

ALIGN

EP-HELICOPTER T-REX 500CF

KX017001TA

INSTRUCTION MANUAL

使用說明書



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Thank you for buying ALIGN products. The T-REX 500 is the latest technology in Rotary RC models. Please read this manual carefully before assembling and flying the new T-REX 500 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

ALIGN

Thank you for buying ALIGN Products. The T-REX 500 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 500 is a new product developed by ALIGN. It features the best design available on the Micro-Heli market to date, providing flying stability for beginners, full aerobatic capability for advanced fliers, and unsurpassed reliability for customer support.

感謝您選購亞航產品，為了讓您容易方便的使用 T-REX 500 直升機，請於詳細的閱讀完這本說明書之後再進行組裝以及操作這台飛機。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 500 是亞航自行研發的新產品，不論您是追求飛行穩定性的初學者或是追求性能的飛行愛好者，T-REX 500 將是您最佳的選擇。

THE MEANING OF SYMBOLS 標誌代表意義

**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.
在任何禁止的場域下，請勿嘗試操作。

IMPORTANT NOTES 重要聲明

R/C helicopters, including the T-REX 500 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 500 遙控直升機並非玩具，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。注意任何遙控直升機的使用，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這類型直升機經驗的成人或有相當技術的人員在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型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 500 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 warranty 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.

模型商品屬於需要操作技術且易消耗性之商品，如組裝或使用後，會造成不尋常零件損耗，任何使用情狀所造成商品不良或不滿意，將無法於原條件內更換新品或退貨。如還有使用操作難題所誤，本公司全省分公司或代理商將提供技術指導，行務案件供應服務。

2. SAFETY NOTES 安全注意事項

ALIGN**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 a result of R/C aircraft models.

遙控模型飛機，因其屬高危險性商品，飛行時應遠離人群，人員組裝不當或損壞、電子控制設備不良，以及操作上的不熟悉，都有可能導致飛行失控墜落等不可預期的意外，請飛行者務必注意飛行安全，並需了解自身疏忽所造成任何意外之責任。

**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.

直升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，請遵守當地法規到合法場所飛行。必須注意周邊有沒有人、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的距離觀察飛行，遇到飛行失事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。

**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.

直升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見的意外！

**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，請使用原廠所已錄中的零件，以確保機體的安全，請依照於產品說明書內操作，請勿過載使用，並勿用於安全、法外其它非法用途。

**OBTAIN THE ASSISTANCE OF AN EXPERIENCED PILOT 必須親自操控**

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.)

在飛行場飛行前，請確認是否有相同頻率的同好正在進行飛行，因為開啓相同頻率的發射機將導致自己與他人立即下降等意外危險，適當的操控技巧在學習初期有重一定的難度，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，(電腦模擬操縱器及老手指導是入門必經的選擇)

**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受一定技術範圍內操作這台直升機，過於疲勞、精神不振或不當操作，意外發生風險將可能會提高。

**ALWAYS BE AWARE OF THE ROTATING BLADES 遠離運動中零件**

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.

當直升機主旋翼與尾旋翼運轉時，切勿觸摸並遠離任何零件，以避免造成危險及損壞。

**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 樹脂或聚乙稀、電子產品為主要材質，因此要盡量遠離熱源、日曬，以避免因高溫而變形或劣化損壞的可能。



3.EQUIPMENT REQUIRED FOR ASSEMBLY 自備設備

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



Transmitter
(6-channel or more, helicopter system)
秒錶級 (六道以上直升機專用系統)



Receiver (6-channel or more)
秒錶級 (六道以上)

Suitable Mini Servos:

適用的微型伺服器
DS3405
S9257
S9650
HS-5245MG
HS-82MG



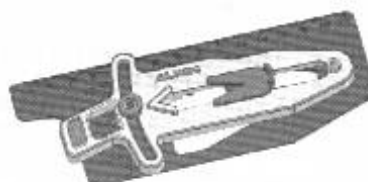
Mini Servo x 3pcs
小型伺服器 x 3



Head Lock Gyro x 1pc
頭鎖式陀螺儀 x 1



Tail Specialized Servo x 1pc
垂直舵機專用伺服器 x 1



Pitch Gauge x 1pc
斜距規 x 1



22.2V 6S 2100~2500mAh Li-Po Battery x 1pc
22.2V 6S 2100~2500mAh Li-Po電池 x 1

ADDITIONAL TOOLS REQUIRED FOR ASSEMBLY 自備工具



Scissors
剪刀



Cutter Knife
小刀



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



Phillips Screw Driver
十字螺絲起子
#3.0/1.8mm

4. SAFETY CHECK BEFORE FLYING 飛行前安全檢查重要事項

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CAREFULLY INSPECT BEFORE REAL FLIGHT 實戰飛行前請嚴格執行飛行前檢查要點

- ★ 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.
- ★ 每次飛行前請先確認所使用的頻率是否會干擾他人，以確保飛行安全。
- ★ 每次飛行前請先確認發射機與接收機電池的電量是在足夠飛行的狀態。
- ★ 開機前確認油门選擇是否位於最近點，熄火選擇離座，定速開關(IDLE)是否位於離座位置。
- ★ 開機時必須遵守電源開機程序，開機時先開發射機，再將接收機電源。開機時先關閉接收機後，再關閉發射機電源。不正確的開關程序可能會導致失控的現象，影響自身與他人的安全，請養成正確的習慣。
- ★ 停機時先確定機內各運動件是否靈活，旋力可否正確，並檢查各運動件是否有干涉或磨損的情形，使用故障的零件將會造成不可預期的危險。
- ★ 飛行前確認沒有缺少或鬆脫的螺絲與螺帽，檢查沒有損壞或不完整或損壞的零件，仔細檢查主旋翼是否有損壞，特別是接近主旋翼夾的部份，損壞或損壞不完整的零件不僅影響飛行，還會造成不可預期的危險。注意到損壞，有損壞零件更換及定期保養檢查的重要性。
- ★ 檢查所有的球桿關節是否有鬆動的現象，鬆動的球桿應先更新，否則將會造成失控無法控制的危險。
- ★ 確認電池及電源接頭是否固定可靠，飛行中的震動或激烈的飛行，可能造成電源接頭鬆動而造成失控的危險。

Standard Equipment 標準配備

					
500HC	500HH	500HB	500HT1	500HT2	500HT3
					
500HG	500HZ	Motor Pinion Gear x 2pcs 12T x 1 3T x 1 M4x6 Self-Screw x1	500L 160SKV Brushless motor x1 500L 160SKV 無刷馬達 x1	RCM-BLA00 Brushless ESC x1 RCM-BLA00 無刷電子速度機 x1	425 CF Blade x1 425 碳纖維主旋翼 x1

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

標有下記圖之組裝步驟，請配合上圖式上油，以確保使用之可讀度。



- 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: 使用無氧膠固定
- T43: 使用鎖線膠
- OIL: 添油潤滑

When assembling ball links, make sure the "A" character faces outside.

組裝球桿關節時，A字朝外。



Grease
潤滑油



R48
無氧膠



T43
鎖線膠



CA
瞬間膠



Self-furnished
自備潤滑油



T43 Glue width: approx. 1mm
T43 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 金屬管狀黏合劑(例如：軸承)，T43 鎖線膠，塗抹少量於螺絲或金屬零件上，並擦去多餘部分。拆卸時，建議將金屬接合處加熱約15秒。(注意：塑膠零件應遠離熱源。)

5.ASSEMBLY SECTION 組裝說明

ALIGN

500HH3A



M3 collar screw
K3雙層軸套螺絲(M3x9.7mm) x 2

M3 collar screw
K3雙層軸套螺絲
M3x9.7mm

Metal main rotor housing
金屬主旋翼固定座

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

Bearing MR74ZZ
MR74ZZ軸承
φ4xφ7x2.5mm
Already assembled by Factory.
已組裝完成

Bearing MR74ZZ
MR74ZZ軸承
φ4xφ7x2.5mm
Already assembled by Factory.
已組裝完成

Pin
定位插梢
φ2x28mm

M3 collar screw
K3雙層軸套螺絲
M3x9.7mm

Flybar seesaw holder
平衡桿固定座

CAUTION 注意

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

For original manufactory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.
原廠零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。

500HH3

Socket screw
圓頭內六角螺絲(M2x5mm) x 4

M3 Set screw
K3止洩螺絲(M3x4mm) x 2

500HH3A

Linkage ball A(T2.6x3.5)
球頭A(T2.6x3.5) (φ4.75x8.18mm) x 2

Linkage ball B(T2.6x5.5)
球頭B(T2.6x5.5) (φ4.75x12.27mm) x 2

Socket button head self tapping screw
半圓頭內六角自攻螺絲(T3x12mm) x 2

Washer
華司(φ3xφ4.8x0.3mm) x 4

500 Linkage rod(B)
500連桿(B) φ1.96x10mm x 2

Ball link
連桿頭 x 4

Flybar rod
平衡桿桿
φ3x340mm

Linkage rod (B)
連桿(B)

Bearing MR83ZZ
MR83ZZ軸承
φ3xφ6x2.5mm
Already assembled by Factory.
已組裝完成

Washer
華司
φ3xφ4.8x0.3mm

Linkage ball A(T2.6x3.5)
球頭A(T2.6x3.5)
φ4.75x8.18mm

Bearing MR63ZZ
MR63ZZ軸承
φ3xφ6x2.5mm
Already assembled by Factory.
已組裝完成

Metal flybar control arm
金屬平衡桿控制臂

M3 Set screw
K3止洩螺絲
M3x4mm

Flybar control rod
平衡桿控制桿
φ4.3x74.2mm

Linkage ball B(T2.6x5.5)
球頭B(T2.6x5.5)
φ4.75x12.27mm

Linkage rod (B)
連桿(B)約29mm x 2

Linkage rod (B)
連桿(B)約29mm x 2

Collar
離臂軸承隔套
φ3xφ4.5x1mm
Already assembled by Factory.
已組裝完成

SF Mixing arm
SF控制搖臂

Washer
華司
φ3xφ4.8x0.3mm

Socket button head self tapping screw
半圓頭內六角自攻螺絲
T3x12mm

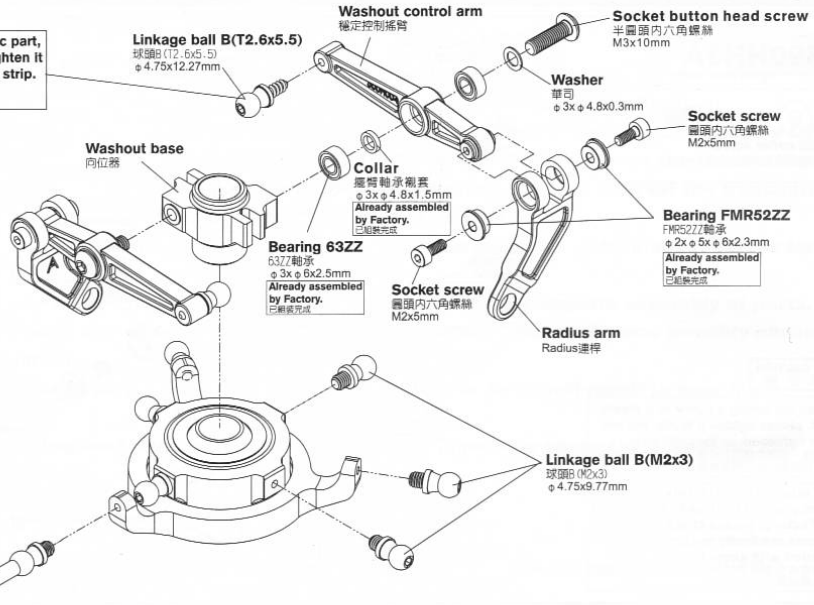
Socket screw
圓頭內六角螺絲
M2x5mm



When tightening a linkage ball to a plastic part, please note to use a little CA glue and tighten it firmly, but not over tightened, or they will strip.
球頭鎖入塑膠件時務必注意，使用少量CA膠並適當扭力鎖緊即可，而過緊的扭力可能會導致滑牙。

For original manufactory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.
原廠零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。

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



500HH4A



500HZ2

500 Linkage rod (C)
500連桿 (C) φ 1.96x31mm x 2

500HZ2A



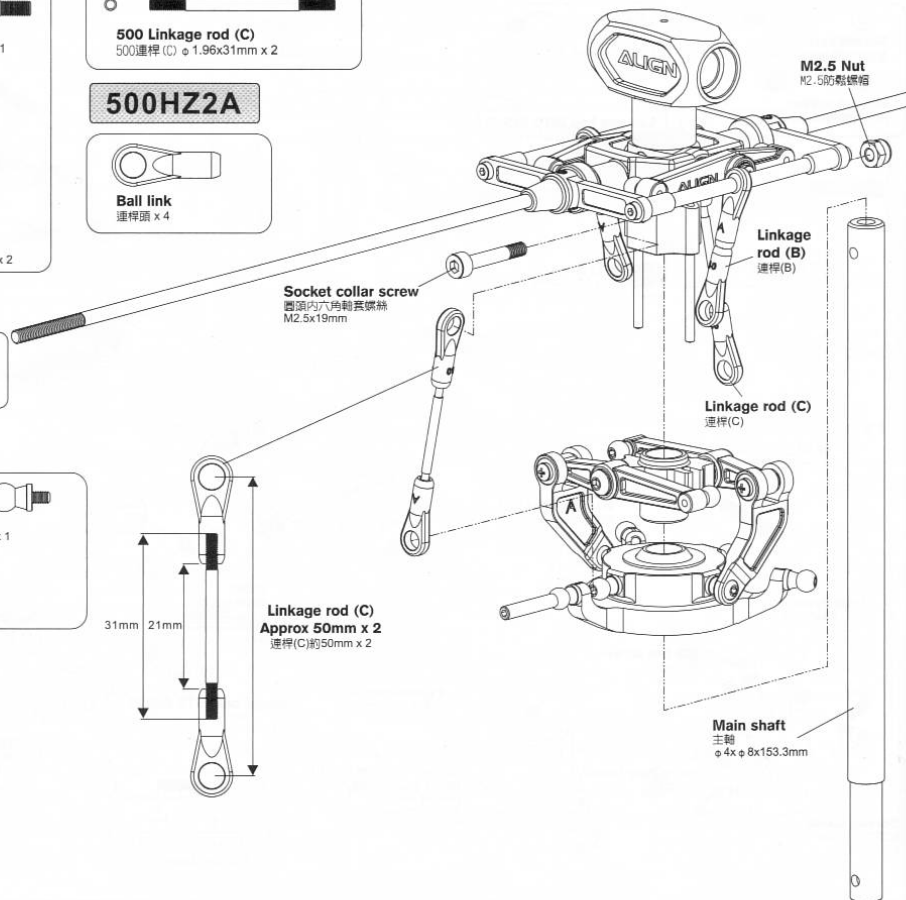
500HH4



500HH5



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



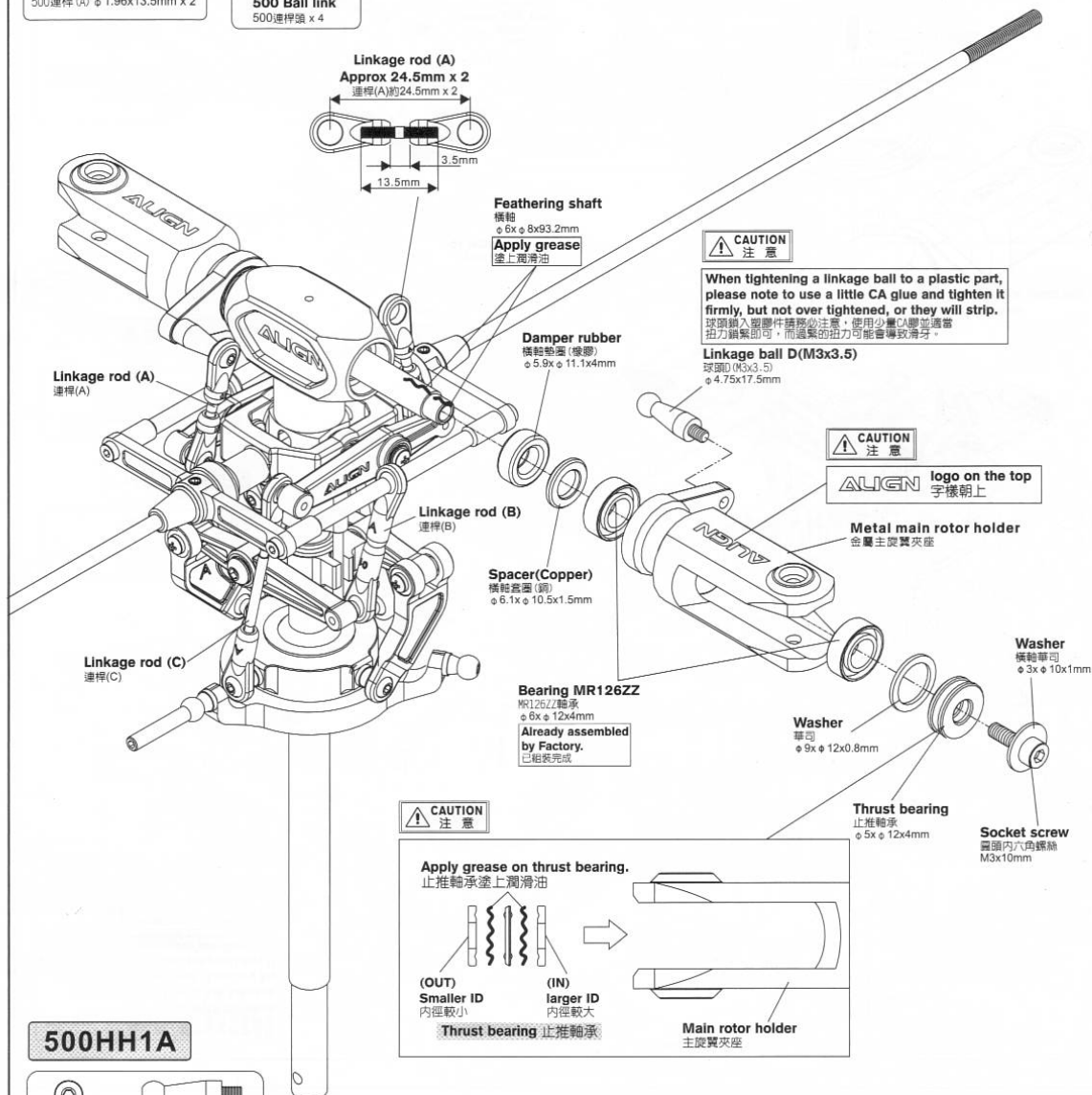
500HZ2

500HZ2A

500 Linkage rod (A)
500連桿(A) $\phi 1.96 \times 13.5 \text{mm} \times 2$

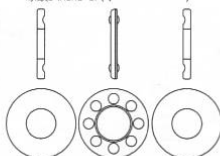
500 Ball link
500連桿球 $\times 4$

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。

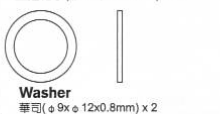


500HH1A

Linkage ball D (M3x3.5)
球頭 (M3x3.5) ($\phi 4.75 \times 17.5 \text{mm}$) $\times 2$



