ALIGN

Nitro T-REX 600 V2

LIMITED EDITION

INSTRUCTION MANUAL

使用說明書

KX0160NPLBT

Contents

Thank you for buying ALIGN products. The *T-REX 600N V2* is the latest technology in Rotary RC models. Please read this manual carefully before assembling and flying the new *T-REX 600N V2* helicopter. We recommend that you keep this manual for future reference regarding tuning and maintenance.

承蒙閣下選用亞拓遙控世界系列產品，謹表謝意。進入遙控世界之前必須告訴您許多相關的知識與注意事項，以確保您能夠在學習的過程中較得心應手。在開始操作之前，請務必詳閱本說明書，相信一定能夠給您帶來相當大的幫助，也請您妥善保管這本說明書，以作為日後參考。

1.INTRODUCTION 前言

Thank you for buying ALIGN Products. The T-REX 600N V2 Helicopter is designed as an easy to use, full featured Helicopter R/C model capable of all forms of rotary flight. Please read the manual carefully before assembling the model, and follow all precautions and recommendations located within the manual. Be sure to retain the manual for future reference, routine maintenance, and tuning. The T-REX 600N V2 is a new product developed by ALIGN. It provides flying stability for beginners, full aerobatic capability for advanced fliers, and unsurpassed reliability for customer support.

感謝您選購亞拓產品，為了讓您容易方便的使用 T-REX 600N V2 直昇機、請您詳細的閱讀完這本說明書之後再進行組裝以及操作這台直昇機，同時請您妥善的保存這本說明書、作為日後進行調整以及維修的參考。 T-REX 600N V2 是由亞拓自行研發的新產品，不論你是需求飛行穩定性的初學者或是追求性能的飛行愛好者。 T-REX 600N V2 將是你最佳的選擇。

THE MEANING OF SYMBOLS 標誌代表涵義

WARNING 警 告	**Mishandling due to failure to follow these instructions may result in damage or injury.** 因為疏忽這些操作說明，而使用錯誤可能造成財產損失或嚴重傷害。
CAUTION 注 意	**Mishandling due to failure to follow these instructions may result in danger.** 因為疏忽這些操作說明，而使用錯誤可能造成危險。
FORBIDDEN 禁 止	**Do not attempt under any circumstances.** 在任何禁止的環境下，請勿嘗試操作。

IMPORTANT NOTES 重要聲明

R/C helicopters, including the T-REX 600N V2 are not toys. **R/C helicopter 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 ALIGN products.**

Manufacturer and seller assume no liability for the operation or the use of this product.

Intended for use only by adults with experience flying remote control helicopters at a legal flying field. After the sale of this product we cannot maintain any control over its operation or usage.

T-REX 600N V2 遙控直昇機並非玩具，它是結合了許多高科技產品所設計出來的休閒用品，所以商品的使用不當或不熟悉都可能會造成嚴重傷害甚至死亡，使用之前請務必詳讀本說明書，勿輕忽並注意自身安全。注意!任何遙控直昇機的使用，製造商和經銷商是無法對使用者於零件使用的損耗異常或組裝不當所發生之意外負任何責任，本產品是提供給有操作過模型直昇機經驗的成人或有相當技術的人員在旁指導於當地合法遙控飛行場飛行，以確保安全無虞下操作使用，產品售出後本公司將不負任何操作和使用控制上的任何性能與安全責任。

We recommend that you obtain the assistance of an experienced pilot before attempting to fly our products for the first time. A local expert is the best way to properly assemble, setup, and fly your model for the first time. The T-REX 600N V2 requires a certain degree of skill to operate, and is a consumer item. Any damage or dissatisfaction as a result of accidents or modifications are not covered by any warrantee and cannot be returned for repair or Replacement. Please contact our distributors for free technical consultation and parts at discounted rates when you experience problems during operation or maintenance.

模型商品屬於需高操作技術且為消耗性之商品，如經拆裝使用後，會造成不等情況零件損耗，任何使用情況所造成商品不良或不滿意，將無法於保固條件內更換新品或退貨，如遇有使用操作維修問題，本公司全省分公司或代理商將提供技術指導、特價零件供應服務。

2.SAFETY NOTES 安全注意事項

CAUTION 注 意

Fly only in safe areas, away from other people. Do not operate R/C aircraft within the vicinity of homes or crowds of people. R/C aircraft are prone to accidents, failures, and crashes due to a variety of reasons including, lack of maintenance, pilot error, and radio interference. Pilots are responsible for their actions and damage or injury occurring during the operation or as of a result of R/C aircraft models.

遙控模型飛機、直昇機屬高危險性商品，飛行時務必遠離人群，人為組裝不當或機件損壞、電子控制設備不良，以及操控上的不熟悉、都有可能導致飛行失控損傷等不可預期的意外，請飛行者務必注意飛行安全，並需了解自負疏忽所造成任何意外之責任。

FORBIDDEN 禁止 LOCATE AN APPROPRIATE LOCATION 遠離障礙物及人群

R/C helicopters fly at high speed, thus posing a certain degree of potential danger. Choose an a legal flying field consisting of flat, smooth ground without obstacles. Do not fly near buildings, high voltage cables, or trees to ensure the safety of yourself, others and your model. For the first practice, please choose a legal flying field and can use a training skid to fly for reducing the damage. Do not fly your model in inclement weather, such as rain, wind, snow or darkness.

直昇機飛行時具有一定的速度，相對的也潛在著危險性，場地的選擇也相對的重要，請需遵守當地法規到合法搖控飛行場地飛行。必須注意周遭有沒有人、高樓、建築物、高壓電線、樹木等等，避免操控的不當造成自己與他人財產的損壞。初次練習時，務必選擇在空曠合法專屬飛行場地並適當搭配練習架練習飛行，這對飛行失誤所造成的損傷將會大幅的降低。
請勿在下雨、打雷等惡劣天候下操作，以確保本身及機體的安全。

FORBIDDEN 禁止 PREVENT MOISTURE 遠離潮濕環境

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.

直昇機內部也是由許多精密的電子零組件組成，所以必須絕對的防止潮濕或水氣，避免在浴室或雨天時使用，防止水氣進入機身內部而導致機件及電子零件故障而引發不可預期的意外！

FORBIDDEN 禁止 PROPER OPERATION 勿不當使用本產品

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.

請勿自行改造加工，任何的升級改裝或維修，請使用亞拓產品目錄中的零件，以確保結構的安全。請確認於產品限界內操作，請勿過載使用，並勿用於安全、法令外其它非法用途。

WARNING 警告 OBTAIN THE ASSISTANCE OF AN EXPERIENCED PILOT 避免獨自操控

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.)

至飛行場飛行前，需確認是否有相同頻率的同好正進行飛行，因為開啓相同頻率的發射機將導致自己與他人立即干擾等意外危險。遙控飛機操控技巧在學習初期有著一定的難度，要盡量避免獨自操作飛行，需有經驗的人士在旁指導，才可以操控飛行。
(勤練電腦模擬器及老手指導是入門必要的選擇)

WARNING 警告 SAFE OPERATION 安全操作

Operate this unit within your ability. Do not fly under tired condition and improper operation may cause in danger.

請於自己能力內及需要一定技術範圍內操作這台直昇機，過於疲勞、精神不佳或不當操作，意外發生風險將可能會提高。

CAUTION 注意 ALWAYS BE AWARE OF THE ROTATING BLADES 遠離運轉中零件

During the operation of the helicopter, the main rotor and tail rotor will be spinning at a high rate of speed. The blades are capable of inflicting serious bodily injury and damage to 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.

當直昇機主旋翼與尾旋翼運轉時，切勿觸摸並遠離任何物件，以避免造成危險及損壞。

CAUTION 注意 KEEP AWAY FROM HEAT 遠離熱源

R/C models are made up 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.

遙控飛機多半是以 PA 纖維或聚乙烯、電子商品為主要材質，因此要盡量遠離熱源、日曬，以避免因高溫而變形甚至熔毀損壞的可能。

3.EQUIPMENT REQUIRED FOR ASSEMBLY 自備設備

RADIO TRANSMITTER AND ELECTRONIC EQUIPMENT REQUIRED FOR ASSEMBLY 自備遙控及電子設備

Transmitter
(7-channel or more,helicopter system)
發射機(七動以上直昇機模式遙控器)

Receiver(7-channel or more)
接收機(七動以上)

Standard size throttle servo
(minimum speed 0.10 sec/60°,
torque 3kg.com or higher)
油門用標準伺服器 x 1pc
(速度：0.10秒/60度以內，扭力：3kg.cm以上)

ALIGN 50 Engine
ALIGN 50引擎

50 Muffler
50高效加速管

Pitch Gauge x 1pc
螺距規 x 1

or
或

Digital Pitch Gauge x 1pc
電子螺距規 x 1

Super Starter x 1pc
啓動器 x 1

Engine Fuel x1pc
引擎燃油x1

Fuel Pump x1pc
加油器x1

ADDITIONAL TOOLS REQUIRED FOR ASSEMBLY 自備工具

Scissors
剪刀

Cutter Knife
刀子

Diagonal Cutting Pliers
斜口鉗

Needle Nose Pliers
尖嘴鉗

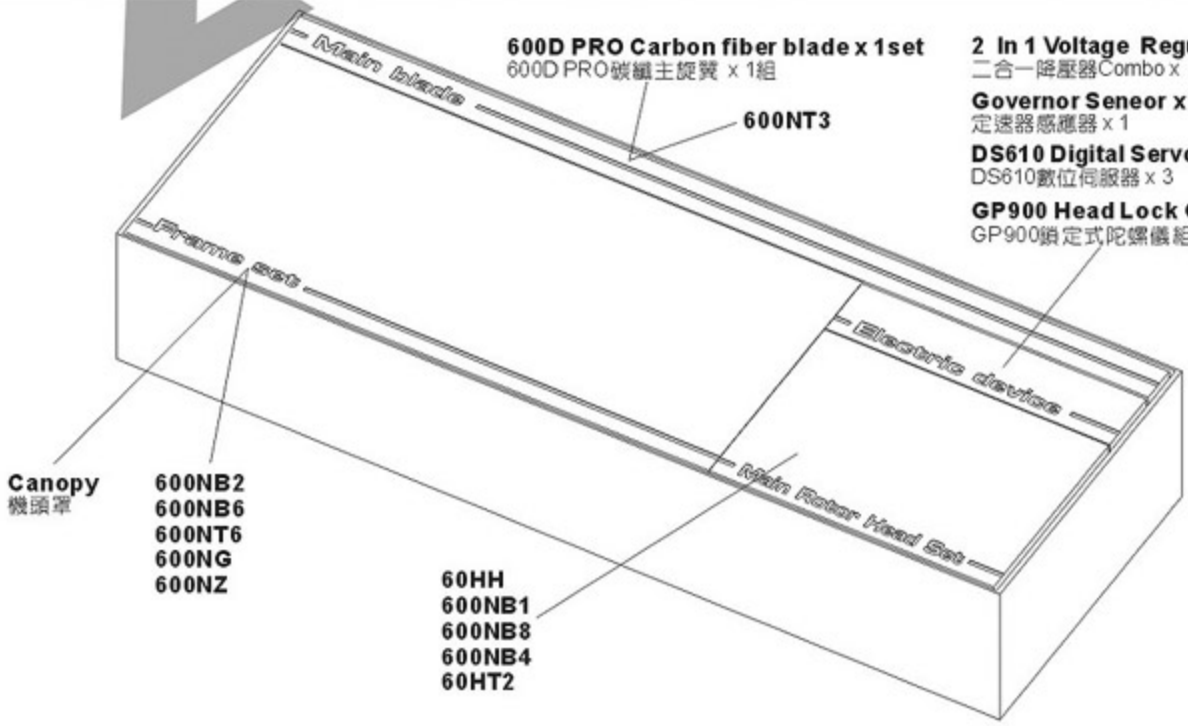
Oil
潤滑油

CA
瞬間膠

Hexagon Screw Driver
六角螺絲起子
3mm/2.5mm/2mm/1.5mm

Philips Screw Driver
十字螺絲起子
φ3.0/φ1.8mm

4.PACKAGE ILLUSTRATION 包裝說明



600D PRO Carbon fiber blade x 1set
600D PRO碳纖主旋翼 x 1組

600NT3

2 In 1 Voltage Regulator combo x 1
二合一降壓器Combo x 1

Governor Seneor x 1
定速器感應器 x 1

DS610 Digital Servo x 3
DS610數位伺服器 x 3

GP900 Head Lock Gyro Combo x 1
GP900鎖定式陀螺儀組(GP900+DS620) x 1

Canopy
機頭罩

600NB2
600NB6
600NT6
600NG
600NZ

60HH
600NB1
600NB8
600NB4
60HT2

CAREFULLY INSPECT BEFORE REAL FLIGHT 請嚴格執行飛行前檢查義務

☆***Before flying, please check to make sure no one else is operating on the same frequency for the safety.***

☆***Before flight, please check if the batteries of transmitter and receiver are enough for the flight.***

☆***Before turn on the transmitter, please check if the throttle stick is in the lowest position. IDLE switch is OFF.***

☆***When turn off the unit, please follow the power on/off procedure. Power ON- Please turn on the transmitter first, and then turn on receiver. Power OFF- Please turn off the receiver first and then turn off the transmitter. Improper procedure may cause out of control, so please to have this correct habit.***

☆***Before operation, check every movement is smooth and directions are correct. Carefully inspect servos for interference and broken gear.***

☆***Check for missing or loose screws and nuts. See if there is any cracked and incomplete assembly of parts. Carefully check main rotor blades and rotor holders. Broken and premature failures of parts possibly cause resulting in a dangerous situation.***

☆***Check all ball links to avoid excess play and replace as needed. Failure to do so will result in poor flight stability.***

☆***Check the battery and power plug are fastened. Vibration and violent flight may cause the plug loose and result out of control.***

★每次飛行前應先確認所使用的頻率是否會干擾他人，以確保你自身與他人的安全。

★每次飛行前確定您發射機與接收機電池的電量是在足夠飛行的狀態。

★開機前確認油門搖桿是否位於最低點，熄火降落開關，定速開關(IDLE)是否於關閉位置。

★關機時必須遵守電源開關機的程序，開機時應先開啓發射機後，再開啓接收機電源；關機時應先關閉接收機後，再關閉發射機電源。不正確的開關程序可能會造失控的現象，影響自身與他人的安全，請養成正確的習慣。

★開機請先確定直昇機的各個動作是否順暢，及方向是否正確，並檢查伺服器的動作是否有干涉或崩齒的情形，使用故障的伺服器將導致不可預期的危險。

★飛行前確認沒有缺少或鬆脫的螺絲與螺帽，確認沒有組裝不完整或損毀的零件，仔細檢查主旋翼是否有損壞，特別是接近主旋翼夾座的部位。損壞或組裝不完整的零件不僅影響飛行，更會造成不可預期的危險。注意:對損耗、有裂痕零件更新及定期保養檢查的重要性。

★檢查所有的連桿頭是否有鬆脫的情形，過鬆的連桿頭應先更新，否則將造成直昇機無法操控的危險。

★確認電池及電源接頭是否固定牢靠，飛行中的震動或激烈的飛行，可能造成電源接頭鬆脫而造成失控的危險。

Standard Equipment 標準配備

 600NC	 600NB6	 600NB1	 600NB2	 600NB8	 600NB4	 60HH	 600NG	 600NT6
 60HT2	 600NT3	 600NZ	 DS610 Digital Servox 3 DS610數位伺服器 x 3	 GP900 Head Lock Gyro Combo GP900鎖定式陀螺儀組 GP900+2025B	 2 In 1 Voltage Regulator Combo 二合一降壓器Combo	 Governor Sensor 定速器感應器	 600D PRO Carbon Fiber Blade 600D PRO碳纖主旋翼	

When you see the marks as below, please use glue or grease to ensure flying safety.
標有下符號之組裝步驟，請配合上膠或上油，以確保使用之可靠度。

CA: Apply CA Glue to fix.
R48: Apply Anaerobics Retainer to fix.
T43: Apply Thread Lock to fix.
OIL: Add Grease.
CA:使用瞬間膠固定
R48:使用金屬管狀固定缺氧膠固定
T43:使用螺絲膠
OIL:添加潤滑油

When assembling ball links, make sure the "A" character faces outside.
各項塑膠製連桿頭扣接時，A字請朝外。

Grease 黃滑油 | Green 綠色 | Blue 藍色 | Self-furnished 瞬間膠(自備)

T43 Glue width: approx. 1mm
T43上膠寬度約1mm

R48 metal tubular adhesive (eg. Bearings). T43 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.)
R48 為強力金屬管狀(如軸承)接著劑，T43為螺絲膠，膠合螺絲或金屬內外徑請務必少量使用，必要時請用手去除多餘膠量，欲拆卸時可於金屬接合部位熱烤約15秒。(注意！塑膠件避免接近熱源)

60HH1

Thrust bearing
止推軸承(φ6xφ14x5mm) x 2

Spindle bearing spacer
橫軸軸承墊片(φ10xφ13.8x0.4mm) x 2

Bearing
軸承(φ8xφ14x4mm) x 4

Socket collar screw
圓頭內六角軸套螺絲(M3x6mm)X4

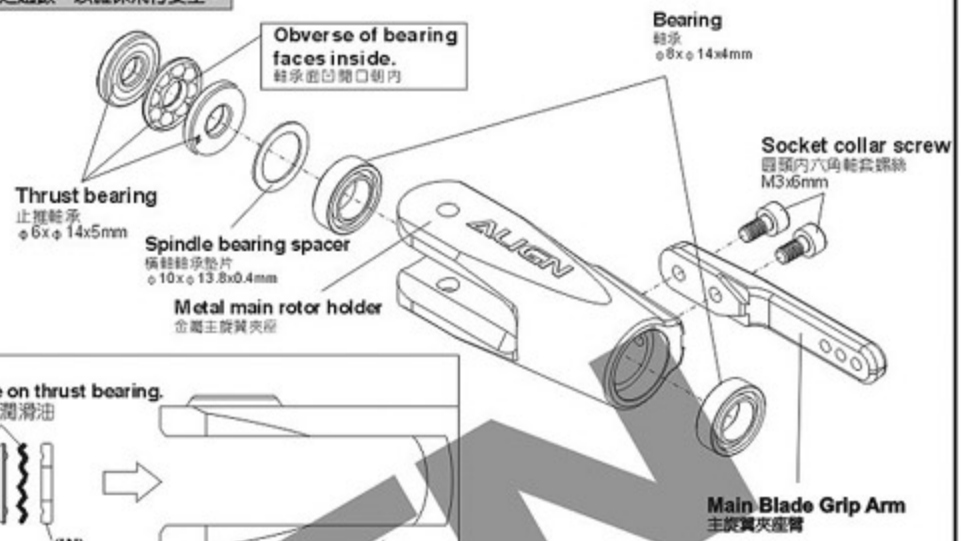
CAUTION 注意

Thrust bearing and washer for radial bearing are wear items, and thus should be inspected for replacement after every 20 flights. For flights with high headspeed, the inspection interval should be reduced to ensure flight safety.
止推軸承及橫軸墊圈屬於飛行消耗品，建議每20趟定期檢查及更換，高主旋翼轉速飛行時，請縮短定期檢查之趟數，以確保飛行安全。

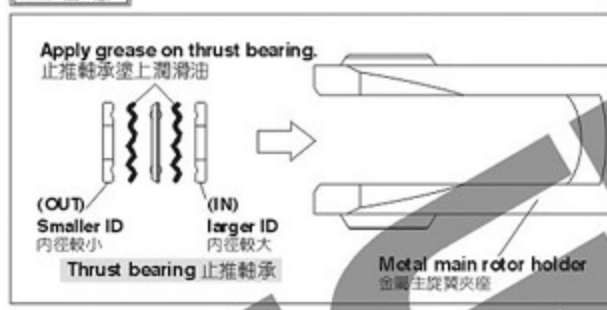
Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)

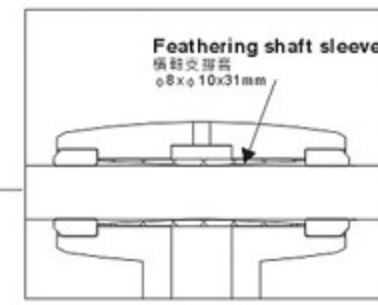
CAUTION 注意

Already assembled by Factory. Before flying, please check if the screws are fixed with glue.
原裝組裝完成品，每一次飛行前請先確認螺絲是否已上膠不會鬆動。

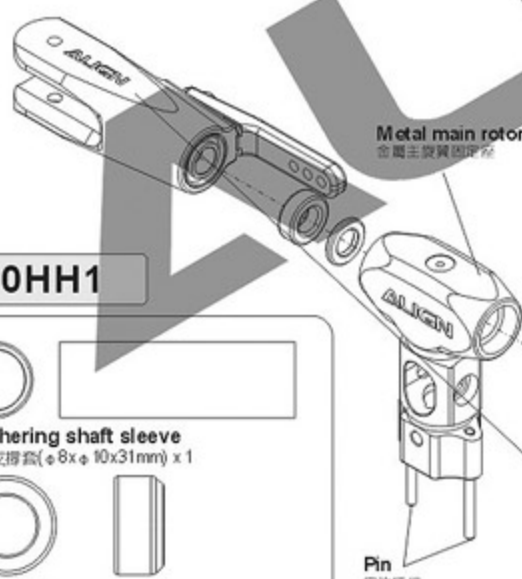


CAUTION 注意





60HH1



Damper rubber-red 60° is suitable to general flight for beginners.
橫軸墊圈紅色60°適用於一般飛行，適合初階者使用
Damper rubber-black 80° is suitable to 3D flight for advanced users.
橫軸墊圈黑色80°適用於3D飛行，適合高階者使用

Feathering shaft sleeve
橫軸支撐套(φ8xφ10x31mm) x 1

Damper rubber-red 60°
橫軸墊圈 紅色60° (φ7.9xφ13x6.5mm) x 2

Damper rubber-black 80°
橫軸墊圈 黑色80° (φ7.9xφ13x6.5mm) x 2

Spacer
橫軸套圈(φ8xφ11.5x1.3mm) x 2

Socket screw
圓頭內六角螺絲(M4x10mm)x2

Washer
橫軸華司(φ4xφ12x1mm)x2

CAUTION 注意

ALIGN logo on the top
字樣朝上

60HH1

- Bearing 軸承(φ3xφ8x3mm) x2
- M3 collar screw M3雙層軸套螺絲(M3x9.3mm)X2
- Washer 華司(φ3xφ4.8x0.3mm)X4
- Socket button head screw 半圓頭內六角螺絲(M3x14mm)X2
- Washer 控制搖臂套(φ3.1xφ5x4.3mm)X2
- Bearing 軸承(φ5xφ9x3mm)X2
- Bearing 軸承(φ3xφ7x3mm) x4

60HH1A

- Linkage ball D(M3x3) 球頭D(M3x3)(φ4.75x16.32mm)X2
- Linkage ball C(M3x3) 球頭C(M3x3)(φ4.75x8.5mm)X4

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲頭附於金屬件請使用適量T43(螺絲膠)

Main blade grip
主旋翼夾座臂

A1 A2 A3

A1 : Positive Delta:
Increase maneuver response speed

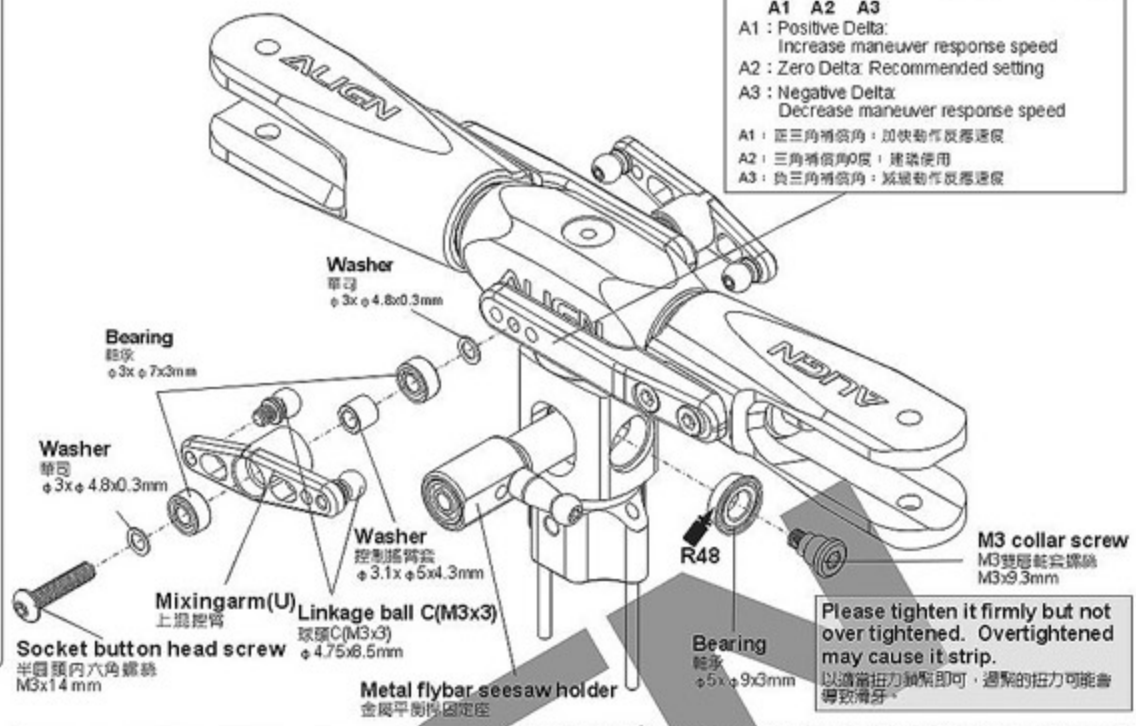
A2 : Zero Delta: Recommended setting

A3 : Negative Delta:
Decrease maneuver response speed

A1：正三角補償角，加快動作反應速度

A2：三角補償角0度，建議使用

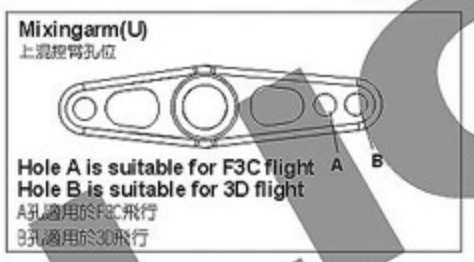
A3：負三角補償角，減緩動作反應速度



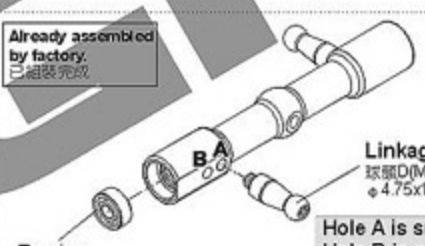
Please tighten it firmly but not over tightened. Overtightened may cause it strip.
以適當扭力鎖緊即可，過緊的扭力可能會導致滑牙。

60HH2

- Socket screw 圓頭內六角螺絲(M3x5mm) x4
- M4 Set screw M4止洩螺絲(M4x4mm)X2
- M3 Set screw M3止洩螺絲(M3x3mm)X2



Already assembled by factory.
已組裝完成



Hole A is suitable for 3D flight
Hole B is suitable for F3C flight
A孔適用於3D飛行
B孔適用於F3C飛行

