

pixy ZAP (Powered by 180 Size Motor)

Truly the best flying ultra-light indoor EP helicopter



3D AEROBATIC CAPABLE
ULTRA - LIGHT INDOOR 100 SIZE EP HELICOPTER
FINAL ASSEMBLY INSTRUCTION



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pixy ZAP

Ultra-micro 3D-Capable 100 size Electric Powered Helicopter

Thank you for choosing RCmart International "pixy ZAP" electric powered helicopter. As the industry leader and creator of the 400-class helicopters, ZAP400 and ZAP400 V2, we would like to proudly introduce this newly developed little machine to those who love high performance and 3D capable ultra-micro RC helicopter. For this time, we have adapted the modern CCPM main rotor control system and equipped ball bearings as many as the big brother "ZAP400". The helicopter is 95% factory assembled and inspected thoroughly by our experienced engineers before shipment.

FEATURES:

- 95% factory assembled
- CCPM main rotor control system
- Belt drive tail rotor
- Fiberglass reinforced main frame and other components
- Fully equipped ball bearings
- 3D aerobatic capability
- Extensive grade-up parts and optional items available

SPECIFICATION:

- Overall length: 345mm (including cabin & canopy)
- Main rotor diameter: 340mm
- Tail rotor diameter: 100mm
- Rotor head assembly: CCPM control system
- Motor: 180 size (standard)
- Flying weight: About 180g (It may vary according to size of a battery pack and R/C gears.)
- Flying duration: 6~8 minutes with 550mAh Li-po battery
10~12 minutes with 800mAh Li-po battery (optional)

YOU NEED:

- PCM/PPM Transmitter (with CCPM function)
- Servo (RCmart PINO, PINO-MG Servo)
- FM receiver (RCmart R4-6CH, R5-7CH RX)
- Gyro (RCmart A500-G, NT-400, NT-310 or A200-D gyro)
- ESC (RCmart ESC-8A or ESC-10A)
- Battery pack: Li-po battery pack (RCmart 550mAh or 800mAh/optional)
- Charger: Li-po battery charger (RCmart Easy Charger)

- Tools (Knife, Needle nose pliers, Small Phillips screwdrivers, Scissors etc.)
- Materials (Velcro strip, Double-sided foam tape etc.)

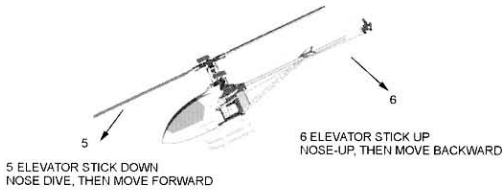
MAIN OPTIONAL ITEMS:

- ECP (Electronic Components Pack): pixy ZAP ECP (UND)
- ECP (Electronic Components Pack): pixy ZAP ECP (JST)
Consist of 1 x FM RX, 4 x Servo, 1 x ESC, 1 x Gyro, 1 x Li-po battery
- Brushless motor w/pinion gear with ESC equipped
- Round body set (Schweizer 300 look-alike)
- 800mAh Li-po battery pack
- CCPM electronic mixer

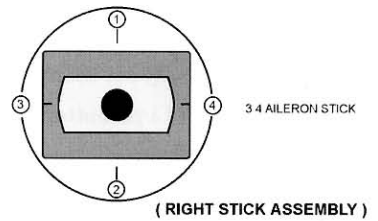
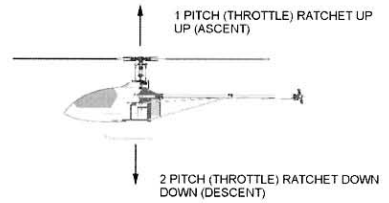
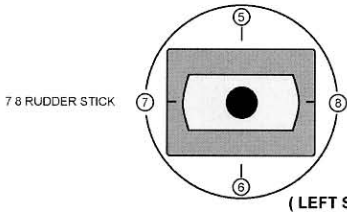
WARNINGS AND PRECAUTIONS

- This R/C helicopter is NOT toy and essentially it is not easy to fly R/C helicopters for the beginners. We strongly suggest them to make flying practice repeatedly having qualified instructors or expert flyers.
- If you are only beginner for R/C helicopters, do not attempt to fly your helicopter by yourself without an advice or assistance from instructors or experienced flyers.
- You must understand the R/C helicopter may crash due to improper installation, wrong set-up, poor controls, improper maintenance, sloppy linkage, radio frequency interference etc. so you have to pay your full attention to flying surroundings, your helicopter, fellow flyers as well as spectators.
- Do not fly your helicopter close to buildings, houses, schools, hospitals, peoples, cars electric power lines etc. Never fly over people's head. It has to be more cautious especially when you fly your helicopter indoor.
- You must fly your helicopter within a visible distance by your eyes.
- Make sure if all battery packs of your transmitter and power supply are fully charged prior to attempting to fly your helicopter. Li-po batteries may explode or catch fire. Serious injury or damage can result in misuse.
- We strongly recommend you to conduct a range test of your radio gears on the ground before attempting each day's flying session.
- Unplug the battery pack while not using or store.
- Always turn the transmitter on first, then the receiver switch. Make sure that your radio systems and servos are functioning normally and properly. Switch the receiver off first, then the transmitter off.

MODE-I



5 6 ELEVATOR STICK

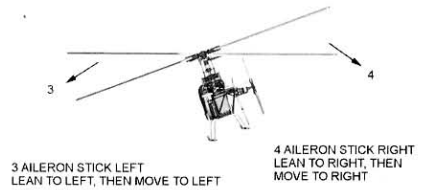


7 8

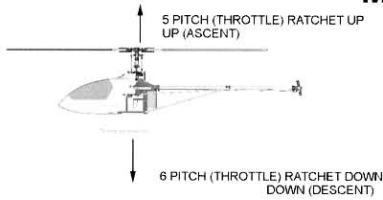
7 RUDDER STICK LEFT
NOSE MOVE TO LEFT



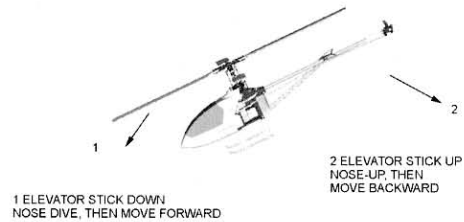
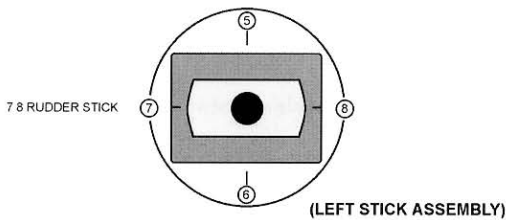
8 RUDDER STICK RIGHT
NOSE MOVE TO RIGHT



