

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**<sup>®</sup>  
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.

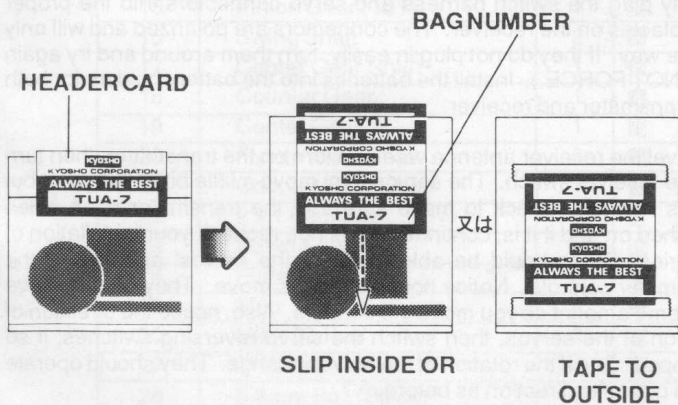
# TURBO ULTIMA II™

## IMPORTANT! BEFORE YOU BEGIN

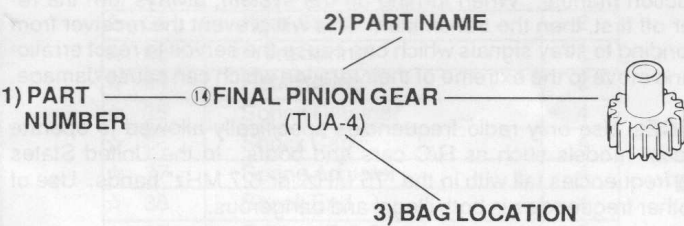
This is a sophisticated model with a large number of moving parts. Before you begin assembly, take a look through the box and these instructions carefully to decide whether or not you are ready for this challenge! If you do not think that this type of model is for you, it may be returned to the dealer 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

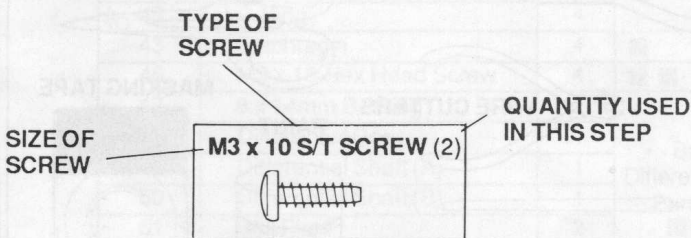
This Kyosho instruction manual uses a unique cross reference system to help you locate all of the bagged parts. DO NOT open each bag and dump out the parts. Carefully remove the header card from the bag and discard the staple. Slip the header card into the bag or tape it to the outside of the bag so 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.

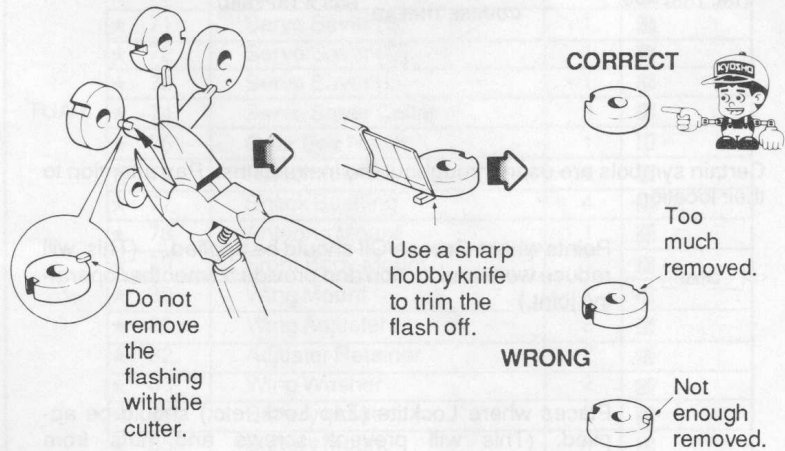


On page 26 you will find a complete list of parts used in this kit including the part number and total quantity supplied in the kit. On pages 5 and 6 you will find an inventory of how each part is bagged in this kit and in which step it is used. When ordering replacement or optional parts, see page 27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

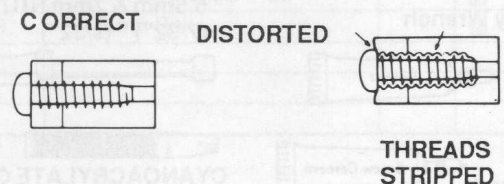
## HELPFUL TIPS AND PRECAUTIONS

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.



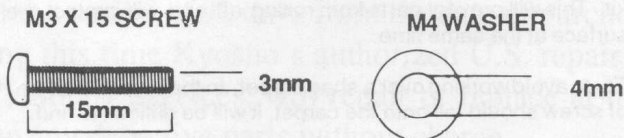
7. Trial fit all parts to ensure proper fit before attaching them permanently.
8. Do not use excessive force when tightening self-tapping type screws into plastic. Overtightening will cause the threaded portion of the plastic to strip. It is recommended to stop tightening when some resistance is felt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



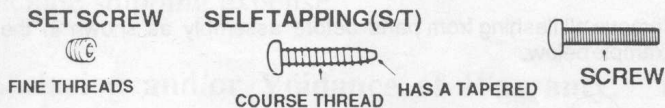
9. Ensure that all parts are well lubricated where the instructions indicate the use of grease.
10. Avoid using power screwdrivers when assembling your kit. They tend to overtighten screws.
11. Take your time and read the directions thoroughly. It's not how fast you can assemble the kit but how fast 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 Locktite (Zap Lock, etc.) should be applied. (This will prevent screws and nuts from loosening up during operation due to the vibration of the model.)

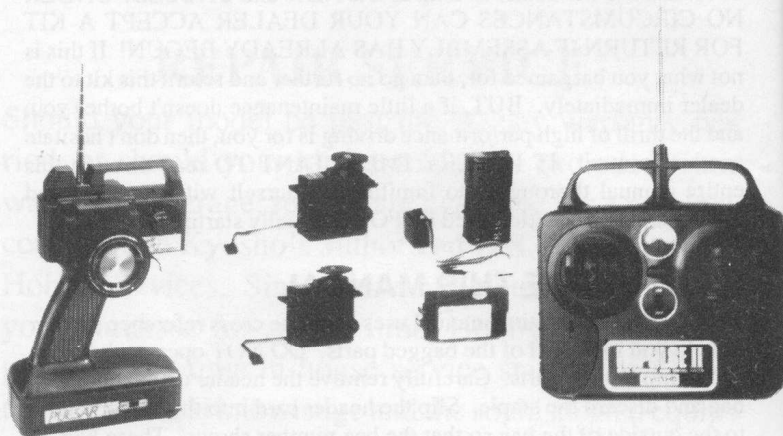


When you see this face, there are steps that you should pay extra particular attention to when building this model.

## 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.

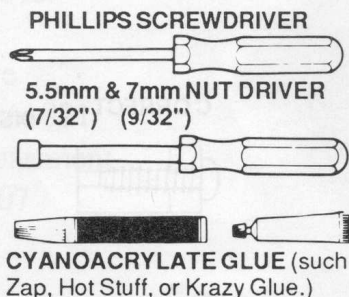
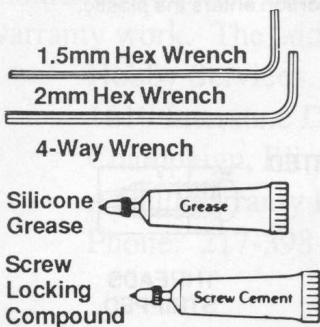
Decide whether your radio is in proper working order. If you decide that it is defective, check the warranty procedures described in the radio instruction manual. When turning off the system, always turn the receiver off first, then the transmitter. This will prevent the receiver from responding to stray 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.

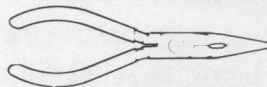
## REQUIRED TOOLS

These ARE included with the kit.

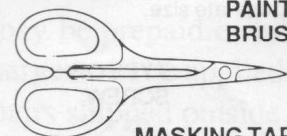
These ARE NOT included with the kit.



