

Combo T-REX 700N DFC INSTRUCTION MANUAL

ALIGN

使用說明書

RH70N07XT



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MICROBEAST PLUS
6 AXIS MEMS SENSOR SYSTEM FOR RC MODELS




Thank you for buying ALIGN products. The T-REX 700N DFC is the latest technology in Rotary RC models. Please read this manual carefully before assembling and flying the new T-REX700N DFC helicopter. We recommend that you keep this manual for future reference regarding tuning and maintenance.

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

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

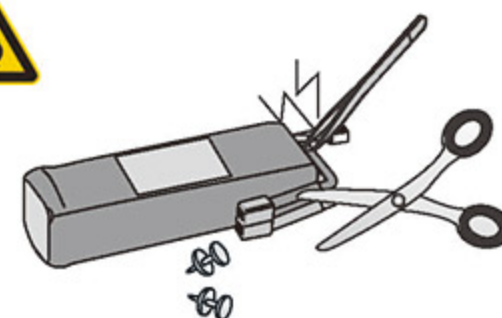
請勿在下雨、打雷等惡劣天氣下操作，以確保本身及機體的安全。



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，可能造成火災並傷及生命財產安全，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 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好手正進行飛行，因為開啟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)



SAFE OPERATION 安全操作

Operate this unit within your ability. Do not fly under tired condition and improper operation may cause in danger. Never take your eyes off the model or leave it unattended while it is turned on. Immediately turn off the model and transmitter when you have landed the model.

請於自己能力內及需要一定技術範圍內操作這台直昇機，過於疲勞、精神不佳或不當操作，意外發生風險將可能會提高。不可在視線範圍外進行，降落後也請馬上關掉直昇機和遙控器電源。



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

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




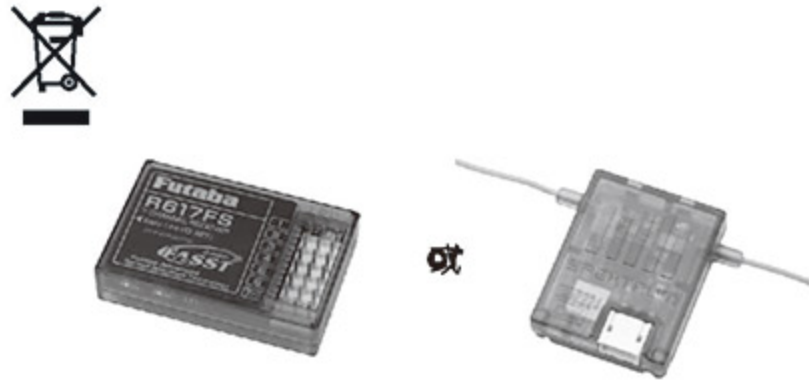







遙控飛機、直昇機多半是以 PA 纖維或聚乙烯、電子商品為主要材質，因此要盡量遠離熱源、日曬，以避免因高溫而變形甚至熔毀損壞的可能。



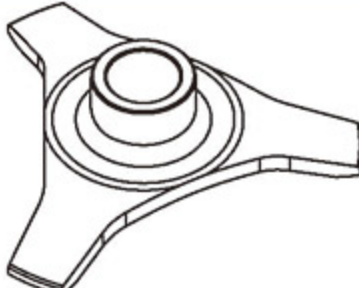
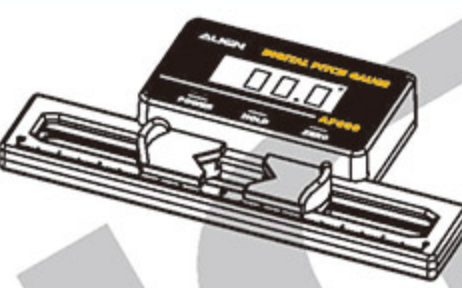







3.EQUIPMENT REQUIRED FOR ASSEMBLY 自備設備

ALIGN

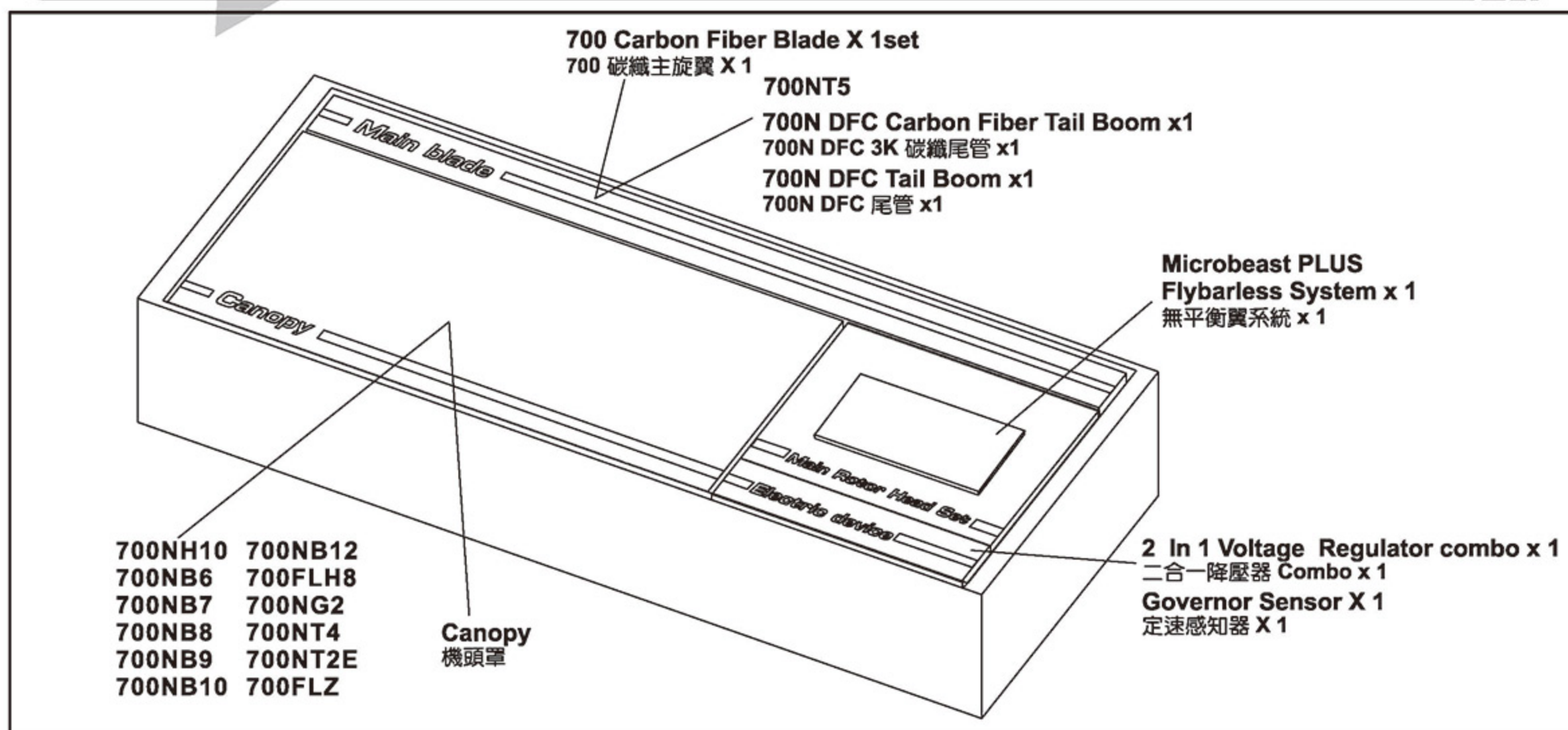
RADIO TRANSMITTER AND ELECTRONIC EQUIPMENT REQUIRED FOR ASSEMBLY 自備遙控及電子設備

