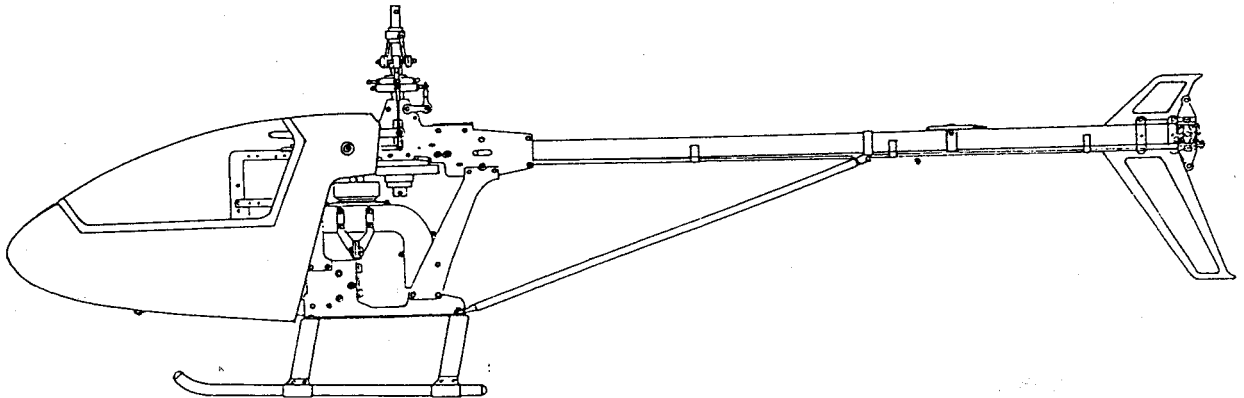


TSK

RC HELICOPTER COMPONENT

Kaiser Ace Premium Set

INSTRUCTION MANUAL



TSK ® TOHKOH SEIKI Co., Ltd.
MAKING NEW LEGEND

The frame of this set is semi-finished. But be sure to check each threaded area carefully before assembly. We will not assume responsibility for a crash and such like attributed to our assembly operation.

Thank you for your purchase of the TSK "Kaiser Ace" Premium Set.

Based on the power drive unit "Separate I" recognized for superior performance in competitions and the New "Kaiser Ace" body, this set makes a reasonable component set.

Before assembly, please read not only this manual but instructions on respective parts.

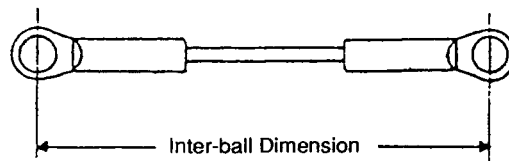
This set does not include the rotor head, stabilizer bar, control paddles, main and tail rotor blades, engine, radio control units and gyroscope. Have them on hand on your own.

- * At the beginning of the following description of each assembly process the parts to be used in the process and their quantities are listed. Furthermore, packaging is classified "SINGLE" or "SET" to show you where to look for what you need.

SINGLE ----- Single part packaged as it is put in market

SET ----- Parts in a vinyl bag

- * In this manual the "inter-ball dimension" in linkage rod instructions applies as shown below.



Procedure1: Engine Assembly

- * *This set includes a normal type cooling fan. When using an engine other than the OS have on hand a cooling fan for the ENYA or YS engine which may be used optionally. (The fan for ENYA or YS is worked to accept directly the standard drive washer on the engine. The fan for YS should have a tag stamped green together with an instruction manual.)*
1. Attach the cooling fan to the engine. Be very careful to prevent a runout. The critical point lies in setting the engine crank shaft at a right angle to the cooling fan top surface for clutch mount installation. Check very carefully and attach the clutch mount to the cooling fan using the M4 hex bolts.
 2. Attach the clutch bolts to the clutch mount. Apply a small amount of grease on the pivot holes and spring grooves of clutch shoe assembly. Put the clutch shoe assembly over the clutch bolts by opening the assembly without disengaging the two pieces from each and attach the E-rings on the bolts.
 3. Cut off the cooling fan casing areas that will interfere with the engine carburetor and offset muffler adaptor.
 4. Depending on your engine, change the direction of the engine mount temporarily set on the semi-finished frame.

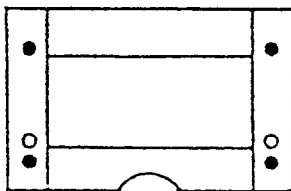
OS engine

Direct the arc cutout side to the rear of the engine.

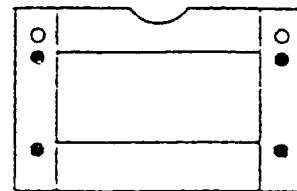
YS/ENYA engine

Direct the arc cutout side to the front of the engine.

OS engine



YS/ENYA engine



5. Remove the engine carbureter.
6. Put the starting belt in the frame. Attach the engine and fan casing stay to the engine mount with four each of the M4-18 cap screws and M4 inner clip washers.
7. Attach the carbureter again and install the cooling fan casing with the screws and fittings furnished with the casing.
8. Pull the engine mount having the engine fixed, upward all the way and lower by 0.5 mm. Center in the manner that the clutch bell and clutch mount are held parallel, and fix.
9. Insure certain back lash is reserved for each gear while the mast is raised all the way. Tighten the cap screws with inner clip washers of the drive unit assembly.

Parts to be used:

<SINGLE>

- D1200 cooling fan 1
- D1300 cooling fan casing 1
- E1500 starting belt 1

Parts to be available separately :

- 60 Class engine for helicopter 1

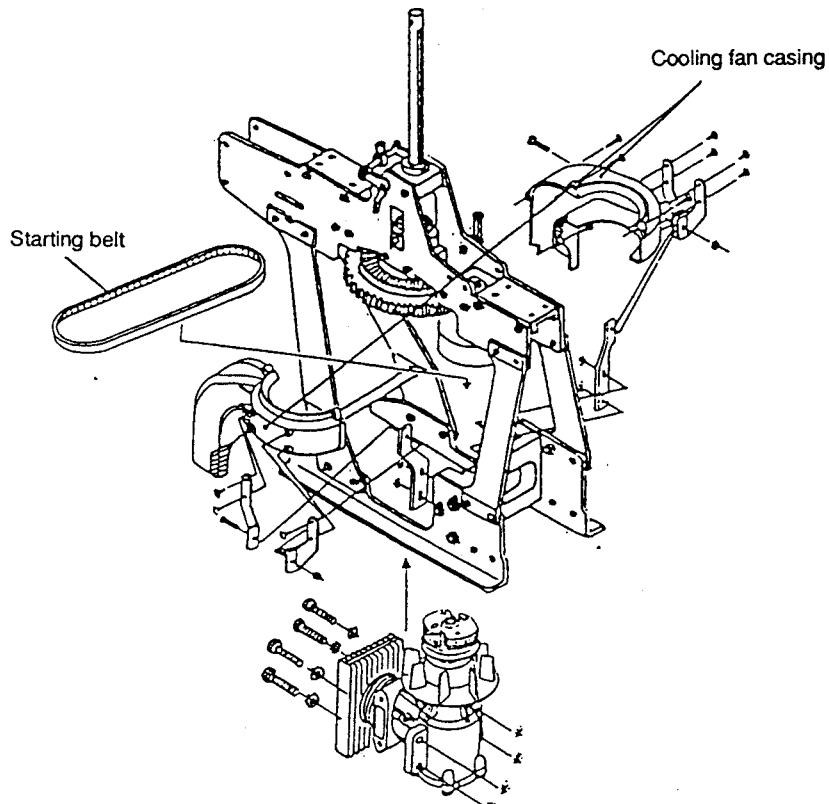
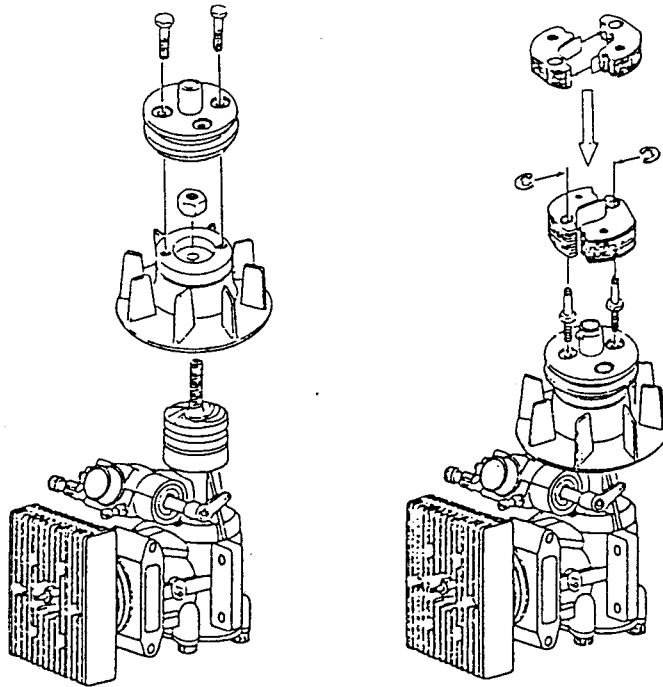
<SET>

- Drive unit "Separate I" semi-finished assembly 1

Drive-related Parts Set D

- Clutch shoe assembly (2-piece unit) 1
- Clutch bolt 2
- M4 hex bolt 2
- E-Ring 2

[Engine assembly]



