

INFUSION 7000



Instruction Manual



Safety Precautions

Helicopter spinning blades are potential dangerous. Please ensure to maintain a minimum distance of 10m from the aircraft at all times. It is the responsibility of the builder to ensure the aircraft is airworthy and safe to operate in the designated area. On going maintenance is required by the operator to ensure continuous safe use and all damaged parts should be replaced immediately.

Small components are included in the kit, please ensure the kit parts are kept out of children's reach, as they are small enough to swallow.

Use only TSA Model genuine parts, failure to do so could result in damage to both the aircraft and personal in the area. TSA Model takes no responsibility for the operational use of the aircraft.



Caution

Reproduction of the manual and any TSA components are strictly prohibited.

The contents of this manual are subject to change without prior notice.

Every effort has been made to ensure that this manual is complete and correct.



ENDLESS PURSUIT OF PERFECTION

Welcome to the TSA family and congratulations on your new purchase. Please read this instruction manual carefully to ensure you understand every step of the build process. Most of all happy building and we look forward to seeing you around the world at many events.

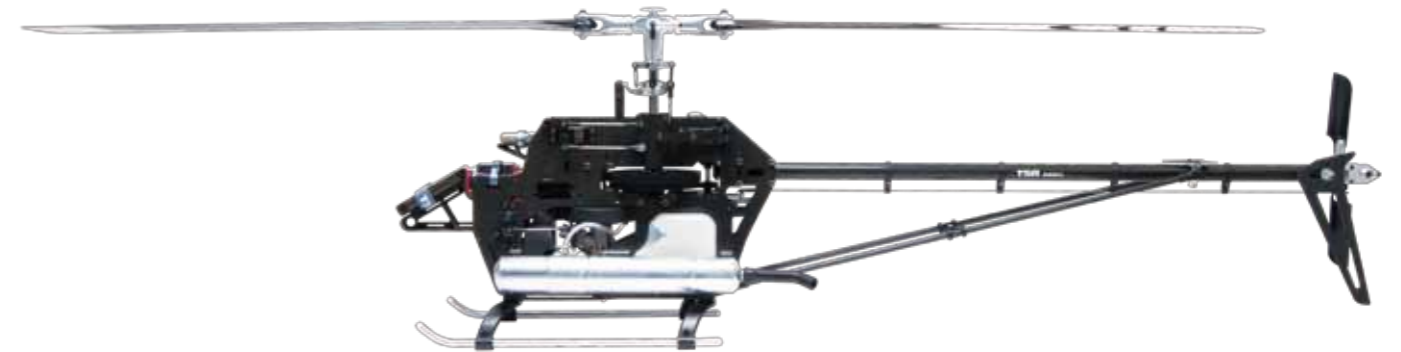
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- ★ 1~2. Introduction
- ★ 3. Safety instructions prior to assembly
- ★ 4~5. Tools required for assembly
- ★ 6~31. Parts assembly
- ★ 32. Blade tracking adjustment
- ★ 33~34. Operation mode
- ★ 35. Flying notes
- ★ 36~42. Parts package list



Specifications

- ★ Full length of fuselage ----- 1845mm
- ★ Full width of fuselage ----- 215mm
- ★ Height ----- 419mm
- ★ Flying weight (approx) ----- 4420g
- ★ Main rotor diameter ----- 1580mm
- ★ Tail rotor diameter ----- 262mm
- ★ Engine class ----- 90/120
- ★ Gear ratio ----- 8.4:1 8.0:1
- ★ Main gear ratio ----- 15T:126T/120T
- ★ Tail gear ratio ----- 113T:25T
- ★ Full tank capacity ----- 650cc
- ★ Main blade (not included) ----- 680~710mm
- ★ Tail blade (not included) ----- 90~110mm





While in flight

- 1: Beginners should obtain safety and technical guidance from an experienced individual, since learning alone to operate this machine is potentially dangerous.
- 2: Choose a safe flying area that is free of obstruction and people.
- 3: Do not fly in a potentially dangerous environment.
- 4: Do not operate while standing on tilted ground to avoid loss of balance.
- 5: Do not insert hands and objects in rotating parts.
- 6: Keep a safe distance from the unit and be sure to operate the unit within the limits of your ability. Failure to operate this unit properly may result in serious harm such as physical injury, damages to property, and even death.
- 7: Enjoy flying while observing safety rules and regulations. Fatigue brought upon by continuous operation may result in impaired judgment that may lead to accidents.
- 8: Inquiries regarding repairs and services should only be made to TSA authorized dealers or TSA technical support department. Individual lacking proper training or knowledge necessary for repair may not only impair the unit's performance, but also increases the risk of accidents or injury. The engine must be turned off before performing any repairs or adjustments. Repair damaged parts before storage using only TSA manufactured parts. When storing or transporting the units, secure the unit carefully to avoid fuel loss, damage, or injury.



Fuel for engine

- 1: Only use glow fuel for glow model engines.
Glow fuel is highly flammable and should be handled with care.
- 2: Before refueling, the engine should be turned off.
- 3: Do not refuel near a naked flame. Do not smoke while refueling. Avoid spillage and be sure to always completely wipe down any spilled fuel. Since fuel vapor and exhausted gas from the unit's operation are hazardous to health, this product is only intended to be used in an outdoor environment.
- 4: The fuel is hazardous. Do not consume and avoid getting fuel in the eyes. If an accident or swallowed occurs, obtain professional medical advice/treatment immediately.
- 5: Fasten the cap on the fuel bottle tightly and store in a cool shaded place. Keep the fuel out of reach of children. The ideal storage temperature should be around 10°C.



Pre-flight inspection

- 1: Check that tools used for assembly and maintenance has been put away.
- 2: Check that there are no loose screws and parts.
- 3: Check that the rotor blades are not damaged or cracked, especially in the vicinity of the blade holder.
- 4: Check the condition of the glow plugs and fuel, old glow plugs and fuel may not only cause difficulties to start the engine, but also the possibility of stalling and crashing in mid-flight.
- 5: Check that electronic equipment and servos operates smoothly.
- 6: Check that the position of the transmitter's throttle stick and engine carburetor are at their low position.
- 7: Check that the receiver receives signals properly.
- 8: Check and ensure that all necessary parts are sufficiently lubricated.
- 9: Check radio is assigned to the correct mode.



In-flight safety inspection

- 1: When starting the engine, be sure to hold the rotor head firmly so the rotor head does not rotate.
- 2: Since the engine and muffler is heated from the operation and remains extremely hot immediately after startup or shutdown, take extra precaution to prevent burns.
- 3: When taking off, the unit should be positioned at least 10 meters away from the operator. Be sure to check for people and dangerous object in the surrounding area before takeoff.
- 4: Adjust the blade tracking right before takeoff.
- 5: Land the unit immediately if abnormal noise or vibration is observed. Then stop the engine and perform complete check for cause of problem.
- 6: Be responsible when operating this unit, as reckless or improper behavior may cause accidents or injury to self or others. Observe all safety rules and regulation while enjoy operating this unit safely and responsibly.



After-flight safety inspection

- 1: Immediately inspect parts after every flight. Be sure to replace, retighten any missing or loose screws and replace any damaged parts.
- 2: Wipe down grease, oil, dirt and dust with a clean cloth.
- 3: If the unit is to be stored out of operation for a long period of time, completely drain remaining fuel from the fuel tank and carburetor.
- 4: Store the unit in an area free of direct sunlight, or other areas that may result in rise in temperature (e.g., car). Instead, store in a shaded and ventilated area, and keep out of reach of children.




Warning

- 1: To reduce the risk of accidents and injuries, do not use parts other than those found in this manual or TSA catalog. TSA will not be responsible for problems caused by using non-genuine TSA parts.
- 2: If the rotor blades should strike the ground during flight, there may be tiny cracks or loosening in various places even though damages may not be clearly visible to naked eyes. If damage to the rotor blade is not fixed before flight, cracks and loosening may increase during flight that would lead to severe consequences. The rotor head may disassemble from the blade holder, which spins at a speed of 1200/2000 rpm, and may fly off from the blade holder. If in doubt regarding the condition of any part, replace the part immediately using only genuine TSA parts.
- 3: TSA will not be held responsible for damages or crash as a result from any loose screws and/or improper maintenance.
- 4: Radio wave transmitting distance is approximately one kilometer or more, therefore operator must check no other operators in the surrounding vicinity are using the same radio frequency.
- 5: This remote control model is not a toy, rather a precise machine. Proper assembly and adjustments must be made in order to avoid the risk of injuries or accidents. Operator should operate this unit safely and properly. Failure to operate this unit properly may result in serious harm such as physical injury, damages to properties, and even death. The operator is responsible for all damages, because TSA cannot control how the unit was assembled and used.
- 6: Recommended 14+ years .



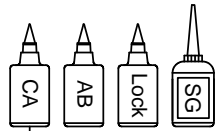
Caution

Please abide by regulations in your county while enjoying the pleasure brought to you by the  700N series.



Preassembly precautions

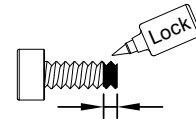
1. Before assembly, read the instruction manual thoroughly and familiarize yourself with the unit's structure and assembly procedures. Failure to assemble the unit properly may not only impair performance but also increases the risk of danger.
2. Before assembly, check description and quantity of parts. In the event of missing or defective items, contact retailer of original purchase where authorized distributor or TSA support department can be located.



Self-furnished

CA=Cynoacrylate adhesive
 AB=5 minute epoxy / A=3 : B=1
 Lock=Thread lock
 SG=Silicone grease

Diagram for applying thread lock



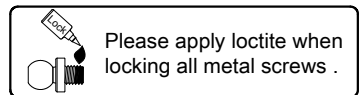
Glue width :1.5mm

3. Apply lubricant and retainers on locations as indicated .
4. In the instruction manual, refer to the left hand column to check the type and quantity of parts.

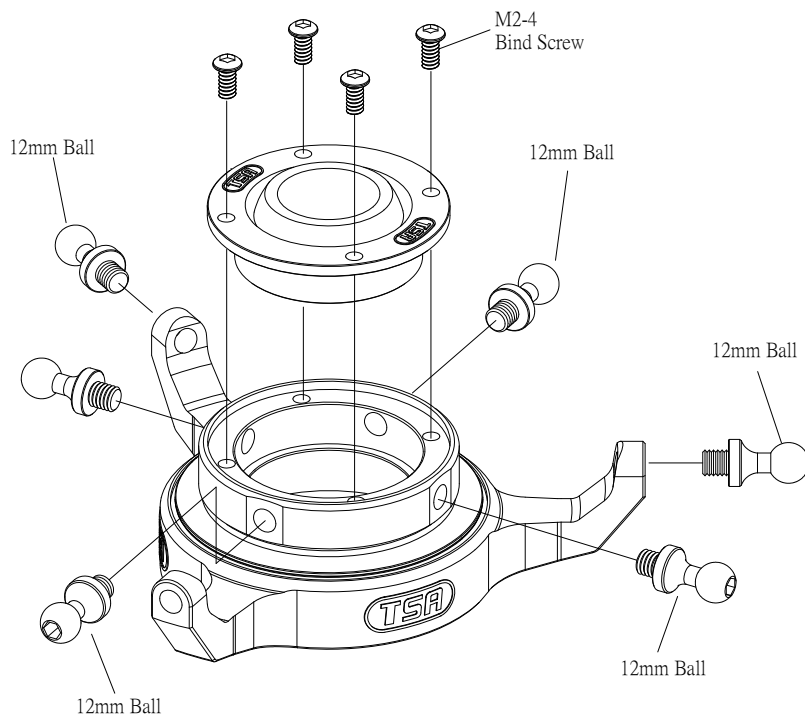
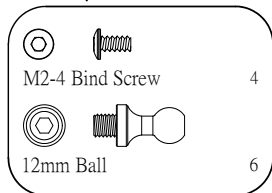
Swashplate Assembly

T-016-05

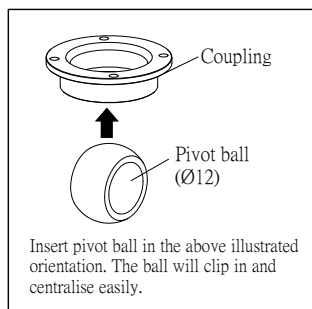
Parts order number



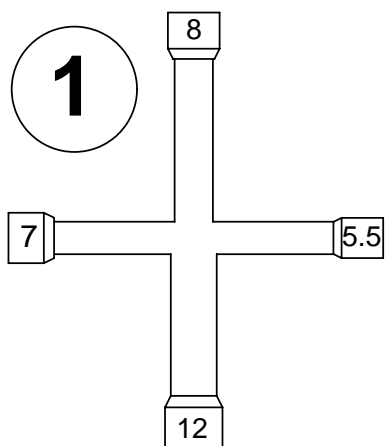
Part name and quantity in this diagram is to 1:1 ratio



Assembly Tip



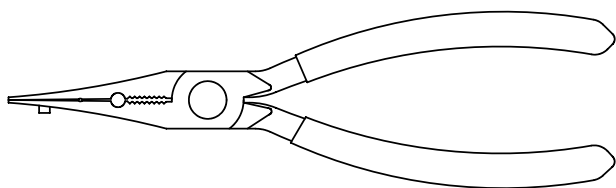
TOOLS REQUIRED FOR ASSEMBLY



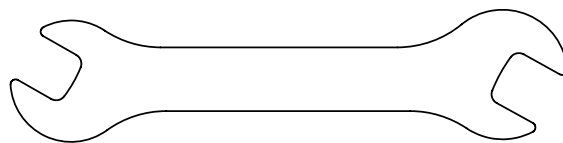
Cross wrench
(5.5~12)



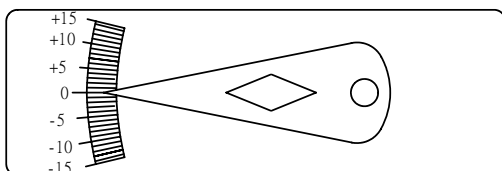
Metric ruler
(Over 30cm)



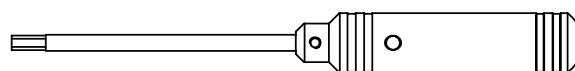
Universal ball link plier



Spanner
(6mm/8mm/12mm/21mm)



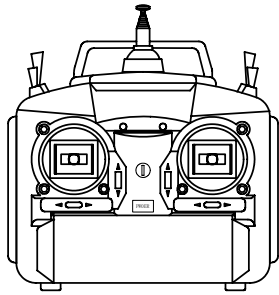
Pitch gauge



(Allen head) Screw drivers
(1.5mm/2mm/2.5mm/3mm/3.5mm/
4mm/5mm)

EQUIPMENT REQUIRED FOR OPERATION

1

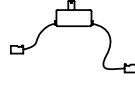


Transmitter(7 channels)

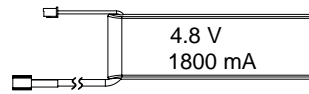
Receiver



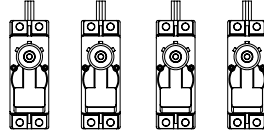
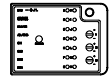
On/off switch



Receiver battery



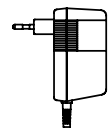
3 Axis gyro system



Servos



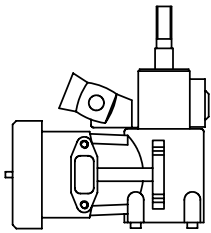
Rudder servo



Charger

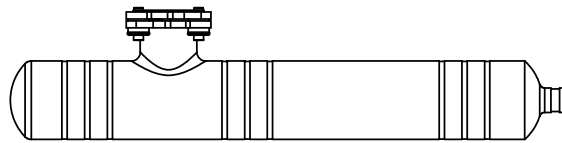
2

90 size helicopter engine



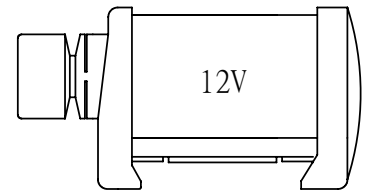
3

90 size helicopter muffler



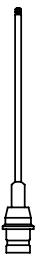
4

Starter



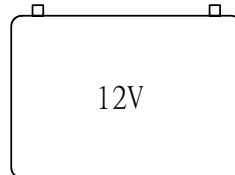
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Starter shaft



6

12V Battery



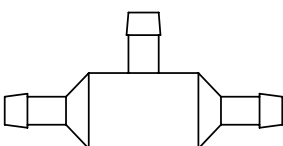
7

Remote glow plug adapter



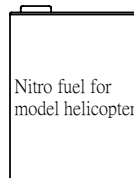
8

Fuel filter



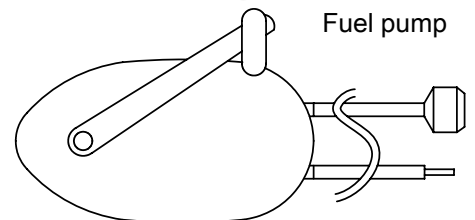
9

Nitro fuel for model helicopter (10~30%)



10

Fuel pump



1

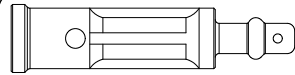
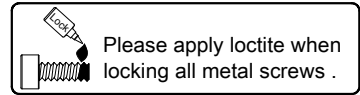
Main Frame Assembly-1

T-001-15

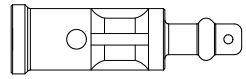
T-007-04

T-003-00

T-005-00



37.5mm Canopy rear support 1



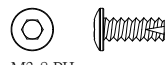
30.5mm Canopy front support 1



M2-4 Bind Screw 2



M3-6 Bind screw 4



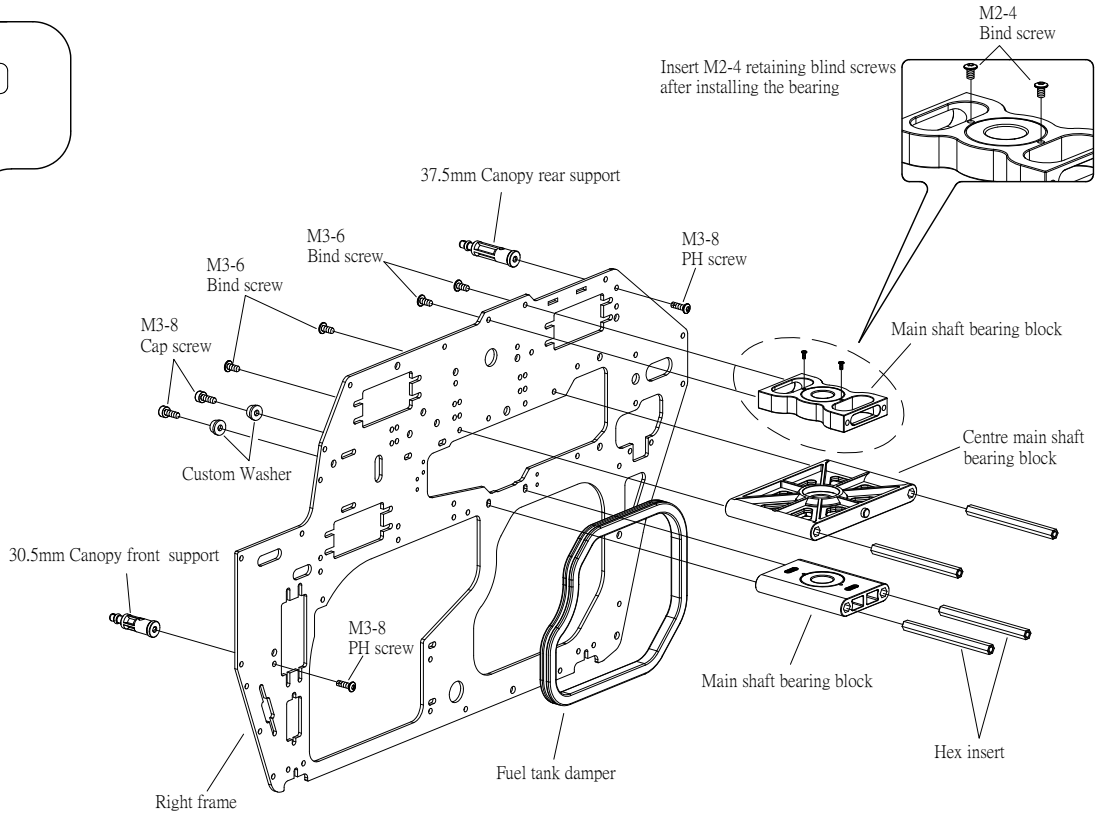
M3-8 PH screw 2



M3-8 Cap screw 2



Custom Washer 2



2

Main Frame Assembly-2

T-001-15

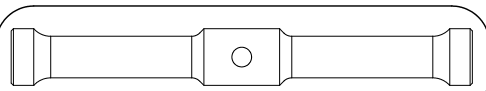
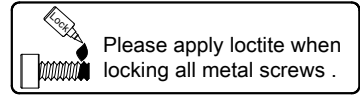
T-009-00

T-002-04

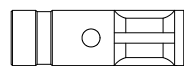
T-022-01

T-005-00

T-031-00



61mm Cross member 1



23mm Servo support 2



Ø5xØ10x4 Flange Brg 1



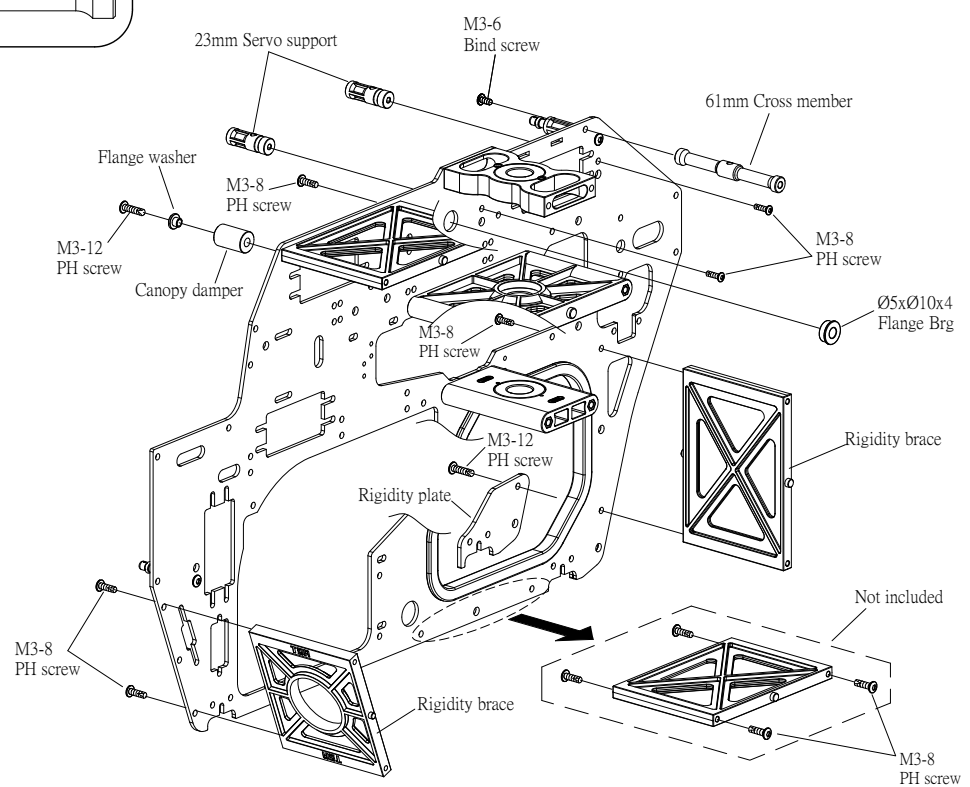
M3-6 Bind screw 1



M3-8 PH screw 6



M3-12 PH screw 2



3


Main Frame Assembly-3

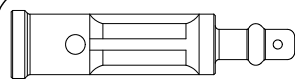
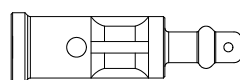
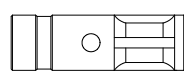


T-001-14

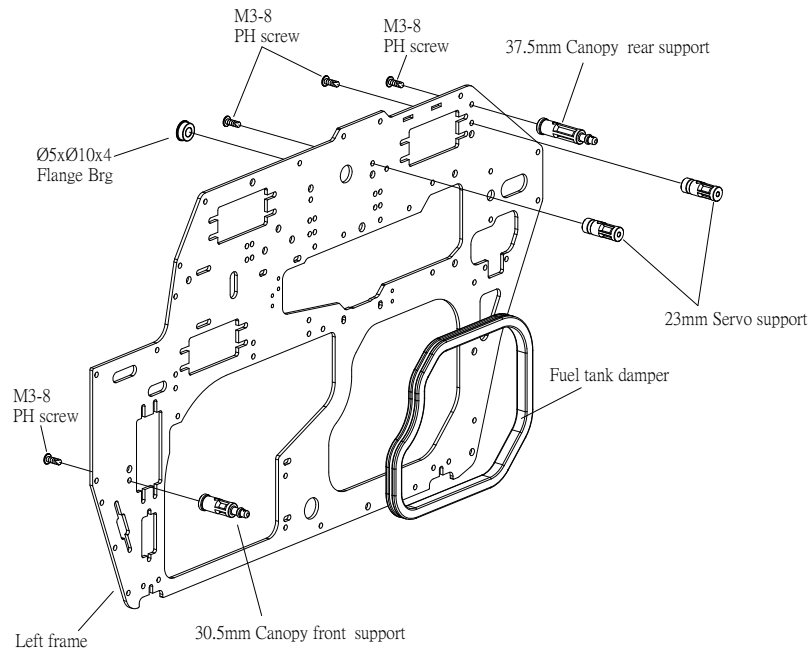
T-022-01

T-003-00

T-005-00

 Please apply loctite when locking all metal screws .

