Cyber Copter

Designed and Manufuactured by :
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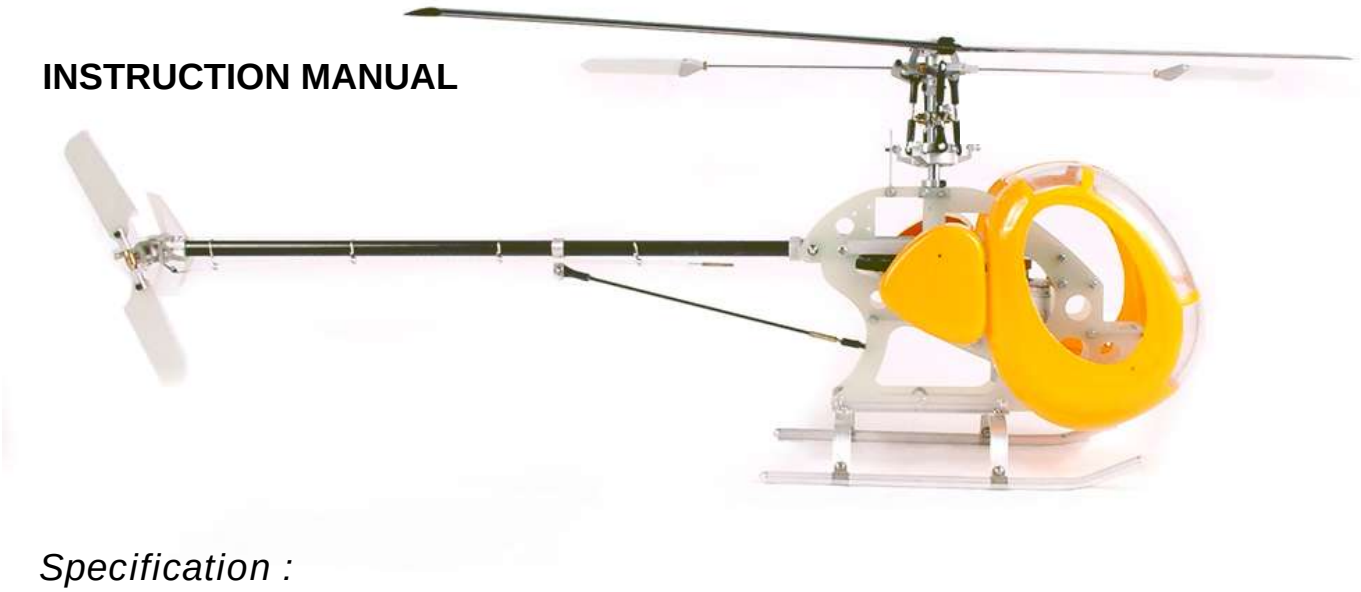
The World's smallest and finest CCPM motor power Radio Control Helicopter

INSTRUCTION MANUAL



Specification :

Length w/blade:	*736 mm (29")*
Body Length :	*533 mm (21")*
Height :	*216 mm (8-1/2")*
Rotor Diameter:	*Main - 584 mm (23")*
	Tail - 123 mm (4.9")
Gear Ratio :	*101 : 1*
	4.5 : 1
Flying weight :	*550g (19.4 oz.)*
	with motor and radio
Engine :	*480 motor (included)*
Rotor blade :	*270mm, Semi-symmetrical*
Carrying case :	*Aluminium (included)*

Recommended accessories (Not included):

Radio control :	*CCPM Program Mixing*
	6 CH, 4 micro Servos
Servo :	*GWS PICO STD x 4*
Gyro :	*Futaba GY240 or GWS PG-01, PG-03*
Battery :	*Li-Po 1,500mAh, 3S (11.1v)*
Speed control :	*30A w/o brake*

- Please read this manual in its entirety before attempting to assemble the helicopter. In particular, please read the section entitled 'Always follow these rules for safety' before attempting to fly the helicopter.
- Keep this manual in a safe place.
- Changes in product specifications may be effected without notice.

AMD

Before flying your model, be sure to read all cautionary items, and confirm that the model can be operated safely. Please enjoy operating your model responsibly.

After reading this manual, store it where it can be easily used for reference.

WARNING

Strict pre-flight inspections are mandatory for real planes. Although the R/C helicopter is small and can be flown with ease, it does not differ from real planes in that it may cause much trouble and lead to severe injury or damage.

Be sure to inspect the helicopter before flight and in the case of an anomaly. If the rotor blade hits the ground during flight, minute cracks and loosening may occur at various parts even if there are no apparent damages. If the helicopter is flown in such a condition,the cracks on the rotor may fly off from the interior of the rotor which rotates rapidly at around 1500 rpm or the rotor fly off from the blade holder.

Immediately replace parts if any suspicious condition is noted.

The tip speed of the main rotor of Cybercopter may reach 200 kph or more. Make sure that there are no persons nearby upon flight.

(1) The machine screws tend to loosen when the helicopter is new. Be sure to make inspections on each f light. Be sure to apply locking agents to machine screws that loosen easily.

(2) Be very careful upon use; the maker shall not be liable for accidents.

(3) The radio wave will reach a distance of distance of

approximately 1km or more. It is necessary to confirm that there is nobody else using RC equipment within the area. (dangerous radio wave interference may occur unless a distance of 2km or more is provided when radio waves of the same frequency are being used.)

(4) Please note that the maker shall not be liable for any crashes or damages due to loosening of machine screws and poor servicing.

(5) Also, please note that the maker shall not be liable for any problems arising from the use or parts other than genuine parts.

Clear the airfield as much as possible

* Clear the airfield of pebbles, nails, wire, rope and any other trash.

Give sufficient consideration to your surroundings.

- Do not fly the helicopter in strong winds, rain, or at night.
- Do not fly the helicopter near homes, schools or hospitals.
- Do not fly the helicopter near roads, railways or electrical lines.
- Do not fly the helicopter where there is the possibility of interference on the radio frequency from another.
- The helicopter should not be operated by:
  - * Children.
  - * Anyone who is menstruating, or pregnant.
  - * Anyone who is tired, sick or inebriated.
  - * Anyone who is under the influence of drugs, or whose judgement is otherwise impaired.
  - * If you are a beginner, or if you have borrowed someone else's helicopter, be sure that you are familiar with the model, and have received safety instruction before starting.

Do not use the helicopter for purposes it was not designed for.

- Do not remodel or reconfigure the helicopter.
- Always operate within the designated limitations for the helicopter.
- Do not use for aerial photography or for the aerial application of chemicals.

Wear appropriate clothing .

- Please wear a long sleeve shirt and long trousers.
- Do not wear jewelry, or other items that may easily become entangled.
- Long hair should be bound to shoulder length.
- Always wear shoes, to ensure good footing.
- Wear gloves as necessary.

Always put away screwdrivers, wrenches and other tools.

- Before starting, always check that tools used in the assembly, or maintenance of the heli copter have been put away.

Check each section of the helicopter.

* Before starting, always check to be sure that there is no damage to any part, and that the model operates and functions properly.

* Always check to be sure that all moving parts have been positioned properly, all nuts and bolts have been tightened properly, and that there is no part that is damaged or improperly attached, or any other part or place in a condition that would adversely affect the flight of the helicopter.

* Always check to be sure that the electrical supply for the radio controls have been fully charged.