Thrust bearing
止推軸承 ($\phi 5 \times 12 \times 4 \text{mm}$) $\times 2$



Washer
華司 ($\phi 9 \times 12 \times 0.8 \text{mm}$) $\times 2$

500HH2

Socket screw
圓頭內六角螺絲 (M3x10mm) $\times 2$



Washer
橫軸華司 ($\phi 3 \times 10 \times 1 \text{mm}$) $\times 2$

500HH2A

Dampener rubber
橫軸墊圈 ($\phi 5.9 \times 11.1 \times 4 \text{mm}$) $\times 2$



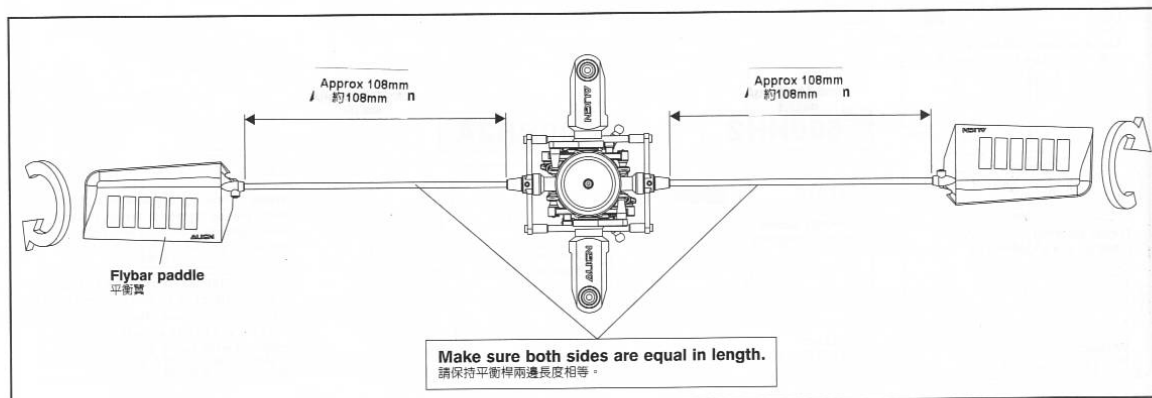
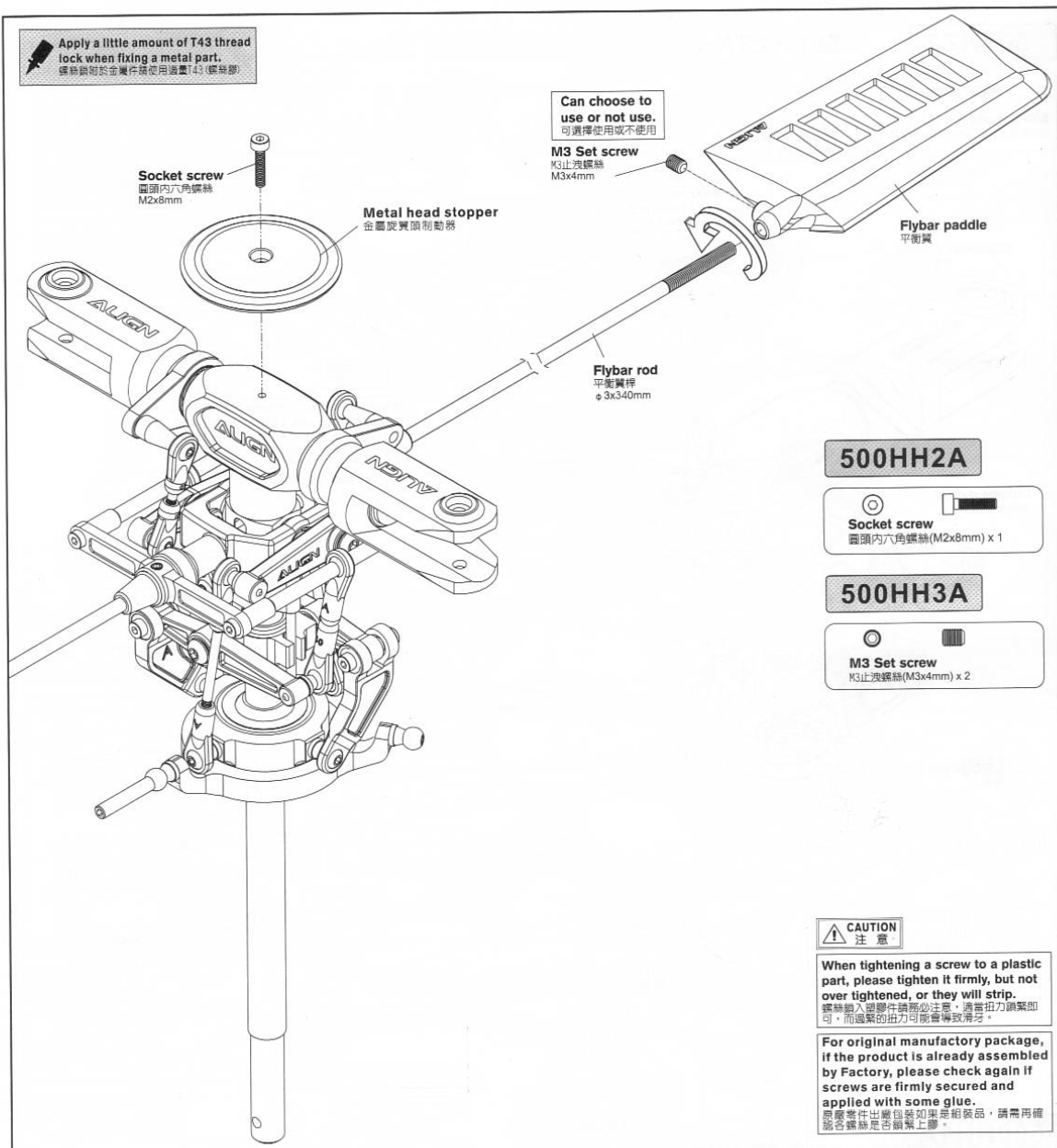
Spacer
橫軸套圈 ($\phi 6.1 \times 10.5 \times 1.5 \text{mm}$) $\times 2$

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。

For original manufactory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.
原廠零件出廠包裝如果是組裝品，請需再確認各螺絲是否已鎖緊上膠。

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖固於金屬件時使用適量T43(鐵弗龍)



500HB1A



Bearing MR688ZZ
MR688ZZ軸承(φ8xφ16x5mm) x 2

500HB1B

Socket button head self tapping screw
半圓頭內六角自攻螺絲(T2.6x8mm) x 2

Socket button head self tapping screw
半圓頭內六角自攻螺絲(T2.6x10mm) x 6

Socket button head screw
半圓頭內六角螺絲(M2.5x10mm) x 8

Socket button head screw
半圓頭內六角螺絲(M3x6mm) x 4

M2.5 Specialty washer
M2.5特殊華司(φ2.5xφ6x2mm) x 14

Socket button head screw
半圓頭內六角螺絲(M2.5x10mm) x 8

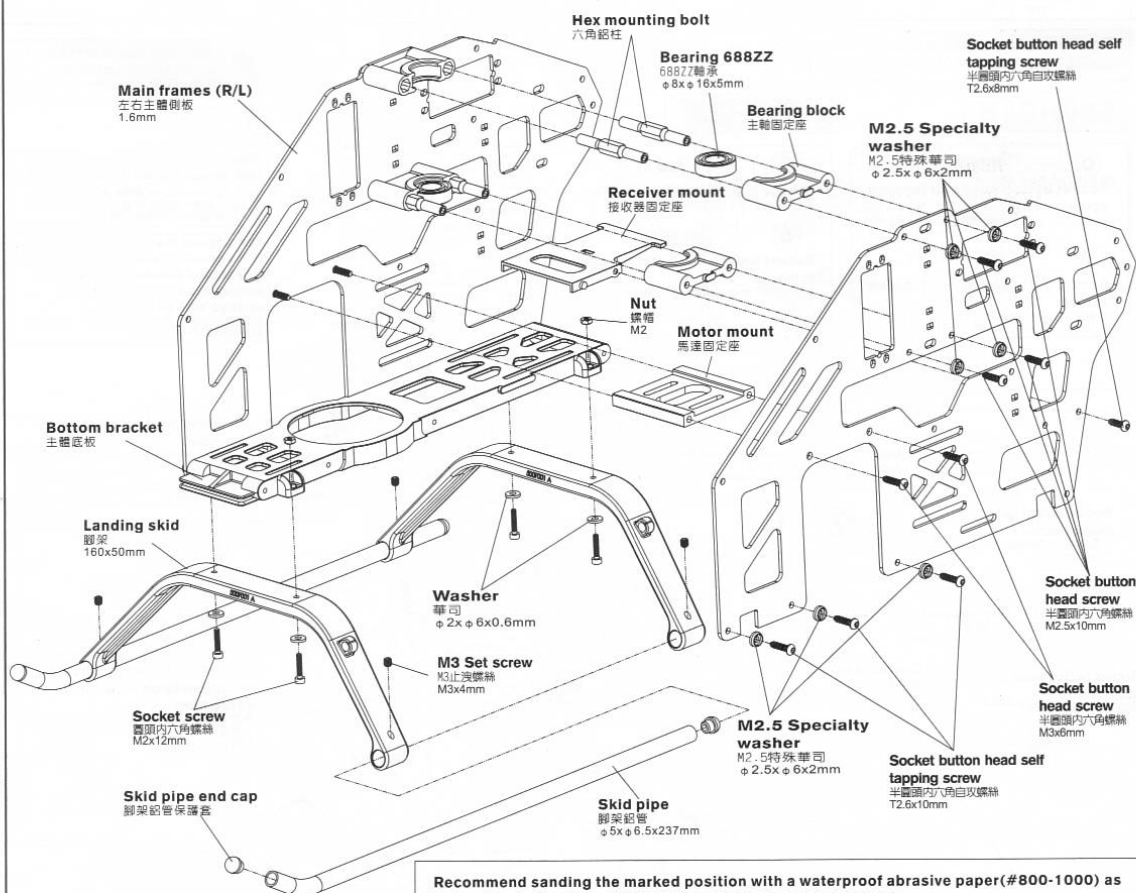
500HG1

Socket screw
圓頭內六角螺絲(M2x12mm) x 4

M3 Set screw
M3止鎖螺絲(M3x4mm) x 4

Washer
華司(φ2xφ6x0.6mm) x 4

M2 Nut
M2螺帽 x 4



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

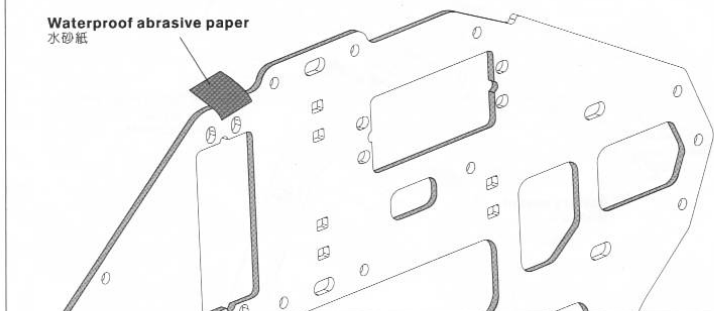
Waterproof abrasive paper
水砂紙



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

For original factory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.
原廠零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。

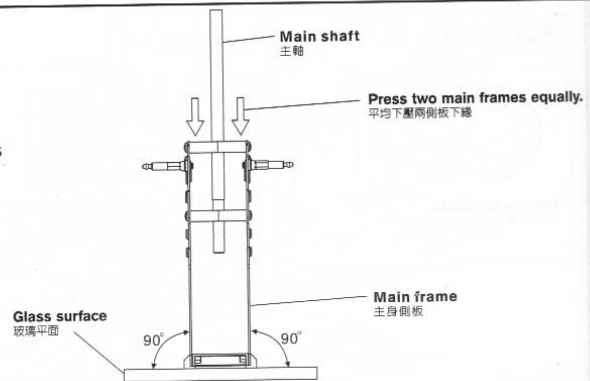
Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖緊於金屬件時使用適量T43螺絲膠。



Main frame assembly point:

First do not fully tighten the screws of main frames. Put the main shaft through the two bearings and check if the movements (up/down) 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. A correct 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, 放入主軸貫穿二顆軸承確認上下移動必需滑順, 主體底板必須與水平桌面(玻璃平面)踏實緊貼; 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。



Servo installation (DS3405/S9257/S9650) 伺服器安裝說明(DS3405/S9257/S9650)

500HB1B

- Socket button head self tapping screw
半圓頭內六角自攻螺絲(T2.6x8mm) x 2
- Socket button head self tapping screw
半圓頭內六角自攻螺絲(T2.6x12mm) x 2

500HZ3

- Linkage ball A(M2x4)
球頭A (M2x4) (φ 4.75x8.68mm) x 3
- Socket button head self tapping screw
半圓頭內六角自攻螺絲(T2.6x10mm) x 12
- M2 Nut
M2螺帽 x 3
- Washer
華司(φ 2.6x φ 5.8x0.6mm) x 12

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件時使用適量T43(鎖緊膠)。

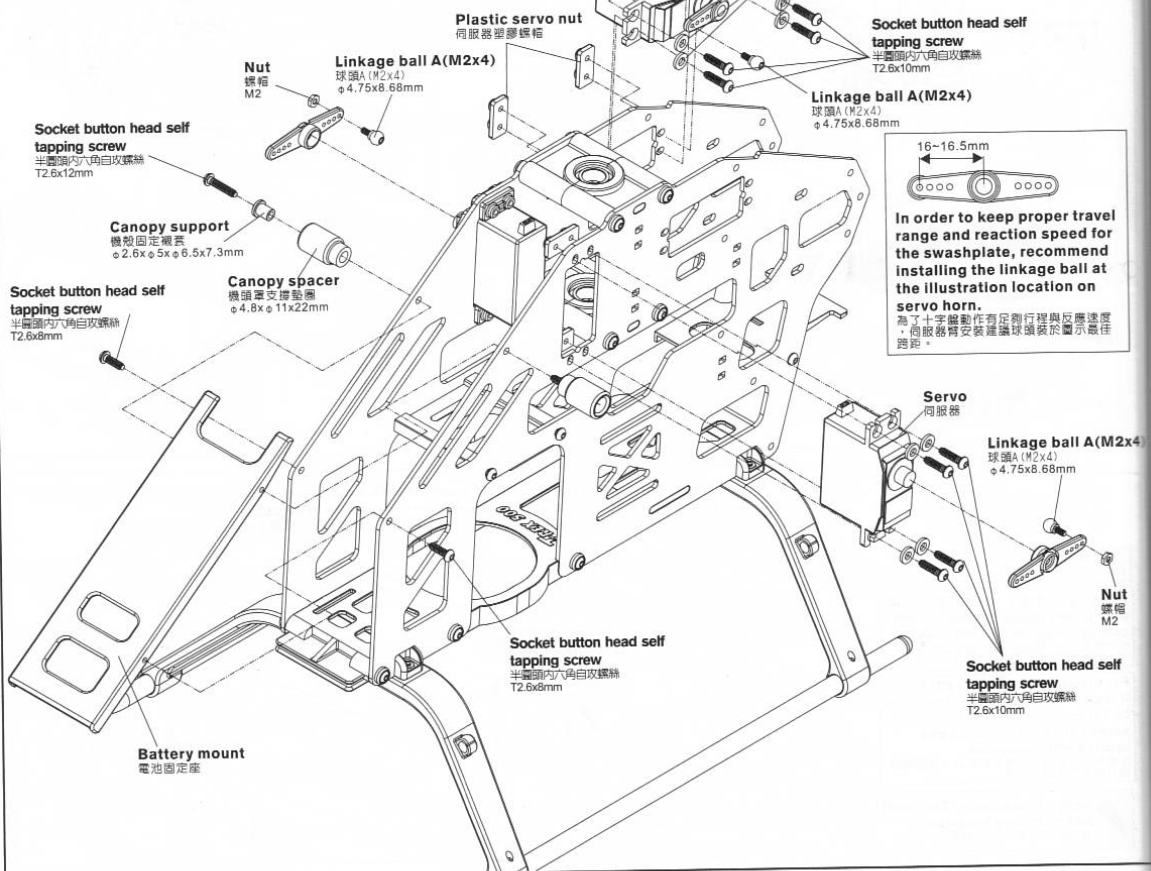
CAUTION 注意

When tightening a screw to a plastic part, please tighten it firmly, but not over tightened, or they will strip.

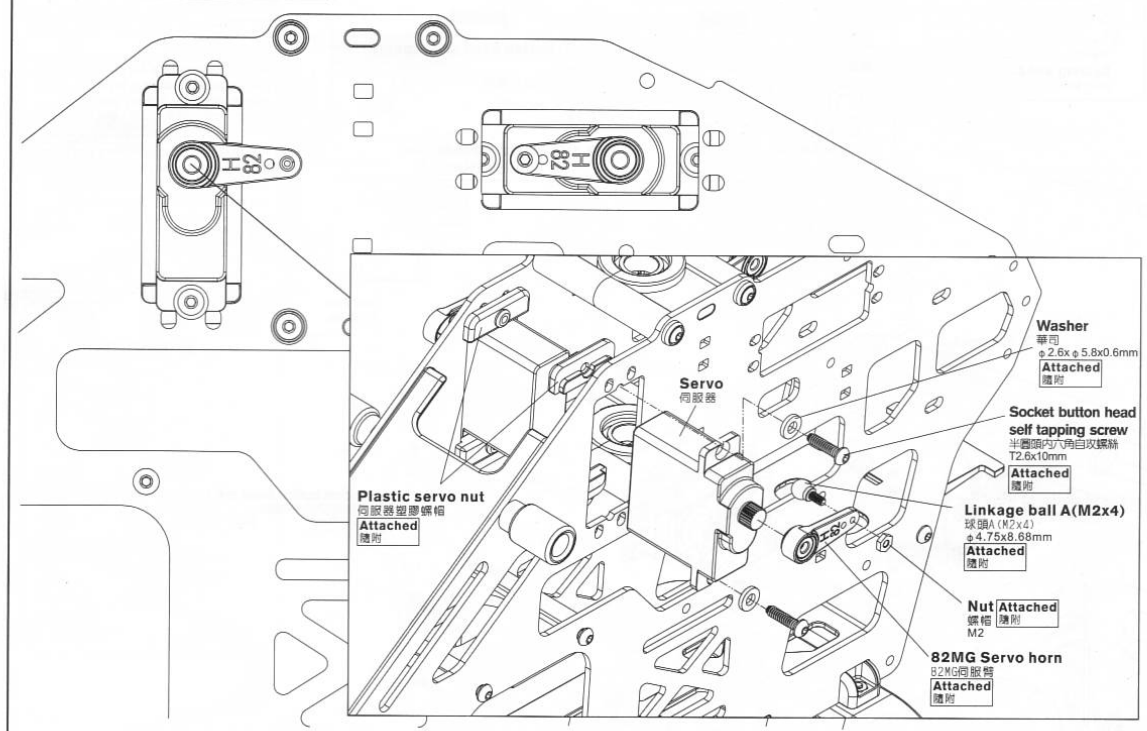
螺絲鎖入塑膠件時務必注意, 適當扭力鎖緊即可, 而過緊的扭力可能會導致滑牙。

For original manufactory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.