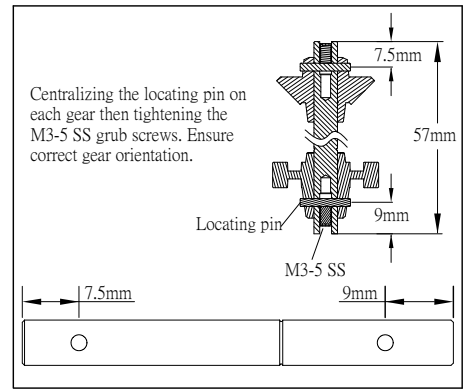
-  37.5mm Canopy rear support 1
-  30.5mm Canopy front support 1
-  23mm Servo support 2
-  M3-8 PH screw 4
-  Ø5xØ10x4 Flange Brg 1





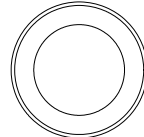
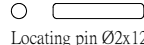
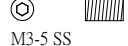

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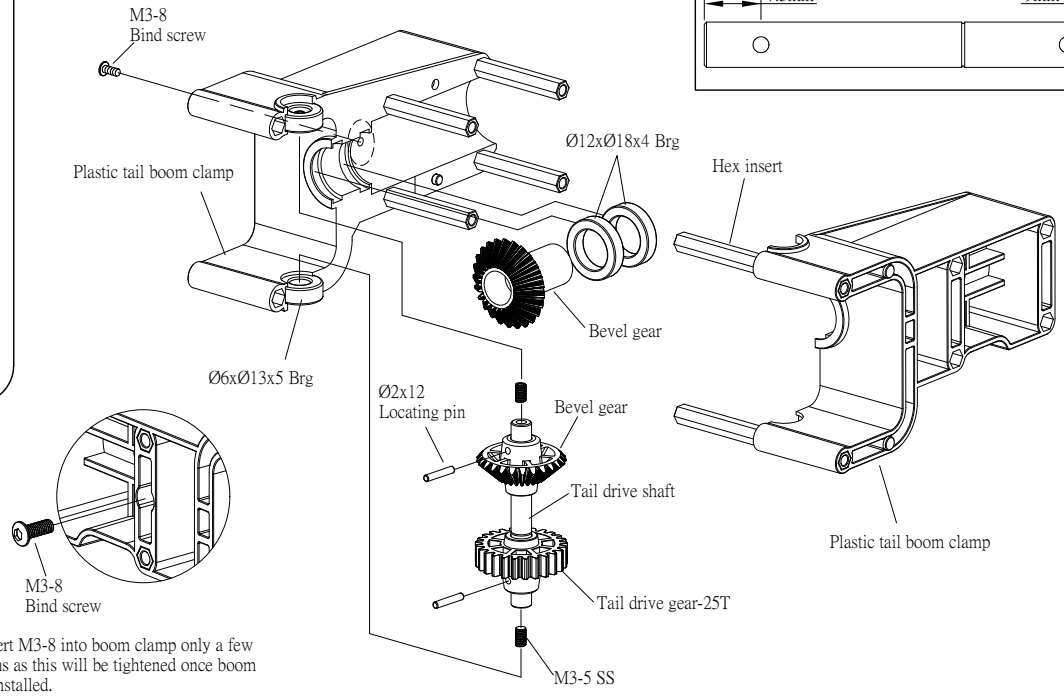
Tail Drive Gear Assembly

T-019-00



 Please apply loctite when locking all metal screws .

-  Ø6xØ13x5 Brg 2
-  Ø12xØ18x4 Brg 2
-  Locating pin Ø2x12 2
-  M3-5 SS 2
-  M3-8 Bind screw 1





Insert M3-8 into boom clamp only a few turns as this will be tightened once boom is installed.

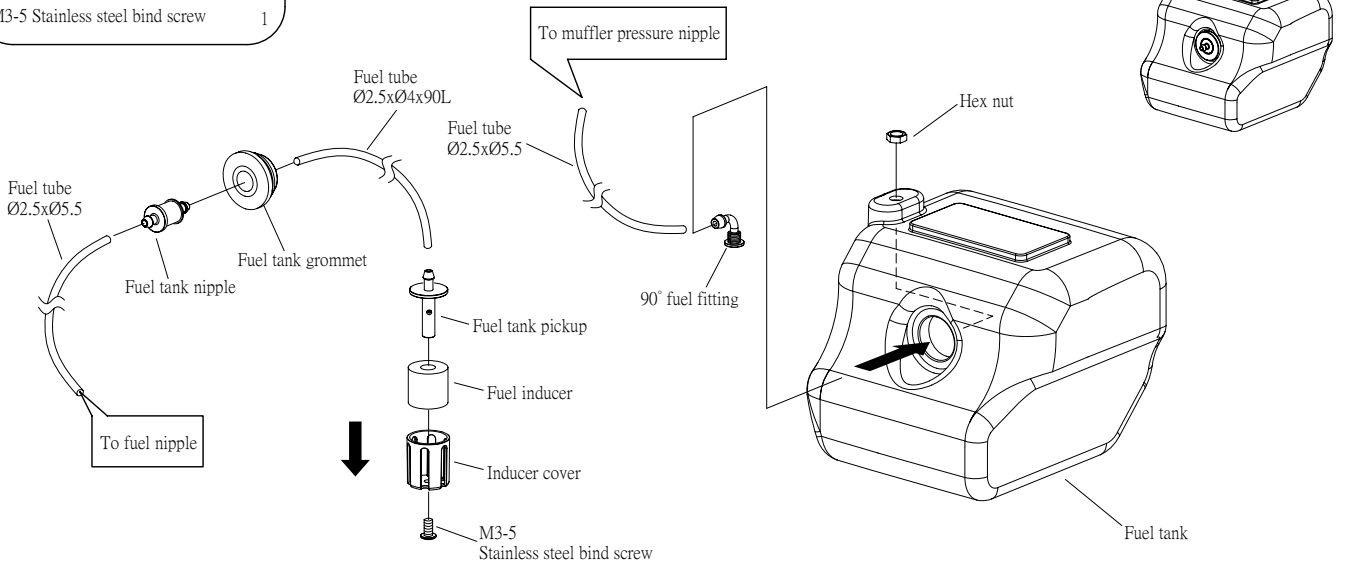
5

Fuel Tank Assembly

T-003-00

 Please apply loctite when locking all metal screws .


-  M3-5 Stainless steel bind screw 1








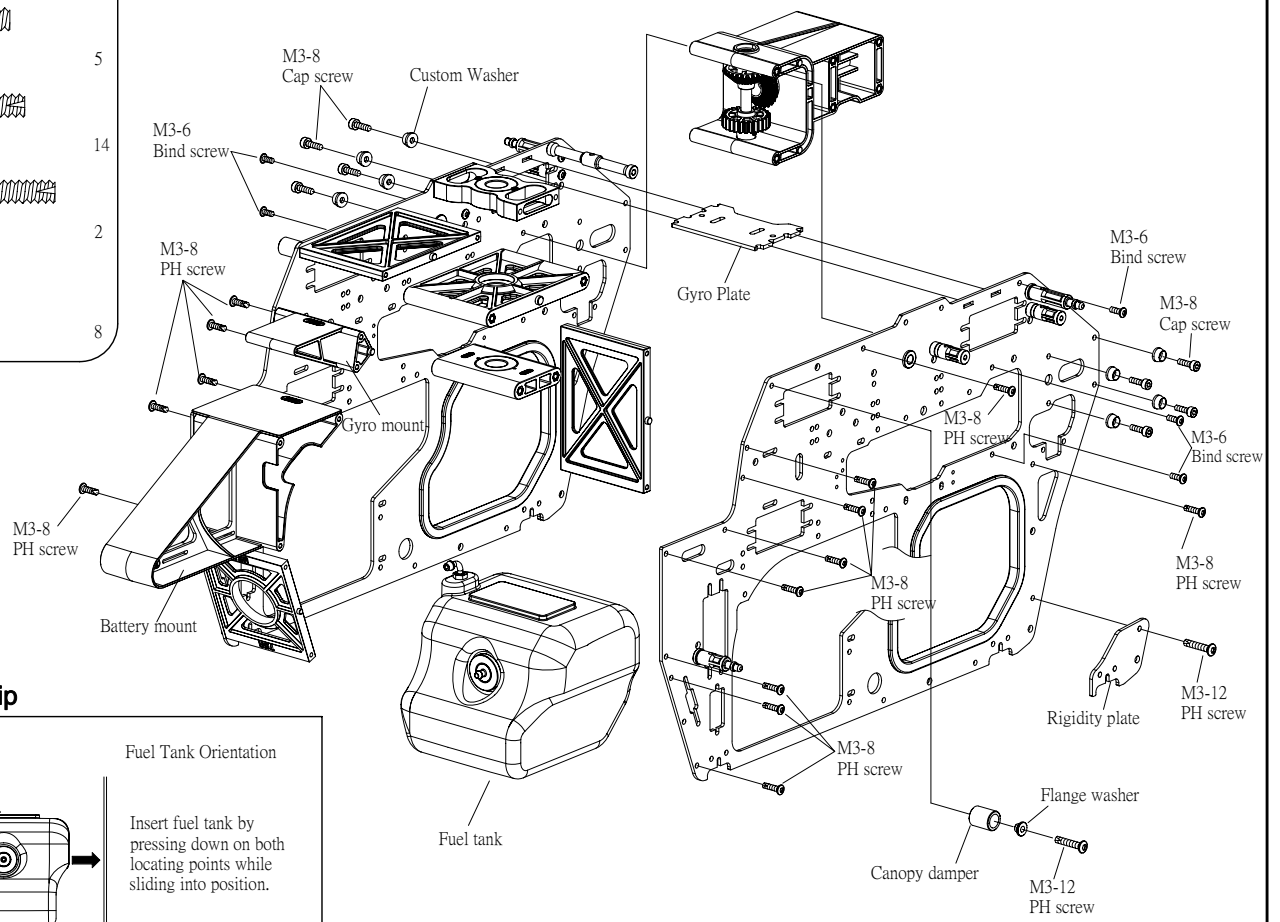
6

Main Frame Assembly-4

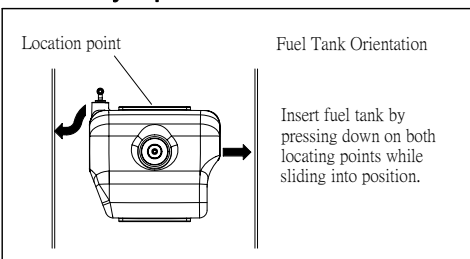
T-002-04 T-009-00
T-004-00 T-019-00
T-005-00 T-031-00

 Please apply loctite when locking all metal screws .

-  M3-8 Cap screw 8
-  M3-6 Bind screw 5
-  M3-8 PH screw 14
-  M3-12 PH screw 2
-  Custom washer 8



Assembly Tip



7

Main Frame Assembly-5

T-002-04











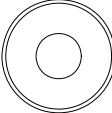
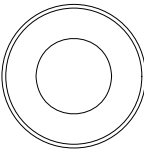
T-010-02

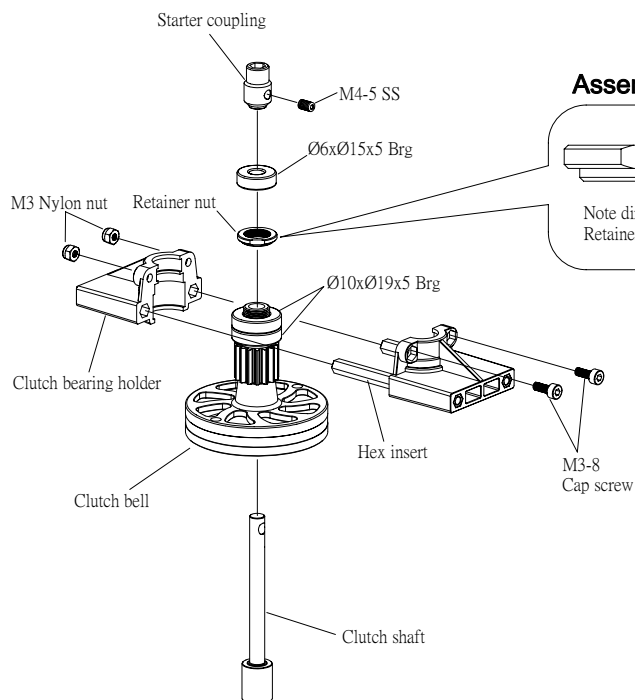
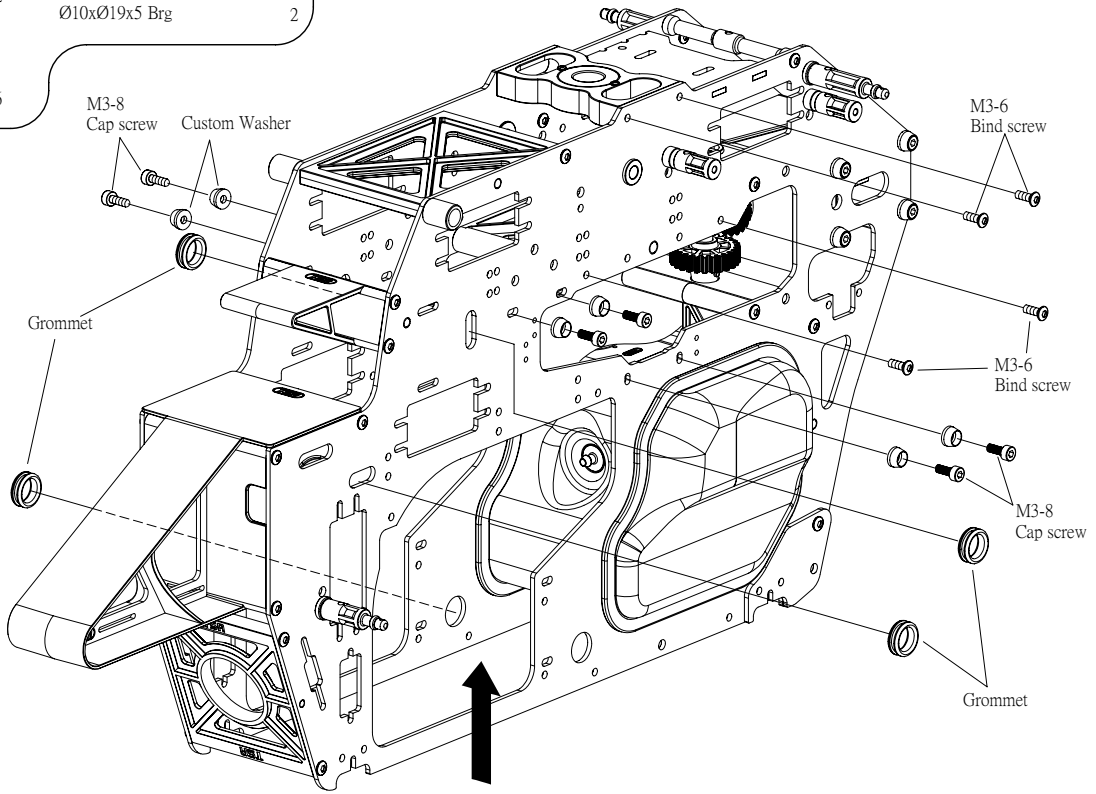
T-006-00

T-016-05

T-007-04

 Please apply loctite when locking all metal screws.

-   1
 -   4
 -   8
 -   2
 -   6
-  1
 -  2




Assembly Tip





Note direction of the Retainer nut!

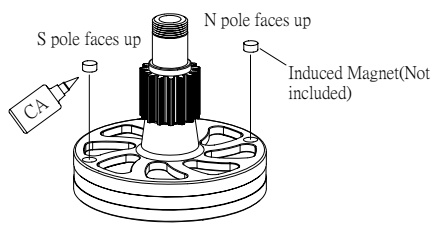
8

RPM Sensor Assembly

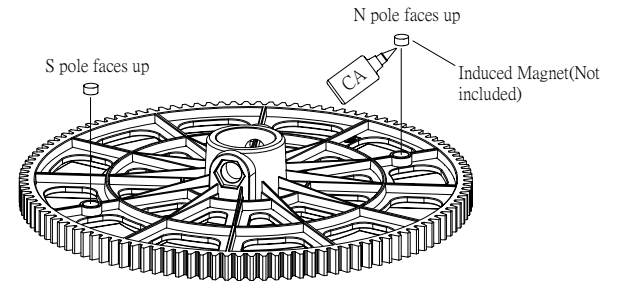
Two means of induced magnet RPM Sensor assembly are provided!

 Please apply loctite when locking all metal screws .

-  M2-6 Cap screw 2
-  M2-7 Cap screw 2
-  M2-8 Cap screw 2
-  M2 Nut 6



Suitable for both TSA and Futaba RPM Sensor assembly.



Only for TSA RPM Sensor assembly.

TSA RPM Sensor assembly means 1: (only for right main frame assembly)

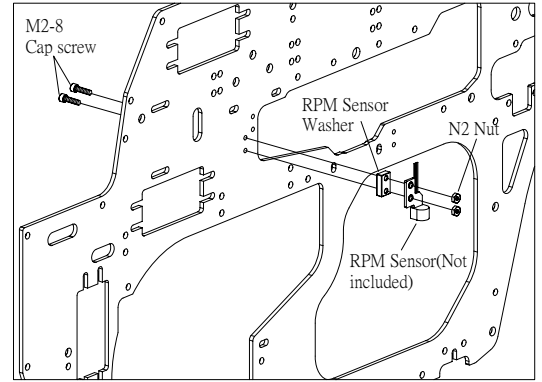
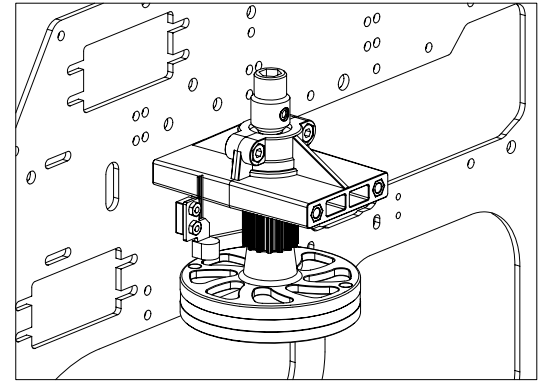


Diagram :



TSA RPM Sensor assembly means 2: (only for left main frame assembly)

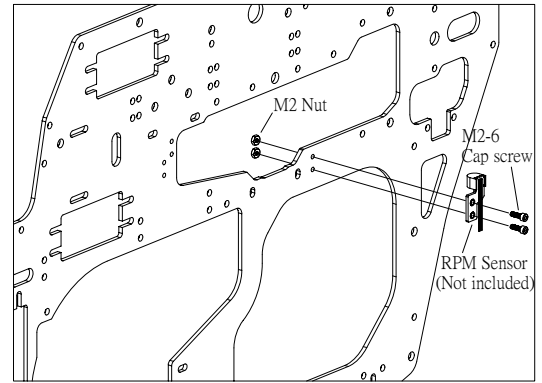
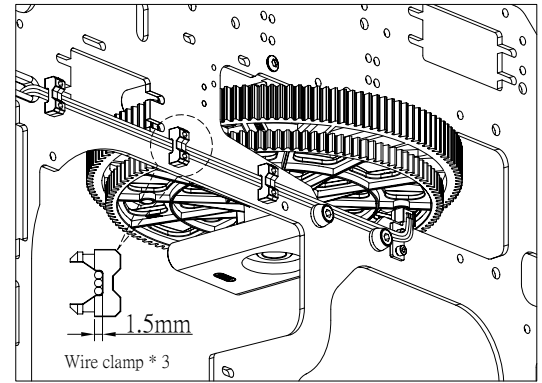


Diagram :



Futaba RPM Sensor assembly means : (for both right and left main frame assembly)

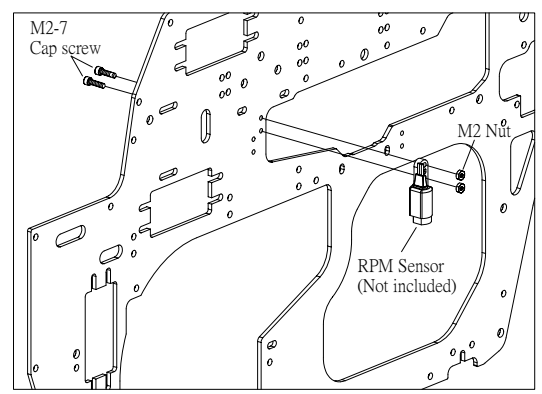
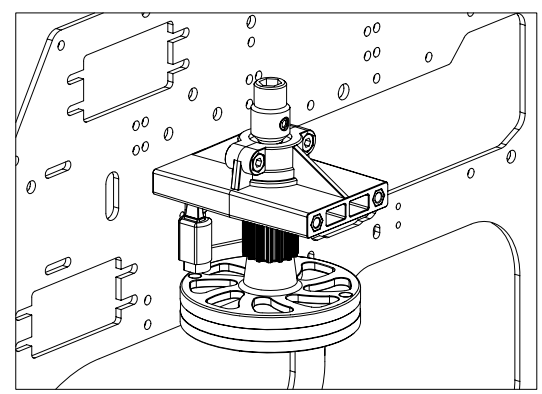



Diagram :







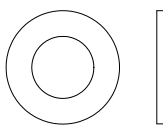


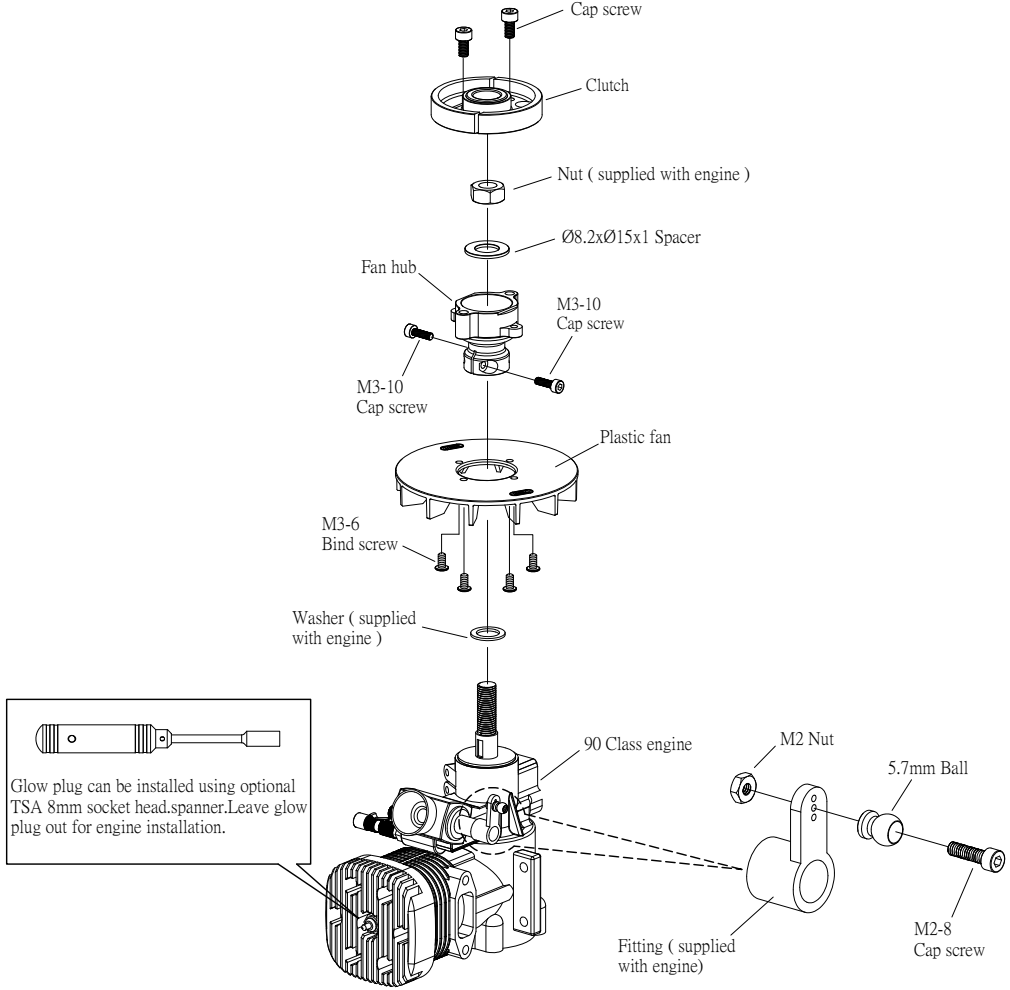
9

Engine Assembly

T-010-02
T-014-01

 Please apply loctite when locking all metal screws .