* Repair or replace damaged or otherwise unusable parts per the instructions in the operating manual .For conditions not covered in the operating manual, consult your dealer, or our engineering service section.

* Before starting, check to be sure that all screws have been tightened, the designated locations have been oiled, the battery is fully charged.

Use official replacement parts.

- Do not use parts other than those shown in this operating manual, or in AMD Catalogues, There is danger of accidents or injury.

Practice operating the helicopter without turning the motor on.

(1) Beginners should receive safety and operating instruction from someone capable. Trying to teach yourself is extremely dangerous.

(2) Check to sure to that there are no loose or missing nuts and bolts.

(3) Check to be sure that there is no play or slack in the linkage rods or controllers.

(4) Check to be sure that there are no loose bolts in the engine mount.

(5) Check to be sure that there is no damage or wear to the rotor blades, especially near the blade holders.

(6) Check to be sure that the rotor blade has been safely fastened.

(7) Check to be sure shat the transmitter and receiver batteries have been fully charged.

(8) Check the effective operating distance of the radio controls.

(9) Check to be sure that all servos operate smoothly. Operating mistakes and malfunctions can result in loss of control and are dangerous.

(10) Check to be sure that the gyro operates properly. In particular check the direction of operation the direction of operation during the startup.

(11) Check to be sure that the helicopter body is properly lubricated.

BEFORE TAKING OFF

Before starting the motor , check to be sure that there no objects nearby that might be hit by, or become entangled in the rotor.

After checking to be cure that no one else in the area is using the same frequency, first turn on the transmitter and then the receiver. Set the throttle and trim to motor stop position.

When taking off, the helicopter should be in a position at least 15 meters away from the startup position, and the operator. Give careful consideration to the surrounding conditions, making sure that there are no other people or obstacles in the area.

Before the helicopter lifts off, adjust the tracking of each rotor. Verifying the tracking should be done from a distance of 5 meters from the helicopter.

Should unusual vibrations or noise occur while in flight, land the helicopter, investigate the source of the problem immediately.

Reckless operation can result in accidents and injury. Please follow all rules and enjoy the safe and responsible operation of your model.

WHILE INFLIGHT

Maintain a good posture.

* Do not operate while sitting or lying on the ground.
* It is easy to lo se your footing on slopes. Please take care.

Always unplug the motor connector :

* When adjusting the helicopter body or transmitter.
* When attaching or replacing parts.
* When the helicopter body replacing parts, or when unusual noise or vibrations occur.
* Durin g any other potentially dangerous situation.

Because of the danger of injury, never place your hand or any object near the rotating parts.

Operate your model in a relaxed and courteous manner.

* Fatigue from continuous operation over a long period of time can lead to impaired judgement and unexpected accidents. Always take sufficient rest periodically.
* Maintain a save distance between yourself and the helicopter while operating.
* Always operating the helicopter within the limits of your ability. Unreasonabl e maneuvers can lead to accidents and injury.

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Because of the danger of burns, do not touch the motor after starting or immediately after stopping the motor.

AFTER OPERATING THE HELICOPTER

Be sure to check the following items:

* Check each section of the h elicopter, and tighten or replace screws as necessary.
* Wipe clean any oil, dirt or water.
* Always conduct lubrication and part replacement as descibed in the operating manual.

Always store with care.

- Store in a dry place, out of the reach of children.

Consult your dealer, or our engineering service section regarding repairs.

* Repairs undertaken by persons without sufficient knowledge, or lacking the proper tools, can result in impaired performance, leading to accidents or injury.
* Always unplug the motor connector before making repairs or adjustments.
* Should your model be damaged, always repair it before storing. Always use the designated genuine replacement parts to repair your model.
* Remodeling or reconfiguration of the helicopter body, or appurtenant parts can result in impaired performance and should not be attempted.

CAUTION

(1) Before connect the motor plug, always be sure that the transmitter throttle is in its lowest position.

(2) Do not short circuit of the battery connector.

(3) Make sure to well balance the rotor blade before your first flight.

(4) Conduct lubrication of the tail gear and tail pitch assembly before every flight.

(5) Check and tighten the screw before every flight.

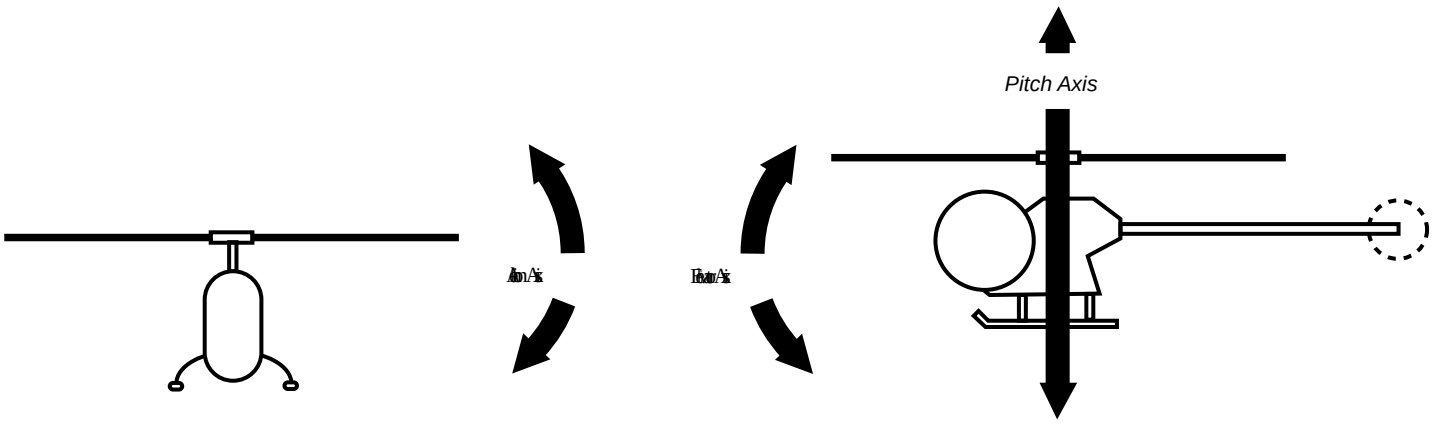
SWASHPLATE CONTROL SYSTEMS

3 - SERVO CCPM SWASHPLATE MIXING

The 120° CCPM or Cyclic/Collective Pitch Mixing system offers the user a control system that accomplish the same control inputs as the one servo standard system, but with increased precision and reduced complexity.

With the one servo system, CCPM system utilizes three servos for the three main controls : Aileron , elevator, and collective. The CCPM lower swashplate ring is designed with only three control balls, spaced at 120° from each other, hence the 120° CCPM designation. Although the control balls are not at 90° as in the standard system, the aileron axis is still parallel to the main mechanics of the helicopter. and the elevator axis still functions at 90° to the mechanics as does the one servo system. Please refer to the diagram below for clarification.