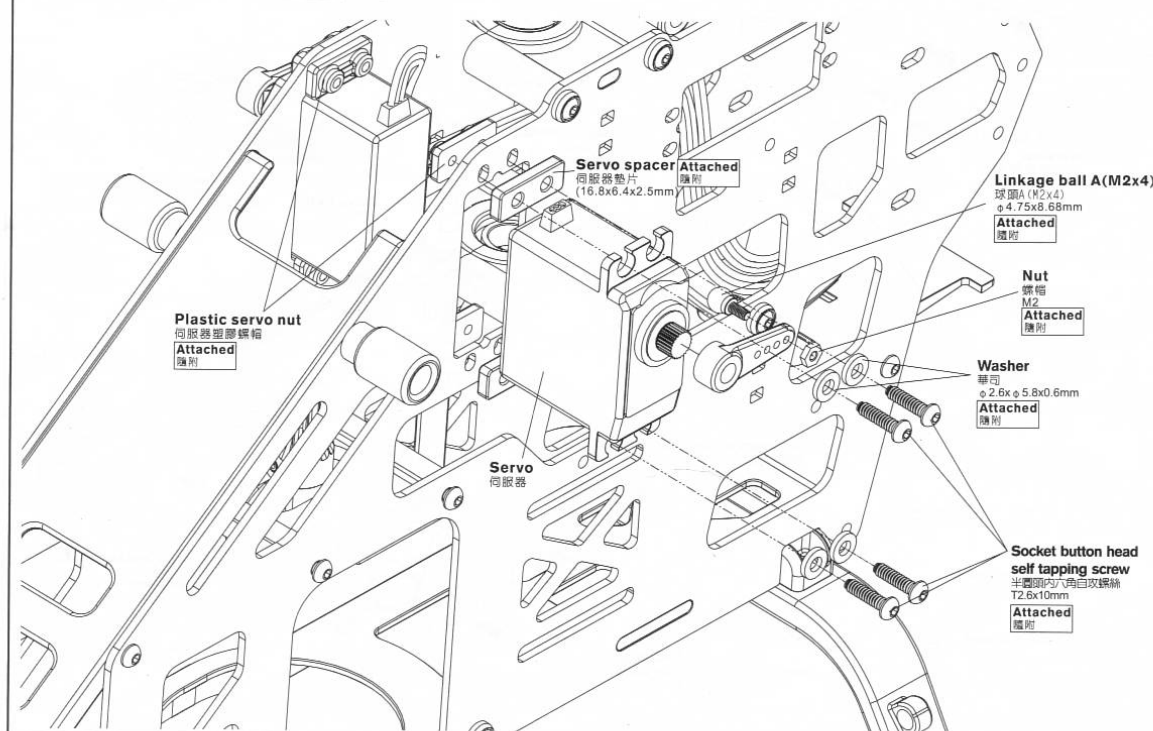
原廠零件出廠包裝如果是組裝品, 請再確認各螺絲是否鎖緊上膠。



Servo installation (HS-82MG)
伺服器安裝說明(HS-82MG)



Servo installation (HS-5245MG)
伺服器安裝說明(HS-5245MG)



500HT1



Bearing 684ZZ
684ZZ軸承 (φ 4x φ 9x4mm) x 2

500HT1A



Socket screw
圓頭內六角螺絲 (M3x10mm) x 2



M3 Nut
M3防鬆螺帽 x 2



Socket button head self tapping screw
半圓頭內六角自攻螺絲 (T2.6x10mm) x 8



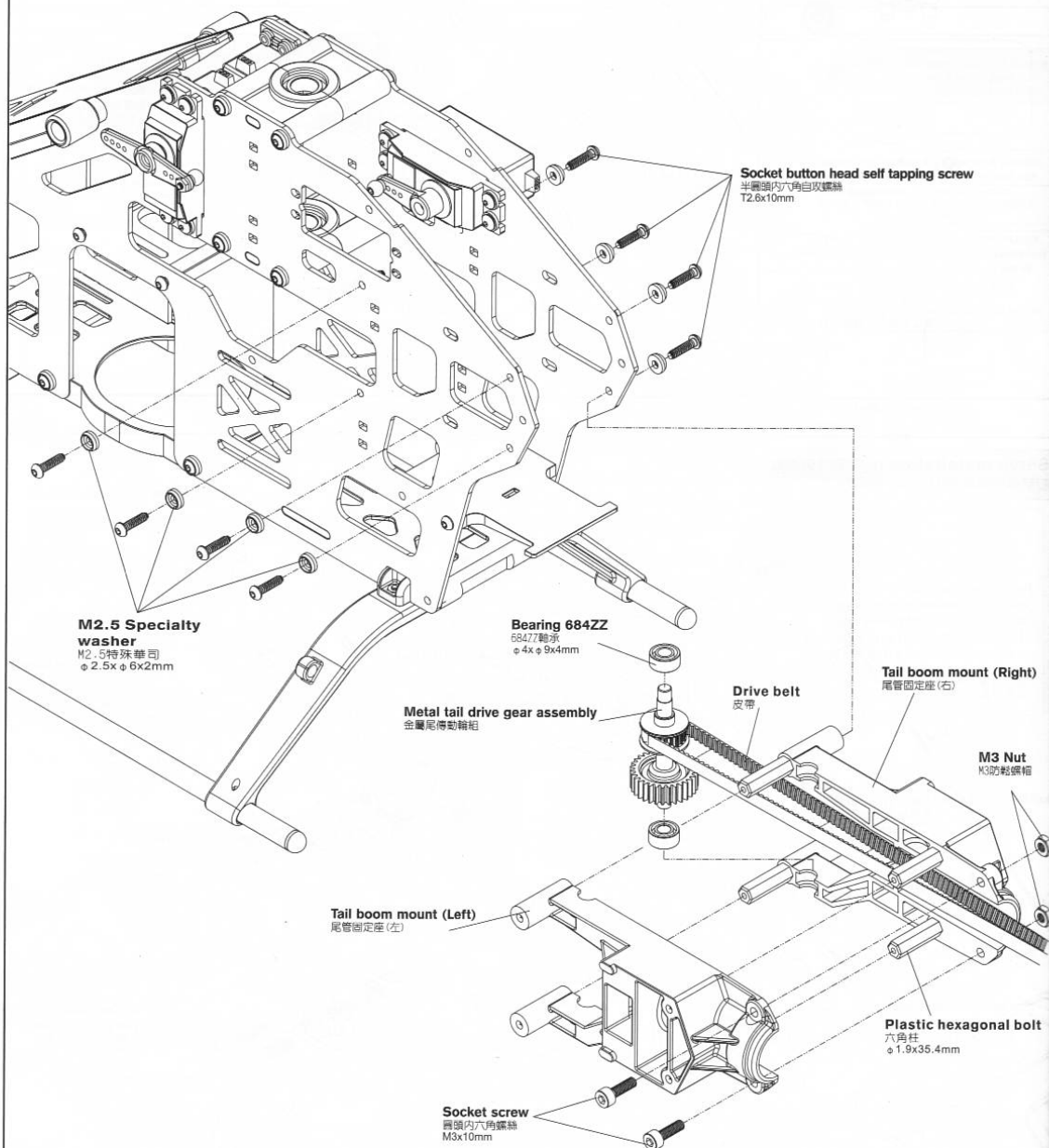
M2.5 Specialty washer
M2.5特殊華司 (φ 2.5x φ 6x2mm) x 8

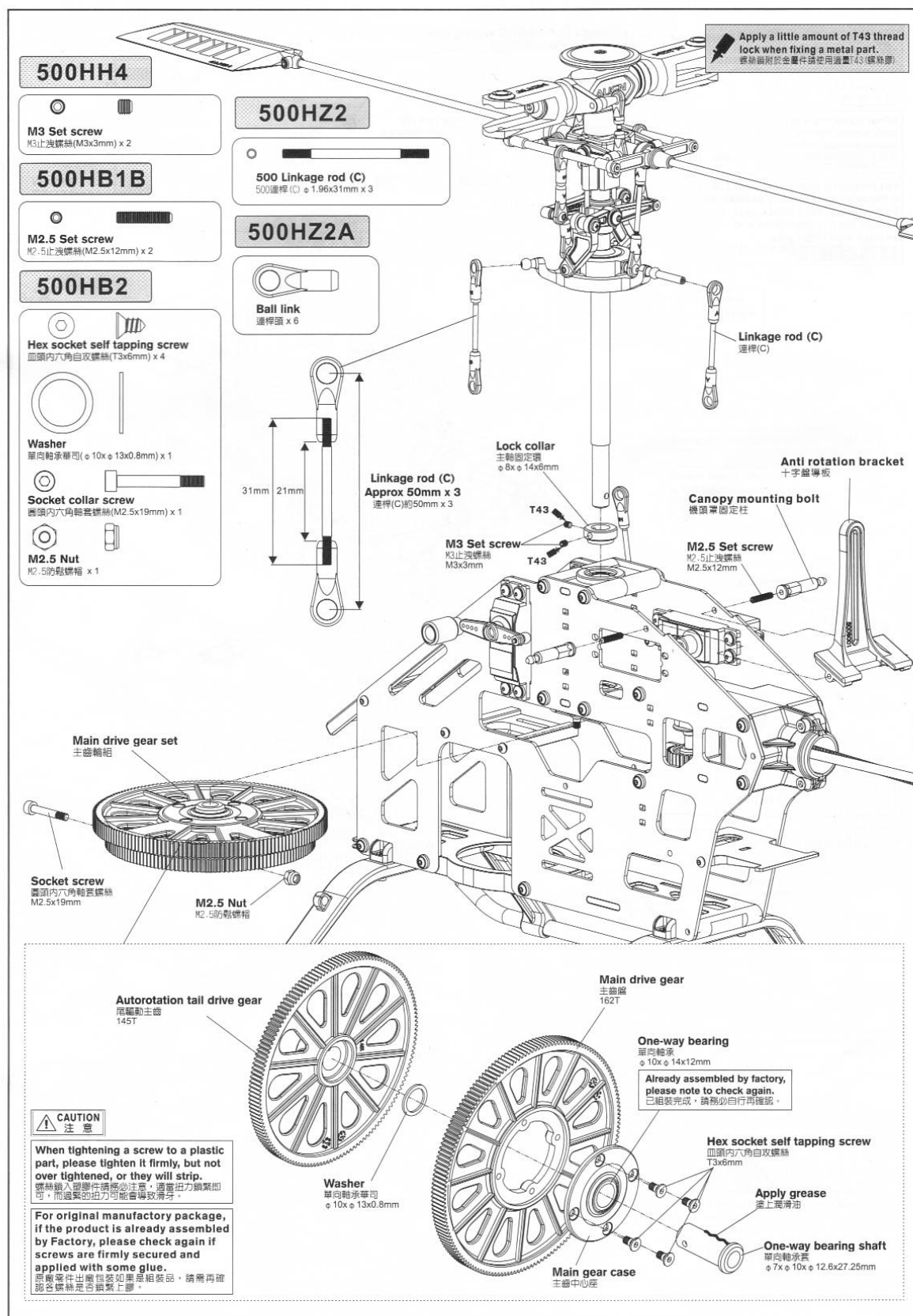
Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件時使用適量T43(螺絲膠)

CAUTION 注意

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

For original manufactory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.
原廠零件包裝盒內如果是組裝品，請再確認各螺絲是否鎖緊上膠。





Apply a little amount of T43 thread lock when fixing a metal part.
 螺絲鎖附於金屬件時使用適量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.
 螺絲鎖入塑膠件時務必注意，適當扭力鎖緊即可，而過緊的扭力可能會導致滑牙。

For original manufactory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.
 原廠零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。

Linkage rods A/B/C sizing and quantity reference chart
 A/B/C連桿尺寸與數量對照圖



500 Linkage rod (A)
 500連桿 (A) $\phi 1.96 \times 13.5 \text{ mm} \times 2$



Ball link
 連桿頭 $\times 14$



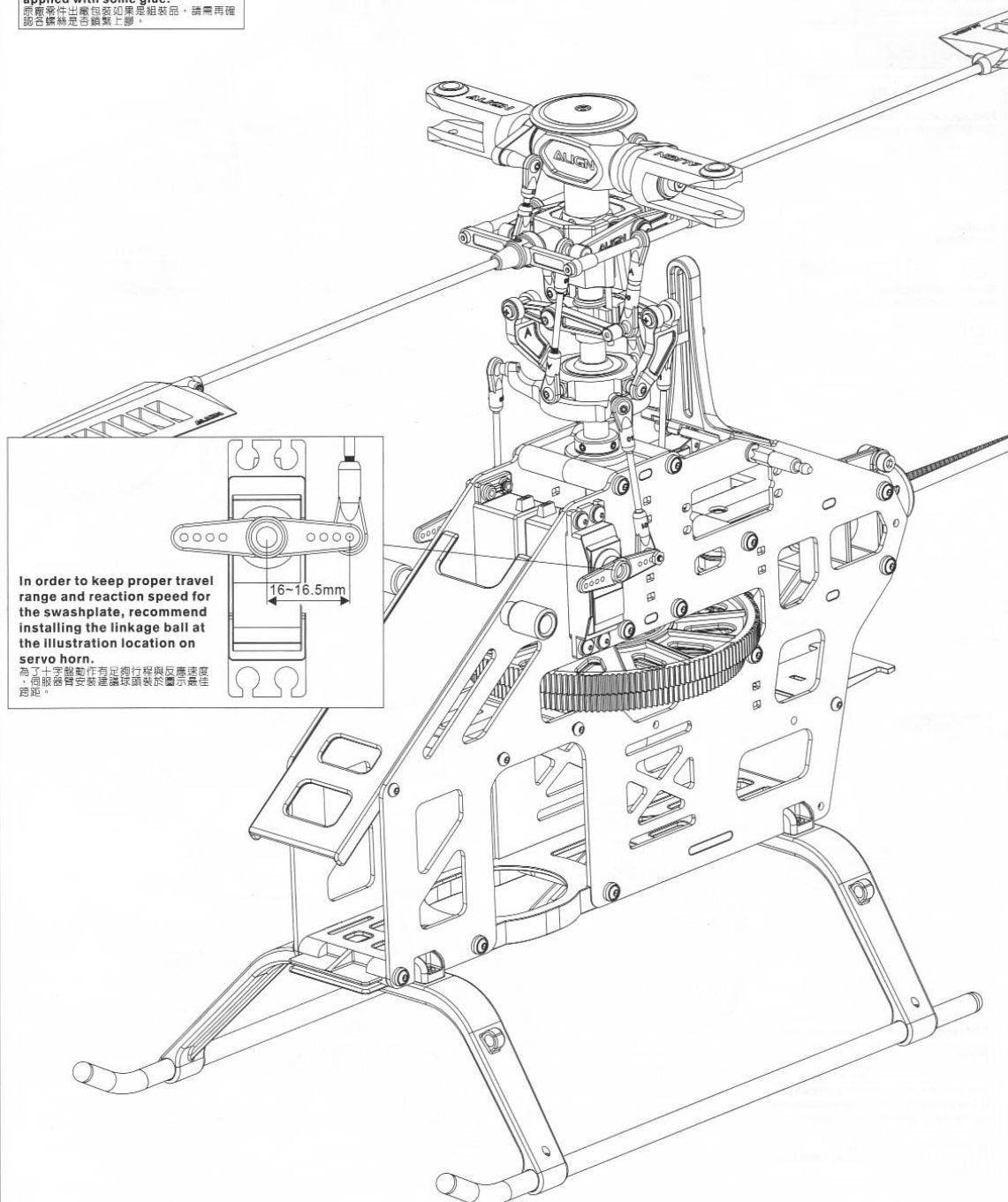
500 Linkage rod (B)
 500連桿 (B) $\phi 1.96 \times 10 \text{ mm} \times 2$



500 Ball link
 500連桿頭 $\times 4$



500 Linkage rod (C)
 500連桿 (C) $\phi 1.96 \times 31 \text{ mm} \times 5$



In order to keep proper travel range and reaction speed for the swashplate, recommend installing the linkage ball at the illustration location on servo horn.

為了保持適當的行程範圍和反應速度，建議將連桿球安裝在圖示位置。

16~16.5mm

500HT3B

Socket button head self tapping screw
半圓頭內六角自攻螺絲(T2.6x10mm) x 2

Washer
華司(φ 2.6xφ 5.8x0.6mm) x 2

Washer
華司
φ 2.6xφ 5.8x0.6mm

Rudder servo mount
尾向舵機固定座

500HT3

Tail control guide
尾控制桿固定環

After assembling the tail boom, please check if it is firmly tighten.
裝入尾管後請確實上緊。

CAUTION
注意

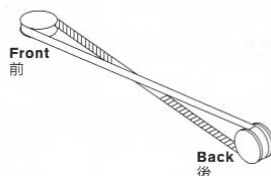
Aim the opening of tail boom at the convex of the case and insert.
瞄準尾管上的凹槽和尾座凸出，並插入。

Please insert the opening of tail boom into the convex.
尾管缺口方向裝入時，請導入導尾管座卡槽內。

Tail boom
尾管
φ 15xφ 16x461mm

CAUTION
注意

Drive belt illustration 尾傳動皮帶裝配圖示



1. Check to rotate the belt 90 degrees when assembling.
2. Belt tension: Recommend to lightly tighten the drive belt after assembling tail boom to avoid vibration, belt friction and rotation slip.