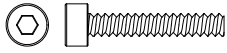



-  1
-  2
-  2
-  4
-  1
-  1
-  1

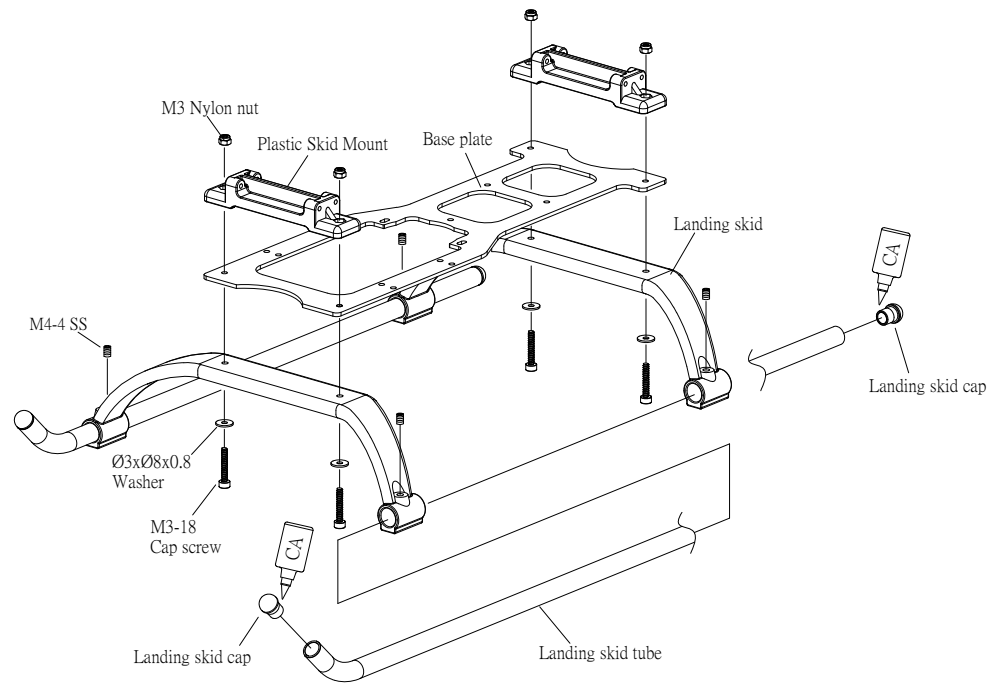


10

Landing Gear Assembly-1

T-012-00
T-013-01

-  4
-  4
-  4
-  4










11

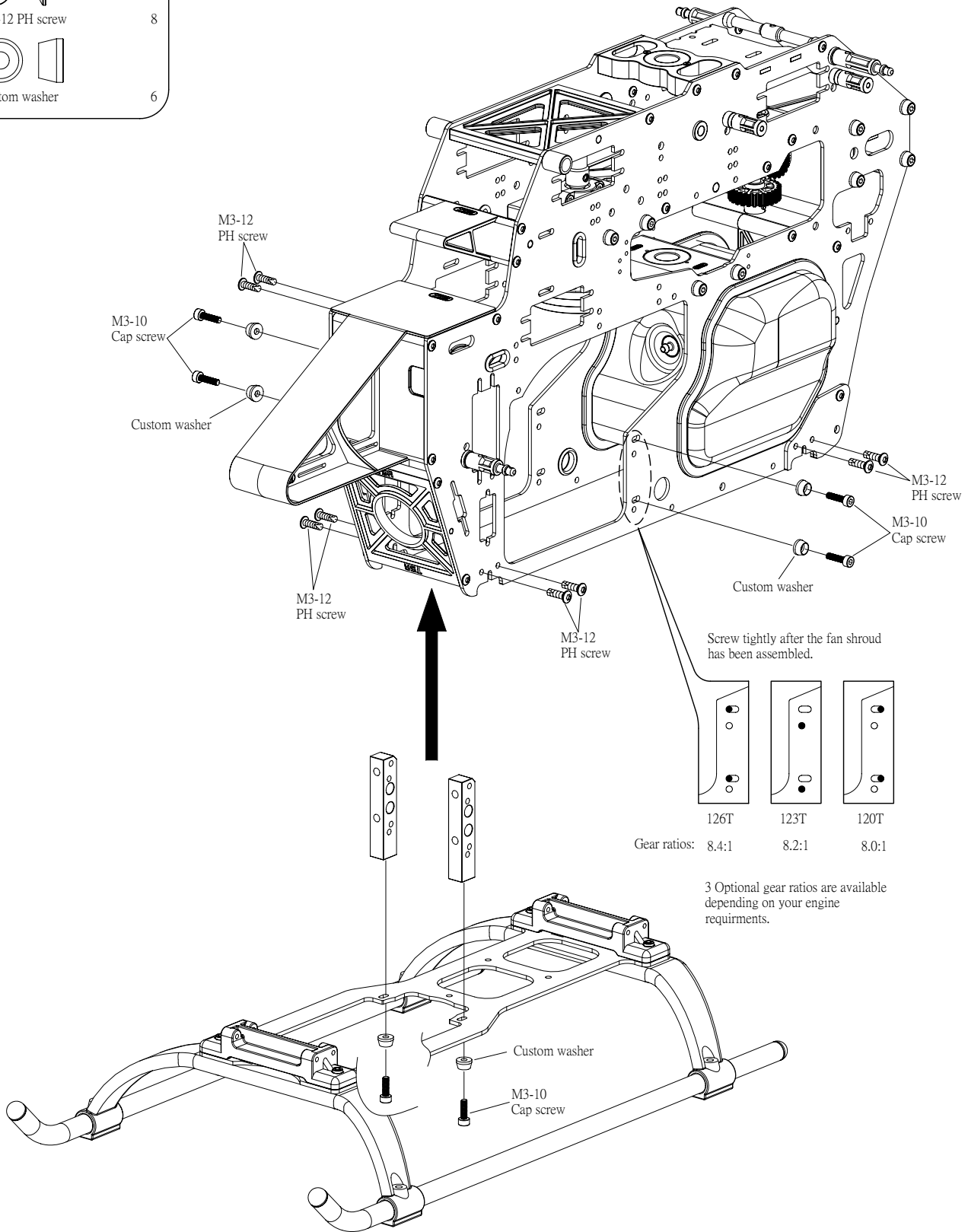
Landing Gear Assembly-2

T-012-00

T-014-01

 Please apply loctite when locking all metal screws .


-   M3-10 Cap screw 6
-   M3-12 PH screw 8
-   Custom washer 6





















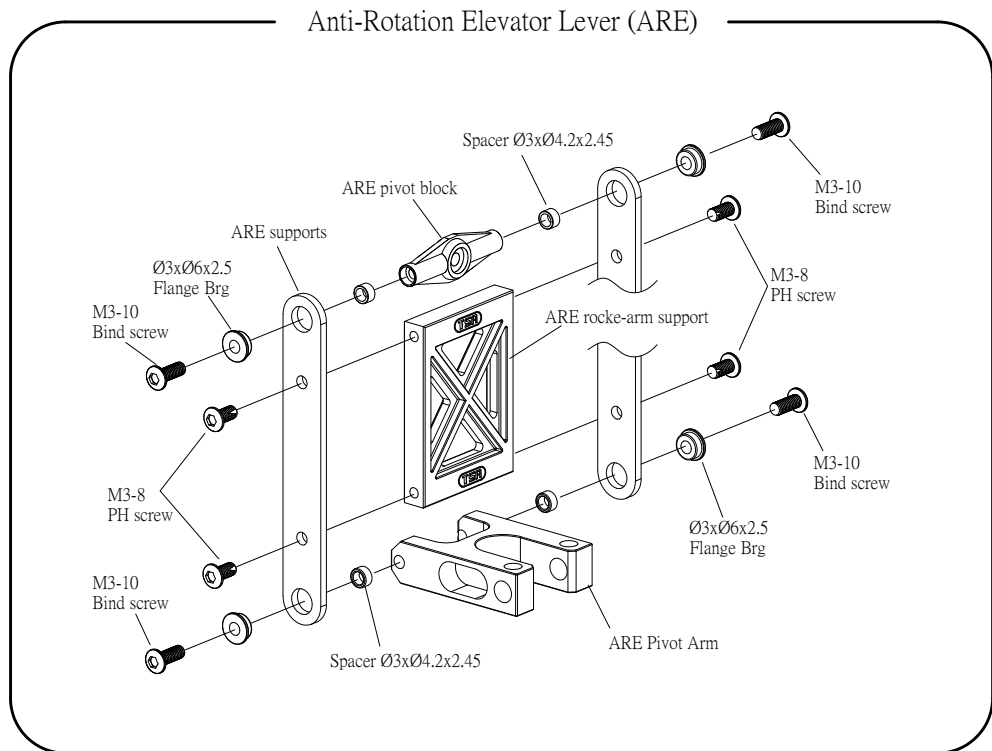
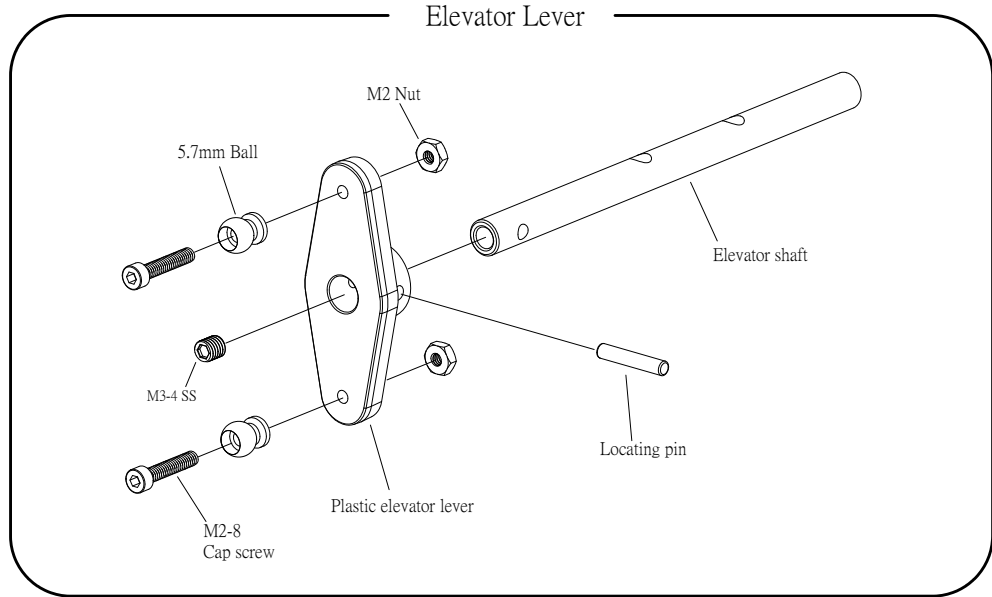
12

Elevator Lever Assembly

T-011-04

 Please apply loctite when locking all metal screws .

		2
		4
		4
		1
		1
		2
		2
		4
		4








13

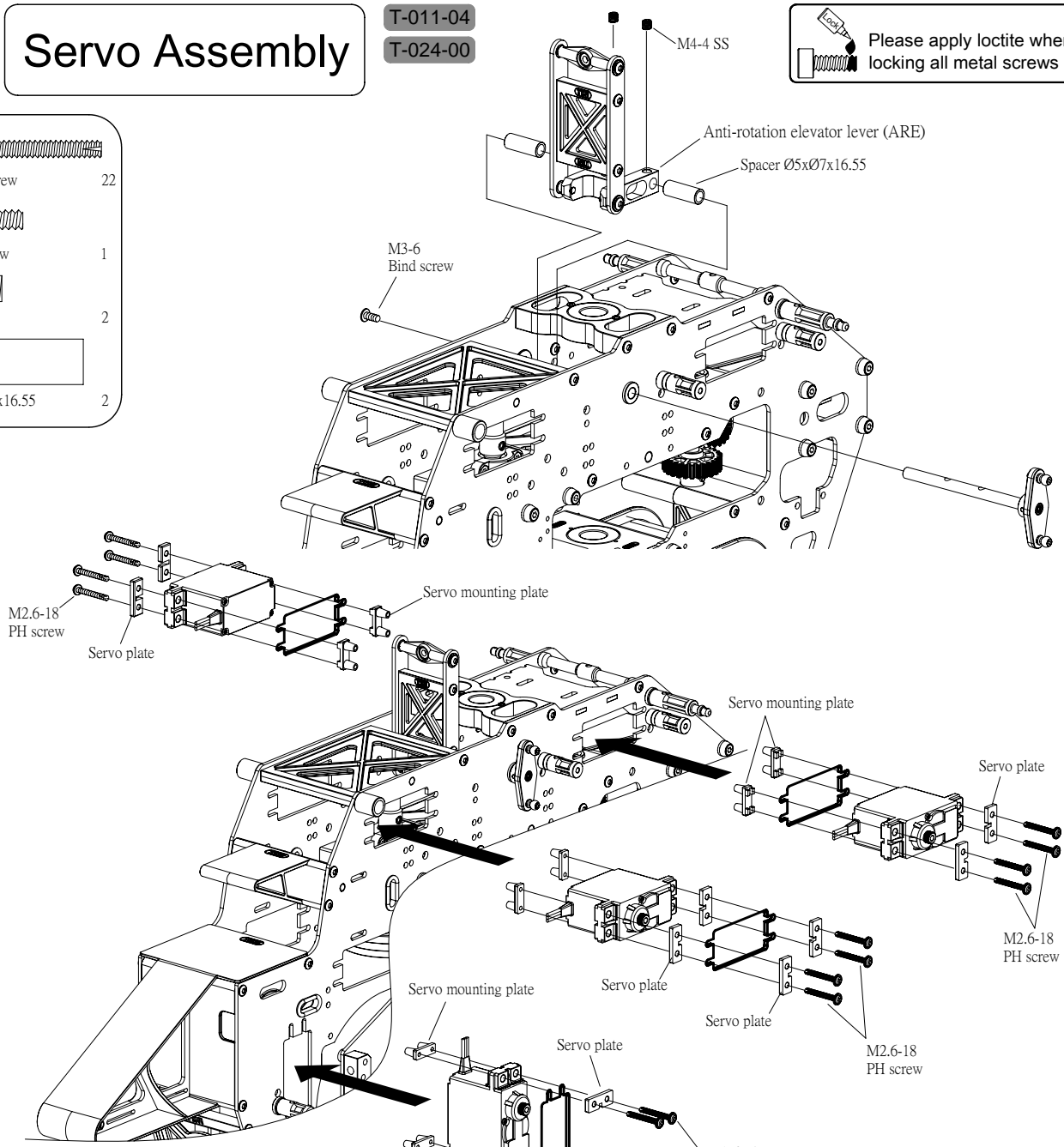
Servo Assembly

T-011-04

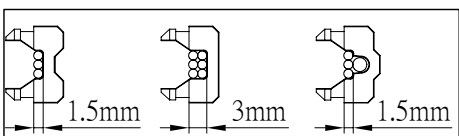
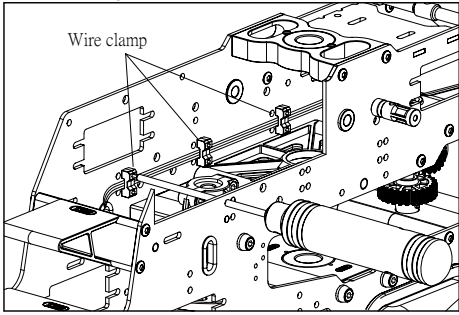
T-024-00

 Please apply loctite when locking all metal screws .

-  M2.6-18 PH screw 22
-  M3-6 Bind screw 1
-  M4-4 SS 2
-  Spacer Ø5xØ7x16.55 2

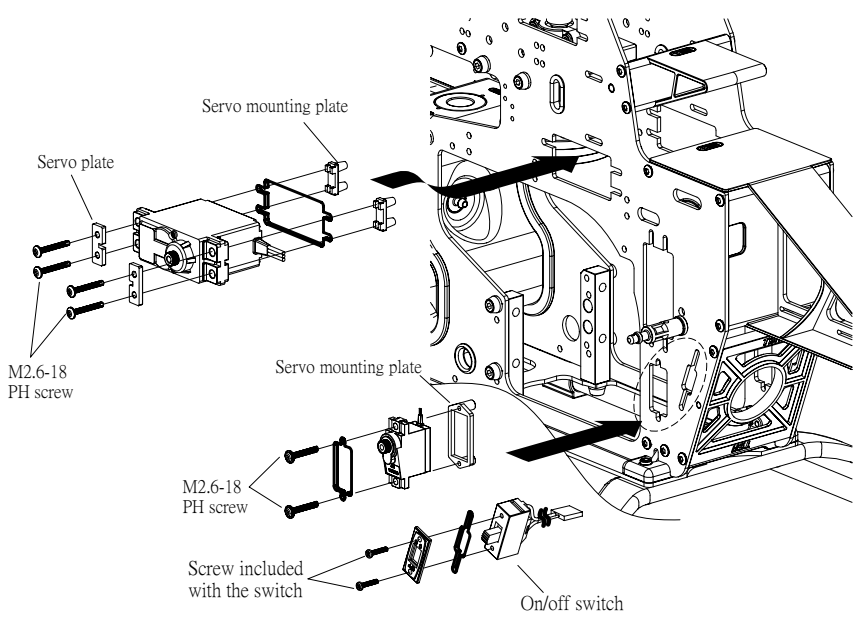


Assembly Tip



Use corresponding wire clamp according to the connecting means as shown in the diagram.

Caution
All servo wires should be segregated to avoid being cut by the the main frame.




14

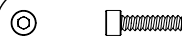

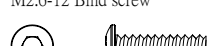
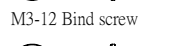


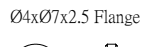



Servo Support Assembly

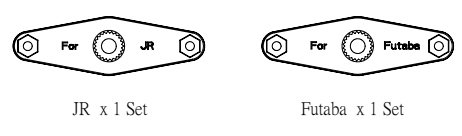
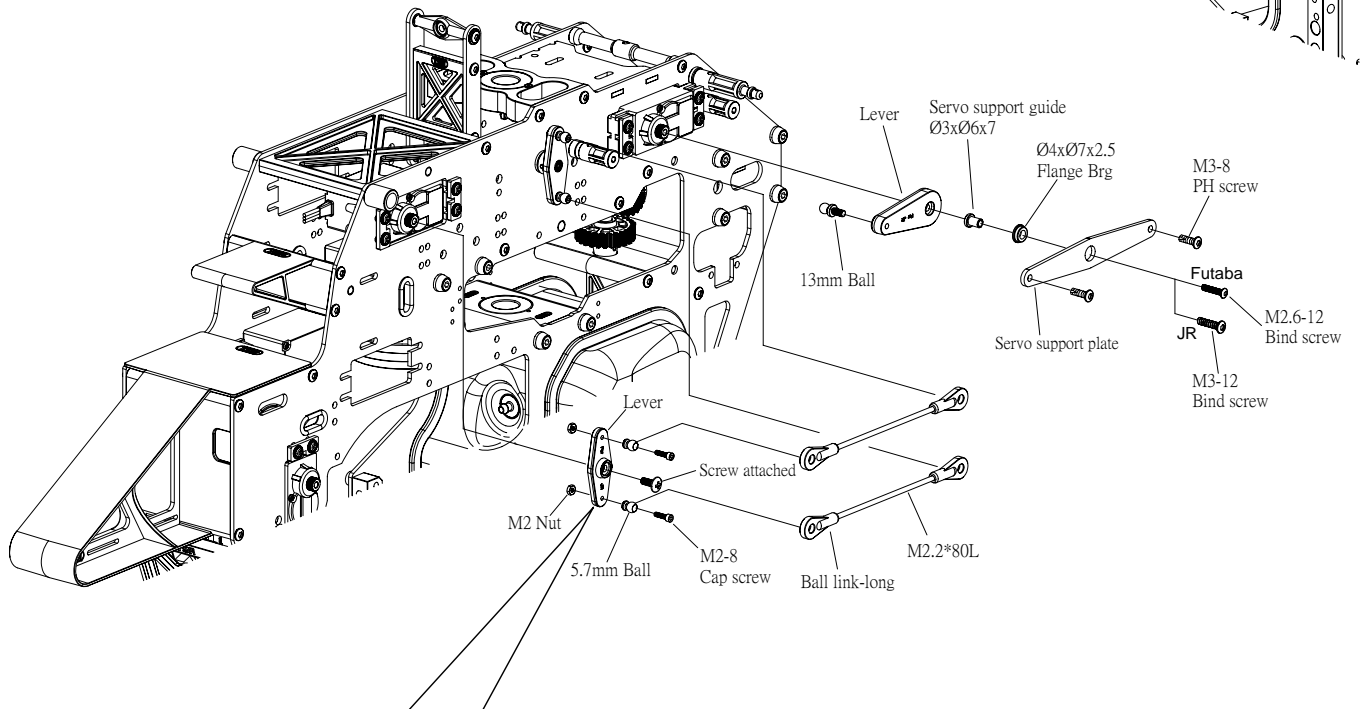
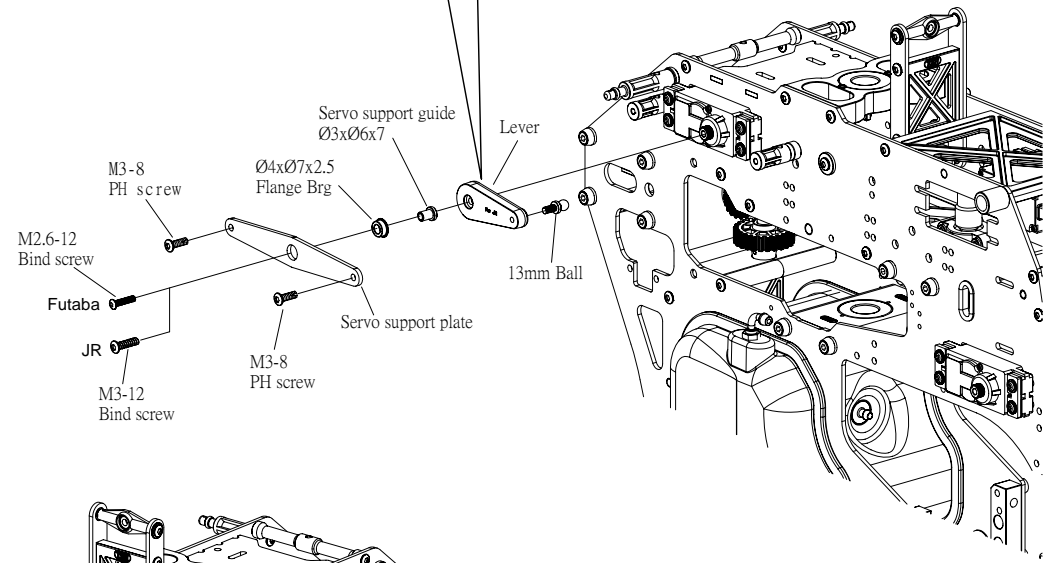
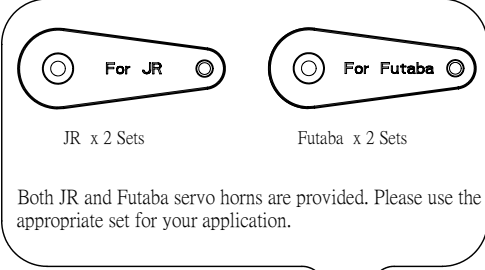
T-020-04

T-022-01

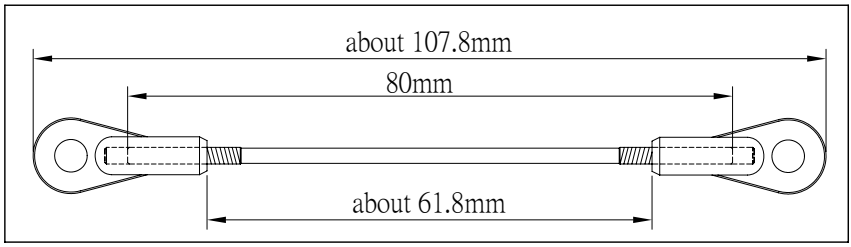
T-025-00

 Please apply loctite when locking all metal screws .