 <p>Transmitter (6-channel or more, Helicopter system) 發射機(七動以上直昇機模式遙控器)</p>	 <p>Standard size throttle servo (minimum speed 0.10 sec/60°, torque 3kg.cm or higher) 油門用標準伺服器(速度:0.10秒/60度以內, 扭力:3kg.cm以上)</p>	 <p>DS655 Digital Servo x 1 DS655 數位伺服器 x 1</p>	 <p>Receiver(6-channel or more) 接收機(七動以上)</p> <p>Remote Receiver 衛星天線</p>
 <p>90-120 Muffler 90-120 高效加速管</p>	 <p>Engine Starter 啟動器</p>	 <p>Fuel Pump 加油器</p>	 <p>Engine Fuel 引擎燃油</p>
 <p>ALIGN 91H Engine 91H 引擎</p>	 <p>ALIGN 91HP Engine 91HP 引擎</p>	 <p>ALIGN 105HP Engine 105HP 引擎</p>	

ADDITIONAL TOOLS REQUIRED FOR ASSEMBLY 自備工具









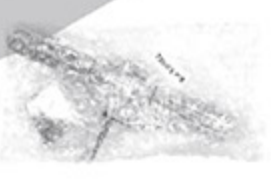









 <p>Swashplate Leveler 十字盤調整器</p>	 <p>Digital Pitch Gauge 電子螺距規</p>	 <p>Multi-function Tester Voltmeter/servo Diagnosis 多功能檢測計 電池電壓/伺服器檢測</p>
 <p>Philips Screw Driver 十字螺絲起子 φ 3.0/φ 1.8mm</p>	 <p>Cutter Knife 刀子</p>	 <p>Hexagon Screw Driver 六角螺絲起子 3mm/2.5mm/2mm/1.5mm</p>
 <p>Needle Nose Pliers 尖嘴鉗</p>	 <p>Oil 潤滑油</p>	 <p>CA 瞬間膠</p>

4.PACKAGE ILLUSTRATION 包裝說明



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

- Before flying, please check to make sure no one else is operating on the same frequency for the safety.
 - Before flight, please check if the batteries of transmitter and receiver are enough for the flight.
 - Before turn on the transmitter, please check if the throttle stick is in the lowest position. IDLE switch is OFF.
 - When turn off the unit, please follow the power on/off procedure. Power ON- Please turn on the transmitter first, and then turn on receiver. Power OFF- Please turn off the receiver first and then turn off the transmitter. Improper procedure may cause out of control, so please to have this correct habit.
 - Before operation, check every movement is smooth and directions are correct. Carefully inspect servos for interference and broken gear.
 - Check for missing or loose screws and nuts. See if there is any cracked and incomplete assembly of parts. Carefully check main rotor blades and rotor holders. Broken and premature failures of parts possibly cause resulting in a dangerous situation.
 - Check all ball links to avoid excess play and replace as needed. Failure to do so will result in poor flight stability.
 - Check if the battery and power plug are fastened. Vibration and violent flight may cause the plug loose and result out of control.
- 每次飛行前應先確認所使用的頻率是否會干擾他人，以確保您自身與他人的安全。
- 每次飛行前確定您發射器與接收器電池的電量是在足夠飛行的狀態。
- 開機前確認油門搖桿是否位於最低點，熄火降落開關，定速開關(IDLE)是否於關閉位置。
- 關機時必須遵守電源開關機的程序，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。

STANDARD EQUIPMENT 標準配備					
					
700NC2	700NH10	700NB6	700NB7	700NB8	700NB9
					
700NB10	700NB12	700FLH8	700NG2	700NT4	700NT2E
					
700NT5	700FLZ	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	700 Carbon Fiber Blades x 1 700 碳纖主旋翼 x 1	Microbeast PLUS Flybarless System x 1 無平衡翼系統 x 1

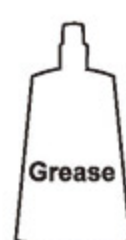
When you see the marks as below, please use glue or grease to ensure flying safety.
標有以下符號之組裝步驟，請配合上膠或上油，以確保使用之可靠度。



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

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

各項塑膠製連桿頭扣接時，A字請朝外。



Grease
潤滑油



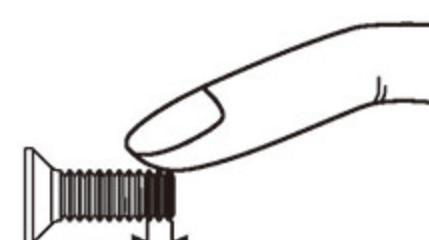
Green
綠色



Blue
藍色



Self-furnished
瞬間膠(自備)

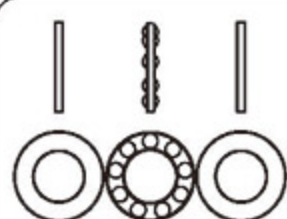


T43 Glue width : approx. 1mm
T43上膠寬度約1mm

R48 metal tubular adhesive (eg. Bearings). T43 thread lock, apply a small amount on screws or metal parts and wipe surplus off. When disassembling, recommend to heat the metal joint about 15 Seconds. (NOTE : Keep plastic parts away from heat.)

