

KALT HELICOPTER

2712938

60 BARON *III*

Prior to assembly, be sure to read this manual.
Due attention must be paid to safety in flying
the helicopter.

Assembly Manual



W ✓
INSTRUCTION MANUAL



Thank you very much for buying Kalt product.

For easier understanding of the assembling processes, this assembly manual uses a lot of instructions and each process includes supplementary explanation. You are requested to read through this manual including such explanatory sentences and understand the contents of this kit before starting the assembly.

Although the contents of this kit and quantities were carefully checked prior to shipment, they should be checked before assembling referring to the parts list. Should there be any shortage of parts, please contact your shop.

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Before Starting Assembly

The assembly of this kit is divided into 9 steps from frame assembly to rotor head installation, and the assembly should be accurately made referring to this manual. The screw sets are contained in vinyl bags numbered for each step and it should be opened just before each step is started. Since the kit includes only the necessary quantities for assembling, care must be taken not to use bolts with wrong length.

To assemble and fly this helicopter, the following things are required in addition to this kit.

- Radio-controlled helicopter transceiver of 5 or more channels 1 set

- Servo motor

The servo mount included in the kit is suitable for the servo installation dimensions, width 10 mm and length 47 -50mm.

It should be noted that a servo of othersize cannot be mounted without modification.

- Gyro
- Engine for helicopter
- Muffler (of engine) and engine starting devices (starter, etc.)

Tools Necessary for Assembling

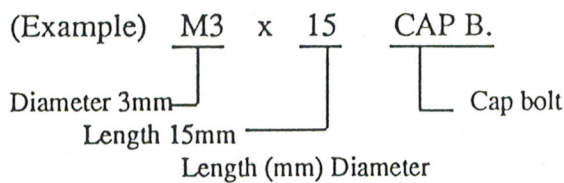
- Screwdriver (small)	- Pliers	- Rubber adhesive
- Radio pliers	- Monkey wrench	- Epoxy adhesive
- Nippers	- Cutter	- Silicon grease
- 5.5 mm nut turner (box screwdriver)	- File	- Scale
- $\phi 2$, $\phi 3$, $\phi 6$, drill blade and hand (electric) drill	- Vinyl tape	- Benzine, etc.

Bolts and Nuts

Looseness of only one bolt may cause falling of the helicopter. Therefore, this kit uses special bolts and nuts described below.

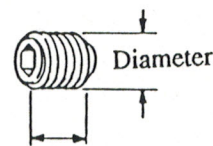
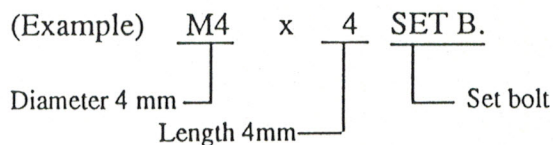
• Cap bolt

The bolt is provided with the hexagon hole as illustrated and is to be tightened with a special hexagon wrench. In the manual the following symbol is used.



• Set bolt

It is a setscrew with hexagon hole as illustrated and has no head.



• **Nylon nut**

It contains locking nylon ring as illustrated and is plated on iron.

(Example) M3 N.N.
 3 mm ——— Nylon nut



• **Tapping bolt**

It is a self-tapping screw as illustrated and is used for installing the canopy to the body. The prepared hole should be made with a $\phi 2$ drill.



• **Plus bolt**

It is a round-head bolt. To tighten it, use a plus screwdriver to meet the size of the bolt.

* For ordinary nuts and washers, M2, M3, etc. are written to indicate the diameter of the screw.

• **Clip washer**

As illustrated, it has teeth and is used for locking.



• **Hexagon Wrench**

This kit includes four types of hexagon wrenches. For the cap bolts and set bolts, use the hexagon wrenches shown in the table.

	Cap bolt	Set bolt
M3	2.5 wrench	1.5 wrench
M4	3.0 wrench	2.0 wrench

* For this kit, the screws of ISO standard are used, but when the ENYA engine is used, the JIS screws including in the screw set should be used. For tightening the JIS screws, use the 2.4 wrench provided. In the explanatory drawings of this manual, the bolts and nuts and quantities to be used in each process are written. Since the kit includes only necessary quantities for assembling, care must be taken not to use the bolts, etc of wrong length.

(Example) M3 x 8 CAP B. [x4]
 4 cap bolts of M3 x 8 are used.

• **Cautions in fixing bolts**

A scale is written at the bottom of each page and it should be used for checking the length of the bolt. Even if the bolts are securely tightened, they may be loosened and drop under severe vibrating condition. To prevent this problem, the cap bolts, \oplus bolts, nuts, set bolts, and threaded holes of parts should be cleaned with benzine, etc., and when fixing, a small amount of Kalt Tight, etc. should be applied.

Parts List

No.	Name	Q'ty
Step 1		
0601-152-6	Subframe α	1
0601-168-8	Main frame (right, left)	1 each
0601-171-7	Lower angle	2
0601-172-8	Body mounting bolt R	2
0601-172-8	Body mounting bolt F	2
0601-174-7	Cross member α	3
Step 2		
0101-089-8	Pinion gear α	1
0102-105-3	Clutch bell	1
0400-040-6	HG bell crank 60 spacer	1
0400-042-8	HG bell crank (with RF-830 ZZ)	1
0402-011-8	Slide ring Ass'y	1 set
0402-013-8	Slide ring hoder	1
0402-014-8	Slide ring shaft A	1
0402-014-8	Slide ring shaft B	2
0402-032-8	Slide ring arm A Ass'y (right, left)	1 each
0402-034-6	Slide ring arm B	1
0601-043-8	Bearing case C	1
0601-160-8	Bearing case A (with 1910 ZZ)	1
0601-161-8	Bearing case A (with 1960 ZZ)	1
Step 3		
0102-005-6	Engine mount	1
0102-010-8	Throttle lever, spacer (for ENYA)	1 each
0102-107-7	Clutch shoe	2
01001	Omega belt L-450	1
71016	Taper collet	1
71017	Taper nut for OS	1
71018	Taper nut for ENYA	1
71019	Taper nut for YS	1

No.	Name	Q'ty
71037	Fan (for YS)	1
	OS engine rotor adjusting screw	1
Step 4		
0100-065-8	Tail joint B	1
0100-065-8	Joint connector	1
0101-043-08	60 Baron auto-ro Ass'y	1 set
0101-045-6	Auto-ro gear spacer (*12 x *14 x '2)	1
0101-087-6	Bevel pinion gear α	1
0200-009-6	60 mast	1
0400-015-7	Pitch control rod (L95)	1
0401-054-8	Scissors arm (C) pitch control ring	1
0401-057-8	Phase adjusting ring	1
0401-097-6	Swash plate collar (*10 x L14)	1
0401-103-8	Scissors arm (C) Ass'y	1 set
0401-112-8	Elevator control ring Ass'y	1 set
0401-114-8	Scissors arm (C) swash plate Ass'y	1 set
0601-042-8	Bearing case B	1
Step 5		
0500-001-7	Fuel filter	1
0500-005-8	Fuel stopper	1
0501-015-6	Silicon tube (large)	1
0501-024-8	Tank cap	1
0501-024-8	Brass pipe for tank (large 1, medium 2)	1 set
0501-024-8	Tank washer (with screw, without screw)	1 each
0501-024-8	Tank weight, silicon tube (narrow)	1 each
0501-028-8	Fuel tank	1

No.	Name	Q'ty
0501-030-7	O ring	2
0601-174-7	Cross member α	1
0603-022-7	Leg spacer	4
0603-051-8	Rear inclined landing gear brace	2
0603-051-8	Skid cap	4
0603-051-8	Leg skid	2
0501-024-8	Tank weight, silicon tube (narrow)	
71010	Fan cover (right, left)	1 each
71013	Fan cover stay F, R	1 set
Step 6		
0100-064-8	ϕ 2.2 inserting piano wire	1
0100-065-8	Tail joint rear	1
0300-011-8	Tail pitch housing (with arm, without arm)	2 each
"	Spacer	2
"	Outer spacer	2
"	1030 ZZ bearing	4
0400-043-7	PP rod bracket	4
0601-080-8	Baron vertical fin	1
0601-080-8	Baron horizontal fin	1
0601-131-7	SUS Tail clamp	3
0601-133-7	Tail pipe retainer	2
0601-135-7	ϕ 2.2 inserting piano wire guide	3
0601-140-8	Tail pipe α (L - 800)	1
0601-145-8	Tail supporter pipe	2
"	Tail supporter end	4
"	SUS Tail supporter clamp	1
0601-170-6	Tail bracket	1
0601-174-7	Cross member α	2
0603-022-7	Leg spacer	1
0903-011-7	Tail rotor (Plastic)	2
73001	Omega tail gear Ass'y for right spec.	1 set

No.	Name	Q'ty
Step 7		
0400-074-8	Flexible P.P. rod. (piano wire)	1 set
0601-154-6	Servo frame α A	1
0601-155-6	Servo frame α B	1
74001	Servo set plate	10
Step 8		
0001-004-6	Body adhesive	1
0602-106-8	60 Baron α body (right, left, instrument panel)	1 each
"	60 Baron α body (bottom reinforcement, reinforcing plate)	1 each
0602-109-9	60 Baron α canopy	1
Step 9		
0200-015-7	Stabilizer bar L450	1
0200-017-8	Stabilizer stopper	2
0200-018-7	Stabilizer blade (black)	2
0207-004-8	BLACK-10 SII	1 set
0207-029-7	Blade grip spacer	4
0207-036-8	Control lever	1
0902-025-8	H55 Main rotor blade	1 set
Accessories		
0001-001-6	Kalt Tight	1
	60 Baron α II screw set	1 set
	60 Baron α II Assembly manual	1
	60 Baron α II decor	1
	BLACK-10 S II Instruction manual	1

List of Screw Set Contents

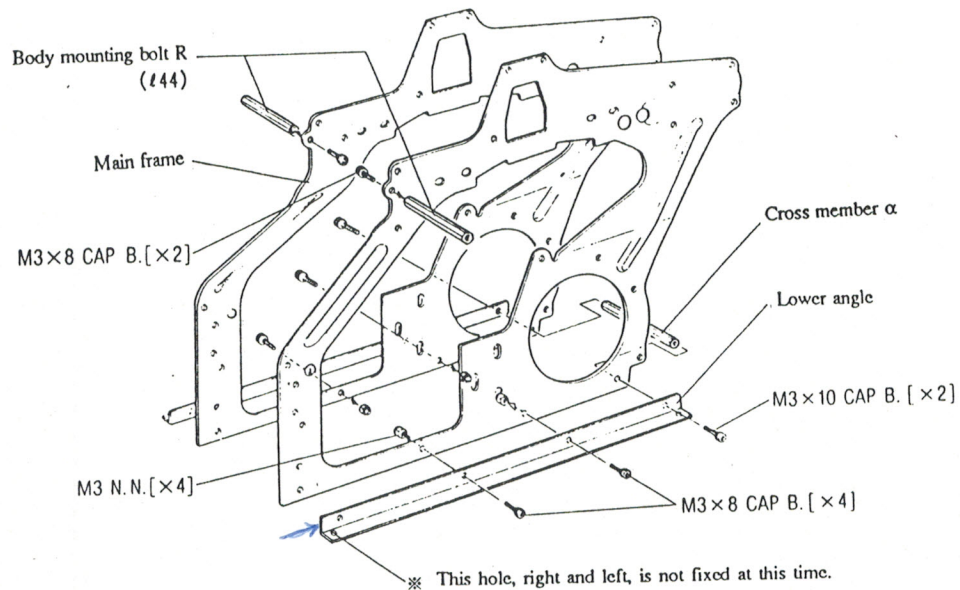
No.	Name	Q'ty	No.	Name	Q'ty
Step 1	M3 x 8 CAP B.	10	Step 4	M2 x 10 CAP B.	1
	M3 x 10 CAP B.	4		M3 x 8 CAP B.	2
	M3 N.N.	4		M3 x 10 CAP B.	4
	M3 x 15 SET B.	2		M3 x 20 CAP B.	1
	1.5 Hexagon wrench	1		M3 N.N.	1
	2.0 Hexagon wrench	1		M3 x 4 SET B.	1
	2.5 Hexagon wrench	1		M4 x 4 SET B.	10
3.0 Hexagon wrench	1	Joint ball	1		
Step 2	M3 x 8 CAP B.	7	Step 5	M3 x 8 CAP B.	4
	M3 x 10 CAP B.	14		M3 x 25 CAP B.	4
	M3 x 27 CAP B.	1		M4 x 22 CAP B.	1
	M2 x 8 ⊕ Bolt	1		M2.6 x 8 Tap tight	4
	M2 x 10 ⊕ Bolt	2		M2.6 x 10 Tap tight	8
	M3 N.N.	1		M3 N.N.	6
	M2 Nut	2	M4 x 4 SET B.	4	
	M4 x 4 SET B.	2	Step 6	M3 x 8 CAP B.	3
	Joint ball	3		M3 x 10 CAP B.	2
	Joint ball spacer	2		M3 x 12 CAP B.	6
	∅3 x ∅4.5 x '0.2 Plate washer	1		M3 x 15 CAP B.	3
	∅3 x ∅4.5 x '0.5 Plate washer	1		M3 x 18 CAP B.	3
∅3 x ∅10 x '1.0 Plate washer	1	M3 x 30 CAP B.		4	
Step 3	M4 x 6 Button CAP B.	2	M2.6 x 8 CAP B.	4	
	M4 x 12 CAP B.	6	M2 x 10 ⊕ Bolt	8	
	M4 x 15 CAP B.	4	M2 x 12 ⊕ Bolt	2	
	M4 Plate washer	10	M3 N.N.	15	
	M4 Clip washer	10	M3 Nut	1	
	M3 x 25 JIS CAP B.	1	M2 Nut	10	
	M3 Spring washer	1	M4 x 4 SET B.	7	
	2.4 Hexagon wrench	1	M3 Plate washer	11	
			Joint ball	2	