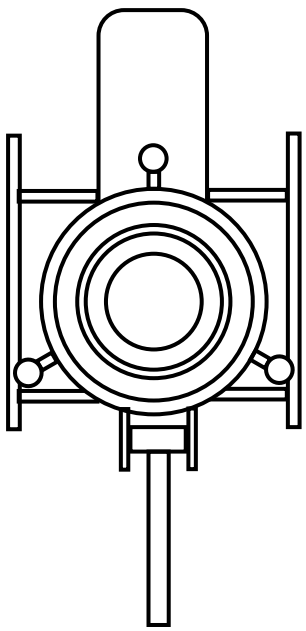
The main difference in the way that these two systems operate is that unlike the one servo system where the three servos work completely independent from each other, the CCPM systems work as a team to achieve the same control inputs. For example, if an aileron input is given, all three servos work together to move the swashplate fore and aft. For collective, it's also the strength of three servos that will move the swashplate up and down the main rotor shaft. With two or three servos working at the same time during any given control input, servo torque is maximized and servo centering is also increased. In addition to these benefits, CCPM achieves these control response without the need for complex mechnical mixing systems that require many more control rods and parts to setup.



The CCPM control is achieved through special CCPM swashplate mixing that is preprogrammed into many of today's popular radio systems. Since the 120°CCPM function is preprogrammed, CCPM is no more complicated to set up than a conventional one servo standard system.

When you factor in the reduced parts count and easy programming, CCPM is actually easier to set up and operate than many conventional system.

Please refer to the radio information on the following page to determine if your radio system has the CCPM function. For the radio not poviding the CCPM program function, please contact the radio manufacturer for CCPM information.



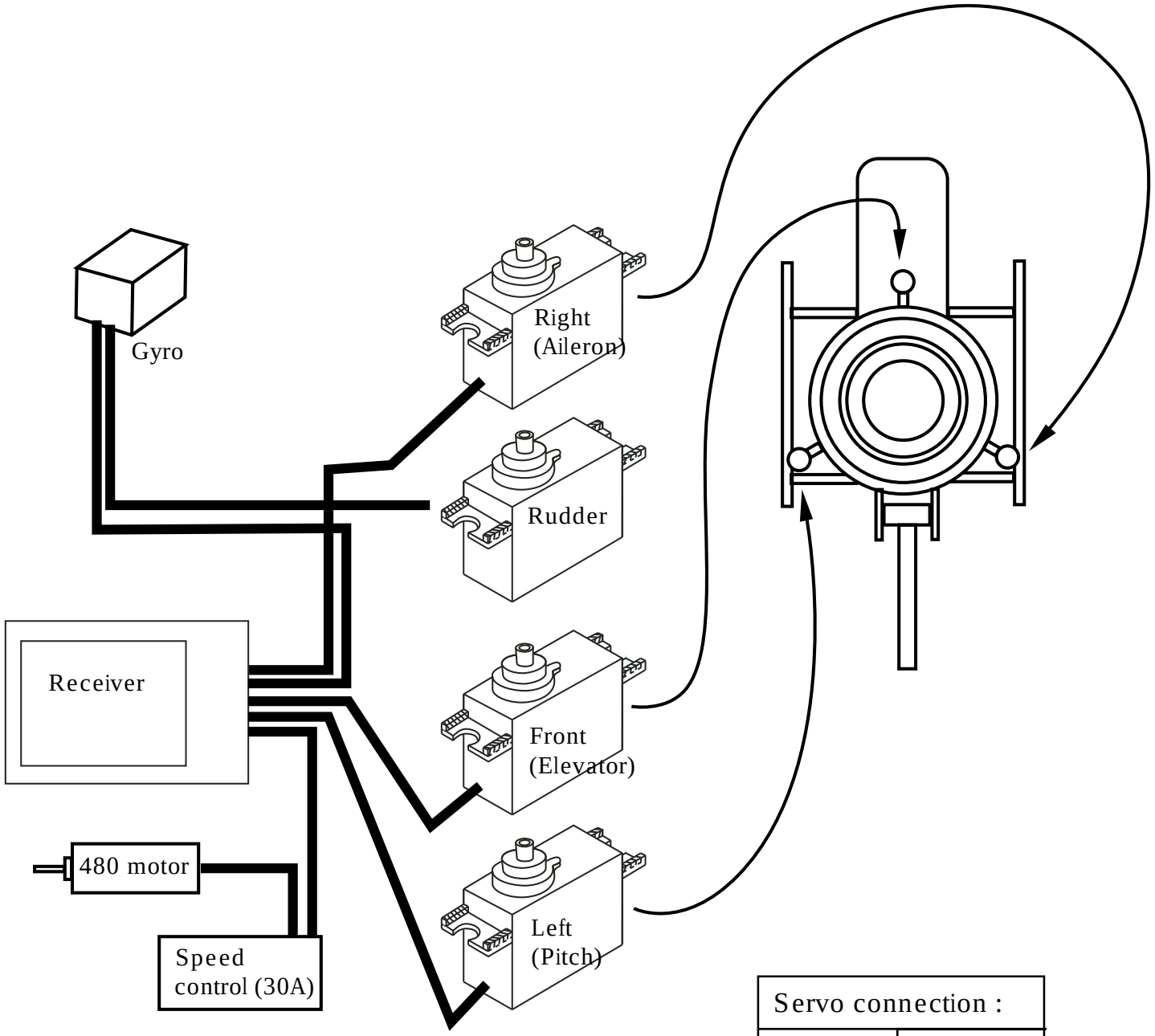
120° 3 servo CCPM Control System

CCPM SERVO CONNECTIONS

The 120 °CCPM system requires the use of three servos to operate, aileron, elevator, and Aux 1 (Pitch). The labeling of these servo can become quite confusing because with the CCPM with the CCPM function; the three servos no longer work independently, but rather as a team, and their functions are now combined. For this reason, we will refer to the three servos in the following manner:

Aileron Servo : We will refer to this servo as the "Right" servo.
Elevator Servo : We will refer to this servo as "Front" servo.
Aux 1 (Pitch) Servo : We will refer to this servo as the "Left" servo.

Please refer to the diagram below of the CCPM connections.



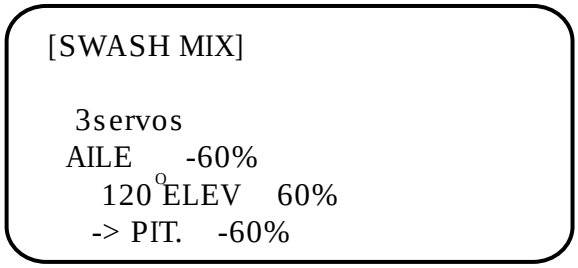
Servo connection :	
Futaba	JR
Ch 1	Aileron
Ch 2	Elevator
Ch 3	Throttle
Ch 4	Rudder
Ch 6	Pitch

CCPM PROGRAM ACTIVATION AND INITIAL ADJUSTMENT

Radio system to be used : JR 3810

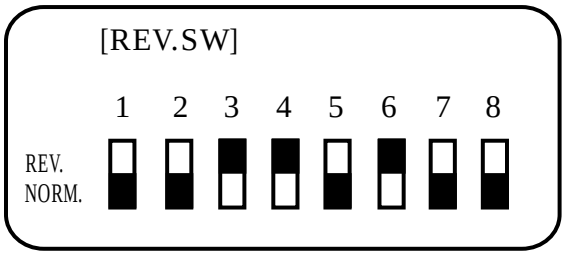
A) CCPM Setting

Turn the power switch on, then press the up and down keys simultaneously to enter the fucntion mode. Press the Up key until "Swash Mix" apears on the screen. Once this has been completed, it will be necessary to change the value of the aileron, elevator, and pitch fucntions from the factory default setting using the + and - keys.



