# ALIGN

# TREX 700E INSTRUCTION MANUAL 使用說明書

KX018E06T





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Thank you for purchasing of Align products. Please read the manual carefully before installing and be sure to retain the manual for future reference. All pictures shown are for illustration purpose only. Actual product may vary due to product enhancement. Specifications, contents of parts and availability are subject to change, ALIGN RC is not responsible for inadvertent errors in this publications.

承蒙閣下選用亞拓遙控世界系列產品,謹表謝意。使用前,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,以做為日後參考。本公司將不對此印刷物之異動負責,也無法主動通知消費者任何更新或異動。所有圖片僅用於展示目的。產品可能因產品改良而有些不同。本說明書內記載的材質、規格或零件包裝之內容物如有異動,請依亞拓官網公告為主。



Thank you for buying ALIGN Products. The T-REX 700E F3C 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 700E F3C 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.

感謝您遺購亞拓產品,為了讓您容易方便的使用 T-REX 700E F3C 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 700E F3C 是由亞拓自行研發的新產品,不讓您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 700E F3C 將是您最佳的選擇。

#### WARNING LABEL LEGEND 標誌代表涵義

○ FORBIDDEN 禁止 Do not attempt under any circumstances.

在任何禁止的環境下,請勿嘗試操作。

**A**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。

<u>↑</u>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。

#### IMPORTANT NOTES 重要聲明

R/C helicopters, including the T-REX 700E F3C 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. This product is 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.

As the user of this product, you are solely responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

T-REX 700E F3C 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,使用之前講務必詳讀本說明書,勿聽忽並注意自身安全。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。

做為本產品的使用者,您,是唯一對於您自己操作的環境及行為負全部的責任之人。

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 700E F3C 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. As Align Corporation Limited has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.

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,將無法於保魯條件內更換 新品或邀貨,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。對使用者的不當使用、設定、組裝、修改、或操作不 良所造成的破損或傷害,本公司無法控制及負責。任何使用、設定、組裝、修改、或操作不良所造成的破損、意外或傷害,使用者應承擔全部責任。

#### 2.SAFETY NOTES 安全注意事項

ALIGN



- 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.
- Prior to every flight, carefully check rotorhead spindle shaft screws and tall blade grip screws, linkage balls and screws, ensure they are firmly secured.
- ・ 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。
- · 每趟飛行前須仔細檢查, 主旋翼夾座橫軸螺絲、尾旋翼夾座螺絲, 以及機身各部位球頭、螺絲, 確實上腳鎖緊才能升空飛行。

#### 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 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. Do not fly your model in inclement weather, such as rain, wind, snow or darkness.

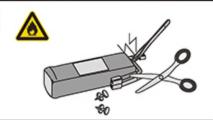
直昇機飛行時具有一定的速度,相對的也潛在著危險性,場地的選擇也相對的重要,請需遵守常地法規 到合法遙控飛行場地飛行。務必選擇在空曠合法專屬飛行場地,並必須注意陶遺有沒有人、高樓、建築 物、高壓電線、樹木等等,避免操控的不當造成自己與他人財產的損壞。 請勿在下雨、打雷等惡劣天候下操作,以確保本身及機體的安全。



○ FORBIDDEN 禁止

#### NOTE ON LITHIUM POLYMER BATTERIES 鋰聚電池注意事項

Lithium Polymer batteries are significantly more volatile than alkaline or Ni-Cd/Ni-MH batteries used in RC applications. All manufacturer's instructions and warnings must be followed closely. Mishandling of Li-Po batteries can result in fire. Always follow the manufacturer's instructions when disposing of Lithium Polymer batteries. 鋰聚電池跟一般在RC使用的鹼性電池、線鋼電池、線氫電池比較起來是相對危險的。請嚴格遵守鋰聚電池說明書之使用注意事項。不恰當使用鋰聚電池,可能造成火災並偏及生命財產安全,切勿大意!



#### 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.

[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 !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。



#### 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 or unforeseen danger may happen. (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,因為開啟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離度,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,否則將可能造成不可預期的意外發生。(勤練電腦模 援器及老手指導是入門必要的選擇)



**MARNING** 

#### 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. 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.

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 膀將可能會提高。不可在視線範圍外進行,降落後也請馬上關掉直昇機和遙控器電源。



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

During the operation of the helicopter, the main rotor and tall 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.

直昇機主旋翼與尾旋翼運轉時會以高轉速下進行,在高轉速下的旋翼會造成自己與他人在身體上或環境上的嚴重損傷,請勿觸摸運轉中的主旋翼與尾旋翼,並保持安全距離以避免造成危險及損壞。



#### ↑ CAUTION KEEP AWAY FROM HEAT 遠離熱源

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

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。





#### 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(七勤以上)



Li-Po Battery Charger Li-Po電池充電器



22.2V 6S 4500~5200mAh Li-Po Battery x 2pc 22.2V 6S 4500~5200mAh Li-Po電池 x 2

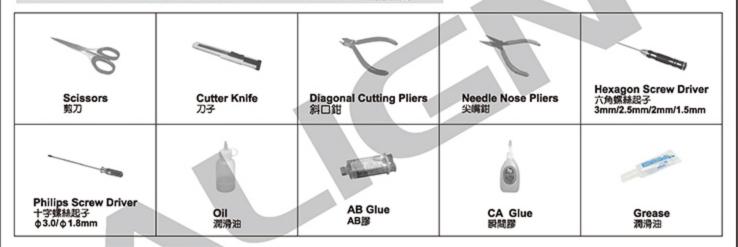


Receiver battery 7.4V 2S 1900~2300mAh Li Po x 1pc 接收機電池7.4V 2S 1900~2300mAh Li-Po x 1

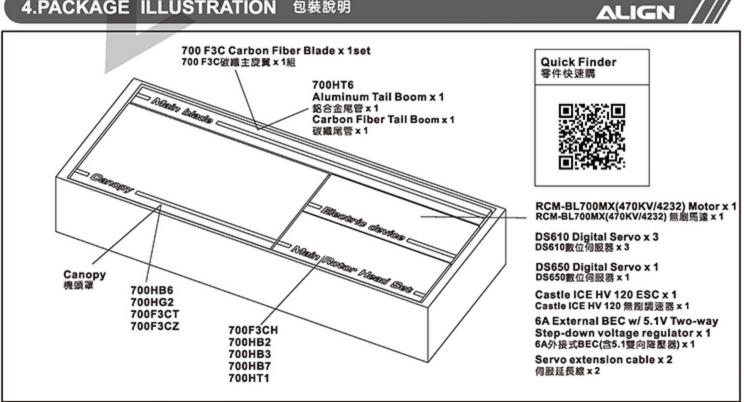


Dial Pitch Gauge x 1pc 旋轉式螺距規 x 1

#### ADDITIONAL TOOLS REQUIRED FOR ASSEMBLY 自備工具



### 4.PACKAGE ILLUSTRATION



There are many versions of T-REX 700E F3C for your choice. The Super Combo includes additional electronics and other equipment. The Instruction Manual will reference the T-REX 700E F3C Super Combo. You may purchase any additional items referenced in the instruction manual or any spare parts for other 700E F3C version by referring to more product information in this manual.

T-REX 700E F3C 系列商品有多種版本可作為選擇,除標準配備會因您購買的商品版本而有 些微不同,在組裝、設定上都是一致的,在此我們以 Super Combo 作為操作範例,您也可 依照書面上的商品資訊來增添其他選購商品。



#### T-REX 700E F3C SUPER COMBO STANDARD EQUIPMENT T-REX 700E F3C SUPER COMBO 標準配備 [KX018E06T] 700HC2 700F3CH 700HB1 700HB2 700HB3 CNC Slant Thread Main Drive Gear 700HB7 700HG2 700F3CT 700HB6 700HT1 . 100.00 M4x4 Set Screw x 2 RCM-BL700MX (470KV/4232) Brushless Motor x 1 M4x4止洩螺絲x2 700 F3C Carbon Fiber Blades x 1set Motor Stant Thread Pinion Gear 12T x 1 700 F3C碳纖主变質 x 1組 700HT6 700F3CZ RCM-BL700MX (470KV/4232) 数段馬達x1 馬達斜線輸 12T x 1 DS610 Digital Servo x 3 DS610數位伺服器 x 3 CNC Metal Servo Horn CNC金屬伺服器舵角片 x 3 6A External BEC w/ 5.1V Two-way GP780 Head Lock Gyro Combo x 1 Castle ICE HV 120 ESC x 1 Step-down voltage regulator 6A外接式BEC(含5.1复向异歷费) GP780額定式於養儀組(GP780+DS650) x 1



#### CAREFULLY INSPECT BEFORE REAL FLIGHT 請嚴格執行飛行前之檢查義務

- 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 if 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,以確保您自身與他人的安全。
- 每次飛行前確定您發射器與接收器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。
- 關機時必須遵守電談開關機的程序,開機時應先開啟發射器後,再開啟接收器電源;關機時應先期閉接收器後,再關閉發射器電源。不正確的開關程序可能會 造失控的现象,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說的螺絲與螺帽,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:每次飛行前的安全檢查、保養、及更換損耗零件,請確實嚴格執行以確 保安全。
- 檢查所有的連桿頭是否有鬆脫的情形,過緊的連桿頭應先更新,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。

When you see the marks as below, please use relative glue or grease to ensure flying safety. 標有以下符號之組裝步驟,請配合上腳或上油,以確保鎖附零件使用之可靠度。