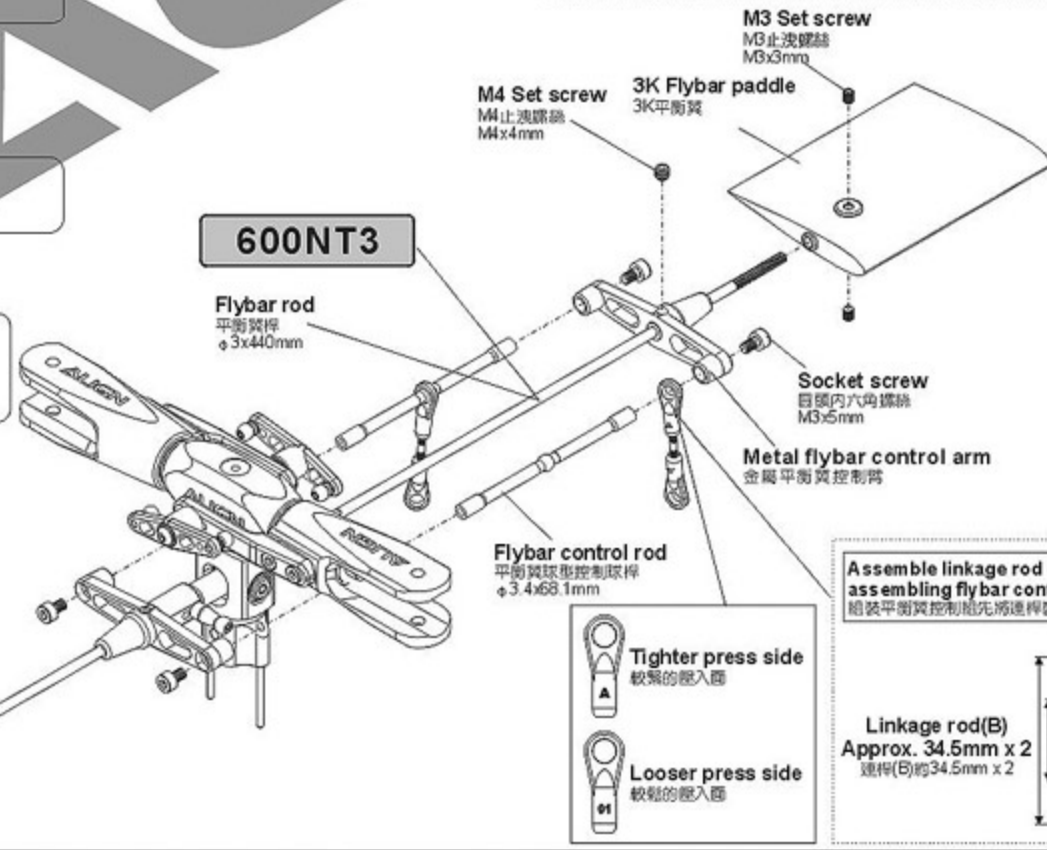
600NZ8

- Linkage rod(B) 連桿(B)φ1.96x19mm x2

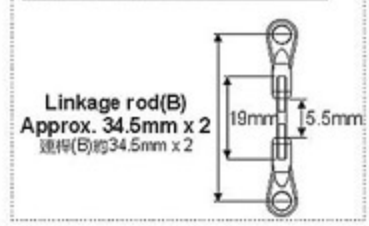
600NZ8A

- Ball link 連桿頭 x4

600NT3



Assemble linkage rod (B) before assembling flybar control set.
組裝平衡翼控制臂先將連桿裝入。



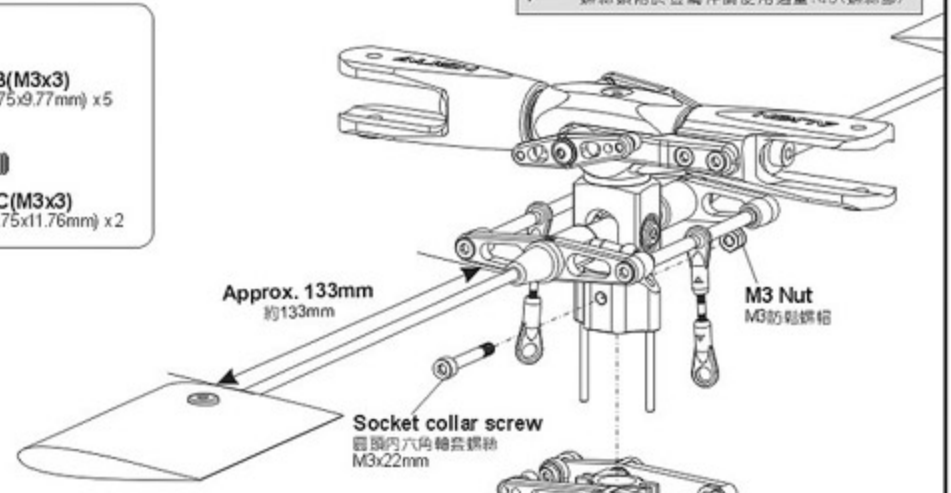
600NH12

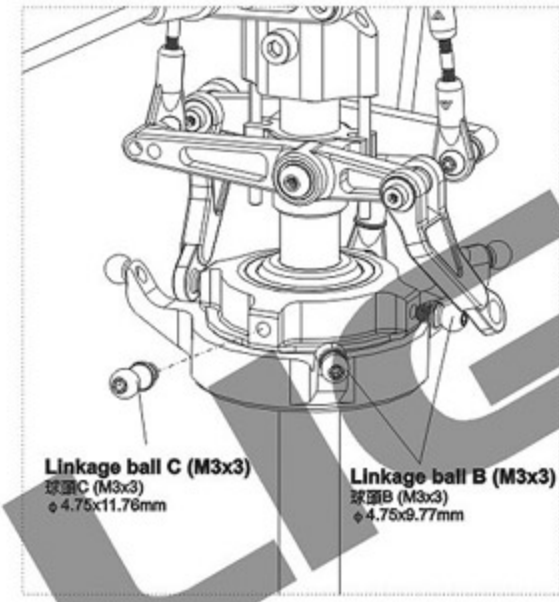
- **Bearing** 軸承(⌀3x⌀7x3mm)x4
- **Bearing** 軸承(⌀2x⌀5x2.3mm) x 4
- **Socket screw** 圓頭內六角螺絲(M2x5mm) x 4
- **Socket button head screw** 半圓頭內六角螺絲(M3x12mm) x2
- **Washer** 華司(⌀3x⌀4.8x0.3mm) x 2
- **Collar** 擺臂軸承襯套(⌀3x⌀4.8x1.5mm) x 2
- **Socket collar screw** 圓頭內六角軸套螺絲(M3x22mm) x 1
- **M3 Nut** M3防鬆螺帽 x 1
- **Linkage ball C(M3x3)** 球頭C(M3x3)(⌀4.75x11.76mm) x 2

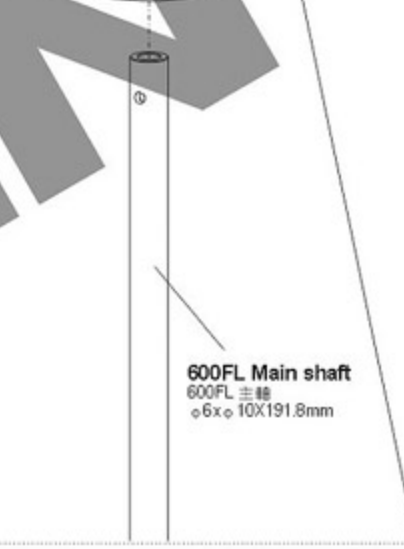
60HH4

- **Linkage ball B(M3x3)** 球頭B(M3x3)(⌀4.75x9.77mm) x5
- **Linkage ball C(M3x3)** 球頭C(M3x3)(⌀4.75x11.76mm) x 2

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)



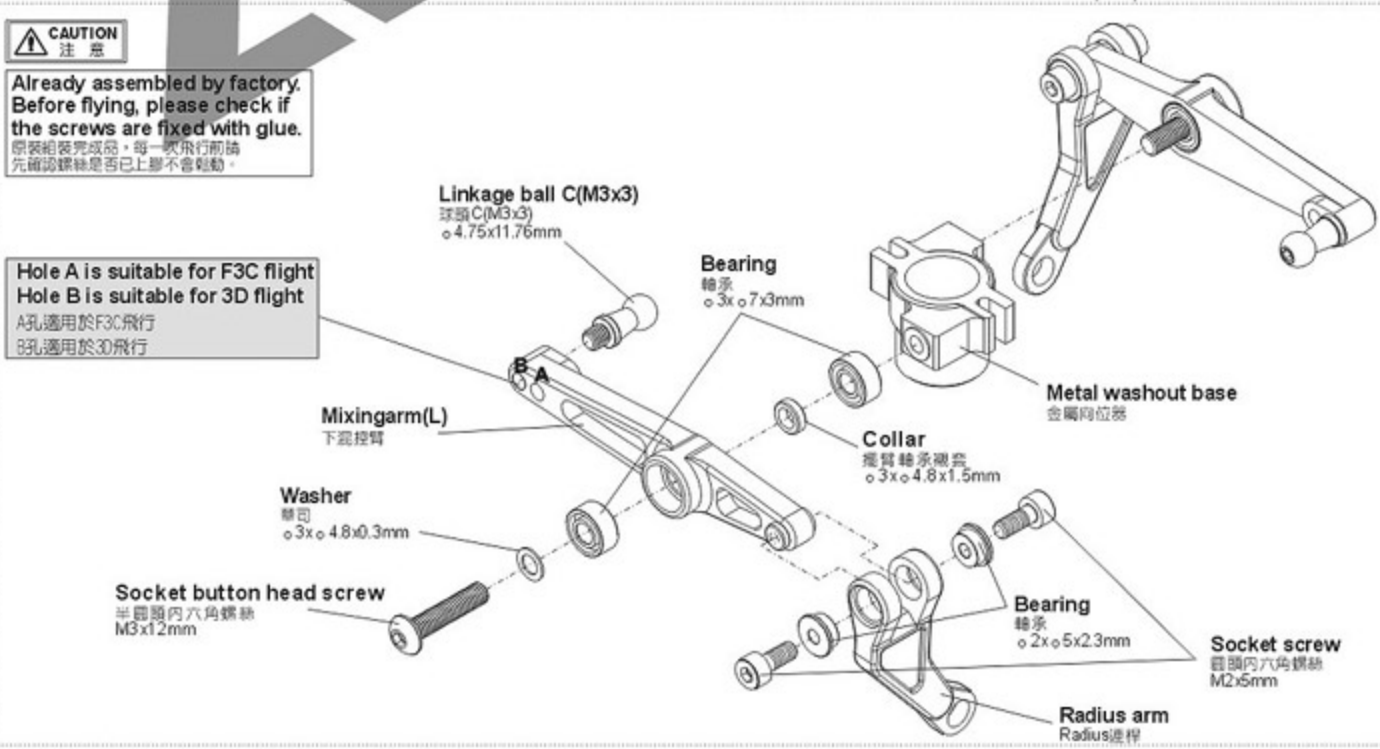




CAUTION 注 意

Already assembled by factory. Before flying, please check if the screws are fixed with glue.
原裝組裝完成品，每一次飛行前請先確認螺絲是否已上膠不會鬆動。

Hole A is suitable for F3C flight
Hole B is suitable for 3D flight
A孔適用於F3C飛行
B孔適用於3D飛行



600NZ8

Linkage rod(A)
連桿(A) φ 1.96x14mm x 2

Linkage rod(C)
連桿(C) φ 2.5x71mm x 2

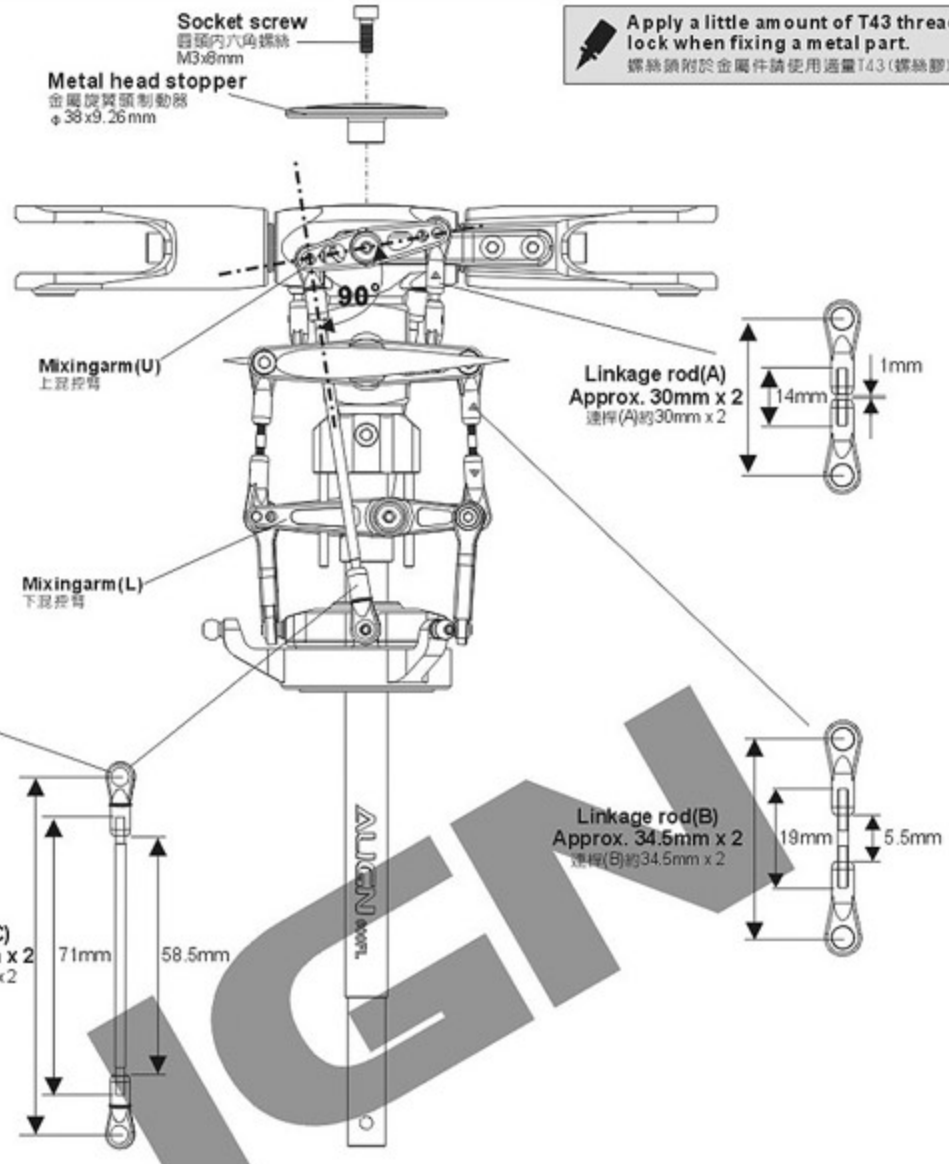
60HH1A

Socket screw
圓頭內六角螺絲(M3x8mm) x 1

600NZ8A

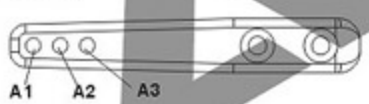
Ball link For linkage rod(C)
連桿頭 x 4 連桿(C)專用

Ball link
連桿頭 x 8



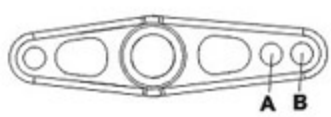
Effect of Adjustment Mounting Holes 調整孔位影響特性:

Main Blade Grip
主旋翼夾座臂



A1 : Positive Delta:
Increase maneuver response speed
A2 : Zero Delta: Recommended setting
A3 : Negative Delta:
Decrease maneuver response speed
A1：正三角補償角：加快動作反應速度
A2：三角補償角0度：建議使用
A3：負三角補償角：減緩動作反應速度

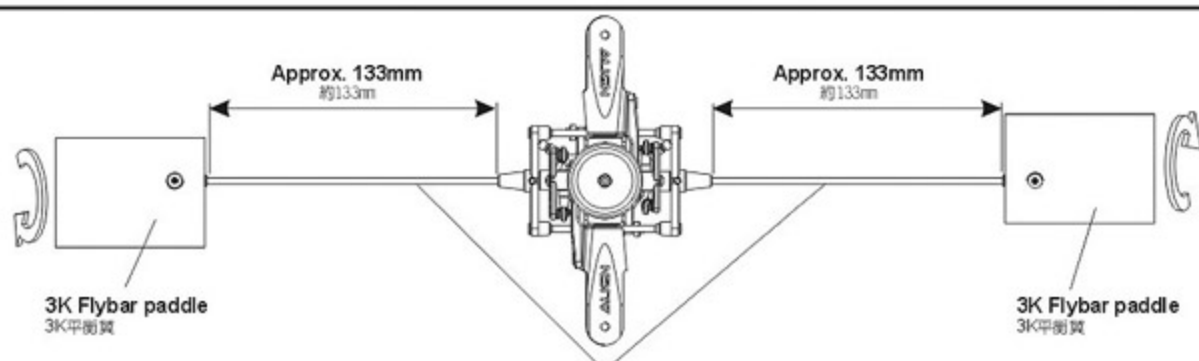
Mixingarm(U)
上混控臂孔位



Hole A is suitable for F3C flight
Hole B is suitable for 3D flight
A孔適用於F3C飛行
B孔適用於3D飛行

Mixingarm(L)
下混控臂孔位

Hole A is suitable for F3C flight
Hole B is suitable for 3D flight
A孔適用於F3C飛行
B孔適用於3D飛行



Make sure both sides are equal in length.
請保持平衡桿兩邊長度相等。

600NB8

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)

Before tightening the screw, please rotate the bearing and check the concentricity of the bearing in order to have the screw firmly secured, to avoid the bearing stuck or heavy load at one sude and cause slip.
上緊螺絲前需試轉動確認軸承同心度良好後，才能將螺絲平均鎖緊，以避免造成卡死或單邊重負載可能產生的打滑。

Bearing
軸承(◇12x◇18x4mm) x 1

One-way bearing
單向軸承(◇12x◇18x16mm) x 1

Washer
單向軸承華司(◇11.5x◇18x0.8mm) x 1

One-way bearing shaft
單向軸承套(◇9x◇12x34.7mm)X1

Flat head self tapping screw
皿頭內六角自攻螺絲(T3x7mm)X5

Washer
單向軸承華司
◇11.5x◇18x0.8mm

Autorotation tail drive gear
尾驅動主齒
180T

CAUTION 注意

Already assembled by factory. Before flying, please check if the screws are fixed with glue.
原裝組裝完成品，每一次飛行前請先確認螺絲是否已上膠不會鬆動。

Main drive gear
主齒盤
170T

Main gear case
主齒中心座

Hex socket self tapping screw
皿頭內六角自攻螺絲
T3x7mm

Apply grease
塗上潤滑油

One-way bearing
單向軸承
◇12x◇18x16mm

Already assembled by factory, please note to check again.
已組裝完成，請務必自行再確認。

Bearing
軸承
◇12x◇18x4mm

One-way bearing shaft
單向軸承套
◇9x◇12x34.7mm

600NB4A

M4 Set screw
M4止洩螺絲(M4x4mm)x2

Clutch nut
離合器齒輪鎖帽(◇14x6mm)x1

Bearing
軸承(◇5x◇13x4mm)x2

Bearing
軸承(◇10x◇19x5mm)x1

600NB4B

Socket screw
圓頭內六角螺絲(M3x8mm) x 2

M3 Nut
M3防鬆螺帽 x 2

M4 Set screw
M4止洩螺絲
M4x4mm

Starter coupling
穴角啓動頭
◇8x◇10x18mm

Bearing
軸承
◇5x◇13x4mm

Socket screw
圓頭內六角螺絲
M3x8mm

M3 Nut
M3防鬆螺帽

Clutch nut
離合器齒輪鎖帽
◇14x6mm

Bearing
軸承
◇10x◇19x5mm

Clutch gear
離合器齒輪
◇15.4x◇7x31.5mm

Clutch bell
離合器鐘
◇44x◇47x20mm

Clutch bearing block
離合器軸承座

Hex mounting bolt
穴角銅柱
◇5x49mm

Clutch/Start shaft
啓動軸
◇7.5x◇10x70.5mm

M3 Nut
M3防鬆螺帽

Clutch liner
離合器夾包片
0.8x9x136mm

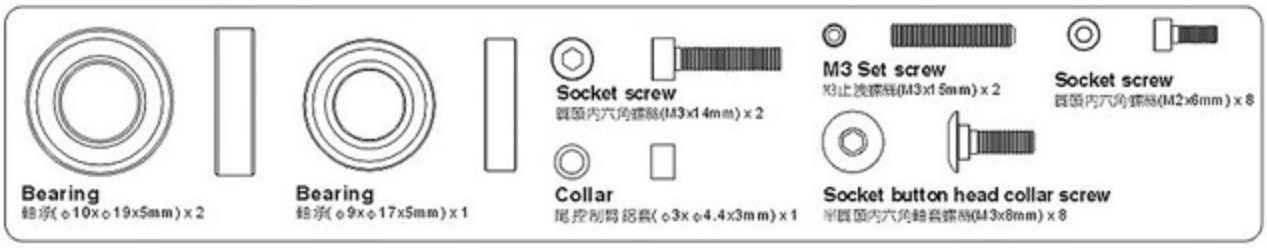
Socket screw
圓頭內六角螺絲
M3x8mm

Already assembled by factory, please note to check again.
已組裝完成，請務必自行再確認。

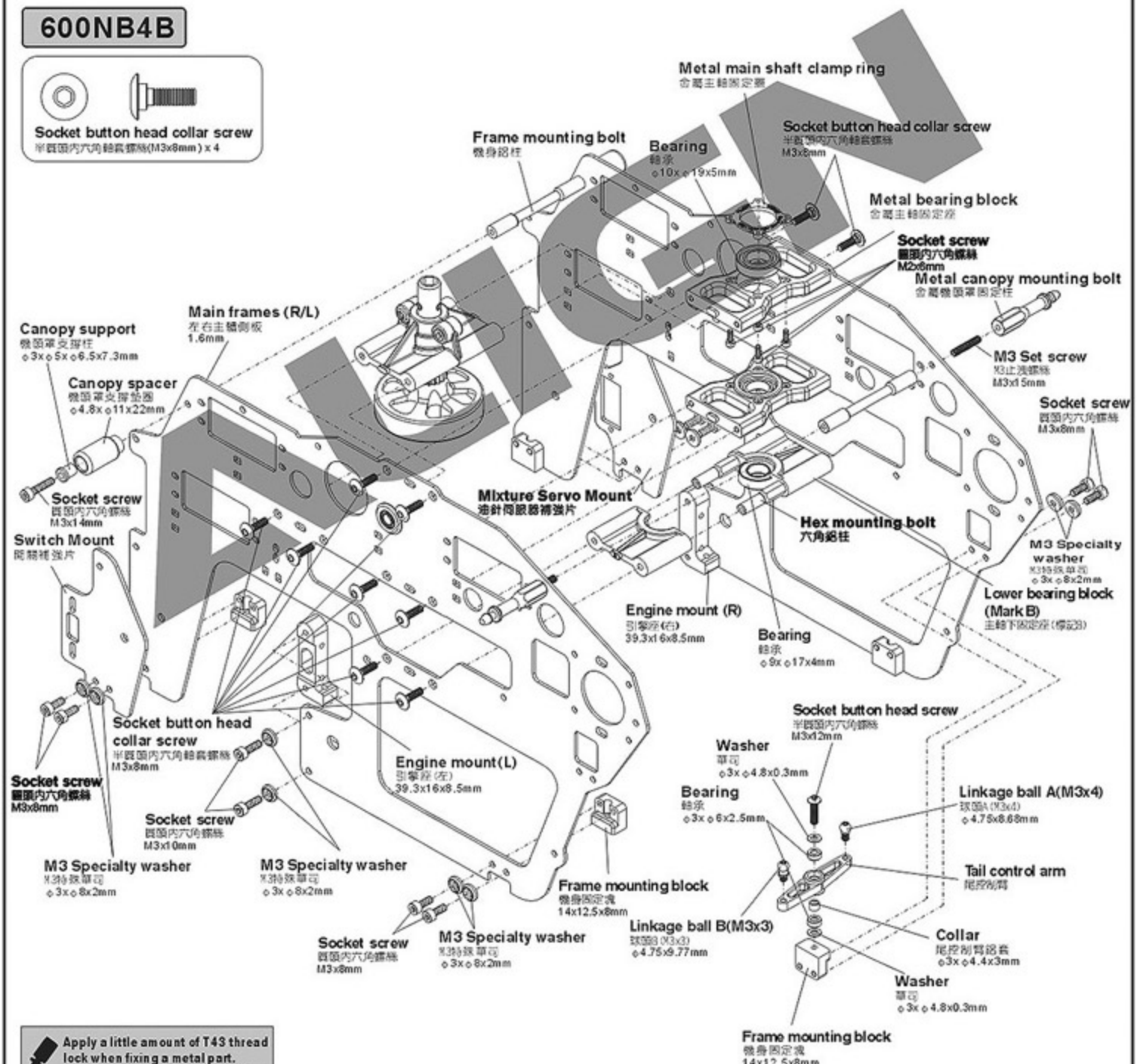
Bearing
軸承
◇5x◇13x4mm

600NB1F

600NB1G

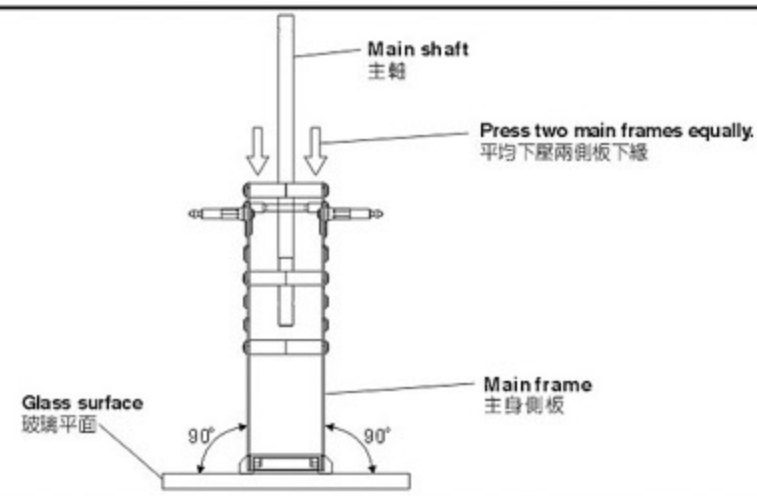


600NB4B



Main frame assembly point:
First do not fully tighten the screws of main frames and put three bearings through the main shaft to check if the movements are smooth. The bottom bracket must be firmly touched the level table top (glass surface); please keep the smooth movements on main shaft and level bottom bracket, then slowly tighten the screws. This assembly can help for the power and flight performance.

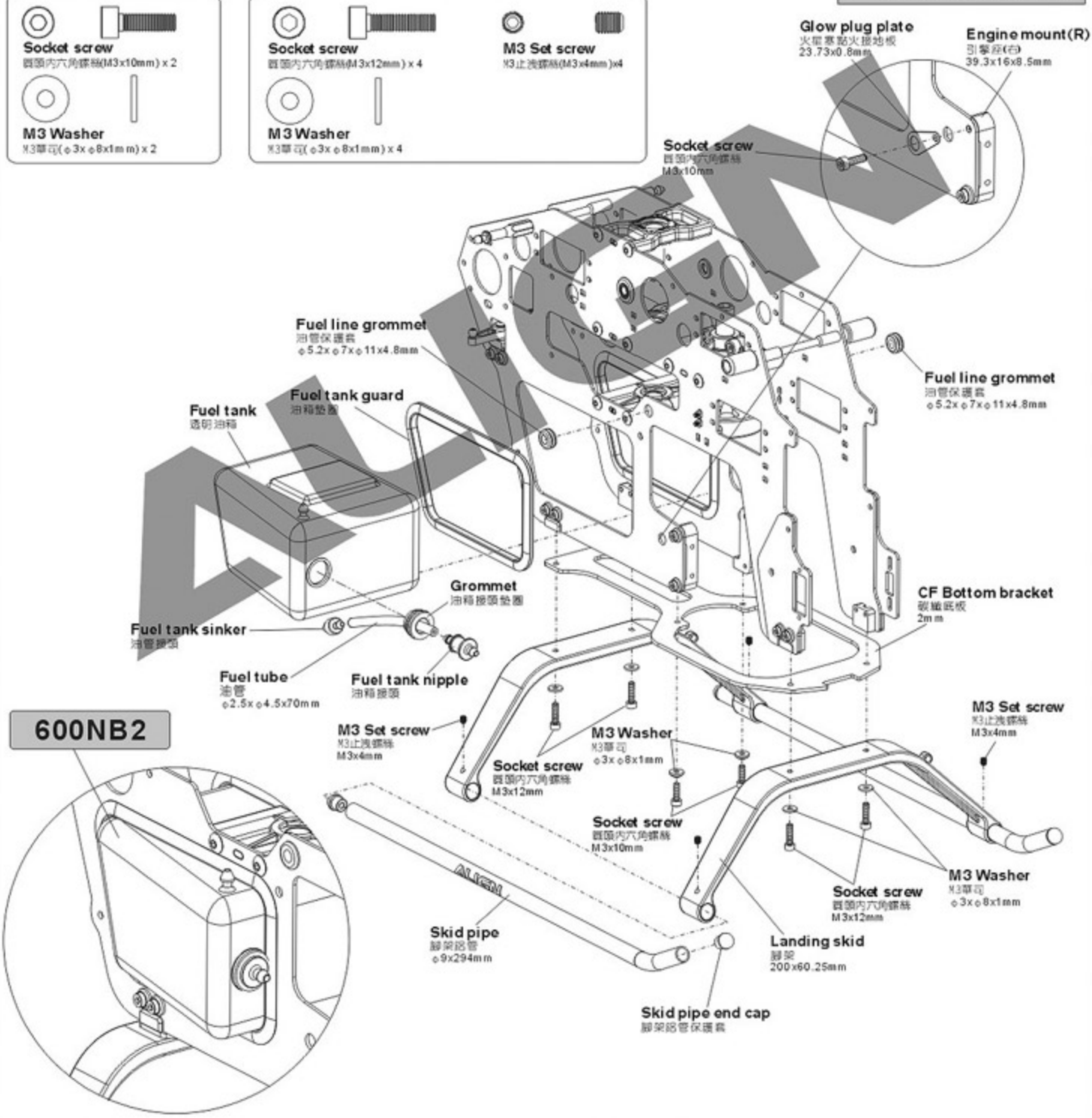
機身側板組立重點:
側板螺絲先不完全鎖緊，放入主軸貫穿三顆軸承確認上下移動必須滑順，主體底板必須與水平桌面(玻璃平面)緊貼平置；請保持主軸滑順與底板平行桌面後慢慢鎖緊螺絲。正確側板的組裝對動力與飛行性能有顯著幫助。



600NB1F

600NG1

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)



600NB2

600NB4A

- Socket screw 圓頭內六角螺絲(M3x12mm) x 2
- Socket head spring screw 圓頭內六角彈簧螺絲(M4x8mm) x 2
- Socket button head screw 半圓頭內六角螺絲(M3x5mm) x 2
- Socket button head screw 半圓頭內六角螺絲(M4x5mm) x 2