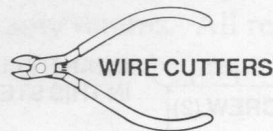
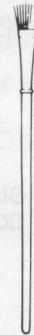
## NEEDLE NOSE PLIERS



## LEXAN SCISSORS



PAINT BRUSH

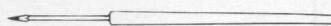


WIRE CUTTERS

MASKING TAPE



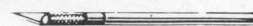
AWL



PAINT



HOBBY KNIFE



CYANOACRYLATE GLUE (such as Jet, Zap, Hot Stuff, or Crazy Glue.)

## 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	9	
	2	Motor Plate	1	4	
	3	5.8mm Ball (Silver)	10	1 2	
	4	Front Shock Tower	1	12	
	5	Rear Shock Tower	1	7	
	6	4 x 8mm Bearing	6	33 25	
	7	5 x 10mm Bearing	6	4 6 9	
	8	Bearing Spacer	1	25	
	9	Sponge Cap	1	6	
TUA-3	10	Front Rim	2	32	
	11	Rear Rim	2	32	
TUA-4	12	Rear Wheel Shaft	2	9	
	13	Driver Washer	2	9	
	14	Final Pinion Gear	1	5	
	15	Pinion Gear (15T)	1	26	
	16	Swing Shaft	2	10	
	17	Center Gear Shaft	1	25	
	18	Counter Gear	1	4	
	19	Center Gear	1	25	
	20	Front Wheel Shaft	2	11	
	21	Counter Gear Shaft	1	4	
	22	2 x 11mm Pin	2	4	
	23	Servo Saver	2	16	
	24	Plate Post	2	23	
	25	M3 x 27 Rod	4	1	
	26	M3 x 50 Rod	2	1	
	27	O-Ring	1	25	
	28	5.8mm Ball (Black)	6	1	
TUA-5	☆ 29	Front Shock	2	★ - Shock Parts 2	
	☆ 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 Piston Tree	4		
	☆ 41	Shock Seal (A)	4		
	☆ 42	Shock Seal (B)	4		
	☆ 44	O-Ring Seal	8		
	☆ 45	C-Ring	4		
	43	Diaphragm	4		3
	46	M3 x 18 Hex Head Screw	4		7 12
	• 47	8 x 14mm Bearing	2		• - Ball Differential Parts 6
• 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 6
	• 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	
★ 61		Rear Hub	2	9
★ 62		Knuckle Arm (R)	1	11
★ 63		Knuckle Arm (L)	1	11
64		Front Bulk Head	1	12
65		Rear Axle Stopper	1	10
66		Rear Bulk Head	1	7
67		Gear Cover	1	27
68		Front Suspension Arms	2	13
69		Rear Suspension Arms	2	9
★ 70		Servo Saver (A)	1	15
★ 71		Servo Saver (B)	1	15
★ 72		Servo Saver (C)	1	15
★ 73		Servo Saver (D)	1	15
★ 74		Servo Saver Collar	2	16
★ 75		Gear Box Hatch	1	8
★ 76		Servo Mounts	4	19
★ 77		Shock Bushing	4	28 30
★ 78		Antenna Mount	1	28
★ 79		Front Body Mount	1	21
★ 80		Wing Mount	2	29
★ 81		Wing Adjuster	2	29
★ 82		Adjuster Retainer	2	29
★ 83		Wing Washer	2	38
★ 84		Battery Holder	2	34
★ 85		Battery Mount	4	34
★ 86		Battery Mount Spacer (A)	4	34
★ 87		Battery Mount Spacer (B)	4	34
88		Bumper	1	28
TUA-7		89	Ball End	12
	90	4.8mm Ball End	2	19
	91	Ball Nut	1	15
	92	Suspension Rod (A)	2	9
	93	Suspension Rod (B)	2	13
	94	Suspension Rod (D)	2	13
	95	King Pin	2	11
	96	Center Rod	1	15
	97	Throttle Control Rod	1	19
	98	Steering Control Rod	1	19
	99	4.8mm Ball	1	21

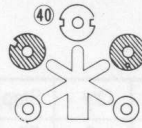
# LIST OF BAGGED PARTS (2)

Bag #	Key #	Description	Qty	Step used in
TUA-8	100	Gear Box (R)	1	4
	101	Gear Box (L)	1	6
	102	Radio Plate	1	21
	103	Double Sided Tape	1	31
	104	Tie Straps (Small)	2	21 31
	105	Battery Straps	2	34
	106	Antenna Tube	1	31
	107	Shock Oil	1	3
	108	Screw Cement	1	
	109	Hobby Grease	1	
	110	4-Way Wrench	1	
	111	Gear Box Cover Seal	1	27
	112	Speed Control	1	21
	113	Resistor	1	24
	114	Resistor Heatsink	1	24
	115	Resistor Base	1	24
	116	Resistor Bracket	1	24
	117	Motor	1	26
118	Motor Leads	1	26	
	119	Front Tire	2	32
	120	Rear Tire	2	32
	121	Body	1	35
	122	Chassis	1	3
	123	Wing	1	35
	124	Decal Sheet	1	37
TUA-1	39	E-Ring (E-2.5)	8	9 13
	125	E-Ring (E-3)	2	11
	126	E-Ring (E-4)	1	6
	127	Body Pins (Small)	7	38 34 27
	128	Body Pins (Large)	2	38
	129	Hex Wrench (1.5mm)	1	26
	130	Hex Wrench (2mm)	1	5 6
	131	Hex Wrench (2.5mm)	1	7 12
		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		