1. 組裝時確認皮帶順轉90°。
2. 皮帶緊度：建議尾管組裝後皮帶請稍微拉緊，避免震動皮帶摩擦或轉動打滑。

Approx 151mm
約151mm

Approx 165mm
約165mm

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 (鎖絲膠)

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。

For original manufactory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.
原廠零件出廠包裝如果是組裝品，請需再確認各螺絲是否鎖緊上膠。

500HT2A



500HT2DA



Apply a little amount of T43 thread lock when fixing a metal part.
鎖緊時於金屬件請使用適量T43 膠絲膠。



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。

For original factory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.
原廠零件出廠包裝如果原裝組裝，請再確認各螺絲是否鎖緊上膠。

Socket button head screw
半圓頭內六角螺絲 (M2.5x20mm)

Washer
華司 (φ2.6xφ5.8x0.6mm)

Socket screw
圓頭內六角螺絲 (M2.5x10mm)

3K CF Vertical stabilizer
3K軟軸垂直翼

Tail case (R)
尾殼軸座 (右)

M2.5 Nut
M2.5防鬆螺帽

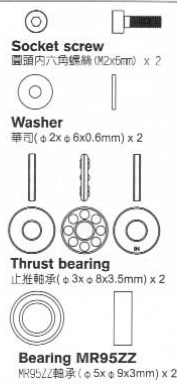
Bearing 684ZZ
684ZZ軸承 (φ4xφ9x4mm)

Metal tail rotor shaft assembly
金屬尾旋翼主軸組



Before/After assembling, please double check to avoid the drive belt bent or scraped to reduce the damage risk.
組裝前與後請檢查避免折彎或刮傷皮帶以造成損壞風險。

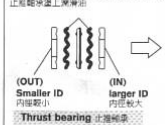
500HT2B



500HT2C



Apply grease on thrust bearing.
止推軸承塗上潤滑脂。



Washer
華司 (φ2xφ6x0.6mm)

Thrust bearing
止推軸承 (φ3xφ8x3.5mm)

Tail rotor holder
尾旋翼夾座

Bearing MR95ZZ
MR95ZZ軸承 (φ5xφ9x3mm)

Tail rotor hub
尾旋翼「金座」 (φ10x39.6mm)

Bearing MR106ZZ
MR106ZZ軸承 (φ6xφ10x2.5mm)

Bearing holder
尾旋翼控制組軸承蓋座

Collar
尾控制組軸承座鋁圈墊 (φ6xφ7.4x2mm)

Bearing MR106ZZ
MR106ZZ軸承 (φ6xφ10x2.5mm)

Slide shaft
尾軸滑套 (φ4xφ7x15.2mm)

Linkage ball A (T2.6x3.5)
球頭A (T2.6x3.5) (φ4.75x8.18mm)

Collar B
尾連桿頭鎖套B (φ2xφ3x3mm)

Control link
尾控制連桿頭

Collar A
尾連桿頭鎖套A (φ2xφ3x4mm)

Collar screw
軸套螺絲 (M2x8mm)

500HT2B

Socket collar screw
圓頭內六角軸套螺絲(M3x16mm) x 2

M3 Nut
M3防鬆螺帽 x 2

M4 Set screw
M4止波螺絲(M4x3mm) x 1

600NT2C

Linkage ball A(T2.6x3.5)
球頭A(T2.6x3.5) (φ4.75x8.18mm) x 1

Socket collar screw
圓頭內六角軸套螺絲(M3x15mm) x 1

Washer
華司(φ3xφ4.8x0.3mm) x 2

CAUTION
注意

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型座筒準確地與軸的凹刻並鎖上，請確認止波螺絲上膠。

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

Tail pitch assembly
尾旋翼控制組

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

Tail rotor control arm
尾旋翼控制臂

Washer
華司
φ3xφ4.8x0.3mm

Socket collar screw
圓頭內六角軸套螺絲
M3x15mm

CAUTION
注意

When tightening a linkage ball to a plastic part, please note to use a little CA glue and tighten it firmly, but not over tightened, or they will strip.
球頭鎖入塑膠件時務必注意，使用少量CA膠並適當扭力鎖緊即可，而過緊的扭力可能會導致滑牙。

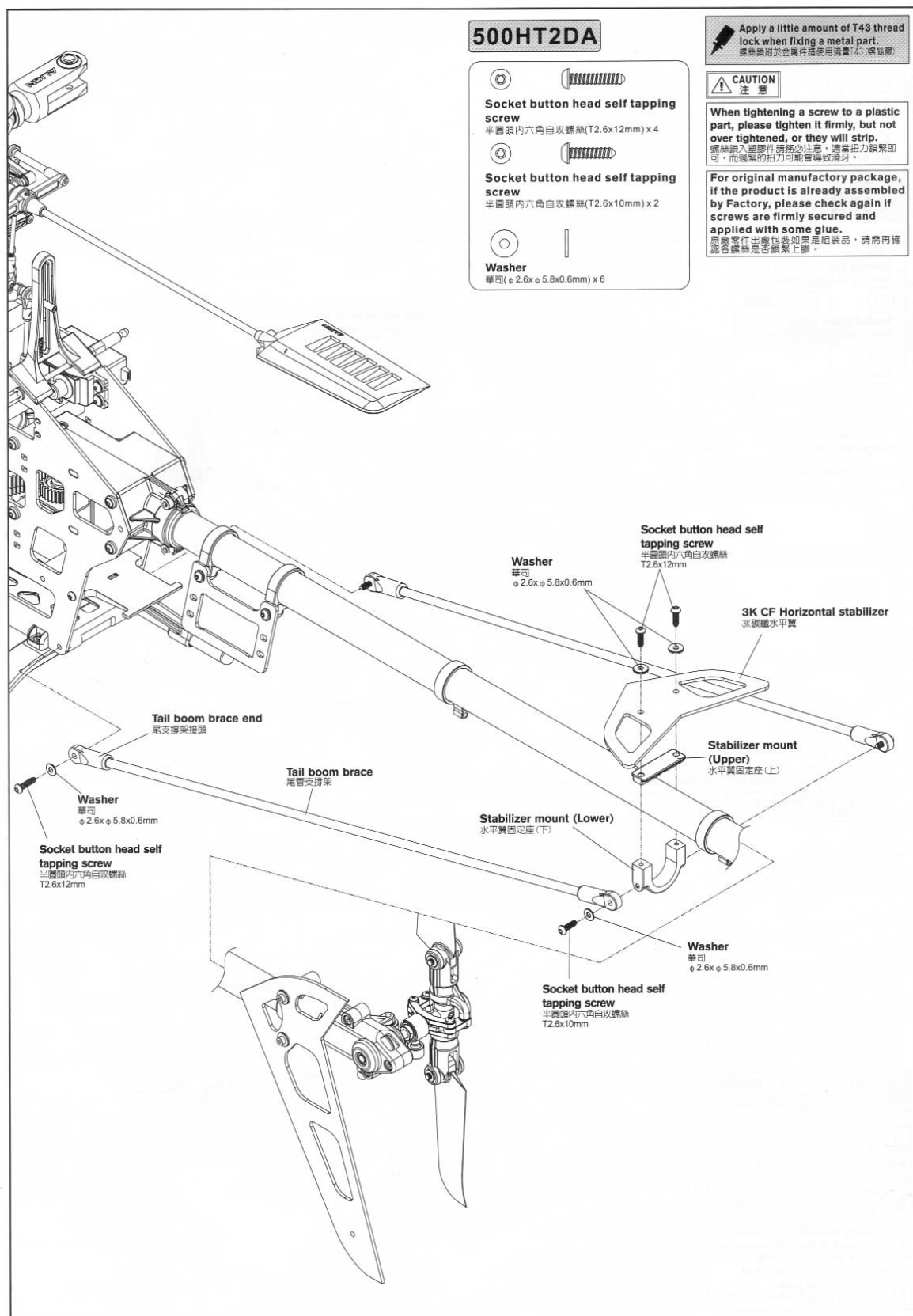
Linkage ball A(T2.6x3.5)
球頭A(T2.6x3.5)
φ4.75x8.18mm

Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖於金屬件時使用適量T43(鎖絲膠)

CAUTION
注意

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

For original manufactory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.
原廠零件出廠包裝如果產品是組裝品，請再確認各螺絲是否鎖緊上膠。



Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件時使用適量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.
螺絲鎖入塑膠件時務必注意，適當扭力鎖緊即可，而過緊的扭力可能會導致滑牙。

For original manufactory package, if the product is already assembled by Factory, please check again if screws are firmly secured and applied with some glue.
原廠零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。

500HH1A

Socket collar screw
圓頭內六角軸套螺絲(M3x20mm) x 2

M3 Nut
M3防鬆螺帽 x 2

Main blade spacer
主旋翼墊片(φ3xφ15x0.5mm) x 4



425 CF Blade
425碳纖主旋翼



Sticker
平面翼貼紙



500HZ5

M4 Set screw
M4止滾螺絲(M4x4mm) x 1



Motor pinion gear 12T
馬達齒輪 12T

M4 Set screw
M4止滾螺絲 M4x4mm



Motor
馬達 1600KV



When fixing the screw of pinion gear, please aim at the fixing point on motor shaft.
鋼齒固定螺絲鎖緊時，請對準馬達心軸固定槽。



After assembling the motor pinion gear and main drive gear, the horizontal distance must be within 1mm and keep the gear mesh at a proper distance.
馬達主齒與主齒盤組立後平行距離不可超過1mm，並保持兩齒咬合有適當間距。



When the thickness of main blade is 10mm, the main blade spacers are not required.
When the thickness of main blade is 9mm, the main blade spacers are required.
主旋翼厚度尺寸10mm時，不需使用主旋翼墊片。
主旋翼厚度尺寸9mm時，請使用主旋翼墊片。



425 Blade
425主旋翼

Main blade spacer
主旋翼墊片 φ3xφ15x0.5mm



Main rotor holder
主旋翼夾座



Socket collar screw
圓頭內六角軸套螺絲 M3x20mm



M3 Nut
M3防鬆螺帽



Socket screw
圓頭內六角螺絲 M3x10mm

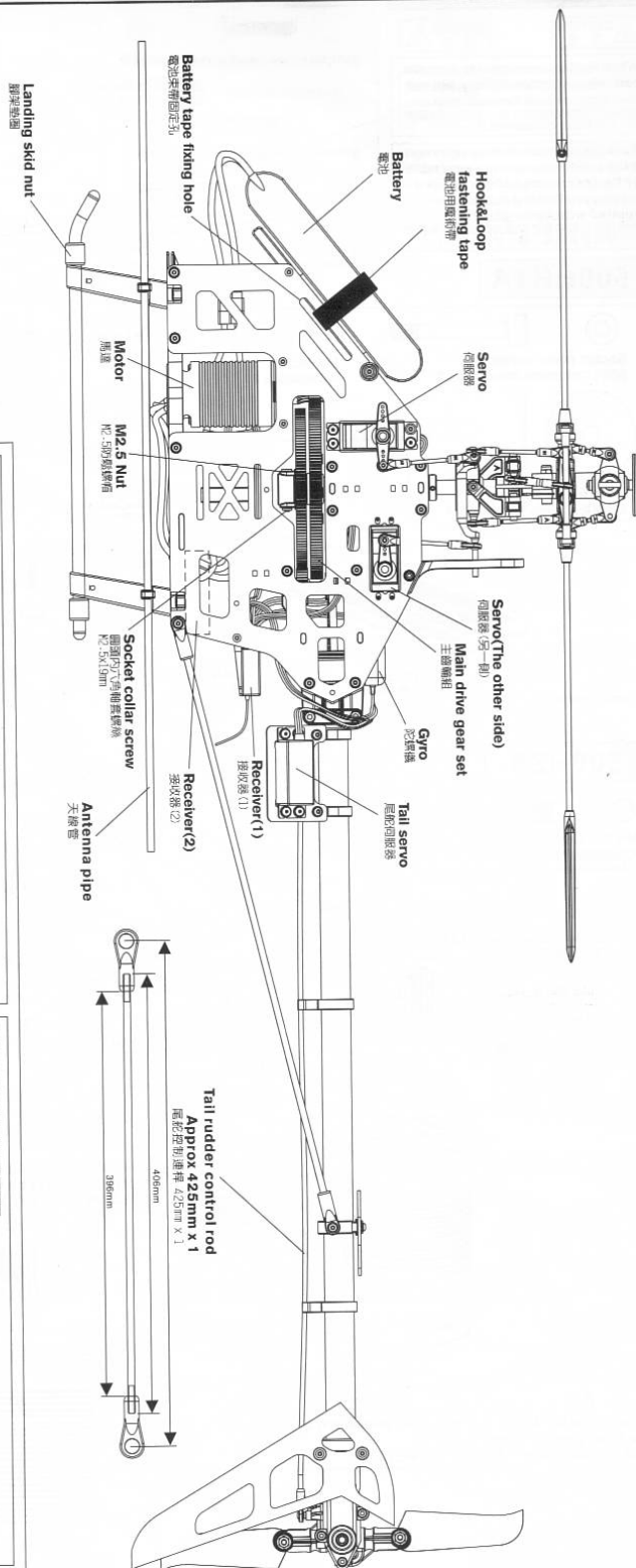


For motor fixing
馬達固定螺絲

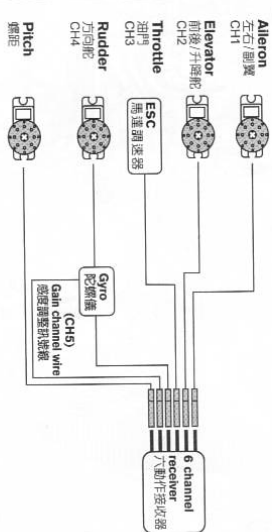


M3 Washer
M3彈弓 φ3xφ8x1mm



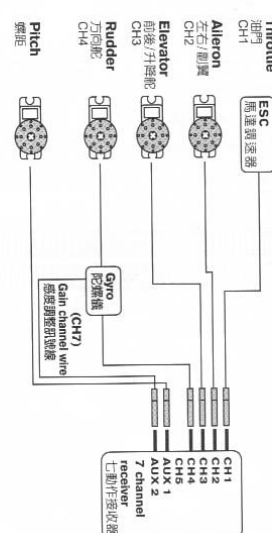


HITEC FUTABA 6CH receiver wiring



6-Channel Receiver is adequate for the requirements of T-REX helicopter. You will need the following channels at a minimum: Throttle, Rudder, Elevator, Aileron, and especially Pitch(CH6) and Gyro(CH5) controls. 六動作接收器已足夠應付T-REX模型直昇機的頻道需求，除了油門、方向舵、升降舵、副翼等基本動作外，亦可以對應具備調整螺距的陀螺儀(CH5)與螺距(CH6)。

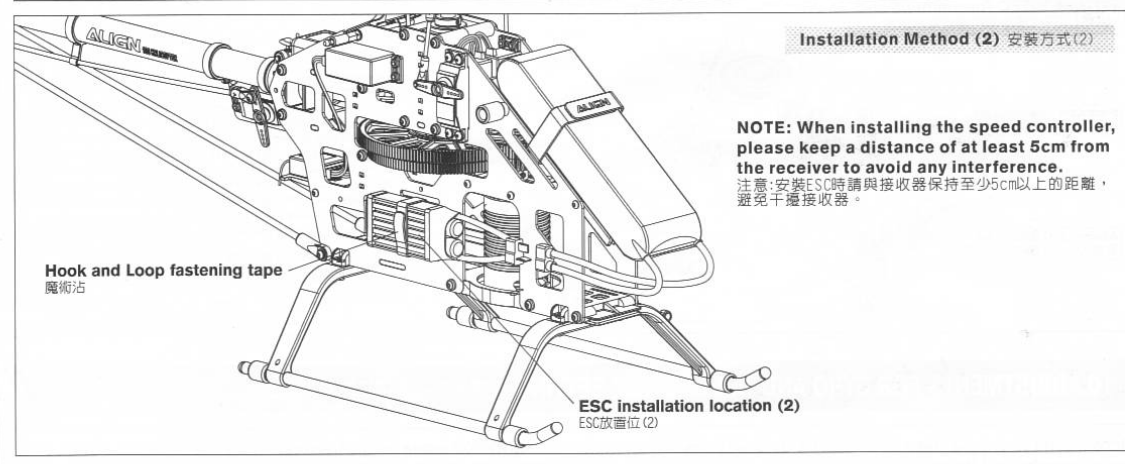
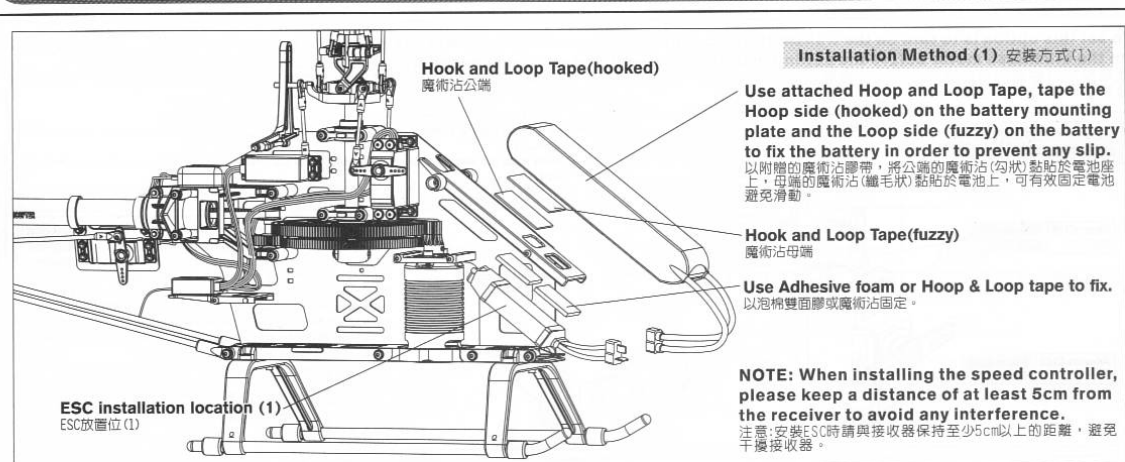
JR 7CH receiver wiring



7-Channel Receiver is adequate for the requirements of T-REX helicopter. You will need the following channels at a minimum: Throttle, Rudder, Elevator, Aileron, and especially Pitch(AUX 1) and Gyro(AUX 2) controls. 七動作接收器已足夠應付T-REX模型直昇機的頻道需求，除了油門、方向舵、升降舵、副翼等基本動作外，亦可以對應具備調整螺距的陀螺儀(AUX 2)與螺距(AUX 1)。

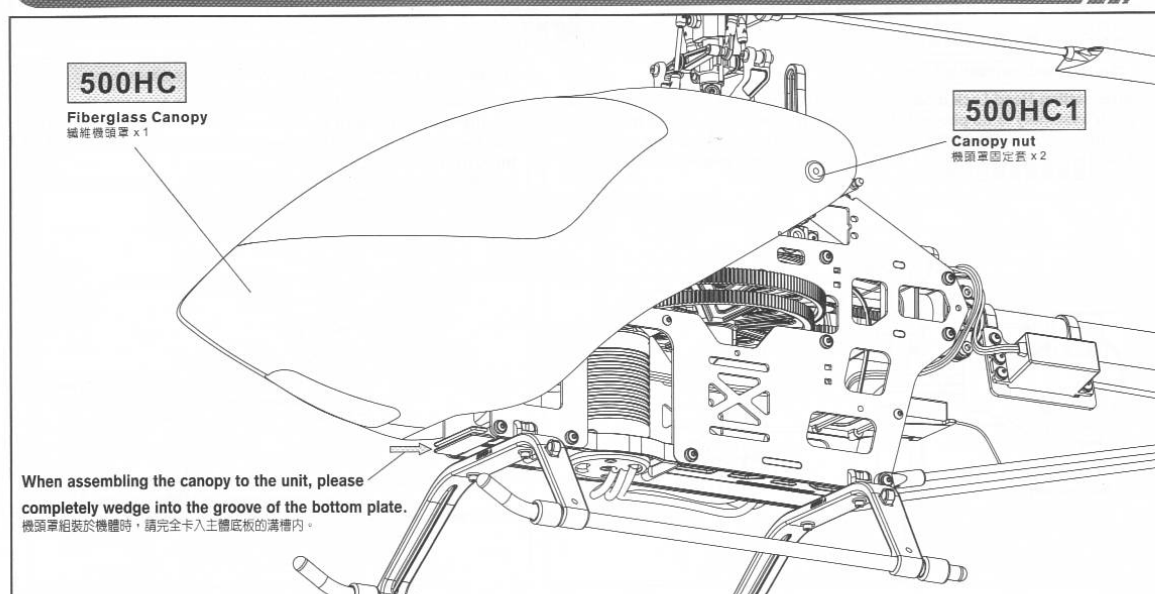
7. BRUSHLESS SPEED CONTROLLER INSTALLATION SUGGESTION ESC無刷調速器安裝建議位置

ALIGN



8. CANOPY ASSEMBLY 機頭罩安裝

ALIGN



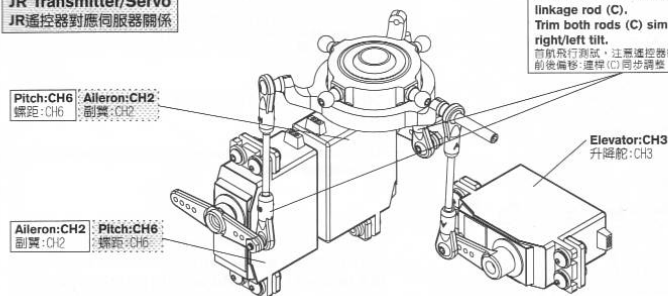
9.SERVO SETTING AND ADJUSTMENT 伺服器設定與調整

ALIGN

To set this option is to turn on the transmitter and connect to the helicopter power. Note: For the safety, please do not connect ESC to the brushless motor before the setting in order to prevent any accident caused by the motor running during the setting.