Procedure2: Assembly of Sub-frame and Servo Frame

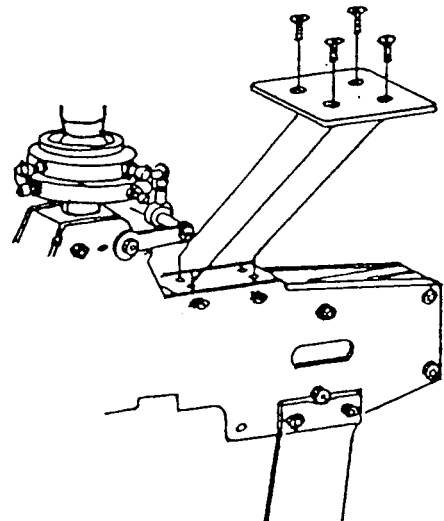
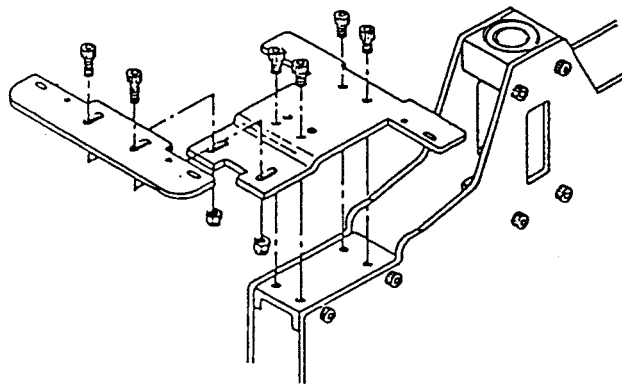
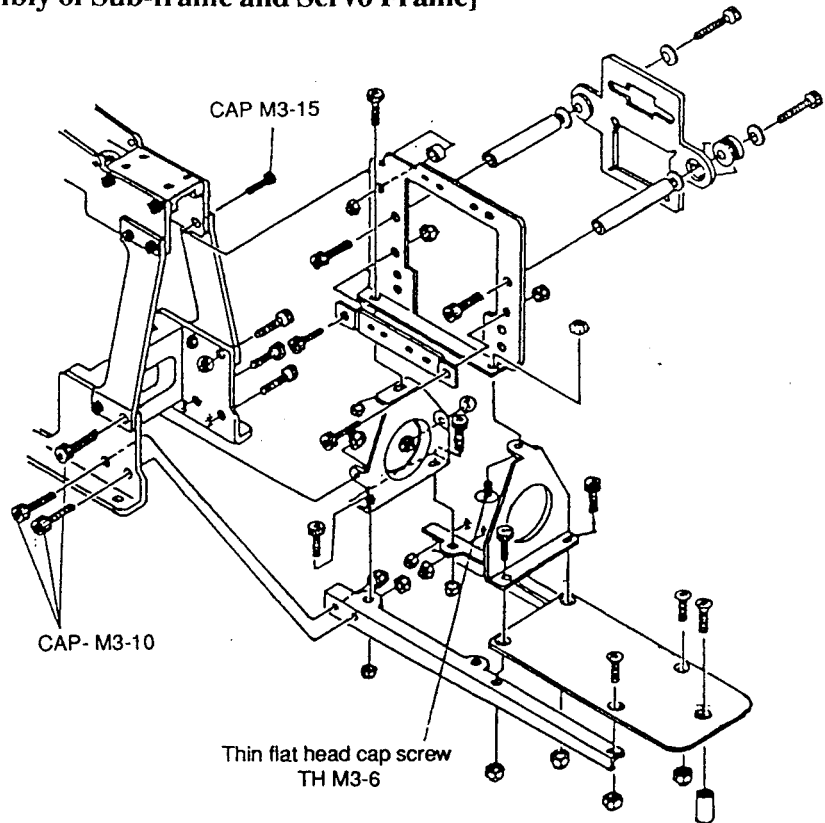
1. Assemble the sub frame unit "L" and attach to the drive unit assembly with six each of the M3-10 cap screws and M3 nylon nuts furnished with the sub frame unit.
2. Attach the lower servo frame in the servo frame set to the drive unit assembly having the sub-frame unit installed. Use the mounting screws and such like in parts sets follows
 - * Fixing of lower servo frame and main frame
(F4000 package) M3-15 cap screw, M3 nylon nut, 7-6 Collar ----- 1 each
 - * Fixing of lower servo frame and servo plate retainer
(F4000 package) M3-8 cap screw, M3 nylon nut ----- 1 each
 - * Fixing of lower servo frame and servo plate retainer "L"
(F3100 package) TH M3-6 thin flat head cap screw, M3 thin nylon nut -- 1 each
3. Make a temporary assembly of the upper servo frame in the servo frame set and attach to the upper frame member (in the direction of the nose) installed on the drive unit assembly, using the four M3-6 cap screws of F4000.
4. Attach the gyro mount to the other upper frame member (behind the mast) installed on drive unit assembly, using the four flat head cap screws of F1051.
5. Attach the switch plate and cross member 40 mm (2) furnished with F1100 for switch plate mounting to the left side of the lower servo frame. Fit the rubber grommets into the switch plate and fix to the cross member with the cap screws, using M3 plate washers on both sides, and taking care not to tighten excessively.
6. Attach the cross member 10 mm in the Kaiser Ace mounting stay set to the leading end of the mechanical plate installed on the sub-frame, using the flat head cap screw in the set. Be sure that the cross member is directs downward on the end of the plate.

Parts to be used:

<SINGLE>

- F1100
- switch plate set 1
- F3100
- sub frame set "L"
assembly 1
- F4000
- servo frame set 1
- F1051
- gyro mount 1
- (No marking)
- In the Kaiser Ace
mounting stay set
package
- Cross member 10mm,
M3-6 flat head cap
screw 1 each

[Assembly of Sub-frame and Servo Frame]



Procedure 3: Assembly of Swash Plate Unit

1. Attach the double support CP control lever assembly to the drive unit with the link screw (shaft threaded on both ends) included furnished with C4050 and cross member 38 mm (2) of the mounting stay set. Set an M3-8 cap screw and such like on the other cross member in advance and tighten with a wrench, etc. After tightening remove the cap screw while fixing the cross member with a pliers.
2. Attach the CP slide ring of the drive unit assembly to the double support CP control lever B with the M3-8 cap screws of C4050. Applying a bit Mild Loctite lightly to the cap screws before tightening.
3. Tighten the cap screws in the temporary lever A/B assembly.
4. Turn out the pivot bolt temporarily attached to the lever A, apply Mild Loctite lightly and turn in again.
5. Apply Mild Loctite lightly to the threads of each pivot bolt, control drive scissors, M3 shoulder screw and upper plate lock of the control drive scissors and attach to each lever and the CD slide ring.

Set the upper plate lock in a position where its center is held 12.5 mm away from the inner surface of the control arm. The rod ends (including the upper plate lock) should be so arranged as to reserve an inter-ball dimension of 22 mm and ball inserting surfaces setting at a right angle.
6. Remove the M3-23 cap screw, etc. used for temporary fixing of the drive gear assembly on the mast, and pull out the mast from the drive unit assembly.
7. Loosen the M3 hollow set screw in the ring for temporary mast installation in the to drive unit assembly and remove the ring.
8. Fit the CP rod in the CD slide ring and put in the mast. Check that the ring slides easily.
 - * If the ring motion is not light and smooth, check and modify the 90° bend in the of rod, then file away the bend mark (bulge) on the inside of the bend.
9. Install the control drive scissors, swash plate C and swash collar in that order in the CP rod having the CD slide ring fit, and insert the mast from above the CD slide ring.
10. While holding the parts on the mast, take the CP rod about 20 mm out of the lower end of the mast, and insert the 90° in the CP rod into one of the four 2 mm holes in the CP slide ring through the bearing housing in the upper part of the drive unit assembly. Then pull down the mast.
11. Attach the drive gear assembly to the lower part of the mast, fix with the cap screw furnished with the drive gear assembly.
12. Tighten the cap screw in the control drive scissors mount while pulling up the mast all the way so that the mast stays fixed.

Parts to be used:

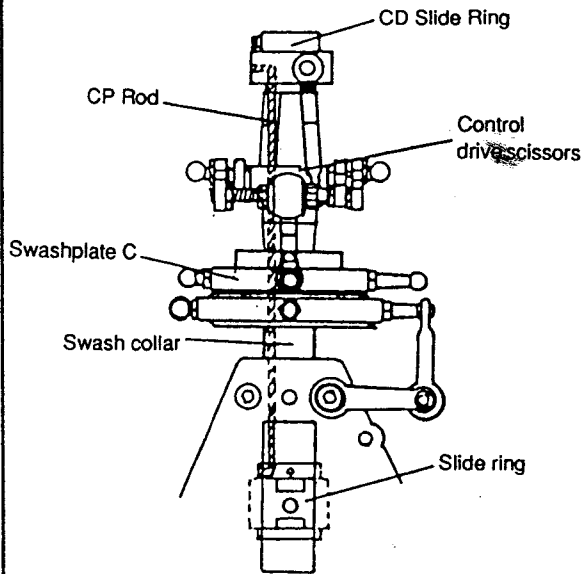
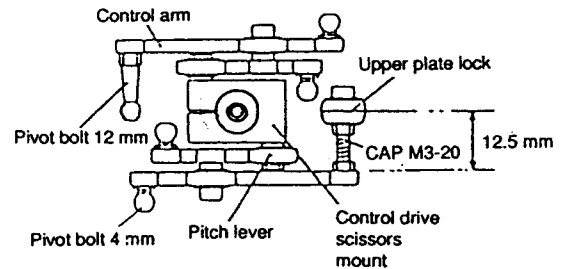
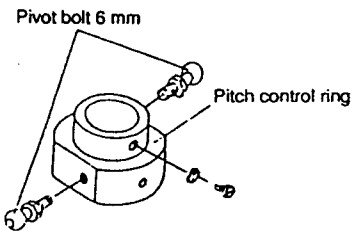
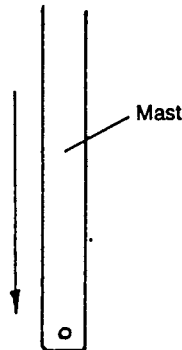
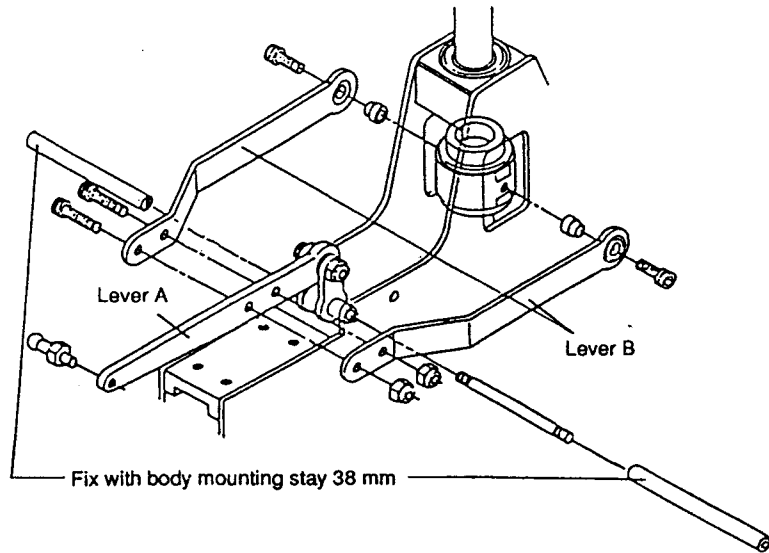
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- M8000 swashplate C 1
- M9200 swash collar 12 mm 1
- M1210 control drive scissors 1
- C4050 double support CP control lever assembly 1 (No marking)
- Kaiser Ace mounting stay set package cross member 38 mm 2