-  M2-8 Cap screw 2
-  M2.6-12 Bind screw 2
-  M3-12 Bind screw 2
-  M3-8 PH screw 4
-  Ø4xØ7x2.5 Flange Brg 2
-  Servo support guide Ø3xØ6x7 2
-  5.7mm Ball 2
-  13mm Ball 2
-  M2 Nut 2
-  Ball link-long 4




Both JR and Futaba servo horns are provided. Please use the appropriate set for your application.



15







Fan and Engine Assembly

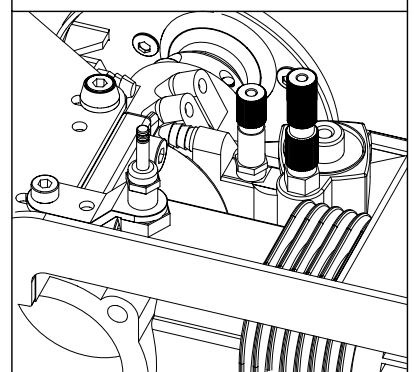
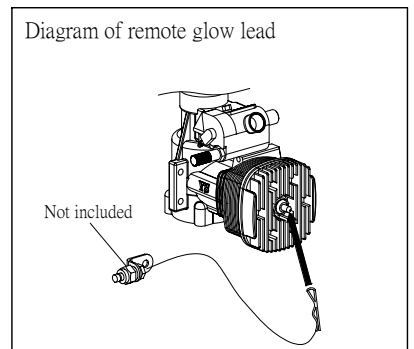
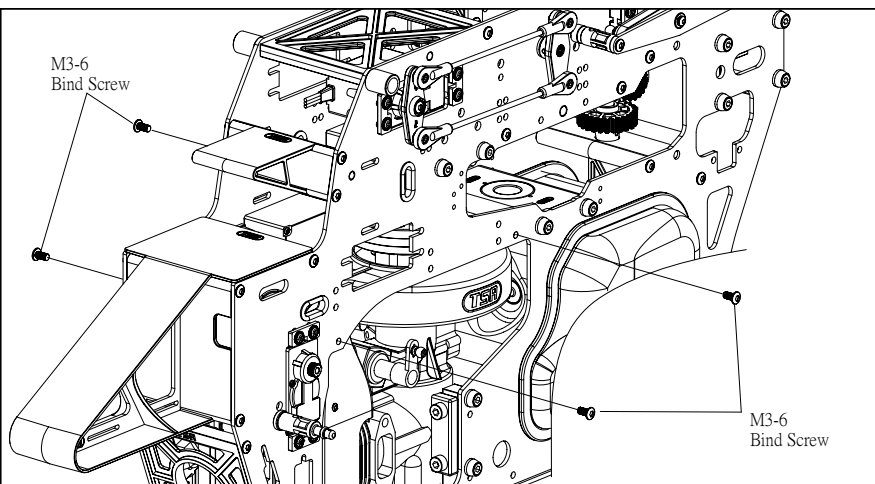
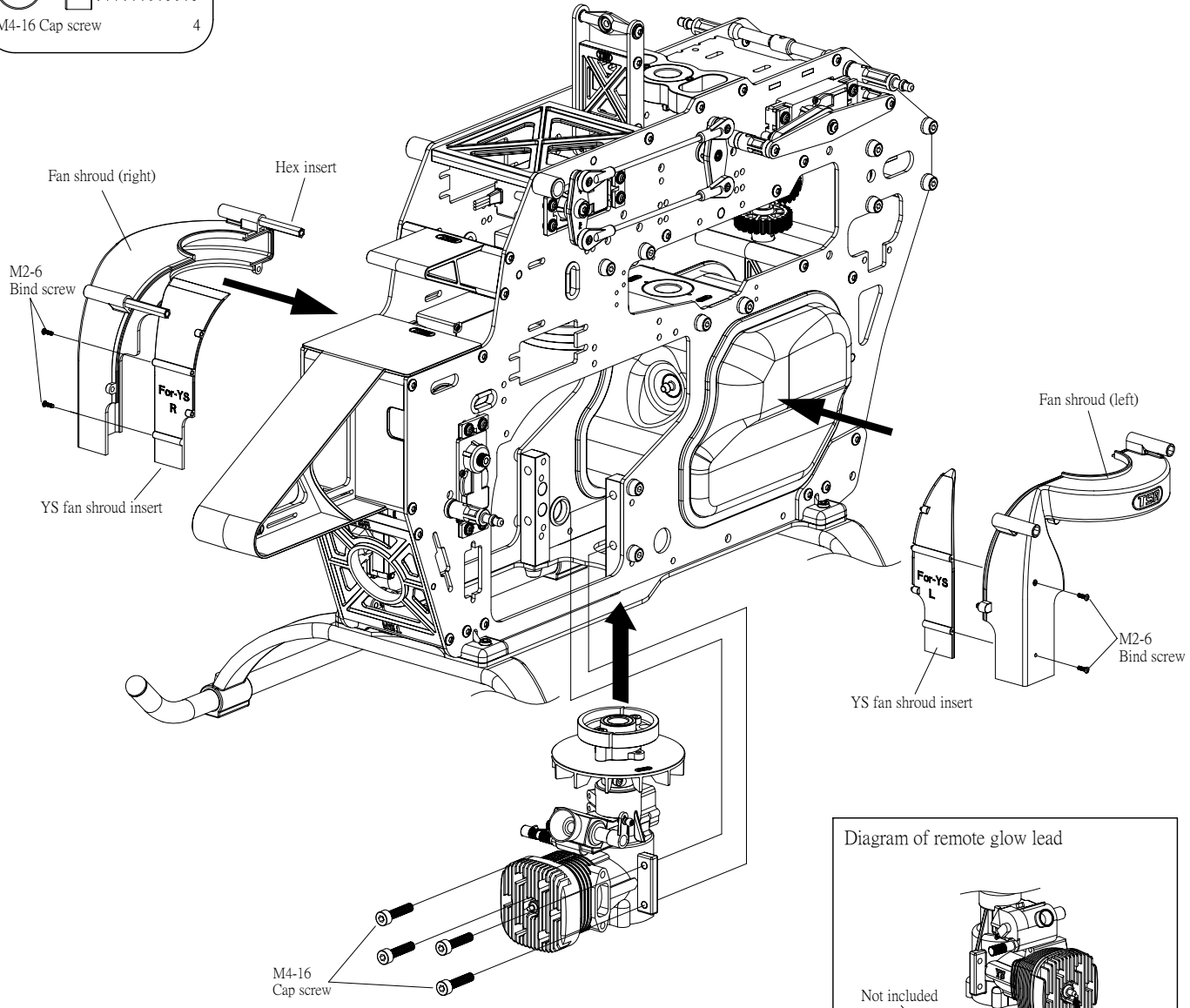
T-010-02
T-014-01

 Please apply loctite when locking all metal screws .

 **Caution**

Fan shroud insert is only for YS engine, it is not necessary for OS engine.

-   M2-6 Bind Screw 4
-   M3-6 Bind Screw 4
-   M4-16 Cap screw 4



16

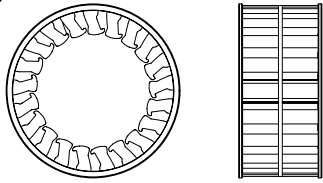
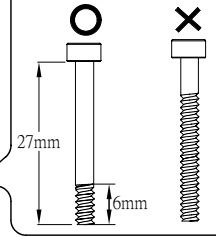
Main Gear Assembly

T-015-03

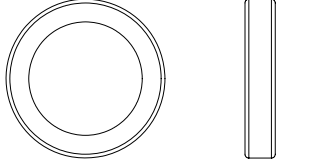
Please apply loctite when locking all metal screws .

Caution

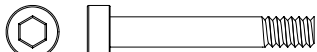
Only use long shank M4 mounting screw!



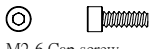
Ø15xØ23x11 One way bearing 1



Ø15xØ21x4 Brg 2



M4-27-6 Cap screw 1



M2-6 Cap screw 6



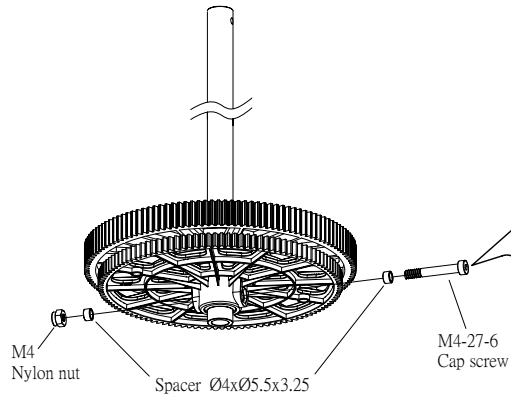
M3-8 Bind screw 6



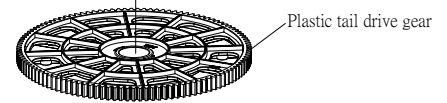
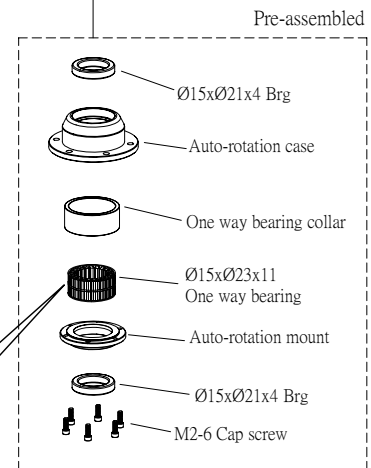
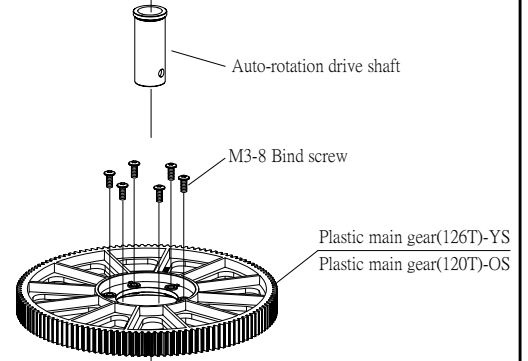
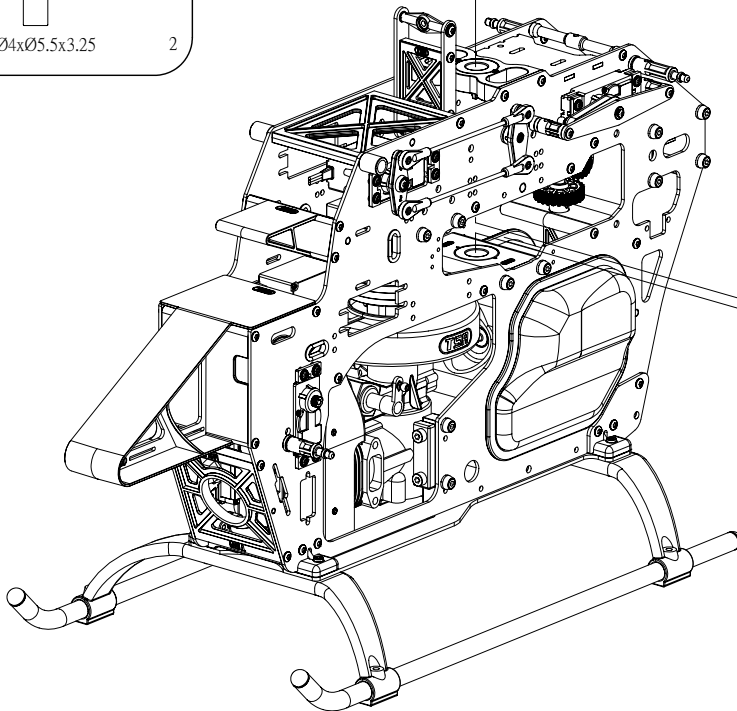
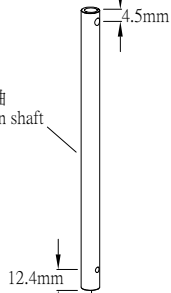
M4 Nylon nut 1



Spacer Ø4xØ5.5x3.25 2

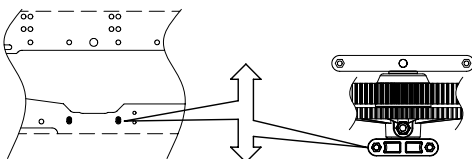


主軸
Main shaft



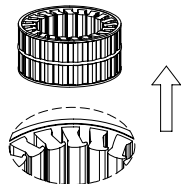
Caution

Main shaft free play adjustment



Loosen lower bearing block bolts. Insert main gear assembly and main shaft. While pressing up on the bearing block tighten the 4 lower bearing block bolts. Ensure no up/down free play by pulling on the main shaft.

Please note the direction of bearing .






Top view

17

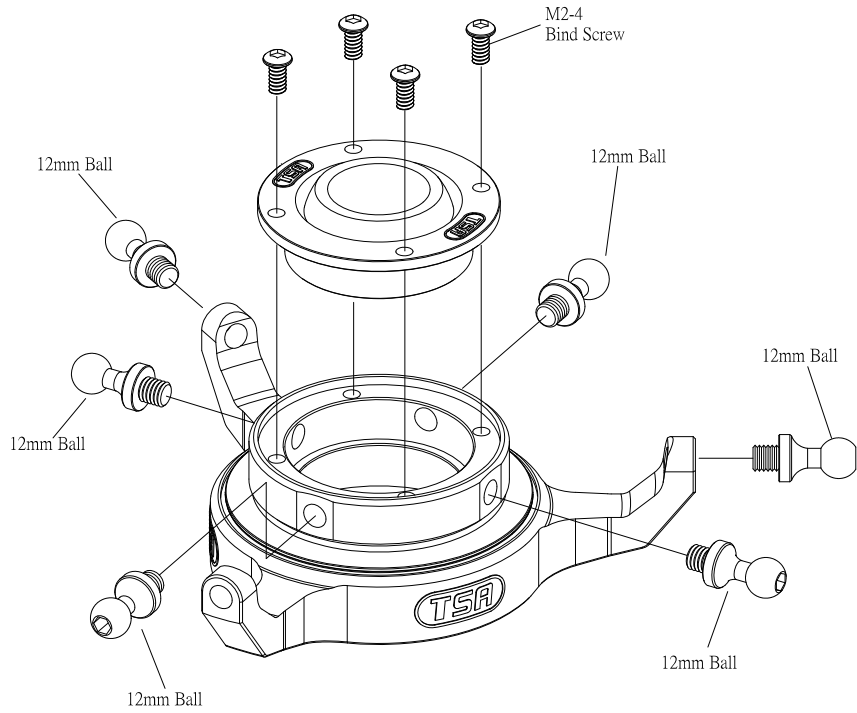
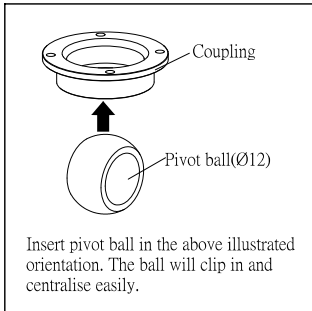
Swashplate Assembly

T-016-05

 Please apply loctite when locking all metal screws .

-  M2-4 Bind Screw 4
-  12mm Ball 6


Assembly Tip










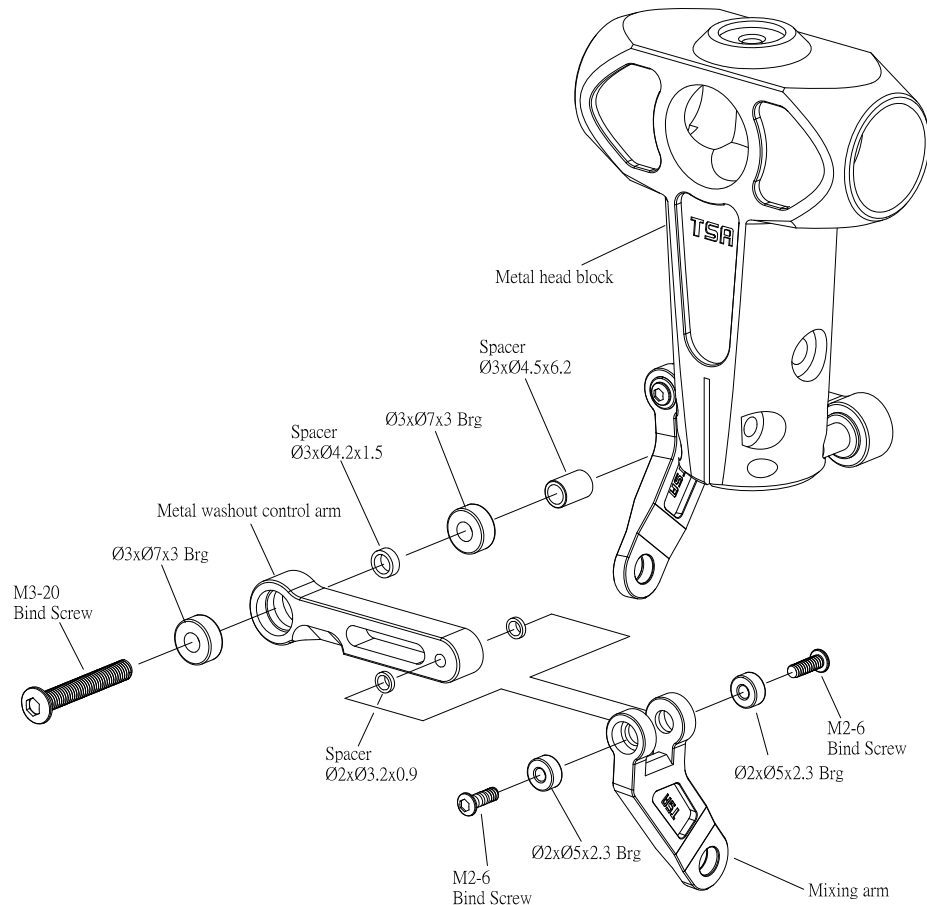
18

Washout Assembly

T-016-05

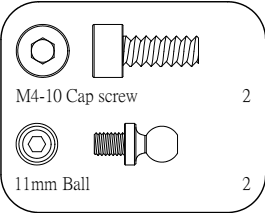
 Please apply loctite when locking all metal screws .

-  M2-6 Bind Screw 4
-  M3-20 Bind screw 2
-  Spacer Ø2xØ3.2x0.9 4
-  Spacer Ø3xØ4.2x1.5 2
-  Spacer Ø3xØ4.5x6.2 2
-  Ø2xØ5x2.3 Brg 4
-  Ø3xØ7x3 Brg 4



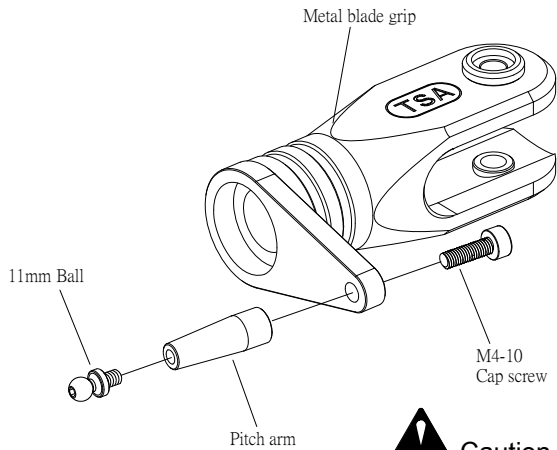
19

Pitch Arm Assembly



Please apply loctite when locking all metal screws .

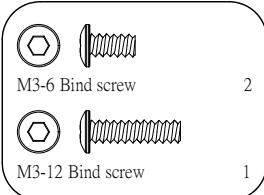
T-016-05



Caution
Two must be assembled

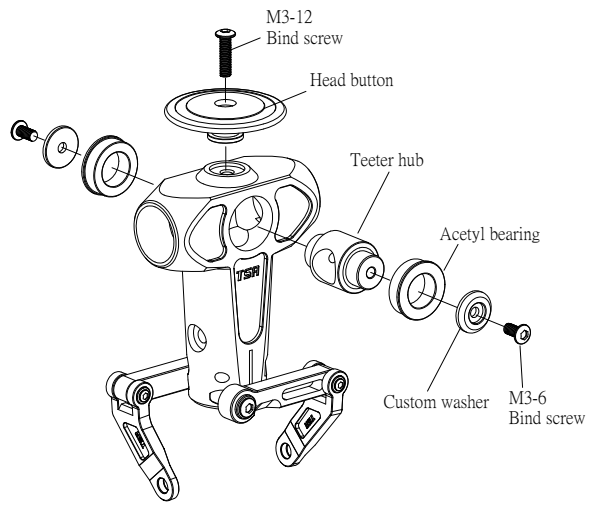
20

Head Block Assembly



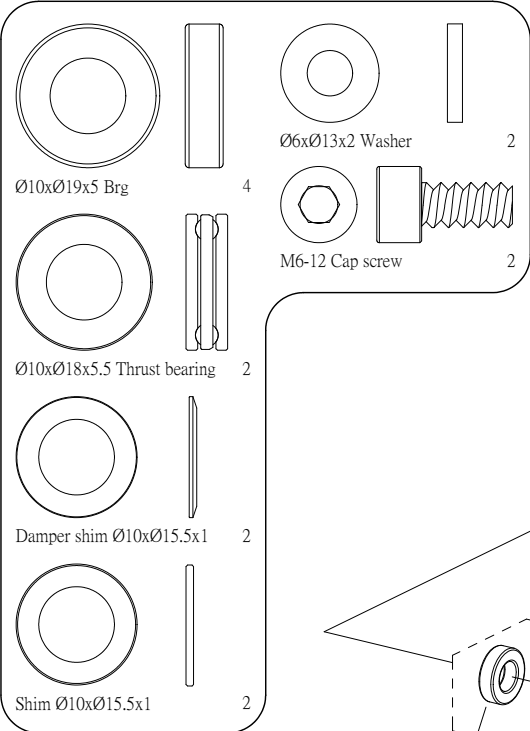
Please apply loctite when locking all metal screws .

