

Super Combo T-REX 600N DFC INSTRUCTION MANUAL

ALIGN

使用說明書 RH60N04XT



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BEASTX

MICROBEAST PLUS

6-AXIS MEMS SENSOR SYSTEM FOR RC-MODELS


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

感謝您選購亞拓產品，為了讓您容易方便的使用 T-REX 600N DFC 直昇機，請您詳細的閱讀完這本說明書之後再進行組裝以及操作這台直昇機，同時請您妥善的保存這本說明書，作為日後進行調整以及維修的參考。T-REX 600N DFC 是由亞拓自行研發的新產品，不論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 600N DFC 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。 |
|  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。 |

IMPORTANT NOTES 重要聲明

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

作為本產品的使用者，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 600N DFC 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. 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，將無法於保固條件內更換新品或退貨，如遇有使用操作維修問題，本公司全省分公司或代理商將提供技術指導、特價零件供應服務。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



- 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.
- Prior to every flight, carefully check rotorhead spindle shaft screws and tail 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，確實上膠鎖緊才能升空飛行。



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.

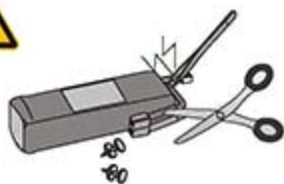
直昇機飛行時具有一定的速度，相對的也潛在著危險性，場地的選擇也相對的重要，請遵守當地法規到合法遙控飛行場地飛行。務必選擇在空曠合法專屬飛行場地，並必須注意周邊有沒有人、高樓、建築物、高壓電線、樹木等等，避免操控的不當造成自己與他人財產的損壞。請勿在下雨、打雷等惡劣天候下操作，以確保本身及機體的安全。



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、鎳鎘電池、鎳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，可能造成火災並危及生命財產安全，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.

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



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 RC 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。請確認於產品界限內操作，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，因為開啓相同頻率的發射器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藝初期有著一定的難度，要盡量避免獨自操作飛行，需有經驗的人工在旁指導，才可以操控飛行，否則將可能造成不可預期的意外發生。(動線電腦模擬器及老手指導是入門必要的選擇)



SAFE OPERATION 安全操作

Make sure to always be aware to keep your eyes and body away from blades rotation. Do not attempt to grab or make contact with the helicopter while the main blades are in motion. During take-off, landing, and flight, be sure to keep the helicopter away from all obstacles. Operators must stand at least 10 meters away from the helicopter. Never take your eyes off the model or leave it unattended while it is turned on, and immediately turn off the model and transmitter when you have landed the model. Operate this unit within your ability, do not fly under tired condition, improper operation may cause in danger, and always to avoid injury caused by loose parts due to improper assembly or any unforeseen dangers.

請隨時注意，無論在任何時候，都不能將旋轉中的旋翼對著眼睛，嚴禁用手抓取運行中的直昇機，當主旋翼轉動後，或起飛/試飛時，務必遠離障礙物，站立位置必需距離10公尺以上，不可在視線範圍外進行飛行，降落後也請馬上關掉直昇機和遙控器電源。操作這台直昇機需要一定操控技術及能力，避免因人為組裝不當造成零件脫落，而引發不可預期的財物及人員損傷，並請衡量自身情況，過於疲勞、精神不佳或不當操作，都可能引誘不可預期的意外發生。



ALWAYS BE AWARE OF THE ROTATING BLADES 遠離旋轉中零件

During the operation of the helicopter, the main rotor and tail rotor will be spinning at a high rate of speed. The blades are capable of inflicting serious bodily injury and damage to the environment. Be conscious of your actions, and careful to keep your face, eyes, hands, and loose clothing away from the blades. Always fly the model a safe distance from yourself and others, as well as surrounding objects.

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。



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。



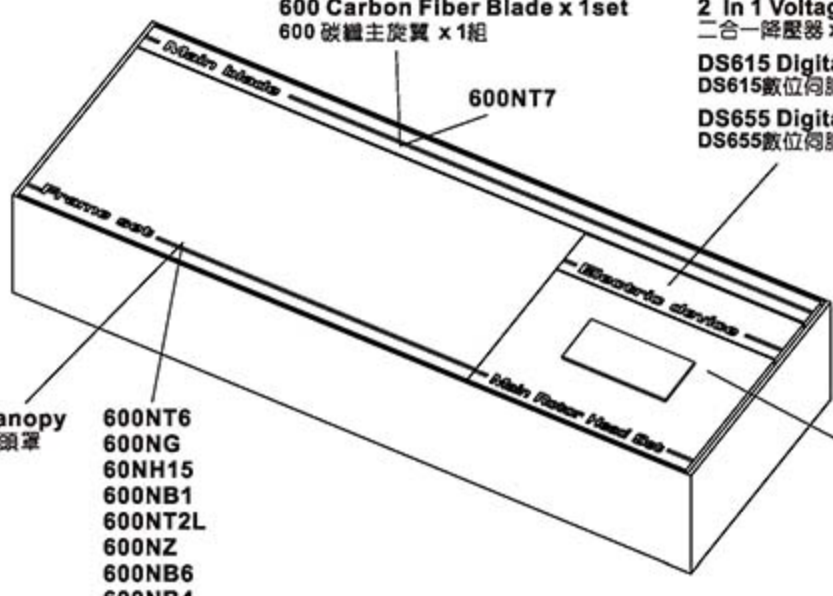
RADIO TRANSMITTER AND ELECTRONIC EQUIPMENT REQUIRED FOR ASSEMBLY 自備遙控及電子設備

| | | | | |
|--|---|---|---|---|
|  Transmitter (7-channel or more, Helicopter system) 發射機(七動以上直昇機模式遙控器) |  Standard size throttle servo (minimum speed 0.10 sec/60°, torque 3kg.cm or higher) 油門用標準伺服器 x 1pc (速度:0.10秒/60度以內, 扭力:3kg.cm以上) |  Engine Fuel 引擎燃油 |  Receiver (7-channel or more) 接收機(七動以上) or Remote Receiver 衛星天線 | |
|  Engine Starter 啓動器 |  50 Muffler 50高效加壓管 |  Fuel Pump 加油器 |  2S1P 7.4V Li-Po 1900-2600mAh Battery 2S1P 7.4V Li-Po 1900-2600mAh 電池 |  ALIGN 50 Engine ALIGN 50引擎 or ALIGN 55 Engine ALIGN 55引擎 |

ADDITIONAL TOOLS REQUIRED FOR ASSEMBLY 自備工具

| | | | | | | |
|--|--|---|---|---|--|---|
|  [H70118] Swashplate Leveler 十字盤校正器 |  [HET80001] AP800 Digital Pitch Gauge AP800 數位標距規 |  [HETMT901] Multi-function Tester 多功能檢測計 | | | | |
|  Phillips Screw Driver 十字螺絲起子 φ3.0/φ1.8mm |  Cutter Knife 刀子 |  Hexagon Screw Driver 六角螺絲起子 3mm/2.5mm/ 2mm/1.5mm |  Needle Nose Pliers 尖嘴鉗 |  Oil 潤滑油 |  CA Glue 瞬乾膠 |  Grease 潤滑油 |

4.PACKAGE ILLUSTRATION 包裝說明




600 Carbon Fiber Blade x 1set
600 碳纖維主旋翼 x 1組

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

DS615 Digital Servo x 3
DS615 數位伺服器 x 3

DS655 Digital Servo x 1
DS655 數位伺服器 x 1

Quick Finder
零件快速購



Canopy
機頭罩

- 600NT6
- 600NG
- 60NH15
- 600NB1
- 600NT2L
- 600NZ
- 600NB6
- 600NB4

Microbeast PLUS
Flybarless System x 1
無平衡翼系統 x 1

- 600NB1G
- 600NB2
- 600NB8

There are many versions of T-REX 600N DFC for your choice. The Super Combo includes additional electronics and other equipment. The Instruction Manual will refer to the T-REX 600N DFC Super Combo. You may purchase any additional items referenced in the instruction manual or any spare parts for other 600N DFC version by referring to more product information in this manual.

T-REX 600N DFC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 600N DFC SUPER COMBO STANDARD EQUIPMENT | | | T-REX 600N DFC SUPER COMBO標準配備 | | [RH60N04XT] |
|--|---|--|---|--|---|
|  600NC3 |  600NH15 |  600NB1G-00 |  600NB2 |  600NB8 |  600NB4 |
|  600NG-00 |  60NT6 |  600NT2L |  600NT7 |  600NZ |  600NH15 600 Carbon Fiber Blade 600 碳纖維主旋翼 |
|  600NB6 |  Beastx Governor Sensor x 1 Beastx 定速器感應器 x 1 |  B6T 2 In 1 Voltage Regulator x 1 B6T 二合一降壓器 x 1 |  DS615 Digital Servo x3 DS615 數位伺服器 x3 |  DS655 Digital Servo x1 DS655 數位伺服器 x1 |  Microbeast PLUS Flybarless System x 1 無平衡翼系統 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 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 in 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。
 - 開機時必須遵守電源開關機的程序，開機時應先開啟發射器後，再開啟接收器電源；關機時應先關閉接收器後，再關閉發射器電源。不正確的開關程序可能會造成失控的現象，影響自身與他人的安全，請養成正確的習慣。
 - 開機請先確定直昇機各個動作是否順暢，及方向是否正確，並檢查伺服器動作是否有干涉或崩齒的情形，使用故障的伺服器將導致不可預期的危險。
 - 飛行前確認沒有缺少或鬆脫的螺絲與螺帽，確認沒有組裝不完整或損壞的零件，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，過鬆的連桿頭應先更新，否則將造成直昇機無法操控的危險。
 - 確認電池及電源接頭是否固定牢靠，飛行中的震動或激烈的飛行，可能造成電源接頭鬆脫而造成失控的危險。

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，請配合上膠或上油，以確保鎖附零件使用之可靠度。



- CA : Apply small amount of CA Glue to fix.
瞬間膠：使用適量瞬間膠固定
- R48 : Apply small amount of Anaerobic Retainer to fix.
缺氧膠：使用適量缺氧膠固定
- T43 : Apply small amount of Thread Lock to fix.
螺絲膠：使用適量螺絲膠
- OIL : Add small amount of OIL.
潤滑油：添加適量潤滑油
- Grease : Add small amount of Grease.
潤滑油：添加適量潤滑油

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



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



CA Glue
瞬間膠



Anaerobic Retainer
缺氧膠



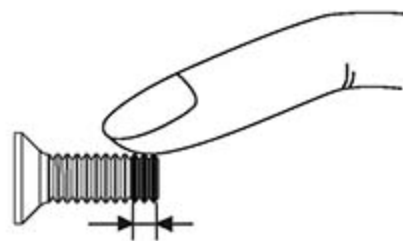
Thread Lock
螺絲膠



Grease
潤滑油



Oil
潤滑油



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

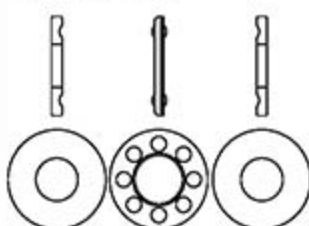
1. Anaerobic Retainer (R48) is green penetrating threadlocker and is used to fix the metal tube before assembly at temperatures up to +180°C.
2. Thread Lock (T43) is blue low strength threadlocker and is applied to the small screw (threads) or metal parts before assembly to prevent loosening. Ensure to apply only a small amount and wipe surplus off. When disassembling, recommend to heat the metal joint about 15 Seconds.
3. 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，請務必適量使用，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。

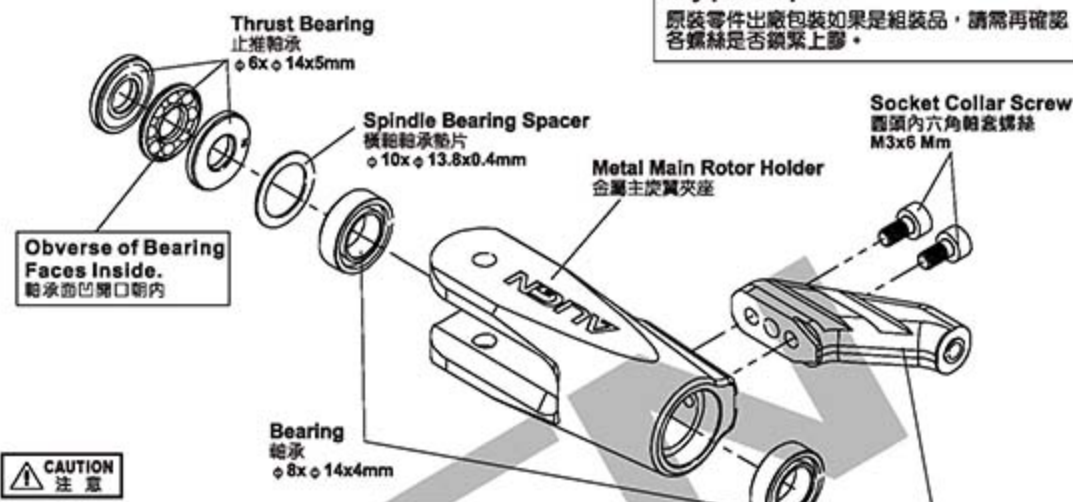
上述各類功能膠(油)請依零件屬性需求自行準備並斟酌其用量，以達到最佳組裝狀態，避免因使用不當造成零件損壞或不可預期的意外發生。

60FLH4

Bearing
軸承 (φ8xφ14x4mm) X 4Socket Collar Screw
圓頭內六角軸套螺絲 (m3x6mm)x4Thrust Bearing
止推軸承 (φ6xφ14x5mm) X 2Spindle Bearing Spacer
橫軸軸承墊片 (φ10xφ13.8x0.4mm) X 2CAUTION
注意

Thrust bearing and washer for radial bearing are wear items; therefore, it is recommended to inspect after every 20 flights and replaced as necessary. For flights with high headspeed, the inspection interval should be reduced to ensure flight safety.

止推軸承及橫軸墊圈屬於飛行消耗品，建議每20趟定期檢查及更換。高主旋翼轉速飛行時，請縮短定期檢查之趟數，以確保飛行安全。

CAUTION
注意

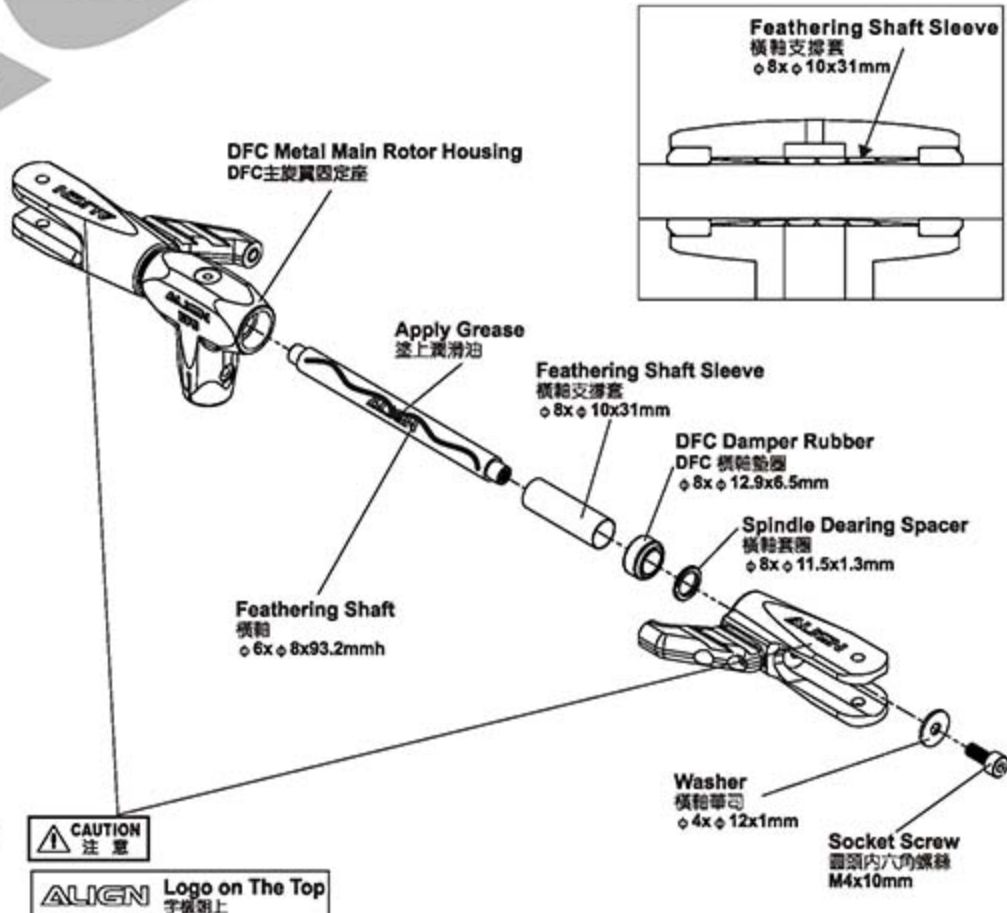
THRUST BEARING 止推軸承

Apply Grease on Thrust Bearing.

止推軸承塗上潤滑油



60FLH4

Feathering Shaft Sleeve
橫軸支撐套 (φ8xφ10x31mm) X 1DFC Damper
DFC 橫軸墊圈 (φ8xφ12.9x6.5mm) X 2Spindle Bearing Spacer
橫軸套圈 (φ8xφ11.5x1.3mm) X 2Socket Screw
圓頭內六角螺絲 (m4x10mm)x2Washer
橫軸墊圈 (φ4xφ12x1mm)x2CAUTION
注意ALIGN Logo on The Top
字樣朝上

600NH13

- Linkage Ball D (M3x3.5)
球頭D (M3x3.5) (φ5x9.3mm) X2
- Linkage Ball B (M3x3)
球頭B (M3x3) (φ4.75x9.77mm) X3

DFC CCPM Swashplate
DFC CCPM 十字盤組

Linkage Ball D (M3x3.5)
球頭D (M3x3.5) φ5x9.3mm

Linkage Ball B (M3x3)
球頭B (M3x3) φ4.75x9.77mm

Linkage Ball B (M3x3)
球頭B (M3x3) φ4.75x9.77mm

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

CAUTION
注意

Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

原裝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。

60FLH4

- Bearing
軸承 (φ3xφ7x3mm) X 4
- Washer
墊圈 (φ3xφ4.8x0.3mm) X 2
- 700DFC Collar
700DFC 連桿套 (φ6xφ4.85x3mm) X 2
- Socket Collar Screw
圓頭內六角軸套螺絲 (M3x19mm) X 2
- 700 DFC Linkage Rod(A)
700 DFC 連桿A M3x14mm X 2
- Elevator Ball Link
升降臂連桿頭 X 2

Socket Collar Screw
圓頭內六角軸套螺絲 M3x19mm

Washer
墊圈 φ3xφ4.8x0.3mm

Collar
尾旋翼控制臂鉛套
φ3xφ4.9x5mm

Bearing
軸承
φ3xφ7x3mm

Main Rotor Grip Arm Integrated
Control Linkage
主旋翼夾座連桿
φ9x11x37.2mm

700 DFC Linkage Rod(A)
700 DFC 連桿A M3x14mm

700 DFC Collar
700 DFC 連桿套 φ6xφ4.85x3mm

M3 Nut
M3 防鬆螺帽

Socket Collar Screw
圓頭內六角軸套螺絲
M3x19mm

Make sure the linkage rod A is completely fastened with main rotor grip arm integrated control linkage and apply a little amount of R48 thread lock to avoid any vibration and loose fitted during flight and cause it breaks.