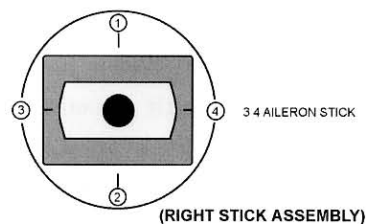
MODE-II



5 6 THROTTLE STICK



1 2 ELEVATOR STICK

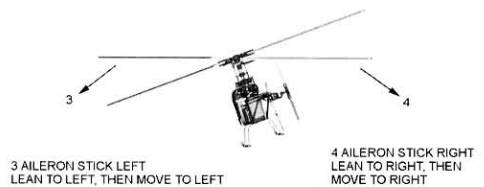


7 8

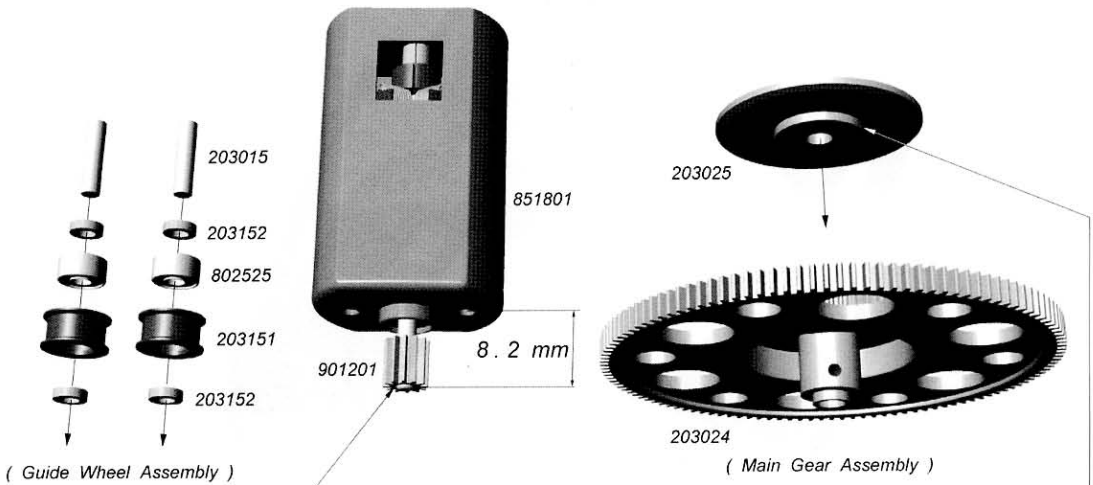
7 RUDDER STICK LEFT
NOSE MOVE TO LEFT



8 RUDDER STICK RIGHT
NOSE MOVE TO RIGHT

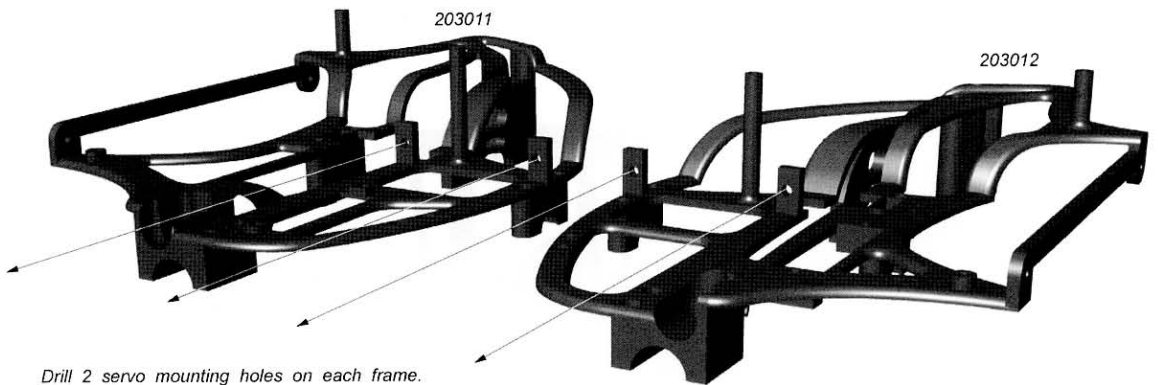


PARTS ASSEMBLING

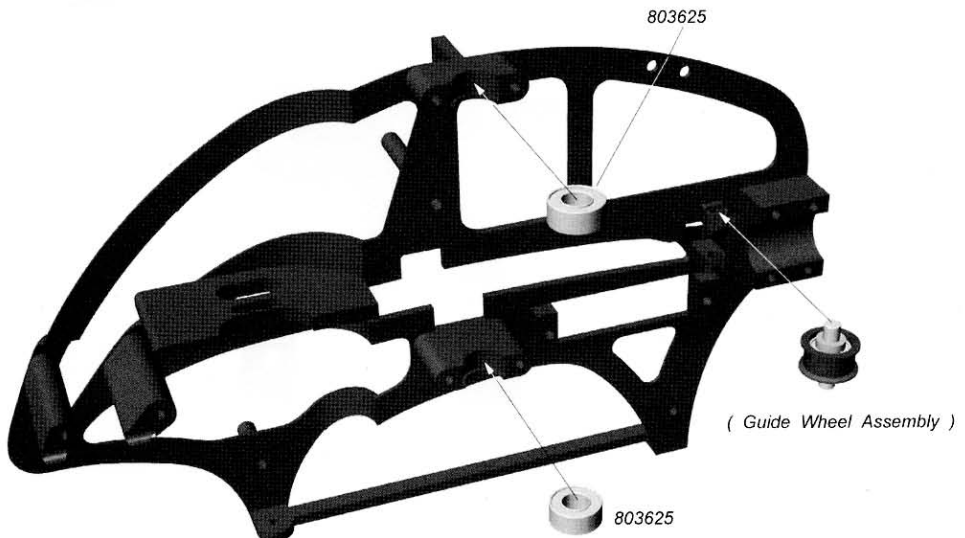


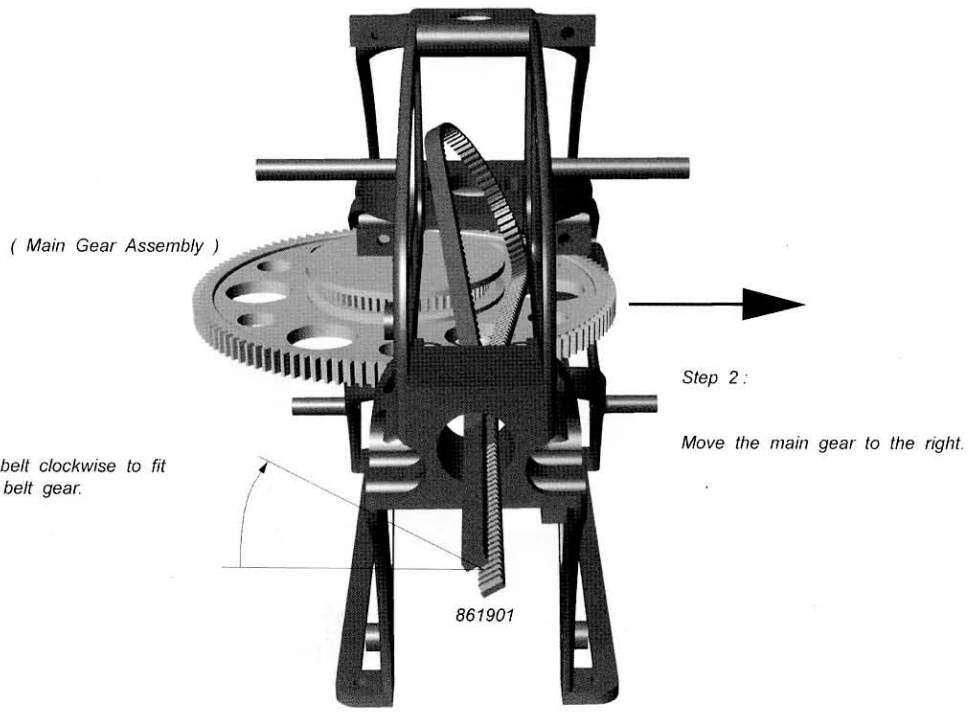
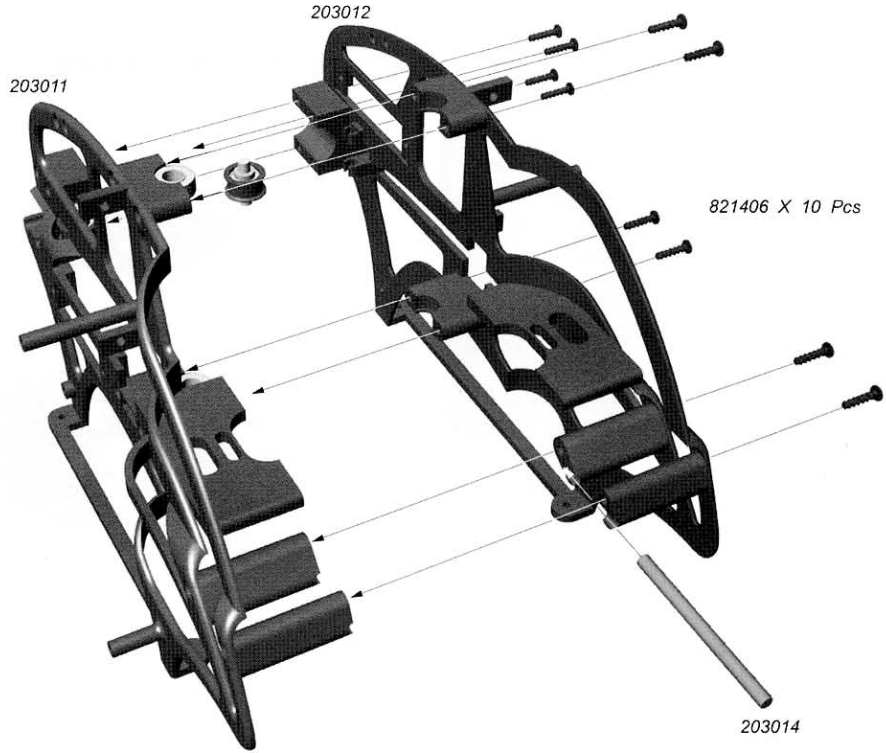
Use Locktite 609, 680 or similar material to adhere the gear to the shaft.

Use instant glue to adhere 203025 to 203024.



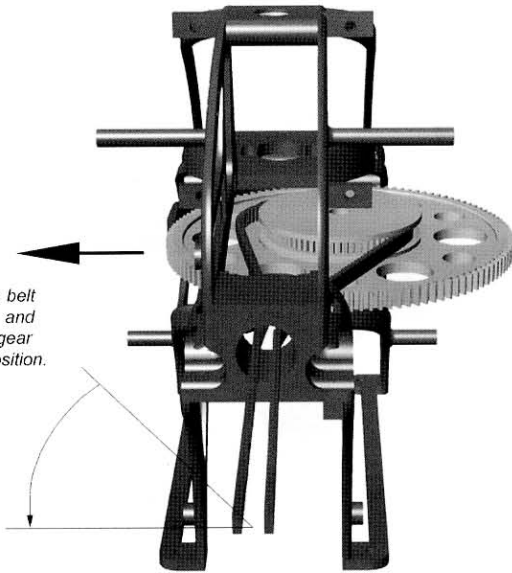
Drill 2 servo mounting holes on each frame.





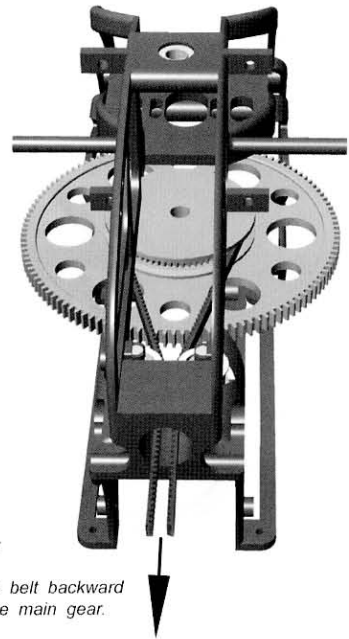
Step 1:

Turn back the belt counterclockwise and move the main gear to the middle position.



Step 2:

Pull the belt backward to fit the main gear.



Step 3:

Put the mast collar(S) to the position as shown in figure, insert the mast and tighten the collar(S) and the main gear. (Use the screws of 821408 X 1 Pc, 843001 X 1 Pc)

IMPORTANT :

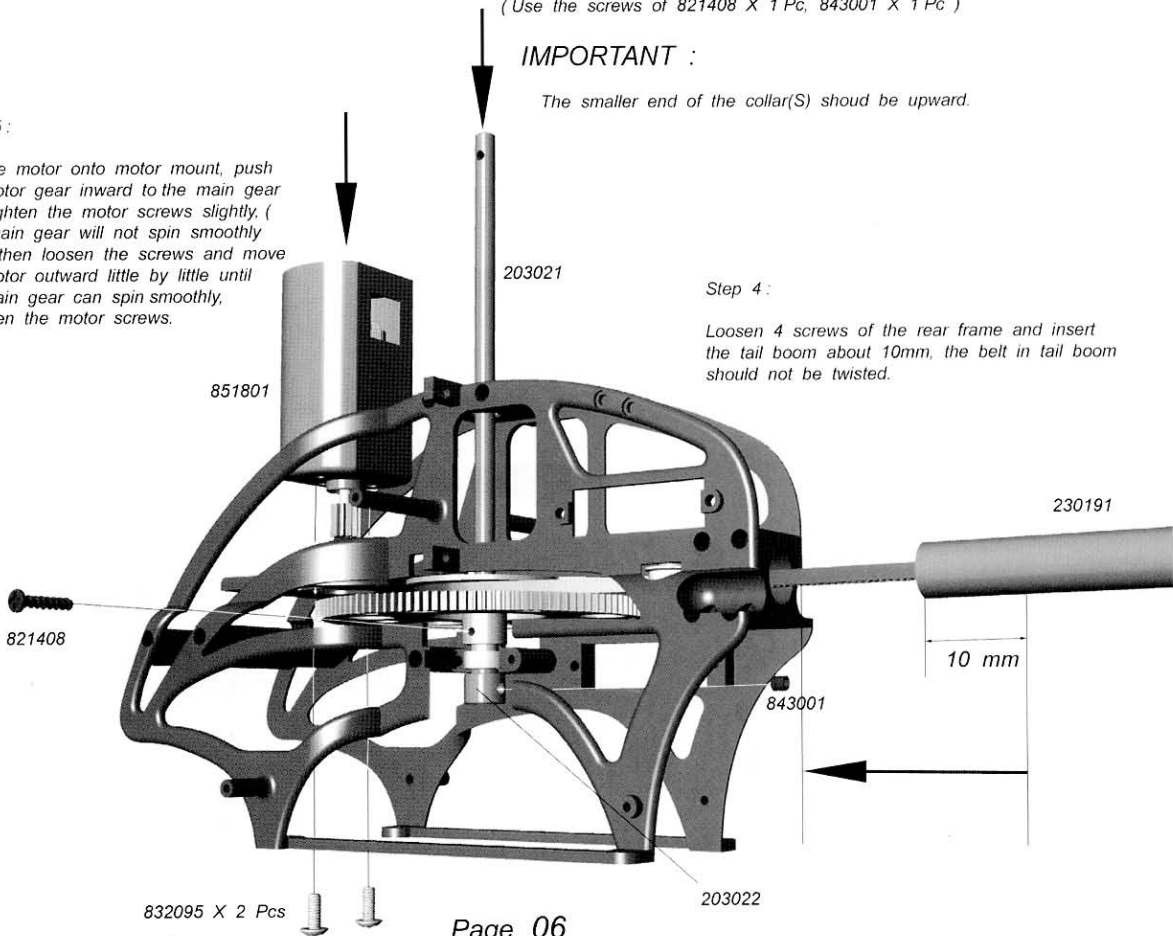
The smaller end of the collar(S) should be upward.

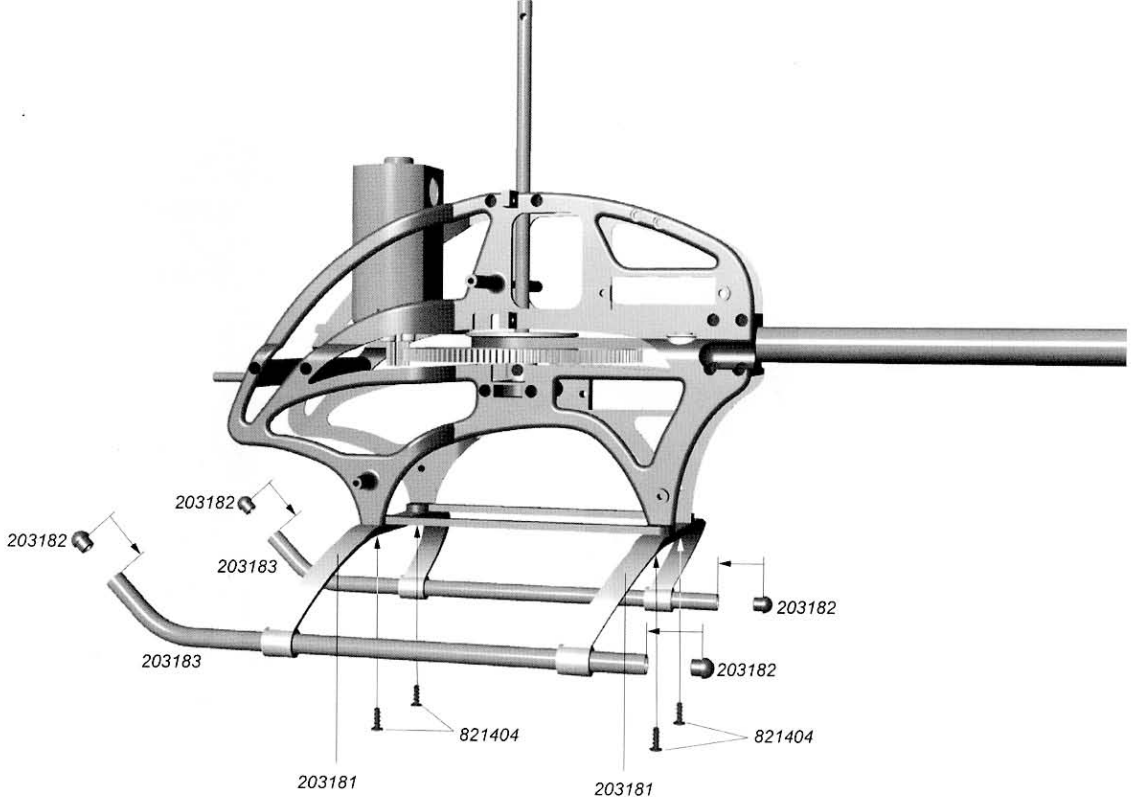
Step 5:

Set the motor onto motor mount, push the motor gear inward to the main gear and tighten the motor screws slightly. (The main gear will not spin smoothly now.) then loosen the screws and move the motor outward little by little until the main gear can spin smoothly, retighten the motor screws.