此項設定只要開啓發射器，接上直昇機電源即可進行操作。注意：為了安全起見，設定前請先不要將無刷調速器與無刷馬達的三條線接上，以免調整時啟動馬達而發生危險。

JR Transmitter/Servo JR遙控器對應伺服器關係



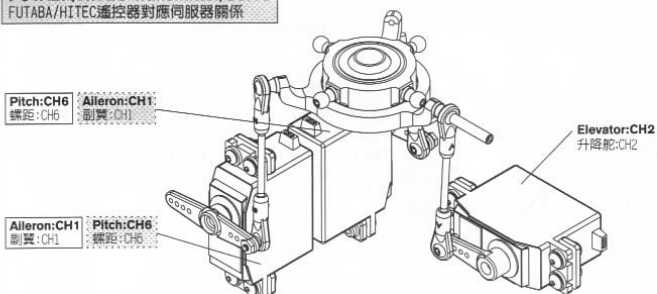
Please note to set the subtrim neutral for the first trial flight. If the helicopter wags, please trim linkage rod (C). Trim both rods (C) simultaneously to adjust for forward/backward tilt. Trim rod (C) separately for right/left tilt.

前試飛行測試，注意遙控器微調均設定中立點，若發現飛行時，機身前後左右偏移，請先調整連桿(C)前後偏移：連桿(C)同步調整，左右偏移：連桿(C)單獨調整為標準。

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，請調整遙控器的反轉開關(REV)使伺服器往上，若3個伺服器同時往下移時，請調整遙控器SWASH CH6行程量的正負值，使伺服器同時往上移，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，請調整遙控器的反轉開關(REV)使伺服器往上，若3個伺服器同時往下移時，請調整遙控器SWASH CH6行程量的正負值，使伺服器同時往上移，副翼與前後動作相反時，同樣調整 SWASH CH1 · CH2行程量正負值。

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

ALIGN

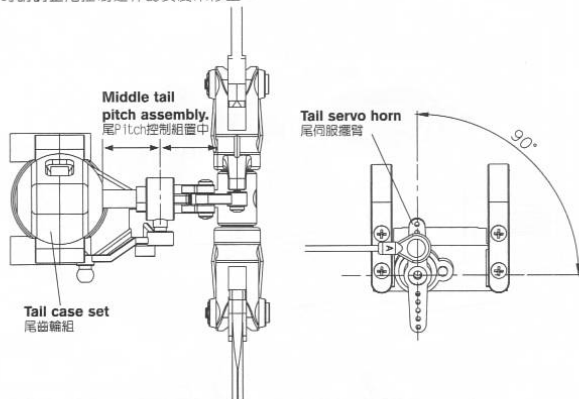
Recommend to choose Head Lock type for Gyro and turn off Revolution mixing(RVMX) mode on the transmitter, then set the gain switch on the transmitter and the gyro to Head lock mode. The gain setting is about 70%, and after transmitter setting, connect to the helicopter power for working on tail neutral setting. Note: When connecting to the helicopter power, please do not touch tail rudder stick and the helicopter. Then wait for 3 seconds, make tail servo horn 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.

陀螺儀選擇，建議選用鎖定式陀螺儀，且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直昇機電源，即可進行尾中立點設定。注意：當接上直昇機電源時請勿撥動尾舵搖桿或碰觸機體，待3秒陀螺儀鎖定後尾舵臂應與尾舵伺服器約成 90°，尾舵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 in the middle position, please adjust the length of rudder control rod to trim.

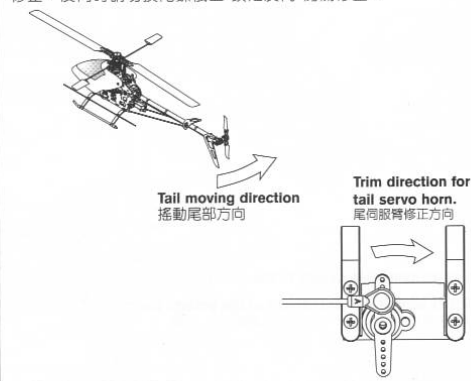
陀螺儀鎖定後尾舵伺服器與尾 Pitch控制組正確擺置位置。若尾 Pitch控制組未置中時請調整尾舵控制桿的長度來修正。



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".

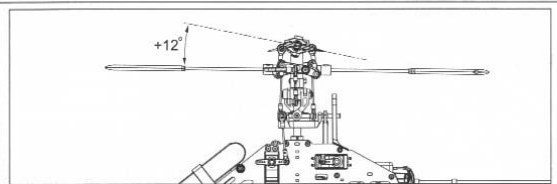
陀螺儀鎖定方向確認，當手搖尾部反時鐘擺動，尾舵臂應順時鐘修正，反方向時請切換陀螺儀上「鎖定反向」開關修正。



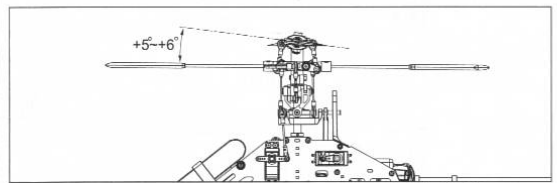
11. PITCH AND THROTTLE SETTING 主旋翼螺距與油門設定

ALIGN

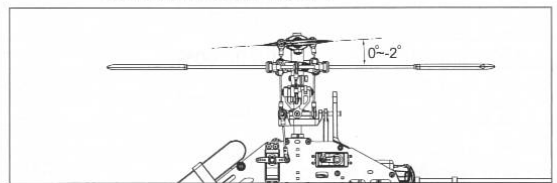
GENERAL FLIGHT 一般飛行模式



Stick position at high/Throttle 100%/Pitch +12°
搖桿高速/油門100%/Pitch+12°



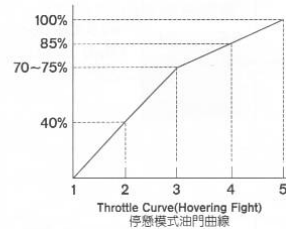
Stick position at Hovering/Throttle 70%~75%/Pitch +5~+6°
搖桿停懸/油門70%~75%/Pitch+5~+6°



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

GENERAL FLIGHT 一般飛行模式

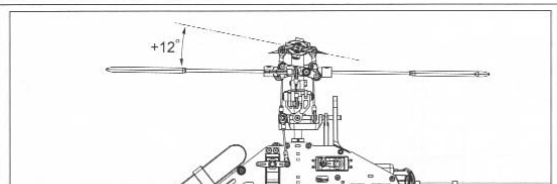
Throttle 油門	Pitch 螺距
5 100% High speed 100% 高速	+12°
4 85%	
3 70%~75% Hovering 70%~75% 停懸	+5~+6°
2 40%	
1 0% Low speed 0% 低速	-2~0°



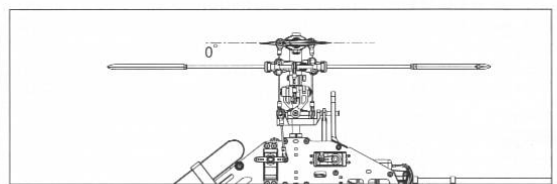
Pitch and Rotation Speed Pitch與轉速關係

TIP: It is recommended to use a lower pitch setting when using higher RPM/Head speed. This will allow for better power.
搭配要領: 如果使用較高轉速馬達動力建議搭配調低 Pitch, 將獲得較佳動力效能。

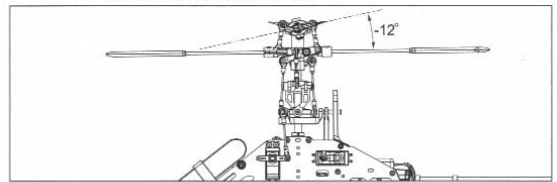
3D FLIGHT 3D特技飛行模式



Stick position at high/Throttle 100%/Pitch +12°
搖桿高速/油門100%/Pitch+12°



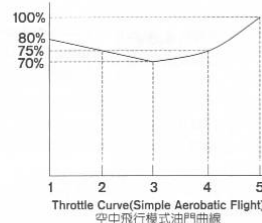
Stick position at middle/Throttle 80~85%/Pitch 0°
搖桿中速/油門80~85%/Pitch 0°



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

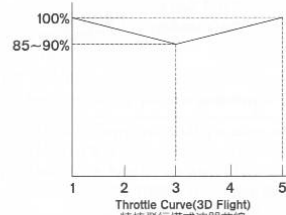
IDLE 1: SPORT FLIGHT

Throttle 油門	Pitch 螺距
5 100%	+12°
4 75%	
3 70%	+5~+6°
2 75%	
1 80%	-5~-6°



IDLE 2: 3D FLIGHT

Throttle 油門	Pitch 螺距
5 100% High 100% 高	+12°
3 85~90% Middle 85~90% 中	0°
1 100% Low 100% 低	-12°



注意

1. Pitch range: Approx. 29 (±14.5) degrees.
2. If the pitch is set too high, it will result in shorter flight duration and poor motor performance.
3. Setting the throttle to provide a higher speed is preferable to increasing the pitch too high.

1. 螺距 (Pitch) 總行程約 29 (±14.5) 。
2. 過大螺距設定, 會導致動力與飛行時間降低。
3. 動力提升以較高轉速的設定方式, 優於螺距調大的設定。

12. POWER COLLOCATION REFERENCE 原裝動力數據參考表

ALIGN

Motor Pinion Gear 馬達主齒	Li-Po 電池規格	Main Rotor Blade 主旋翼規格	Pitch 螺距	Current(A) approx. 電流 (A) 大約值	Throttle Curve 油門曲線	RPM approx. 主旋翼轉速大約值	
12T Suitable for elementary/ intermediate hovering, general 3D flight. 初中階、停懸及一般3D 飛行適用	6S 22.2V (2100mAh)	425 Carbon Fiber Blades 425碳纖維主旋翼	Hover 停懸	+5°	11	0/50/70/85/100%	2150
			Idle 1	+12°	30	80/70/100%	2450
				+5°	10		2020
				-5°	13		2260
			Idle 2	0°	11.5	85%Middle中	2500
				0°	15	100/100/100/100/100%	⚠ 2690
				±12°	30		2450
13T Suitable for Advanced 3D flight. 高階3D飛行適用	6S 22.2V (2500mAh)	425 Carbon Fiber Blades 425碳纖維主旋翼	Hover 停懸	+5°	11.5	0/50/70/85/100%	2220
			Idle 1	+12°	34	80/70/100%	2550
				+5°	11.5		2080
				-5°	14		2330
			Idle 2	0°	14.5	85%Middle中	2630
				0°	17	100/100/100/100/100%	⚠ 2840
				±12°	34		2550
14T	5S 18.5V (2700mAh)	425 Carbon Fiber Blades 425碳纖維主旋翼	Hover 停懸	+5°	13	0/60/80/90/100%	2400
			Idle 1	+12°	34.6	80/70/100%	2380
				+5°	11		1950
				-5°	14		2208
			Idle 2	0°	12.7	85%Middle中	2430
				0°	14.8	100/100/100/100/100%	2650
				±12°	34.6		2380
15T	5S 18.5V (2700mAh)	425 Carbon Fiber Blades 425碳纖維主旋翼	Hover 停懸	+5°	14	100/60/80/90/100%	2400
			Idle 1	+12°	40	80/70/100%	2440
				+5°	12		2020
				-5°	15.5		2295
			Idle 2	0°	14.5	85%Middle中	2560
				0°	18.5	100/100/100/100/100%	⚠ 2760
				±12°	40		2440
16T	4S 14.8V (3200mAh)	425 Carbon Fiber Blades 425碳纖維主旋翼	Hover 停懸	+5°	13.5	0/50/75/85/100%	1940
			Idle 1	±12°	35.5	80/70/100%	2110
				+5°	12		1720
				-5°	15.5		1940
			Idle 2	0°	11.5	85%Middle中	2200
				0°	14.5	100/100/100/100/100%	2410
				±12°	35.5		2110
17T	4S 14.8V (3200mAh)	425 Carbon Fiber Blades 425碳纖維主旋翼	Hover 停懸	+5°	14.5	0/50/75/85/100%	1940
			Idle 1	+12°	36	80/70/100%	2080
				+5°	12.5		1770
				-5°	16.5		1998
			Idle 2	0°	12.5	100/100/100/100/100%	2260
				0°	15.5		2480
				±12°	36		2150
18T	4S 14.8V (3200mAh)	425 Carbon Fiber Blades 425碳纖維主旋翼	Hover 停懸	+5°	14	0/50/75/85/100%	1880
			Idle 1	+12°	38.5	80/70/100%	2100
				+5°	13.7		1820
				-5°	18		2040
			Idle 2	0°	13.5	85%Middle中	2330
				0°	16.5	100/100/100/100/100%	2550
				±12°	38.5		2200

NOTE: 1. Please use a pitch gauge to adjust the pitch value. Incorrect excess pitch setting will result poor helicopter performance and reduce ESC's life and battery's life.

⚠ 2. For the safeties of flight and helicopter structure, please do not equip the power of main blade over 2650 RPM.

註: 1. 請務必使用螺距規來量測調整螺距, 不正確的過大螺距設定不但無法發揮直昇機的特性, 反會影響到無刷調速器與電池的壽命。
⚠ 2. 為了飛行安全與機體結構安全, 主旋翼轉速設定禁止超過2650RPM。

PRODUCT FEATURES 產品特色

1. 5-6V step-less adjustable BEC output allowing custom voltage setting to match servo specification.
2. BEC output utilizing switching power system, suitable for 7.4-22.2V (2S-6S) Li battery, with continuous current rating of 3A, and burst rating of 5A.
3. Three programmable throttle speed settings to support quick throttle response.
4. Include soft start and governor mode.
5. Small and compact PCB design for lightweight and simple installation.
6. Large heat sink for optimum thermal performance.
7. Highly compatible to work with 98% of all brushless motors currently on the market.
8. Ultra-smooth motor start designed to run with all kinds of brushless motors.
9. The power inlet utilizes a Japanese made "Low ESR" capacitor in order to provide stable power source.
10. The throttle has more than 200 step resolution that provides great throttle response and control.

1. 5-6伏特無段可調式BEC輸出，可依伺服器規格與所需的特性自行設定電壓。
2. BEC輸入端採用交換式電源設計，適用7.4-22.2V (2S-6S) 鋰電，持續耐電流3A，瞬間5A。
3. 三段可程式油門反應速度，使動力的反應隨傳隨到。
4. 具備啟動及Governor Mode定速功能。
5. 體積小，外型設計，安裝於機身容易。
6. 有散熱片設計，可延長電變壽命。
7. 超高相容性，可對應市面上 98% 無刷馬達。
8. 絕佳起步設計，無論國產、進口、內轉、外轉無刷馬達皆起步順暢。
9. 電池電源端採用日製 Low ESR 低阻抗電解電容，大幅提高電源之穩定性。
10. 油門達 200 段以上解析度，無格數之油門感覺。

WIRING ILLUSTRATION 接線示意圖**SPECIFICATION 規格**

Model 型號	Continuous Current 持續	Peak Current 瞬間	BEC Output BEC輸出	Dimension 尺寸	Weight 重量
RCE-BL60G	60A	70A	Output voltage: 5-6V step-less adjustment Continuous current 3A; Burst current 5A 輸出電壓: 5-6V無段可調式 承受電流: 持續3A、瞬間5A	65x28x12mm	55g

1. Good temperature situation for working at the maximum current
2. Supporting motor types: 2 ~ 10 pole in/outrunner brushless motors.
3. Supporting maximum RPM: 2 pole → 190,000 rpm ; 6 pole → 630,000 rpm.
4. Input voltage: 5.5V ~ 25.2V (2~6S Li-Po)

NOTE: 1. When setting to the Quick throttle response speed, the accelerative peak current will increase.

2. To minimize possible radio interference induced by switching power system, BEC should be installed at least 5cm away from the receiver. The use of PCM receiver is recommended.

1. 持續最大電流需在機體散熱良好情況下。
2. 支援馬達型式: 二極至十數極之內外轉子無刷馬達。
3. 支援最高轉速: 二極→190,000rpm; 六極→630,000rpm。
4. 輸入電壓: 5.5V-25.2V (2-6S Li-Po)

注意: 1. 設定為高油門反應速度時，加速瞬間電流會有增大情形。

2. 內建Switching BEC，安裝時請與接收器保持至少5cm以上的距離以避免干擾接收器 (建議使用較穩定的PCM系統接收器)。

FUNCTIONS 產品功能

1. Brake Option - 3 settings that include Brake disabled/Soft brake/Hard brake.
2. Electronic Timing Option - 3 settings that include Low timing/Mid timing/High timing. Generally, 2 pole motors are recommended to use low timing, while 6 or more poles should use Mid timing. High timing gives more power at the expense of efficiency. Always check the current draw after changing the timing in order to prevent overloading of battery.
3. Battery Protection Option- 2 settings that include Li-ion, Li-poly High/Middle cutoff voltage protection. The default setting is high cutoff voltage protection. CPU will automatically determine cell number of input Lithium battery (2S~6S). This option will prevent over-discharge of the battery. The following reference is the guideline for setting the Battery Protection option.
 - 3-1 Li-ion/Li-poly High cutoff voltage protection-When the voltage of single cell drops to 3.2V, the first step of battery protection mode will be engaged by the ESC resulting in reduced power. The pilot should reduce the throttle and prepare landing. If the voltage of single cell drops to 3.0V, the second step of battery protection mode will be engaged resulting in power cutoff. (*Note 1) For 11.1V/3cells Lithium battery, the full charged voltage will be approximately 12.6V. According to this input voltage, CPU will determine that this is a 3cell battery.