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

700FLH8



Thrust Bearing
止推軸承(φ 10.2xφ 18x5.5mm) X 2



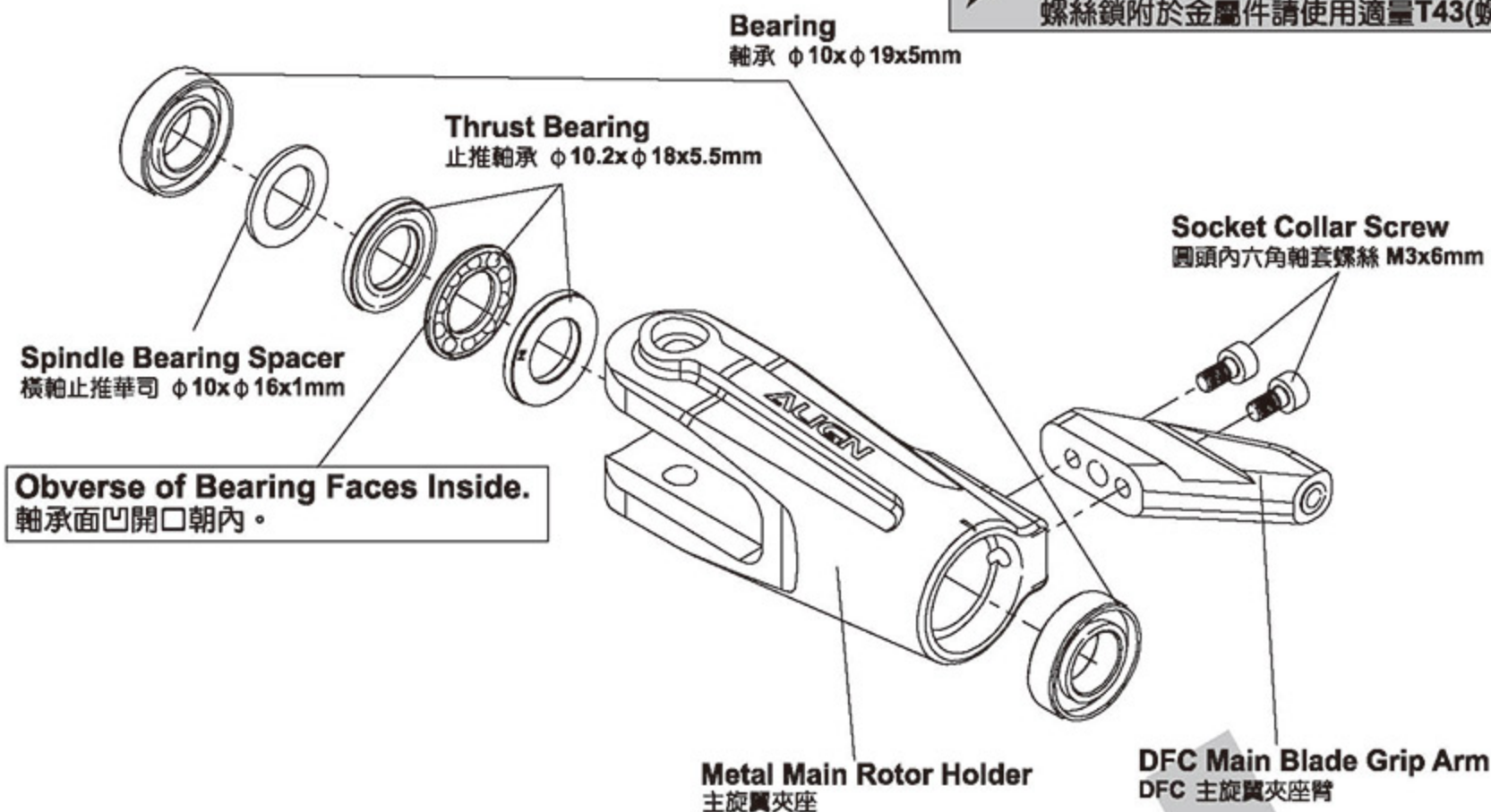
Bearing
軸承(φ 10xφ 19x5mm) X 4



Spindle Bearing Spacer
橫軸止推華司(φ 10xφ 16x1mm) X 2



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



CAUTION
注意

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



CAUTION
注意

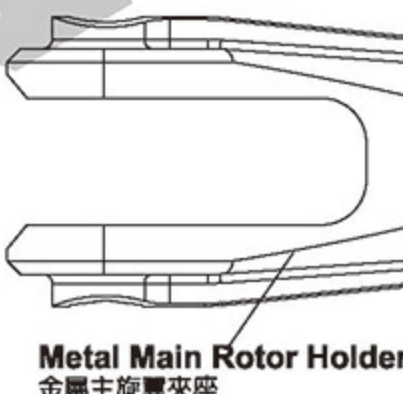
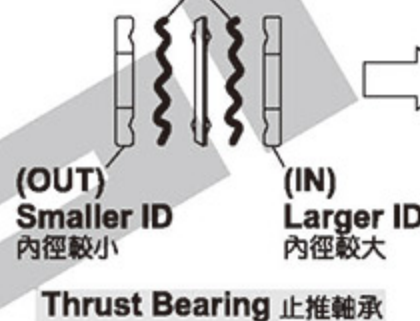
Thrust bearing and washer for radial bearing are wear items, and thus should be inspected for replacement after every 20 flights. For flights with high headspeed, the inspection interval should be reduced to ensure flight safety.

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



CAUTION
注意

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



700FLH8



Spindle Bearing Spacer
橫軸止推華司(φ 10xφ 16x1mm) X 2



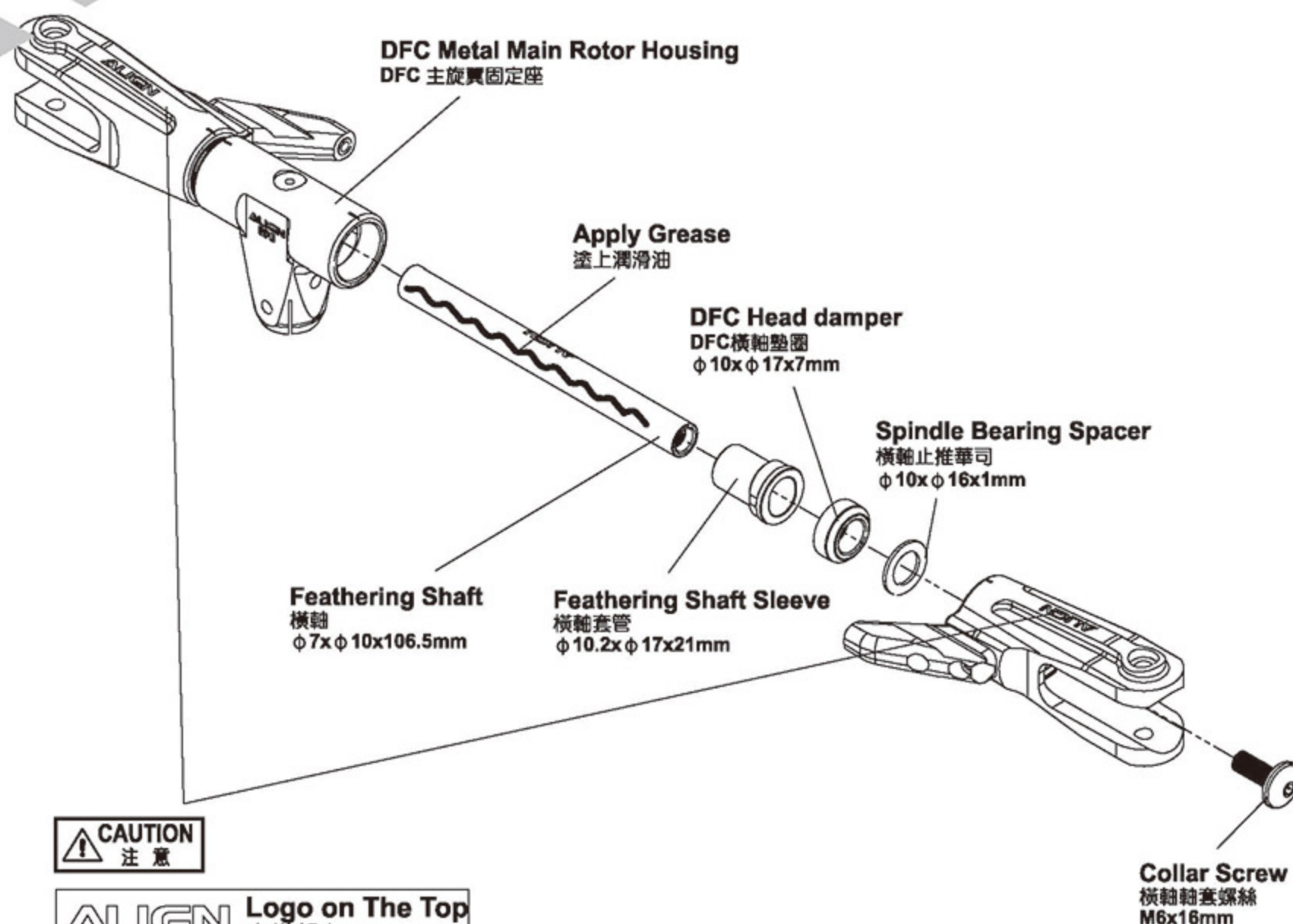
Collar Screw
橫軸軸套螺絲(m6x16mm) X 2



Feathering Shaft Sleeve
橫軸套管(φ 10.2xφ 17x21mm) X 2



DFC Head Damper
DFC橫軸墊圈(φ 10xφ 17x7mm) X 2



700NH10

Linkage Ball D(M3x3.5)
球頭D(M3x3.5)(ϕ 5x9.3mm) x 2

Linkage Ball B(M3x4)
球頭B(M3x4)(ϕ 5x12mm) x 3

Use The Inner Hole
請鎖附於內孔

Linkage Ball D(M3x3.5)
球頭D(M3x3.5) ϕ 5x9.3mm

DFC CCPM Swashplate
DFC CCPM 十字盤組

Linkage Ball B(M3x4)
球頭B(M3x4) ϕ 5x12mm

Linkage Ball B(M3x4)
球頭B(M3x4) ϕ 5x12mm

Linkage Ball D(M3x3.5)
球頭D(M3x3.5) ϕ 5x9.3mm

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)

700FLH8

Bearing
軸承(ϕ 3x ϕ 7x3mm) x 4

Main Rotor Griplinkage Bearing Sleeve
主旋翼連桿軸承套(ϕ 3x ϕ 4.8x9.1mm) x 2

Socket Screw
圓頭內六角螺絲(M3x10mm) x 1

Socket Collar Screw
圓頭內六角軸套螺絲(M3x24mm) x 2

Washer
華司(ϕ 3x ϕ 4.8x0.3mm) x 2

DFC Metal Main
DFC 連桿A(M3x14mm) x 2

Socket Collar Screw
圓頭內六角軸套螺絲 M3x24mm

Washer
華司 ϕ 3x ϕ 4.8x0.3mm

Main Rotor Griplinkage Bearing Sleeve
主旋翼連桿軸承套 ϕ 3x ϕ 4.8x9.1mm

Bearing
軸承 ϕ 3x ϕ 7x3mm

Main Rotor Grip Arm Integrated Control Linkage
主旋翼夾座連桿 ϕ 9x15.1x38.2mm

Socket Collar Screw
圓頭內六角軸套螺絲 M4x24mm

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

Elevator Ball Link
升降臂連桿頭

Socket Screw
圓頭內六角螺絲 M3x10mm

Head Stopper
旋翼頭制動器

M4 Nut
M4防鬆螺帽

Collar
連桿套 ϕ 6x ϕ 4.85x3mm

Socket Screw
圓頭內六角螺絲 M4x8mm

Make sure the linkage rod A is completely fastened with main rotor grip arm integrated control link 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。