連桿A鎖入主旋翼夾座連桿須確實鎖緊並使用適量R48固定，避免飛行中的震動及鬆動，嚴重可能導致飛行中斷裂。

Elevator Ball Link
升降臂連桿頭

Main Shaft
主軸 φ9x169.96mm

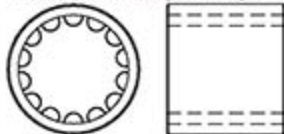
60FLH4A

- M3 Nut
M3 防鬆螺帽 X 1
- Socket Collar Screw
圓頭內六角軸套螺絲 (M3x19mm) X 1

You may adjust the length of ball link when tracking is off while flight.
若飛行中有雙槳情形，可適當調整連桿頭長短改善。

600NB8

Hex Socket Self Tapping Screw
圓頭內六角自攻螺絲(T3x7mm)x5



One-way Bearing
單向軸承(φ12xφ18x16mm)x1



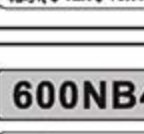
Washer
單向軸承墊圈(φ11.5xφ18x0.8mm)x1



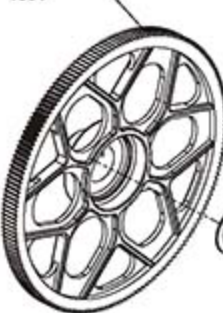
One-way Bearing Shaft
單向軸承蓋(φ9xφ12x34.7mm)x1



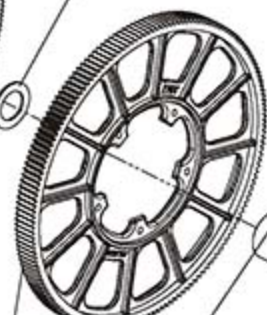
Bearing
軸承(φ12xφ18x4mm) X 1



Autorotation Tail Drive Gear
尾驅動主齒
180T



Washer
單向軸承墊圈
φ11.5xφ18x0.8mm



Main Drive Gear
主齒
170T

One-way Bearing
單向軸承
φ12xφ18x16mm

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

Main Gear Case
主齒中心座



Hex Socket Self Tapping Screw
圓頭內六角自攻螺絲
T3x7mm



Apply Grease
塗上潤滑油

Bearing
軸承 φ12xφ18x4mm



One-way Bearing Shaft
單向軸承蓋
φ9xφ12x34.7mm

Before tightening the screw, please rotate the bearing and check the concentricity of the bearing in order to have the screw firmly secured, to avoid the bearing stuck or heavy load at one side and cause slip.

上緊螺絲前請旋轉確認軸承同心度良好後，才能將螺絲平均鎖緊，以避免造成卡死或單向重負載可能產生的打滑。

600NB4A

M4 Set Screw
M4止鎖螺絲(m4x4mm)x2



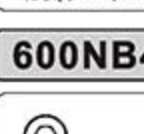
Clutch Nut
離合器齒輪螺帽(φ14x6mm)x1



Bearing
軸承(φ5xφ13x4mm)x2



Bearing
軸承(φ10xφ19x5mm)x1



Starter Coupling
六角啟動頭
φ8xφ10x18mm

M4 Set Screw
M4止鎖螺絲
M4x4mm

Bearing
軸承
φ5xφ13x4mm

Clutch Bell
離合器鐘
φ44xφ47x20mm

Clutch Liner
離合器來令片
0.8x9x136mm

Bearing
軸承
φ5xφ13x4mm

Clutch Bearing Block
離合器軸承座

M3 Nut
M3防鬆螺帽

Socket Screw
圓頭內六角螺絲
M3x8mm

Clutch Gear
離合器齒輪
φ15.4xφ7x31.5mm

Clutch/start Shaft
啟動軸
φ7.5xφ10x70.5mm

Socket Screw
圓頭內六角螺絲
M3x8mm

M3 Nut
M3防鬆螺帽

Clutch Bearing Block
離合器軸承座

Hex Mounting Bolt
六角鉚柱
φ5x49mm

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CAUTION
注意

Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

原裝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。

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

600NB4B

Socket Screw
圓頭內六角螺絲(M3x8mm) x 2



M3 Nut
M3的防鬆螺帽 x 2



M3 Nut
M3防鬆螺帽

Socket Screw
圓頭內六角螺絲
M3x8mm

Clutch Bearing Block
離合器軸承座

Clutch Bearing Block
離合器軸承座

M3 Nut
M3防鬆螺帽

Socket Screw
圓頭內六角螺絲
M3x8mm

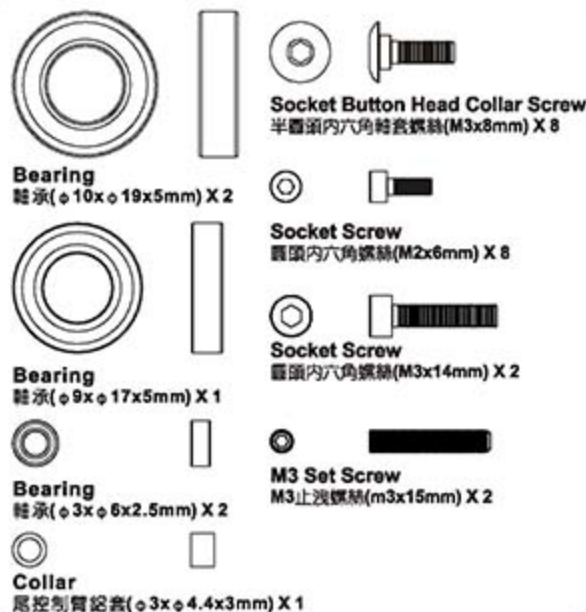
Clutch Bearing Block
離合器軸承座

Clutch Bearing Block
離合器軸承座

600NB1F



600NB1G



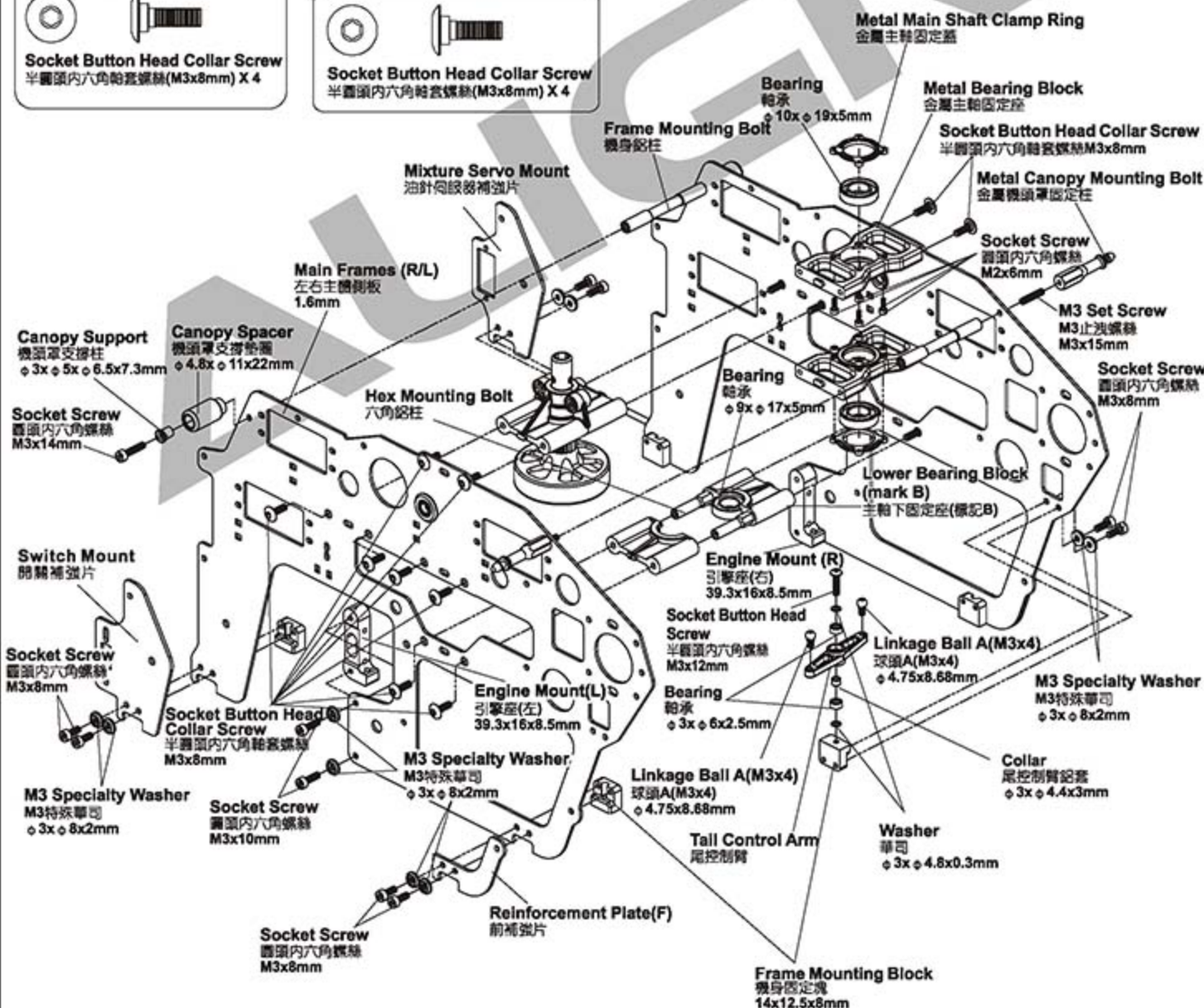
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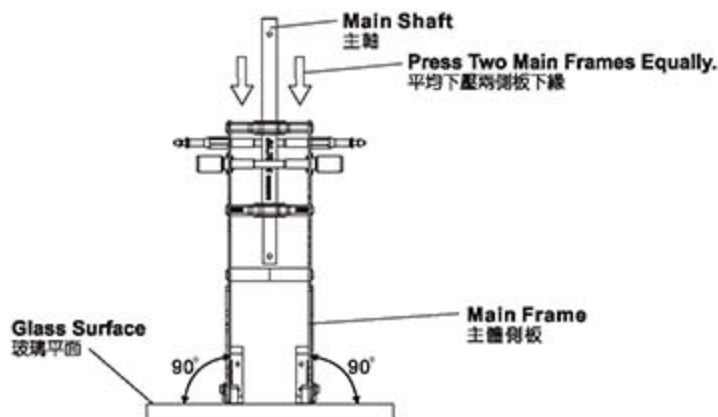
600NB4B





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

機身側板組立重點:
側板螺絲先不完全鎖緊, 放入主軸貫穿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。



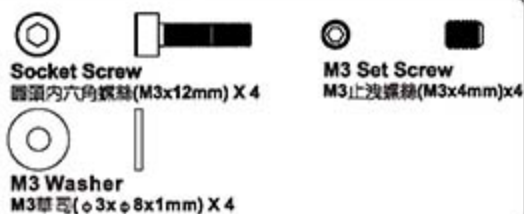
Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)。



Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

原裝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。

600NG1

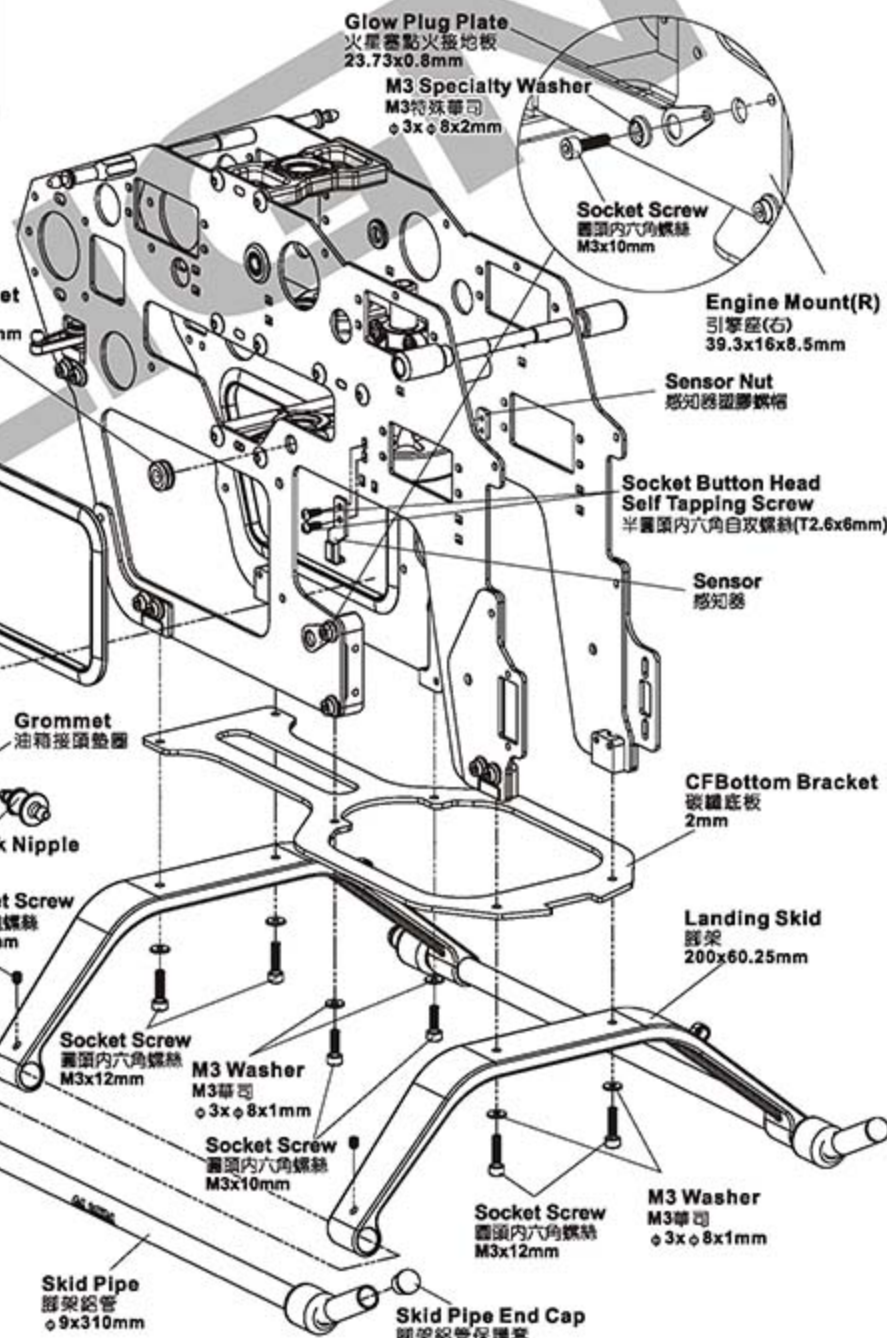


600NB1F

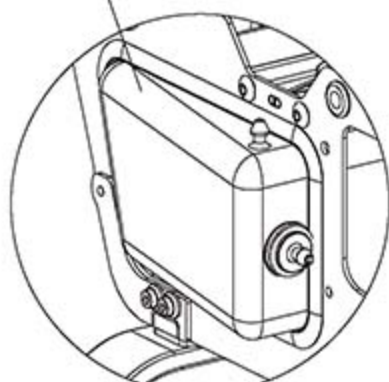


Fuel Line Grommet
油管保護蓋
φ5.2xφ7xφ11x4.8mm

Fuel Tank Guard
油箱防護蓋



600NB2



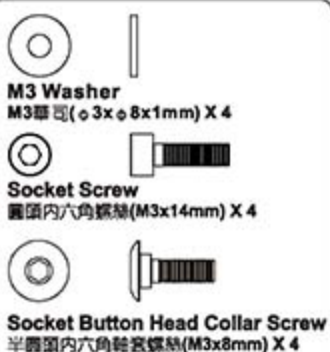
600NB4A**600NB1H**

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)。



Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

原裝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。

600NB4B

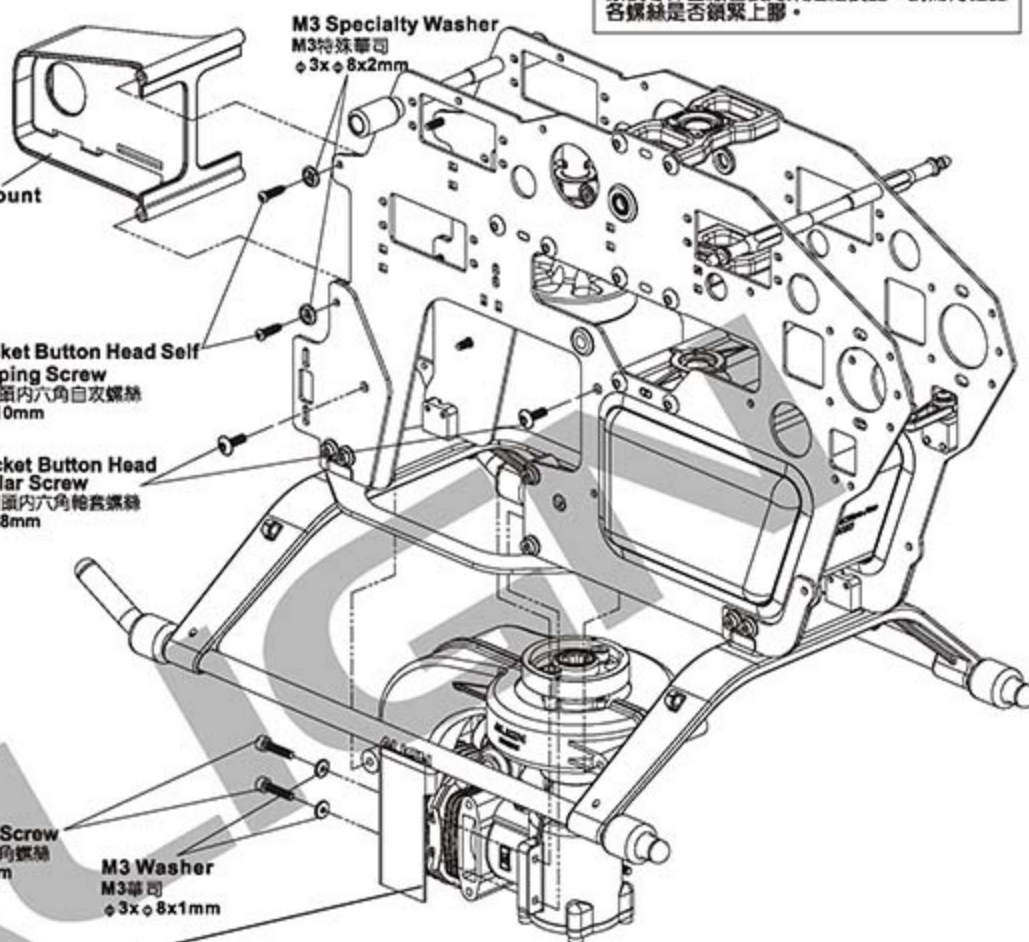
Receiver Mount
接收器座

Socket Button Head Self Tapping Screw
半圓頭內六角自攻螺絲 T3x10mm

Socket Button Head Collar Screw
半圓頭內六角鉸套螺絲 M3x8mm

Socket Screw
圓頭內六角螺絲 M3x14mm

M3 Washer
M3華司 φ3xφ8x1mm



Socket Head Spring Screw
圓頭內六角彈簧螺絲 M4x8mm

Clutch
離合器 φ35xφ42x12mm

Socket Screw
圓頭內六角螺絲 M3x12mm

Washer(Supplied with 50 Engine)
50引擎附華司 φ9.5xφ14x1mm

Socket Button Head Screw
半圓頭內六角螺絲 M3x5mm

Engine Fan Cover (R)
引擎風扇蓋(右)