CA: Apply small amount of CA Glue to fix. 瞬間夢:使用適量瞬間譯固定

 OIL: Add small amount of OIL. 潤滑油:添加適量潤滑油

R48: Apply small amount of Anaerobic Retainer to fix. 缺氧膠:使用適量缺氧膠固定

 Grease: Add small amount of Grease. 潤滑油:添加適量潤滑油

 T43 : Apply small amount of Thread Lock to fix. 螺絲膠:使用適量螺絲膠

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



Keep plastic parts away from heat. 塑膠件避免接近熱源。



**CA Glue** 



Anaerobic Retainer



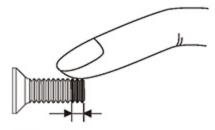
Thread Lock



Grease 潤滑油

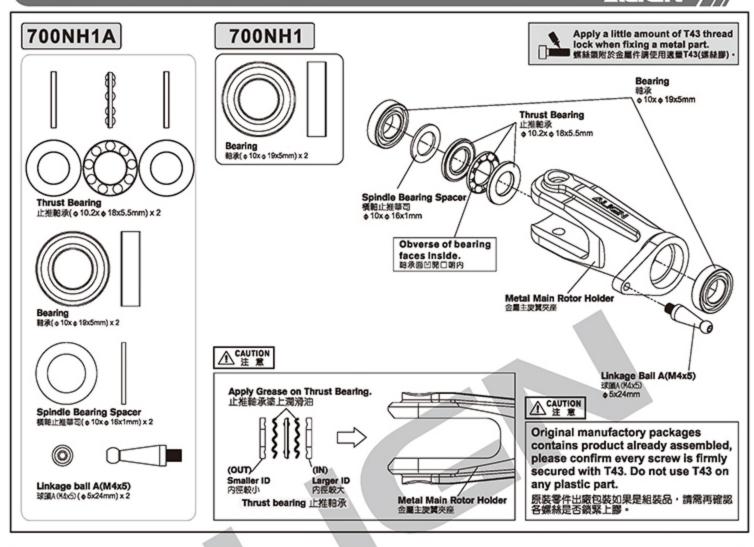


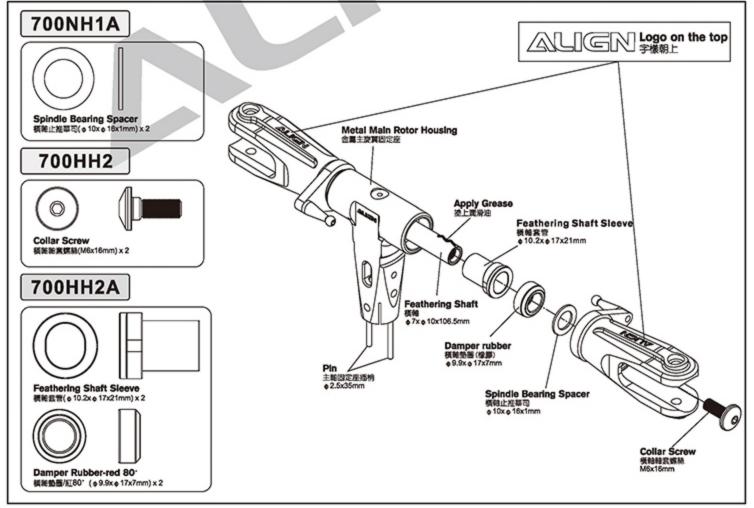
Oil

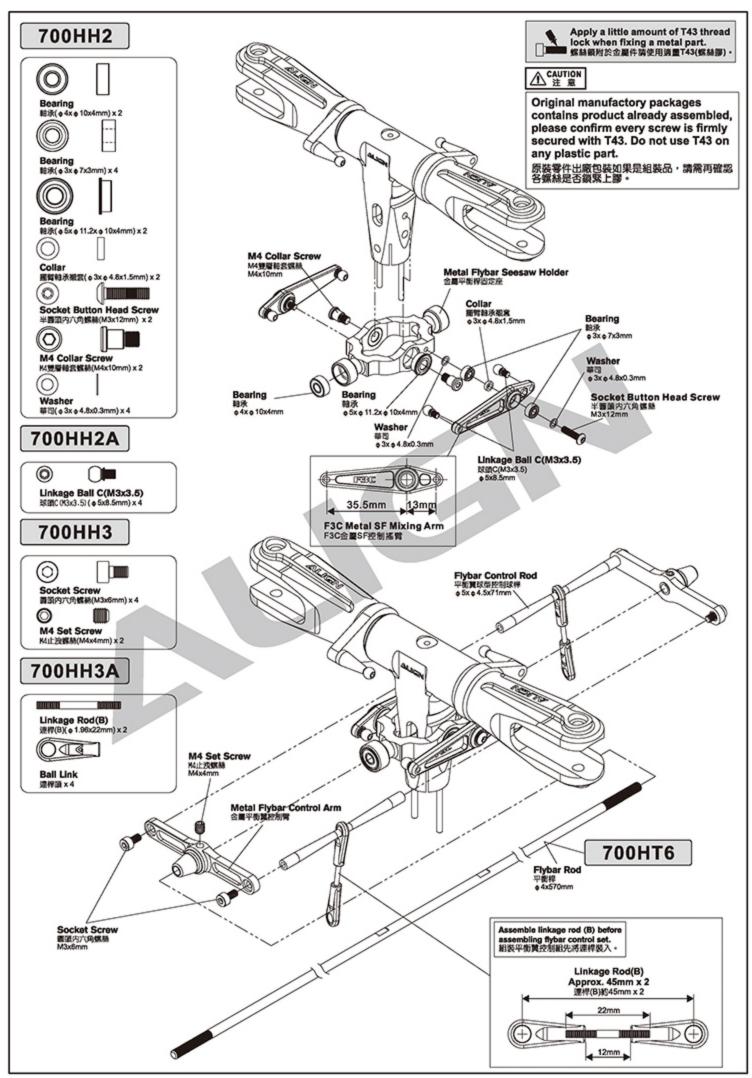


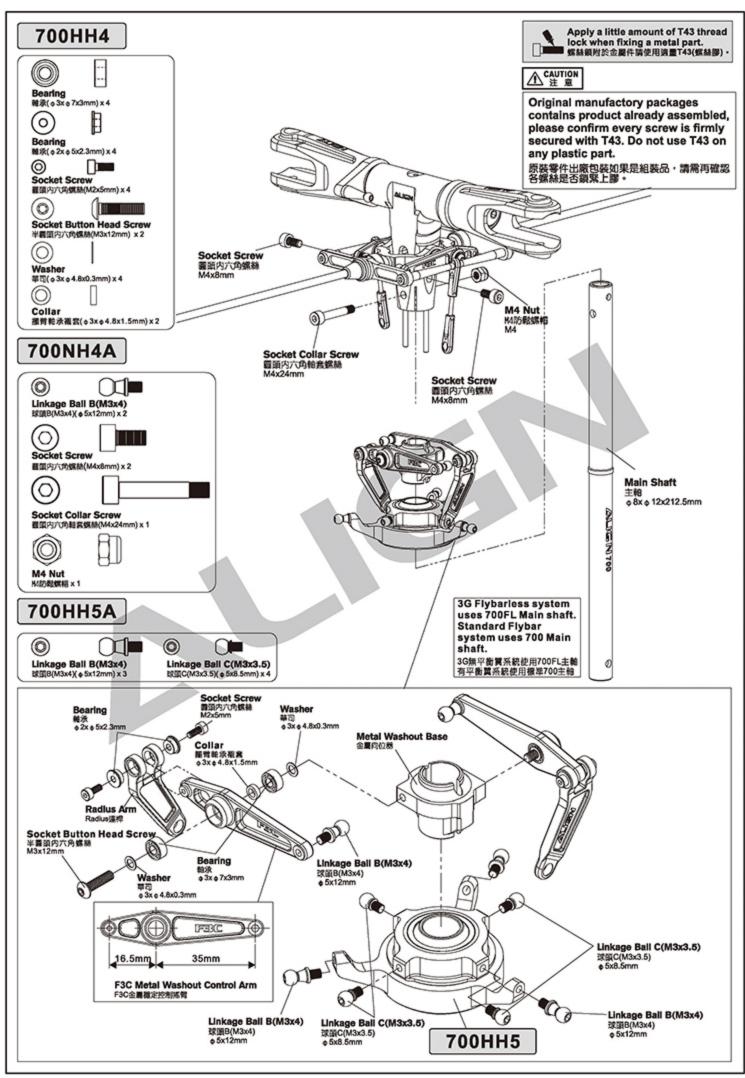
T43 Glue width : approx. 1mm T43 上陽實度約 1mm

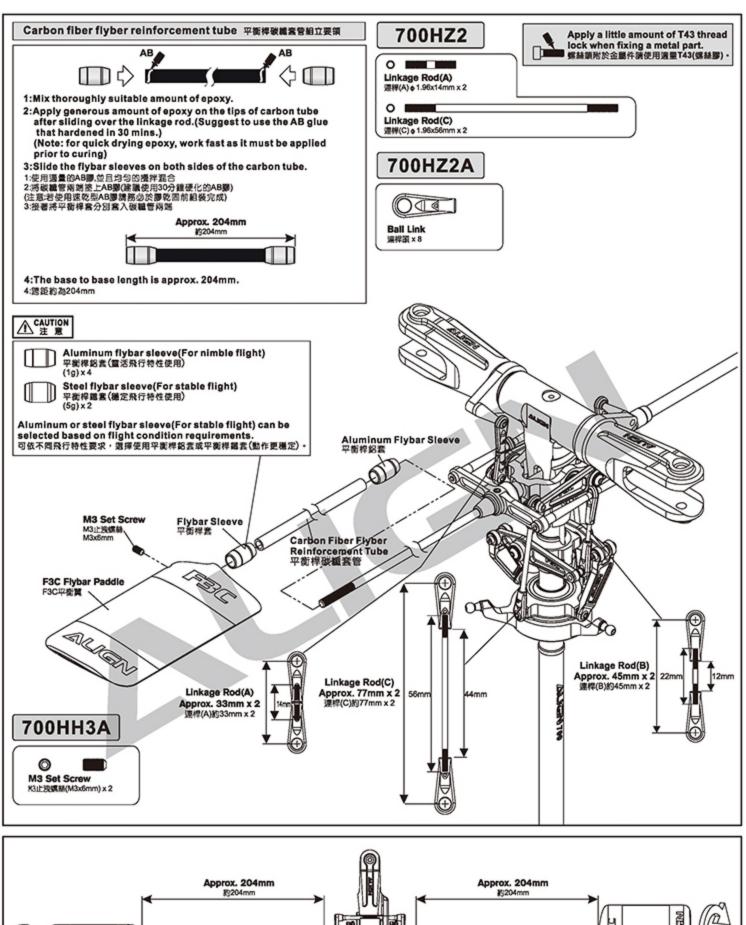
- Anaerobic Retainer (R48) is green penetrating threadlocker and is used to fix the metal tube before assembly at temperatures up to +180°C -
- Thread Lock(T43) is blue low strength threadlocker and is applied to the small screw(threads) or metal parts before assembly to prevent loosening. Ensure to apply only a small amount and wipe surplus off. When disassembling, recommend to heat the metal joint about 15 Seconds.
- Grease is kind of lubricant additive which is applied to the one-way bearings or thrust bearing.
- Based on parts physical attributes, please apply small amount of the relative glue or grease accordingly to prevent any parts damage or loosening or unexpected danger happened.
- 1.缺氧膠(R48)為綠色高強度快速固化的缺氧膠,適合於金屬管狀固定用,可耐高溫至180°C。
  2.螺絲膠(T43)為藍色低強度螺絲膠,適合小型螺絲;使用於金屬內外徑或膠合螺絲時,讀務必適量使用,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。
- 3.潤滑油 (Grease) 為膏狀潤滑油,適用於單向軸承或止推軸承。
- ◎上述各類功能膠(油)請依零件關性需求自行準備並斟酌其用量,以達到最佳組裝狀態,避免因使用不當造成零件損壞或不可預期的意外發生。