600NB4B

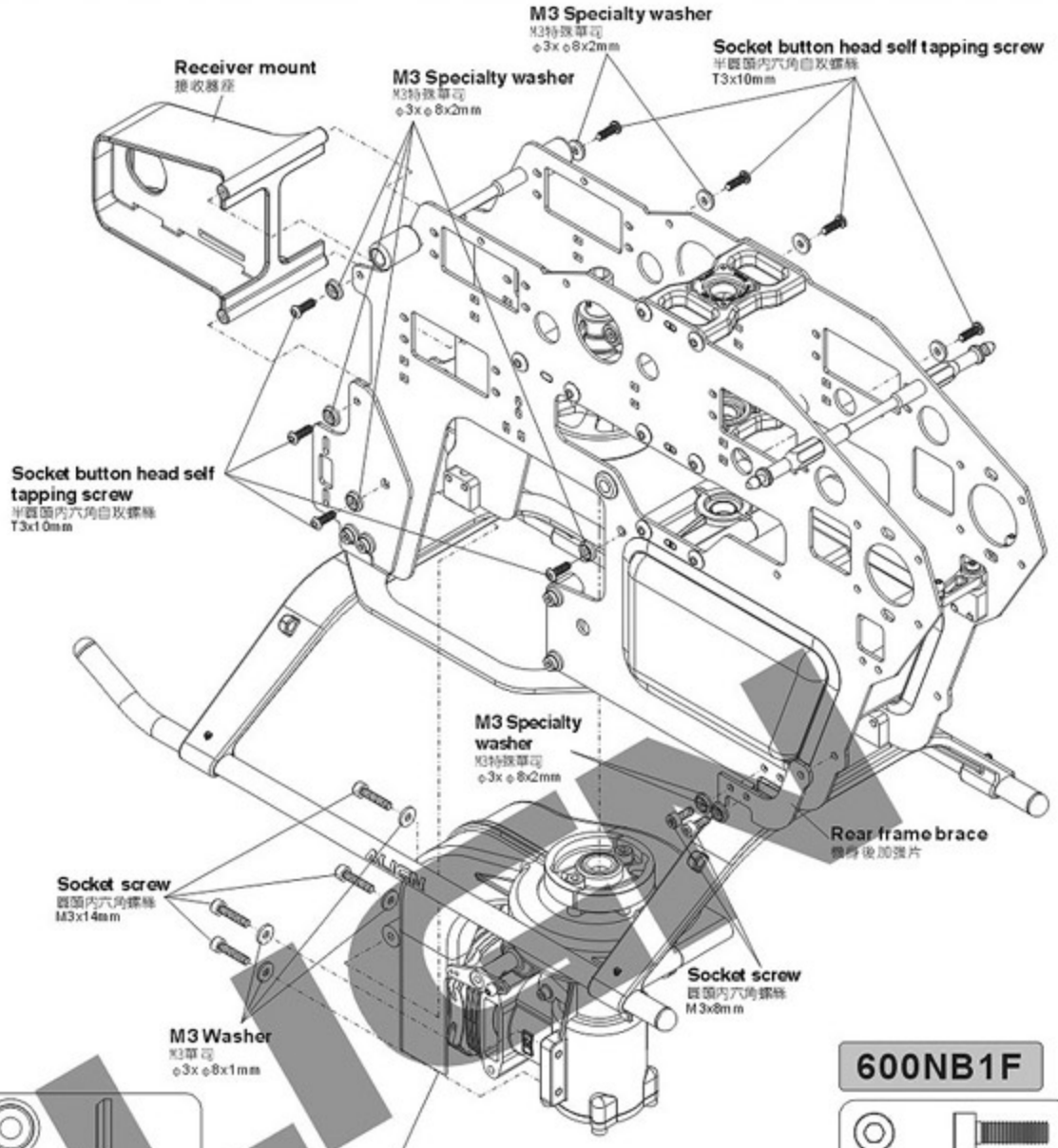
- M3 Washer M3華司(φ3xφ8x1mm) x 4
- M3 Specialty washer M3特殊華司(φ3xφ8x2mm) x 4
- Socket screw 圓頭內六角螺絲(M3x14mm) x 4
- Socket button head self tapping screw 半圓頭內六角自攻螺絲(T3x10mm) x 4

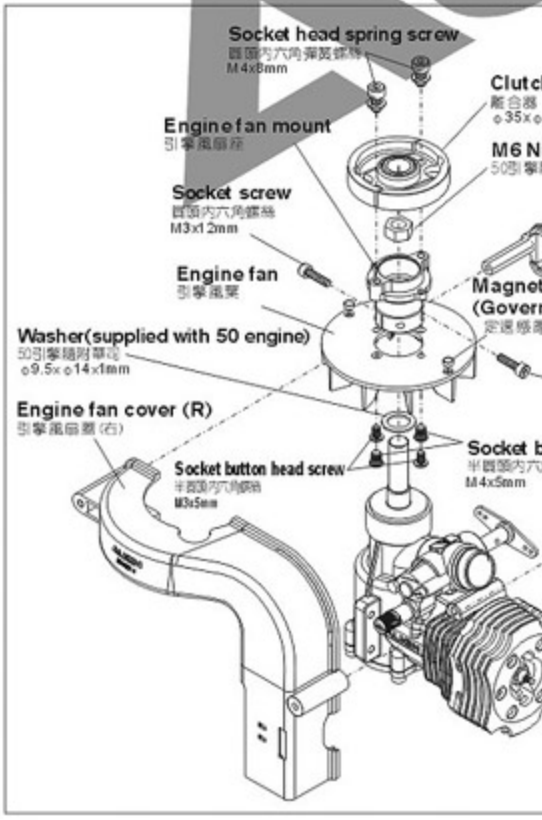
600NB1H

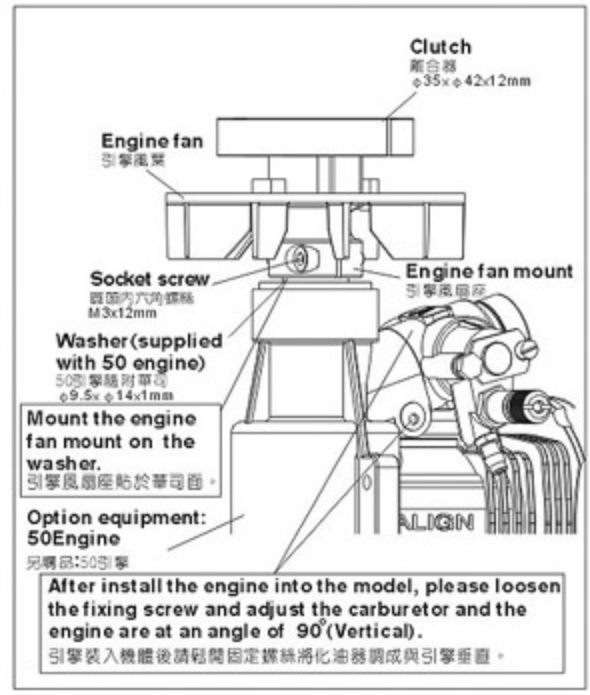
- Socket button head self tapping screw 半圓頭內六角自攻螺絲(T3x10mm)x4
- M3 Specialty washer M3特殊華司(φ3xφ8x2mm) x 4

600NB1F

- Socket screw 圓頭內六角螺絲(M3x8mm) x 4

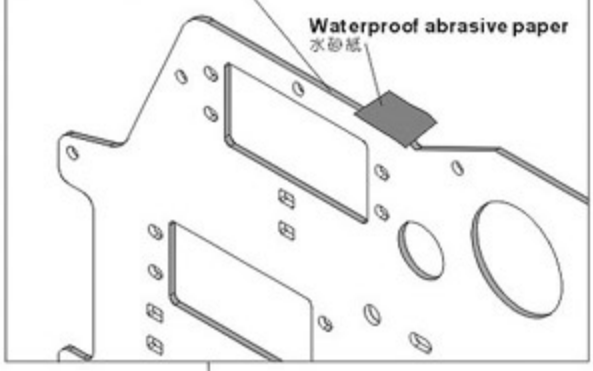






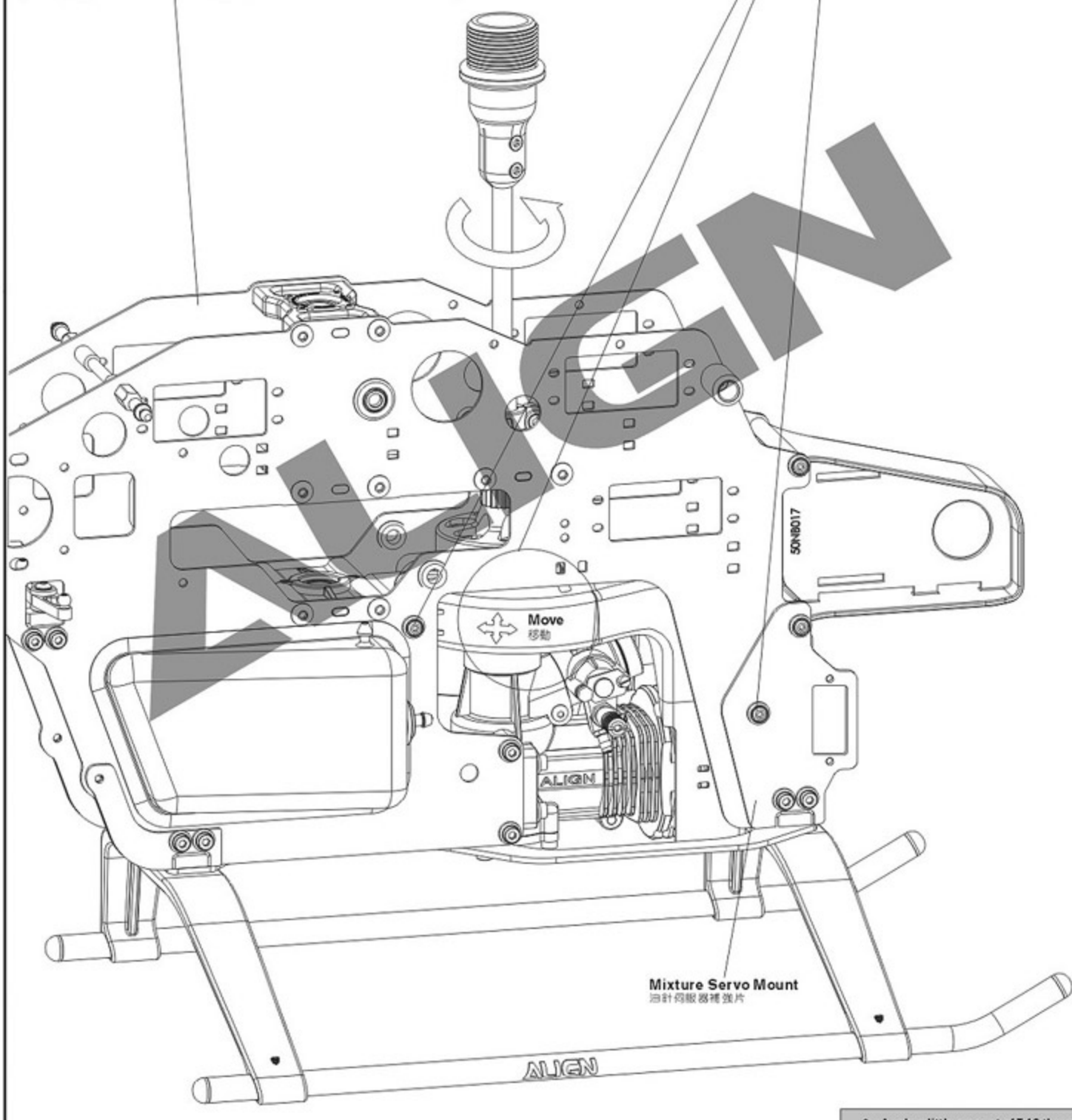
Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)

Recommend sanding the marked position as below illustration with a waterproof abrasive paper(#800-1000) to avoid the wires of electric parts to be cut.
建議於下圖色塊標示處，使用#800-1000水砂紙打磨，可防止電子設備電線被割破。



Fan cover fixing Tip
風扇罩固定要領

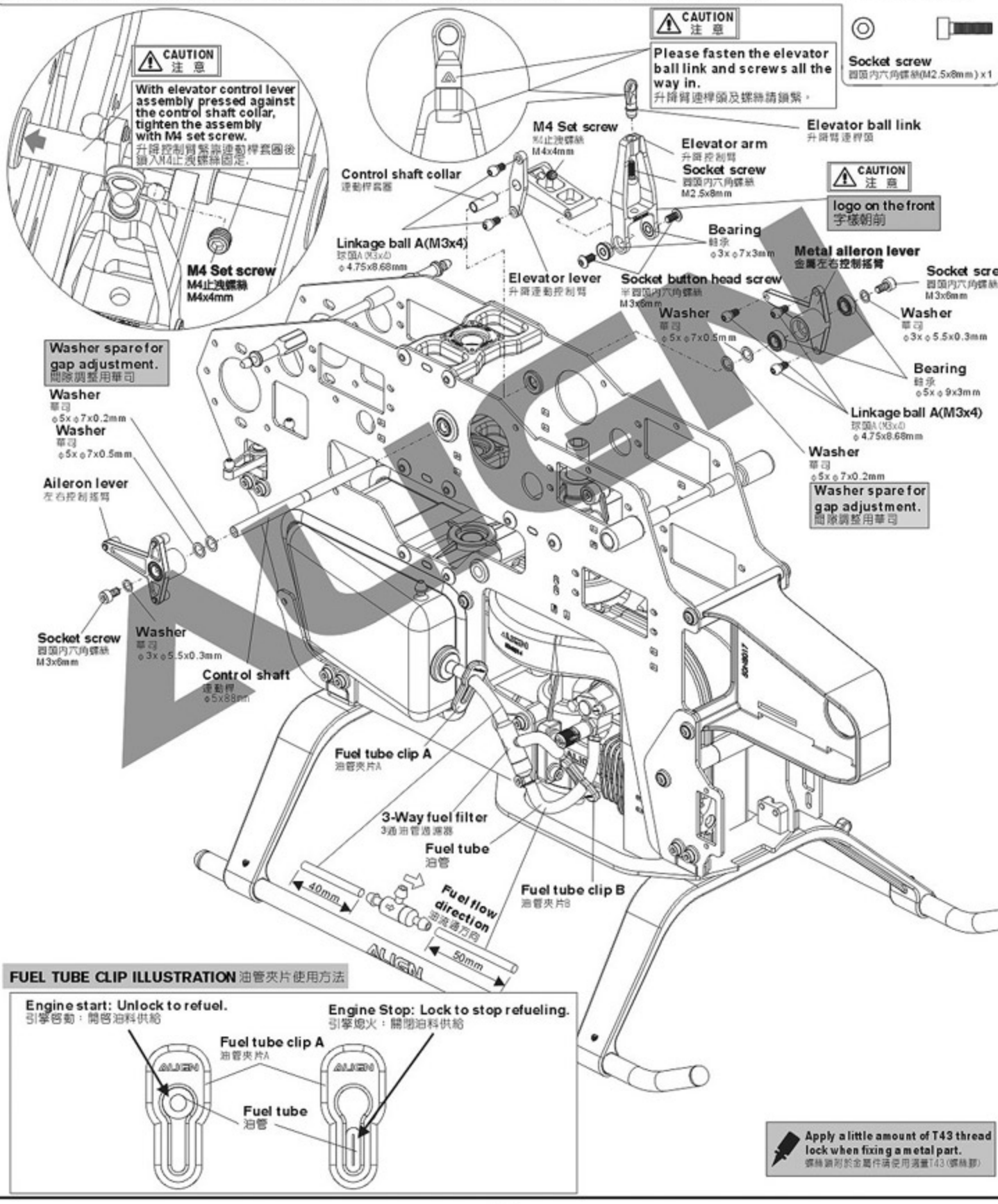
Before fixing the engine fan cover, please use a starter to rotate the fan and move the fan cover. This is to make sure no any interference, and then secure the fan cover with a fixing screw.
鎖緊固定引擎散熱風罩前，請先使用啓動棒轉動風扇，並移動風扇罩，確認在風扇無碰觸風扇罩後才鎖緊風扇罩固定螺絲。



Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖劑於金屬件請使用適量T43(螺絲膠)

600NB1H

600NB1G



FUEL TUBE CLIP ILLUSTRATION 油管夾片使用方法

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)

600NZ6

Linkage ball A(M2x3.5)
球頭A (M2x3.5) (φ4.75x8.18mm) x 6

Socket button head self tapping screw
半圓頭內穴角自攻螺絲(T3X14mm) x 12

M2 Nut
M2螺帽 x 6

600NZ8A

Ball link
連桿頭 x 2

600NZ8

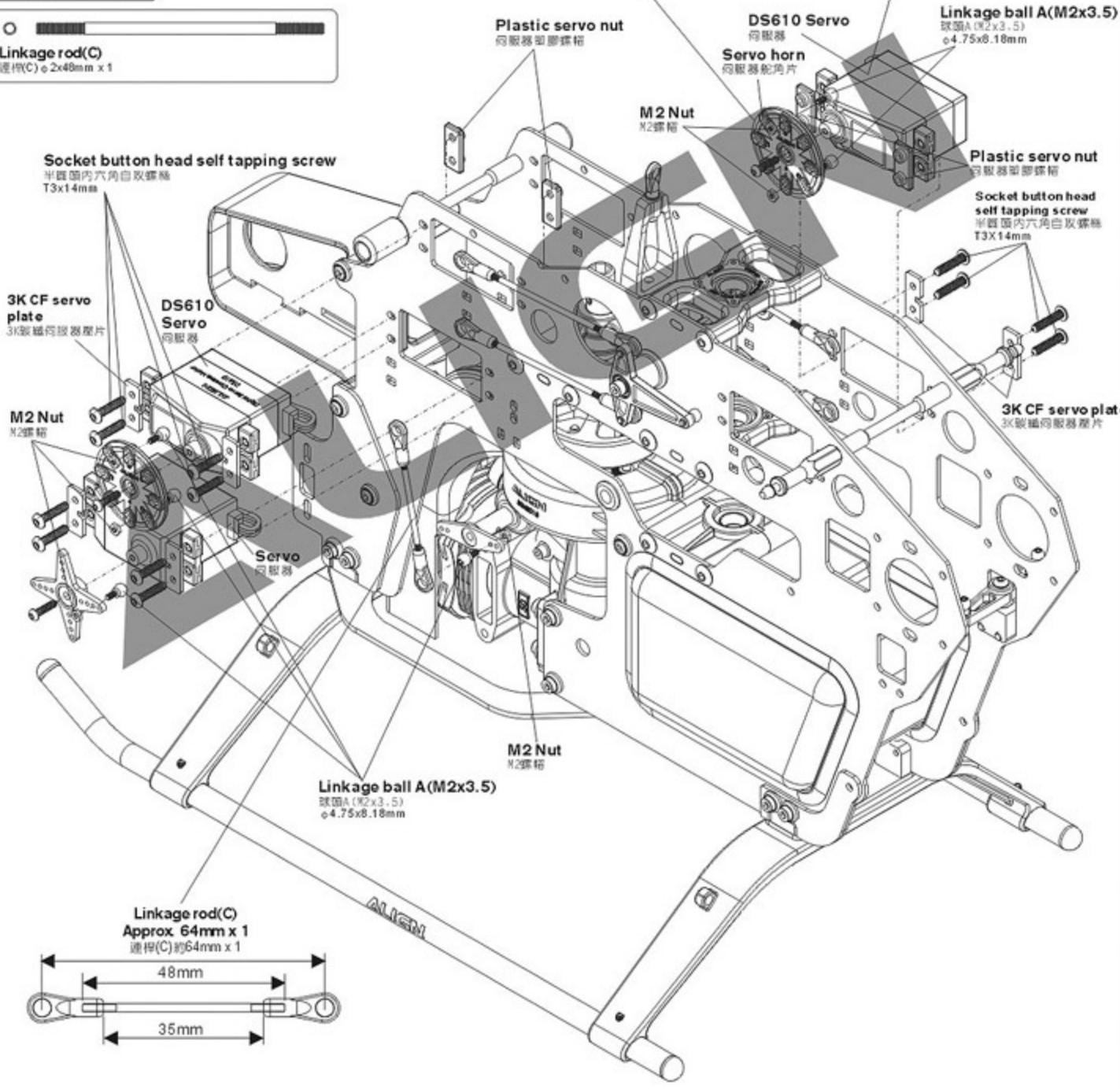
Linkage rod(C)
連桿(C) φ2x48mm x 1

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)

CAUTION 注 意

3G/3GX Flybarless system uses inner hole(A)
Flybar system uses outer hole(B)
3G/3GX無平衡翼系統使用內孔(A)
有平衡翼系統使用外孔(B)

DS610 Digital Servo:
1. Stall torque/輸出扭力: 9.6kg.cm(4.8V)
12.0kg.cm(6.0V)
2. Motion speed/動作速度: 0.10sec/60° (4.8V)
0.08sec/60° (6.0V)
3. Dimension/尺寸: 40.3 x 20.1 x 36mm
4. Weight/重量: 52.2g



600NZ8

Linkage rod(G)
連桿(G) ø 2x61mm x 4

Linkage rod(E)
連桿(E) ø 2x32mm x 2

600NZ8A

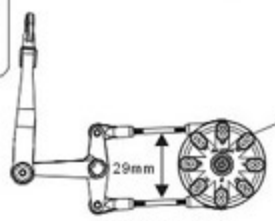
Ball link
連桿頭 x 12

600NZ6

Linkage ball A(M2x3.5)
球頭A(M2x3.5)(ø 4.75x8.18mm) x 3

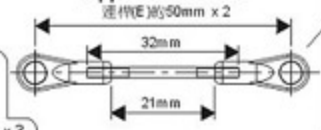
Socket button head self tapping screw
半圓頭內六角自攻螺絲(T3X14mm) x 8

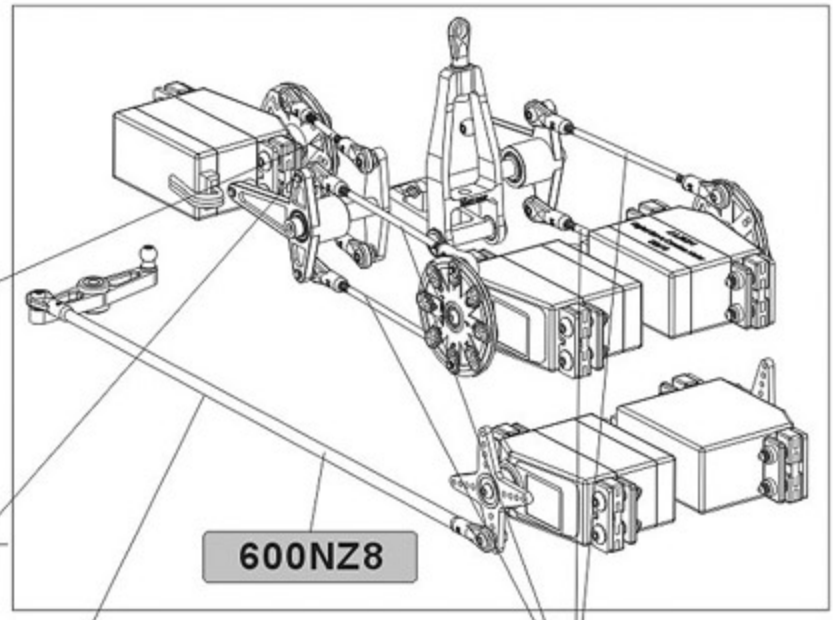
M2 Nut
M2螺帽 x 3



Keep parallel
保持平行

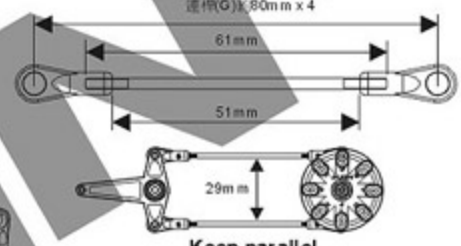
Linkage rod(E)
Approx. 50mm x 2
連桿(E)約50mm x 2





Tail rudder control rod A
Approx. 216mm x 1
尾舵控制連桿A 216mm x 1

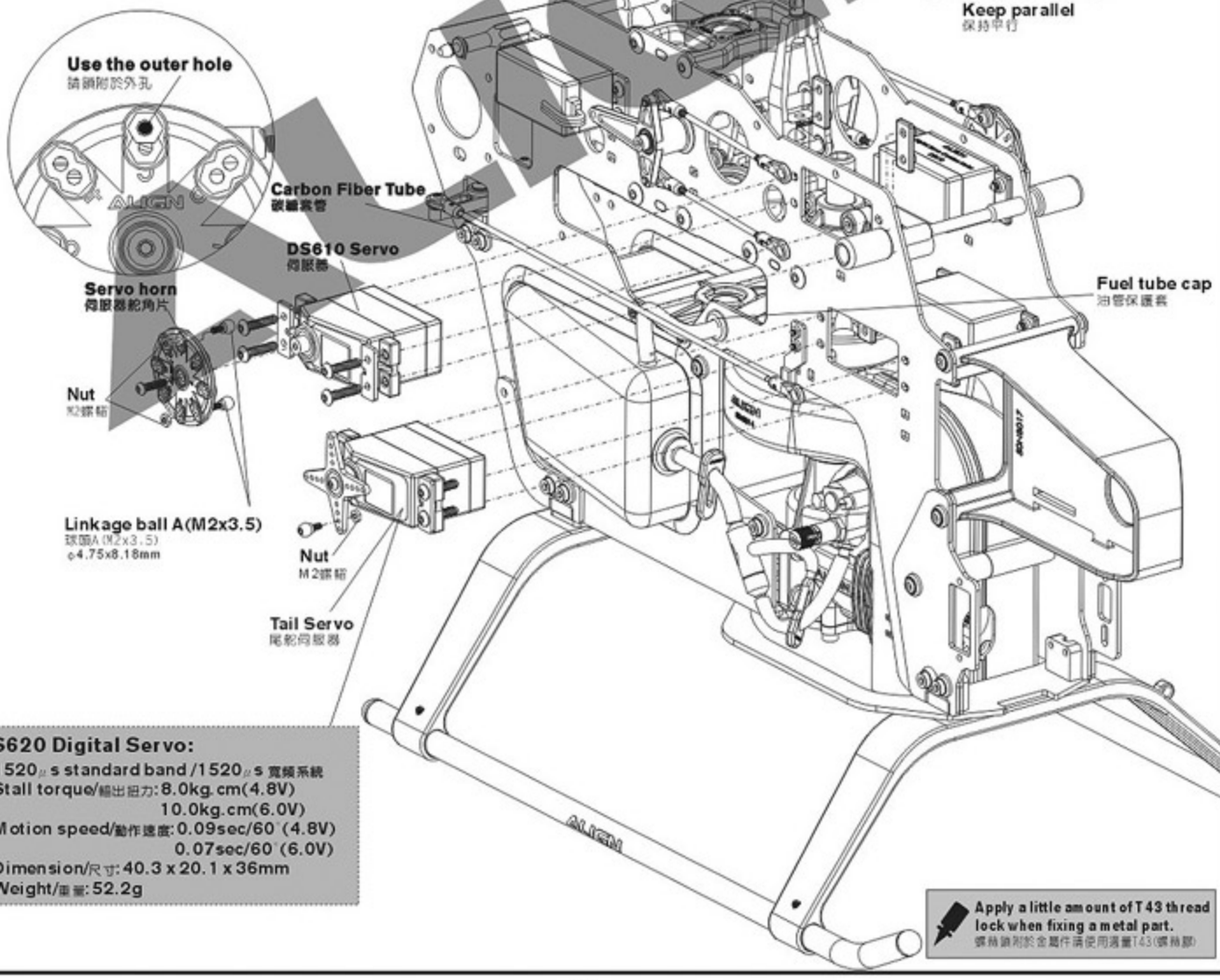
Linkage rod(G)
Approx. 80mm x 4
連桿(G)約80mm x 4



Keep parallel
保持平行

CAUTION
注 意

3G/3GX Flybarless system uses inner hole(A)
Flybar system uses outer hole(B)
3G/3GX無平衡翼系統使用內孔(A)
有平衡翼系統使用外孔(B)

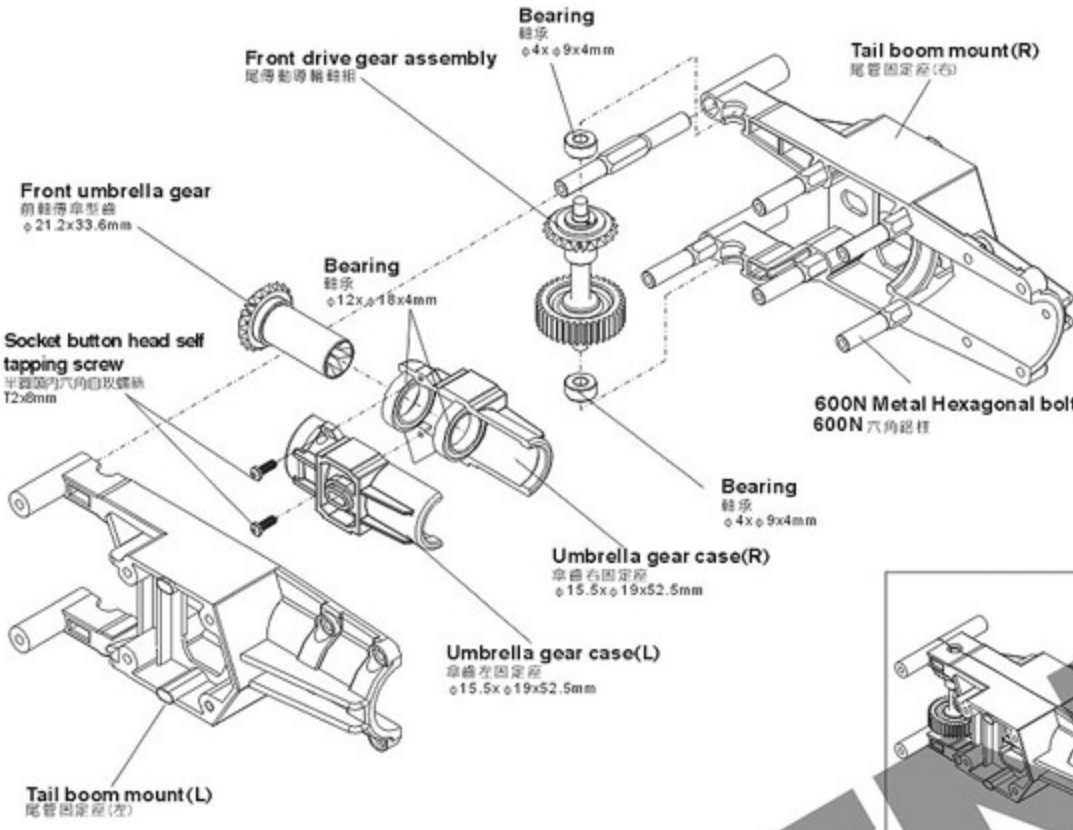


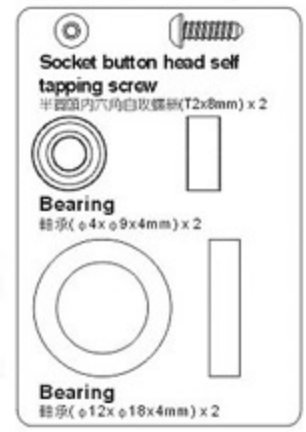
DS620 Digital Servo:

1.1520μs standard band /1520μs 寬頻系統
2.Stall torque/輸出扭力: 8.0kg.cm(4.8V)
10.0kg.cm(6.0V)
3.Motion speed/動作速度: 0.09sec/60°(4.8V)
0.07sec/60°(6.0V)
4.Dimension/尺寸: 40.3 x 20.1 x 36mm
5.Weight/重量: 52.2g

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)

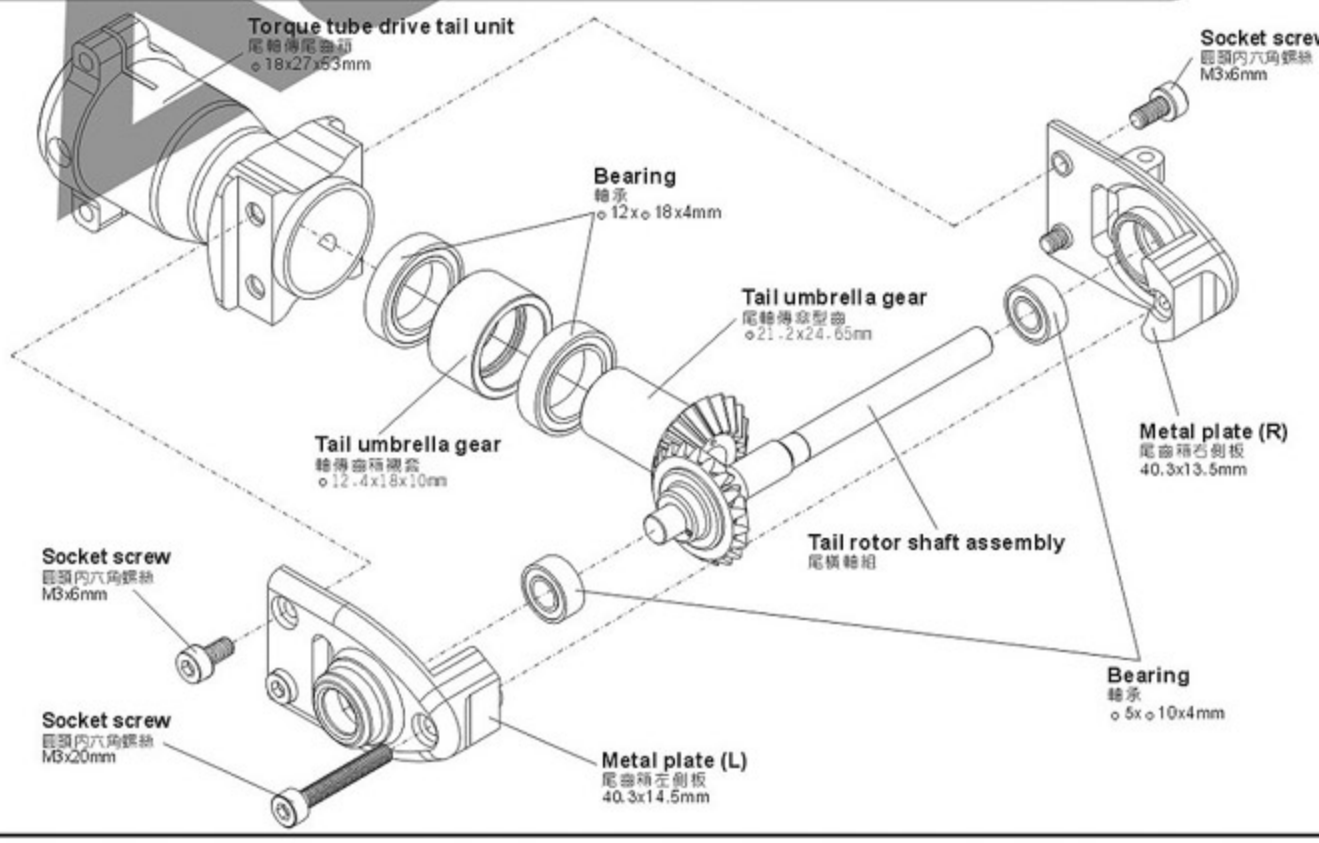
600NT1





60HT2

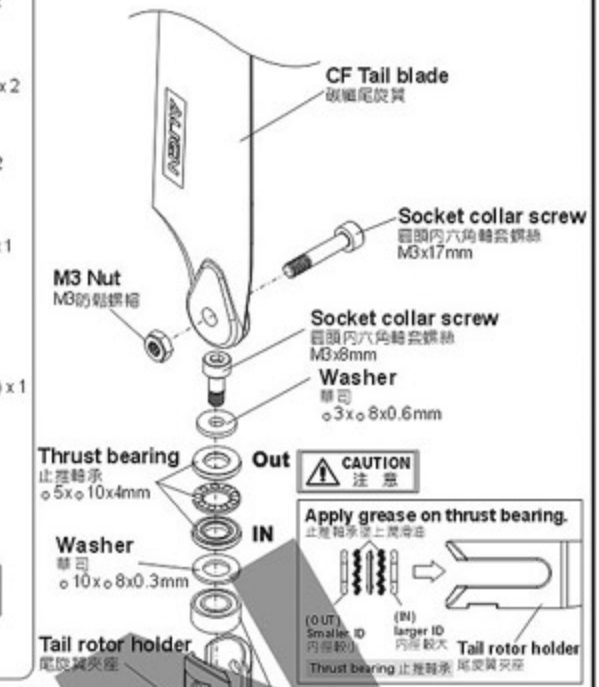
Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)



60HT2

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)

- Socket collar screw 扁頭內六角輪套螺絲(M3x8mm) x 2
- Thrust bearing 止推軸承(○5x○10x4mm) x 2
- Bearing 軸承(○6x○10x3mm) x 4
- Washer 華司(○3x○8x0.6mm) x 2
- Washer 華司(○10x○8x0.3mm) x 2
- M4 Set screw M4止洩螺絲(M4x4mm) x 1
- Linkage ball A 球頭A(M2x3.5)(○4.75x8.18mm) x 1
- Socket collar screw 扁頭內六角輪套螺絲(M3x15mm) x 1
- Washer 華司(○3x○4.8x0.3mm) x 2
- Bearing 軸承(○3x○6x2.5mm) x 2
- Collar 尾旋翼控制臂絕套 (○3x○4.9x5mm) x 1
- Tail pitch bell crank sleeve 尾旋翼控制球頭套 (○7.6x○4.7x6.2mm) x 1
- Collar screw 輪套螺絲(M2x8mm)(牙長3mm) x 2
- Collar screw 輪套螺絲(M2x8mm)(牙長4.3mm) x 2
- Collar A 尾連桿頭鋼套A(○2x○3x4mm) x 2
- Linkage ball A 球頭A(M2x2.5)(○4.75x7.18mm) x 1
- Collar 尾控制輪套襯墊(○7x○8.3x3.5mm) x 1
- Bearing 軸承(○7x○11x3mm) x 2
- Slide shaft 尾軸滑套(○8x○7x17.6mm)x1



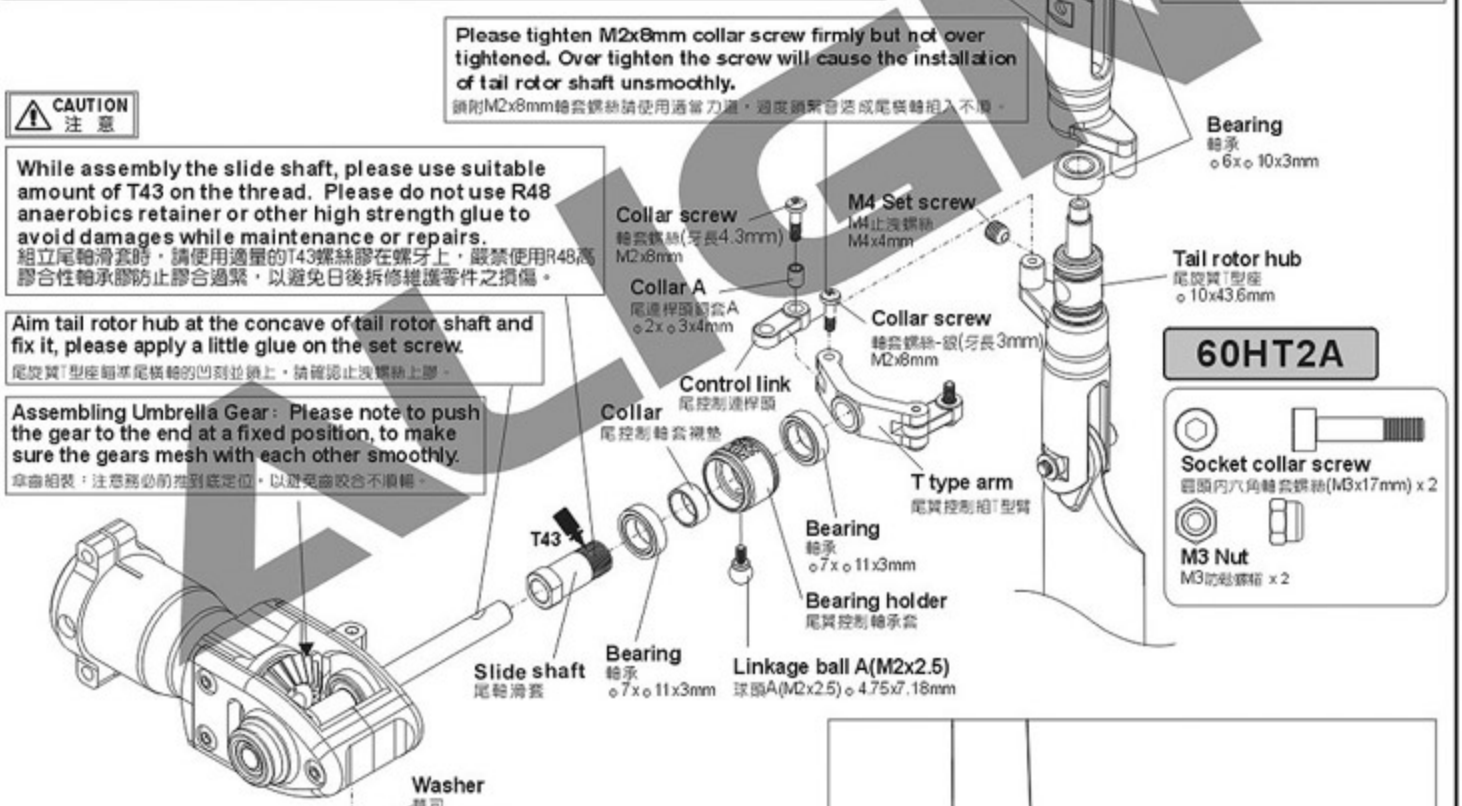
Please tighten M2x8mm collar screw firmly but not over tightened. Over tighten the screw will cause the installation of tail rotor shaft unsmoothly.
鎖附M2x8mm輪套螺絲請使用適當力道，過度鎖緊會造成尾槳軸組入不順。

CAUTION 注 意

While assembly the slide shaft, please use suitable amount of T43 on the thread. Please do not use R48 anaerobics retainer or other high strength glue to avoid damages while maintenance or repairs.
組立尾軸滑套時，請使用適量的T43螺絲膠在螺牙上，嚴禁使用R48高膠合性軸承膠防止膠合過緊，以避免日後拆修維護零件之損傷。

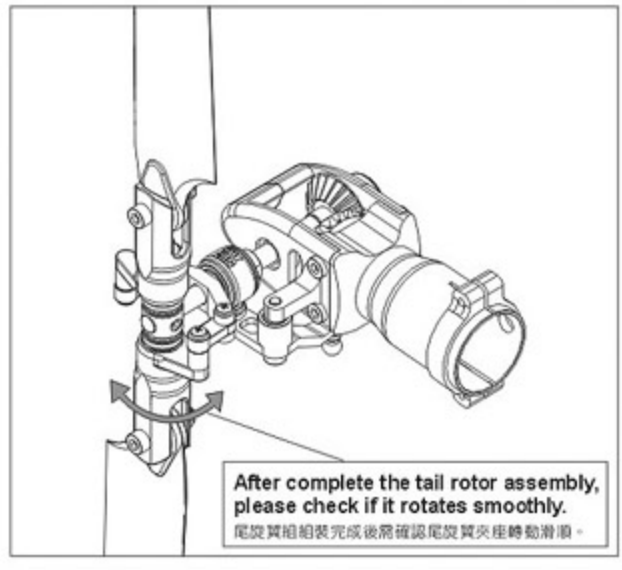
Aim tail rotor hub at the concave of tail rotor shaft and fix it, please apply a little glue on the set screw.
尾旋翼T型座組準尾槳軸的凹刻位鎖上，請確認止洩螺絲上膠。

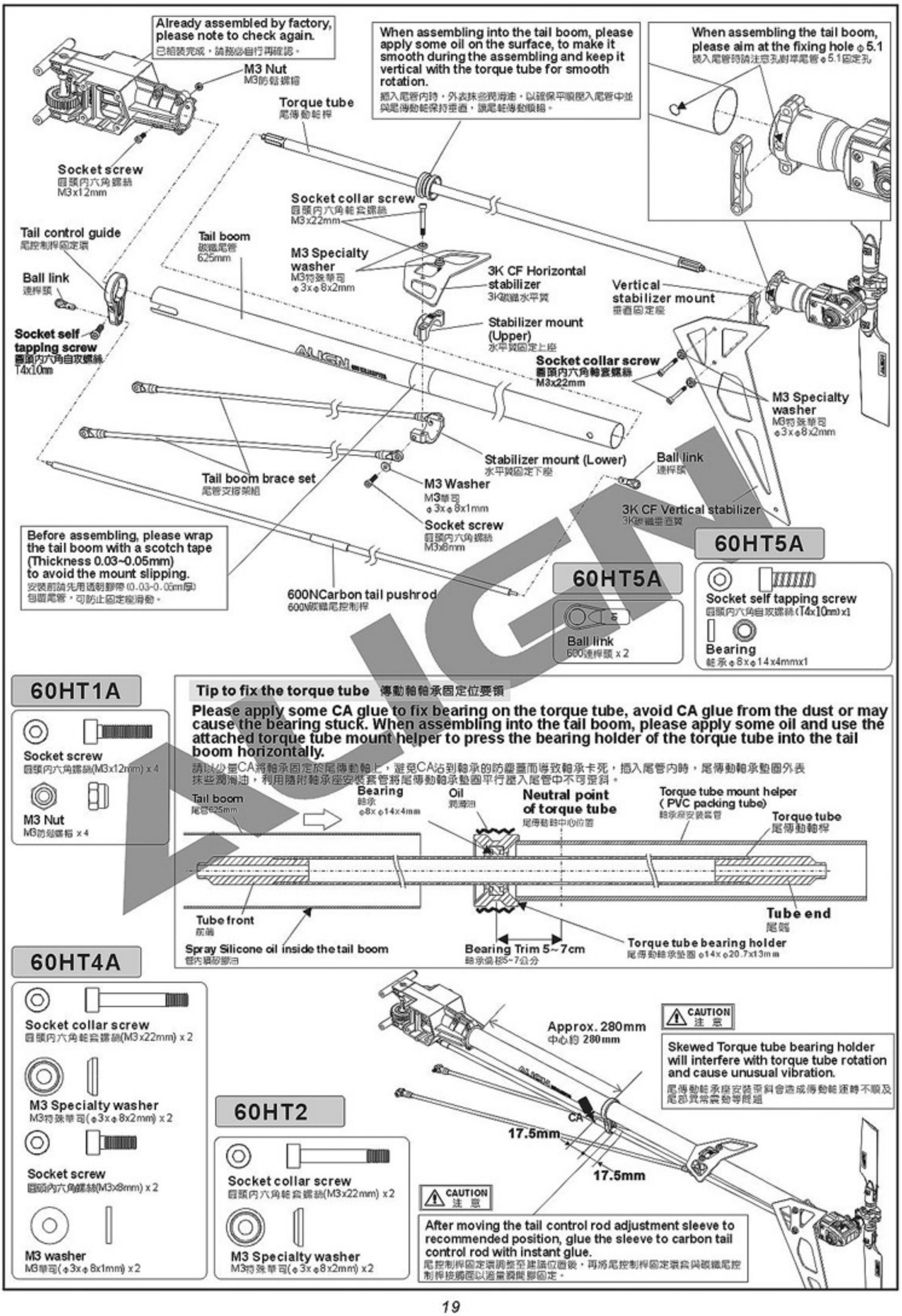
Assembling Umbrella Gear: Please note to push the gear to the end at a fixed position, to make sure the gears mesh with each other smoothly.
傘齒組裝：注意務必前推到底定位，以避免齒咬合不順暢。



60HT2A

- Socket collar screw 扁頭內六角輪套螺絲(M3x17mm) x 2
- M3 Nut M3防鬆螺帽 x 2




Already assembled by factory, please note to check again.
已組裝完成，請務必自行再確認。
M3 Nut
M3防鬆螺帽
Socket screw
圓頭內六角螺絲
M3x12mm
Torque tube
尾傳動軸桿
When assembling into the tail boom, please apply some oil on the surface, to make it smooth during the assembling and keep it vertical with the torque tube for smooth rotation.
插入尾管內時，外表抹些潤滑油，以確保平順壓入尾管中並與尾傳動軸保持垂直，讓尾軸傳動順暢。
When assembling the tail boom, please aim at the fixing hole ϕ5.1
裝入尾管時請注意孔對準尾管ϕ5.1固定孔
Socket collar screw
圓頭內六角軸套螺絲
M3x22mm
Tail control guide
尾控制桿固定環
Tail boom
碳纖尾管
625mm
M3 Specialty washer
M3特殊華司
ϕ3xϕ8x2mm
3K CF Horizontal stabilizer
3K碳纖水平翼
Vertical stabilizer mount
垂直固定座
Ball link
連桿頭
Stabilizer mount (Upper)
水平翼固定上座
Socket self tapping screw
圓頭內六角自攻螺絲
T4x10mm
Socket collar screw
圓頭內六角軸套螺絲
M3x22mm
M3 Specialty washer
M3特殊華司
ϕ3xϕ8x2mm
Stabilizer mount (Lower)
水平翼固定下座
Ball link
連桿頭
Tail boom brace set
尾管支撐架組
M3 Washer
M3華司
ϕ3xϕ8x1mm
Socket screw
圓頭內六角螺絲
M3x8mm
3K CF Vertical stabilizer
3K碳纖垂直翼
Before assembling, please wrap the tail boom with a scotch tape (Thickness 0.03~0.05mm) to avoid the mount slipping.
安裝前請先用透明膠帶(0.03-0.05mm厚)包覆尾管，可防止固定座滑動。
600NCarbon tail pushrod
600N碳纖尾控制桿
60HT5A
Ball link
600連桿頭 x 2
60HT5A
Socket self tapping screw
圓頭內六角自攻螺絲(T4x10mm) x1
Bearing
軸承ϕ8xϕ14x4mmx1
60HT1A
Socket screw
圓頭內六角螺絲(M3x12mm) x 4
M3 Nut
M3防鬆螺帽 x 4
Tip to fix the torque tube 傳動軸軸承固定位要領
Please apply some CA glue to fix bearing on the torque tube, avoid CA glue from the dust or may cause the bearing stuck. When assembling into the tail boom, please apply some oil and use the attached torque tube mount helper to press the bearing holder of the torque tube into the tail boom horizontally.
請以少量CA將軸承固定於尾傳動軸上，避免CA沾到軸承的防塵蓋而導致軸承卡死，插入尾管內時，尾傳動軸承墊圈外表抹些潤滑油，利用隨附軸承座安裝套管將尾傳動軸承墊圈平行壓入尾管中不可歪斜。
Tail boom
尾管625mm
Bearing
軸承
ϕ8x ϕ14x4mm
Oil
潤滑油
Neutral point of torque tube
尾傳動軸中心位置
Torque tube mount helper (PVC packing tube)
軸承座安裝套管
Torque tube
尾傳動軸桿
Tube front
前端
Tube end
尾端
Spray Silicone oil inside the tail boom
管內噴矽膠油
Bearing Trim 5~7cm
軸承修整5~7公分
Torque tube bearing holder
尾傳動軸承墊圈 ϕ14x ϕ20.7x13mm
60HT4A
Socket collar screw
圓頭內六角軸套螺絲(M3x22mm) x 2
M3 Specialty washer
M3特殊華司(ϕ3xϕ8x2mm) x 2
Socket screw
圓頭內六角螺絲(M3x8mm) x 2
M3 washer
M3華司(ϕ3xϕ8x1mm) x 2
60HT2
Socket collar screw
圓頭內六角軸套螺絲(M3x22mm) x2
M3 Specialty washer
M3特殊華司(ϕ3xϕ8x2mm) x2
Approx. 280mm
中心約 280mm
CAUTION 注 意
Skewed Torque tube bearing holder will interfere with torque tube rotation and cause unusual vibration.
尾傳動軸承座安裝歪斜會造成傳動軸運轉不順及尾部異常震動等問題
CA
17.5mm
17.5mm
CAUTION 注 意
After moving the tail control rod adjustment sleeve to recommended position, glue the sleeve to carbon tail control rod with instant glue.
尾控制桿固定環調整至建議位置後，再將尾控制桿固定環套與碳纖尾控制桿接觸區以適量瞬間膠固定。

600NB1G

Socket screw
圓頭內六角螺絲(M3x12mm) x 2

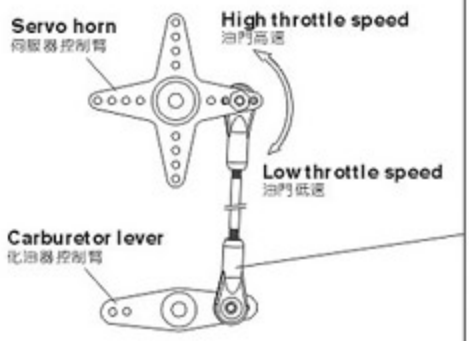
600NB1H

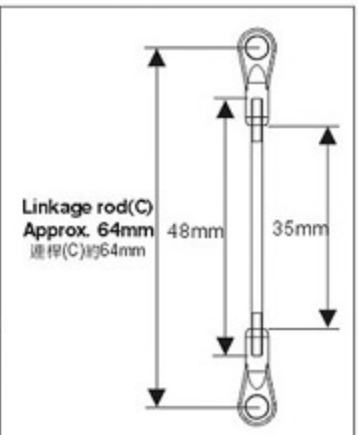
Socket button head self tapping screw
半圓頭內六角自攻螺絲(T3x8mm) x 2

600NB1F

M3 Specialty washer
M3特殊華司(φ3x φ8x2mm) x 14

High/Low throttle speed setting
油門高/低速控制設定



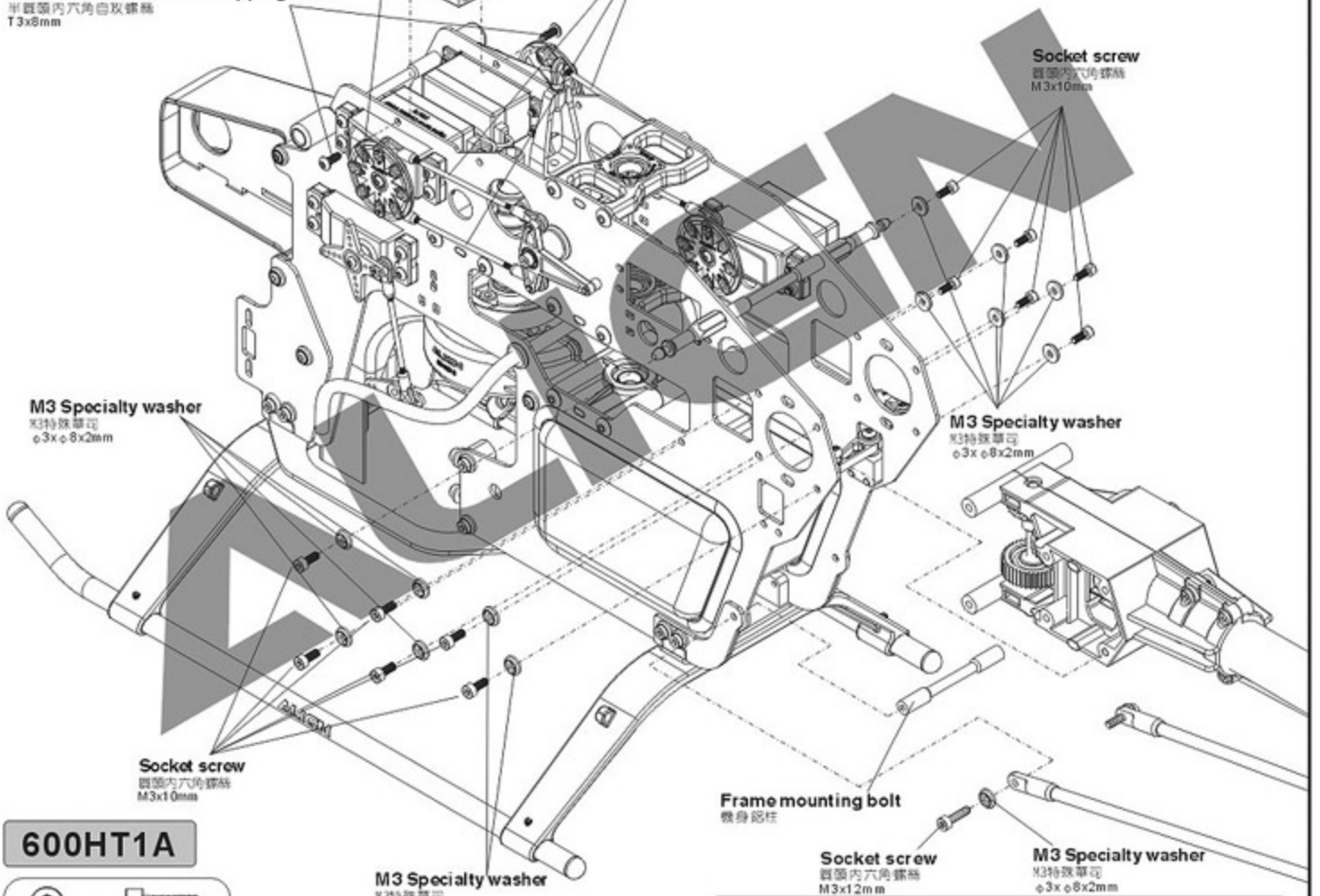


Gyro Mount
陀螺儀固定座

Please assemble the G linkage rods inside the servo horns to avoid any interference caused by the canopy.
G連桿請裝於伺服臂內側確保動作時不碰觸機頭罩

Socket button head self tapping screw
半圓頭內六角自攻螺絲
T3x8mm

Socket screw
圓頭內六角螺絲
M3x10mm



M3 Specialty washer
M3特殊華司
φ3x φ8x2mm

M3 Specialty washer
M3特殊華司
φ3x φ8x2mm

Socket screw
圓頭內六角螺絲
M3x10mm

Frame mounting bolt
機身鋁柱

Socket screw
圓頭內六角螺絲
M3x12mm

M3 Specialty washer
M3特殊華司
φ3x φ8x2mm

M3 Specialty washer
M3特殊華司
φ3x φ8x2mm

600HT1A

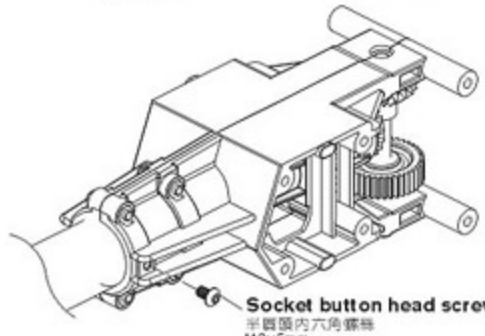
Socket screw
圓頭內六角螺絲(M3x10mm) x 12

Socket button head screw
半圓頭內六角螺絲(M3x5mm) x 1

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)

