

# AGILE 7.2 HELICOPTER

## INSTRUCTION MANUAL

Version No: 20130715



### Product Specifications

Length: 1370mm  
Height: 420mm  
Width: 200mm  
Main Rotor Diameter: Ø1560  
Main Blade Length: 690-713mm  
Tail Rotor Diameter: Ø294mm  
Tail Blade Length: 105-115mm  
Motor Pinion: 19T  
Motor KV: 540KV  
Driving Gear: (19/54)(20/66)  
Gear Ratio: 19T(9.37:1)  
Tail Gear Ratio: 4.75:1  
Weight(w/o power): 4000g  
Flying Weight: 5600g  
Battery: 22.2V 5000mAh x2  
ESC: 160-200A

Thank you for buying Agile products. Please read this manual carefully before assembling. We recommend that you keep this manual for future reference regarding tuning and maintenance.

#### SAFETY PRECAUTIONS

This radio controlled helicopter is NOT A TOY! It has some technical requirements, you must pay attention to the flying environment and correct operation. Never fly your radio controlled helicopter over people or near crowds. Teenagers must fly under the guardian's guide. Beginners must fly under the guardian of experienced pilot.

Version No: 20130715

## 1.INTRODUCTION

Congratulations on your purchase of the Agile 7.2 radio controlled helicopter kit. Agile 7.2 was designed in Europe by Eng. Gaziano Roberto and is proudly manufactured by KDS Model. Our goal was to offer you something different with a minimum of parts, easy maintenance, and outstanding flying performances.

It's time to fly different!...

Enjoy the built and have a great time with you Agile 7.2!

### IMPORTANT NOTES

R/C helicopters, including the AGILE 7.2 are not toys. R/C helicopters utilize various high-tech products and technologies to provide superior performance. Improper use of this product can result in serious injury or even death. Please read this manual carefully before using and make sure to be conscious of your own personal safety and the safety of others and your environment when operating all AGILE products. Agile 7.2, KDS Model, their affiliates and authorized distributors are not responsible for personal injuries to the operators and others, and property damages that could occur from the assembly, maintenance or your use/misuse of this product. Always respect the rules provided by your local remote control aircraft organization.

### NOTE FOR ASSEMBLY

The following manual provide important instructions to correctly assemble the model. It is structured in a logical way, based on the work done in previous step. If you change the order, it may result in additional or unnecessary steps. So we suggest you to read this user manual very carefully to understand correctly the assembly procedure. Failure to do so may not only downgrade performances but also increase the risk of danger. Apply thread lock as indicated, allow the threadlock to cure before mounting parts. It is recommended to use threadlock on each bolt or screw that are engaged with metal parts.

## 2.SAFETY NOTES

### • LOCATEAN APPROPRIATE LOCATION

R/C helicopters fly at high speed, thus posing a certain degree of potential danger. Choose an appropriate flying site consisting of flat, smooth ground, a clear open field, or a large open room, such as gymnasium or warehouse without obstacles. Do not fly near buildings, high voltage cables, or trees to ensure the safety of yourself, others and your model. Do not play your model in inclement weather, such as rain, wind, snow or darkness.



### • OBTAIN THE ASSISTANCE OF AN EXPERIENCED PILOT

Before turning on your model and transmitter, check to make sure no one else is operating on the same frequency. Frequency interference can cause your model, or other models to crash. The guidance provided by an experienced pilot will be invaluable for the assembly, tuning, trimming, and actual first flight(recommend you to practice with computer-based flight simulator).



### • ALWAYS BE AWARE OF THE ROTATING BLADES

During the operation of the helicopter, the main rotor will be spinning at a high rate of speed. The blades are capable of inflicting serious bodily injury and damage the environment. Be conscious of your actions, and careful to keep your face, eyes, hands, and loose clothing away from the blades. Always fly the model a safe distance from yourself and others, as well as surrounding objects. Never take your eyes off the model or leave it unattended while it is turned on. Immediately turn off the model and transmitter when you have landed the model.



### • PREVENT MOISTURE

R/C models are composed of many precision electrical components. It is critical to keep the model and associated equipment away from moisture and other contaminants. The introduction or exposure to water or moisture in any form can cause the model to malfunction resulting in loss of use, or a crash. Do not operate or expose to rain or moisture.



### • KEEP AWAY FROM HEAT

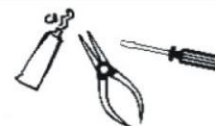
R/C models are made up of various forms of plastic. Plastic is very susceptible to damage or deformation due to extreme heat and cold climate. Make sure not to store the model near any source of heat such as an oven, or heater. It is best to store the model indoors, in a climate-controlled, room temperature environment.





### • PROPER OPERATION

Please use the replacement of parts on the manual to ensure the safety of instructors. This product is for R/C model, so do not use for other purpose.



### • SAFE OPERATION

Operate this unit within your ability. Do not fly under tired condition or improper operation, which may cause danger.

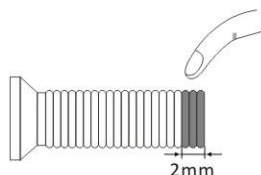
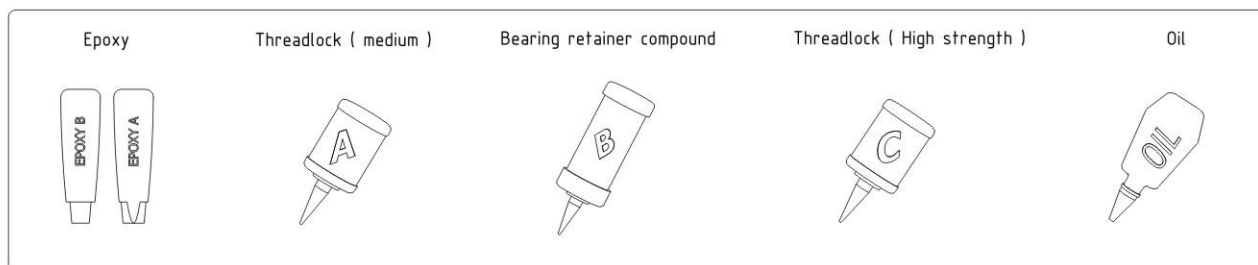


## 3.Tools Required

- Hex drivers : 1.5, 2, 2.5, 3, 4mm
- Nut Drivers : 2, 4, 7mm
- Ball link pliers
- Diagonal cutting pliers
- Scissors
- Metric ruler
- Soldering iron + solder (for motor and ESC wiring)
- Pitch gauge (for set up)
- Swashplate leveller
- Threadlock blue \* (medium)
- Threadlock red \* (high strength)
- Bearing retainer compound
- Epoxy A+B Glue
- Grease
- Oil

\* Colors may vary depending on your area.

When you see the marks as below, please use glue or grease to ensure flying safety.



"A" Glue width: approx. 2mm

"OIL" Lubrication grease. "A" thread lock, apply a small amount on screws or metal parts and wipe surplus off. When disassembling, recommend to heat the metal joint about 15 seconds. (NOTE: Keep plastic parts away from heat.)

## 4.Equipment Required for Assembly

### RADIO TRANSMITTER AND ELECTRONIC EQUIPMENT REQUIRED FOR ASSEMBLY



Transmitter  
(7-Channel or more, helicopter system)



Receiver(6-Channel or more)



or



Remote receiver

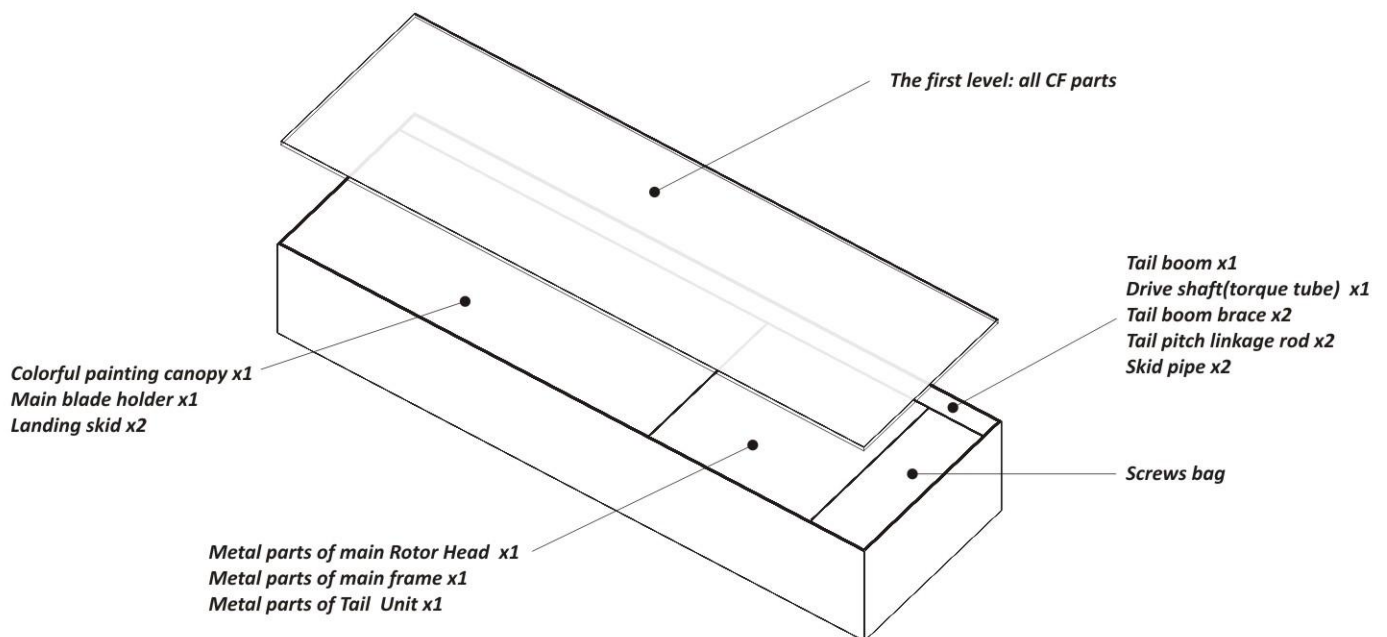
- Brushless electric motor: 12s – 500~550KV / 3000W (4mm Bolt holes, 30mm mount width, 6mm \* 37 motor shaft)
- Speed controller: minimum 120A (ESC specs limits should be rated accordingly to the maximum amps handling by the motor)
- Lipo Batteries: 12s 4000-5500 mAh
- Electronic flybarless system
- 3 cyclic servos, standard size
- 1 tail rotor servo, high speed required
- 690~720 mm main rotor blades
- 105~115 mm tail rotor blades
- 6 channel or more helicopter transmitter system, 2.4 Ghz frequency preferred
- Receiver 6 channel or more (working with your transmitter specs)



#### ADDITIONAL EQUIPMENT REQUIRED (not included)

- Brushless electric motor: 12s Lipo - 500~550KV / 3000W (4mm Bolt holes, 30mm mount width, 6mm \* 37mm motor shaft)
- Speed controller: minimum 120A (ESC specs limits should be rated accordingly to the maximum amps handling by the motor)
- Lipo Batteries: 12s 4000-5500 mAh
- Electronic flybarless system
- 3 cyclic servos, standard size
- 1 tail rotor servo, standard size, high speed required
- 690~720 mm main rotor blades
- 105~115 mm tail rotor blades
- 6 channel or more helicopter transmitter system, 2.4 Ghz frequency preferred
- Receiver 6 channel or more (working with your transmitter specs)

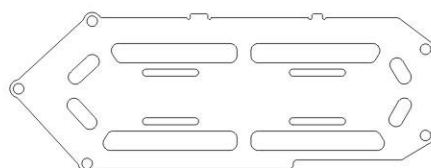
## 5.Package Illustration





REM: Apply Medium Thread lock equivalent to all screws, balls, and threads which are engaged with metal-parts.

5x Set Screw M3 x 12 mm

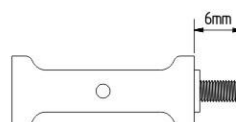
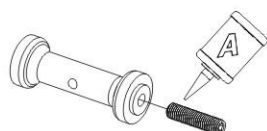


1x Lipo Battery tray

5x Cup point set screw M3x12 mm

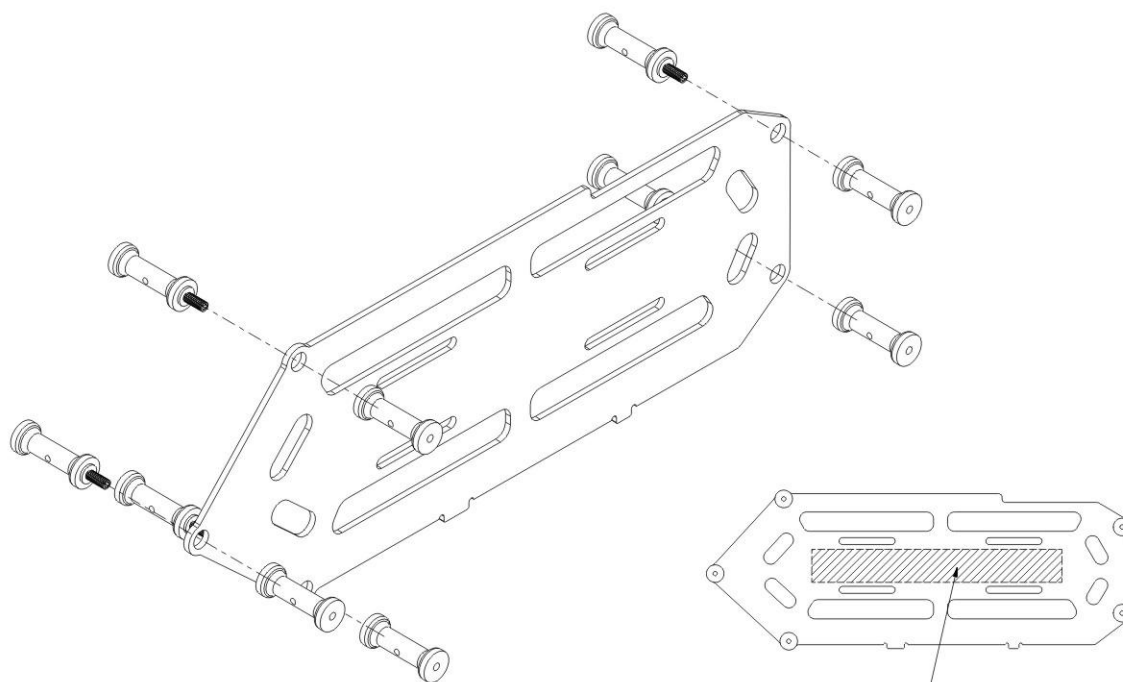


Frame spacers



You may use some pins throughout this drilling to hold frame spacer when tightening screw.

Attention: Be sure that frame spacers are correctly mounted,  
housing sholder must be placed into carbon battery tray  
Do not overtighten

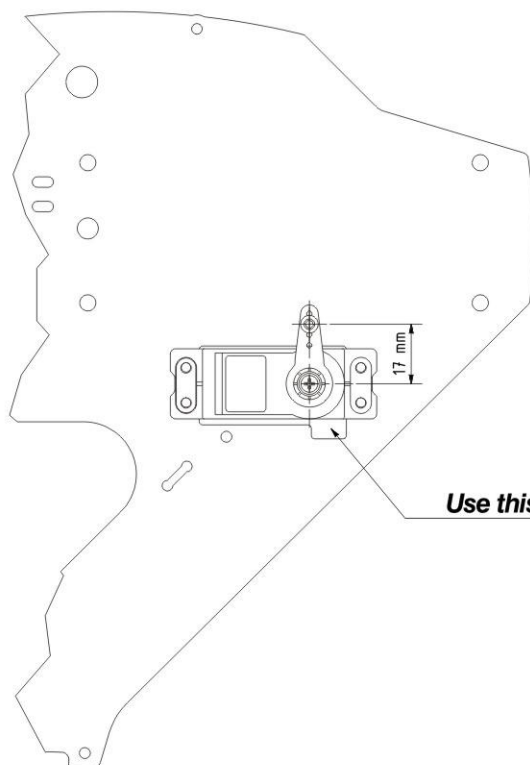
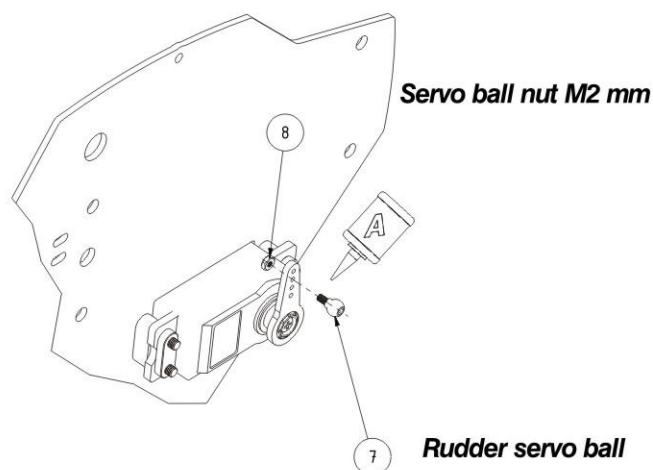
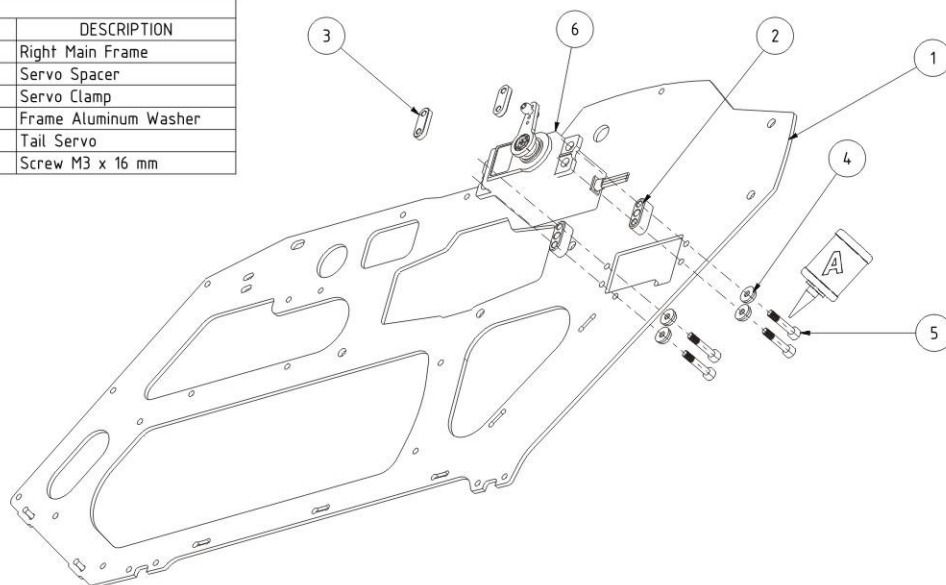


It is recommended to put on this area  
some adhesive Hook and loop tape  
to hold the battery

## 7.Assembly Process of Main Frames and Power System

**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	KA-72-034	Right Main Frame
2	2	KA-72-066	Servo Spacer
3	2	KA-72-066	Servo Clamp
4	4	KA-72-074	Frame Aluminum Washer
6	1	Not included in Standard kit	Tail Servo
5	4	KA-72-066	Screw M3 x 16 mm

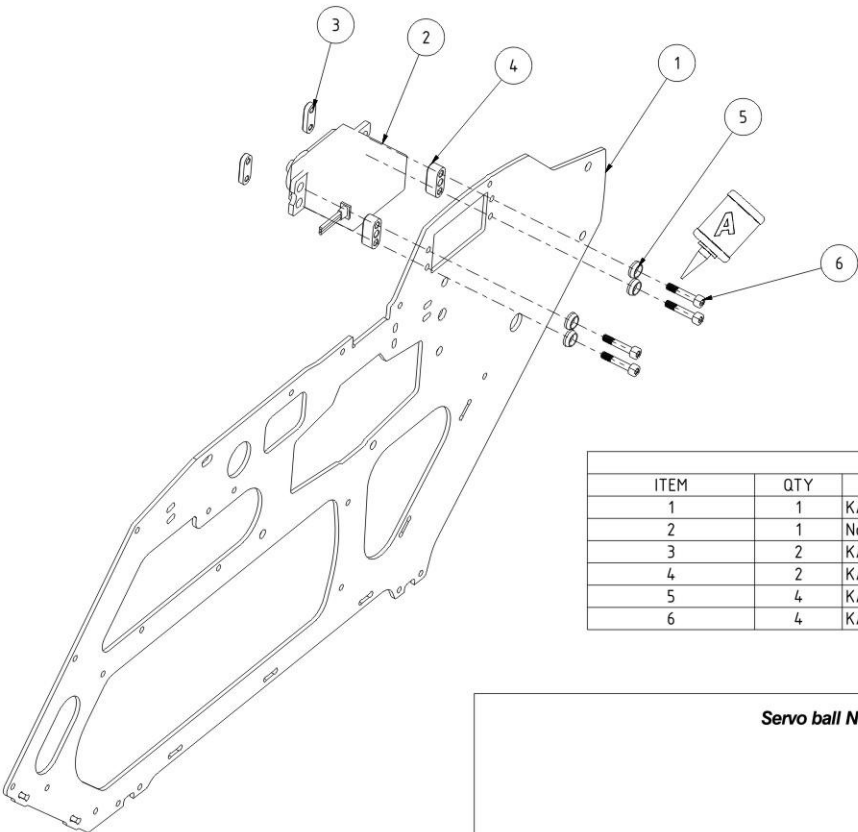


**17mm is recommended, but may vary according to your rudder servo arm brand and the mechanical tail travel provided by the tail gyro function of your FBL system.**

