ALIGN

T-REX 700XN
INSTRUCTION MANUAL
使用說明書

RH70N11XT
RH70N12XT

Contents

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。

INTRODUCTION 前言

Thank you for buying ALIGN Products. The T-REX 700XN 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 700XN 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 700XN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 700XN 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 700XN 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 700XN 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 700XN 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 700N 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 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。

SAFETY NOTES 安全注意事項

CAUTION 注 意

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

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

R/C helicopters fly at high speed, thus posing a certain degree of potential danger. Choose 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，並必須注意周遭有沒有人、高樓、建築物、高壓電線、樹木等等，避免操控的不當造成自己與他人財產的損壞。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、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，可能造成火災並傷及生命財產安全，切勿大意！

FORBIDDEN 禁止 PREVENT MOISTURE 遠離潮濕環境

R/C models are composed of many precision electrical components. It is critical to keep the model and associated equipment away from moisture and other contaminants. The introduction or exposure to water or moisture in any form can cause the model to malfunction resulting in loss of use, or a crash. Do not operate or expose to rain or moisture.

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

FORBIDDEN 禁止 PROPER OPERATION 勿不當使用本產品

Please use the replacement of parts on the manual to ensure the safety of instructors. This product is for R/C model, so do not use for other purpose.

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

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

Before turning on your model and transmitter, check to make sure no one else is operating on the same frequency. Frequency interference can cause your model, or other models to crash. The guidance provided by an experienced pilot will be invaluable for the assembly, tuning, trimming, and actual first flight 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習初期有著一定的難度，要盡量避免獨自操作飛行，需有經驗的人士在旁指導，才可以操控飛行，否則將可能造成不可預期的意外發生。(勤練電腦模擬器及老手指導是入門必要的選擇)

WARNING 警告 SAFE OPERATION 安全操作

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，都不能將運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，都可能引請不可預期的意外發生。

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

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

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 注意 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。

EQUIPMENT REQUIRED FOR ASSEMBLY 自備設備

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

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

90-120 Muffler
90-120 高效加速管

Engine Starter
啓動器

Fuel Pump
加油器

Engine Fuel
引擎燃油

2S1P 7.4V Li-Po 1900~2600mAh Battery x 1
2S1P 7.4V Li-Po 1900~2600mAh 電池 x 1

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

Receiver(7-channel or more)
接收機(七動以上)

or 或

Remote Receiver
衛星天線

ALIGN 91H Engine
91H 引擎

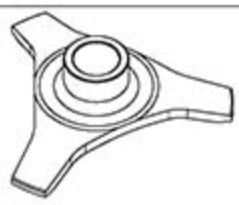
or 或

ALIGN 91HP Engine
91HP 引擎

or 或

105HP Engine
105HP 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 數位螺距規

[HETMT901]
Multi-function Tester
多功能檢測計

Philips 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

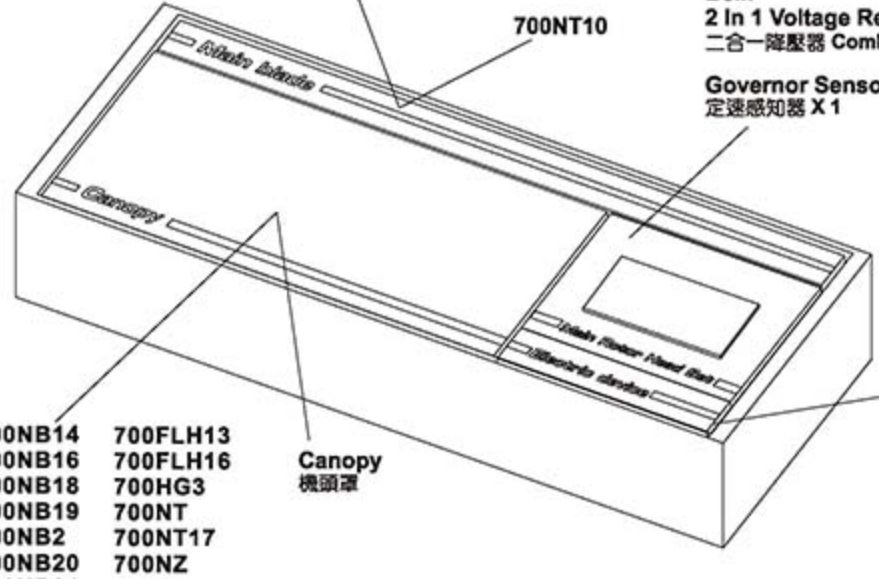
Needle Nose Pliers
尖嘴鉗

Oil
潤滑油

CA Glue
瞬間膠

Grease
潤滑油

PACKAGE ILLUSTRATION 包裝說明



700 Carbon Fiber Blade X 1set
700 碳纖主旋翼 X 1組

700NT10

B6M
2 In 1 Voltage Regulator combo x 1
二合一降壓器 Combo x 1

Governor Sensor X 1
定速感知器 X 1

Quick Finder
零件快速購

700NB14
700NB16
700NB18
700NB19
700NB2
700NB20
700NB21

700FLH13
700FLH16
700HG3
700NT
700NT17
700NZ

Canopy
機頭罩

Optional Equipment
選購品

DS820M Digital Servo x 3
DS820M 數位伺服器 x 3

DS825M Digital Servo x 1
DS825M 數位伺服器 x 1

DS530 Digital Servo x 1
DS530 數位伺服器 x 1

The T-REX 700XN Combo includes additional electronics and other equipment. The Instruction Manual will refer to the T-REX 700XN Combo. You may purchase any additional items or spare parts referenced in the instruction manual.

T-REX 700XN 系列商品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 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 700XN COMBO STANDARD EQUIPMENT　T-REX 700XN COMBO 標準配備　[RH70N11XT]

 700NC4	 700FLH16	 700NB14	 700NB16	 700NB2	 700NB21	 700NB18
 700NB19	 700NB20	 700FLH13	 700HG3	 700HT11	 700NT	 700NT10
 700NZ	 700 Carbon Fiber Blades x 1set 700 碳纖輕量化主旋翼	 DS820M Digital Servo x 3 數位伺服器 x 3	 DS825M Digital Servo x 1 數位伺服器 x 1	 DS530 Digital Servo x 1 數位伺服器 x 1	 Beastx Governor Sensor x 1 定速器感應器 x 1	 B6M 2 In 1 Voltage Regulator x 1 二合一降壓器 x 1

T-REX 700XN KIT STANDARD EQUIPMENT　T-REX 700XN KIT 標準配備　[RH70N12XT]

 700NC4	 700FLH16	 700NB14	 700NB16	 700NB2	 700NB21
 700NB20	 700FLH13	 700HG3	 700HT11	 700NT	 700NT10
 700NB18	 700NZ	 700NB19	 700 Carbon Fiber Blades x 1set 700 碳纖輕量化主旋翼	 Beastx Governor Sensor x 1 定速器感應器 x 1	 B6M 2 In 1 Voltage Regulator x 1 二合一降壓器 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。
- 關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失控的現象，影響自身與他人的安全，請養成正確的習慣。
- 開機請先確定直昇機的各個動作是否順暢，及方向是否正確，並檢查伺服器的動作是否有干涉或崩齒的情形，使用故障的伺服器將導致不可預期的危險。
- 飛行前確認沒有缺少或鬆脫的螺絲與螺帽，確認沒有組裝不完整或損毀的零件，仔細檢查主旋翼是否有損壞，特別是接近主旋翼夾座的部位。損壞或組裝不完整的零件不僅影響飛行，更會造成不可預期的危險。注意：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。

CAUTION 注意

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

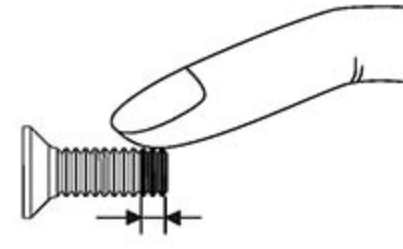
CA Glue 瞬間膠

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

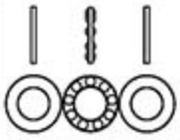
1. Anaerobic Retainer (R48)is green penetrating threadlocker and is used to fix the metal tube before assembly at temperatures up to +180˚C。
2. Thread Lock(T43) is blue low strength threadlocker and is applied to the small screw(threads) or metal parts before assembly to prevent loosening. Ensure to 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。

700FLH16



Thrust Bearing
止推軸承(φ10.2xφ18x5.5mm) X 2

Bearing
軸承(φ10xφ19x5mm) X 4

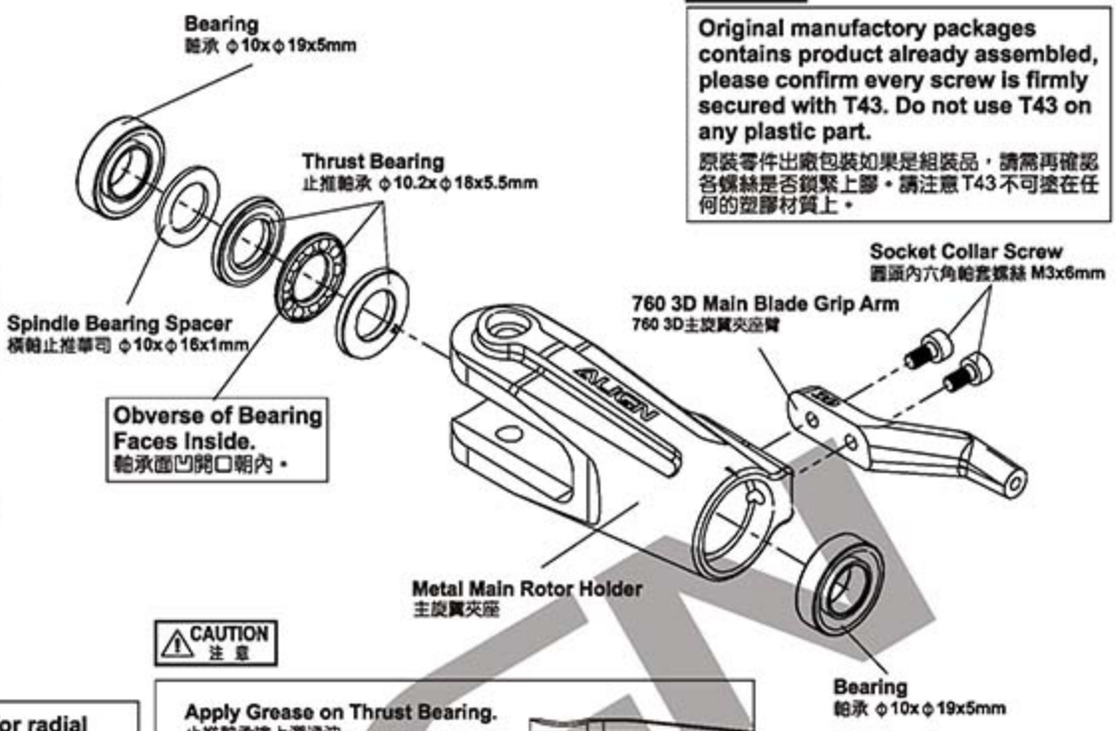
Spindle Bearing Spacer
橫軸止推華司(φ10xφ16x1mm) X 2

Socket Collar Screw
圓頭內六角軸套螺絲(M3x6mm)x4

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

CAUTION 注意

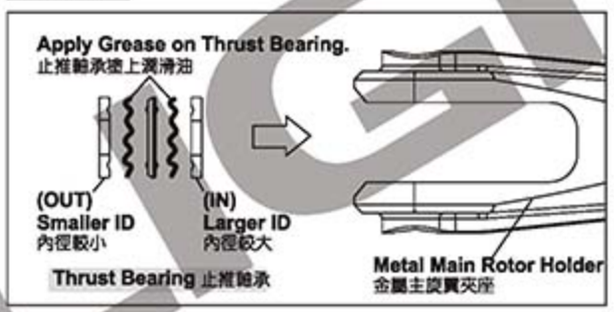
Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.
原裝零件出廠包裝如果是組裝品，請需再確認各螺絲是否鎖緊上膠。請注意T43不可塗在任何的塑膠材質上。



CAUTION 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



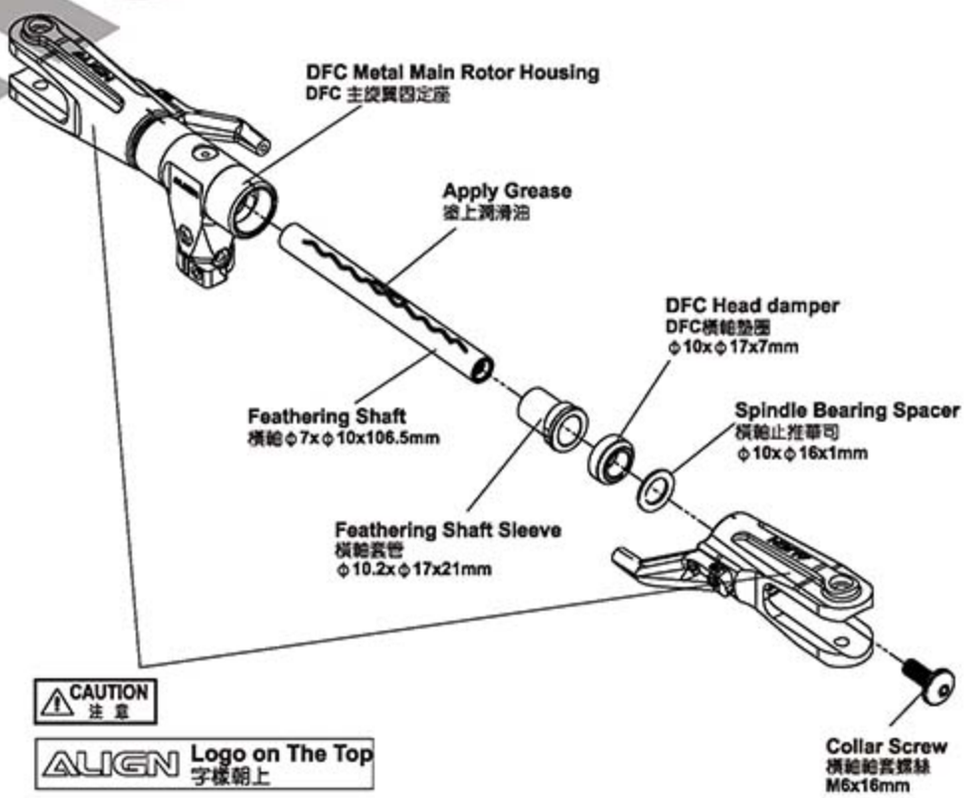
700FLH16

Spindle Bearing Spacer
橫軸止推華司(φ10xφ16x1mm) X 2

Collar Screw
橫軸軸套螺絲(M6x16mm) X 2

Feathering Shaft Sleeve
橫軸套管(φ10.2xφ17x21mm) X 2

DFC Head Damper
DFC橫軸墊圈(φ10xφ17x7mm) X 2



CAUTION 注意

ALIGN Logo on The Top
字樣朝上

700FLH16

Bearing
軸承(ϕ3xϕ7x3mm) x 4

Bearing
軸承(ϕ2xϕ5x2.3mm) x 4

Washer
華司(ϕ3xϕ4.8x0.3mm) x 2

Collar
擺臂軸承襯套(ϕ3xϕ4.8x1.5mm) x 2

Apply a small 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)。

700FLH13

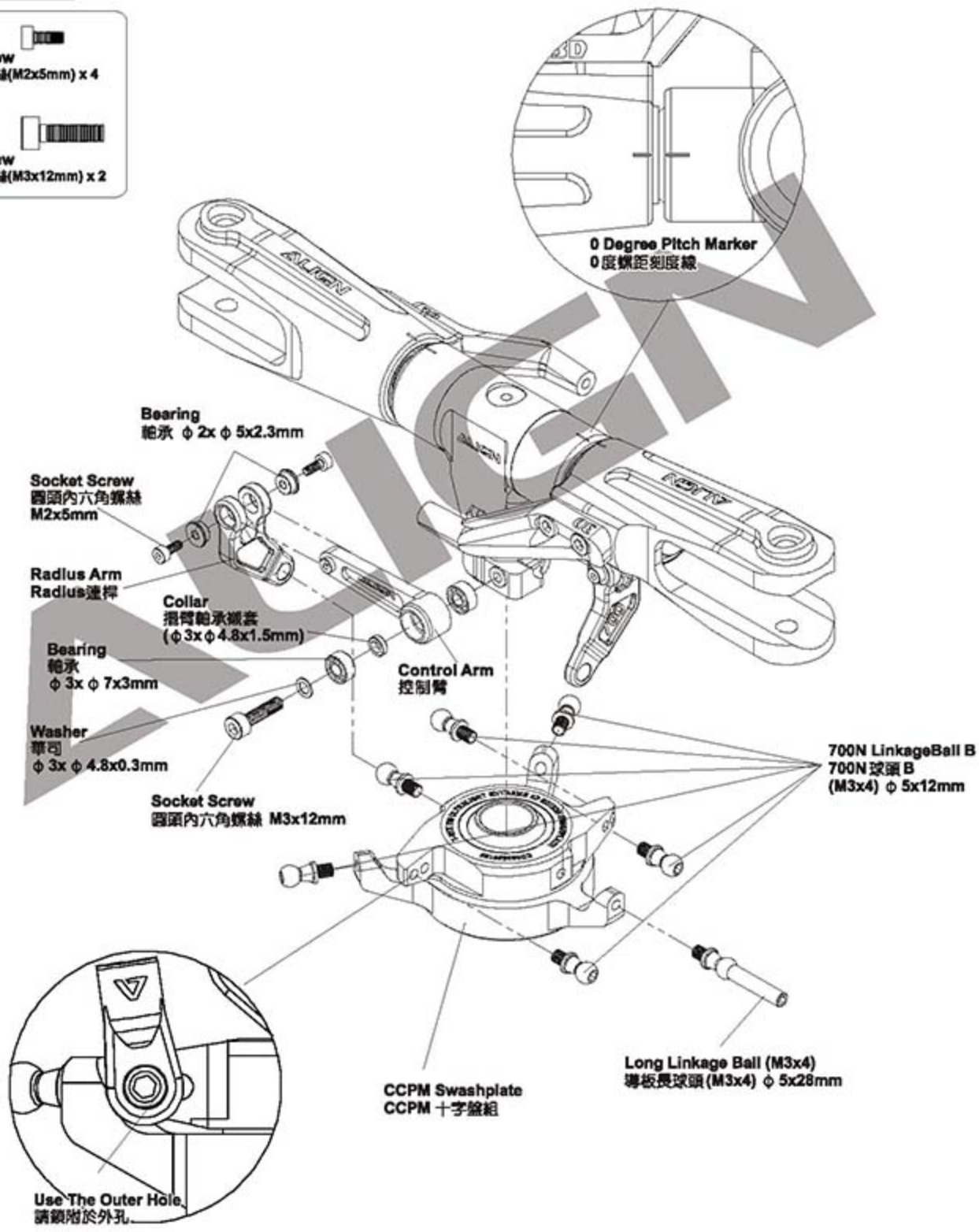
700N Linkage Ball B(M3x4)
700N球頭B(M3x4)(ϕ 5x12mm) x 6