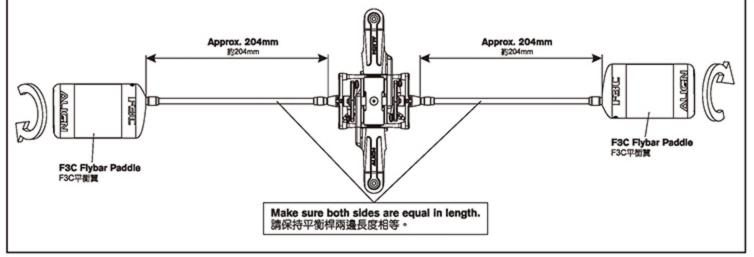


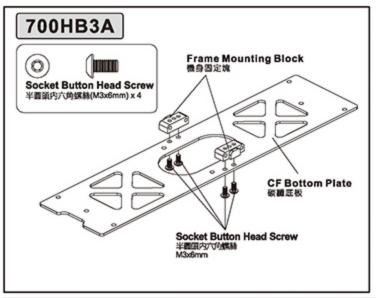


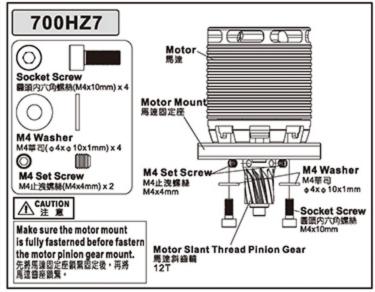


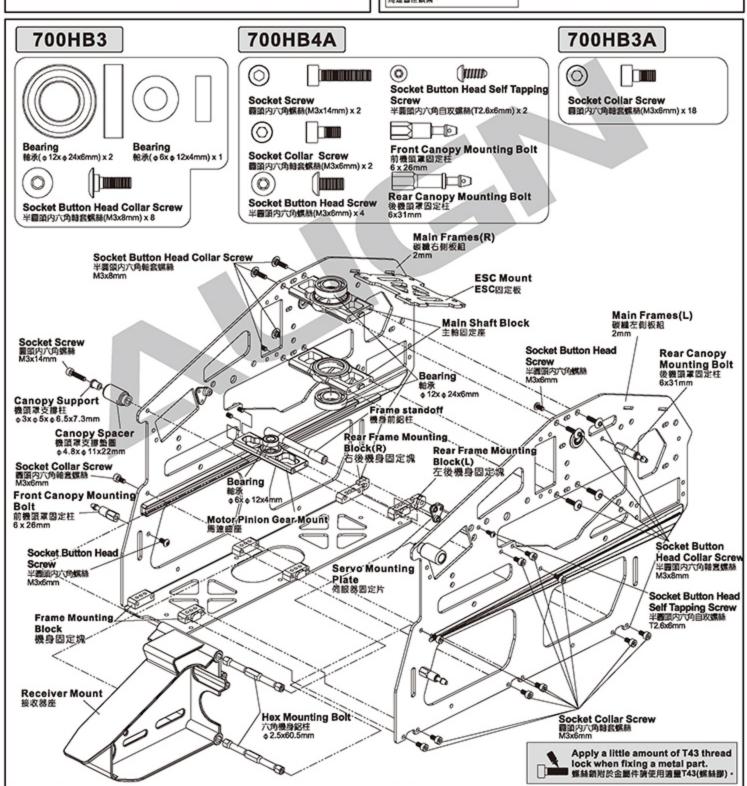


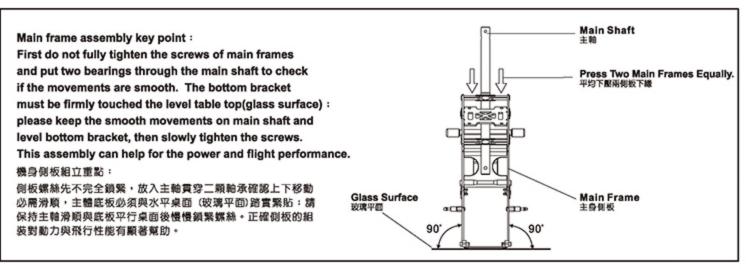


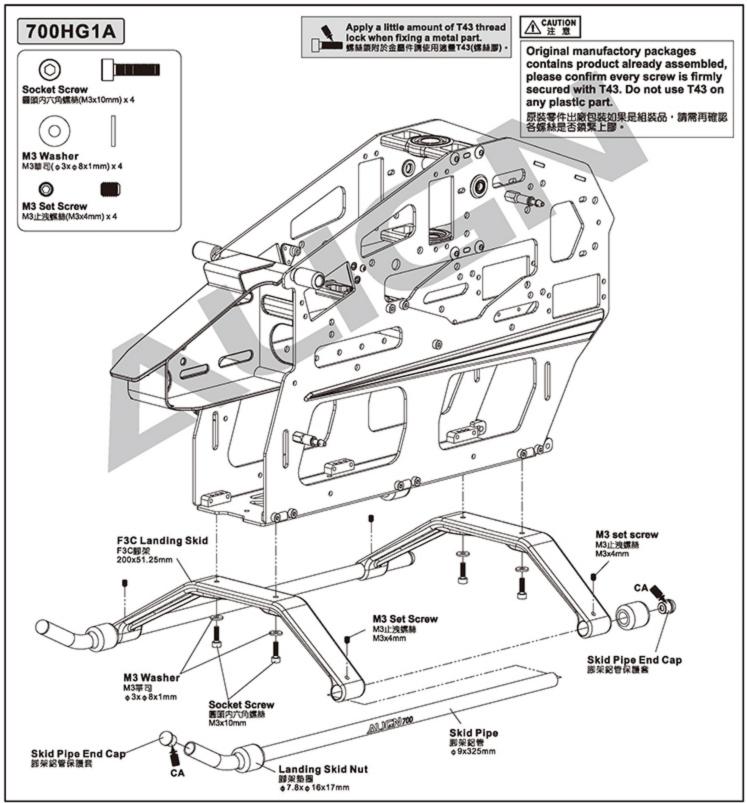


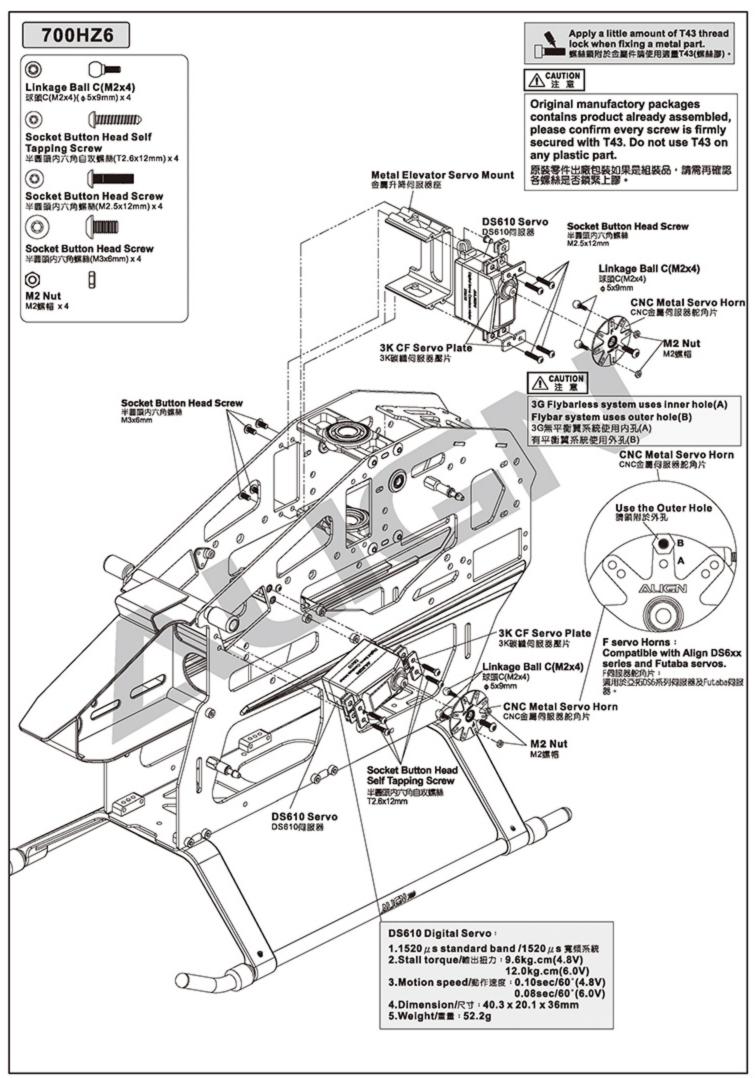


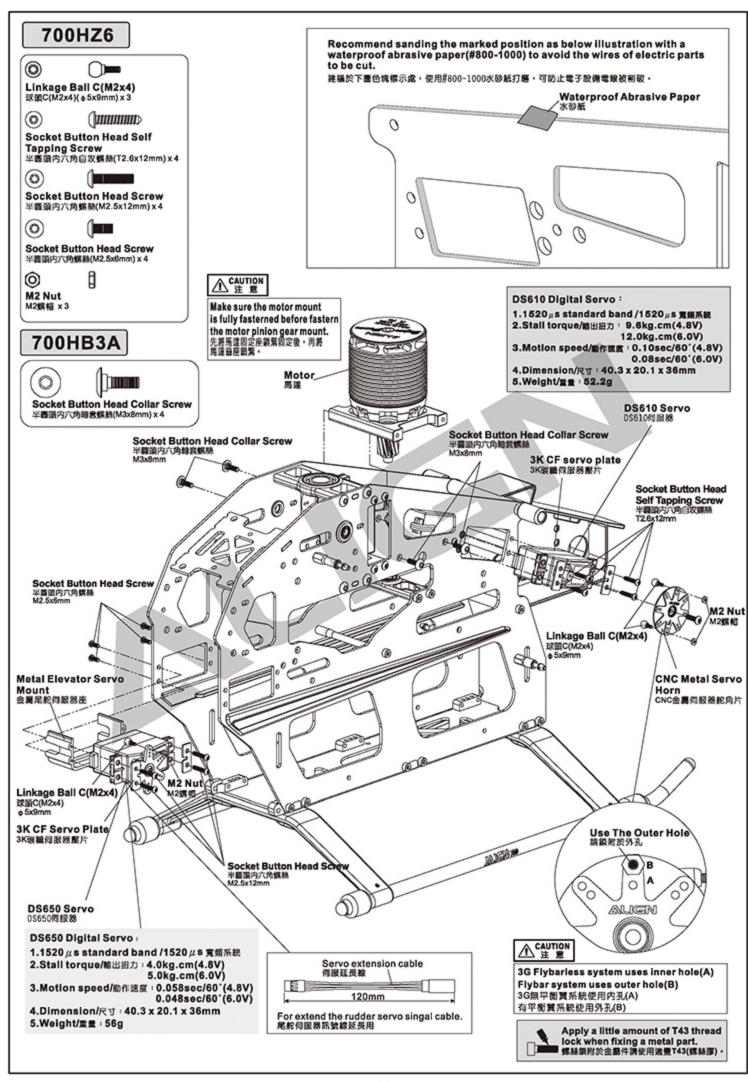


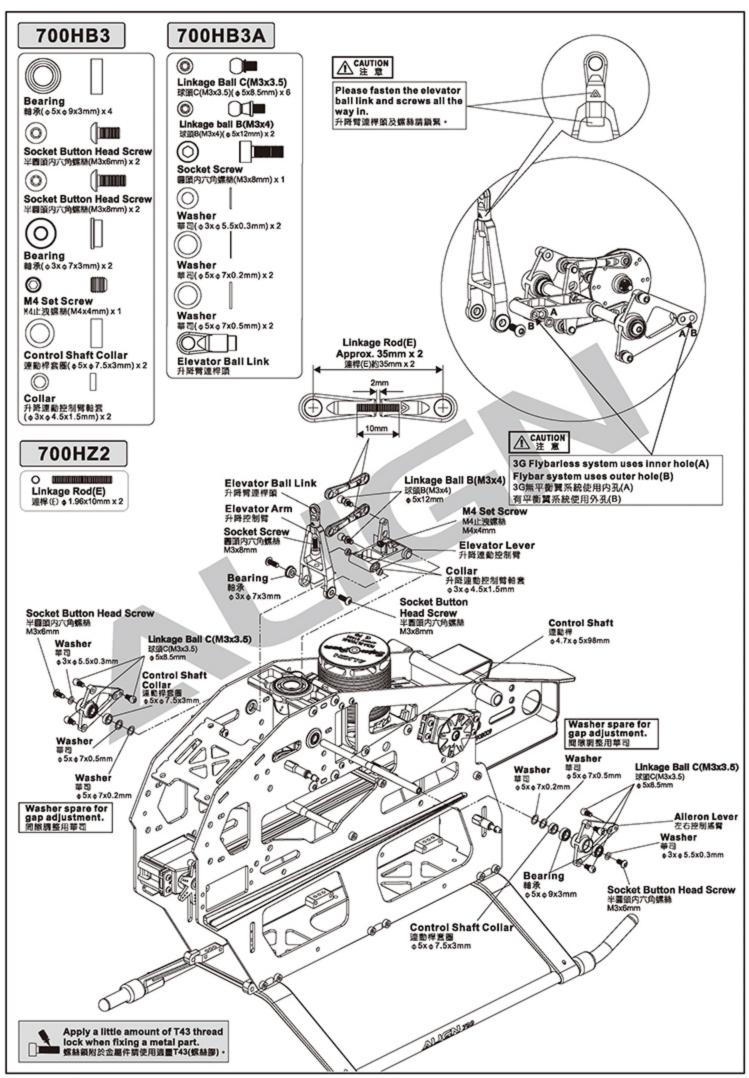