B) Servo Reversing

Press the Up Key until "Rev. SW" (Servo Reversing) appears on the screen. Next, reverse channels 3,4, and 6 by moving the cursor with the Channel key, then pressing the + or - keys.



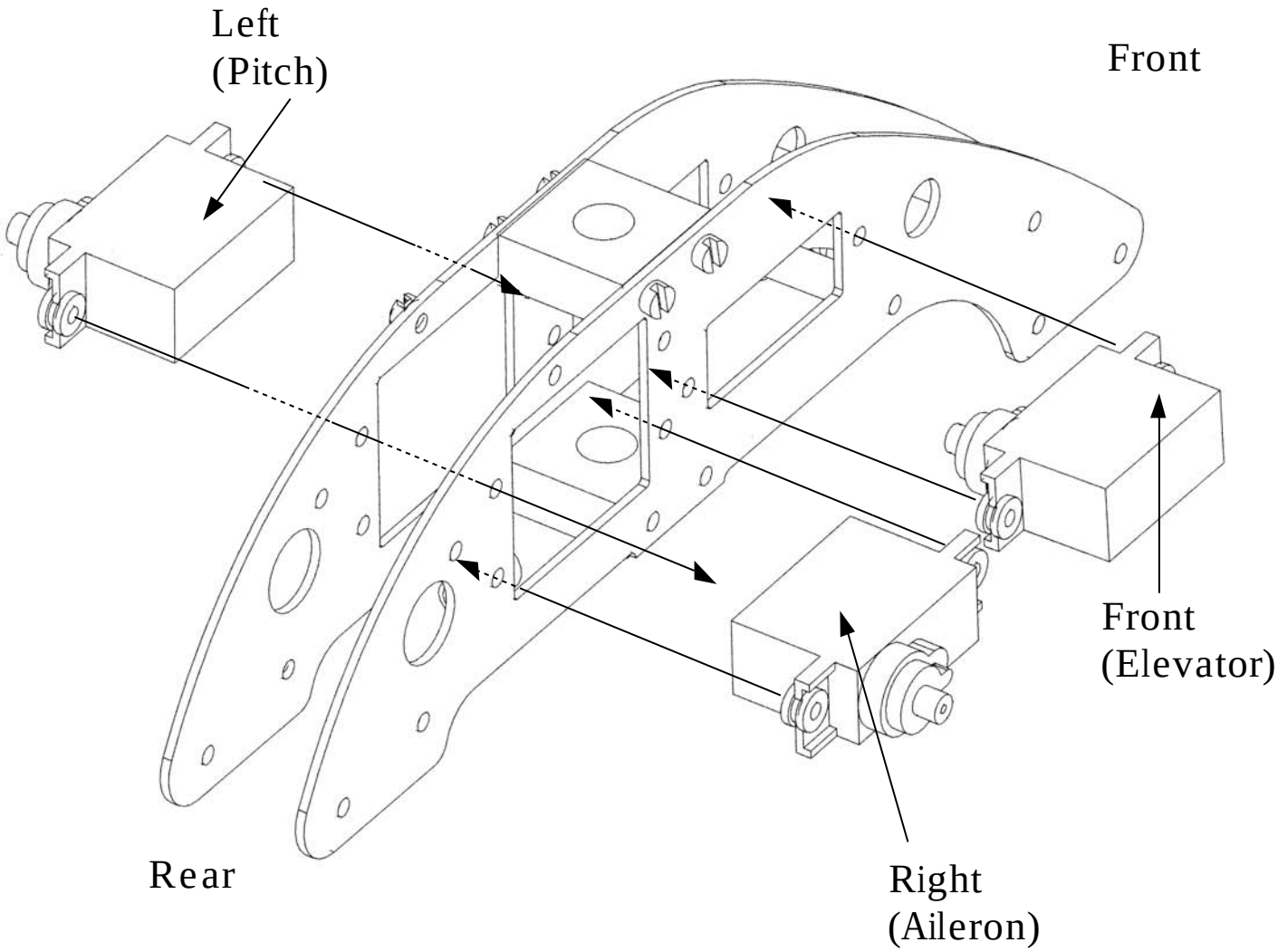
	REV	NORM
THR		✓
AIL		✓
ELE	✓	
RUD	✓	
GER		✓
PIT	✓	

C) Travel Adjustment

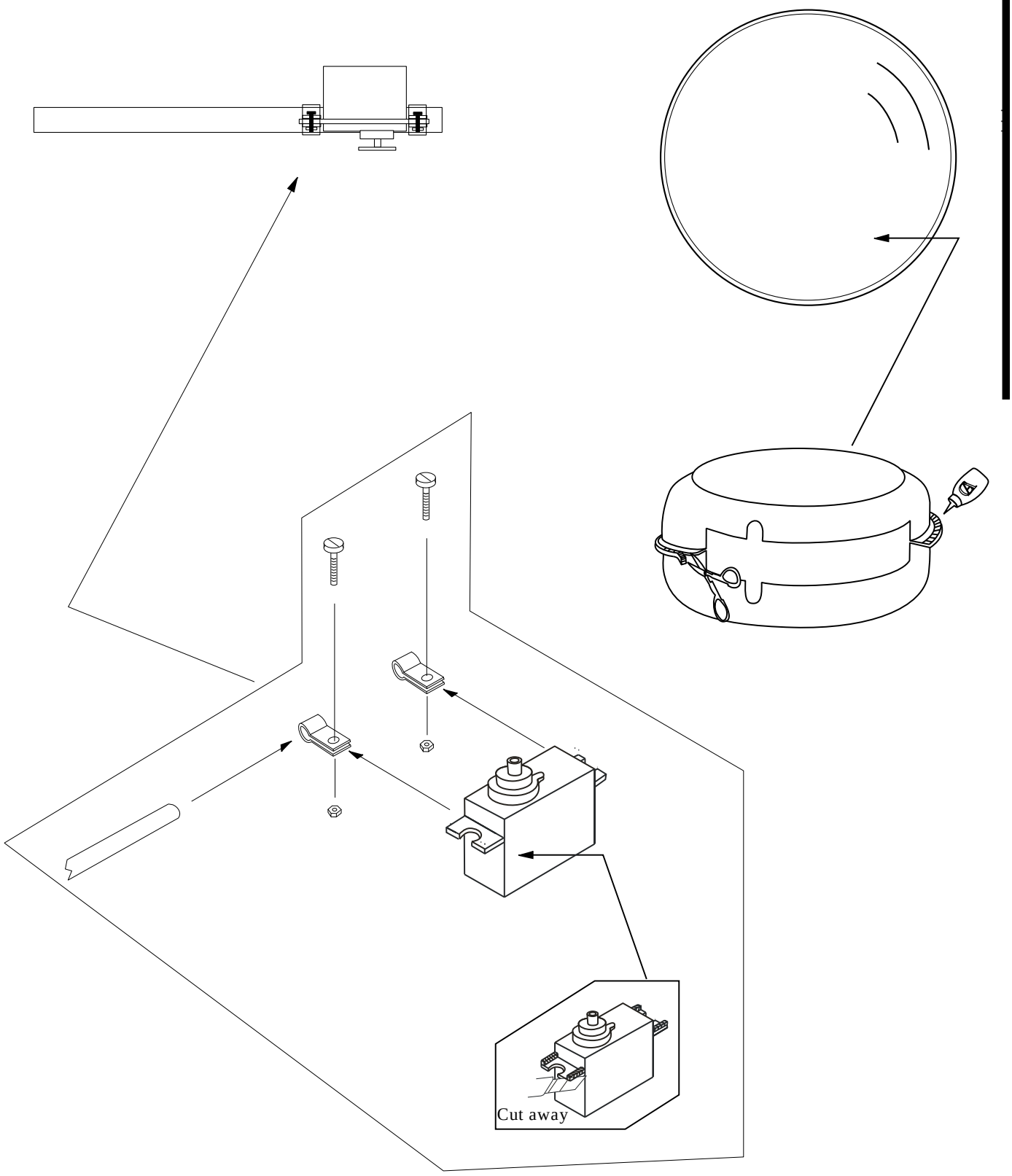
Press the Up key until "TRVL. ADJ." (travel adjust) appears on the screen. Adjust the values as shown using the channel key to move the cursor, and the + and - keys to set the value. Press the Sel key to access the pitch channel values and set as indicated. Please note that the required travel values will vary based on the type of servo selected. Please also note that the throttle travel value may vary based on the type of speed control used. Please refer to the manual of the speed control for the fine tuned of the travel adjustment.