Long Linkage Ball (M3x4)
導板長球頭(M3x4) (ϕ 5x28mm) x 1

700FLH16A

Socket Screw
圓頭內六角螺絲(M2x5mm) x 4

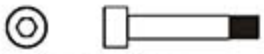
Socket Screw
圓頭內六角螺絲(M3x12mm) x 2



760FLH16A

Linkage Rod(A)
連桿A (M3x35mm) x 2

Linkage Ball B(M3x4)
球頭B(M3x4)(ϕ 5x10.5mm) x 2



Socket Collar Screw
圓頭內六角軸套螺絲(M4x24mm) x 2

M4 Nut
M4防鬆螺帽 x 2

Washer
華司(ϕ4xϕ8x1mm) x 2

Collar
連桿套 x 2

Elevator Ball Link
升降臂連桿頭 x 2

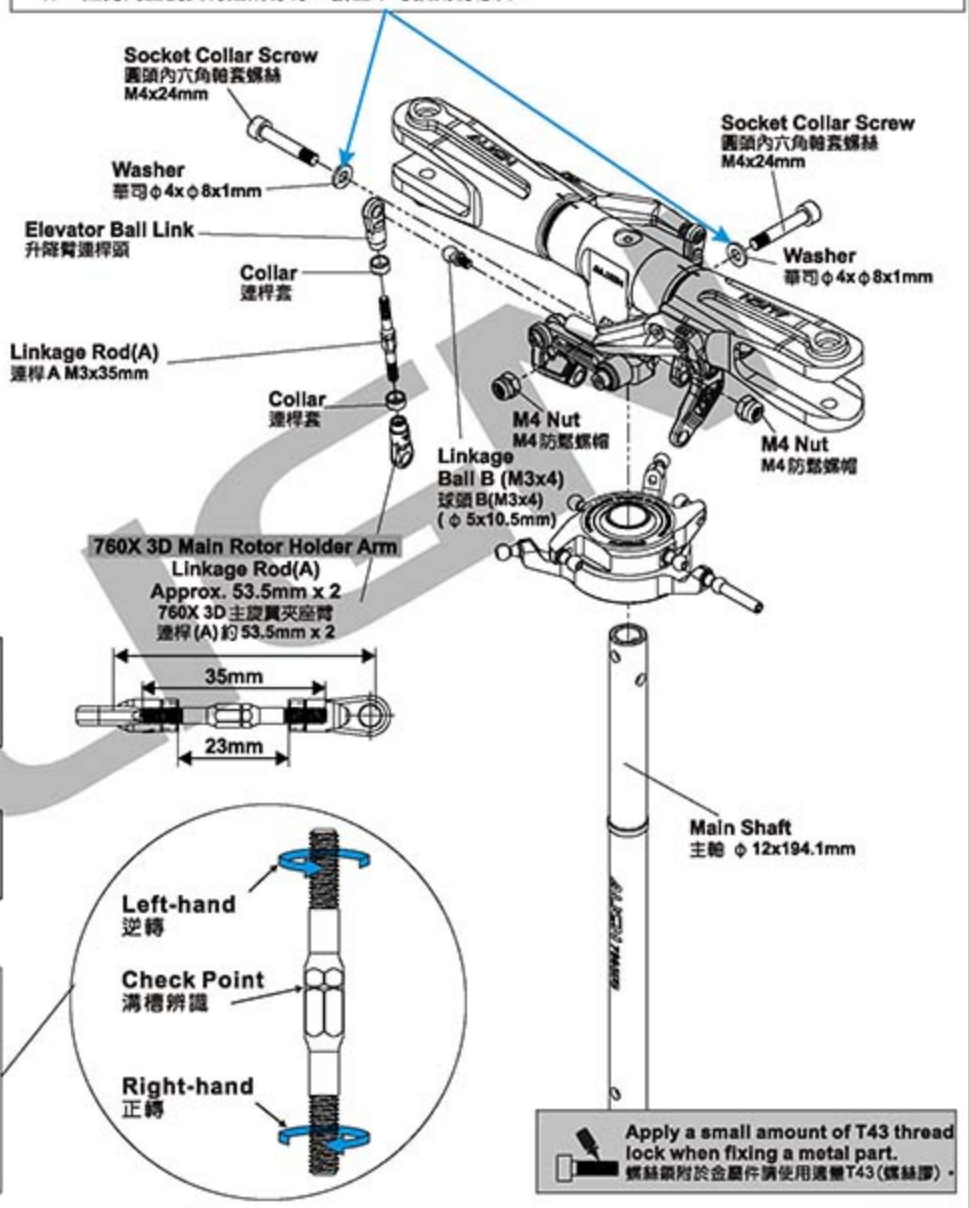
CAUTION 注意

1. While assembling T-REX 700X/700L V2 FL Rotor Housing, please be sure to include a Φ4xΦ8x1 mm washer between Socket Collar Screw and M4 Nut. Confirm the main shaft is firmly assembled on rotor housing. This will ensure main shaft longevity and fight safety.
2. Main rotor head and main shaft are wear items; it is recommended to inspect after every 200 flights and replace as necessary. For high headspeed flights, the inspection interval should be reduced to ensure flight safety.
3. Make sure to check and change the parts if any failure due to normal deterioration or mechanical wear to prevent expected danger during high headspeed flight.

1.T-REX 700X/700L V2 FL新款旋翼頭組裝時，請於主旋翼固定座鎖附的軸套螺絲及防鬆螺帽之間墊上一片Φ4xΦ8x1mm華司，可確保主旋翼固定座能確實鎖緊於主軸上，請試用手上下左右搖動，不可有縫隙或搖晃的情形發生。

2.旋翼頭組及主軸屬於飛行消耗品，建議每200趟定期檢查及更換，請縮短定期檢查之趟數，並確實檢查您的直昇機，以確保飛行安全。

3.若發生人為組裝不當或機件損毀造成模型商品摔機時，請務必詳細確實檢查，強烈建議更換損壞的部件，避免高主旋翼轉速飛行時，發生不可預期的意外。



CAUTION 注意

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

CAUTION 注意

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。

CAUTION 注意

For installation, make sure the "Check Point" is face upward, then use plier or wrench grasp the center of hexagonal rod to adjust its suitable length, turns clockwise to decrease the length, turns counter clockwise to increase the linkage length.
組裝時請將連桿中間有溝槽辨識處朝上，請使用尖嘴鉗或扳手轉動連桿中間六角柱部位調整適當長度，順時針轉動為調短連桿長度；逆時針轉動則為調長連桿長度。

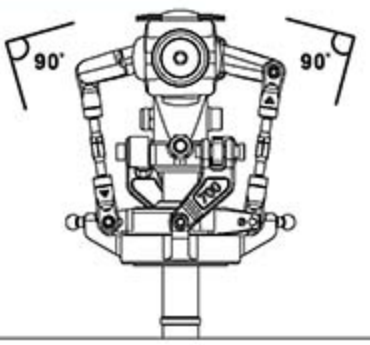
Apply a small amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)。

MAIN ROTOR GRIP ARM AND LINKAGE ROD 主旋翼連桿與夾座臂

SYMMETRICAL PITCH, THE BEST PRECISION
動作螺距對稱，精準度更好

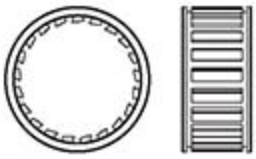
Main Rotor Grip Arm and Linkage Rod is at 90-degree angle symmetrically, allow to keep the best precise flight performance.

主旋翼連桿與夾座臂90度設計，使螺距動作成對稱比例，讓直昇機動作更精準無誤差。



700NB21

Bearing
軸承(ϕ 15x ϕ 21x4mm) x 2



One-way Bearing
單向軸承(ϕ 15x ϕ 23x11mm) x 1

Spacer
700 單向墊片
ϕ 18x ϕ 22.7x0.7mmx 1

Socket Screw
圓頭內六角螺絲(M2.5x8mm) x 6

Socket Screw
圓頭內六角螺絲(M3x8mm) x 6

Please fasten the screws to the ϕ 3.0 holes of the slant main gear.
螺絲鎖附於斜主齒輪 ϕ 3.0 孔位

Socket Screw
圓頭內六角螺絲
M3x8mm

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

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

CNC Main Drive Gear
CNC 斜主齒輪
107T

Please note the direction of bearing.
請注意軸承方向

Autorotation Tail Drive Gear
尾驅動斜齒
104T

Apply Grease
塗上潤滑油

Spacer
700 單向墊片
ϕ 18x ϕ 22.7x0.7mm

One-way Bearing Shaft
單向軸承套
ϕ 12x ϕ 15x41.5mm

One-way Bearing Cover
700N 單向軸承上蓋
ϕ 18x ϕ 40x15.8mm

One-way Bearing Collar
單向軸承外環
ϕ 6x ϕ 23x11.6mm

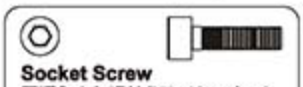
One-way Bearing
單向軸承
ϕ 15x ϕ 23x11mm

Bearing
軸承
ϕ 15x ϕ 21x4mm

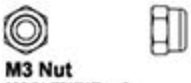
One-way Bearing Mount
700N 單向軸承下座
ϕ 19x ϕ 39x6.5mm

Socket Screw
圓頭內六角螺絲
M2.5x8mm

700NB18A



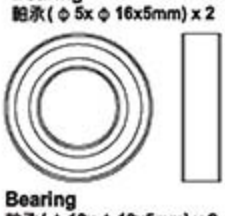
Socket Screw
圓頭內六角螺絲(M3x12mm) x 2



M3 Nut
M3 防鬆螺帽 x 2

Bearing
軸承(ϕ 5x ϕ 13x4mm) x 3

Bearing
軸承(ϕ 5x ϕ 16x5mm) x 2



Bearing
軸承(ϕ 10x ϕ 19x5mm) x 2

Starter Coupling
六角啟動頭
ϕ 8x ϕ 10x18mm

M4 Set Screw
M4 止洩螺絲
M4x4mm

Washer
華司
ϕ 5x ϕ 7x0.5mm

Bearing
軸承
ϕ 5x ϕ 13x4mm

Clutch Nut
離合器齒輪螺帽
ϕ 14x6mm

Socket Screw
圓頭內六角螺絲
M3x12mm

700X Hex Mounting Bolt
700X 六角鋁柱
M3X36mm

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。請注意T43不可塗在任何的塑膠材質上。

700XN Idler Pulley Helical Gear 23T
700XN 情輪斜齒 23T

Bearing
軸承
ϕ 5x ϕ 13x4mm

Moly Grease

Moly Grease

700XN Idler Pulley Helical Gear 20T
700XN 情輪斜齒 20T

M3 Nut
M3 防鬆螺帽

700XN Drive Gear Assembly
700XN 齒輪箱

Bearing
軸承
ϕ 5x ϕ 16x5mm

Bearing
軸承
ϕ 10x ϕ 19x5mm

700XN Clutch Gear
700XN 離合器斜齒 13T

T43

The side with a mark on the magnet is the north pole
作記號面為 N 極

N

Moly Grease

S

T43

Governor Sensor
定速感應磁鐵

CAUTION 注意

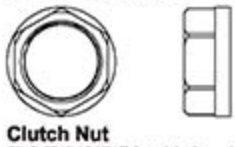
Make sure to inspect gears after every flight. Clean the Idler Pulley and Clutch Bell Helical Gear surface if necessary and suggest to apply some moly grease every five rounds to ensure working efficiency and keep durability.
每次飛行後確實檢視齒輪狀況，必要時請清潔情輪與離合器斜齒齒輪表面，建議每五趟飛行後重新塗抹二硫化鉬潤滑油，以確保齒輪傳動效率與使用壽命。

700NB19

M4 Set Screw
M4 止洩螺絲 (M4x4mm) x 2

Washer
華司 ϕ 5x ϕ 7x0.5mm x 1

Bearing
軸承(ϕ 5x ϕ 13x4mm) x 1



Clutch Nut
離合器齒輪螺帽(ϕ 14x6mm) x 1

Clutch Bell
離合器鐘
ϕ 56x ϕ 51x20.5mm

Bearing
軸承
ϕ 5x ϕ 13x4mm

Clutch Liner
700XN 離合器鐘環
ϕ 49x ϕ 51x8.75mm

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

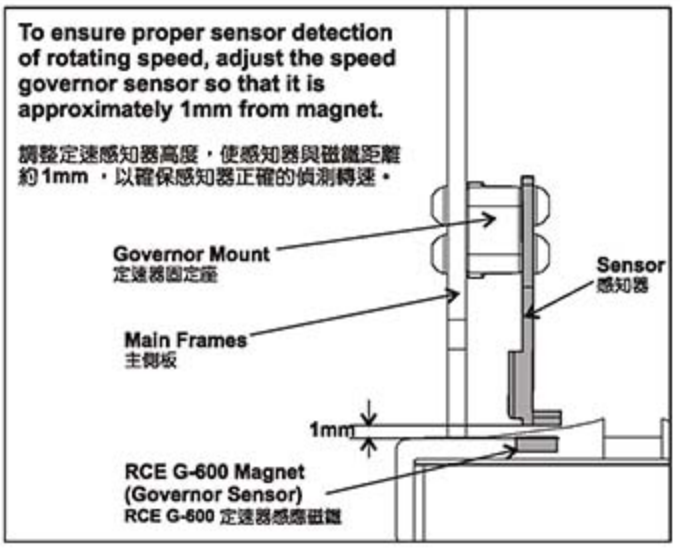
Clutch/Start Shaft
啟動軸
ϕ 5x ϕ 12x85.5mm

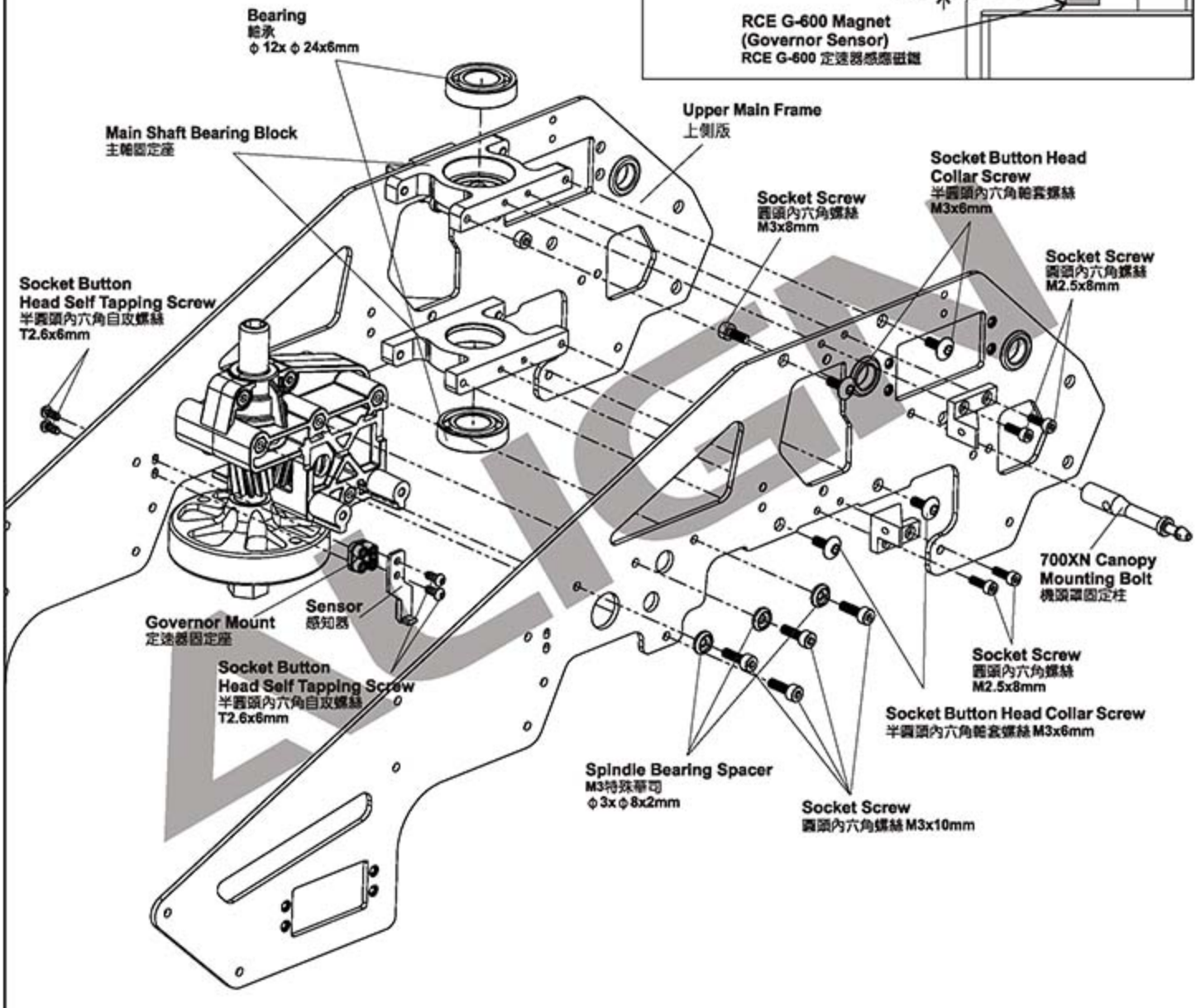
Apply a small amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量T43(螺絲膠)。

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。請注意T43不可塗在任何的塑膠材質上。

To ensure proper sensor detection of rotating speed, adjust the speed governor sensor so that it is approximately 1mm from magnet.
調整定速感知器高度，使感知器與磁鐵距離約1mm，以確保感知器正確的偵測轉速。





700NB16

Bearing
軸承(ϕ 12x ϕ 24x6mm) x 2

Socket Button Head Collar Screw
半圓頭內六角軸套螺絲
(M3x6mm) x8

Socket Screw
圓頭內六角螺絲 (M2.5x8mm) x 8

700NB20A

Socket Button Head Self Tapping screw
半圓頭內六角自攻螺絲 (T2.6x6mm) x 4

Socket Screw
圓頭內六角螺絲 (M3x8mm) x 2

700NB18A

Socket Screw
圓頭內六角螺絲 (M3x10mm) x 8

Special Washer
M3特殊華司(ϕ 3x ϕ 8x2mm) x 6

700NB15

Socket Button Head Screw
半圓頭內六角螺絲 (M3x8mm) x 12

Socket Screw
圓頭內六角螺絲 (M4x8mm) x 4

M3 Specialty Washer
M3 特殊華司 (ϕ 3x ϕ 8x2mm) x 4

700NB16

Socket Screw
圓頭內六角螺絲 (M3x10mm) x 2

Socket Screw
圓頭內六角螺絲 (M3x20mm) x2

Special Washer
M3特殊華司(ϕ 3x ϕ 8x2mm) x 2

Bearing
軸承 (ϕ 12x ϕ 24x6mm) x 1

700NB20

Socket Button Head
Self Tapping Screw
半圓頭內六角自攻螺絲 (T3x8mm) x2

Socket Screw
圓頭內六角螺絲 (M3x20mm) x4

M3 Specialty Washer
M3 特殊華司 (ϕ 3x ϕ 8x2mm) x 4

700NB20A

Socket Screw
圓頭內六角螺絲 (M3x8mm) x 2

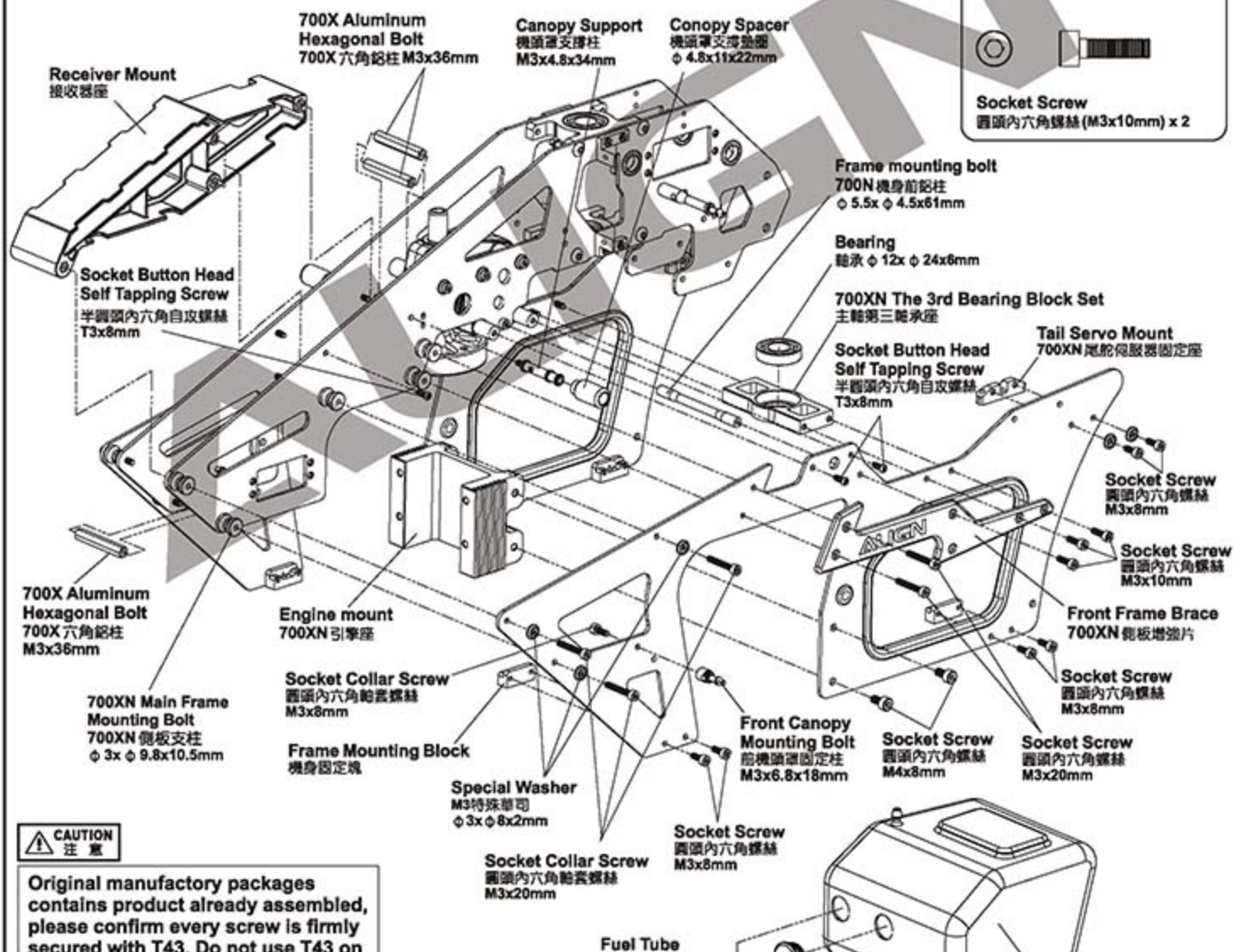
700NB18A

Socket Button Head
Self Tapping Screw
半圓頭內六角自攻螺絲 (T3x8mm) x4

700NB14

Socket Screw
圓頭內六角螺絲 (M3x20mm) x4

Socket Screw
圓頭內六角螺絲 (M3x10mm) x 2



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，請務再確認各螺絲是否鎖緊上膠。請注意 T43 不可塗在任何的塑膠材質上。