M6 Nut (Supplied with Engine)
50引擎附M6螺帽

Magnet (Governor Sensor)
定速感應磁鐵

Engine Fan Cover (L)
引擎風扇蓋(左)

Socket Button Head Screw
半圓頭內六角螺絲 M4x5mm

Hex Mounting Bolt
六角機身鉚柱

50 Hz Engine or 55 Hz Engine
50引擎或55引擎

Optional Equipment
另購品

Clutch
離合器 φ35xφ42x12mm

Engine Fan
引擎風扇

Engine Fan Mount
引擎風扇座

Socket Screw
圓頭內六角螺絲 M3x12mm

Washer(supplied With 50 Engine)
50引擎附華司 φ9.5xφ14x1mm

Mount the engine fan mount on the washer.
引擎風扇座貼於華司面。

50 Hz Engine or 55 Hz Engine
50引擎或55引擎

Optional Equipment
另購品

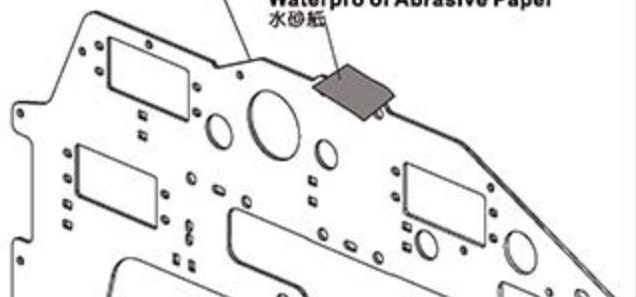
After install the engine into the model, please loosen the fixing screw and adjust the carburetor and the engine are at an angle of 90° (Vertical).

引擎裝入機體後請鬆開固定螺絲將化油器調成與引擎垂直。

Recommend sanding the marked position as below illustration with a waterproof abrasive paper(#800-1000) to avoid the wires of electric parts to be cut.

建議於下圖色塊標示處，使用#800~1000水砂紙打磨，可防止電子設備電線被割破。

Waterpro of Abrasive Paper
水砂紙



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

CAUTION
注意

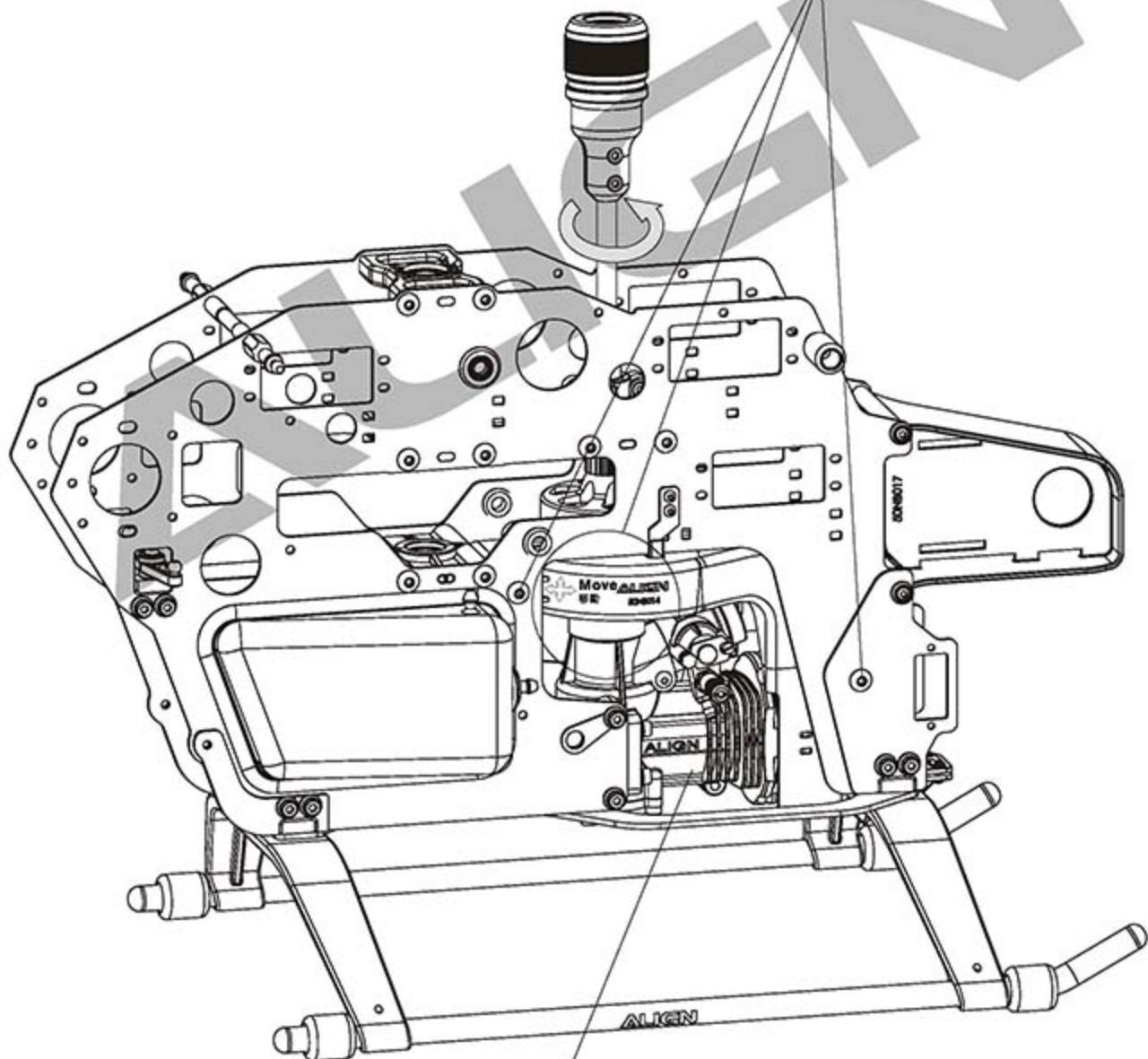
Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

原裝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。

Fan Cover Fixing Tip 風扇罩固定要領

Before fixing the engine fan cover, please use a starter to rotate the fan and move the fan cover. This is to make sure no any interference, and then secure the fan cover with a fixing screw.

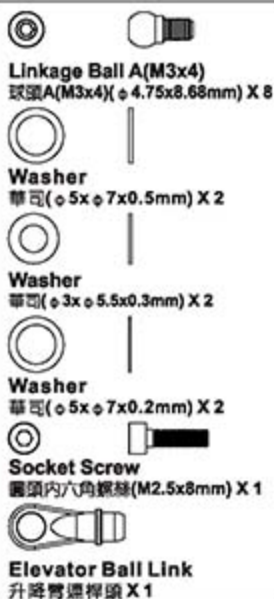
鎖緊固定引擎散熱風罩前，請使用啟動棒轉動風扇，並移動風扇罩，確認在風扇無碰觸風扇罩後才鎖緊風扇罩固定螺絲。



CAUTION
注意

For engine adjustment and precautions, please refer to the factory manual for more instruction.
引擎各項調整及注意事項，請參照原廠使用說明書。

600NB1H



600NB1G



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

CAUTION
 注意

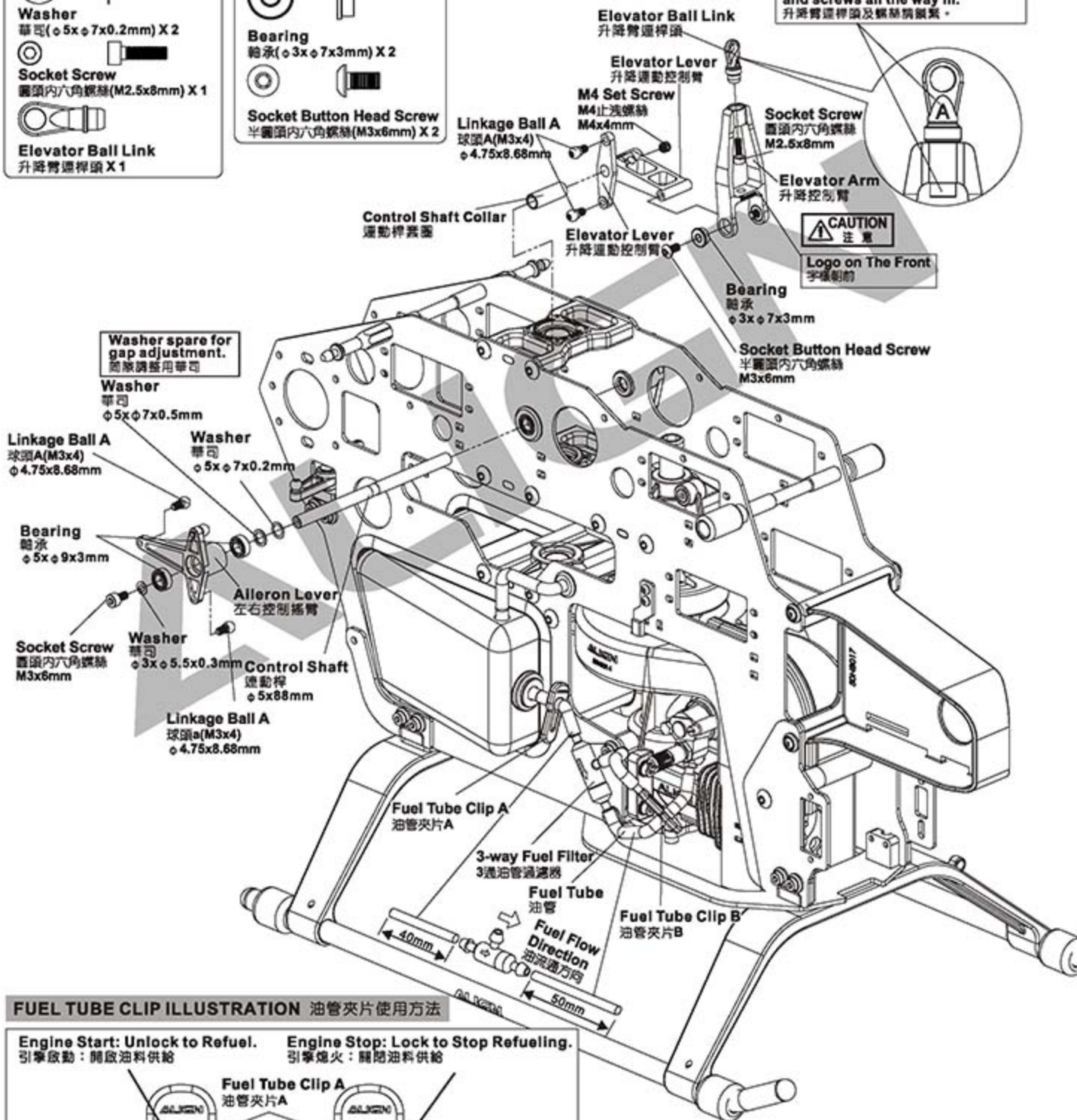
Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.
 原裝零件出廠包裝如果是組裝品，請需再確認各螺絲是否鎖緊上膠。

CAUTION
 注意

Please fasten the elevator ball link and screws all the way in.
 升降臂連桿頭及螺絲請鎖緊。

CAUTION
 注意

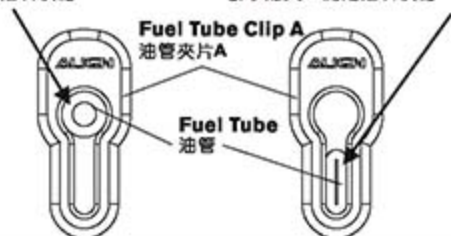
Logo on The Front 字樣朝前



FUEL TUBE CLIP ILLUSTRATION 油管夾片使用方法

Engine Start: Unlock to Refuel.
 引擎啟動：開啟油料供給

Engine Stop: Lock to Stop Refueling.
 引擎熄火：關閉油料供給



600NZ6

Linkage Ball A(M2x3.5)
球頭A(M2x3.5)(ϕ 4.75x8.18mm) X 6

Socket Button Head Self Tapping Screw
半圓頭內六角自攻螺絲(T2.6x14mm) X 12

M2 Nut
M2螺帽 X 6

600NZ9

Ball Link
連桿頭 X 2

Linkage Rod(C)
連桿(C) ϕ 1.96x48mm X 1

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

CAUTION
注意

Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

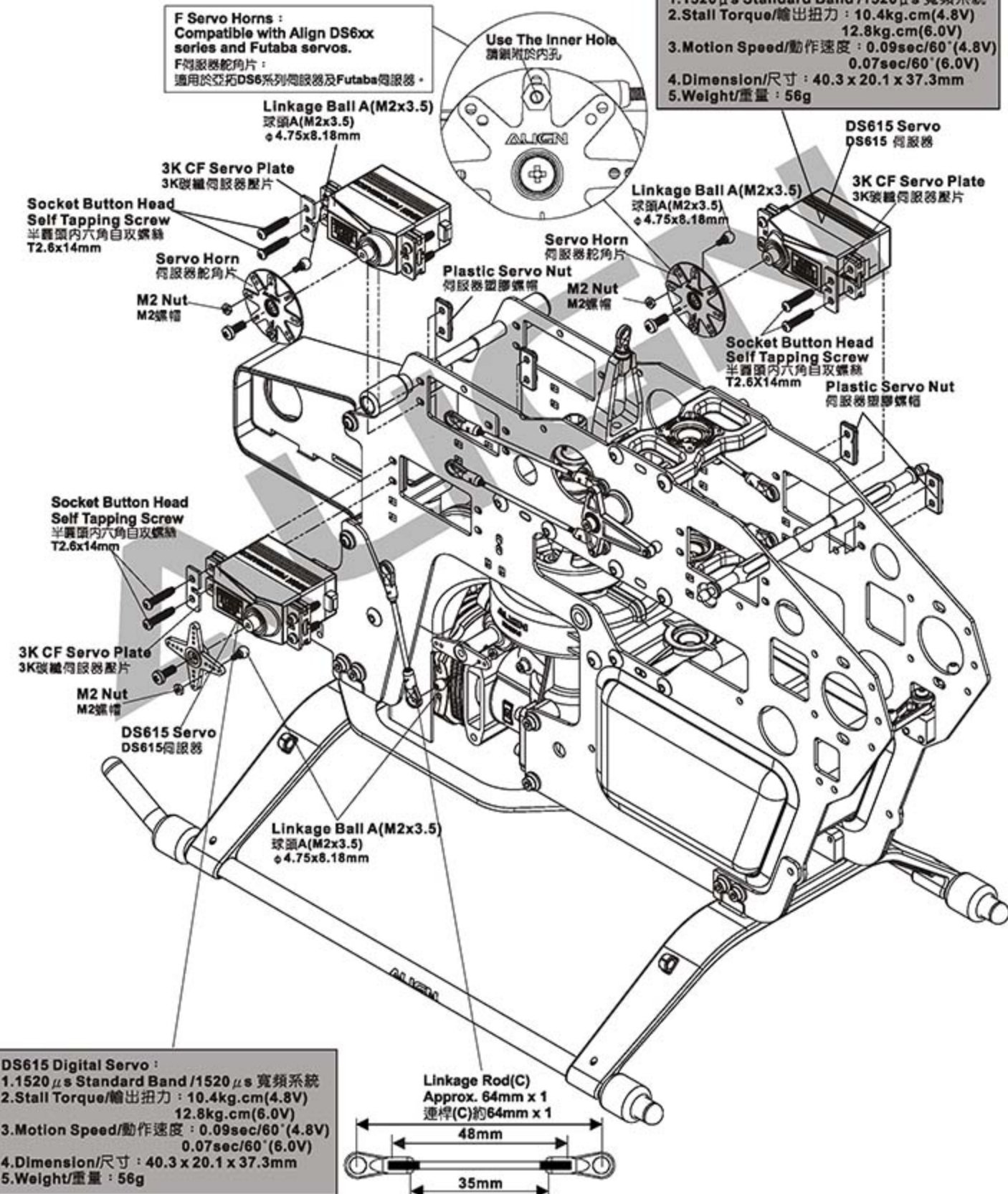
原裝零件出廠包裝如果是組裝品，請需再確認各螺絲是否鎖緊上膠。

DS615 Digital Servo :

