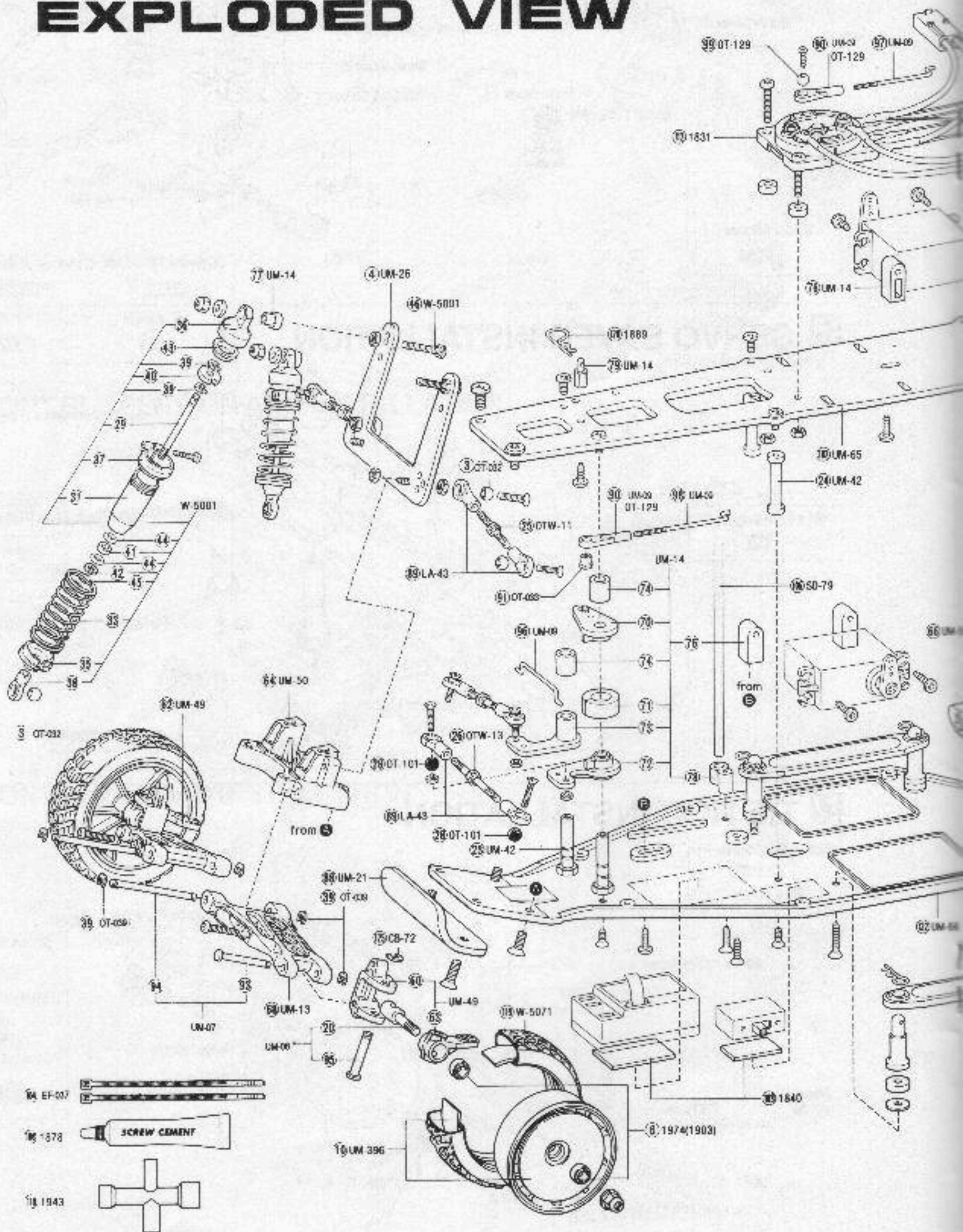


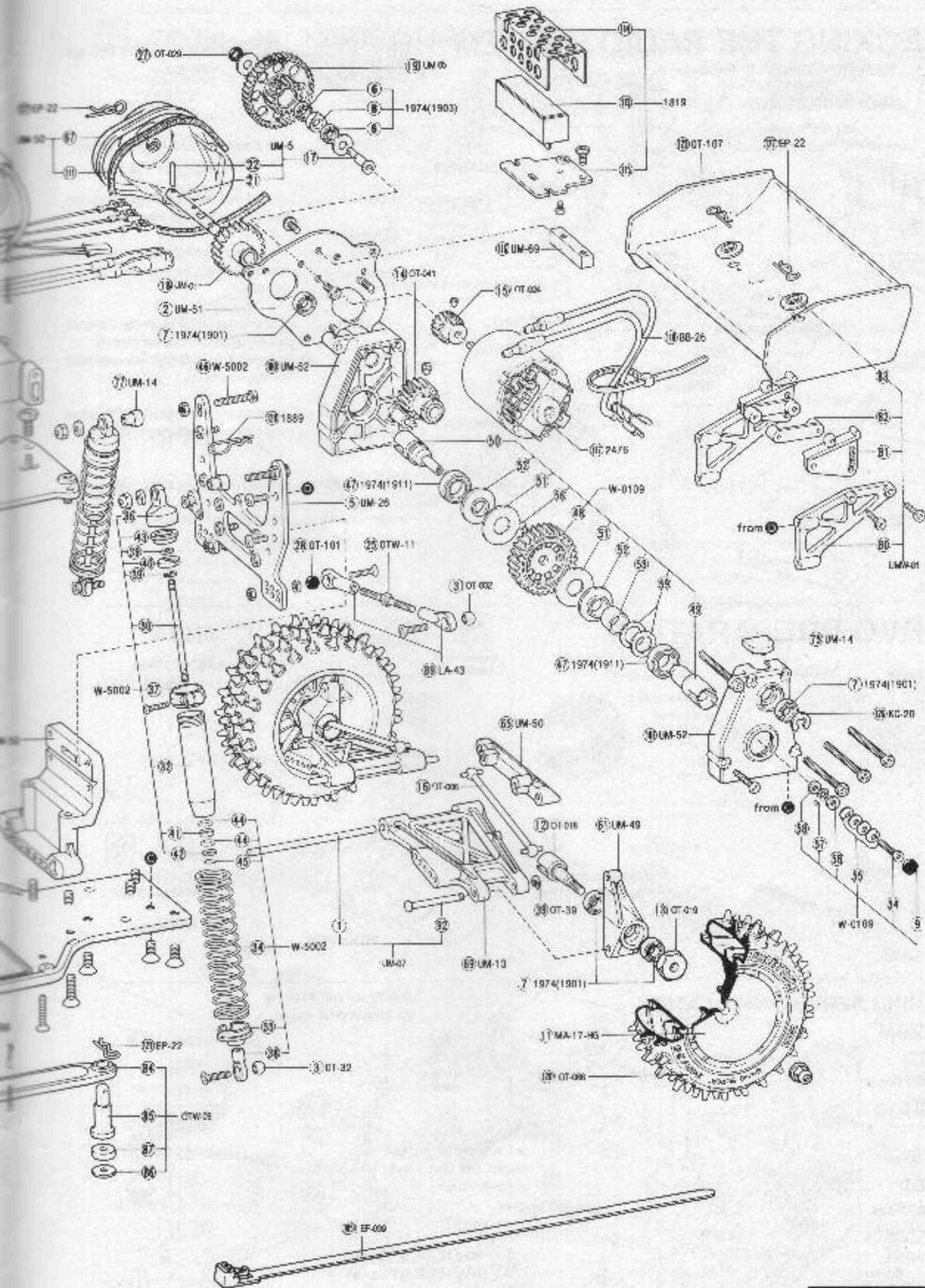
17 TIE ROD INSTALLATION



TURBO ULTIMA II

EXPLODED VIEW



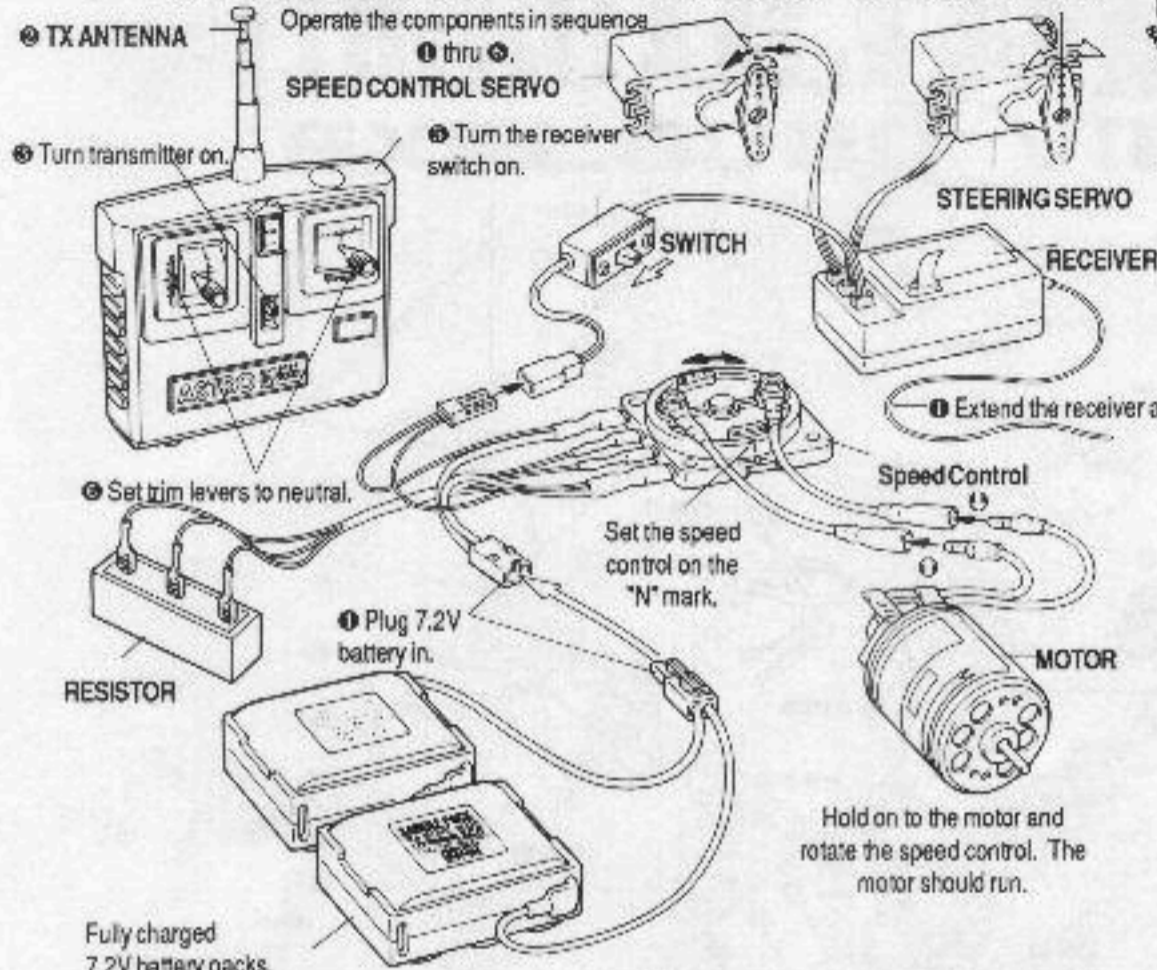


NO. 3120

18 CHECKING THE RADIO SYSTEM



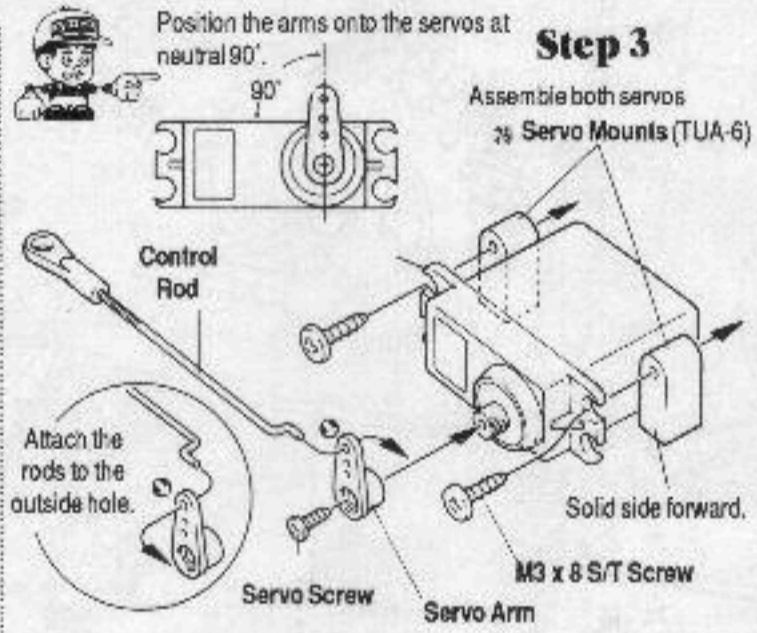
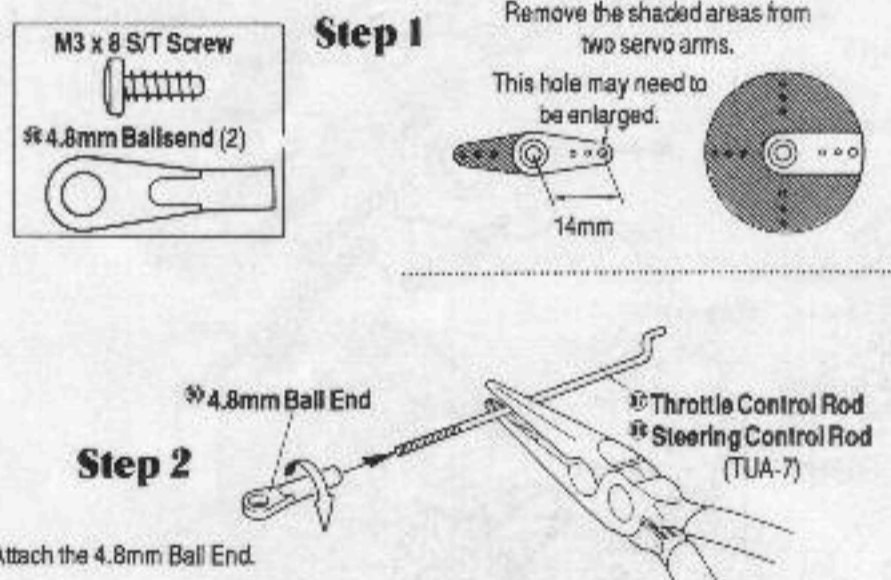
This R/C model car is designed for BEC type receiver only.