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

Apply a small 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。請注意T43不可塗在任何的塑膠材質上。

700NB18A

M3 Specialty Washer
M3特殊華司(Φ 3x Φ 8x2mm) x 4

Socket Screw
圓頭內六角螺絲(M3x10mm) x 4

700NB15

Socket Screw
圓頭內六角螺絲(M4x16mm) x 4

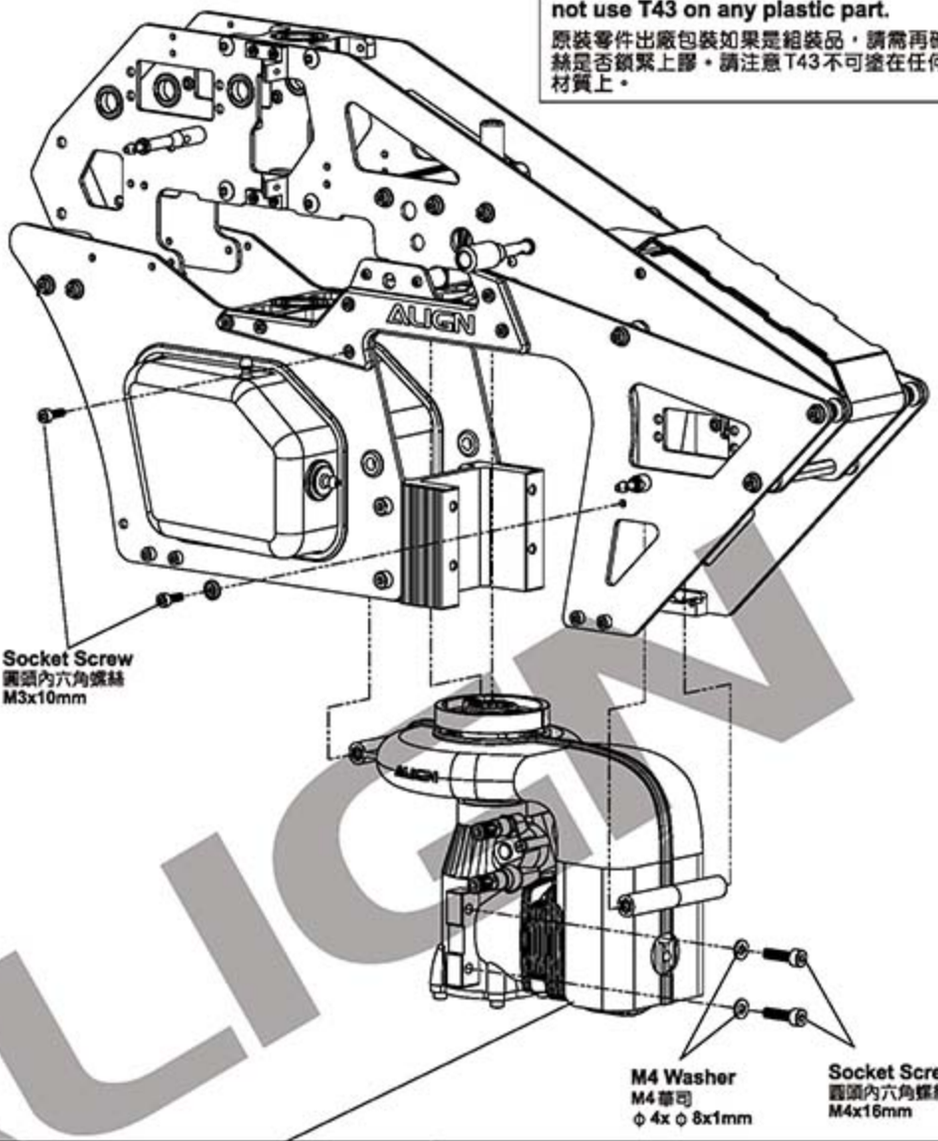
M4 Washer
M4華司(Φ 4x Φ 8x1mm) x 4

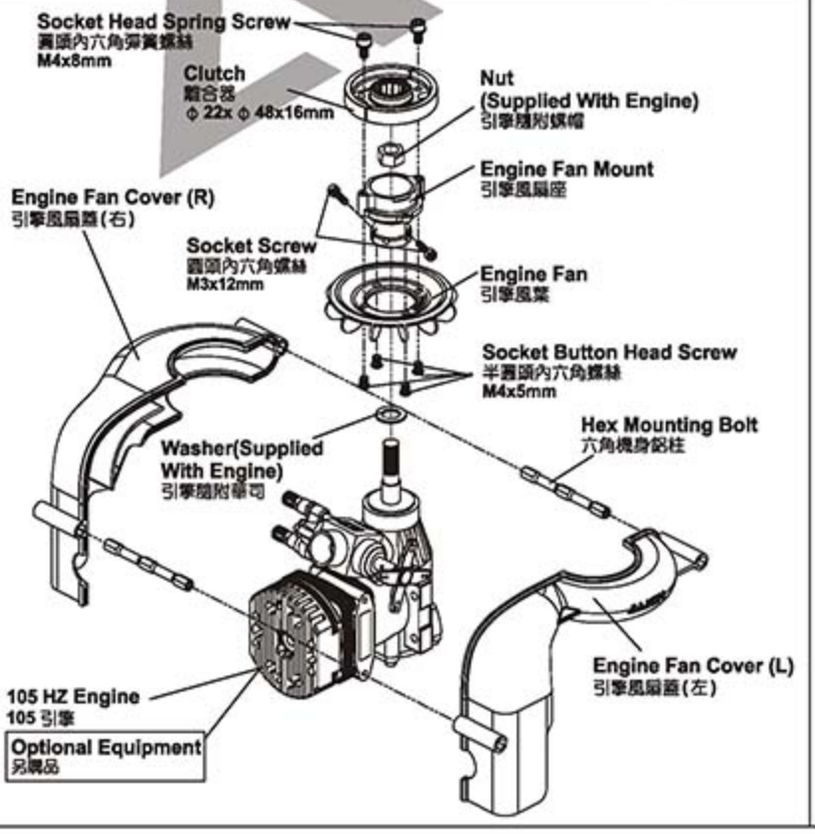
700NB19

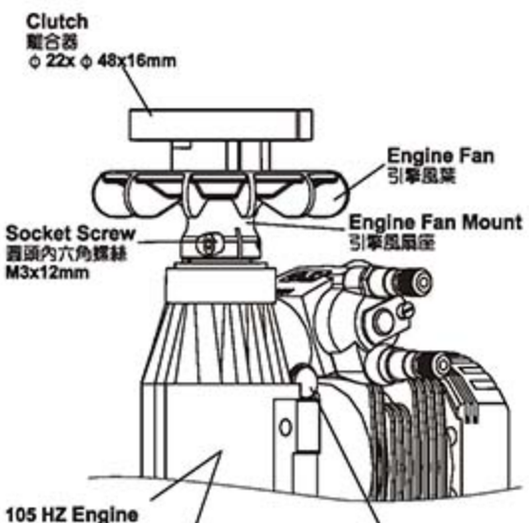
Socket Screw
圓頭內六角螺絲(M3x12mm) x 2

Socket Head Spring Screw
圓頭內六角彈簧螺絲(M4x8mm) x 2

Socket Button Head Screw
半圓頭內六角螺絲(M4x5mm) X 4







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。

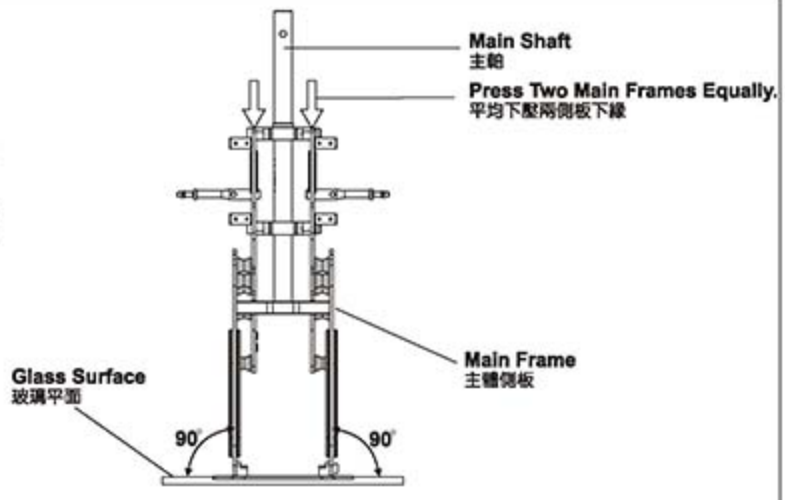
CAUTION
注 意

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 improve 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。



700NB15

Socket Screw
圓頭內六角螺絲 (M4x8mm)X2

700NG1

Socket Screw
圓頭內六角螺絲 (M3x12mm) x 4

M3 Washer
M3 華司 (Φ 3x Φ 8x1mm) x 4

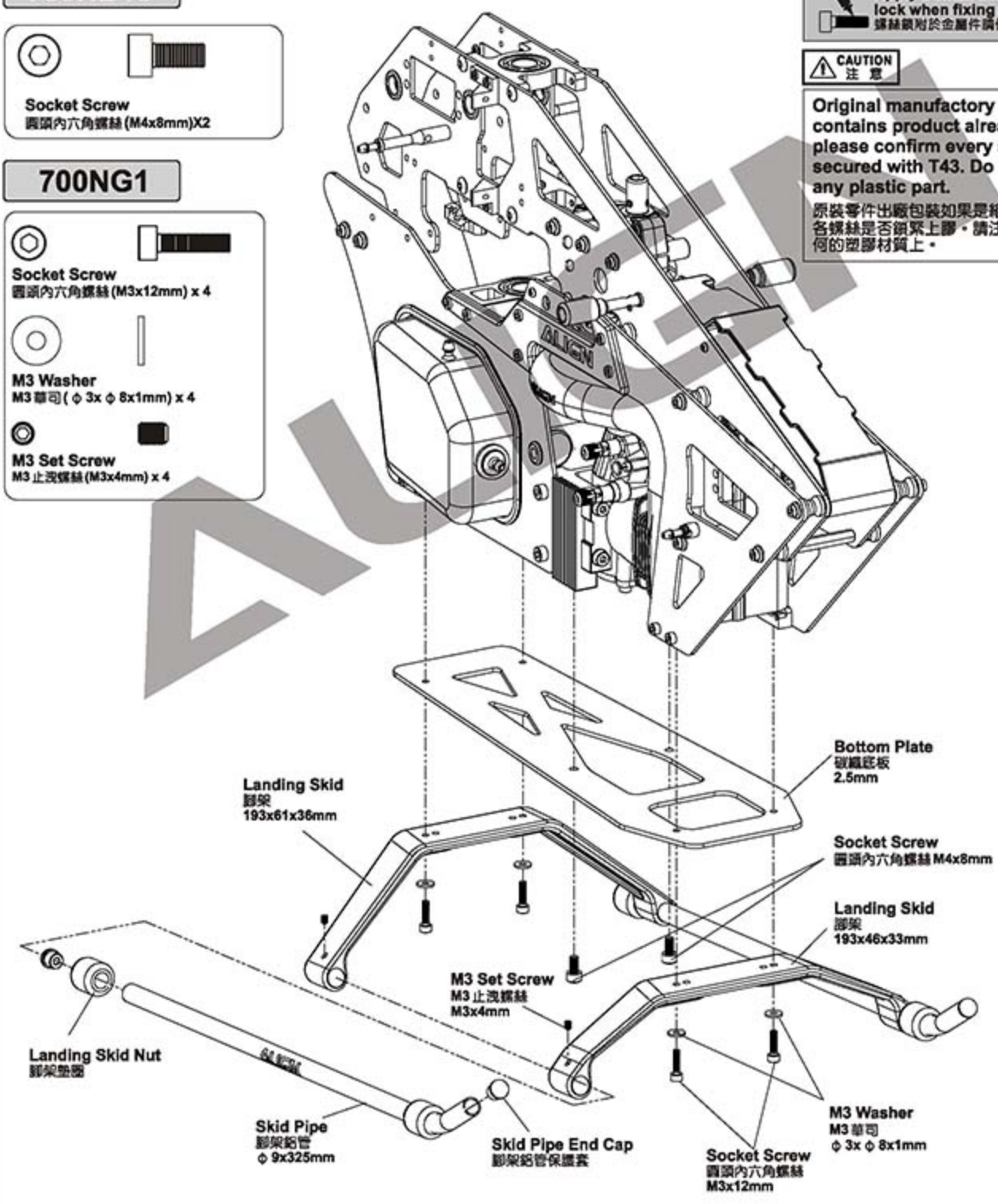
M3 Set Screw
M3 止洩螺絲 (M3x4mm) x 4

Apply a small 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。請注意T43不可塗在任何的塑膠材質上。



700NZ11

Linkage Ball C(M2.5x4)
球頭C(M2.5x4)(ϕ 5x12mm) x 3

Socket Button Head Screw
半圓頭內六角螺絲 (M2.5x10mm) x 4

CAUTION 注意

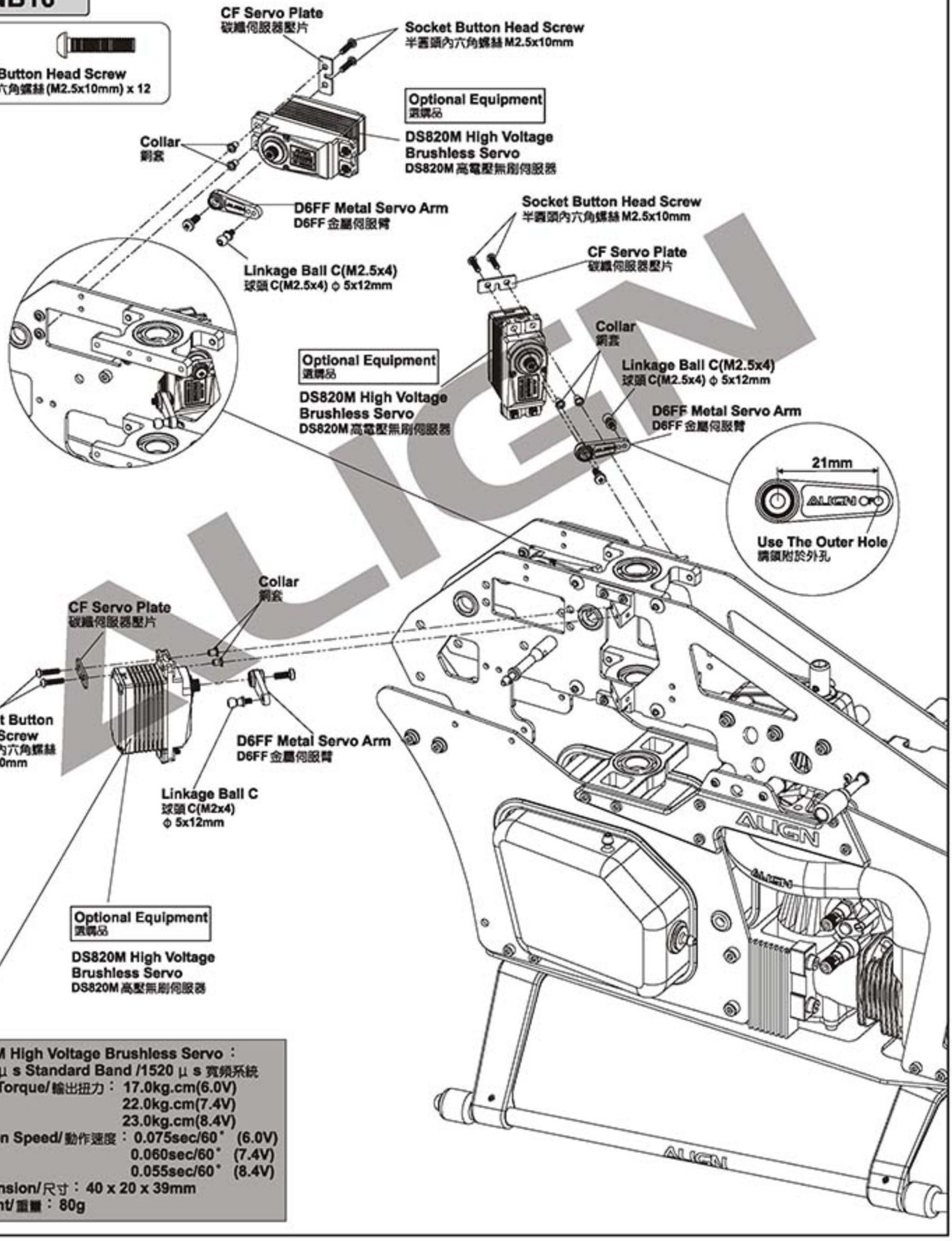
Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

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。
請注意T43不可塗在任何的塑膠材質上。

Apply a small 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)。

700NB16

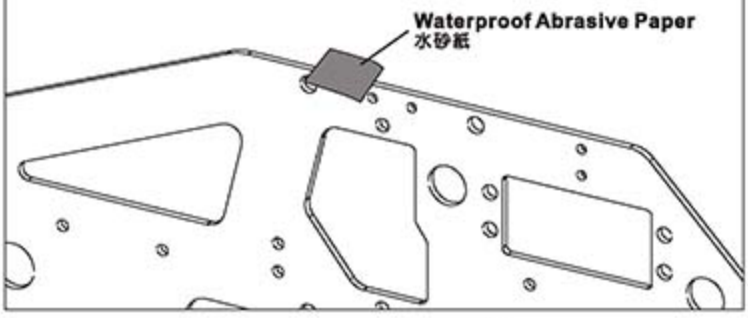
Socket Button Head Screw
半圓頭內六角螺絲 (M2.5x10mm) x 12



DS820M High Voltage Brushless Servo：
1.1520 μ s Standard Band /1520 μ s 寬頻系統
2.Stall Torque/輸出扭力： 17.0kg.cm(6.0V)
22.0kg.cm(7.4V)
23.0kg.cm(8.4V)
3.Motion Speed/動作速度： 0.075sec/60° (6.0V)
0.060sec/60° (7.4V)
0.055sec/60° (8.4V)
4.Dimension/尺寸： 40 x 20 x 39mm
5.Weight/重量： 80g

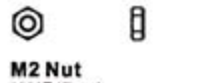
Recommend sanding the marked position as below illustration with a waterproof abrasive paper(#800-1000) to avoid the wires of electric partsto be cut.