T-016-05



21

Blade Holder Assembly

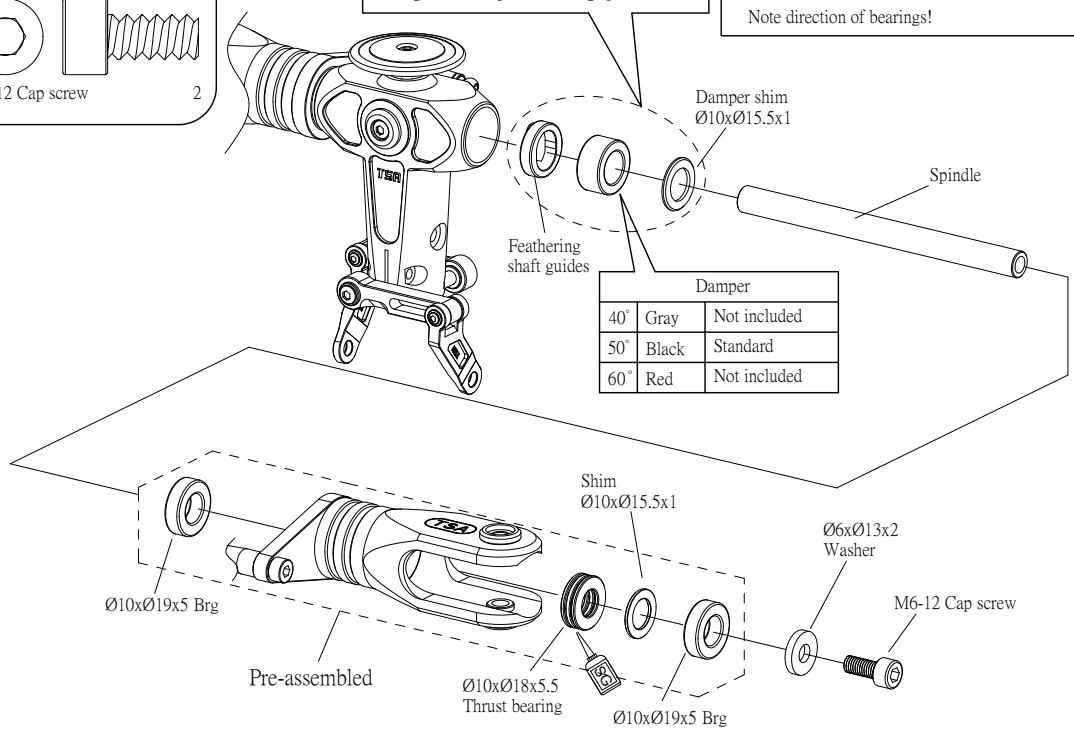
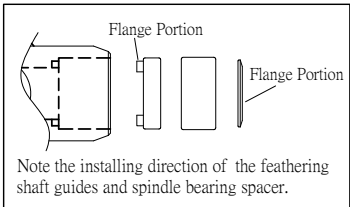


T-016-05

Please apply loctite when locking all metal screws .

Caution






Larger inner diameter (Black)
Smaller inner diameter
Blade holder
Ø10xØ18x5.5 Thrust bearing
Note direction of bearings!




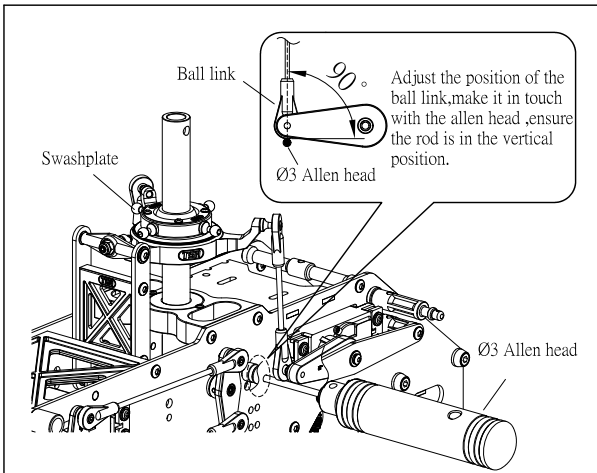
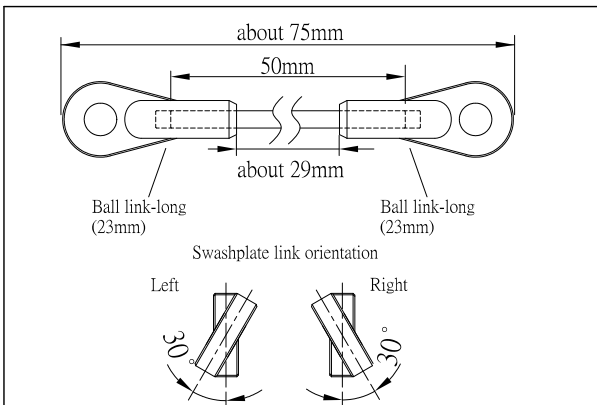
22

Rotor Head Complete Assembly

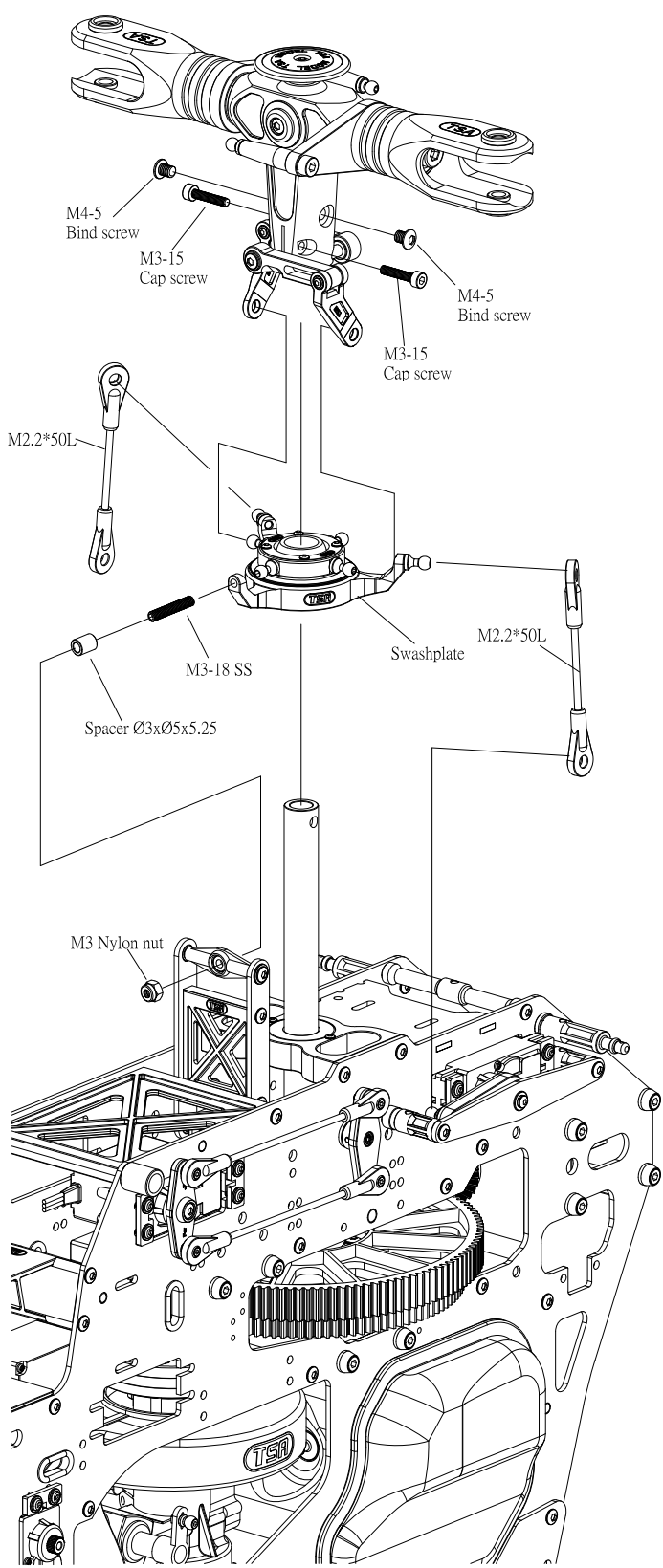
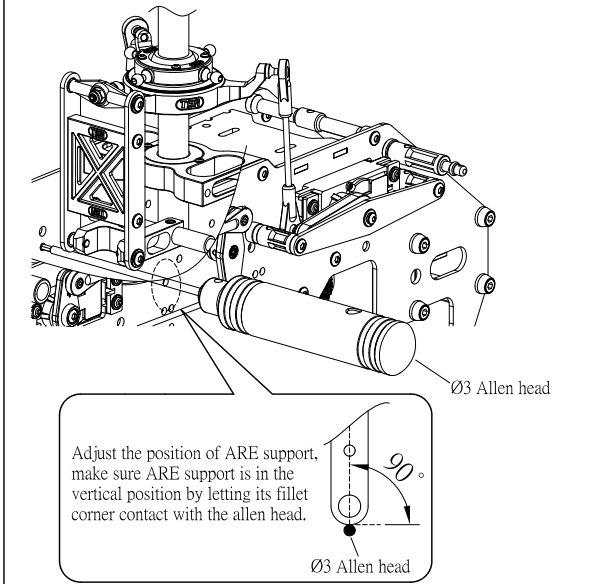
T-011-04
T-016-05
T-020-04

-  1
-  1
-  2
-  1
-  2

 Please apply loctite when locking all metal screws .




Insert the allen head into the hole as shown in the diagram , make sure the rocker-arm is parallel with the swashplate.












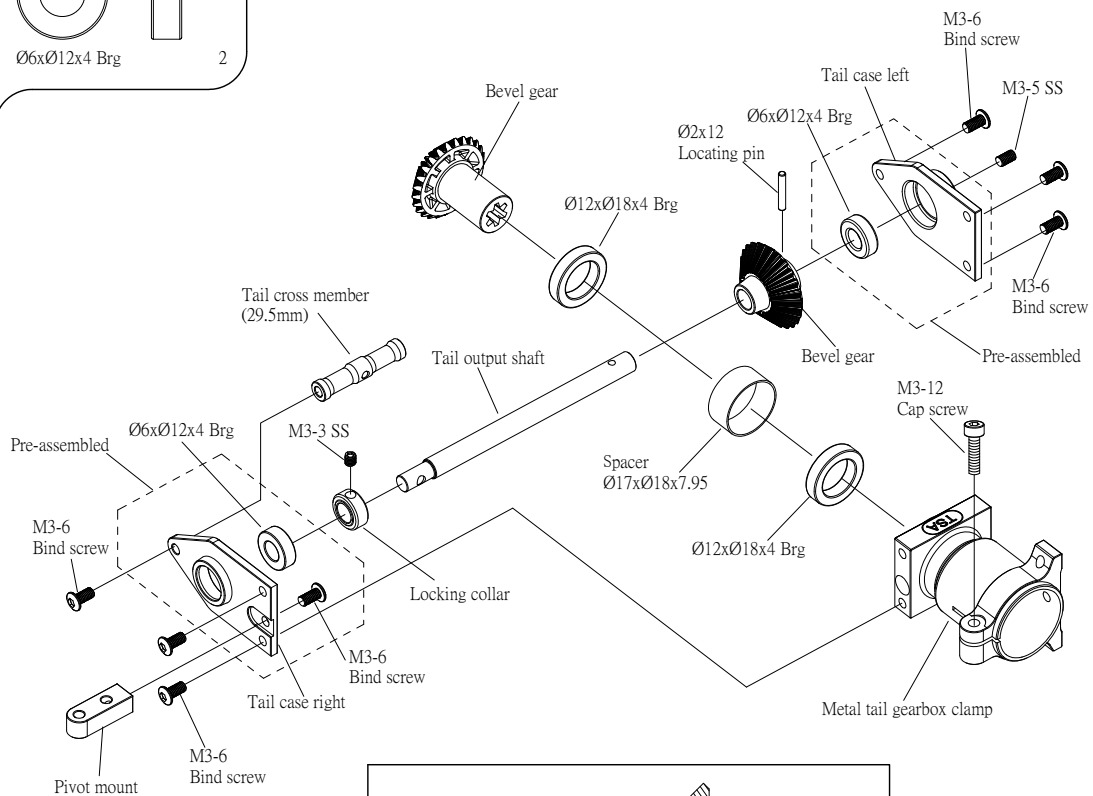
23

Tail Gearbox Assembly-1

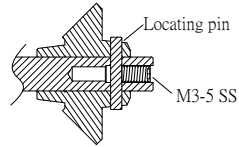
T-016-05

 Please apply loctite when locking all metal screws .

-   1
-   1
-  7
-  1
-  1
-  2
-  1




Centralise the locating pin on each gear then tighten the M3-5SS grub screws. Ensure correct orientation.









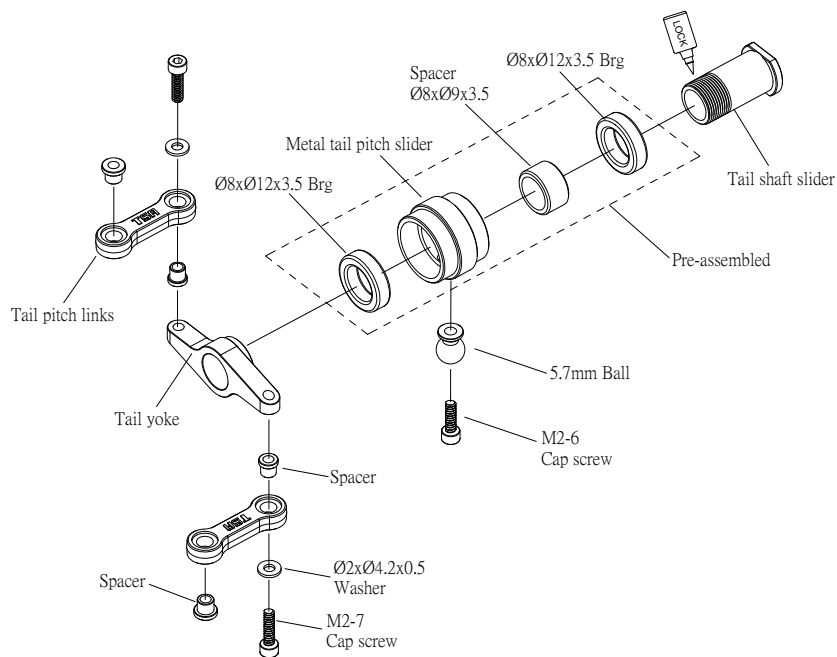
24

Tail Gearbox Assembly-2

T-017-01

 Please apply loctite when locking all metal screws .

-  1
-  2
-  1
-  2
-  1
-  2



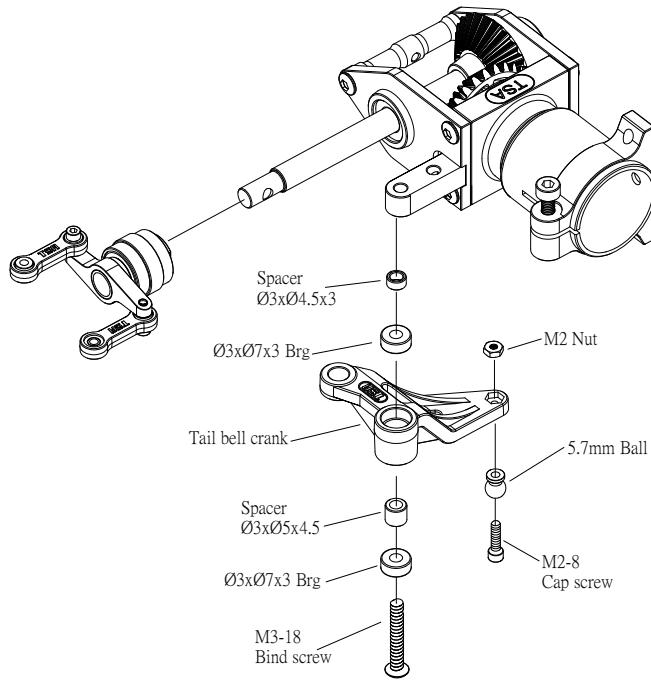
25

Tail Gearbox Assembly-3

T-018-00

Please apply loctite when locking all metal screws .

- M2-8 Cap screw 1
- M3-18 Bind screw 1
- 5.7mm Ball 1
- M2 Nut 1
- Spacer Ø3xØ5x4.5 1
- Spacer Ø3xØ4.5x3 1
- Ø3xØ7x3 Brg 2



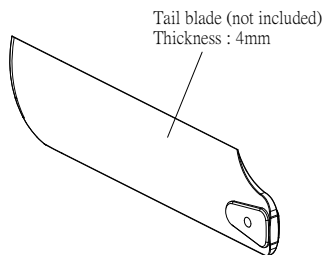
26

Tail Gearbox Assembly-4

T-016-05

Please apply loctite when locking all metal screws .

- M3-17-5 Cap screw 2
- M3 Nylon nut 2
- M4 Nylon nut 2
- Ø5xØ10x4 Thrust bearing 2
- Ø6xØ12x4 Brg 2
- Ø5xØ10x4 Brg 2



Caution

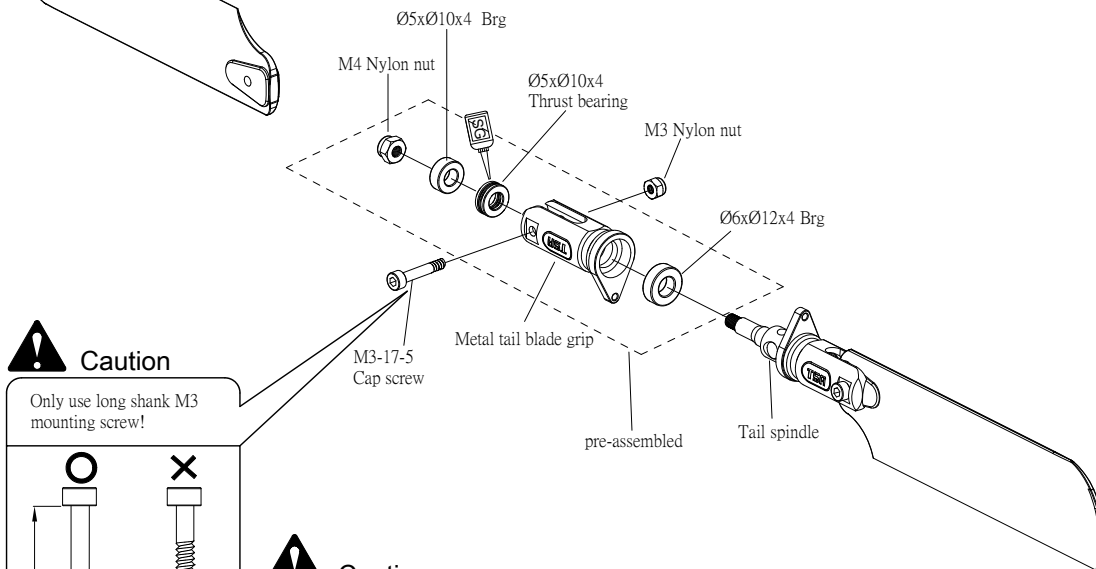
Note direction of bearings!
Periodically check and perform necessary lubrication.

Caution

Only use long shank M3 mounting screw!

Caution

Fasten the tail blade to permit only slight movement .
Note the direction of the tail blade and the tail blade grip .




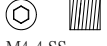
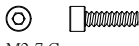

27

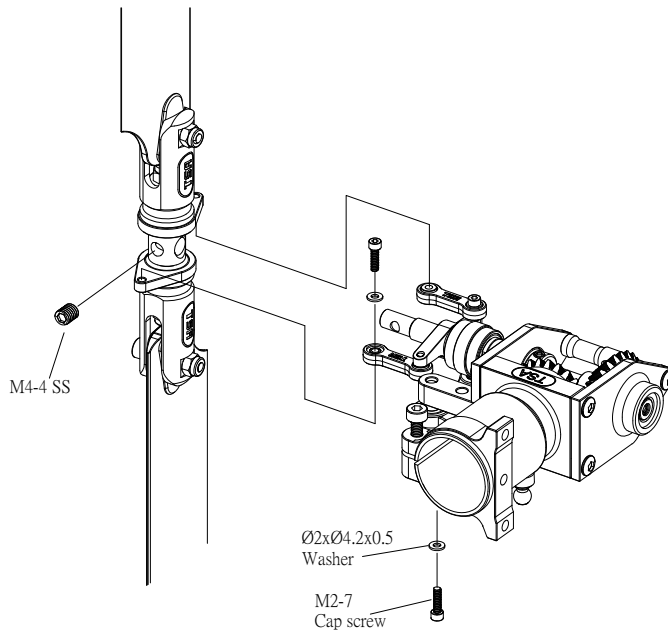
Tail Gearbox Assembly-5

T-016-05

T-017-01

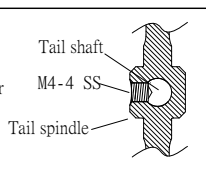
 Please apply loctite when locking all metal screws .

-  M4-4 SS 1
-  M2-7 Cap screw 2
-  Ø2xØ4.2x0.5 Washer 2



Caution

Use the M4-4SS screw to fasten the tail shaft and spindle. Ensure grub screws are seated into receiver grooves.




28

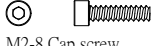

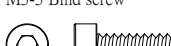

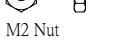
Tail Gearbox Assembly-5

T-026-01

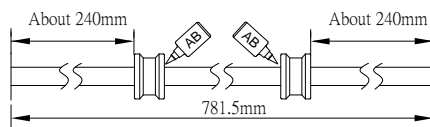
T-027-02

T-028-18

 Please apply loctite when locking all metal screws .

-  M2-8 Cap screw 4
-  M3-5 Bind screw 2
-  M3-10 Cap screw 1
-  M2 Nut 4
-  Ø8xØ14x4 Brg 2

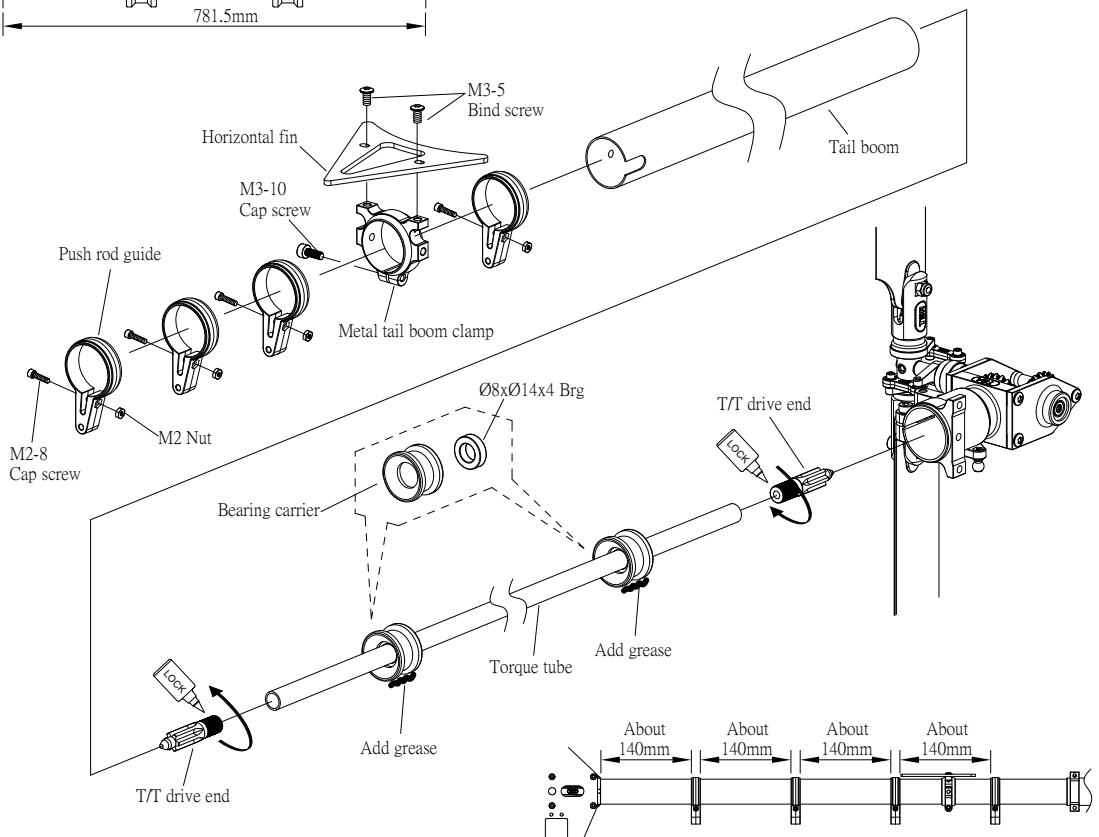
Torque tube bearing location :



Apply AB glue to shaft then slide bearing ovetop and allow to dry.

Assembly Tip

Apply oil to tail boom bearing carrier and inside tail boom for easy T/T installation.