First step protection: 3.2V x 3cell=9.6V

Second step protection: 3.0V x 3cell= 9.0V

When the voltage drops to 9.6V, the power will be reduced. When the voltage drops to 9.0V, the power will be cut off.
 - 3-2 Li-ion/Li-poly Middle cutoff voltage protection- This option is same as instruction 3-1, but when the voltage of single cell drops to 3.0V, the first step of battery protection will be engaged. When the voltage of single cell drops to 2.8V, the second step of battery protection will be engaged. (*Note 1)

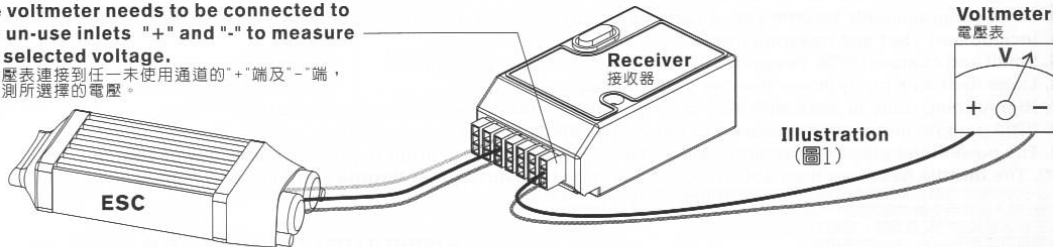
Note 1: Second step of battery protection only works when Aircraft mode is setting to the option 4-1.

NOTE: THIS OPTION IS ONLY SUITABLE FOR A FULLY CHARGED BATTERY PACK IN GOOD WORKING CONDITION.
4. Aircraft Option: 3 settings that include Normal Airplane / Helicopter 1 / Helicopter 2. Normal Airplane Mode is used for general airplanes and gliders. When flying Helicopters, you can choose Helicopter 1 Mode, or Helicopter 2 Mode. Helicopter 1 Mode provides Soft Start feature. Helicopter 2 Mode provides Soft Start and Governor Mode.
5. Throttle response speed: 3 settings that include standard/ Medium/ Quick throttle response speed. The default setting is "quick speed". Use this option to adjust the setting according to flight character. For example, setting at Medium or Quick speed for 3D and powerful flight to make the power response more quickly, but note the accelerative peak current and power expense will increase.

6. BEC output voltage setting: 5-6V step-less adjustment.

This option allows custom voltage setting. Default setting is 5.5V; please adjust the voltage according to the specification of the servo (speed and resistance). Prior to entering the setup mode, a voltmeter needs to be connected to the power inlet of the receiver (as illustration) to monitor the selected voltage. The voltage is set by varying the throttle stick position from low (5V) to high (6V).

The voltmeter needs to be connected to any un-use inlets "+" and "-" to measure the selected voltage.
將電壓表連接到任一未使用通道的 "+" 端及 "-" 端，以量測所選擇的電壓。



NOTE: Certain servos are designed to work with high voltage, while other servos are designed for lower voltage. To avoid damage to servos, please follow the servo's factory specification to determine the proper voltage setting.

注意：部份伺服器不適合較高的電壓下操作，請依照原廠適用電壓規格設定，避免造成伺服器燒毀。

7. Thermal Protection: When the ESC temperature reaches 80 °C for any reason, it will engage the battery protection circuit, reducing power to the ESC. We recommend mounting the ESC in a location with adequate air flow and ventilation.
8. Safe Power On Alarm: When the operator turns on the ESC, it will automatically detect the transmitter signal. The ESC will emit a confirmation tone and enter normal operation mode if the throttle is set to the lowest position. If the throttle position is at full throttle, it will begin to enter Setup Mode. If the throttle is in any other position, the ESC will emit an alarm and not enter into user mode for safety precautions.
9. Aircraft Locator: If the aircraft should land or crash in an unexpected location and become lost, the pilot can enable the Aircraft Locator Option. The Aircraft Locator Option is engaged by turning off the transmitter. When the ESC does not receive a signal from the transmitter for 30 seconds, it will start to send an alarm to the motor. The sound of the alarm will aid the pilot to locate the aircraft. This option will not work with a PCM receiver that has SAVE function enabled, or with low noise resistant PPM receivers.

1. 煞車設定：三段選擇分為無煞車 / 軟性煞車 / 急煞車
2. 進角設定：三段選擇分為低進角 / 中進角 / 高進角
設定時機分為二極以及六極以上無碳刷馬達，二極無碳刷馬達一般適用低進角，若希望馬達轉速提高，可將進角設定為中進角。六極以上無碳刷馬達一般適用中進角，若希望馬達轉速提高，可將進角設定為高進角。然而進角之調整需要注意電流之變化，避免電池過載，影響電池及馬達壽命。
3. 電池保護電壓設定：二段選擇分為 L1-Ion、L1-Po 高截止電壓保護/中截止電壓保護
出廠設定為高截止電壓保護：此功能會自動判定所輸入鋰電池的cell數(2-6S)，並提供使用者對該電池之放電保護，以避免因放電電壓過低而造成電池損壞，以下為設定值之解說：
3-1 L1-Ion/L1-Po高截止電壓保護：當鋰電池cell壓降達3.2V時，電變會啟動第一階段保護，使動力間歇性中斷，此時使用者應將油門收小，準備降落；而當單cell電壓持續壓降達到3.0V時則會啟動第二階段保護，完全限制動力輸出(註1：僅在4-1選項「一般飛機模式」下才會啟動第二階段保護)。
例：以一個使用11.1V 3cell鋰電池之系統而言11.1V鋰電池充飽電壓約12.6V，此輸入電壓CPU會自動判定為3cell鋰電池。
第一階段保護：3.2Vx3cell=9.6V 第二階段保護：3.0Vx3cell=9.0V 當電壓降至9.6V時，動力會間歇性中斷，當壓降達到9.0V時則完全限制動力輸出。
3-2 L1-Ion/L1-Po中截止電壓保護：同3-1功能說明，但單cell壓降達到3.0V時，會啟動第一階段保護，單cell壓降達到2.8V時啟動第二階段保護(註1)。
注意：以上功能僅適用於充飽電，且功能正常的鋰電池。
4. 飛機模式設定：三段式選擇分為：一般飛機模式/直昇機模式1/直昇機模式2
使用於一般飛機或滑翔機時，請設定於一般飛機模式，使用於直昇機時可選擇直昇機模式1：具有緩啟動功能，或直昇機模式2：具有緩啟動及Governor Mode定速功能。
5. 油門反應速度設定：三段選擇分為標準/中速/快速
出廠設定值為「快速」油門反應速度，此功能提供使用者依所需的飛行特性來作適當的調整，例如3D飛機與劇烈的3D直昇機飛行時可設定為中速或快速，使動力反應更加快速、靈敏，但須注意提高油門反應速度時，加速瞬間電流與耗電量會有增大的情形。
6. BEC輸出電壓設定：5-6V無段調整
本功能提供使用者自行設定BEC輸出電壓，初始電壓為5.5V，使用者可依伺服器的規格與所需的特性(速度與扭力)自行更改設定；進入此項設定前，請先將電壓表連接到接收器的電源端(如圖1)，用以監看所選擇的電壓，設定時以油門搖桿的位置來決定輸出電壓，油門搖桿最低為5伏特，最高為6伏特，之間的電壓值可移動搖桿的位置任意設定。
7. 溫度保護：當電變因不良之空氣對流或是過載輸出導致溫度上升達 80°C時，電變會啟動溫度保護，而使動力間歇性中斷，建議將電變裝置在機艙內空氣對流之位置，並實際使用電流量表測輸出電流，以達到電變之最佳效率。
8. 開機防暴衝提醒功能：當使用者開啓電變電源時，系統會自動偵測發射機之設定，如果發射機油門未置於最低點，或未置於最高點準備進入設定模式，馬達將不會轉動，同時會有警示聲響提醒。
9. 尋機功能：當飛機降落若再長草區無法以目視定位時，使用者可將發射機關閉，當電變無法接收來自接收機信號時，電變會於三十秒後使馬達發出警示聲響，以利定位。此功能不適用於設定了 SAVE 功能之 PCM 接收機，或抗雜訊低之 PPM 接收機。

SETUP MODE 設定模式

1. Setup mode: Make sure to connect the ESC to the throttle channel of the receiver. Please refer to the user manual of your radio system. The second step is to connect the 3 power-out signal pins to the brushless motor. Before you turn on the transmitter, please adjust the throttle stick to the maximum full throttle position. Proceed to connect the battery to the ESC. You will hear confirmation sounds as soon as you enter the SETUP MODE. Please refer the attached flow chart for details.
2. Throttle stick positions in Setup mode: Setup mode includes six settings: Brake, Electronic Timing, Battery Protection, Aircraft, Throttle Response Speed and BEC output voltage. Every setting has three options. Simply place the throttle stick in the highest, middle, and lowest positions for each setting. For example, first brake setting (Hard): move the stick to the highest position. Then timing setting (mid): move the throttle stick in the middle position.

1. **進入設定模式:**將電變與接收器之油門 Channel 連接,不同之遙控系統請參閱遙控系統之使用手冊,馬達之三條線亦與電變連接,將發射器之油門搖桿推到最高點,使之於全油門狀態,先開啓發射器電源,再將電源連接至電變,進入設定模式後,馬達將有設定模式之提示聲響。請參考第二頁程式化設定模式說明。
2. **設定模式中之動作:**設定模式共含有六項設定,分別為煞車、馬達進角、電池保護、飛機模式、油門反應速度級、BEC 輸出電壓等設定,詳細內容請參考產品功能之解說。每一項設定中各含三段設定,各項設定以油門搖桿之上、中、下位置來決定其設定值。例如:煞車設定時,油門搖桿撥至最高,則設定為急煞車,進入第二項進角設定時,油門搖桿撥至中間,則設定為中進角。

Mode 設定模式	Throttle position 油門搖桿	Low 低	Middle 中	High 高
Brake 煞車設定		● Brake disabled(1-1) 無煞車(1-1)	Soft brake(1-2) 軟性煞車(1-2)	Hard brake(1-3) 急煞車(1-3)
Electronic Timing 進角設定		Low-timing(2-1) 低進角(2-1)	● Mid-timing(2-2) 中進角(2-2)	High-timing(2-3) 高進角(2-3)
Battery Protection 電池保護電壓設定		● High cutoff voltage protection(3-1) 高截止電壓保護(3-1)	Middle cutoff voltage protection(3-2) 中截止電壓保護(3-2)	—
Aircraft 飛機模式設定		Normal Airplane/Glider(4-1) 一般飛機 / 滑翔機 (4-1)	● Helicopter 1 (Soft Start)(4-2) 直升機模式1 (緩啟動功能) (4-2)	Helicopter 2 (Soft Start+ Governor Mode)(4-3) 直升機模式2 (緩啟動+Governor Mode定速功能) (4-3)
Throttle response speed 油門反應速度設定		Standard(5-1) 標準(5-1)	Medium speed(5-2) 中速(5-2)	● Quick speed(5-3) 快速(5-3)
BEC output voltage BEC輸出電壓設定		5.0V	● 5.5V	6.0V

Note: "●" default setting
註: "●" 表示出廠設定值

Chart A
表A

SETUP INSTRUCTION 開機使用模式



SETUP INSTRUCTION 開機模式設定響音提示說明

First mode sound Brake Status 第一個響音 煞車設定狀態提示 = Brake disabled = 無煞車 = Soft brake = 軟性煞車 = Hard brake = 急煞車	Second mode sound Electronic Timing Status 第二個響音 進角設定狀態提示 = Low timing (apply to 2 pole inrunner motors) = Mid timing (apply to 6 pole in/out runner motors) = High timing (apply to high power output) = 高進角 (適用於高功率輸出) High-timing/big power/power expense 高進角模式行較大功率與耗電特性	Third mode sound Battery protection Status 第三個響音 電池保護設定狀態提示 = High cutoff voltage protection = 高截止電壓保護 = Middle cutoff voltage protection = 中截止電壓保護	Fourth mode sound Aircraft Status 第四個響音 飛機模式設定狀態提示 = Normal airplane/Glider = 一般飛機/滑翔機 = Helicopter 1 (Soft start) = 直升機模式1 (緩啟動功能) = Helicopter 2 (Soft start + Governor Mode) = 直升機模式2 (緩啟動+Governor Mode定速功能)	Fifth mode sound Throttle response speed status 第五個響音 油門反應速度設定狀態提示 = Standard = 標準 = Medium speed = 中速 = Quick speed = 快速
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INSTRUCTIONS ON AIRCRAFT MODE SETTINGS 飛機模式設定使用說明

Normal Airplane/Glider Mode (Option 4-1):

This option is applied to general airplanes and gliders.

Helicopter 1 Mode (Option 4-2):

This option provides a soft start feature and is applied to Helicopters for Normal, Idle Up 1, or Idle Up 2 modes.

Please note that the sensitivity of the gyro should be set lower when flying in Idle Up 1 or Idle Up 2 modes if tail hunting (wag) occurs due to higher rotor speed.

Helicopter 2 Mode (Option 4-3):

This option supports soft start as well as Governor Mode features and is applied to Helicopters for Idle Up 1 and Idle Up 2 modes(not suitable for Normal Flight Mode). When Governor Mode is in use, the throttle should be set between 75% and 85%. Again if tail wag occurs, lower the sensitivity of the gyro to eliminate the hunting effect. The Governor Mode may not work properly in cases of insufficient rotor speed (due to improper gear ratio), poor battery discharge capability, and improper setting of gyro sensitivity and the blade pitch, etc. Please make sure all the proper adjustments have been done when using Governor Mode.

一般飛機模式 (選項4-1): 適用於一般飛機及滑翔機。

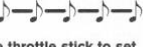
直昇機模式1 (選項4-2): 具有緩啟動功能, 適用於Normal、Idle1、Idle2等飛行模式, 當切換至Idle1或Idle2

直昇機模式2 (選項4-3): 模式如有較高轉速造成陀螺儀有輕微的追蹤現象, 此時應將陀螺儀的敏感度設定分別降低。

具有緩啟動及Governor Mode定速功能, 適用於Idle1、Idle2特技飛行模式 (不適合Normal) 飛行模式下選用, 選擇定速功能時, 油門應定速在75%-85%之間, 如果飛行時發現有輕微的追蹤現象時, 應降低陀螺儀的敏感度; 由於轉速不足(齒比搭配不當), 電池效能不佳, 陀螺儀敏感度設定不當, Pitch設定錯誤, 皆會導致無法發揮定速的功能, 甚至產生尾部偏擺的情形, 所以選擇此模式時應對相關條件進行確認。

SETUP MODE 程式化設定模式

Minimum 4 channel radio is required 四動以上標準發射器均可執行設定

1 Place the throttle stick to the highest position. Switch on transmitter. 打開電源，油門搖桿置於最高點準備進入程式化功能設定模式 	2 Connect battery to ESC 變速器接上電源，馬達聲音提示 Power on sound 開機確認音 Enter Setup Mode 進入設定模式 	3 Throttle channel adjustment process, the highest position acknowledge sound. 油門校正程序，最高點確認音 	4 Place the throttle stick to the lowest position acknowledge sound. 油門搖桿移至最低點確認音 	5 Use throttle stick to set preferred Brake Mode within the 5 tones. A confirmation sound will kick in when finish. 於5音節之音響聲響時以發射器油門搖桿設定，設定值請參考表A飛機模式設定，結束時將有連續響音確認 
6 Use throttle stick to set preferred Timing Mode within the 5 tones. (Refer to Chart A) A confirmation sound will kick in when finish. 於5音節之音響聲響時以發射器油門搖桿設定，設定值請參考表A進角設定，結束時將有連續響音確認 	7 Use throttle stick to set preferred Battery Protection Mode within the 5 tones. (Refer to Chart A) A confirmation sound will kick in when finish. 於5音節之音響聲響時以發射器油門搖桿設定，設定值請參考表A電池保護電壓設定，結束時將有連續響音確認 	8 Use throttle stick to set preferred Aircraft Mode within the 5 tones. (Refer to Chart A) A confirmation sound will kick in when finish. 於5音節之音響聲響時以發射器油門搖桿設定，設定值請參考表A飛機模式設定，結束時將有連續響音確認 	9 Use throttle stick to set preferred Throttle Response Speed Mode within the 5 tones. (Refer to Chart A) A confirmation sound will kick in when finish. 於5音節之音響聲響時以發射器油門搖桿設定，設定值請參考表A油門反應速度設定，結束時將有連續響音確認 	10 Use throttle stick to set preferred BEC Output Voltage Mode within 5 tones. (Refer to Chart A) A confirmation sound will kick in when finish. 於5音節之音響聲響時以發射器油門搖桿設定，設定值請參考表A BEC輸出電壓設定，結束時將有連續響音確認 

14. FLIGHT ADJUSTMENT AND SETTING 飛行動作調整與設定

ALIGN

PLEASE PRACTICE SIMULATION FLIGHT BEFORE REAL FLYING 飛行前請先熟練模擬飛行

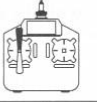
Do a simulation flight until you familiarize your fingers with the movements of the rudders, and keep practicing until the fingers move naturally.

1. Place the helicopter in a clear open field (Make sure the power OFF) and the tail of helicopter point to yourself.
2. Practice to operate the throttle stick (as below illustration) and repeat practicing "Throttle high/low", "Aileron left/right", "Rudder left/right", and "Elevator up/down".
3. The simulation flight practice is very important, please keep practicing until the fingers move naturally when you hear operation orders being call out.
4. Another safe and effective practice method is to use the transmitter flying on the computer through simulator software sold on the market.

在還沒瞭解直昇機各動作的操控方式前，嚴禁通電飛行，請先進行模擬飛行的練習，並不斷的重複，直到手指可熟練的控制各個動作及方向。

1. 將直昇機放在空曠的地方(確認電源為關閉)，並將直昇機的機尾對準自己。
2. 練習操作遙控器的各搖桿(各動作的操作方式如下圖)，並反覆練習油門高/低、副翼左/右、升降舵前/後及方向舵左/右操作方式。
3. 模擬飛行的練習相當重要，請重複練習直到不需思索，手指能自然隨著喊出的指令移動控制。
4. 另外一種最有效、最安全的練習方式，就是透過市面販售的模擬軟體，以遙控器在電腦上模擬飛行，熟悉各種方向的操控。



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

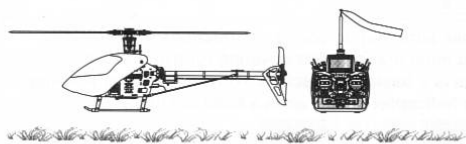


- ⊙ Check if the screws are firmly tightened.
- ⊙ Check if the transmitter and receivers are fully charged.
- ⊙ 再次確認→螺絲是否鎖固?
- ⊙ 發射器和接收器電池是否足夠。



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。

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



STARTING AND STOPPING THE MOTOR 啟動和停止馬達



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。



Check if the throttle stick is set at the lowest position. 確認油門搖桿是在最低的位置。

★ Check the movement.
★ 動作確認



ON! Step1
First turn on the transmitter.
先開啓發射器

- ⊙ Are the rudders moving according to the controls?
- ⊙ Follow the transmitter's instruction manual to do a range test.
- ⊙ 方向舵是否隨著控制方向移動?
- ⊙ 根據發射器說明書進行距離測試。



ON! Step2
Connect to the helicopter power
接上直昇機電源



OFF! Step3
Reverse the above orders to turn off.
關閉電源時請依上述操作動作反執行。

Main rotor adjustments 主旋翼雙槳平衡調整



Tracking adjustment is very dangerous, so please keep away from the helicopter at a distance of at least 5m. 調整軌跡非常危險，請於距離飛機最少5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 lengthen pitch linkage rod (A) for regular trim or shorten linkage rod (C) for slight pitch trim.
B. When rotating, the blade with lower path means the pitch too small. Please shorten pitch linkage rod (A) for regular trim or lengthen linkage rod (C) for slight pitch trim.