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。



700NZ11

Linkage Ball C(M2x4)
球頭C(M2x4)(ϕ5x9mm) x 2



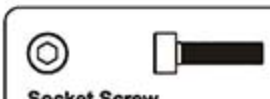
M2 Nut
M2螺帽 x 4

Socket Button Head Screw
半圓頭內六角螺絲(M2.5x10mm) x 4

700NZ9

Elevator Ball Link
升降臂連桿頭 x2

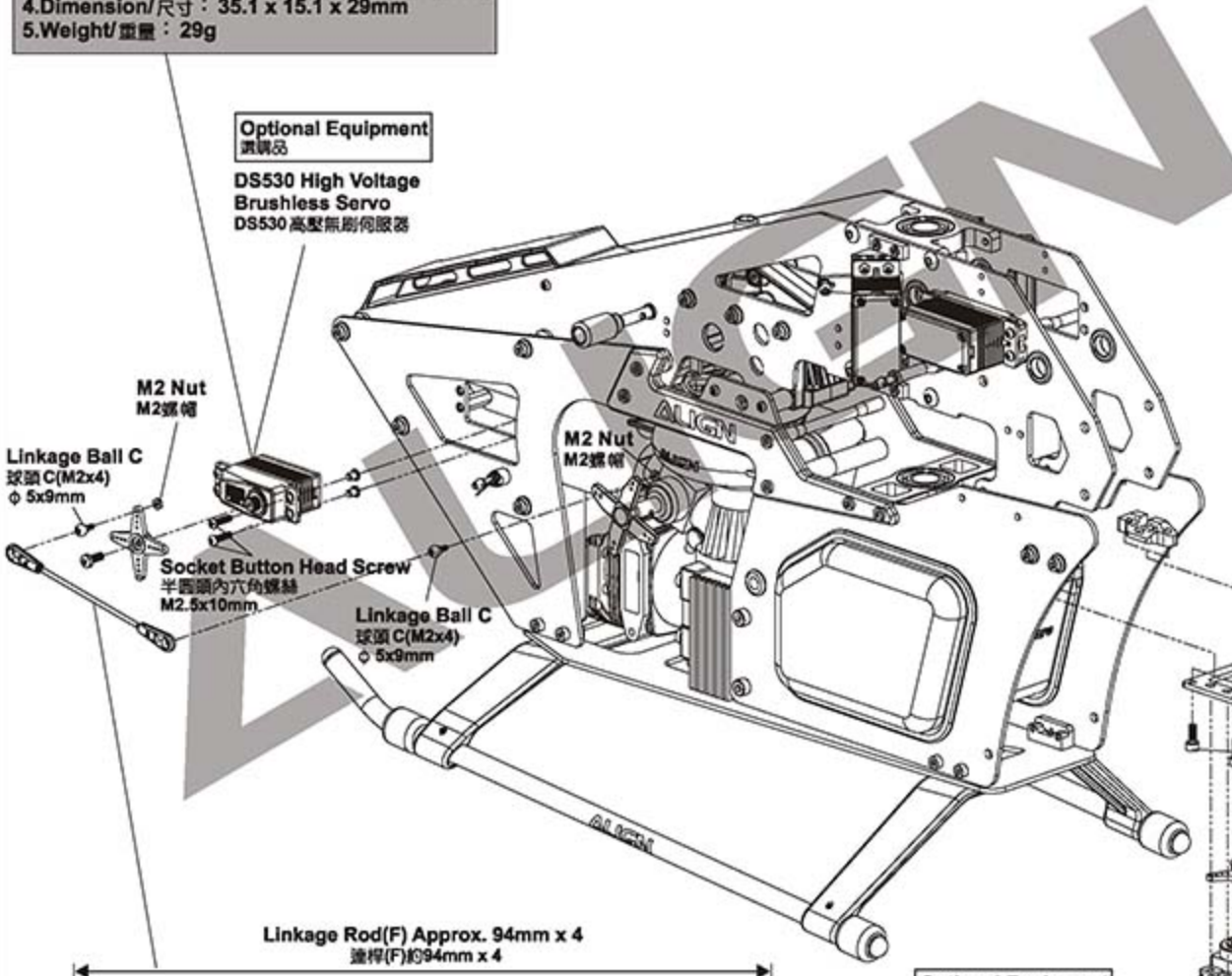
700NB15

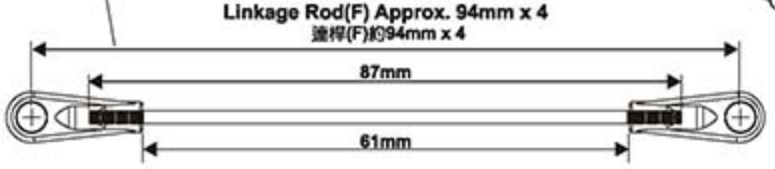


Socket Screw
圓頭內六角螺絲(M3x8mm) x 4

Socket Button Head Screw
半圓頭內六角螺絲(M2.5x12mm) x 4

DS530 High Voltage Brushless Servo：
1.1520 μ s Standard Band /1520 μ s 寬頻系統
2.Stall Torque/輸出扭力： 6.5kg.cm(6.0V)
9.0kg.cm(8.4V)
3.Motion Speed/動作速度： 0.085sec/60° (6.0V)
0.065sec/60° (8.4V)
4.Dimension/尺寸： 35.1 x 15.1 x 29mm
5.Weight/重量： 29g





Optional Equipment
選購品

DS825M High Voltage
Brushless Servo
DS825M高壓無刷伺服器

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。請注意T43不可塗在任何的塑膠材質上。

DS825M High Voltage Brushless Servo：
1.1520 μ s Standard Band /1520 μ s 寬頻系統
2.Stall Torque/輸出扭力： 8.0kg.cm(6.0V)
10.0kg.cm(7.4V)
12.5kg.cm(8.4V)
3.Motion Speed/動作速度： 0.04sec/60° (6.0V)
0.03sec/60° (7.4V)
0.028sec/60° (8.4V)
4.Dimension/尺寸： 40 x 20 x 391mm
5.Weight/重量： 72g

Apply a small 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)。

Apply a small 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)。

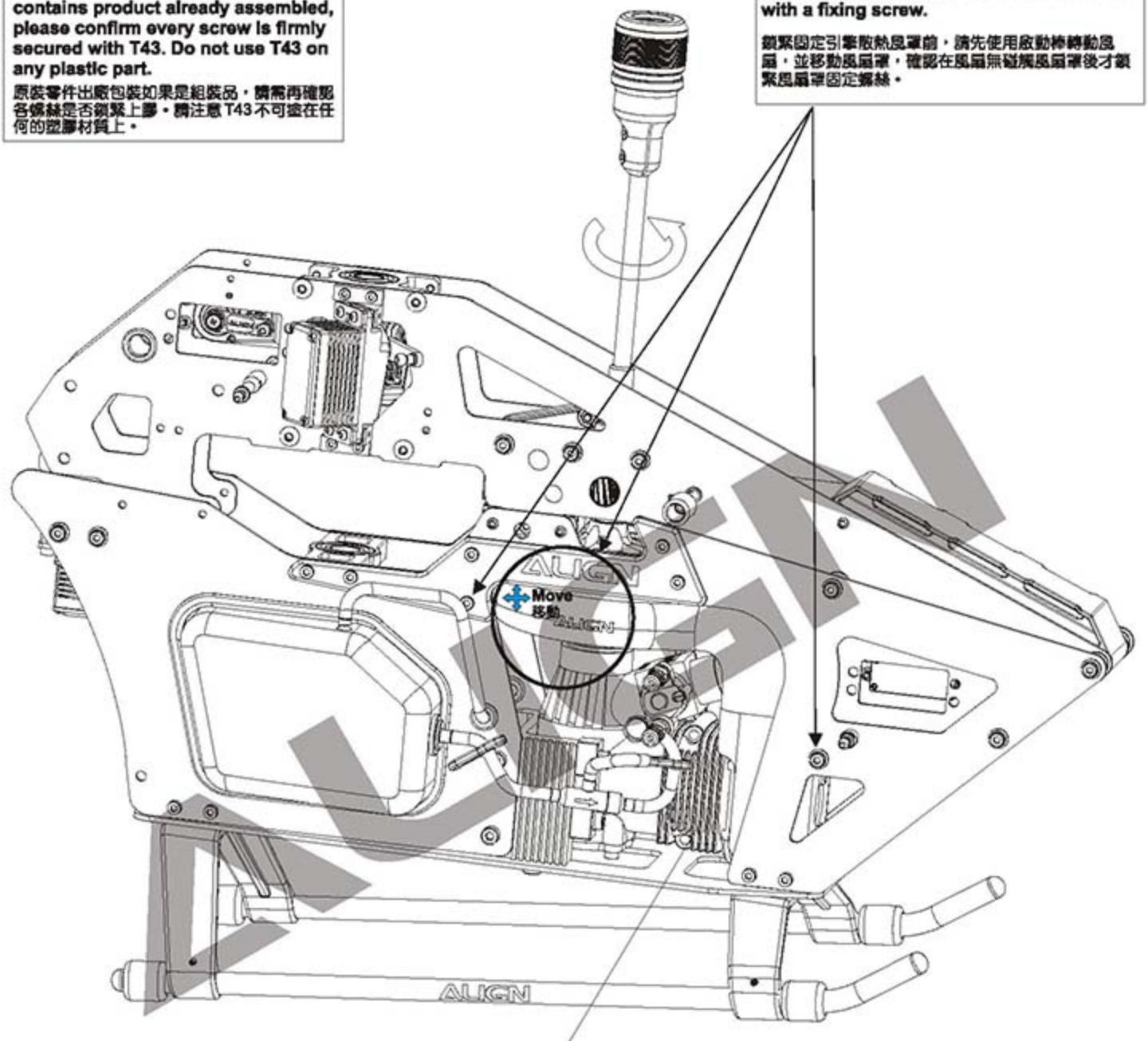
CAUTION 注意

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。請注意T43不可塗在任何的塑膠材質上。

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 there is no interference, and then secure the fan cover with a fixing screw.

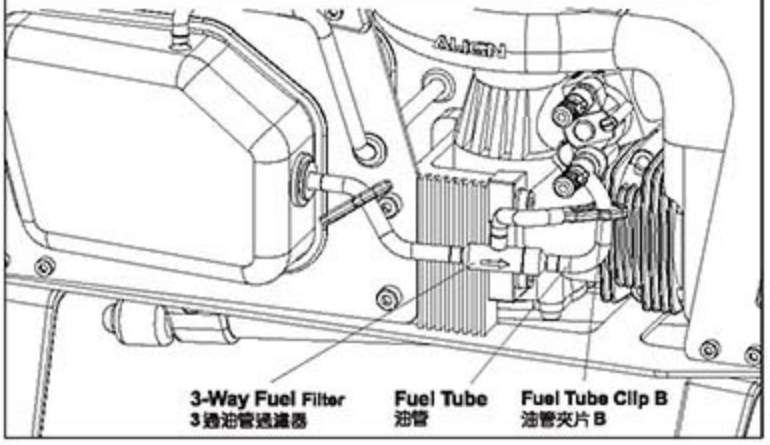
鎖緊固定引擎散熱風罩前，請先使用啟動棒轉動風扇，並移動風扇罩，確認在風扇無碰觸風扇罩後才鎖緊風扇罩固定螺絲。



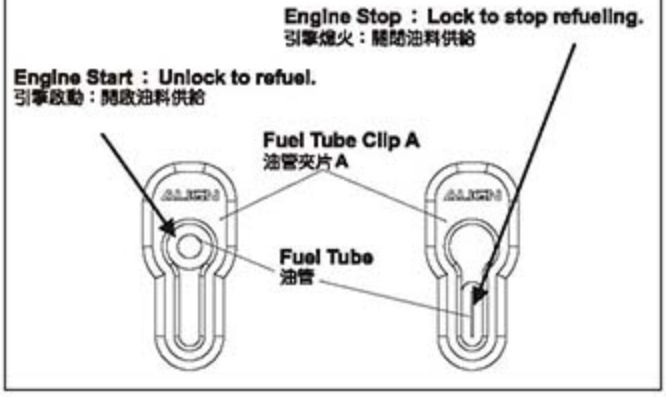
CAUTION 注意

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。

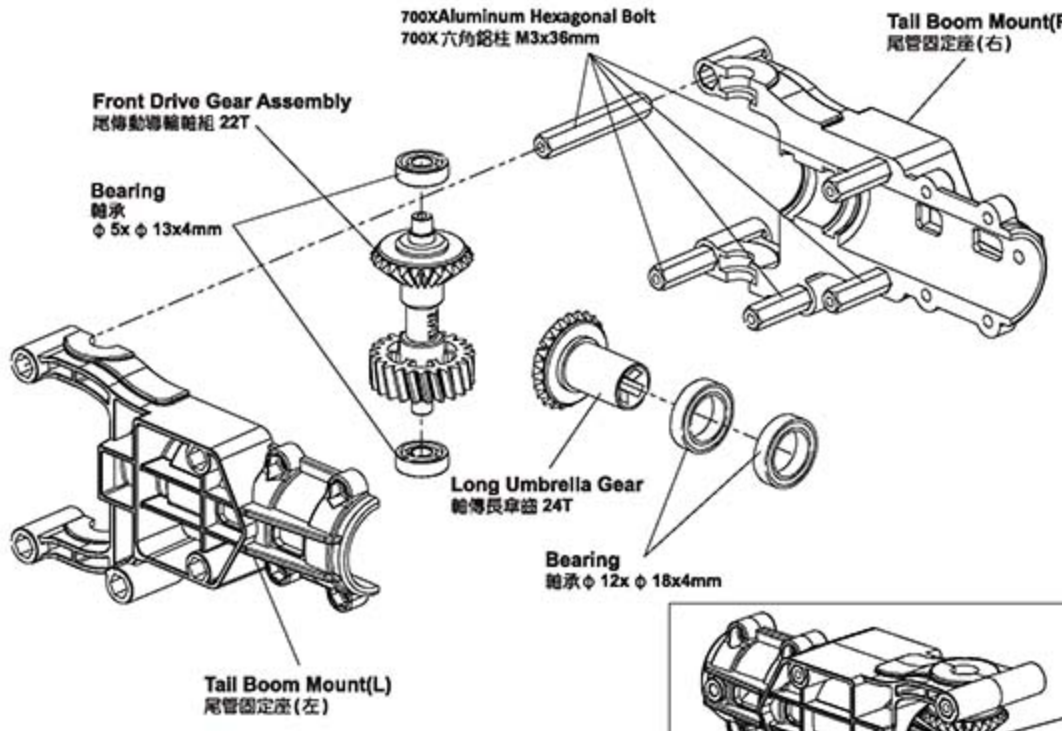
FUEL TUBE CLIP B ILLUSTRATION 油管夾片B使用說明

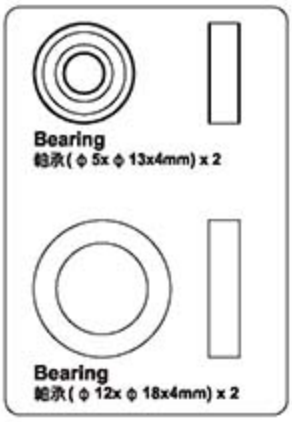


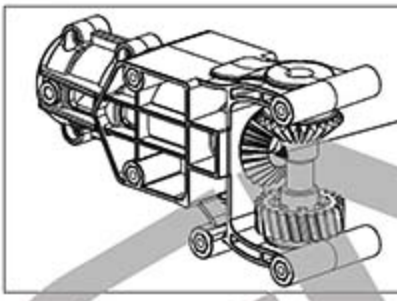
FUEL TUBE CLIP ILLUSTRATION 油管夾片使用方法



700HT11

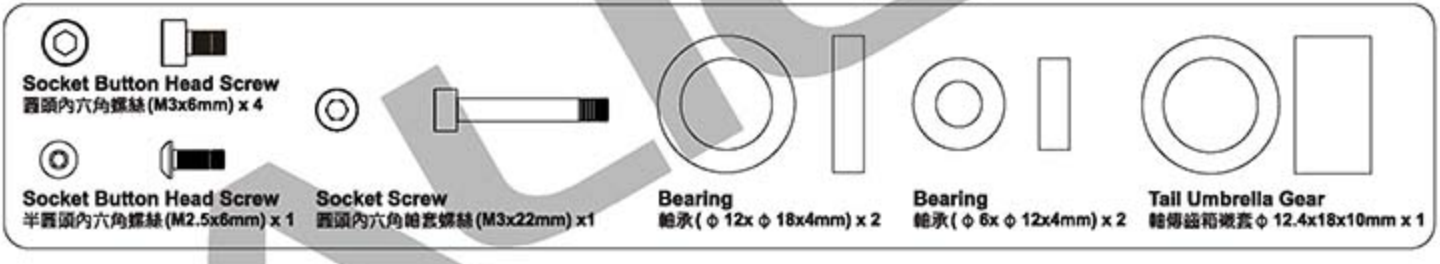


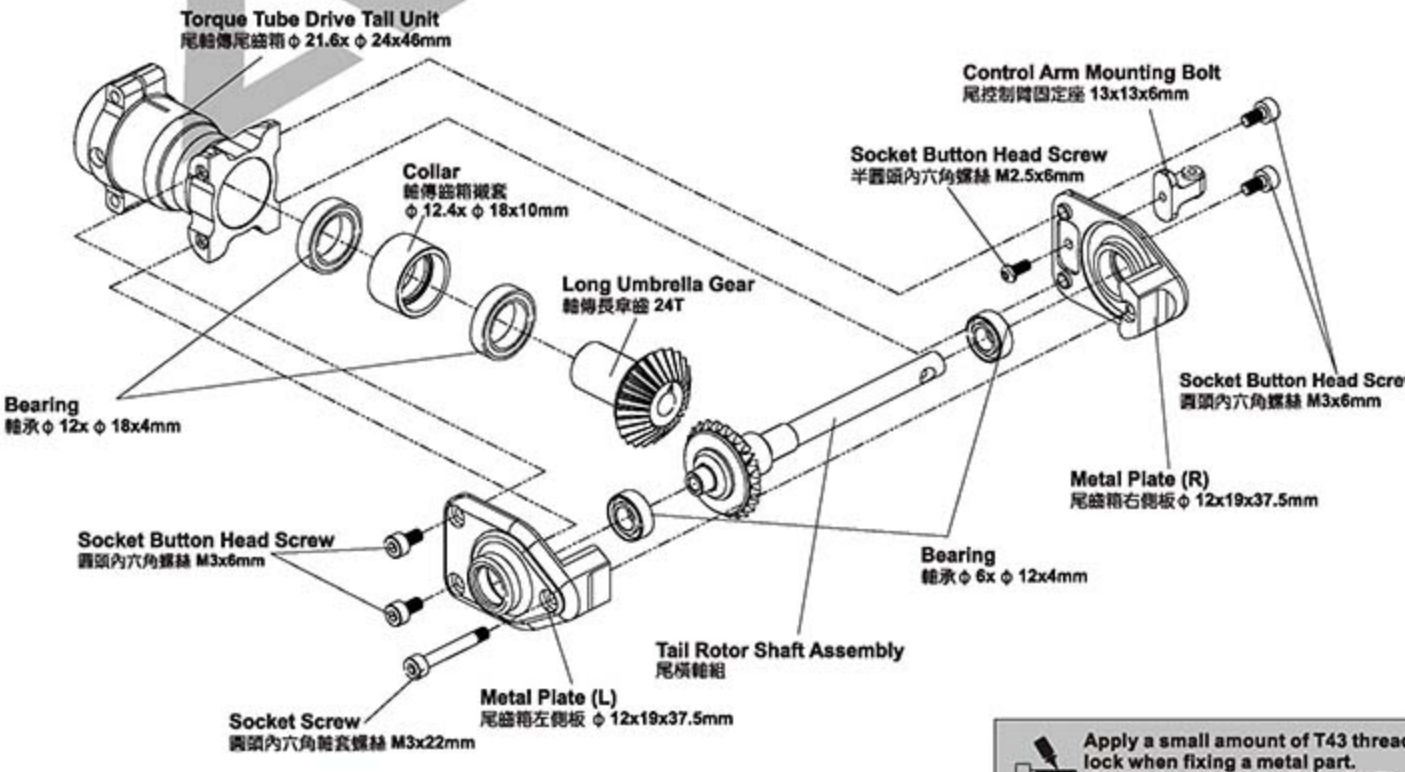




Assembling Umbrella Gear :
Please note to push the gear to the end at a fixed position, to make sure the gears mesh with each other smoothly.
傘齒組裝：注意務必前推到定位，以避免齒咬合不順暢。

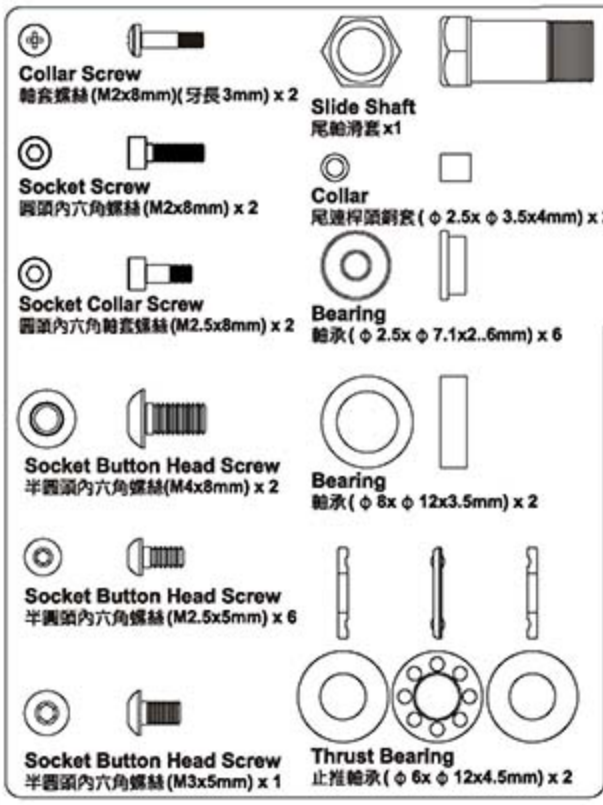
700NT8

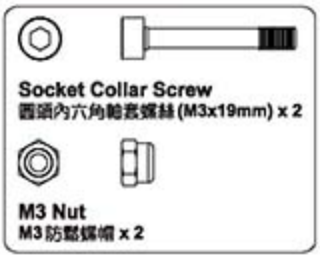




700NT8

700HT15





CAUTION 注意

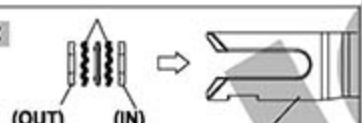
The Metal Tail Rotor Holder is assembled at the factory, make sure to apply little thread lock on screws and tighten them back appropriately before starting to fly. Suggest to use torque wrench or torque lock for tightening screws with the torque value 5.0kg.cm.