Step 4:

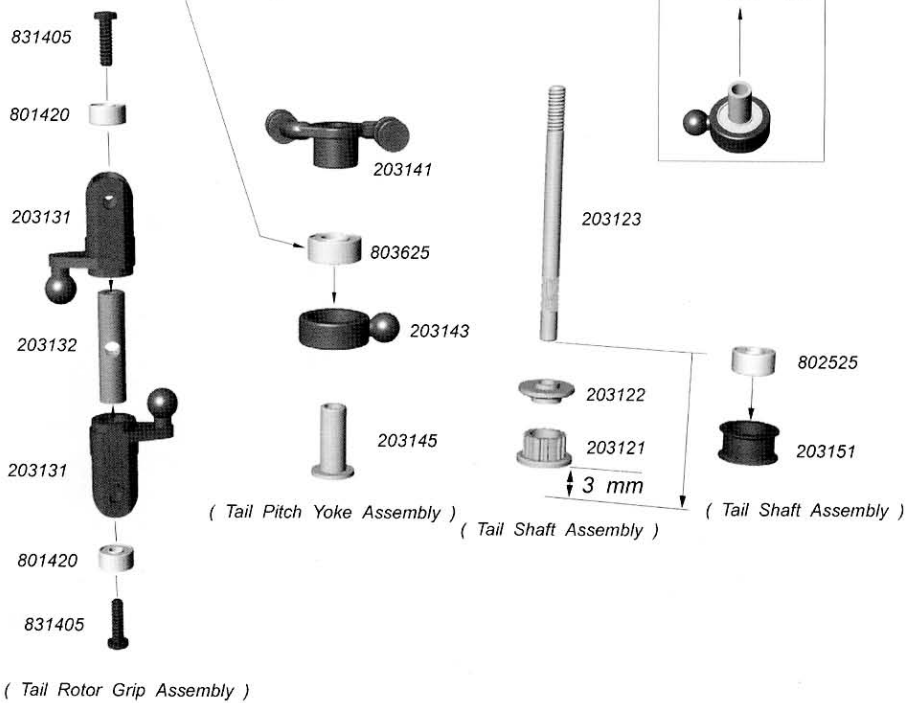
Loosen 4 screws of the rear frame and insert the tail boom about 10mm, the belt in tail boom should not be twisted.

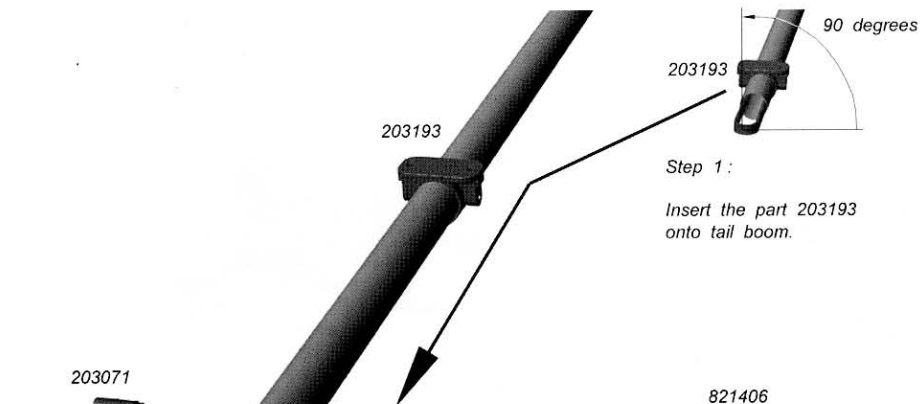




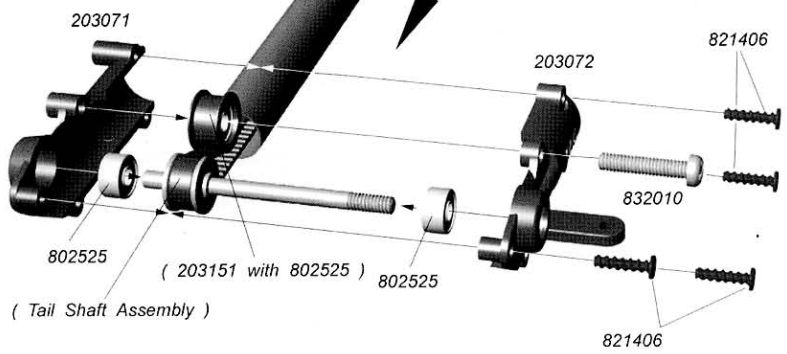
Use Locktite 609, 680 or similar material to adhere 203145 to 203141.
 (Don't adhere the balls of bearing or the inner race of 203145)

Use instant glue to adhere 803625 to 203143.
 (Don't adhere the balls of bearing)





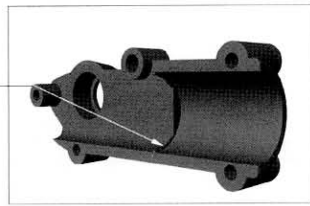
Step 1:
Insert the part 203193 onto tail boom.



Step 2:
Turn the rear end of the belt 90 degrees counterclockwise, hook the belt onto the pulley and assemble the other parts as shown on left.

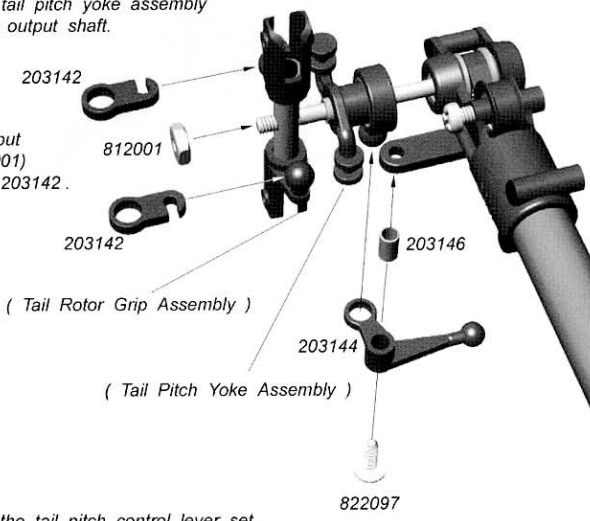
IMPORTANT :

The rear end of tail boom should reach to the smaller inner race of tail gear case. (The diameter is smaller than the tail boom.)



Step 3:
Set the tail pitch yoke assembly onto tail output shaft.

Step 4:
Tighten the tail rotor grip assembly onto the tail output shaft, tighten the nut (812001) and snap on the parts of 203142.



Step 5:
Assemble the tail pitch control lever set.

IMPORTANT :

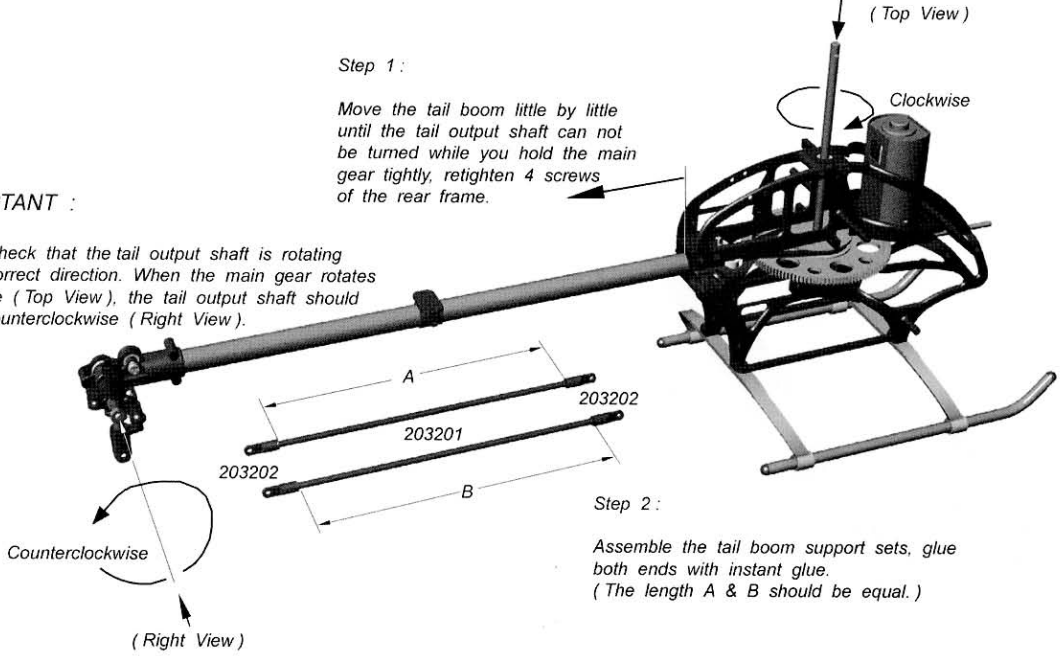
The screw (832008) should be tightened properly. (If it's too tight, the tail pitch control lever can not move smoothly.)

IMPORTANT :

Double-check that the tail output shaft is rotating in the correct direction. When the main gear rotates clockwise (Top View), the tail output shaft should rotate counterclockwise (Right View).

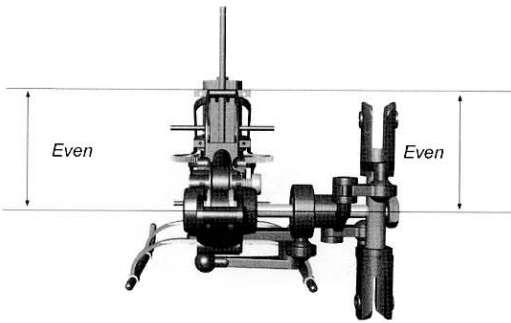
Step 1 :

Move the tail boom little by little until the tail output shaft can not be turned while you hold the main gear tightly, retighten 4 screws of the rear frame.



Step 2 :

Assemble the tail boom support sets, glue both ends with instant glue. (The length A & B should be equal.)



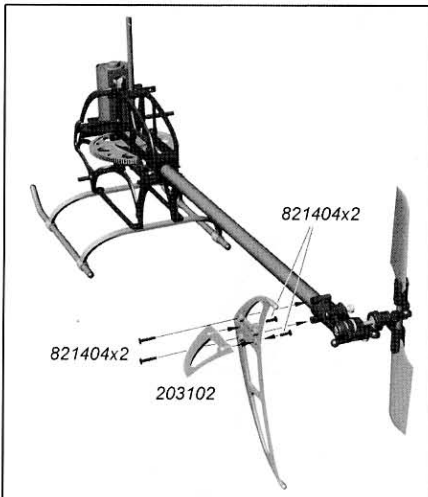
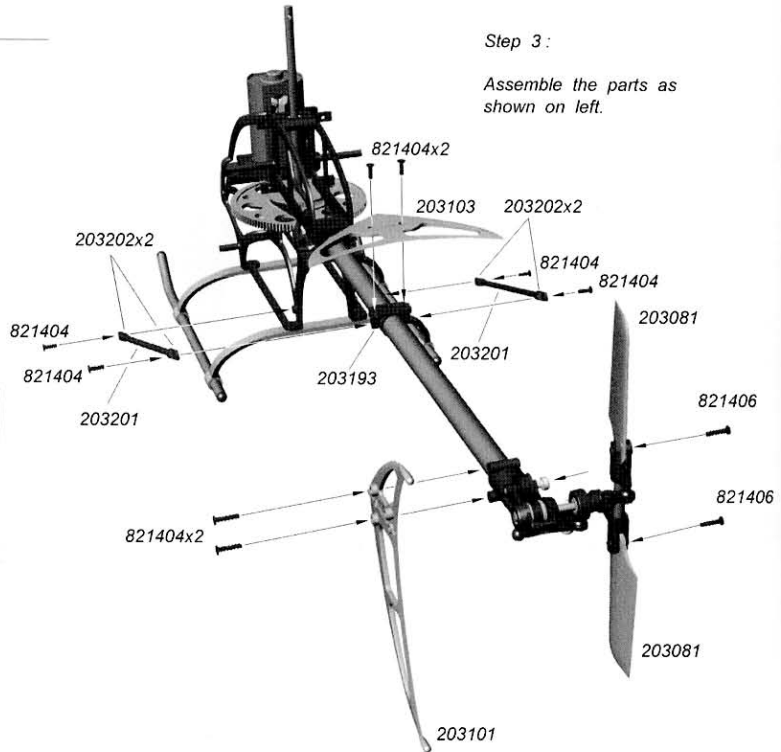
Check to insure that the tail output shaft is level when viewed from the back.