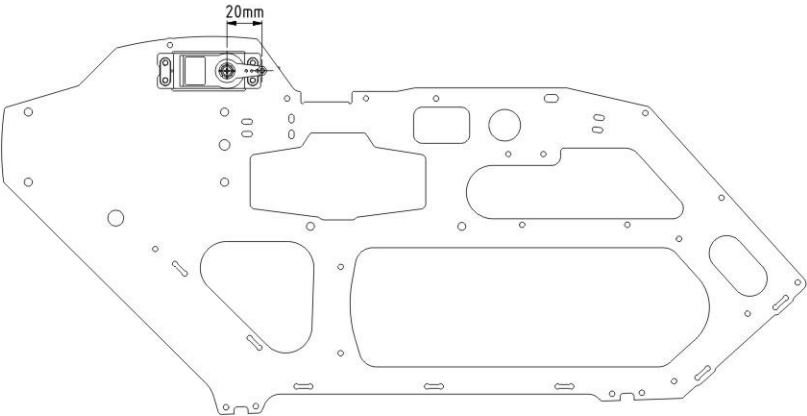
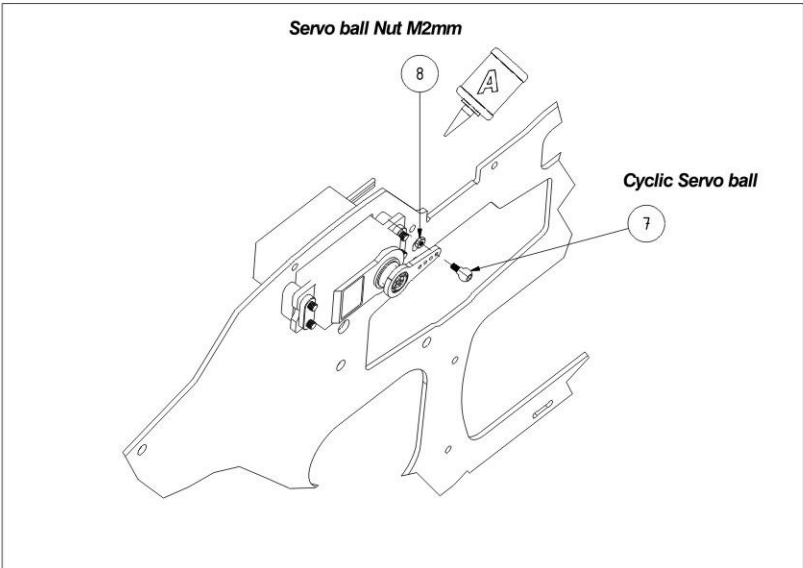
**Use this opening to get your rudder servo wire inside frame**



REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	KA-72-033	Left Main Frame
2	1	Not included in standard kit	Cyclic Servo
3	2	KA-72-066	Servo Clamp
4	2	KA-72-066	Servo Spacer
5	4	KA-72-074	Frame Aluminum Washer
6	4	KA-72-066	Screw M3 x 16 mm

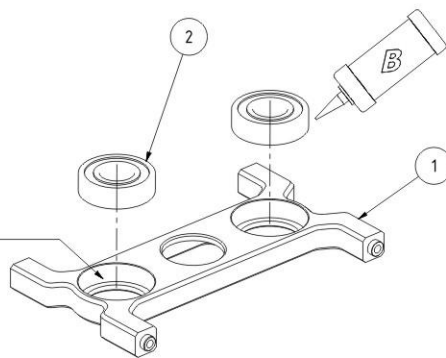


20 mm is recommended, length may vary according to your cyclic servo arm brand, and the mechanical cyclic/pitch travel provided by your FBL system settings

**REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.**

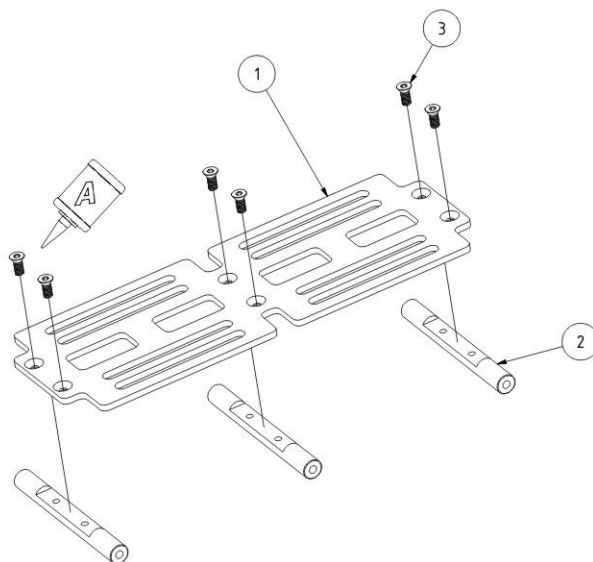
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	KA-72-011	MAIN SHAFT BEARING BLOCK
2	2	KA-72-089	BEARING 10 x 22 x 6

Clean surface with alcohol. Apply Loctite Retaining Compound to this area wait 24H at least before flying

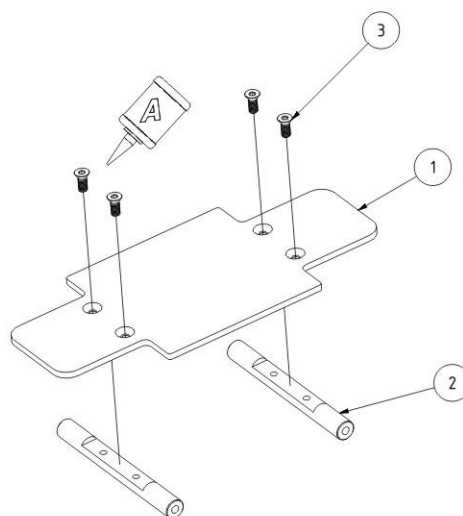


**Important :**  
Keep this orientation in mind for future assembly  
Bearings must facing up

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	KA-72-035	ESC FRAME
2	3	KA-72-060	SPACER
3	6	KA-72-077	Flat Head Screw M2.5 x 6 mm

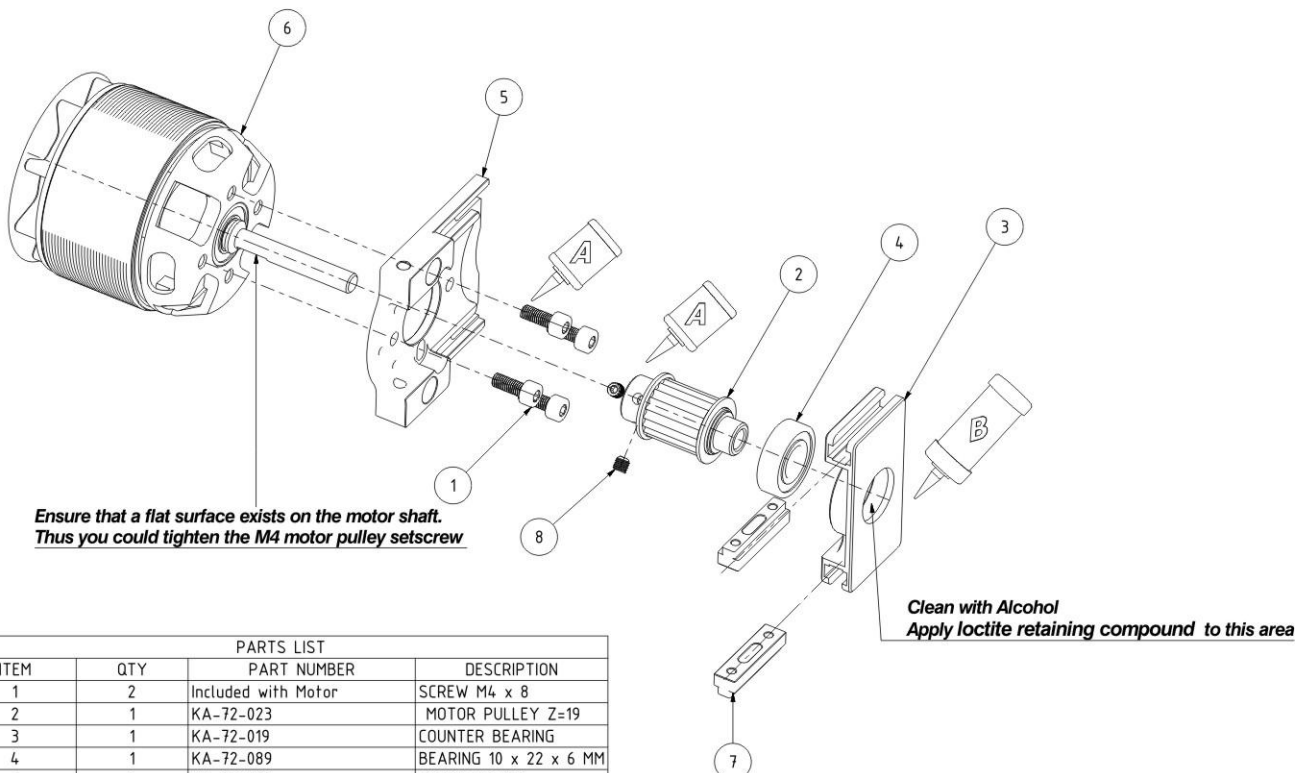


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	KA-72-039	GYRO MOUNT
2	2	KA-72-060	SPACER
3	4	KA-72-077	Flat Head Screw M2.5 x 6 mm

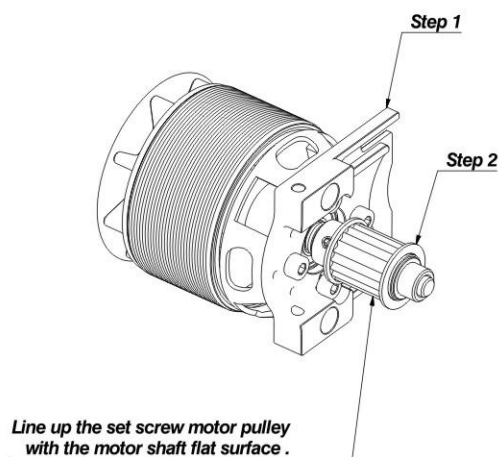




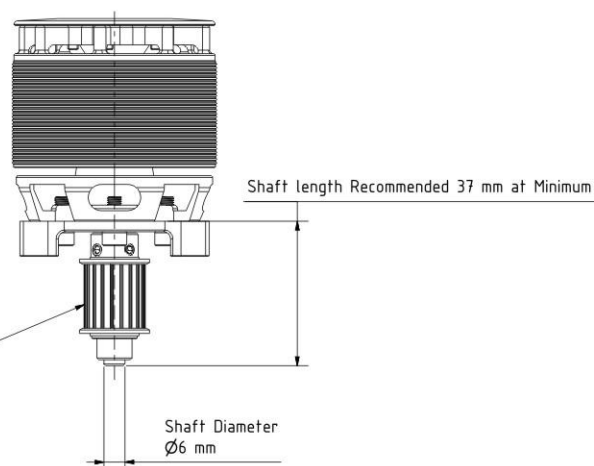
**REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.**



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	Included with Motor	SCREW M4 x 8
2	1	KA-72-023	MOTOR PULLEY Z=19
3	1	KA-72-019	COUNTER BEARING
4	1	KA-72-089	BEARING 10 x 22 x 6 MM
5	1	KA-72-018	MOTOR MOUNT
6	1	Not Included in Standard kit	MOTOR Kv : 500-550
7	2	KA-72-020	COUNTER BEARING RAIL
8	2	KA-72-023	SET SCREW M4 x 4



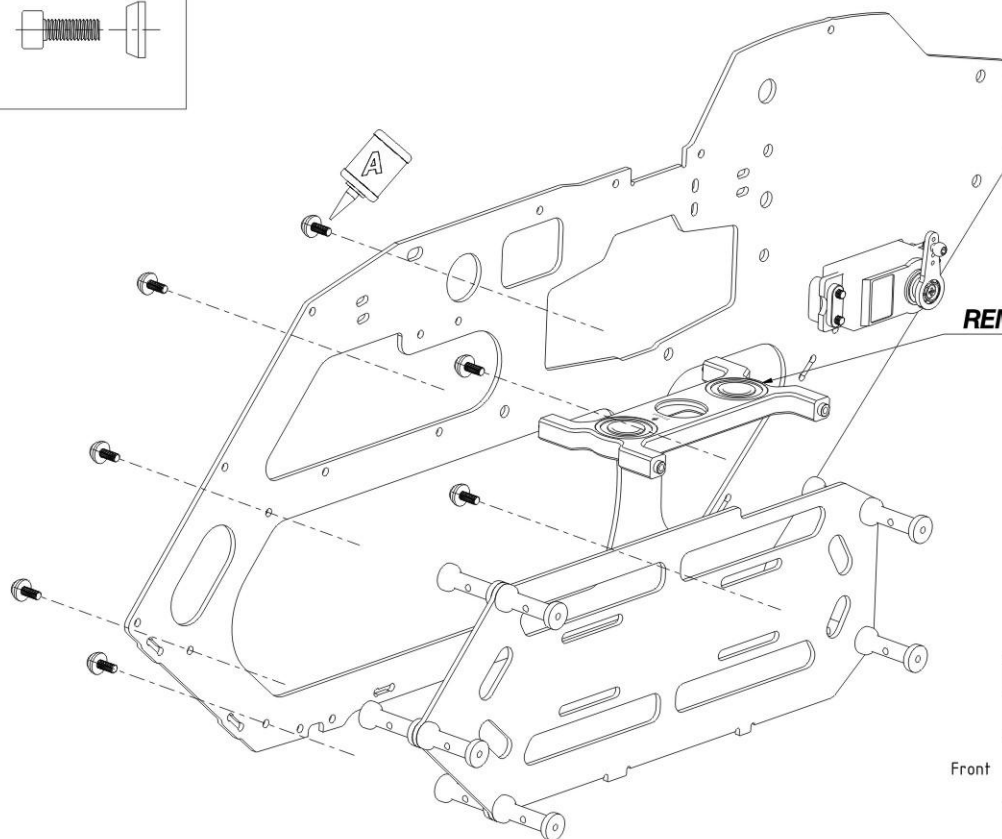
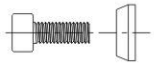
**The Motor pulley must be aligned to the pulley by adjusting the height with the main gear of the first stage, so that the belt will stay perfectly horizontal, thus works as well as can be expected**



## 11.Assembly Process of Main Frames and Power System

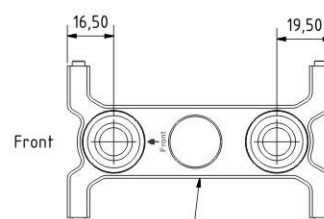
**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

7 x M3 x 8mm  
7 x Frame Washer

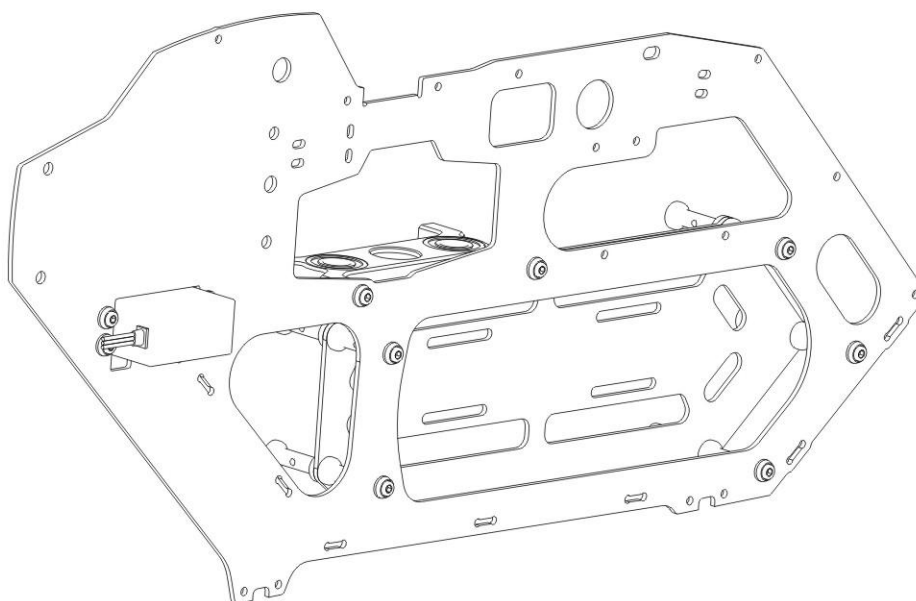


**REM : Bearings Facing Up**

**Take note of the third main shaft bearing block orientation.**



**Ref: KA-72-011**



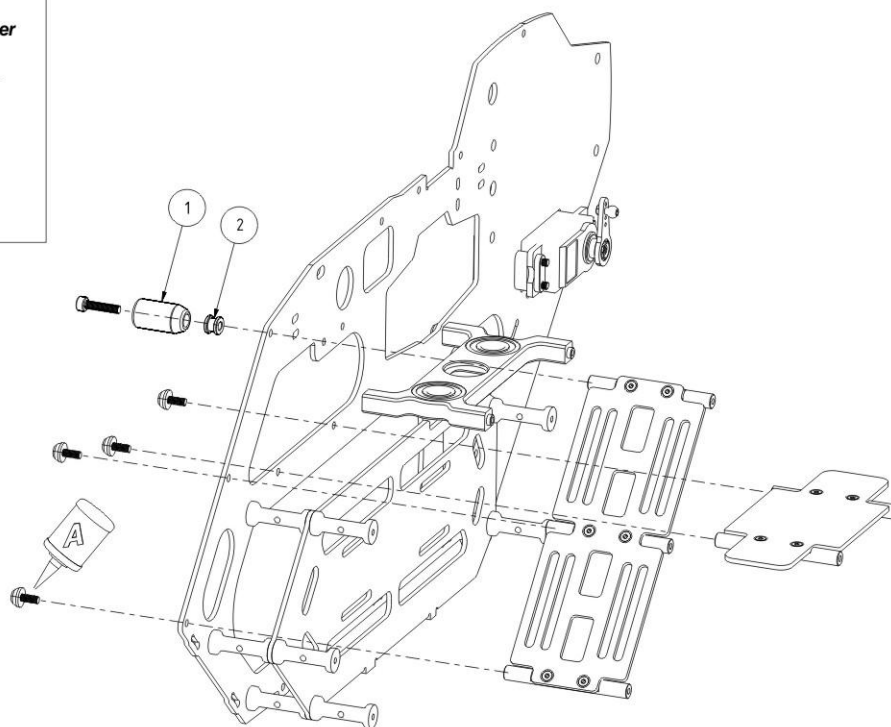


REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

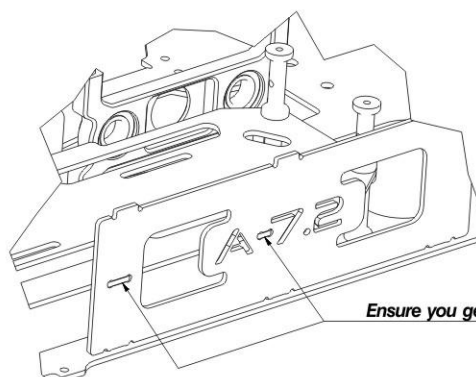
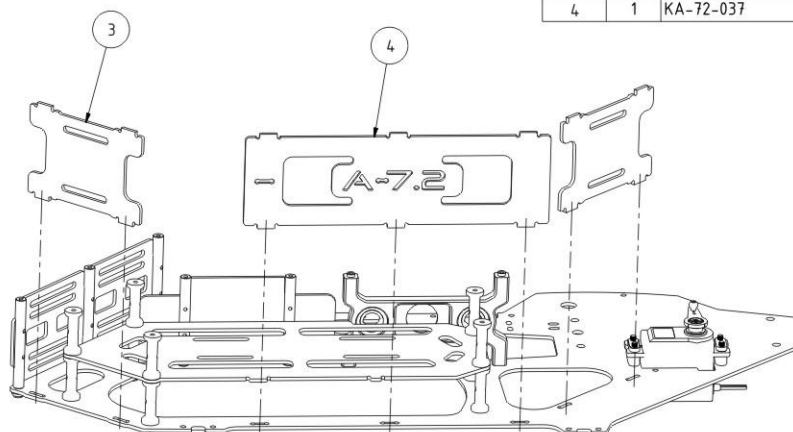
4 x M3 x 8 mm  
4x Frame Washer



1 x M3 x14mm



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	KA-72-062	FRONT CANOPY DAMPING
2	1	KA-72-062	ALUMINIUM SLEEVE FOR CASE BOLTS
3	1	KA-72-038	ELECTRONIC BOARD
4	1	KA-72-037	BOTTOM PLATE



Ensure you get all the Insert guides into the right place

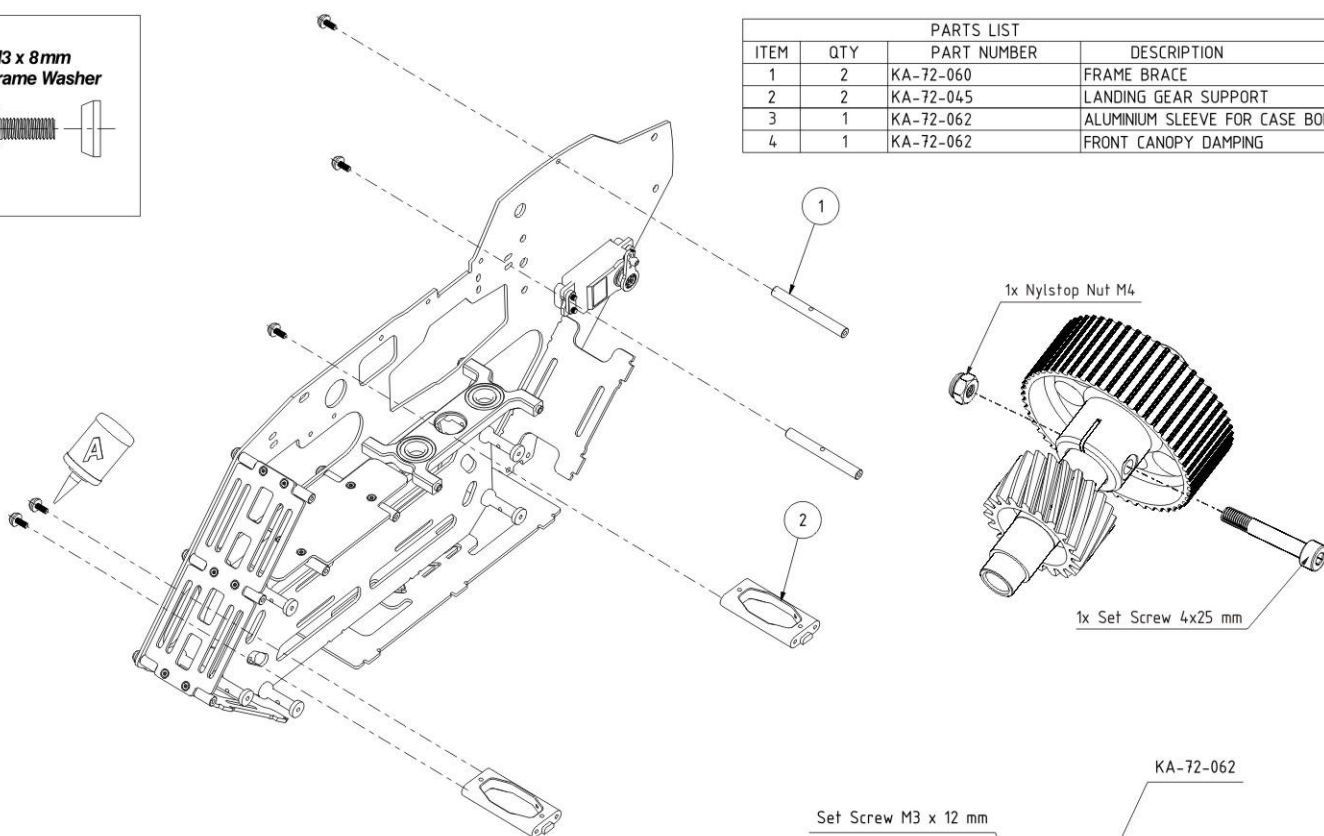
## 13.Assembly Process of Main Frames and Power System