29

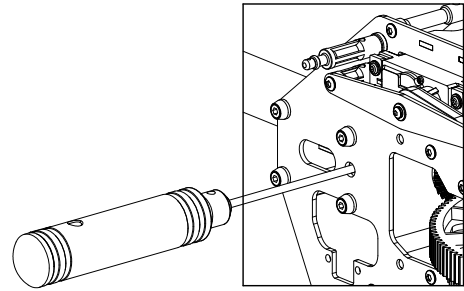
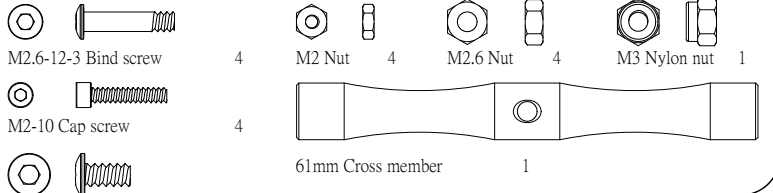
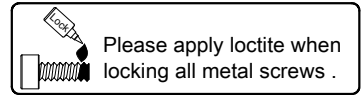
Tail Boom Support Assembly

T-016-05

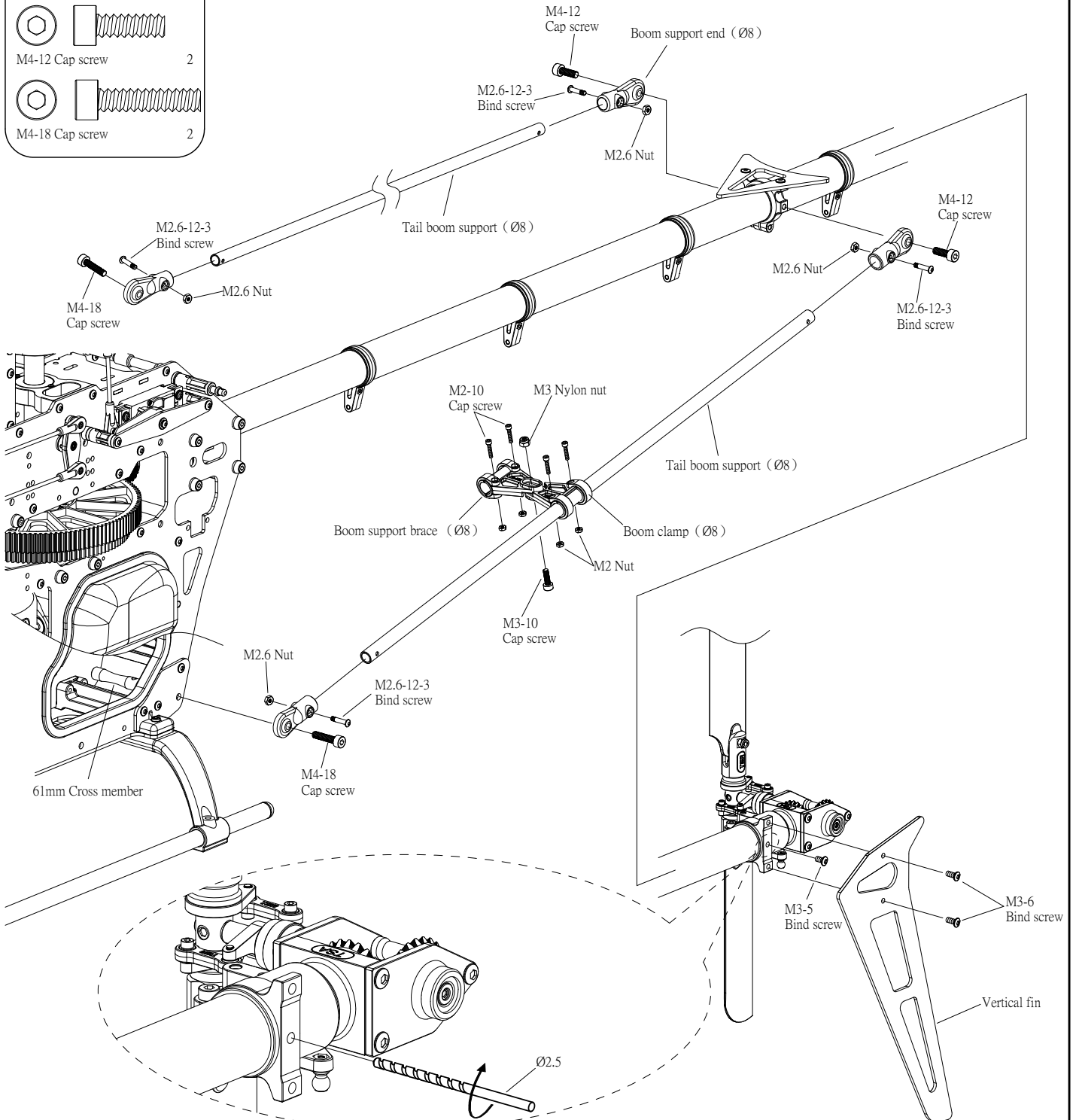
T-026-01

T-027-02

T-028-18




After inserting the tail boom tighten the previously installed retaining screw.

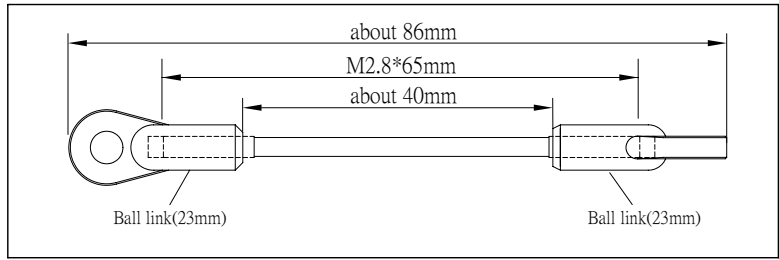
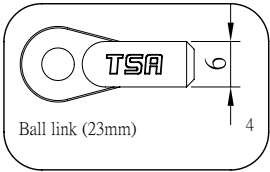


30

Rotor Head Linkage Assembly

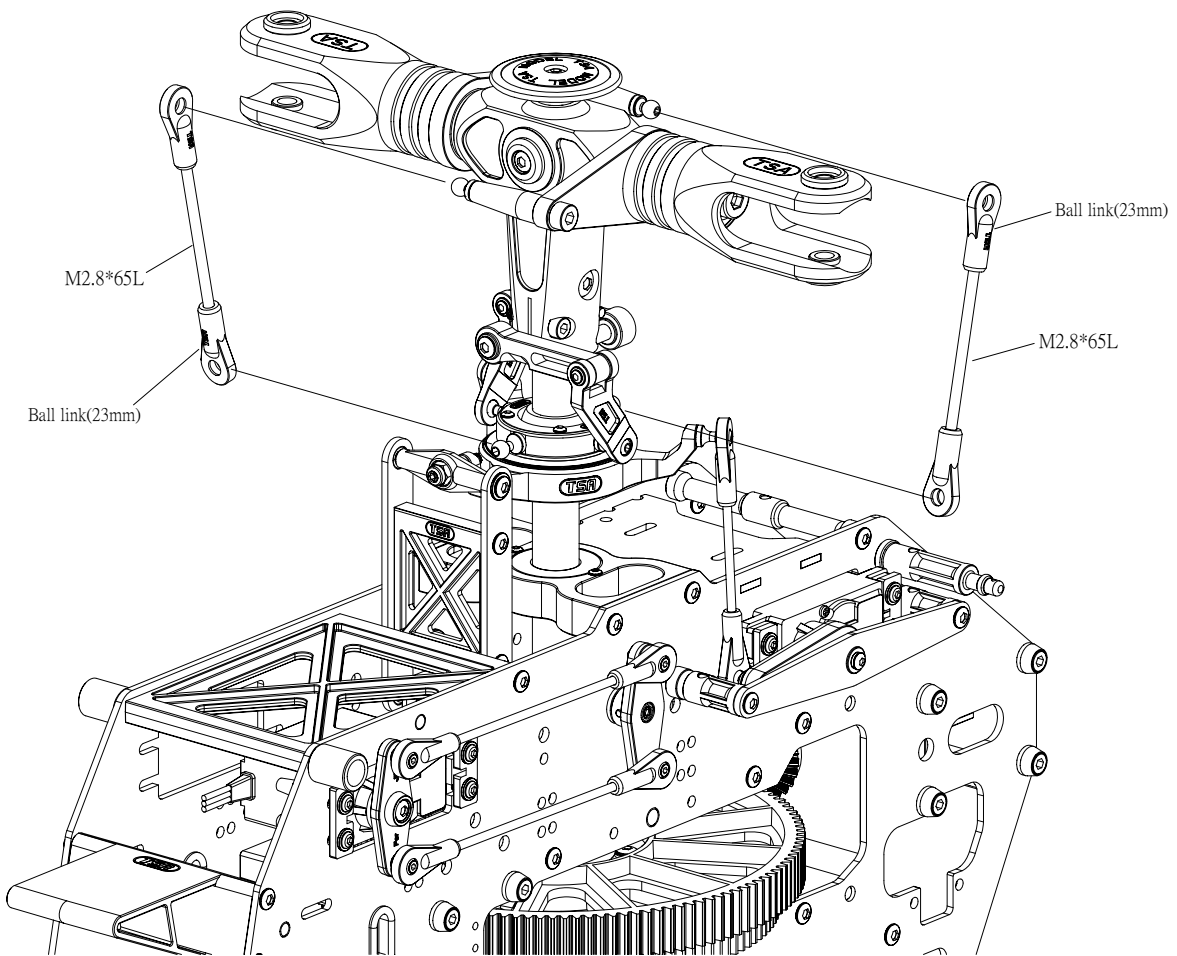
T-016-05

 Please apply loctite when locking all metal screws .



Caution

Measure the pitch angle after assembly of the blades, and then make the adjustment .




31









Linkage Rod Assembly

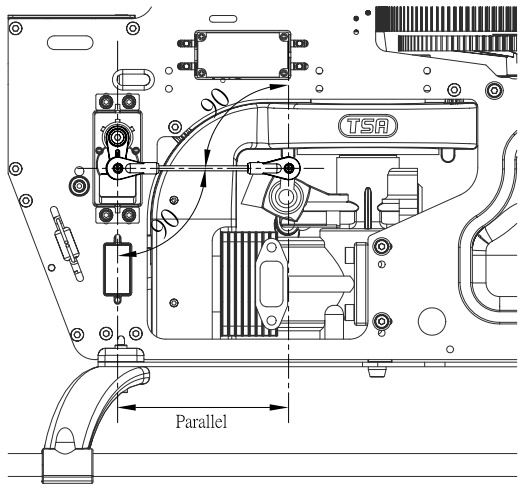
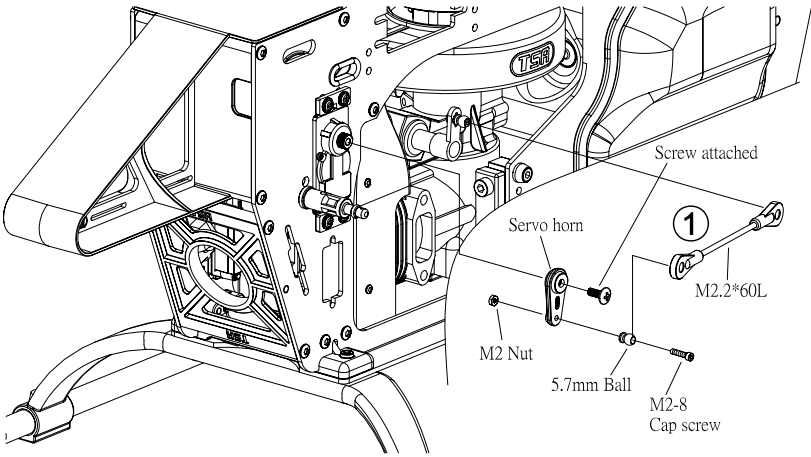
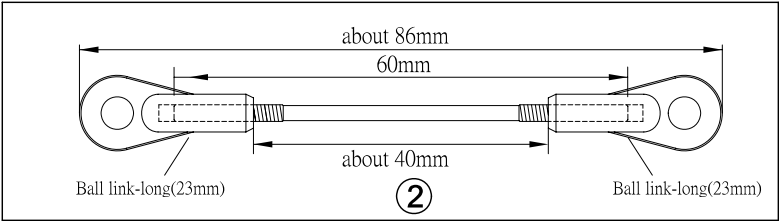
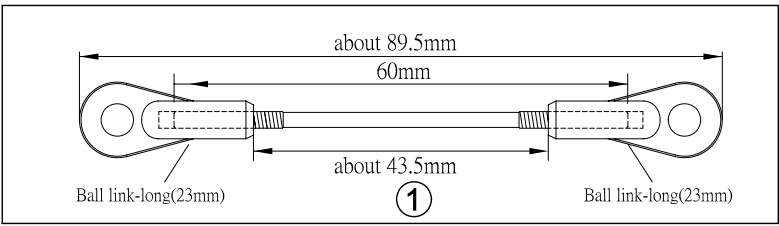
T-020-04

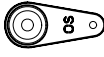

T-021-01

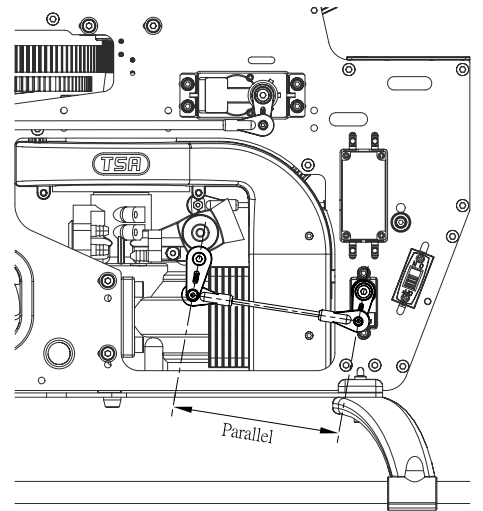
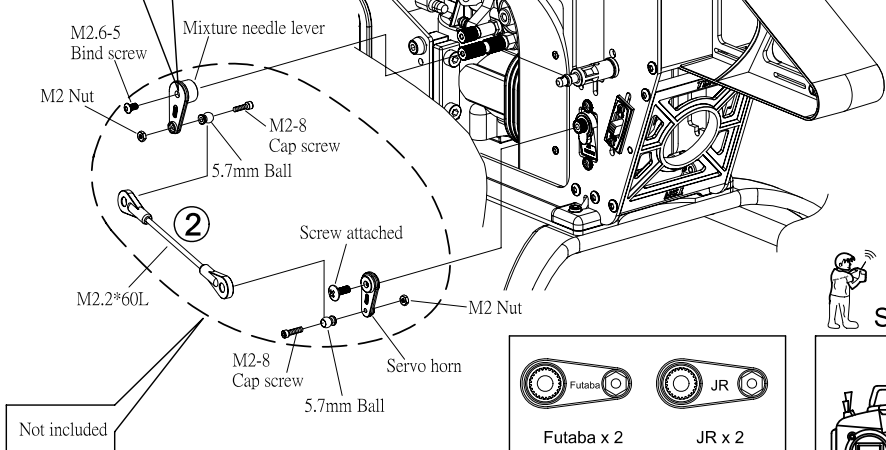
T-024-00

 Please apply loctite when locking all metal screws.

-   3
-   1
-   3
-   3





 OS - Ø7.2
 YS - Ø6.2
Both YS and OS mixture arms are provided. Please use the appropriate set for your application.



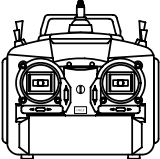
Not included

The rod's length varies depending on the servo. Adjust the length according to the instructions and verify once fitted on the model.

 Futaba x 2
 JR x 2

Both JR and Futaba servo horns are provided. Please use the appropriate set for your application.

Setup Tips

 Turn on the transmitter before installing the servo rod, ensure the radio has a linear throttle/pitch curve and the throttle is set to mid stick 50% travel. This will enable close to equal travel limits for high/low throttle.

32


Rudder Linkage Assembly















T-023-01

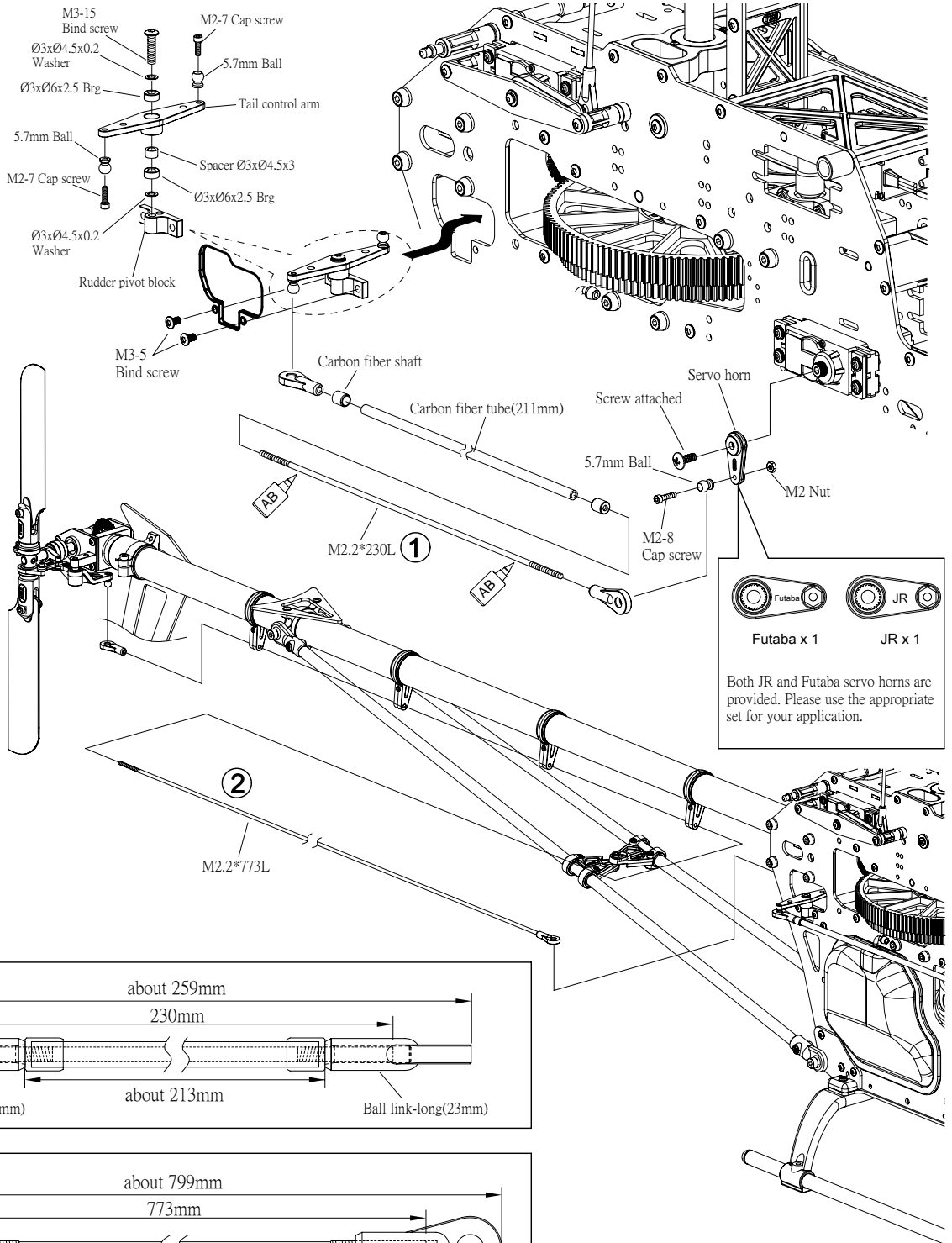
T-024-00



T-027-02

T-028-18

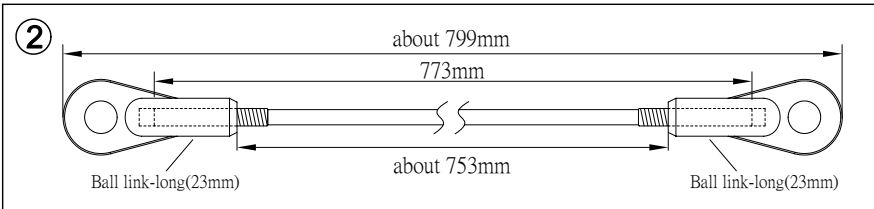
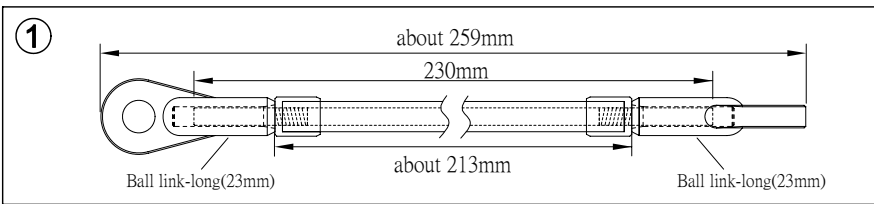
 Please apply loctite when locking all metal screws.

-   2
-   1
-   2
-   1
-  3
-   2
-  1
-  1
-  2

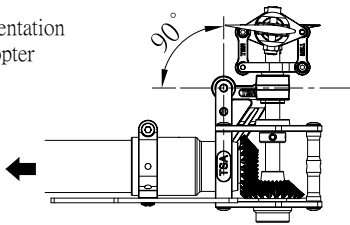


 Futaba x 1  JR x 1

Both JR and Futaba servo horns are provided. Please use the appropriate set for your application.



Note the orientation of the helicopter



During initial setup of the lever, adjust the tail blade as shown (left). Setup is different among gyro manufacturers, so consult manual before test flying.

33

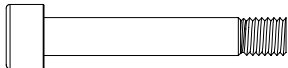
Main Blade Assembly

T-016-05



M5-32-6 Cap screw

2



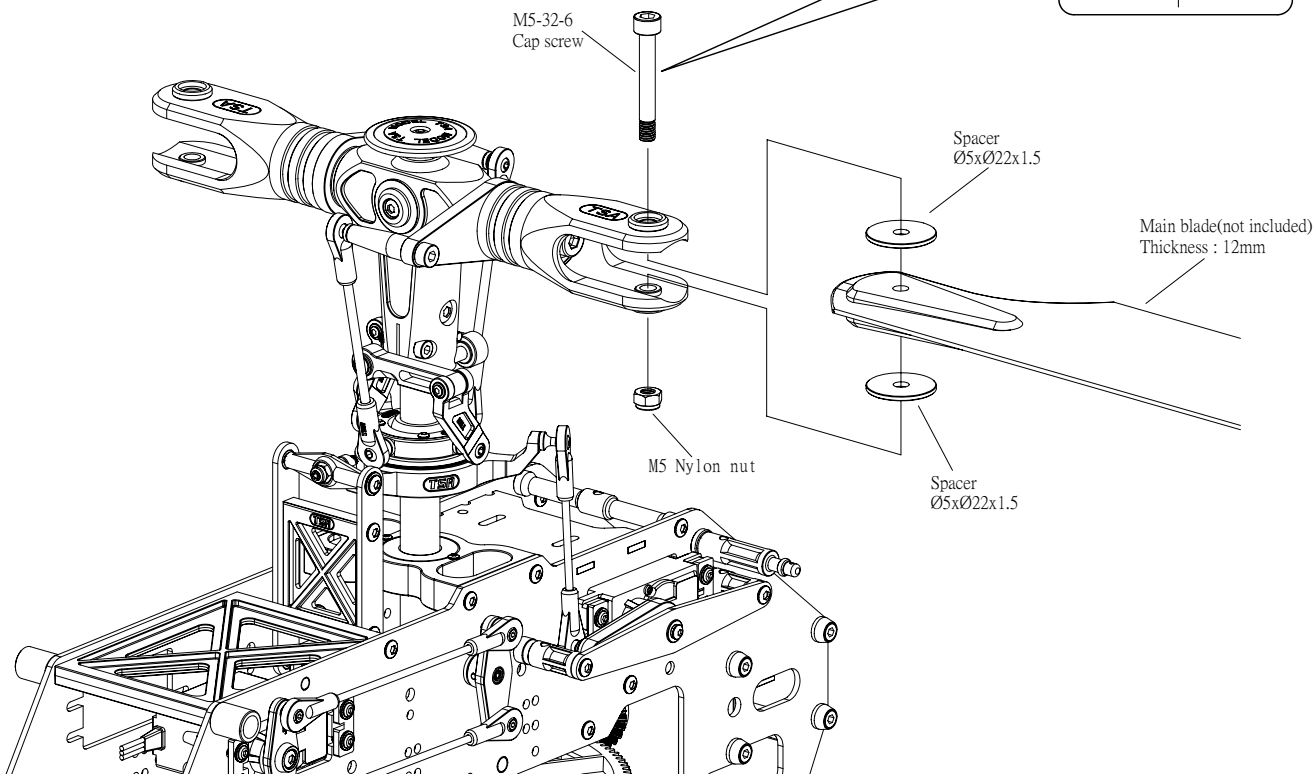
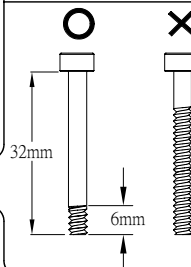
M5 Nylon nut

2



Caution

Only use long shank M5 mounting screw!