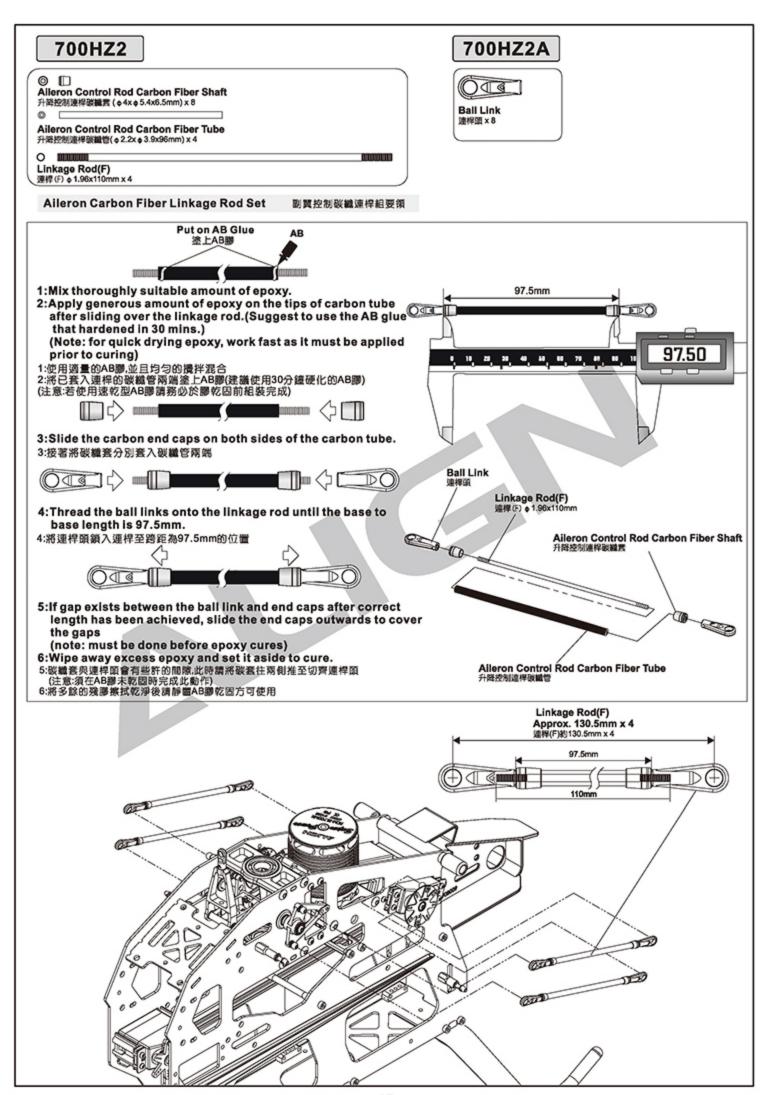


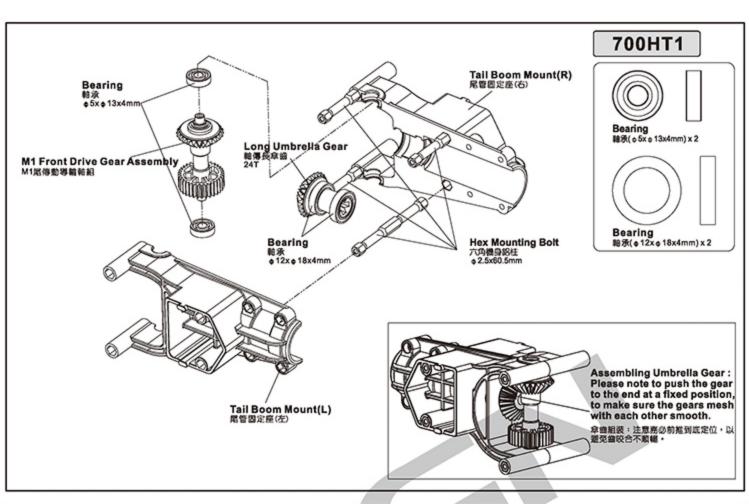


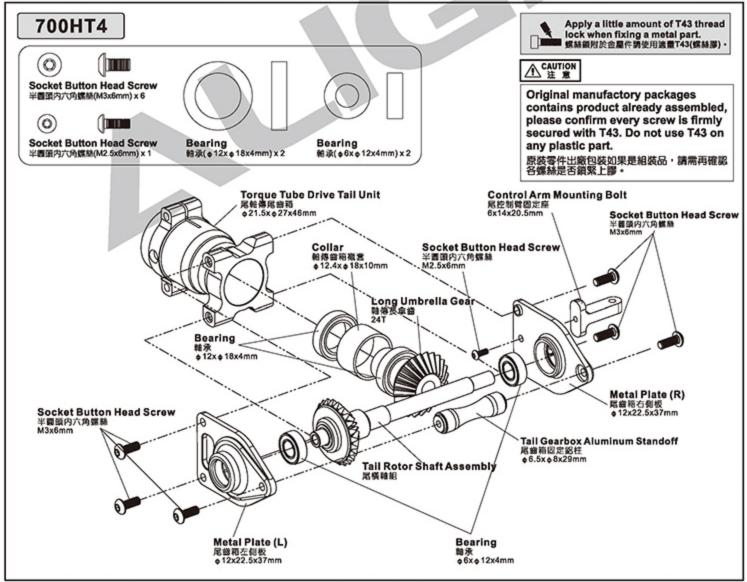


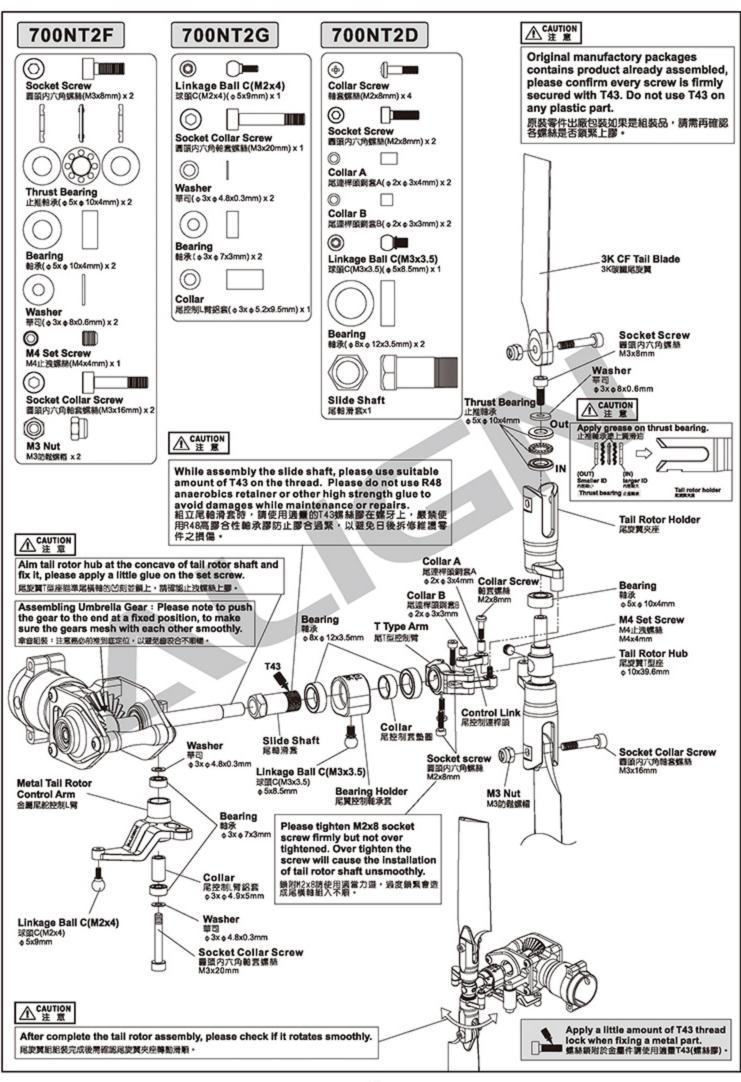


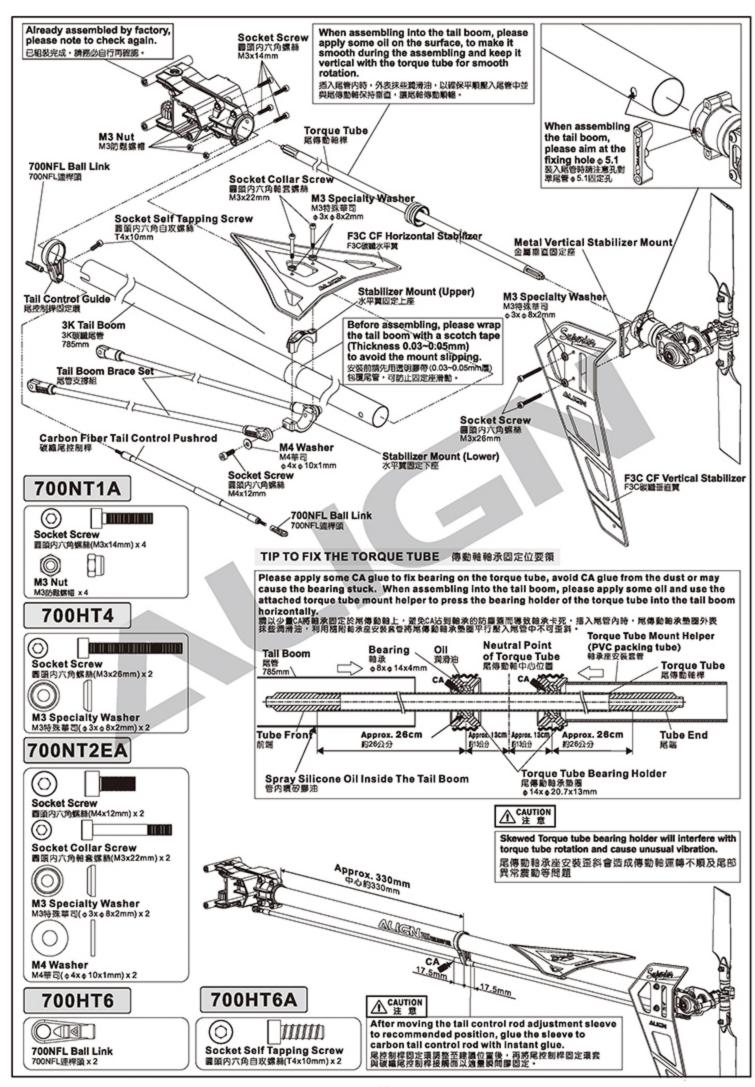


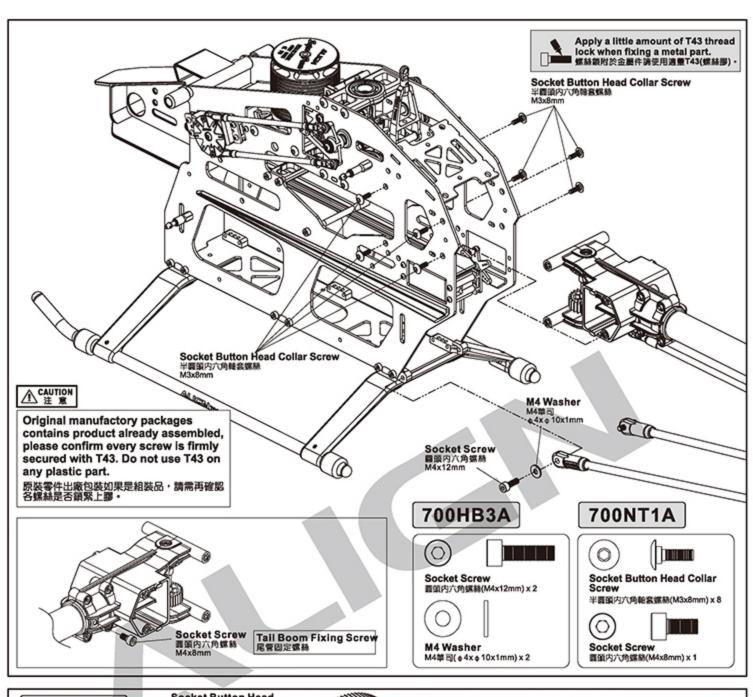


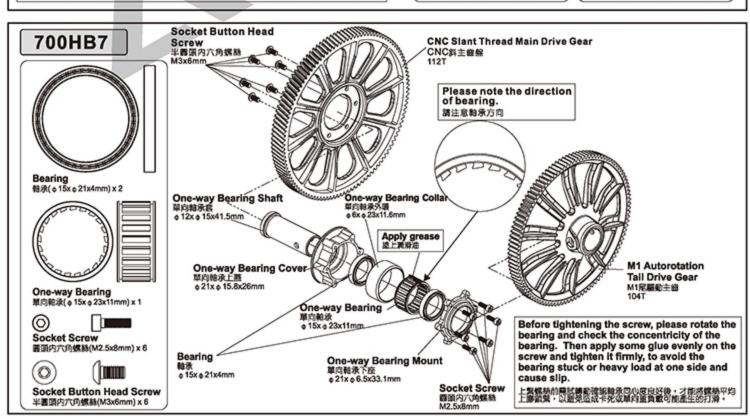


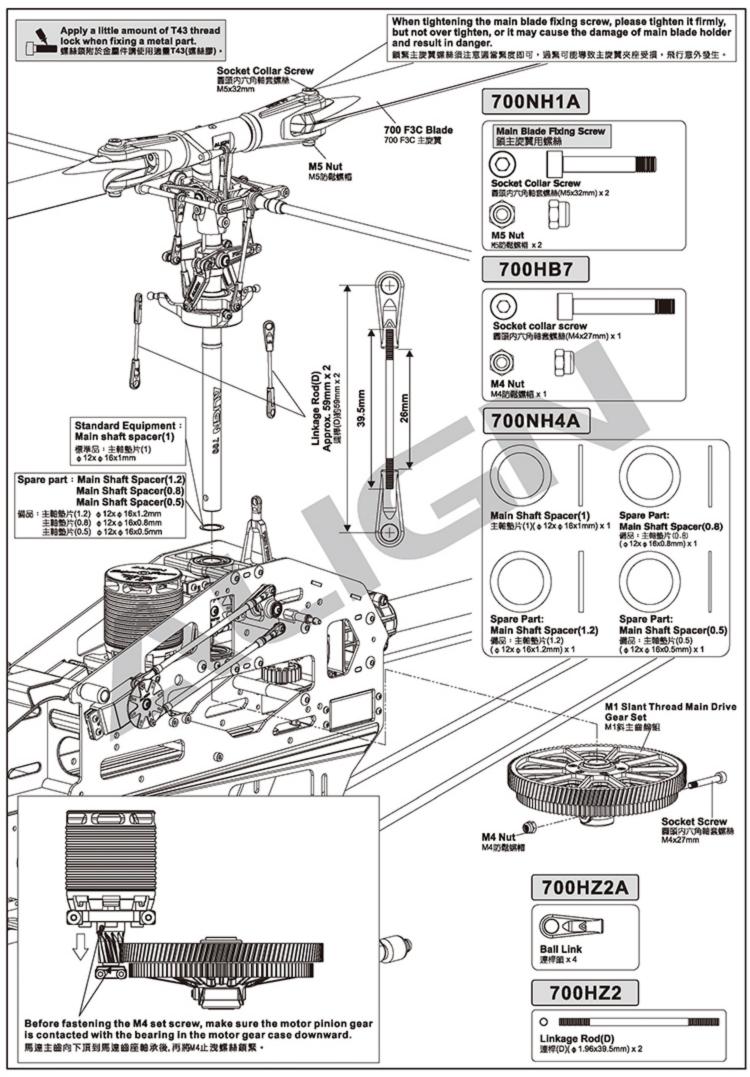