**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

5x M3 x 8mm  
5x Frame Washer



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	KA-72-060	FRAME BRACE
2	2	KA-72-045	LANDING GEAR SUPPORT
3	1	KA-72-062	ALUMINIUM SLEEVE FOR CASE BOLTS
4	1	KA-72-062	FRONT CANOPY DAMPING



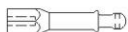
16x M3 x 8mm  
16x Frame Washer



2x Set Screw M3 x 12 mm



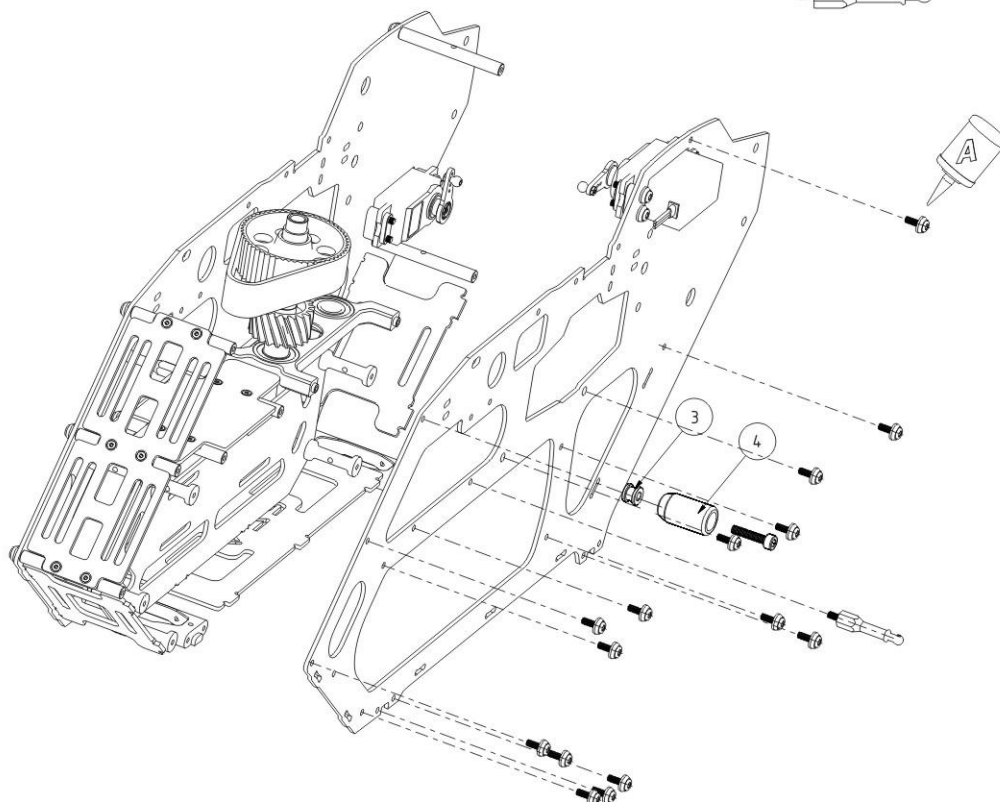
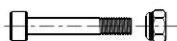
2x Standoff Canopy



1x M3 x 14mm



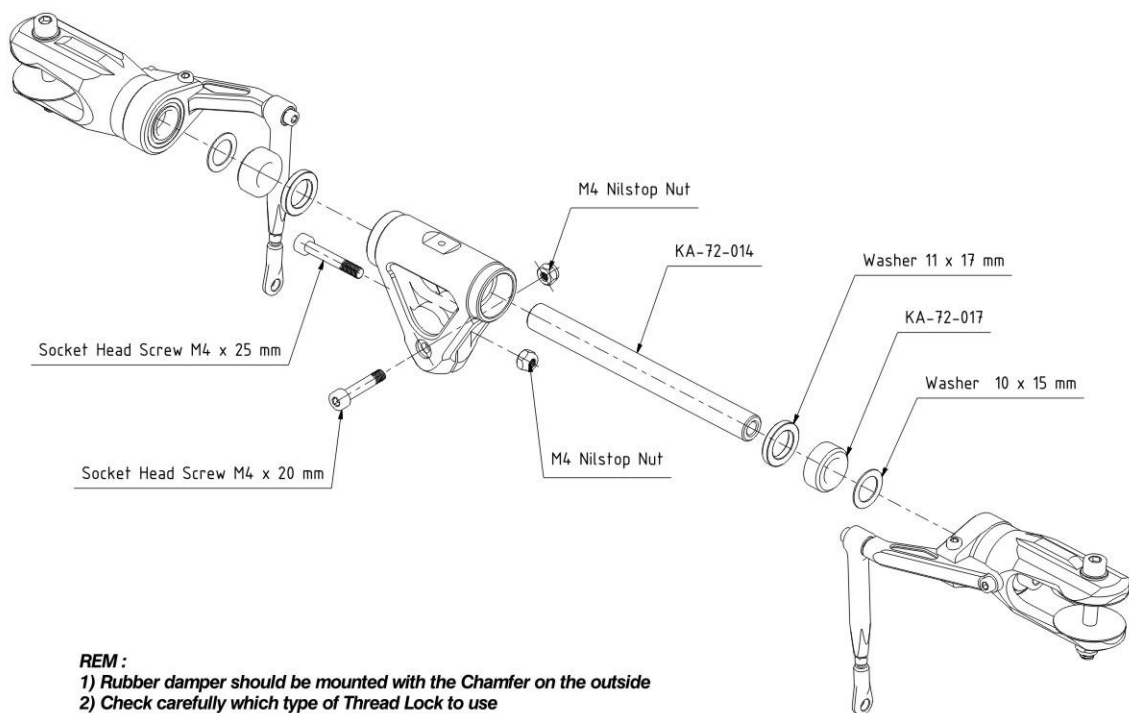
1x Set Screw 4x25 mm  
1x Nylstop Nut M4





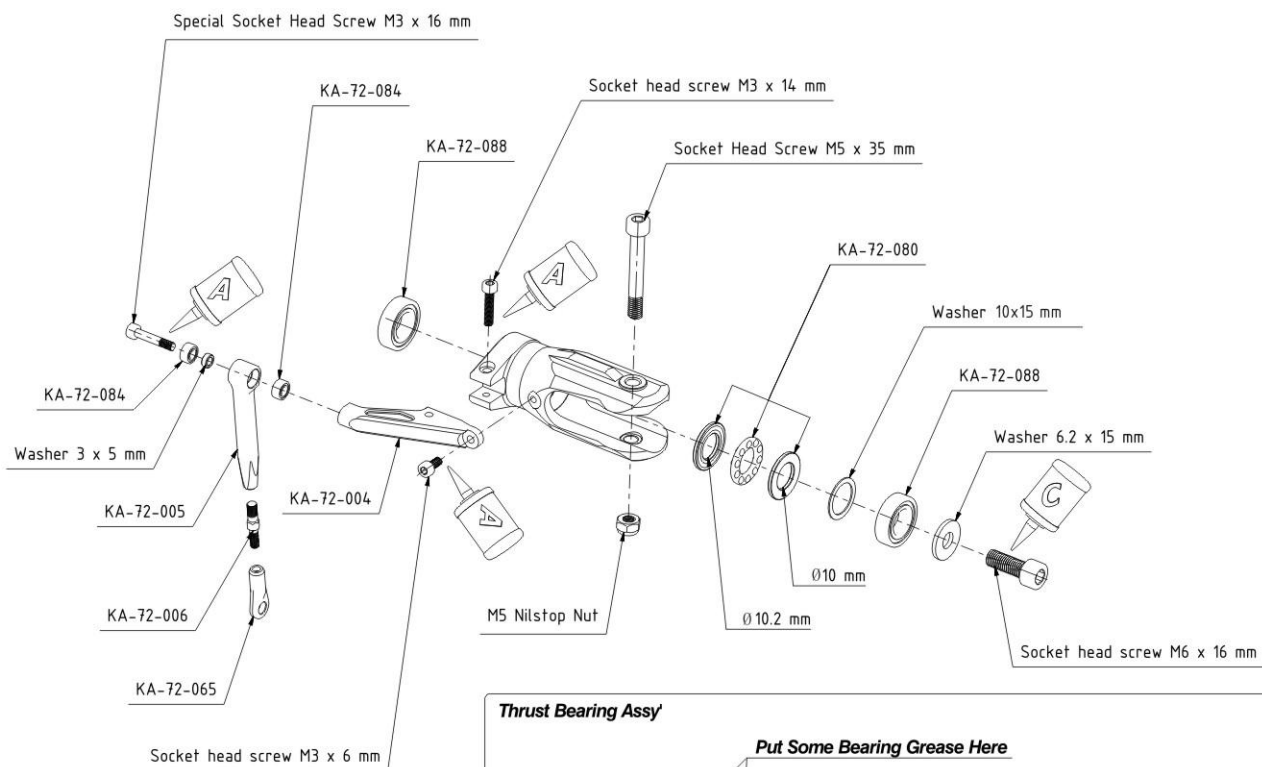
## 14.Assembly Process of Main Rotor Head

**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

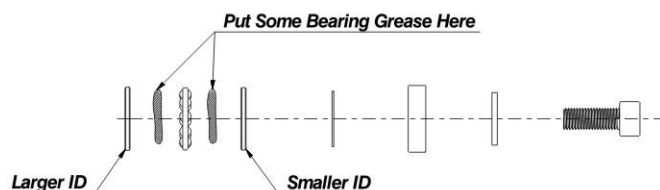


**REM:**

- 1) Rubber damper should be mounted with the Chamfer on the outside
- 2) Check carefully which type of Thread Lock to use
- 3) Apply some Grease inside the Thrust Bearing
- 4) Check the orientation of the Thrust Bearing , larger inner diameter on the inside.



**Thrust Bearing Assy'**



## 15.Assembly Process of Main Frames and Power System

**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

1x KA-72-089  
Bearing 10 x 22 x 6 mm



1x KA-72-090  
Bearing 12 x 24 x 6 mm



2x Round Head Screw  
M3 x 6 mm



Round head screw M 3 X 6 mm

KA-72-089

KA-72-090

KA-72-010

Clean surface with alcohol.  
Apply Loctite Retaining Compound to this area  
wait 24H at least before flying

1x KA-72-090  
Bearing 12 x 24 x 6 mm



2x Socket Head Screw M2 x 6 mm



KA-72-012

KA-72-009

Ka-72-090

KA-72-012

KA-72-061

Socket Head Screw M2 x 6 mm

Clean surface with alcohol.  
Apply Loctite Retaining Compound to this area  
wait 24H at least before flying

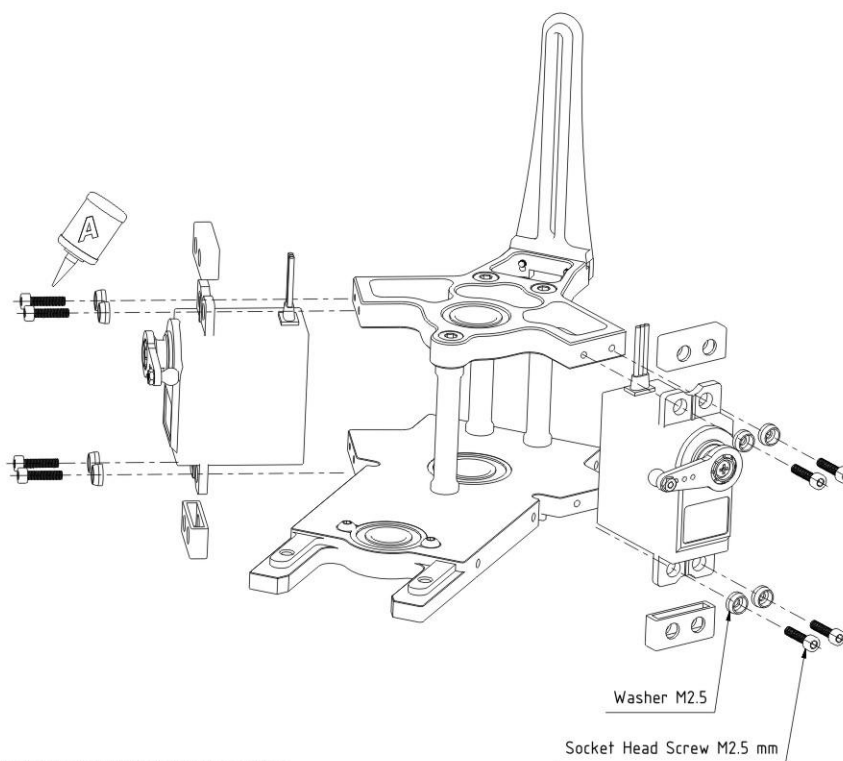
## 16.Assembly Process of Main Frames and Power System

**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

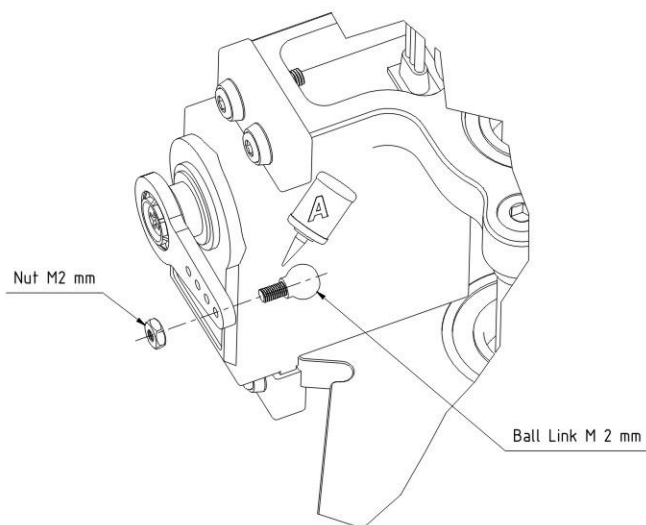
8x Socket Head Screw M2.5 x 10 mm



8x Servo Washer M2.5



**REM:** Before mounting servo arms, do not forget to set their neutral position. Check the manual of your flybarless system for more informations.



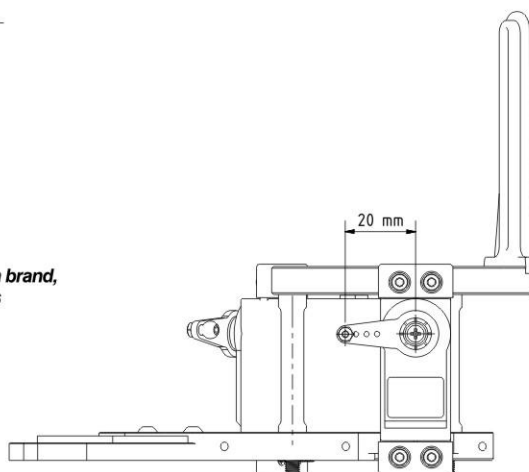
2x Ball Linkage M2 x 3.5 mm



2x Nut M2 mm



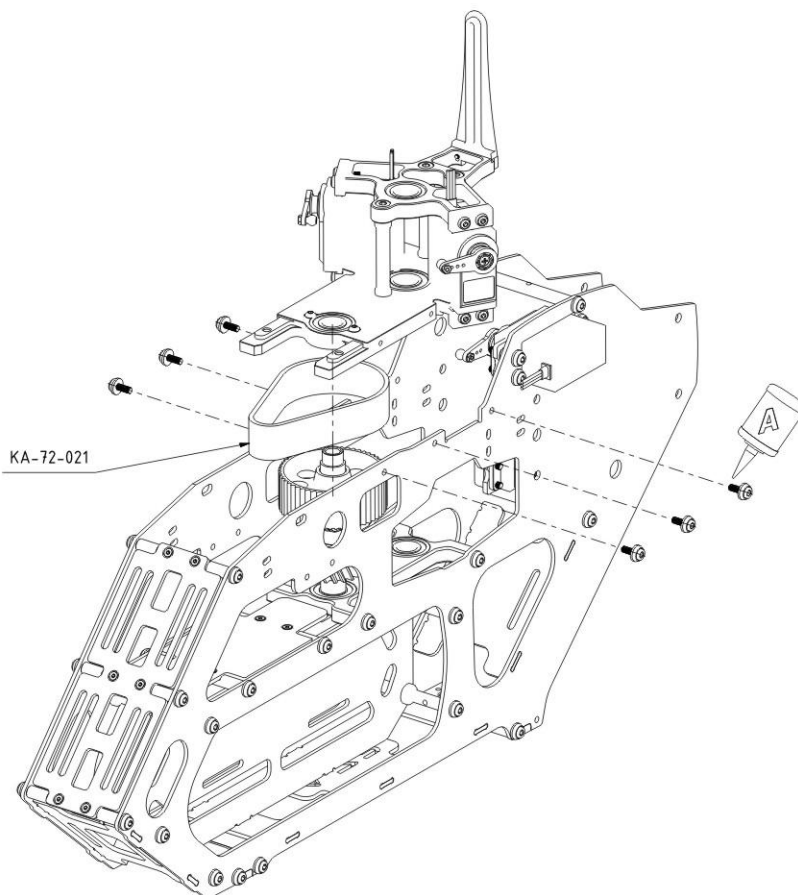
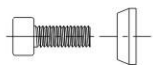
20 mm is recommended, length may vary according to your cyclic servo arm brand, and the mechanical cyclic/pitch travel provided by your FBL system settings



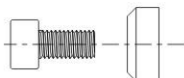


**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

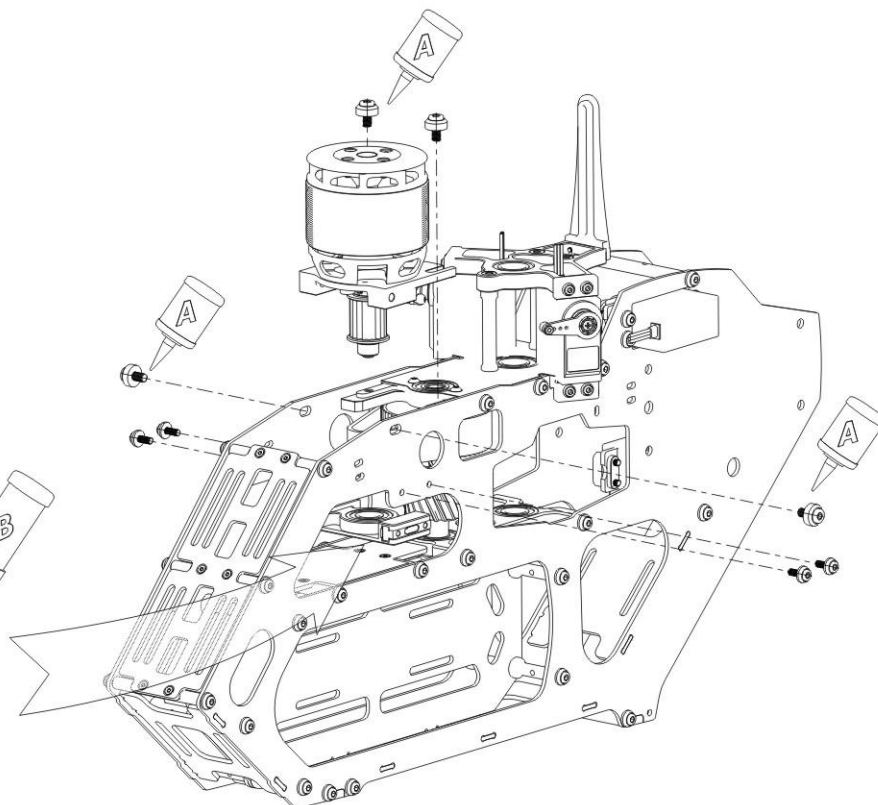
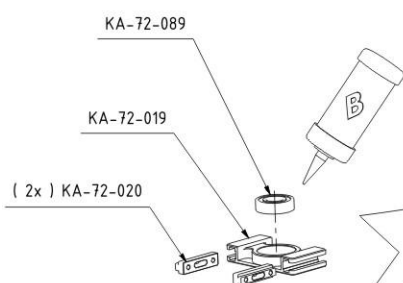
6x M3 x 8 mm  
6x Frame Washer