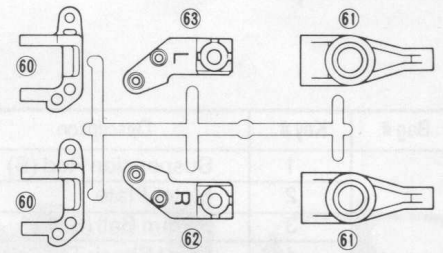
# PLASTIC PARTS TREE LAYOUTS

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

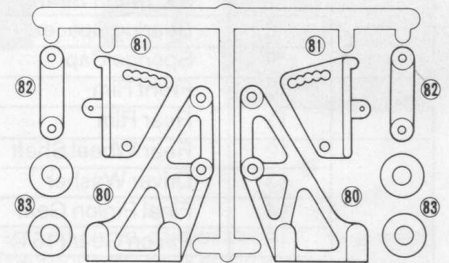
## SHOCK PISTONS



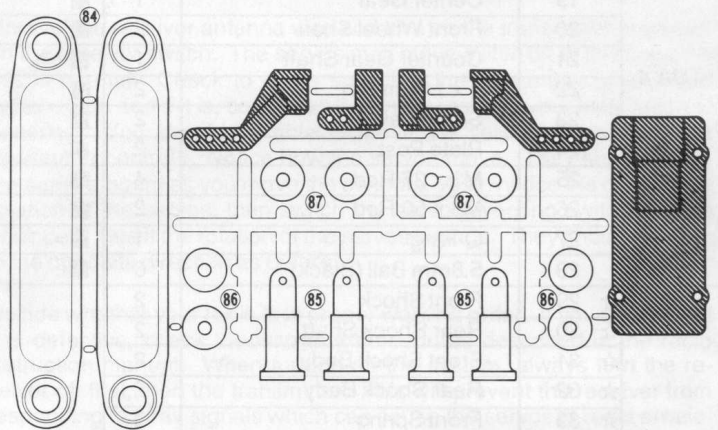
## KNUCKLE ARMS



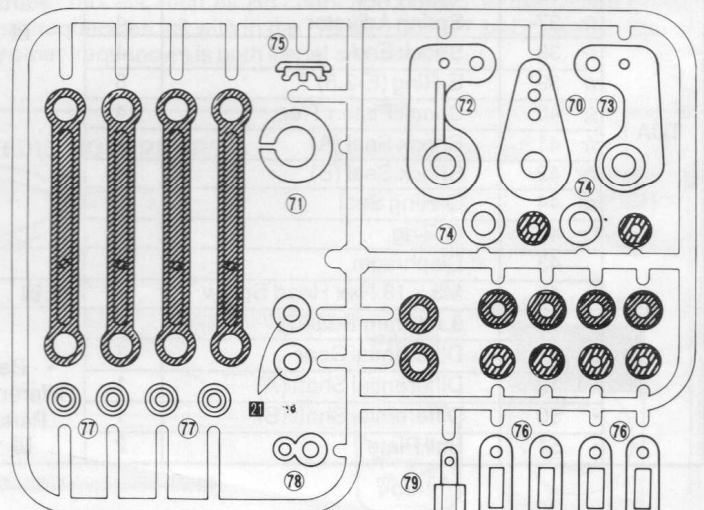
## WING MOUNT



## BATTERY MOUNTING ACCESSORIES



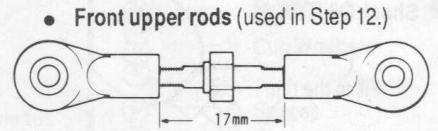
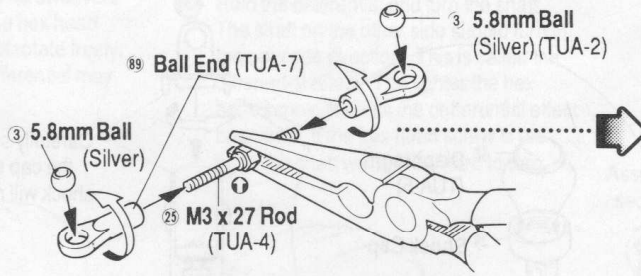
## SERVO ACCESSORIES



# 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.



Assemble two of the above rod.

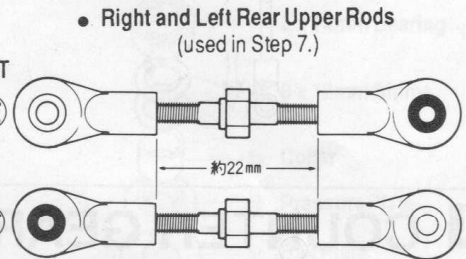
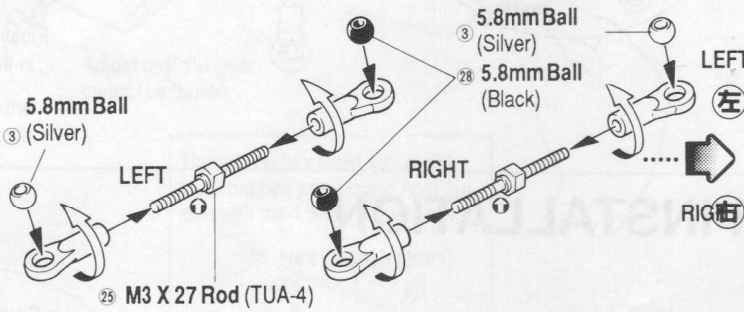
**89 Ball End (12)**

**3 5.8mm Ball (Silver) (6)**

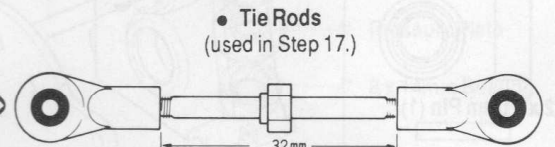
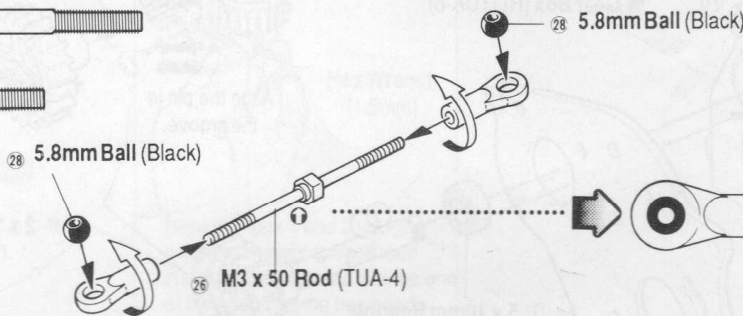
**26 M3 x 50 Rod (2)**

**25 M3 x 27 Rod (4)**

**28 5.8mm Ball (6) (Black)**



Assemble one each of the above rods.



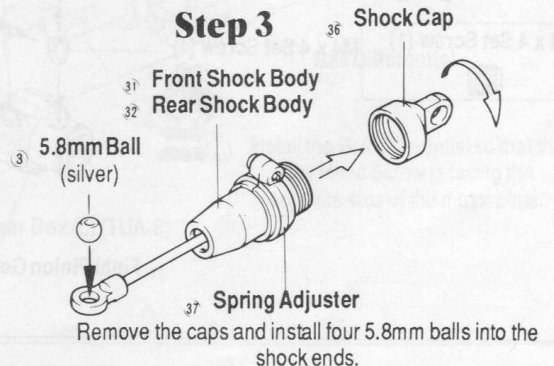
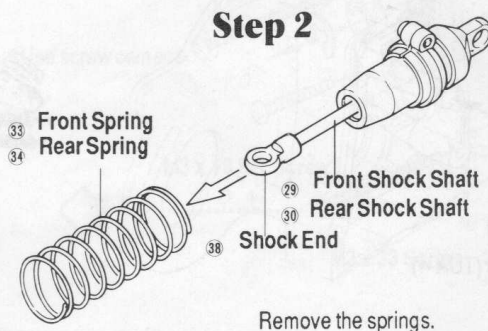
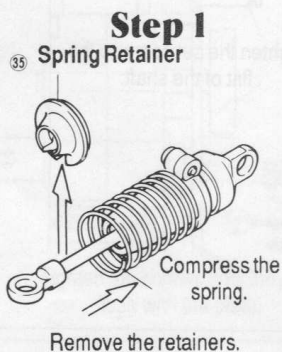
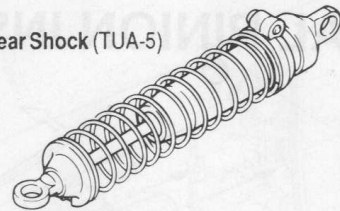
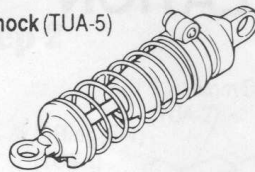
Assemble two of the above rod.

# 2 SHOCK PREPARATION

**3 5.8mm Ball (4) (Silver)**

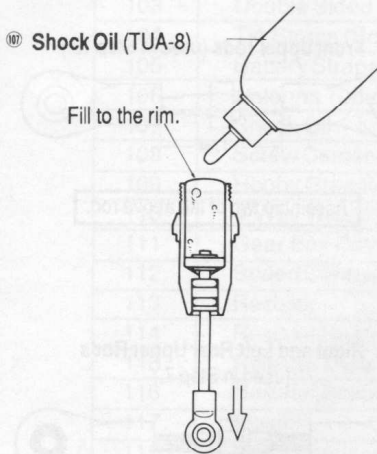
Front Shock (TUA-5)

Rear Shock (TUA-5)

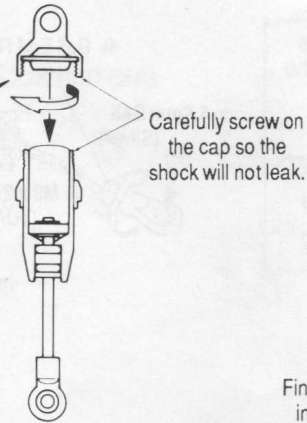
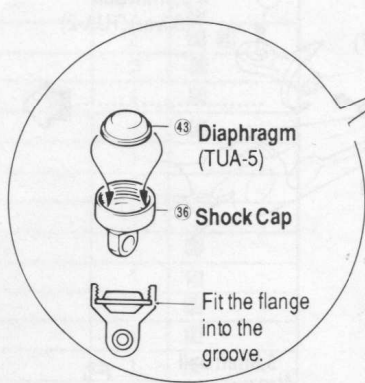