CAUTION
注 意

When tightening a screw to a plastic part, please tighten it firmly, but not over tightened, or they will strip.
螺絲鎖入塑膠件請務必注意，適當扭力鎖緊即可，而過緊的扭力可能會導致滑牙。



Socket button head screw
半圓頭內六角螺絲
M3x5mm

Tail boom fixing screw
尾管固定螺絲

600NB8

Socket collar screw
圓頭內六角轉套螺絲(M3x20mm) x 1

M3 Nut
M3防鬆螺帽 x 1

60NH12

M4 Set screw
M4止溲螺絲(M4x4mm) x 2

600NZ8

Linkage rod(D)
連桿(D)約39.5mm x 2

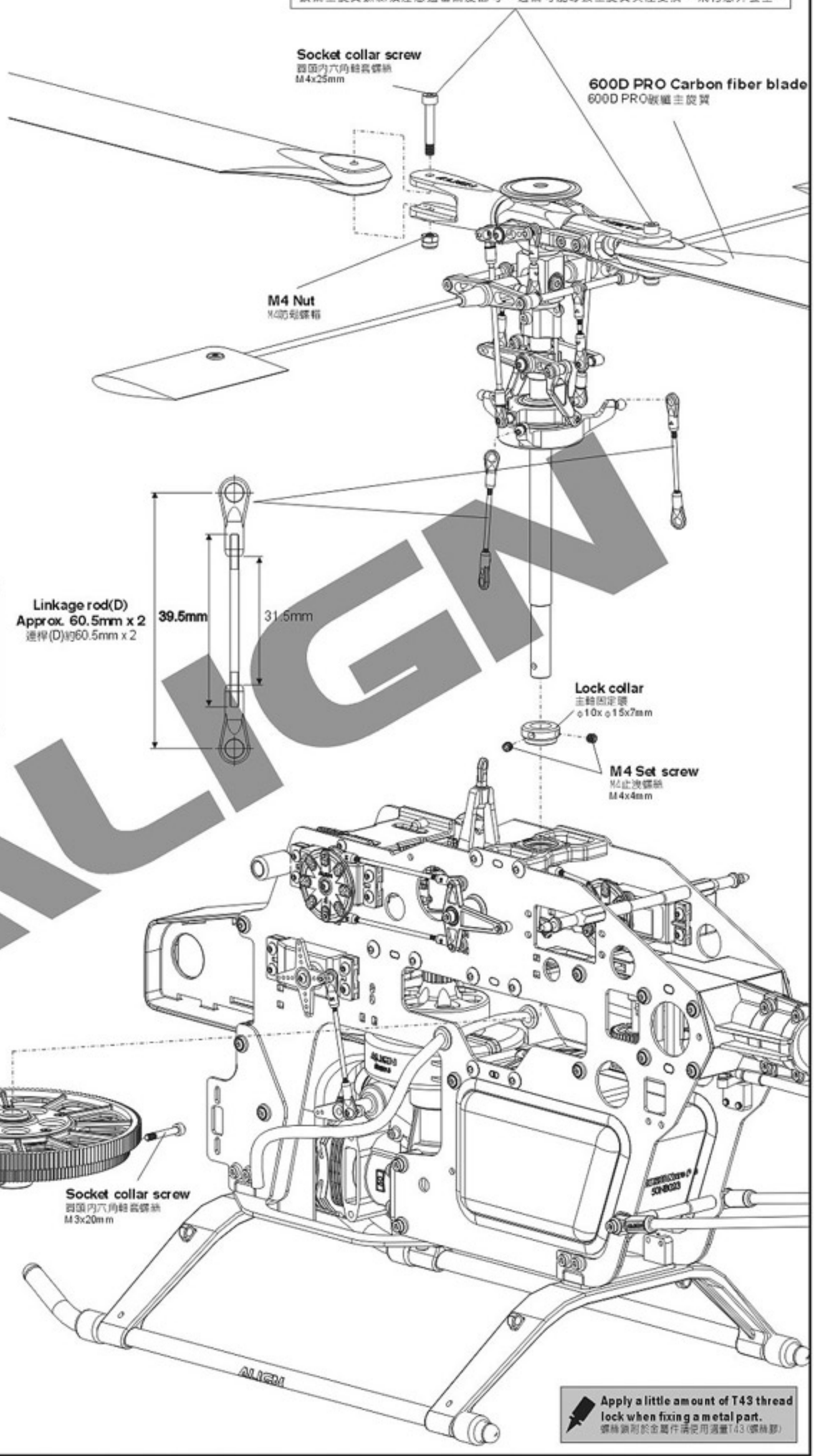
Ball link
連桿頭 x 4

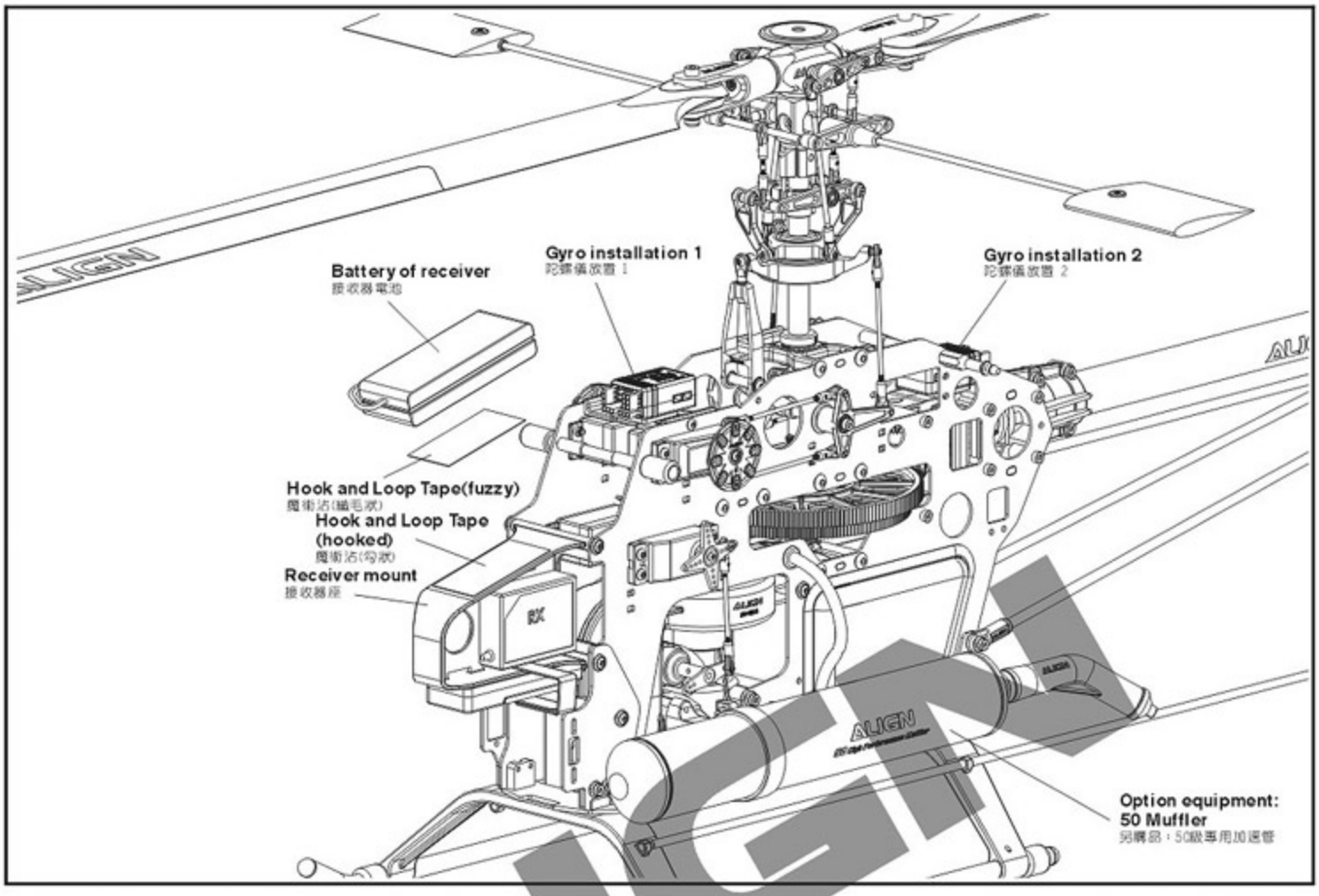
60HH1A

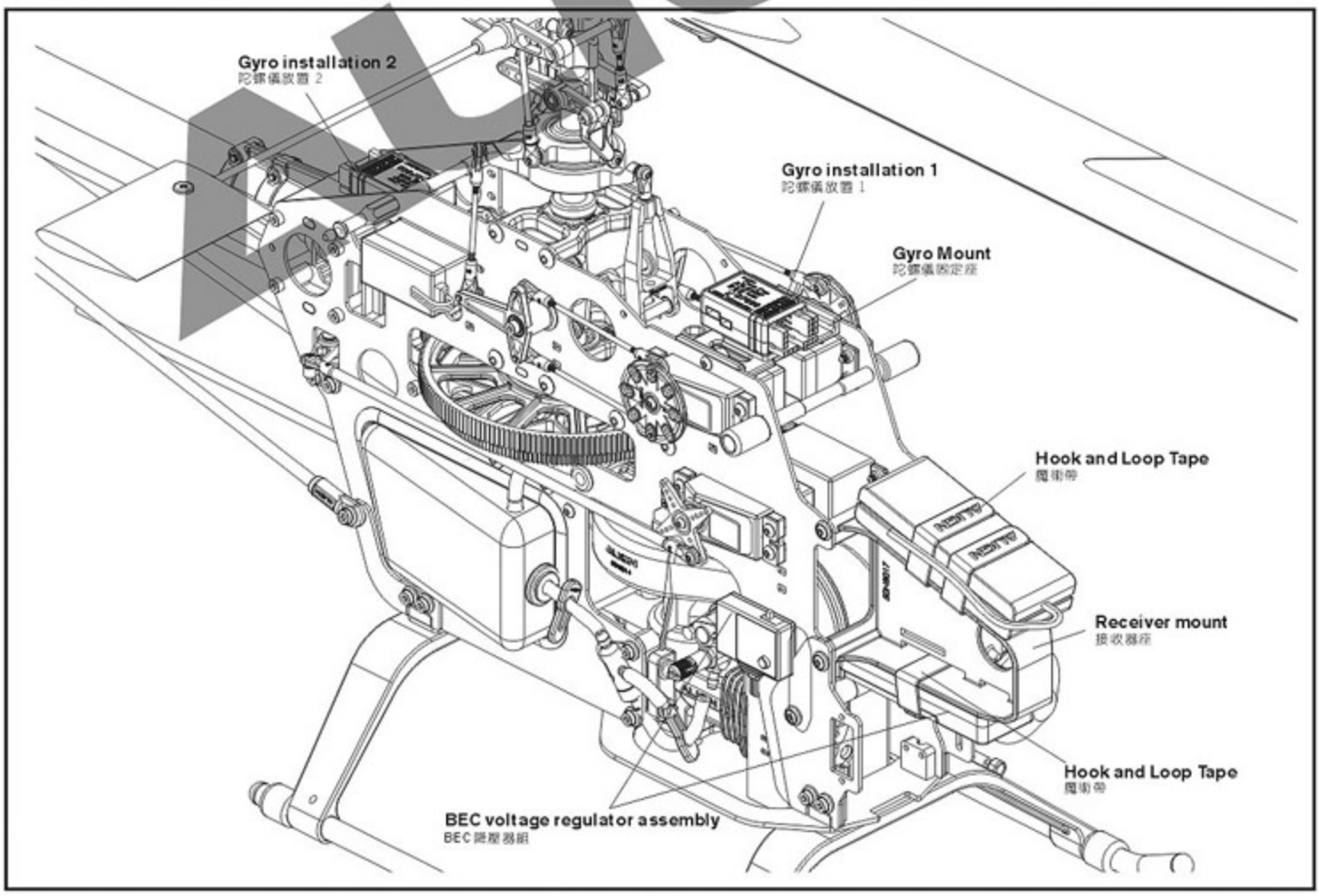
Socket collar screw
圓頭內六角轉套螺絲(M4x25mm) x 2

M4 Nut
M4防鬆螺帽 x 2

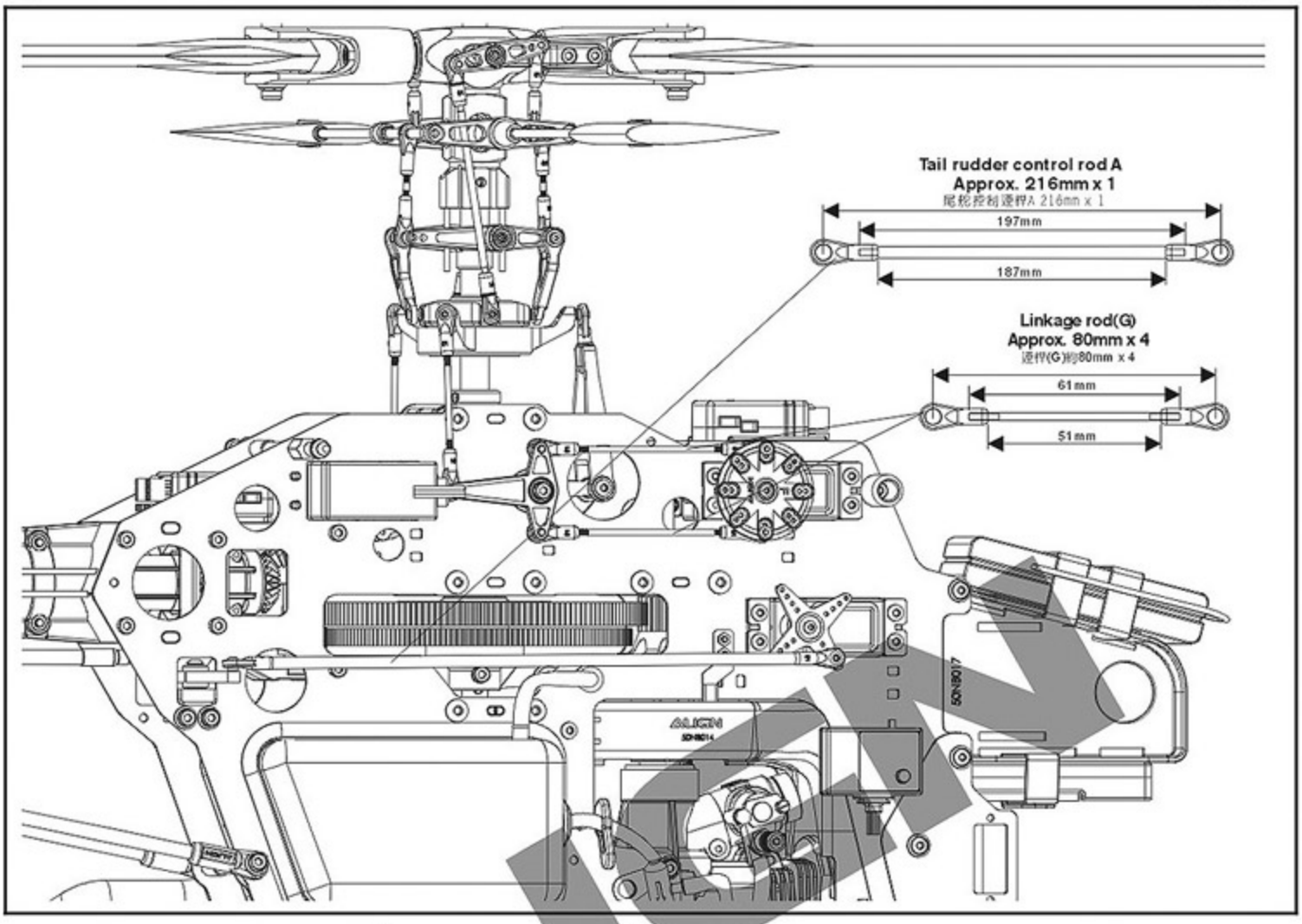
When tightening the main blade fixing screw, please tighten it firmly, but not over tighten, or it may cause the damage of main blade holder and result in danger.
鎖緊主旋翼螺絲須注意適當緊度即可，過緊可能導致主旋翼夾座受損，飛行意外發生。



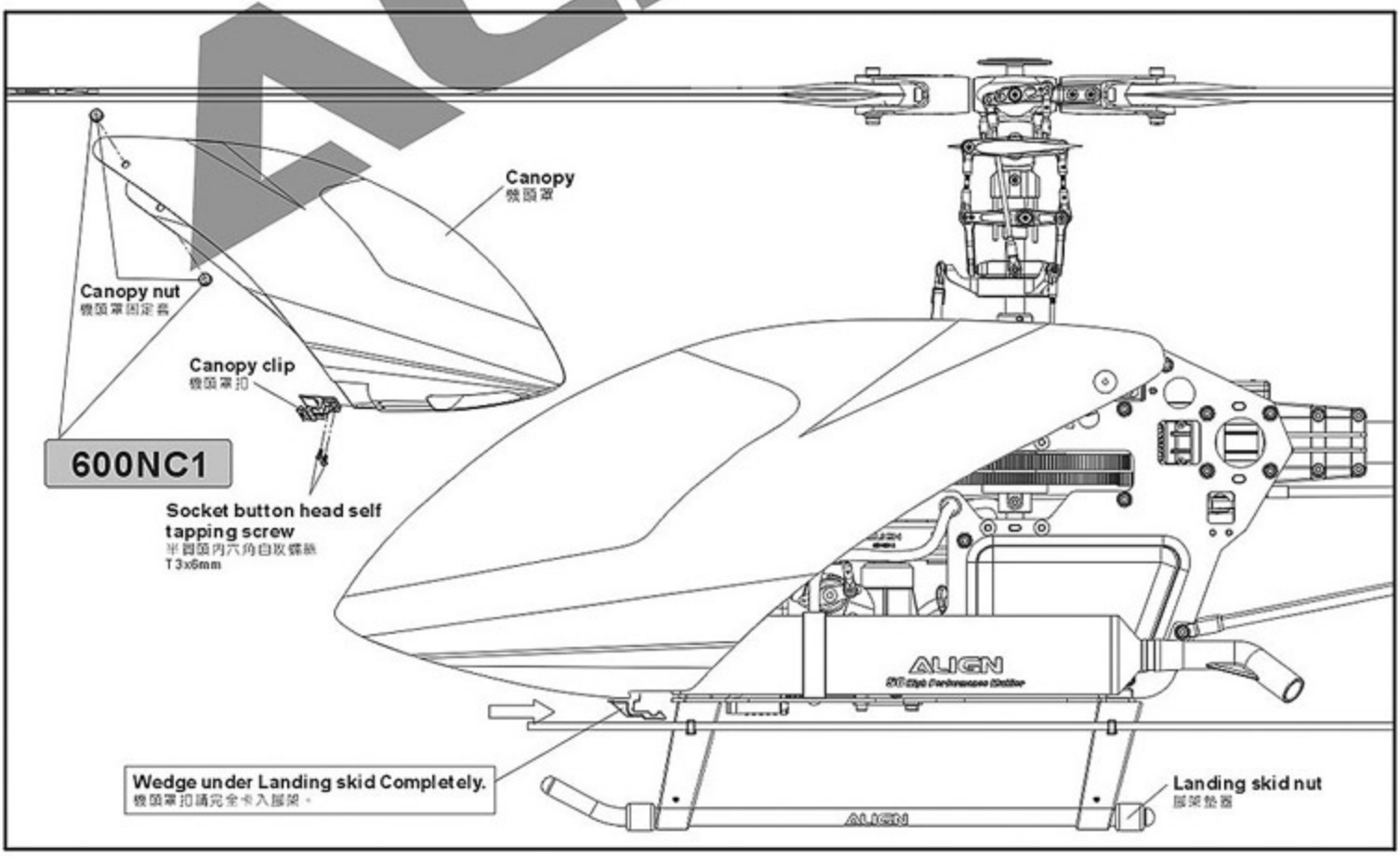

Battery of receiver
接收器電池
Gyro installation 1
陀螺儀放置 1
Gyro installation 2
陀螺儀放置 2
Hook and Loop Tape(fuzzy)
魔術沾(絨毛狀)
Hook and Loop Tape
(hooked)
魔術沾(勾狀)
Receiver mount
接收器座
Option equipment:
50 Muffler
另購品：50級專用加速管

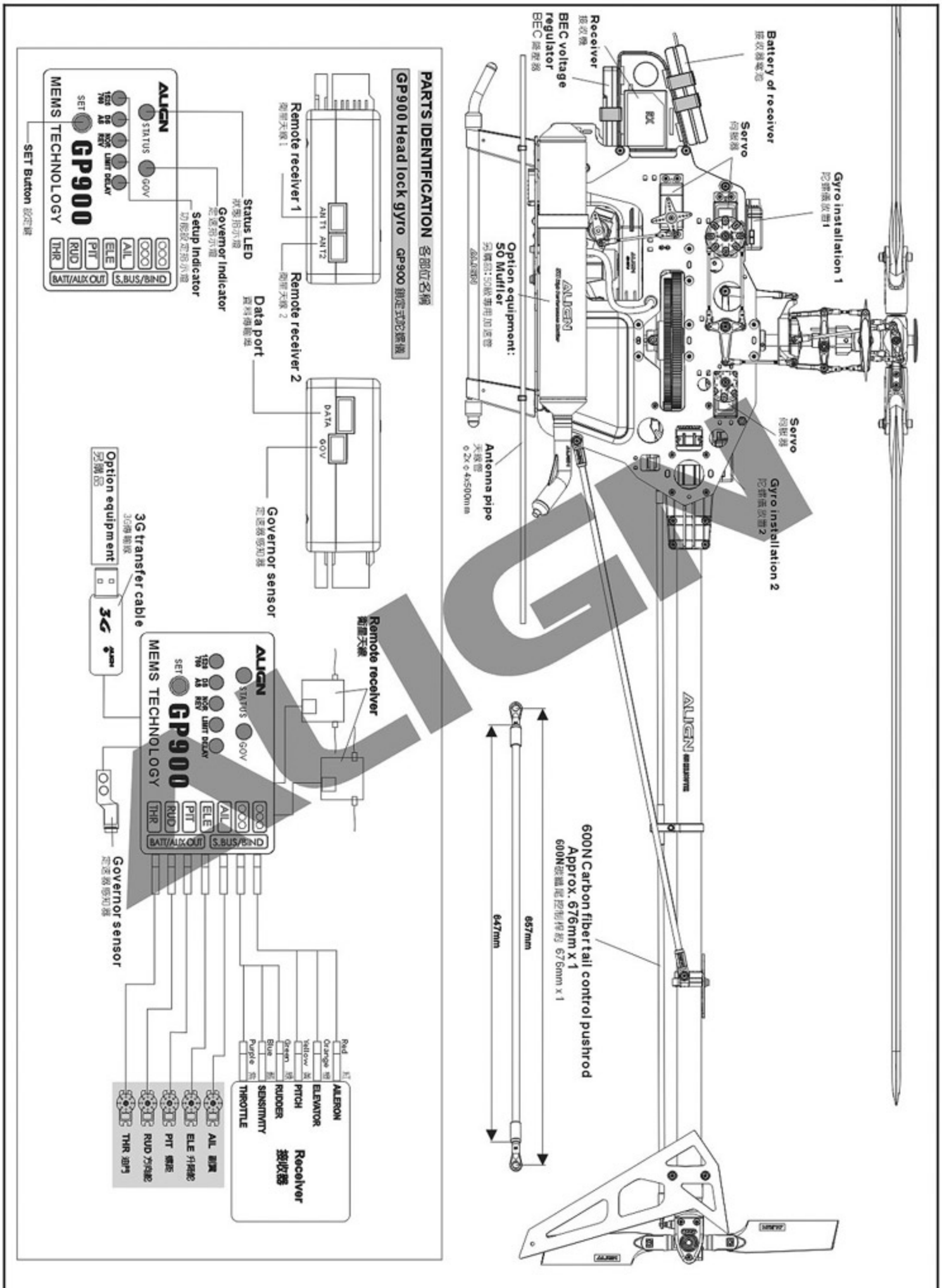

Gyro installation 2
陀螺儀放置 2
Gyro installation 1
陀螺儀放置 1
Gyro Mount
陀螺儀固定座
Hook and Loop Tape
魔術帶
Receiver mount
接收器座
Hook and Loop Tape
魔術帶
BEC voltage regulator assembly
BEC 降壓器組

8.SERVO AND LINKAGE ROD SETTING ILLUSTRATION 伺服器與連桿設定視圖



9.CANOPY ASSEMBLY 機頭罩安裝

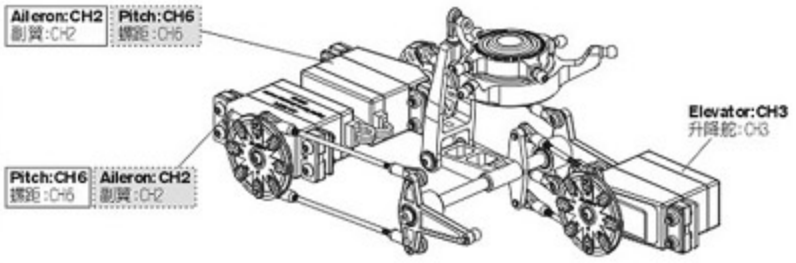



Battery of receiver
接收機電池
Receiver
接收機
BEC voltage regulator
BEC 降壓器
Servo
舵機器
Gyro installation 1
陀螺儀安裝1
Option equipment:
50 Muffler
另購品:50級專用加速管
Antenna pipo
天線管
Servo
舵機器
Gyro installation 2
陀螺儀安裝2
600N Carbon fiber tail control pushrod
Approx. 676mm x 1
600N碳纖維尾控推桿 676mm x 1
657mm
647mm
PARTS IDENTIFICATION 各部位名稱
GP900 Head lock gyro GP900 鎖定式陀螺儀
Remote receiver 1
遙控天線 1
Remote receiver 2
遙控天線 2
Status LED
狀態指示燈
Governor indicator
定速指示燈
Setup Indicator
初始設定指示燈
Data port
資料傳輸座
Governor sensor
定速感知器
SET Button 設定鍵
Option equipment
另購品
3G transfer cable
3G傳輸線
Remote receiver
遙控天線
Governor sensor
定速感知器
AILERON
ELEVATOR
PITCH
RUDDER
SENSITIVITY
THROTTLE
Receiver
接收器
AIL 副翼
ELE 升降舵
PIT 螺距
RUD 方向舵
THR 油門
MEMS TECHNOLOGY
GP900
STATUS
GOV
AIL
ELE
PIT
RUD
THR
BATT/AUX OUT
S.BUS/BIND
SET
DATA
AN T1
AN T2

11.SERVO SETTING AND ADJUSTMENT 伺服器設定與調整

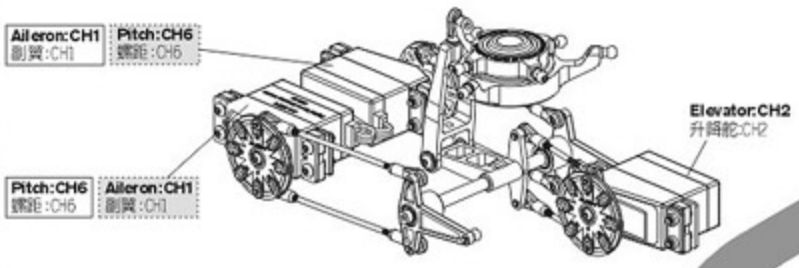
To set this option is to turn on the transmitter and connect to BEC power.
此項設定只要開啓發射器，接上BEC電源即可進行操作。

JR Transmitter/Servo
JR遙控器對應伺服器關係



Positions of CH2、CH6 are exchangeable, After assembling as photo (Note:Set the transmitter under CCPM 120 degrees mode), pull throttle stick (pitch) upward. If one swashplate servo (or two servos) moves downward, adjust reverse switch (REV) on the transmitter to make it moves upward. If three servo move downward, adjust the travel value (+-) of SWASH CH6 on the transmitter to make them move upward. When the actions of Aileron and Elevator are opposite, adjust travel values of SWASH CH2 and CH3.
CH2、CH6可互換配置，依圖連結後(注意:遙控器須設定於CCPM 120°十字盤模式)，將油門搖桿(Pitch)往上推，若十字盤伺服器有1個或2個往下移時，請調整搖控器的反轉開關(REV)使伺服器往上，若3個伺服器伺時往下移時，請調整遙控器SWASH CH6行程量的正負值，使伺服器伺時往上平移，副翼與前後動作相反時，同樣調整 SWASH CH2、CH3行程量正負值。

FUTABA/HITEC Transmitter/Servo
FUTABA/HITEC遙控器對應伺服器關係



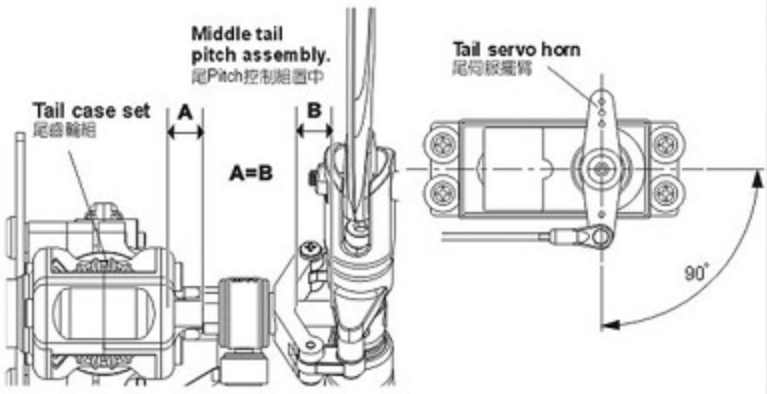
Positions of CH1、CH6 are exchangeable, After assembling as photo (Note:Set the transmitter under CCPM 120 degrees mode), pull throttle stick (pitch) upward. If one swashplate servo (or two servos) moves downward, adjust reverse switch (REV) on the transmitter to make it moves upward. If three servo move downward, adjust the travel value (+-) of SWASH CH6 on the transmitter to make them move upward. When the actions of Aileron and Elevator are opposite, adjust travel values of SWASH CH1 and CH2.
CH1、CH6可互換配置，依圖連結後(注意:遙控器須設定於CCPM 120°十字盤模式)，將油門搖桿(Pitch)往上推，若十字盤伺服器有1個或2個往下移時，請調整搖控器的反轉開關(REV)使伺服器往上，若3個伺服器伺時往下移時，請調整遙控器SWASH CH6行程量的正負值，使伺服器伺時往上平移，副翼與前後動作相反時，同樣調整 SWASH CH1、CH2行程量正負值。