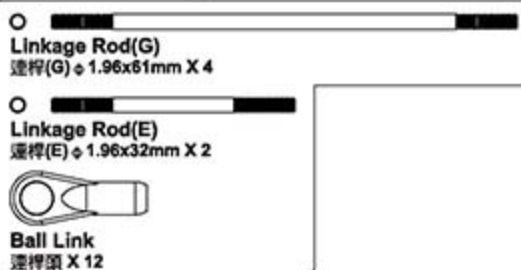
- 1.1520 μ s Standard Band /1520 μ s 寬頻系統
- 2.Stall Torque/輸出扭力 : 10.4kg.cm(4.8V)
12.8kg.cm(6.0V)
- 3.Motion Speed/動作速度 : 0.09sec/60° (4.8V)
0.07sec/60° (6.0V)
- 4.Dimension/尺寸 : 40.3 x 20.1 x 37.3mm
- 5.Weight/重量 : 56g

DS615 Servo

DS615 伺服器



600NZ9



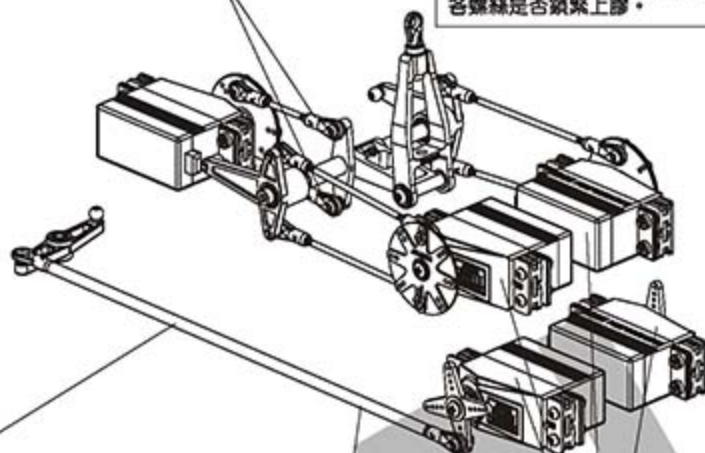
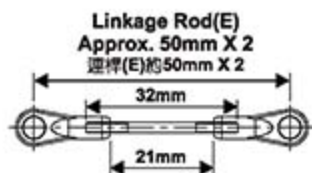
Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)。

CAUTION
注意

Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

原裝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。

600NZ6



600NZ9

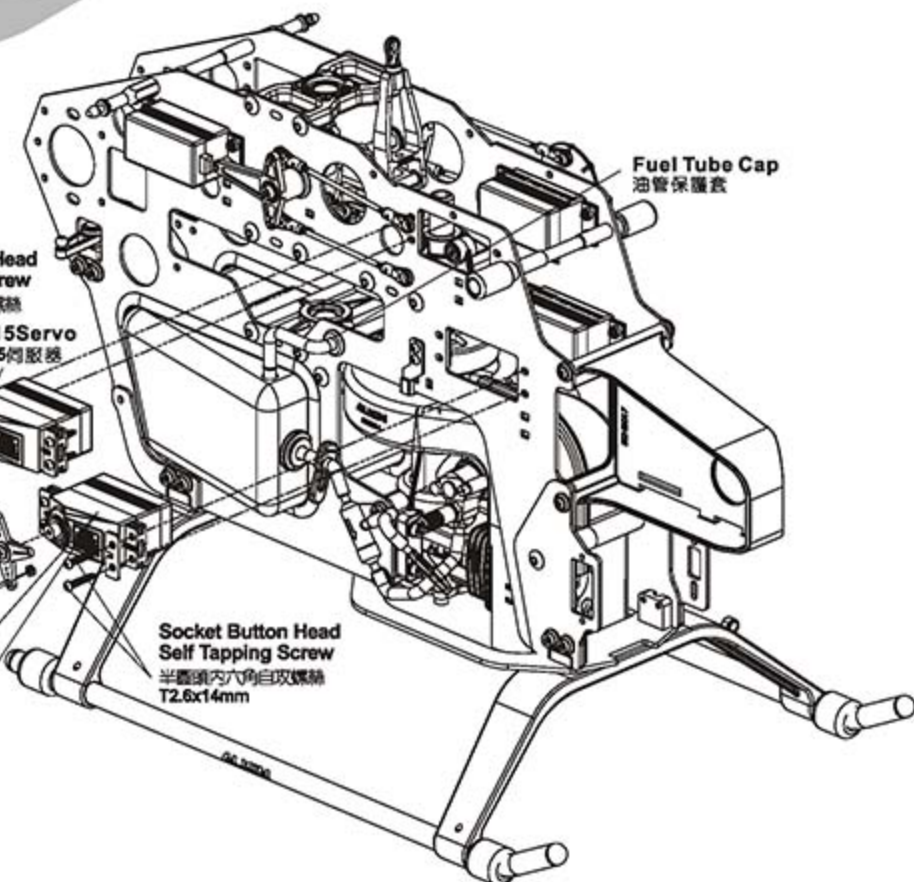
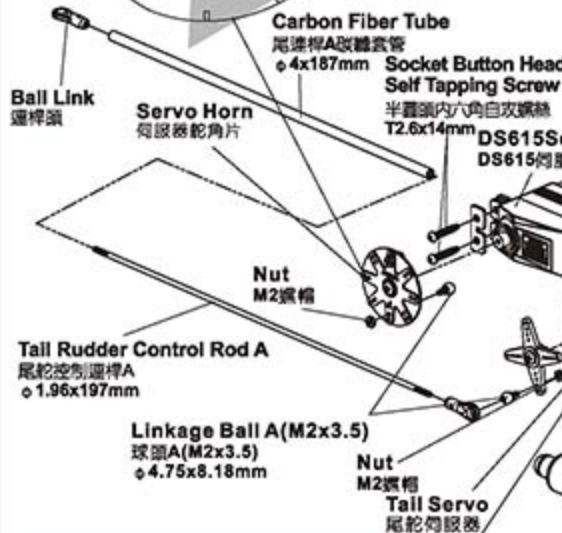


CAUTION
注意

Microbeast PLUS Flybarless System uses inner hole(A)
Flybar system uses outer hole(B)
無平衡翼系統使用內孔(A)
有平衡翼系統使用外孔(B)



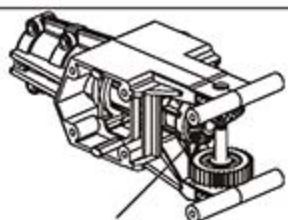
Use The Inner Hole
請鎖於內孔



DS655 Digital Servo:

1. Stall Torque/輸出扭力: 4.5kg.cm(4.8V)
5.5kg.cm(6.0V)
2. Motion Speed/動作速度: 0.06sec/60° (4.8V)
0.05sec/60° (6.0V)
3. Dimension/尺寸: 40.1 x 20.1 x 37.3mm
4. Weight/重量: 56g

60NT6



Assembling Umbrella Gear :
Please note to push the gear to the end at a fixed position, to make sure the gears mesh with each other smoothly.

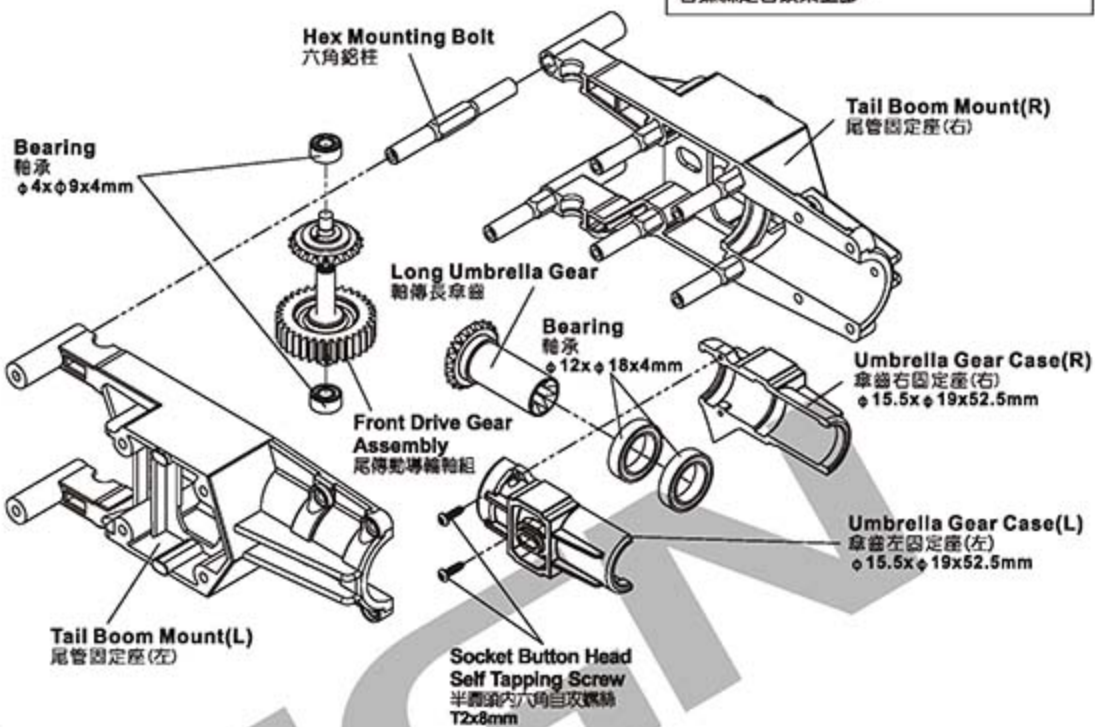
傘齒組裝：注意務必前推到底定位，以免齒齒咬合不順暢。

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

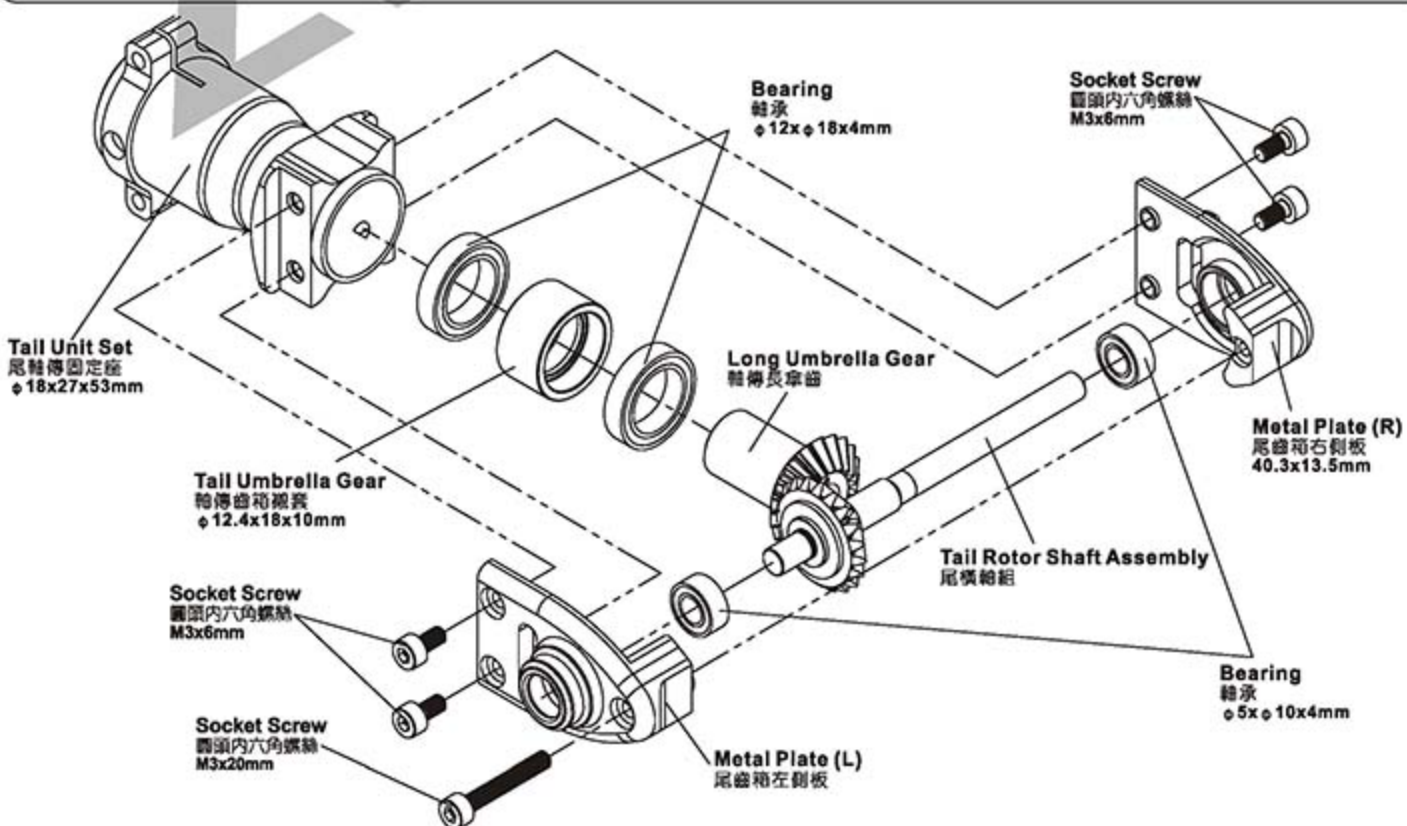
CAUTION
注意

Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

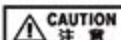
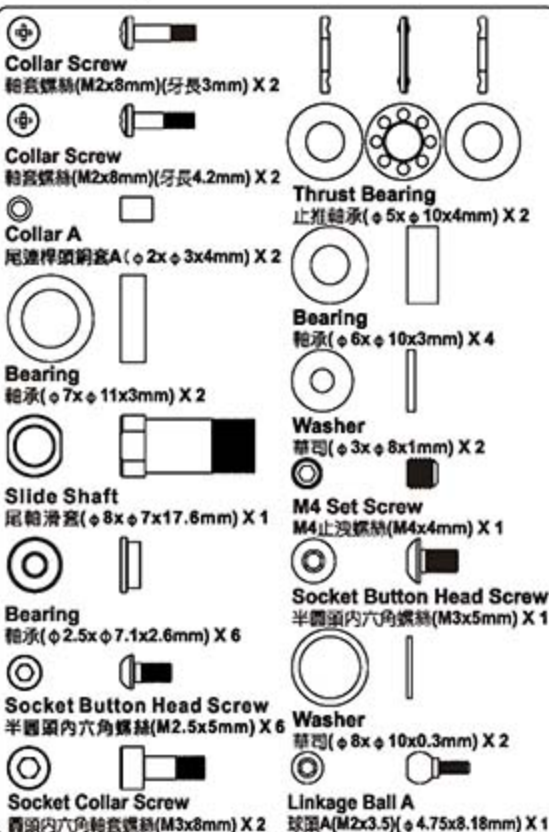
原裝零件出廠包裝如果是組裝品，請需再確認各螺絲是否鎖緊上膠。



60HT6



60HT6



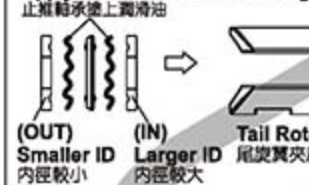
CAUTION 注意
 Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.
 原裝零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。

60HT2A



THRUST BEARING 止推軸承

Apply Grease on Thrust Bearing.
 止推軸承塗上潤滑油



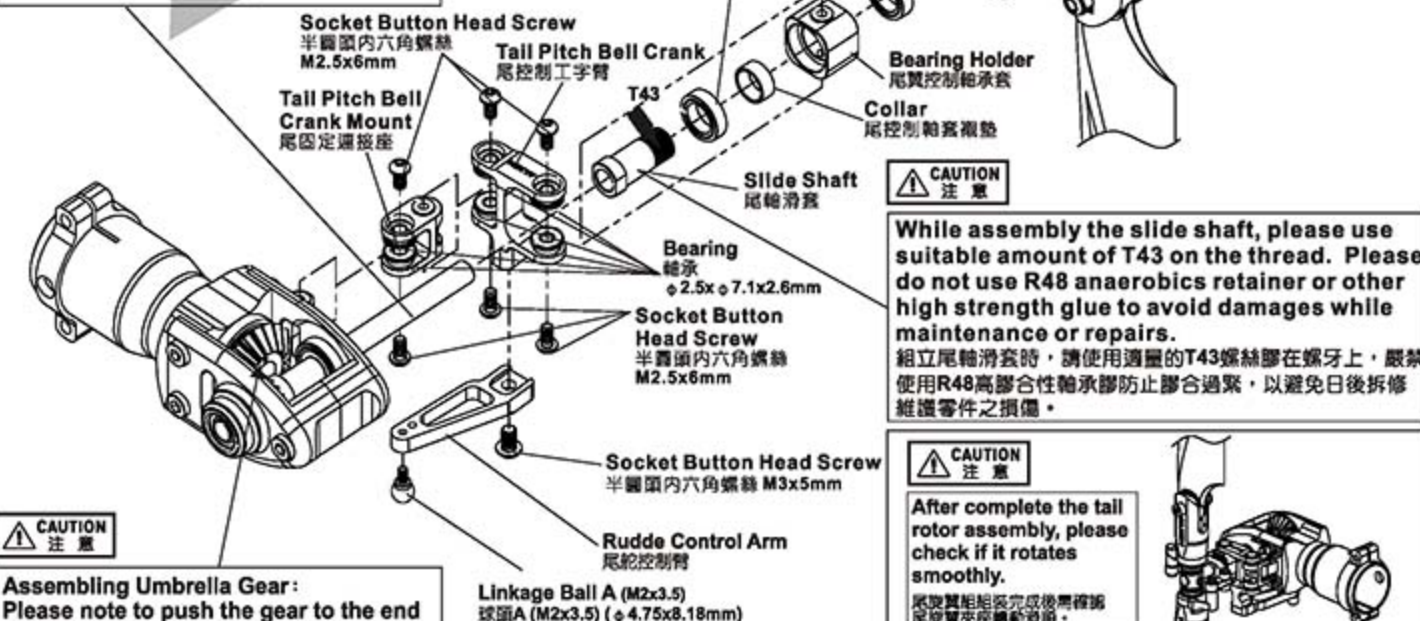
Apply a little amount of T43 thread lock when fixing a metal part.
 螺絲鎖附於金屬件請使用適量T43(螺絲膠)。