### 3 FILLING THE SHOCKS WITH OIL

**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.

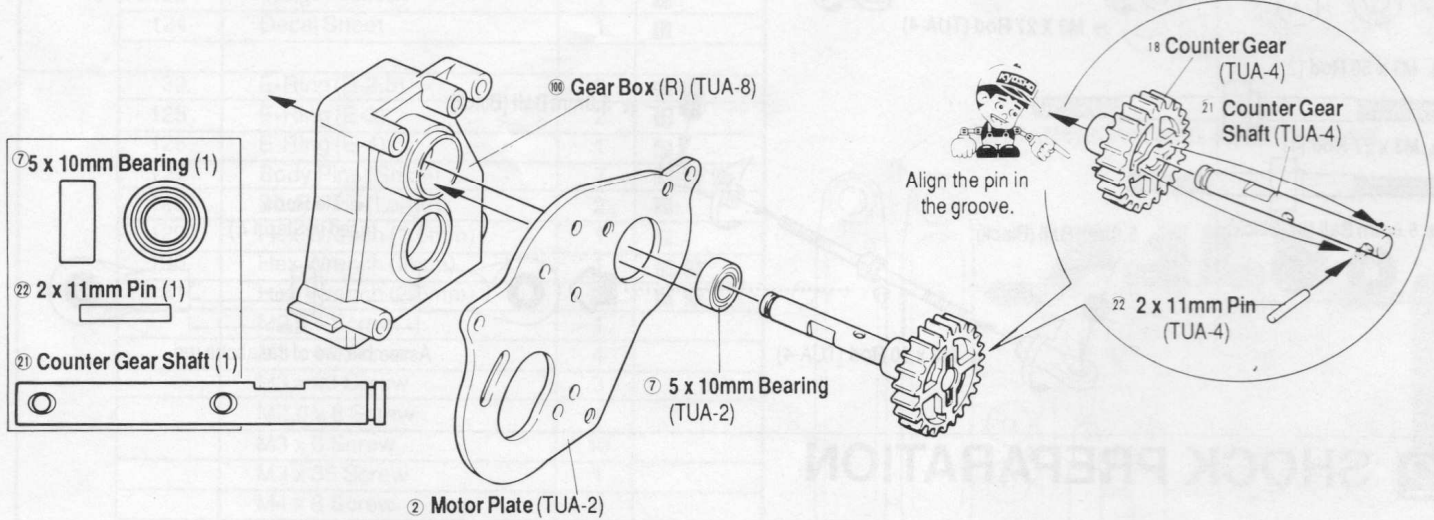


**Step 3** Excersize the piston once again to make sure it is smooth and quiet. If not, refill and double check to make sure all air bubbles are removed.

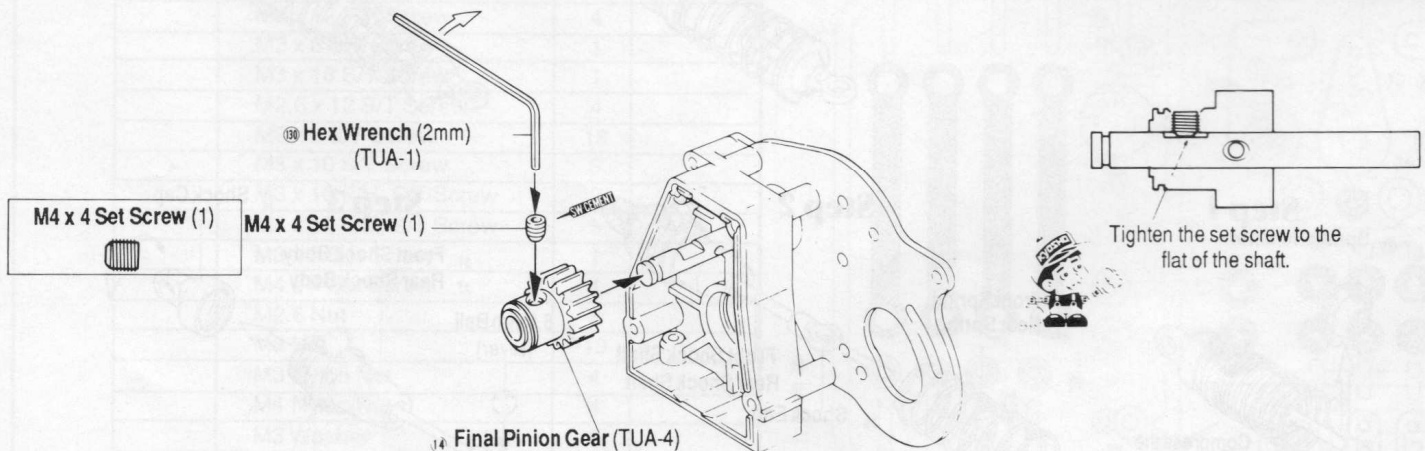


Finally, reinstall the shock springs in the reverse order of Step 2.

### 4 COUNTER GEAR INSTALLATION



### 5 FINAL PINION INSTALLATION





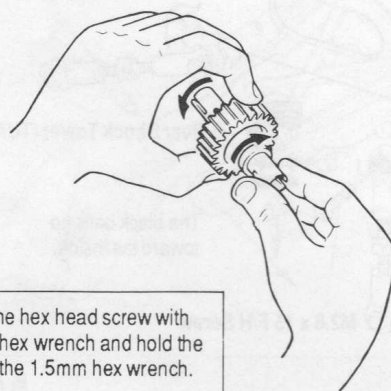
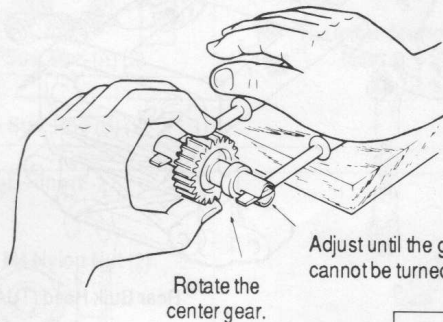
# 6 BALL DIFFERENTIAL ASSEMBLY AND INSTALLATION

## Step 1

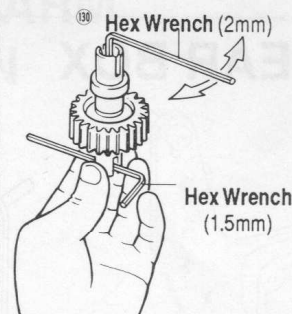
The Ball Differential is located in bag (TUA-5).

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

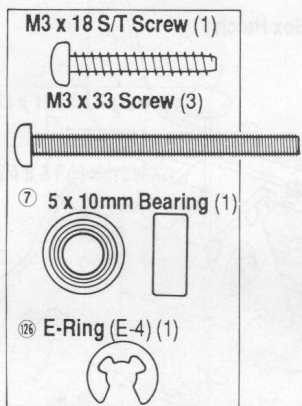
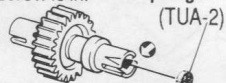
- 2** Hold the differential and turn the shaft. The shaft on the other side should turn in the opposite direction. This is called the differential effect. The tighter the hex head screw, the less the differential effect becomes. If the hex head screw is too tight, the shaft will be very hard to turn.



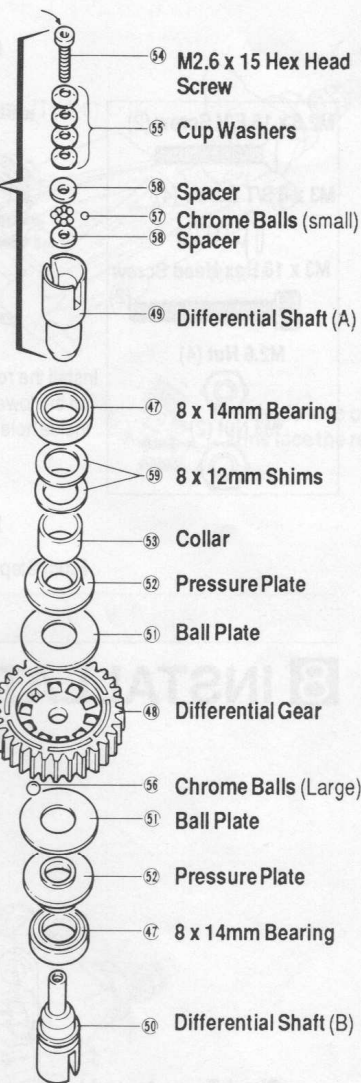
Tighten the hex head screw with the 2mm hex wrench and hold the joint with the 1.5mm hex wrench.