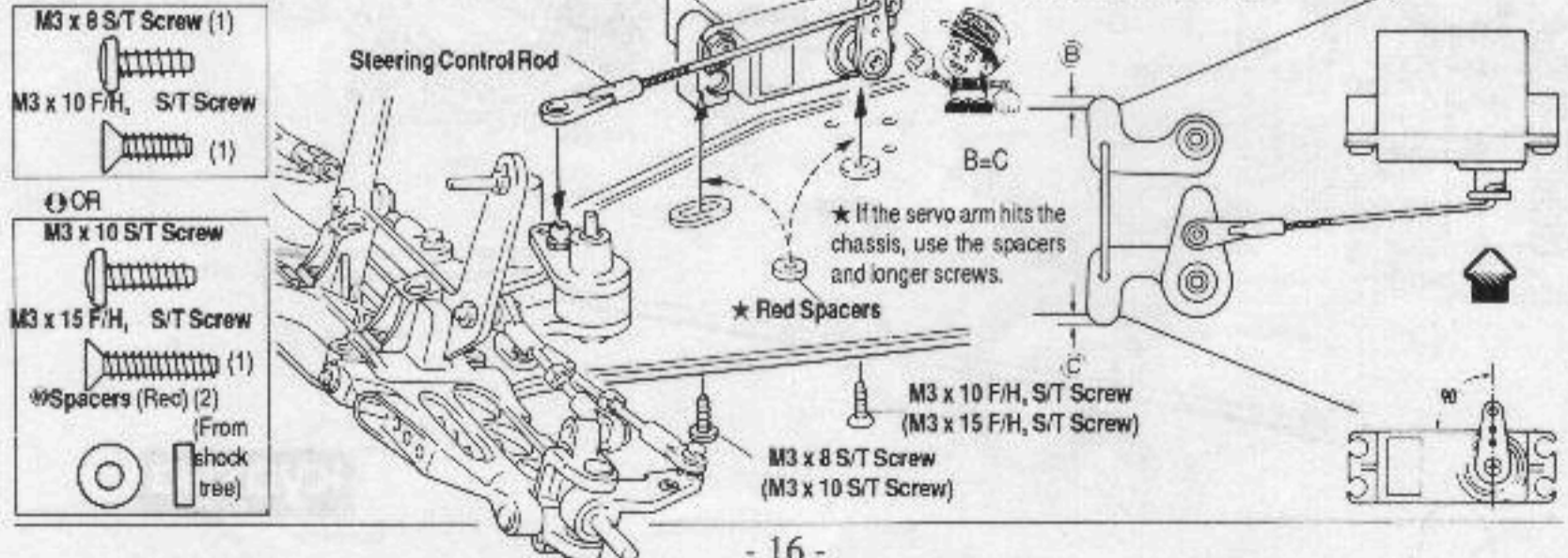
- **Transmitter** It is a control box that provides a signal according to the stick movement.
- **Receiver** It receives the signal from the transmitter and sends a signal to the servo.
- **Servo** They move the mechanism of the car in accordance with the signal from the receiver.
- **Antenna** The antenna on the transmitter transmits the signal and the receiver antenna receives the signal. Both antennas must be fully extended.
- **Trim Lever** It adjusts the neutral position of the servo and allows the fine tuning of the servo position.
- **Battery Meter** It allows you to monitor the battery power.
- **Servo Horn** It transmits the mechanical power of the servo to the control rod.

Fully charged 7.2V battery packs.

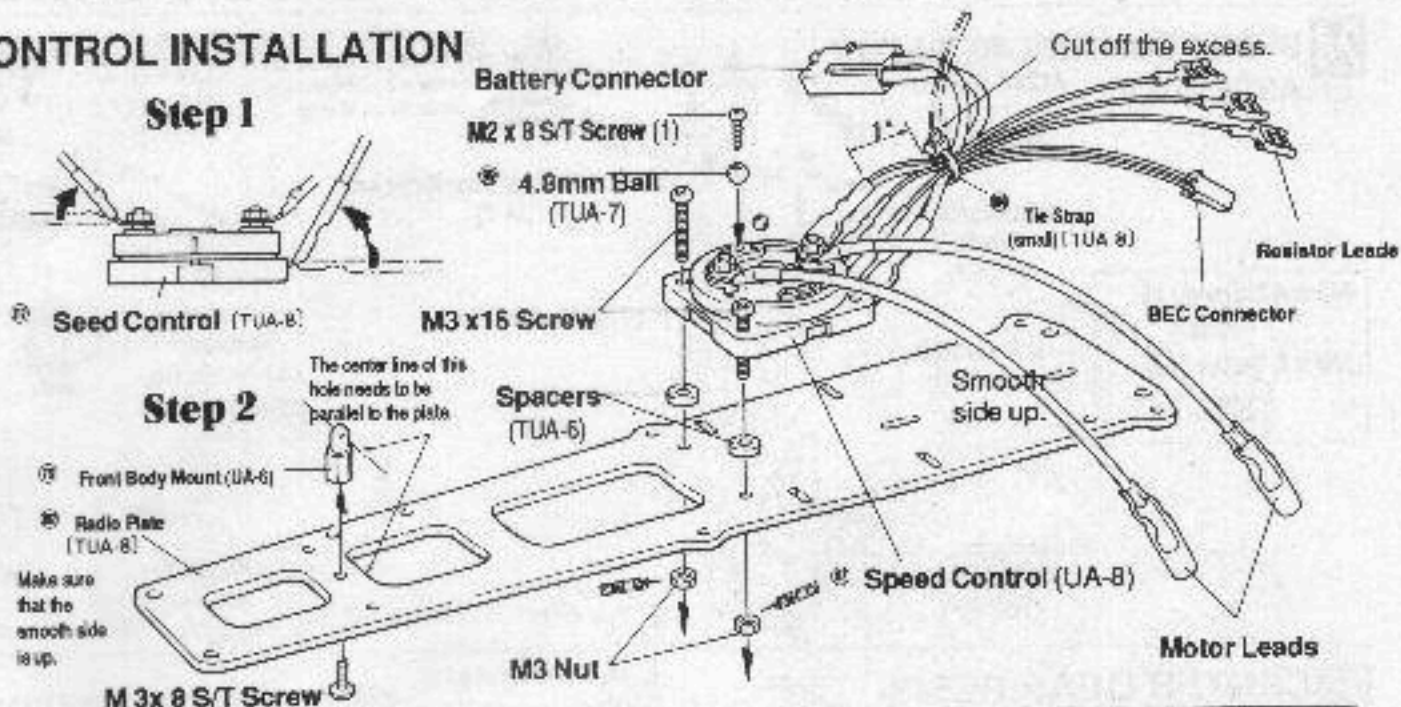
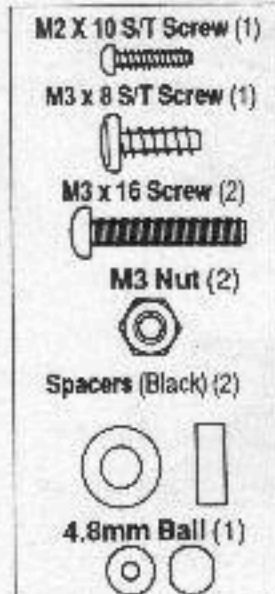
19 SERVO PREPARATION



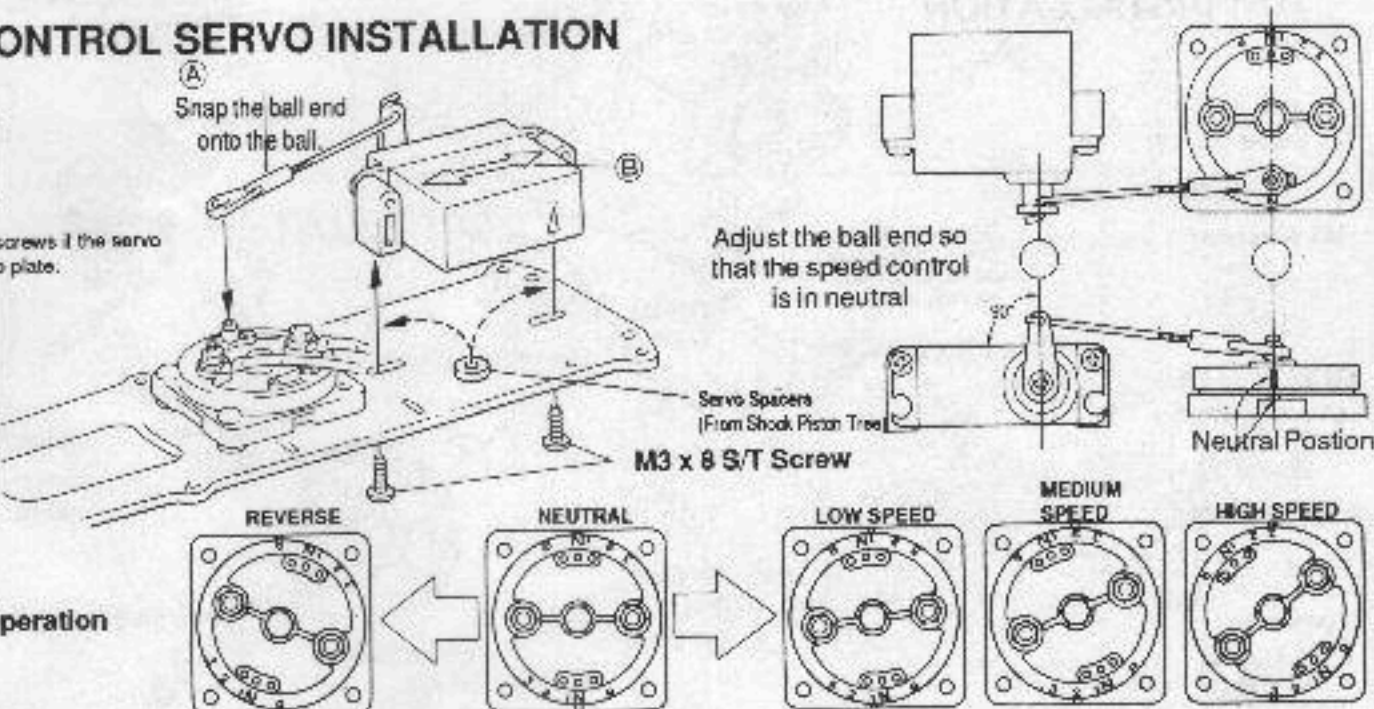
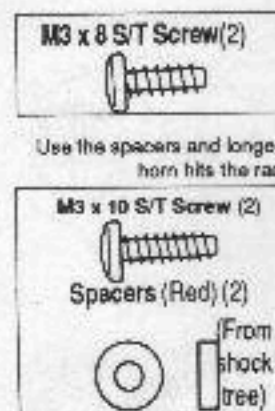
20 STEERING SERVO INSTALLATION



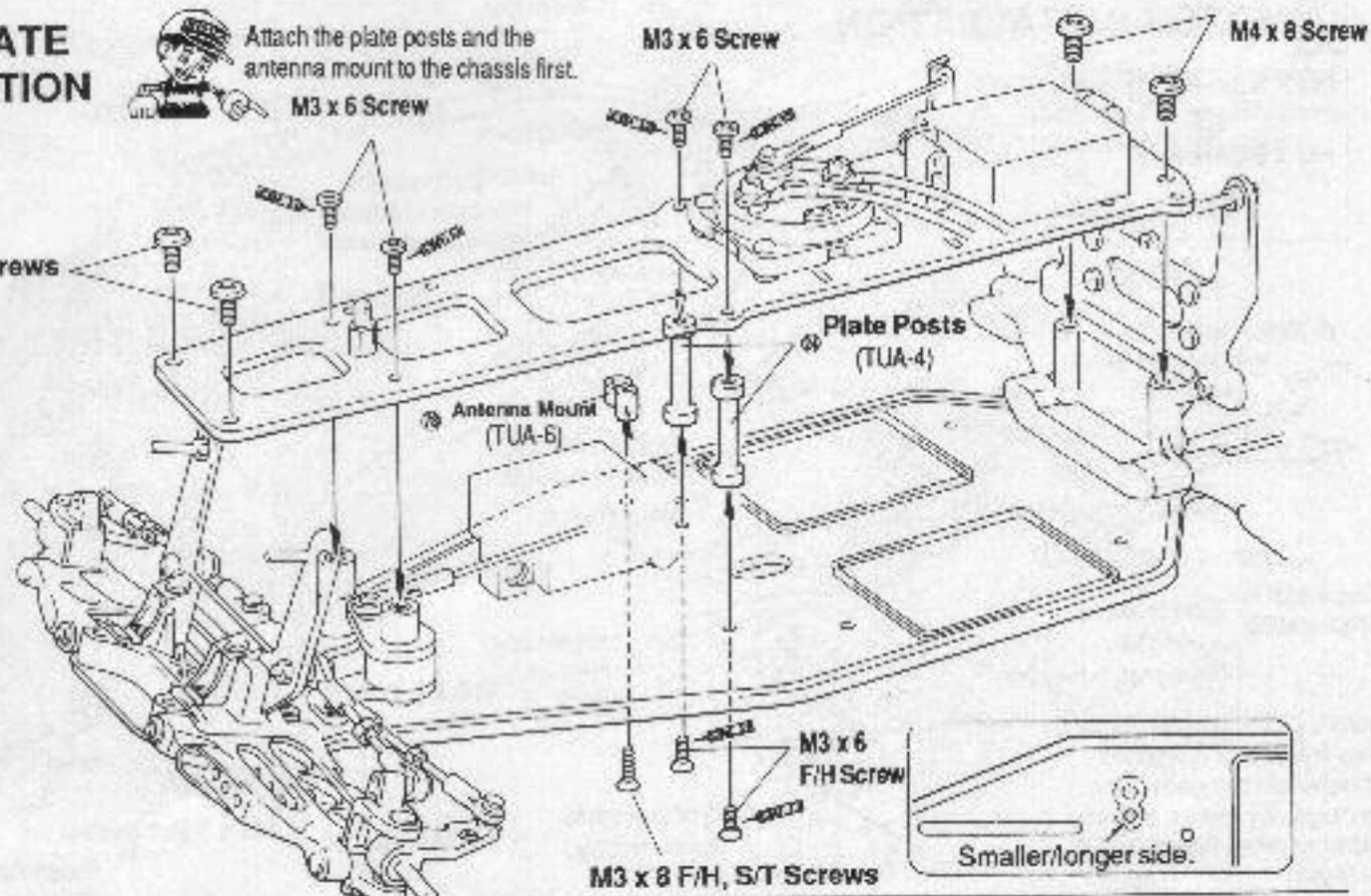
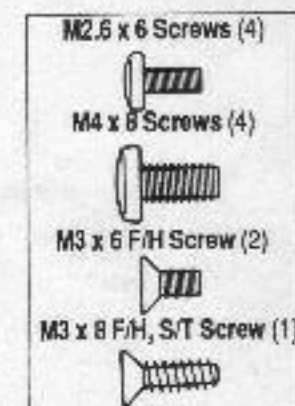
21 SPEED CONTROL INSTALLATION