No.	Name	Q'ty
Step 7	M3 x 8 CAP B.	12
	M2.6 x 10 CAP B.	20
	M2x10 ⊕ Bolt	4
	M2 Nut	8
	M2.3 x 50 Continuous thread rob	1
	M2.3 x 70 Double-end rod	2
	M2.3 x 80 Double-end rod	1
	M2.3 x 100 Double-end rod	1
	M3 Plate washer	6
	Universal link	9
	Quick link	3
	Joint ball	4
	Step 8	M3 x 12 CAP B.
M2.3x5 Tapping bolt		3
M3 Plate washer		8
Rubber grommet.		4
Step 9	M3 x 22 CAP B.	1
	M4 x 32 CAP B.	2
	M3 N. N.	1
	M4 N. N.	2
	M3 x 3 SET B.	4
	M4 x 4 SET B.	1
	M2.3 x 17 Continuous thread rob	2
	M2.3 x 90 Double-end rod	2
	M2.3 x 110 Double-end rod	1
Universal link	10	

Step 1. Frame Assembly

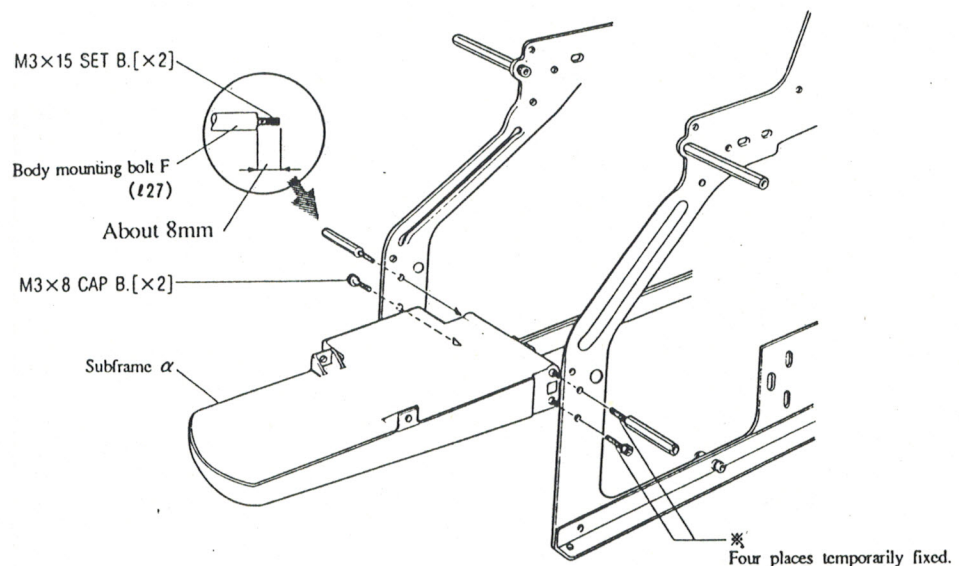
1-1 ✓

Carefully fix them so that the main frame and lower angle will be neatly aligned at the bottom (right and left). The front two places, right and left, (marked *) of the frame are not fixed here.



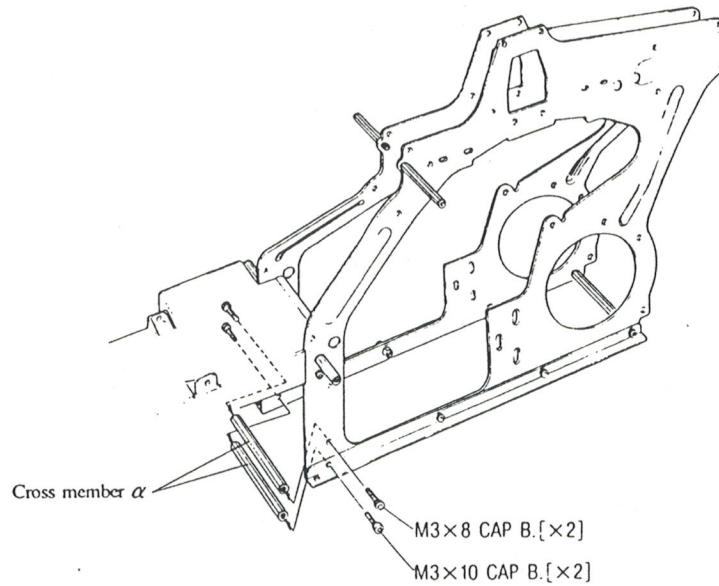
1-2 ✓

To the body mounting bolt F, the setbolt M3×15 should be attached about 8mm projected before the assembly is started. Temporary fixing should be done at four places.



1-3

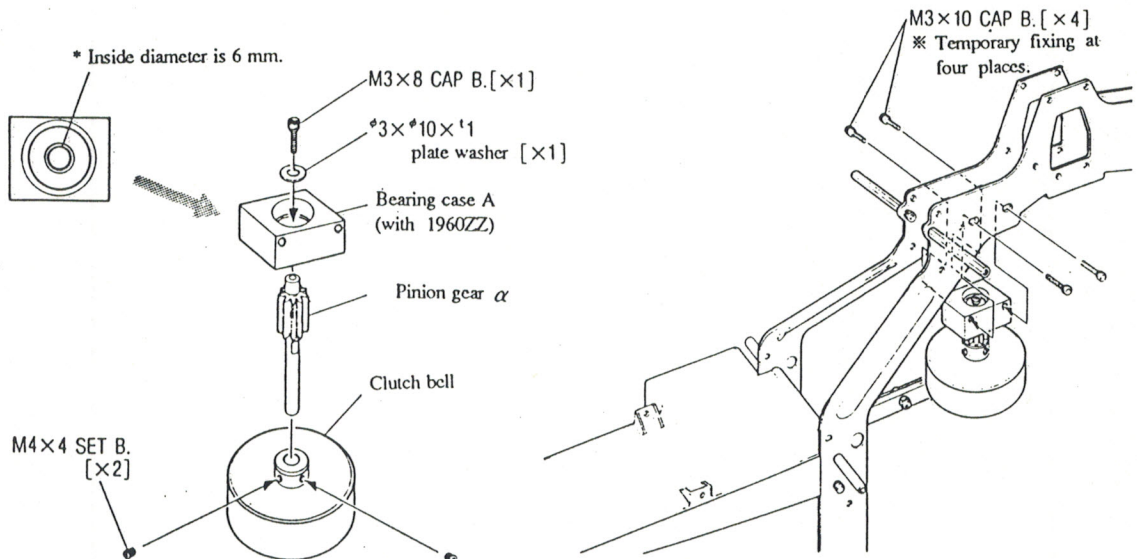
✓ The cap bolts to be used for the front and rear cross members are different in length. The right and left frames should be in parallel.



Step 2. Ball Bearing Installation

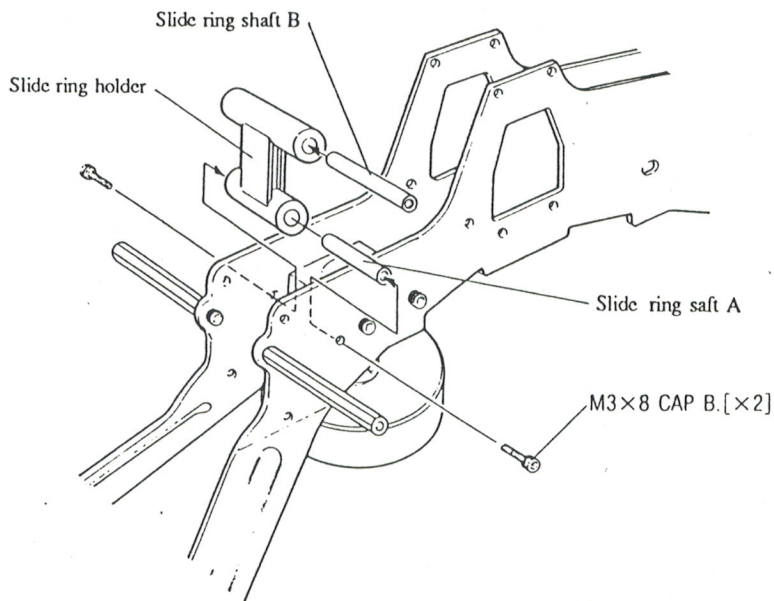
2-1

✓ They should be fixed in such a way that the chamfered part of the shaft under the pinion gear will be aligned with one of the set bolts M4x4 of the clutch bell. The bearing case A should be temporarily fixed to the frame.



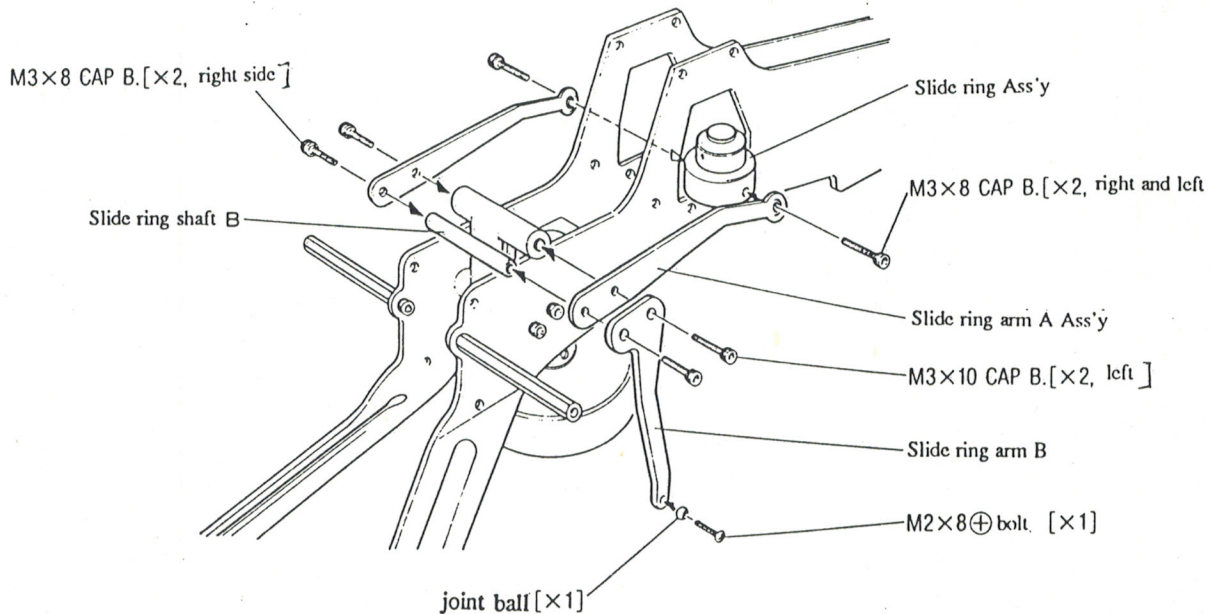
2-2

When the slide ring shaft A is fixed, make sure that the shaft is not inclined against the main frame.