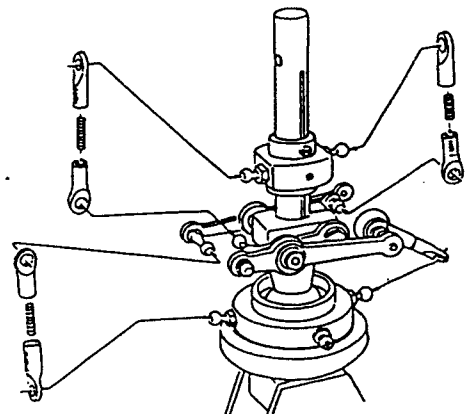
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Linkage-related set L:

- Rod end SS 1
- Rod end L 2
- Control rod 2.3-10 1
- Control rod 2.3-50SS 1
- Pivot bolt M3-4 3
- CP rod 1



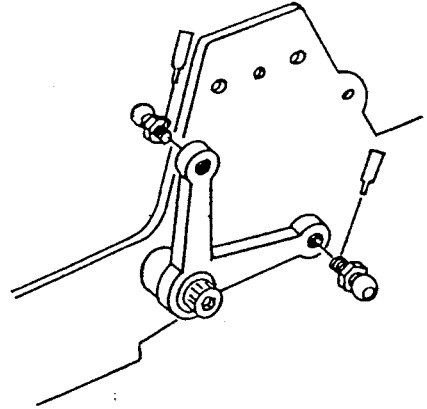
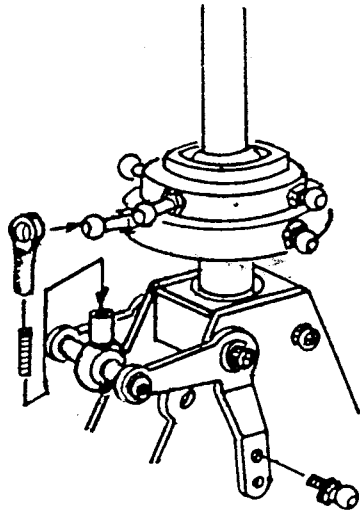
[Swashplate Assembly]



[Control Drive Scissors Assembly]

-
13. Attach the rod end SS, control rod 2.3-10 and M3-4 pivot bolt (one each) furnished in linkage related set L to the elevator and radius arm assembly with the drive unit assembly. Apply Loctite lightly to the threads before turning in the pivot bolt. Turn in the rod end SS firmly until it is in contact with the lower plate lock.
 14. Fit the long pivot bolt at the four attached to the lower plate (lower disk) of the swash plate C in the rod end SS attached to the elevator and radius arm assembly.
 15. Attach the two M3-4 pivot bolts in the linkage-related set L to the L-crank B installed on the upper left side of the drive unit assembly with a bit of Loctite applied on the threads.
 16. Make a linkage rod of inter-ball dimension of 64 mm using the rod end L (2) included and control rod 2.3-50SS (1) in the linkage-related set L. Connect by fitting over the L-crank B and short pivot bolt in the lower part of the swash plate.
 17. Connect the CD slide ring, control drive scissors levers and short pivot bolt in the upper part of the swashplate (upper disk) with the linkage rods (and the rod ends) prepared for the control drive scissors in step 5 above.

After connecting each linkage rod, adjust the control drive scissors mount position until so that the long pivot bolt in the upper part of the swash plate is set at a right angle to the 3 mm rotor head mounting holes in the mast.



[Installation of Rod End SS and Pivot Bolt]

Procedure 4 : Assembly and Installation of Landing Skid

1. Attach the front and rear braces to the skid pipes with the skid bands, M3-8 pan head cap screws and M3 nylon nuts furnished with B6000 in such a way that the dimension between the 3 mm holes front and rear for frame fixing is held 160 mm.
2. Adhere the pipe caps to the ends of the skid pipes using a rubber-based adhesive.
3. Fix the assembled skid in the 3 mm holes front and rear in the lower frame of the drive unit assembly with two each of the M3-10 and M3-12 cap screws and 4 nylon nuts in the mounting screw-related set S. Use the M3-12 cap screws for temporary fixing of the rear skid brace at this stage. These screws will be used later to fix the end of the tail pipe supporter together with the skid brace.

Parts to be used:

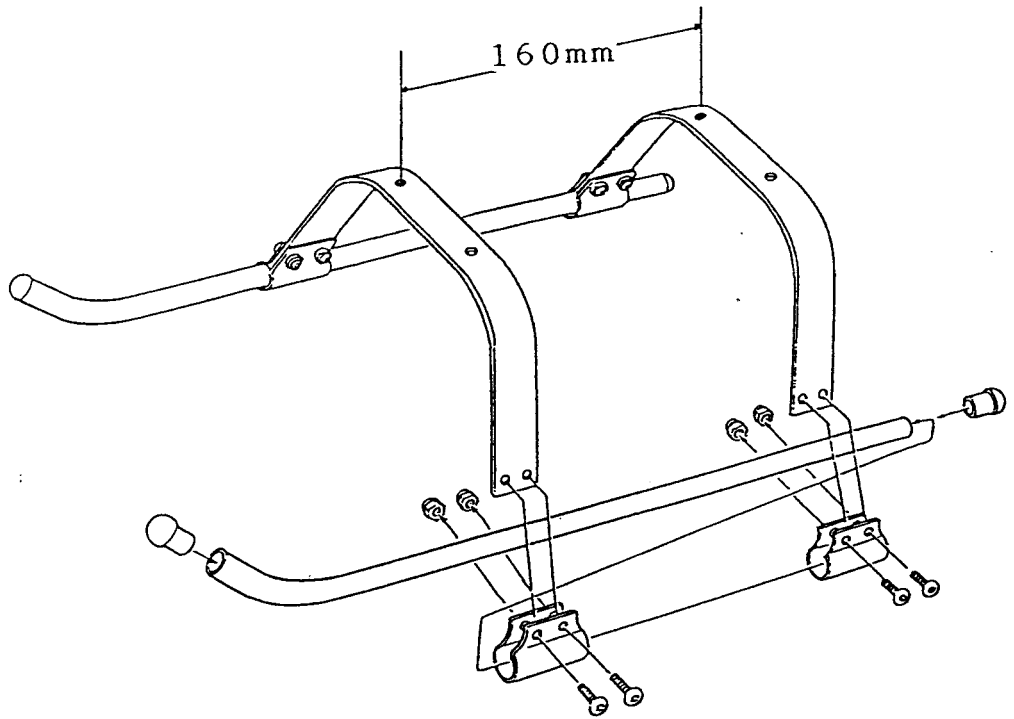
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B6000
landing skid 1

<SET>

Mounting screw-related
set

M3-10
cap screws 2
M3-12
cap screws 2
M3
nylon nuts 4



[Assembly of Landing Skid]

Procedure 5 : Assembly of Tail

1. Attach the four bearings (at 3 mm inside diameter) in the tail rotor grip A set to the center hub of the tail drive transmission. Put the M3-14 stainless steel cap screws, furnished with T3010 in two of the bearings, apply Loctite carefully to the remaining threaded areas and attach to the center hub of the tail transmission.
 - * Don't tighten the stainless steel cap screws with an L-type wrench and such like. Overtightening may lead to a tail rotor breakdown during flight. So, be careful.
2. Fit the grip plate A and B of T3010 in the bearings attached to the center hub and assemble using the eight M2-10 cap screws and spacers. Fix the ball to the grip A with the M2-10 PH screws and M2 nuts.
3. Thread the rod end SS of D8500 onto the slide ring down to clearance of 2.5 mm away from the PC plate and fit over the ball on the grip A in the manner that the heads of the M2 screws used to assemble the grip plates are directed to the tail drive transmission.
4. Assemble the lever unit of D8500 and fix to the tail drive transmission.
 - * When adhering the spherical housing, degrease the PC lever surface carefully and use an epoxy glue.
5. Attach the joint S to the tail drive transmission and pass the piano wire through the joint S, using the six M4-4 hollow set screws.
 - * The piano wire of this set is cut to the correct length for direct application. In case of replacement cut the D1050 to the length of 785 mm.
6. Assemble the custom tail pipe guide set and attach to the custom tail pipe. Fix the stainless steel pipe, rubber holders guides of the guide set with an instant adhesive. For fixing the tail pipe guide set the tail pipe drill 1.5 mm pilot holes in the holder ring position, set in place using the two M2-3 self tapping screws of B4500 and pour in a small amount of an instant adhesive into the pipe.
 - * When attaching the guide set, mark the holder ring position on the outer surface of the tail pipe and drill one 1.5 mm hole before inserting the guide set into the tail pipe. This saves the trouble in drilling the pilot holes.
7. Apply a small amount of grease to the piano wire. Insert the tail drive transmission with the piano wire thus greased into the tail pipe containing the tail pipe guide from the end where the guide is attached. Attach the tail bracket with the four M3-6 cap screws in the set S.
 - * Insert the tail transmission until the input area of the housing is fully covered by the tail pipe.