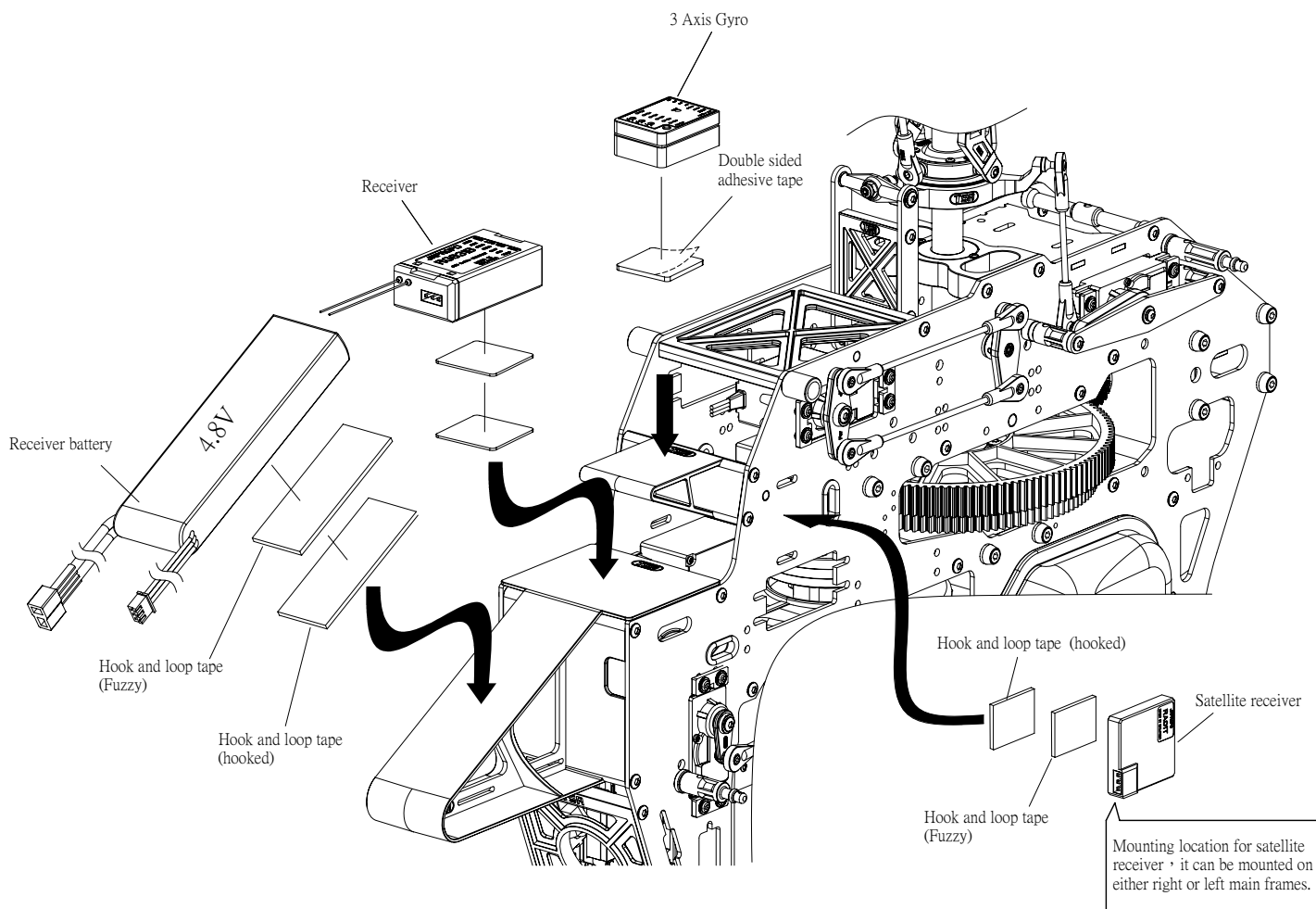
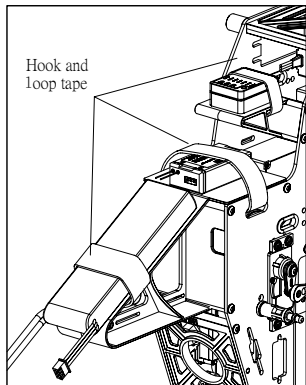
34

Receiver and Gyro Assembly

Caution

The gyro sensor has a special orientation when installed. Install it according to the gyro's instruction manual .

For JR



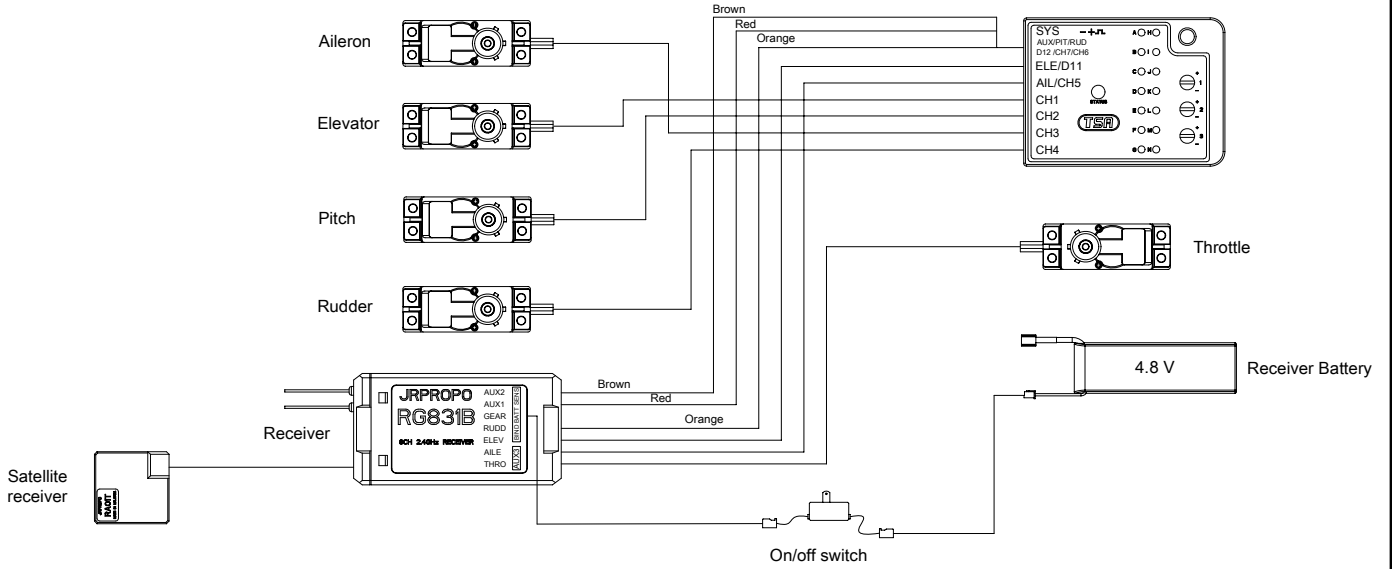
Caution

The electrical control system as stated above shall be assembled in according to its corresponding instruction manual.

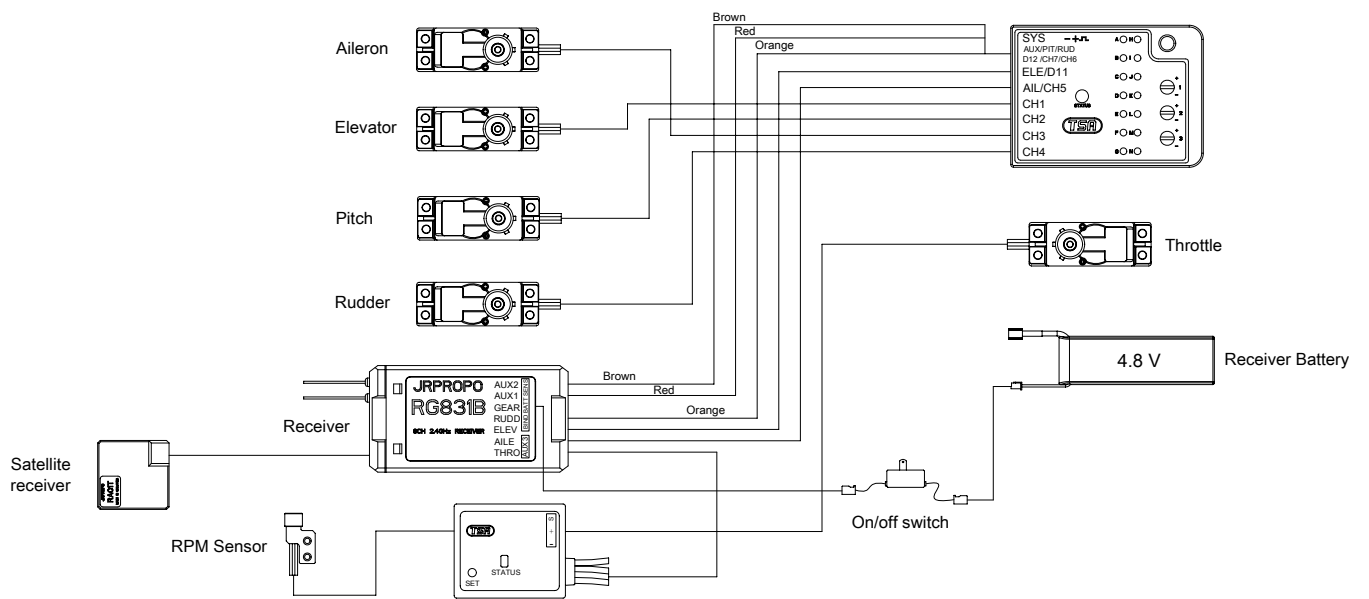
35

Electrical Control System Wiring Diagram

JR / 7CH receiver wiring

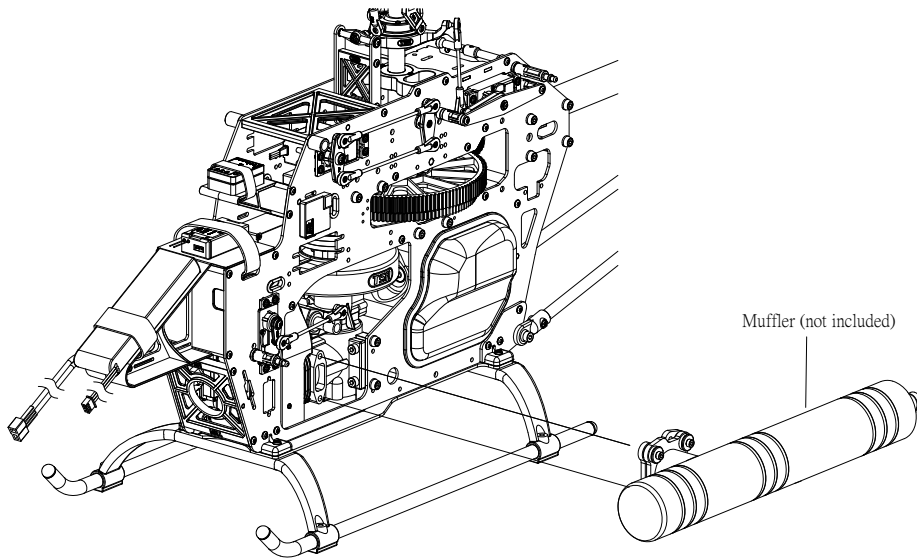


JR / 7CH receiver wiring



36

Muffler Assembly

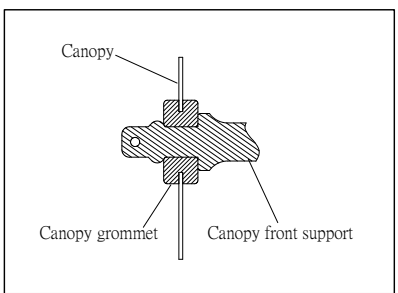
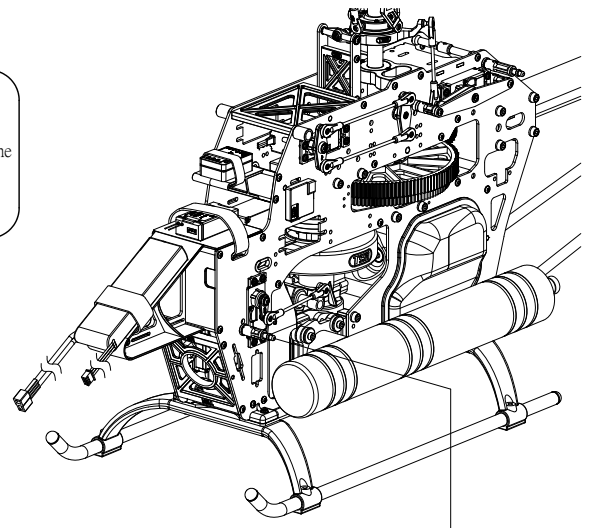
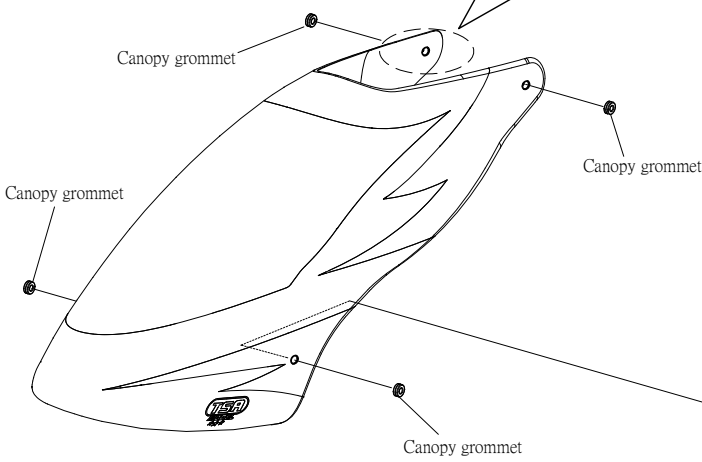
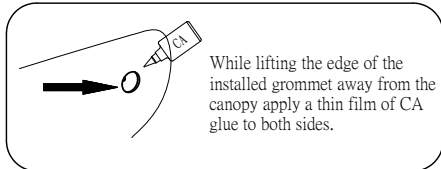
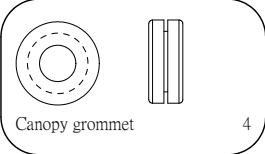


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Canopy Assembly

T-005-00

Optional custom designed canopies are available. Please check website for availability.





Flybarless gyro setup-3 Axis gyros

Caution

Please refer to the Flybarless gyro instruction manual for setting up the cyclic and tail servo along with the rotor head. This will be specific for each system.



Main blade adjustment

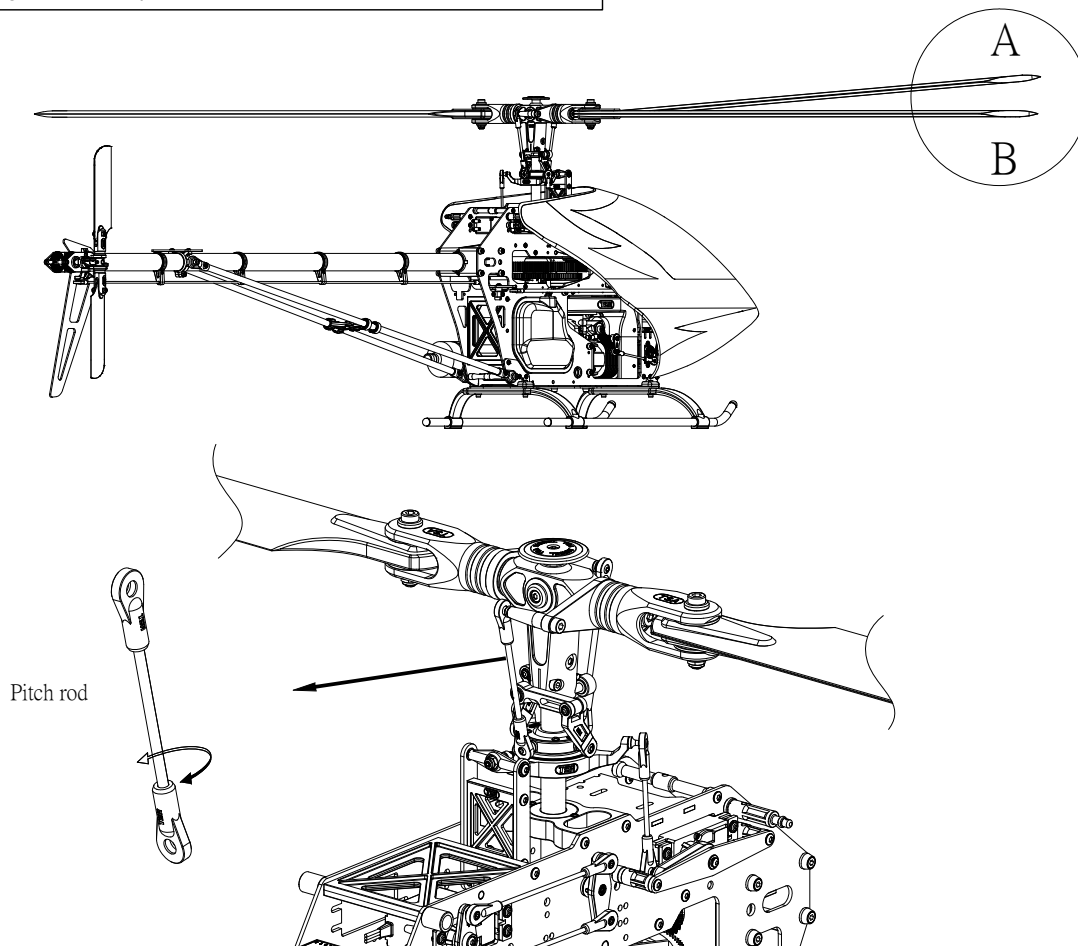
Caution

Precaution during initial setup is for the safety of yourself and others, so please make sure the heli is flying at least 10m away from any person.

1. Increase pitch slowly until the helicopter comes to a stable hover. Note any separation in the rotor blades.
2. Observe the blade tracking:
If main blades are in the same track, then no adjustment required. However, if one blade appears higher than the another blade, then adjustments must be made.
3. Adjust pitch rod tracking:
A. Main blade is higher → reduce length of linkage rod
B. Main blade is lower → add the length of linkage rod

Caution

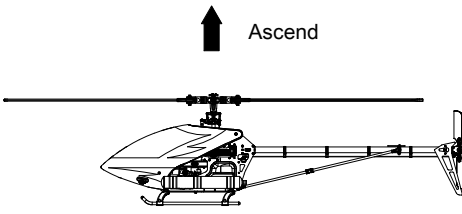
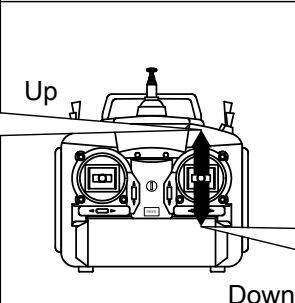
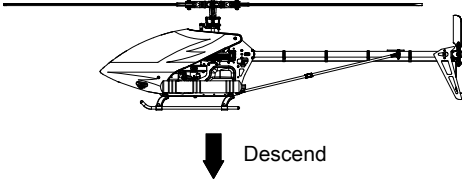
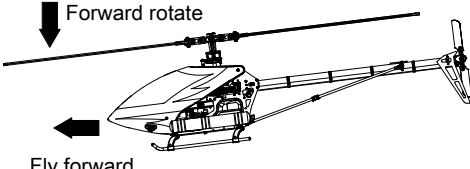
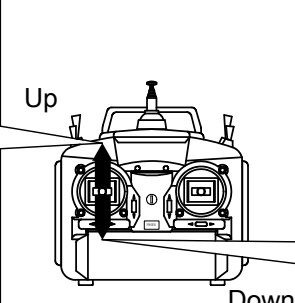
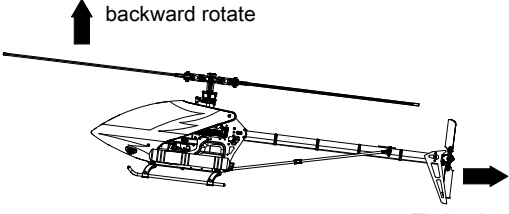
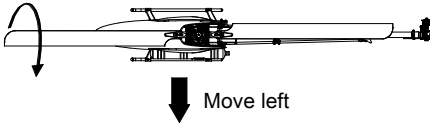
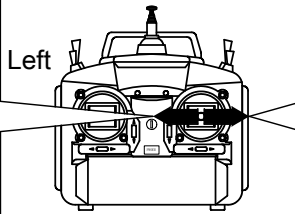
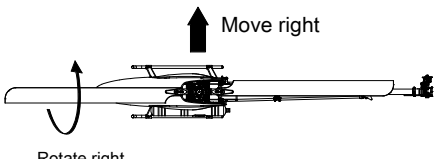
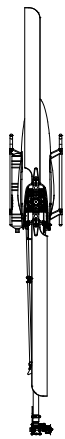
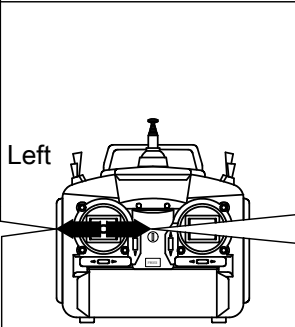
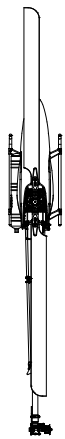
Improper tracking will result in vibration, Adjust track until both blades are tracking in the same plane.





Caution Beginners should know the designated operating mode of (TSA)700N-3D before operating to avoid accidents

(Mode 1)

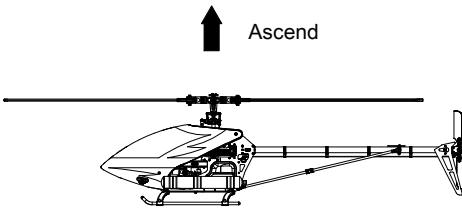
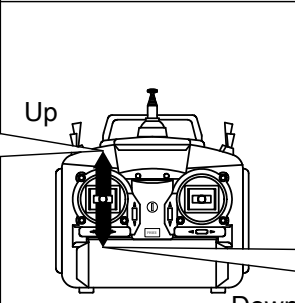
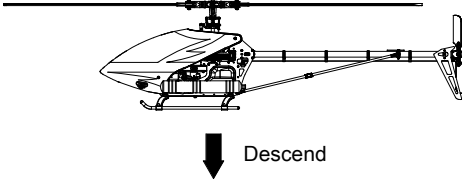
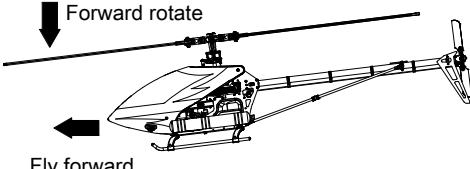
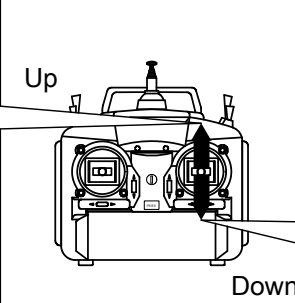
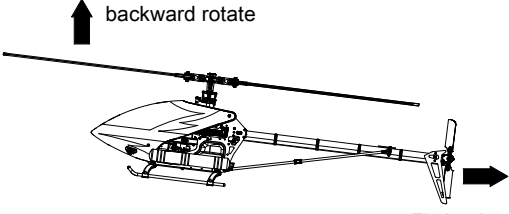
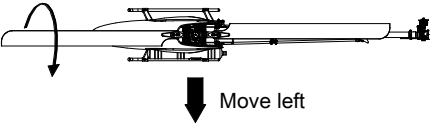
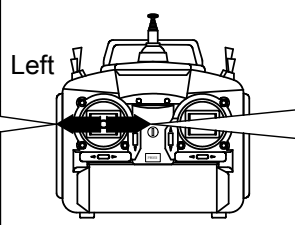
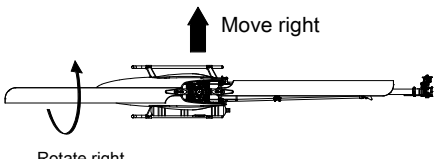
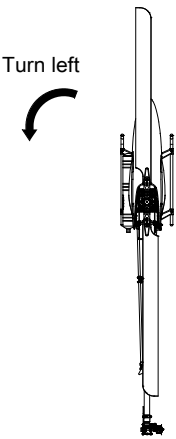
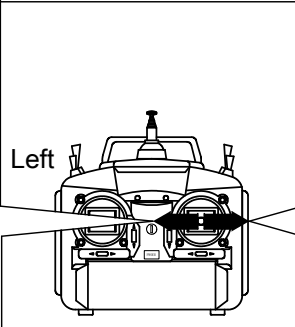
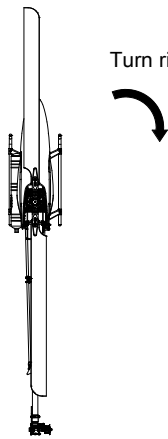
 <p>Pushing the pitch control upward will cause the unit to ascend.</p>	<p>Throttle / Pitch</p>  <p>Up Down</p>	 <p>Push the pitch control down, then the unit will descend.</p>
 <p>Pushing the elevator control up, then the unit will go forward.</p>	<p>Elevator</p>  <p>Up Down</p>	 <p>Push the elevator control down, then the unit will go backward.</p>
 <p>Push the aileron control left, the unit will move to the left.</p>	<p>Aileron</p>  <p>Left Right</p>	 <p>Push the aileron control right, then the unit will move to the right.</p>
 <p>Push the rudder control to the left, the body and nose of unit will rotate to the left.</p>	<p>Rudder</p>  <p>Left Right</p>	 <p>Push the rudder control to the right, the body and nose of unit will rotate to the right.</p>



注意
Caution

Beginners should know the designated operating mode of (TSA)700N-3D before operating to avoid accidents

(Mode 2)

 <p>Pushing the pitch control upward will cause the unit to ascend.</p>	<p>Throttle / Pitch</p> 	 <p>Push the pitch control down, then the unit will descend.</p>
 <p>Pushing the elevator control up, then the unit will go forward.</p>	<p>Elevator</p> 	 <p>Push the elevator control down, then the unit will go backward.</p>
 <p>Push the aileron control left, the unit will move to the left.</p>	<p>Aileron</p> 	 <p>Push the aileron control right, then the unit will move to the right.</p>
 <p>Push the rudder control to the left, the body and nose of unit will rotate to the left.</p>	<p>Rudder</p> 	 <p>Push the rudder control to the right, the body and nose of unit will rotate to the right.</p>

The helicopter's main and tail rotors spin at very high speed. Make sure to follow these instructions to ensure a safe and enjoyable flight.