Servo adjustment

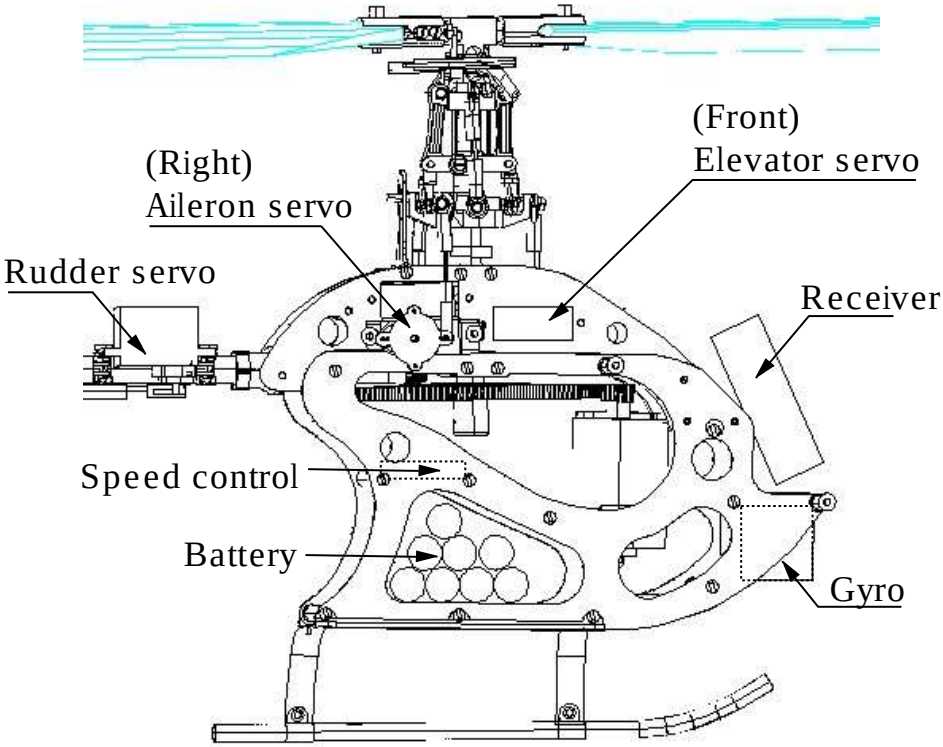
Servo installation

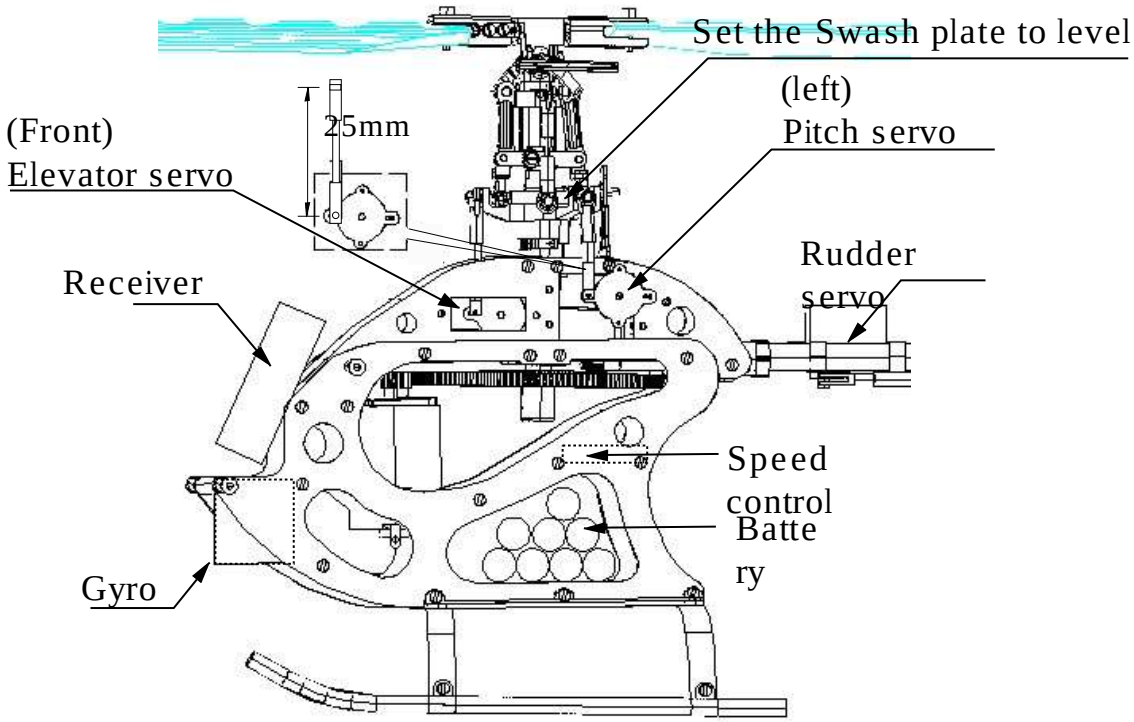


Servo to be used : GWS PICO+F BB x 4


Cut away

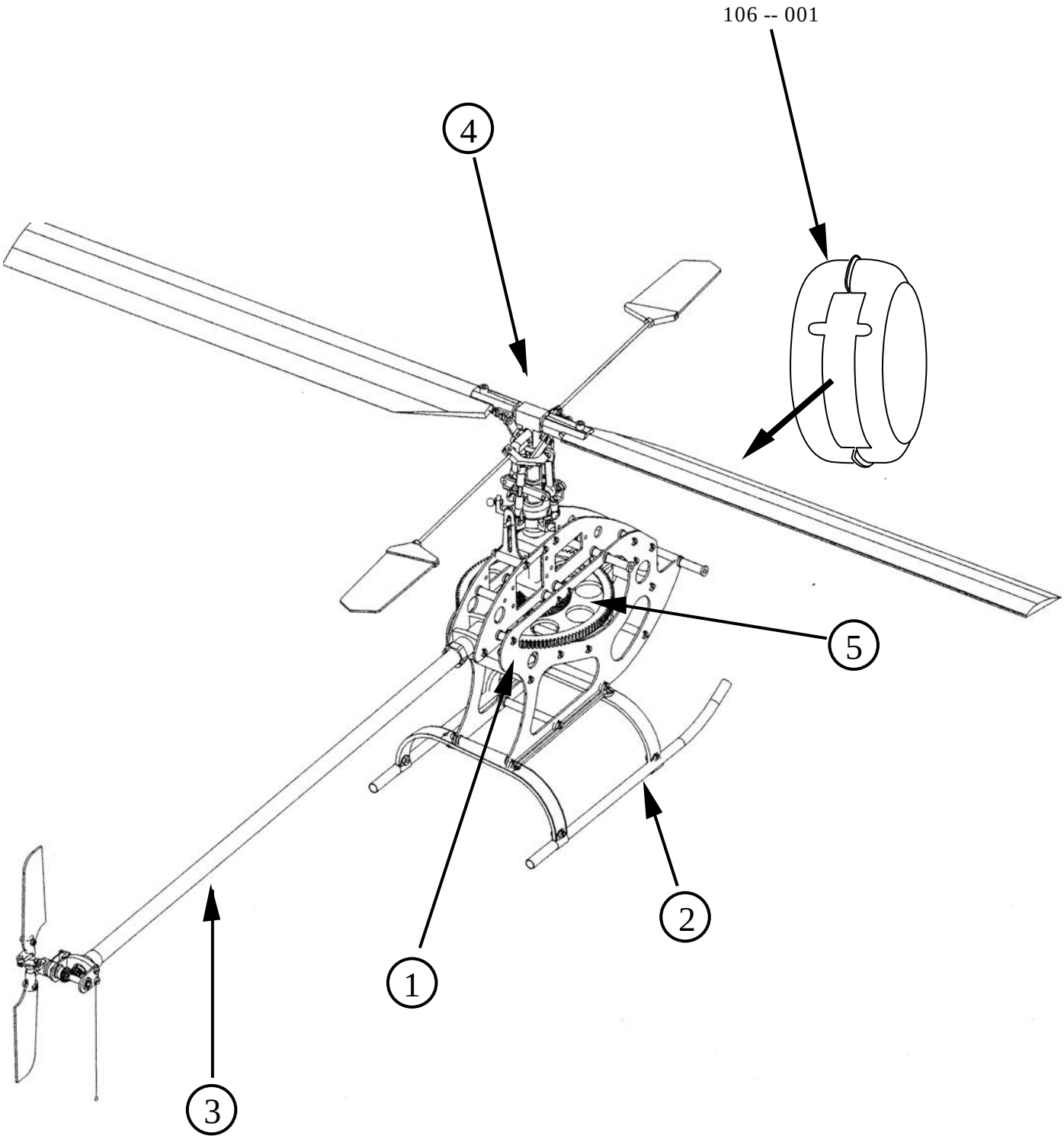
Servo Installation - CCPM program mixing