Parts to be used

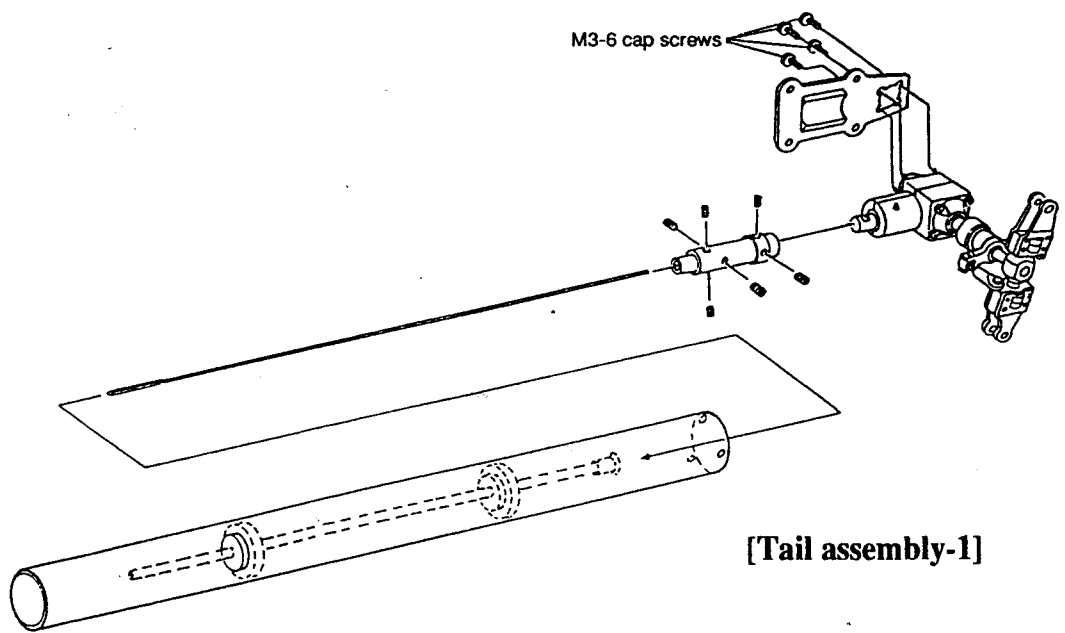
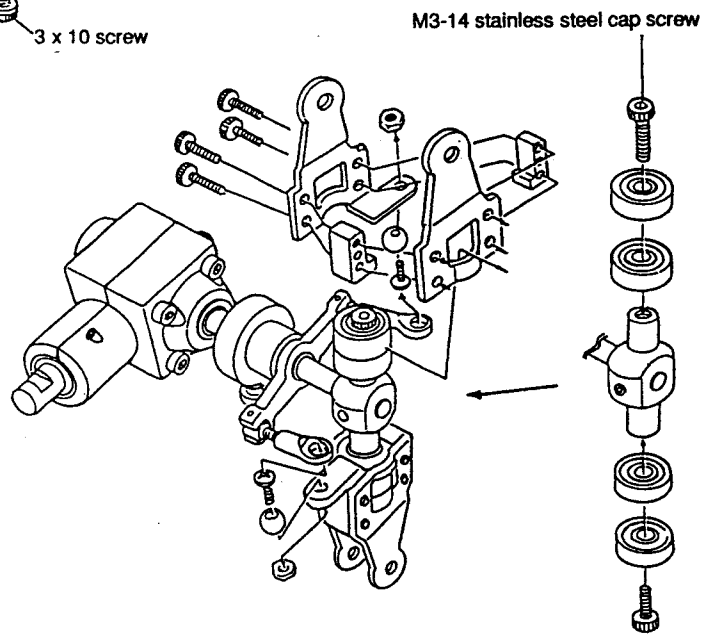
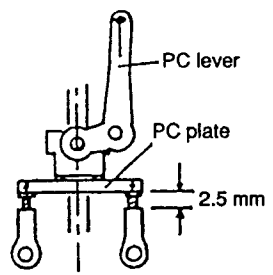
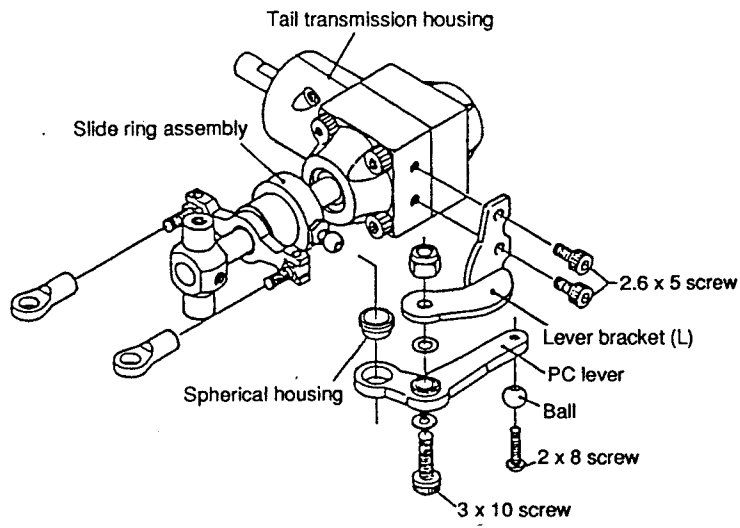
<SINGLE>

- T3010 tail rotor grip
- A Set 1
- D8500 tail drive transmission 1
- D9400 tail bracket 1
- D9902 joint set S 1
- D1050 piano wire (jointless, no packaging) 1
- B3100 special tail pipe (no packaging) 1
- B4500 custom tail pipe guide set 1
- B5000 tail pipe holder 1
- B7000 vertical fin and horizontal stabilizer set 1
- B8000 tail pipe supporter 1

<SET>

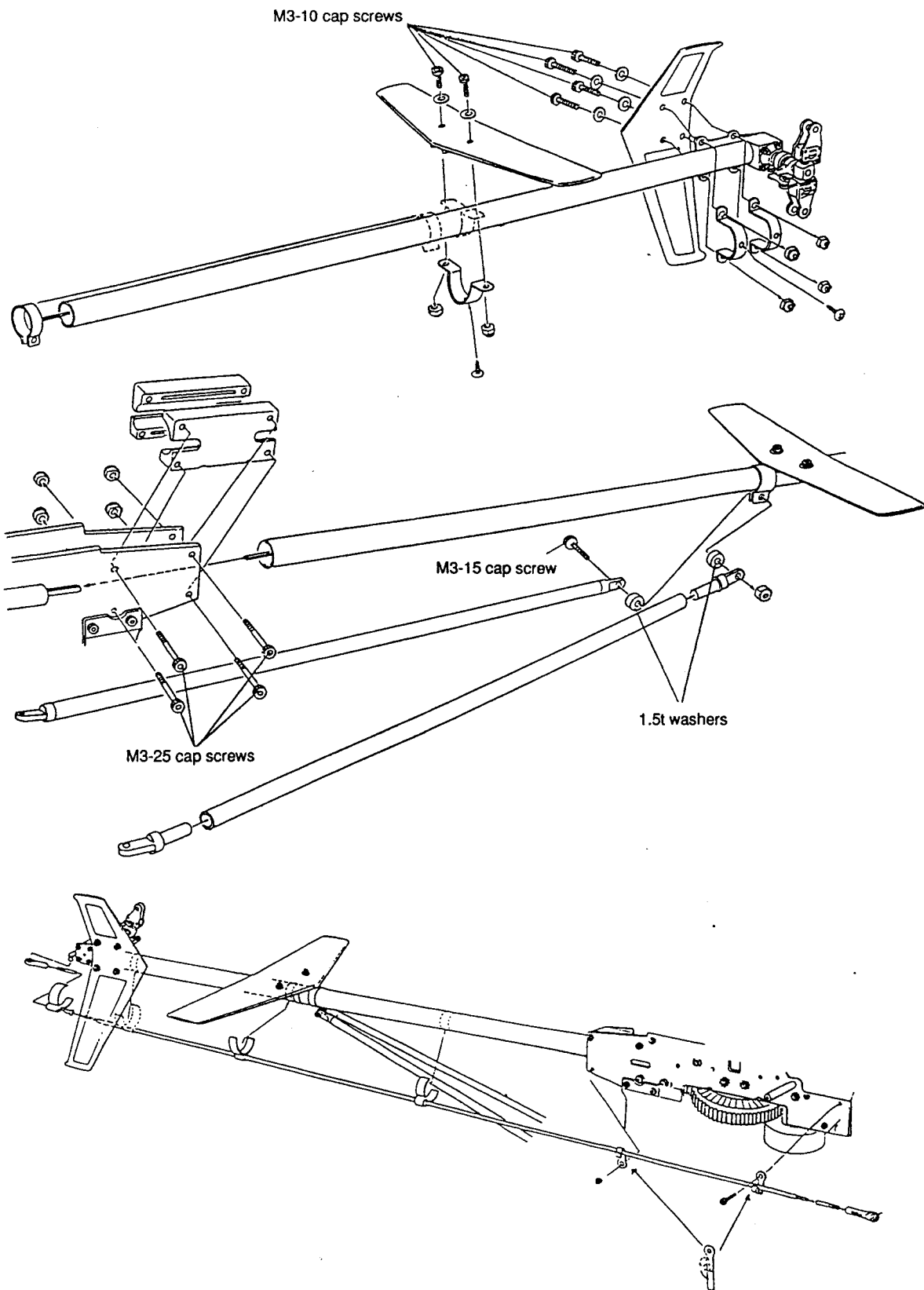
Mounting screw-related set S:

- M3-6 cap screws 4
- M3-10 cap screws 8
- M3-12 cap screws 2
- M3 nylon nuts 10
- M3 plate washers 6
- M2.3-6 self tapping screws 2
- Tail pipe clamps 3



[Tail assembly-1]

8. Attach the vertical fin to the tail bracket with the two tail pipe clamps and four each of the M3-10 cap screws, M3 washers and M3 nylon nuts in the set.
9. Attach the horizontal stabilizer using one tail pipe clamp and two each of the M3-10 cap screws, M3 washers and M3 nylon nuts in the set.
10. Attach the tail pipe holder temporarily to the rear of the upper frame of the drive unit assembly with four each of the M3-25 cap screws and M3 nylon nuts in B5000.
11. Fit the tail pipe supporter clamps (Ω shaped bands) on the assembled tail pipe. Put the tail pipe into the tail pipe holder in the rear of the drive unit assembly. At the same time, insert the crushed end of the piano wire for the tail drive into the tail drive joint B (plug-in joint) attached to the drive unit assembly.
 - * Insert the tail pipe until its end is flush with the tail pipe holder outlet in the nose direction and fix. If the pipe ceases to move on the way, fix the pipe in a position where the piano wire is not squeezed.
12. Assemble the tail pipe supporter and attach.
 - 1: Degrease one each of the two types of pipe ends (straight and bent using s thinner, etc. and adhere them) to the supporter pipe at a right angle to each other with an epoxy or rubber-based adhesive.
 - 2: Fix the straight type pipe end temporarily to the tail pipe supporter bands on the tail pipe with one each of the M3-15 cap screws and M3 nylon nuts and two 1.5t washers in B8000.
 - 3: Fix the bent type pipe end on the lower frame with the M3-12 cap screws used for temporary skid fixing in Procedure 4.
 - 4: Adjust the supporter clamp position until the tail pipe is raised lightly by the tail pipe supporter and fix.
13. Drill pilot holes of diameter of 1.8 mm or so in the small hole positions of the tail pipe clamps and attach the two M2.3-6 self tapping screws in the sets. Not to let the tail transmission and horizontal stabilizer turn in respect to the tail pipe.
 - * Attach the self tapping screw to hold the tail transmission to the forward tail pipe clamp of the tail bracket.
 - * Fix the horizontal stabilizer behind the tail pipe supporter band to stay almost level with the mast.
 - * Fix the tail transmission and vertical fin in a position to hold the output shaft of the tail transmission at a right angle to the mast.



Procedure 6: Linkage

1. Attach the servos to the servo frame with the servo fixing screws and shoulder nuts furnished in F4000. Be sure to fit the rubber absorber (rubber vibration insulator) to each servo. Set the shoulder nut in a direction that the cylindrical area comes into the rubber absorber. Apply Mild loctite lightly to the servo fixing screws and turn them in while taking care not to deform the rubber absorbers too much.
2. Attach the special ball H to each servo horn and engine throttle lever. Apply a bit of Mild Loctite to M2 nuts not to loosen.
3. Make each Linkage Rods to the inter-ball dimensions (L) shown below and connect the servo horns and levers. The dimension L shown is a standard. Adjust, if necessary, according to the size of your servo. When cutting the control rod, be always sure to file away sharp edges on the end of the rod.
 - 1: Throttle linkage L=128 mm
Cut the control rod 2.3-120 to 105 mm and thread the rod end L onto the rod.
 - 2: Aileron linkage L=61 mm
Cut the control rod 2.3-50 to 44 mm and thread the rod end L onto the rod.
 - 3: Elevator linkage L=95 mm
Thread the rod end L onto the control rod 2.3-70.
 - 4: CP control linkage L=62 mm
Cut the control rod 2.3-50 to 45 mm and thread the rod end L onto the rod.
4. Cut the guide pipe in the PC control glass rod set to about 950 mm and insert into the PC wire guide set (3-piece) using the spacers of L1120.
5. Adhere the PC wire guide set having the guide pipe put in the tail pipe with an instant adhesive.
6. An area of the guide pipe is left unfixd to the side of the frame. Fix it on the right side of the upper frame using the PC wire bracket and cap screws already installed in two places.
7. Cut the PC control glass rod to 1,050 mm, apply a bit of an instant adhesive to the ends, trim the ends with a file and insert the rod into the guide pipe. Degrease the inside of the rod joints of L1130 and attach the rod joints to the rod ends with an instant adhesive.
8. Thread the rod end L onto the rod joints adhered until an inter-ball dimension of about 1,085 mm is attained. Connect the PC lever of the tail transmission and the servo horn.
9. Stick the gyroscope to the gyroscope mount in the tail portion of the frame using pressure sensitive adhesive double coated tape to double as a cushion.
10. Wrap the gyroscope amplifier, receiver and Ni-Cd battery pack in foam rubber sheets and mount on the sub-frame unit. Attach the switches to the switch plate.
 - * If the switch case is large and contacts with the servo base, put M3 nuts and each like between the switch plate rubber grommets and the cross member so that the switches may be isolated safely.
 - * Set the throttle lever of the engine upward to open the carbureter 40% when it comes into a vertical.
 - * Fix the servo and gyroscope cords to the frame with nylon straps.

Parts to be used:

<SINGLE>

- L1120
- PC wire guide set
(3-piece set) 1
- L1130
- PC control glass
rod set 1

- F4000 servo frame set

- M2.6-12
servo fixing
screws 20
- M2.6
servo fixing
shoulder nuts 16

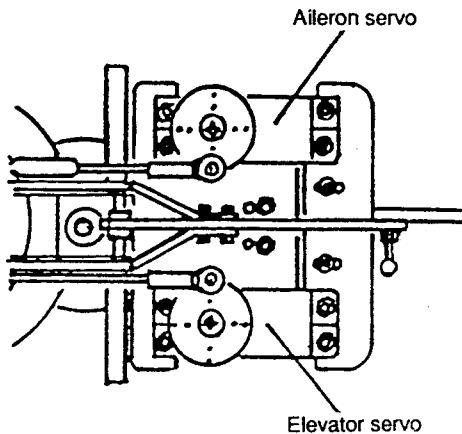
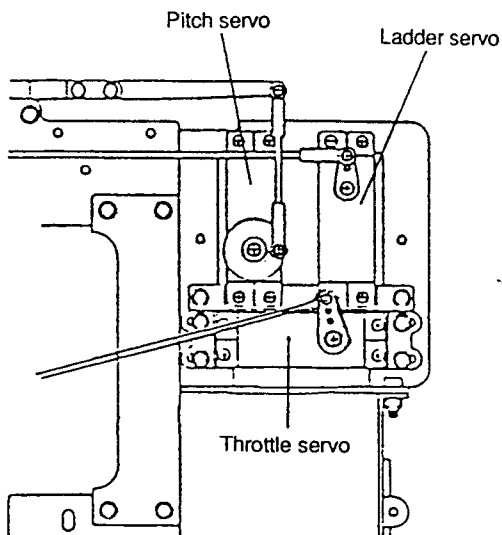
<SET>

- Linkage-related set L

- Rod end L 16
- Control rod
2.3-50 SS 2
- Control rod
2.3-70 SS 1
- Control rod
2.3-120 SS 1
- PC wire bracket 2
- Special ball H
(M2 screw,
nut) set 6

**Parts to be available
separately:**

- Servos gyroscope,
receiver, switch
harness, Ni-Cd
battery pack 1 set



Procedure 7: Assembly and Mounting of Fuel Tank

1. Assemble the fuel tank. The in-tank silicone tube should be the tube furnished with B9100.
 - * The tank inside and weight are cleaned to remove dust deposits in packing. But clean again at assembly.
2. Insert the assembled fuel tank from the right side of the frame, directing the rubber cap to the nose of the helicopter.
3. Connect the fuel tank and the carburetor using the silicone tube with a filter between the ends. In case muffler pressure will be applied, attach a pressure fitting to the silencer and connect the fitting and the tank with the silicone tube.

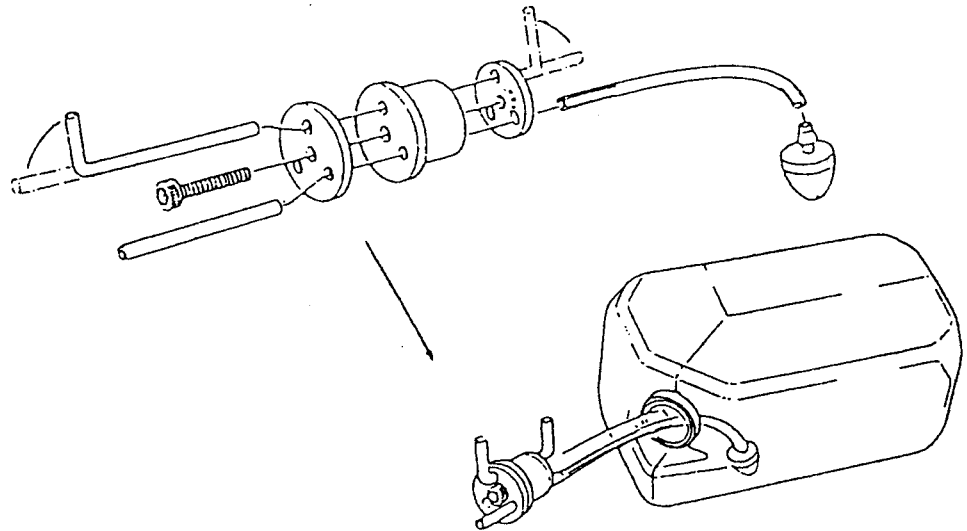
Parts to be used:

<SINGLE>

B9100
fuel tank 1

Parts to be available separately

Silicone tube 1
Fuel filter 1



Procedure 8: Assembly and Mounting of Body

Drill three 6 mm holes for rubber grommet fitting in the body. Firstly drill the holes at the center of dents on the upper right and left sides of the body and fit the rubber grommets and fasten temporarily to the frame with M3-10 cap screws. Work on the nose next and fit a rubber grommet.