12.ADJUSTMENTS FOR GYRO AND TAIL NEUTRAL SETTING 陀螺儀與尾翼中立點設定調整

Turn off Revolution mixing(RVMX) mode on the transmitter, then set the gain switch on the transmitter and the gyro to Head lock mode. The gain setting is about 70%, and after transmitter setting, connect to BEC power to work on tail neutral setting. Note: When turn on BEC power, please do not touch tail rudder stick and the helicopter. Then wait for 3 seconds, make tail servo arm and tail servo at a right angle(90 degrees), tail pitch assembly must be correctly fixed about in the middle of the travel of tail rotor shaft for standard neutral setting.
發射器內陀螺儀設定請關閉根軸混控模式，並將發射器上的感度開關與陀螺儀切至鎖定模式，感度設約 70% 左右，發射器設定完成後接上BEC接收電源，即可進行尾中立點設置。注意:當啓動BEC電源時請勿撥動尾舵搖桿或碰觸機體，待3秒陀螺儀鎖定後尾伺服臂需與尾伺服器約成 90°，尾旋翼控制組須正確置於尾橫軸行程約中間位置，即為標準尾中立點設定。

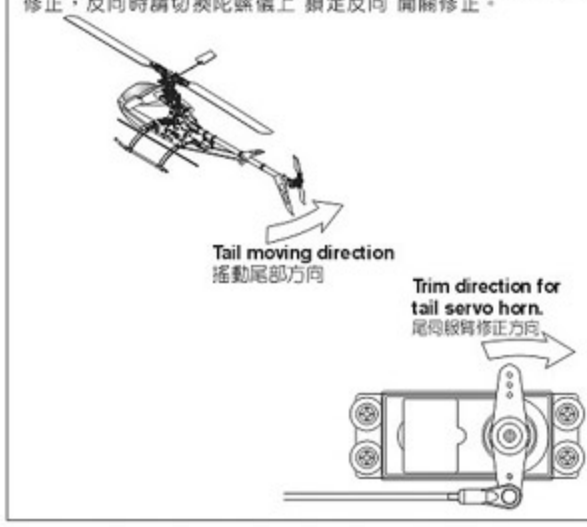
TAIL NEUTRAL SETTING 尾中立點設定

After setting Head Lock mode, correct setting position of tail servo and tail pitch assembly is as photo. If the tail pitch assembly is not at the neutral position, please adjust the length of rudder control rod to trim.
陀螺儀鎖定後尾伺服器與尾 Pitch控制組正確擺置位置。若尾 Pitch控制組未置中時請調整尾控制連桿的長度來修正。

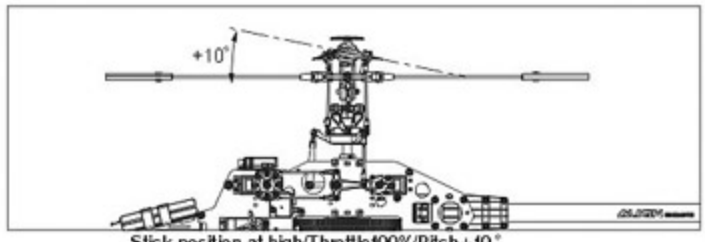


HEAD LOCK DIRECTION SETTING OF GYRO 陀螺儀鎖定方向設定

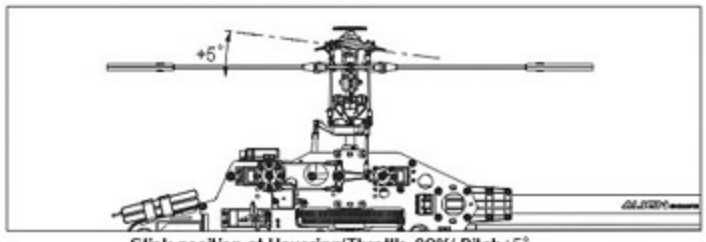
To check the head lock direction of gyro is to move the tail counterclockwise and the tail servo horn will be trimmed clockwise. If it trims in the reverse direction, please switch the gyro to"REVERSE".
陀螺儀鎖定方向確認，當手搖尾部反時鐘擺動，尾伺服臂應順時鐘修正，反向時請切換陀螺儀上"鎖定反向"開關修正。



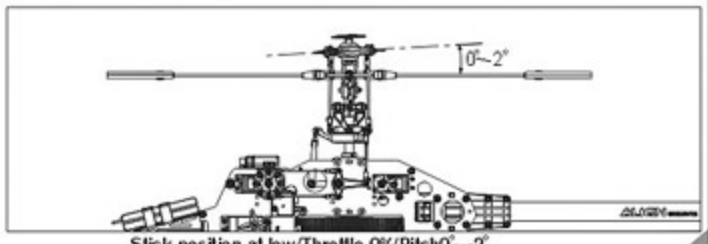
GENERAL FLIGHT 一般飛行模式



Stick position at high/Throttle100%/Pitch+10°
搖桿高速/油門100%/Pitch+10°



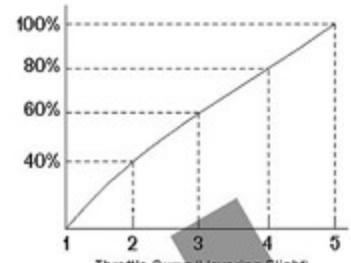
Stick position at Hovering/Throttle 60%/ Pitch+5°
搖桿停懸/油門60%/Pitch+5°



Stick position at low/Throttle 0%/Pitch0°~-2°
搖桿低速/油門0%/Pitch0°~-2°

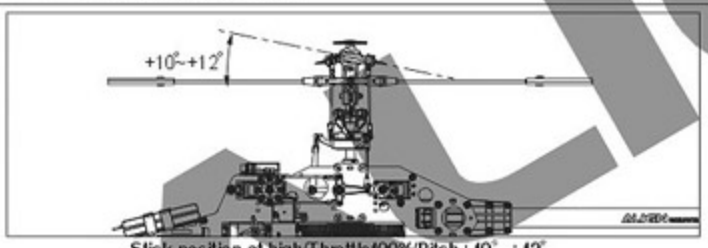
GENERAL FLIGHT
一般飛行模式

	Throttle 油門	Pitch 螺距
5	100%High speed 100%高速	+10°
4	80%	
3	60%Hovering 60%停懸	+5°
2	40%	
1	0% Low speed 0%低速	0°~-2°

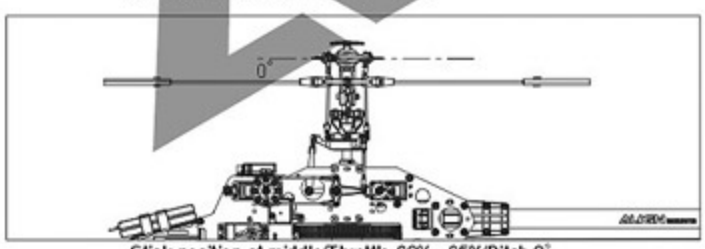


Throttle Curve(Hovering Flight)
停懸模式油門曲線

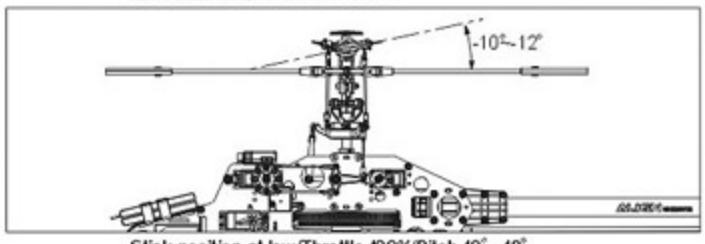
3D FLIGHT 3D特技飛行模式



Stick position at high/Throttle100%/Pitch+10°~+12°
搖桿高速/油門100%/Pitch+10°~+12°



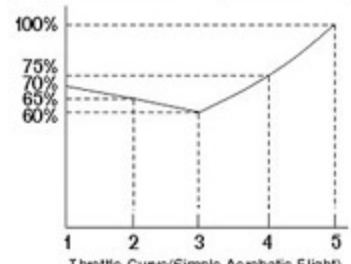
Stick position at middle/Throttle 60%~65%/Pitch 0°
搖桿中速/油門60%~65%/Pitch 0°



Stick position at low/Throttle 100%/Pitch-10°~-12°
搖桿低速/油門100%/Pitch-10°~-12°

IDLE 1:SPORT FLIGHT

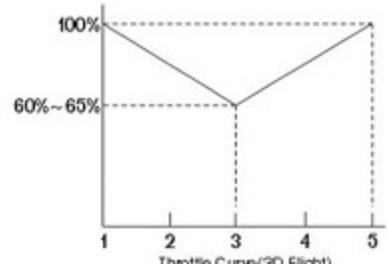
	Throttle 油門	Pitch 螺距
5	100%	+10°~+12°
4	75%	
3	60%	+5°
2	65%	
1	70%	-5°



Throttle Curve(Simple Aerobatic Flight)
空中飛行模式油門曲線

IDLE 2:3D FLIGHT

	Throttle 油門	Pitch 螺距
5	100% High 100%高	+10°~+12°
3	60%~65% Middle 60%-65%中	0°
1	100% Low 100%低	-10°~-12°



Throttle Curve(3D Flight)
特技飛行模式油門曲線

CAUTION 注意

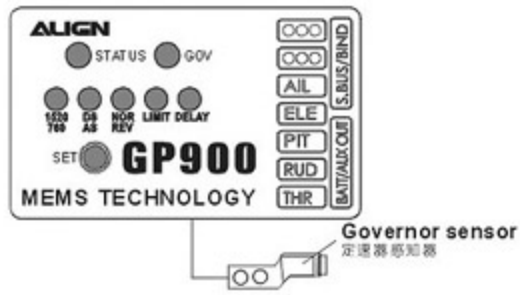
1. Pitch range: Approx.±13 degrees.
2. If the pitch is set too high, it may cause motor overload.

1. 螺距(Pitch)總行程約±13°
2. 過大螺距設定，可能導致引擎過載。

Features功能說明

1.Compact design, easy use, simple setting with great speed control performance.
2.Speed resolution: 0.1RPM
3.Speed stability accuracy: within 1% (Steady State)
4.Not apply to S9251、S9256 and other 760μs servos.

1.造型精巧操作簡易，不需繁雜的設定，同樣有優異的定速表現。
2.轉速解析度0.1 RPM。
3.轉速控制精度1%以內（steady state）。
4.不適用S9251、S9256等760μs伺服器。

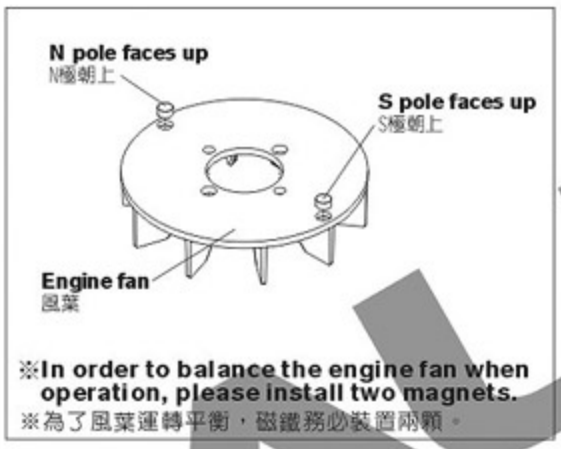


Specifications 產品規格/配件

1.Operating voltage:DC4.5V-6V
2.Consumption current:<20mA@4.8V
3.Direct detection of engine rotation speed
4.Speed control range: 10500~21000RPM
5.Servo RWM output pulse width: 1~2ms, not apply to S9251,S9256,other 760μs servos.
6.Operating temperature range:-20℃~85℃
7.Operating moisture range:0%~95%
8.Sensor wire length:250mm
9.Accessories: Magnet (Φ4x1.5mm)x2pc

1.工作電壓:DC 4.5V-6V。
2.消耗電流:<20mA@4.8V。
3.直接偵測引擎轉速。
4.定速範圍:10500~21000RPM。
5.伺服器PWM輸出波寬1~2ms，不適用 S9251、S9256等760μs伺服器。
6.工作溫度範圍-20℃~85℃。
7.工作濕度範圍:0%~95%。
8.轉速感應器線長:250mm。
9.配件: 轉速感應磁鐵(Φ4x1.5mm)x2pcs。

Instruction 安裝使用說明



※In order to balance the engine fan when operation, please install two magnets.
※為了風葉運轉平衡，磁鐵務必裝置兩顆。

Fig.1 圖一

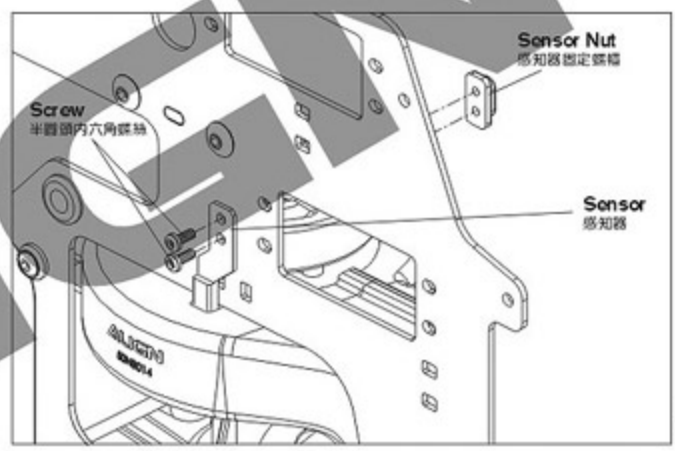


Fig.2 圖二

1. See Fig. 1, first install two magnets on the mounting hole of the engine fan with CA glue or R48 glue, the north pole of one magnet (mark N) faces up and the north pole of the other magnet faces down.
   NOTE: Magnets must be firmly secured. If the magnet falls from the engine fan during the flight, the governor will automatically cut out the speed control function.
2. See Fig. 2, install the sensor on the main frame, and check if any interference caused by the engine fan.
3. Before connecting to the governor, first please check the rotation direction (clockwise/anti-clockwise) of throttle servo and travel range are correct.
4. When using standard parallel channel layout or S.BUS system to connect the GP900, speed setting is done through channel 7. Turning channel 7 on or off will enable/disable governor function. GP900 GOV LED will lit green when governor is active, red when inactive.
5. When connecting the governor to the power, LED light is on. When the magnet is lapped over the sensor, the LED light will be off. (If the LED isn't off, please check the polarity of the magnet and check if the wire is well connected and check for the distance between the sensor and the magnet.)
6. Adjustment of throttle travel: First place the throttle stick at the lowest position. Press and hold the SET button while powering up the receiver until all 1~5 LED lights up. Release the SET button and GOV red LED will light up, Push the throttle stick on transmitter to the maximum top, and in a few moments LED will go off and system power cycles, indicating the completion of setup process.
   NOTE: Do not run the engine before completing the throttle limit setting, to avoid the throttle travel error or servo reversion.
7. When normal, the throttle curve is straight (0%/50%/100%). When Idle, the throttle curve cannot be lower than 50%. When the governor fails, it will go back to the governor OFF mode. Therefore, even though you have installed the governor, the throttle curve of transmitter must be set as regular setting.
8. Two conditions- Governor will be enabled:
   (1)Turn on the governor switch, and GOV light is green. (2)Throttle position >30% and more.
9. When the governor turns on, the rotation speed of the engine is controlled by the ATV (%) which is the channel chosen on the 4th step. The following chart is ATV setting and engine rotation speed for Futaba and JR transmitters. The rotation speed of main blade is converted according to the engine ratio of original helicopter.

1. 如圖一先將轉速感應磁鐵一顆N極朝上(作記號的面為N極)，一顆N極朝下，以CA或R48黏著在引擎風葉預留的磁鐵座上。
※注意:磁鐵須固定牢靠，若飛行中磁鐵不慎脫落，定速器將自動取消定速功能。
2. 如圖二標示之位置將轉速感知器安裝於側板上，並檢查是否與風葉產生干涉的情形。
3. 連接定速器前，先確定油門伺服器正逆轉及機械行程是否正確。
4. GP900採用傳統接線與S.BUS接線方式時，轉速設定由第七通道設定，撥動第七通道的開關可切換定速與非定速模式，定速模式下GP900的 GOV指示燈為綠色，非定速模式下GOV指示燈為紅燈，採用衛星天線接法時，轉速設定由第五通道設定。
5. 定速器接上電源後，LED恆亮，當磁鐵與感知器重合時，LED會熄滅。
（如LED未熄滅，需檢查磁鐵極性是否正確？線路連接是否正確？感知器及磁鐵距離是否正確？）
6. 油門行程的校正：先將油門置於最低點的位置，於接收機未通電的狀態下，按下"SET"鍵不放，並將接收器電源開啓，直到LED1~5全亮起再放開"SET"鍵，此時GOV紅燈亮起，接著將油門搖桿推到最高點位置，稍等LED會先熄滅後重新開機，即完成設定。
※注意:未執行定速器油門行程設定前切勿發動引擎，以免油門行程錯誤或發生伺服器反向之情形。
7. 油門曲線在normal時為直線（0%／50%／100%），idle油門曲線最低點不可低於50%，即使有安裝定速器，遙控器的油門曲線仍要依照正常的模式來設定，因為當定速器失效時會返回非定速模式。
8. 定速器的啓動條件有二項:(1)定速器開關開啓，GOV亮綠燈。(2)油門位置＞30%以上。
9. 當啓動定速功能時，引擎的轉速即交由第4步驟所選定通道的行程量(ATV)百分比(%)來進行控制，下表為Futaba與JR遙控器ATV設定值與引擎轉速的對照表，主旋翼的轉速請依原廠直昇機的引擎齒比換算。

ATV	FUTABA PCM 1024Z		FUTABA T14MZ		JR PCM10S&9X	
	Engine speed 引擎轉速	T-REX 600NSP Main blade speed8.5:1 主旋翼轉速8.5:1	Engine speed 引擎轉速	T-REX 600NSP Main blade speed8.5:1 主旋翼轉速8.5:1	Engine speed 引擎轉速	T-REX 600NSP Main blade speed8.5:1 主旋翼轉速8.5:1
10%	10500	1235	10500	1235	10500	1235
20%	10500	1235	10500	1235	10500	1235
30%	12000	1412	10800	1271	10500	1235
40%	13700	1612	12000	1412	11200	1318
50%	15400	1812	13300	1565	12400	1459
60%	17070	2008	14550	1712	13600	1581
70%	18760	2207	15800	1859	14850	1747
80%	20410	2401	17100	2012	16000	1882
90%	21000	2470	18340	2158	17200	2024
100%	21000	2470	19700	2318	18450	2171
110%	21000	2470	20860	2454	19640	2311
120%	21000	2470	21000	2470	20760	2442
130%	21000	2470	21000	2470	21000	2470
140%	21000	2470	21000	2470	21000	2470
150%	21000	2470	21000	2470	21000	2470

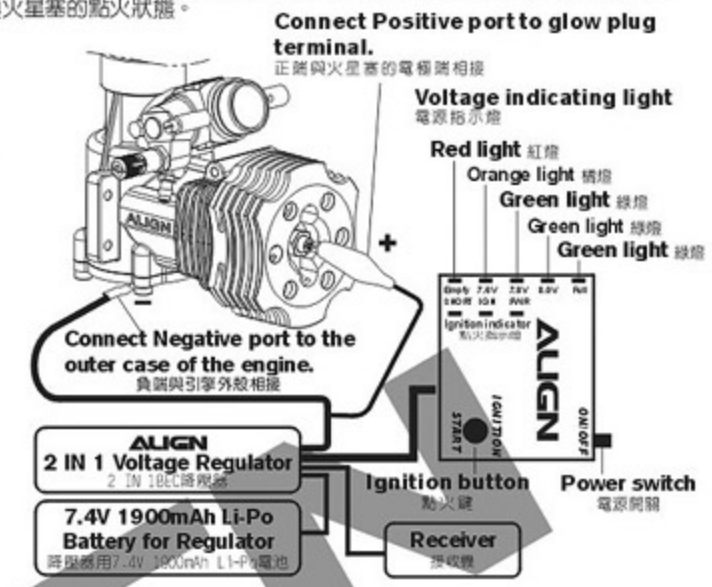
NOTE: If the LED light is off, please check if the magnet is lapped over the sensor. Please turn the magnet position of engine fan to let the LED light on.

註:如開機時定速器燈沒亮，有可能是磁鐵跟感知器重合，請轉動風葉磁鐵位置，讓指示燈亮起。

Features 功能說明

1. Due to the unique 2 in 1 design, the regulator's functions provide power to the receiver, servos, and the internal glow plug ignition system that does not require you to remove the clip lead.
2. The linear regulator design results in no interference to the receiver. The required input power may only consist of a 2 cell Li-ion or a Li-Poly battery.
3. When the integrated power switch is moved to the on position, the voltage indicating LED's and ignition indicating LED's will illuminate displaying thestatus of the battery voltage, and of the plug ignition function.

1.獨特的二合一設計，除了具備(BEC)降/穩壓系統，以提供接收器與伺服器電源的功能外，還內建一組火星塞的點火裝置，省卻傳統電夾插拔的麻煩。
2.本產品採用線性設計，輸入電源為2CELL的Li-ion或Li-Poly電池，其優點為不會像交換式設計的BEC會產生干擾接收器的情形，免於摔機的恐懼。
3.具備電源開關、電壓指示燈及點火指示燈功能，可由燈號判定電池殘量與火星塞的點火狀態。



Specifications 產品規格/配件

1. Input Voltage: DC 7.4V 2 cell Lithium or Li-Poly battery
2. Output Voltage: DC 5.8V(BEC)/1.5V(Glow Plug)
3. Max. Continuous Current: 6A
4. Weight: 53.5g (including wires)
5. Regulator size: 80x30x13.3mm
   Control board size: 35x24x10mm

1.輸入電壓:DC 7.4V 2CELL鋰電
2.輸出電壓:DC 5.8V(BEC)/1.5V(Glow Plug)
2.最大連續輸出電流:6安培
4.重量:53.5g(含線組)
5.尺寸:降壓器80x30x13.3mm
控制板35x24x10mm

Instruction 安裝使用說明

Receiver and Servo Voltage Regulating Functions:

1. The Auto-detecting voltage LED's will display a series of lights when turned on. If the entire five-light array is illuminated then the battery is fully charged.When the voltage drops below 7.6V the three green lights will turn off. USE CAUTION: Once the green lights are no longer illuminated the battery can only be safely used for a single flight. When only the single red LED is lit, DO NOT ATTEMPT TO OPERATE THE MODEL The battery voltage has been drained too low, and must be recharged before its next use.
2. It is important to note that not all servos are designed to operate on 6 volts, such as Futaba servo models 9241, 9251, 9253, 9254, 9255, 9256 and other digital servo are not capable of handling 6V. Please check with the manufacturing specifications of the servo before attempting to operate. A separate 5.1V inline voltage Step-Down may be purchased and is recommended for use between the gyro and the tail servo, and any servos that are not designed to handle 6V. Please note that some servos are designed for running on 6V and may not require a voltage step-down.

接收器與伺服機電源部份:
1.本產品具電壓指示功能，當接入充飽的電池時五顆指示燈全亮，表示電池在Full電量充足狀態下: 使用中當電壓降低至7.6V時(3顆綠燈熄滅)，尚可完成單趟飛行即須對電池充電或更換新電池；而如果僅亮紅燈時表示Empty電量不足，不應該再使用喔！
2.部份的伺服器如:Futaba9241.9251.9253.9254.9255.9256等，此類型的伺服器不適合於較高的電壓下操作，所以使用此類型的伺服器時請另外加裝5.1V降壓調整器於陀螺儀與尾舵伺服器間，避免伺服器損壞;規格標示准許6V輸入的伺服器則不須使用調整器。

Glow Plug Ignition System Functions:

1. Start by connecting the wires using the included diagram as a reference. Once completed connect the battery and move the power switch to the on position. Depress the "START" button on the control board. The green and the orange lights will illuminate. When this happens the glow plug is being ignited for a period of 15 seconds. After 15 seconds, the control board will stop igniting the glow plug. If the engine has not yet been started, the process can be repeated by simply repressing the "START" button. The Ignition system is designed to automatically shut off once the engine starts running. To ensure that the system is operating properly, check to make sure that the orange and green lights have shut off once the engine starts running. In the event that the lights are still illuminated once the engine is running, it may be necessary to remove the lead clip from the engine.
2. If the orange light is not illuminated after pressing "START" then this means that the glow plug is not being ignited. Please check to see if the element of the glow plug has burned out, or if the lead clip is not properly connected to the glow plug.
3. If the Glow plug is short-circuited or the lead clip has contacted the outer case of the engine, the red (SHORT) light will be illuminated approx. 1 second after pressing the "START" button. If the "SHORT" light illuminates the system will automatically shut off the power to the output leads.

火星塞點火器部分:
1.依接線示意圖完成接線後，開啓電源開關，接著按下控制電路板上的"START"鍵，此時點火指示燈的綠燈與橘燈同時亮起，表示火星塞已正常點火中，每次點火時間約為15秒，15秒後自動關閉，如需再次點火時，則再按一次"START"鍵；由於點火狀置會自動關閉，所以引擎啓動後，確認橘色、綠色指示燈於15秒後熄滅，即不須將鱷魚夾移除。
2.若按下"START"鍵時，橘燈不亮，表示火星塞未正常點火，請檢查火星塞加熱線圈是否開路損壞，或是鱷魚夾未確實夾在火星塞電極端上。
3.如果火星塞發生短路或是鱷魚夾（電源正端）與引擎外殼接觸時，當按下"START"鍵，紅色(SHORT)指示燈會亮起，約1秒後熄滅並隨即關閉電源輸出，請檢查火星塞是否損壞或檢查鱷魚夾是否接觸到引擎外殼。

NOTE: Please use double-sided foam tape or hook & loop tap to fix the regulator on the helicopter. Please do not tighten the wires of regulator hard to avoid the wires loose or broken caused by the vibration during the operation of the helicopter.