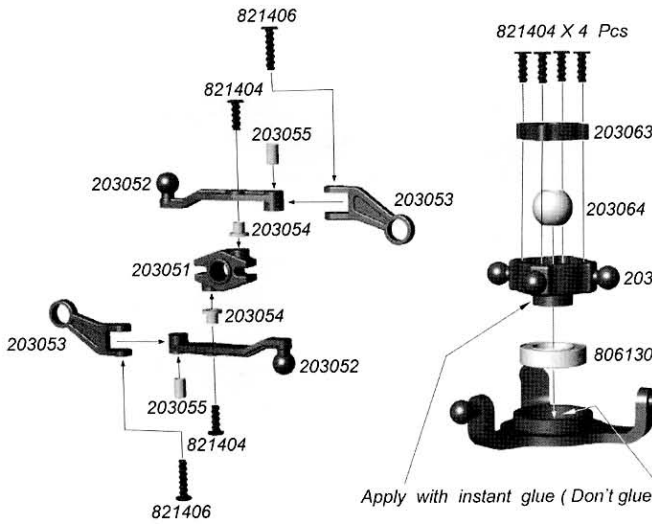
Step 3 :

Assemble the parts as shown on left.

Suggestion :

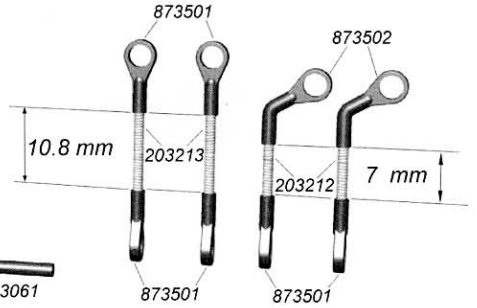
You may remove some parts (203103, 203193, 203201x2, 203202x4, 821404x6) to reduce the weight and get better performance for 3D, but add the part 203102.



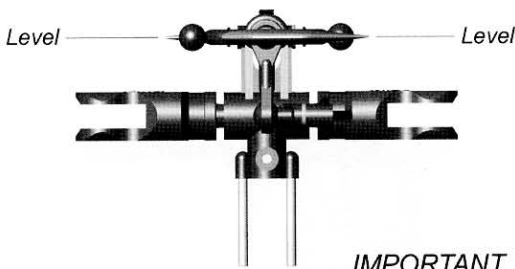


IMPORTANT :

The screws (821404) should be tightened properly. (If it's too tight, the inner ball of swashplate (203064) will not move smoothly.)



Apply with instant glue (Don't glue the balls of bearing)



Step 1 :

Set on the parts to the position as shown in figure below, tighten the screws (842001) by wrench (842000).

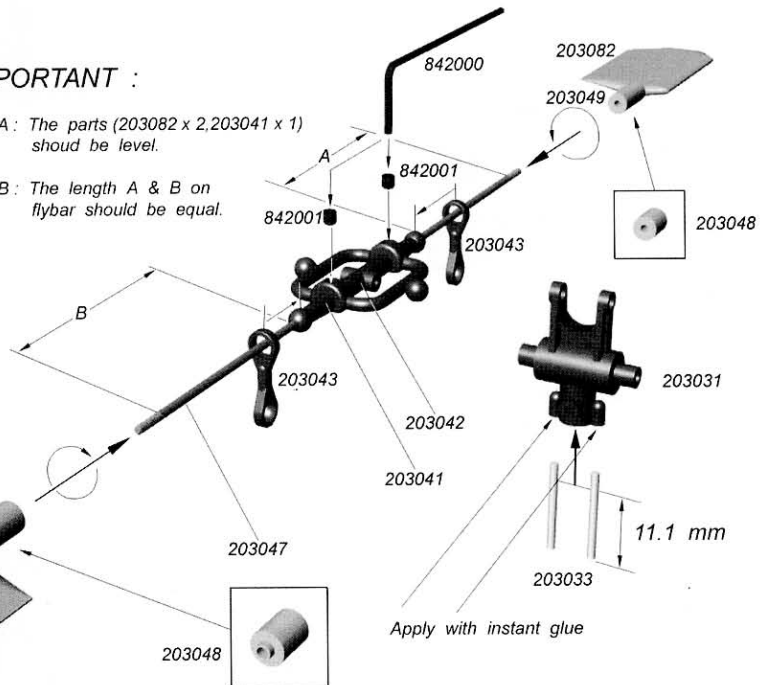
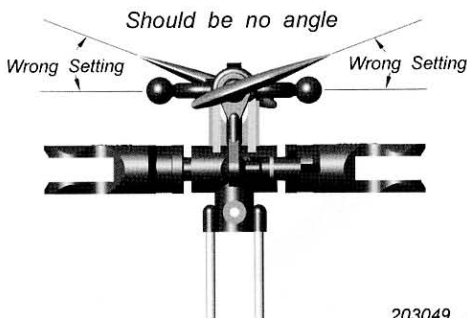
IMPORTANT :

The socket set screws should be tightened properly. (If it's overtightened, the part 203042 may be broken.)

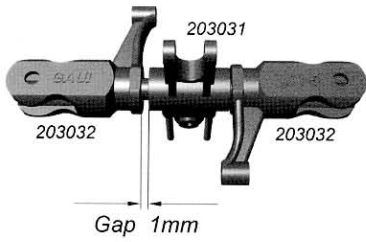
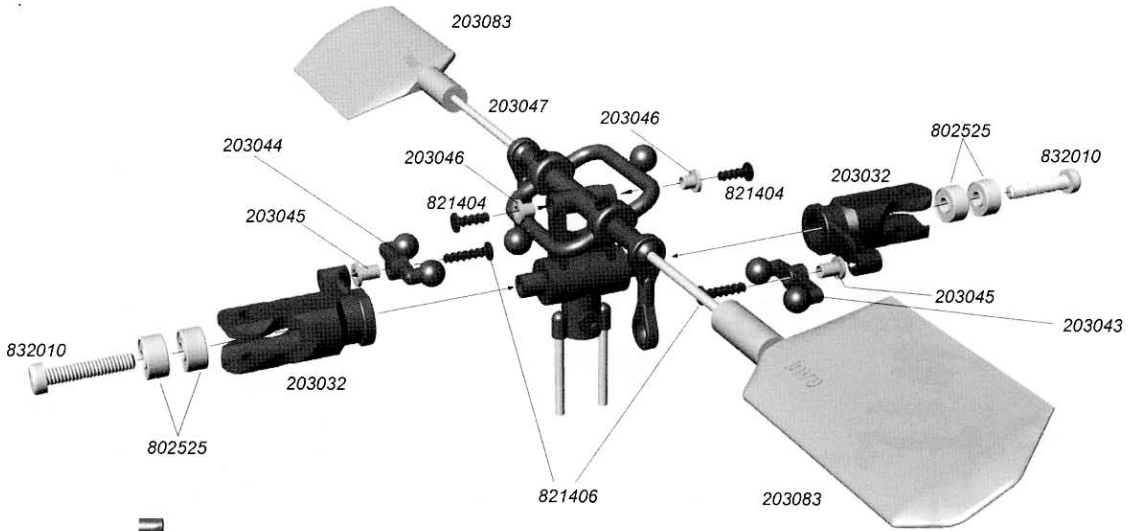
IMPORTANT :

A: The parts (203082 x 2, 203041 x 1) should be level.

B: The length A & B on flybar should be equal.

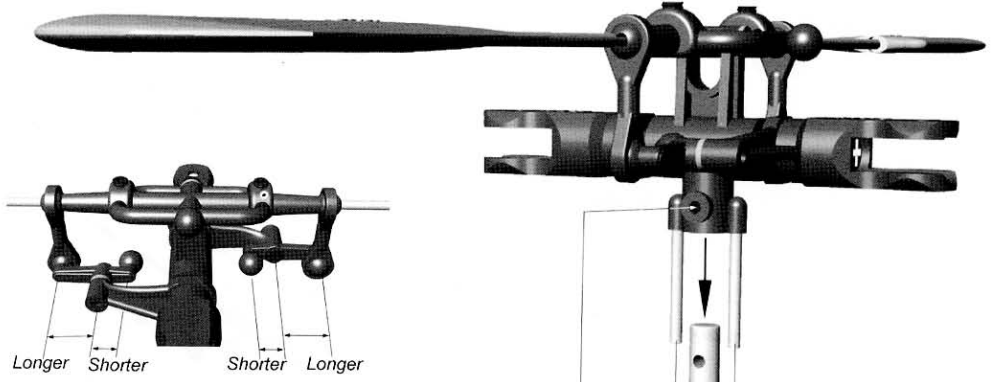


Suggestion : You may replace the part 203049 by 203048 to get better performance for 3D.



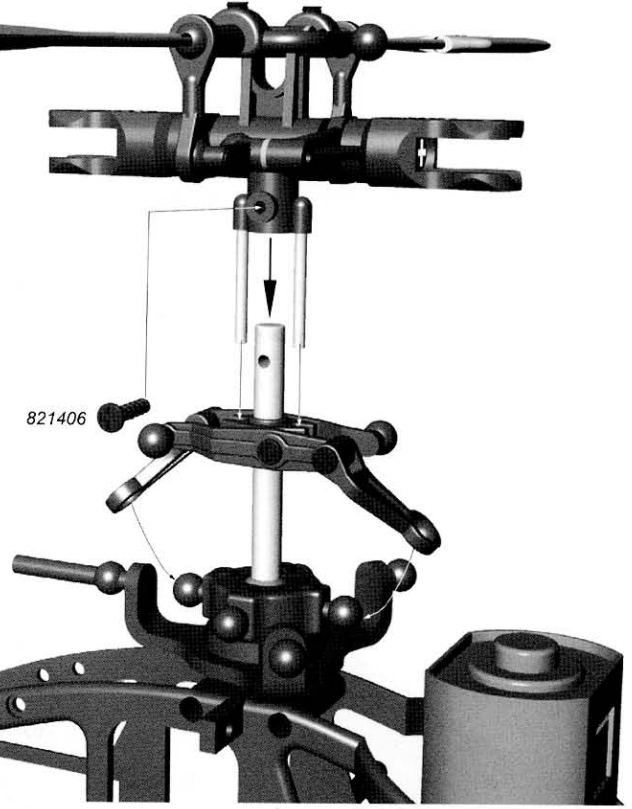
Pull Out

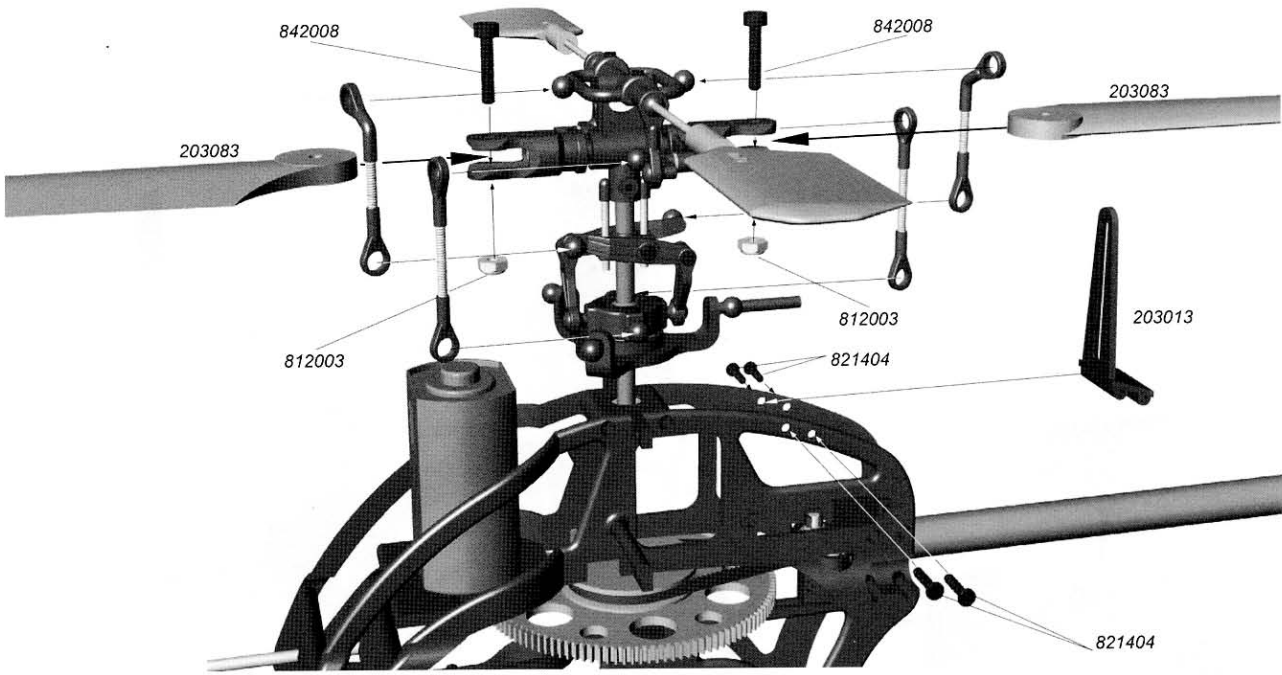
IMPORTANT :
 After you tighten the screw (832010), it should have a gap (1mm) between parts 203032 & 203031, if it doesn't, pull out the part (203032).