* It is recommended to drill 2 mm pilot holes first and enlarge them by filing to the 6 mm diameter for precise positioning and prevention of a damage.

Remove the rubber grommets from the body, polish the surface of the body with #800 - 1000 sandpaper and apply urethane paints and such like.

Trim the canopy edges with scissors so that it will fit to the body properly.

Put the trimmed canopy onto the body, drill holes of 1.8 mm or so in diameter and fix with six M2.3-6 self tapping screws as shown below.

* If the canopy will be put on and off frequently, use the Z-30 TH M2.6-8 screws and N-40 M2.6 nylon nut with flanges available from us.

to be used:

GLE>

marking)
for Ace body.... 1

marking)
for Ace mounting
set

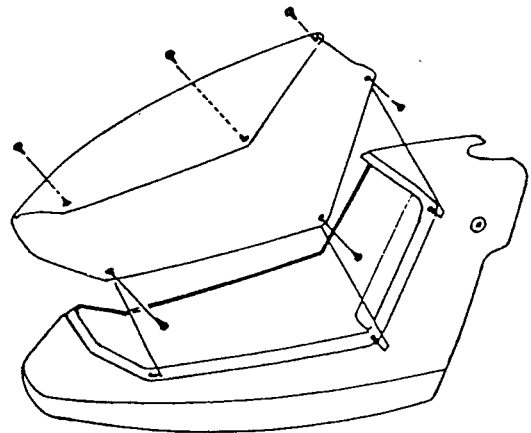
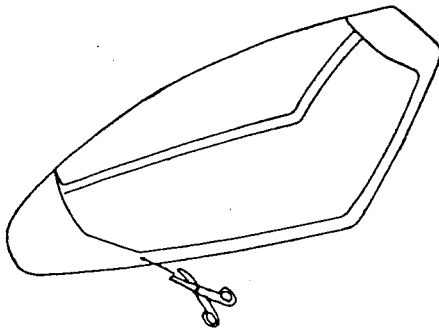
0
screws 3

washers..... 3

er
nuts 3

1-6
tapping

#s 6



Procedure 9: Rotor Head Rod Fabrication and Rotor Blades

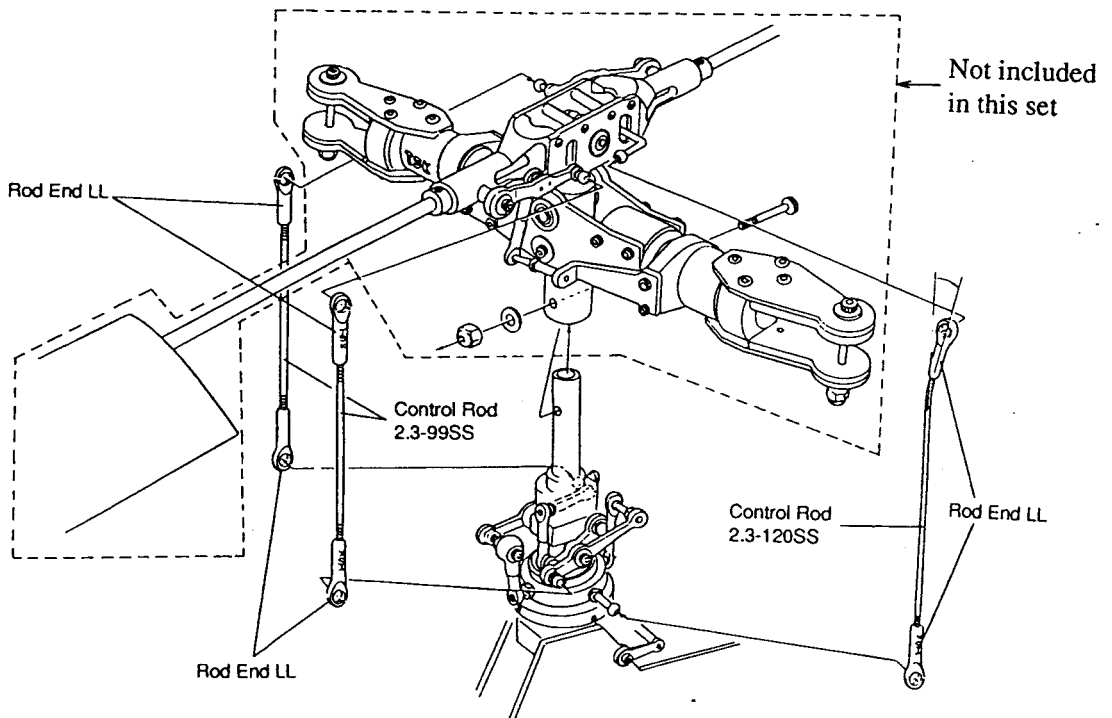
1. Make two types of rotor head linkage rods according to the rotor head chosen. If the control rods in the set L are too short, have on hand control rods of proper length.
2. It is recommended to select main rotor blades of 1,520 - 1,560 mm in diameter as installed on the rotor head blade diameter varies with the engine power, fuel, etc. of your choice. Set 5 - 5.5° in hovering pitch. Adjust the rotor blade diameter to attain a speed of 1,250 - 1,300 RPM and pitch angle of 5 - 5.5° in hovering.
3. Select the tail rotor blades by referencing the following values.
 - Chord length: About 30 mm 280 - 290 mm diameter as installed on the tail rotor grip.
 - Chord length: Over 30 mm 260 - 270 mm in diameter as installed on the tail rotor grip.

Parts to be used:

<SET>

Linkage related set L

Rod end LL	6
Control rod 2.3-90 SS	2
Control rod 2.3-120 SS	1



Procedure 10: Silencer

set does not include a silencer (muffler) and parts like an adapter for silencer installation. A silencer such as the TSK Super Silencer BL-T of proven performance should be selected.

After you have assembled your "Kaiser Ace". Just like any other helicopter model, it requires final adjustment or setting after assembly. At the first flight and test flights for setting adjustment you must be too careful to insure safety. After final adjustment, always be sure of careful maintenance and inspection so that the joy of flying your RC helicopters may not be spoiled.

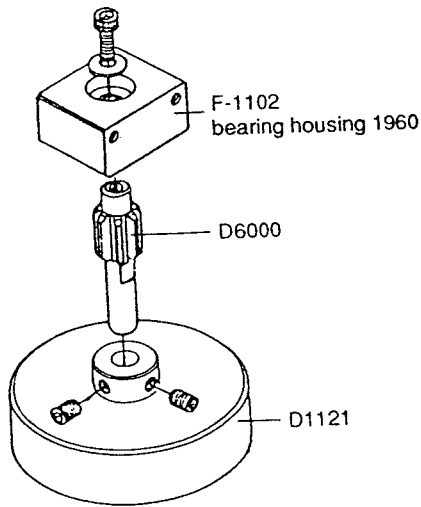
Operation after Completion

Many sophisticated miniature bearings are used in this RC helicopter. Be sure to lubricate properly with machine oil of good quality before and after flights of the day.

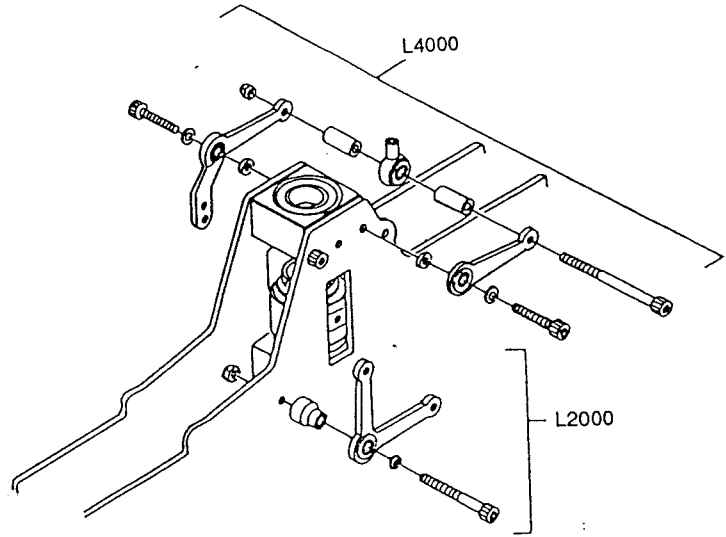
Replace the frame cracked in a crash or long period of use.

Check and replace the parts and components periodically even when your RC helicopter is in good flying conditions.