CAUTION 注意
 Please tighten M2x8mm collar screw firmly but over tightened, please use suitable amount of T43 on the thread. Over tighten the screw will cause the operation of control link unsmoothly.
 鎖附M2x8mm軸套螺絲請使用適當力道，並使用適量T43螺絲膠固定，過度鎖緊會造成尾槳控制桿轉動不順。



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.
 尾槳T型座瞄準尾槳軸的凹刻並鎖上，請確認止洩螺絲上膠。



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

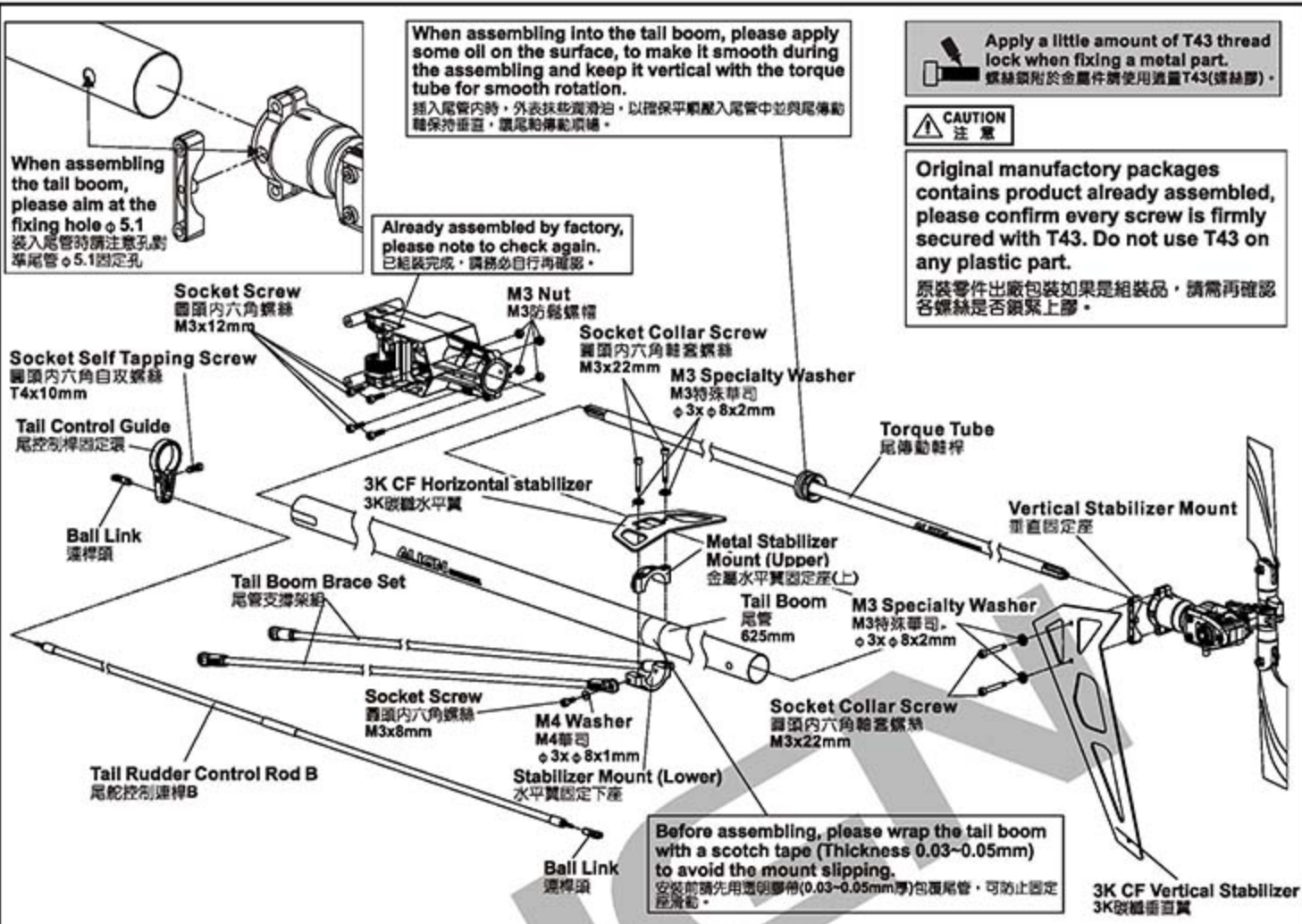


CAUTION 注意
 After complete the tail rotor assembly, please check if it rotates smoothly.
 尾槳組裝完成後請確認尾槳夾座轉動滑順。



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





600NT8

- Socket Screw 蓋頭內六角螺絲(M3x12mm) X 4
- M3 Nut M3防鬆螺帽 X 4

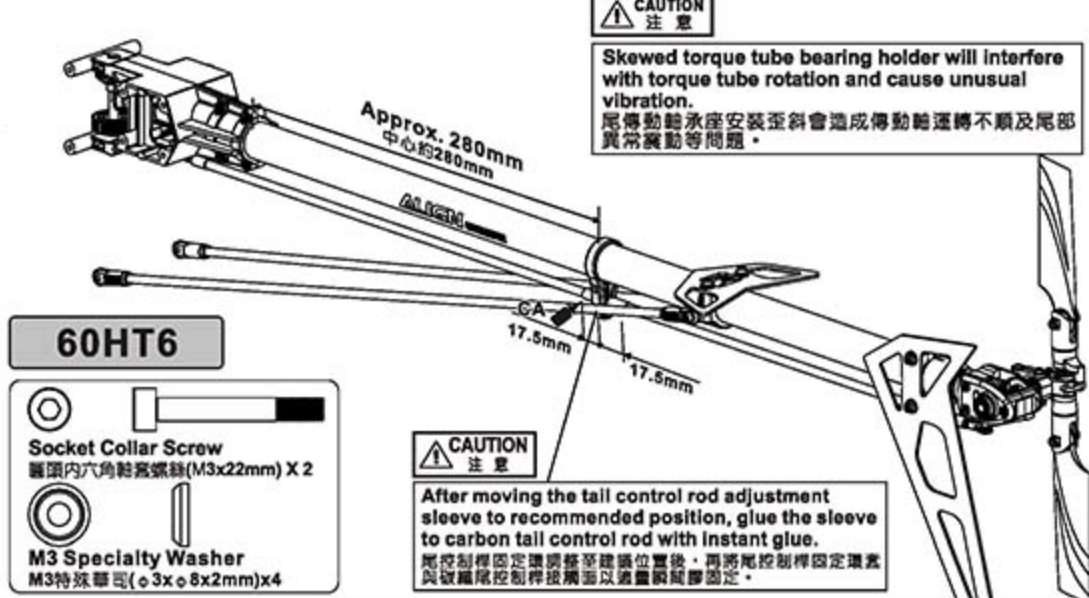
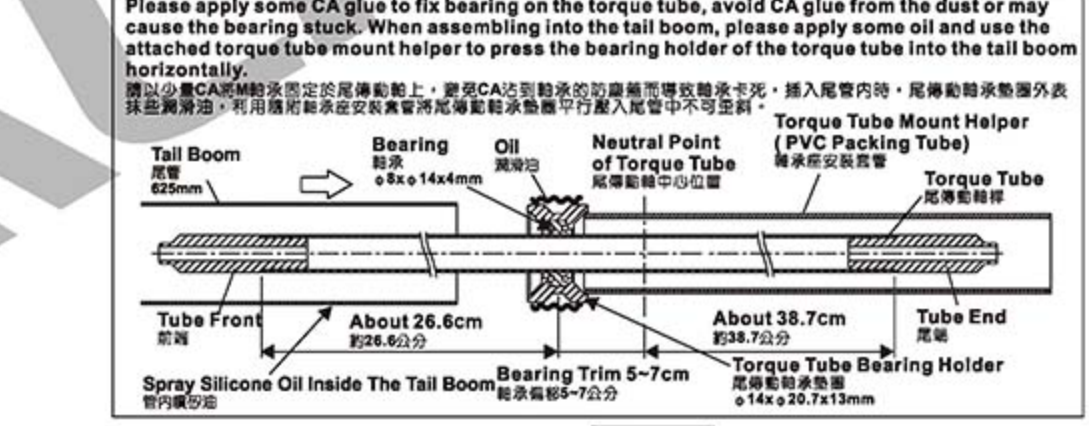
60HT5A

- Socket Self Tapping Screw 蓋頭內六角自攻螺絲T4x10mm X2
- Ball Link 連桿頭 X2

60HT4A

- Socket Screw 蓋頭內六角螺絲(M3x8mm) X 2
- M3 Washer M3華司(φ3xφ8x1mm) X 4
- Socket Collar Screw 蓋頭內六角輪蓋螺絲(M3x22mm) X 2
- M3 Specialty Washer M3特殊華司(φ3xφ8x2mm)x4

TIP TO FIX THE TORQUE TUBE 傳動軸承固定位置須



600NB1G



600NB1H



600NB1F



60HT1A

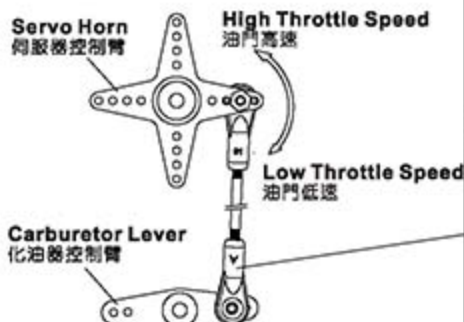


Gyro Mount
陀螺儀固定座

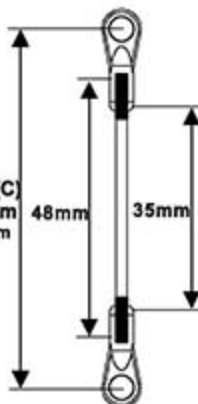
Socket Button Head Self Tapping Screw
半蓋頭內六角自攻螺絲
T3x8mm

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

High/Low Throttle Speed Setting 油門高/低速控制設定



Linkage Rod(C)
Approx. 64mm
連桿(C)約64mm



Socket Screw
蓋頭內六角螺絲
M3x10mm

Frame Mounting Bolt
機身鋁柱

Socket Screw
蓋頭內六角螺絲
M3x12mm

M3 Specialty Washer
M3特殊華司
φ3xφ8x2mm

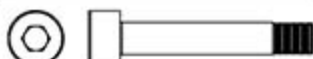


Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

原裝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。

Socket Button Head Screw
半蓋頭內六角螺絲
M3x5mm
Tail Boom Fixing Screw
尾管固定螺絲

60FLH4A



Socket Collar Screw
圓頭內六角軸套螺絲(M4x25mm) X 2



M4 Nut
M4防鬆螺帽 X 2

When tightening the main blade fixing screw, please tighten it firmly, but not over tighten, or it may cause the damage of main blade holder and result in danger.

鎖緊主旋翼螺絲時須注意適當緊度即可，過緊可能導致主旋翼夾座受損，飛行意外發生。

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)。

600NB8

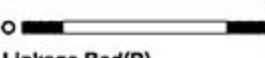


Socket Collar Screw
圓頭內六角軸套螺絲(M3x20mm) X 1



M3 Nut
M3防鬆螺帽 X 1

600NZ9



Linkage Rod(D)
連桿(D)約39.5mm X 2



Ball Link
連桿頭 X 4

600NH13



Spare Part:
Main Shaft Spacer(0.3)
備品：主軸墊片(0.3)
($\phi 10.1x \phi 14x0.3mm$) X 1



Spare Part:
Main Shaft Spacer(0.5)
備品：主軸墊片(0.5)
($\phi 10.1x \phi 14x0.5mm$) X 1

[H70118]

Swashplate Leveler

十字盤校正器

Optional Equipment

另購品

Main Shaft

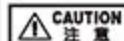
主軸

Horizontally Level

水平

Swashplate

十字盤



While using Flybarless system, please use the swashplate leveler to calibrate swashplate. Adjust the length of servo linkage rod to make sure the swashplate is leveled before start setting up to ensure the gyro provides the best performance.

使用無平衡系統，請務必使用十字盤調整器校正十字盤，調整伺服器連桿長度，確保十字盤達到水平狀態，再進行基本機體設定，這樣才能確保飛行性能達到最佳效果。

Socket Collar Screw
圓頭內六角軸套螺絲
M4x25mm

600 Blade
600 主旋翼

M4 Nut
M4防鬆螺帽

Linkage Rod(D)
Approx. 60.5mm X 2
連桿(D)約60.5mm X 2

39.5mm

31.5mm

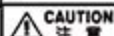
Spare part : Main shaft spacer(0.3)
Main shaft spacer(0.5)

備品：主軸墊片(0.3) $\phi 10.1x \phi 14x0.3mm$
主軸墊片(0.5) $\phi 10.1x \phi 14x0.5mm$

Main Drive Gear Set
主齒輪組

Socket Collar Screw
圓頭內六角軸套螺絲
M3x20mm

M3 Nut
M3防鬆螺帽



Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

原裝零件出廠包裝如果是相裝品，請需再確認各螺絲是否鎖緊上膠。



CAUTION
注意

A MOUNTING ORIENTATION OF MICROBEAST PLUS MICROBEAST PLUS的安裝方向



Please visit Align download area to get the completed instruction manual at Align website.

更多詳細的設定操作說明請至官網下載專區下載。
<http://www.align.com.tw/beastx/>

Microbeast PLUS can be installed on any position of helicopter. V4.x.x provides 8 different direction choices.

Microbeast PLUS 可以安裝在機體的任何一個位置。V4.x.x版本提供8種不同方向供你選擇

THE COLOR OF THE STATUS-LED SHOWS THE CURRENTLY SELECTED ORIENTATION:

LED指示燈狀態顯示安裝方向：



Status LED Off
Status-LED 燈熄滅*



Status LED Flashing Purple
Status-LED 燈紫色閃爍



Status LED Purple
Status-LED 燈紫色



Status LED Flashing Red
Status-LED 燈紅色閃爍



Status LED Red
Status-LED 燈紅色



Status LED Flashing Blue
Status-LED 燈藍色閃爍



Status LED Blue
Status-LED 燈藍色



Status LED Flashing Red/Blue
Status-LED 燈紅色/藍色同時閃爍

Front
機頭方向

* Factory Setting * 出廠預設值



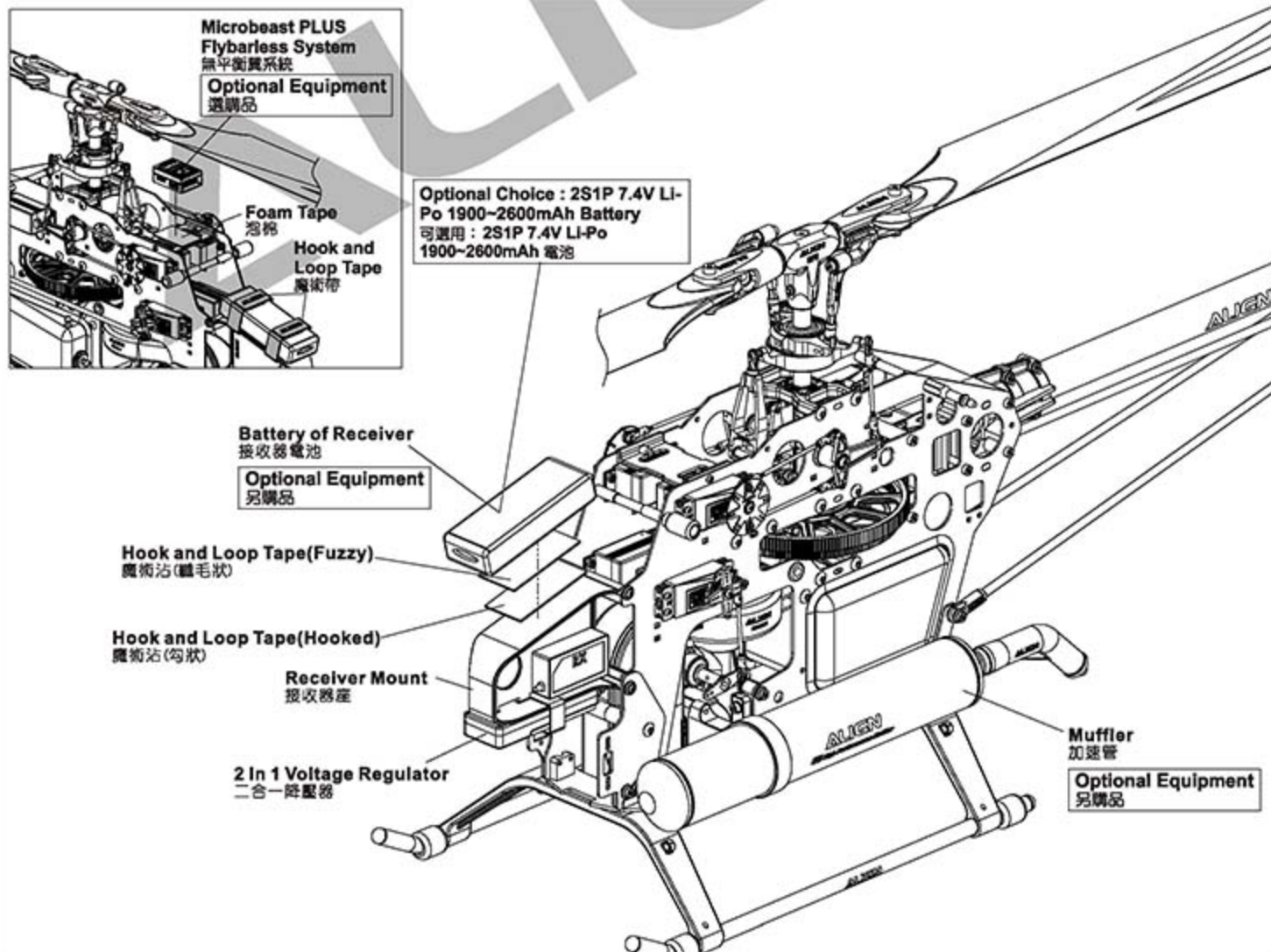
Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件時使用適量T43(螺絲膠)。