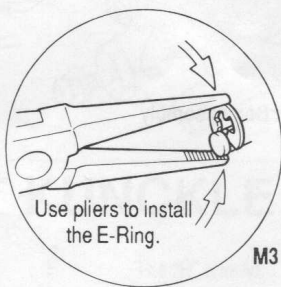
Repeat Steps 1 and 2 until the adjustment feels correct, then install the sponge cap into the end of the shaft that the hex head screw is in.



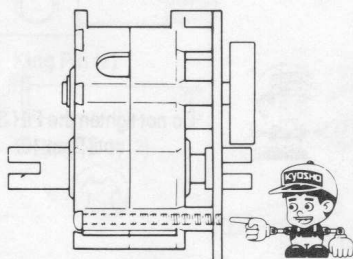
Assemble this section first.



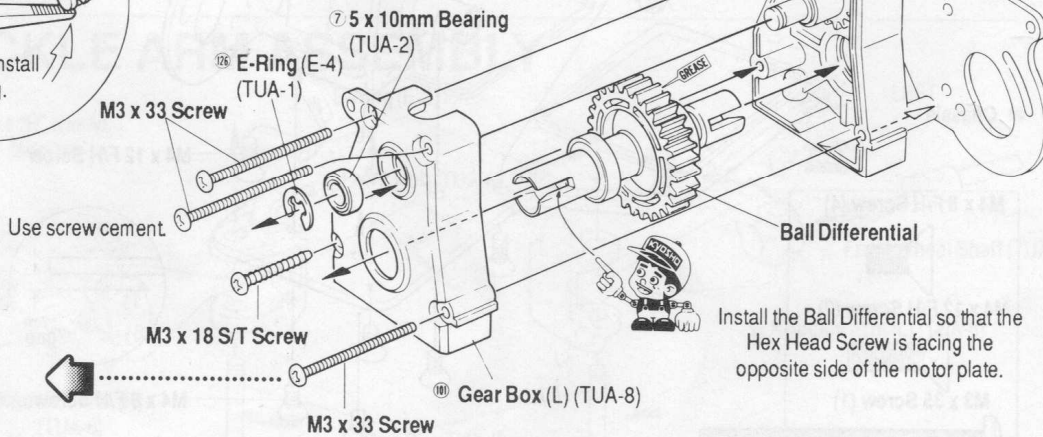
## Step 2



Use pliers to install the E-Ring.



Tighten the screws until they are flush with the plate.

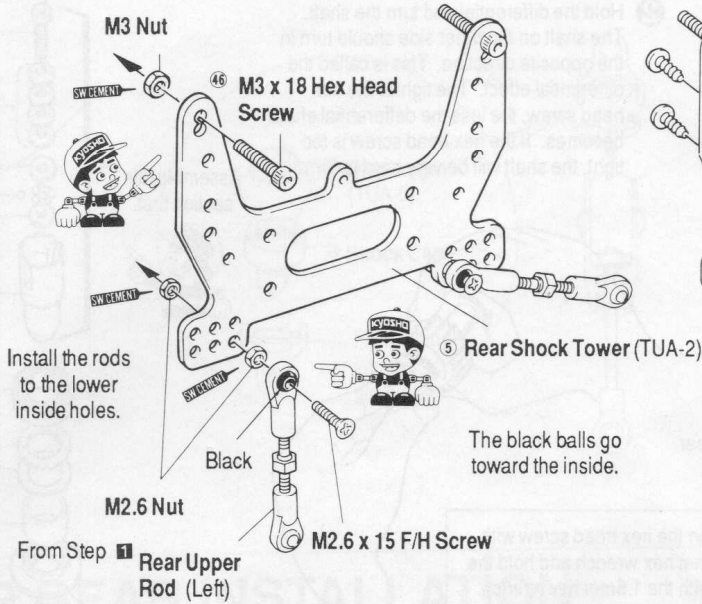


Install the Ball Differential so that the Hex Head Screw is facing the opposite side of the motor plate.

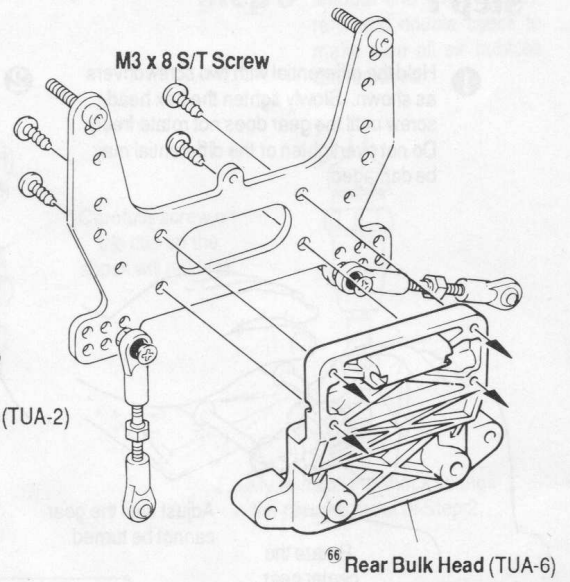
# 7 ASSEMBLY OF THE REAR SHOCK TOWER

## Step 1

- 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)