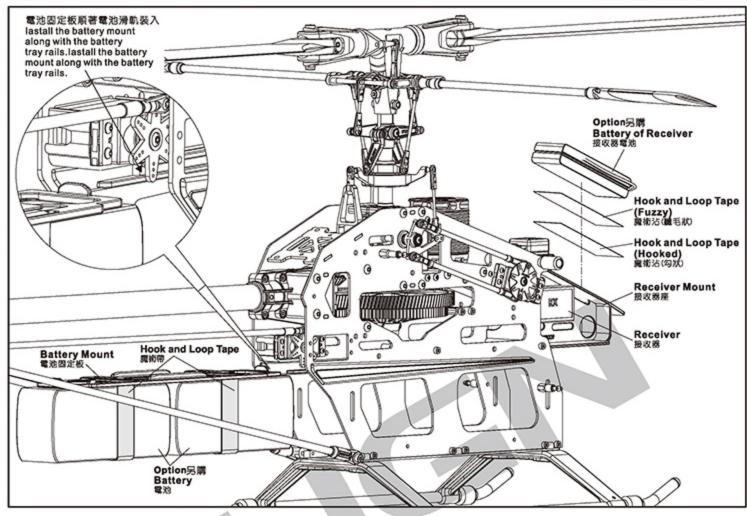


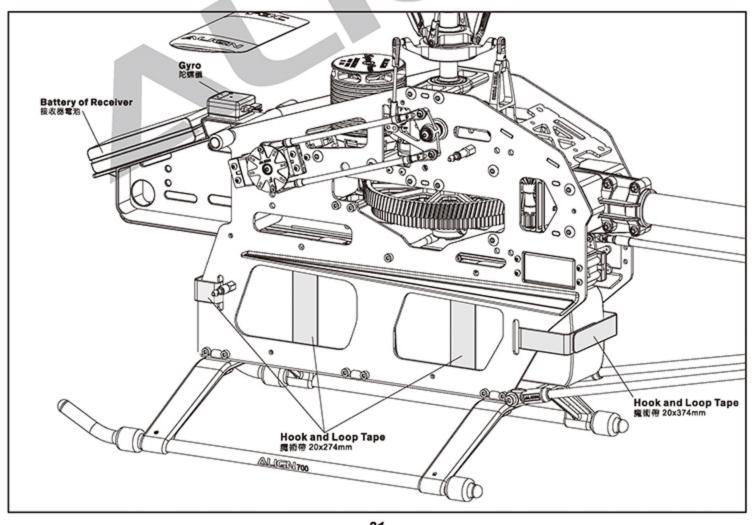


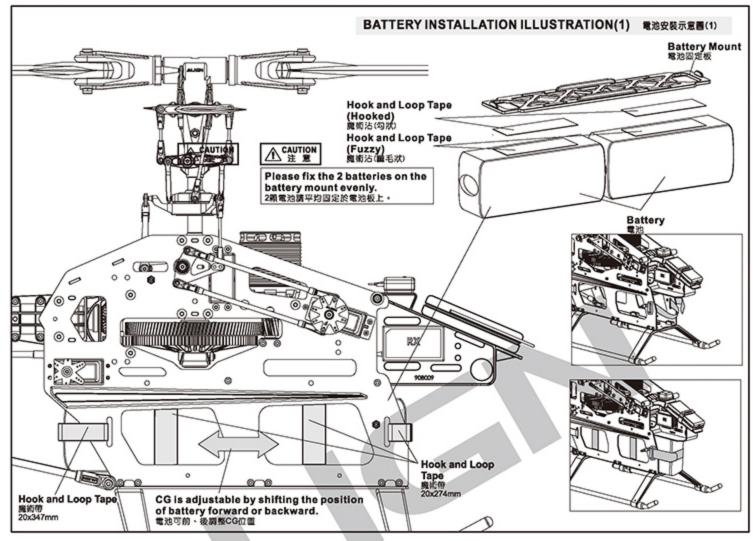


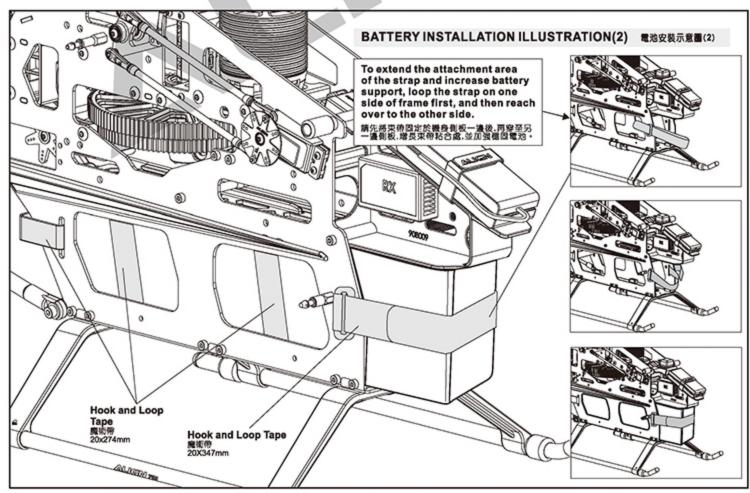


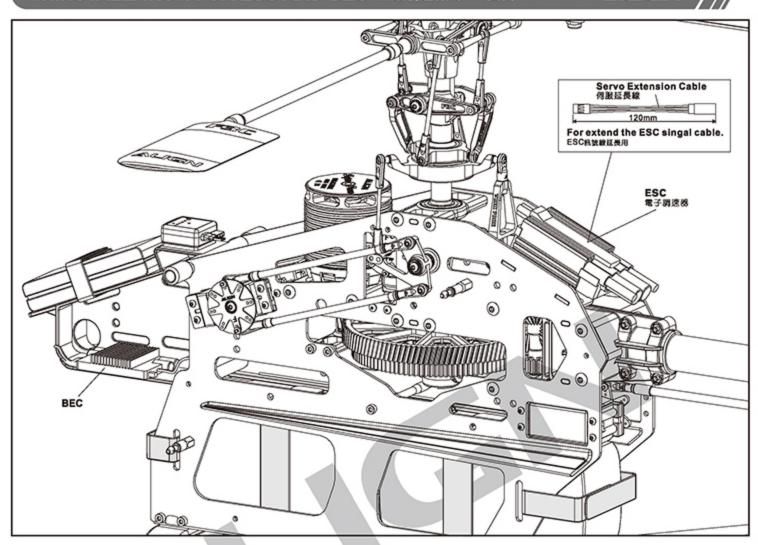






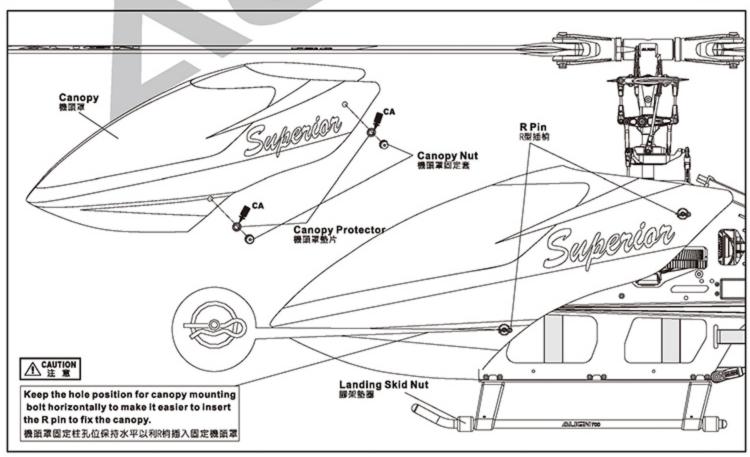


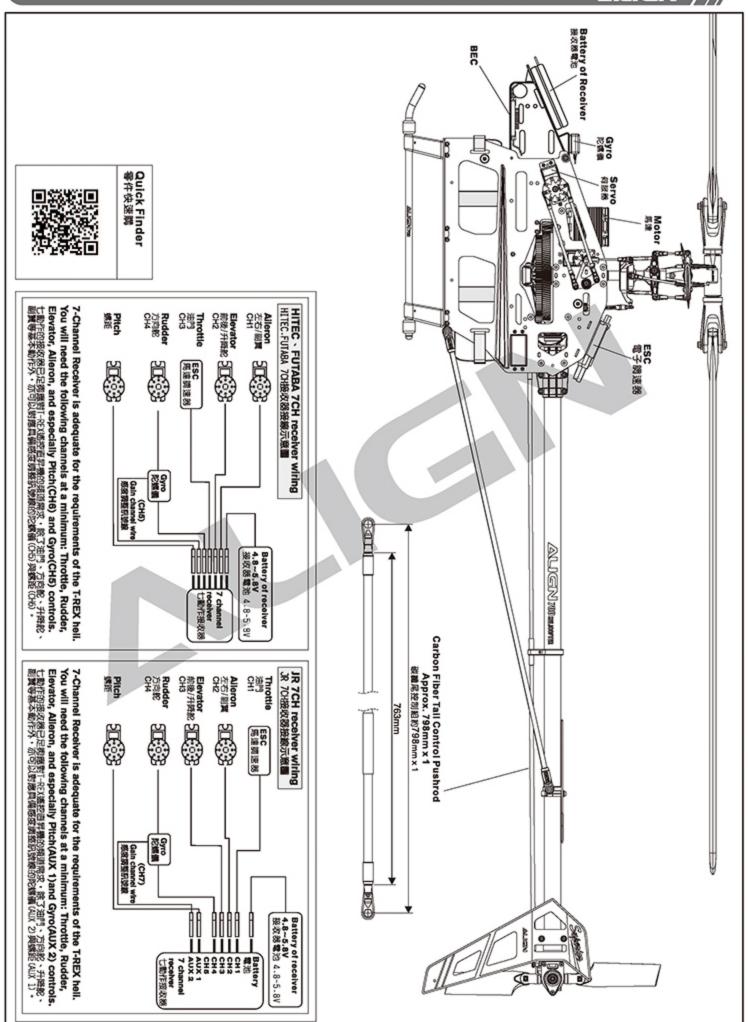




## 11.CANOPY ASSEMBLY 機頭罩安裝

ALIGN





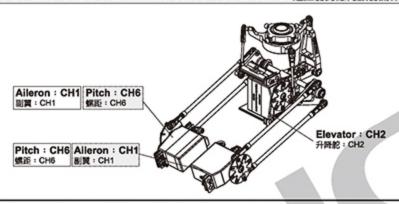
To set this option is to turn on the transmitter and connect to BEC power. 此項設定只要開啓發射器,接上BEC電源即可進行操作。

## JR Transmitter/Servo JR遞控器對應伺服器關係 Alleron: CH2 Pitch: CH6 順東: 02 Pitch: CH6 順東: 08 Pitch: CH6 副東: 02 Elevator: CH3 升降紀: CH3

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 Alleron and Elevator are opposite, adjust travel values of SWASH CH2 and CH3.