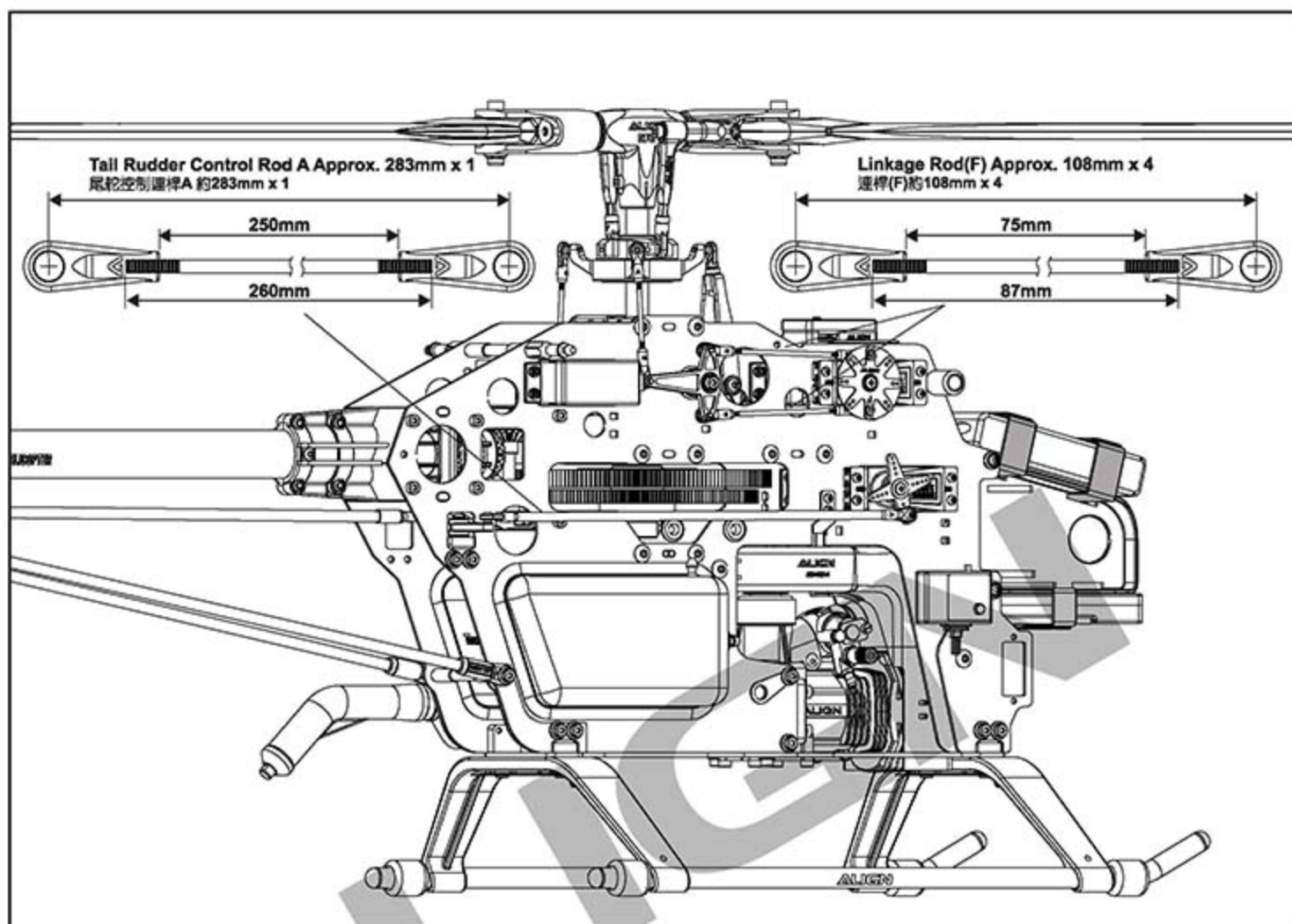


CAUTION
注意

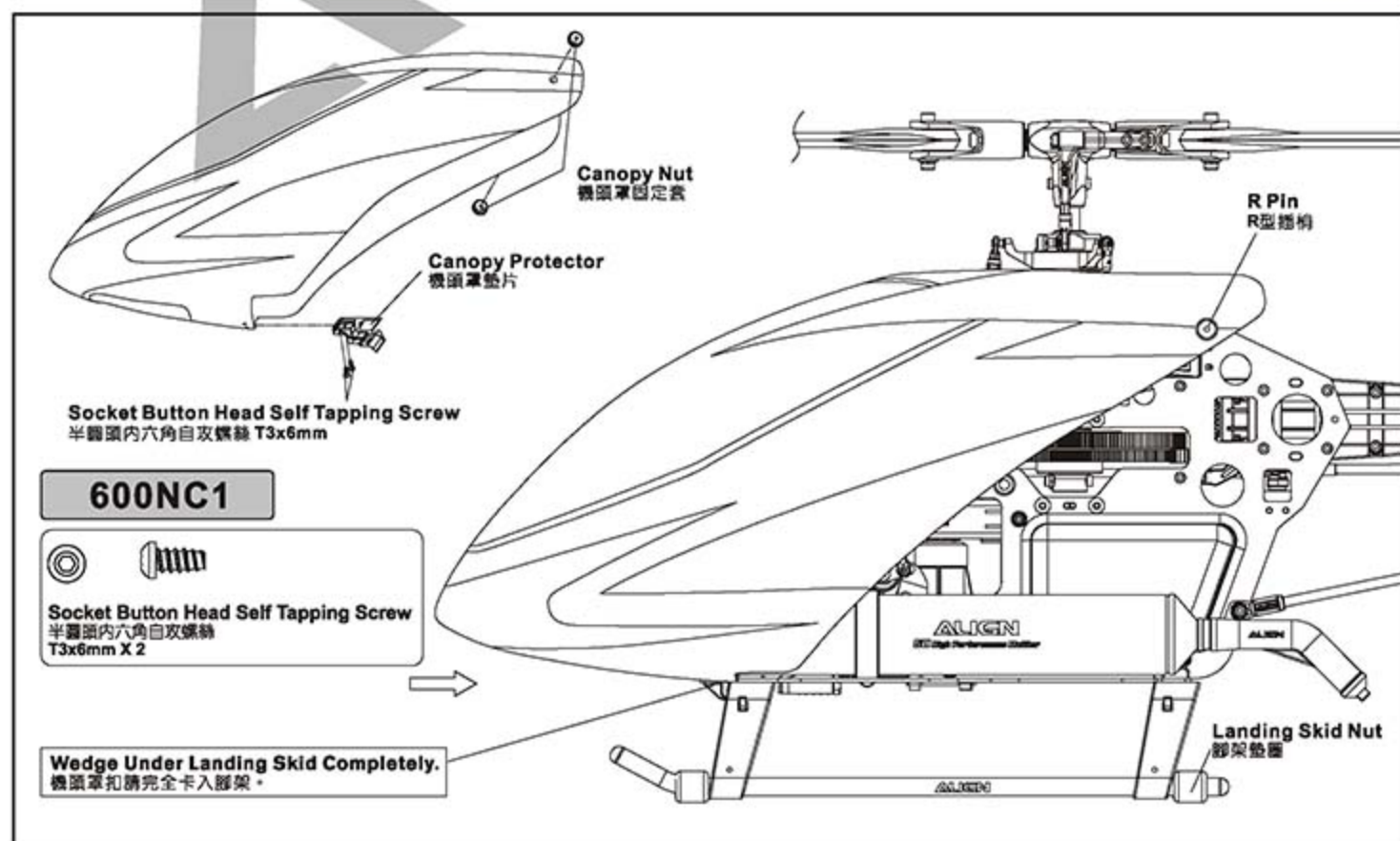
Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

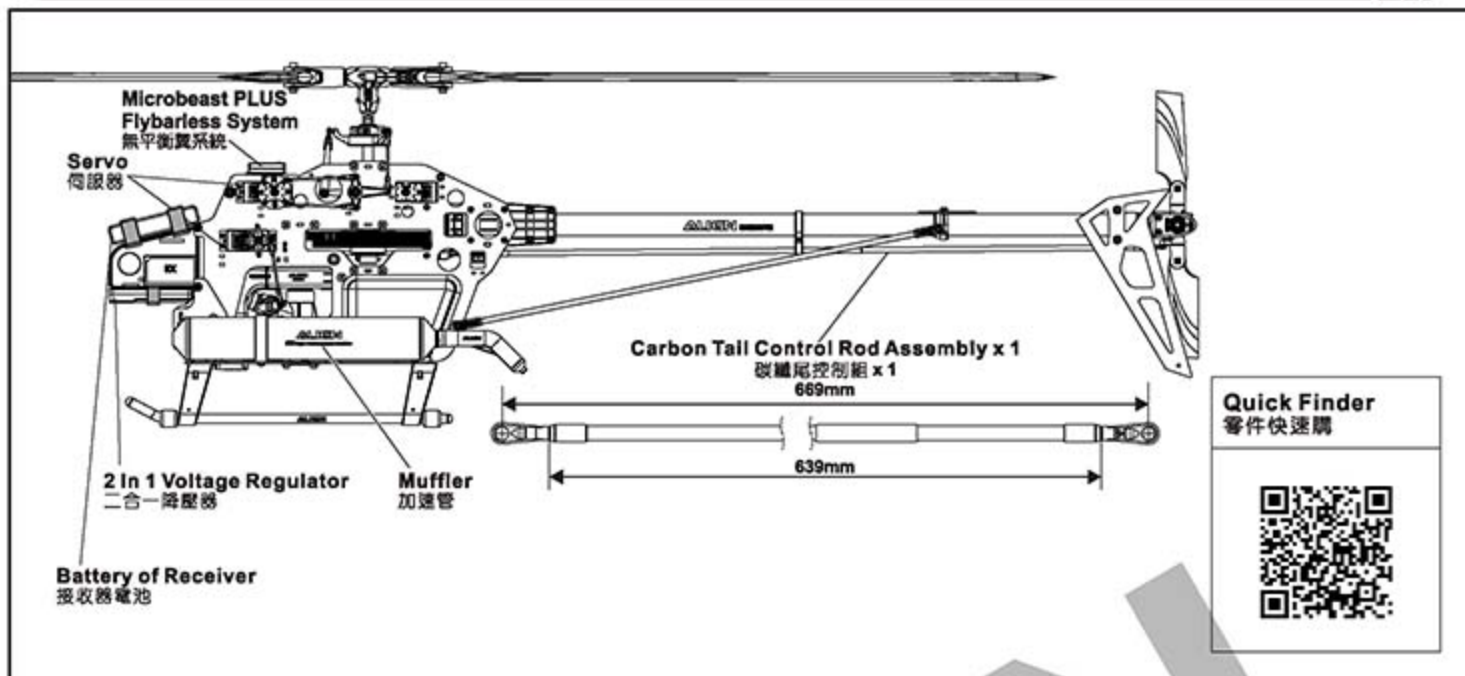
原裝零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。





10.CANOPY ASSEMBLY 機頭罩安裝





12.MICROBEAST PLUS FLYBARLESS MANUAL 無平衡翼系統使用說明

MICROBEAST PLUS Flybarless System as ALIGN helicopter standard equipment, must and compatible with ALIGN standard equipment including blades, servos, motor, battery and so on, please refer to flight and setup instruction in this manual.

ALIGN helicopter 標配使用 MICROBEAST PLUS 無平衡翼系統，須搭配 ALIGN 直昇機標準配件(主旋翼、伺服器、馬達)與飛行操作、設定指示。

USER NOTICE 使用注意事項



- 1.If assembling and operating the helicopter without using ALIGN standard equipment, including electronic equipment & blades...etc, please make sure there is a sufficiently large and stable power supply to your helicopter. If there is any abnormal voltage or insufficient power supply, suggest to upgrade the flybarless system to MICROBEAST PLUS HD (Optional) for better power back up.
- 2.Please refer to BEASTX MICROBEAST PLUS/HD website for MICROBEAST PLUS/HD assembly and setup instruction.
- 3.Any over use, incorrect setup, missassembly, incorrect modification or misuse will lead to abnormal voltage, electronic devices damage, structural interference, and insufficient power supply. Make sure to carefully check every assembly and setup refer to the manual instruction prior to every flight to prevent any unforeseen danger.

1. 安裝、操控您的直昇機時，如非使用 ALIGN 標準配件(含電子配件、主旋翼等)，請務必確定您的供電系統有足夠的供電能力，如發現電壓異常、供電不足，建議您升級使用 MICROBEAST PLUS HD 無平衡翼系統(選配)，以能確保充足、穩定的接收器電源。

2. MICROBEAST PLUS/HD 使用、設定、接線，請參照 BEASTX MICROBEAST PLUS/HD 官方說明。

3. 任何電子配件、零件的設定、組裝、修改或操作不良所造成的電壓異常、電子零件損壞，即可能造成供電不穩定等問題，每趟飛行前須注意仔細檢查，防止機件及電子零件故障而引發不可預期的意外。

MANUAL LINK 設定操作連結

MICROBEAST PLUS Flybarless System is the V4.2 version out of the factory, please feel at ease using it. You can also link to BEASTX MICROBEAST PLUS/HD website to get the latest version and the latest news. And please refer to MICROBEAST PLUS V3.2.x and V4.2 instruction manual for operating and setting.

MICROBEAST PLUS 無平衡翼系統，出廠時主程式為 V4.2 版本。您也可以連結至 BEASTX MICROBEAST PLUS/HD 官網查詢，隨時更新最新版本及各項最新訊息。操作設定請同時參照 V3.2.x 版及 V4.2 版使用說明書。



Please visit Align download area to get the completed instruction manual at Align website.

更多詳細的設定操作說明請至官網下載專區下載。
<http://www.align.com.tw/beastx/>

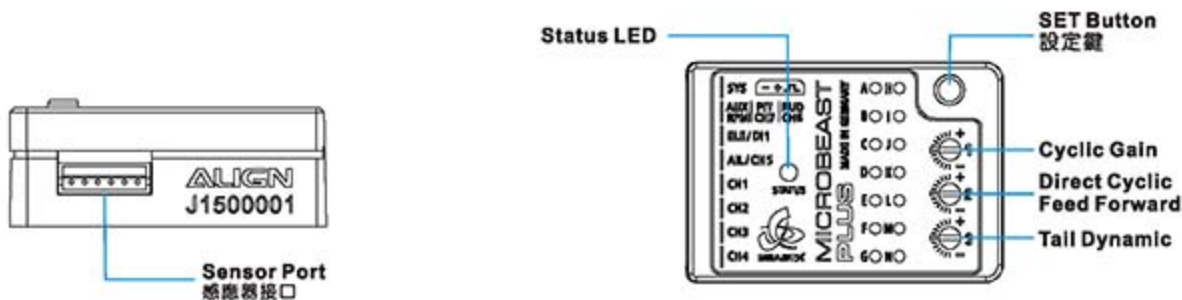


MICROBEAST PLUS

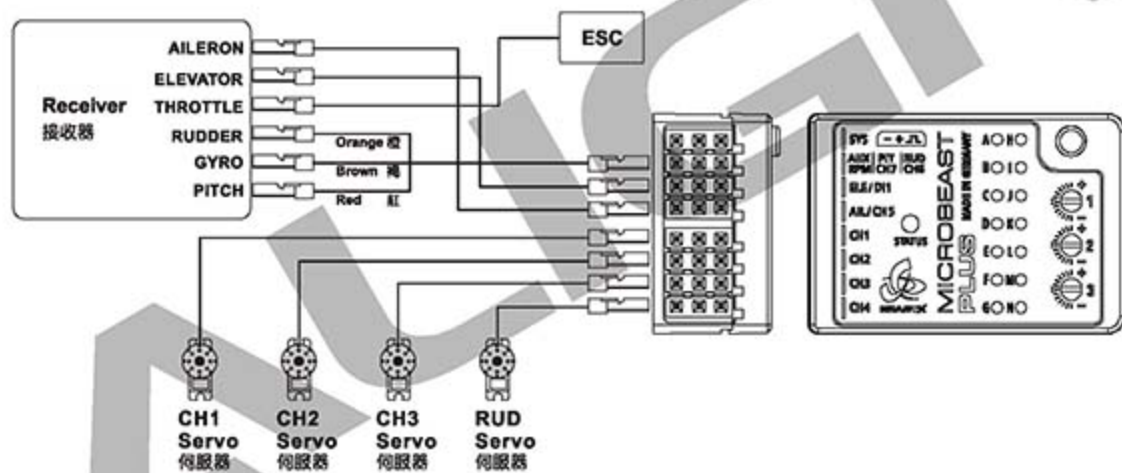
Optional Equipment
選購品

PARTS IDENTIFICATION 各部位名稱

MICROBEAST PLUS FLYBARLESS SYSTEM 無平衡翼系統



MICROBEAST PLUS FLYBARLESS SYSTEM WIRING DIAGRAM 無平衡翼系統接線示意圖



For detail connectivity, please scan QR Code then follow MICROBEAST PLUS manual.

詳細接線方式，請掃描QR Code連結至MICROBEAST PLUS說明書。



CAUTION
注意



MICROBEAST PLUS HD Flybarless System(Optional) MICROBEAST PLUS HD無平衡翼系統(選配)

If assembling and operating the helicopter without using ALIGN standard equipment, including electronic equipment & blades...etc, please make sure there is a sufficiently large and stable power supply to your helicopter. If there is any abnormal voltage or insufficient power supply, suggest to upgrade the flybarless system to MICROBEAST PLUS HD (Optional) for better power back up. Please refer to BEASTX website for MICROBEAST PLUS HD assembly and setup instruction.

安裝、操控您的直昇機時，如非使用ALIGN標準配件(含電子配件、主旋翼等)，請務必確定您的供電系統有足夠的供電能力，如發現電壓異常、供電不足，建議您升級使用MICROBEAST PLUS HD無平衡翼系統(選配)，以能確保充足、穩定的接收器電源。MICROBEAST PLUS HD使用、設定、接線，請參照MICROBEAST PLUS HD官方說明。

To set this option is to turn on the transmitter and connect to BEC power.

Note: For the safety, please do not connect ESC to the brushless motor in order to prevent any accident caused by the motor running during the setting.

此項設定只要開啟發射器，接上BEC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三條線接上，以免調整時啟動馬達而發生危險。

SERVO CONFIGURATION 伺服器配置

Following the servo configuration diagram on right, plug the servos to Gyro.