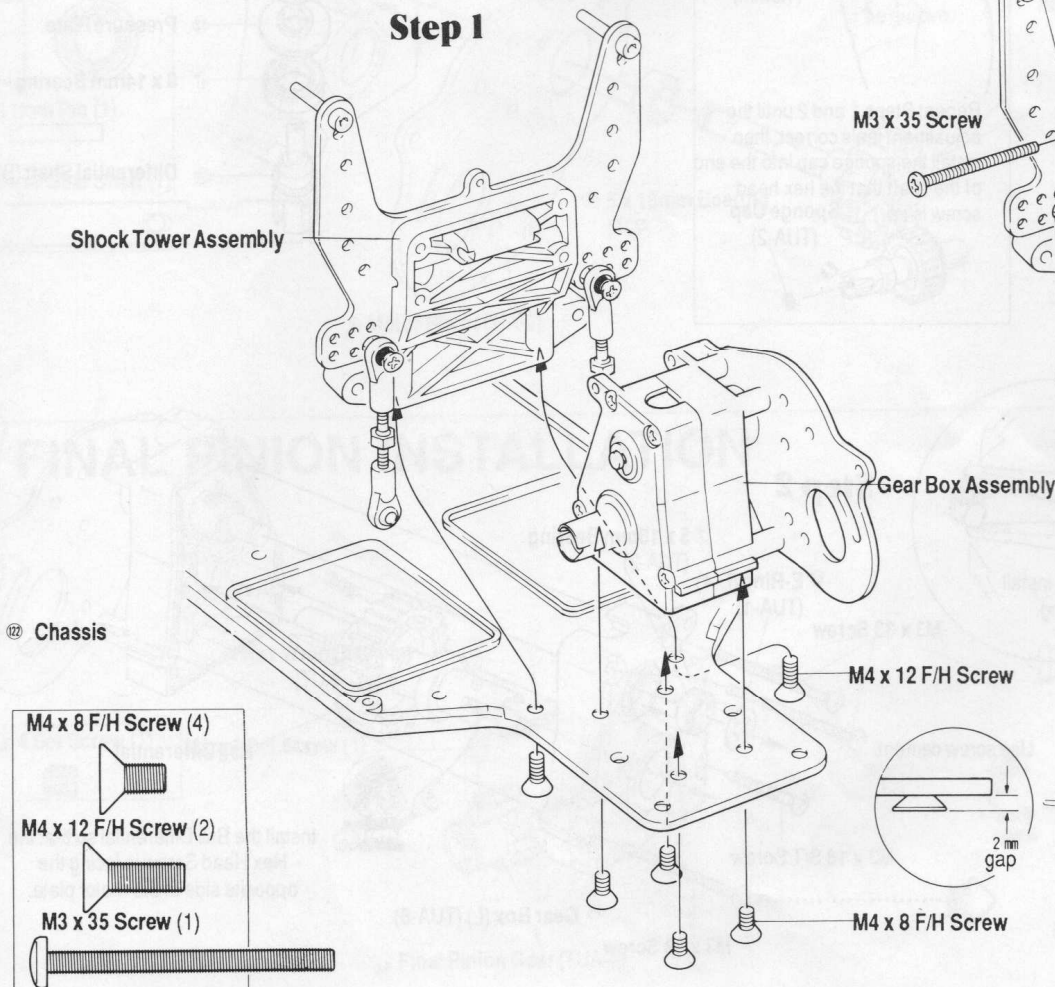


## Step 2



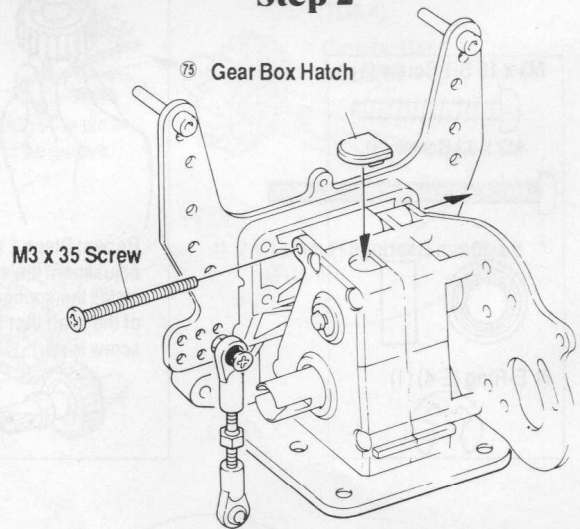
# 8 INSTALLATION OF THE GEAR BOX

## Step 1



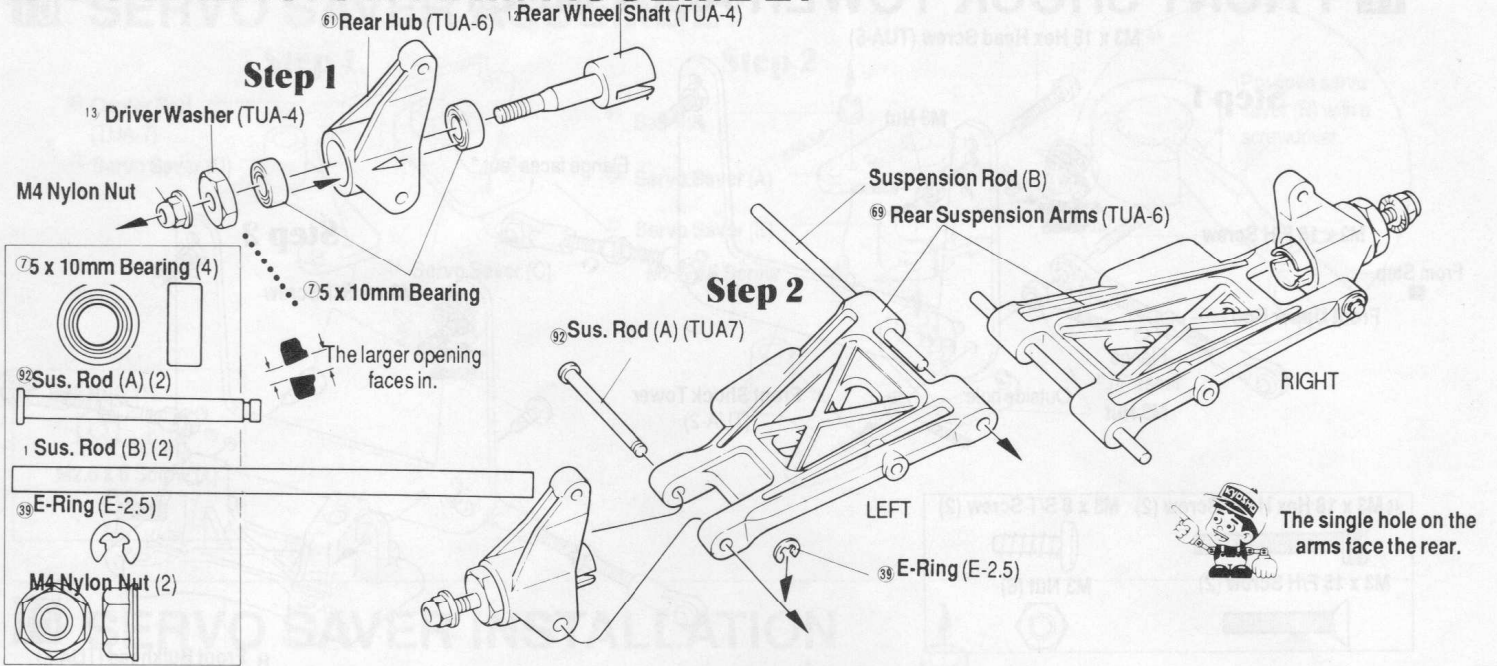
- M4 x 8 F/H Screw (4)
- M4 x 12 F/H Screw (2)
- M3 x 35 Screw (1)

## Step 2

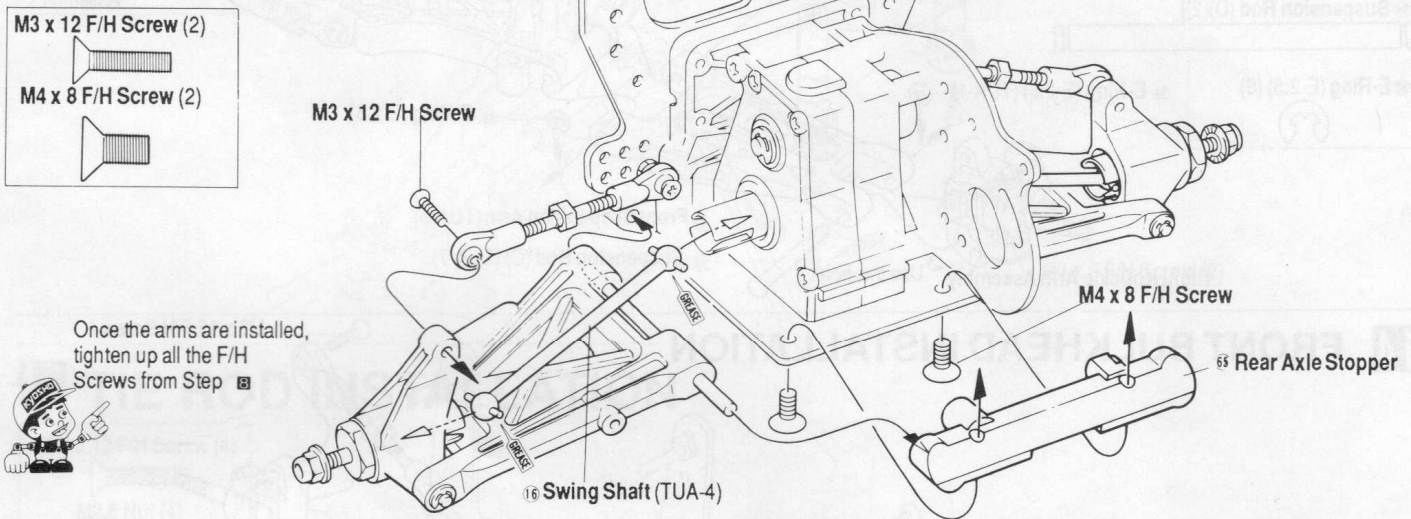


Do not tighten the F/H Screws until Step 10.