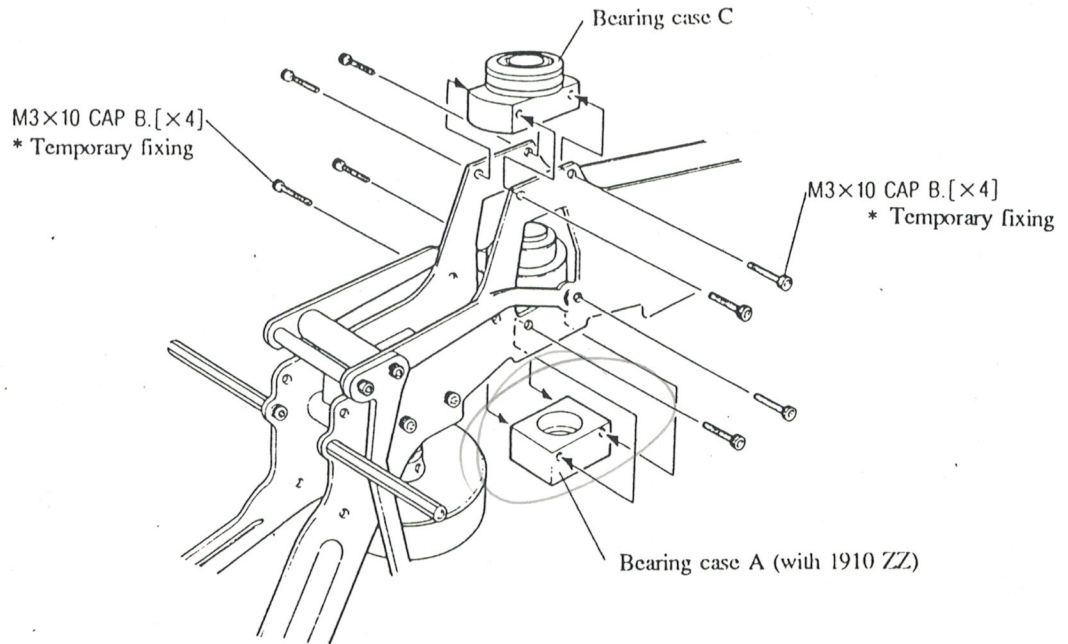
2-3

The slide ring arm A should be installed in such a way that the convex side of the bearing portion is faced inward. On the side where the slide ring arm B is attached, the cap bolts M3×10 are to be used. Be careful not to twist the right and left arms.



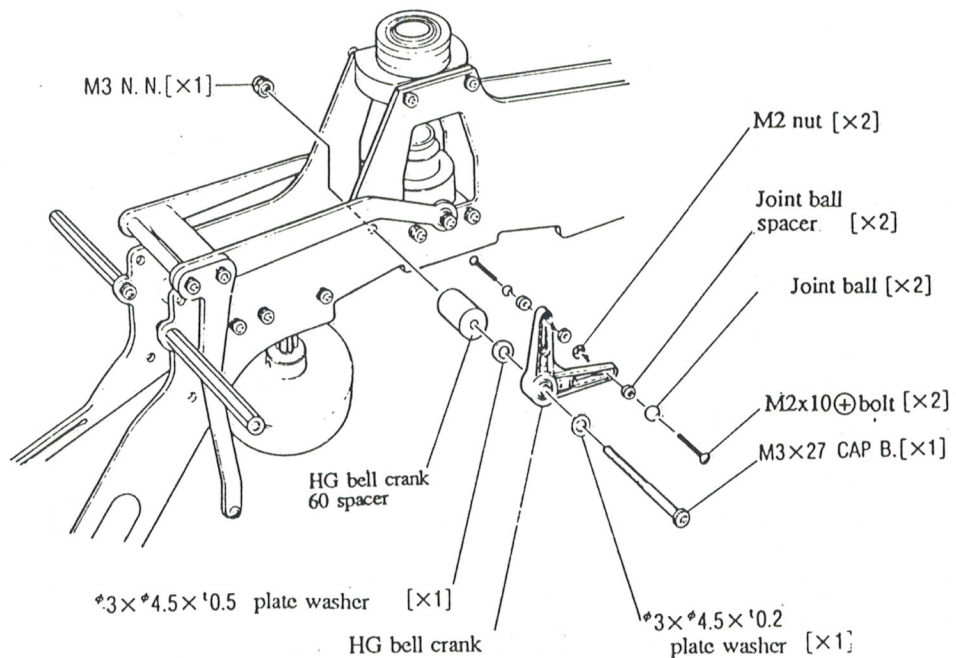
2-4

The bearing case A with the inside diameter 10 mm should be used. Both bearing cases A and C should be temporarily fixed.



2-5

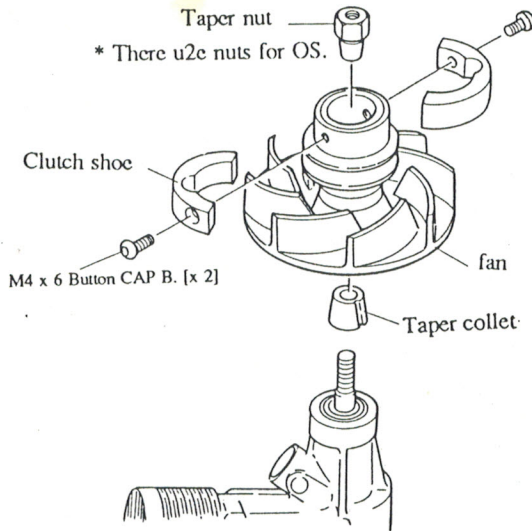
Make sure of the installation position of the joint ball. For installing the HG bell crank, be sure to insert the washers.



STEP 3. Assembly of Power Section

3-1

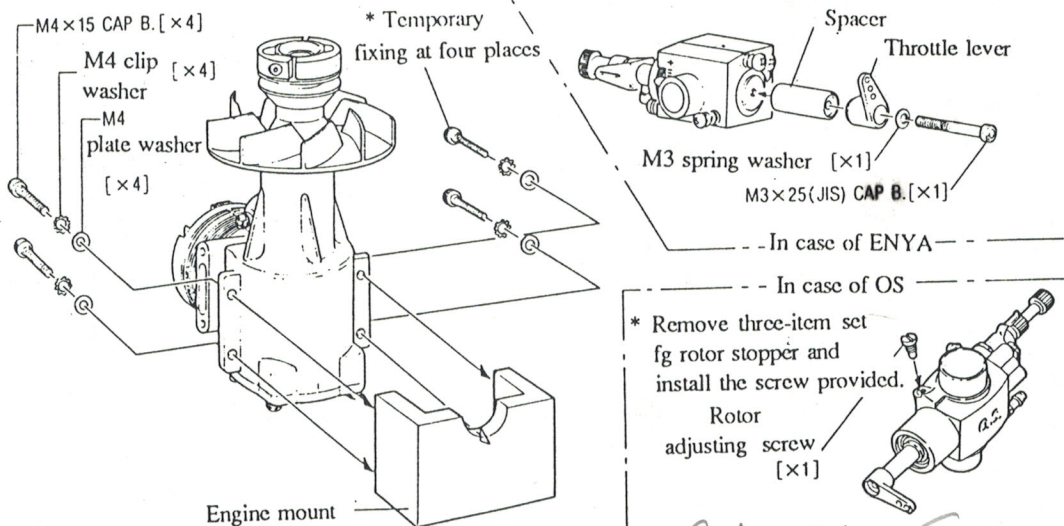
Remove the engine drive washer and then insert the fan onto the drive shaft via the taper collet. Apply the silicon grease to the bearing portion of the taper nut and firmly fix the fan with the taper nut. Each taper portion should be sufficiently cleaned to remove dust, etc.



*Clutch shoes
Bolt to
Fan Hub*

3-2

Temporarily fix the engine making sure of the direction of the engine mount. When the ENYA engine is used, the throttle lever and spacer must be installed as shown. When the OS engine is used, the rotor stopper is brought into contact with the fan cover and so it should be replaced with the screw provided.

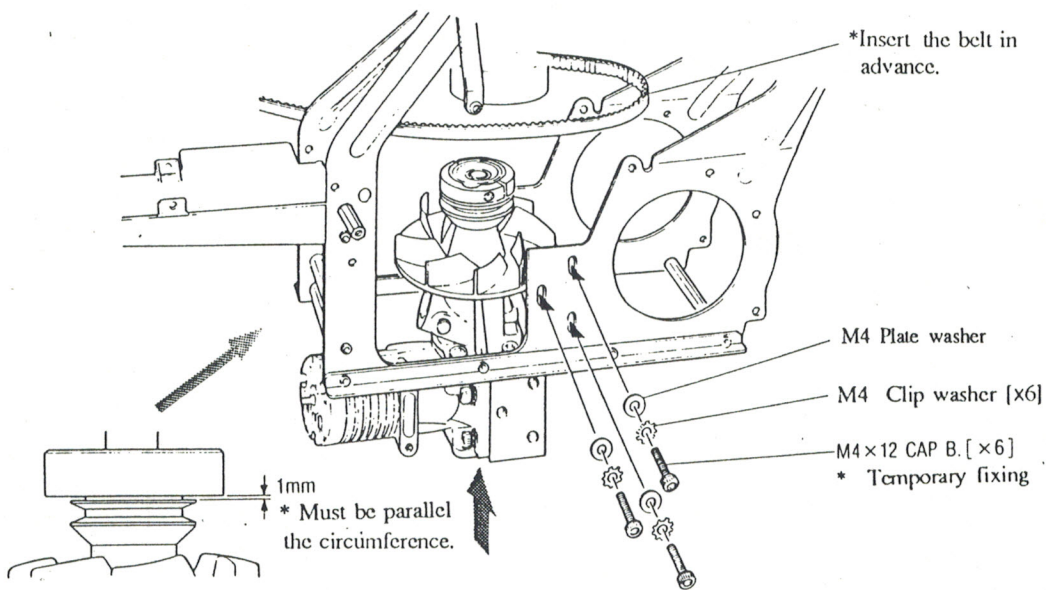


Rotor Stop Screw

#277181601 Provided

3-3

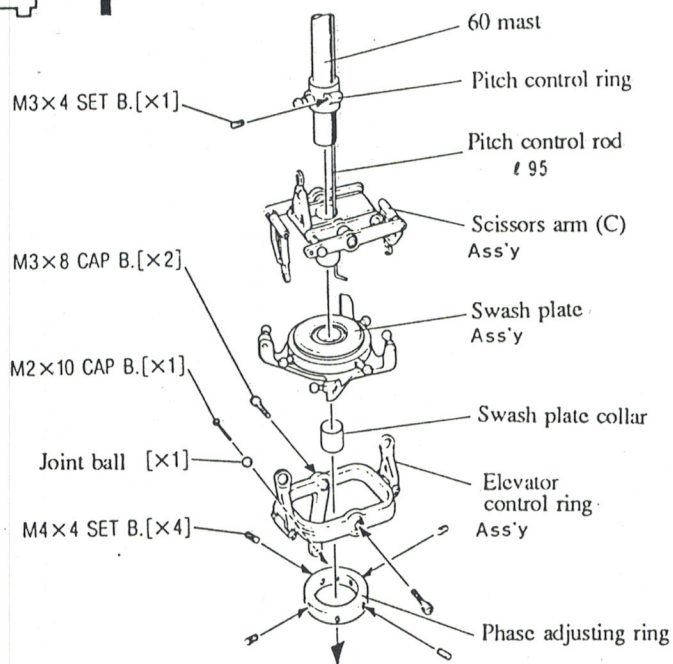
The OMEGA belt should be installed in advance above the clutch bell. There should be a clearance of about 1 mm between the clutch bell and pulley on the engine side, and the six bolts should be temporarily fixed.