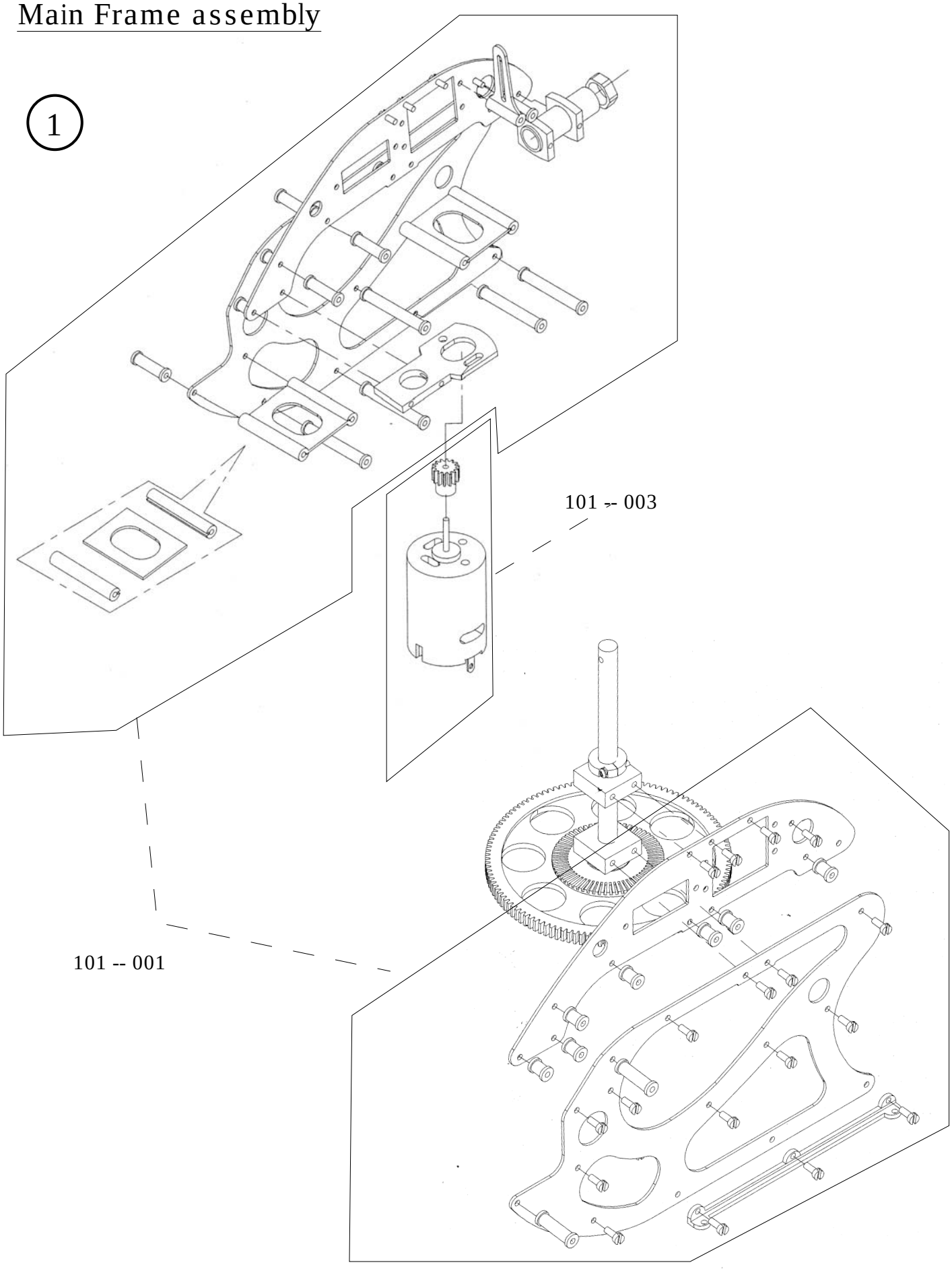


Recommended accessories :
Servo : GWS PICO+ F BB x 4
Speed control : ESC-30A (30Amp w/o brake)
Battery : 1500 - 1800 mAh Li-Po, 3S, (11.1v)
Gyro : Futaba GY240, or GWS PG-01,PG-03