22 SPEED CONTROL SERVO INSTALLATION

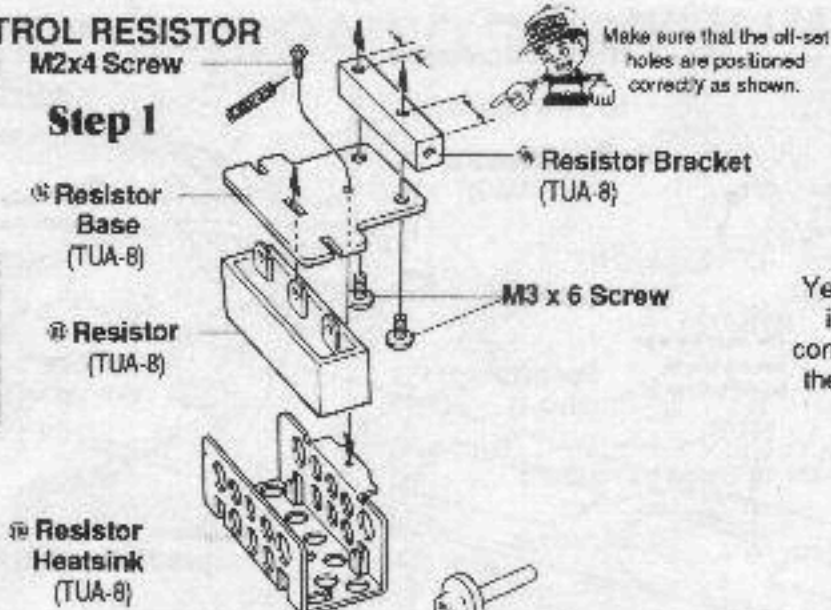


23 RADIO PLATE INSTALLATION



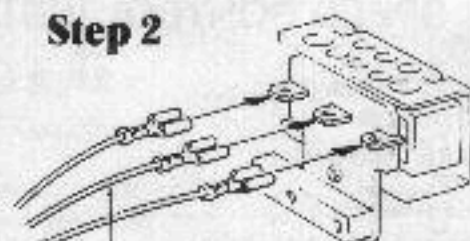
24 SPEED CONTROL RESISTOR ASSEMBLY

- M2 x 4 Screw (1)
- M3 x 6 Screw (2)



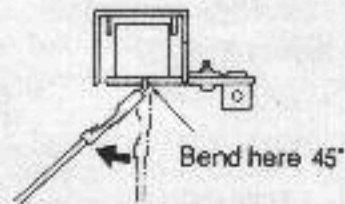
Step 2

Yellow wire is to be connected to the middle.



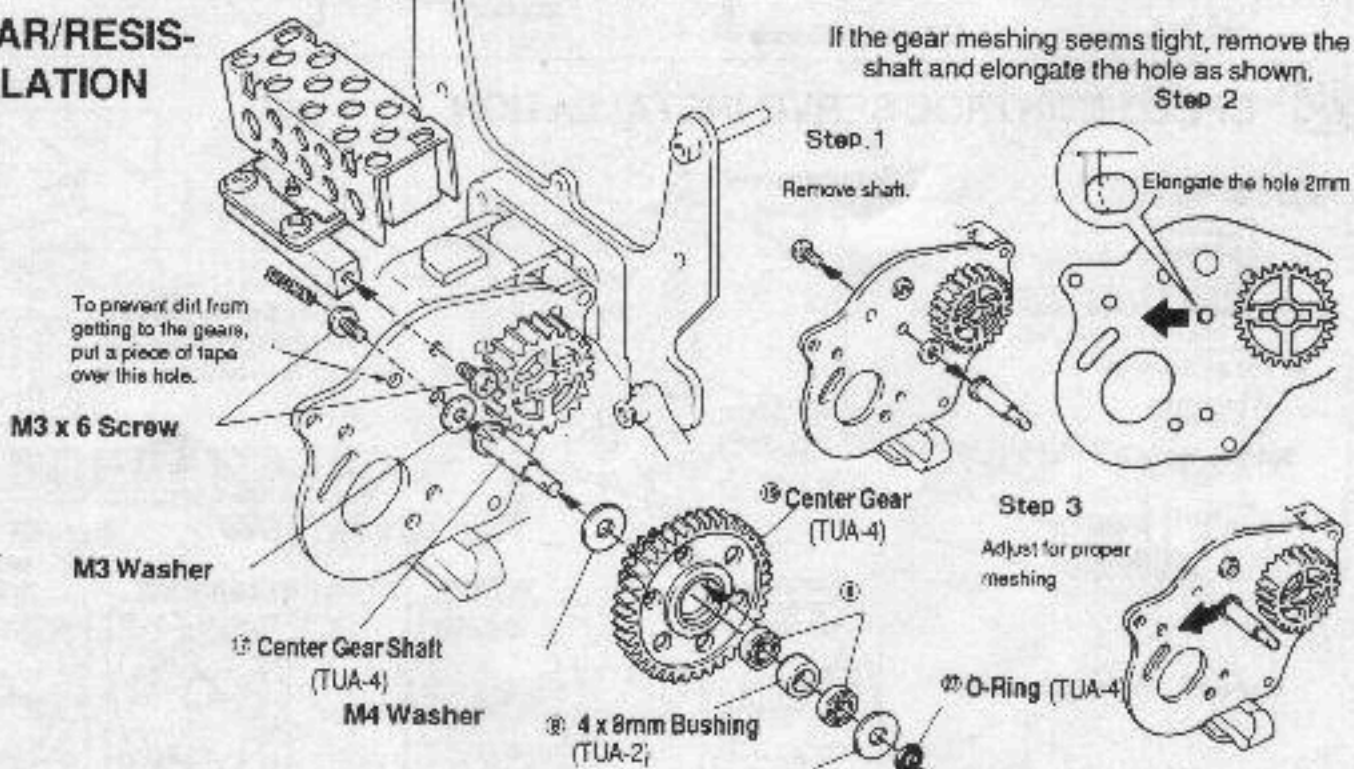
Step 3

Bend the terminals slightly.



25 CENTER GEAR/RESISTOR INSTALLATION

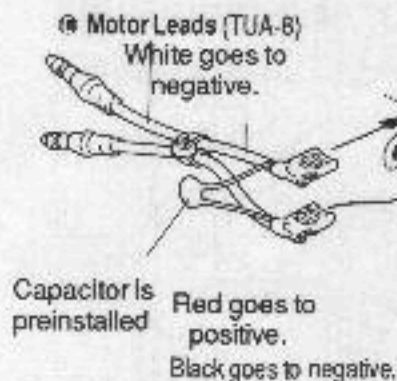
- M3 x 6 Screw (2)
- M3 Washer (1)
- M4 Washer (2)
- 4 x 8mm Bearing (2)
- 4 x 8mm Bushing (1)
- O-Ring (1)



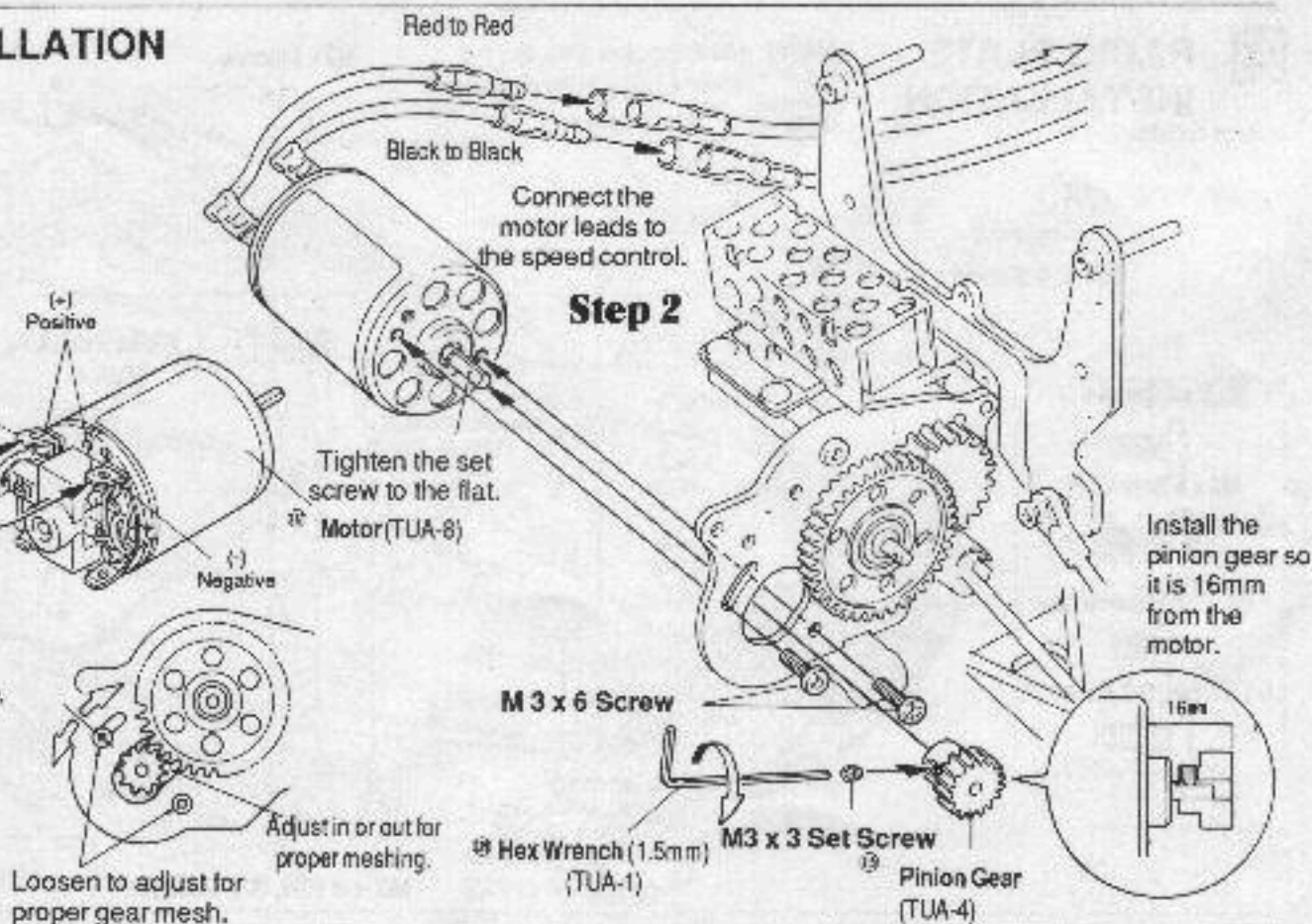
26 MOTOR INSTALLATION

- M3 X 3 Screw (1)
- M3 x 6 Screw (2)