700FLH8A

Socket Screw
圓頭內六角螺絲(M4x8mm) x 2

Socket Collar Screw
圓頭內六角軸套螺絲(M4x24mm) x 1

Collar
連桿套(ϕ 6x ϕ 4.85x3mm) x 2

M4 Nut
M4防鬆螺帽 x 1

Elevator Ball Link
升降臂連桿頭 x 2

700E DFC Main Shaft
700E DFC 主軸 ϕ 12x194.1mm

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。

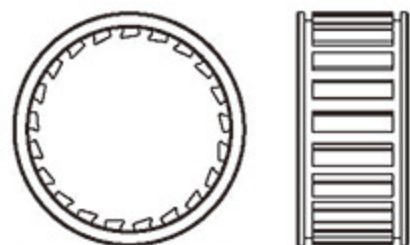
CAUTION
注意

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

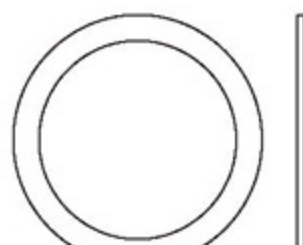
700NB9



Bearing
軸承 (φ 15x φ 21x4mm) x 2



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

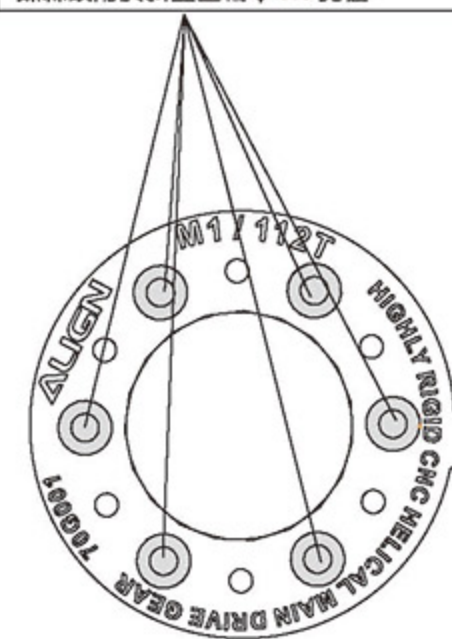


Spacer
700 單向墊片
φ 18x φ 22.7x0.7mm x 1



Washer
華司 φ 3x φ 4.8x0.6mm 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

Washer
華司
φ 3x φ 4.8x0.6mm

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

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

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

M1 Main Drive Gear
M1 斜主齒盤
112T

**M1 Autorotation
Tail Drive Gear**
M1 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
單向軸承上蓋
φ 21x φ 15.8x26mm

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**
單向軸承下座
φ 21x φ 6.5x33.1mm

Socket Screw
圓頭內六角螺絲
M2.5x8mm

700NB11

M4 Set Screw
M4 止洩螺絲 (M4x4mm) x 2

Clutch Nut
離合器齒輪螺帽 (φ 14x6mm) x 1

Bearing
軸承 (φ 5x φ 13x4mm) x 2

Bearing
軸承 (φ 10x φ 19x5mm) x 2

Socket Screw
圓頭內六角螺絲
M3x8mm

M3 Nut
M3 防鬆螺帽

700N DFC Hex Mounting Bolt
700N DFC 六角鉚柱
φ 2.5x60.5mm

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

Bearing
軸承
φ 10x φ 19x5mm

Starter Coupling
六角啟動頭
φ 8x φ 10x18mm

M4 Set Screw
M4 止洩螺絲
M4x4mm

Bearing
軸承
φ 5x φ 13x4mm

Clutch Nut
離合器齒輪螺帽
φ 14x6mm

CAUTION
注意

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

Clutch Bearing Block
離合器軸承座

Socket Screw
圓頭內六角螺絲
M3x8mm

M3 Nut
M3 防鬆螺帽

M1 Clutch Gear
M1 離合器齒輪
14T (φ 7x φ 16.43x40.9mm)

Governor Sensor
定速感應磁鐵

Clutch Bell
離合器輪
φ 56x φ 51x20.5mm

Bearing
軸承
φ 5x φ 13x4mm

Clutch Liner
離合器來令片
1x9x158mm

Clutch/Start Shaft
啟動軸
φ 12x φ 5x82mm

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

700NB4B

Socket Screw
圓頭內六角螺絲 (M3x8mm) x 2

M3 Nut
M3 防鬆螺帽 x 2

700NB7A

Socket Button Head Collar Screw
半圓頭內六角軸套螺絲 (M3x8mm) x 4

Socket Screw
圓頭內六角螺絲 (M3x6mm) x 2

700NB12A

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

Socket Screw
圓頭內六角螺絲 (M3x12mm) x 2

700NB7

Socket Screw
圓頭內六角螺絲 (M3x14mm) x 2

Tail Control Arm Aluminum Sleeve
尾控制臂鋁套 (φ 3x φ 4.4x3mm) x 1

Bearing
軸承 (φ 3x φ 6x2.5mm) x 2

Socket Button Head Screw
半圓頭內六角螺絲 (M3x12mm) x 1

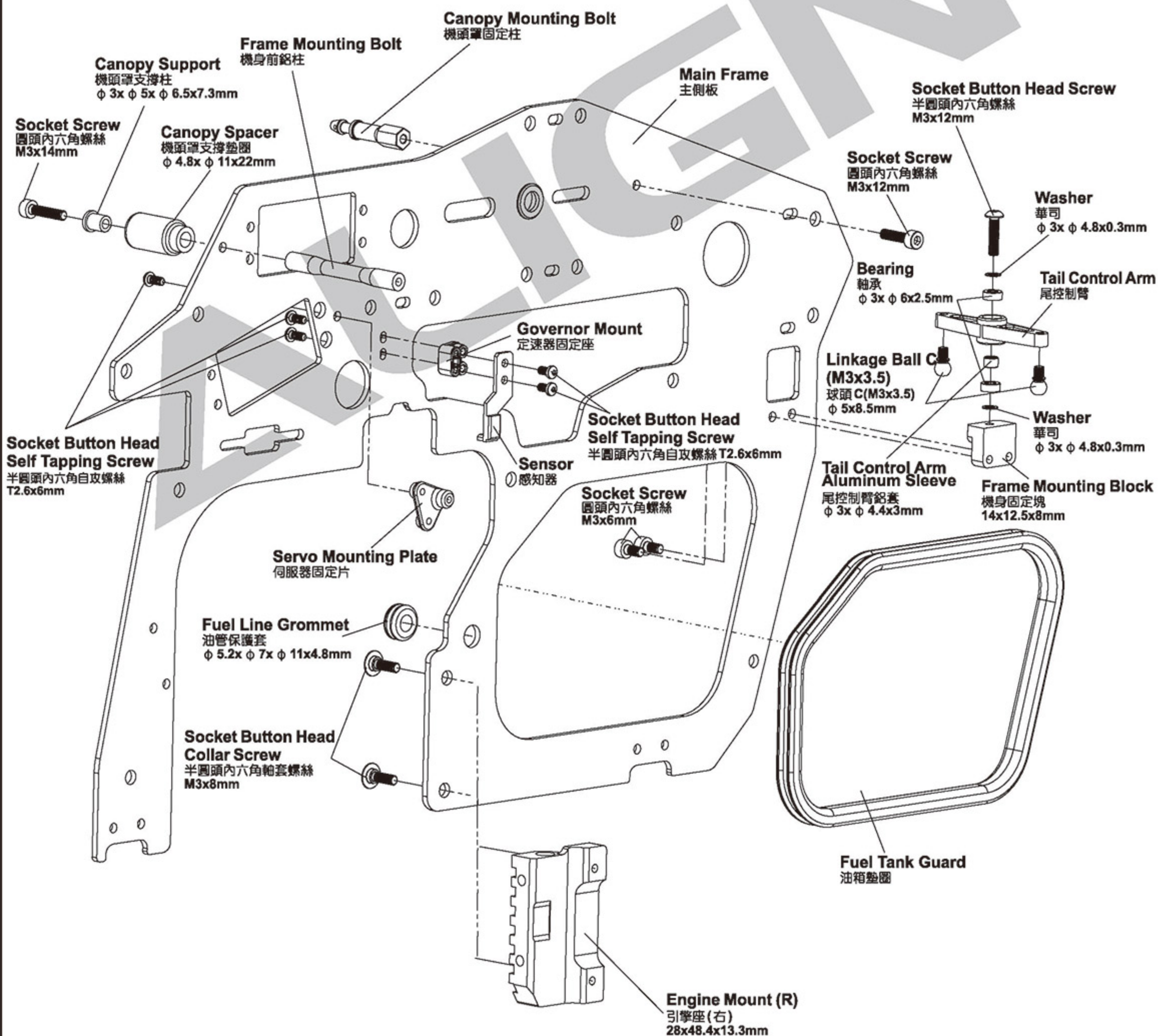
Linkage Ball C (M3x3.5)
球頭 C (M3x3.5) (φ 5x8.5mm) x 2