Main body assembly



Main Frame assembly



Main Mast assembly

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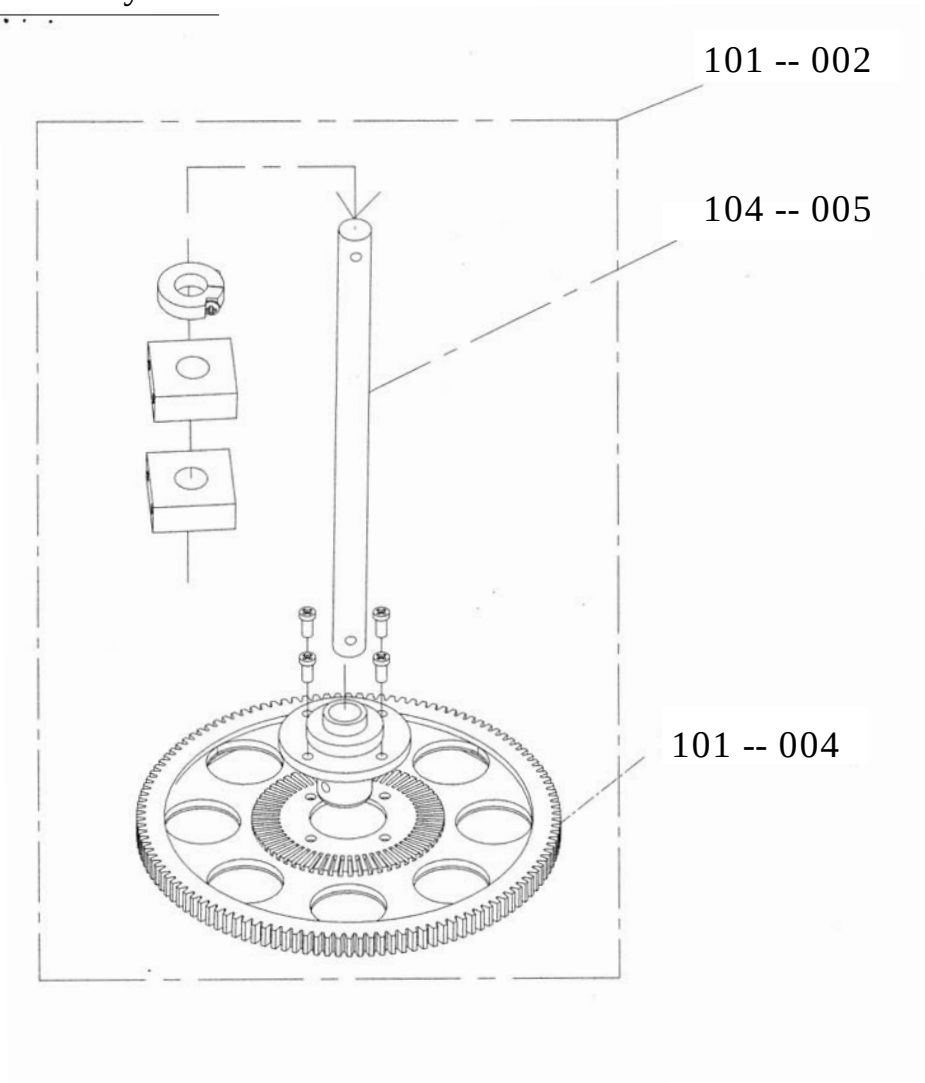
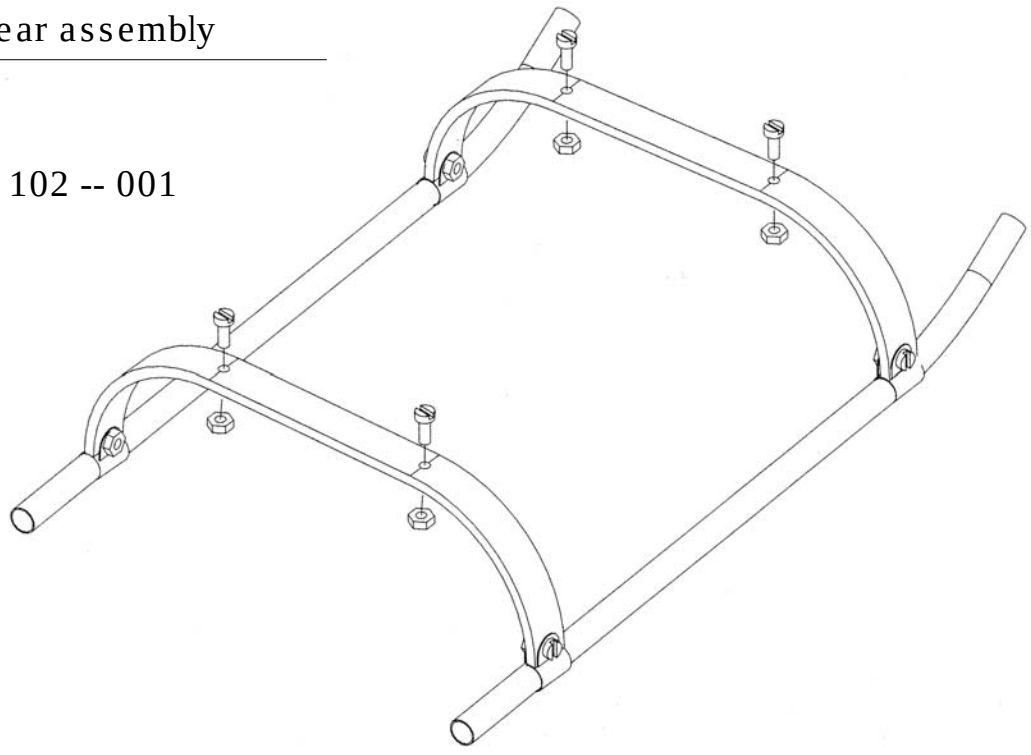