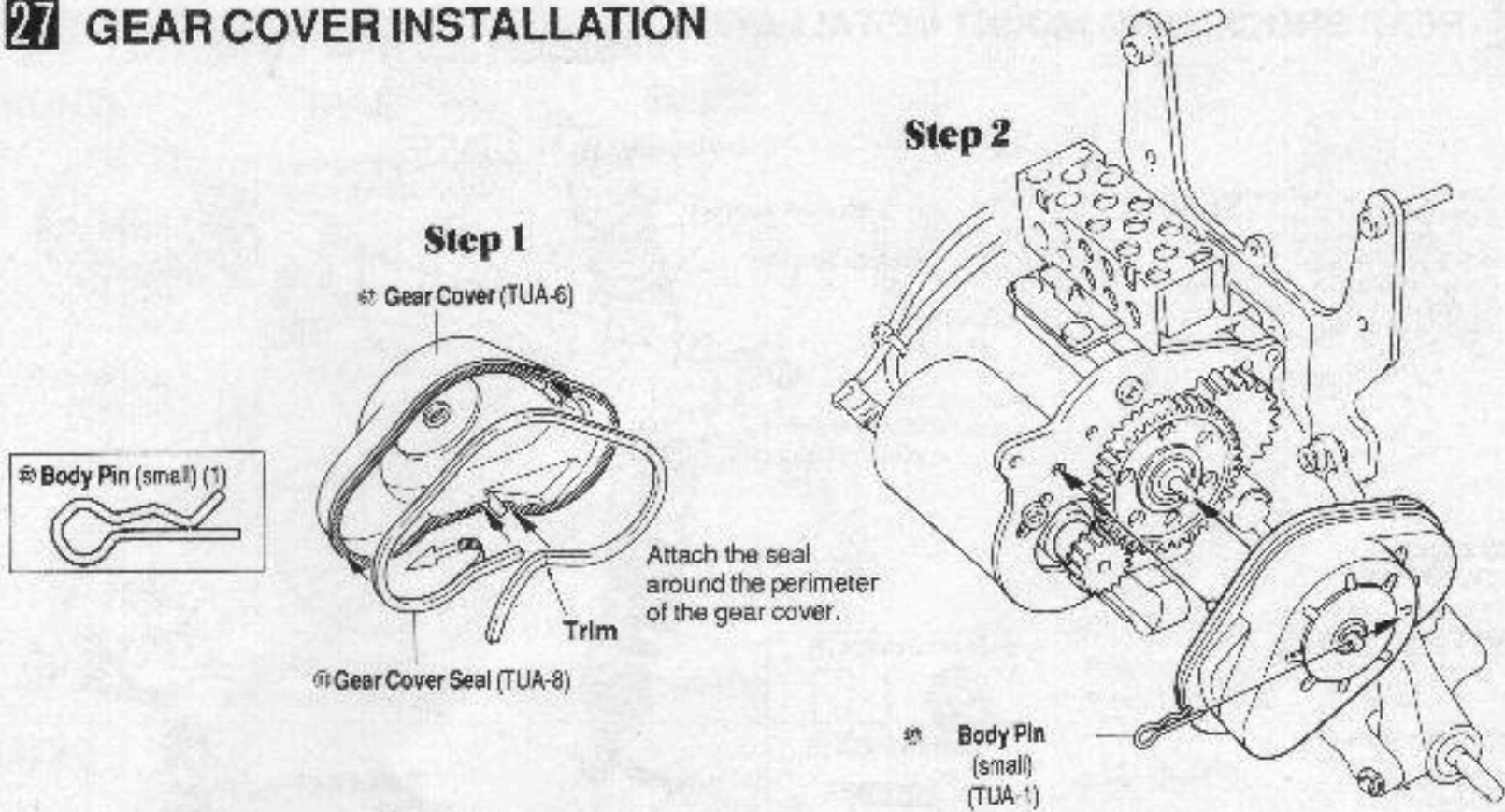
Step 1



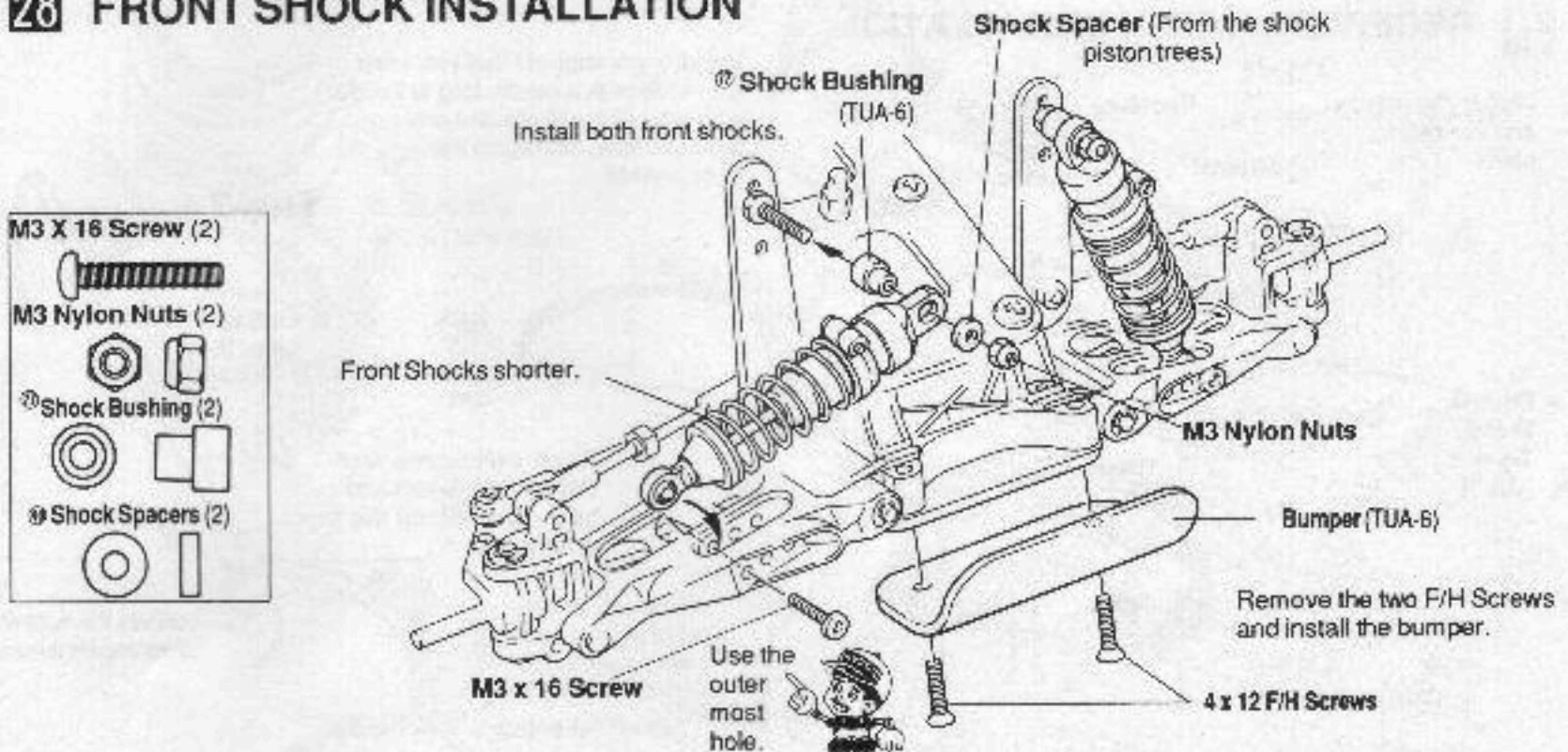
A simple trick for proper meshing is to slip a piece of notebook paper between the gears and tighten together. Next, remove the paper and the proper mesh will be there.