STEP 4. Assembly of Control Section and Gears

4-1

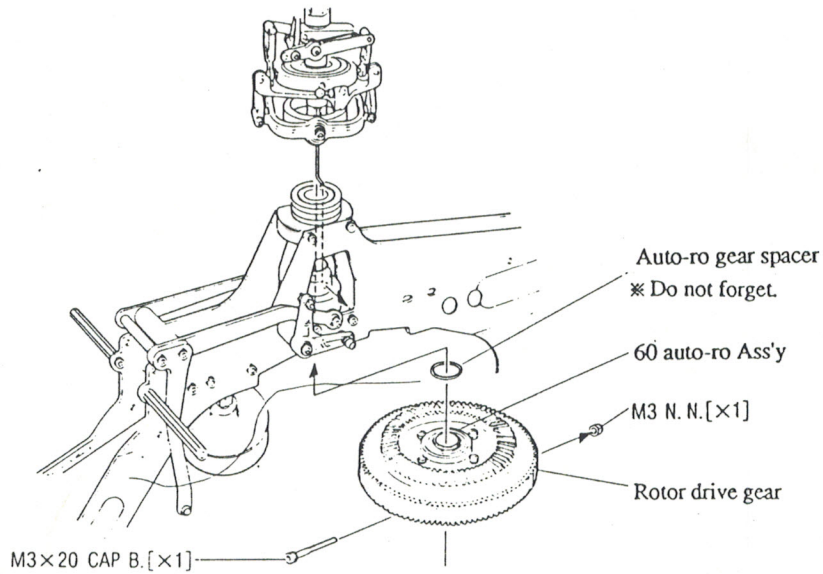
IMPORTANT



Install the joint ball in the elevator control ring and assemble the elevator control ring and phase adjusting ring. Insert one end of the pitch control rod into the pitch control ring and pass it through the mast and fix the rod with the setbolt M3x4. Check that the pitch control ring slides smoothly. If it does not move lightly, adjust the bent angle of the pitch control rod. Put out the lower end of the pitch control rod a few centimeters from the mast and pass it through the scissors arm, swash plate, swash plate collar and phase adjusting ring in that order, and fit the universal links in the ball arm.

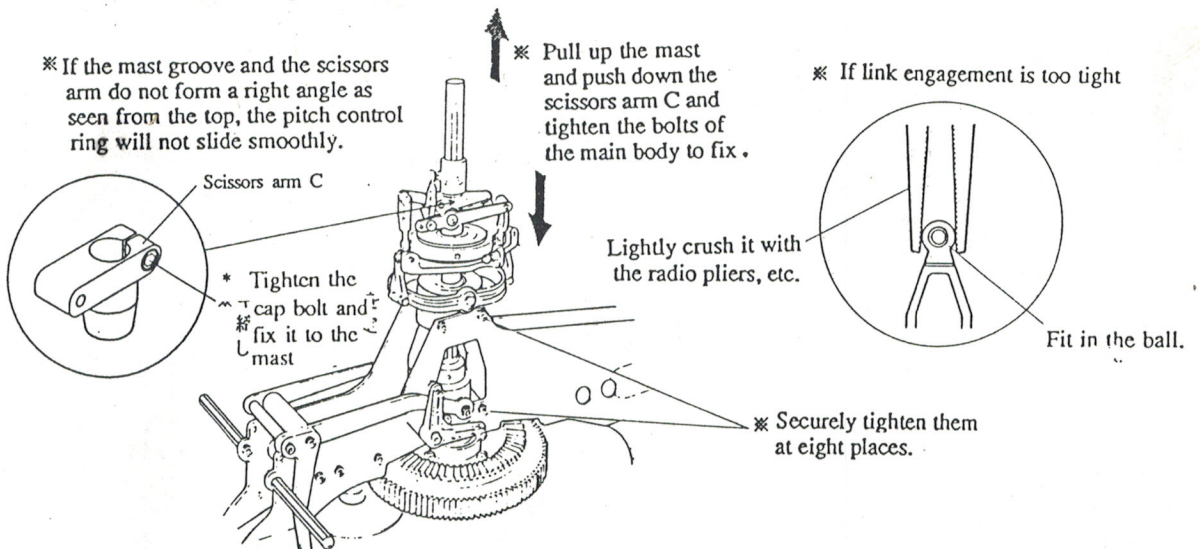
4-2

With the lower end of the pitch control rod put out a few centimeters from the mast, pass it through the bearing case C and insert it from the inside of the slide ring Ass'y into the $\phi 2$ hole, and then pass the mast through the bearing cases C and A. Be sure to insert the auto-low gear spacer and install the rotor drive gear Ass'y.



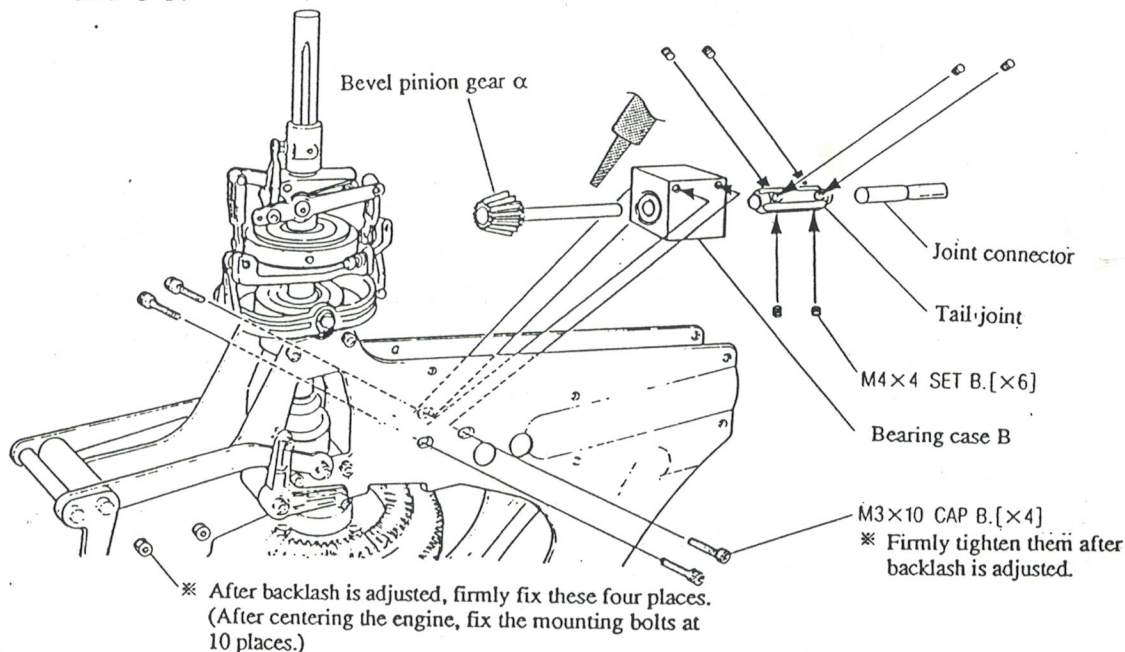
4-3

Insert the phase adjusting ring in the bearing case C. The set bolts M4x4 should not yet be fixed. While sufficiently pulling the mast, hold the scissors arm C, adjust the angle of the main body so that the pitch control ring will slide lightly, and fix the bolts. Then move the elevator control ring several times back and forth, adjust the height position of the phase adjusting ring to the swash plate, and fix the set bolts at the lightly moving position. At that time, the phase should be set to 0 degree and should be offset as required after flying. Securely fix the bearing cases A and C which were temporarily fixed in 2-4.



4-4

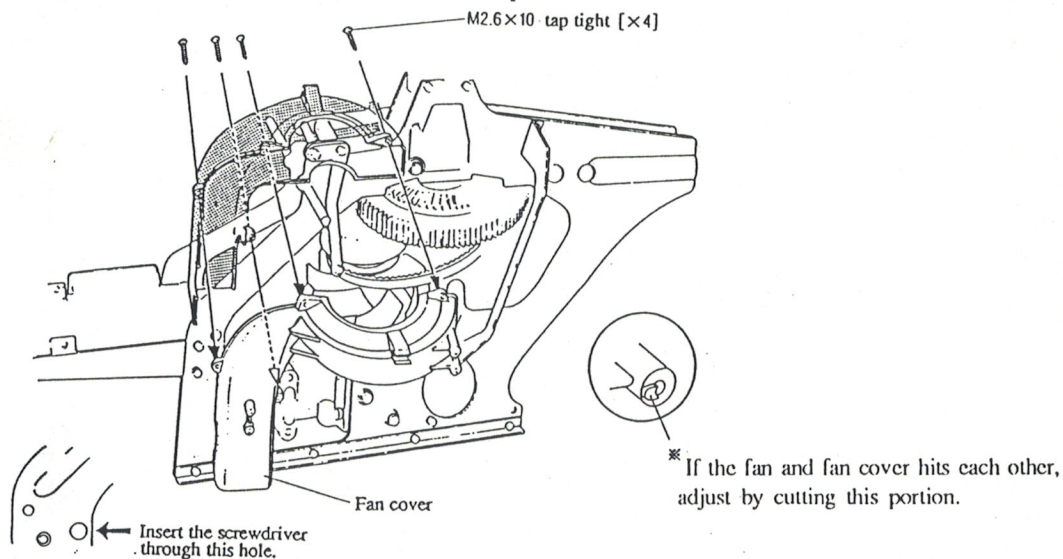
Clean and bond with Kalt Tight, etc, the bevel pinion gear shaft and inner circumference of the bearing of the bearing case B. The bearing case B should be firmly fixed after the backlash with the bevel gear is adjusted. Also adjust the pinion gear/drive gear backlash and center the pinion gear and the engine as shown in 3-3, and firmly tighten the bolts which were temporarily tightened in 2-1, 3-2, and 3-3.



STEP 5. Assembly of Frame Peripheral Parts, Legs, and Tank

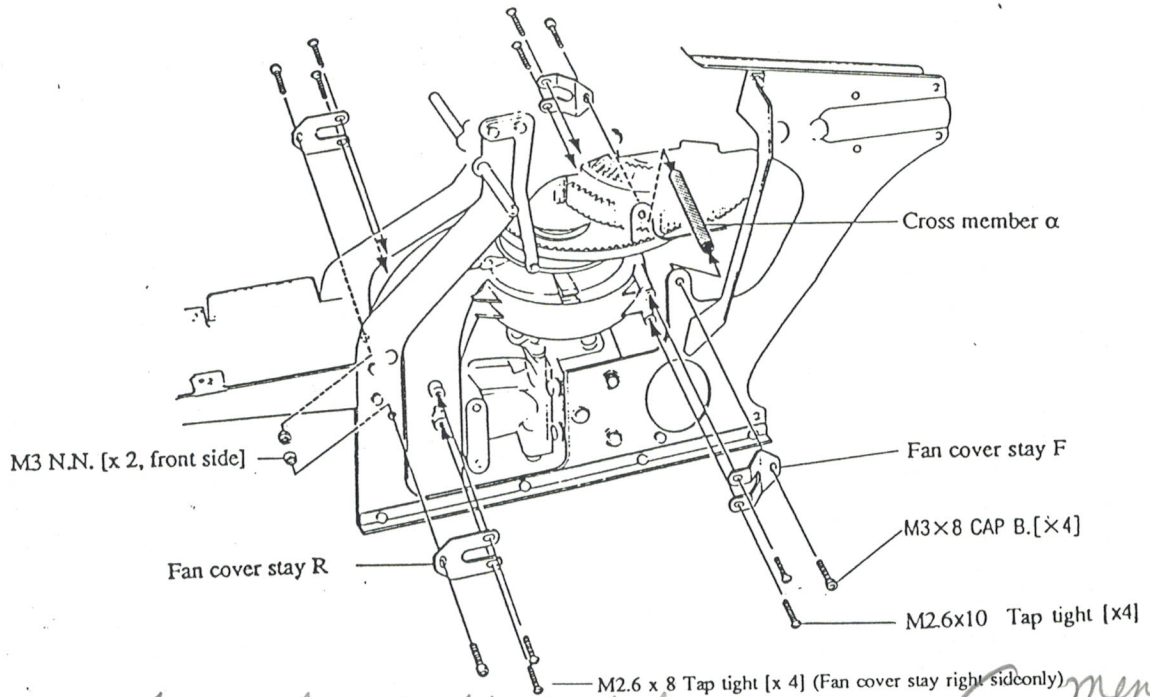
5-1

If the fan cover and muffler touch each other, scrape off before the right and left parts are fixed. When the OS carburetor is used, the carburetor may touch the fan cover, and in such a case, the cut-off portion of the fan cover should be cut off.