Transporting the unit

When transporting the unit to an airfield, secure it to prevent the unit from tipping over. Avoid causing damage to the components which may adversely affect flight performance and safety.

Check the unit before flight

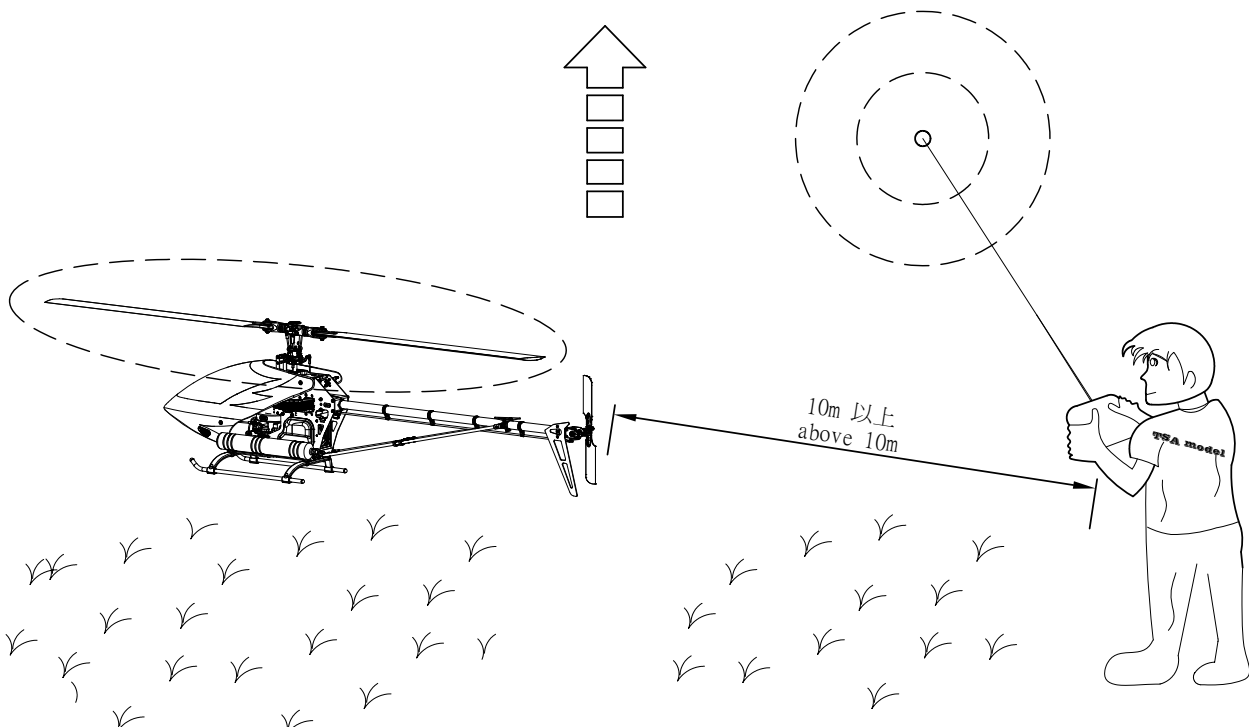
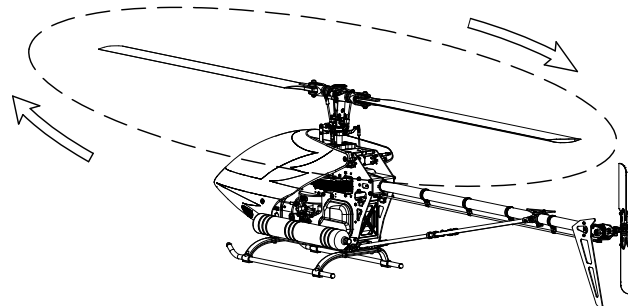
Check that all of the screws are securely fastened. New unit tends to have loose screws. Make sure to check them all before each flight. Check that the transmitter and receiver batteries are fully charged.

The airfield

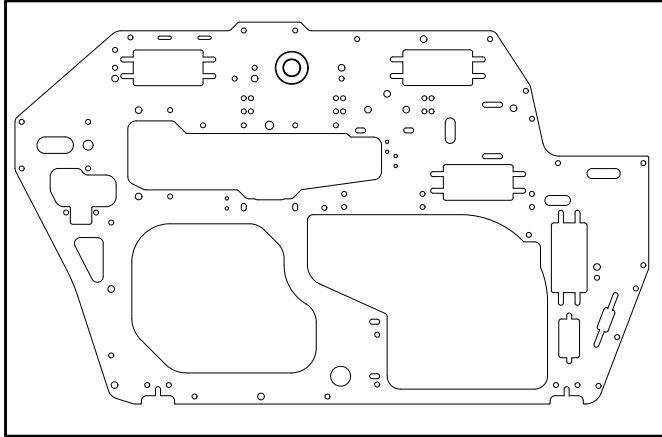
Do not fly

1. Near people ,
2. Near buildings ,
3. Near roads, railway tracks, or power lines .

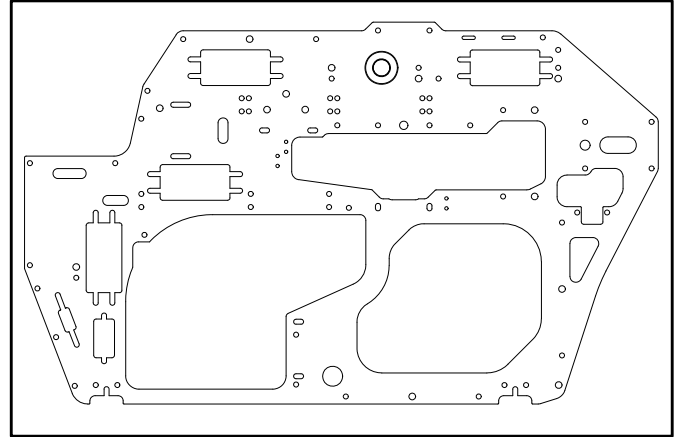
The distance of flight



✳ Order Number:A-001-20(Left)



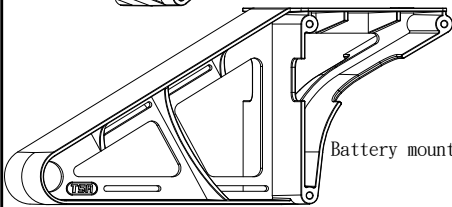
✳ Order Number:A-001-21(Right)



Order Number:A-005-00



Gyro mount

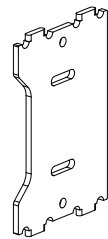


Battery mount



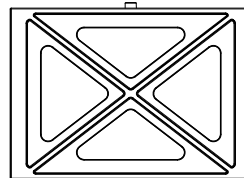
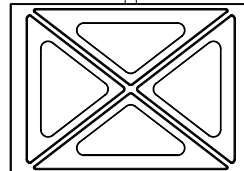
M3-8 PH screw

Order Number: A-0276-001

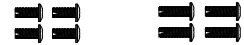


Gyro Plate

Order Number:A-004-00

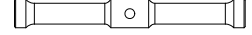


Rigidity brace



M3-8 PH screw M3-12 PH screw

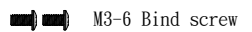
Order Number:A-003-00



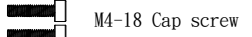
Cross member



Cross member



M3-6 Bind screw



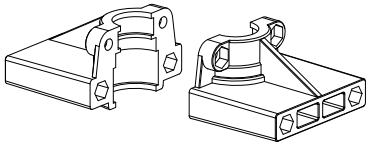
M4-18 Cap screw

Order Number:A-0145-000

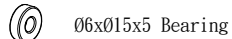


Grommet

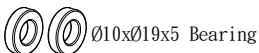
Order Number:A-006-00



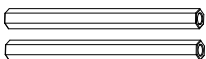
Clutch bearing holder



06x015x5 Bearing



010x019x5 Bearing



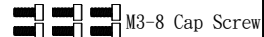
Hex insert



M3 Nylon nut

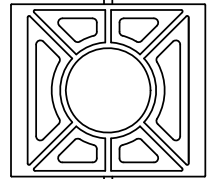


Custom Washer

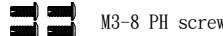


M3-8 Cap Screw

Order Number:A-004-02

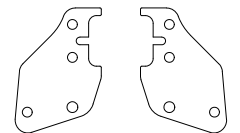


Rigidity brace



M3-8 PH screw

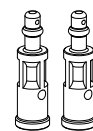
Order Number:A-0283-107



Rigidity plate

Order Number:A-013-00

Order Number: A-010-00

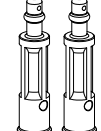


Canopy front support

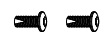


M3-8 PH screw

Order Number: A-012-00



Canopy rear support

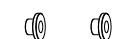


M3-8 PH screw

Order Number:A-011-00



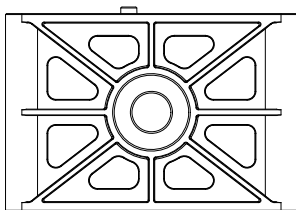
Canopy damper



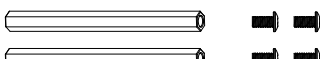
Flange washer

✳ Order Number:A-009-01

✳ Order Number:A-007-00



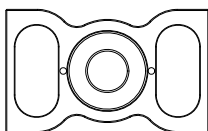
Centre main shaft bearing block



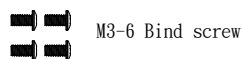
Hex insert

M3-6 Bind screw

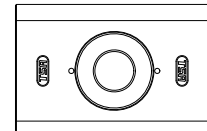
✳ Order Number:A-008-01



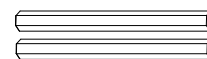
Main shaft bearing block



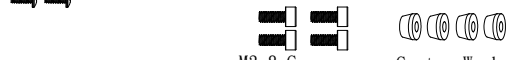
M3-6 Bind screw



Main shaft bearing block



Hex insert



M2-4 Bind screw

M3-8 Cap screw

Custom Washer

✳ Parts with this symbol have been assembled by the bearing factory.

Order Number:A-016-01

Order Number:A-014-00

Landing skid

M4-4 SS

Order Number:A-015-01

Landing skid tube

Order Number:A-018-01

Fan shroud

Hex insert

M3-6 Bind screw

Order Number:A-017-00

fan shroud insert

M2-6 Bind screw

Order Number:A-019-00

Plastic Skid Mount

M3-12 PH screw

M3-18 Cap screw

M3 Nut

Washer(Ø3xØ8x0.8)

Order Number:A-022-00

Fuel tank (600CC)

Fuel fitting

Hex nut

Fuel tank grommet

Order Number:A-020-10

Fuel tube(Ø2.5xØ4x90mm)

Fuel tube(Ø2.5xØ5.5x500mm)

Order Number:A-020-00

Fuel tank pickup

Fuel inducer

Fuel tank nipple

Inducer cover

M3-5 Stainless steel bind screw

Order Number:A-0147-000

Fuel tank guard

Order Number:A-0262-001

Base plate

Order Number:A-0340-000

Plastic tail boom clamp

Order Number:A-027-00

Ø6xØ13x5 Bearing

Ø12xØ18x4 Bearing

Order Number:A-025-00

Hex insert

Custom Washer

M3-8 Cap screw

M3-6 Bind screw

M3-8 Bind screw

Order Number:A-026-00

Locating pin (Ø2*12mm)

M3-5 SS

Bevel gear

Order Number:A-029-01

M3-6 Bind screw

Fan hub

M3-10 Cap screw

Spacer Ø8.2*Ø15*1

M4-8 Cap screw

Order Number:A-030-01

Clutch

Order Number:A-0325-001

Plastic fan

Order Number:A-034-01

Starter coupling

Clutch shaft

M4-5 SS

Order Number:A-031-02

Retainer nut

Spur gear

✳️ Order Number:A-032-01

Clutch bell

Order Number:A-0380-001

Clutch liner

✳️ Order Number:A-033-02

Order Number:A-0043-000

Plastic main gear(126T)

Order Number:A-0121-003

Main shaft

✳️ Order Number:A-035-01

M3-8 Bind screw

Order Number:A-0122-000

Auto-rotation drive shaft

Order Number:A-0123-000

One way bearing collar

Order Number:AB-016-08

Ø15xØ23x11
One way bearing

Order Number:A-036-00

Plastic tail drive gear(113T)

Spacer(Ø4*Ø5.5*3.25)

Order Number:A-038-00

M4 Nylon nut

M4-27-6 Cap screw

Order Number:A-039-01

Custom Washer

M3-10 Cap screw

M4-16 Cap screw

Engine mount

Spare parts

✳ Order Number: A-046-04

- Spacer (03*05 *5.25)
- M3-18 SS
- M3 Nylon nut

Order Number: A-040-01

ARE Pivot Arm

- M4-4 SS
- Spacer (03*04.2 *2.45mm)
- M3-10 Bind screw

Order Number: A-041-00

Elevator shaft

- M3-4 SS
- M3-6 Bind screw
- Locating pin (02*11mm)

Order Number: A-042-00

- 5.7mm Ball
- M2 Nut
- M2-8 Cap screw

Order Number: A-043-00

- M3-8 PH screw

ARE rocker-arm support

✳ Order Number: A-044-04

ARE supports

✳ Order Number: A-045-00

- M3-10 Bind screw
- ARE Pivot block
- Spacer (03*05 *5.25)
- M3-18 SS
- M3 Nylon nut

Order Number: A-0210-001

- Spacer (05*07 *16.55)

✳ Order Number: A-201-00

- 12mm Ball
- M2-4 Bind screw

Order Number: A-200-00

Coupling

Pivot ball

Order Number: A-202-01

- 11mm Ball
- 12mm Ball
- 13mm Ball

✳ Order Number: A-204-01

✳ Order Number: A-203-01

Washout control arm

- Spacer (02*03.2*0.9)
- M2-6 Bind screw

Order Number: A-0306-000

Mixing arm

Order Number: AB-001-00

Bearing (02x05x2.3)

Order Number: A-047-00

- 5.7mm Ball
- M2 Nut
- M2-8 Cap screw

Order Number:A-209-01

<p>Order Number:A-208-01</p> <p>Metal head block</p> <p>M4-5 Bind screw</p> <p>M3-15 Cap screw</p> <p>Spacer(Ø3*Ø4.5*6.2mm)</p> <p>M3-20 Bind screw</p>	<p>Order Number:A-206-01</p> <p>Teeter hub</p> <p>Acetyl bearing</p> <p>Custom washer</p> <p>M3-6 Bind screw</p> <p>Order Number:A-201-001</p> <p>Damper shim (Ø10*Ø15.5*1mm)</p>	<p>Order Number:A-0302-001</p> <p>Feathering shaft guides</p> <p>Order Number:A-0141-001</p> <p>Damper50° (black)</p> <p>Order Number:A-207-00</p> <p>Head button</p> <p>M3-12 Bind screw</p>	<p>Order Number:A-205-01</p> <p>Spindle(Ø10*111.2mm)</p> <p>M6-12 Cap screw</p> <p>Washer Ø6xØ13x2</p>
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✳ Order Number:A-212-03

<p>Blade grip</p> <p>M5 Nylon nut</p> <p>M5-32-6 Cap screw</p> <p>Order Number:A-211-01</p> <p>Pitch arm</p> <p>11mm Ball</p> <p>M4-10 Cap screw</p>	<p>Order Number:A-210-02</p> <p>M5 Nylon nut</p> <p>M5-32-6 Cap screw</p> <p>Order Number:A-213-01</p> <p>Rod(M2.8*65mm)</p> <p>Ball link</p>
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✳ Order Number:A-420-01

M3 Nylon nut

M3-17-5 Cap screw

M4-4 SS

Order Number:A-417-00

Tail spindle

M4-4 SS

M4 Nylon nut

✳ Order Number:A-421-01

M3-5 Bind screw

M3-6 Bind screw

M3-12 Cap screw

M3-18 Bind screw

spacer(Ø3*Ø4.5*3mm)

✳ Order Number:A-419-01

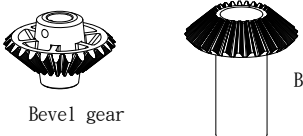
Metal tail blade grip

Order Number:A-418-01

M3 Nylon nut

M3-17-5 Cap screw

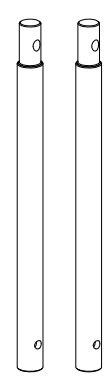
Order Number:A-023-00




Bevel gear

Bevel gear


Order Number:A-409-00



Metal tail output shaft

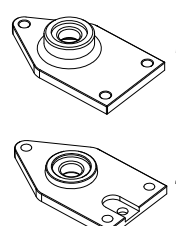


Locating pin



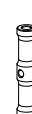
M3-5 SS

✳️ Order Number:A-412-00




Tail case left

Tail case right

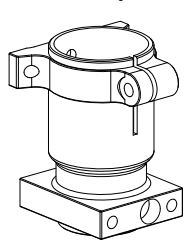


Tail spacer
standoff(29.5mm)




M3-6 Bind
screw


✳️ Order Number:A-413-01




Metal tail gearbox clamp



M3-5 Bind screw




M3-6 Bind screw




M3-12 Cap screw

Order Number:A-408-00




Locking collar




M3-3 SS


Order Number:A-411-00




Pivot mount



spacer(Ø3*Ø4.5*3mm)

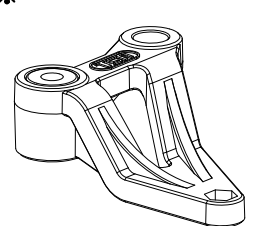


M3-6 Bind screw




M3-18 Bind screw


✳️ Order Number:A-410-00




Tail bell crank



5.7mm Ball

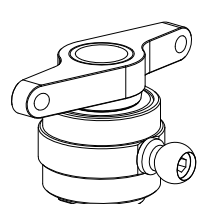


M2-8 Cap screw




M2 Nut


✳️ Order Number:A-416-01



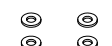
✳️ Order Number:A-414-01




Tail pitch links



Spacer

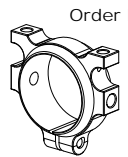


Washer
Ø2xØ4.2x0.5




M2-7
Cap screw


Order Number:A-400-01




Metal tail
boom clamp



M3-5 Bind screw

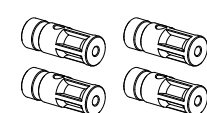


M3-10 Cap screw




M4-12 Cap screw

Order Number:A-048-00

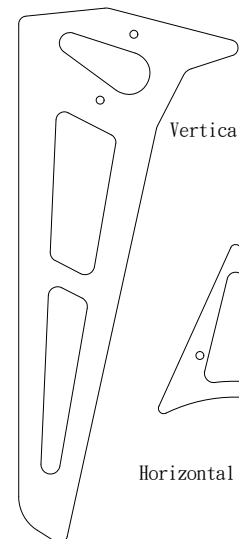


Servo support

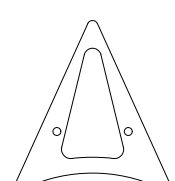


M3-8 PH screw

Order Number:A-423-01

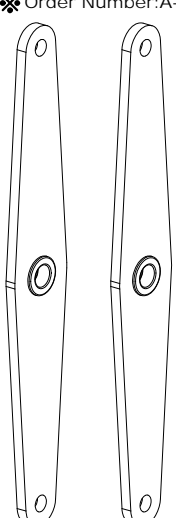


Vertical fin

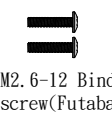


Horizontal fin

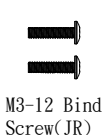
✳️ Order Number:A-049-01



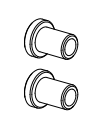
Servo support plate



M2.6-12 Bind
screw(Futaba)

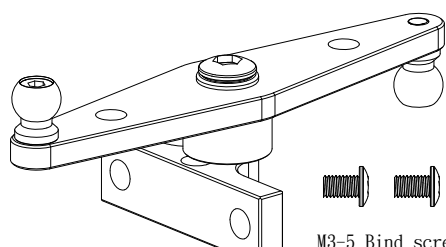


M3-12 Bind
Screw(JR)



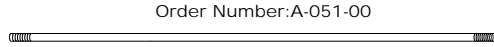
Servo support
guide

✳️ Order Number:A-050-01

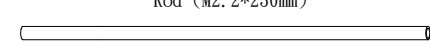


M3-5 Bind screw


Order Number:A-051-00




Rod (M2.2*230mm)



Carbon fiber tube(211mm)



Carbon fiber shaft



Ball link-long

Order Number:A-052-02

Rod (M2.2*50mm)

Rod (M2.2*60mm)

Rod (M2.8*65mm)

Rod (M2.2*80mm)

Order Number:A-053-00

Ball link

Ball link-long

Order Number:A-054-00

Lever(JR)

13mm Ball

Order Number:A-054-01

Lever(Futaba)

13mm Ball

Order Number:A-057-00

Servo mounting plate

Servo mounting plate

M2.6-18 PH screw

Order Number:A-065-00

Wire clamp

Wire clamp

Wire clamp

Order Number:A-0333-000

Servo plate

Order Number:A-055-00

Servo horn(JR)

Lever(JR)

5.7mm Ball

M2 Nut

M2-8 Cap screw

Order Number:A-401-00

Push rod guide

M2 Nut

M2-8 Cap screw

Order Number:A-403-01

Boom support ends(Ø8)

M2.6-12-3 Bind screw

M2.6 Nut

Order Number:A-406-00

Bearing carrier

Order Number:A-055-01

Servo horn(Futaba)

Lever(Futaba)

5.7mm Ball

M2 Nut

M2-8 Cap screw

Order Number:A-402-01

Boom support brace(Ø8)

M2-10 Cap screw

M2 Nut

Boom clamp(Ø8)

M3 Nylon nut

M3-10 Cap screw

Order Number:A-0172-000

T/T drive end

bearing(Ø8*Ø14*4)

Order Number:A-407-01

Topque tube(781.5mm)

Order Number:A-405-02

Ball link-long(23mm)

Rudder rod (M2.3*773mm)

Order Number:A-404-10

Tail boom support(Ø8*597mm)

Order Number:A-0084-002

tail boom(788mm)

Order Number:A-900-00

Silicone grease

Retainer

5 minute epoxy

Order Number:A-602-01

Canopy

Canopy grommet