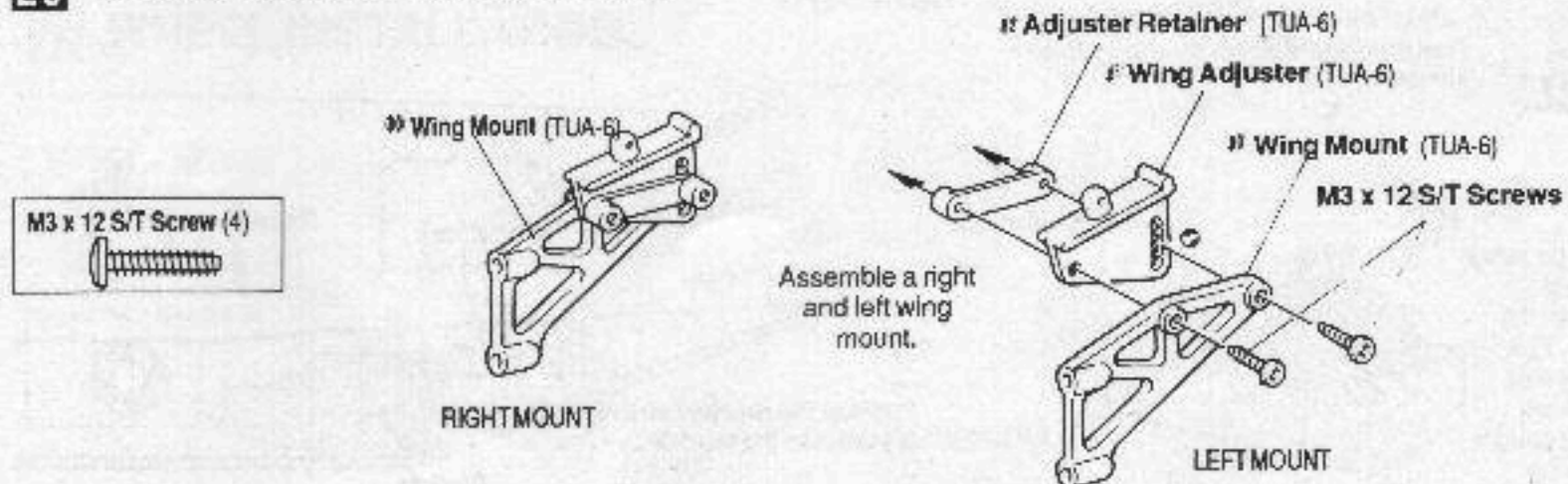
27 GEAR COVER INSTALLATION



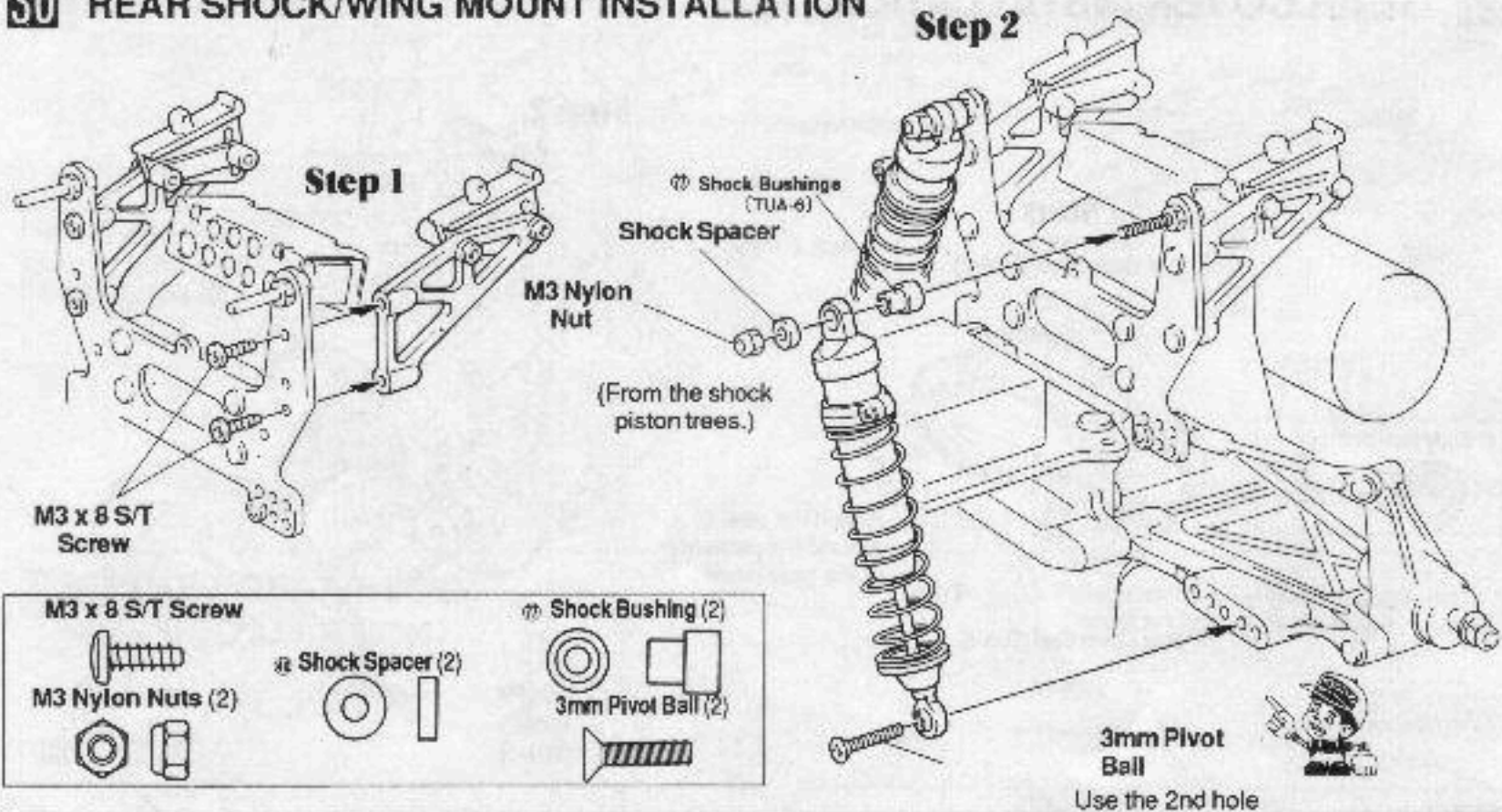
28 FRONT SHOCK INSTALLATION



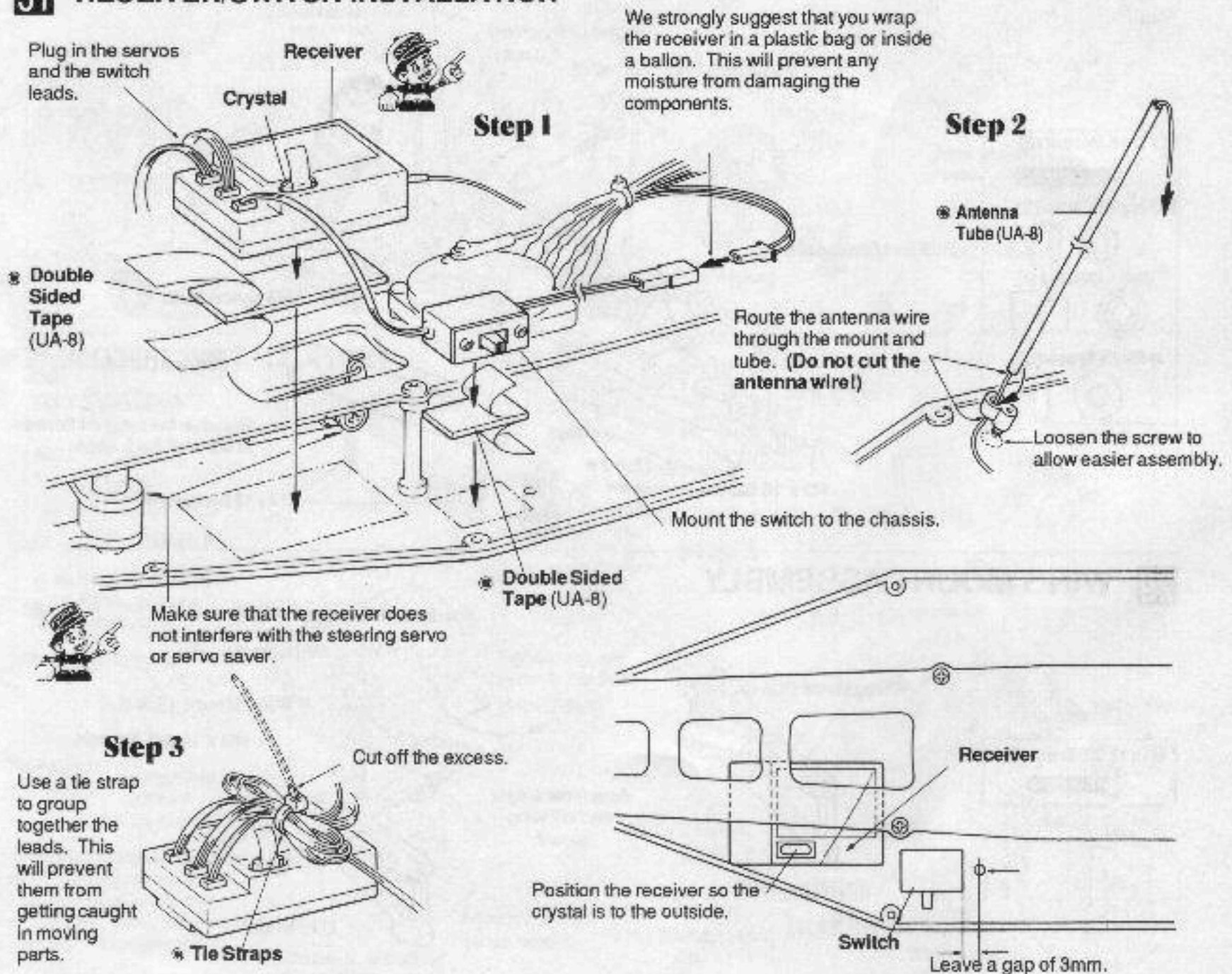
29 WING MOUNT ASSEMBLY



30 REAR SHOCK/WING MOUNT INSTALLATION



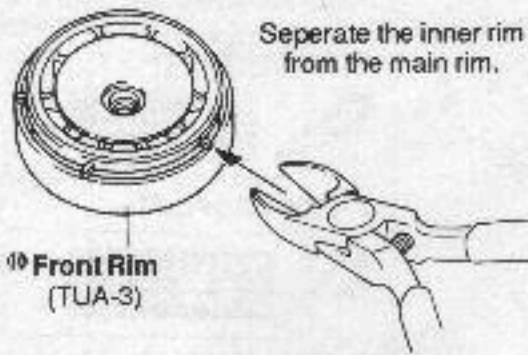
31 RECEIVER/SWITCH INSTALLATION



32 TIRE AND WHEEL ASSEMBLY

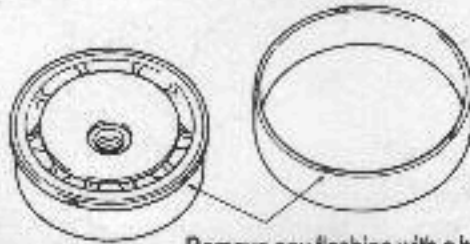
(FRONT)

Step 1



Separate the inner rim from the main rim.

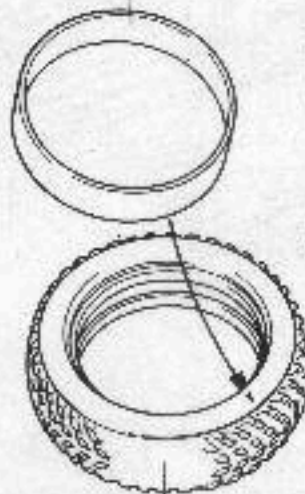
⑩ Front Rim (TUA-3)



Remove any flashing with a hobby knife

Step 2

Inner Rim



Insert the inner rim into the tire.

⑪ Front Tire

Step 3



When assembling the second wheel, make sure that the threads are mounted in the opposite direction, so when the wheels are mounted the tread pattern will be the same.



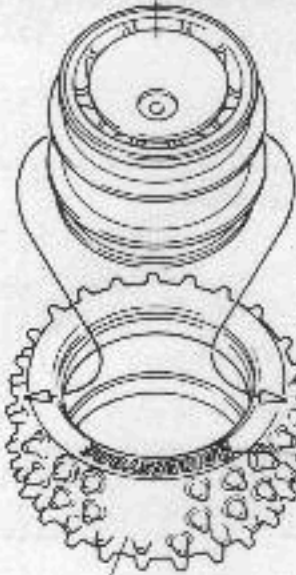
Front

Step 4

Using an instant type (cyanoacrylate) glue, apply a small amount inside the lip to hold the tire in place.

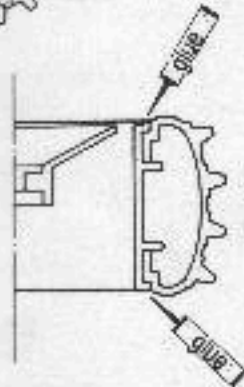
(BACK)

⑫ Rear Rim (TUA-3)



The lettering should face out.

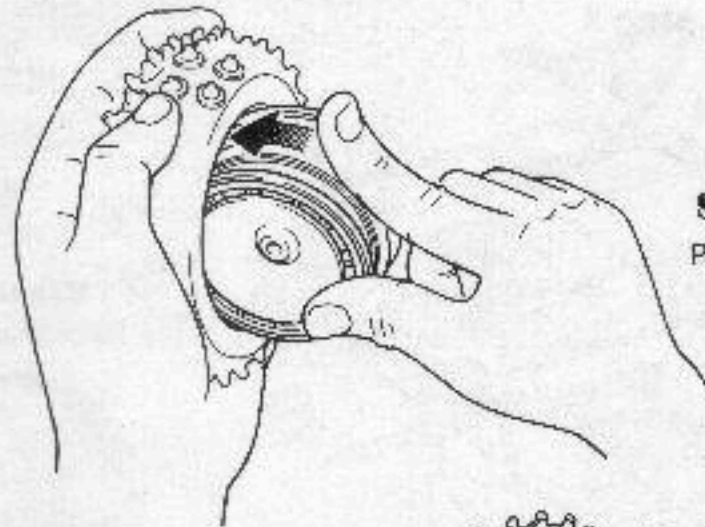
⑬ Rear Tire



Again, use an instant glue to hold the tire in place.

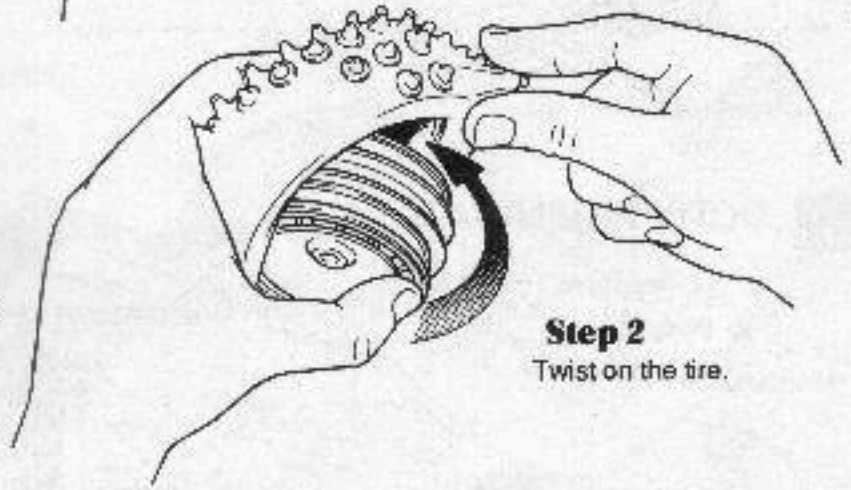
Step 1

Push in the rim sideways.



Step 2

Twist on the tire.



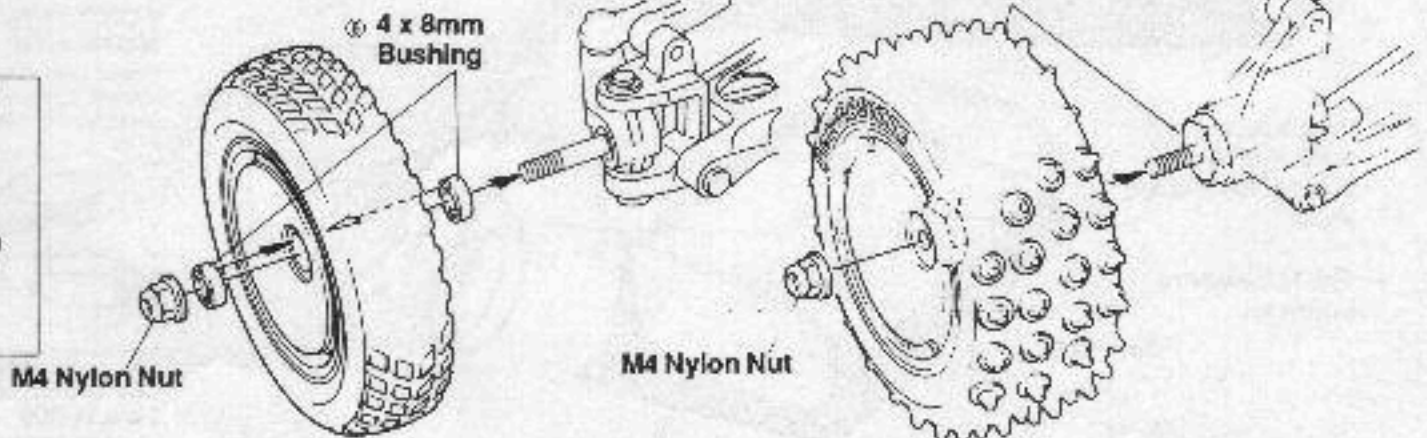
33 WHEEL INSTALLATION

Install the wheel onto the drive washer.



M4 Nylon Nut (4)

4 x 8mm Bushing (4)



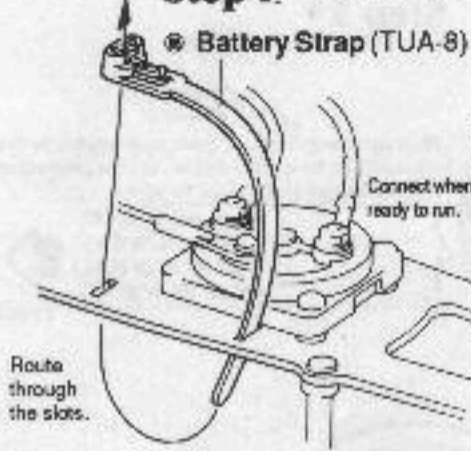
⑭ 4 x 8mm Bushing

M4 Nylon Nut

M4 Nylon Nut

34 BATTERY INSTALLATION

Step 1 (FOR STICK TYPE BATTERIES)

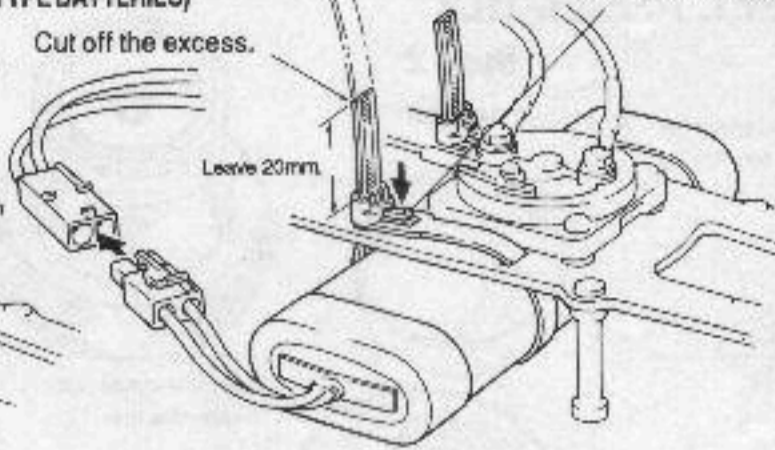


Cut off the excess.

Leave 20mm.

Step 2

Press down to release the strap.



KYOSHO

Kyosho offers a wide variety of stick type batteries which will work great in the Turbo Ultima II.

- 2310 7.2V SCR



- 2306 7.2 SPORT



(FOR SADDLE TYPE BATTERIES)

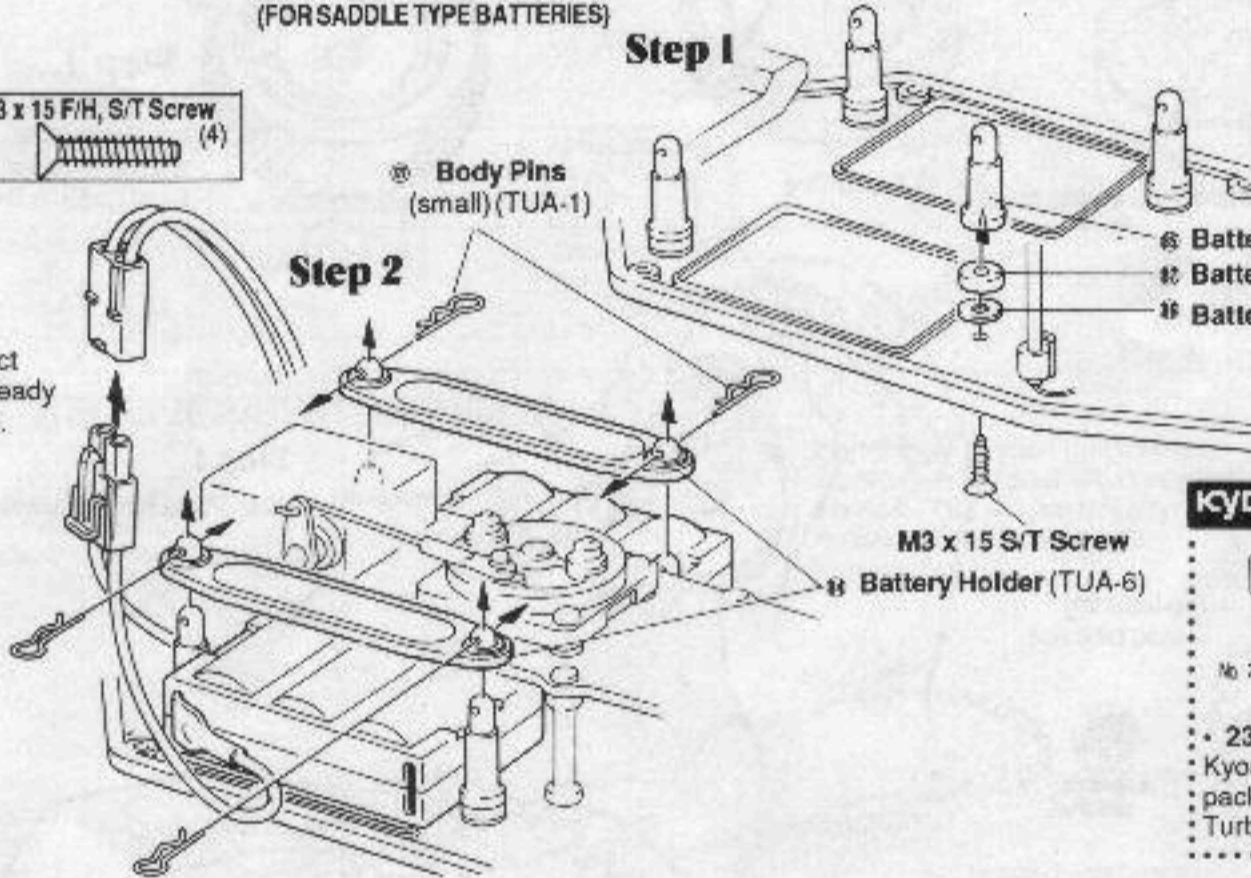
Step 1



Body Pins (small) (TUA-1)

Step 2

Connect when ready to race.