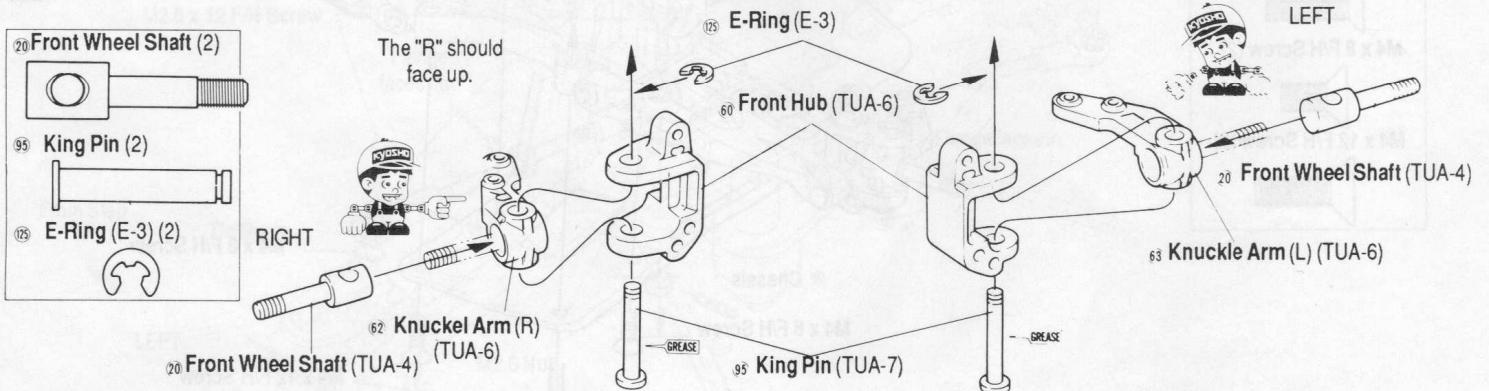
# 9 SUSPENSION ARM ASSEMBLY



# 10 SUSPENSION ARM INSTALLATION



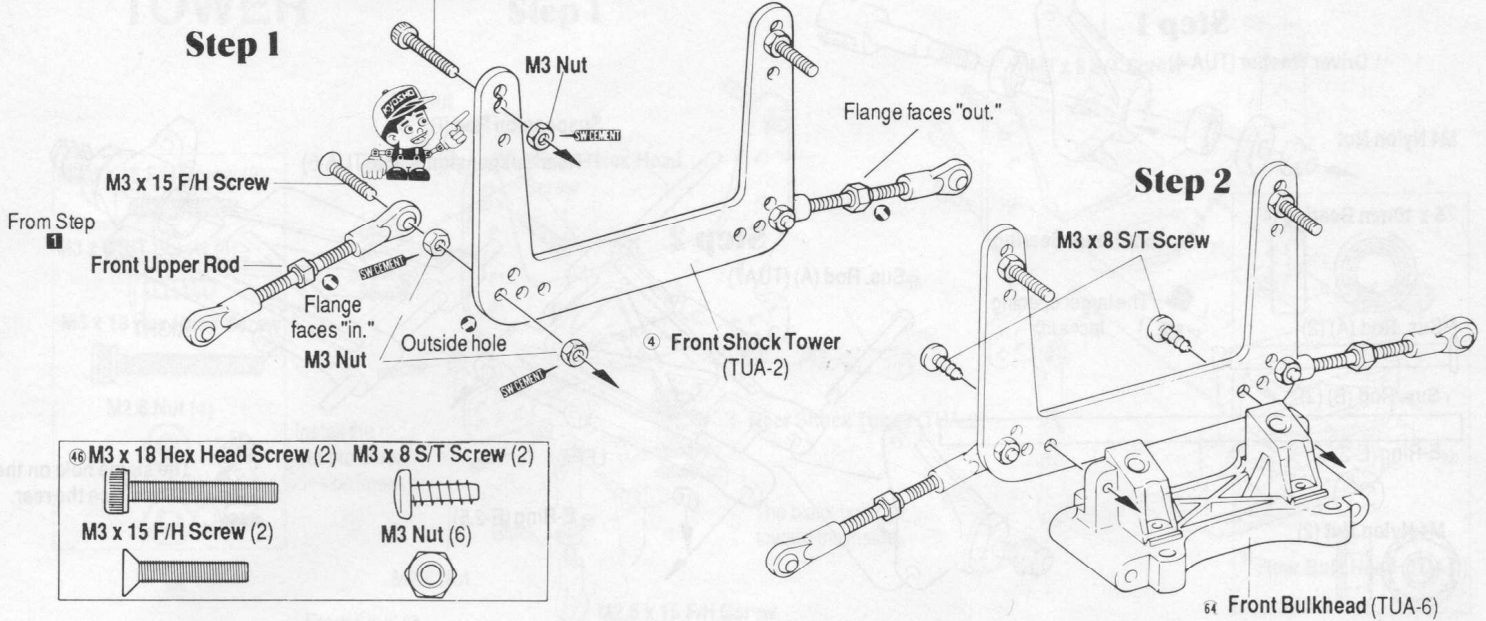
# 11 FRONT KUNCKLE ARM ASSEMBLY



# 12 FRONT SHOCK TOWER ASSEMBLY

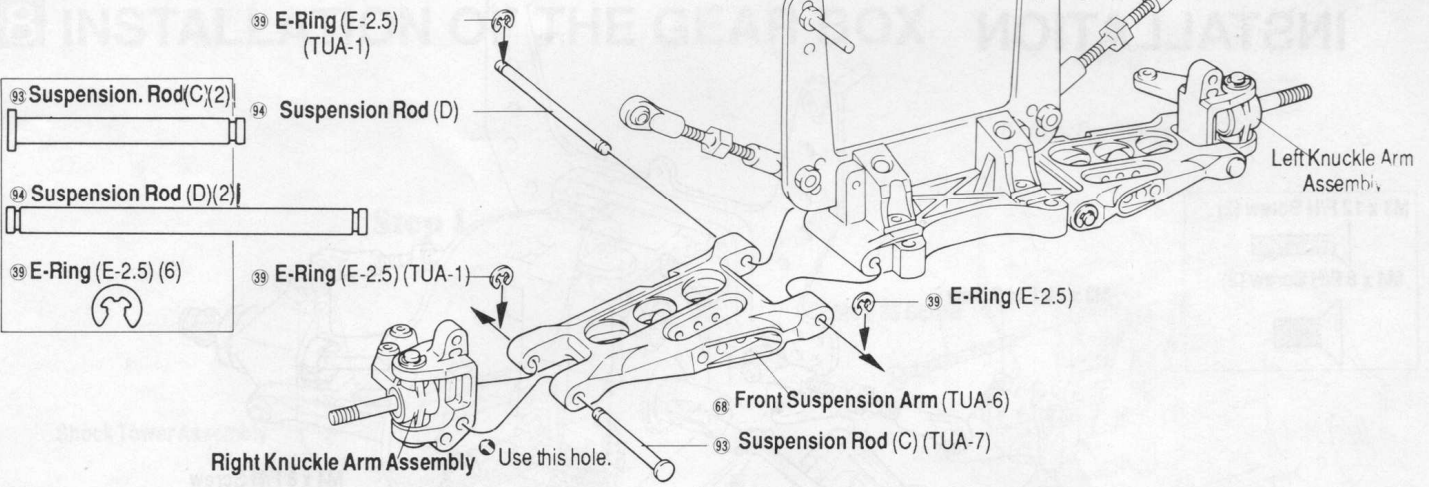
46 M3 x 18 Hex Head Screw (TUA-5)