Washer
華司 (φ 3x φ 4.8x0.3mm) x 2

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

CAUTION
注意

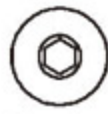
Already assembled by Factory.
Before flying, please check if the screws are fixed with glue.
原廠組裝完成品，每一次飛行前請先確認螺絲是否已上膠不會鬆動。



700NB12A



M3 Set Screw
M3 止洩螺絲 (M3x15mm) x 2



Socket Button Head Collar Screw
半圓頭內六角軸套螺絲 (M3x8mm) x 6

700NB7



Socket Button Head Collar Screw
半圓頭內六角軸套螺絲 (M3x8mm) x 8



Bearing
軸承 (φ 12x φ 24x6mm) x 2

700NB7A



Socket Button Head Collar Screw
半圓頭內六角軸套螺絲 (M3x8mm) x 8

700NB4B



Socket Button Head Collar Screw
半圓頭內六角軸套螺絲 (M3x8mm) x 4



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

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。

Governor Mount
定速器固定座

Main Frames
主側板

Sensor
感知器

1mm

RCE G-600 Magnet
(Governor Sensor)
RCE G-600 定速器感應磁鐵

Socket Button Head Collar Screw
半圓頭內六角軸套螺絲
M3x8mm

Main Shaft Block
主軸固定座

Bearing
軸承
φ 12x φ 24x6mm

Switch Mount
側板開關補強片

Front Frame Mount
機身前固定座

Set Screw
止洩螺絲
M3x15mm

Rear Frame Brace
側板後補強片

Canopy Mounting Bolt
機頭罩固定柱

Receiver Mount
接收器座

Front Frame Brace
側板前補強片

Socket Button Head Collar Screw
半圓頭內六角軸套螺絲
M3x8mm

Hex Mounting Bolt
六角機身鋁柱
φ 5.5x47mm

Grommet
油箱接頭墊圈

Fuel Tank
透明油箱
φ 116.54x φ 107.43x80.5mm

Fuel Tube
油管
φ 2.5x φ 4.5x90mm

Fuel Tank Sinker
油管接頭

Fuel Tank Nipple
油箱接頭

700NB4B



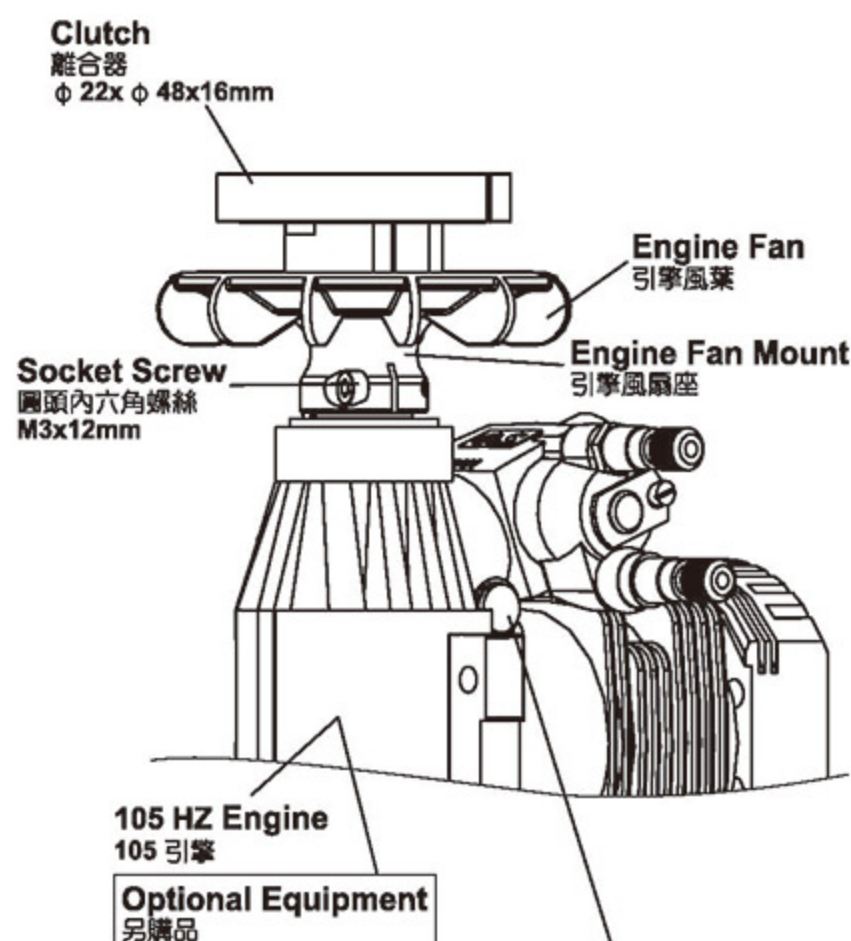
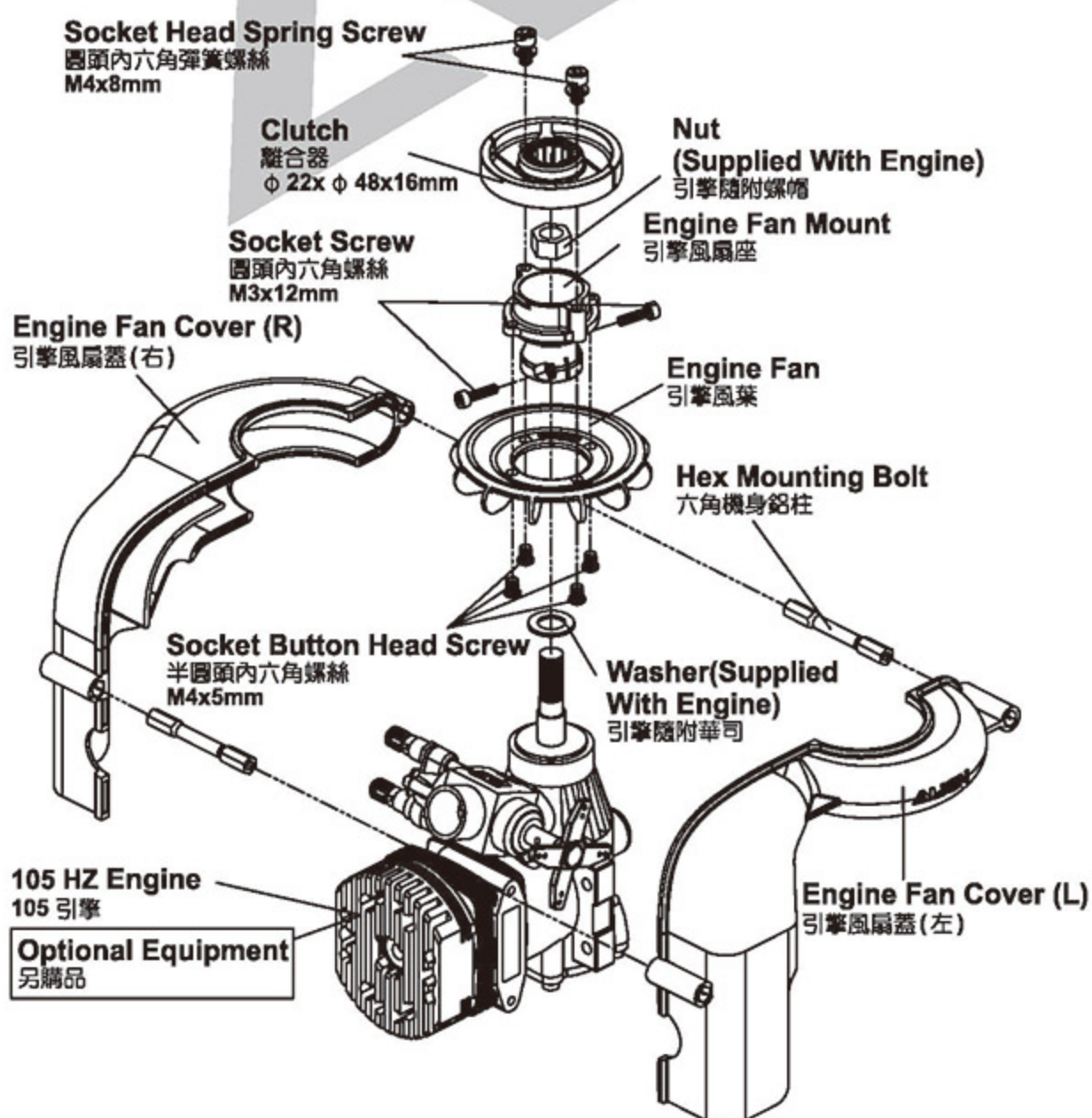
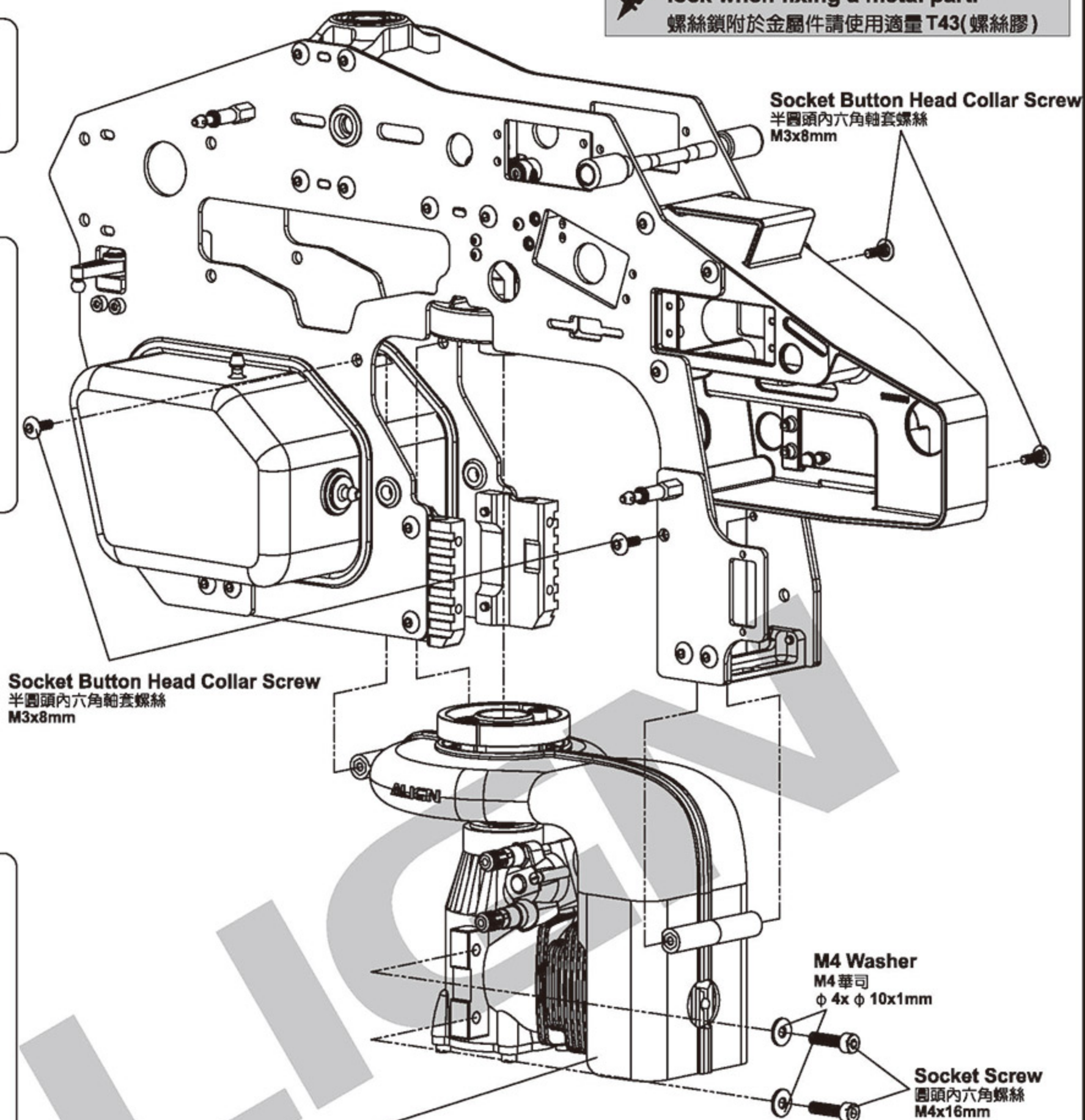
700NB7A



700NB11



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)



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。

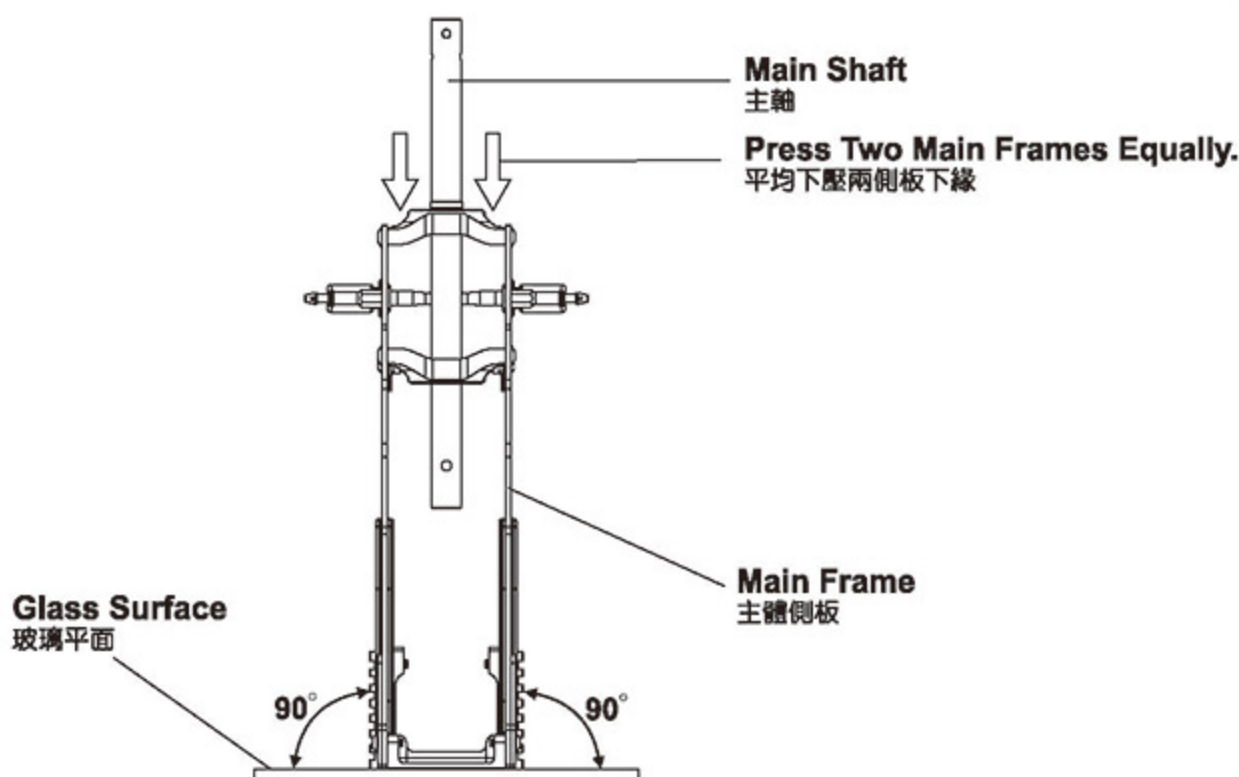


CAUTION 注意

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 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。