CH2、CH6可互換配置,依置連結後(注意:連控器須設定於 CCPM 120 十字盤模式),將油門總桿(Pitch)往上推,若十字盤 但級器有1個或之個往下移時,讀調整進投器的反轉編輯(REV)使 何級器在上,若3個相級器何時往下移時,讀調整進控器 SWASH CH6 行程量的正負值,使何級器何時往上早移,劃質與 前後動作相反時,同樣凱整 SWASH CH2、CH3 行程量正負值。

#### FUTABA/HITEC Transmitter/Servo FUTABA/HITEC遞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 r everse 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,依置連絡後(注意:進按級領股定於 CCPM 120 十字整模式),將油門基準(Pitch)往上推,若十字盤 但以務有1個或200往下移時,購調整基皮器的反降開闢(REV)使 何以務住上,若3個何以務何時往下移時,購調整基控務 SWASH CH6 行程量的正負值,使何服務向時往上學移,劃質與 前被動作相反時,同樣調整 SWASH CH1、CH2 行程量正負值。

### 14.ADJUSTMENTS FOR GYRO AND TAIL NEUTRAL SETTING 陀螺镀與尾翼中立點股定調本LICIN

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 BEC power to work on tall neutral setting.

Note: When turn on BEC power, please do not touch tall rudder stick and the helicopter. Then wait for 3 seconds, make tall 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.

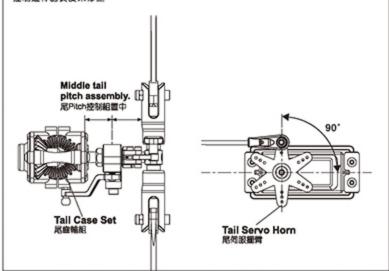
陀螺儀選擇,建議選用獅定式陀螺儀,其發射器內陀螺儀設定請關閉根軸混控模式,並將發射器上的感度開關與陀螺儀切至鎖定模式,感度設約 70% 左右,發射 器設定完成後接上BEC接收電源,即可進行尾中立點設置。

注意:當客動BEC電源時期勿投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轄行程約中間位置,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 tall servo and tall 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.

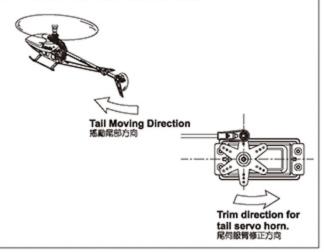
. 陀螺藥鋼定後尾何級器與尾 Pitch控制組正確攜置位置。若尾 Pitch控制組未置中時請關整尾 控制連桿的長度來修正。



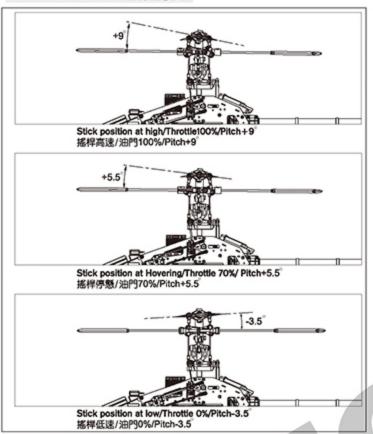
## HEAD LOCK DIRECTION SETTING OF GYRO 陀螺儀鎖定方向設定

To check the head lock direction of gyro is to move the tail counterclockwise and the tall servo horn will be trimmed counterclockwise. If it trims in the reverse direction, please switch the gyro to "REVERSE".

陀螺儀鎮定方向確認,當手搖尾部反時鐘擺動,尾伺設腎應反時鐘修正,反向時請切換陀螺儀上"鎖定反向"閱購修正。

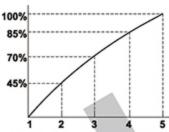


#### GENERAL FLIGHT 一般飛行模式



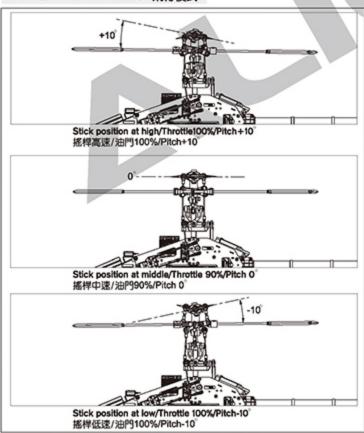
## GENERAL FLIGHT 一般飛行模式

Throttle 油門		Pitch 螺距
5	100%High speed 100%高速	+9°
4	85%	
3	70%Hovering 70%停懸	+5.5°
2	45%	
1	0% Low speed 0%低速	-3.5



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

#### IDLE UP FLIGHT IDLE UP飛行模式

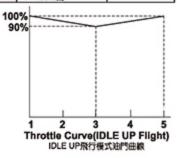


- ▲ CAUTION 1.Pitch range : Approx. ±12 degrees. 2.If the pitch is set too high, it will result in shorter fight duration and poor motor performance.
  - 3.Setting the throttle to provide a higher speed is preferable to increasing the pitch too high.
  - 1.螺距(Pitch)總行程約 ±12

  - 2.週大螺距設定,會導致動力與飛行時間降低。
     3.動力提昇以較高轉速的設定方式,優於螺距調大的設定。

#### IDLE UP FLIGHT

	Throttle 油門	Pitch 飯節
5	100% High 100%高	+10
3	90% Middle 90%Ф	0°
1	100% Low 100%低	-10°



■Input voltage: DC7.4V 2cell Lithium battery

Output voltage: DC5.8V Max. Continuous Current: 6A

Integrated power switch and voltage indicator meter

Utilizes a linear design, resulting in no interference to the receiver.

●Including a 5A 5.1V two-way step-down Voltage Regulator

Size: 60x34x15mm

Weight: 31g(including wire set)

●輸入電壓: DC 7.4V 2CELL經電

●輸出電壓: DC 5.8V

●最大連續輸出電流:6安培

具電源切換開關與電壓指示燈功能

採線性設計,無干擾接收機的缺點

●附5A5.1V雙向降壓器 ●尺寸: 60x34x15mm

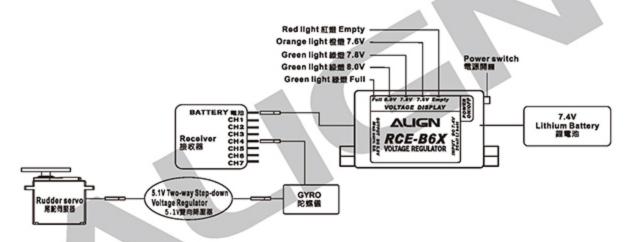
●重量: 31g (含線組)

#### WIRING ILLUSTRATION:

Connect a 5.1V two-way step-down voltage regulator between the gyro and the rudder servo.

#### 接線示意圖:

5.1V 雙向降壓器連接於陀螺儀與尾舵伺服器之間。



#### Instruction:

- 1. Auto-detecting voltage meter display lights. If the entire five-light array is illuminated, the battery is fully charged. When the voltage drops below 7.6V, the three green lights will be turned off. Use caution, the battery can only be safely used for a single flight. When only the red light is on, the battery voltage is drained, and must be fully recharged before use. Do not attempt to operate the model during this condition!
- 2. Some servos such as Futaba servo models 9241, 9251, 9253, 9254, 9255, 9256 and other digital servos are not capable of handling 6V. Please connect a 5.1V two-way step-down voltage regulator to avoid the servo damaged. If you are using a servo that can accept 6V input, the regulator is not required.
- When using a speed controller with BEC output, you must remove the red wire of BEC output on the speed controller.
- 4. If the receiver does not have enough channels or an available socket, you can use a Y-type servo harness to share any channel with an existing connection.
- 1. 本產品具電壓指示功能,當接入充飽的電池騎五顆指示燈全亮,表示電池在Full電量充足狀態下;使用中當電壓降低至7.6V詩 (3顆綠燈熄滅) ,尚可完成單題 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!
- 部份的伺服器如:Futaba 9241.9251.9253.9254.9255.9256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 降壓器,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降壓器。
- 使用具BEC輸出之調速器時,必須將調速器BEC輸出的紅色線拆除!
- 4. 若接收機已無多餘的電源插孔時,可利用一條伺服Y型連接線,接到接收機的任一通道,再將外接BEC與拆下的通道一同接在Y型線上。

NOTE: When fixing the wire, please do not over tighten to avoid the connector come off or the wire broken when the helicopter rotates (vibration);

do not operate in rain or moisture environment to avoid the electric parts short circuit and damaged.