4x M4 x 10 mm  
4x Frame Washer

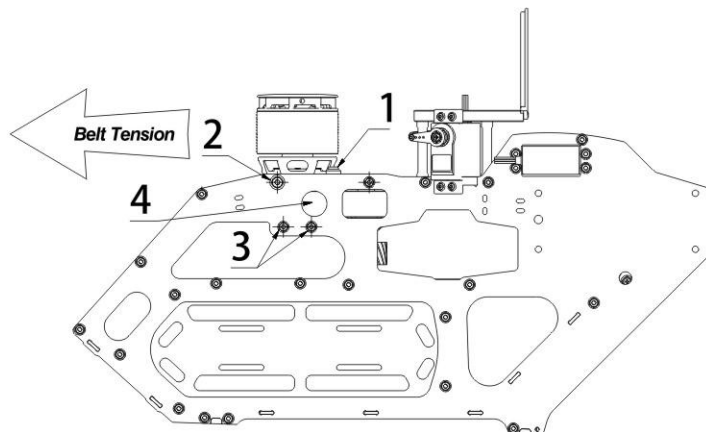


4x M3 x 10 mm  
4x Frame Washer



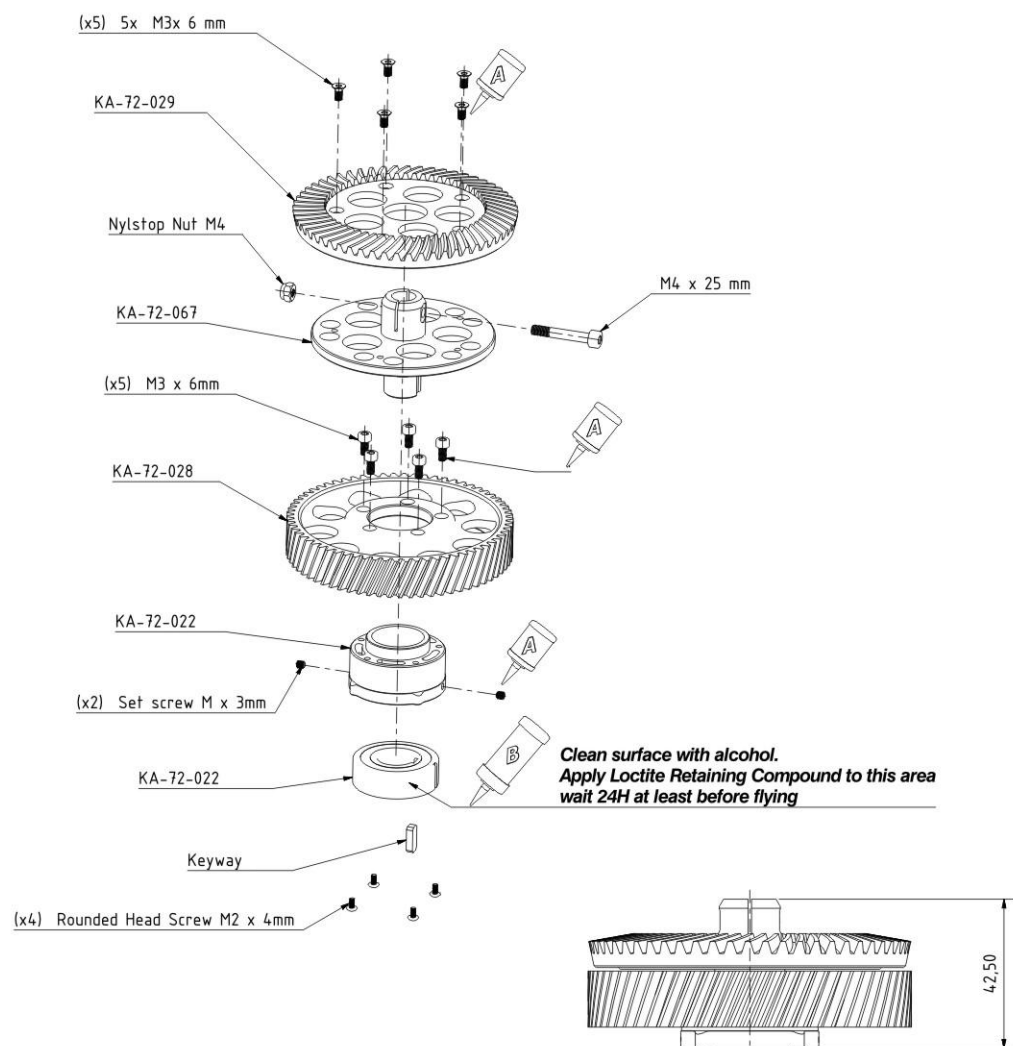
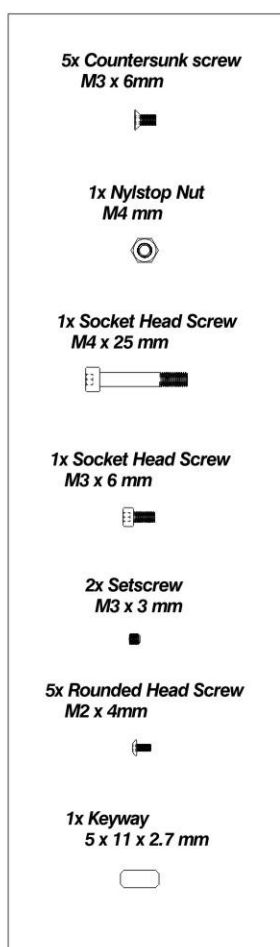
**Rem:** it is recommended to read carefully the next step of this manual before tightening motor mount screws. In fact, you have to apply the right belt tension at the same time you will tighten them.

REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

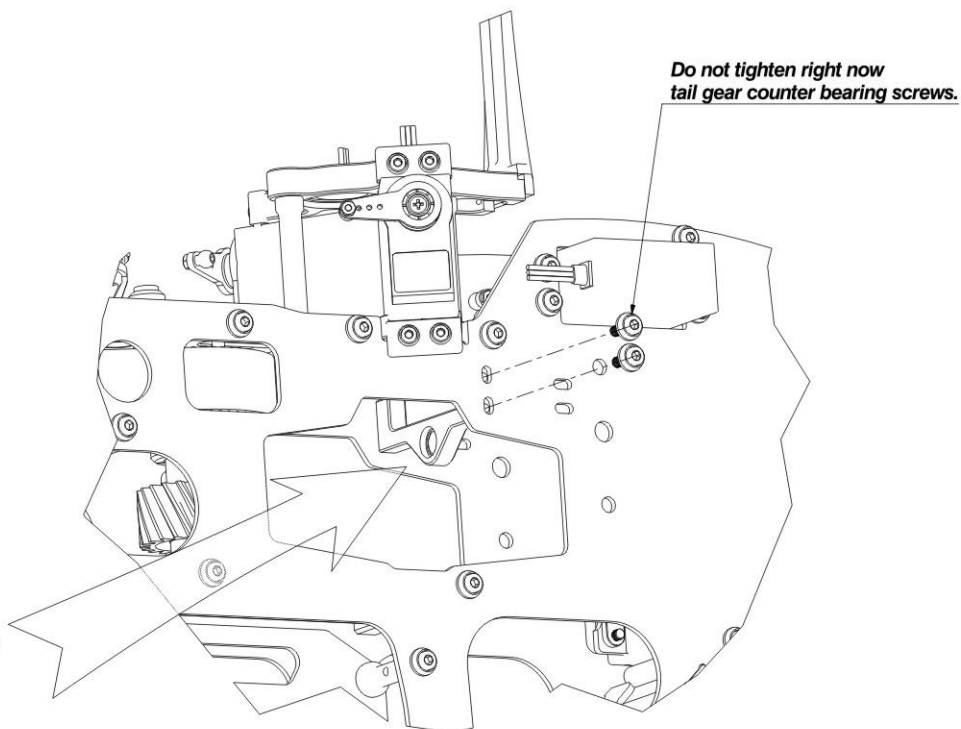
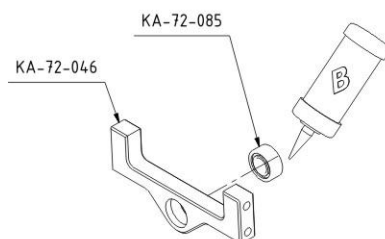
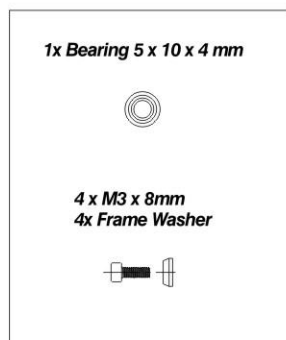


1. Push the motor in the opposite direction of the main shaft as far as you can (by hand).
2. Tighten slide screws # 1
3. Tighten motor mount locking screws #2
4. Rotate the motor several times by hand. Ensure that belt is correctly aligned with the big pulley.
5. Tighten counter bearing screws #3
6. You can check the belt tension by hand, you just have to push the belt with one of your finger through the round opening on frame # 4. It should be difficult to push motor belt.

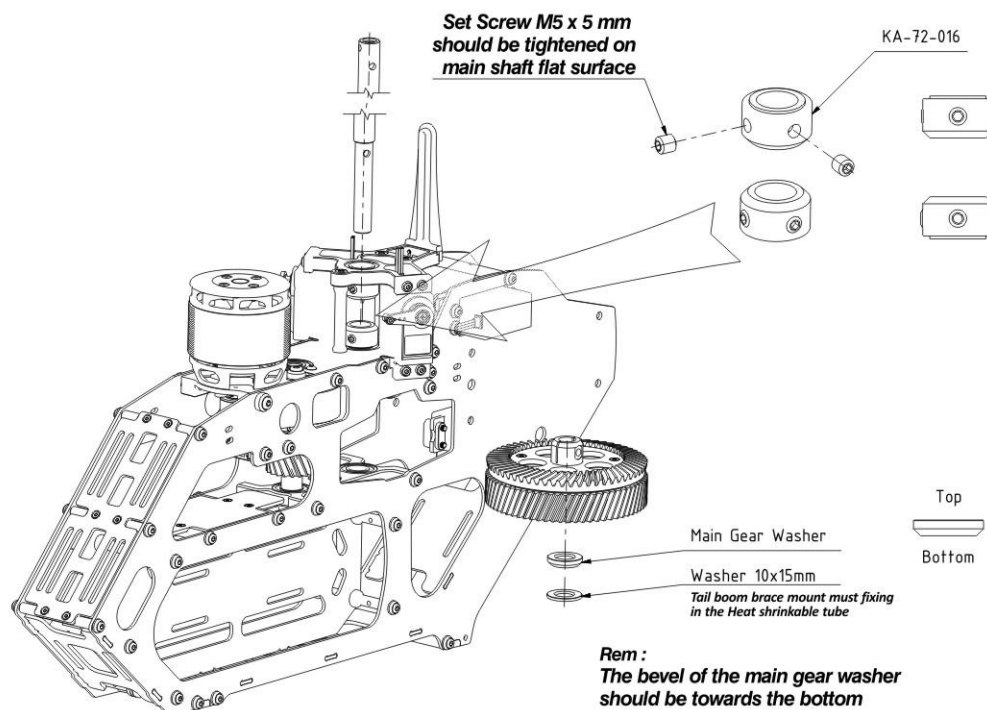
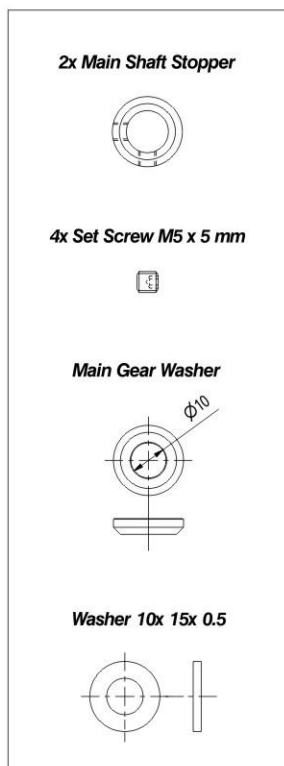
### Assembling the Main Gear



**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

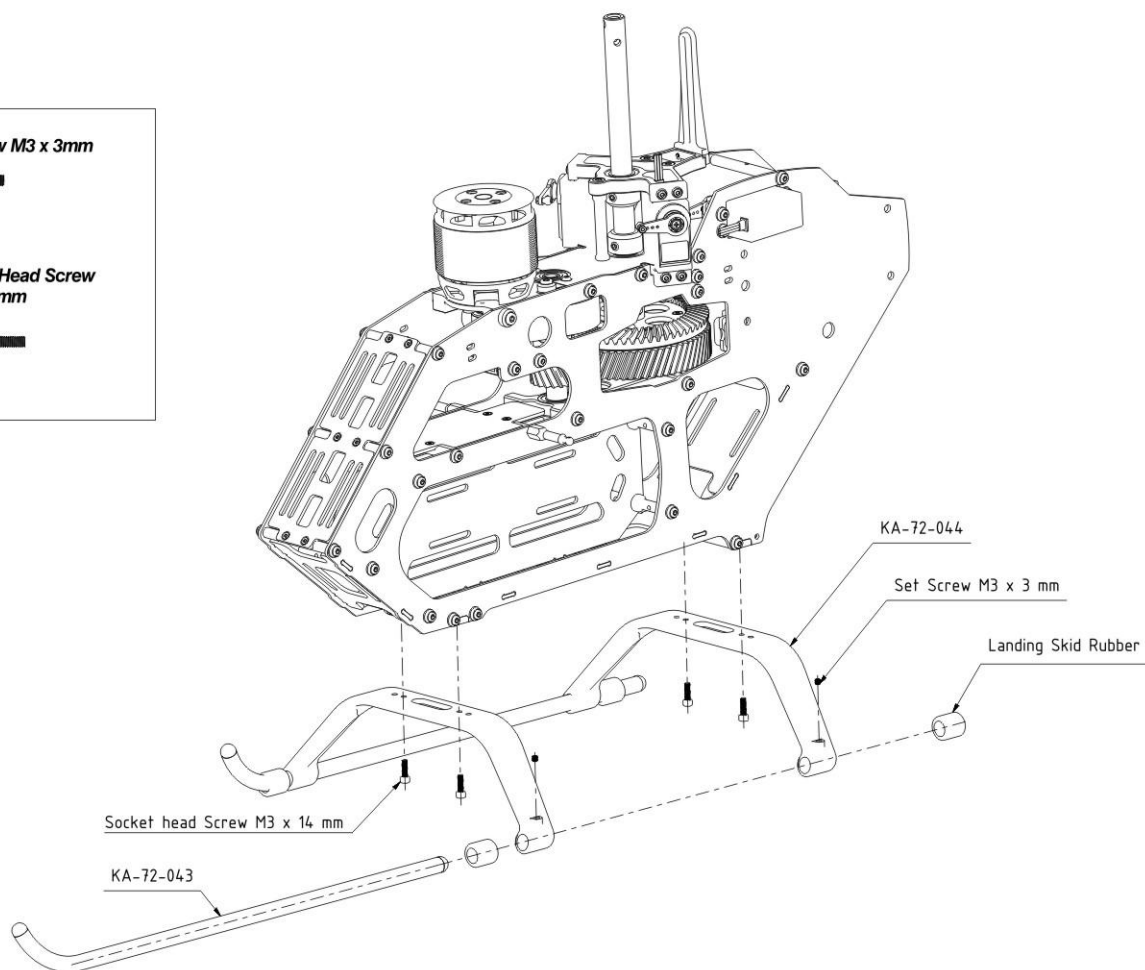
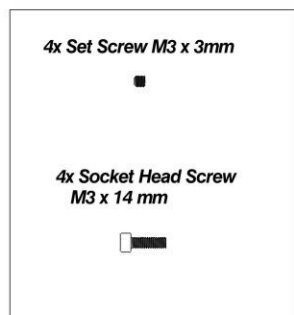


**Rem:** the main shaft should slide along the 3 bearing blocks (upper, medium and lower) effortless.  
If not the case, remove the 6 screws of the medium bearing block, then slide down the main shaft and tighten again these 6 screws.

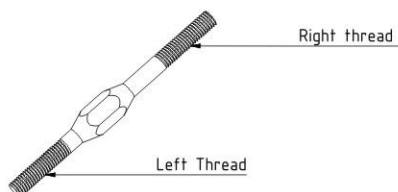
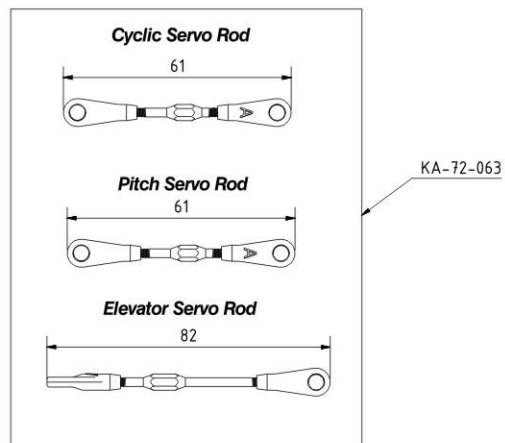
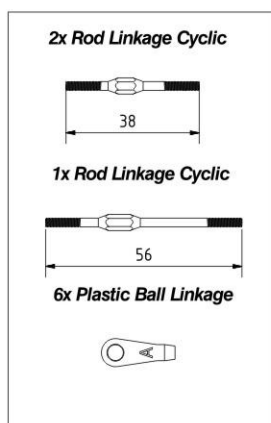




REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.



### Cyclic linkage installation

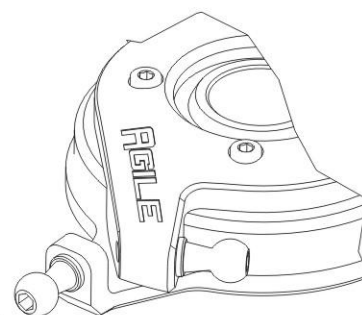
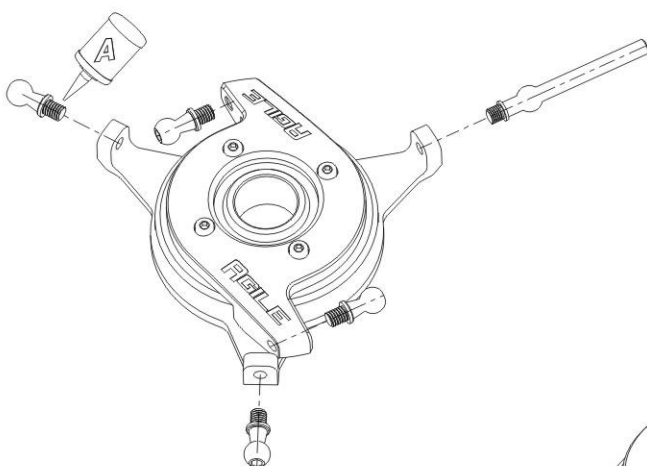


REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

4x Ball Linkage



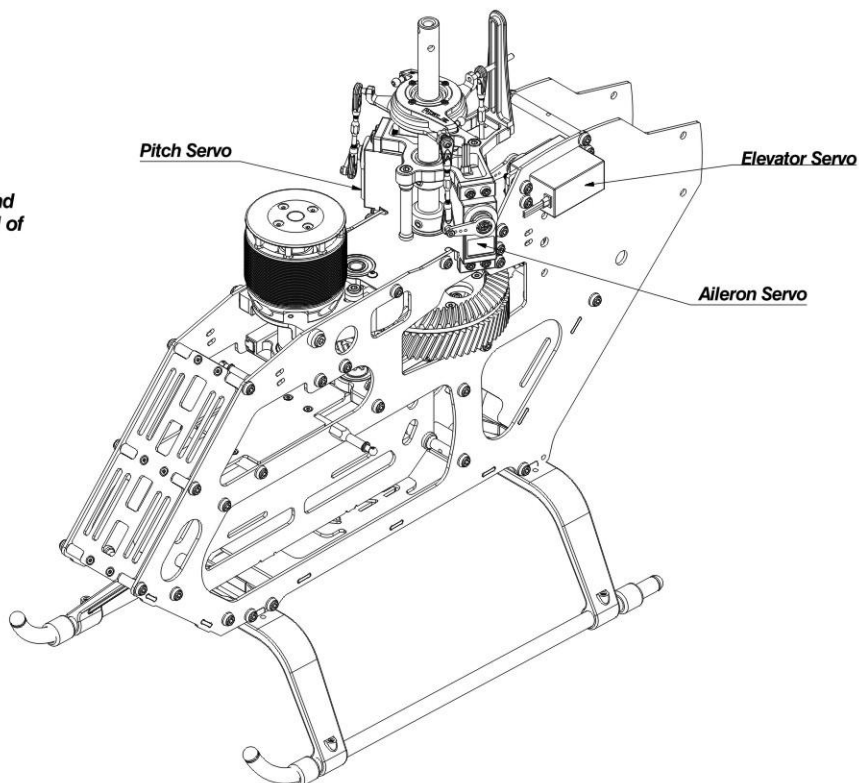
1x Ball Linkage Guide



Rem : To Get a safety lock  
The "A of Agile " should facing out



Rem: At this point, you may set  
the neutral position of your servos and  
swatchplate according to the manual of  
your FLB system.



REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

### Front Torque tube Assy'

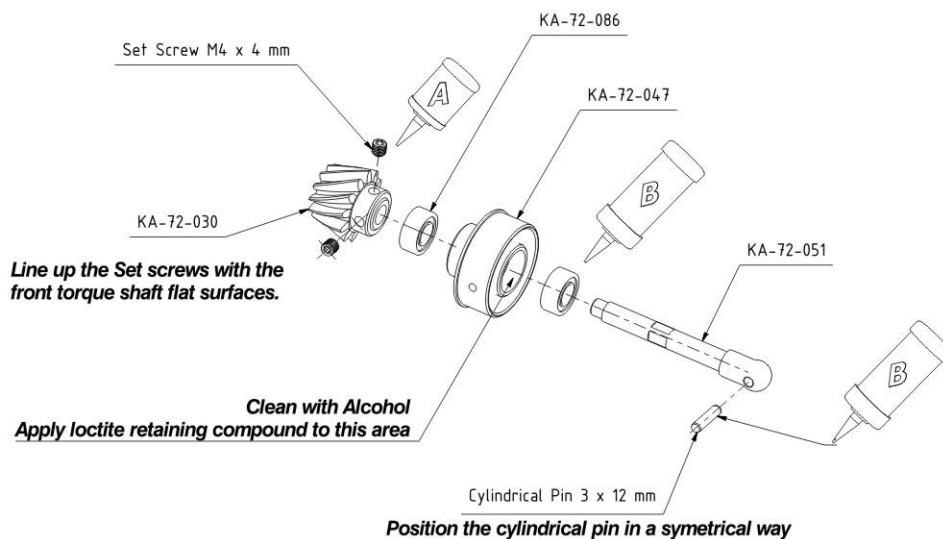
2x Bearing 6 x 13 x 5 mm



1x Set Screw M 4 x 4 mm



1x Pin Dia: 3 x 12 mm



### Tail Case Assy'

2x Set Screw M4 x 4 mm



4x Socket Head Screw M2 x 4 mm



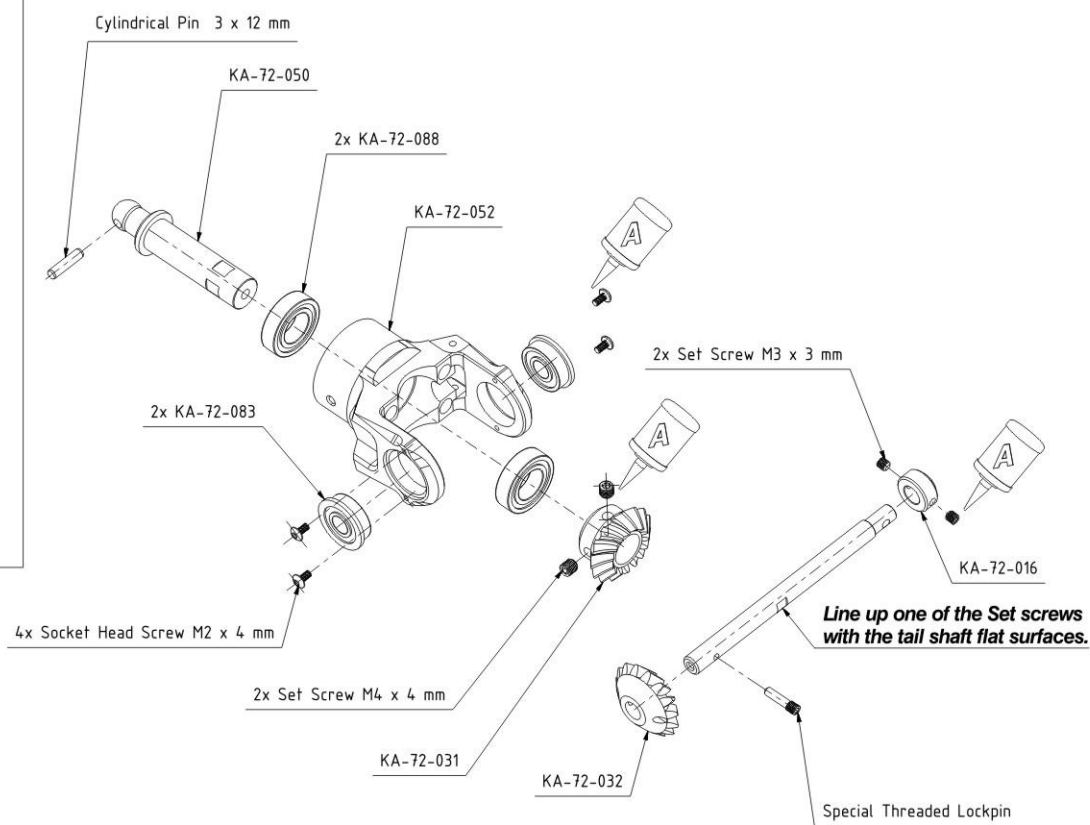
2x Set Screw M3 x 3 mm



2x KA-72-083  
Bearing 6 x 15 x 5 mm

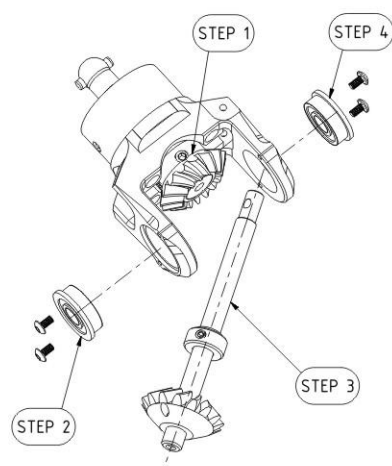


2x KA-72-088  
Bearing 10 x 19 x 5 mm



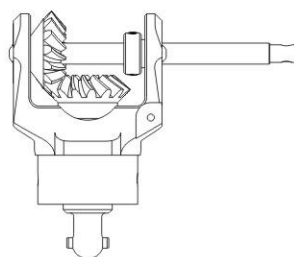
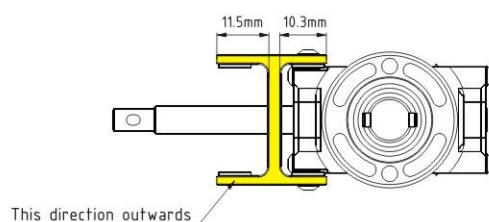


**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.



**Rem :**

- 1- install the main tail spindle and metal helical gear.
- 2- Install side bearings
- 3- Slide the tail shaft between the two side bearings Notice that the plastic gear and its collar must install on the tail shaft inside the tail case as shown on drawing below
- 4- Tighten the special threaded lockpin inside the plastic gear.
- 5- check the play between metal and plastic gears. you shall have a smooth rotation and no axial play.
- 6- tighten the set screws of the collar to keep this (don't forget to line up one of set screws with tail shaft flat surface )



6x Round Head Socket Screw  
M2.5 x 6 mm

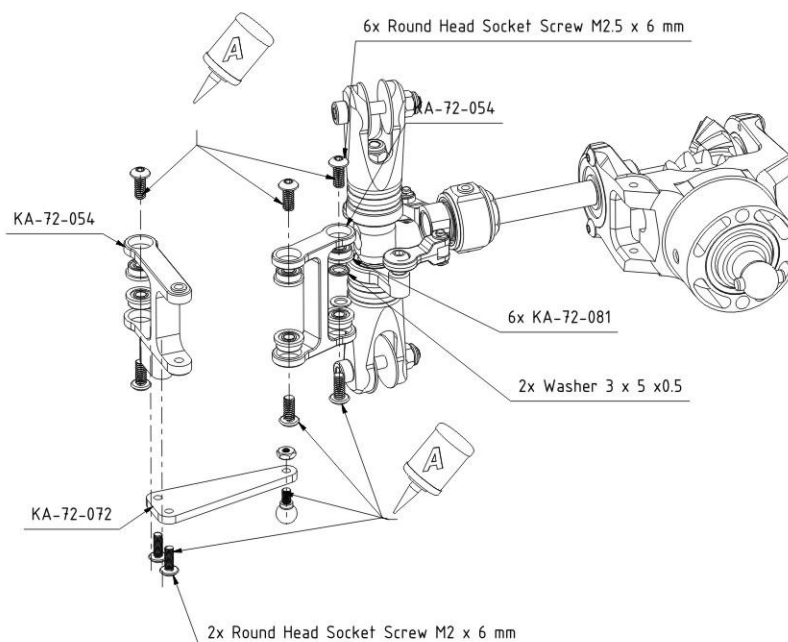
2x Round Head Socket Screw  
M2 x 6 mm

6x Flange Bearing  
2.5 x 6 x 2.6 mm

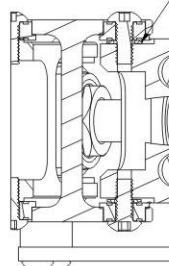
2x Washer  
2.6 x 5 x 0.5 mm

1x Nut M2 mm

1x Ball link M2 mm

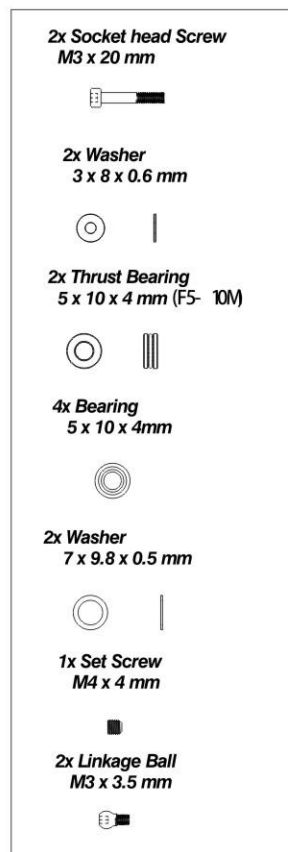
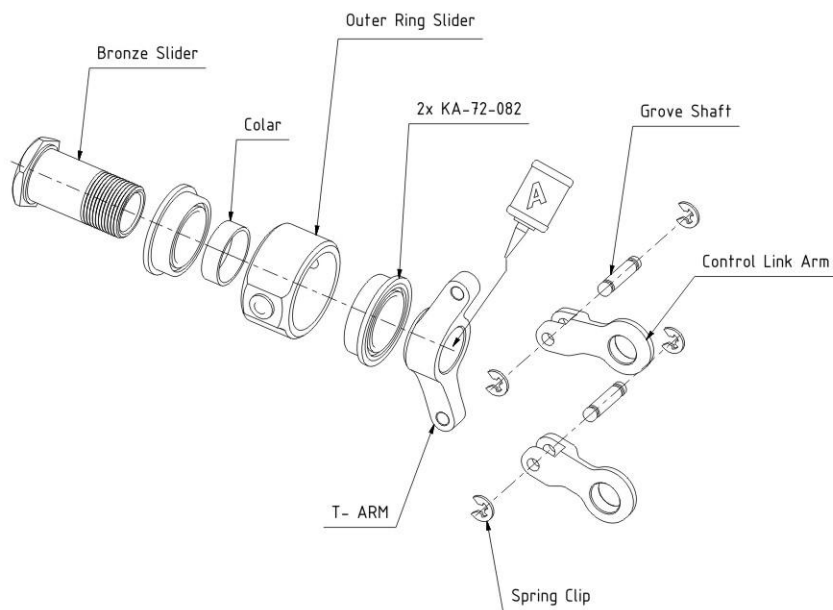
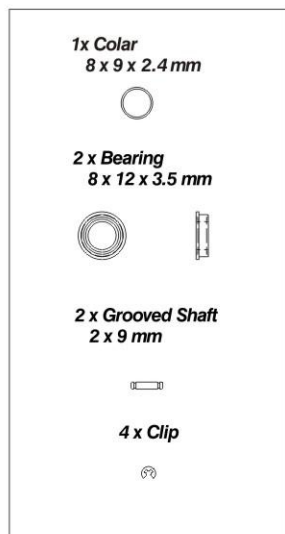


**Rem:**  
Take care of the Washer Orientation  
The small Shoulder diameter must face the bearing

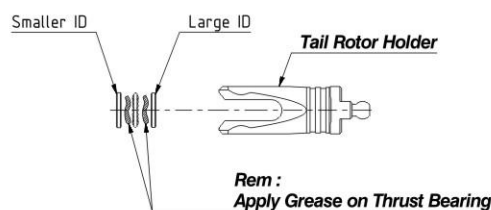
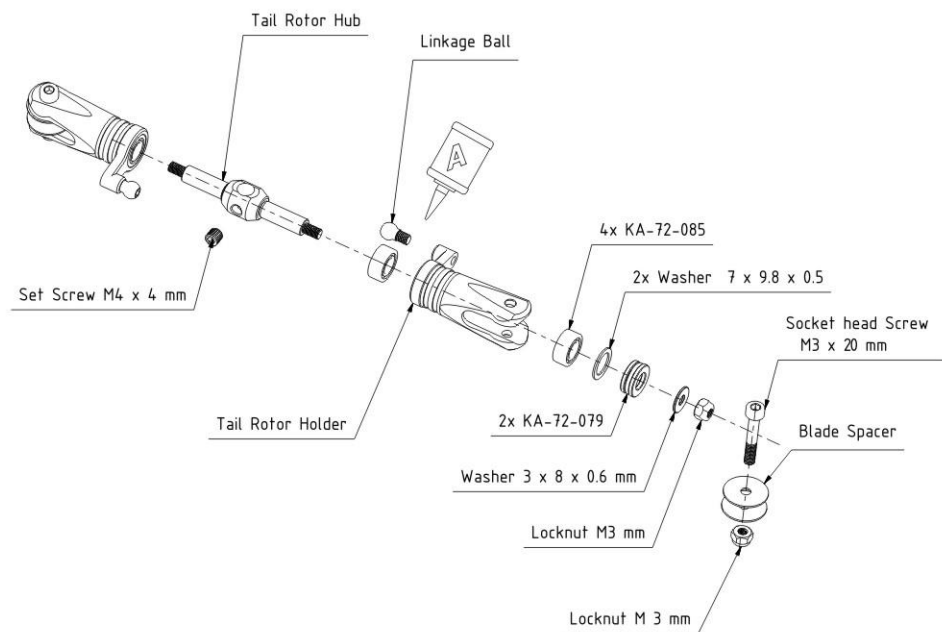


REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

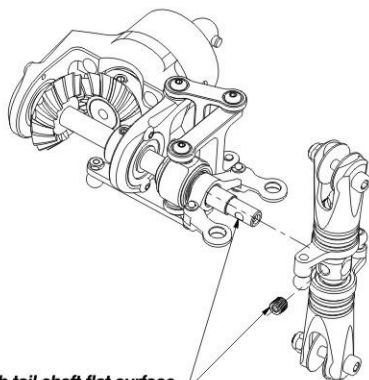
### Pre Assembled Tail Slider Mechanism



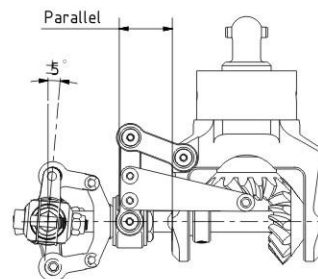
### Pre Assembled Tail Blade grip



**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

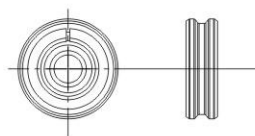
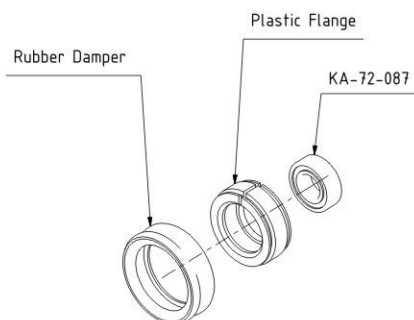


Line up set screw with tail shaft flat surface



**Rem:**  
At the Neutral position to get the best resolution  $\pm 5^\circ$  of Pitch  
Nevertheless you may take into account your FBL system recommendations .

### Torque Tube Bearing Guide Assy KA-72-049



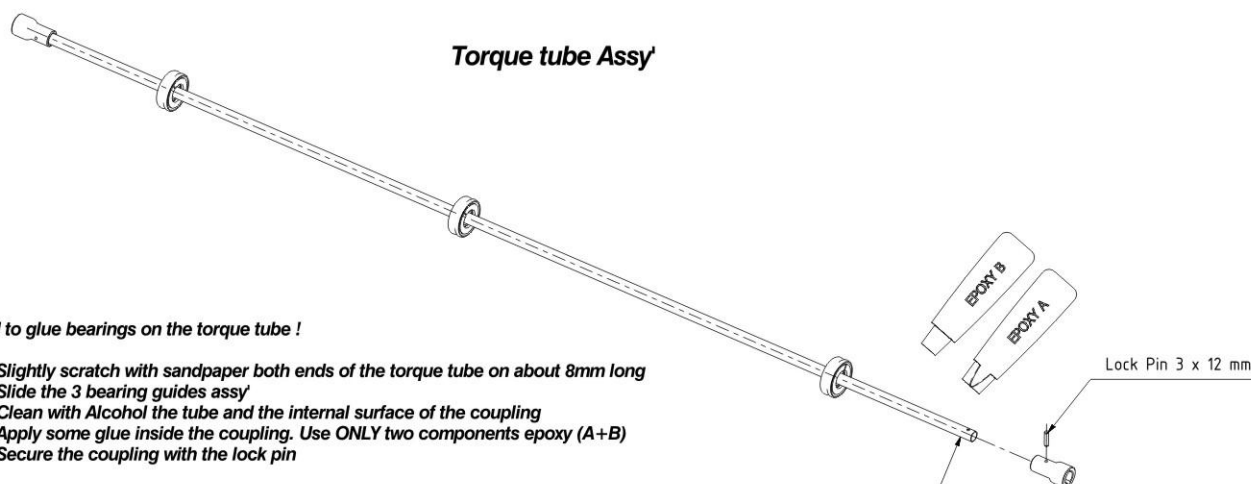
3x KA-72-087  
Bearing 8 x 16 x 5 mm



### Torque tube Assy

No Need to glue bearings on the torque tube !

- Step 1 - Slightly scratch with sandpaper both ends of the torque tube on about 8mm long
- Step 2 - Slide the 3 bearing guides assy
- Step 3 - Clean with Alcohol the tube and the internal surface of the coupling
- Step 4 - Apply some glue inside the coupling. Use ONLY two components epoxy (A+B)
- Step 5 - Secure the coupling with the lock pin

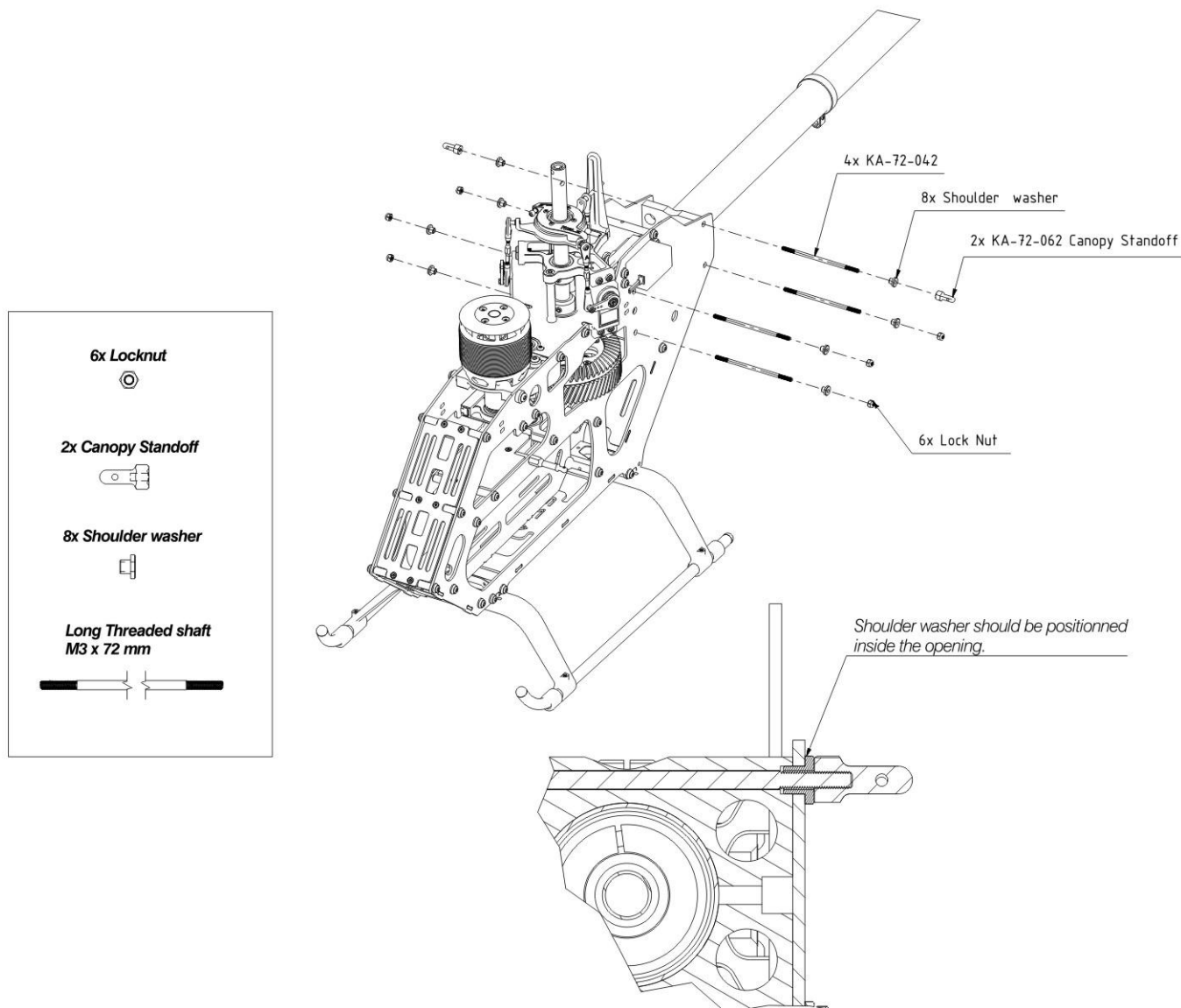
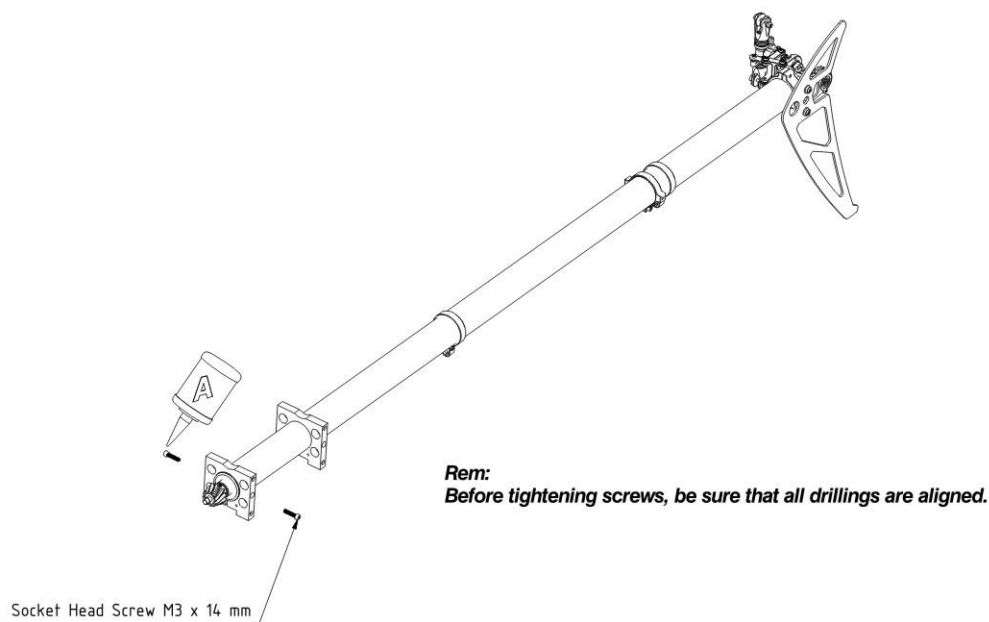


**Rem :**  
Wait 24H at least before flying to be sure that Epoxy is completely dry



## 26.Tail Boom Mount Assy

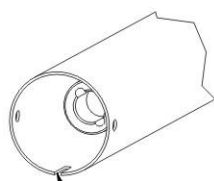
**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.