尾旋翼夾座出廠為假組裝，螺絲必須使用適量螺絲膠重新鎖附，鎖附需注意適當緊度即可，建議搭配扭力或扭力機鎖附，扭力值為5.0kg.cm。

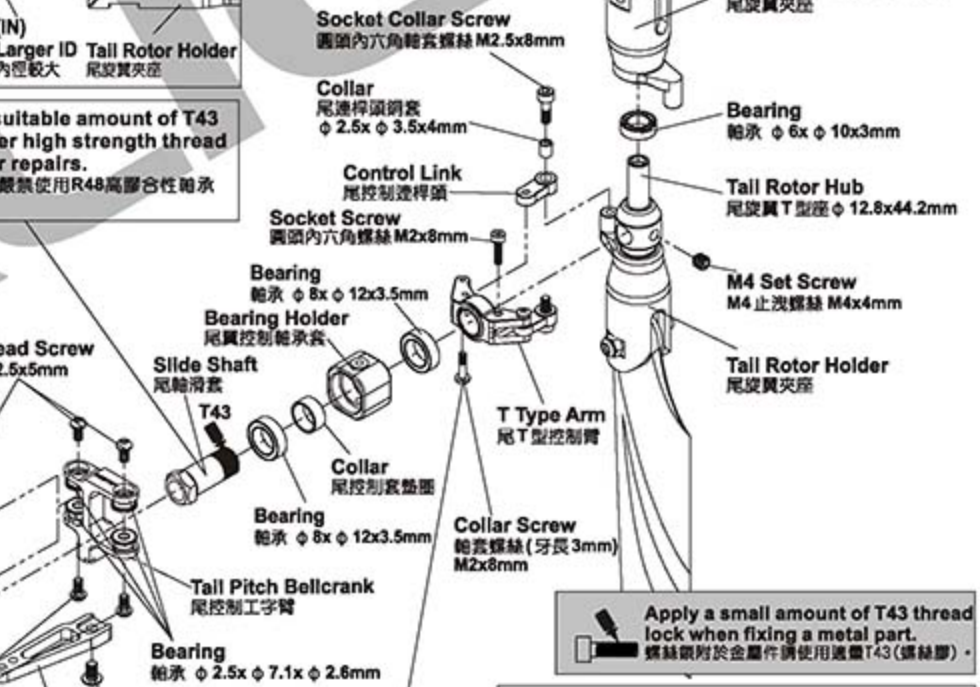
CAUTION 注意

THRUST BEARING止推軸承

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

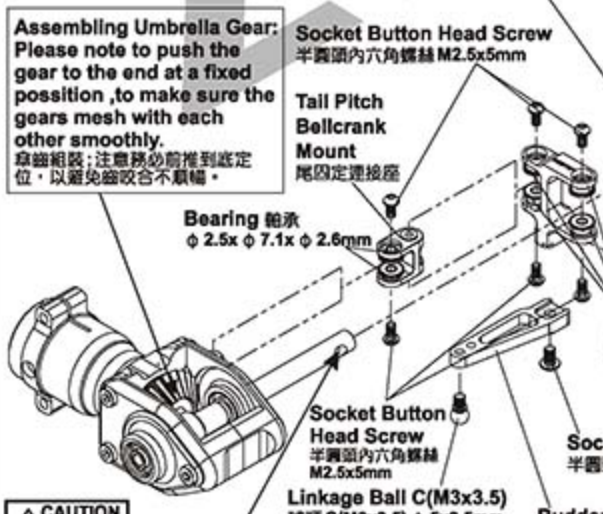


While assembly the slide shaft, please use suitable amount of T43 on the thread. Please do not use R48 or other high strength thread lock to avoid damages while maintenance or repairs.
組立尾軸滑套時，請使用適量的T43螺絲膠在螺牙上，嚴禁使用R48高膠合性軸承膠防止膠合過緊，以避免日後拆修維護零件之損傷。



Apply a small 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)。

Assembling Umbrella Gear: Please note to push the gear to the end at a fixed possition ,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。

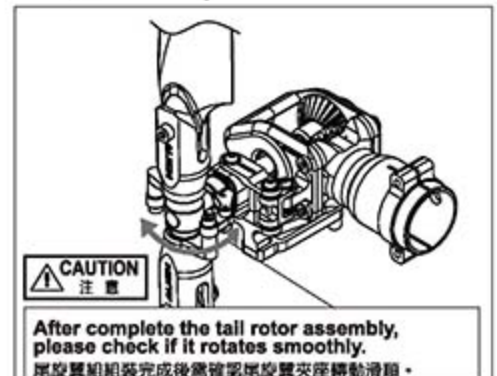


CAUTION 注意

Aim tail rotor hub at the concave of the tail rotor shaft and apply thread lock on the set screw. The tail rotor hub and screws are wear items, and thus should be inspected for replacement after every 100 flights. For flights with high head speed, the inspection interval should be reduced to ensure flight safety.
尾旋翼T型座器半尾橫軸的凹刻並鎖上，請確認止洩螺絲上膠。尾旋翼T型座和螺絲屬於飛行消耗品，建議每100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。

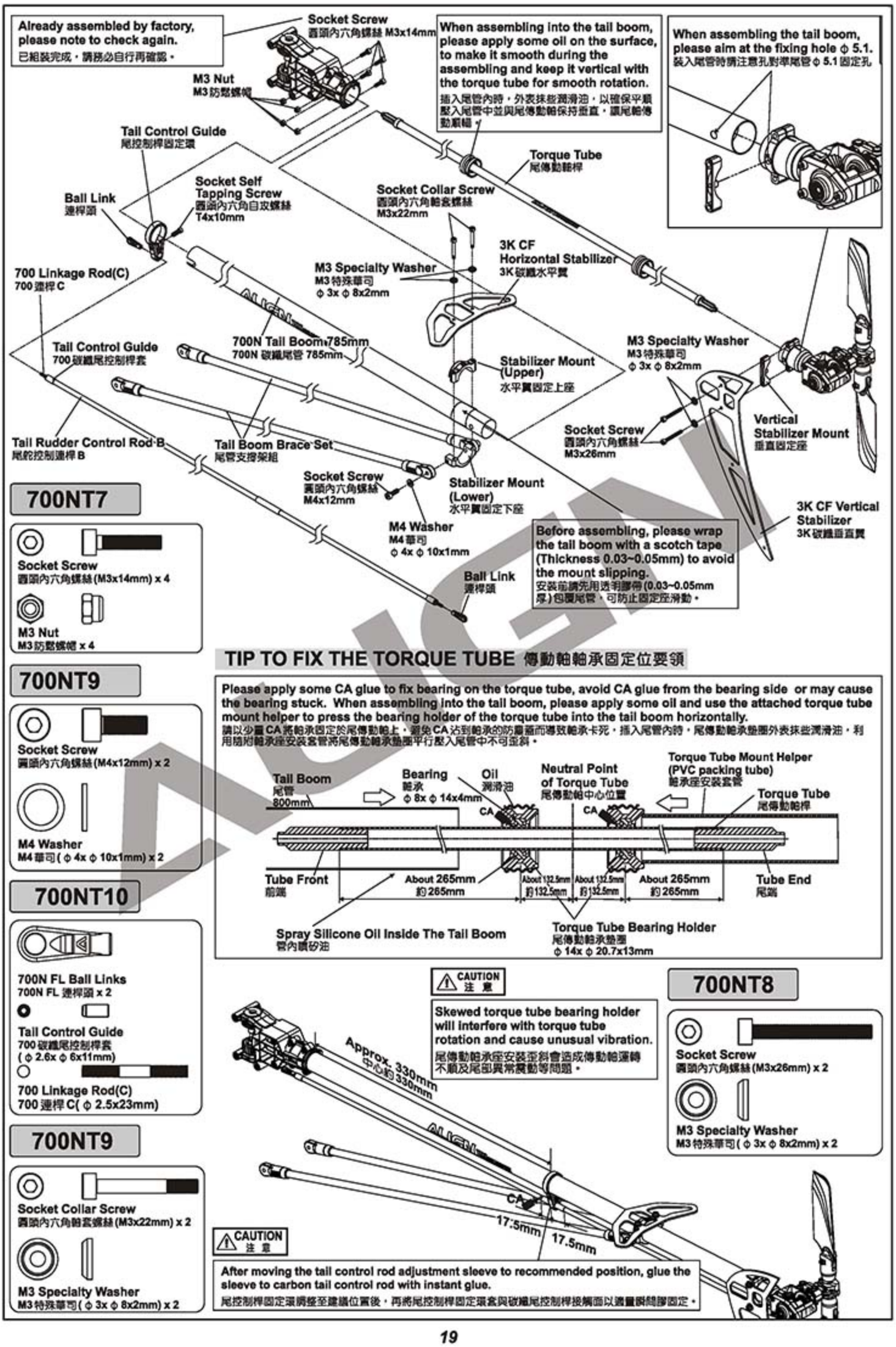
CAUTION 注意

Please tighten M2x8mm collar screw firmly but not over tightened. Over tighten the screw will cause the operation of control link to be tight.
鎖附M2x8mm軸套螺絲請使用適當力道，過度鎖緊會造成尾控制邊桿頭轉動不順。



CAUTION 注意

After complete the tail rotor assembly, please check if it rotates smoothly.
尾旋翼組組裝完成後需確認尾旋翼夾座轉動滑順。


Already assembled by factory, please note to check again.
已組裝完成，請務必自行再確認。
Socket Screw
圓頭內六角螺絲 M3x14mm
M3 Nut
M3防鬆螺帽
When assembling into the tail boom, please apply some oil on the surface, to make it smooth during the assembling and keep it vertical with the torque tube for smooth rotation.
插入尾管內時，外表抹些潤滑油，以確保平順壓入尾管中並與尾傳動軸保持垂直，讓尾軸傳動順暢。
When assembling the tail boom, please aim at the fixing hole ϕ 5.1.
裝入尾管時請注意孔對準尾管 ϕ 5.1 固定孔
Tail Control Guide
尾控制桿固定環
Torque Tube
尾傳動軸桿
Socket Self Tapping Screw
圓頭內六角自攻螺絲 T4x10mm
Ball Link
連桿頭
Socket Collar Screw
圓頭內六角軸套螺絲 M3x22mm
3K CF Horizontal Stabilizer
3K碳纖水平翼
M3 Specialty Washer
M3特殊華司 ϕ 3x ϕ 8x2mm
700 Linkage Rod(C)
700 連桿C
700N Tail Boom 785mm
700N 碳纖尾管 785mm
Tail Control Guide
700 碳纖尾控制桿套
Stabilizer Mount (Upper)
水平翼固定上座
M3 Specialty Washer
M3特殊華司 ϕ 3x ϕ 8x2mm
Vertical Stabilizer Mount
垂直固定座
Socket Screw
圓頭內六角螺絲 M3x26mm
Tail Rudder Control Rod B
尾舵控制連桿B
Tail Boom Brace Set
尾管支撐架組
Socket Screw
圓頭內六角螺絲 M4x12mm
Stabilizer Mount (Lower)
水平翼固定下座
M4 Washer
M4華司 ϕ 4x ϕ 10x1mm
3K CF Vertical Stabilizer
3K碳纖垂直翼
Before assembling, please wrap the tail boom with a scotch tape (Thickness 0.03~0.05mm) to avoid the mount slipping.
安裝前請先用透明膠帶(0.03~0.05mm厚)包覆尾管，可防止固定座滑動。
Ball Link
連桿頭
700NT7
Socket Screw
圓頭內六角螺絲 (M3x14mm) x 4
M3 Nut
M3防鬆螺帽 x 4
700NT9
Socket Screw
圓頭內六角螺絲 (M4x12mm) x 2
M4 Washer
M4華司 (ϕ 4x ϕ 10x1mm) x 2
700NT10
700N FL Ball Links
700N FL 連桿頭 x 2
Tail Control Guide
700 碳纖尾控制桿套
(ϕ 2.6x ϕ 6x11mm)
700 Linkage Rod(C)
700 連桿C(ϕ 2.5x23mm)
700NT9
Socket Collar Screw
圓頭內六角軸套螺絲 (M3x22mm) x 2
M3 Specialty Washer
M3特殊華司 (ϕ 3x ϕ 8x2mm) x 2
TIP TO FIX THE TORQUE TUBE 傳動軸軸承固定位要領
Please apply some CA glue to fix bearing on the torque tube, avoid CA glue from the bearing side or may cause the bearing stuck. When assembling into the tail boom, please apply some oil and use the attached torque tube mount helper to press the bearing holder of the torque tube into the tail boom horizontally.
請以少量 CA 將軸承固定於尾傳動軸上，避免 CA 沾到軸承的防塵蓋而導致軸承卡死，插入尾管內時，尾傳動軸承墊圈外表抹些潤滑油，利用隨附軸承座安裝套管將尾傳動軸承墊圈平行壓入尾管中不可歪斜。
Tail Boom
尾管
800mm
Bearing
軸承
ϕ 8x ϕ 14x4mm
Oil
潤滑油
CA
Neutral Point of Torque Tube
尾傳動軸中心位置
Torque Tube Mount Helper (PVC packing tube)
軸承座安裝套管
Torque Tube
尾傳動軸桿
Tube Front
前端
About 265mm
約 265mm
About 132.5mm
約 132.5mm
Tube End
尾端
Spray Silicone Oil Inside The Tail Boom
管內噴矽油
Torque Tube Bearing Holder
尾傳動軸承墊圈
ϕ 14x ϕ 20.7x13mm
CAUTION 注意
Skewed torque tube bearing holder will interfere with torque tube rotation and cause unusual vibration.
尾傳動軸承座安裝歪斜會造成傳動軸運轉不順及尾部異常震動等問題。
700NT8
Socket Screw
圓頭內六角螺絲 (M3x26mm) x 2
M3 Specialty Washer
M3特殊華司 (ϕ 3x ϕ 8x2mm) x 2
Approx. 330mm
中心約 330mm
CA
17.5mm
17.5mm
CAUTION 注意
After moving the tail control rod adjustment sleeve to recommended position, glue the sleeve to carbon tail control rod with instant glue.
尾控制桿固定環調整至建議位置後，再將尾控制桿固定環套與碳纖尾控制桿接觸面以適量瞬間膠固定。

700NB16

Socket Screw
圓頭內六角螺絲 (M4x14mm) x 2

M4 Washer
M4 華司 (ϕ 4x ϕ 10x1mm) x 2

Socket Button Head Screw
半圓頭內六角螺絲 (M2.5x6mm) x4

700NT7

Socket Screw
圓頭內六角螺絲 (M3x20mm) x 4

M3 Specialty Washer
M3 特殊華司 (ϕ 3x ϕ 8x2mm) x 4

Socket Button Head Collar Screw
半圓頭內六角軸套螺絲 (M3x6mm) x6

700NZ9

Throttle Linkage Rod
油門連桿 (ϕ 1.96x87mm) x 1

700NZ9

Ball Link
連桿頭 x 2

700NT7

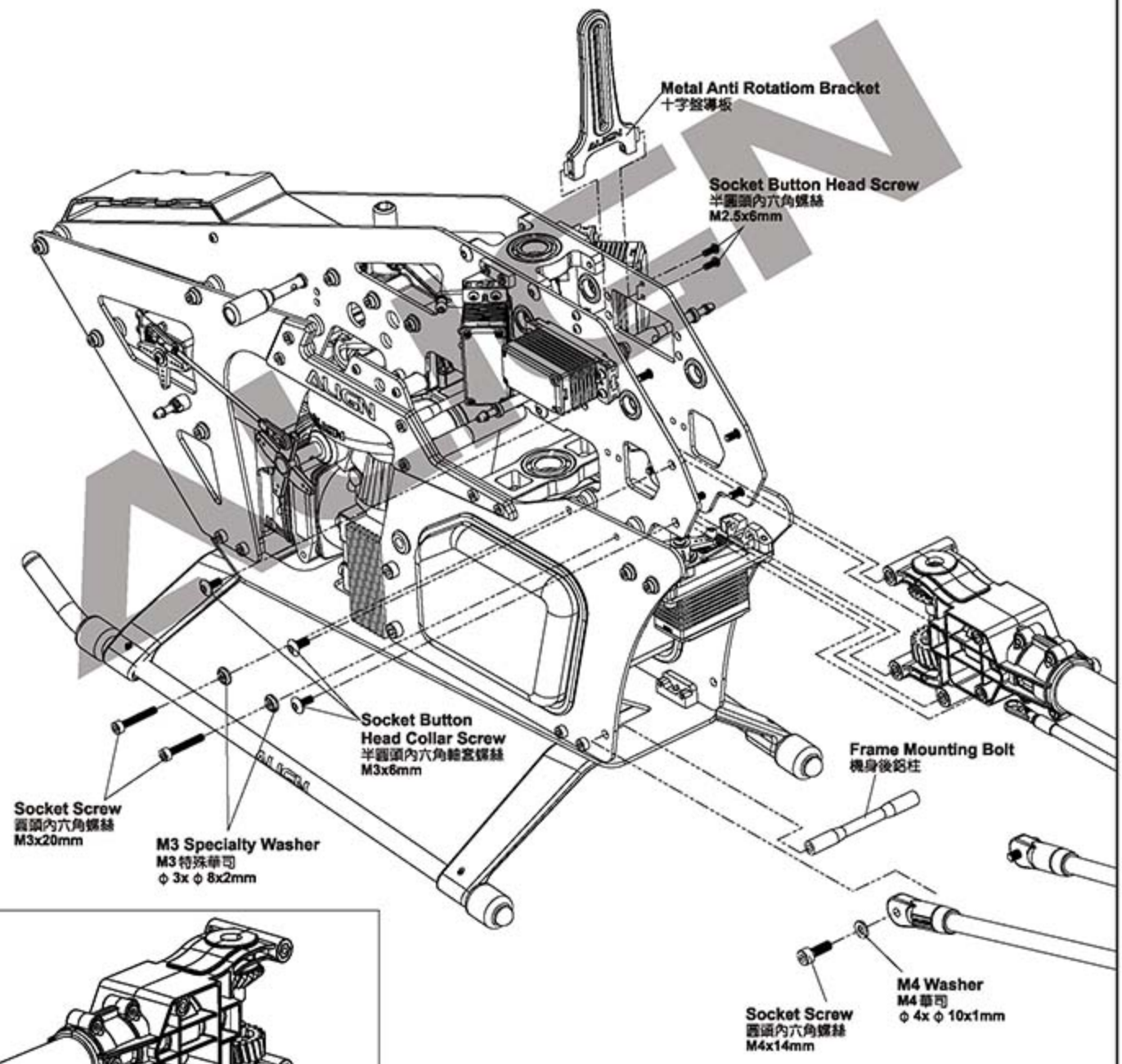
Socket Screw
圓頭內六角螺絲 (M4x8mm) x 1

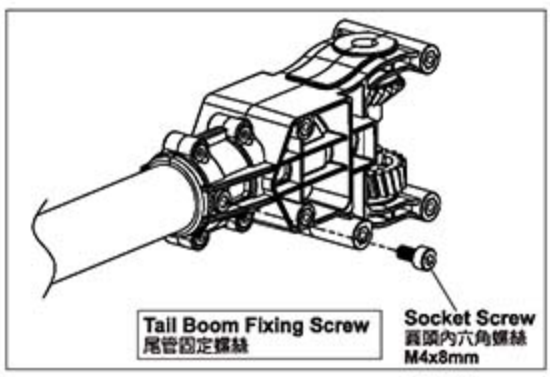
Apply a small amount of T43 thread lock when fixing a metal part.
螺絲頭附於金屬件請使用適量T43 (螺絲膠)。

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。請注意T43不可塗在任何的塑膠材質上。





CAUTION 注 意

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

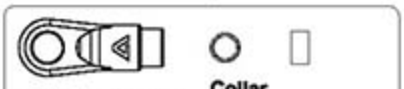
螺絲鎖入塑膠件請務必注意，適當扭力鎖緊即可，而過緊的扭力可能會導致滑牙。

700FLH16A

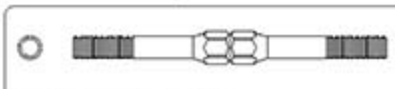
When tightening the main blade fixing screw, please tighten it firmly, but not over tighten, or it may cause the damage of main blade holder and result in danger.