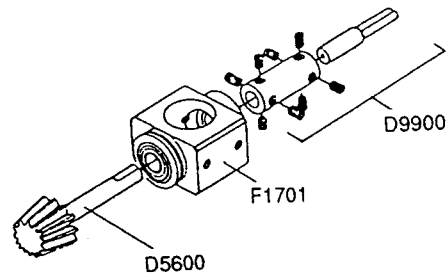
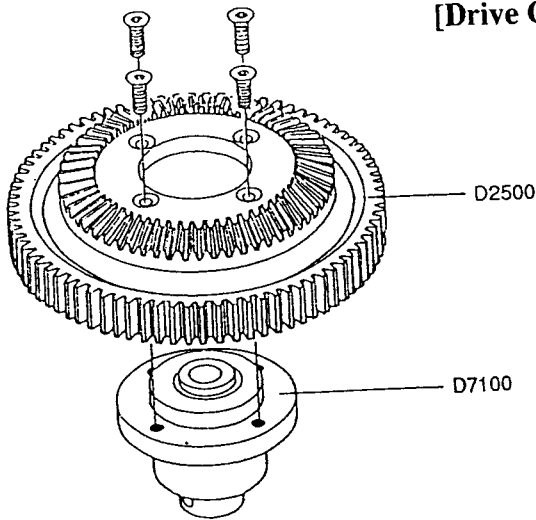
[Clutch Bell Assembly]



[Linkage Assembly]

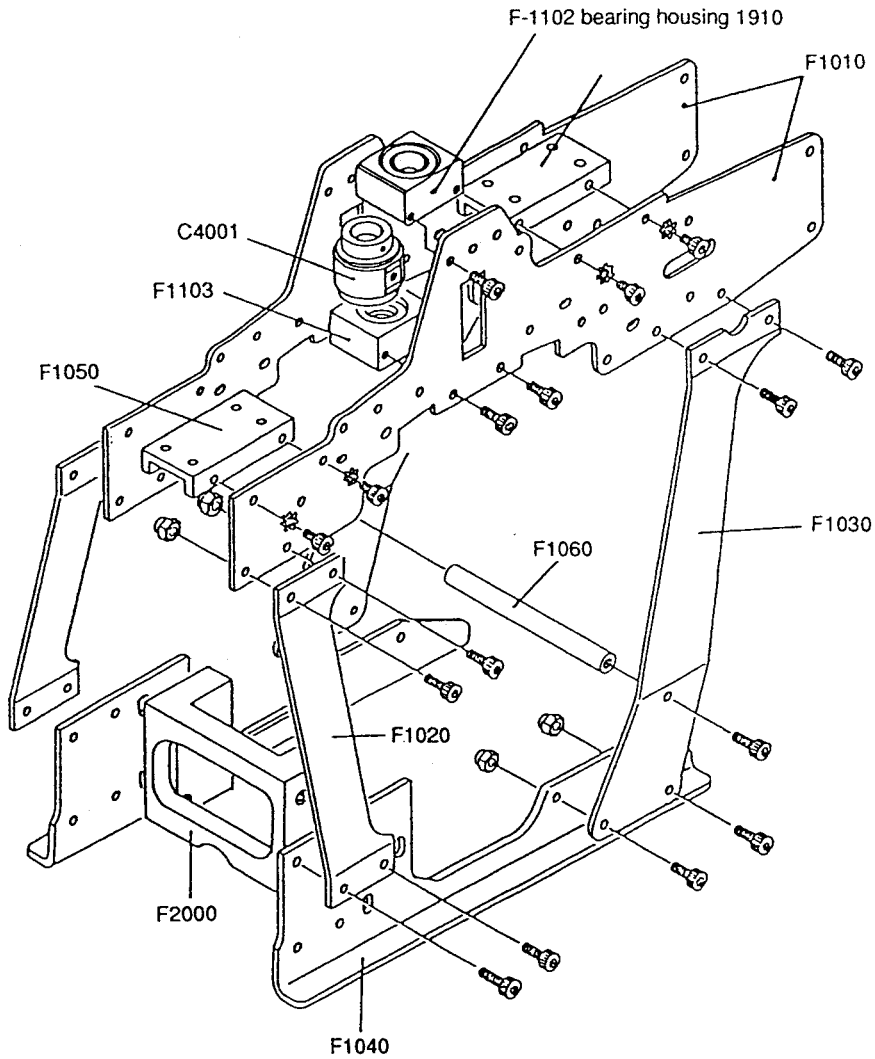


[Drive Gear Assembly]



- * The "Kaiser Ace" of this premium set does not accept the M-15 inner pitch mast. When replacing the mast, purchase an M-11 double slot mast. (When your RC helicopter has a T/C autorotation system, you may use the M-15B B/S inner pitch mast.)
 - * When modifying your Kaiser Ace of this set into a T/C autorotation model, purchase the following parts. The T/C autorotation system is installed by only changing the parts. Only adjust the length of control rods around related to the rotor head.
- | | |
|---|---------|
| - <D2100> B/S custom drive gear 86T | ¥3,200 |
| or <D4200> custom drive gear 88T set | ¥3,800 |
| - <D5500> B/S tail drive bevel gear 70T | ¥3,000 |
| - <D7200> tail control autorotation clutch assembly | ¥10,400 |

["Kaiser Ace" Drive Unit]



Parts No.	Item
F1010	Upper frame
F1020	Front stiffener
F1030	Rear stiffener
F1040	Lower frame
F1050	Upper frame member
F1060	Cross member 67 mm
F1102	Bearing housing 1910
F1102	Bearing housing 1960
F1103	Premium bearing housing
F2000	Engine mount
C4001	Slide ring assembly

Parts No.	Item
D6000	Pinion gear 9T
D1121	Clutch bell
L2000	Bell crank, Type B
L4000	Elevator and radius arm set
D2500	Drive gear K/A 86
D7100	Autorotation clutch 10L
D5600	B/S bevel pinion gear
D9900	Tail drive joint set B
F1701	Bevel pinion gear holder
M1100	Double slot mast 10-10 mm

Parts List

<Single and Assembly Parts>

Parts No.	Name	Qty.
	Semi-finished power drive unit *Separate I A*	
B2000	Kaiser Ace Body	1
B3100	Special tail pipe (aluminum)	1
B4500	Custom tail pipe guide assembly	1
B6000	Light weight landing skid	1
B7000	Vertical fin and horizontal stabilizer set (white)	1
B8000	Tail pipe supporter	1
B9100	Fuel tank	1
D1050	Piano wire	1
D1300	Cooling fan casing	1
L1130	PC control glass rod set	1

<Single Parts in the Small Packages>

Parts No.	Item	Qty.
B5000	Tail pipe holder	1
C4050	Double support CP control lever assembly	1
D8500	Tail drive transmission	1
D9400	Tail bracket	1
D9902	Light joint set S	1
D1200	Cooling fan	1
E1500	Starting belt	1
F1051	Gyroscope mount	1
F1100	Switch plate assembly (for Kaiser Ace)	1
F3100	Sub-frame unit "L" assembly	1
F4000	Servo frame set	1
L1120	PC wire guide set	1
M8000	Swashplate C	1
M9200	Swashplate collar 12 mm	1
M1200	Control drive scissors	1
T3010	Tail rotor grip A set	1
	Kaiser Ace mounting Set	1

(Package D)	Clutch shoe	1
	Clutch mount	1
	Clutch bolts	2
	M4 hexagonal bolts	2
	E-rings	2
(Package S)	M3-6 cap screws	4
	M3-10 cap screws	8
	M3-12 cap screws	2
	M3 nylon nuts	10
	M3 plate washers	6
	M2.3-6 self tapping screws	2
	Tail pipe clamps	3
(Package L)	Rod end L	18
	Rod end SS	1
	Control rod 2.3-10	1
	Control rod 2.3-50 SS	3
	Control rod 2.3-70 SS	1
	Control rod 2.3-90 SS	2
	Control rod 2.3-120 SS	2
	PC wire brackets	2
	Special ball H set	6
	CP rod	1
	M3-4 pivot bolts	3

Text Reviced

Only the component set delivered this time is partly different from the previous sets. The Parts List and Assembly Manual are modified as follows according to the change in the set.

<B6000> Light-weight landing skid ----- <B6100> Landing skid P

<D9400> Tail bracket ----- <SB3005> Tail bracket P (in Package S)

In addition, the cap screws to fix the horizontal and vertical stabilizers are changed to M3-8.