5-2

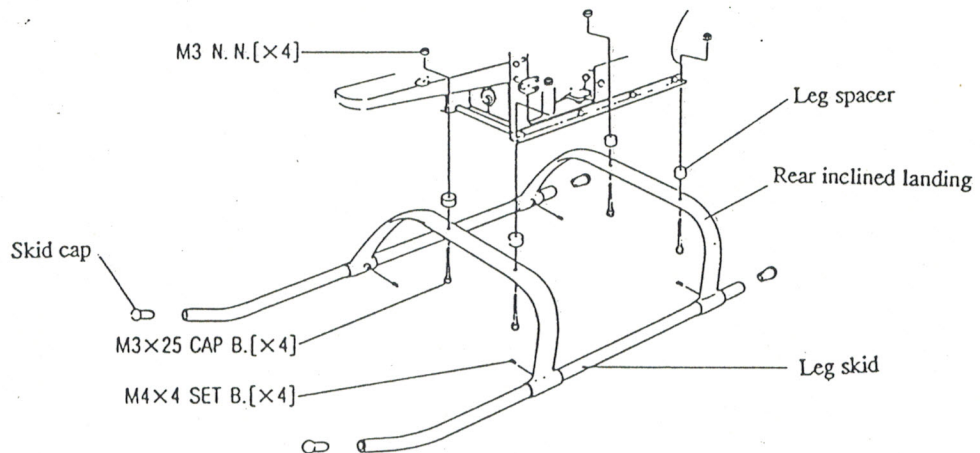
When the fan cover stay is installed, adjust the clearance back and forth and up and down so that the fan cover and fan will not touch each other.



Fan should fit tightly to engine - mention cover stays

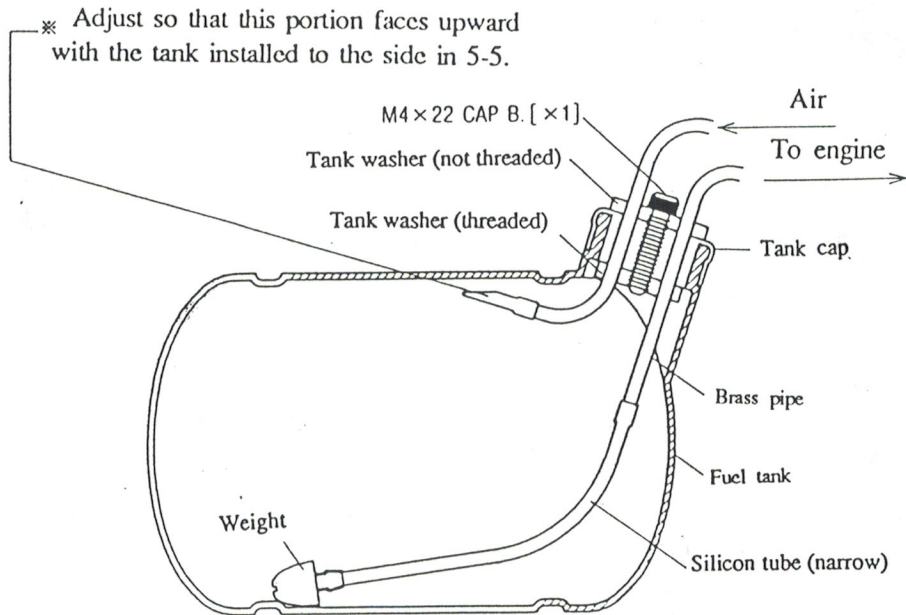
5-3

When the leg skid is fixed to the rear inclined landing gear brace, the set bolts M4x4 should not be tightened too strongly because there is a fear of damaging the threaded portion.



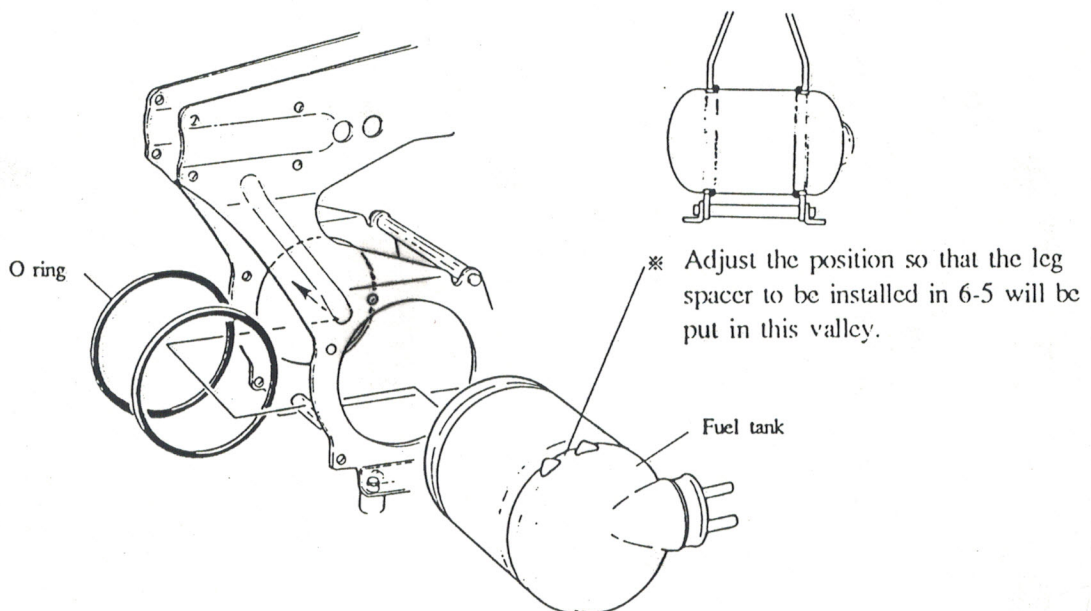
5-4

For the weight in the tank, adjust the length of the silicon tube (narrow) so that the weight sufficiently reaches the bottom of the tank and that it can freely move in the tank when the tank is inclined.



5-5

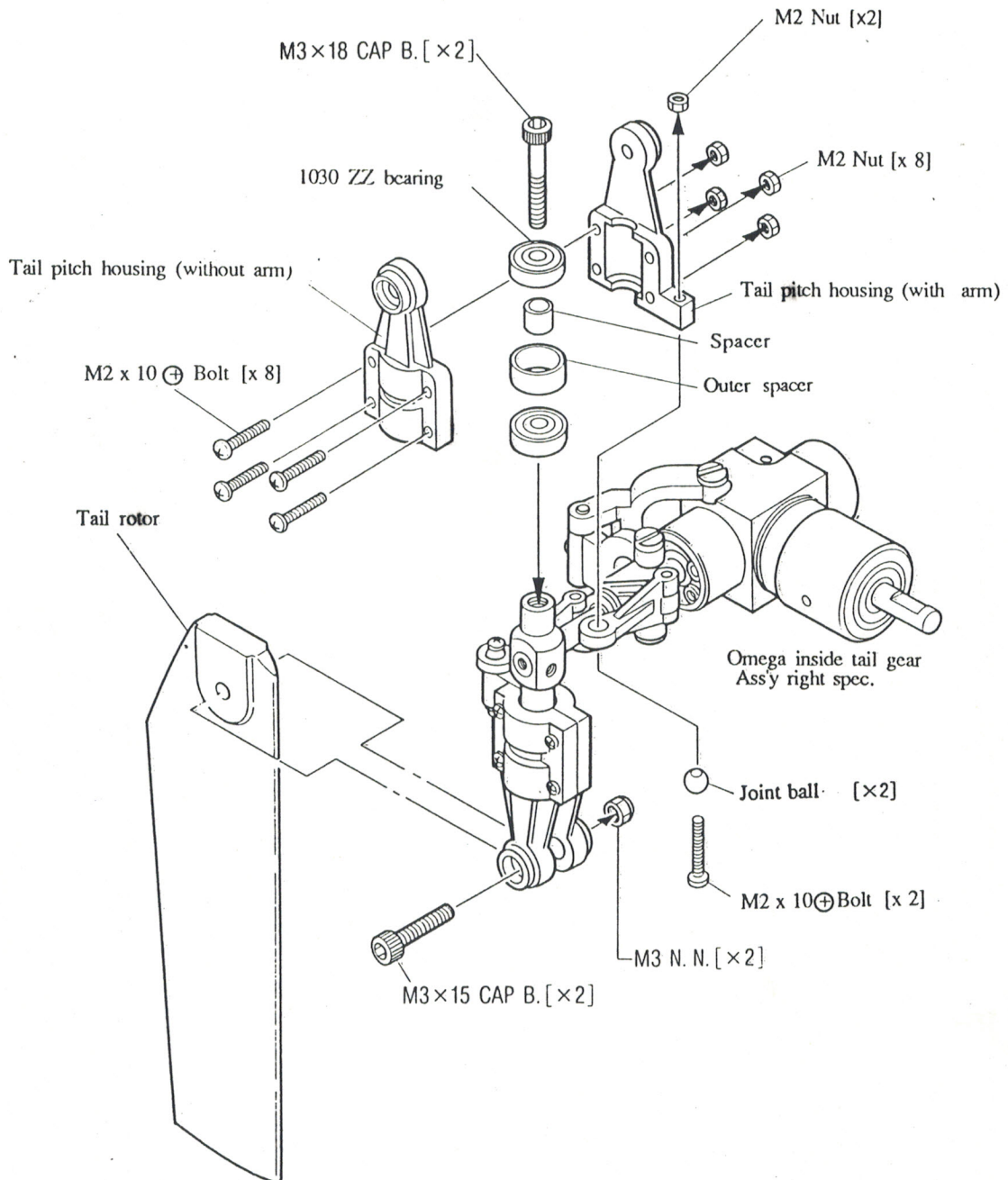
Put in the fuel tank through the main frame on the right side, fix the O ring in the groove of the tank, and fix the tank to the frame. At that time, the tank should be moved and adjusted so that the clearance between the tank and frame will be same.



STEP 6. Assembly of Tail Portion

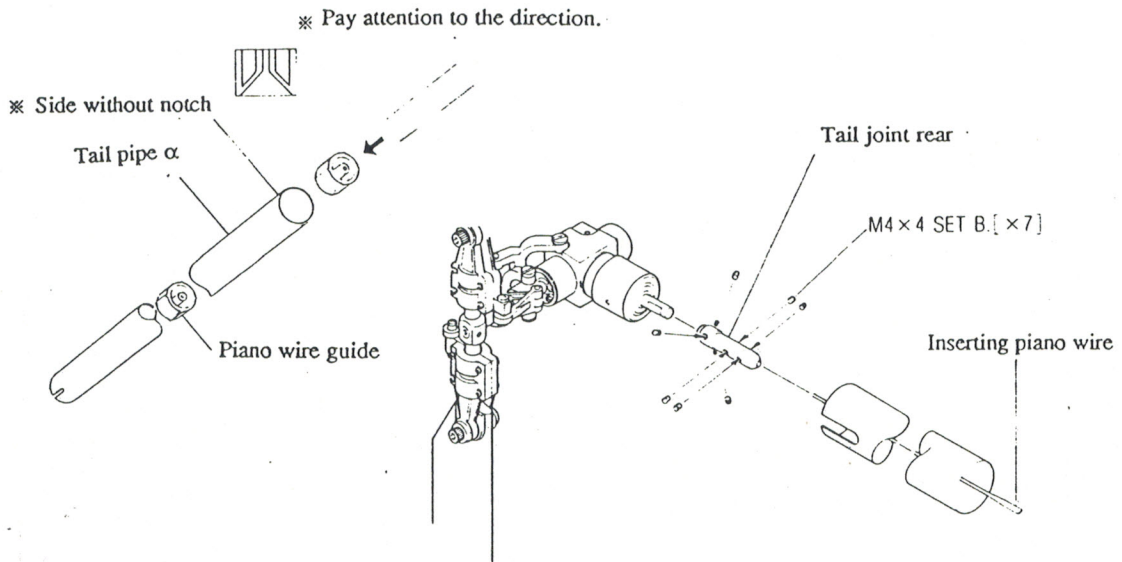
6-1

Put the spacer and outer spacer between the bearings and install them to the tail rotor hub with M3x18 cap bolt. This bolt should be degreased clean and bonded with KALT tight, etc. Be careful so that the adhesive will not enter the bearing. Sufficiently apply silicon grease to the bevel gear in the inside tail gear.