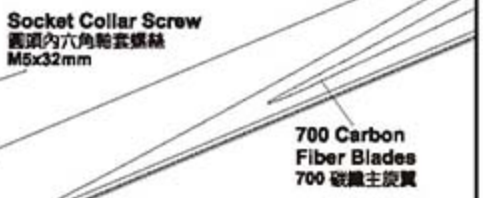
鎖緊主旋翼螺絲須注意適當緊度即可，過緊可能導致主旋翼夾座受損，飛行意外發生。

700NZ9

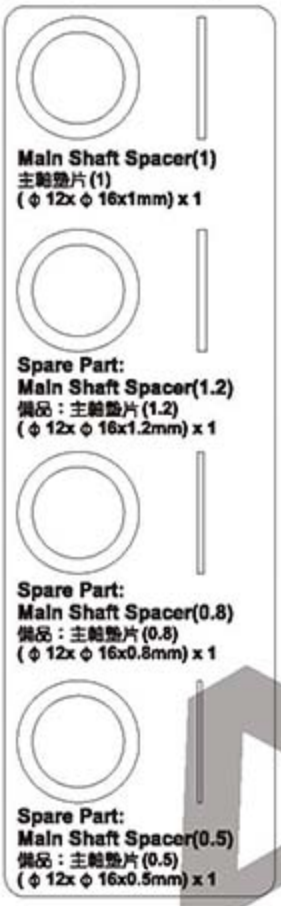


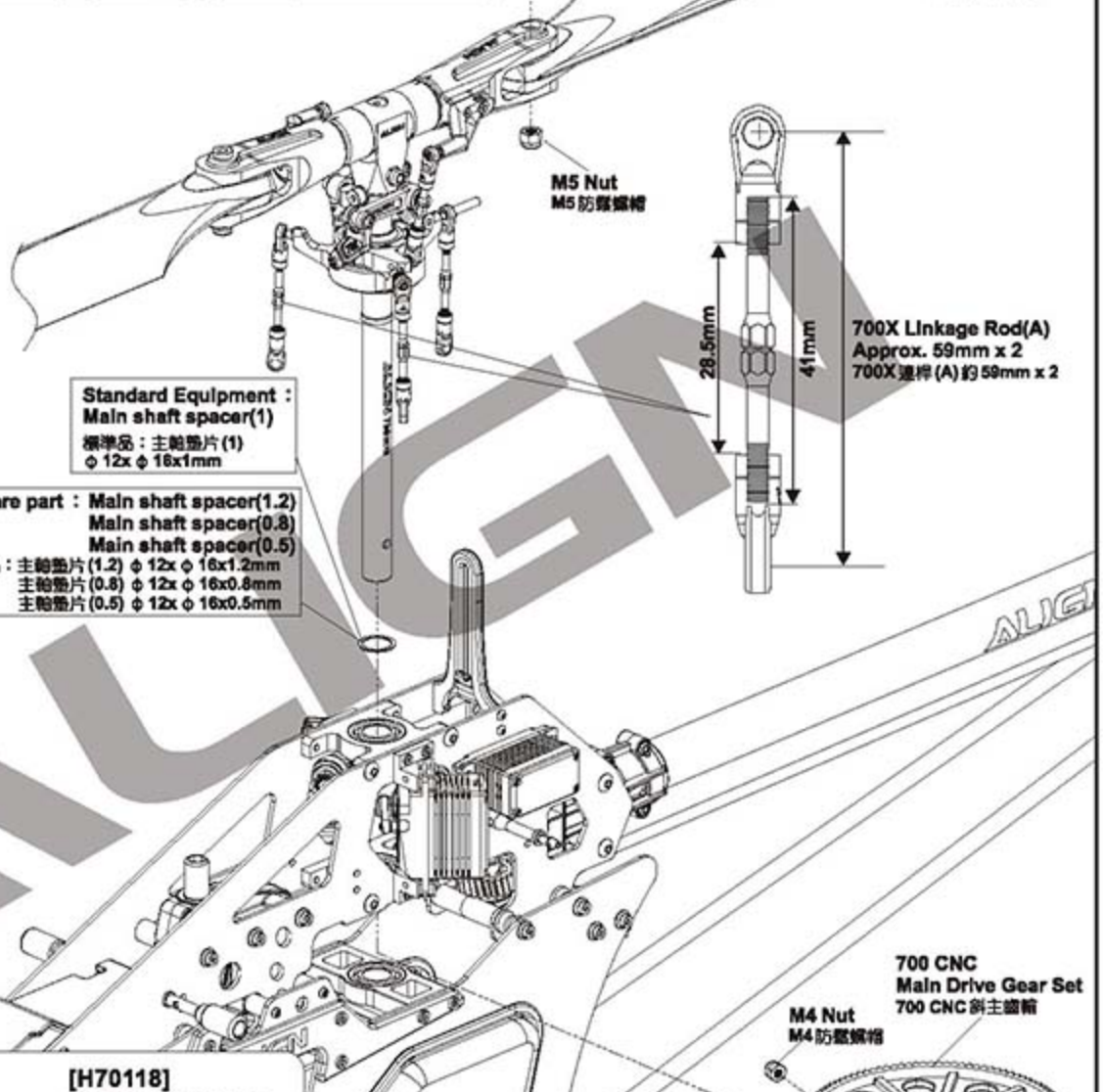
700NZ9





700FLH13

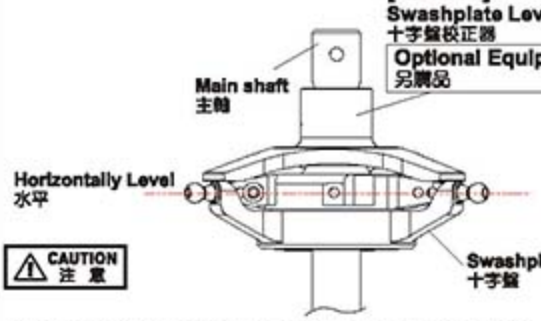




Standard Equipment：
Main shaft spacer(1)
標準品：主軸墊片(1)
Φ 12x Φ 16x1mm

Spare part：Main shaft spacer(1.2)
Main shaft spacer(0.8)
Main shaft spacer(0.5)
備品：主軸墊片(1.2) Φ 12x Φ 16x1.2mm
主軸墊片(0.8) Φ 12x Φ 16x0.8mm
主軸墊片(0.5) Φ 12x Φ 16x0.5mm

[H70118]
Swashplate Leveler
十字盤校正器
Optional Equipment
另購品

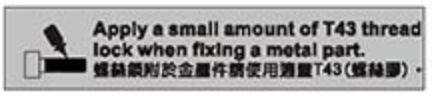


CAUTION 注意

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，務務必使用十字盤調整器校正十字盤，調整伺服器連桿長度，確保十字盤運到水平狀態，再進行基本機體設定，這樣才能確保飛行性能運到最佳效果。

700NB21



CAUTION 注意

Apply a small amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件前使用塗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。請注意T43不可塗在任何的塑膠材質上。

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 provides 8 different direction choicescan be installed on any position of helicopter.