請依照右圖顯示的伺服器名稱，將伺服器接到陀螺儀。



14.AJUSTMENTS FOR GYRO AND TAIL NEUTRAL SETTING

陀螺儀與尾翼中立點設定調整

ALIGN

Turn off Revolution mixing (RVMX) mode on the transmitter, then set the gain switch on the transmitter and the gyro to non-head lock mode, or disable gain completely. After setting the transmitter, connect the helicopter power and proceed with rudder neutral point setting. **Note:** When connecting to the helicopter power, please do not touch tail rudder stick and the helicopter, wait for 3 seconds for gyro to enable, and the rudder servo horn should be 90 degrees to the tail servo. Tail pitch slider should be half way on the tail output shaft. This will be the standard rudder neutral point. After completing this setting, set the gain switch back to heading lock mode, with gain at around 70%.

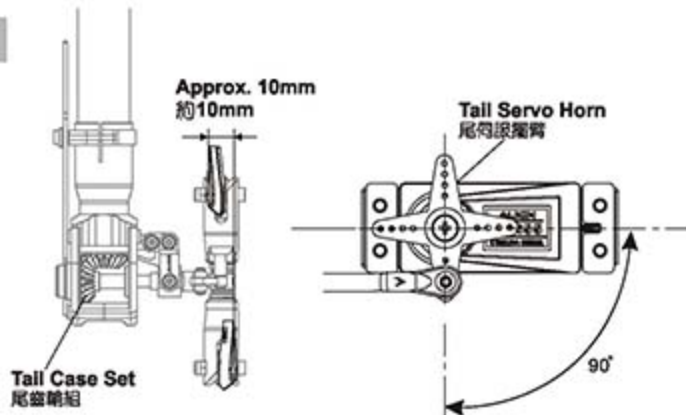
發射器內陀螺儀設定請關閉根軸混控模式，並將發射器上的感度開關與陀螺儀切至“非鎖定模式”或將陀螺儀感度關閉。發射器設定完成後接上直昇機電源，即可進行尾舵中立點設定。注意：當接上直昇機電源時請勿撥動尾舵搖桿或碰觸機體，待3秒陀螺儀開機完成後，尾舵舵臂需與尾伺服器約成90度，尾旋翼控制組須正確置於尾橫軸約中間位置，即為標準尾舵中立點設定，設定完成後，切換至“鎖定模式”，感度設約70%左右。

TAIL NEUTRAL SETTING

尾中立點設定

After the gyro is enable and under non-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.

陀螺儀開機後，在非鎖定模式下，尾伺服器與尾 Pitch 控制組正確擺置位置。若尾 Pitch 控制組未置中時請調整尾控制連桿的長度來修正。

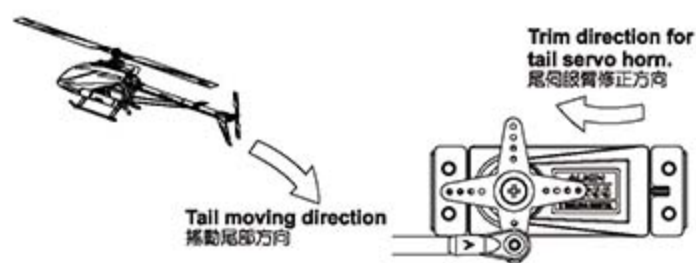


HEAD LOCK DIRECTION SETTING OF GYRO

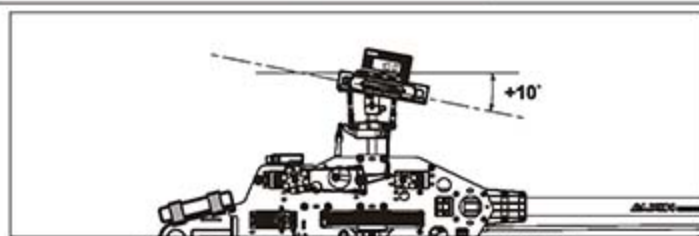
陀螺儀鎖定方向設定

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

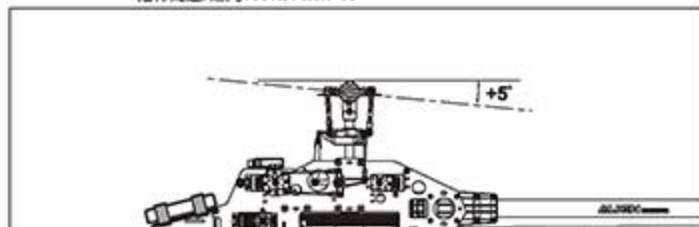
陀螺儀鎖定方向確認，當手搖尾部順時鐘擺動，尾舵舵臂應反時鐘修正，反向時請切換陀螺儀上“鎖定反向”開關修正。



GENERAL FLIGHT 一般飛行模式



Stick Position at High/Throttle 100%/Pitch +10°
搖桿高速/油門100%/Pitch+10°

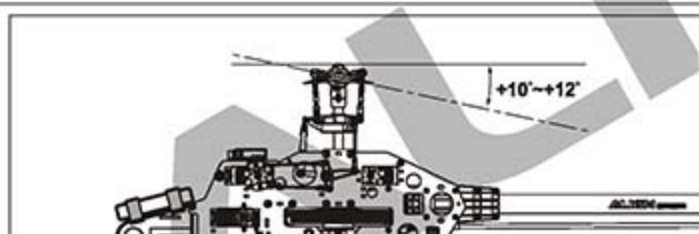


Stick Position at Hovering/Throttle 60%/Pitch +5°
搖桿停懸/油門60%/Pitch+5°

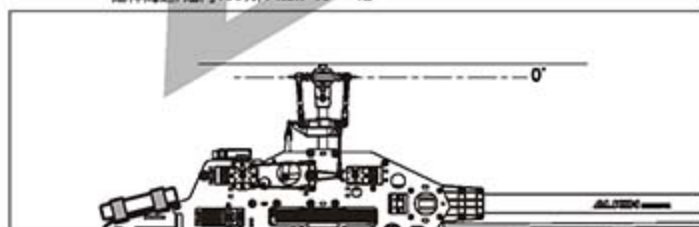


Stick Position at Low/Throttle 0%/Pitch -2°~0°
搖桿低速/油門0%/Pitch-2°~0°

3D FLIGHT 3D特技飛行模式



Stick Position at High/Throttle 100%/Pitch +10°~+12°
搖桿高速/油門100%/Pitch+10°~+12°



Stick Position at Middle/Throttle 60%~65%/Pitch 0°
搖桿中速/油門60%~65%/Pitch 0°



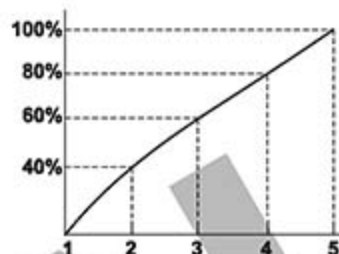
Stick Position at Low/Throttle 100%/Pitch -10°~+12°
搖桿低速/油門100%/Pitch-10°~+12°



1. Pitch range: Approx. 25 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25°
 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方式，優於螺距過大的設定。

GENERAL FLIGHT 一般飛行模式

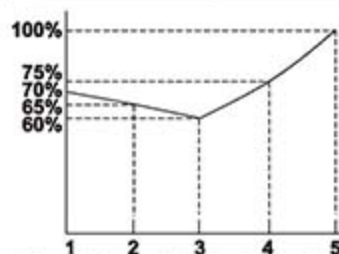
| | Throttle 油門 | Pitch 螺距 |
|---|----------------------------|-------------|
| 5 | 100% High Speed 100% 高速 | +10° |
| 4 | 80% | |
| 3 | 60% Hovering 60% 停懸 | +5° |
| 2 | 40% | |
| 1 | 0% Low Speed 0% 低速 | -2°~0° |



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

IDLE 1 : SPORT FLIGHT

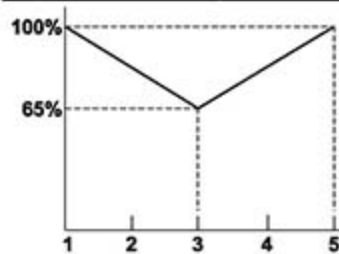
| | Throttle 油門 | Pitch 螺距 |
|---|----------------|-------------|
| 5 | 100% | +10°~+12° |
| 4 | 75% | |
| 3 | 60% | +5° |
| 2 | 65% | |
| 1 | 70% | -5° |



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

IDLE 2 : 3D FLIGHT

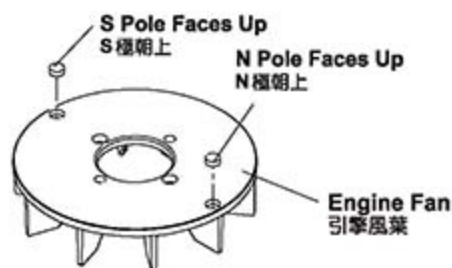
| | Throttle 油門 | Pitch 螺距 |
|---|-----------------------------|-------------|
| 5 | 100% High 100% 高 | +10°~+12° |
| 3 | 60%~65% Middle 60%~65% 中 | 0° |
| 1 | 100% Low 100% 低 | -10°~+12° |



Throttle Curve (3D Flight)
特技飛行模式油門曲線

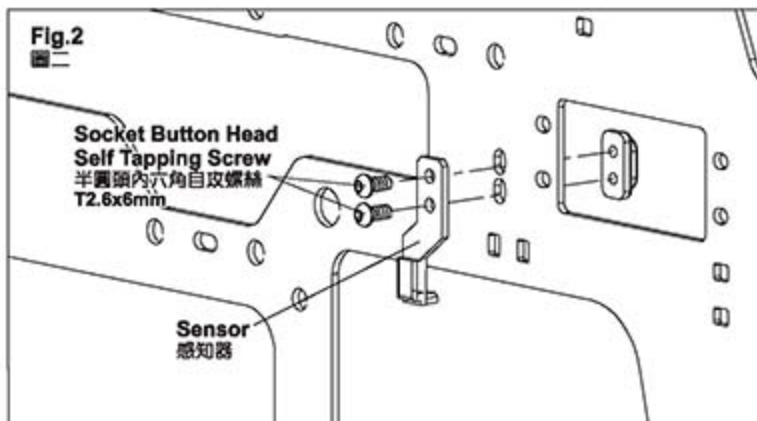
INSTRUCTION 安裝使用說明

Fig.1



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

Fig.2



NOTE : The safety RPM is up to 20000rpm for OS50 engine.

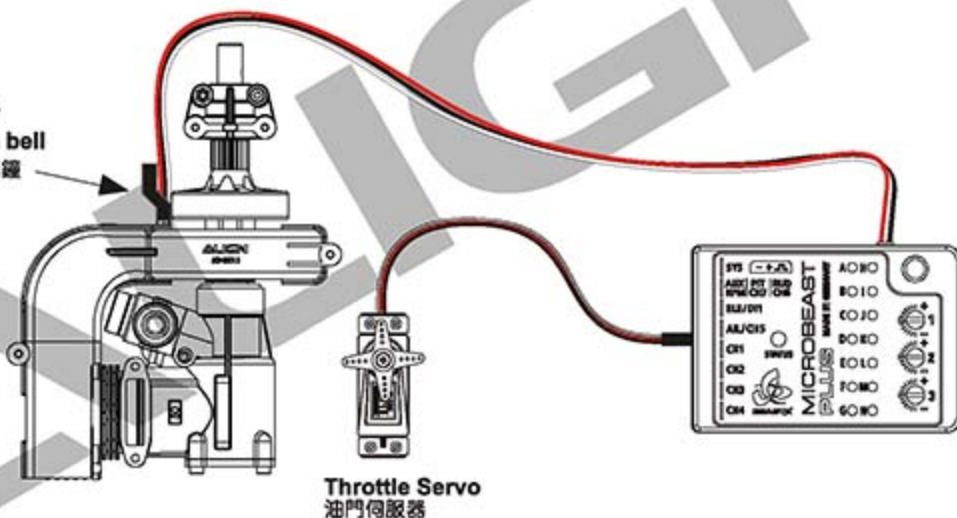
註：OS50引擎安全轉速上限20000rpm。



Particularly when using sensors for combustion engines check for correct polarity of the sensor power supply on the adapter cable.

當感應器使用在引擎直昇機時，請特別注意感應器電源供應與連接線的極性是否正確。

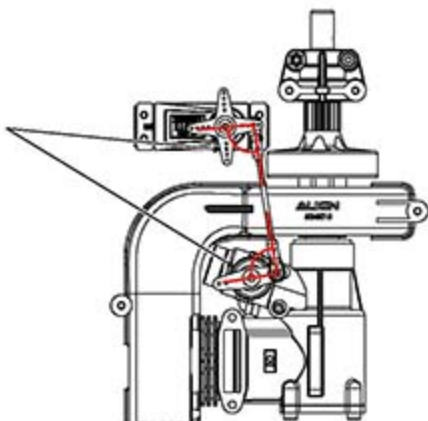
Magnetic sensor located at clutch bell
 磁感應器位於離合器鐘



Throttle at mid stick position
 油門選擇在中間



After install the engine into the model, please loosen the fixing screw and adjust the carburetor and the engine are at an angle of 90° (Vertical).
 引擎裝入機體後請鬆開固定螺絲將化油器調整成與引擎垂直。



For transmitter throttle curve setup, please refer to Microbeast PLUS (V4.x.x) manual, Nitro Mode setup on page 30.
 Manual download : <http://www.align.com.tw/manuals/flybarless/>

遙控器的油門曲線數據，請參考 Microbeast PLUS 無平衡翼系統 (V4.x.x 專用) 說明書內第30頁引擎模式調整，完整的說明書請至官網下載專區下載。
<http://www.align.com.tw/manuals/flybarless/>

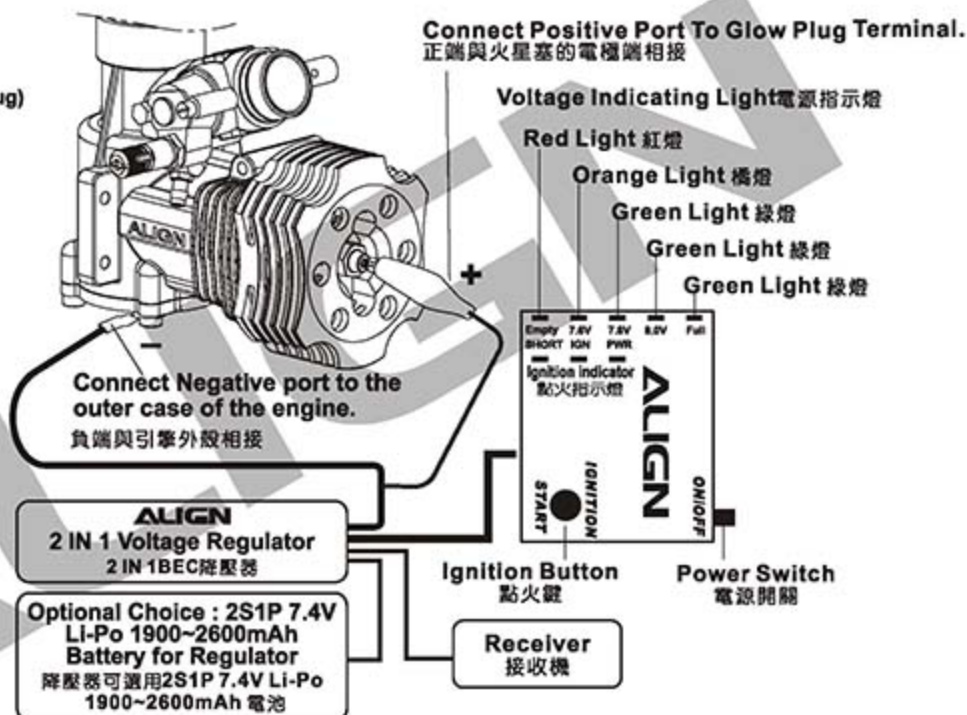
FEATURES 功能說明

1. Due to the unique 2 in 1 design, the regulator's functions provide power to the receiver, servos, and the internal glow plug ignition system that does not require you to remove the clip lead.
 2. The linear regulator design results in no interference to the receiver. The required input power may only consist of a 2 cell Li-Ion or a Li-Poly battery.
 3. When the integrated power switch is moved to the on position, the voltage indicating LED's and ignition indicating LED's will illuminate displaying the status of the battery voltage, and of the plug ignition function.
1. 獨特的二合一設計，除了具備(BEC)降/穩壓系統，以提供接收器與伺服器電源的功能外，還內建一組火星塞的點火裝置，省去傳統電夾插拔的麻煩。
2. 本產品採用線性設計，輸入電源為2CELL的Li-Ion或Li-Poly電池，其優點為不會像交換式設計的BEC會產生干擾接收器的情形，免於摔機的恐懼。
3. 具備電源開關、電壓指示燈及點火指示燈功能，可由燈號判定電池殘量與火星塞的點火狀態。

SPECIFICATIONS 產品規格/配件

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

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



INSTRUCTION 安裝使用說明

Receiver and Servo Voltage Regulating Functions :

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

接收器與伺服器電源部份：

1. 本產品具電壓指示功能，當接入充電的電池時五顆指示燈全亮，表示電池在Full電量充足狀態下；使用中當電壓降低至7.6V時(3顆綠燈熄滅)，尚可完成單趟飛行即須對電池充電或更換新電池；而如果僅亮紅燈時表示Empty電量不足，不應該再使用囉！
2. 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降壓調整器於陀螺儀與尾舵伺服器間，避免伺服器損壞；規格標示准許6V輸入的伺服器則不須使用調整器。

Glow Plug Ignition System Functions :

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

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

火星塞點火器部分 :

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

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

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

ALIGN

PLEASE PRACTICE SIMULATION FLIGHT BEFORE REAL FLYING 飛行前請事先熟練電腦模擬飛行






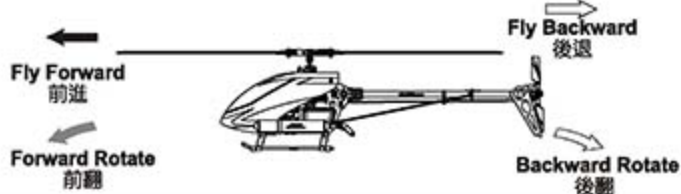


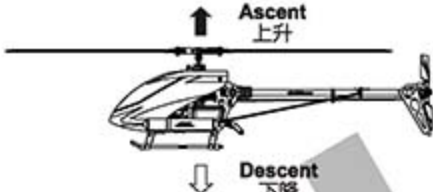



A safe and effective practice method is to use the transmitter flying on the computer through simulator software sold on the market. Do a simulation flight until you familiarize your fingers with the movements of the rudders, and keep practicing until the fingers move naturally.

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.