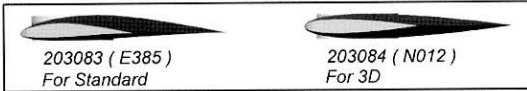
IMPORTANT :

3D MODE :
 The shorter arm of (203044) should be at the inner side.

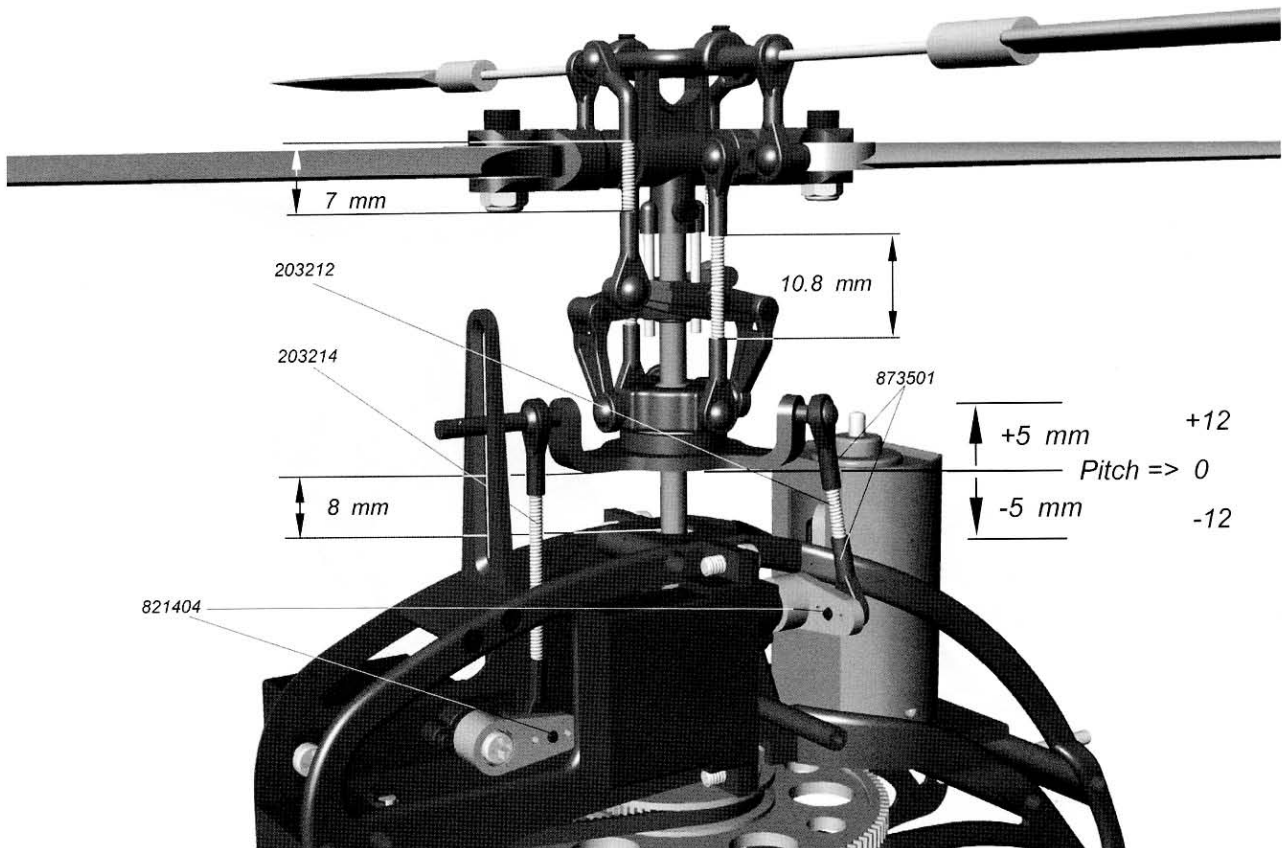


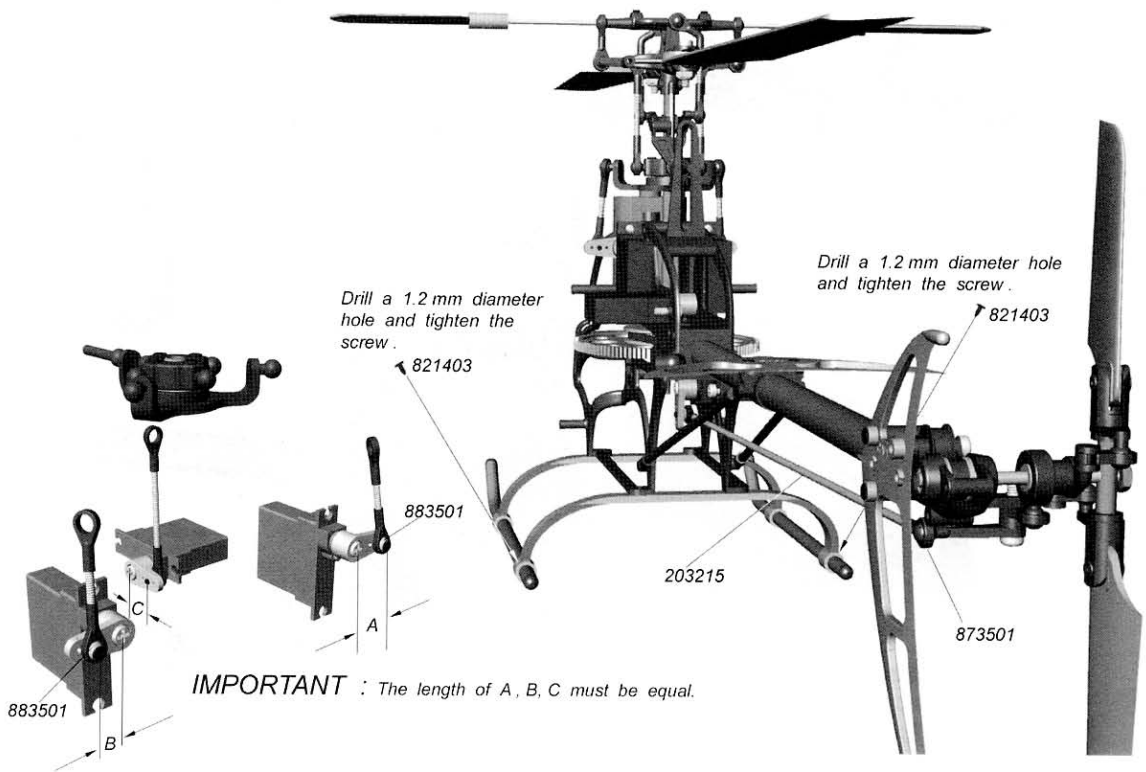


Standard

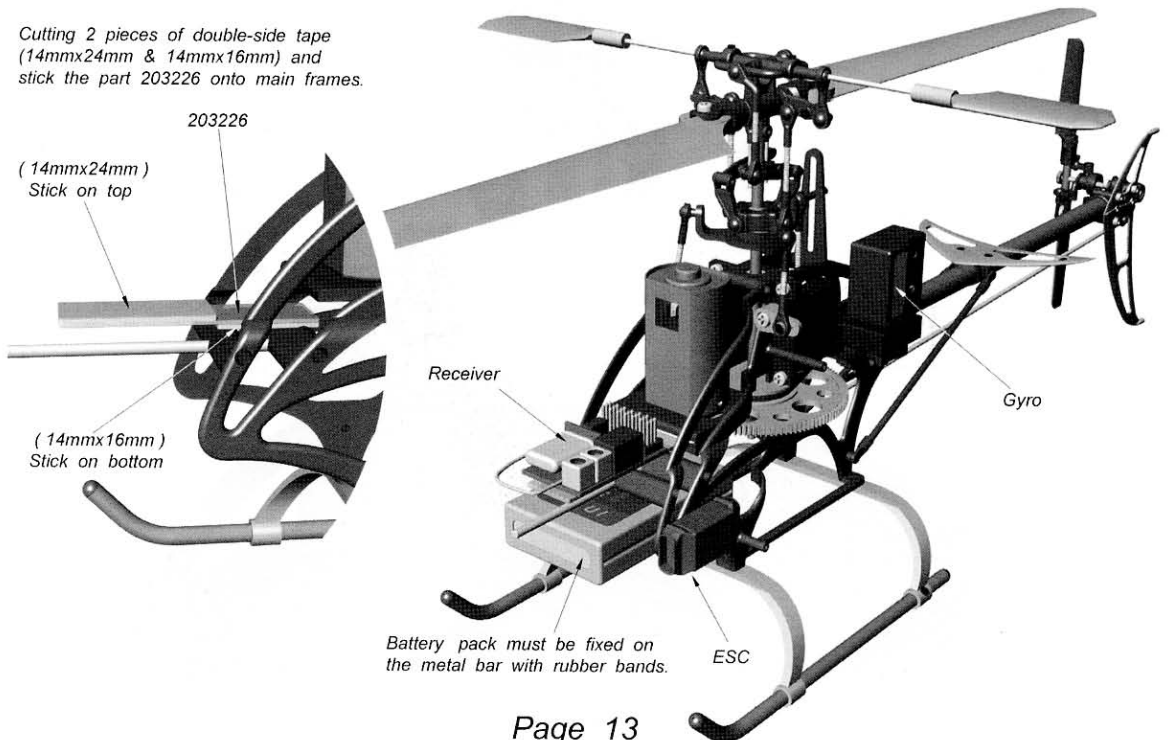


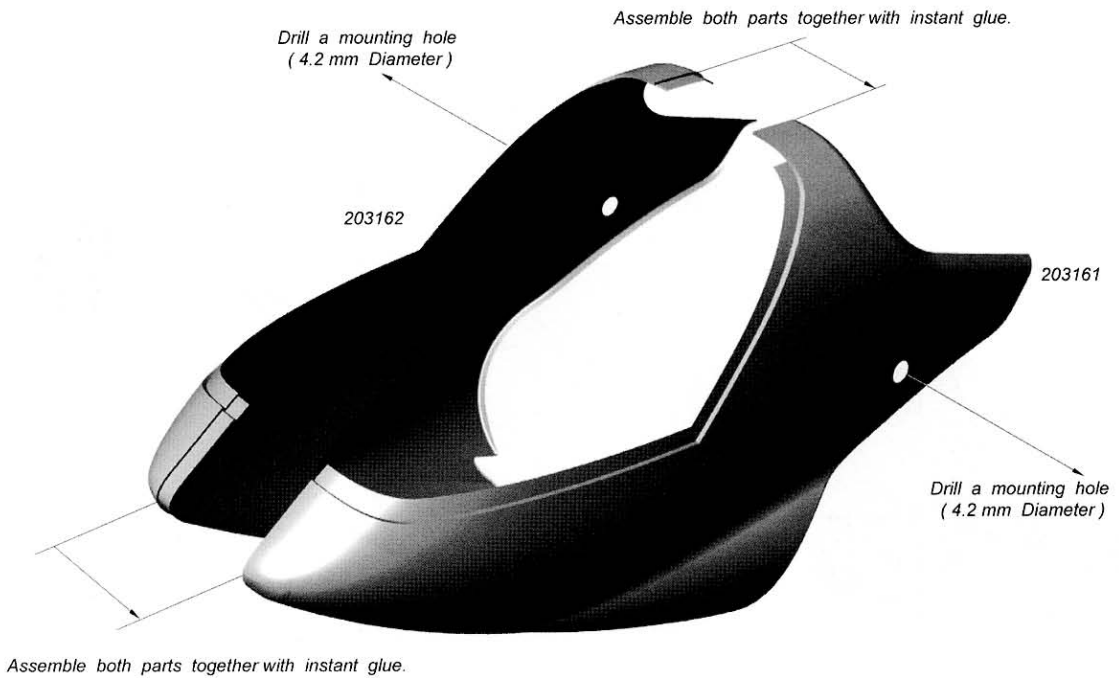
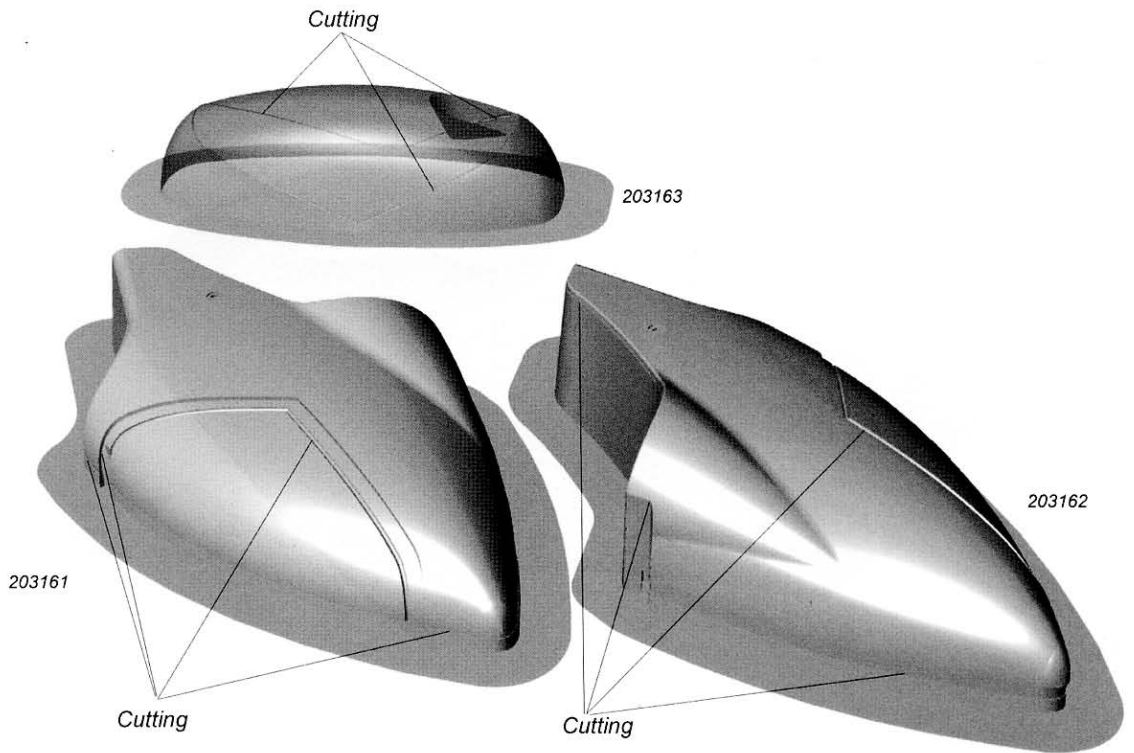
Optional