Microbeast PLUS 提供8種不同方向選擇，可以安裝在機體的任何一個位置。

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

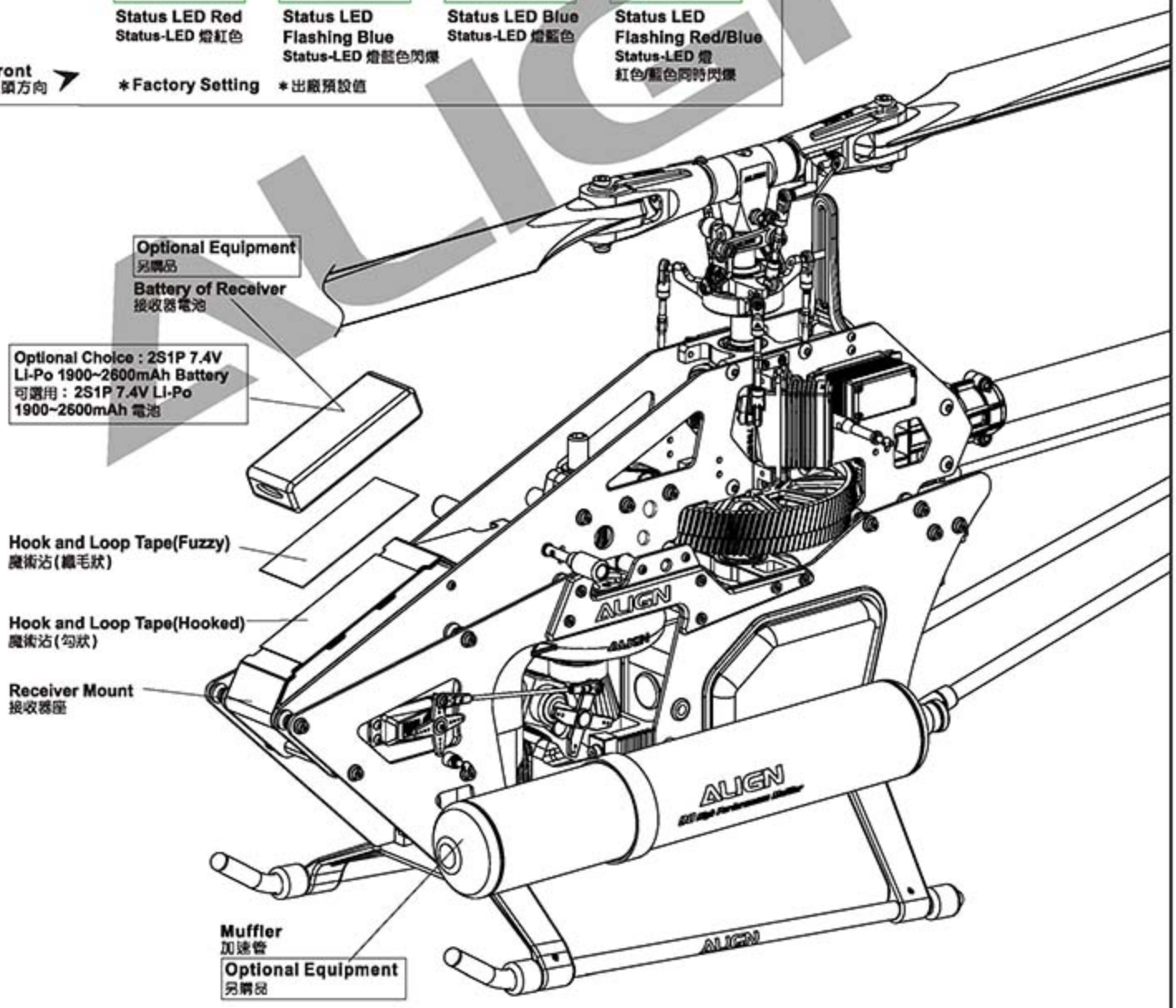

Status LED Flashing Blue
Status-LED 燈藍色閃爍

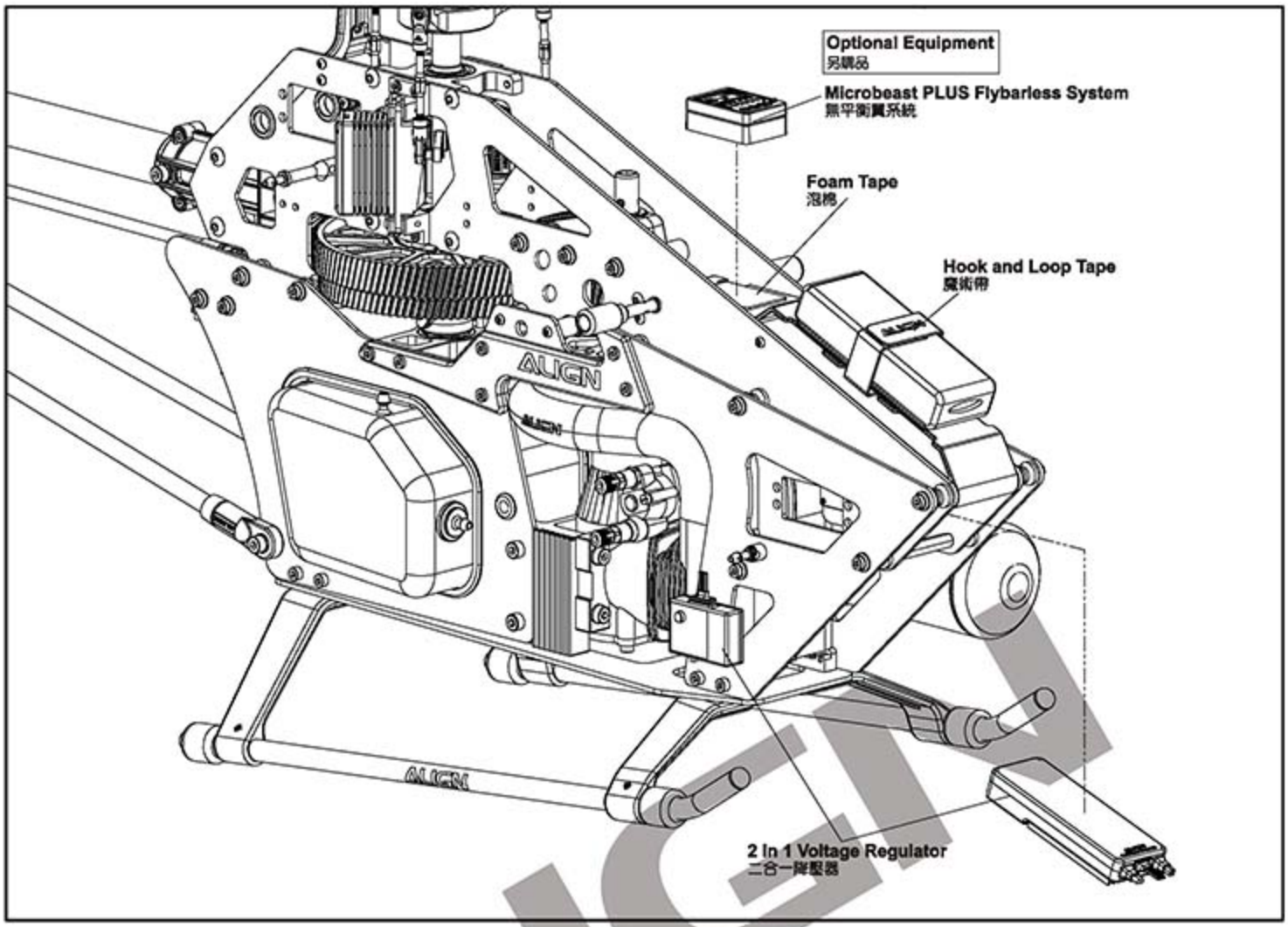

Status LED Blue
Status-LED 燈藍色


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

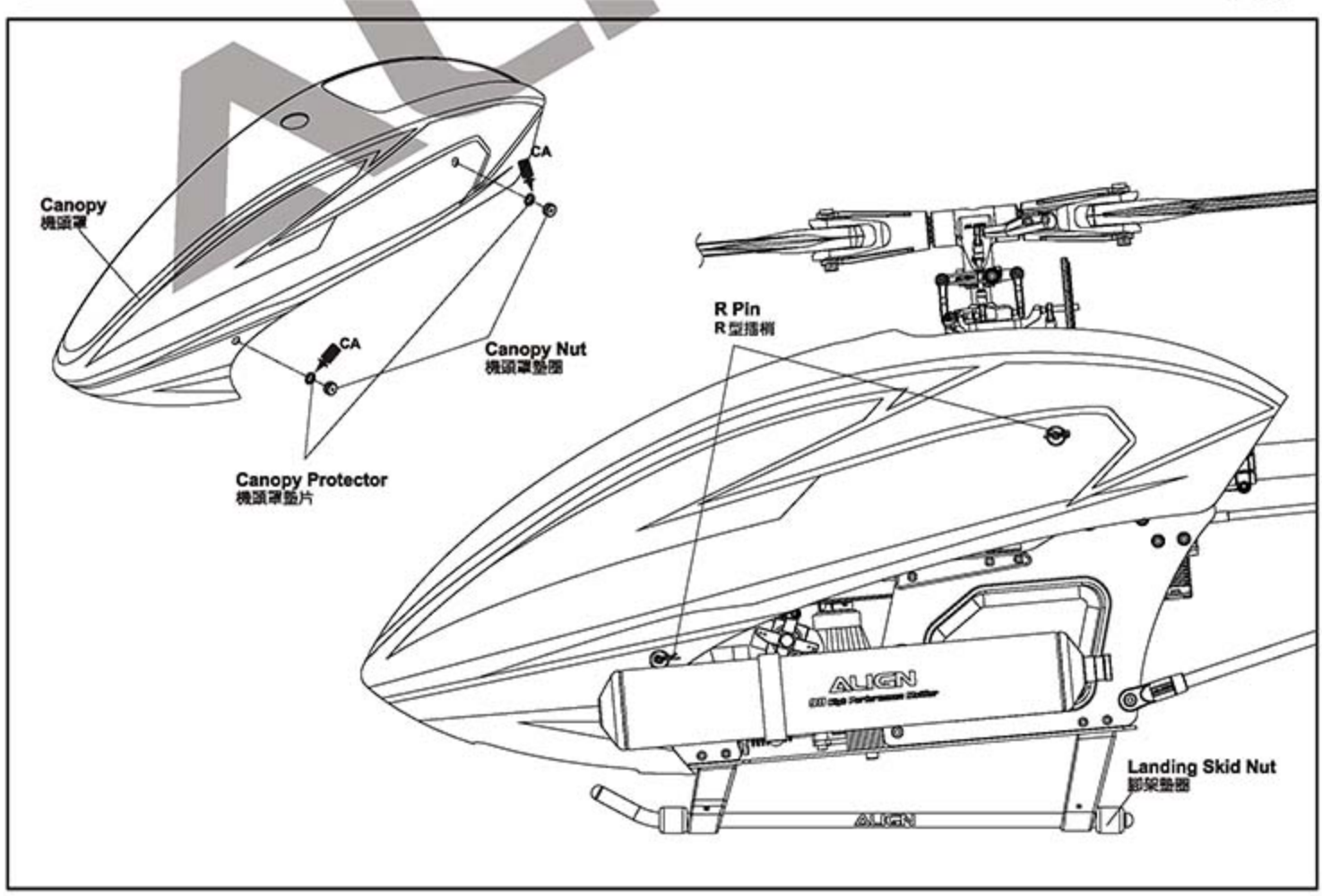
Front
機頭方向

*Factory Setting *出廠預設值

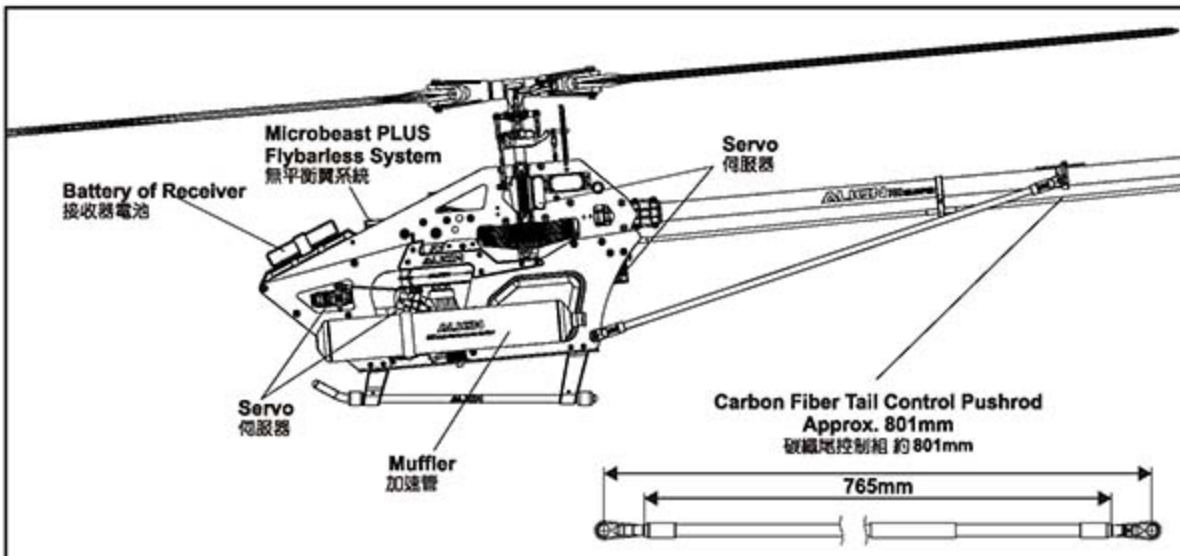




CANOPY ASSEMBLY 機頭罩安裝



ELECTRIC EQUIPMENT ILLUSTRATION 電子設備建議配置圖示 ALIGN



Quick Finder
零件快速篩

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

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 直昇機使用 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

WARNING 警告

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 latest 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. MICROBEAST PLUS Flybarless System has available some different versions, each version has different programming and function, please make sure your Microbeast version and read its correct manual carefully before assembly or upgrading, especially you are upgrade from version V3.2.X. to V.4.X.X by yourself, in order to avoid mistake or loss by any misunderstanding, please be sure that you have correct version and follow its setting method accordingly. 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，出廠時主程式已是最新版本。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。部分版本因升級而設定及功能會有所不同，請確定您的版本並詳閱其說明書，尤其您是由 V3.2.x 升級至 V.4.x.x，請務必深入了解版本之間的設定功能，以免錯誤而造成損失。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.

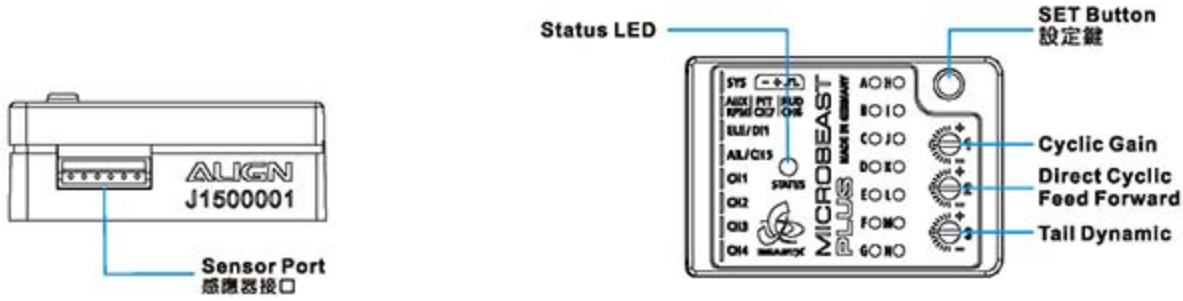
更多詳細的設定操作說明請至官網下載專區下載。
http://www.align.com.tw/beastx/

MICROBEAST PLUS

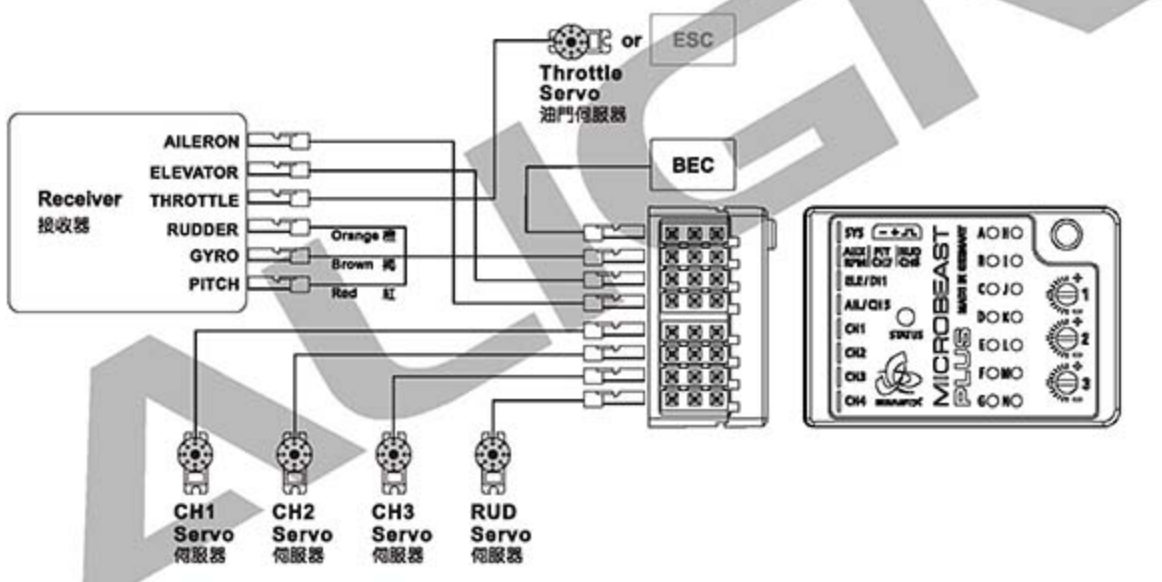
Optional Equipment
選購品

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。

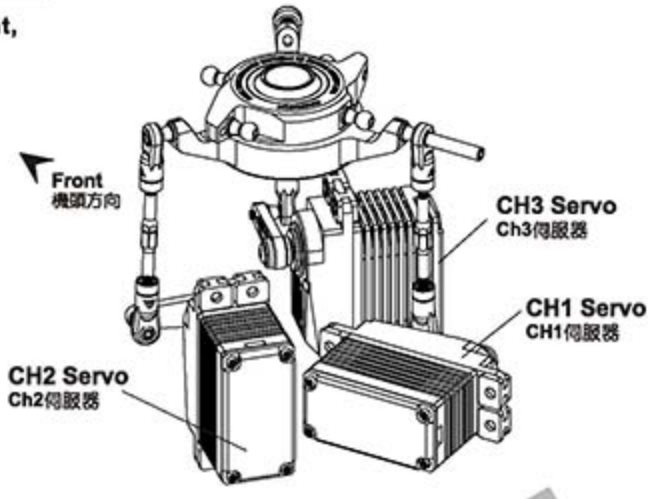
SERVO SETTING AND ADJUSTMENT 伺服器設定與調整

To set this option is to turn on the transmitter and connect to BEC power.
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.
請依照右圖圖示的伺服器名稱，將伺服器接到陀螺儀。



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

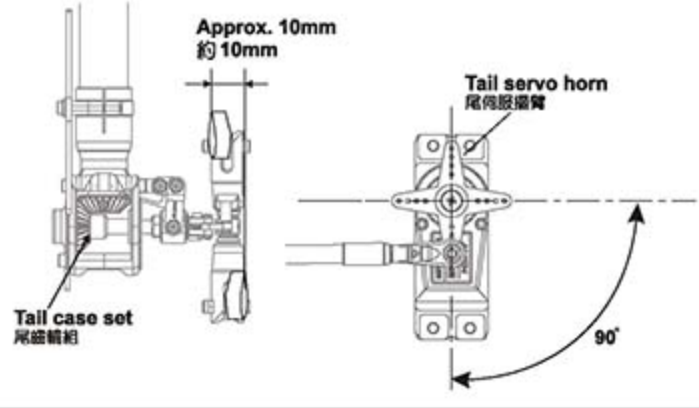
Turn off Revolution mixing(RVMX) mode on the transmitter, then set the gain switch on the transmitter and the gyro to non-head lock mode, or disable gain completely. After setting the transmitter, connect the helicopter power and proceed with rudder neutral point setting. Note: When connecting to the 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輪混控模式，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置。注意:當接上直昇機電源時請勿搖動尾舵搖桿或碰觸機體，待3秒陀螺儀開機完成後，尾伺服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.

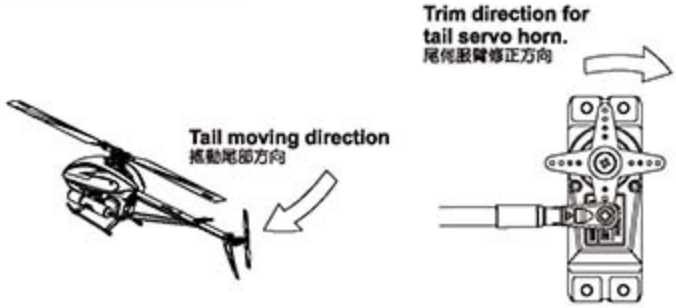
陀螺儀開機後，在非鎖定模式下，尾伺服器與尾 Pitch控制組正確擺置位置。若尾 Pitch控制組未置中時請調整尾控制連桿的長度來修正。



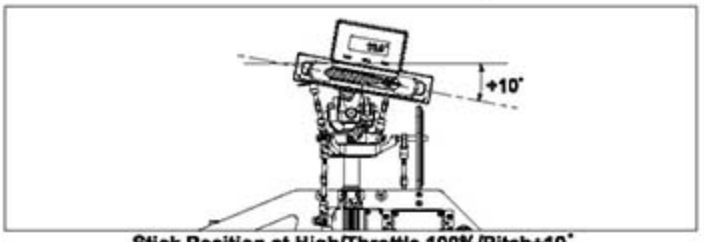
HEAD LOCK DIRECTION SETTING OF GYRO 陀螺儀鎖定方向設定

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".

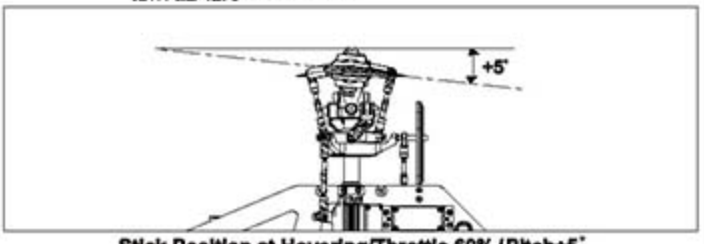
陀螺儀鎖定方向確認，當手搖尾部順時鐘擺動，尾伺服臂應反時鐘修正，反向時請切換陀螺儀上"鎖定反向"開關修正。



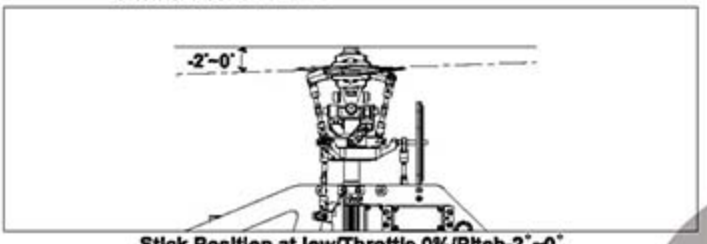
GENERAL FLIGHT 一般飛行模式



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

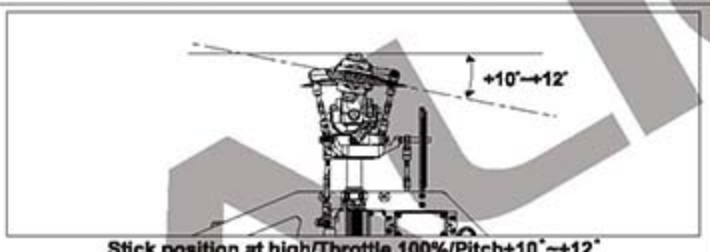


Stick Position at Hovering/Throttle 60%/Pitch+5°
搖桿停懸/油門60%/Pitch+5°

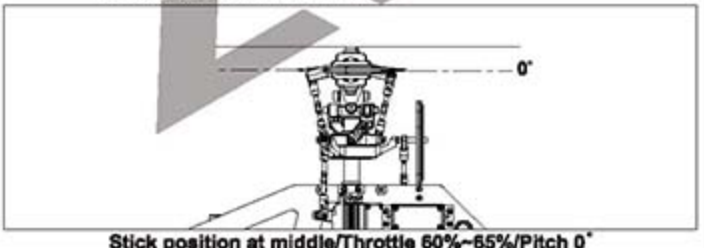


Stick Position at low/Throttle 0%/Pitch-2°~0°
搖桿低速/油門0%/Pitch-2°~0°

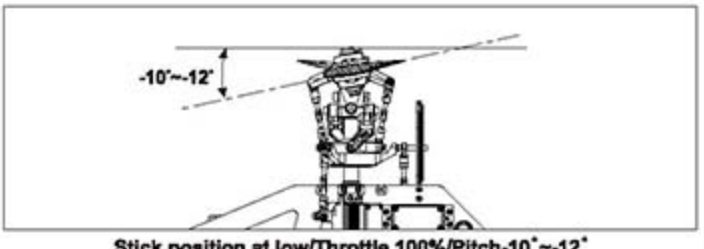
3D FLIGHT 3D特技飛行模式



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°

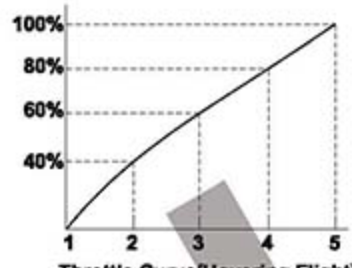
CAUTION 注意

1.Pitch range : Approx ± 15 degrees.
2.Hint : Do not exceed ± 14 degrees pitch range. Doing so may cause motor overload and binding of certain head components.

1.螺距(Pitch)總行程約 ± 15°
2.建議：螺距設定勿超過± 14°，過大螺距設定，可能導致引擎過載及旋翼頭旋轉干涉。

GENERAL FLIGHT 一般飛行模式

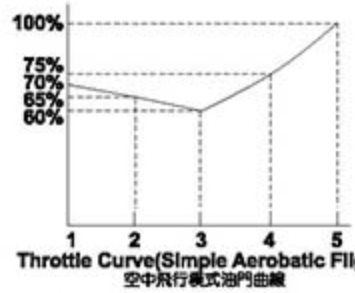
	Throttle 油門	Pitch 螺距
5	100%High Speed 100%高速	+10°
4	80%	
3	60%Hovering 60%停懸	+5°
2	40%	
1	0% Low Speed 0%低速	-2°~0°



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

IDLE 1 : SPORT FLIGHT

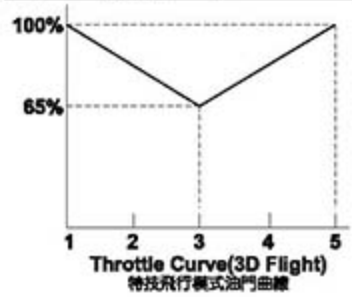
	Throttle 油門	Pitch 螺距
5	100%	+10°~+12°
4	75%	
3	60%	+5°
2	65%	
1	70%	-5°



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

IDLE 2 : 3D FLIGHT

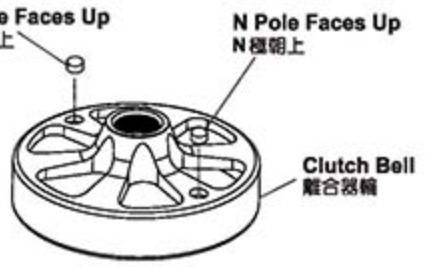
	Throttle 油門	Pitch 螺距
5	100% High 100%高	+10°~+12°
3	60%~65% Middle 60%~65%中	0°
1	100% Low 100%低	-10°~-12°



Throttle Curve(3D Flight)
特技飛行模式油門曲線

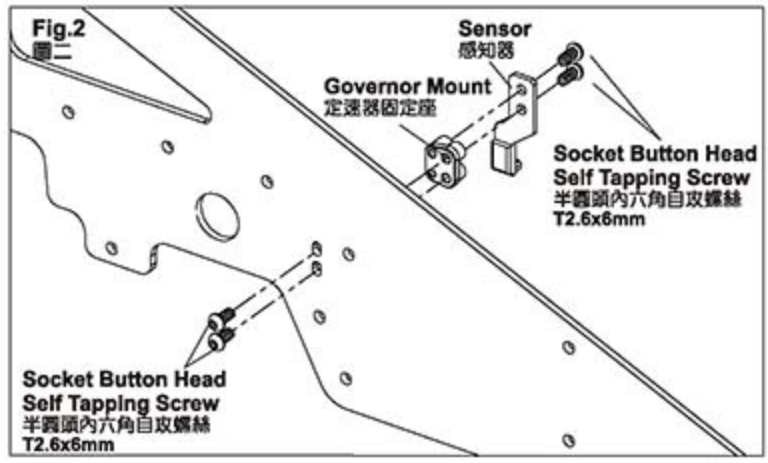
INSTRUCTION 安裝使用說明

Fig.1
圖一



※ In order to balance the clutch bell when operation, please install two magnets.
※ 為了離合器輪運轉平衡，磁鐵務必裝置兩顆。