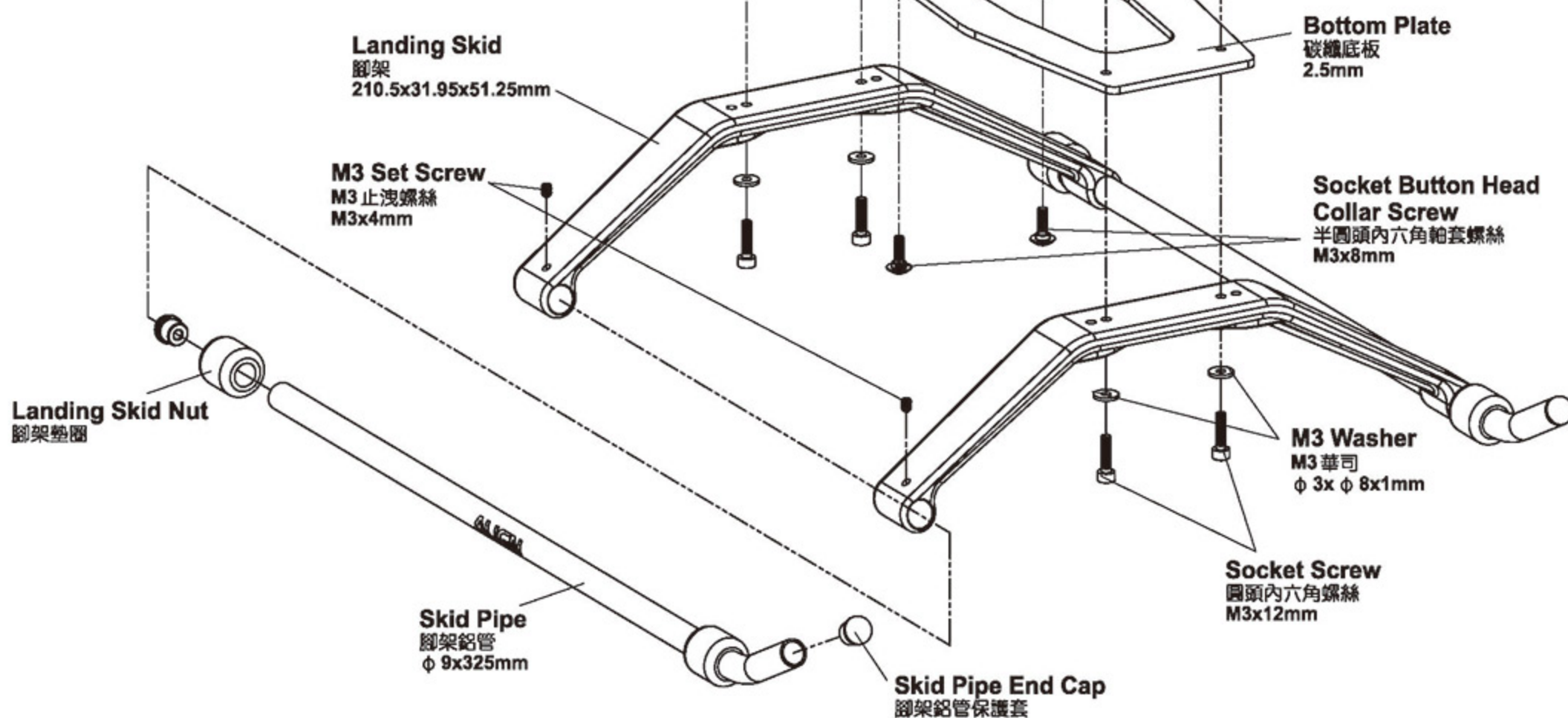
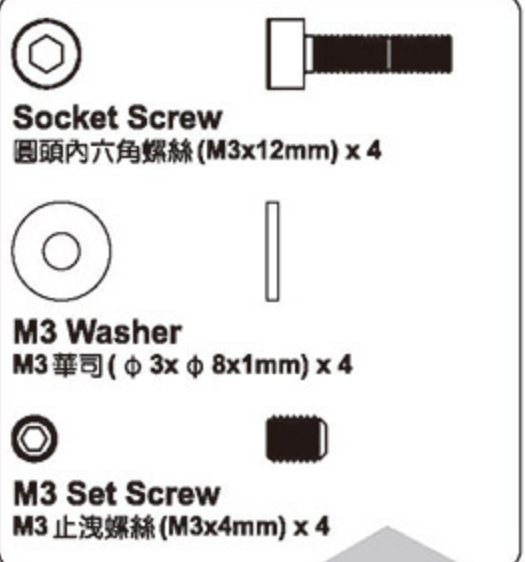


700NB7A



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)