A. 旋翼轉動時較高軌跡的主旋翼表示螺距(PITCH)過大，請調長連桿(A)修正，或需要更小的螺距微調時，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，請調短連桿(A)修正，或需要更小的螺距微調時，請調長連桿(C)修正。



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. +5~6° 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+5~6°。



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



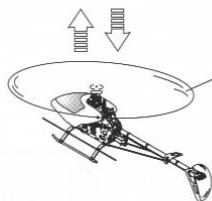
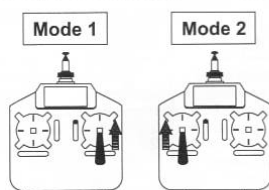
- ⊙ Make sure that no one or obstructions in the vicinity.
- ⊙ You must first practice hovering for flying safety. This is a basic flight action. (Hovering means keeping the helicopter in mid air in a fixed position)
- ⊙ 確認鄰近地區沒有人和障礙物。
- ⊙ 為了飛行安全，你必須先練習停旋，這是飛行動作的基础（停旋：直昇機滯留空中並保持固定位置）。

- ⊙ Please stand approximately 5m diagonally behind the helicopter.
- ⊙ 練習時，請站在直昇機後方5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。

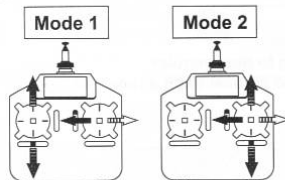
STEP 1 THROTTLE CONTROL PRACTICE 油門控制練習



- ⊙ 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.

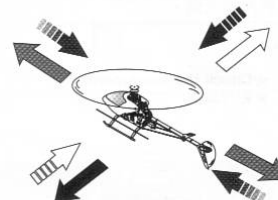
⊙ 當直昇機開始離地時，慢慢降低油門將飛機降下。持續練習飛機從地面上升和下降直到你覺得油門控制很順。

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。

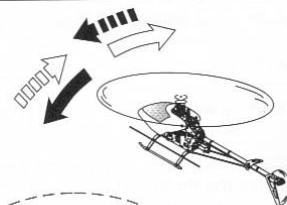
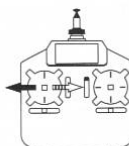


- ⊙ If the nose of the helicopter moves, please lower the throttle stick and land the helicopter. Then move your position diagonally behind the helicopter 5m and continue practicing.
- ⊙ If the helicopter flies too far away from you, please land the helicopter and move your position behind 5m and continue 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5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5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。

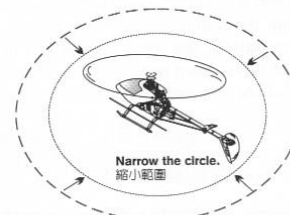


STEP 4

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，在地上畫圈並在這個圓圈的範圍內練習飛行，以增加你操控的準確度。

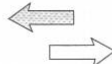
- ⊙ You can draw a smaller circle when you get more familiar with the actions.
- ⊙ 當你更加習慣操作動作，你可以畫更小的圓圈。



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 rudder trim 調整方向舵微調

Just before the helicopter lift-off, the nose lean left/right...

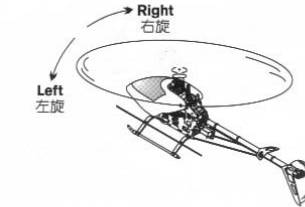
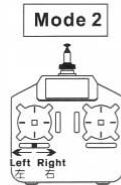
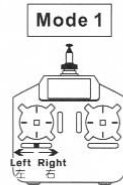
When leans right, adjust the trim to left side.

When leans left, adjust the trim to right side.

在直昇機正要起飛時，機頭朝左/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。



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

Just before the helicopter lift-off, the nose lean forward/backward...

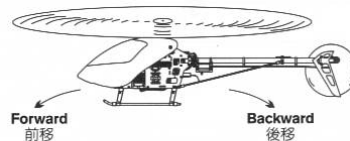
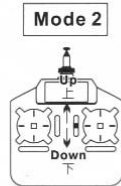
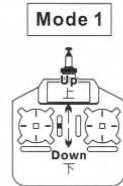
When leans forward, adjust the trim down.

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。



3. Adjustment of Aileron trim 調整副翼微調

Just before the helicopter lift-off, the body lean left/right...

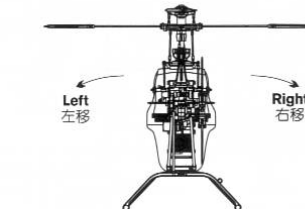
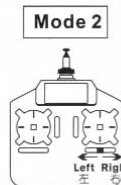
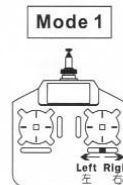
When leans right, adjust the trim to left side.

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。

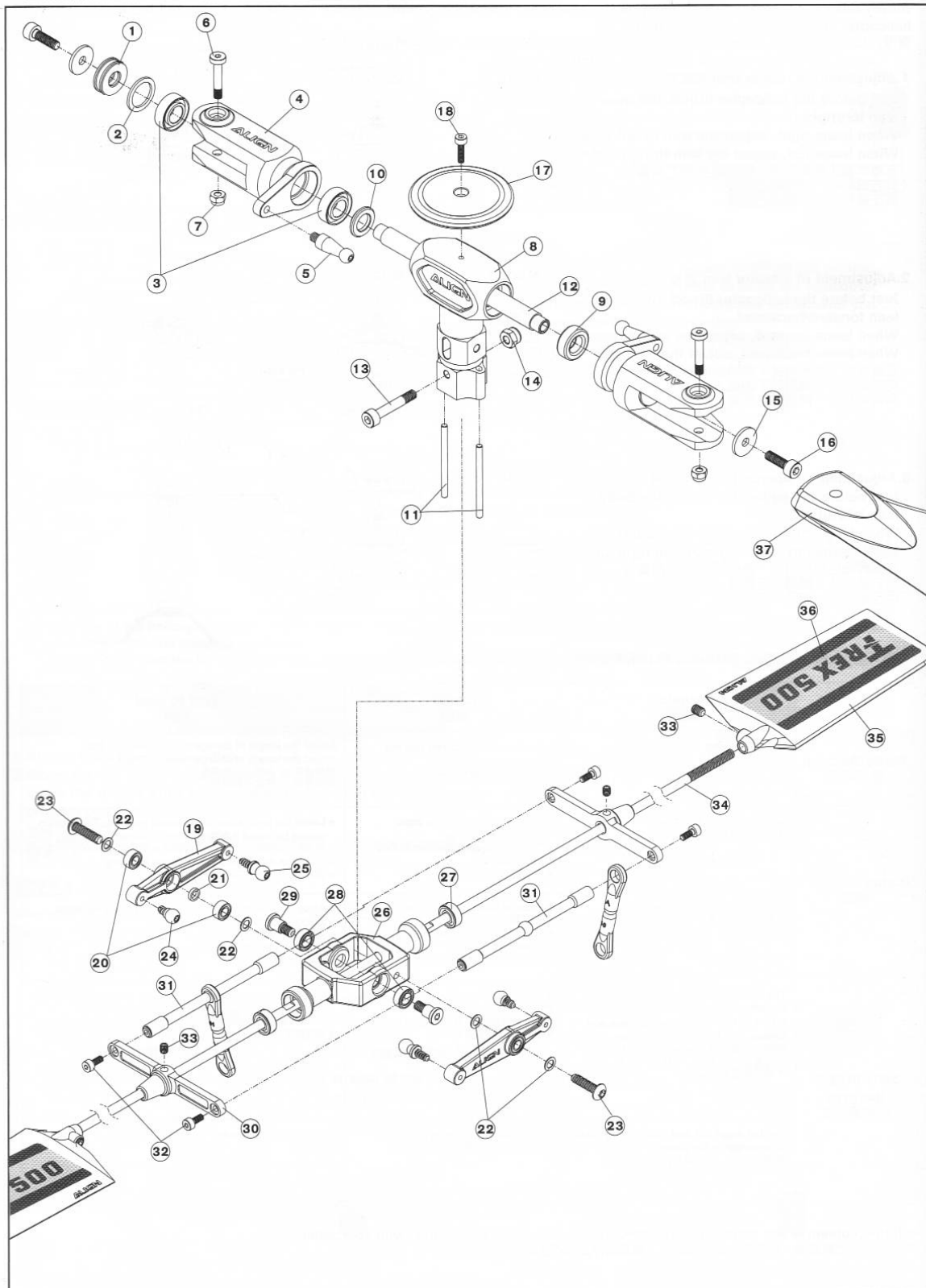


TROUBLE SHOOTING DURING FLIGHT 如何排除飛行中的狀況

	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(A) → Regular trim Adjust the length of linkage rod(C) → Slight trim 調整連桿(A)長度 → 一般調整 調整連桿(C)長度 → 微調整
	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 5~6° during hovering (The rotation should be about 2,000~2,200rpm during hovering). ★ 調低Pitch停旋點約5~6° (停旋時主旋翼轉速為約2000~2200rpm) ★ Heighten the throttle curve during hovering. ★ 調高停旋點油門曲線
During Hovering 停旋	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(A) (The rotation should be about 2,000~2,200rpm during hovering). ★ 調整連桿(A) (停旋時主旋翼轉速為約2000~2200rpm) ★ Lower the throttle curve during hovering. ★ 調低停旋點油門曲線
Sensitivity of the gyro 陀螺儀敏感度	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，或撥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. ★ 增加敏感度
	The tail wags left and right during flight at hovering or full speed. 停旋或全油門時尾翼左右來回搖擺。	The sensitivity of the gyro is high. 陀螺儀敏感度偏高	Decrease the sensitivity. 降低敏感度

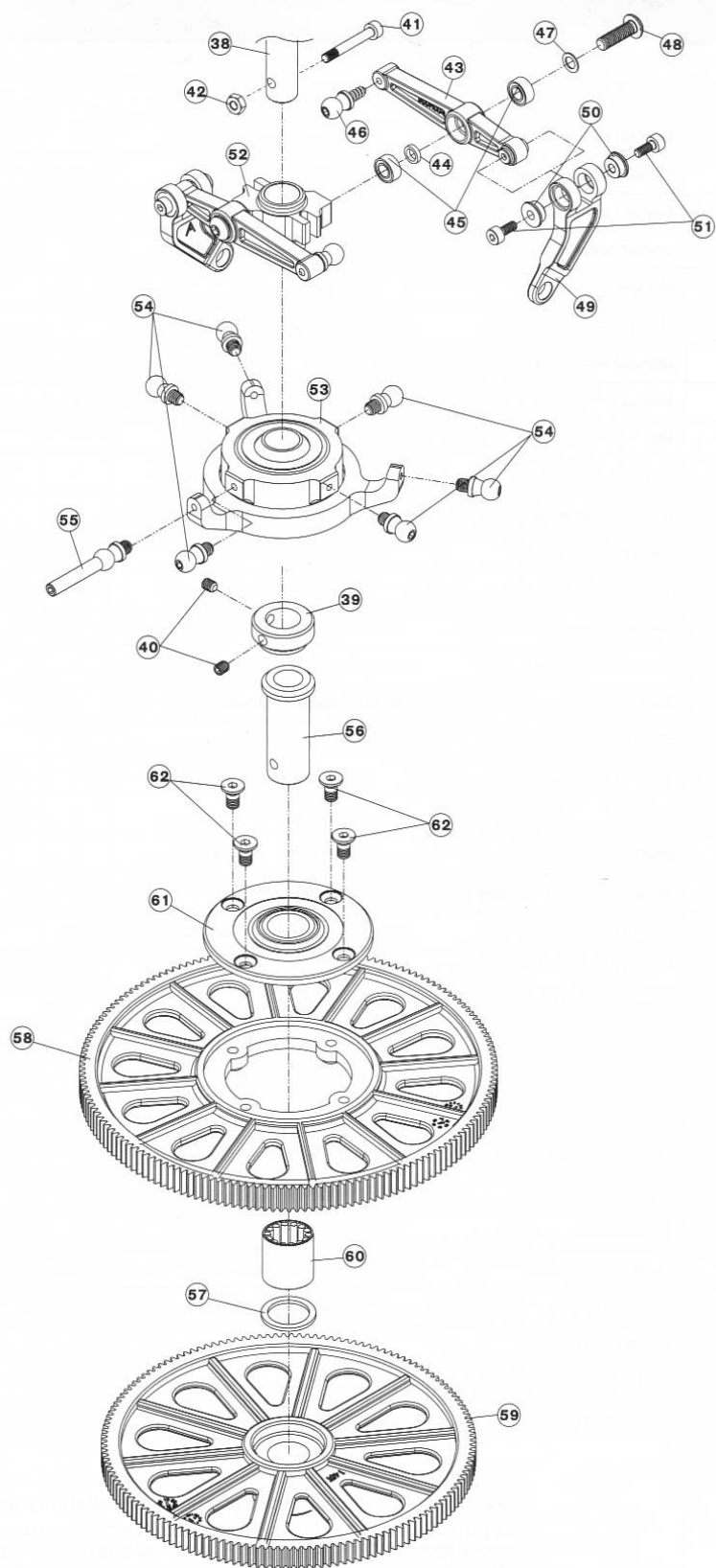
※ If the problem is still there even after tried above, stop flying and contact with your seller.

※ 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。

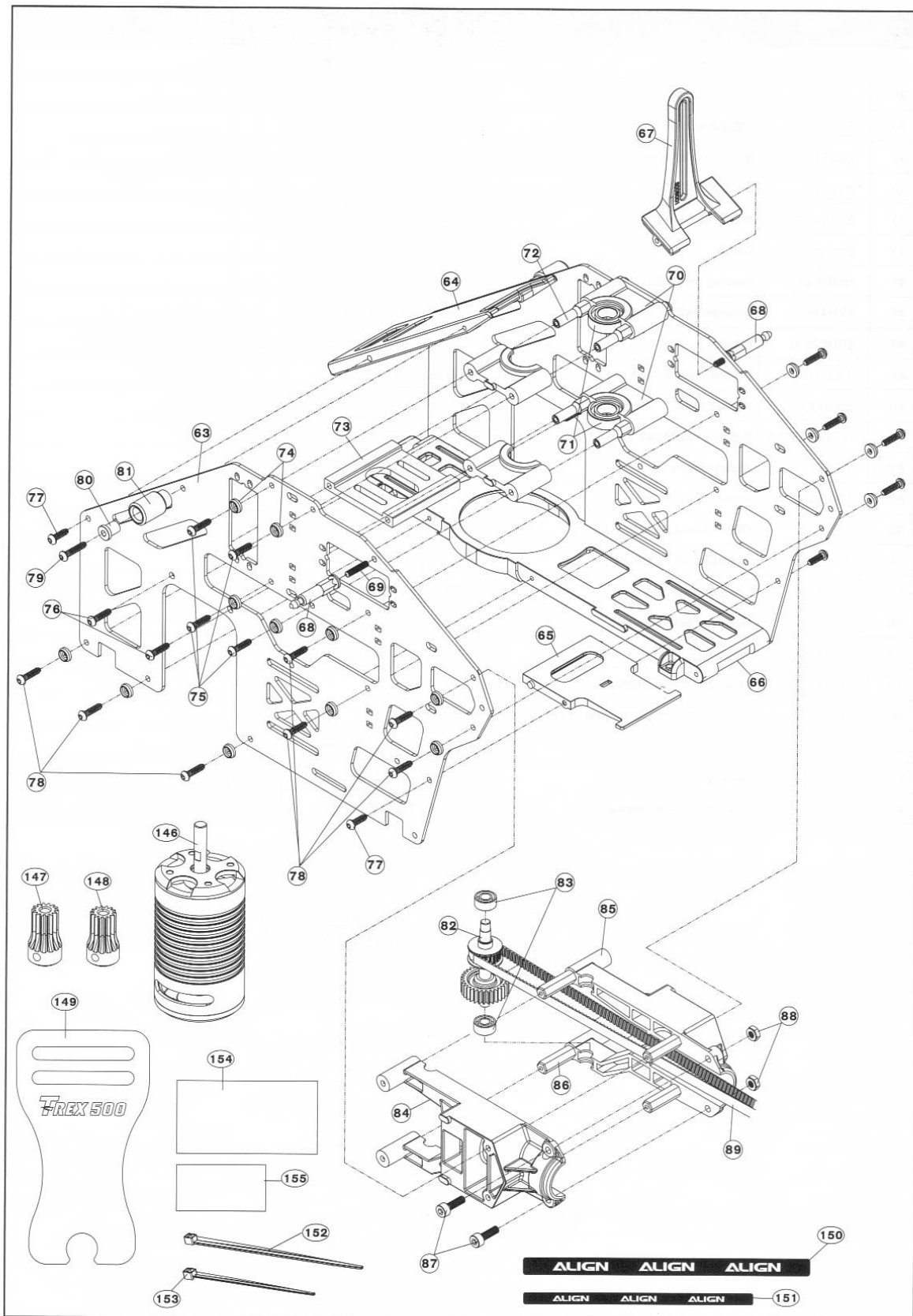


No.	Code No.	Name	Specification	Quantity	Remarks
1	HF512M	Thrust bearing 止推軸承	φ 5x φ 12x4mm	2	
2	500H025	Washer 華司	φ 9x φ 12x0.8mm	2	
3	HMR126ZZ	Bearing MR126ZZ MR126ZZ軸承	φ 6x φ 12x4mm	4	
4	500H024	Metal main rotor holder 金屬主旋翼夾座		2	
5	500H033	Linkage ball D (M3x3.5) 球頭D (M3x3.5)	φ 4.75x17.5mm	2	
6	T63020	Socket collar screw 圓頭內六角軸套螺絲	M3x20mm	2	
7	N10030	M3 Nut M3防鬆螺帽	M3	2	
8	500H010	Metal main rotor housing 金屬主旋翼固定座		1	
9	500H028	Damper rubber 80° 橫軸墊圈-80°	φ 5.9x φ 11.1x4mm	2	
10	500H027	Spacer 橫軸套圈	φ 6.1x φ 10.5x1.5mm	2	
11	500H019	Pin 定位插梢	φ 2x28mm	2	
12	500H011	Feathering shaft 橫軸	φ 5x φ 6x76.2mm	1	
13	T62519	Socket collar screw 圓頭內六角軸套螺絲	M2.5x19mm	1	
14	N10025	M2.5 Nut M2.5防鬆螺帽	M2.5	1	
15	500H026	Washer 橫軸華司	φ 3x φ 10x1mm	2	
16	T63010	Socket screw 圓頭內六角螺絲	M3x10mm	2	
17	500H009	Metal head stopper 金屬旋翼頭制動器	φ 34x7mm	1	
18	T52008	Socket screw 圓頭內六角螺絲	M2x8mm	1	
19	500H003	SF Mixing arm SF控制搖臂	46.5x6mm	2	
20	HMR63ZZ	Bearing MR63ZZ MR63ZZ軸承	φ 3x φ 6x2.5mm	4	
21	500H018	Collar 擺臂軸承襯套	φ 3x φ 4.5x1mm	2	
22	50H022-2	Washer 華司	φ 3x φ 4.8x0.3mm	4	
23	S93012	Socket button head self tapping screw 半圓頭內六角自攻螺絲	T3x12mm	2	
24	50H144-1	Linkage ball A (T2.6x3.5) 球頭A (T2.6x3.5)	φ 4.75x8.18mm	2	
25	50H145-1	Linkage ball B (T2.6x5.5) 球頭B (T2.6x5.5)	φ 4.75x12.27mm	2	
26	500H002	Flybar seesaw holder 平衡桿固定座		1	
27	50TMR83ZZ	Bearing MR83ZZ MR83ZZ軸承	φ 3x φ 8x3mm	2	
28	HMR74ZZ	Bearing MR74ZZ MR74ZZ軸承	φ 4x φ 7x2.5mm	2	
29	50H119-2	M3 collar screw M3雙層軸套螺絲	M3x9.7mm	2	
30	500H021	Metal flybar control arm 金屬平衡翼控制臂	46x12.5mm	2	
31	500H012	Flybar control rod 平衡翼球型控制球桿	φ 3.5x59.1mm	2	
32	T52005	Socket screw 圓頭內六角螺絲	M2x5mm	4	
33	T73004	M3 Set screw M3止洩螺絲	M3x4mm	4	
34	500H013	Flybar rod 平衡翼桿	φ 3x340mm	1	
35	500H006	Flybar paddle 平衡翼		2	
36	D05003	Sticker 平衡翼貼紙		6	
37	KU110013	425 CF Blade 425碳纖主旋翼	425mm	1set	