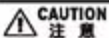
在還沒瞭解直昇機各動作的操控方式前，嚴禁實機飛行，請先進行電腦模擬飛行的練習，一種最有效、最安全的練習方式，就是透過市面販售的模擬軟體，以遙控器在電腦上模擬飛行，熟悉各種方向的操控，並不斷的重複，直到手指可熟練的控制各個動作及方向。

1. 將直昇機放在空曠的地方(確認引擎為熄火狀態)，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。



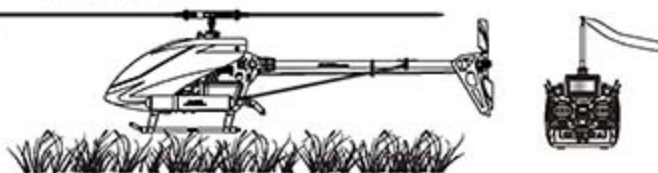
| Mode 1 | Mode 2 | Illustration 圖示 |
|---|---|---|
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

FLIGHT ADJUSTMENT AND NOTICE 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。

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



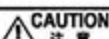
If there are other radio control aircraft at the field, make sure to check their frequencies and tell them what frequency you are using. Frequency interference can cause your model, or other models to crash and increase the risk of danger.

假使飛行場有其他遙控飛機，請確認他們的頻率，並告知他們你正在使用的頻率，相同的頻率會造成干擾導致失控和大大地增加風險。

ENGINE START PREPARATION 引擎啟動事前準備

Separate the fuel tube and the joint and start to refuel. Please be careful to avoid the dust entering the tube. When the fuel tank is full, please stop refueling and reconnect the tube and the joint.

將油管與其接頭分離，並開始補給燃料。請小心避免灰塵砂粒進入管子內。當油箱已滿，請停止補給燃料並再將管子和接頭接合。



For engine adjustment and precautions, please refer to the factory manual for more instruction.

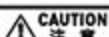
引擎各項調整及注意事項，請參照原廠使用說明書。



Mode 1



Mode 2



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。

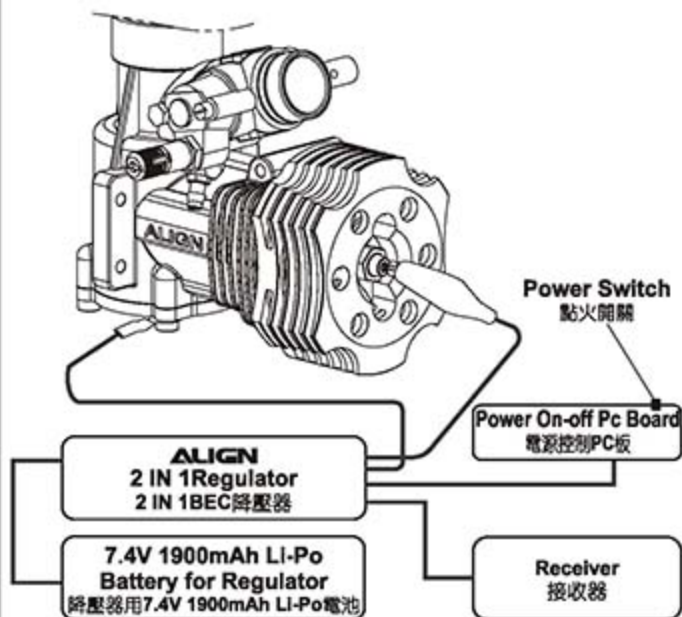


Check if the throttle stick is set at the lowest position and check if engine throttle is at low speed.

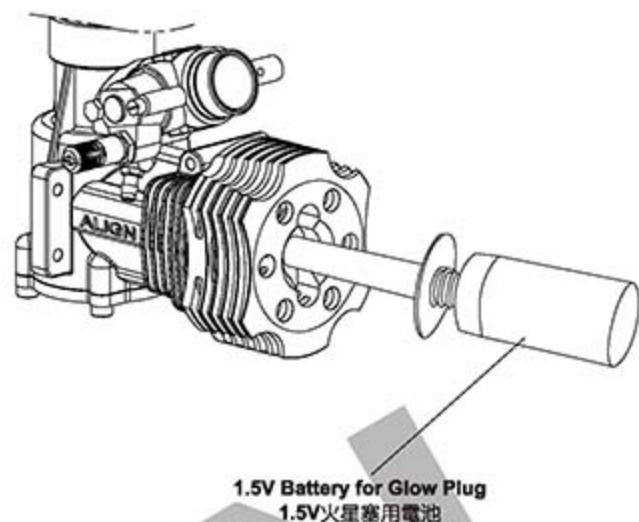
確認油門搖桿是在最低的位置，並確認引擎油門置於低速。

GLOW PLUG IGNITION METHOD 火星塞點火方式

Method 1
方式一



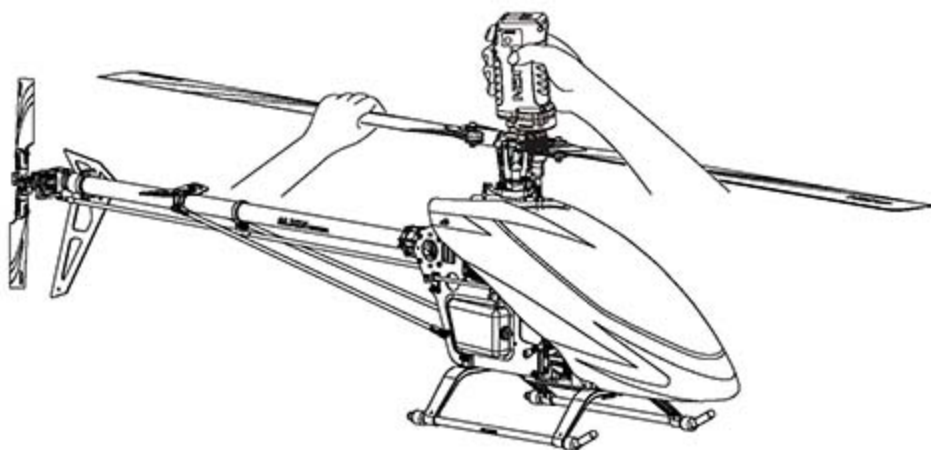
Method 2
方式二



ENGINE START AND STOP 引擎啟動和熄火

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

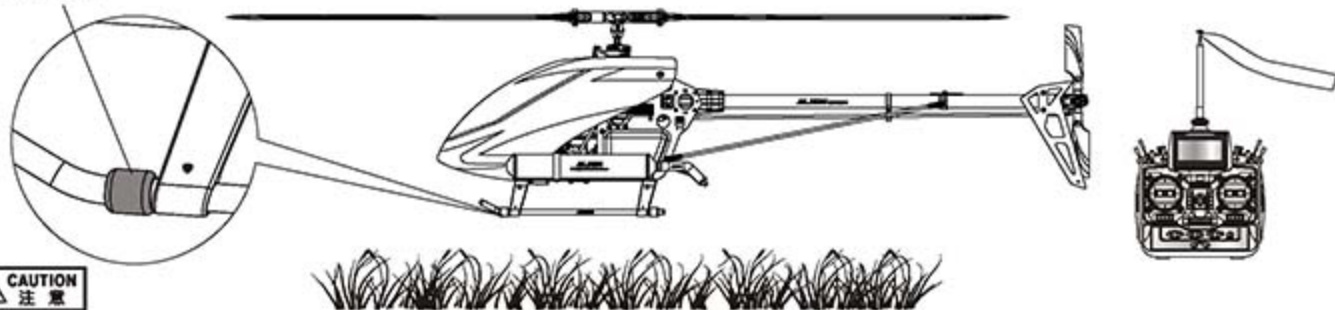
1. 將啟動電池連接到啟動器並確認其轉動方向。將啟動軸完全插入啟動器。
2. 緊緊抓住主旋翼頭部，將啟動軸插入引擎啟動頭並以啟動器啟動引擎。
3. 當引擎啟動後，停止啟動器並將啟動頭上的啟動器移開。請保持繼續緊緊抓住主旋翼頭部。
4. 仍然緊緊抓住主旋翼頭部，將火星塞點火電池關閉或移開。
5. 仍然緊緊抓住主旋翼頭部，請保持油門於最低點時，引擎能保持於低怠速下正常運轉。
6. 欲將引擎熄火時，只需將油門搖桿旁的油門微調調至最低即可；如果引擎仍無法停止，請將油管夾片推至鎖定位，關閉油料供給。



This procedure is best performed on soft surfaces such as grass. The use of rubber skid stopper is recommended on hard surface to prevent vibration feedback from the ground to flybarless sensors, resulting in over-corrections.

將直升機置於柔軟地面上，建議硬地起飛腳架裝上避震墊圈。避免升空前腳架與過硬的地面震動太大反饋至機身上的無平衡翼感應器，影響無平衡翼系統升空前過度修正。

Rubber Skid Stoppers Installed 裝上避震墊圈



CAUTION
注意

If swashplate should tilt prior to lift off, do not try to manually trim the swashplate level. This is due to vibration feedback to the sensor, and will disappear once helicopter lifts off the ground. If manual trim is applied, helicopter will tilt immediately after lift off.

直昇機離地前，十字盤可能因感應器受震動的反應，使十字盤有傾斜的情形，此時請勿刻意將十字盤修正為水平狀態，此現象只要離地升空時立即解除，可平穩升空；若刻意將十字盤修正為水平時，反而會造成感應器過度修正，一離地即偏向修正方向的危險。

MAIN ROTOR ADJUSTMENTS 主旋翼雙槳平衡調整

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.

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)。

A. When rotating, the blade with higher path means the pitch too big. Please shorten DFC ball link for regular trim.

B. When rotating, the blade with lower path means the pitch too small. Please lengthen DFC ball link for regular trim.

A. 旋翼轉動時較高軌跡的主旋翼表示螺距(PITCH)過大，請調DFC連桿修正。

B. 旋翼轉動時較低軌跡的主旋翼表示螺距(PITCH)過小，請調DFC連桿修正。

CAUTION
注意

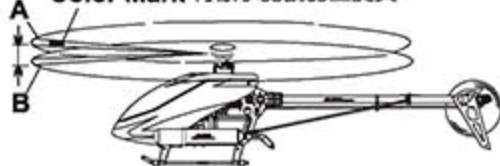
Tracking adjustment is very dangerous, so please keep away from the helicopter at a distance of at least 10m.

調整軌跡非常危險，請於距離飛機最少10公尺的距離。

Incorrect tracking may cause vibrations. Please repeat adjusting the tracking to make sure the rotor is correctly aligned. After tracking adjustment, please check the pitch angle is approx. 5° when hovering.

不正確的旋翼軌跡會導致震動，請不斷重複調整軌跡，使旋翼軌跡精準正確。在調整軌跡後，確認一下Pitch角度在停旋時應為大約 5° 。

Color Mark 有標示記號的主旋翼



FLIGHT ADJUSTMENT AND NOTICE 飛行調整與注意

FORBIDDEN
禁止



⊙ Do not attempt to grab or make contact with the helicopter while the main blades are in motion and keep your eyes away from the helicopter. During take-off, landing, and flight, be sure to keep the helicopter away from all obstacles. Operators must stand at least 10 meters away from the helicopter to avoid injury caused by loose parts due to improper assembly or any unforeseen dangers.

⊙ 嚴禁用手抓取運行中的直昇機，並禁止將直昇機對著眼睛，當主旋翼轉動後，或起飛/試飛時，務必遠離障礙物，站立位置必需距離10公尺以上，避免因人為組裝不當造成零件脫落，而引發不可預期的財物及人員損傷。

CAUTION
注意

⊙ Make sure that no one or obstructions in the vicinity.

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

⊙ 確認鄰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。

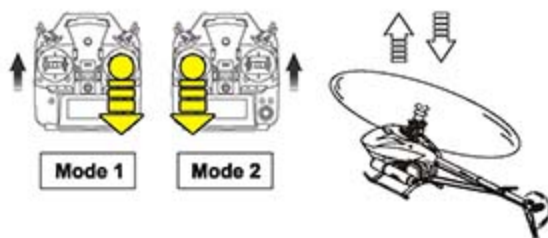
CAUTION
注意

Do not attempt to fly until you have some experiences with the operation of helicopter.

嚴禁無熟練操控飛行經驗者操控飛行。

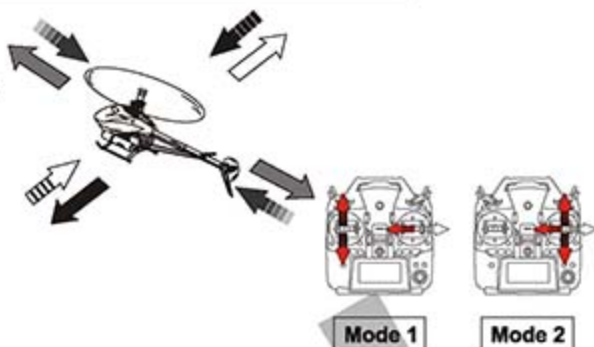
STEP 1 THROTTLE CONTROL PRACTICE 油門控制練習

- ⊙ 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

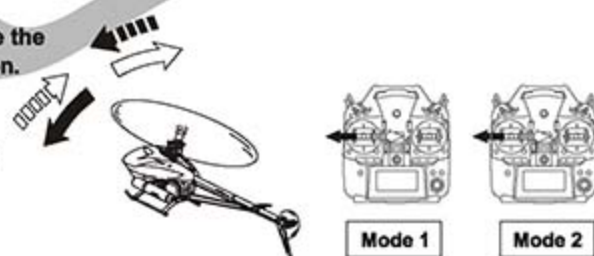
1. Raise the throttle stick slowly.
 2. Move the helicopter in any direction back, forward, left and right, slowly move the aileron and elevator sticks in the opposite direction to fly back to its original position.
1. 慢慢升起油門搖桿。
2. 使直昇機依指示：移動向後/向前/向左/向右，慢慢的反向移動副翼和升降搖桿並將直昇機開回到原來位置。



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

STEP 3 RUDDER CONTROL PRACTICING 方向舵操作練習

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



STEP 4

After you are familiar with all actions from STEP1 to 3, draw a circle on the ground and practice within the circle to increase your accuracy.

- ⊙ You can draw a smaller circle when you get more familiar with the actions.

當您覺得 STEP1~3 動作熟悉了，在地上畫圓圈並在這個圓圈的範圍內練習飛行，以增加您操控的準確度。

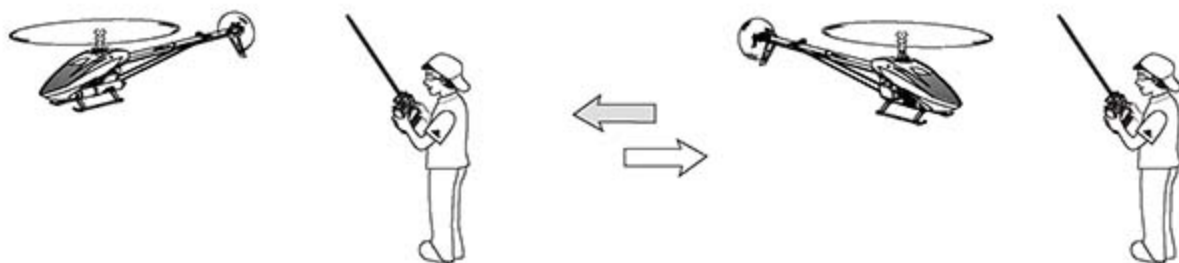
- ⊙ 當您更加習慣操作動作，您可以畫更小的圓圈。



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

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.

當您覺得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，站在直昇機機頭前方重複步驟練習。



| | Problem 狀況 | Cause 原因 | Solution 對策 |
|-------------------------|---|--|--|
| Blade Tracking 雙槳平衡 | Tracking is Off 雙槳 | Pitch linkage rods are not even length PITCH連桿長度調整不平均 | Adjust length of DFC ball link. 調整DFC連桿頭長度 |
| Hover 停懸 | Head speed too low 主旋翼轉速偏低 | Excessive pitch 主旋翼的PITCH偏高 | Adjust DFC ball link to reduce pitch by 4 to 5 degrees. Hovering headspeed should be around 1700~1800RPM. 調整DFC連桿頭調低Pitch約+4~5度 (停懸時主旋翼轉速為約1700~1800RPM) |
| | | Hovering throttle curve is too low 停懸點油門曲線過低 | Increase throttle curve at hovering point on transmitter (around 60%) 調高停懸點油門曲線(約60%) |
| | Head speed too high 主旋翼轉速偏高 | Not enough pitch 主旋翼的PITCH偏低 | Adjust DFC ball link to increase pitch by 4 to 5 degrees. Hovering headspeed should be around 1700~1800RPM. 調整DFC連桿頭調高Pitch約+4~5度 (停懸時主旋翼轉速為約1700~1800RPM) |
| | | Hovering throttle curve is too high 停懸點油門曲線過高 | Decrease throttle curve at hovering point on transmitter (around 60%) 調低停懸點油門曲線(約60%) |
| Rudder Response 尾舵反應 | Drifting of tail occurs during hovering, or delay of rudder response when centering rudder stick. 停懸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。 | Rudder neutral point improperly set 尾中立點設定不當 | Reset rudder neutral point 重設尾中立點 |
| | Tail oscillates (hunting, or wags) at hover or full throttle 停懸或全油門時尾翼左右來回搖擺。 | Rudder gyro gain too low 尾舵陀螺儀感度偏低 | Increase rudder gyro gain 增加尾舵陀螺儀感度 |
| | | Rudder gyro gain too high 尾舵陀螺儀感度偏高 | Reduce rudder gyro gain 降低尾舵陀螺儀感度 |

If above solution does not resolve your issues, please check with experienced pilots or contact your Align dealer.

※在做完以上調整後，仍然無法改善情況時，應立即停止飛行並向有經驗的飛手諮詢或連絡您的經銷商。

ALIGN

Specifications & Equipment/規格配備:

Length/機身長:1160mm

Height/機身高:357mm

Main Blade Length/主旋翼長:600mm

Main Rotor Diameter/主旋翼直徑:1350mm

Tail Rotor Diameter/尾旋翼直徑:240mm

Engine Pinion Gear/引擎主齒:20T

Autorotation Tail Drive Gear/尾驅動主齒:180T

Drive Gear Ratio/齒輪傳動比:8.5:1:4.5(E:M:T)

Fuel Tank Capacity /油箱容量 : 440cc.

Flying Weight/全配重:Approx. 3.2kg