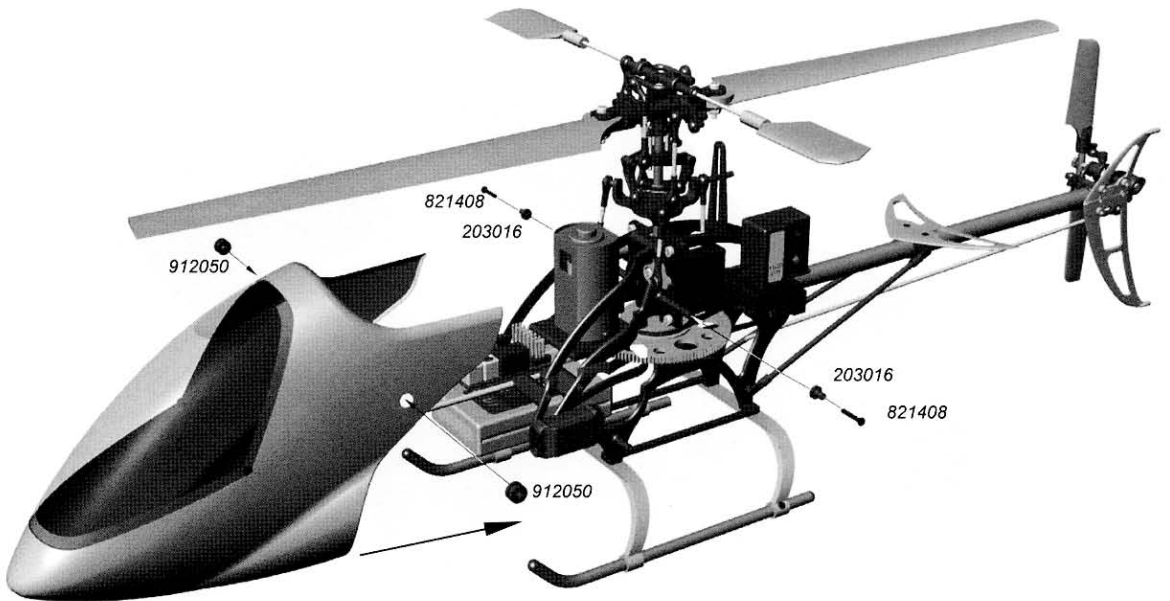
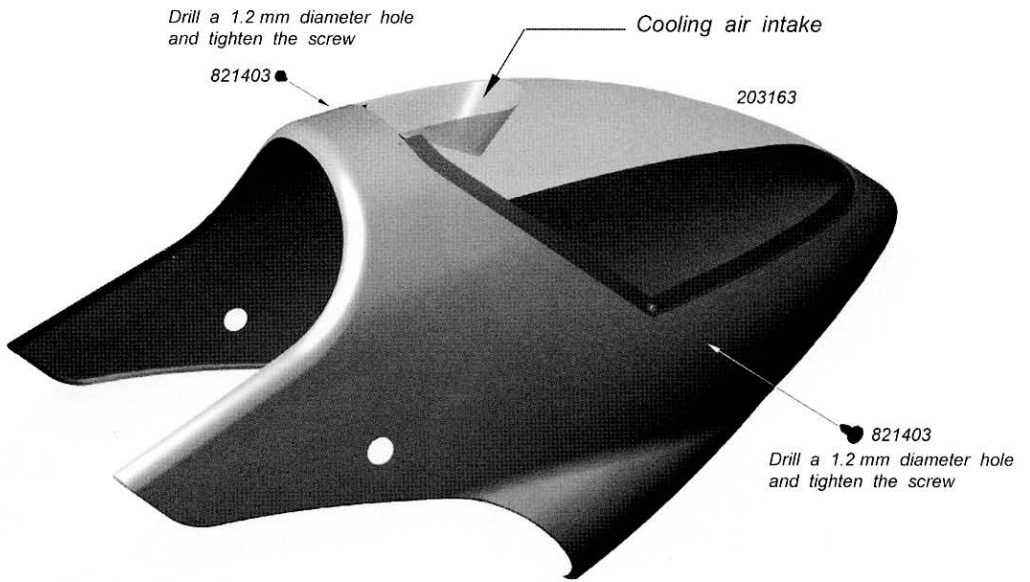




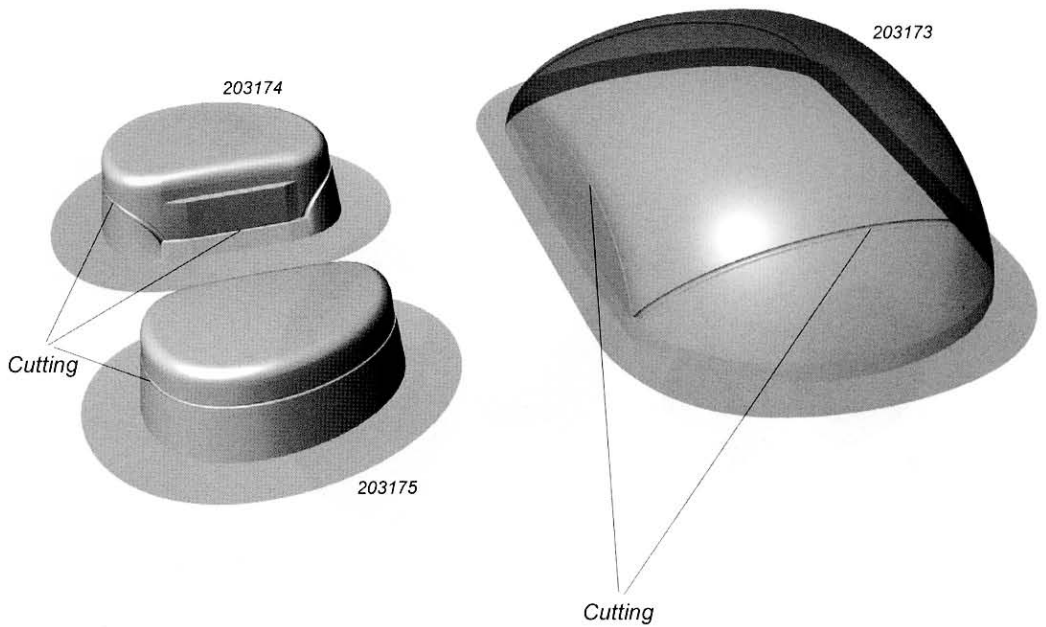
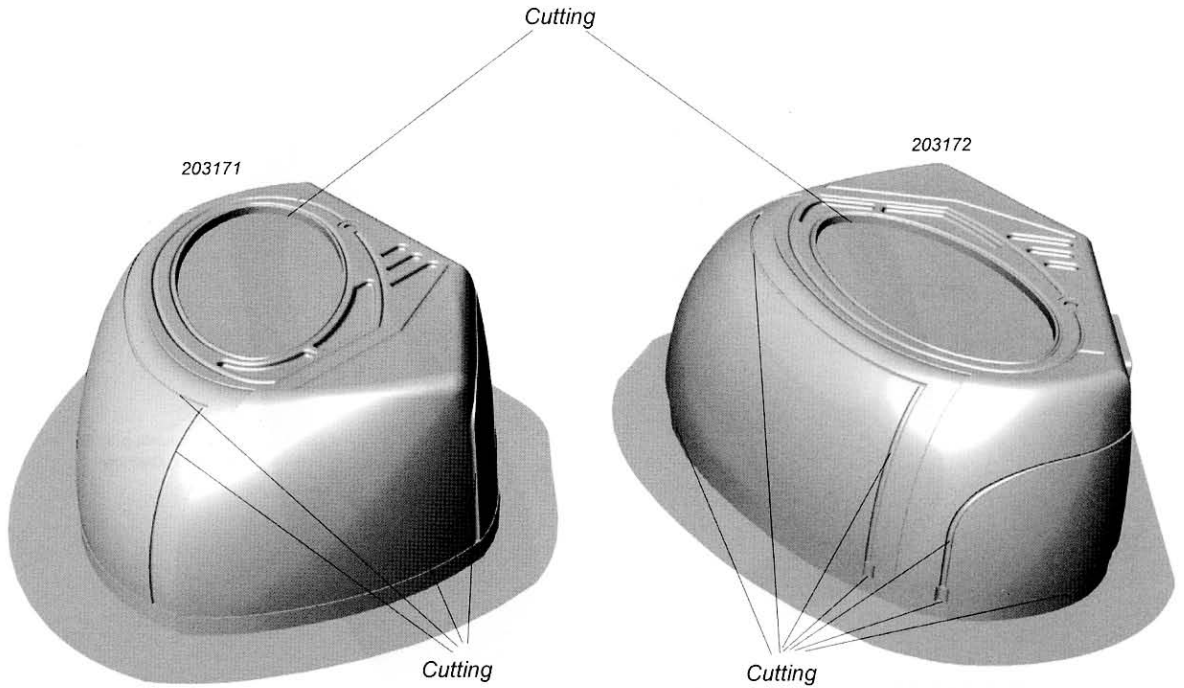
Cutting 2 pieces of double-side tape (14mmx24mm & 14mmx16mm) and stick the part 203226 onto main frames.







OPTIONAL PARTS (Round Body)



OPTIONAL PARTS (Round Body)

Assemble both parts together with instant glue.

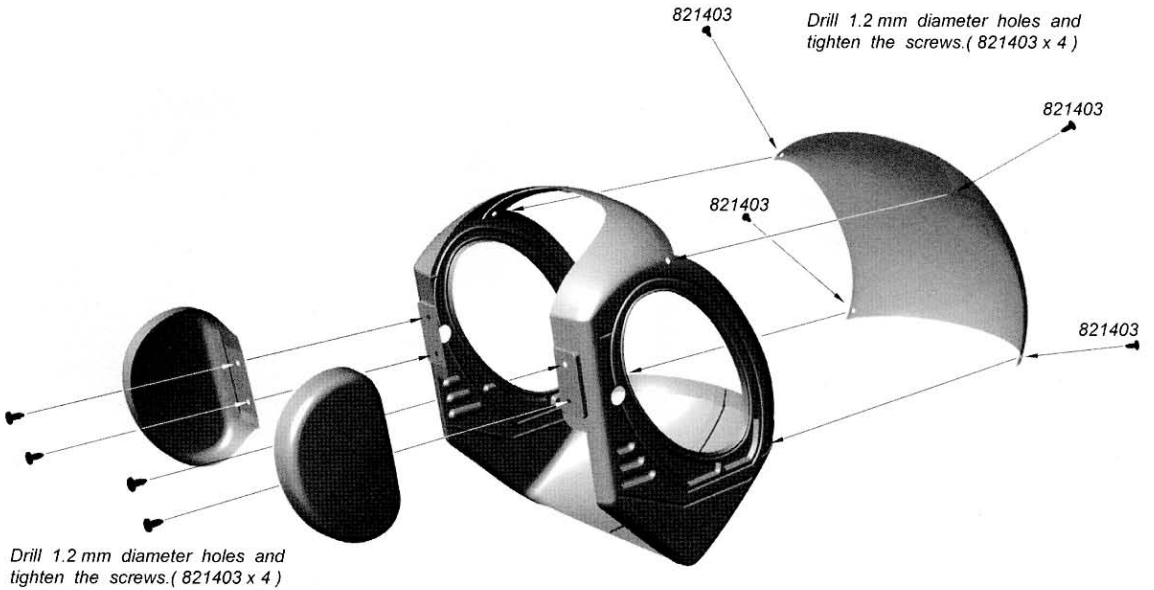
Drill a mounting hole
(4.2 mm Diameter)