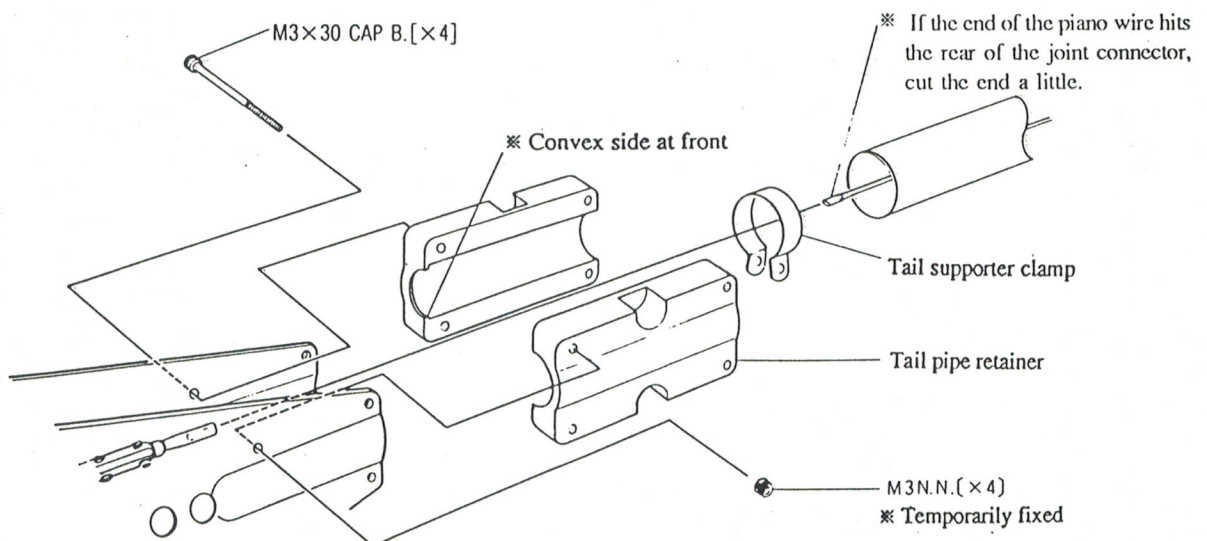
6-2

Using a long bar, push the piano wire guides into the tail pipe at the side without notch, making sure of the direction.



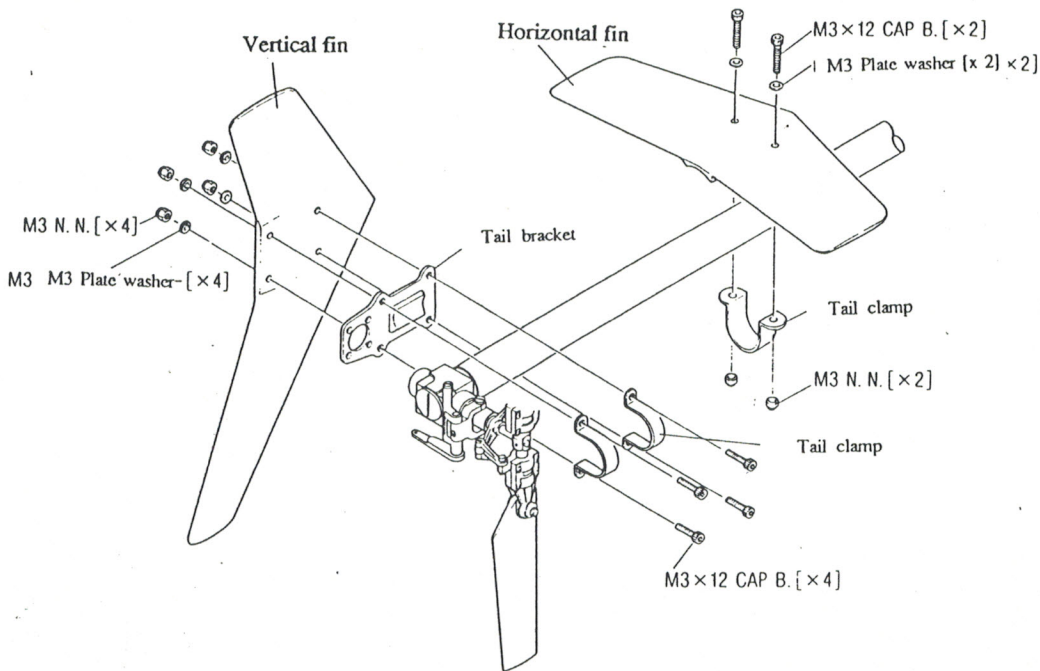
6-3

Temporarily fix the tail pipe retainer with the convex side front to the frame. Then push the tail pipe into the pipe retainer via the tail supporter clamp. At that time, the piano wire should be inserted making sure of the direction of the joint connector and the piano wire.



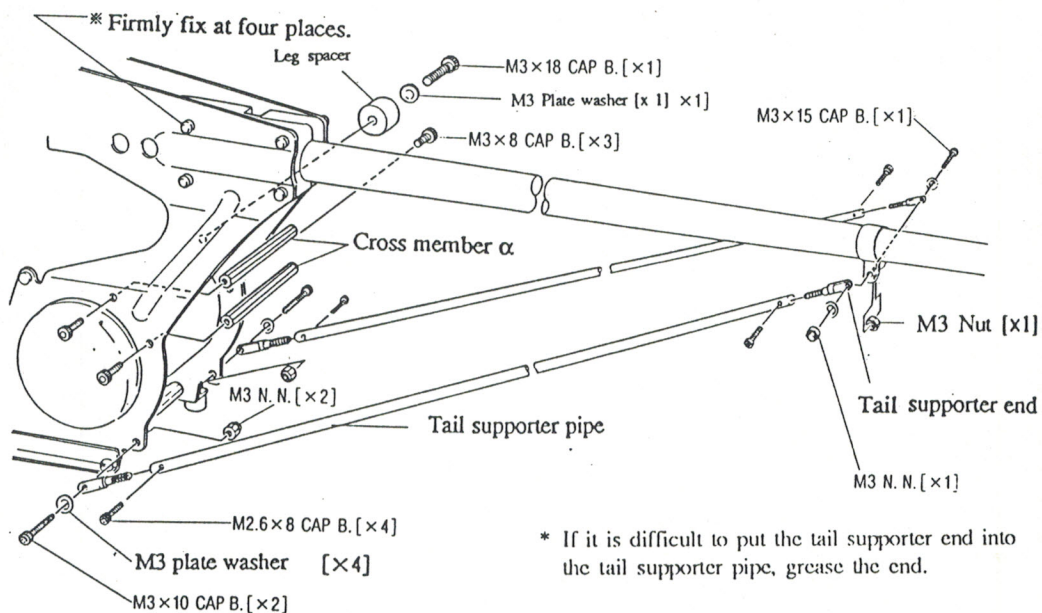
6-4

Fix the vertical tail and then install the horizontal fin normal to the vertical fin.



6-5

When the tail supporter is installed, adjust the tail supporter clamp position back and forth so that the tail pipe will be accurately at right angles to the mast. Turn and Adjust the tail pipe so that the vertical tail becomes parallel to the mast. Firmly fix the tail pipe retainer bolts and tail supporter parts.

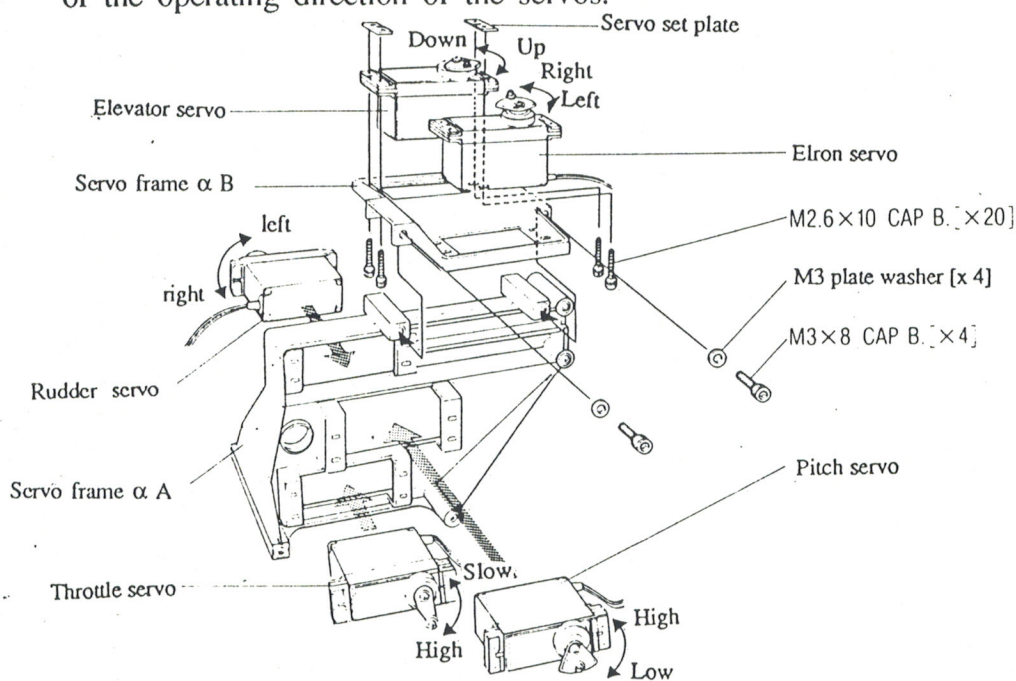


* If it is difficult to put the tail supporter end into the tail supporter pipe, grease the end.

STEP 7. Mechanism installation and Linkage

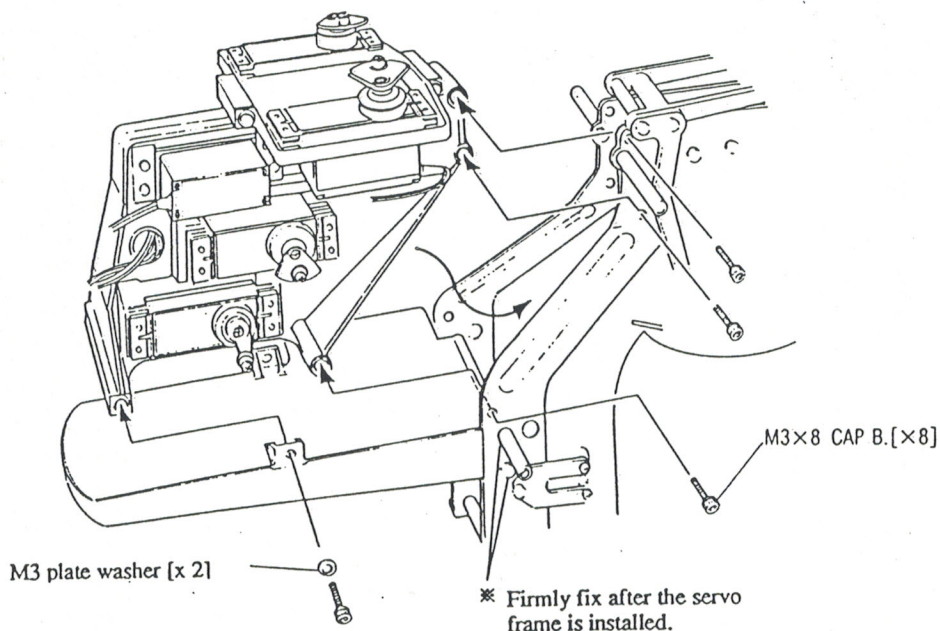
7-1

Clean the servo set plates and M2. 6x10 cap bolts and firmly fix the servos using the Kalt Tight, etc. (Be sure to install the rubber bushes to the servos.) Make sure of the operating direction of the servos.