注意:請使用泡綿雙面膠或魔術沾將降壓器與直昇機固定，降壓器的各線組請勿繃緊固定，以免直昇機運轉時因震動造成接頭鬆脫或斷線。

FEATURES 產品特色

Utilizes MEMS gyro sensors, which feature small footprint, high reliability, and excellent stability.
採用MEMS（Micro Electro Mechanical Systems）微機電系統技術感測器，具有體積小，可靠性高，穩定性佳的優點。

Sensor with 12 bit ultra high resolution, resulting in highly precise controls.
感測器12位元超高解析度，控制細膩精準。

Supports Spektrum and JR satellite receivers.
支援SPEKTRUM與JR衛星天線。

Supports Futaba S.Bus architecture.
支援Futaba S.BUS功能。

Software upgradable through PC interface adapter.
具備可升級程式化介面，可透過傳輸線更新軟體。

Highly sensitive gyroscopic sensors combined with advanced control detection routine providing higher hovering and aerobatic stability.
高感度陀螺感測器及先進環路設計，可提供更佳的靜態及動態穩定性。

Built in speed governor function.
內建定速器功能。

Capable to operate between 3.5V to 8.4V, compatible with high voltage servos.
適用電壓3.5V~8.4V，支援高電壓伺服器。

Small footprint, light weight, minimalists and reliable design.
體積小、重量輕，構造簡單可靠，提供操控者高性能的飛行樂趣。

RoHS certified.
符合RoHS限用規章。

GP900 HEAD LOCK GYRO SETUP INDICATORS GP900鎖定式陀螺儀功能設定指示燈說明

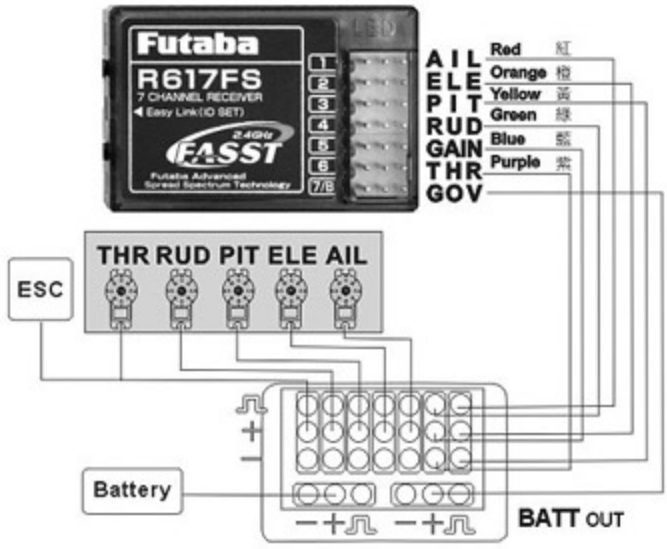
T-REX 600/700 Standard setting T-REX 600/700標準設定

Setting type 設定項目	1520/760 μs	DS/AS	NOR / REV	LIMIT	Helicopter mode / DELAY 直昇機模式/DELAY	Anti-torque compensation 反扭力補償正反向
"STATUS"green "STATUS"綠燈	▲Standard 1520 μs Servo ▲標準1520μs伺服器	▲Digital servo ▲DS數位伺服器	▲Normal rotation ▲NOR正轉	Left(Right)Travel limit 左(右)行程量	Medium/ large heli, suitable for T-REX 500/600/700 中型/大型直昇機 適用T-REX 500/600/700	Right side up mounting: Installed with GP900 label facing up 正裝：安裝時GP900面板朝上
"STATUS"red "STATUS"紅燈	Narrow band 760μs Servo 窄頻760μs伺服器	Analog Servo AS類比伺服器	Reverse rotation REV反轉	Right(Left)Travel limit 右(左)行程量	Mini/ Micro heli, suitable for T-REX250/450 小型/迷你型電直 適用T-REX 250/450	Upside down mounting: Installed with GP900 label facing down 反裝：安裝時GP900面板朝下
Setting instruction 設定方式說明	See no. 1 in setting instructions 參照設定方式第1項	See no. 2 in setting instructions 參照設定方式第2項	See no. 4 in setting instructions 參照設定方式第4項	See no. 5 in setting instructions 參照設定方式第5項	See no. 6 in setting instructions 參照設定方式第6項	See no. 7 in setting instructions 參照設定方式第7項

NOTE: 1. "▲"Default setting. 2. Wrong heli mode will affect the performance of gyro. Do not fly before the complete setting.
註: 1."▲"表示出廠設定值。 2.錯誤的直昇機模式將影響陀螺儀性能，未完成設定前請勿飛行。

GP900 Connectivity Method GP900接線方式

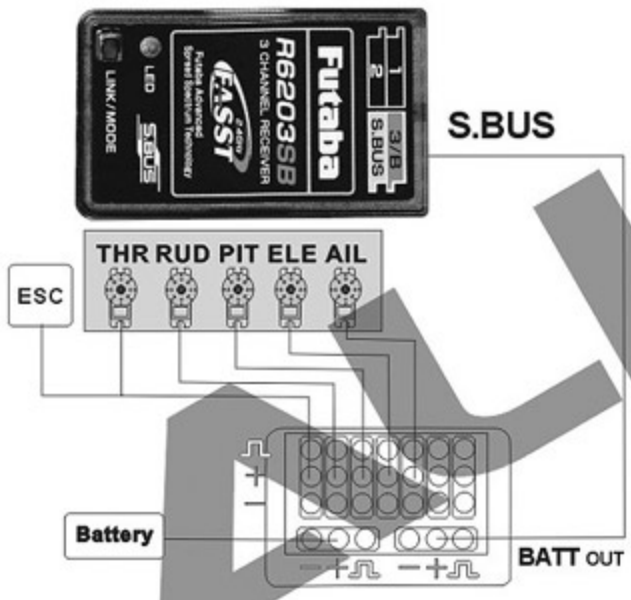
Method 1:Standard receiver connectivity method 方式一:傳統接收器接線法



1.Connect all wires as shown in diagram. Receiver and GP900 wires are color coded to distinguish the different connection channels. Care should be taken to ensure proper wire color to channel connection.
2.Please connect the BEC power with GP900 "BATT"port.
3.Receiver power is achieved by connecting the GP900 "S.BUS/BIND" port to the ch7 or BATT port on receiver using supplied signal wire.
4.GP900 has built in speed governor function which can be utilized by purchasing the optional speed sensor.
Governor setting is done through channel 7 on the receiver.

1.請依照圖示進行接線，接收器與GP900的接線使用不同的顏色來區分不同的通道，接線時請注意各顏色所對應的通道。
2. 請由GP900的"BATT"孔位接入BEC電源。
3.接收器電源請以隨附的訊號線由GP900的"S.BUS/BIND"孔位接至第七通道或BATT通道。
4.GP900內建定速器功能，可外接定速器感知器使用，轉速設定由接收器的第七通道設定。

Method 2: Futaba S.BUS Connectivity method 方式二:Futaba S.BUS接線法



1.For Futaba S.BUS receivers, connect wires as shown in diagram.
2.Please connect the BEC power with GP900 "BATT"port.
3.Receiver power is supplied through S.BUS signal wire connected to GP900's "S.BUS/BIND" port.
4.The default channel/function mapping when using S.BUS are:
(1)AIL (2)ELE (3)THR
(4)RUD (5)GAIN (6)PIT (7)GOV

1.具備S.BUS功能的Futaba接收器，請依照圖示進行接線。
2.請由GP900的"BATT"孔位接入BEC電源。
3.接收器電源共同由S.BUS 訊號線接至GP900的"S.BUS/BIND"孔位。
4.使用S.BUS功能時,內部通道已指定為：
(1)AIL (2)ELE (3)THR (4)RUD (5)GAIN (6)PIT (7)GOV

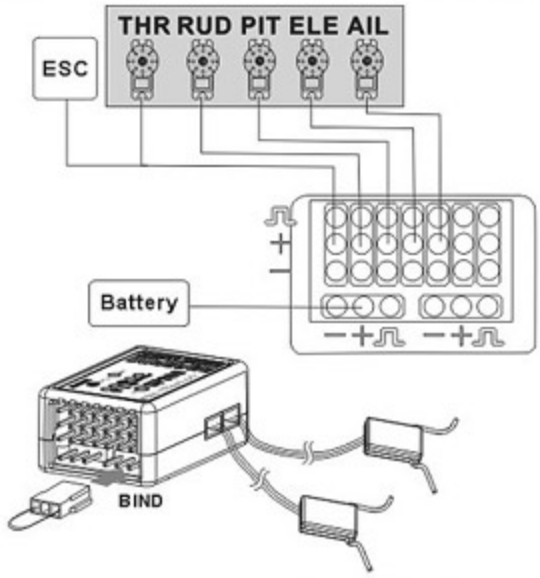
CAUTION 注意

If channel 3 is set as PIT and channel 6 set as THR on transmitter, Such as 8FG, 12Z, 14MZ,nd etc, please reprogram the transmitter to utilize channel3 as THR and channel6 as PIT.
若所使用的遙控器內部指定(3)通道為PIT (6)通道為THR時，例如8FG、12Z、14MZ等，請更改遙控器上的設定為(3)通道 THR (6)通道 PIT。

5.GP900 has built in speed governor function which can be utilized by purchasing the optional speed sensor.
Governor setting is done through channel 7 on the receiver.

5.GP900內建定速器功能，可外接定速器感知器使用，轉速設定由接收器的第七通道設定。

Method 3: JR/SPEKTRUM Setellite connectivity method 方式三:JR/SPEKTRUM衛星天線接線法



1.For JR or Spektrum satellite receivers, connect wires as shown in diagram.
2.Please connect the BEC power with GP900 "BATT"port.
3.GP900 has built in speed governor function which can be utilized by purchasing the optional speed sensor. Governor setting is done through channel 7 on the receiver. Channel5/GEAR controls RPM of speed governor, channel7/AUX2 controls rudder gyro gain. For radios with less than 6 channels, please use the standard receiver connectivity method.
4.For radios with less than 6 channels, channel5/GEAR is used for rudder gyro gain. Speed governor cannot be used. For safety concern, two satellite receives should be used, with each antenna perpendicular (90 degrees) from each other. A satellite receiver should be installed on each side of the frame, separate by minimum distance of 5cm.
5.Should both satellite receivers loose connectivity during flight, LED1 ~ LED5 will flash continuously as warning. A single power cycle of the system will not clear this error. The system need to be power cycled the second time to reset.
6.default channel/function mapping when using satellite receiver are:
(1)THR (2)AIL (3)ELE
(4)RUD (5)GOV (6)PIT (7)GAIN

CAUTION 注 意

1.Do not mix satellite receivers of different makes.
2.Even under correct startup sequence, if transmitter is powered off first, LED1~LED5 will also flash. Thus the receiver should always be powered off before the transmitter.
3.GP900 supports satellite receiver models currently available on the market. Should new receiver version comes out with compatibility issues, firmware will be updated to resolve any incompatibility that may arise.

1.不同廠牌的衛星天線請勿交叉對頻。
2.正常開機的情況下，如果先關發射機，也會發生LED1～LED5持續閃爍情況，所以請養成先關接收機，再關發射機的良好習慣。
3.如有新型號衛星天線產生不相容情形，將以韌體更新方式解決。

1.請依照圖示進行接線，GP900支援Spektrum與JR系統衛星天線。
2.請由GP900的"BATT"孔位接入BEC電源。
3.GP900內建定速器功能，可外接定速器感知器使用 。七動及七動以上遙控器 (5)GEAR控制定速器轉速，(7)AUX2控制尾舵陀螺儀感度。六動以下遙控器請使用傳統接線方式。
4.為安全起見，請盡量安裝兩個衛星天線，兩個衛星天線角度除必須呈90度之外，且須安裝於機身兩側，相隔至少5公分以上。
5.如果飛行途中有兩個衛星天線同時失連的情形，LED1～LED5會持續閃爍警告，在此情形下就算重新開機，LED1～LED5會持續閃爍而無法開機，必須再重新開機一次，才可正常運作。
6.使用衛星天線接線時，內部通道已指定為：
(1)THR (2)AIL (3)ELE
(4)RUD (5)GOV (6)PIT (7)GAIN

Failsafe(Last Position Hold) 失控保護(保留最後指令)：

When helicopter lost connectivity with your radio under this setting, all channels will hold at the last command position, except throttle channel which goes to a preset position.
1.Push throttle stick to the desired fail safe position.
2.Plug the binding plug into GP900's BIND port, and perform radio binding steps.
3.After successful binding, do not power off the GP900, unplug the binding plug and allow GP900 to enter initializing process. The last position hold function will be active after the GP900 initializes.
4. Test Method: Power off transmitter. The throttle channel should move to preset position, while all other channels should hold in their last position.

在此模式下，若您的直昇機與遙控器失連，除油門頻道為預設位置，其餘頻道皆為最後指令位置。
1. 將油門搖桿放置於您所需要的預設安全位置
2. 將對頻接頭插在GP900的BIND插座，執行與遙控器的對頻動作。
3. 與遙控器完成對頻動作後，不要關閉GP900電源，先將對頻接頭拔除，GP900會進入開機狀態，待GP900開機完成後，即完成保留最後指令設定。
4. 測試方法：將遙控器關機，除了油門頻道為預設安全位置外，其餘頻道都為失連前的最後命指令位置。

Failsafe (Pre-set Position Hold) 失控保護(回復預設值)：

When helicopter lost connectivity with your radio under this setting, all channels will move to the pre-set position.
1.Plug the binding plug into GP900's BIND port, and power up the GP900. After the rapid flash of satellite's LEDs, pull the binding plug off.
2.Power up radio transmitter, and perform radio binding steps. After radio is bound, LED on the satellite antennas will end the rapid flash, following by slower flash.
3.Move the transmitter sticks to the desired failsafe position while the LED is flashing in slower mode.
4.Satellite antenna's LED will lit up after 5 seconds, and GP 900 goes through initializing process. The failsafe position will be set after the GP900 initializes.
5. Test Method: Power off transmitter, and all channels should move to the pre-set failsafe position.

在此模式下，若您的直昇機與遙控器失連，所有頻道為預設安全位置。
1. 將對頻接頭插在GP900的BIND插座，先開啟GP900電源，待衛星天線上LED快速閃爍後，將對頻接頭拔除。
2. 開啟遙控器電源，執行與遙控器的對頻動作，對頻完成瞬間，衛星天線上LED會由快速閃爍狀態熄滅，之後再亮起改為慢速閃爍。
3. 在慢速閃爍狀態時，將遙控器上的所有搖桿放置於您所需要的預設安全位置。
4. 5秒後衛星天線LED燈為恆亮，GP900進入開機狀態，待GP900開機完成後，即完成失控保護設定。
5. 測試方法：將遙控器關機，所有頻道為預設安全位置。

RUDDER GYRO SETUP 尾舵陀螺儀設定

Push and hold the SET button for 2 seconds to enter the rudder gyro setup mode.
If your transmitter has the following settings, please disable it or set the value to zero.
於開機狀態下持按"SET"鍵2秒進入尾舵陀螺儀設定。
如果您的遙控器有下列功能時，請設定為關閉(OFF)或數值設定為零。

- ATS
- Pilot authority mixing
- Throttle to rudder mixing
- Rudder to gyro mixing
- Pitch to rudder mixing
- Revolution mixing

CAUTION 注 意

GP900 rudder gyro has the factory setting of 1520 μs and DS digital servo. Double check your servospec and change the gyro setting as needed to avoid damages to the servo.
GP900 尾舵陀螺儀出廠設定值為：1520μs寬頻與DS數位伺服器模式，安裝時請確認您的伺服器規格，避免設定值不同而造成伺服器損壞。

1.1520 μs (standard) or 760 μs(narrow band) servo frame rate setup.
1520μs(標準)或760μs(窄頻)伺服器設定

GP900 is compatible with both the 760 μs narrow frame rate servos (such as Futaba S9256, S9251, BLS251), as well as the standard 1520 μs frame rate servos (most others). Proper frame rate must be selected based on your servo's specifications.

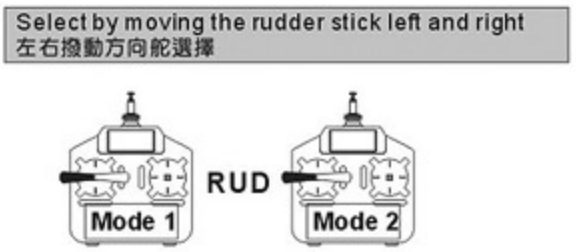
To enter the setup mode：Press and hold the SET button for 2 seconds until STATUS LED flashes. The 1520/760 LED will light up indicating servo frame rate setup mode. Push the transmitter rudder stick left or right to select the frame rate. For example, if rudder is pushed to the left (or right) and STATUS LED turns green, the frame rate is set to 1520 μs. To set it to 760 μs, the rudder stick need to be pushed from the center to the opposing end 3 times for the STATUS LED to turn red, indic ating frame rate set to 760 μs.

GP900 panel：Each setting value is labeled on the 3G flybarless control unit with either green or red lettering, which corresponds to the STATUS LED color. Subsequent setup mode is entered by a single press of the SET button. Setup mode will exit if no activity is detected in 10 seconds.

GP900相容兩種波寬控制系統，若您使用的伺服器屬於760μs系統（如Futaba S9256、S9251、BLS251)，則必須將GP900設定於760的模式，其他未標示760μs規格的伺服器，一般皆為1520μs系統，須設定為1520的模式。

進入功能設定模式：持按面板上的"SET"設定鍵約2秒，此時"STATUS"狀態指示燈會開始閃爍，且"1520/760"的功能設定指示燈會亮起，表示進入標準／窄頻伺服器選項，利用遙控器方向舵搖桿的左右方向來選擇設定值，例如方向舵搖桿往左（或右）時，"STATUS"指示燈為綠色，表示設定值為1520μs系統；若要設定為窄頻760μs系統時，必須將搖桿由中立點往相反方向**連續撥動3次**，使"STATUS"指示燈亮紅色，才會進入760μs系統。

GP900的面板：標籤上已使用綠／紅色的字體提示"STATUS"燈色所代表的設定值。設定完成後按"SET"鍵一次可進入下一個設定，或是10秒內不做任何設定，系統會自動離開設定模式。



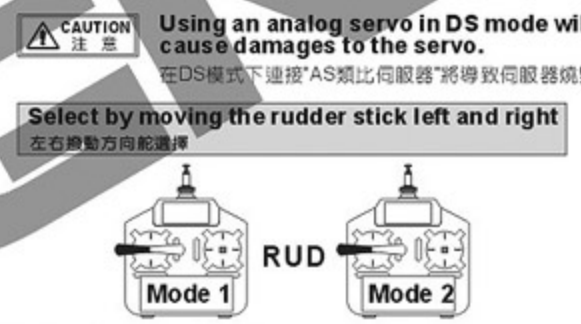
2.DS (digital) / AS (analog) servo selection DS數位／AS類比伺服器選擇

There is a direct correlation between servos' speed to gyro's performance. Faster servos are able to execute commands from the gyro at faster and higher precision. Due to the high performance gyro sensors used in the GP900, premium high speed digital rudder servos are mandatory for optimal tail performance. Some of the recommended rudder servos include Align DS650, DS620, DS520, DS420, Futaba S9257, S9256, S9254, S9253, or other servos with similar specifications.

Setup method：Press and hold the SET button for 2 seconds to enter the setup mode, then press the SET button to select DS/AS setup mode, as indicated by the lighting of DS/AS LED. Using the transmitter's rudder stick, select either digital servo DS mode (STATUS LED is green),or analog servo AS mode (STATUS LED is red).

伺服器動作速度攸關陀螺儀的性能，伺服器動作愈快，就能立即反應陀螺儀送出的指令，發揮快速精準的效能：由於GP900具有相當快速的反應時間與靈敏度，所以建議您搭配高速型數位伺服器，如ALIGN DS650、DS620、DS520、DS420、Futaba S9257、S9256、S9254、S9253或其他相同規格伺服器，以獲得最佳效能。

設定方式：持按"SET"鍵2秒進入功能設定模式，再按"SET"鍵選擇DS／AS選項，（DS／AS指示燈亮起），利用方向舵搖桿選擇數位DS（STATUS為綠燈）或類比AS（STATUS為紅燈)伺服器。



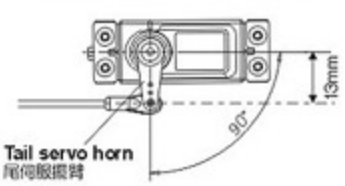
3. Rudder servo direction check and link adjustment 檢查尾舵伺服器正逆轉方向與調整連桿

Move the transmitter rudder stick left/right, and check for the correct direction of the rudder servo. If needed, servo reverse is done from the transmitter's REV (reverse) function.

For tail pitch adjustment, center the rudder servo by either setting the GP900 to normal rate mode (non-heading lock), or press and hold the SET button for 2 seconds. With the rudder servo centered and servo horn at 90 degrees, adjust the linkage length until tail pitch slider is centered on the tail output shaft as shown in diagram.

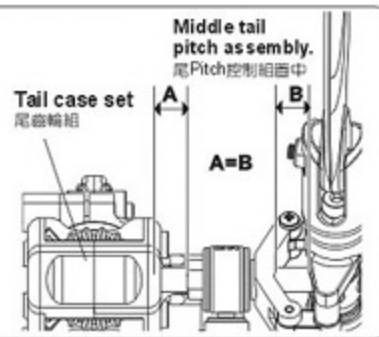
左右撥動尾舵搖桿，確認尾舵伺服器移動的方向是否正確，若不正確請更改遙控器上的尾舵伺服器正逆轉方向。

將GP900切換成非鎖定模式或持按"SET"鍵2秒，使尾舵伺服器保持在中立點的位置上，調整伺服舵片，盡可能使尾舵連桿與伺服擺臂呈90度，接著調整連桿長度使尾Pitch 控制組置中。



Utilizing DS620 rudder servo as an example, the recommended location of linkage connection is the third hole from the center on the servo horn. The ideal distance from linkage connection to servo center is 13mm.

以DS620尾舵伺服器為例，建議將球頭鎖附於伺服舵片由內算起的第三孔， 使尾舵控制桿與伺服器平行距離13mm左右為最佳。



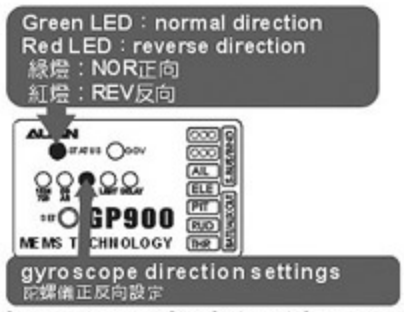
4.Gyro NOR/REV setting NOR／REV陀螺儀正反向開關設定

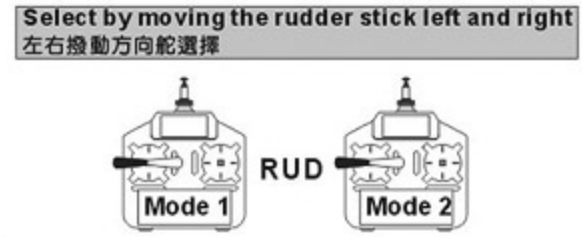
Lift up the helicopter by hand, and turn it to the left (yaw). Check if the rudder servo is applying correct compensation to the right. If reversed, set the NOR/REV setting as follow.

Setup method：Press and hold the SET button for 2 seconds to enter the setup mode, then press the SET button to select NOR/REV setup mode, as indicated by the lighting of NOR/REV LED. Using the transmitter's rudder stick, select either NOR (STATUS LED is green),or REV (STATUS LED is red).

提起直昇機，將機頭往左擺動，若尾舵伺服器的擺動方向與遙控器的方向舵搖桿打右舵同方向時，表示陀螺儀的動作方向設定正確，若不正確時請更改正反向設定。

設定方式：持按"SET"鍵2秒進入功能設定模式，選擇NOR ／REV選項，以方向舵選擇NOR(STATUS為綠燈) 或REV（ STATUS為紅燈 ）。

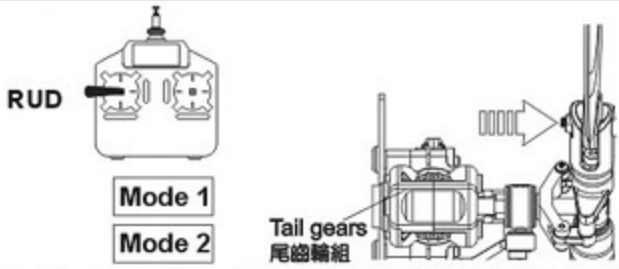




5.LIMIT rudder servo endpoint setting LIMIT尾舵伺服器行程量調整

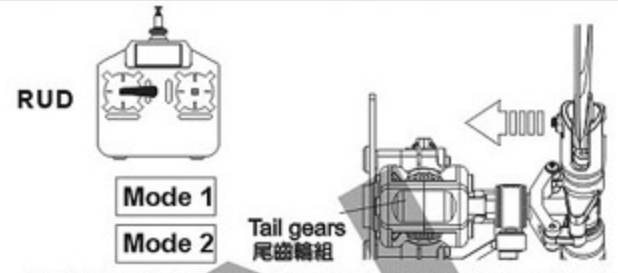
Press and hold the SET button for 2 seconds to enter the setup mode, then press the SET button repeatedly to select LIMIT setup mode, as indicated by the lighting of LIMIT LED. Push the transmitter rudder stick left until tail pitch slider reaches the end, then center the rudder stick and wait 2 seconds for the STATUS LED to flash red. Then push the rudder stick right until tail pitch slider reaches the end, then center the rudder stick and wait 2 seconds for the STATUS LED to flash red. This completes the left and right endpoint limit adjustment of servo travel. Insufficient servo travel will degrade helicopter performance, while excessive travel will cause binding and damage rudder servo.

持按"SET"鍵2秒進入功能設定模式，此時尾伺服器會保持在中立點的位置上，選擇LIMIT選項，接著將方向舵搖桿慢慢的往左移動，使尾控制組達到該側的大行程限度後，將搖桿回歸中立點不動，待2秒後"STATUS"指示燈會亮紅燈閃爍，表示左側行程量已記憶；接著將尾舵搖桿向右移動至控制組最大行程限度後，再將搖桿回歸中立點不動，待2秒後 "STATUS"指示燈亮紅燈閃爍，即完成左右行程量設定，行程量不足時會影響陀螺儀與直昇機的性能，行程量過大易造成伺服器損壞。



Push the transmitter rudder stick left until tail pitch slider reaches the end,then center the rudder stick and wait 2 seconds for the STATUS LED to flash red. This completes the rudder endpoint limit adjustment for the left side.

將方向舵慢慢往左撥動，使控制組達到左舵最大行程限度後，將搖桿回歸中立點不動，待2秒後"STATUS"紅燈閃爍表示左舵行程記憶量完成。



Push the rudder stick right until tail pitch slider reaches the end, then center the rudder stick and wait 2 seconds for the STATUS LED to flash red. This completes the rudder endpoint limit adjustment for the right side.

將方向舵慢慢往右撥動，使控制組達到右舵最大行程限度後，將搖桿回歸中立點不動，待2秒後"STATUS"指示燈表示右舵行程記憶量完成。

CAUTION 注意

To avoid degraded gyro performance as result of insufficient travel range, rudder travel limit setting should not be set to below 50%.

尾舵行程量設定不可低於50%，避免行程不足影響陀螺儀性能。

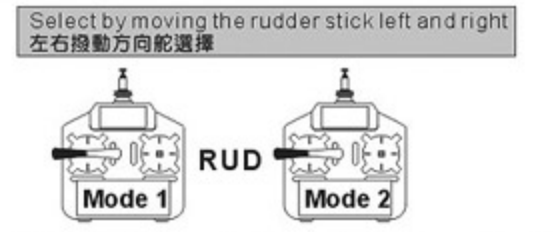
6.Helicopter size and DELAY settings 直昇機模式與DELAY控制延遲量調整

This setting includes two functions：

(1) For small helicopters such as T-Rex 250/450, set this setting to small helicopter (STATUS LED red). For larger helicopters such as T-Rex 500/550/600/700 set this setting to large helicopter (STATUS LED green).

此設定結合兩項功能：

(1) GP900支援小型／迷你型室內電直，請依您直昇機的類型選擇適合的模式，如：T-REX250/450請選擇小型／迷你型模式（設定時"STATUS"指示燈為紅色）；T-REX500/550/600/700請選中大型直昇機模式（設定時 "STATUS"指示燈為綠色）。



(2) The DELAY function is utilized when slower rudder servo causes tail hunting (wagging). This can be observed after a hovering pirouette comes to a stop. If tail hunting occurs, gradually increase DELAY value to eliminate it. For best performance, DELAY value should be kept as low as possible without tail hunting.

Setup method：Press and hold the SET button for 2 seconds to enter the setup mode, then press the SET button to select DELAY setup mode, as indicated by the lighting of DELAY LED. The choice of small or large helicopter is done by moving the transmitter rudder stick left or right while observing the color of the STATUS LED. For small helicopters STATUS LED will be red, and large helicopter will be green. The amount of servo delay is set by how far you push the rudder stick, followed by pushing the SET button.

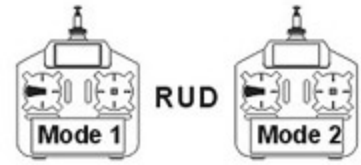
(2)使用速度較慢的尾舵伺服器較容易產生追蹤現象，當直昇機停懸時，打方向舵使直昇機快速自轉，當方向舵回到中立點使直昇機停止自轉時，此時若發生追蹤現象，請增加控制延遲的設定量，一般而言在不產生追蹤現象的原則下控制延遲的設定量愈小愈好，否則尾舵的動作會變得遲緩。

設定方式：持按"SET"鍵2秒進入功能設定模式，選擇至DELAY選項，以方向舵搖桿選擇小型／迷你型電直，
如：T-REX 250/450（STATUS為紅燈），或中大型直昇機如T-REX500/550/600/700（STATUS為綠燈），若要同時設定DELAY控制量時，則利用方向舵搖桿的位置來設定，搖桿中中立點推至"DELAY"燈開始閃爍時為0%，推至最大行程時控制量為100%，將搖桿推至所需的延遲量時保持不動，並按下"SET"鍵確認，即可同時設定直昇機模式與延遲量。

Green LED for T-REX600
T-REX600設定為綠燈

0% when DELAY LED begins flashing
DELAY燈開始閃爍時為0%

Gradually move the transmitter rudder stick until DELAY LEDbegins to flash, the delay value is 0% at this point.
輕推方向舵搖桿至"DELAY"燈開始閃爍時，延遲量為0%



Green LED for T-REX600
T-REX600設定為綠燈

Continue to move the rudder stick until desired delay value is needed, then press the SET button to register the setting. Maximum is 100% delay, with rudder stick pushed to the end.
方向舵推至最大行程時，延遲量為100%，將搖桿推至所需的延量，按下"SET"鍵確認

7.Anti Torque Compensation direction setting 反扭力補償正反向設定

To achieve consistent gyro gain on left and right, GP900 has built in anti-torque compensation function. User need to confirmif GP900 is mounted right side up or upside down.
Right side up: Installed with GP900 label facing up, anti-torque compensation set to positive (green STATUS LED).
Upside down: Installed with GP900 label facing down, anti-torque compensation set to negative(red STATUS LED).
為使陀螺儀左右感度一致，GP900內置反扭力補償功能,使用者需確認GP900為正裝或反裝。
正裝：安裝時GP900面板朝上，反扭力補償設為正向(STATUS綠燈)。
反裝：安裝時GP900面板朝下，反扭力補償設為反向(STATUS紅燈)。

Setup method: Press and hold the SET button for 2 seconds to enter setup mode, select until anti-torque compensation section, as indicated by lighting of all 5 setup mode LEDs. Using the rudder stick to select either positive anti-torque compensation (green STATUS LED) for right side up mounting, or negative anti-torque compensation (red STATUS LED)for upside down installation.
設定方式：持按"SET"鍵2秒進入功能設定模式，選擇至反扭力補償設定項，此時5顆功能設定指示燈全亮，接著以方向舵搖桿選擇，當GP900正裝時，須設定為正向(STATUS綠燈)；當GP900反裝時，須設定為反向(STATUS紅燈)。

Green ：Right side up mounting
Red：Upside down mounting
綠燈：GP900正裝，反扭力補償正向
紅燈：GP900反裝，反扭力補償反向

Anti Torque Compensation direction setting
反扭力補償正反向設定

Select by moving the rudder stick left and right
左右撥動方向舵選擇

8.Sensitivity Adjustment 感度調整

For radio with built in gyro gain settings, gain can be adjusted directly. For example, 50%-100% setting on the radio translates to 0% - 100% gain in the heading lock mode ;50%-0% setting on the radio translates to 0%-100% gain in the normal (non-heading) lock mode.