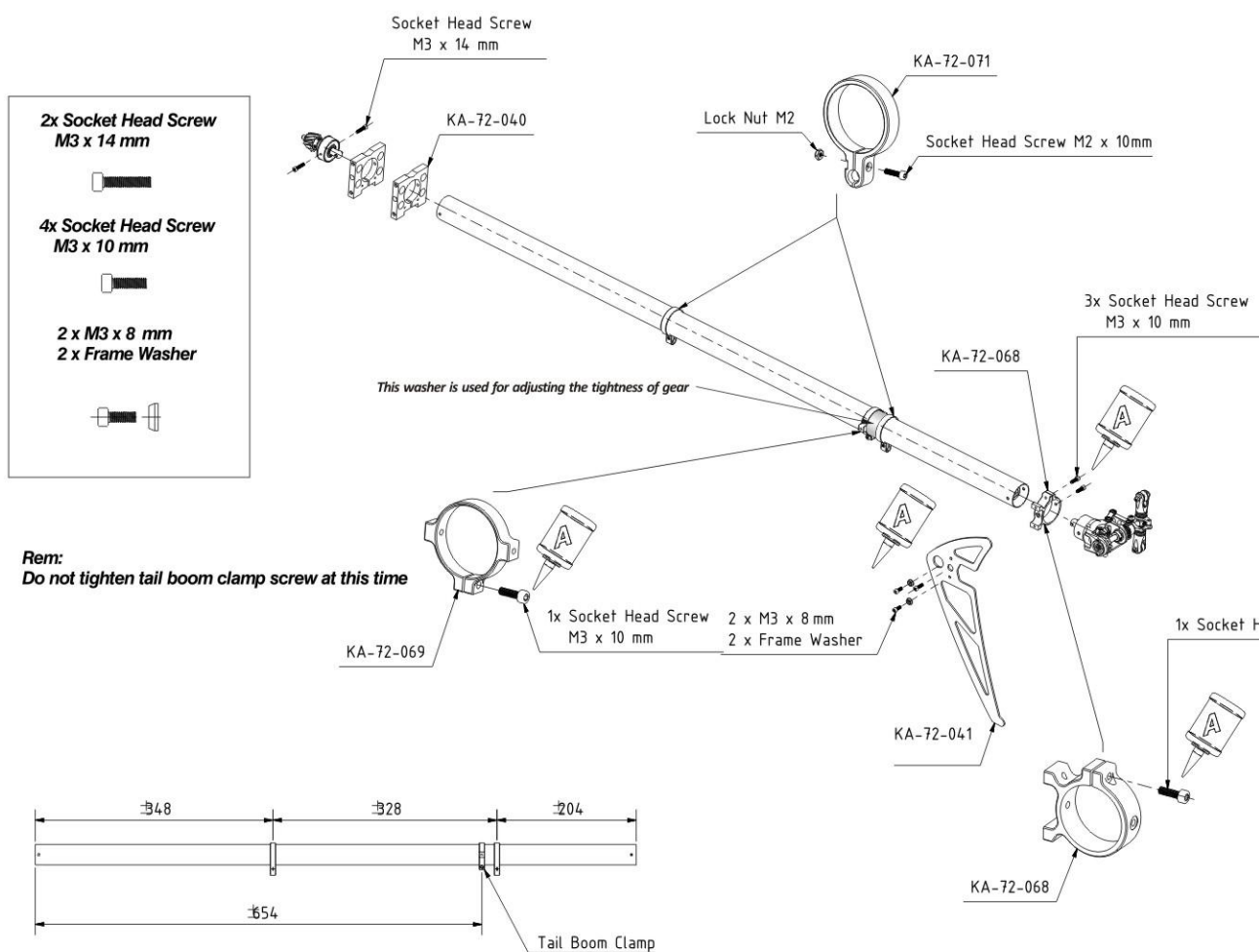
**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

It's advised to not put the third bearing perfectly centered and keep  $\pm 80$  mm offset to avoid resonance and vibrations

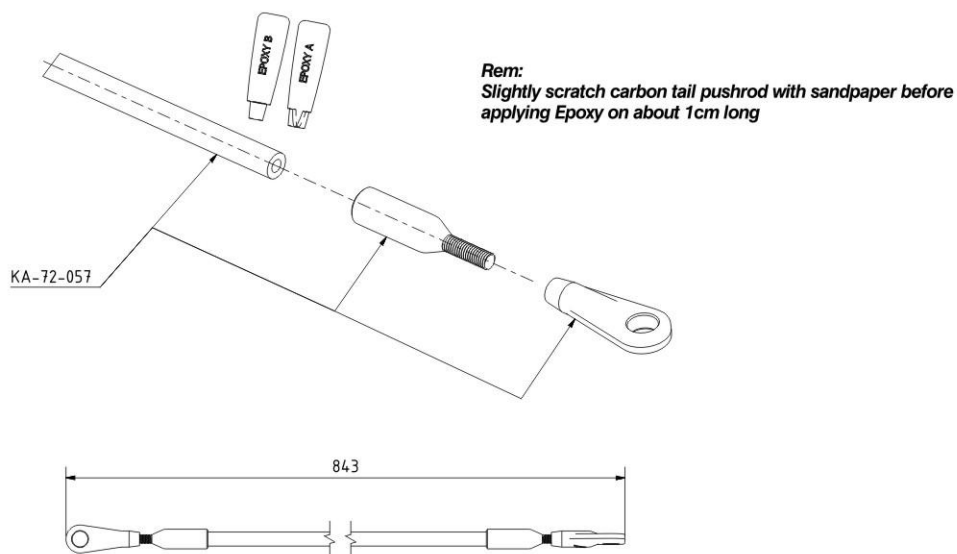
Rem:  
Use Oil to lubricate the rubber  
before to insert them into the carbon tail boom



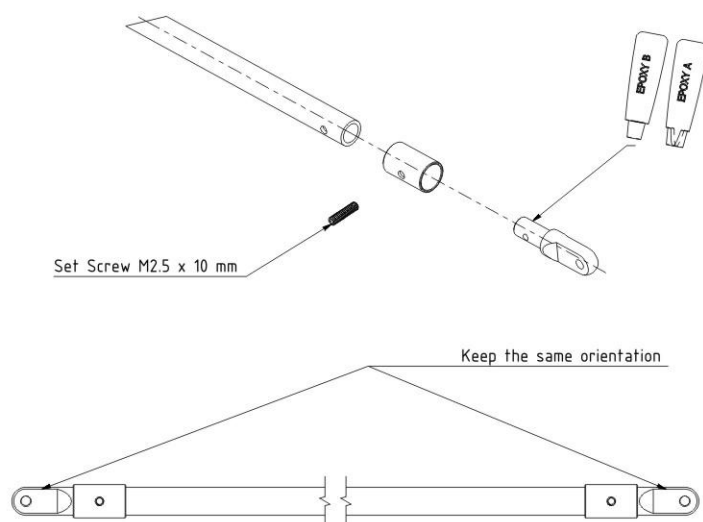
Keep the Cut at the front side



REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.



### Tail Boom Brace Assy



The best solution to mount tail boom brace correctly is to apply some Epoxy as shown. Then, screw them on position on Agile main frames and tail boom clamp. Insert set screws to secure. And let Epoxy drying for at least 24H.

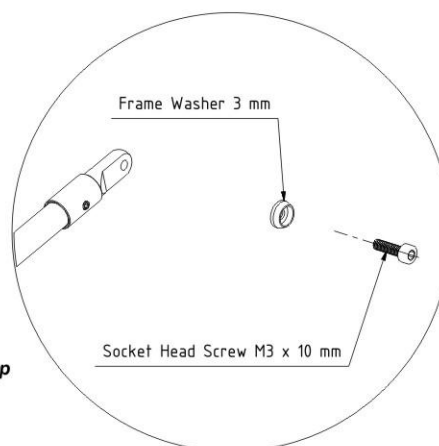
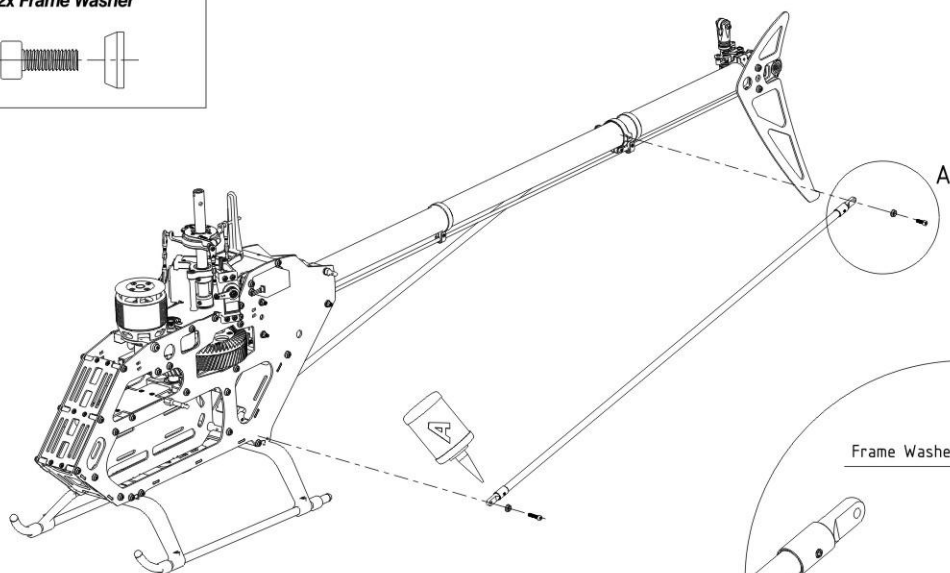
## 29.Installing The Tail Boom Brace Set

**REM:** Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

2x M3 x 10 mm  
2x Frame Washer



2x M3 x 14 mm  
2x Frame Washer



**Rem:**

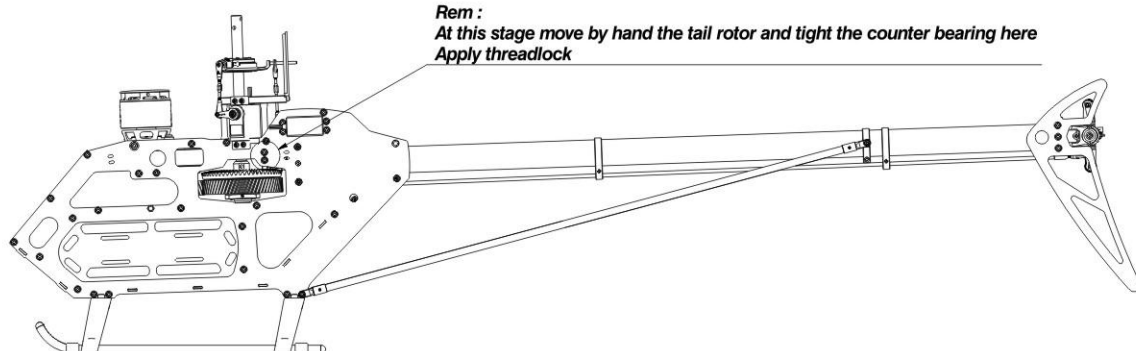
Step 1 : tighten tail boom brace on Agile main frames and tail boom clamp

Step 2 : Put them on right position on tail boom

Step 3 : tighten now the tail boom clamp screw.

**Rem :**

At this stage move by hand the tail rotor and tight the counter bearing here  
Apply threadlock





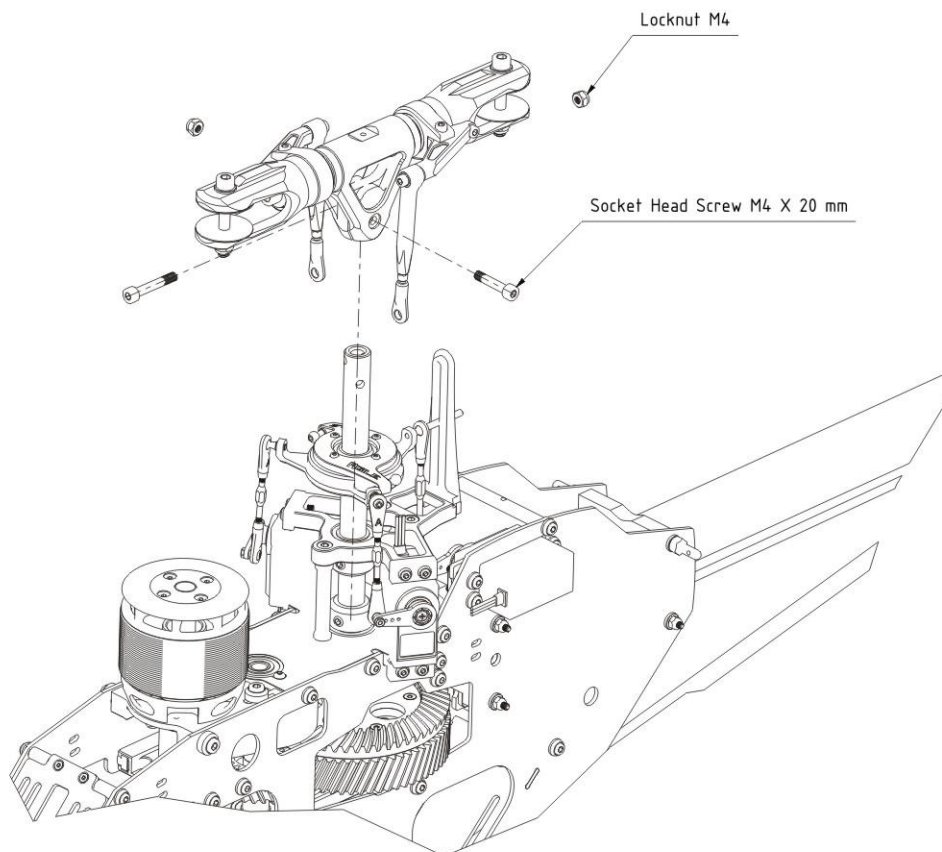
### 30.Assembly Process of Main Rotor Head

REM: Apply Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-part.

2x Socket Head Screw  
M4 X 20 mm



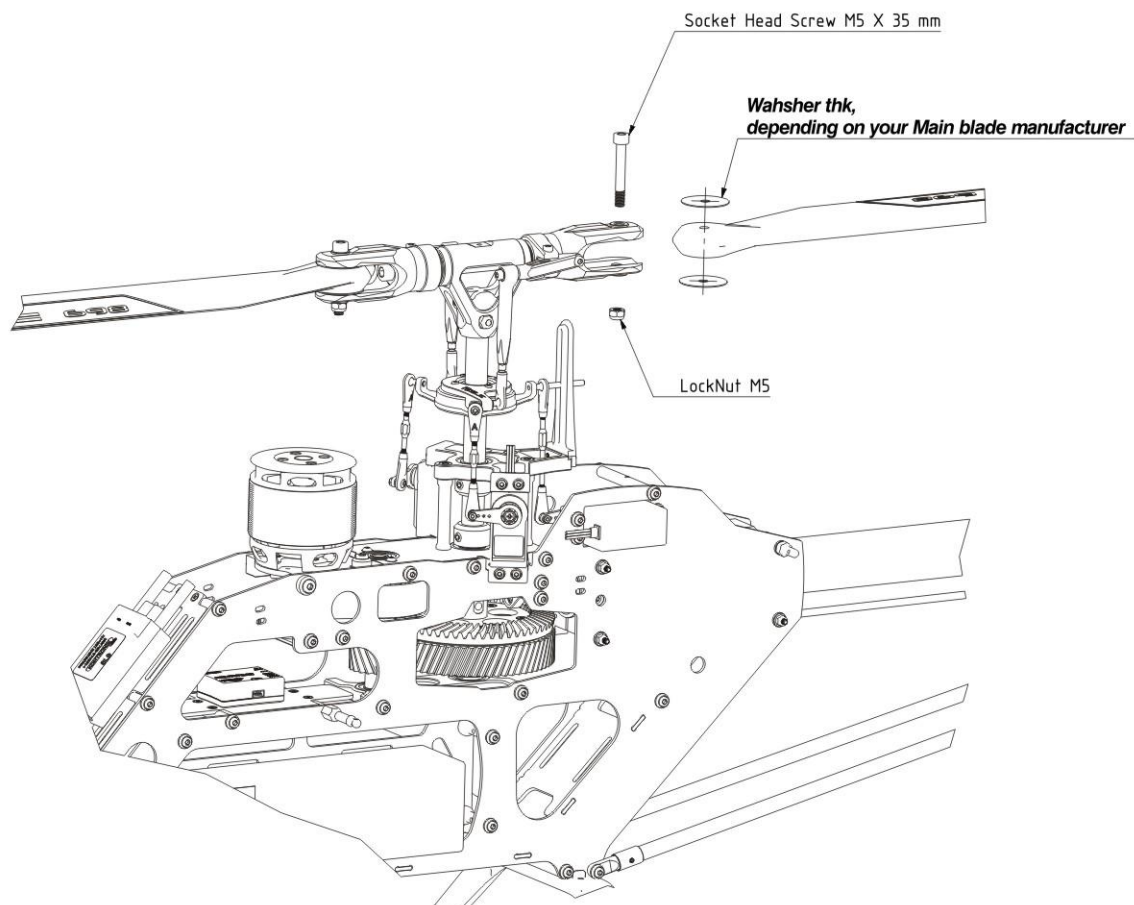
2x Locknut  
M4



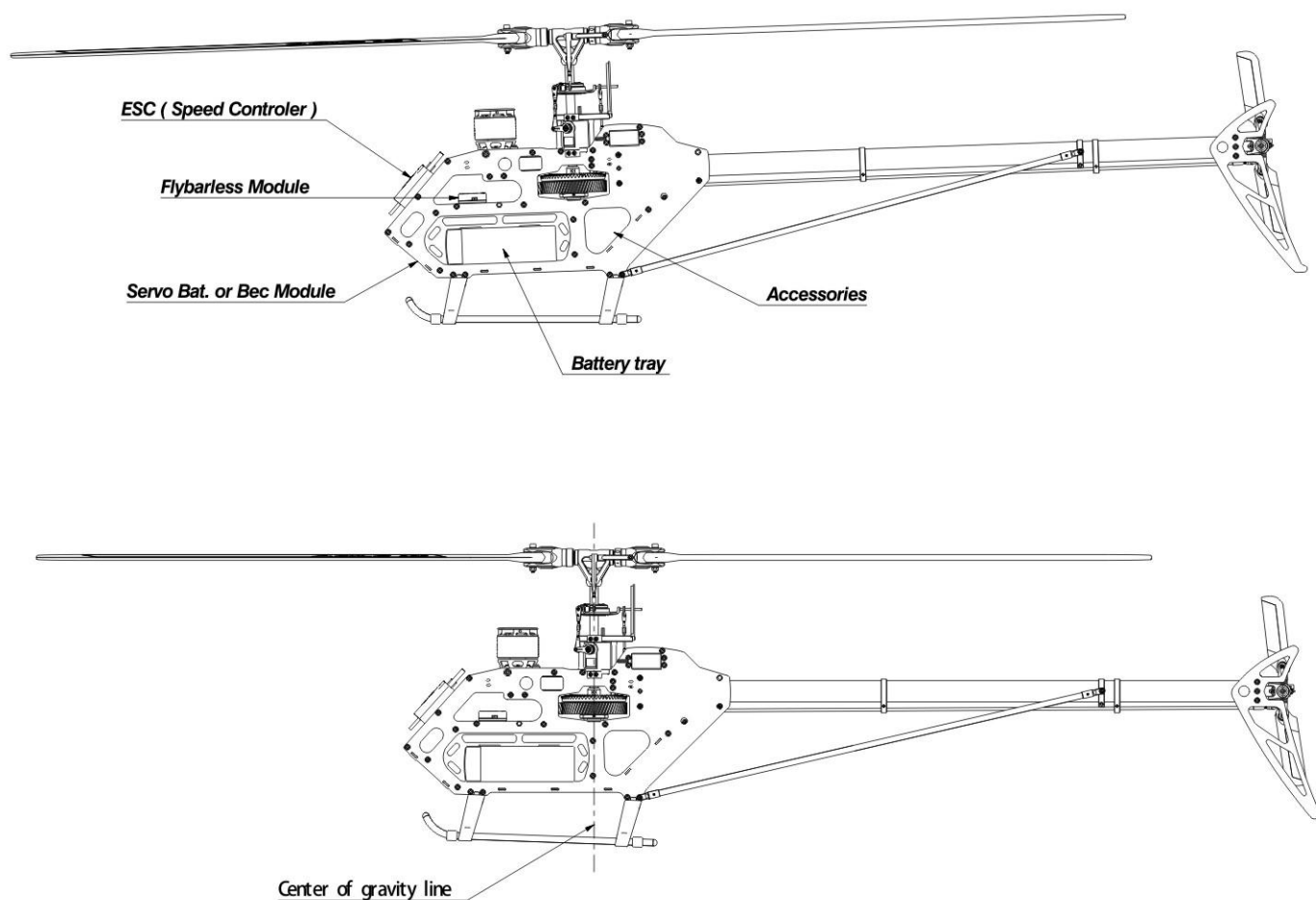
2 x Socket Head Screw  
M5 X 35 mm



2x Locknut  
M5



REM: Apply Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-part.



Important Before fly,

- 1) check the servo direction , according your flybarless module.
- 2) make sure your helicopter is well balanced in term of center of gravity passing thru the main shaft .