## Step 1

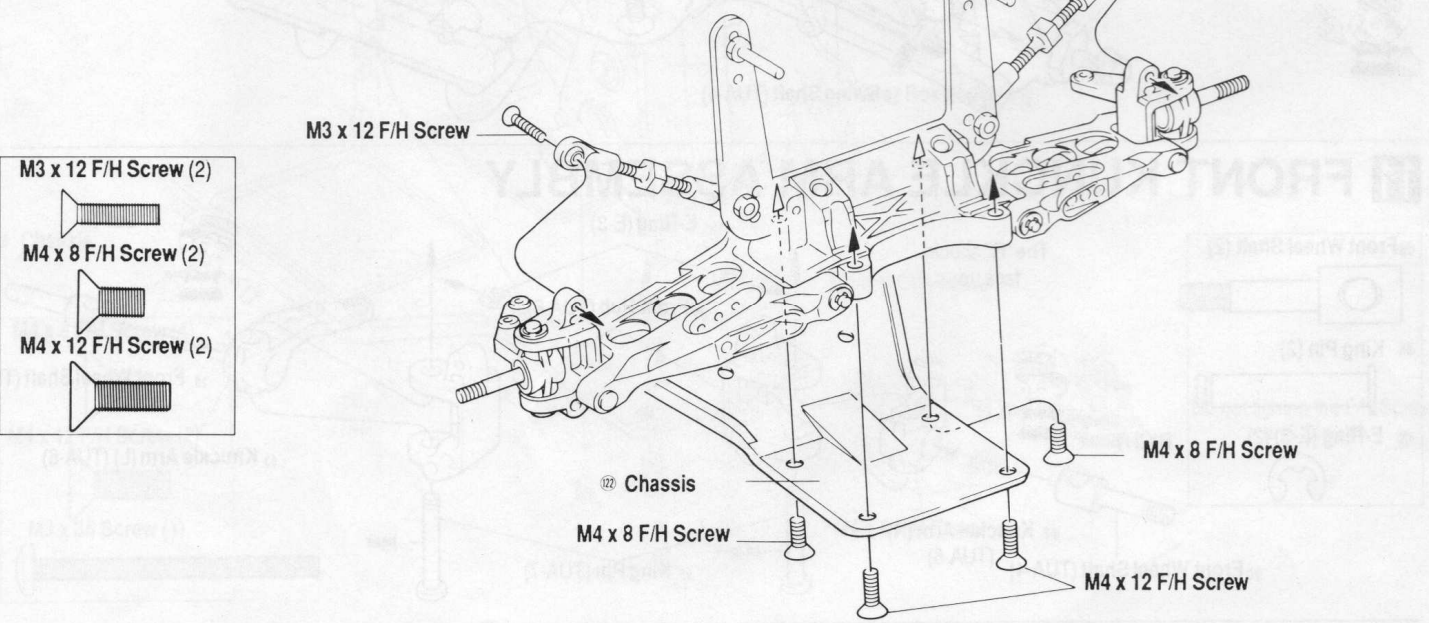


- 46 M3 x 18 Hex Head Screw (2)
- M3 x 8 S/T Screw (2)
- M3 x 15 F/H Screw (2)
- M3 Nut (6)

# 13 FRONT SUSPENSION ARM INSTALLATION



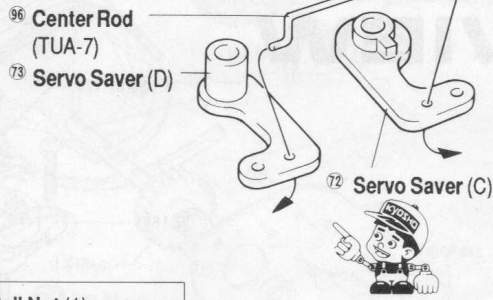
# 14 FRONT BULKHEAD INSTALLATION



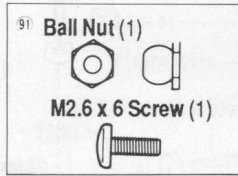
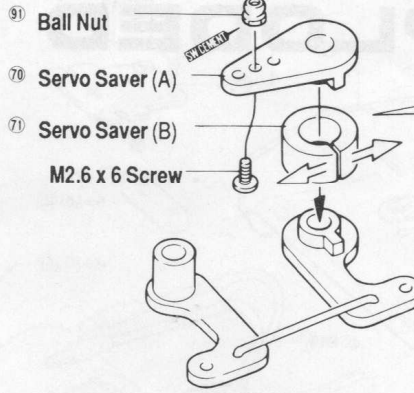
# 15 SERVO SAVER ASSEMBLY

70 73 are located in bag TUA-6)

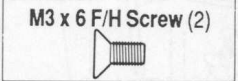
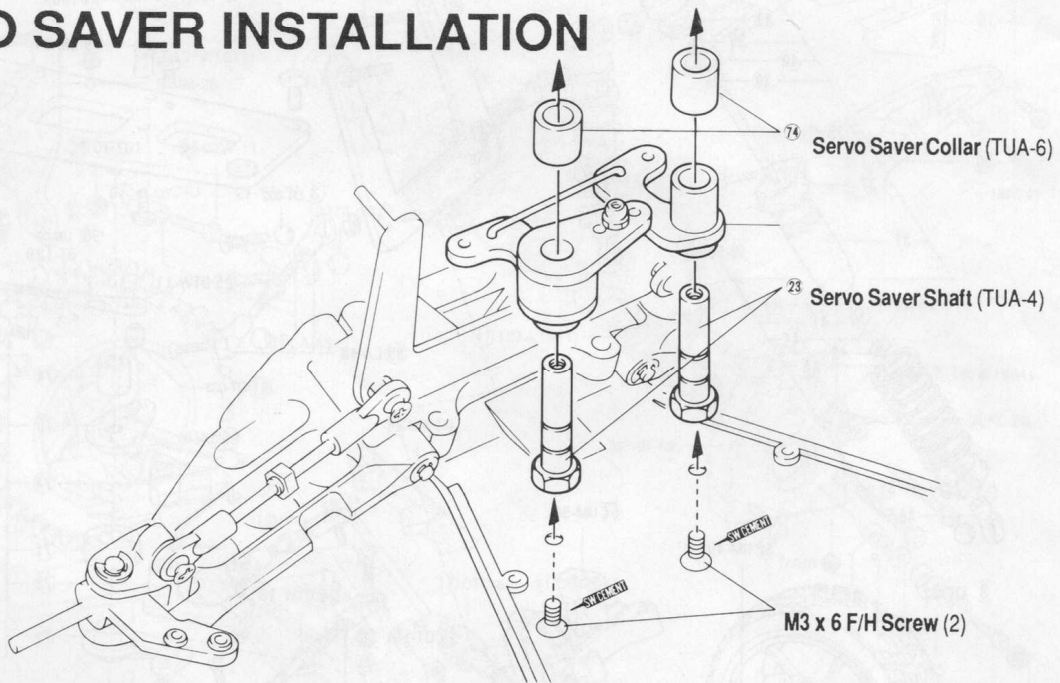
## Step 1



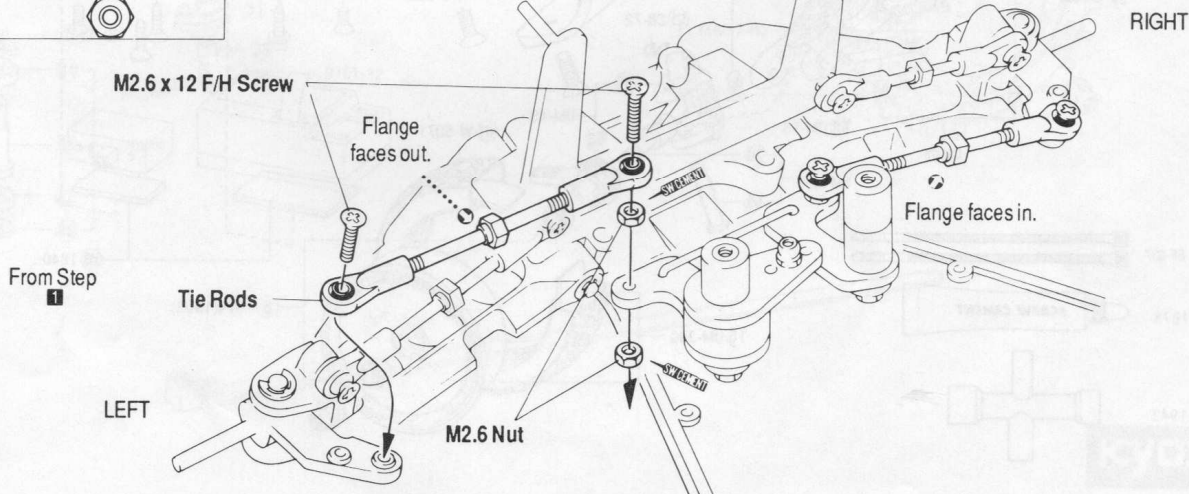
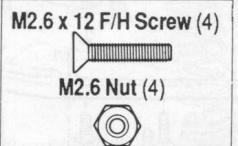
## Step 2



# 16 SERVO SAVER INSTALLATION



# 17 TIE ROD INSTALLATION



# TURBO ULTIMA II

## EXPLODED VIEW