203172

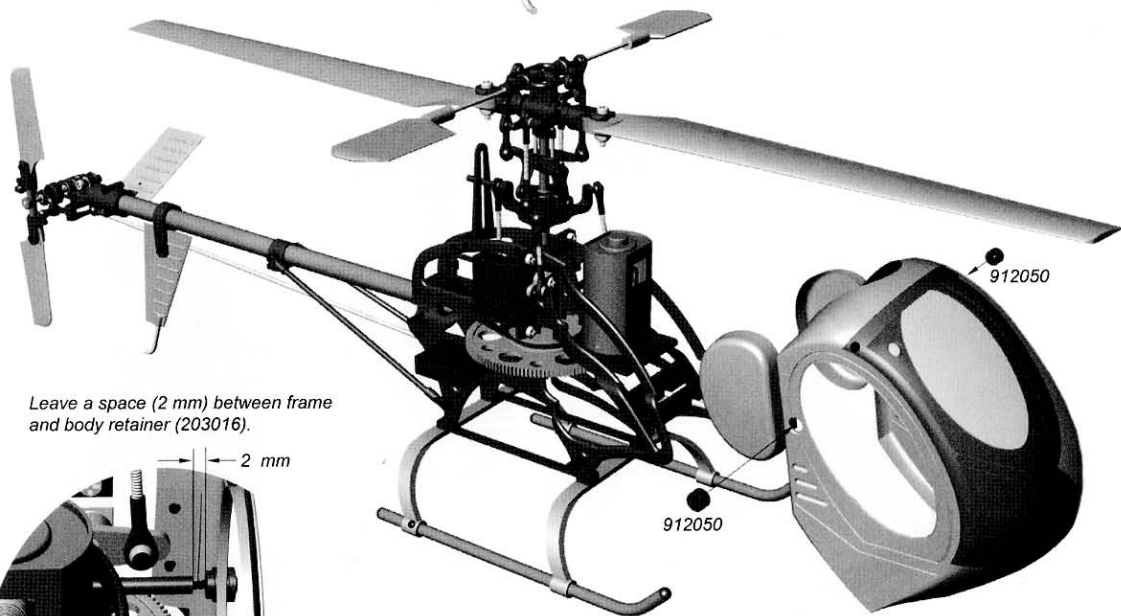
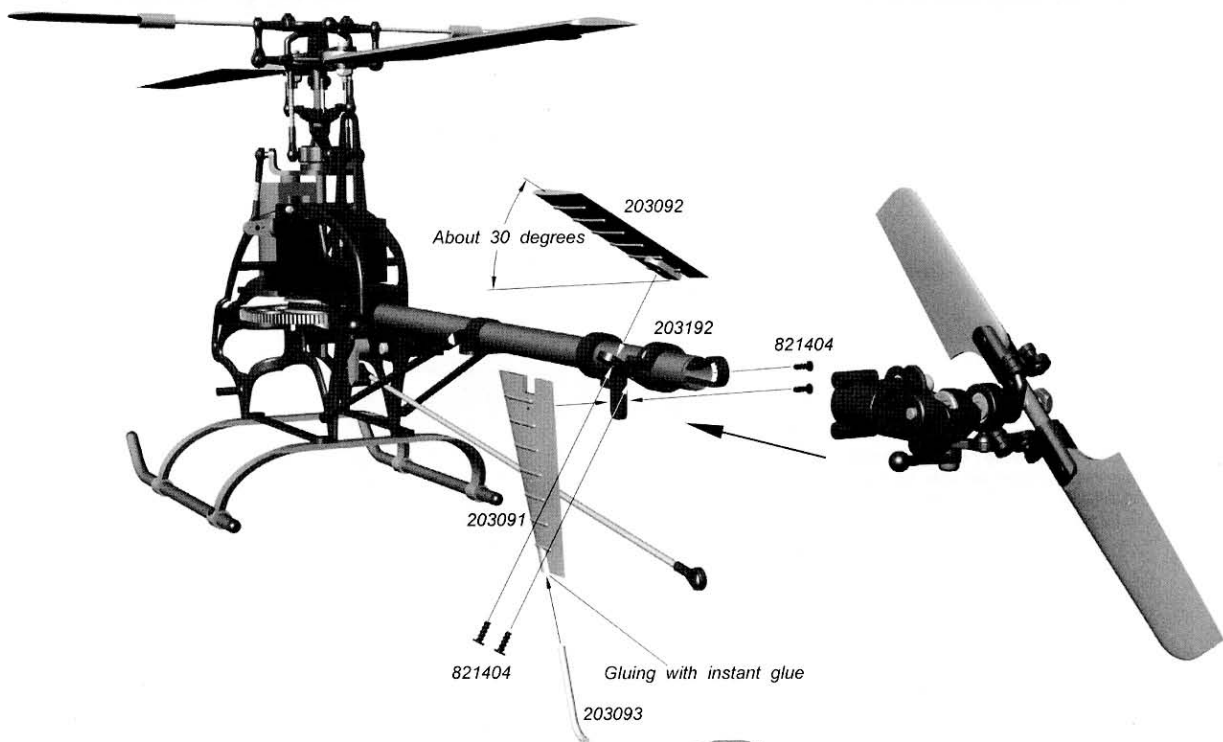
Drill a mounting hole
(4.2 mm Diameter)

203171

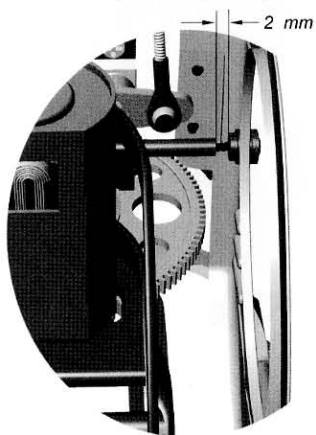
Assemble both parts together with instant glue.



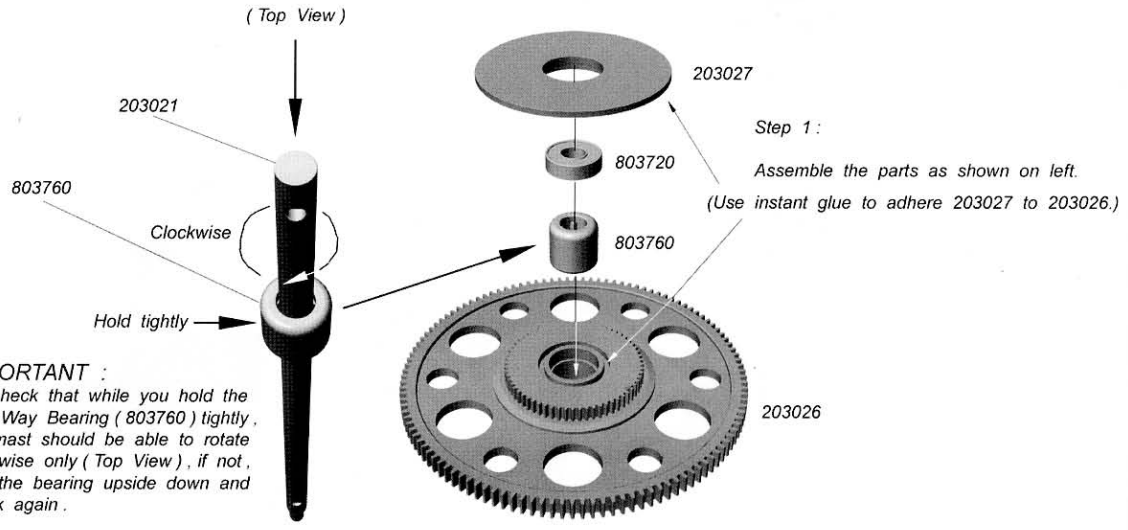
OPTIONAL PARTS (Fin & Tail)



Leave a space (2 mm) between frame and body retainer (203016).



OPTIONAL PARTS (One Way Gear)

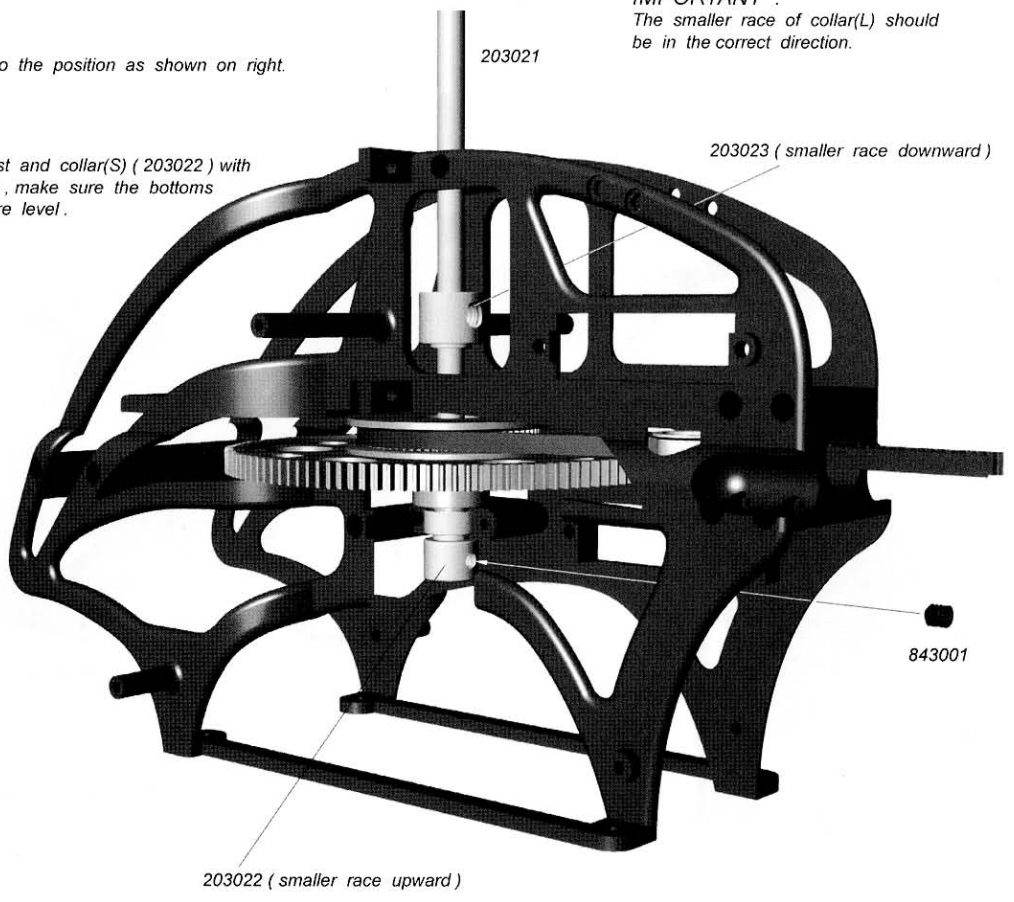


IMPORTANT :
 Pre-check that while you hold the One Way Bearing (803760) tightly , the mast should be able to rotate clockwise only (Top View) . if not , turn the bearing upside down and check again .

Step 2 :
 Put the parts to the position as shown on right.

IMPORTANT :
 The smaller race of collar(L) should be in the correct direction.