### Calculation for your total ratio :

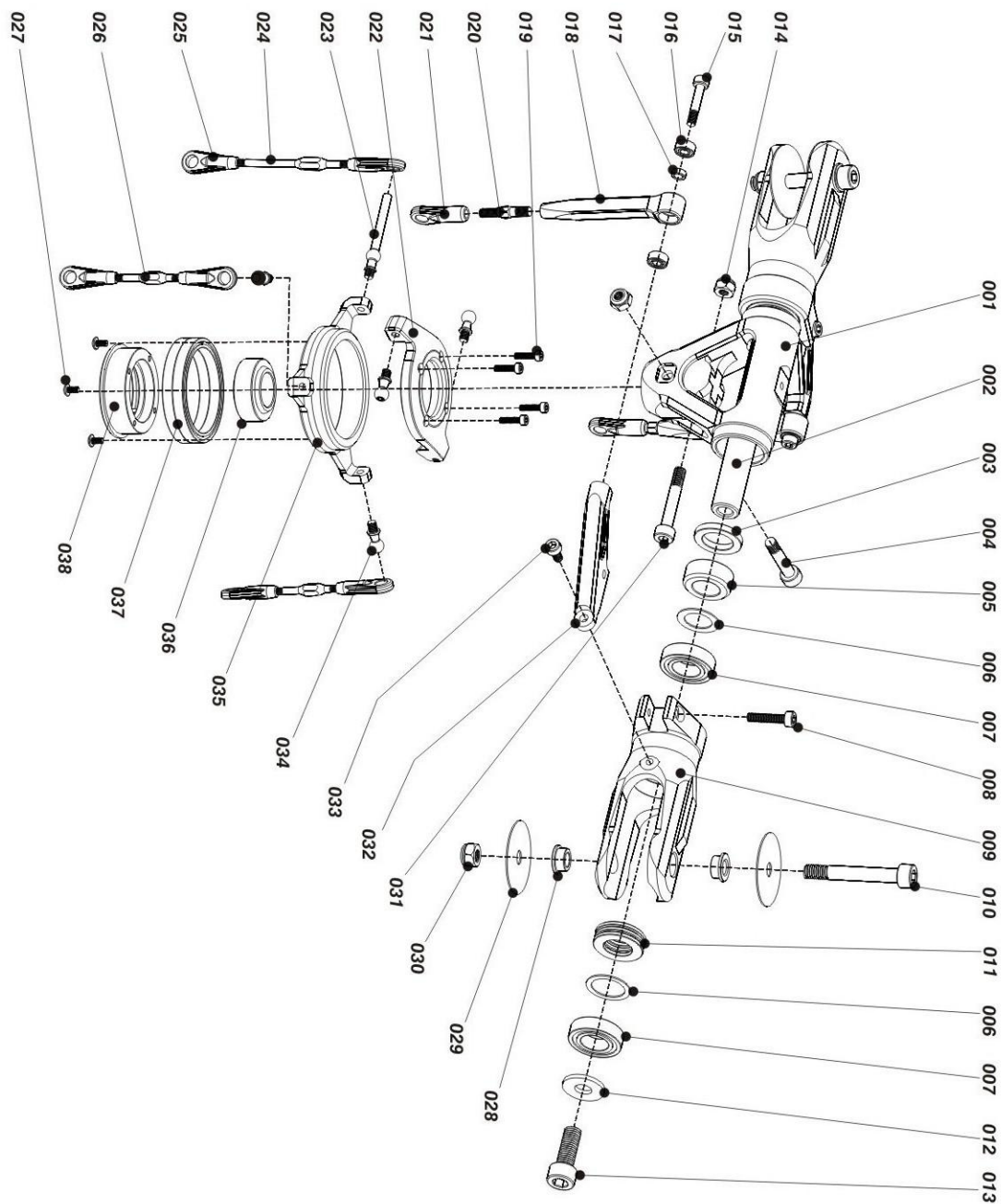
Pignon z=17  
 $(54/17) \times (66 / 20) = 10.48$

Pignon z=18  
 $(54/20) \times (66 / 20) = 9.9$

Pignon z=19  
 $(54/19) \times (66 / 20) = 9.378$

Pignon z=20  
 $(54/20) \times (66 / 20) = 8.91$

REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

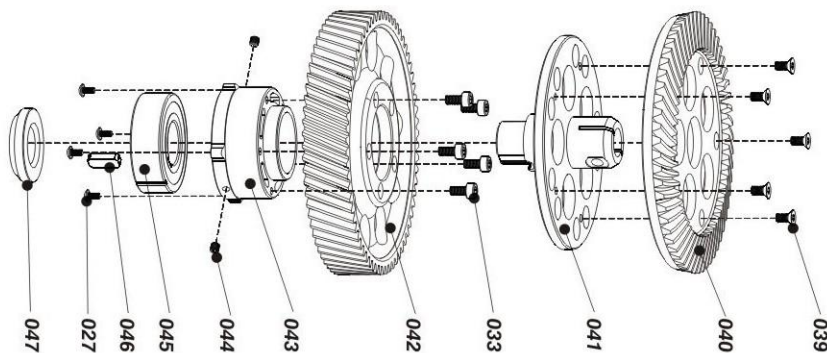


No.	Part No.	Description	Quantity
001	KA-72-003	Main rotor housing	1
002	KA-72-014	Feathering shaft	1
003	KA-72-014	Washer (ϕ 11*ϕ 17*2.5)	2
004	KA-72-003	Hex socket cap screw (M4*20)	1
005	KA-72-003	Damper rubber (ϕ 9.8*ϕ 17*7)	2
006	KA-72-003	Washer (ϕ 10.2*ϕ 15*0.5)	6
007	KA-72-002	Bearing (ϕ 10*ϕ 19*5)	6
008	KA-72-004	Hex socket cap screw (M3*14)	12
009	KA-72-002	Plastic main rotor holder	2
010	KA-72-002	Hex socket cap screw (M5*35)	2
011	KA-72-002	Thrust bearing (F10-18M)	2
012	KA-72-014	Washer (ϕ 6.2*ϕ 19*1.5)	2
013	KA-72-014	Hex socket cap screw (M6*16)	2
014	KA-72-003	M4 NUT	4
015	KA-72-005	Hex socket cap screw (M3*16)	10
016	KA-72-005	Bearing (ϕ 3*ϕ 7*3)	4
017	KA-72-005	Collar (ϕ 3*ϕ 5*2.1)	2
018	KA-72-005	Draw arm	2
019	KA-72-007	Hex socket cap screw (M2*8)	4
020	KA-72-005	Bolt	2
021	KA-72-005	Linkage ball A	2
022	KA-72-007	Swashplate inner upper part	1
023	KA-72-007	Swashplate mounting pin	1
024	KA-72-063	Linkage rod (58mm)	1
025	KA-72-063	Ball link B	8
026	KA-72-063	Linkage rod (38mm)	2
027	KA-72-007	Button head socket cap (M2*4)	11
028	KA-72-002	Screw socket	4
029	KA-72-002	Washer (ϕ 5.2*ϕ 26*0.5)	4
030	KA-72-002	M5 NUT	2
031	KA-72-003	Hex socket cap screw (M4*25)	3
032	KA-72-004	Main rotor branch control arm	2
033	KA-72-004	Hex socket cap screw (M3*6)	7
034	KA-72-007	Linkage ball A	4
035	KA-72-007	Swashplate Outer ring	1
036	KA-72-007	Oscillating bearing	1
037	KA-72-007	Bearing (ϕ 30*ϕ 37*4)	2
038	KA-72-007	Swashplate inner lower part	1

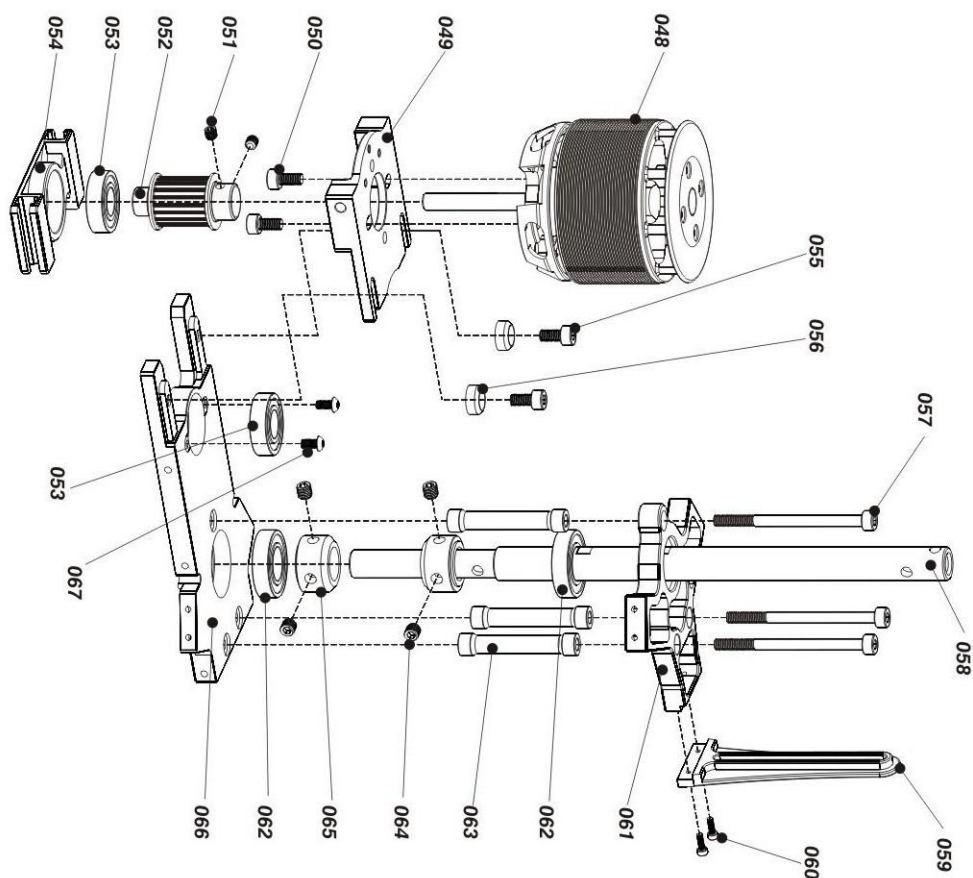


### 33. Motor Bearing Assembly Steps

REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.



No.	Part No.	Description	Quantity
039	KA-72-067	Flat socket head cap (M3*6)	5
040	KA-72-029	57T Spiral bevel gear	1
041	KA-72-067	Gear hub	1
042	KA-72-028	60T Main gear	1
043	KA-72-022	One way clutch mount	1
044	KA-72-022	KIM screw (M3*3)	6
045	KA-72-022	One way clutch	1
046	KA-72-067	Flat pin	1
047	KA-72-076	Washer (φ 10*φ 20*4)	1

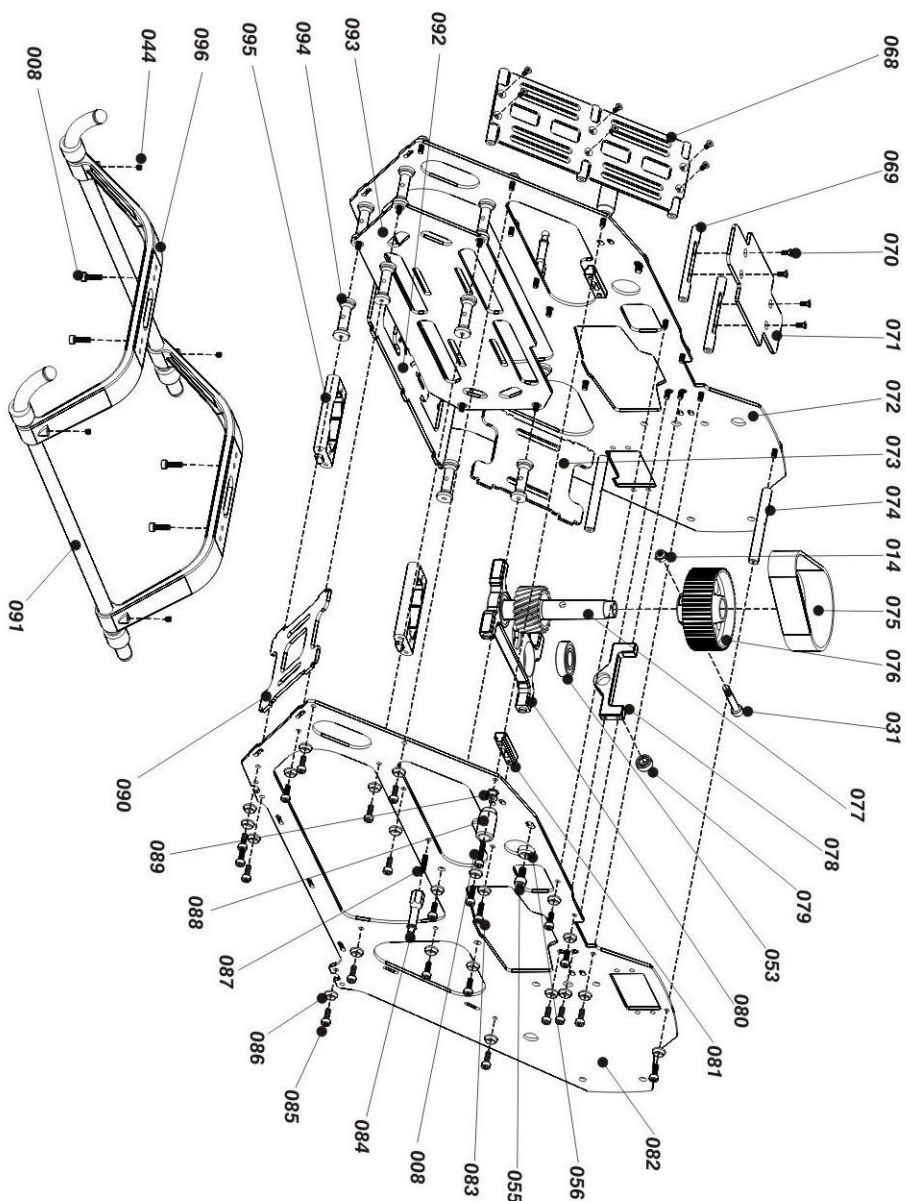


048	KA-72-092	Motor 500-540KV	1
049	KA-72-018	Motor mount	1
050	KA-72-018	Hex socket cap screw (M4*8)	2
051	KA-72-025	KIM screw (M4*4)	7
052	KA-72-025	19T Main pinion gear	1
053	KA-72-019	Bearing (φ 10*φ 22*6)	4
054	KA-72-019	Under motor block	1
055	KA-72-010	Hex socket cap screw (M4*10)	4
056	KA-72-010	Aluminum washer	4
057	KA-72-012	Hex socket cap screw (M4*55)	3

058	KA-72-013	Main shaft	1
059	KA-72-061	Swashplate Anti-rotation bracket	1
060	KA-72-061	Hex socket cap screw (M2*6)	2
061	KA-72-009	Main shaft upper bearing block mount	1
062	KA-72-009	Bearing (φ 12*φ 24*6)	2
063	KA-72-012	Main shaft bearing block pillar	3
064	KA-72-016	KIM screw (M5*5)	4
065	KA-72-016	Lock collar	2
066	KA-72-010	Main shaft middle bearing mount	1
067	KA-72-010	Button head socket cap (M3*4)	2



REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.



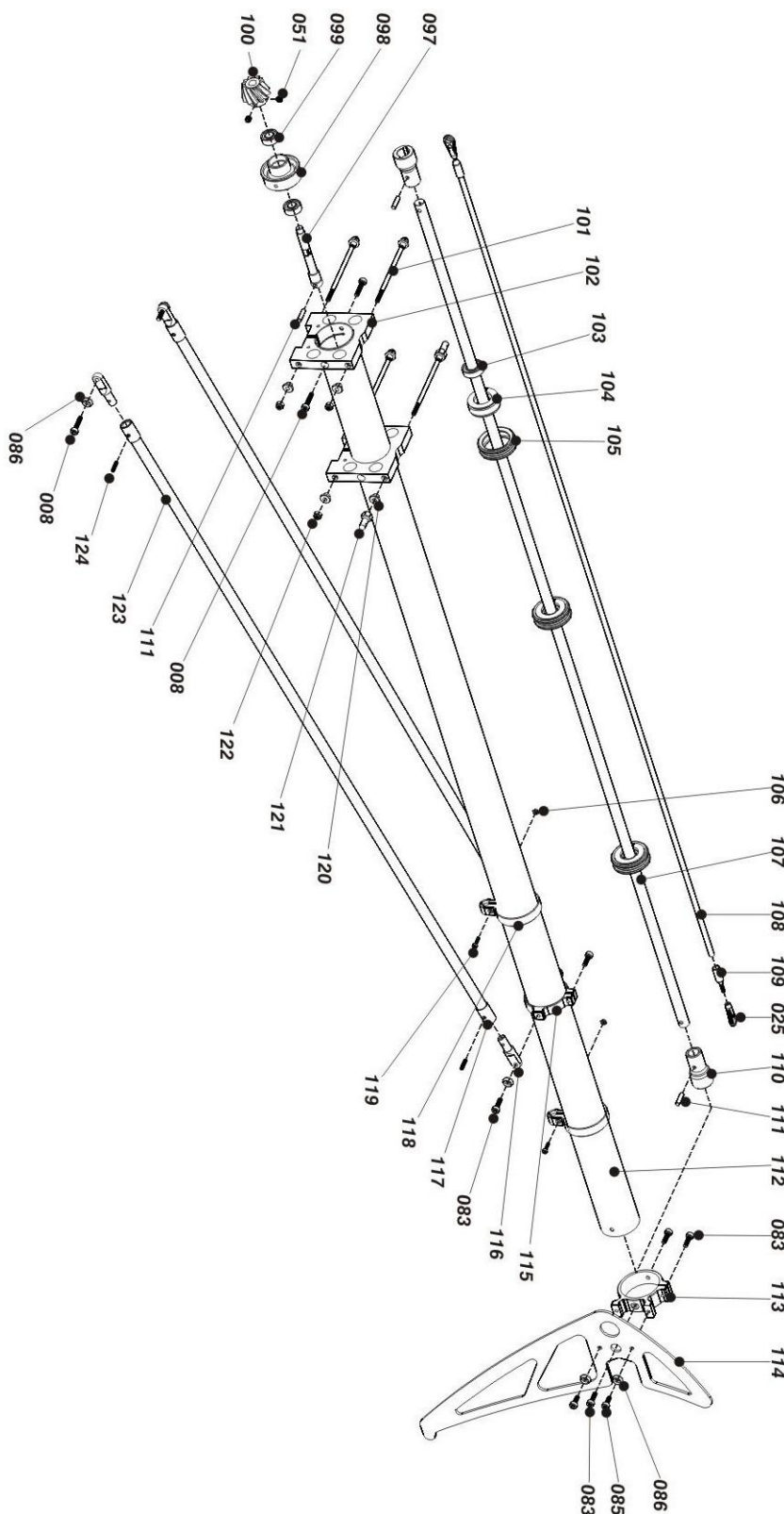
No.	Part No.	Description	Quantity
068	KA-72-035	Swashplate	1
069	KA-72-060	Frame connecting bolt	5
070	KA-72-060	Sink hexangular screw	10
071	KA-72-039	CF middle electronic board	1
072	KA-72-034	Main frame R	1
073	KA-72-038	CF back-end electronics board	1
074	KA-72-060	Frame columns(spacers)	2
075	KA-72-021	3M-213 Synchronous belt	1
076	KA-72-026	First reduction gear 54T	1
077	KA-72-027	Second reduction gear	1
078	KA-72-046	Front drive shaft mount	1
079	KA-72-046	Bearing ( 1/8" 5" 10 4)	5
080	KA-72-011	Main shaft (under bearing block/option plate)	1
081	KA-72-020	Motor block sliding rail	2
082	KA-72-033	Main frame L	1
083	KA-72-020	Hex socket cap screw (M3*10)	4
084	KA-72-062	Front canopy mounting bolt	2
085	KA-72-077	Hex socket cap screw (M3*8)	46
086	KA-72-074	Cotical washers	48
087	KA-72-062	KIM screw (M3*12)	7
088	KA-72-062	Canopy spacer	2
089	KA-72-062	Aluminum sleeve for case bolts	2
090	KA-72-038	CF front electronics board	1
091	KA-72-043	Skid pipe	2
092	KA-72-037	Bottom plate	1
093	KA-72-036	Lipo battery tray	1
094	KA-72-060	Frame spacers	10
095	KA-72-045	Landing skid mount	2
096	KA-72-044	Landing skid	2

REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.

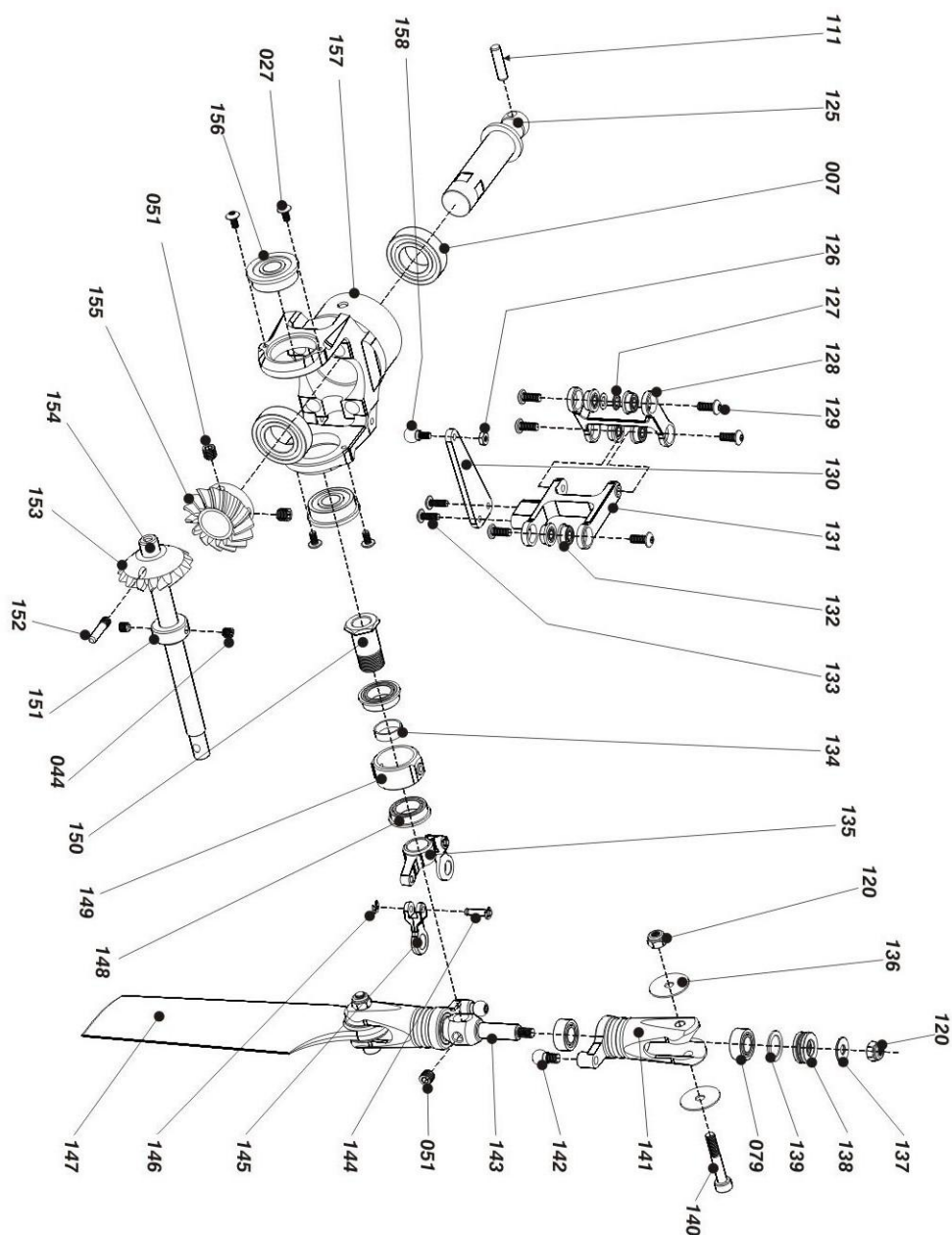
No.	Part No.	Description	Quantity
097	KA-72-051	Front universal joint drive shaft	1
098	KA-72-047	Middle drive shaft mount	1
099	KA-72-047	Bearing (ϕ 6" ϕ 13.5)	2
100	KA-72-030	Helical bevel gear 12Z	1
101	KA-72-042	Doubled-headed screw rod	4
102	KA-72-040	Tail boom mount	2
103	KA-72-049	Bearing (ϕ 8" ϕ 16.5)	3
104	KA-72-049	Tail drive bearing mount	3
105	KA-72-049	Rubber damper	3

106	KA-72-071	M2 Nut	2
107	KA-72-048	Torque tube	1
108	KA-72-048	Tail linkage rod	1
109	KA-72-058	Push link connecting set	2
110	KA-72-048	Drive shaft joint	2
111	KA-72-048	Pin (ϕ 3*12)	4
112	KA-72-070	Tail boom	1
113	KA-72-068	Vertical stabilizer mount	1
114	KA-72-041	CF vertical stabilizer	1
115	KA-72-069	Tail boom brace mount	1

116	KA-72-057	Tail boom brace end	4
117	KA-72-057	Aluminum sleeve	4
118	KA-72-071	Hex socket cap screw	2
119	KA-72-071	Hex socket cap screw (M2*10)	2
120	KA-72-042	Aluminum sleeve	8
121	KA-72-062	Behind canopy mounting bolt	2
122	KA-72-042	M3 Nut	10
123	KA-72-057	Tail boom brace	2
124	KA-72-057	KMM screw (M2.5*10)	4



REM: Apply Medium Thread lock or Equivalent to all screws, balls, and threads which are engaged with metal-parts.