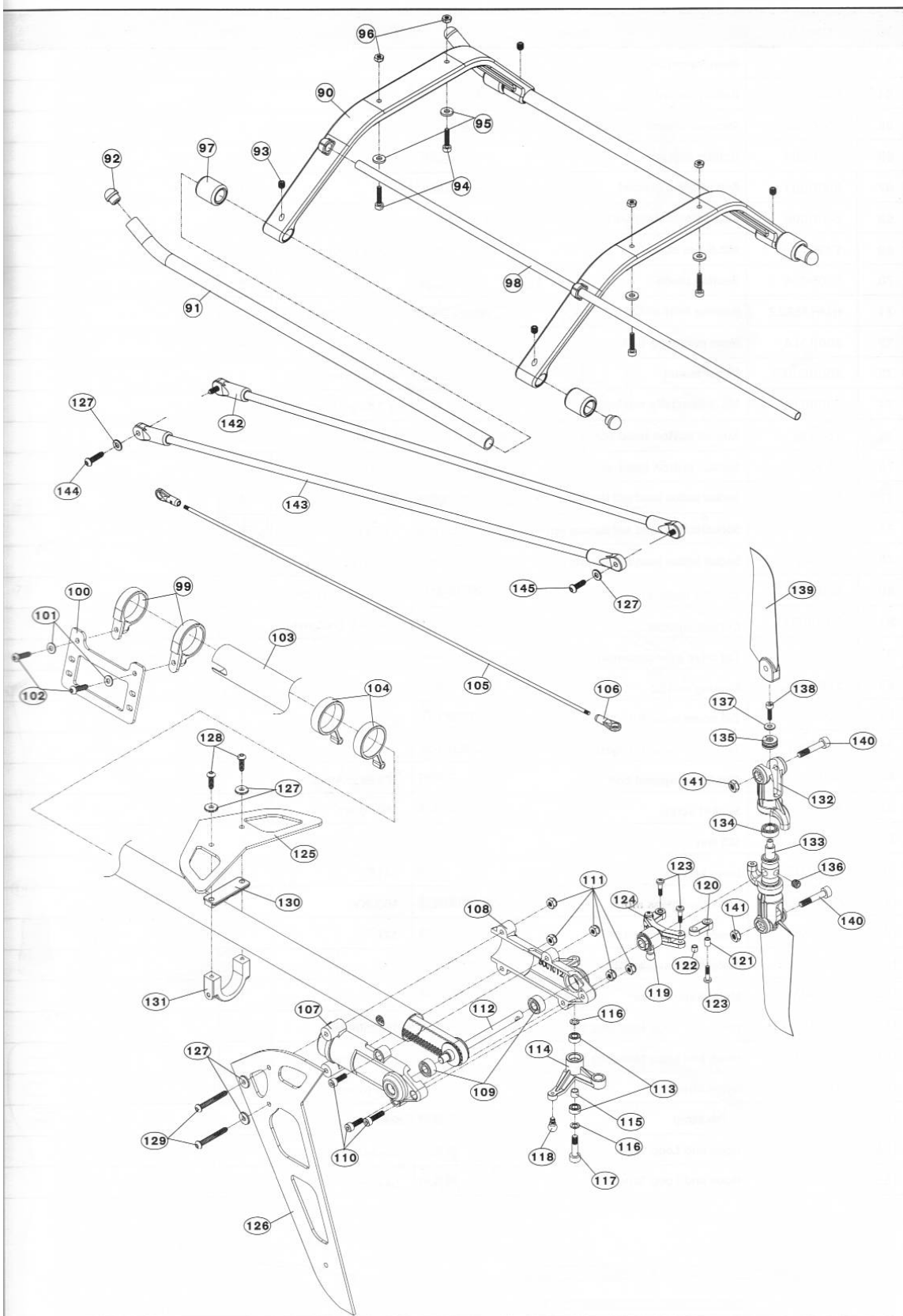
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No.	Code No.	Name	Specification	Quantity	Remarks
38	500H014	Main shaft 主軸	φ 4x φ 8x153.3mm	1	
39	500H029	Lock collar 主軸固定環	φ 8x φ 14x6mm	1	
40	T73003	M3 Set screw M3止洩螺絲	M3x3mm	2	
41	T62519	Socket collar screw 圓頭內六角軸套螺絲	M2.5x19mm	1	
42	N10025	M2.5 Nut M2.5防鬆螺帽	M2.5	1	
43	500H004	Washout control arm 穩定控制搖臂		2	
44	500H018	Collar 擺臂軸承襯套	φ 3x φ 4.5x1mm	2	
45	HMR63ZZ	Bearing MR63ZZ MR63ZZ軸承	φ 3x φ 6x2.5mm	4	
46	50H145-1	Linkage ball B (T2.6x5.5) 球頭B (T2.6x5.5)	φ 4.75x12.27mm	2	
47	50H022-2	Washer 華司	φ 3x φ 4.8x0.3mm	2	
48	T53010-2	Socket button head screw 半圓頭內六角螺絲	M3x10mm	2	
49	500H005	Radius arm Radius連桿		2	
50	HFMR52ZZ-1	Bearing FMR52ZZ FMR52ZZ軸承	φ 2x φ 5x φ 6x2.3mm	4	
51	T52005	Socket screw 圓頭內六角螺絲	M2x5mm	4	
52	500H016	Washout base 向位器	φ 8x16x14.5mm	1	
53		CCPM Metal Swashplate 金屬CCPM十字盤組		1	
54	50H043	Linkage ball B (M2x3) 球頭B (M2x3)	φ 4.75x9.77mm	6	
55	500H034	Long linkage ball (M2x3) 導板長球頭 (M2x3)	φ 4.75x24.59mm	1	
56	500B011	One-way bearing shaft 單向軸承套	φ 7x φ 12.6x27.25mm	1	
57	500B013	Washer 單向軸承華司	φ 10x φ 13x0.8mm	1	
58	500B007	Main drive gear(162T) 主齒盤 (162T)	162T	1	
59	500B010	Autrotation tail drive gear (145T) 尾驅動主齒 (145T)	145T	1	
60	50NHF1012	One-way bearing HF1012 單向軸承HF1012	φ 10x φ 14x12mm	1	
61	500B012	Main gear case 主齒中心座	φ 14x φ 40x9mm	1	
62	S83006	Hex socket self tapping screw 圓頭內六角自攻螺絲	T3x6mm	4	



No.	Code No.	Name	Specification	Quantity	Remarks
63	500B008	Main frame(L/R) 左右主體側板	1.6mm	2	
64	500B002	Battery mount 電池固定座		1	
65	500B005	Receiver mount 接收器固定座		1	
66	500B003	Bottom bracket 主體底板		1	
67	500B001	Anti rotation bracket 十字盤導板		1	
68	500B006	Canopy mounting bolt 機頭罩固定柱		2	
69	T72512	M2.5 Set screw M2.5止洩螺絲	M2.5x12mm	2	
70	500B004	Bearing block 主軸固定座		4	
71	HMR688ZZ	Bearing MR688ZZ MR688ZZ軸承	φ 8x φ 16x5mm	2	
72	500B014	Hexo mounting bolt 六角鋁柱		4	
73	500B009	Motor mount 馬達固定座	40x39x5mm	1	
74	500B016	M2.5 Specialty washer M2.5特殊華司	φ 2.5x φ 6x2mm	22	
75	T52510	Socket button head screw 半圓頭內六角螺絲	M2.5x10mm	8	
76	T53006	Socket button head screw 半圓頭內六角螺絲	M3x6mm	4	
77	S92608	Socket button head self tapping screw 半圓頭內六角自攻螺絲	T2.6x8mm	4	
78	S92610	Socket button head self tapping screw 半圓頭內六角自攻螺絲	T2.6x10mm	14	
79	S92612	Socket button head self tapping screw 半圓頭內六角自攻螺絲	T2.6x12mm	2	
80	500B019	Canopy support 機頭罩固定襯套	φ 2.6x φ 6.5x7.3mm	2	
81	50NB039	Conopy spacer 機頭罩支撐墊圈	φ 4.8x φ 11x22mm	2	
82		Tail drive gear assembly 尾傳動輪組		1	
83	50B684ZZ	Bearing 684ZZ 684ZZ軸承	φ 4x φ 9x4mm	2	
84	500T001	Tail boom mount (Left) 尾管固定座(左)		1	
85	500T002	Tail boom mount (Right) 尾管固定座(右)		1	
86	500T003	Plastic hexagonal bolt 六角柱	φ 1.9x35.4mm	4	
87	T63010	Socket screw 圓頭內六角螺絲	M3x10mm	2	
88	N10030	M3 Nut M3防鬆螺帽	M3	2	
89	500T016	Drive belt 皮帶	541T	1	
146	KX870001A	500L Brushless motor 500L無刷馬達	1600KV	1	
147	500M002	Motor pinion gear 12T 12T馬達主齒	12T	1	
148	500M003	Motor pinion gear 13T 13T馬達主齒	13T	1	
149	500H032	Main blade holder 主旋翼固定架泡棉		1	
150	K10378	Hook and Loop fastening tape 魔術帶	15x250mm	2	
151	K10379	Hook and Loop fastening tape 魔術帶	10x200mm	2	
152	VCM-98	Nylon strap 紫線帶	2.5x160mm	2	
153	VCM-99	Nylon strap 紫線帶	2.5x100mm	4	
154	50B052	Hook and Loop Tape 魔術沾	85x44mm	1	
155	K10365	Hook and Loop Tape 魔術沾	54x28mm	1	



No.	Code No.	Name	Specification	Quantity	Remarks
90	500F001	Landing skid 腳架	160x50mm	2	
91	500F003	Skid pipe 腳架鋁管	φ 5x φ 6x237mm	2	
92	500F002	Skid pipe end cap 腳架鋁管保護套		4	
93	T73004	M3 Set screw M3止洩螺絲	M3x4mm	4	
94	T52012	Socket screw 圓頭內六角螺絲	M2x12mm	4	
95	W10020	Washer 華司	φ 2x φ 6x0.6mm	4	
96	N10020-1	M2 Nut M2螺帽	M2	4	
97	500F004	Landing skid nut 腳架墊圈	φ 6.4x φ 10.5x12mm	4	
98	500F005	Antenna pipe 天線管	φ 2x φ 3.9x400mm	1	
99	500T004	Rudder servo mount 尾伺服器固定座	φ 16x27.2x5.6mm	2	
100	500T018	Rudder servo bracket 尾舵伺服器板	52.5x33.45x1.6mm	1	
101	W10026	Washer 華司	φ 2.6x φ 5.8x0.6mm	2	
102	S92610	Socket button head self tapping screw 半圓頭內六角自攻螺絲	T2.6x10mm	2	
103	500T028	Tail boom 尾管	φ 15x φ 16x461mm	1	
104	500T008	Tail control guide 尾控制桿固定環		2	
105	500T031	Rudder control rod 尾舵控制連桿	φ 1.96x406mm	1	
106	50Z124	Ball link 連桿頭		2	
107	500T011	Tail case (L) 尾齒輪座(左)		1	
108	500T012	Tail case (R) 尾齒輪座(右)		1	
109	50B684ZZ	Bearing 684ZZ 684ZZ軸承	φ 4x φ 9x4mm	2	
110	T62510	Socket screw 圓頭內六角螺絲	M2.5x10mm	3	
111	N10025	M2.5 Nut M2.5防鬆螺帽	M2.5	5	
112		Tail rotor shaft assembly 尾橫軸組		1	
113	HMR63ZZ	Bearing MR63ZZ MR63ZZ軸承	φ 3x φ 6x2.5mm	2	
114	50T096-1	Tail rotor control arm 尾旋翼控制臂		1	
115	50T097	Collar 尾旋翼控制臂鉛套	φ 3x φ 4.9x5mm	1	
116	50H022-2	Washer 華司	φ 3x φ 4.8x0.3mm	2	
117	T63015	Socket collar screw 圓頭內六角軸套螺絲	M3x15mm	1	
118	50H144-1	Linkage ball A(T2.6x3.5) 球頭A(T2.6x3.5)	φ 4.75x8.18mm	1	
119		Tail pitch assembly 尾旋翼控制組		1	
120	50T105	Control link 尾控制連桿頭		2	
121	50T106	Collar A 尾連桿頭銅套A	φ 2x φ 3x4mm	2	
122	50T127	Collar B 尾連桿頭銅套B	φ 2x φ 3x3mm	2	
123	T12008-4	Collar screw 軸套螺絲	M2x8mm	4	
124	500T015	T type arm 尾T型控制臂		1	
125	500T030	3K CF Horizontal stabilizer 3K碳纖維水平翼	1.6mm	1	
126	500T029	3K CF Vertical stabilizer 3K碳纖維垂直翼	1.6mm	1	
127	W10026	Washer 華司	φ 2.6x φ 5.8x0.6mm	8	
128	S92612	Socket button head self tapping screw 半圓頭內六角自攻螺絲	T2.6x12mm	2	

No.	Code No.	Name	Specification	Quantity	Remarks
129	T52520	Socket button head screw 半圓頭內六角螺絲	M2.5x20mm	2	
130	500T009	Stabilizer mount (Upper) 水平翼固定座(上)		1	
131	500T010	Stabilizer mount (Lower) 水平翼固定座(下)		1	
132	500T013	Tail rotor holder 尾旋翼夾座		2	
133	500T024	Tail rotor hub 尾旋翼T型座	φ 9x36.6mm	1	
134	50BMR95ZZ	Bearing MR95ZZ MR95ZZ軸承	φ 5x φ 9x5mm	2	
135	HH2016	Thrust bearing 止推軸承	φ 3x φ 8x3.5mm	2	
136	T74003	M4 Set screw M4止洩螺絲	M4x3mm	1	
137	W10020	Washer 華司	φ 2x φ 6x0.6mm	2	
138	T62006	Socket screw 圓頭內六角螺絲	M2x6mm	2	
139	500T014	Tail blade 尾旋翼		2	
140	T63016	Socket collar screw 圓頭內六角軸套螺絲	M3x16mm	2	
141	N10030	M3 Nut M3防鬆螺帽	M3	2	
142	500T007	Tail boom brace end 尾支撐架接頭		4	
143	500T022	Tail boom brace 尾支撐架	φ 1.9x φ 3.9x320mm	2	
144	S92612	Socket button head self tapping screw 半圓頭內六角自攻螺絲	T2.6x12mm	2	
145	S92610	Socket button head self tapping screw 半圓頭內六角自攻螺絲	T2.6x10mm	2	

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Specifications & Equipment/規格配備:

Length/機身長:850mm

Height/機身高:310mm

Main Blade Length/主旋翼長:425mm

Main Rotor Diameter/主旋翼直徑:970mm

Tail Rotor Diameter/尾旋翼直徑:200mm

Motor Pinion Gear/馬達主齒:12T/13T

Main Drive Gear/傳動主齒:162T

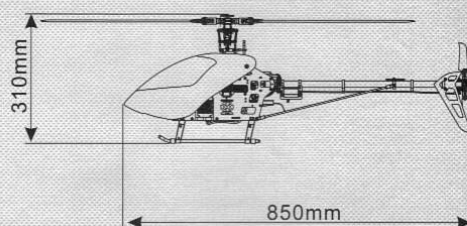
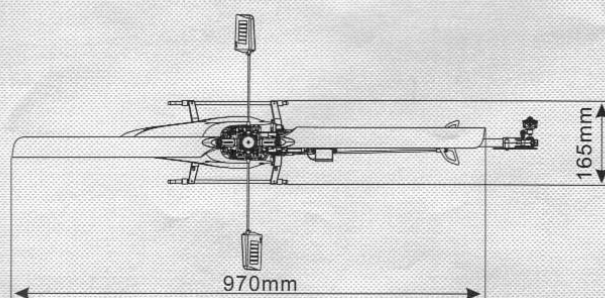
Autorotation Tail Drive Gear/尾驅動主齒:145T

Tail Drive Gear/尾翼傳動齒:31T

Drive Gear Ratio/齒輪傳動比:1:13.5:4.68/1:12.46:4.68

Weight(Without Power System)/空機重:935g

Flying Weight/全配重:Approx 1700g



Features:

- ★Rigid carbon fiber frame design. ★Rotor head/tail with thrust bearings.
- ★Electric power system. ★Beautiful factory painted fiberglass canopy.
- ★Tail servo boom mount. ★Direct-to-swash CCPM linkage. ★Fully driven tail auto rotation system.
- ★Simple and light weight design provides awesome flight performance and extreme 3D capability.
- ★Center of gravity of Battery tray designed close to the rotor head. ★Tail rotor drive belt system.

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ALIGN CORPORATION LIMITED

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Dec.2007