Actual gain value differs amongst servos and helicopters. The goal is to find the maximum gain without tail hunting. This can only be done through actual flight tests.

The recommended starting point for transmitter's gyro gain setting should be 70~80% for hovering, 60~70% for idle-up. Value should be tuned under actual flight conditions by increasing to the maximum gain without tail hunting.

一般具有陀螺儀感度設定功能的遙控器，可直接進入GYRO功能選項進行感度值的設定，設定值50%則陀螺儀的感度為0，設定值50%~100%，則陀螺儀感度值為鎖定狀態的0~100%；設定值50%~0%，則陀螺儀感度值為非鎖定狀態的0~100%。

感度值的大小會隨著伺服器與直昇機的不同而有所差異，一般而言，在不產生追蹤現象（直昇機尾部出現左右搖擺的情況）的前提下感度值愈高愈好，所以只能透過實際飛行的狀況來進行調整。

進入遙控器感度設定的選項，剛開始停懸時建議先設定在70~80%左右，Idle up飛行時設定在60~70%左右，之後再依實際飛行的狀態再行修正，如果沒有追蹤現象發生時可再調整高感度，若發生追蹤現象時，則調低感度。

CAUTION 注意

For radios (IE Futaba) using 0-100% as heading lock gain scales, the recommended gain setting is 30% to 35%.
For radio that uses the 50 -100% scale(such as JR and Hitec), the recommended gain setting is 70% to 75%.
鎖定感度值為0~100%的遙控器，如Futaba，建議設定在30~35%左右；鎖定感度值為50~100%的遙控器，如JR、HITEC，建議感度值設定在70~75%左右。

GP900 Gyro Specifications GP900陀螺儀產品規格

- **Operating Voltage: DC 3.5~8.4V**
- **Current Consumption: <80mA @ 4.8V**
- **Angular Detection Speed: ±300 degrees/sec**
- **Operating Temperature: -20°C~65°C**
- **Operating Humidity: 0%~95%**
- **Size: 36.5x25.2x15.6mm**
- **Weight: 11g**
- **RoHS compliant**

- ●適用電壓：DC 3.5V-8.4V
- ●消耗電流：<80mA @4.8V
- ●偵測角速度±300度/sec
- ●操作溫度：-20℃~65℃
- ●操作濕度：0%~95%
- ●尺寸：36.5x25.2x15.6mm
- ●重量：11g
- ●符合RoHS限用規章

Mode 1	Mode 2	Illustration圖示
Aileron 副翼		Move left 左移 / Move right 右移 / Rotate left 左翻 / Rotate right 右翻
Elevator 升降/前後		Fly forward 前進 / Fly backward 後退 / Forward rotate 前翻 / backward rotate 後翻
Throttle 油門		Ascent 上升 / Descent 下降
Rudder 方向		Turn right 右旋 / Turn left 左旋

Flight adjustment and notice for beginners 初學飛行調整與注意

CAUTION 注意

◎Check if the screws are firmly tightened.
◎Check if the transmitter and receivers are fully charged.
◎再次確認→螺絲是否鎖固?
◎發射器和接收器電池是否足夠。

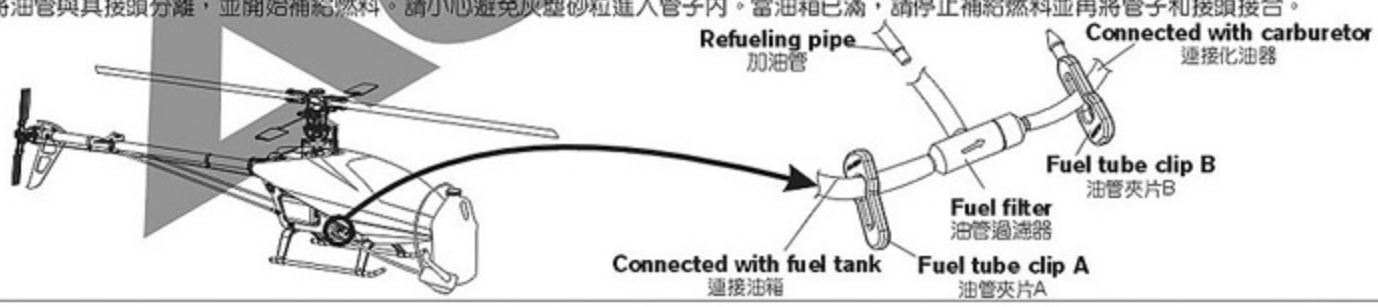
★When arriving at the flying field.
★當抵達飛行場

CAUTION 注意

If there are other radio control aircraft at the field, make sure to check their frequencies and tell them what frequency you are using. Frequency interference can cause your model, or other models to crash and increase the risk of danger.
假使飛行場有其他遙控飛機，請確認他們的頻率，並告知他們你正在使用的頻率，相同的頻率會造成干擾導致失控和大大地增加風險。

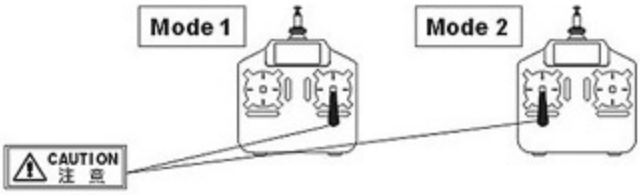
Engine start preparation 引擎啓動事前準備

Separate the fuel tube and the joint and start to refuel. Please be careful to avoid the dust entering the tube. When the fuel tank is full, please stop refueling and reconnect the tube and the joint.
將油管與其接頭分離，並開始補給燃料。請小心避免灰塵砂粒進入管子內。當油箱已滿，請停止補給燃料並再將管子和接頭接合。



CAUTION 注意

First check to make sure no one else is operating on the same frequency. Then place the throttle stick at lowest position and turn on the transmitter.
首先確認附近沒有其他相同頻率的使用，然後打開發射器將油門搖桿推到低點。



CAUTION 注意

Check if the throttle stick is set at the lowest position and check if engine throttle is at low speed.
確認油門搖桿是在最低的位置，並確認引擎油門置於低速。

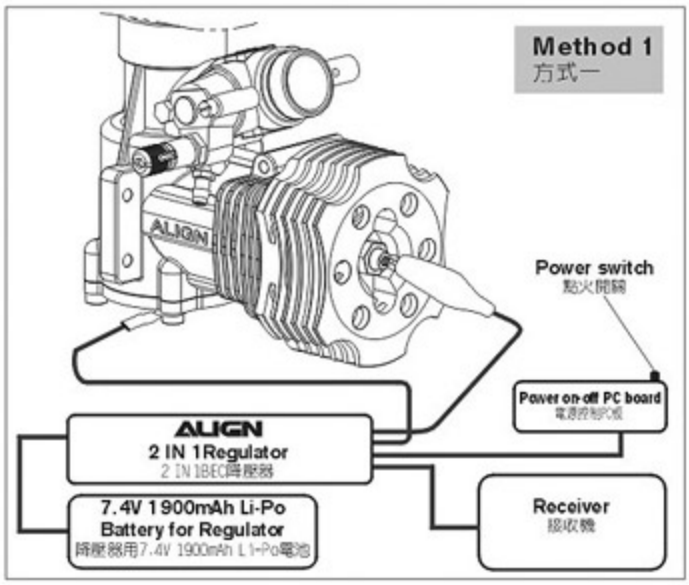
Needle valve adjusting suggestion 引擎油針調整建議

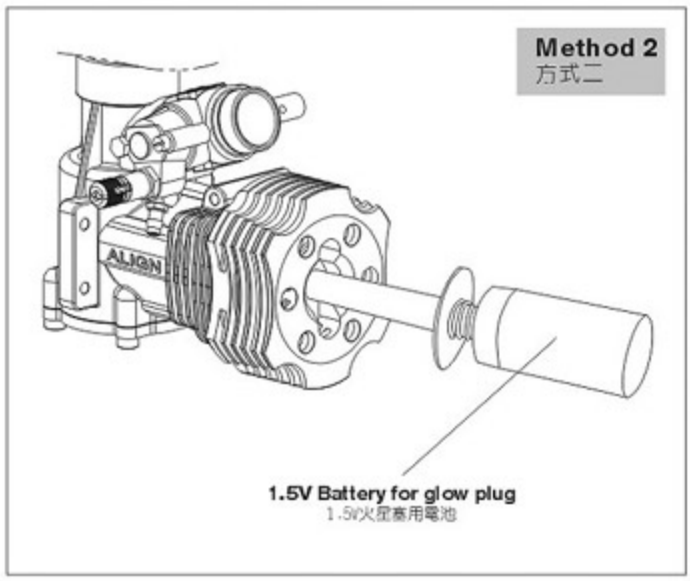
For a new engine, recommend closing the needle valve completely first, and then open the needle valve 1.5 turns for running-in during the first 3 flights. After the first 3 flights, see the flight conditions to adjust the engine to higher speed,recommend closing the needle valve to 1.25 turns.(Please refer to the original instruction manual of the engine for more detail.)
建議新引擎於前3次飛行時主油針先鎖緊後，以鬆退1 1/2圈條件引擎磨合飛行。3次飛行以後，可視飛行狀況適當調高引擎轉速，建議可調緊主油針到1 1/4圈。(詳細調整請參閱原廠說明書)

CAUTION 注意

If the engine speed and the temperature are too high, it will seriously affect the engine life.
引擎轉速、溫度過高將嚴重影響引擎壽命。

Glow plug ignition method 火星塞點火方式

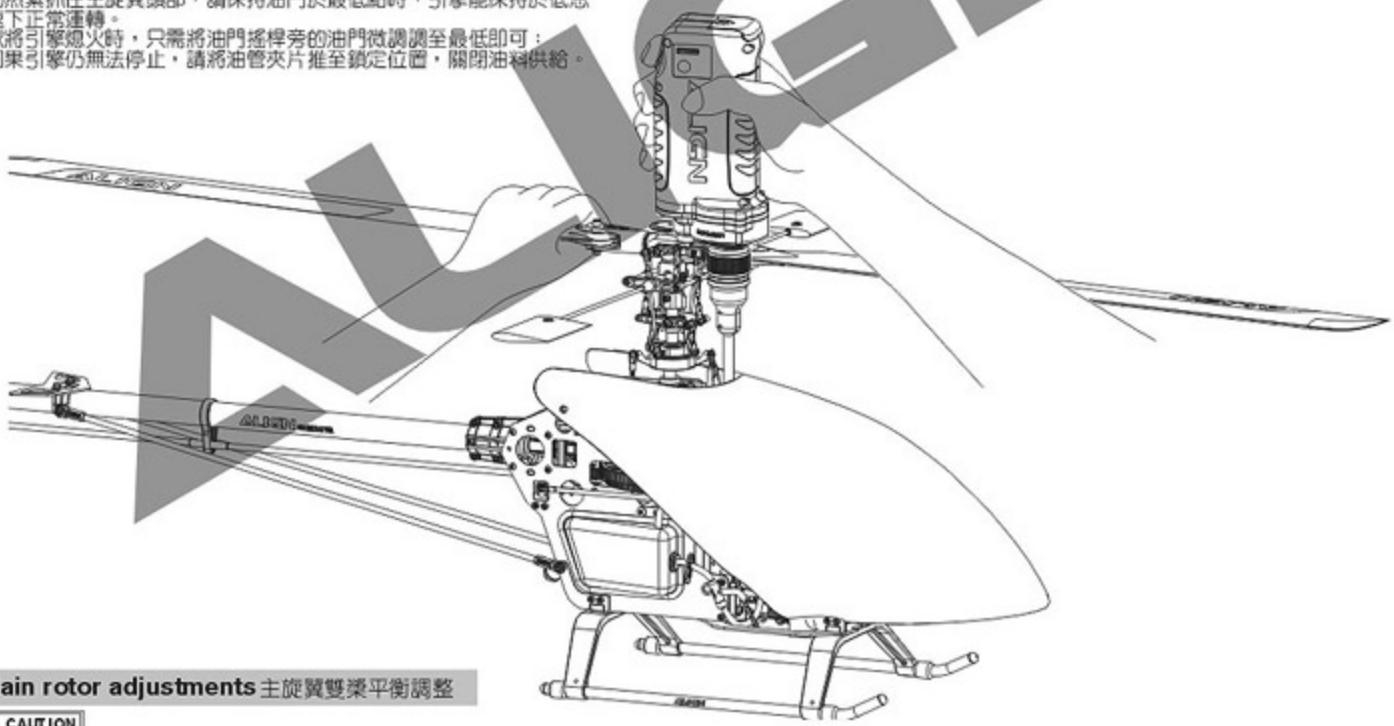




Engine start and stop 引擎啓動和熄火

1.Connect the battery to the starter and check the rotation direction. Insert the starter shaft into the starter completely.
2.Tightly hold the main rotor head, and insert the starter shaft into the starter coupling. Then turn the starter to start the engine.
3.When the engine starts, stop the starter and remove it from the starter coupling. Please keep holding the main rotor head tightly.
4.Hold the main rotor head tightly, and turn off the power of glow plug or remove the power.
5.Still hold the main rotor head tightly, turn throttle trim at the lowest position, and keeping engine in lowest regular running.
6. If you want to stop the engine, please set the throttle trim (beside the throttle stick) at the lowest position. If the engine cannot stop, please put the Fuel Clip into lock position to stopping refueling.

1.將啓動電池連接到啓動器並確認其轉動方向。將啓動軸完全插入啓動器。
2.緊緊抓住主旋翼頭部，將啓動軸插入引擎啓動頭並以啓動器啓動引擎。
3.當引擎啓動後，停止啓動器並將啓動頭上的啓動器移開。請保持繼續緊抓住主旋翼頭部。
4.仍然緊抓住主旋翼頭部，將火星塞點火電池關閉或移開。
5.仍然緊抓住主旋翼頭部，請保持油門於最低點時，引擎能保持於低怠速下正常運轉。
6.欲將引擎熄火時，只需將油門搖桿旁的油門微調調至最低即可；如果引擎仍無法停止，請將油管夾片推至鎖定位置，關閉油料供給。



Main rotor adjustments 主旋翼雙槳平衡調整

CAUTION 注 意

Tracking adjustment is very dangerous, so please keep away from the helicopter at a distance of at least 10m.
調整軌跡非常危險，請於距離飛機最少10公尺的距離。

1.Before adjusting, apply a red piece of tape on one blade, or paint a red stripe with a marker or paint to identify on blade.
2.Raise the throttle stick slowly and stop just before the helicopter lifts-off ground. Look at the spinning blades from the side of the helicopter.
3.Look at the path of the rotor carefully. If the two blades rotate in the same path, it does not need to adjustment. If one blade is higher or lower than the other blade, adjust the tracking immediately.
4.Linkage rod (A): Regular pitch trim (For large variations). Linkage rod (C): Slight pitch trim (For slight variations).

1.調整前先在其中一支主旋翼的翼端，貼上有顏色的貼紙或畫上顏色記號，方便雙槳調整辨識。
2.慢慢的推起油門搖桿到高點並且停止，在飛機離開地面前，從飛機側邊觀察主旋翼轉動。
3.仔細觀察旋翼軌跡(假如兩支旋翼移動都是相同軌跡，則不需要調整；可是如果一支旋翼較高或較低產生“雙槳”的情形時，則必須立刻調整軌跡)。
4.連桿(A)為一般螺距調整(雙槳翼大時使用)。連桿(C)為螺距微調調整(雙槳微幅差異時使用)。

A.When rotating, the blade with higher path means the pitch too big. Please shorten pitch linkage rod (C) for slight trim.
B.When rotating, the blade with lower path means the pitch too small. Please shorten pitch linkage rod (C) for slight trim.

A.旋翼轉動時較高軌跡的主旋翼表示螺距(PITCH)過大，請調短連桿(C)修正。
B.旋翼轉動時較低軌跡的主旋翼表示螺距(PITCH)過小，請調長連桿(C)修正。

CAUTION 注 意

Incorrect tracking may cause vibrations. Please repeat adjusting the tracking to make sure the rotor is correctly aligned. After tracking adjustment, please check the pitch angle is approx. 5° when hovering.
不正確的旋翼軌跡會導致震動，請不斷重複調整軌跡，使旋翼軌跡精準正確。
在調整軌跡後，確認一下Pitch角度在停旋時應為大約5°。

FLIGHT ADJUSTMENT AND NOTICE FOR BEGINNERS 初學飛行調整與注意

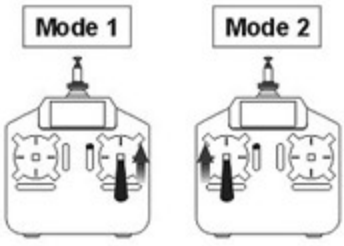
CAUTION 注 意

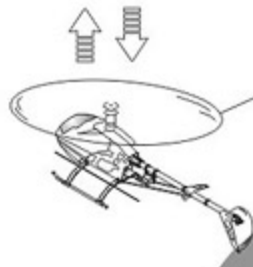
◎Make sure that no one or obstructions in the vicinity.
◎You must first practice hovering for flying safety. This is a basic flight action. (Hovering means keeping the helicopter in mid air in a fixed position)
◎確認鄰近地區沒有人和障礙物。
◎為了飛行安全，你必須先練習停旋，這是飛行動作的基礎(停旋:直昇機滯留空中並保持固定位置)。

◎Please stand approximately 10m diagonally behind the helicopter.
◎練習時，請站在直昇機後方10公尺。

Beginner may install a training landing gear to avoid any crash caused by offset effect while landing.
必要時初學者可以在腳架下方安裝練習架，可避免降落時因重心偏移導致主旋翼或直昇機損毀。

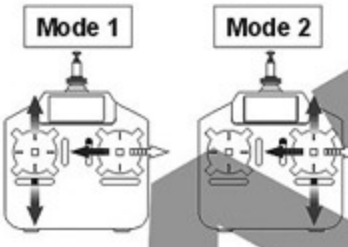
STEP 1 THROTTLE CONTROL PRACTICE 油門控制練習



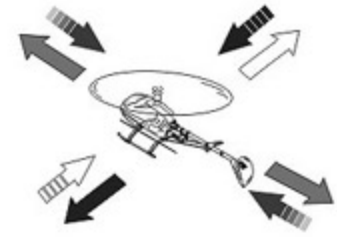


◎When the helicopter begins to lift-off the ground, slowly reduce the throttle to bring the helicopter back down. Keep practicing this action until you control the throttle smoothly.
◎當直昇機開始離地時，慢慢降低油門將飛機降下。持續練習飛機從地面上升和下降直到你覺得油門控制很順。

STEP 2 AILERON AND ELEVATOR CONTROL PRACTICE 副翼和升降控制練習



1.Raise the throttle stick slowly.
2.Move the helicopter in any direction back, forward, left and right, slowly move the aileron and elevator sticks in the opposite direction to fly back to its original position.
1.慢慢升起油門搖桿。
2.使直昇機依指示:移動向後/向前/向左/向右，慢慢的反向移動副翼和升降搖桿並將直昇機開回到原來位置。

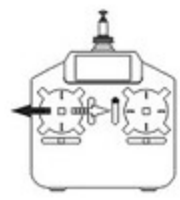


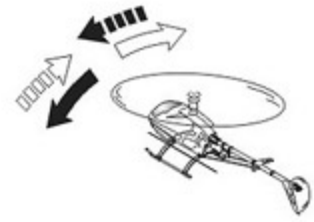
CAUTION 注 意

◎If the nose of the helicopter moves, please lower the throttle stick and land the helicopter. Then move your position diagonally behind the helicopter 10m and continue practicing.
◎If the helicopter flies too far away from you, please land the helicopter and move your position behind 10m and continue practicing.
◎當直昇機機頭偏移時，請降低油門並且降落，然後移動自己的位置到直昇機的正後方10公尺再繼續練習。
◎假如直昇機飛離你太遠，請先降落直昇機，並到直昇機後10公尺再繼續練習。

STEP 3 RUDDER CONTROL PRACTICING 方向舵操作練習

1.Slowly raise the throttle stick.
2.Move the nose of the helicopter to right or left, and then slowly move the rudder stick in the opposite direction to fly back to its original position.
1.慢慢升起油門搖桿。
2.將直昇機機頭移動左或右，然後慢慢反向移動方向舵搖桿並將直昇機飛回原本位置。





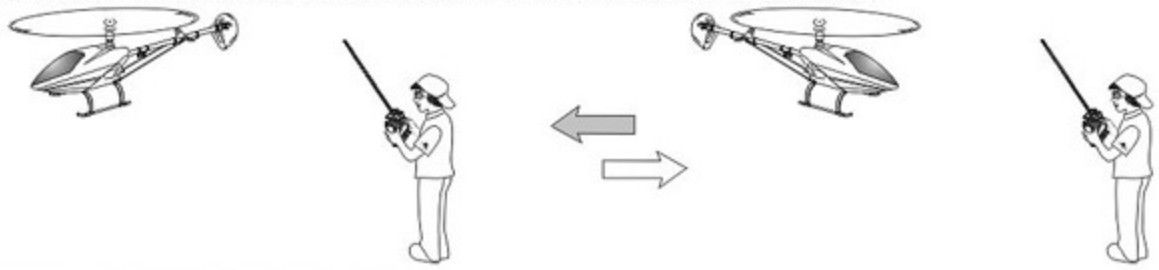
STEP 4

After you are familiar with all actions from Step1 to 3, draw a circle on the ground and practice within the circle to increase your accuracy.
當你覺得 step1-3 動作熟悉了，在地上畫圈圈並在這個圈圈的範圍內練習飛行，以增加你操控的準確度。

◎You can draw a smaller circle when you get more familiar with the actions.
◎當你更加習慣操作動作，你可以畫更小的圈圈。

STEP 5 DIRECTION CHANGE AND HOVERING PRACTICE 改變直昇機方向和練習停旋

After you are familiar with Step1 to 4, stand at side of the helicopter and continue practicing Step1 to 4.
Then repeat the Step1 to 4 by standing right in front of the helicopter.
當你覺得step1~4動作熟悉了，站在面對直昇機側邊並繼續練習step1~4。之後，站在直昇機機頭右邊重複步驟練習。

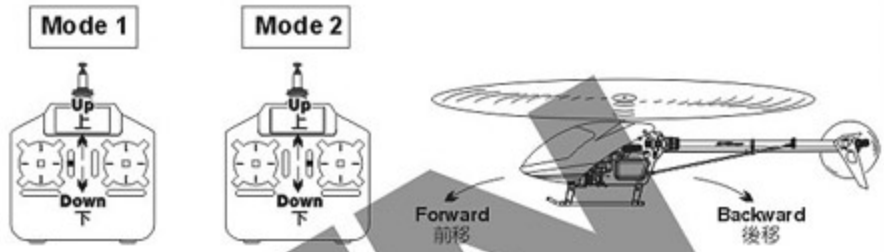


ADJUSTMENT OF EACH TRIM 飛行動作微調

Slowly raise the throttle stick and just as the helicopter lift-off the ground, you can use the trim to correct the action if the helicopter leans in a different direction.
慢慢升起油門搖桿，當直昇機剛剛離開地面時，若直昇機傾向不同方向，可使用微調修正動作。

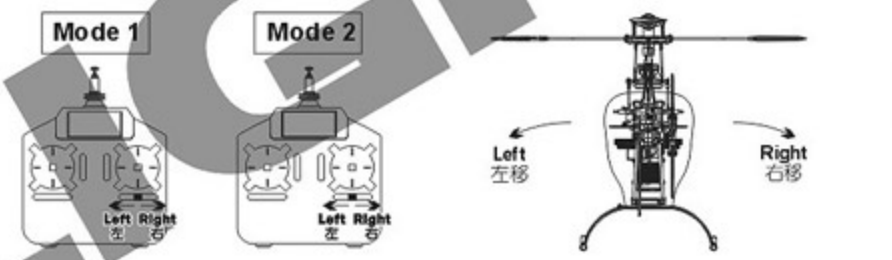
1.Adjustment of elevator trim 調整升降舵微調

Just before the helicopter lift-off, the nose lean forward/backward...
When leans forward, adjust the trim down.
When leans backward, adjust the trim up.
在直昇機正要起飛時，機頭朝前/後方向偏移...
向前偏移時，微調向下調整。
向後偏移時，微調向上調整。



2.Adjustment of Aileron trim 調整副翼微調

Just before the helicopter lift-off, the body lean left/right...
When leans right, adjust the trim to left side.
When leans left, adjust the trim to right side.
在直昇機正要起飛時，機身朝左/右方向偏移...
向右偏移時，微調向左調整。
向左偏移時，微調向右調整。



TROUBLE SHOOTING DURING FLIGHT 如何排除飛行中的狀況

	Situation 狀況	Cause 原因	Way to deal 對策
Blade Tracking 雙槳平衡	Out of tracking 雙槳	Adjustment of pitch rod has not been done. PITCH連桿長度調整不平均	Adjust the length of linkage rod(C)→Slight trim 調整連桿(C)長度→微調整
During Hovering 停旋	Low rotation of the rotor 主旋翼轉速偏低	★Pitch of main blade is high. ★主旋翼的PITCH偏高 ★Throttle curve is too low during hovering. ★停旋點油門曲線過低	★Lower the pitch about 4~5 during hovering(The rotation should be about 1,600rpm during hovering). ★調低Pitch停旋Pitch約4-5(停旋時主旋翼需為約1600RPM) ★Heighten the throttle curve during hovering. ★調高停旋點油門曲線
	High rotation of the rotor 主旋翼轉速偏高	★Pitch of main blade is low. ★主旋翼的PITCH偏低 ★Throttle curve is too high during hovering. ★停旋點油門曲線過高	★Adjust the pitch rod〈C〉(The rotation should be about 1,600rpm during hovering). ★調整連桿〈C〉(停旋時主旋翼需為約1600RPM) ★Lower the throttle curve during hovering. ★調低停旋點油門曲線
Sensitivity of the gyro 陀螺儀感度	The tail leans to one side during hovering, or when trim the rudder and return to the neutral, the tail lags and cannot stay in a control position. 停旋時尾翼向某一邊偏移，或搵動方向舵並回復到中立點時，尾翼產生延遲，無法停頓在所控制位置上。	★Failure setting of tail neutral point. ★尾中立點設定不當 ★The sensitivity of the gyro is low. ★陀螺儀敏感度偏低	★Reset tail neutral point. ★重設尾中立點 ★Increase the sensitivity. ★增加感度
	The tail wags left and right during flight at hovering or full speed. 停懸或全油門時尾翼左右來回快速搖擺。	The sensitivity of the gyro is high. 陀螺儀敏感度偏高	Decrease the sensitivity. 降低感度

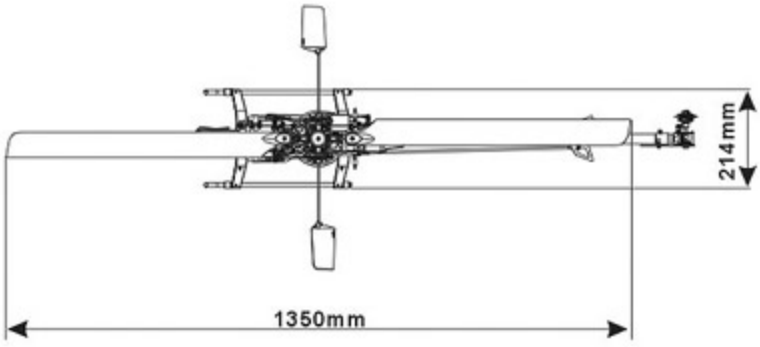
※If the problem is still there even after tried above, stop flying and contact with your seller.
※在做完以上調整後，仍然無法改善情況時，應立即停止飛行並連絡您的經銷商。

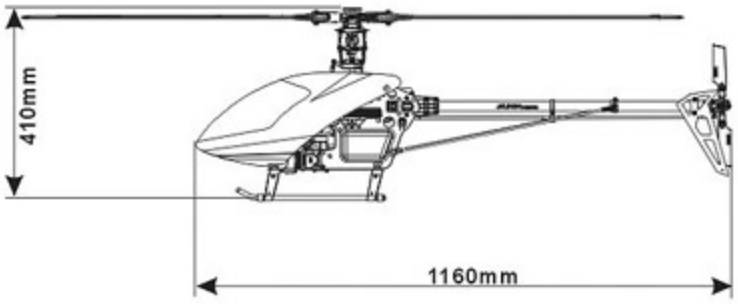
Note 備忘錄

ALIGN

Specifications & Equipment/規格配備:

Length/機身長: 1160mm
Height/機身高: 398mm
Main Blade Length/主旋翼長: 600mm
Main Rotor Diameter/主旋翼直徑: 1350mm
Tail Rotor Diameter/尾旋翼直徑: 240mm
Motor Pinion Gear/引擎主齒: 20T
Autorotation Tail Drive Gear/尾驅動主齒: 180T
Drive Gear Ratio/齒輪傳動比: 8.5:1:4.5(E:M:T)
Flying Weight/全配重: Approx. 3.2kg





亞拓電器股份有限公司
ALIGN CORPORATION LIMITED MADE IN TAIWAN

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