No.	Part No.	Description	Quantity
125	KA-72-050	Back-end universal joint drive shaft	1
126	KA-72-072	M2 NUT	5
127	KA-72-076	Washer (ϕ 2.6*ϕ 5*0.5)	2
128	KA-72-054	Tail rocker arm mount	1
129	KA-72-054	Round head hex socket screw (M2.5*6)	6
130	KA-72-072	Tail control arm	1
131	KA-72-054	Tail rocker arm	1
132	KA-72-054	Bearing (ϕ 2.5*ϕ 5*2.6)	6
133	KA-72-072	Round head hex socket screw (M2.5*6)	2
134	KA-72-053	Aluminum sleeve (ϕ 8*ϕ 9*2.5)	1
135	KA-72-053	T type arm	1
136	KA-72-055	Washer (ϕ 3*ϕ 15*0.5)	4
137	KA-72-055	Washer (ϕ 3*ϕ 8*0.6)	2
138	KA-72-055	Thrust bearing(75-10M)	2
139	KA-72-055	Washer (ϕ 3*ϕ 8*0.6)	2
140	KA-72-055	Hex socket cap screw (M3*20)	2
141	KA-72-055	Tail rotor holder	2
142	KA-72-055	Sinkage ball B	2
143	KA-72-055	Tail rotor T type holder	1
144	KA-72-053	Pin (ϕ 2*9)	2
145	KA-72-053	Ball link for tail holder	2
146	KA-72-053	E-tring	4
147		CF Tail blade	2
148	KA-72-053	Bearing (ϕ 8*ϕ 12*3.5)	2
149	KA-72-053	Tail push bearing mount	1
150	KA-72-053	Tail push bearing	1
151	KA-72-073	Tail shaft locking collers ring	1
152	KA-72-032	Pin (ϕ 2.5*12)	1
153	KA-72-032	Tail shaft spiral bevel gear 15T	1
154	KA-72-015	Tail shaft	1
155	KA-72-031	Back-end drive spiral bevel gear 15T	1
156	KA-72-052	Bearing (ϕ 6*ϕ 15*5)	2
157	KA-72-052	Tail gear box	1
158	KA-72-072	Short linkage ball	5



## 37.PARTS LIST 1

Main rotor holder  
KA-72-002



2 x Main rotor holder  
4 x Rotor holder washer  
2 x Stainless steel gasket Ø10.2xØ15x0.5mm  
2 x Plane bearing Ø10xØ19x5mm  
2 x Thrust bearing F10-18M  
2 x Nylon lock nuts M4  
2 x Cup head socket head half tooth screw M5x35mm  
4 x Washers Ø5xØ26x0.5mm

Main rotor house  
KA-72-003



1 x Main rotor house  
2 x Stainless steel gasket Ø10.2xØ15x0.5mm  
2 x Nylon lock nuts M4  
2 x Feathering shaft rubber ring(dampers)  
2 x Aluminum gasket feathering shaft damper Ø11x17x2.5mm  
1 x Cup head socket head half tooth screw M4x25mm  
1 x Cup head socket head half tooth screw M4x20mm

Main rotor arm  
KA-72-004



2 x Main rotor arm  
2 x Cup head socket head half tooth screw M3x14mm  
2 x Cup head socket head half tooth screw M3x6mm

Pitch connecting arm  
KA-72-005



2 x Connecting linkage  
2 x Double-headed screw  
2 x Cooper head Ø3xØ15x2.1mm  
2 x Cup head socket head half tooth screw M3x16mm  
2 x Ball Linkage Rod 5.0  
4 x Plane bearing Ø3xØ7x3mm

Connecting link  
KA-72-006



4 x Double-headed screw

Swashplate  
KA-72-007



2 x Plane bearing Ø30xØ37x4mm  
1 x Swashplate inner upper part  
1 x Housing washer  
1 x Swashplate inner lower part  
1 x Swashplate nose pile  
4 x Ball part Ø5.0xØ10.7mm  
4 x Cup head socket head screw M2x8mm  
2 x Umbrella head screws M2x4mm  
2 x Oscillating bearing

Swashplate outer ring  
KA-72-008



1 x Swashplate outer ring

Main shaft upper bearing block mount  
KA-72-009



1 x Main shaft upper bearing block mount  
4 x Cup head socket head screw M2.5x10mm  
1 x Imported plane bearing Ø12x24x6mm

Main shaft middle bearing mount(main top plate)  
KA-72-010



1 x Imported plane bearing Ø12xØ24x6mm  
4 x Cup head socket head screw M2.5x10mm  
1 x Imported plane bearing Ø10xØ22x6mm  
1 x Main shaft block(Middle)  
6 x Cup head socket head screw M3x8mm  
2 x Aluminum gasket  
2 x Cup head socket head screw M4x10mm  
2 x Umbrella head screw M3x6mm

Main shaft under bearing block(bottom plate)  
KA-72-011



1 x Under bearing block  
2 x Imported plane bearing Ø12xØ24x6mm  
4 x Cup head socket head screw M3x8mm

Main shaft bearing block pillar  
KA-72-012



3 x Main shaft bearing block pillar  
3 x Cup head socket head half tooth screws M4x55mm

Main Shaft  
KA-72-013



2 x Main Shaft

Feathering Shaft  
KA-72-014



2 x Feathering Shaft  
4 x Cup head socket head screw M6x16mm  
4 x Stainless steel gasket Ø6.2xØ15x1.5mm

Tail shaft  
KA-72-015



2 x Tail shaft

Main shaft spacing ring(locking collers set)  
KA-72-016



2 x Spacing ring collers  
4 x Grub screw M4x4mm

Feathering shaft dampers  
KA-72-017



4 x Feathering shaft dampers

Upper motor block  
KA-72-018



1 x Upper motor block  
2 x Aluminum spacer  
2 x Cup head socket head screw M4x10mm  
2 x Cup head socket head screw M4x8mm

under motor block  
KA-72-019



1 x under motor block  
1 x imported plane bearing Ø10xØ22x6mm

motor block sliding rail  
KA-72-020



2 x motor block sliding rail  
4 x cup head socket head screw M3x10mm

Synchronous main motor belt  
KA-72-021



1 x synchronous belt 3M-213-18

Overrunning clutch mount  
KA-72-022



1 x Overrunning clutch mount  
1 x Imported one-way clutch  
5 x Cup head socket head screw M3x6mm  
2 x Grub screw M3x3mm  
4 x Umbrella head screws M2x4mm

Motor pinion gear 18T  
KA-72-024



1 x Motor gear  
2 x Set screws M4X4mm

Motor pinion gear 19T  
KA-72-025



1 x Motor gear  
2 x Set screws M4X4mm

First reduction gear 54T  
KA-72-026



1 x First reduction gear 54T  
1 x Cup head socket head half tooth screws M4x25mm  
1 x Nylon lock nuts M4



## 38.PARTS LIST 2

Second reduction gear  
KA-72-027



1 x Second reduction gear (20Z)  
1 x Cup head socket head half tooth screws M4x25mm  
1 x Nylon lock nuts M4

Second reduction gear  
KA-72-028



1 x Second reduction gear (66Z)

Front spiral bevel gear  
KA-72-029



1 x Front spiral bevel gear (57Z)

Front drive spiral bevel gear  
KA-72-030



2 x Grub screw M4x4mm  
1 x Helical bevel gear 12Z

Back-end drive spiral bevel gear  
KA-72-031



2 x Grub screw M4x4mm  
1 x Helical bevel gear (15Z)

Tail shaft spiral bevel gear  
KA-72-032



1 x Helical bevel gear (15Z)  
1 x Tail shaft pin

CF Right side plate (r/h side main frame)  
KA-72-033



1 x CF Right side plate (r/h side main frame)

CF Left side plate (l/h side main frame)  
KA-72-034



1 x CF Left side plate (l/h side main frame)

CF Front electronic board  
KA-72-035



1 x CF Front electronic board

CF Batteries spacing board  
KA-72-036



1 x CF Batteries spacing board

CF Bottom plate  
KA-72-037



1 x CF Bottom plate

CF Back-end electronics board  
KA-72-038



1 x CF Back-end electronics board

CF Middle electronic board  
KA-72-039



1 x CF middle electronic board

Tail boom mount  
KA-72-040



2 x Tail boom mount

CF Vertical stabilizer  
KA-72-041



1 x CF Vertical stabilizer

Tail boom Double-headed screw  
KA-72-042



8 x Nylon lock nuts M3  
8 x Tail boom mount aluminum gasket  
4 x Doubled-headed screw rod

Aluminum landing hear pipe  
KA-72-043



2 x Aluminum landing hear pipe  
4 x Plastic rubber ring

Landing gear  
KA-72-044



4 x Grub screw M3x3mm  
4 x Cup head socket head screw M3x14mm  
2 x Landing gear

Landing gear mount  
KA-72-045



2 x Landing gear mount  
6 x Cup head socket head screw M3x8mm  
6 x Cup head socket head screw M3x14mm

Front drive shaft mount  
KA-72-046



4 x Cup head socket head screw M3x8mm  
1 x Plane bearing Ø5xØ10x4mm  
1 x Gear bearing mount

Middle drive shaft mount  
KA-72-047



1 x Middle drive shaft mount  
2 x Cup head socket head screw M3x14mm  
2 x Plane bearing Ø6xØ13x5mm

Drive shaft(toque tube)  
KA-72-048



1 x Drive shaft(toque tube)  
2 x Tail drive bearing mount  
2 x Tail drive shaft pin Ø3x12mm

Drive shaft damping  
KA-72-049



























3 x Surface bearings Ø8x16x5mm  
3 x Rubber ring  
3 x Tail drive bearing mount

Back-end universal joint drive shaft  
KA-72-050
























1 x Back-end universal joint drive shaft  
1 x Joint Ø3x12mm

### 39.PARTS LIST 3

<p>Front universal joint drive shaft KA-72-051</p>  <p>1 x Tail drive shaft bolt Ø3x12mm 1 x Front universal joint for tail drive shaft</p>	<p>Tail gear box KA-72-052</p>  <p>1 x Tail gear box 2 x Flange Bearings(imported) Ø6xØ15x5mm 2 x Cup head socket head screw M3x10mm 4 x Umbrella head socket head machining screws M2x4mm 2 x Surface bearing Ø10xØ19x5mm</p>	<p>Tail pitch slider KA-72-053</p>  <p>1 x Copper Sleeve for tail push slider 1 x Tail push bearing 1 x U-type arm for Tail push slider 2 x Tail push bolt 2 x Umbrella head socket head machining screws M2.5x6mm 4 x Split washer 2 x Flange bearing M8x12x3.5mm 1 x Aluminium sleeve 2 x Ball head buckle for tail holder</p>	<p>Tail pitch assembly KA-72-054</p>  <p>6 x Umbrella head socket head machining screws M2.5x6mm 6 x Flange bearing M2.5x6x2.6mm 1 x Tail rocker arm mount 2 x Coppter washers Ø2.6xØ0.5mm 1 x Tail rocker arm 2 x Umbrella head socket head machining screws M2x6mm</p>
<p>Tail rotor holder KA-72-055</p>  <p>2 x Thrust bearing (F5-10M) 1 x Tail rotor hub (outer-teethed) 2 x Tail rotor holder 4 x Washers for Tail rotor holder(PVC) 2 x Short ball head Ø5.0x10mm-M3 4 x Surface bearings Ø5xØ10x4mm 2 x Cup head socket head half tooth screw M3x20mm 1 x Grub screw M4x4mm 4 x Nylon nuts M3 2 x Iron washers Ø3x8x0.6mm</p>	<p>Tail rotor hub KA-72-056</p>  <p>2 x Grub screw M4x4mm 4 x Nylon nuts M3 4 x Iron washers Ø3x8x0.6mm 2 x Tail rotor hub</p>	<p>CF Rudder control rod KA-72-057</p>  <p>4 x Grub screw M2.5x10mm 2 x CF rudder control rod 4 x Aluminium sleeve for tail boom 4 x Tail boom connector</p>	<p>CF Rudder control rod KA-72-058</p>  <p>2 x CF rudder control rod 4 x Metal head of rudder control rod 4 x Ball link Ø5.0</p>
<p>Boom support head KA-72-059</p>  <p>4 x Boom support head</p>	<p>Frame connecting bolt KA-72-060</p>  <p>2 x Frame connecting bolt 2 x Battery plate connecting bolt 2 x ESC fixing bolt 1 x Grub screw M3x12mm 10 x Cup head socket head screw M3x8mm</p>	<p>Swashplate Anti-rotation bracket KA-72-061</p>  <p>1 x Swashplate Anti-rotation bracket 2 x Cup head socket head machining screws M2x6mm</p>	<p>canopy mounting bolt KA-72-062</p>  <p>2 x behind canopy mounting bolt 2 x Canopy mounting bolt 2 x Front canopy damping 2 x Aluminium sleeve for case bolts 2 x grub screw M3x12mm 4 x retainer ring 2 x cup head socket head screw M3x14mm</p>
<p>Linkage rod set KA-72-063</p>  <p>1 x Linkage rod (56MM) 2 x Linkage rod (38MM) 6 x Ball head buckle Ø 5.0</p>	<p>Linkage ball set KA-72-064</p>  <p>1 x Cross plate guide post 4 x Intermediate linkage ball Ø 5.0x10.7mm 2 x Short ball head Ø 5.0x10mm M3 5 x Short ball head Ø 5.0x10mm M2</p>	<p>Ball link set KA-72-065</p>  <p>2 x Linkage Ball 8 x Linkage Ball Ø 5.0 2 x Linkage Ball Ø 5.0</p>	<p>Servo mount metal spacers KA-72-066</p>  <p>4 x Cup head socket head half tooth screw M3x16mm 2 x Servo mount metal spacers 2 x Servo cover plate</p>
<p>Gear hub KA-72-067</p>  <p>1 x Gear couple axle 5 x Sink head Phillips machining screws M3x6mm 1 x Cup head socket head half tooth screw M4x25mm 1 x Nylon nuts M4 1 x Flat pin</p>	<p>Vertical stabilizer mount KA-72-068</p>  <p>1 x Vertical stabilizer mount 3 x Cup head socket head screw M3x10mm 2 x Conical washers 2 x Cup head socket head screw M3x8mm</p>	<p>Tail boom brace mount KA-72-069</p>  <p>1 x Tail boom brace mount 2 x Conical washers 3 x Cup head socket head screw M3x10mm</p>	<p>CF Tail boom KA-72-070</p>  <p>1 x CF Tail boom</p>
<p>Tail boom brace mounting ring KA-72-071</p>  <p>2 x Tail boom brace mounting ring 2 x Nylon nuts M2 2 x Cup head socket head screw M2x10mm</p>	<p>CF Tail pitch connecting piece KA-72-072</p>  <p>2 x Hexnuts M2 2 x CF tail pitch connecting piece 2 x Umbrella head socket head machining screws M2x6mm 2 x Short linkage ball</p>	<p>Tail shaft locking collers ring KA-72-073</p>  <p>2 x Tail shaft locking collers ring 4 x Grub screw M3x3mm</p>	<p>Conical washers KA-72-074</p>  <p>10 x Conical washers</p>



## 40.PARTS LIST 4

<p>Battery straps KA-72-075</p>  <p>Battery straps x2</p>	<p>Washers set KA-72-076</p>  <p>1 x Washers set</p>	<p>Screws set KA-72-077</p>  <p>1 x Screws set</p>	<p>Canopy KA-72-078</p>  <p>4 x Canopy rubber ring 1 x Canopy</p>
<p>Thrust bearings KA-72-079</p>  <p>2 x Thrust bearings F5-10M</p>	<p>Thrust bearings KA-72-080</p>  <p>2 x Thrust bearings F10-18M</p>	<p>Flange bearings KA-72-081</p>  <p>2 x Flange bearings Ø2.5xØ6x2.6mm</p>	<p>Flange bearings KA-72-082</p>  <p>2 x Flange bearings Ø8xØ12x3.5mm</p>
<p>Flange bearings KA-72-083</p>  <p>2 x Flange bearings Ø6xØ15x5mm</p>	<p>Surface bearings KA-72-084</p>  <p>2 x Surface bearings Ø3xØ7x3mm</p>	<p>Surface bearings KA-72-085</p>  <p>2 x Surface bearings Ø5xØ10x4mm</p>	<p>Surface bearings KA-72-086</p>  <p>2 x Surface bearings Ø6xØ13x6mm</p>
<p>Surface bearings KA-72-087</p>  <p>2 x Surface bearings Ø8xØ16x5mm</p>	<p>Surface bearings KA-72-088</p>  <p>2 x Surface bearings Ø10xØ19x5mm</p>	<p>Surface bearings KA-72-089</p>  <p>2 x Surface bearings Ø10xØ22x6mm</p>	<p>Surface bearings KA-72-090</p>  <p>2 x Surface bearings Ø12xØ24x6mm</p>
<p>Surface bearings KA-72-091</p>  <p>2 x Surface bearings Ø30xØ37x4mm</p>	<p>Main rotor head KA-72-001</p>  <p>1 x Main rotor head</p>	<p>Brushless motor KA-72-092</p>  <p>1 x Brushless motor BL4725-540KV</p>	<p>CF Tail blade KA-72-094</p>  <p>2 x CF Tail blade</p>
<p>CF Main blade 1193-10</p>  <p>2 x CF Main blade</p>			

Regular maintenance is required to keep the KDA AGILE 7.2 helicopter in optimal and safe flying condition. The model requires precise configuration of the components and settings to be kept by the owner. Maintain regular maintenance on the model to avoid accidents or loss, and optimum performance.

### MAIN ROTOR CHECKLIST

- 1.Main Rotor Housing: when the main rotor housing is worn or faulty, there will be obvious vibration and poor flight control. Check the main rotor, main shaft, and feathering shaft for wear or deformity. Replace parts as necessary to eliminate imbalance.
- 2.O-Rings:The O-Rings will lose their elasticity over time. This will cause excess play on rotor and cause instability. Replace them as needed.
- 3.Main Rotor Holder: When the helicopter does not fly or reacts sluggishly, even after checking for proper setting of pitch and throttle, check the following items: Plastic parts, Bearings, Ball bearings, Rotor Blades. Check for excess play or broken parts, or binding or restricted movement. It is important to check for main rotor balance before each flight. Operating the model when out of balance will cause excessive wear and premature failure of parts, possibly resulting in a dangerous situation.
- 4.Control Arm Assembly: Check regularly for cracked, worn, bent or binding control arms and pushrods. Smooth movement of control arms and linkages is required for stable, vibration free flight.
- 5.Swashplate:Check for excess slop in the main ball where the main shaft rides on, and slop or looseness between the plastic and metal surfaces. Swashplate wear will result in poor stability and lack of control during flight. Replace them as necessary.

### FUSELAGE/CHASSIS

- 1.Main Shaft Bearing: Normal replacement interval for proper operation is between 60-100 flights. If flying 3D or extreme aerobatics often, inspect the bearing more frequently and shorten the interval as necessary.
- 2.One-way Bearing: One-way bearings have longer lifetimes. Failure is not common. To keep the one-way bearing in good operation, remove it to clean and lubricate after every 50 flights. If the main drive gear is loose, you should replace the one-way bearing.
- 3.Drive Belt: Agile and KDS uses only top quality, stretch-proof belts. It is however, impossible to prevent the belt from stretching or wearing out. Check belt tension regularly, and check for the wear on the teeth. Replace it as necessary.

### LINKAGE RODS&CONNECTING PARTS

During assembly, take special care to keep the connecting parts in smooth operation, and avoid excess play or binding. Failure to do so will result in poor flight stability. The linkage rods and ends will break and wear due to normal usage, crashing, and poor maintenance and environment. Check for wear and proper operation regularly,replace them as needed.

### TAIL ROTOR SYSTEM

- 1.Tail Rotor Control Set: Check the tail rotor bearing regularly. If there is excess play or gaps, replace it immediately. Avoid any binding or improper contact on the tail components and bearings as this will cause excess wear and heat, potentially melting or deforming the tail system.
- 2.Tail Unit Assembly: Avoid flying in tall grass or weeds. If grass or weed becomes lodged in the tail rotor unit, it will interfere with the operation, and cause the helicopter to lose control. Always check for foreign objects in the tail and clean them off immediately. Avoid using lubricants on the exposed surfaces of the model as it will attract and collect dirt and debris, and cause failure.
- 3.Tail Rotor Housing: Disassemble tail rotor housing for cleaning and maintenance after every 50 flights. If the tail does not operate smoothly or shows any signs of stress or wear, please replace immediately.
- 4.Tail Rotor: Check the tail rotor blades regularly for damage, especially if the helicopter ever strikes the ground while flying, or after hard landings. Damaged tail rotor blades can induce vibration.