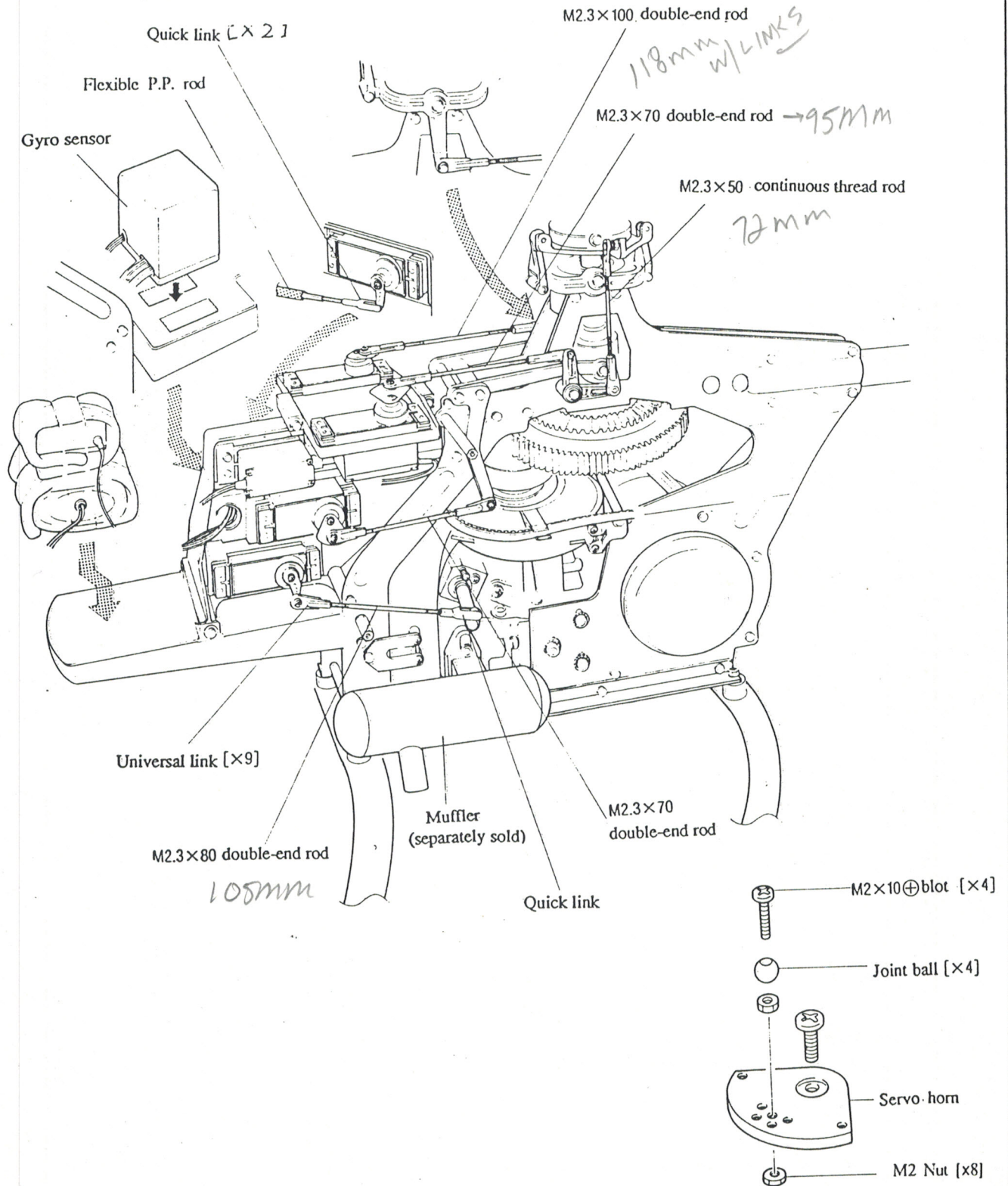
7-2

Install the servo frame in the main frame. If it does not go in smoothly, loosen these bolts fixing the subframe. They should be firmly tightened after loosening or even when they are not loosened because they were temporarily fixed.



7-3

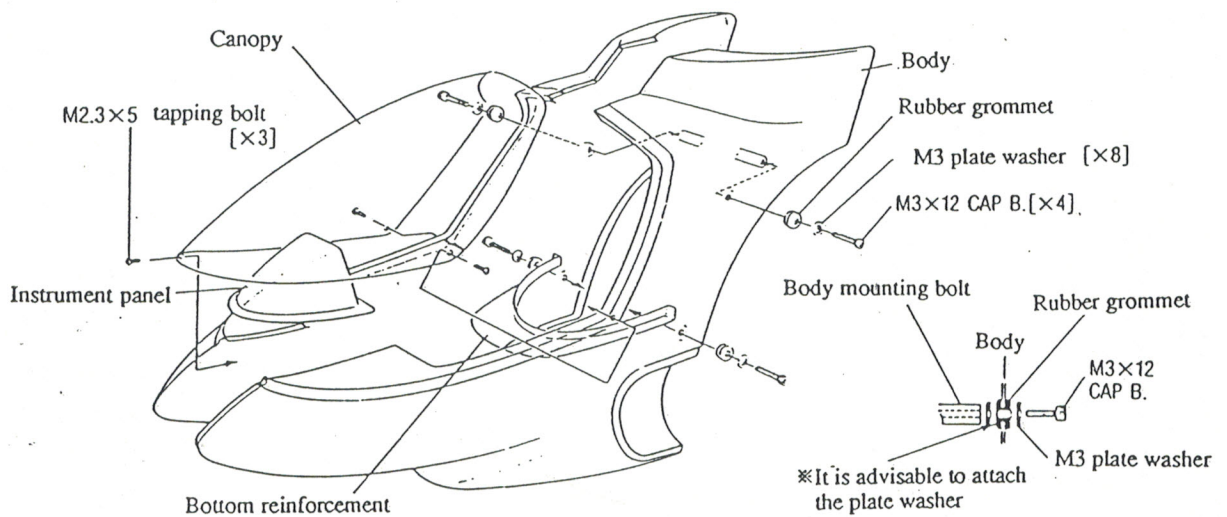
Make the linkages as illustrated below. For the Elron. elevator and pitch servos, use the disk type servo horn. Step it as illustrated, install the joint ball, and make the linkage. For linkage of the rudder, screw the quick link onto the flexible P.P. rod at both ends. The P.P. rod should be fixed using the P.P. rod bracket and fixed to the tail pipe by wrapping with vinyl tape at points so that it will not be bent on the way.



STEP 8. Body Assembly

8-1

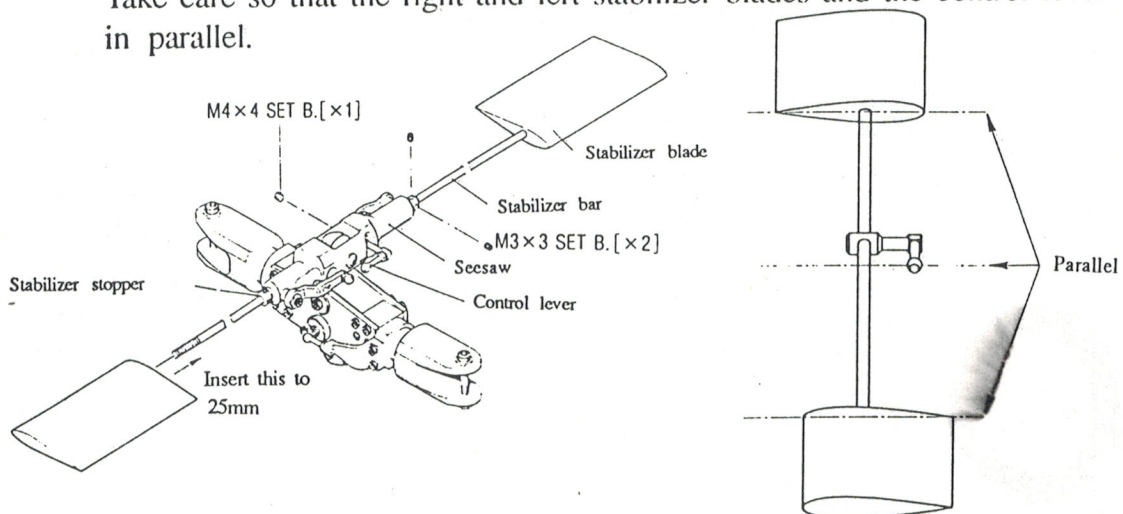
Temporarily fix the parts of the body with adhesive cellophane tape, etc, and bond them by putting in the adhesive provided between the mating parts using a small brush. Prepare the hole $\phi 6$ for the rubber grommet of the body and the hole $\phi 2$ for the canopy mounting taking bolt after attaching 2 or 3 reinforcing plates from the inside. (When the normal muffler is not used, bond the provided cover to the concave partion on the side of the body.)



STEP 9. Head Installation

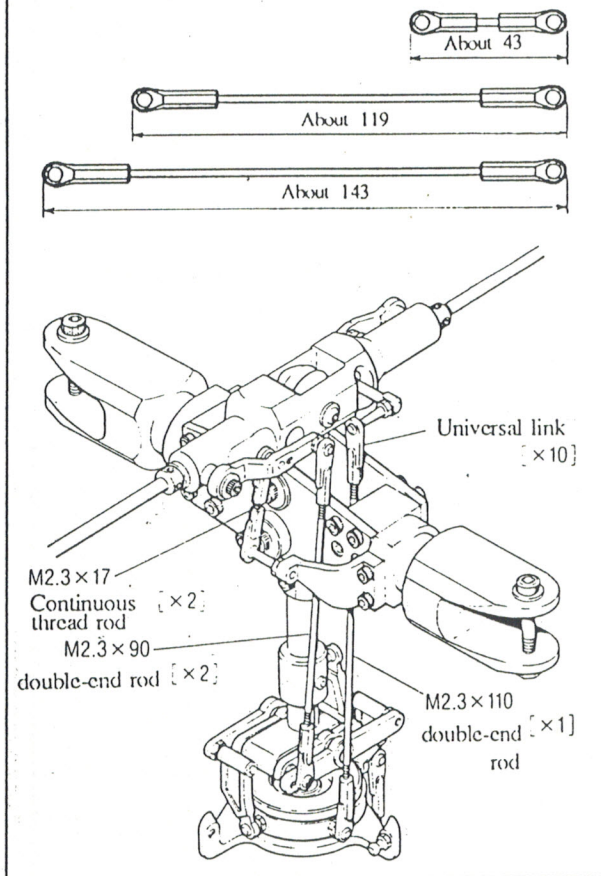
9-1

Adjust the length of the stabilizer bar at right and left so that the length from the seesaw portion to the stabilizer blade will be same, and fix them with the set bolts. Take care so that the right and left stabilizer blades and the control lever will be in parallel.



9-2

Make linkage rods and link them as illustrated below. For the method of adjusting the rotor head, see the instruction manual for rotor head.



Flying Adjustment

The following adjustment must be made under the guidance of an experienced person of the radio controlled helicopter.

To prevent danger, the rotor should be started after the engine is started at a place sufficiently away from people and objects, and the operator himself must not go near the rotating main and tail rotors and the extension of the plane of rotation. When the rotor is started, carefully check the helicopter for any abnormal vibration or noise, and if any abnormality is found, immediately stop the engine and investigate the cause. The parts (including engine and radio equipment) should be always checked, and any cracked or faulty parts must be replaced.

Adjustment after Assembly

After the assembly is completed, recheck all the processes and make sure that there is no wrong assembling or forgetting of tightening the bolts and that there is no linkage fault by operating all the servos. Sufficiently charge the transceiver in preparation for the following flying adjustment.

• Checking of Center of Gravity

The center of gravity of the helicopter is very important.

Prior to flying, it should be set in the range from the mast to the place 5 mm ahead of the mast without fuel. For actual adjustment, the nose should be slightly lowered when the mast of the helicopter is raised.

• Pitch of Main and Tail Rotors

For the pitch of the main rotor, see the instruction manual of the rotor head.

Actually it considerably differs depending on the helicopter weight, engine power, diameter of main rotor and taste of the operator, and the adjustment should be made while flying the helicopter. As a yardstick when assembling, it should be set to minimum 0° and maximum 8°.

The tail rotor pitch also differs depending on the type of helicopter, but the PC plate position should be set in such a way that about 5 pitch is obtained when the rudder stick is in the neutral position and the throttle stick in the slowest position.