Landing Gear assembly

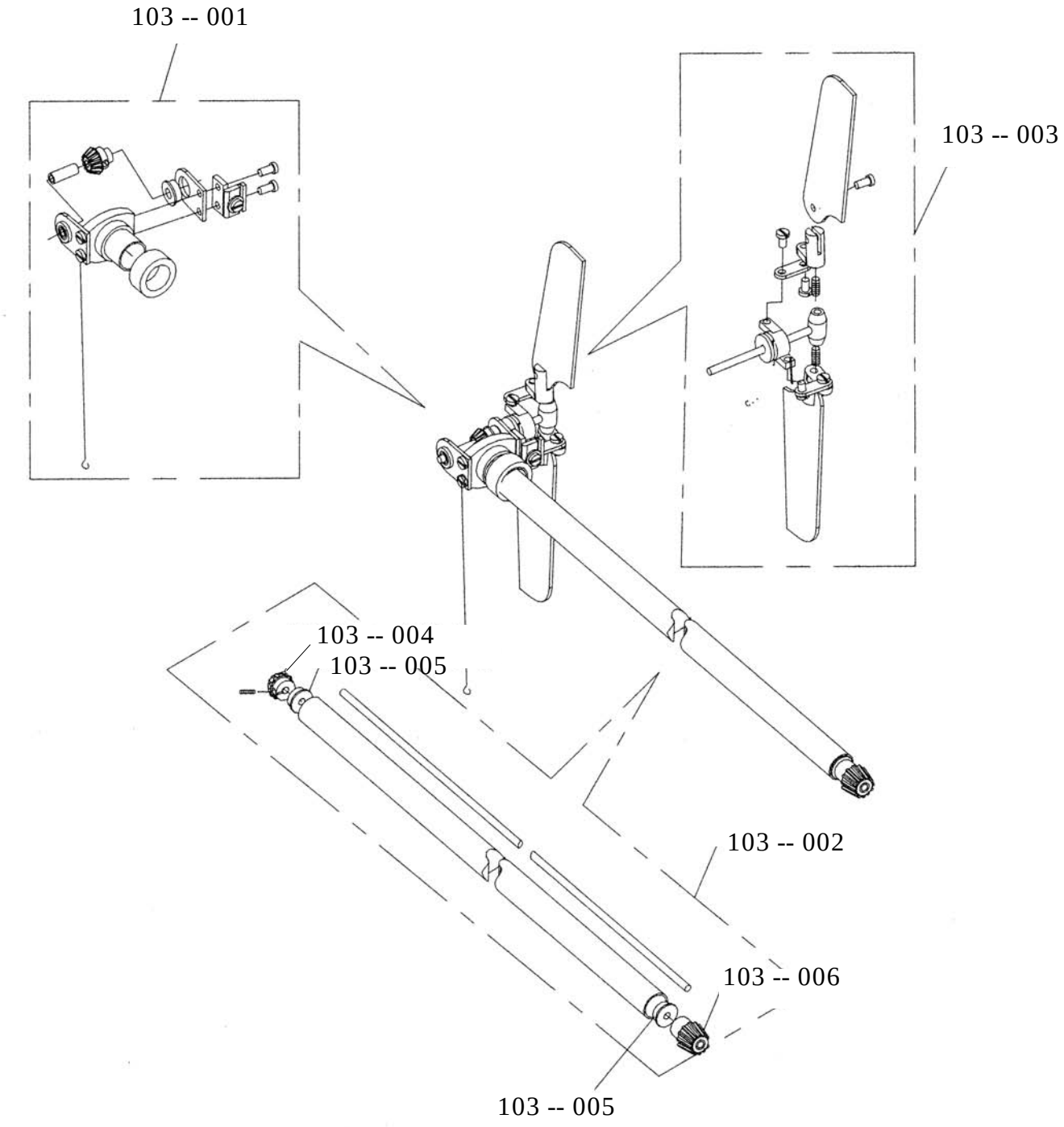
2

102 -- 001

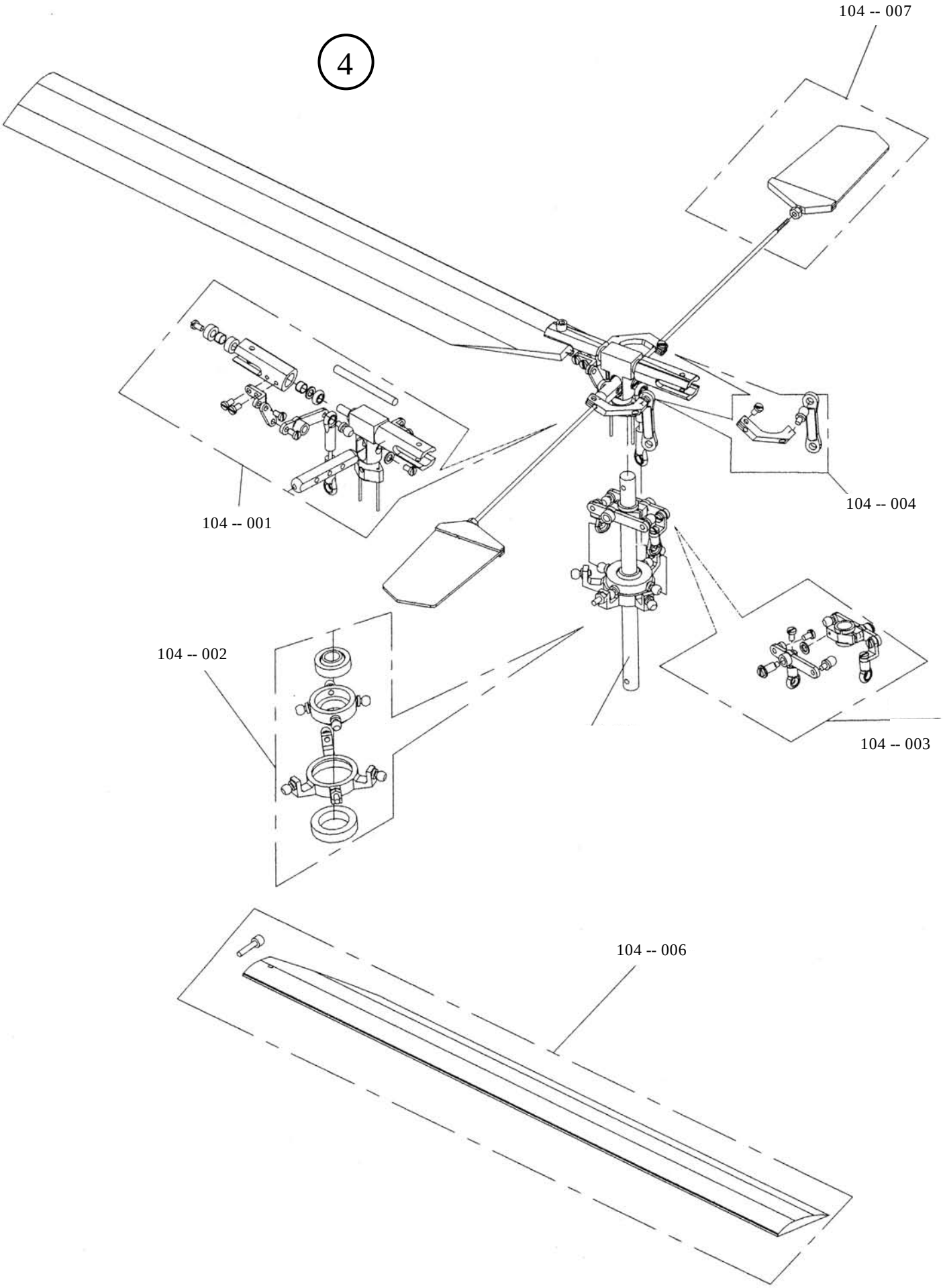


Tail pipe assembly

3



Rotor Head assembly



Code No	Particulars	Qty	Price(USD)
Main Frame			
101-001	Main Frame	1	32.00
101-002	Auto-rotation drive drive shaft assembly	1	19.20
101-003	480 motor with gear	1	15.40
101-004	Main gear	1	11.50
Landing gear			
102-001	Landing gear set	1 set	15.40
Tail assembly			
103-001	Tail gear assembly	1 set	12.80
103-002	Tail drive pipe assembly	1 set	23.00
103-003	Tail pitch assembly	1 set	15.40
103-004	Bevel pinion gear w/screw	1 set	3.90
103-005	Bearing	1	2.30
103-006	Bevel Pinion gear	1	3.90
103-007	Tail Blade	2	3.60
103-008	Carton tail dribe pipe	1	5.80
103-009	Tail boom	1	4.90
Rotor head assembly			
104-001	Spindle	1 set	45.20
104-002	Swash plate	1	28.20
104-003	Wash-out assembly	1 set	23.00
104-004	Stabillizer control arm	2 set	10.30
104-005	Main mast	1	4.50
104-006	Main blade	2	20.50
104-007	WC Stabillizer blade	2	9.60
104-008	Feathering spindle	1	4.50
104-009	Blade holder	2	12.20
Carring case			
105-001	Aluminum carrying case	1 set	41.00
106-001	Canopy	1 set	3.00

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