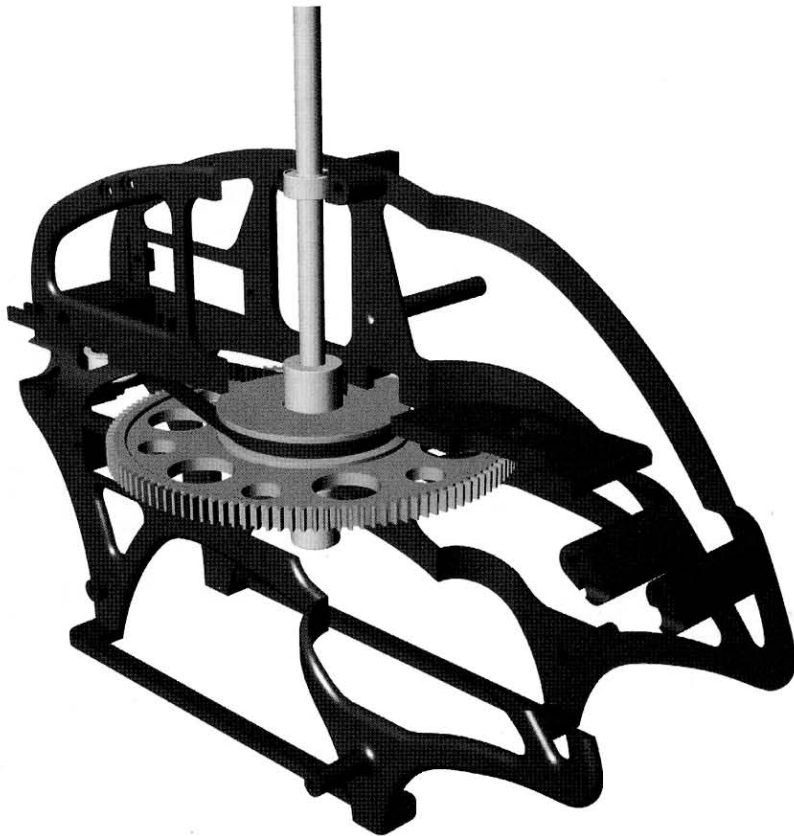
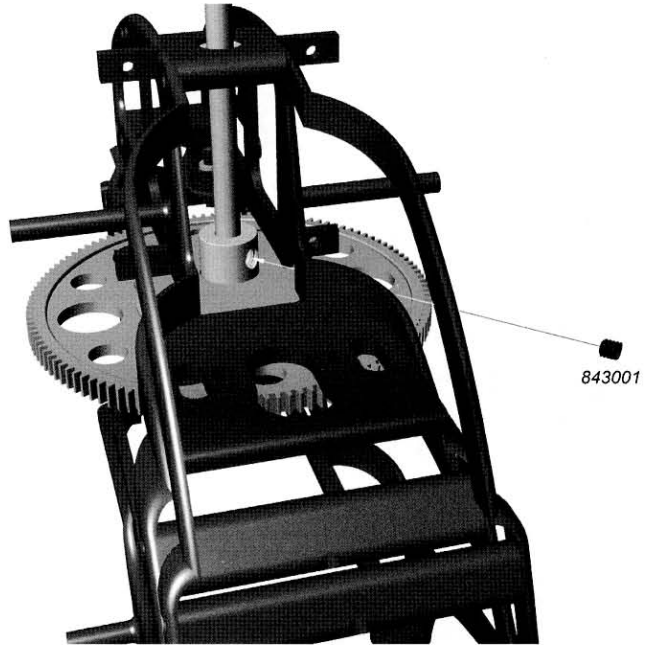
Step 3 :
 Tighten the mast and collar(S) (203022) with screw (843001) , make sure the bottoms of both parts are level .



OPTIONAL PARTS (One Way Gear)

Step 1:

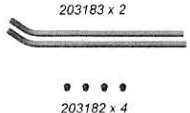



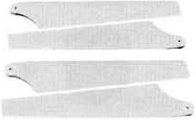
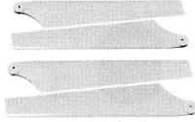
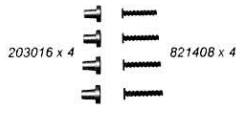

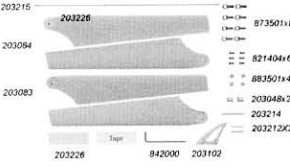
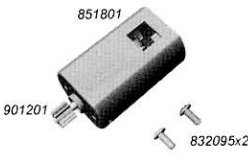
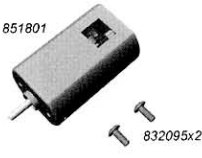
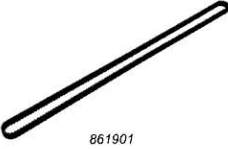
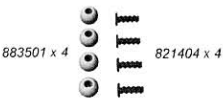


Pull up the mast and push down the lower collar(L) & Main Gear Assembly , tighten the lower collar(L) with screw (843001) .



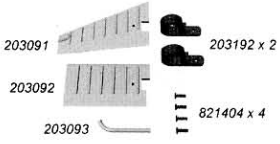
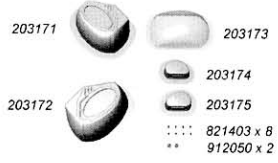
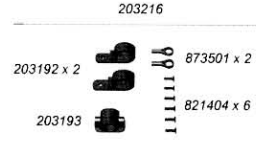
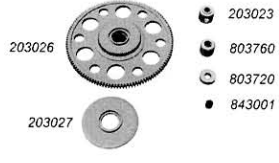

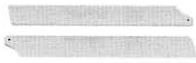
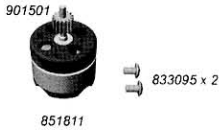







Replacement Parts

<p>203010 Main Frame Set</p>	<p>203020 Main Gear (120T X 64T) Set</p>	<p>203030 Main Rotor Yoke & Grip Set</p>	<p>203040 See-Saw Set</p>
<p>203050 Washout Base Set</p>	<p>203060 Swashplate Assembly</p>	<p>203070 Tail Gear Case Set</p>	<p>203080 Tail Rotor Blades Pack</p>
<p>203100 Fin & Stabilizer</p>	<p>203110 Stabilizer Blades Pack</p>	<p>203120 Tail Output Shaft Set</p>	<p>203130 Tail Rotor Grip (with Hub) Set</p>
<p>203140 Tail Pitch Control Set</p>	<p>203150 Belt Guiding Wheel Set</p>	<p>203160 Body & Canopy Set</p>	<p>203180 Landing Gear Brace Set</p>
<p>203190 Tail Booms Pack</p>	<p>203200 Tail Boom Support Set</p>	<p>203210 Linkage Set</p>	<p>203220 Main Shafts (Masts) Pack</p>
<p>decal</p>			
<p>203221 Decal Sets</p>	<p>203230 Mast Collars Pack (S)</p>	<p>203240 Flybars Pack</p>	<p>203241 Flybar Adaptors Pack</p>

Replacement Parts

 <p>203183 x 2</p> <p>203182 x 4</p>	 <p>801420 x 2</p>	 <p>602525 x 3</p>	 <p>803625 x 2</p>
<p>203260 Landing Gear Skids Pack</p>	<p>203270 Ball Bearings (1.4x2x2) x 2 pcs</p>	<p>203280 Ball Bearings (2x5x2.5) x 3 pcs</p>	<p>203290 Ball Bearings (3x6x2.5) x 2 pcs</p>
 <p>203083 x 2 pairs</p>	 <p>203084 x 2 pairs</p>	 <p>203016 x 4</p> <p>821408 x 4</p>	 <p>912050 x 4</p>
<p>203300 Main Rotor Blades Pack(E385)</p>	<p>203301 Main Rotor Blades Pack(N012)</p>	<p>203310 Body Retainers Pack</p>	<p>203311 Damper Rubbers Pack</p>
 <p>203215</p> <p>203226</p> <p>203084</p> <p>203083</p> <p>203226</p> <p>842090</p> <p>203192</p> <p>873501x6</p> <p>821404x6</p> <p>883501x4</p> <p>203048x2</p> <p>203214</p> <p>203212x2</p>	 <p>851801</p> <p>901201</p> <p>832095x2</p>	 <p>851801</p> <p>832095x2</p>	 <p>861901</p>
<p>203320 Spare Parts Pack</p>	<p>203500 180 Brushed Motor (With 12T Gear)</p>	<p>851801 180 Brushed Motor</p>	<p>861901 Tail Rotor Belt</p>
 <p>883501 x 4</p> <p>821404 x 4</p>	 <p>901201</p>	 <p>901201 x 10</p>	
<p>883500 Metal Balls Pack</p>	<p>901201 12T Pinion Gear</p>	<p>832010 Machine Screws (M2 x 10 mm)</p>	

Optional Parts

 <p>203091 203092 203093 203192 x 2 821404 x 4</p>	 <p>203171 203172 203173 203174 203175 821403 x 8 912050 x 2</p>	 <p>203216 203192 x 2 203193 873501 x 2 821404 x 6</p>	 <p>203026 203027 203023 803760 803720 843001</p>
<p>203510 <i>Stabilizer & Fin Set(for Round Body)</i></p>	<p>203520 <i>Body & Canopy Set(Round Body)</i></p>	<p>203530 <i>Fin Mounts & Boom Clamps Pack</i></p>	<p>203540 <i>One Way Bearing & Main Gear Set</i></p>
 <p>203023 x 2 843001 x 2</p>	 <p>203085 x 1 pairs</p>	 <p>901501 851811 833095 x 2</p>	 <p>851811 833095 x 2</p>
<p>203231 <i>Mast Collars Pack (L)</i></p>	<p>203302 <i>Main Rotor Blades Pack(Wood)</i></p>	<p>203501 (O411 OBL) <i>Brushless Motor (With 15T Gear)</i></p>	<p>851811 (W/O Pinion Gear) <i>Brushless Motor</i></p>
			
<p>859901 <i>Motor Brushes Oil</i></p>	<p>901501 <i>15T Pinion Gear</i></p>	<p>923082 <i>ESC 8A (For 180 Brushed Motor)</i></p>	<p>923101 <i>BLESC-10A (For Brushless Motor)</i></p>
			
<p>926055 <i>Li-Po Battery (7.4v 550mah)</i></p>	<p>926080 <i>Li-Po Battery (7.4v 800mah)</i></p>		

RCmart Optional Electronic Components

<p><i>PINO</i> Servo (Plastic Gear)</p>	<p><i>PINO-MG</i> Servo (Metal Gear)</p>	<p><i>R4-6CH</i> Receiver (6CH)</p>	<p><i>R5-7CH</i> Receiver (7CH)</p>
<p><i>A500-G</i> Head Lock Gyro</p>	<p><i>NT-400</i> Head Lock Gyro</p>	<p><i>NT-310</i> Micro Piezo Gyro</p>	<p><i>A200-D</i> Micro Piezo Gyro</p>
<p><i>STD ECP (UNI)</i></p>	<p><i>AIRTRIX ECP (JST)</i></p>	<p><i>Easy Charger</i></p>	<p><i>CCPM Electronic Mixer</i></p>

" pixy ZAP " Electric Power Helicopter Spare Parts List – STD

Item	Description
203010	Main Frame Set
203020	Main Gear (120T x 64T) Set
203030	Main Rotor Yoke & Grip Set
203040	See-Saw Set
203050	Washout Base Set
203060	Swashplate Assembly
203070	Tail Gear Case Set
203080	Tail Rotor Blades Pack
203100	Fin & Stabilizer
203110	Stabilizer Blades Pack
203120	Tail Output Shaft Set
203130	Tail Rotor Grip (with Hub) Set
203140	Tail Pitch Control Set
203150	Belt Guiding Wheel Set
203160	Body & Canopy Set
203180	Landing Gear Brace Set
203190	Tail Booms Pack
203200	Tail Boom Support Set
203210	Linkage Set
203220	Main Shafts (Masts) Pack
203221	Decal Sets
203230	Mast Collars Pack (S)
203240	Flybars Pack
203241	Flybar Adaptors Pack
203260	Landing Gear Skids Pack
203270	Ball Bearings (1.4x2x2) x 2 pcs
203280	Ball Bearings (2x5x2.5) x 3 pcs
203290	Ball Bearings (3x6x2.5) x 2 pcs
203300	Main Rotor Blades Pack (E385)
203301	Main Rotor Blades Pack (N012)
203310	Body Retainers Pack
203311	Damper Rubbers Pack
203320	Spare Parts Pack
203500	180 Brushed Motor (With 12T Gear)
851801	180 Brushed Motor
861901	Tail Rotor Belt
883500	Metal Balls Pack
901201	12T Pinion Gear
832010	Machine Screws (M2 x 10 mm)

Optional Parts

Item	Description
203510	Stabilizer & Fin Set (For Round Body)
203520	Body & Canopy Set (For Round Body)
203530	Fin Mounts & Boom Clamps Pack
203540	One Way Bearing & Main Gear Set
203231	Mast Collars Pack (L)
203302	Main Rotor Blades Pack (Wood)
203501 (O411 OBL)	Brushless Motor (With 15T Gear)
851811	Brushless Motor (W/O Pinion Gear)
859901	Motor Brushes Oil
901501	15T Pinion Gear
923082	ESC 8A (For 180 Brushed Motor)
923101	BLESC-10A (For Brushless Motor)
926055	Li-Po Battery (7.4V 550mah)
926080	Li-Po Battery (7.4V 800mah)

“RCmart” Optional Electronic Components

Item	Description
PINO	Servo (Plastic Gear)
PINO-MG	Servo (Metal Gear)
R4-6CH	Receiver (6CH)
R5-7CH	Receiver (7CH)
A500-G	Head Lock Gyro
NT-400	Head Lock Gyro
NT-310	Micro Piezo Gyro
A200-D	Micro Piezo Gyro
STD ECP (UNI)	PINO SV x4,R4-6CH RX x1,NT-310 Gyro x1,Li-Po ESC-10Ax1,Battery x 1
AIRTRIX ECP (JST)	PINO SV x4,RX-6CH x1,CPU-6CH x1,A100-F Gyro x1,ESC-5A2 x1,Battery x1
Easy Charger	Li-Po & Li-Ion Quick Charger
CCPM Electronic Mixer	CCPM Electronic Mixer

LIMITED WARRANTY

RCmart International, Inc. warrants "pixy ZAP" EP helicopter (and other electronic components supplied by RCmart International) to be free from defects in materials and workmanship.



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