• Tracking Adjustment

Place the helicopter at a place 5m or more away from you, gradually raise the throttle, and when the helicopter is about to rise, check the plane of the rotation of the main rotor from the side to see whether the two rotor blades form same tracking. If the tracking is not in agreement and is doubled, adjust the tracking by decreasing the pitch of the upper rotor or increasing the pitch of the lower rotor.

This adjustment is made by turning the universal link connected to the pitch arm of the rotor head.

• Engine Adjustment

The engine needle valve and slow adjuster should be set in accordance with the instruction manual of the engine maker and fine adjustment should be made by checking the engine condition while flying the helicopter. Since the engine condition greatly differs depending on the fuel used, plug, helicopter weight, flying place, altitude and meteorological condition, veteran's advice should be heard.

• Tail Pitch Adjustment

Place the helicopter with the nose faced toward the wind and gradually increase the speed of the engine. If the tail swings when the helicopter is about to rise, the tail pitch should be adjusted. (The transmitter rudder stick and trim should be placed in the neutral position.) If the tail swings rightward (nose leftward), the pitch of the tail rotor is low, and should be increased by shortening the length of the P.P. rod. If the tail swings leftward (nose rightward), the pitch should be decreased.

Repair and Replacement Parts

For all the parts used in our kits, replacement parts are sold. If parts are damaged due to turnover or falling, you can obtain the replacement parts at the shop where you bought the kit. For special parts not stocked, please order to your shop describing the helicopter model name, correct name of the parts and part No. Since the helicopters made by our company are designed in due consideration of

the overall strength and durability, it is very dangerous to use parts made by other companies or make partial reinforcement.

It must be noted that if use of other parts than our genuine parts causes trouble, our company cannot guarantee anything. Repairing or adjustment should be made in accordance with this manual as in the case of assembling.

Request

The adjustment of the radio-controlled helicopter is very complicated, and in order to achieve good condition, overall adjustment of components is required. For a beginner, it is rather difficult to achieve this total balance, and therefore, the adjustment should be made under guidance of a veteran. Since the radio-controlled helicopter is very dangerous if the adjustment or handling is wrong, it is recommended to effect the radio control insurance contract and take utmost care to secure safety. If falling or turnover should occur, all the parts should be carefully checked, and any

doubtful parts should never be used. Keeping in mind the fact that the helicopter is operated by means of the radio control equipment using very weak radio wave, the helicopter should never be flown near and over people and buildings and too near to you. If any shortage of parts included in the kit is found, please contact your shop before starting the assembly. If any parts included in the kit are faulty or defective, please contact our company before flying. They will be replaced with the good parts.

It should be noted that our company cannot take any responsibility for accidents which may occur after flying due to the above reasons and defects of this manual and drawings.

For all the main parts and designs of Kalt helicopters, the patent, utility model, and registration of design were obtained or applied for.

No part of this manual and drawings can be reproduced in any form without permission.

Main Specifications

Main rotor diameter	1556mm
Total length of helicopter	1400mm
Total equipment weight	4.6kg ~ 4.8kg
Engine	60 class
RC equipment	5 channels
Mechanism	60 Baron α II
Revolution ration (engine : main : tail)	9.78 : 1 : 5.52
Body material	ABS vacuum-molded
Temperature range for safe flying	0 °C~40 °C

10
11
12

13
14
15



KAITO SANGYO CO. LTD.

SUPPLEMENT OF INSTRUCTION MANUAL FOR
60 BARON ALPHA II- U.S. VERSION

THERE ARE FEW CHANGES IN KIT AND MANUAL.
PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE
YOU START TO BUILD THE MODEL.

A) ADDITIONAL PARTS

STEP 2

0102-091-8	CLUTCH BELL FOR STARTER	1
0102-102-6	PINION GEAR (T9) FOR STARTER	1
0102-108-8	BEARING CASE TYPE II FOR STARTER (W/L-1910 ZZ, R-1760 ZZ & R-1960 ZZ)	1
0102-109-8	STARTER CONE TYPE II	1

STEP 3

71031	TAPERED NUT FOR O.S.	1
71032	TAPERED NUT FOR Y.S.	1
71033	TAPERED NUT FOR ENYA	1

STEP 4

0601-180-8	BEARING CASE B (PLASTIC)	1
61005	L.S.D. AUTOROTATION SYSTEM	1

STEP 6

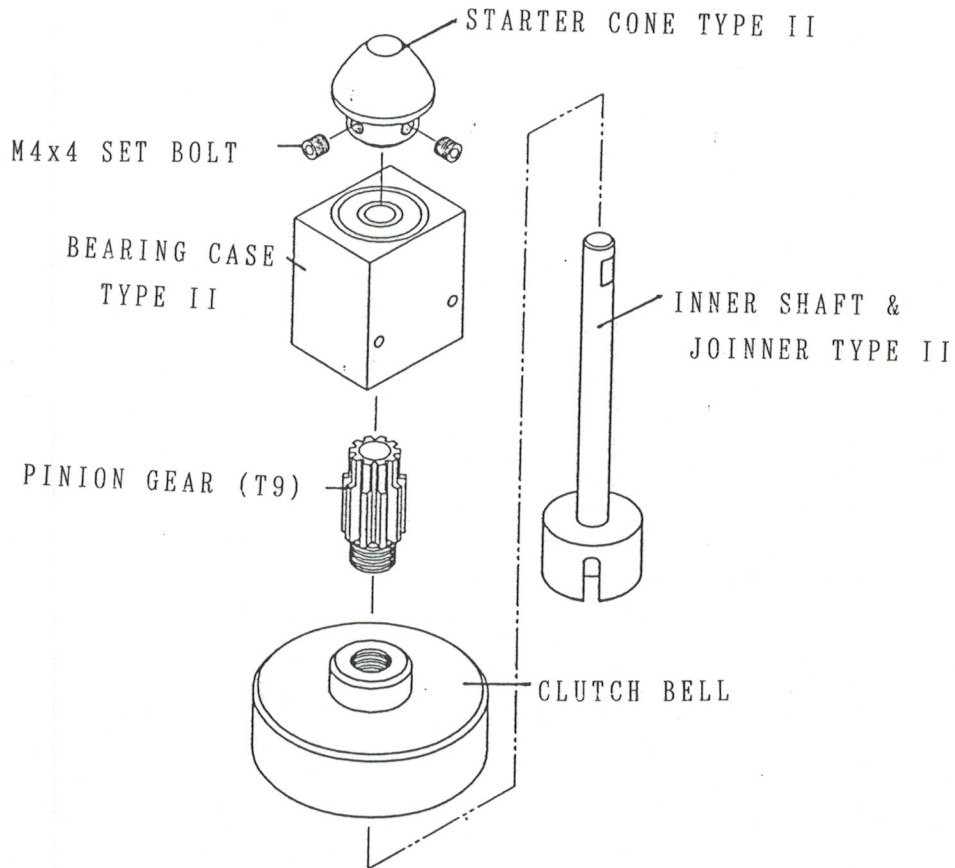
0601-181-8	VERTICAL FIN	1
	HORIZONTAL STABILIZER	1
	3x9x5 SPACER	4
	TAIL SUPPORT CLAMP	2

B) ADDITIONAL BOLTS & WASHERS

STEP 2	M3x8 CAP BOLT	4
STEP 3	CLUTCH SHOE FIXING BOLT	2
STEP 4	M3x30 CAP BOLT	1
STEP 6	M3x15 CAP BOLT	4
	M3x40 CAP BOLT	2
	M3 PLATE WASHER	2

STEP 2-1

ASSEMBLE STARTER SYSTEM AS PER THE ILLUSTRATION SHOWN. WIPE THREADS OF PINION GEAR AND CLUTCH BELL OFF WITH ALCOHOL AND APPLY A SMALL AMOUNT OF KALT -TITE, THEN SCREW IN FIRMLY. PULL INNER SHAFT SLIGHTLY UP AND ADJUST SET BOLTS AND COUNTER PART OF INNER SHAFT. (REMARKS) USE M3x8 CAP BOLT TO FIX SYSTEM ONTO MAIN FRAME.



STEP 3-1

TAPERED NUT HAS BEEN CHANGED TO ONE FOR STARTER SYSTEM AND IT IS NOT NECESSARY TO APPLY SILICON GREASE TO BEARINGS. CLUTCH SHOE FIXING BOLTS (M4x6 BUTTON CAP BOLT) WERE CHANGED TO ONES FOR STARTER SYSTEM.

STEP 3-3

AS THIS MODEL HAS STARTER SYSTEM, OMEGA STARTING BELT IS ELIMINATED.

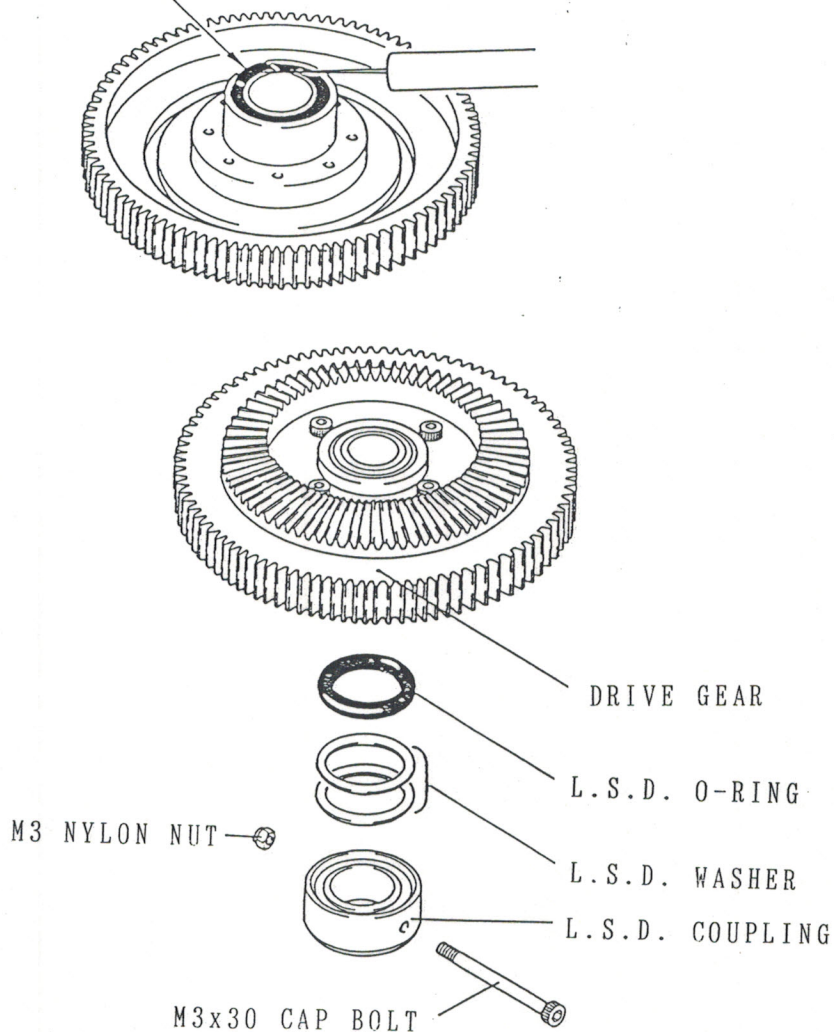
STEP 4-2

AS PER THE ILLUSTRATION, INSTALL L.S.D. SYSTEM WHEN YOU PUT MAIN DRIVE GEAR AND AUTOROTATION SYSTEM ON THE MAIN SHAFT.

1. TAKE OIL-SEAL OFF AS SHOWN.
2. INSTALL MAIN DRIVE GEAR, O-RING, WASHERS AND COUPLING ON MAIN SHAFT.
3. PUT M3x30 CAP BOLT AS SHOWN AND FIX IT WITH M3 NYLON NUT.

OIL SEAL

[M3x30 CAP B. 1]



STEP 4-4

TO PREVENT FROM NOISE PROBLEMS. PLASTIC BEARING CASE IS INCLUDED IN THE KIT.

STEP 6-3. 6-4

TAIL CLAMPS AND NEW VERTICAL FIN & HORIZONTAL STABILIZER ARE INCLUDED IN A KIT, ASSEMBLE THEM AS PER ILLUSTRATION.

- [M3x15 CAP B. 4]
- [M3x40 CAP B. 2]
- [M3 P.W. 2]