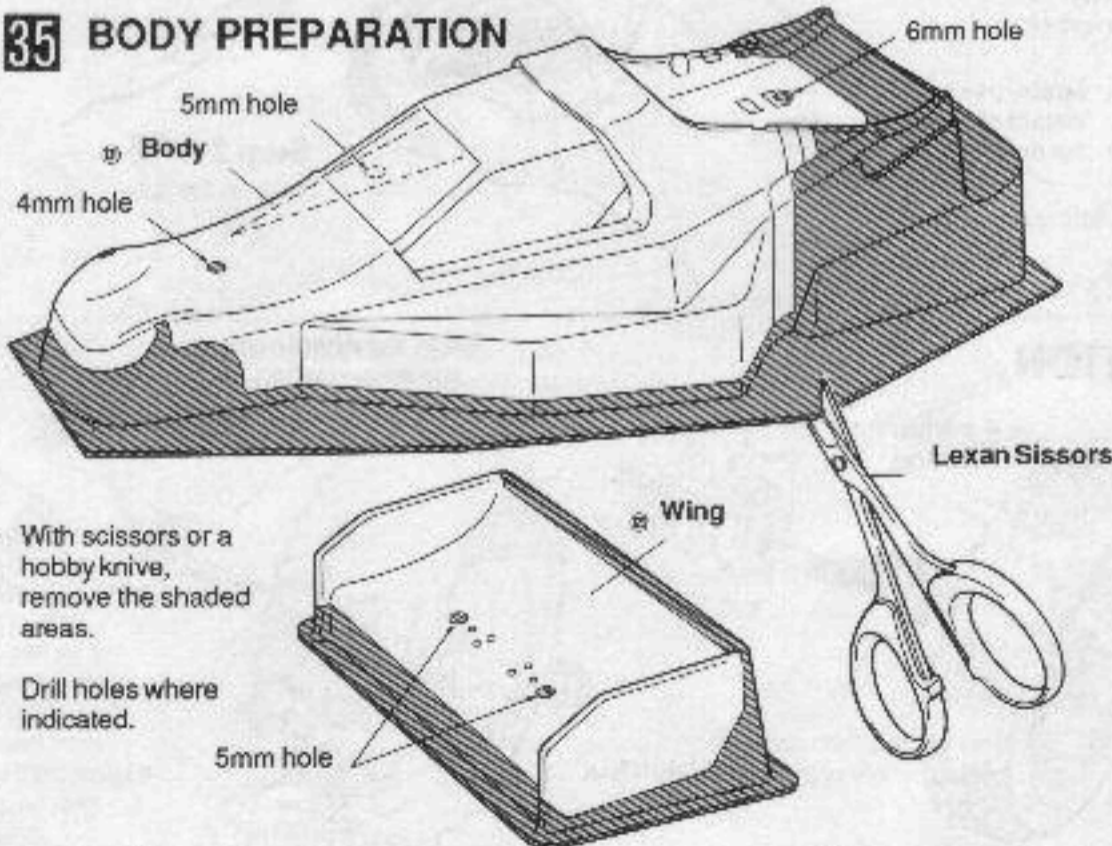
KYOSHO



- 2331 7.2V SCR

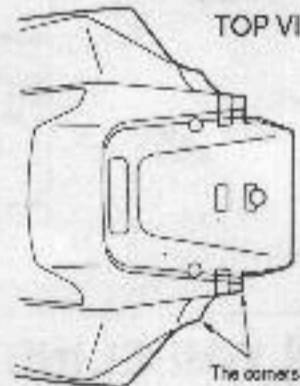
Kyosho also offers saddle packs that work great in the Turbo Ultima II.

35 BODY PREPARATION



- With scissors or a hobby knife, remove the shaded areas.
- Drill holes where indicated.

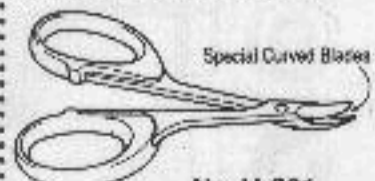
TOP VIEW



The corners should look like this.

KYOSHO

These special Lexan scissors make trimming bodies a breeze and the sander comes in handy for finishing the rough edges.



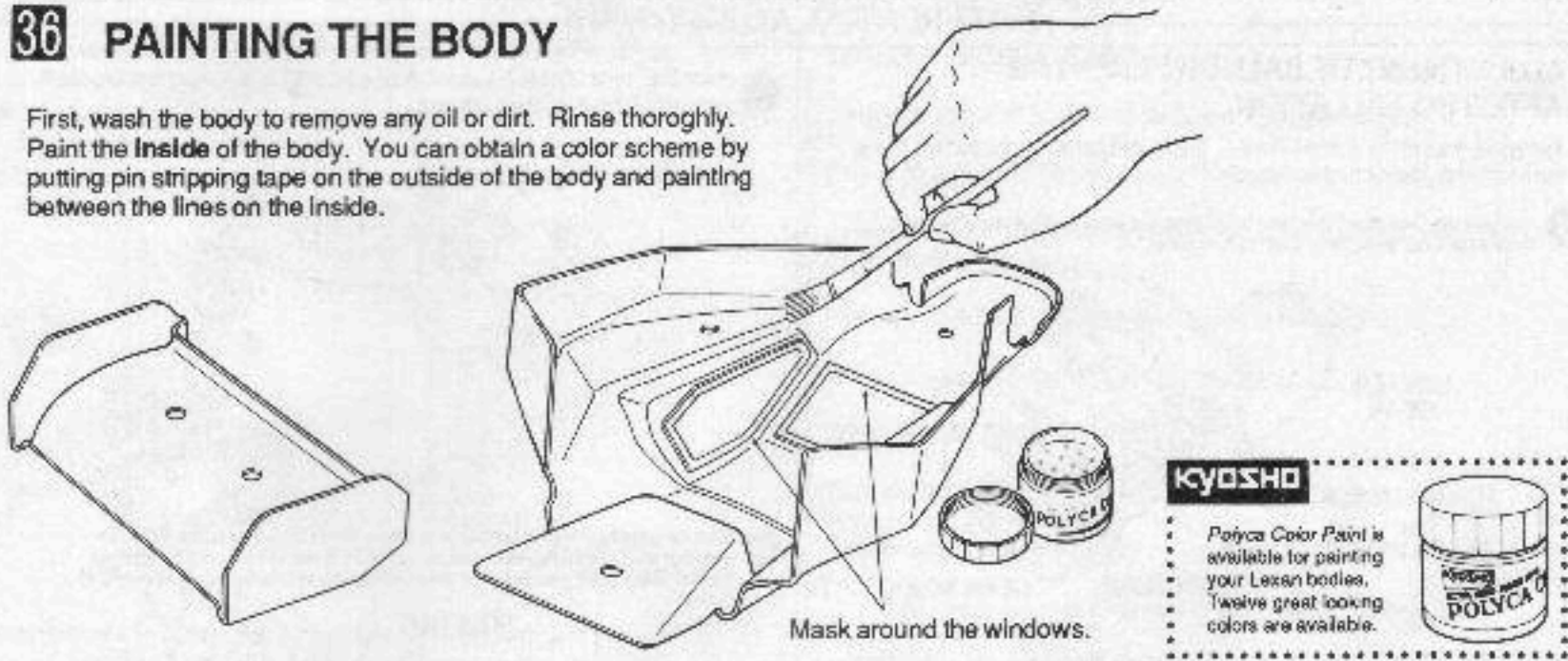
No. H-301



No. H-300

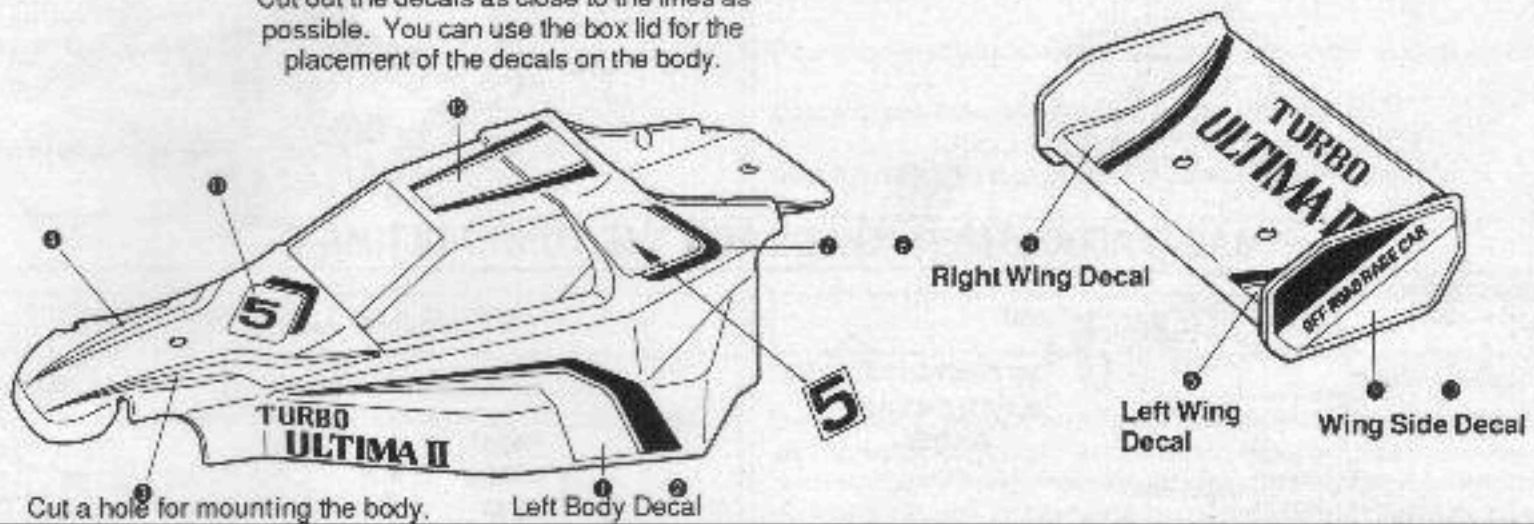
36 PAINTING THE BODY

First, wash the body to remove any oil or dirt. Rinse thoroughly. Paint the **inside** of the body. You can obtain a color scheme by putting pin stripping tape on the outside of the body and painting between the lines on the inside.

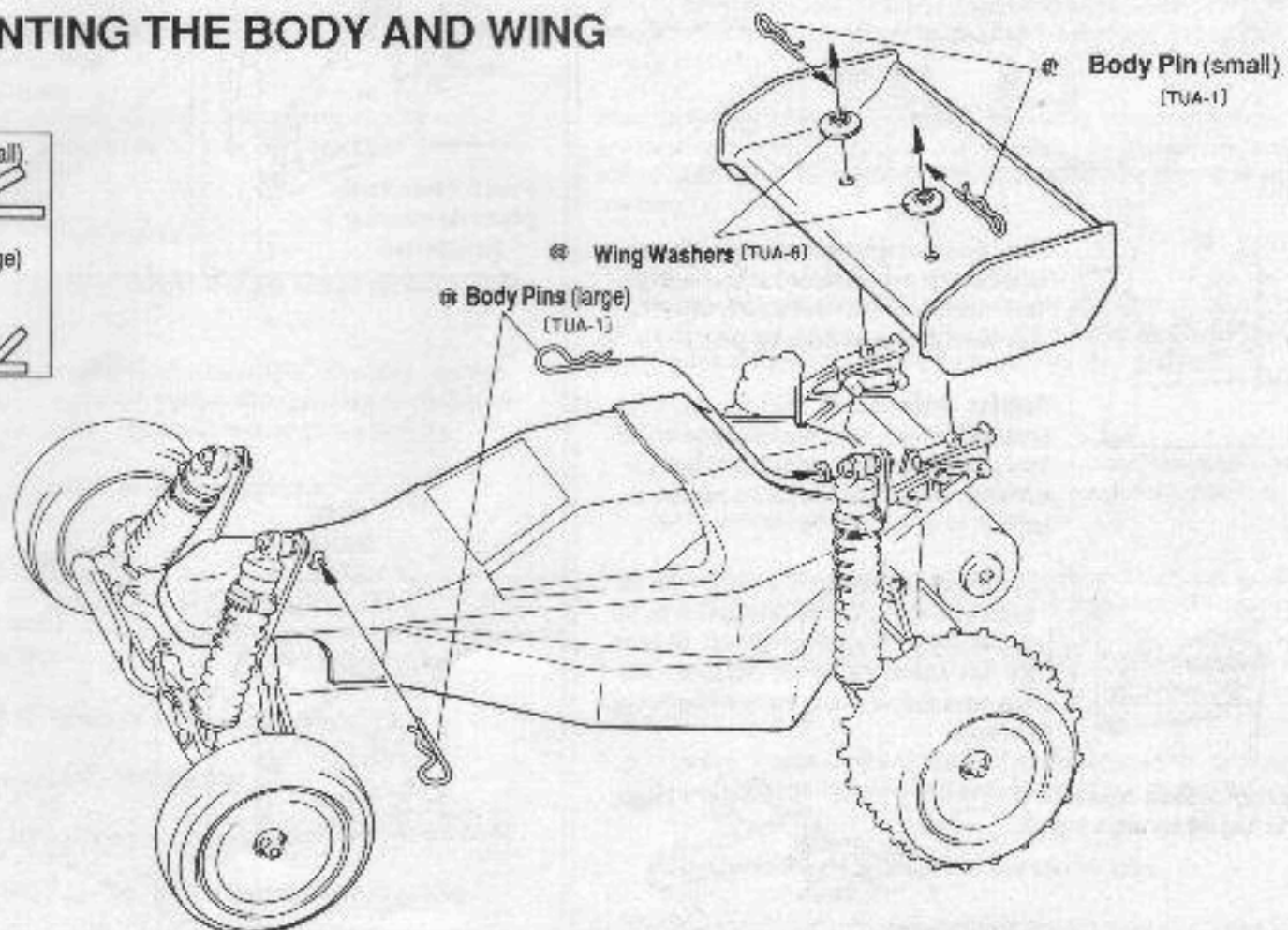
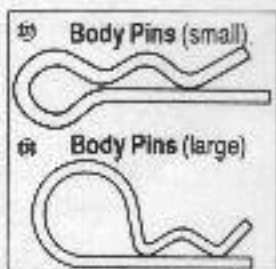


37 APPLYING THE DECALS

Cut out the decals as close to the lines as possible. You can use the box lid for the placement of the decals on the body.