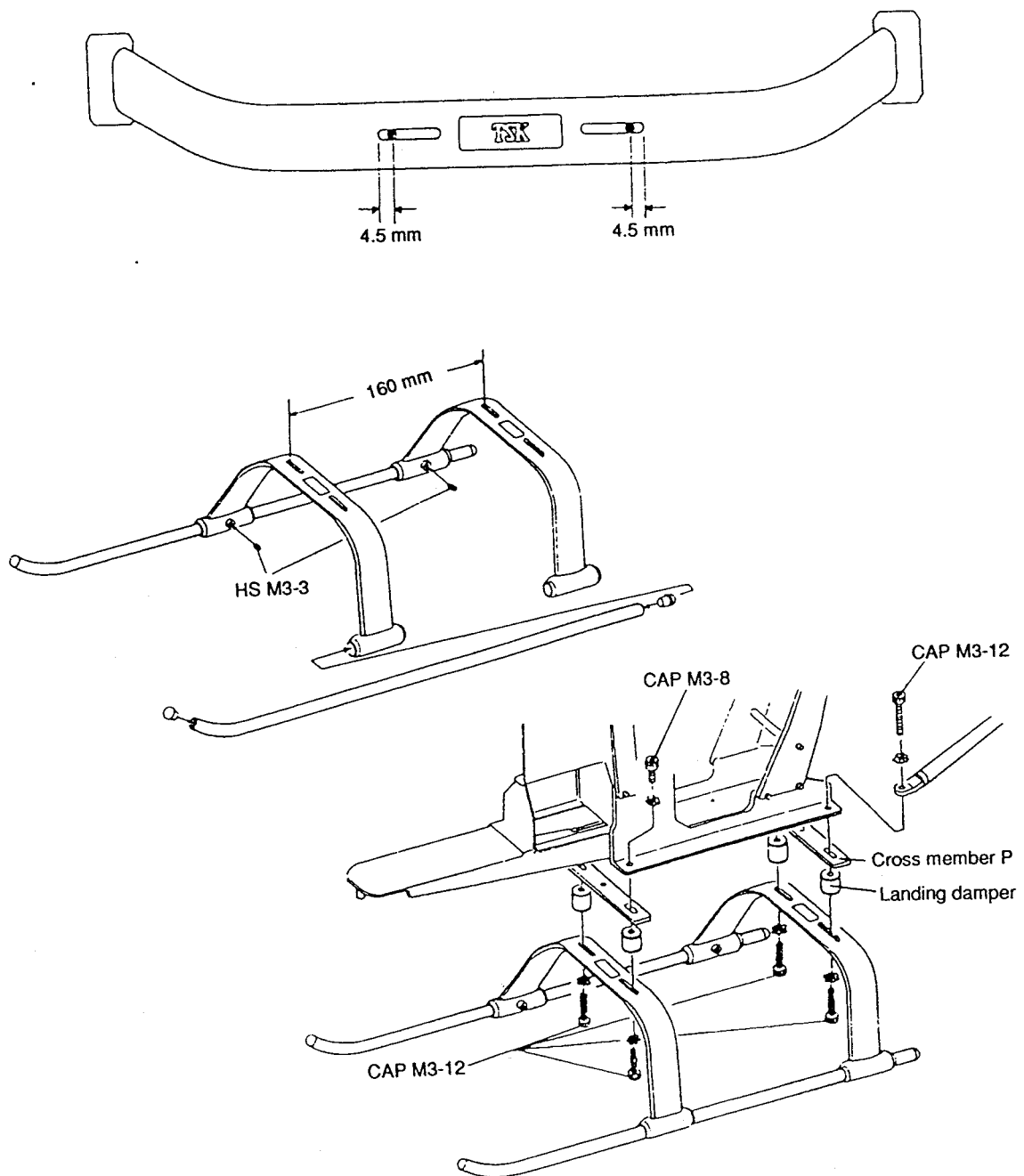
The <B6500> landing damper and <F7000> cross member P are also added as landing skid fixing parts.

Manual changed:

<Procedure 4: Assembly and Installation of Landing Skid> (Page 10)

1. Drill the 3-mm holes in the skid brace as shown for landing damper installation.
2. Adhere the caps to both ends of the skid pipe with a rubber based adhesive.
3. Run the skid pipe through the braces and adjust the brace position until the 3-mm holes in the front and rear braces are set 160 mm apart. Then fix using the hollow set M3-3 bolts.
4. Attach the cross members P and landing dampers to the bottom of the drive unit, using the M3-8 and M3-12 cap screws (2 each) and clip washers (4) furnished with the dampers. The M3-8 cap screws should be used to tighten the landing damper and cross member P for the front skid brace. Don't try to fix the landing dampers of the rear skid brace in this step. They should be fixed when installing the tail pipe supporter in <Procedure 5> below.
5. Attach the landing skid assembly to the landing dampers, using the M3-12 cap screws and clip washers (4 each) furnished with the skid dampers.

<Assembly and Installation of Landing Skid>



<Procedure 5: Assembly of Tail> (Page 12) Steps 7, 8 and 11

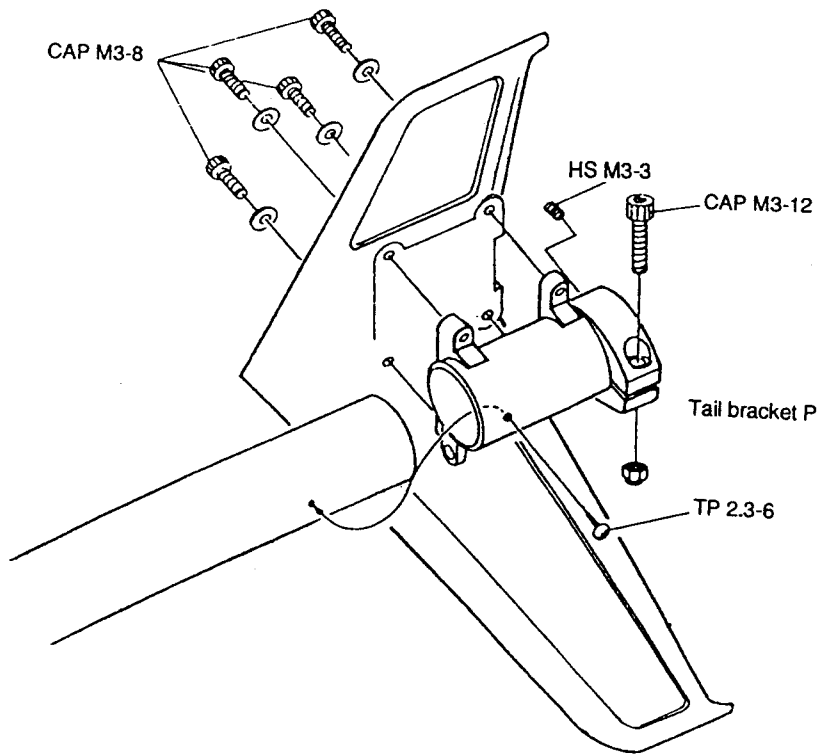
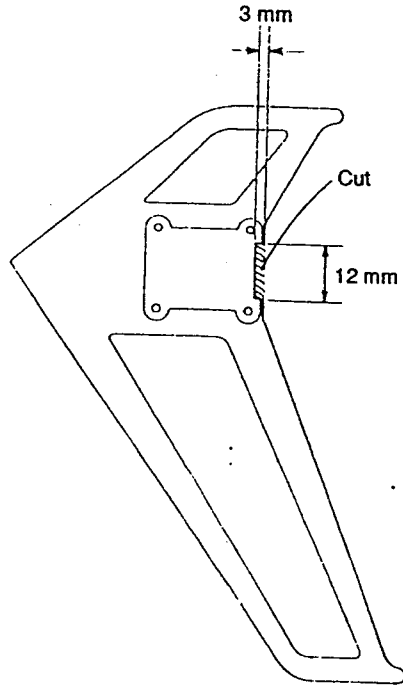
7. Put the tail bracket P completely in the tail pipe in the direction of tail transmission installation and fix by applying a small quantity of an instant adhesive to the gap between the tail pipe and the bracket. Next apply grease lightly to the piano wire attached to the tail transmission, put the wire in the tail bracket, tighten with the M3-12 cap screw and lock with the hollow M3-3 set screw.
 - * Be careful not to tighten the set screw too tight.
 - * Put the tail transmission completely in the tail bracket P and fix.
8. Cut out part of the vertical stabilizer as shown and attach to the tail bracket P using the M3-8 cap screws and M3 washers (4 each).
11. (Changed only where marked with *)
 - * Put in the tail pipe until its leading end comes out 10 mm from tail pipe holder outlet in the nose direction, and fix. If the tail pipe cannot be put in thus far, find a position where the piano wire will not be squeezed, and fix.

<Procedure 9: Potor Head Rod Fabrication>

When using a TSK rotor head (Pearl 1 series and PB1 series), prepare a linkage rod as described below.

- * To prepare the head seesaw arm and scissors arm connecting rod assembly (2) thread the rod ends (2) onto each control rod 2.3-90. Be sure that inter-ball distance of the assembly is 119 mm.
- * To prepare the stabilizer control lever and swash upper plate connecting rod assembly (1) thread the rod ends (2) onto the control rod 2.3-120. Be sure that inter-ball distance of the assembly is 143 mm. If part of the rod touches the head, bend lightly.

<Assembly of Tail>



Parts List

<Single and Assembly Parts>

Parts No.	Name	Qty.
	Semi-finished power drive unit "Separate I A"	1
B2000	Kaiser Ace Body	1
B3100	Special tail pipe (aluminum)	1
B4500	Custom tail pipe guide assembly	1
B6100	Landing skid P	1
B7000	Vertical fin and horizontal stabilizer set	1
B8000	Tail pipe supporter	1
B9100	Fuel tank	1
D1050	Piano wire	1
D1300	Cooling fan casing	1
L1130	PC control glass rod set	1

<Single Parts in the Small Packages>

Parts No.	Item	Qty.
B5000	Tail pipe holder (with screw and nut)	1
C4050	Double support CP control lever assembly	1
D8500	Tail drive transmission	1
D9902	Light joint set S	1
D1200	Cooling fan	1
E1500	Starting belt	1
F1051	Gyroscope mount	1
F1100	Switch plate assembly (for Kaiser Ace)	1
F3100	Sub-frame unit "L" assembly	1
F4000	Servo frame set	1
L1120	PC wire guide set	1
M8000	Swashplate C	1
M9200	Swashplate collar 12 mm	1
M1200	Control drive scissors	1
T3010	Tail rotor grip A set	1
	Kaiser Ace mounting Set	1

(Package D)	Clutch shoe	1
	Clutch mount	1
	Clutch bolts	2
	M4 hexagonal bolts	2
	E-rings	2
(Package S)	M3-8 cap screws	6
	M3-12 cap screw	1
	M3 nylon nuts	2
	M3 thin nylon nut	1
	M3 plate washers	6
	M3-3 hollow set screw	1
	M2.3-6 self tapping screws	2
	Tail pipe clamp	1
	Tail bracket P	1
(Package L)	Rod end LL	6
	Rod end L	12
	Rod end SS	1
	Control rod 2.3-10	1
	Control rod 2.3-35 SS	3
	Control rod 2.3-70 SS	1
	Control rod 2.3-90 SS	2
	Control rod 2.3-120 SS	2
	PC wire brackets	2
	Special ball H sets	6
	CP rod	1
	M3-4 pivot bolts	3