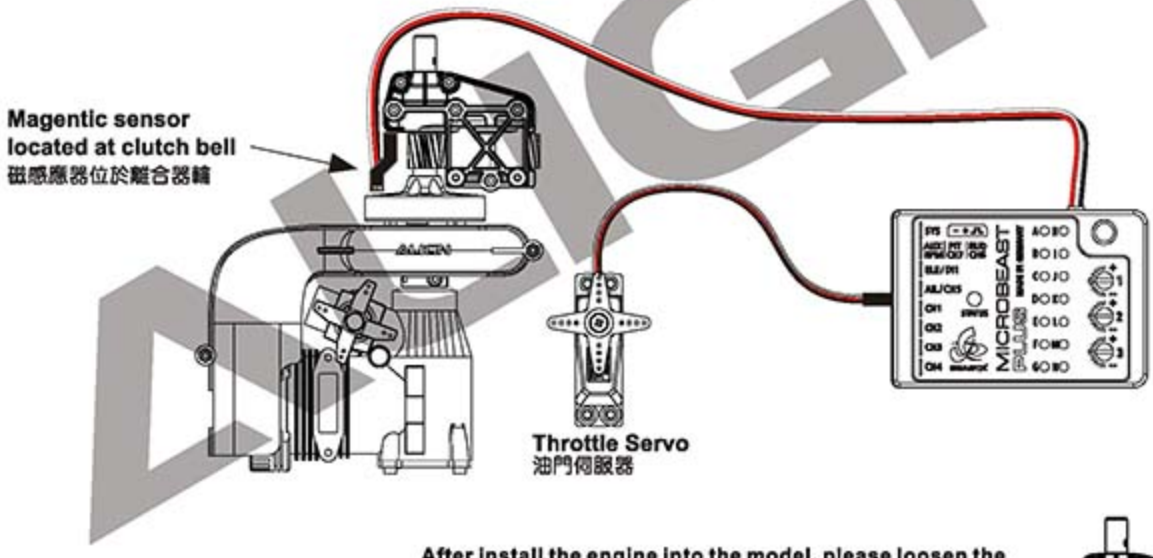
Fig.2
圖二



NOTE：The safty RPM is up to 16000rpm for OS90 engine.
註：OS90引擎安全轉速上限16000rpm。

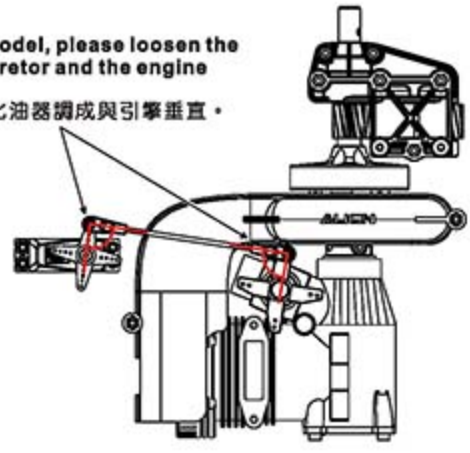
CAUTION 注意

Combustion Drive System (Nitro/Gas), Particularly when using sensors for combustion engines check for correct polarity of the sensor power supply on the adapter cable.
燃燒驅動系統(引擎)，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。



Throttle at mid stick position
油門遙桿在中間

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成與引擎垂直。



For transmitter throttle curve setup, please refer to Microbeast PLUS (V5.x.x) manual, Nitro Mode setup .
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 (V5.x.x專用)說明書內引擎模式調整，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

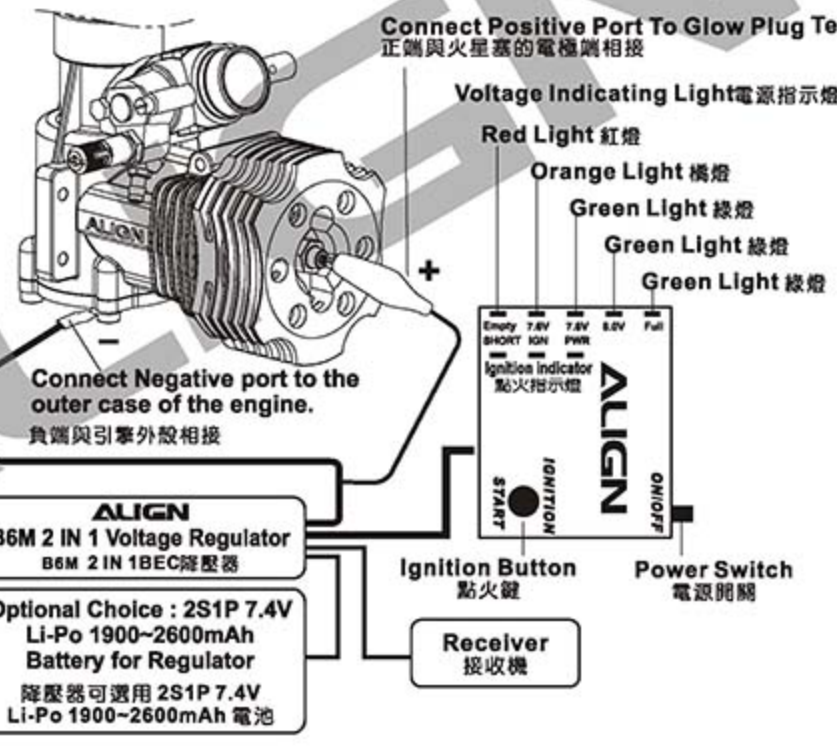
1. Due to the unique 2 in 1 design, the regulator's functions provide power to the receiver, servos, and the internal glow plug ignition system that does not require you to remove the clip lead.
2. The linear regulator design results in no interference to the receiver. The required input power may only 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 thestatus of the battery voltage, and of the plug ignition function.

1. 獨特的二合一設計，除了具備(BEC)降／穩壓系統，以提供接收器與伺服器電源的功能外，還內建一組火星塞的點火裝置，省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 7.4V(BEC)/ 1.5V(Glow Plug)
3. Max. Continuous Current : 6A
4. Weight : 51.2g (including wires)
5. Regulator size : 73x32.5x13mm
   Control board size : 35x24x10mm

1. 輸入電壓：DC 7.4V 2CELL鋰電
2. 輸出電壓：DC 7.4V(BEC)/ 1.5V(Glow Plug)
3. 最大連續輸出電流：6安培
4. 重量：51.2g (含線組)
5. 尺寸：降壓器73x32.5x13mm
   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. 7.4V output 2 in 1 Voltage Regulator BEC must compatible with HV servos, make sure not to use 6V servos for it.

接收器與伺服機電源部份：

1. 本產品具電壓指示功能，當接入充飽的電池時五顆指示燈全亮，表示電池在Full電量充足狀態下；使用中當電壓降低至7.6V時(3顆綠燈熄滅)，尚可完成單趟飛行即須對電池充電或更換新電池；而如果僅亮紅燈時表示Empty電量不足，不應該再使用喔！
2. 二合一降壓器BEC輸出為7.4V，必須搭配高壓伺服器使用，嚴禁搭配使用一般6V輸出的伺服器。

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；由於點火狀態會自動關閉，所以引擎啓動後，確認橘色、綠色指示燈於15秒後熄滅，即不須將鱷魚夾移除。
2. 若按下"START"鍵時，橘燈不亮，表示火星塞未正常點火，請檢查火星塞加熱線圈是否開路損壞，或是鱷魚夾未確實夾在火星塞電極端上。
3. 如果火星塞發生短路或是鱷魚夾（電源正端）與引擎外殼接觸時，當按下"START"鍵，紅色(SHORT)指示燈會亮起，約1秒後熄滅並隨即關閉電源輸出，請檢查火星塞是否損壞或檢查鱷魚夾是否接觸到引擎外殼。

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緊緊固定，以免直昇機運轉時因震動造成接頭鬆脫或斷線。

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

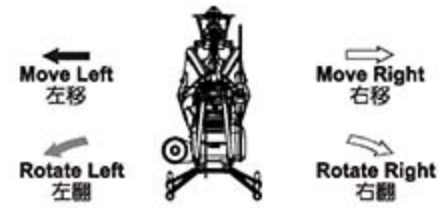
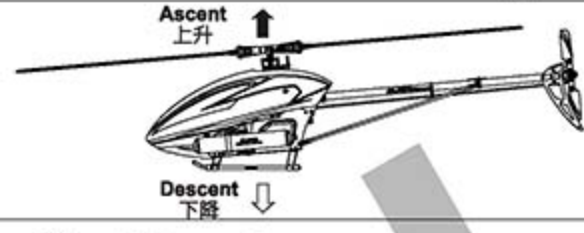
PLEASE PRACTICE SIMULATION FLIGHT BEFORE REAL FLYING 飛行前請事先熟練電腦模擬飛行

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 flightuntil 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
	 Aileron 副翼	
	 Elevator升降/前後	
	 Throttle 油門	
	 Rudder 方向	

FLIGHT ADJUSTMENT AND NOTICE 飛行調整與注意

CAUTION 注意

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

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

CAUTION 注意

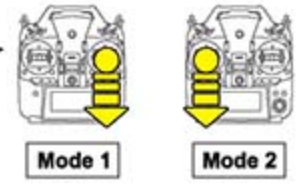
If there are other radio control aircraft at the field, make sure to check their frequencies and tell them what frequency you are using. Frequency interference can cause your model, or other models to crash and increase the risk of danger.
假使飛行場有其他遙控飛機，請確認他們的頻率，並告知他們你正在使用的頻率，相同的頻率會造成干擾導致失控和大大地增加風險。

ENGINE START PREPARATION 引擎啓動事前準備

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

CAUTION 注意

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。



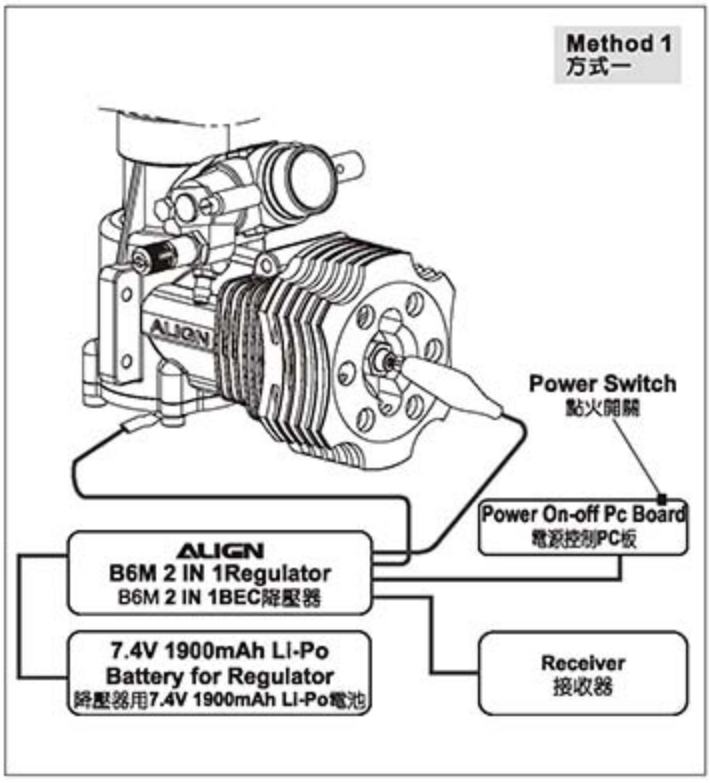
CAUTION 注意

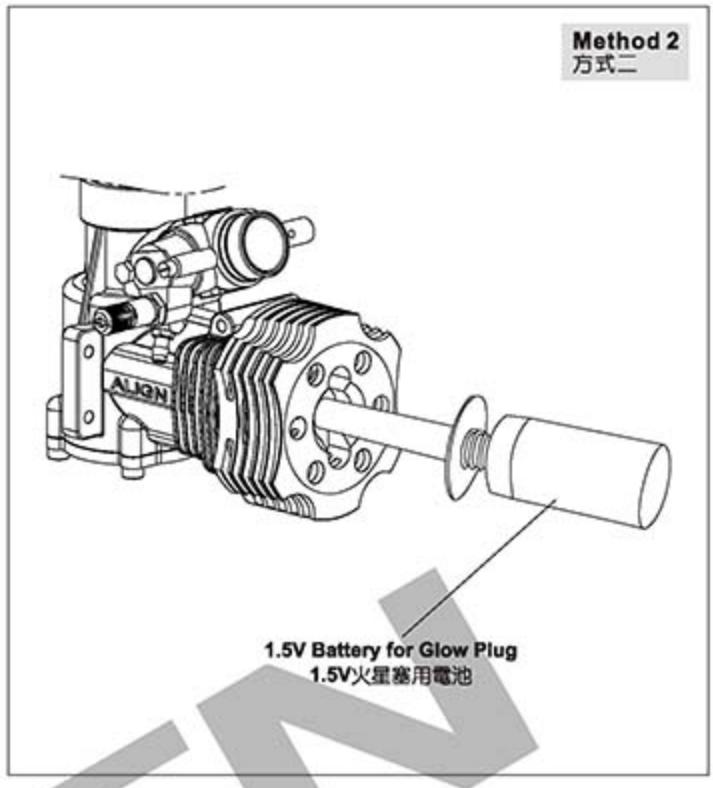
First check to make sure no one else is operating on the same frequency. Then place the throttle stick at lowest position and turn on the transmitter.
首先確認附近沒有其他相同頻率的使用，然後打開發射器將油門搖桿推到低點。

CAUTION 注意

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

GLOW PLUG IGNITION METHOD 火星塞點火方式

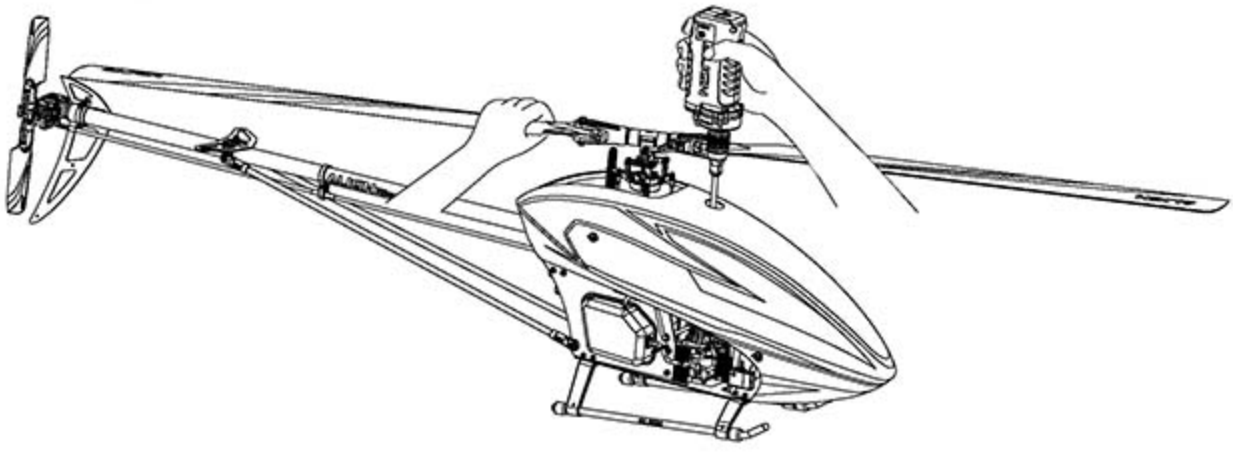




ENGINE START AND STOP 引擎啓動和熄火

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

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



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饋，使十字盤有傾斜的情形，此時請勿刻意將十盤修正為水平狀態，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，一離地即偏往修正方向的危險。

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，在飛機離開地面前，從飛機側邊觀察主旋翼轉動。
3. 仔細觀察旋翼軌跡(假如兩支旋翼移動都是相同軌跡，則不需要調整;可是如果一支旋翼較高或較低產生"雙槳"的情形時，則必須立刻調整軌跡)。

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連桿頭修正。

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

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°。

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

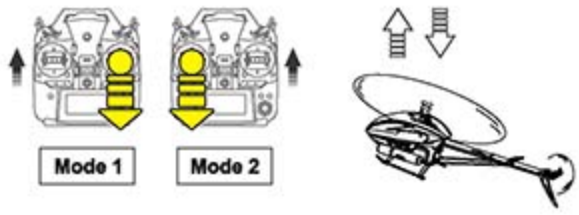
Do not attempt to fly until you have some experiences with the operation of helicopter.

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 untilyou control the throttle smoothly.

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



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

1. Raise the throttle stick slowly.
2. Move the helicopter in any direction back, forward, left and right, slowly move the aileron and elevator sticks in the opposite direction to fly back to its original position.

1. 慢慢升起油門搖桿。
2. 使直昇機依指示：移動向後/向前/向左/向右，慢慢的反向 移動副翼和升降搖桿並將直昇機開回到原來位置。

CAUTION 注 意

◎ If the nose of the helicopter moves, please lower the throttle stick and land the helicopter. Then move your position diagonally behind the helicopter 10m and continue practicing.

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

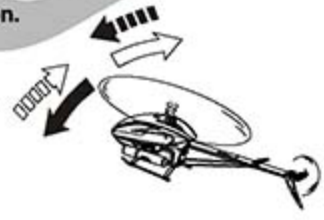
◎ 當直昇機機頭偏移時，請降低油門並且降落，然後移動自己的位置到直昇機的正後方10公尺再繼續練習。

◎ 假如直昇機飛離您太遠，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 ts 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。



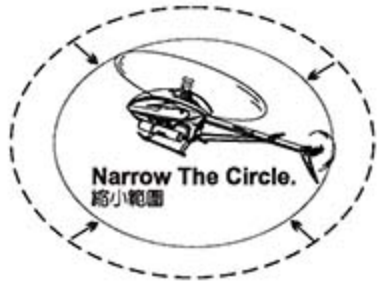
STEP 4

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，在地上畫圈圈並在這個圈圈的範圍內練習飛行，以增加您操控的準確度。

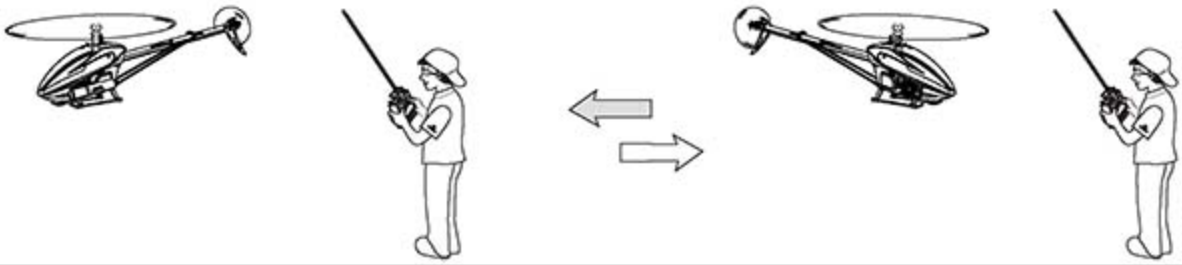
◎ 當您更加習慣操作動作，您可以畫更小的圈圈。



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 ball link. 調整連桿頭長度
Hover 停懸	Headspeed too low 主旋翼轉速偏低	Excessive pitch 主旋翼的PITCH偏高	Adjust ball link to reduce pitch by 4 to 5 degrees. Hovering headspeed should be around 1700~1800RPM. 調整連桿頭調低Pitch約+4~5度 (停懸時主旋翼需為約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%)
	Headspeed too high 主旋翼轉速偏高	Not enough pitch 主旋翼的PITCH偏低	Adjust ball link to increase pitch by 4 to 5 degrees. Hovering headspeed should be around 1700~1800RPM. 調整連桿頭調高Pitch約+4~5度 (停懸時主旋翼需為約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，或搜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
		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
	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 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。

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Good Flying!

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ALIGN Youku
http://i.youku.com/u/UMTQ0NjEwNjczNg==

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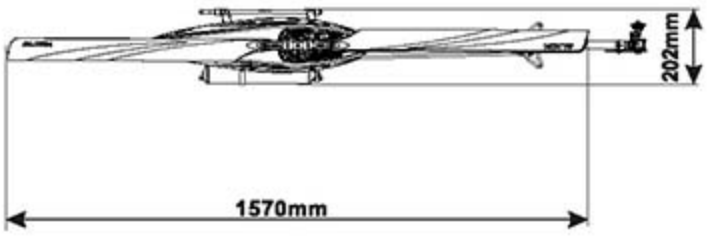
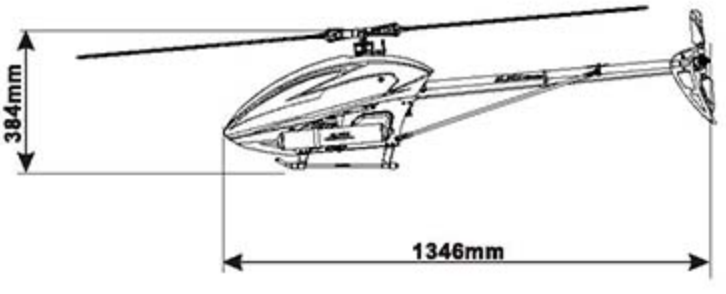
Specifications & Equipment/規格配備:

Length/機身長: 1346mm
Height/機身高: 384mm
Main Blade Length/主旋翼長: 700mm
Main Rotor Diameter/主旋翼直徑: 1570mm
Tail Rotor Diameter/尾旋翼直徑: 281mm
Engine Pinion Gear/引擎主齒: 13T
Main Drive Gear/傳動主齒: 107T
Autorotation Tail Drive Gear/尾驅動主齒: 104T
Tail Drive Gear/尾翼傳動齒: 22T
Drive Gear Ratio/齒輪傳動比: 8.23 : 1 : 4.73
Fuel Tank Capacity /油箱容量: 630cc.
Flying Weight/全配重: Approx. 4540g





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