注意:固定線組時勿將各線組織緊,以冤直昇機運轉時因震動造成接頭獻說或斷線:避冤在兩中或潮濕的環境下使用,以冤造成零件短路而損壞。

## 17.RCM-BL700MX (470KV/4232) POWER COLLOCATION REFERENCE 原装動力數據参考表 人にしてい

BATTERY電池: ALIGN Li-Poly 44.4V 5200mAh

ESC 無刷網速器: Castle ICE HV 120 Governor Mode Set RPM

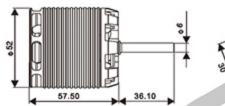
Motor Pinion Gear 馬達磁輪	Main Rotor Blade 主旋翼規格	Pitch 螺距		Current(A) approx. 電流(A) 大約值	Throttle Curve 油門曲線	Desired Head Speed 主旋翼轉速大約值
12T	700 F3C Carbon Fiber Blades 700 F3C碳纖主旋翼	Hover 停懸	+5"	14	Governor mode:up to 50% 定速模式50%以下	1450
			0.	16	Governor mode:50%~ 99% 定速模式50%~99%	1900
			±12'	54		
			0.	18	Governor mode:above 99%	2000
				±12"	57	定速模式99%以上

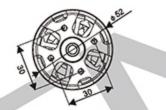
NOTE: 1. Please use a pitch gauge to adjust the pitch value. Incorrect excess pitch setting will result poor helicopter performance and reduce ESC's life and battery's life.

- 2. For the safeties of flight and helicopter structure, please do not equip the power of main blade over 2200 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,反會影響到無別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2200RPM。

#### RCM-BL700MX MOTOR RCM-BL700MX 無剧馬達

Specification 尺寸規格





KV	KV值	470KV(RPM/V)	Input voltage	輸入電壓	DC 11.1~50.4V
Stator Diameter	定子外徑	42 mm	Stator Thickness	定子高度	32mm
Stator Arms	砂鋼片槽數	12	Magnet Poles	磁鐵極數	10
Max continuous current	最大持續電流	90A	Max instantaneous current	最大瞬間電流	150A(5sec)
Max continuous power	最大持續功率	4000W	Max instantaneous power	最大瞬間功率	6600W(5sec)
Dimension	RY	Shaft 6x52x57.5mm	Weight	重量	Approx. 405g

#### Illustration 接線示意圖



The motor rotates in different direction with different brand ESCs. If the wrong rotating direction happens, please switch any two cables to make the motor rotates in right direction.

由於各品牌電子變速器的馬達客動轉向不盡相同,若發生轉向錯誤時,請將馬達與電子變速器的接線任兩條對調即可。

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

## ALIGN

#### PLEASE PRACTICE SIMULATION FLIGHT BEFORE REAL FLYING 飛行前請事先熟練模擬飛行

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

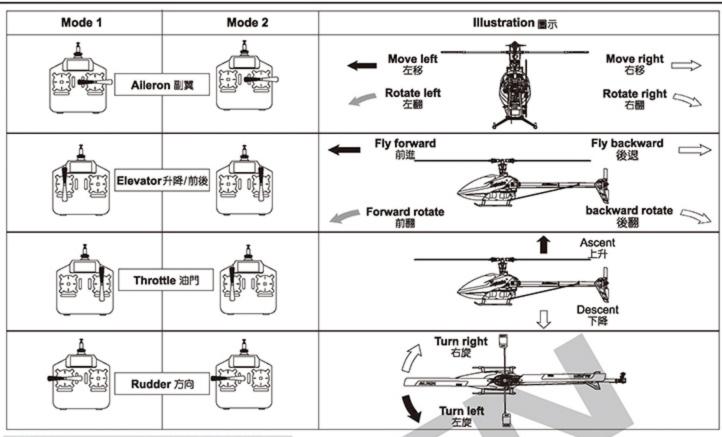
- 1. Place the helicopter in a clear open field ( Make sure the power OFF ) and the tail of helicopter point to yourself.
- Practice to operate the throttle stick(as below illustration) and repeat practicing "Throttle high/low", "Aileron left/right", "Rudder left/right", and "Elevator up/down".
- 3.The 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。







#### Flight adjustment and notice 飛行調整與注意

**企AUTION** 注意

©Check if the screws are firmly tightened.

- OCheck 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。

**企**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,讀確認他們的頻率,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。

#### STARTING AND STOPPING THE MOTOR 容動和停止馬達

**企**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。

- ★Check the movement.
- ★動作確認



ON! Step1
First turn on the transmitter.
先開啟發射器

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

Check if the throttle stick is set at the lowest position.

★When arriving at the flying field.

Slov 3/6/6 × 3/6/2 2/12

★當抵達飛行場

**企**CAUTION

確認油門搖桿是在最低的位置。

Mode 1 Mode 2

- OAre 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・

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

**企AUTION** 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.
- 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.
- . 調整前先在其中一支主旋翼的翼端,贴上有颜色的贴紙或畫上颜色記號,方便雙樂調整辨識。
- 2.慢慢的推起油門搖桿到高點並且停止,在飛機難開地面前,從飛機制邊觀察主旋翼轉動。
- 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"雙灤"的情形時,則必須立刻調整軌跡)。

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

B.When rotating, the blade with lower path means the pitch too small. 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,請調短連桿 (C) 修正。

股質轉動時較低軌節的主旋質表示羅鉅(PITCH)過小,請請長連桿(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 when hovering.

不正確的從質軌跡會導致震動,請不斷重複開整軌跡,使從質軌跡精準正確。

在開整軌跡後,確認一下Pitch角度在停旋時應為大約5°

#### FLIGHT ADJUSTMENT AND NOTICE FOR BEGINNERS 初學飛行網整與注意

Ouring the operation of the helicopter, please stand approximately 10m diagonally behind the helicopter.

○飛行時,請站在直昇機後方最少10公尺。



Make sure that no one or obstructions in the vicinity.

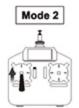
OFor flying safety, please carefully check if every movement and directions are correct when hovering.

◎確認鄭近地區沒有人和障礙物。

◎為了飛行安全,您必須先確認停懸時各項操控動作是否正常。

#### STEP 1 THROTTLE CONTROL PRACTICE 油門控制練習





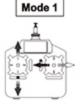


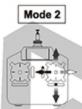
When the helicopter begins to lift-off the ground, slowly reduce the throttle to bring the helicopter back down. Keep practicing this action until you control the throttle smoothly.

Color mark 有標示記號的主旋翼

○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.
- Move the helicopter in any direction back, forward, left and right, slowly move the alleron and elevator sticks in the opposite direction to fly back to its original position.
- 1.慢慢升起油門搖桿。
- 使直昇模依指示:移動向後/向前/向左/向右,慢慢的反向 移動削翼和升降搖桿並將直昇機開回到原來位置。



### **A**CAUTION 注意

Solf 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.

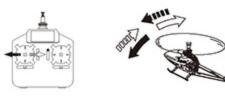
Olf the helicopter flies too far away from you, please land the helicopter and move your position behind 10m and continue practicing.

◎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。

◎假如直昇機飛艇你太遠・請先路落直昇機,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.
- 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。



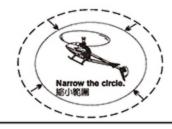
#### STEP 4

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 stepl-3 動作熟悉了,在地上畫圈團並在這個團團的範圍內練習飛行,以增加你操控的準確度。

OYou 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。



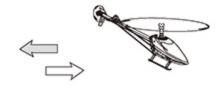
#### STEP 5 DIRECTION CHANGE AND HOVERING PRACTICE 改變直昇機方向和練習停旋

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 in front of the helicopter.

當你覺得step1-4動作熟悉了,站在面對直昇機倒邊並繼續練習step1-4。之後,站在直昇機機頭前方重複步驟練習。









#### 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,當直昇機刚剛難開地面時,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.

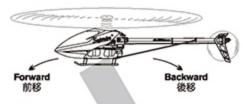
在直昇機正要起飛時,機頭朝前/後方向偏移...

向前偏移時·微調向下調整。

向後偏移時,微調向上調整。





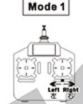


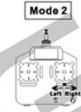
#### 2.Adjustment of Alleron trim 調整副翼微調 Just before the helicopter lift-off, the body

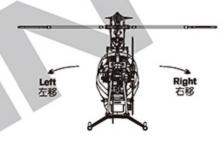
lean left/right...

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,微測向左調整。 向左偏移時,微測向右調整。







#### 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 雙榮	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) 調整連桿(C) 長度
During Hovering 停懸	Low rotation of the rotor 主旋翼轉速偏低	★Pitch of main blade is high. ★主旋翼的PITCH端离 ★Throttle curve is too low during hovering. ★停懸點油門曲線過低	★Lower the pitch about 4~5 during hovering(The rotation should be about 1700~1800rpm during hovering). ★調低P1tch停懸P1tch約4~5*(停懸時主旋翼黑為約1450-1500RPM) ★Heighten the throttle curve during hovering. ★調高停懸點油門曲線
	High rotation of the rotor 主旋簧轉速偏高	★Pitch of main blade is low. ★主旋翼的PITCH偏低 ★Throttle curve is too high during hovering. ★停懸點油門曲線邊高	★Adjust the pitch rod〈C〉(The rotation should be about 1700~1800rpm during hovering). ★撰整理本〈C〉(停懸時主旋寶帶為約1450-1500RPM) ★Lower the throttle curve during hovering. ★撰低停懸點油門曲線
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.  停慰時尾翼向某一邊傷移,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. ★陀螺儀數感度偏低	★Reset tail neutral point. ★重設尾中立點 ★Increase the sensitivity. ★増加感度
	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. 陀螺模敏感度偏高	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。

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## Specifications & Equipment/規格配備:

Length/機身長: 1343mm Height/機身高: 424mm

Main Blade Length/主旋翼長: 700mm

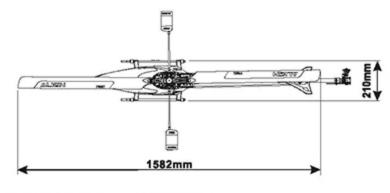
Main Rotor Diameter/主旋翼直徑: 1582mm Tall Rotor Diameter/尾旋翼直徑: 281mm

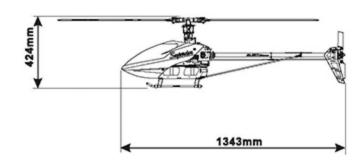
Motor Drive Gear/馬達齒輪: 12T Main Drive Gear/主齒輪: 112T

Autorotation Tail Drive Gear/尾驅動主齒: 104T

Drive Gear Ratio/齒輪傳動比: 9.33:1:4.33 Welght(With Motor)/空機重(含馬達): 3230g

Flying Weight/全配重: Approx. 5200g





亞布電器股份有限公司 AUGN CORPORATION LIMITED MADE IN TAIWAN