38 MOUNTING THE BODY AND WING

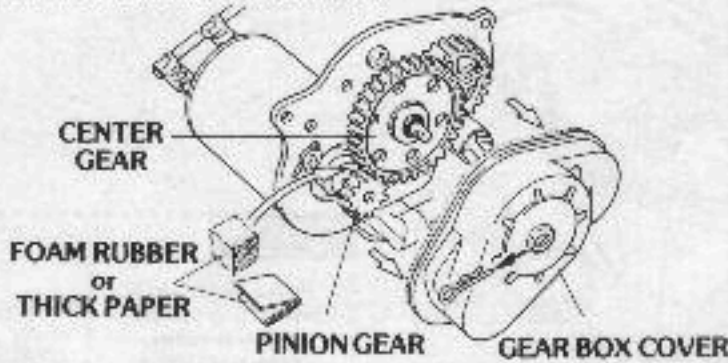


DIFFERENTIAL ADJUSTMENT

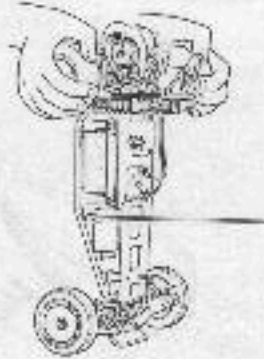
ADJUSTMENT OF BALL DIFFERENTIAL AFTER INSTALLATION

Swing the front of the Turbo Ultima II. If adjusted correctly, the car will rise to the horizontal position and no farther.

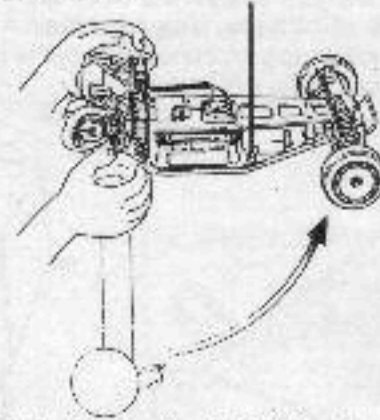
- 1 Remove the Gear Box Cover and insert a piece of foam or thick paper between the Pinion Gear and Center Gear to lock them.



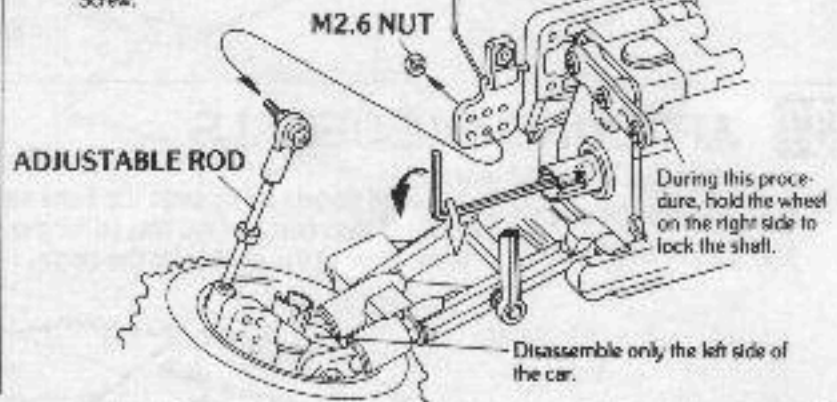
- 2 Hold both rear wheels with your hands.



- 3 After the Turbo Ultima II is assembled, perform the following test to assure proper ball differential adjustment.

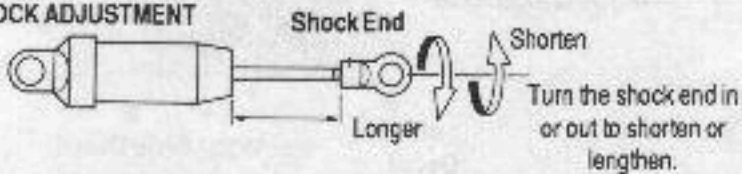


- 4 If the car goes beyond the horizontal position, the H/H Screw is too loose. If it does not reach the horizontal position, the H/H Screw is too tight. To readjust the Ball Differential, remove the nut that fastens the rear hub and adjust the H/H Screw.

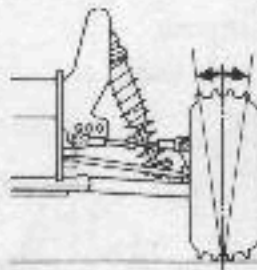
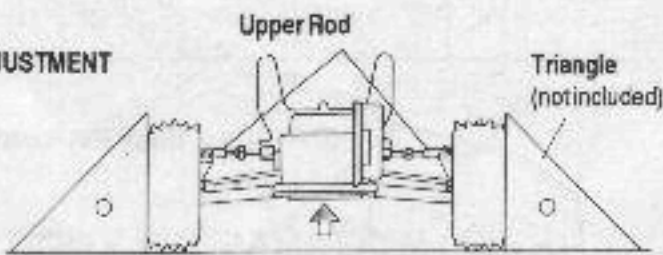


BASIC ADJUSTMENT GUIDE FOR THE TURBO ULTIMA II

SHOCK ADJUSTMENT

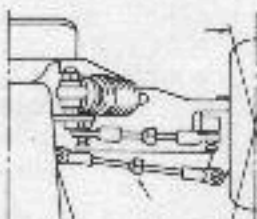


CAMBER ADJUSTMENT



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

Negative camber results when you make the upper rods shorter. With negative camber on the front wheels, sharper steering tendency will result while on the rear wheels the traction improves.

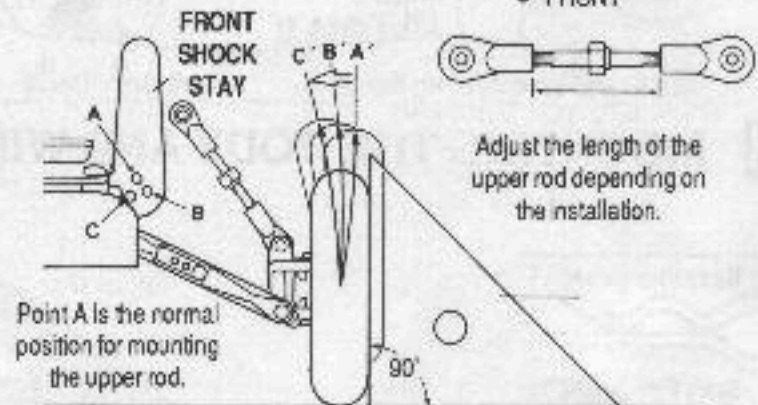


Positive camber results when you make the upper rods longer. With positive camber on the front wheels under steering will result. While on the rear wheels the car will oversteer. With excessive positive camber the swing shafts may dislocate.

The rods can be easily adjusted in or out by turning the nut with a wrench.

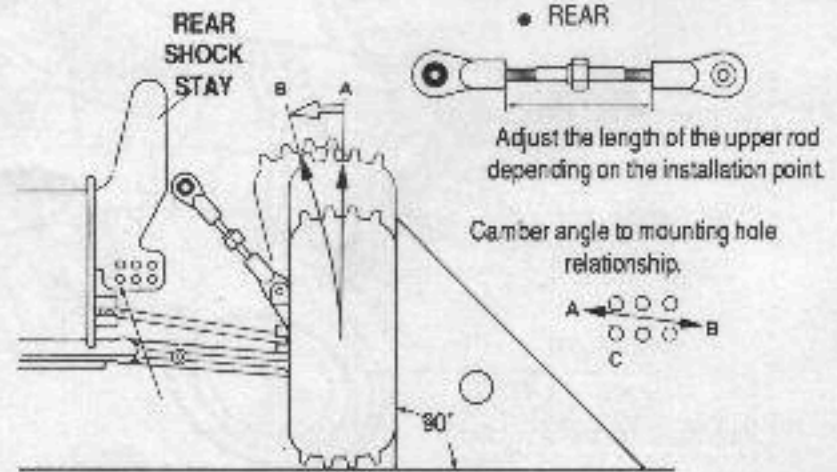


FRONT



Point A is the normal position for mounting the upper rod.

REAR

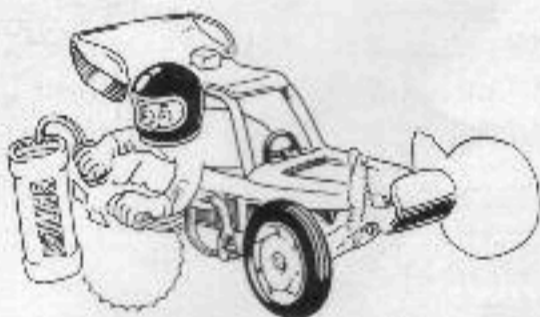


RUNNING YOUR TURBO ULTIMA II

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



After running, always remove the battery from the car.



OPERATIONAL SAFETY

Radio controlled model cars are powered by quick discharge NiCd batteries which allow the cars to obtain high speeds. **Caution** is required when operating R/C cars.

Do not run R/C cars on the street.

Check to make sure no one else is on your frequency. If so do not turn your radio on.

If your car is stopped by an obstacle do not continue running the car. Remove the car manually. Failing to do so may ruin the motor and wiring.

Do not grab the tires while they are rotating.

Before connecting the NiCd battery, check that the speed control is in the neutral position.

The motor and receiver are powered by the same NiCd battery. As the battery lowers the receiver loses power resulting in the loss of control of the car. When the car slows down, stop, and recharge the battery.

Remove the NiCd battery from the car when not in use..

MAINTENANCE AFTER RUNNING THE CAR

Wipe the dirt off of the car.

Make sure all the switches of the radio control unit are off.

Clean and grease the moving parts periodically.

Check and tighten all nuts and screws.

Wipe the speed control off with a rag or a brush and check regularly.

CHECK BEFORE EVERY RUN

Check to see if all bolts and nuts are tightened firmly.

Check to see if the NiCd battery is fully charged.

Check to see if the steering and speed control is in proportion to your control of the transmitter.

Check to see that all wiring is properly insulated.

Check to see if parts are moving smoothly.

OPERATING PROCEDURES

Turn transmitter switch on.

Switch on the receiver.

Check to see if the radio system is working properly.

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

TROUBLE SHOOTING IF THE CAR DOES NOT START

Poor contact of connectors of batteries, connector, and speed control.

Check to see if the NiCd battery is fully charged.

Check to see shortage of battery power for the transmitter.

Signal interference from other radios.

MOTOR CARE

BREAK-IN RUNNING

Breaking in your new motor is necessary to allow the brushes, commutator, and bushings to seat themselves into position. Break-in running should be done with no load placed on the motor; don't break it in while installed in your model. Since higher voltages tend to cause some vibration before break-in, the ideal break-in procedure is to run the motor at around 3-4 volts for a total period of 10 hours. If a source of 3 or 4 volts is unavailable, run the motor at a higher voltage for less time. Just remember, the lower the voltage, the better. Never exceed 7.2 volts for break-in.

After a particularly rough run in your model, the brushes and commutator may become dirty and start to bind. If this is the case, run the motor with a 7.2 volt battery for about 15-20 minutes with no load (Pinion Gear removed). This should restore the motor to its proper operating condition.

MAINTENANCE

To keep your motor in top condition, keep it clean and inspect it often. The motor was designed for use with battery packs. It is a good idea to avoid battery packs greater than 8.4 volts (7-cells). Using more voltage will shorten motor life.

Cleaning

1. To clean the inside working parts, we suggest one of the new spray motor cleaners such as "BLAST OFF" (follow the instructions supplied with the cleaner. Never spray lubricants such as WD-40 on your motor)
2. Oil the front and rear bearings with a light machine oil such as 3-IN-1 OI. Don't allow any oil to get into the inside of the motor and contaminate the commutator.
3. Occasionally check the terminals for oxidation and other contaminants.

Changing the Brushes

1. The motor brushes eventually will wear out. To replace them, slide the brush springs forward at the spring holder tabs and pull them back so that the brushes can be removed.
2. Carefully remove the brushes and install the new ones.
3. You will now have to break-in the motor again to allow the brushes to seat.

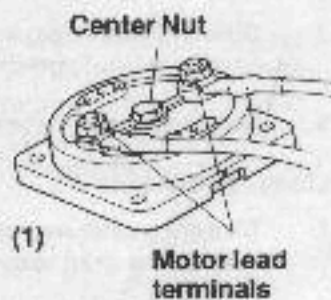
PARTS LIST

① Suspension Rod (B) 2	ⓄⓈ E-Ring (E-2.5) 16	ⓉⓈ Servo Mounts 4	ⓉⓉ Resistor 1
② Motor Plate 1	ⓄⓉ Shock Piston Tree 4	ⓉⓉ Shock Bushing 4	ⓉⓉ Resistor Headsink 1
③ 5.8mm Ball (silver) 10	ⓄⓉ Shock Seal (A) 4	ⓉⓉ Antenna Mount 1	ⓉⓉ Resistor Base 1
④ Front Shock Tower 1	ⓄⓉ Shock Seal (B) 4	ⓉⓉ Front Body Mount 1	ⓉⓉ Resistor Bracket 1
⑤ Rear Shock Tower 1	ⓄⓉ Diaphragm 4	ⓉⓉ Wing Mount 2	ⓉⓉ Motor 1
⑥ 4 x 8mm Bearing 6	ⓄⓉ O-Ring Seal 8	ⓉⓉ Wing Adjuster 2	ⓉⓉ Motor Leads 1
⑦ 5 x 10mm Bearing 6	ⓄⓉ C-Ring 4	ⓉⓉ Adjuster Retainer 2	ⓉⓉ Front Tire 2
⑧ Bearing Spacer 1	ⓄⓉ M3 x 18 Hex Head Screw 4	ⓉⓉ Wing Washer 2	ⓉⓉ Rear Tire 2
Sponge Cap 1	●Ⓣ 8 x 14mm Bearing 2	ⓉⓉ Battery Holder 2	ⓉⓉ Body 1
⑩ Front Rim 2	●Ⓣ Differential Gear 1	ⓉⓉ Battery Mount 4	ⓉⓉ Chassis 1
⑪ Rear Rim 2	●Ⓣ Differential Shaft (A) 1	ⓉⓉ Battery Mount Spacer (A) 4	ⓉⓉ Wing 1
⑫ Rear Wheel Shaft 2	●Ⓣ Differential Shaft (B) 1	ⓉⓉ Battery Mount Spacer (B) 4	ⓉⓉ Decal Sheet 1
⑬ Driver Washer 2	●Ⓣ Ball Plate 2	ⓉⓉ Bumper 1	ⓄⓉ E-Ring (E-3) 2
⑭ Final Pinion Gear 1	●Ⓣ Pressure Plate 2	ⓉⓉ Ball End 12	ⓄⓉ E-Ring (E-4) 1
⑮ Pinion Gear (15T) 1	●Ⓣ Collar 1	ⓉⓉ 4.8m Ball End 2	ⓄⓉ Body Pins (small) 7
⑯ Swing Shaft 2	●Ⓣ M2.6 x 15 Hex Head Screw 1	ⓉⓉ Ball Nut 1	ⓄⓉ Body Pins (large) 2
⑰ Center Gear Shaft 1	●Ⓣ Cup Washers 4	ⓉⓉ Suspension Rod (A) 2	ⓄⓉ Hex Wrench (1.5mm) 1
⑱ Counter Gear 1	●Ⓣ Chrome Balls (large) 10	ⓉⓉ Suspension Rod (C) 2	ⓄⓉ Hex Wrench (2mm) 1
⑲ Center Gear 1	●Ⓣ Chrome Balls (small) 8	ⓉⓉ Suspension Rod (D) 2	ⓄⓉ Hex Wrench (2.5mm) 1
ⓉⓉ Front Wheel Shaft 2	●Ⓣ Spacers 2	ⓉⓉ King Pin 2	
ⓉⓉ Counter Gear Shaft 1	●Ⓣ 8 x 12mm Shims 2	ⓉⓉ Center Rod 1	
ⓉⓉ 2 x 11mm Pin 2	ⓄⓉ Front Hub 2	ⓉⓉ Throttle Control Rod 1	
ⓉⓉ Servo Saver 2	ⓄⓉ Rear Hub 2	ⓉⓉ Steering Control Rod 1	
ⓉⓉ Plate Post 2	ⓄⓉ Knuckle Arm (R) 1	ⓄⓉ 4.8mm Ball 1	
ⓉⓉ M3 x 27 Rod 4	ⓄⓉ Knuckle Arm (L) 1	ⓄⓉ Gear Box (R) 1	
ⓉⓉ M3 x 50 Rod 2	ⓄⓉ Front Bulk Head 1	ⓄⓉ Gear Box (L) 1	
ⓉⓉ O-Ring 1	ⓄⓉ Rear Axle Stopper 1	ⓄⓉ Radio Plate 1	
ⓉⓉ 5.8mm Ball (Black) 6	ⓄⓉ Rear Bulk Head 1	ⓄⓉ Double Sided Tape 1	
ⓄⓉ Front Shock Shaft 2	ⓄⓉ Gear Cover 1	ⓄⓉ Tie Strap (small) 2	
ⓄⓉ Rear Shock Shaft 2	ⓄⓉ Front Suspension Arms 2	ⓄⓉ Battery Strap 2	
ⓄⓉ Front Shock Body 2	ⓄⓉ Rear Suspension Arms 2	ⓄⓉ Antenna Tube 1	
ⓄⓉ Rear Shock Body 2	ⓄⓉ Servo Saver (A) 1	ⓄⓉ Shock Oil 1	
ⓄⓉ Front Spring 2	ⓄⓉ Servo Saver (B) 1	ⓄⓉ Screw Cement 1	
ⓄⓉ Rear Spring 2	ⓄⓉ Servo Saver (C) 1	ⓄⓉ Hobby Grease 1	
ⓄⓉ Spring Retainer 4	ⓄⓉ Servo Saver (D) 1	ⓄⓉ 4-Way Wrench 1	
ⓄⓉ Shock Cap 4	ⓄⓉ Servo Saver Collar 2	ⓄⓉ Gear Cover Seal 1	
ⓄⓉ Spring Adjuster 4	ⓄⓉ Gear Box Hatch 1	ⓄⓉ Speed Control 1	
ⓄⓉ Shock End 4			

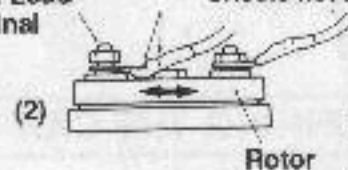
SPEED CONTROL MAINTENANCE

Check the following points before running the Speed Control.

1. Make sure that the Center Nut and the Motor Lead Terminals are tight.
2. Check the Motor Lead Terminals and Wires to make sure they do not hit on the Center Nut.
3. Make sure that the Speed Control Rod does not hit on the Motor Lead Terminals



Motor Lead Terminal Should not touch



IMPORTANT!

Every once in awhile it is necessary to remove the Center Nut and clean the Speed Control. This will ensure longer life and higher performance from your Speed Control.



PARTS LIST

You can purchase replacement and optional parts for your kit. All of the parts identified by key numbers (see page 26 for complete list) 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 within the manual. Then consult our parts pack guide below. When referring to the parts you need, always use the **Parts Pack Number**. For instance, if you need a Center Gear Shaft (Key#17) ask your dealer for Kyosho Parts Pack UM-05 (Gear Shaft Set).

STOCK #	Part #	DESCRIPTION	CONTAINS
KYOC4182	UM-01	Gear Set	18 1/2 x 1
KYOC4184	UM-05	Gear Shaft Set	17 1/2 x 1 1/2 x 2
KYOC8078	UM-07	Susp. Shaft Set	17 1/2 x 1 1/2 x 2
KYOC3737	UM-08	Shaft Set-Front	17 1/2 x 2
KYOC5387	UM-09	Rod Set	16 1/2 x 1 1/2 x 2
KYOC6069	UM-13	Susp. Arm Set	16 1/2 x 2
KYOC5653	UM-14	Servo Saver	16 1/2 x 1 1/2 x 2 1/2 x 4
KYOC2677	UM-21	Bumper	16 x 1
KYOC5694	UM-26	Shock Towers	15 1/2 x 1
KYOC2486	UM-34	Body	15 x 1
KYOC6349	UM-39G	Wheels-Frt.	10 x 2
KYOC5639	UM-42	Servo Saver Set	15 1/2 x 2
KYOC6301	UM-49	Upright Set	15 1/2 x 1 1/2 x 2
KYOC2626	UM-50	Bulk Head Set	15 1/2 x 1 1/2 x 1
KYOC4622	UM-51	Motor Plate	15 x 1
KYOC4034	UM-52	Gear Box	15 1/2 x 1
KYOC6297	UM-65	Upper Plate Set	15 x 1
KYOC4523	UM-66	Kelron Chassis	15 x 1
KYOC5372	UM-69	Resistor Stay	15 x 1
KYOC3194	UM-80	Decals	15 x 1
KYOC5485	UM-81	Screw Set	
KYOC2258	UMW-01	Wing Stay Set	15 1/2 x 2 1/2 x 4
KYOC6122	OT-006	Swing Shafts	15 x 2
KYOC5658	OT-018	Shafts-Rear	15 x 2
KYOC3332	OT-019	Drive Washer	15 x 4
KYOC4782	OT-024	Pinion Gear (15T)	15 x 1
KYOC4707	OT-029	O-Ring	15 x 10
KYOC2167	OT-032	Balls-5.8mm	15 x 10
KYOC2242	OT-033	Ball Rcptl.-2.6mm	15 x 10
KYOC3392	OT-039	E-Ring (E-2.5)	15 x 10
KYOC6246	OT-066	Tires-Low Pro	15 x 2
KYOC2169	OT-101	5.8mm Ball	15 x 10
KYOC6363	OT-107	Wing	15 x 1
KYOC4485	OT-129	Linkage Set	15 x 2 1/2 x 1
KYOC3517	OT-041	Final Pinion	14 x 1
KYOC4827	OTW-09	Plastic Parts	14 x 2 1/2 x 1 1/2 x 4
KYOC2037	OTW-11	Adjustable Rod (S)	14 x 2
KYOC2039	OTW-13	Adjustable Rod (L)	14 x 2
KYOC5692	W-5001	Gold Shocks (S)	14 1/2 x 1 1/2 x 1 1/2 x 2 1/2 x 4
KYOC5693	W-5002	Gold Shocks (L)	14 1/2 x 1 1/2 x 1 1/2 x 2 1/2 x 4
KYOC6253	W-5071	Tires Front	14 x 2
KYOC2176	W-0109	Ball Differential	14 1/2 x 1 1/2 x 1 1/2 x 2 1/2 x 4 1/2 x 8 1/2 x 10
KYOC5823	1819	Resistor-15W	14 1/2 x 1
KYOC5785	1831	Speed Control	14 x 1
KYOC6141	1840	Double Sided Tape	14 x 1
KYOC5451	1878	Screw Cement	14 1/2
KYOC2517	1889	Body Pins (Large)	14 x 5
KYOC2197	1901	5mm x 10mm Bearing	14 x 2
KYOC2207	1903	4mm x 8mm Bearing	14 x 2
KYOC2217	1911	8 x 14mm Bearing	14 x 2
KYOC6390	1942	Wrench Set	14 x 1
KYOC2194	1974	Bearing Set	14 x 1 1/2 x 2 1/2 x 1 1/2 x 6
KYOC2476	2476	Outlaw Stock Motor	14 x 1
KYOC4586	BB-26	Motor Cord	14 1
KYOC2520	EP-22	Body Pins (small)	14 x 5

STOCK #	Part #	DESCRIPTION	CONTAINS
KYOC6025	EF-037	Straps (small)	14 x 5
KYOC6020	EF-039	Battery Straps	14 x 6
KYOC2055	SD-79	Antenna Tube	14 x 5
KYOC3395	CB-072	E-Ring (E-3)	14 x 4
KYOC3400	KC-20	E-Ring (E-4)	14 x 4
KYOC2171	LA-43	5.8mm Ball End	14 x 12
KYOC6314	MA-17HG	Wheel - Rear	14 x 4

OPTIONAL PARTS

STOCK #	Part #	DESCRIPTION	CONTAINS
KYOC4767	OT-050	Pinion Gear (13T)	Ratio 9.5 : 1
KYOC4777	OT-051	Pinion Gear (14T)	Ratio 8.8 : 1
KYOC4787	OT-052	Pinion Gear (16T)	Ratio 7.7 : 1
KYOC4792	OT-053	Pinion Gear (17T)	Ratio 7.3 : 1
KYOC4797	UM-23	Pinion Gear (18T)	Ratio 6.9 : 1
KYOC4802	UM-24	Pinion Gear (19T)	Ratio 6.5 : 1
KYOC4807	UM-25	Pinion Gear (20T)	Ratio 6.2 : 1
KYOC4604	UM-28	Motor Guard	
KYOC5944	UM-29	Stabilizer Set	
KYOC3518	OT-076	Final Pinion	Hard
KYOC5638	OTW-10	Servo Saver	Special
KYOC4708	1883	Hobby Oil	
KYOC5681	1951	Shock Oil Set	(Thin, Medium, Thick)
KYOC5736	1953	Silicone Oil	Thin
KYOC5737	1954	Silicone Oil	Medium
KYOC5738	1955	Silicone Oil	Thick
KYOC5897	W-0110	Spur Gear	
KYOC3089	W-0111	Counter Gear	
KYOC5703	W-5003	Platinum Shocks (S)	
KYOC5704	W-5004	Platinum Shocks (L)	
KYOC5236	W-5031	Tires-Hard	Low-Pro Rears
KYOC6237	W-5032	Tires-Soft	Low-Pro Rears
KYOC6127	W-5061	Swing Shafts	Universal (2)
KYOC5254	W-5072	Tires Block	Front-Hard
KYOC6223	W-5073	Tires-Pin Spike	Front-Soft
KYOC6224	W-5074	Tires-Pin Spike	Front-Hard
KYOC6227	W-5077	Tires-Pin Spike	Low Profile
KYOC6228	W-5078	Tires-Block	Low Profile
See Your Local Hobby Dealer For Listing	W-5085 thru W-5093	(15T - 25T) Pinion Gears	Hardened Performance Gears
KYOC2177	WBD-01	Ball Differential Joint	
KYOC2178	WBD-02	Ball Differential Balls	
KYOC2179	WBD-03	Ball Differential Gear	