700NG1



700NZ8

Linkage Ball C(M2x4)
球頭 C(M2x4) (φ 5x9mm) x 5

Socket Button Head Self Tapping Screw
半圓頭內六角自攻螺絲 (T2.6x14mm) x 8

M2 Nut
M2 螺帽 x 5

700NB12

Socket Button Head Screw
半圓頭內六角螺絲 (M2.5x8mm) x 4

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

700NZ7A

Ball Link
連桿頭 x 2

CAUTION
注意

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

CAUTION
注意

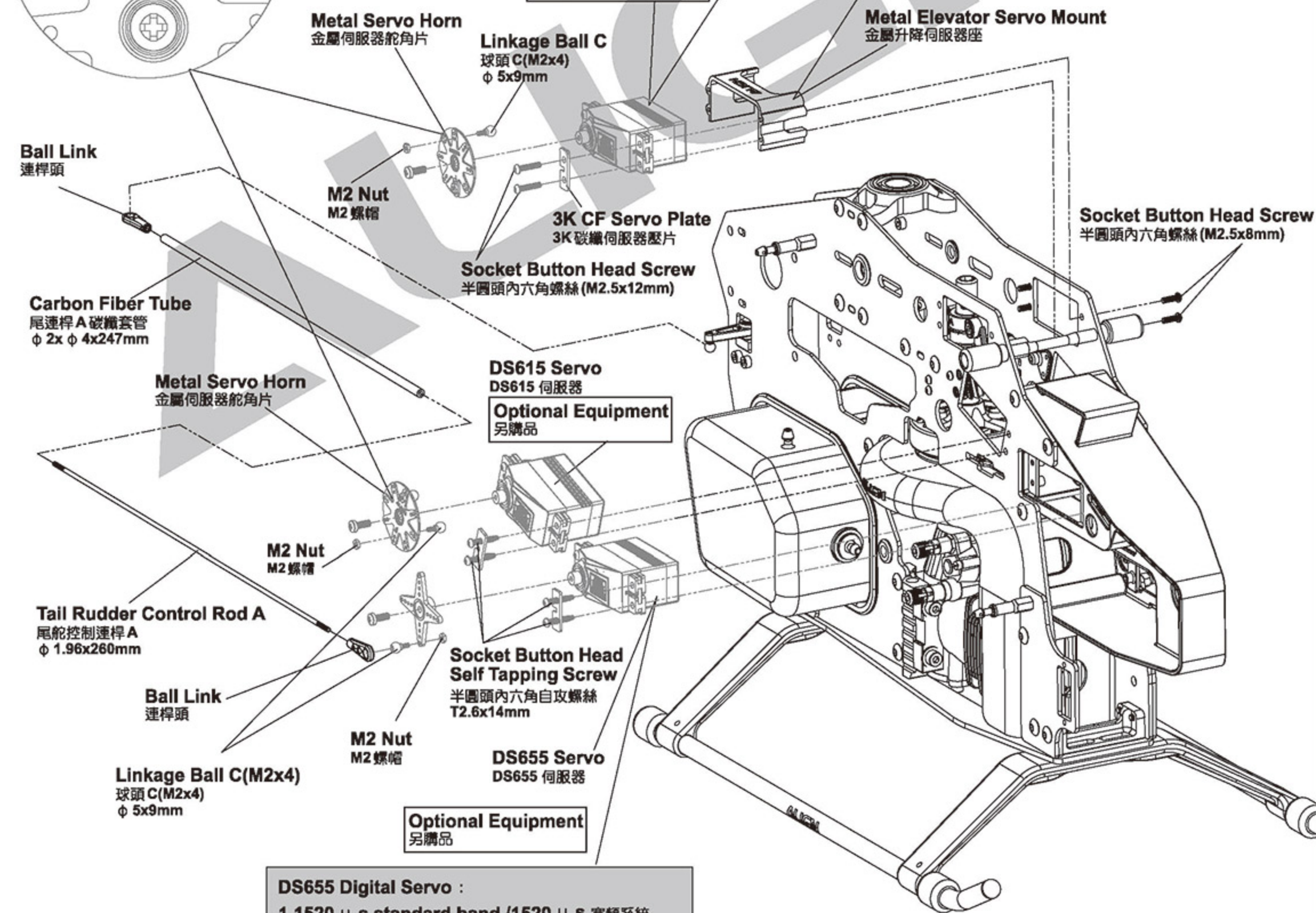
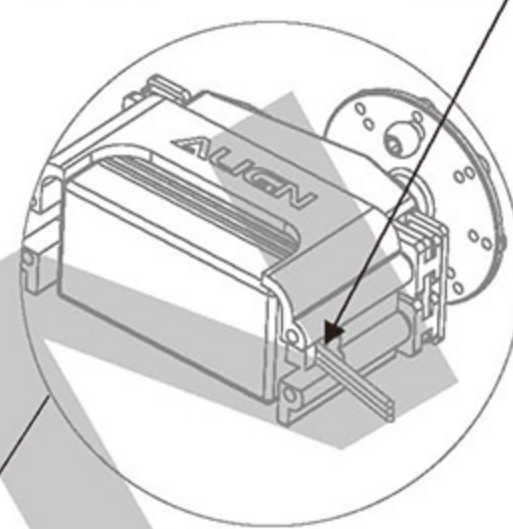
Flybarless system uses inner hole(A)
Flybar system uses outer hole(B)
無平衡翼系統使用內孔 (A)
有平衡翼系統使用外孔 (B)

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

To avoid crimping the elevator servo wire,
position the servo so that wire exit is at the
side with the deeper hole in the servo
mounting cage.

安裝伺服器時，請將訊號線出口對到升降伺服器座較深
缺口的一側，避免擠壓訊號線。



DS655 Digital Servo :

- 1.1520 μ s standard band /1520 μ s 寬頻系統
- 2.Stall torque/輸出扭力: 4.5kg.cm(4.8V)
5.5kg.cm(6.0V)
- 3.Motion speed/動作速度: 0.6sec/60° (4.8V)
0.5sec/60° (6.0V)
- 4.Dimension/尺寸: 40.1 x 20.1 x 37.3mm
- 5.Weight/重量: 56g

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)

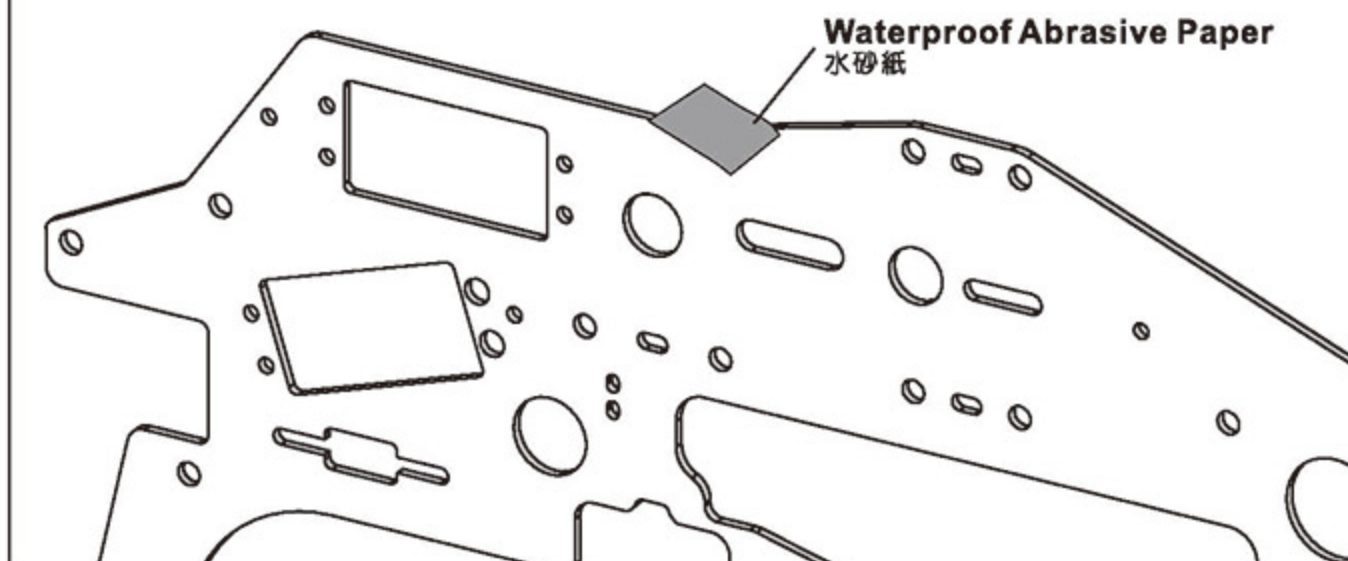
700NZ8



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

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

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



CAUTION
注意

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)



DS615 Servo
DS615 伺服器

Optional Equipment
另購品

Matal Servo Horn
金屬伺服器舵角片

CF Servo Plate
碳纖維伺服器壓片

Linkage Ball C(M2x4)
球頭C(M2x4)
 $\phi 5 \times 9 \text{mm}$

M2 Nut
M2螺帽

DS615 Servo
DS615 伺服器

Optional Equipment
另購品

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

700NB7



Bearing
軸承(φ5xφ9x3mm) x 4



Socket Button Head Screw
半圓頭內六角螺絲(M3x6mm) x 2



Socket Button Head Screw
半圓頭內六角螺絲(M3x8mm) x 2



Bearing
軸承(φ3xφ7x3mm) x 2



M4 Set Screw
M4止洩螺絲(M4x4mm) x 1



Control Shaft Collar
連動桿套圈(φ5xφ7.5x3mm) x 2



Collar
升降連動控制臂軸套(φ3xφ4.5x1.5mm) x 2



Linkage Ball C(M3x3.5)
球頭C(M3x3.5)(φ5x8.5mm) x 8

700NB7A



Socket Screw
圓頭內六角螺絲(M3x12mm) x 1



Washer
華司(φ3xφ5.5x0.3mm) x 2



Elevator Ball Link
升降臂連桿頭 x 1



Washer
華司(φ5xφ7x0.2mm) x 2



Washer
華司(φ5xφ7x0.5mm) x 2



CAUTION 注意
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)

700NZ7A



Ball Link
連桿頭 x 12

700NZ7

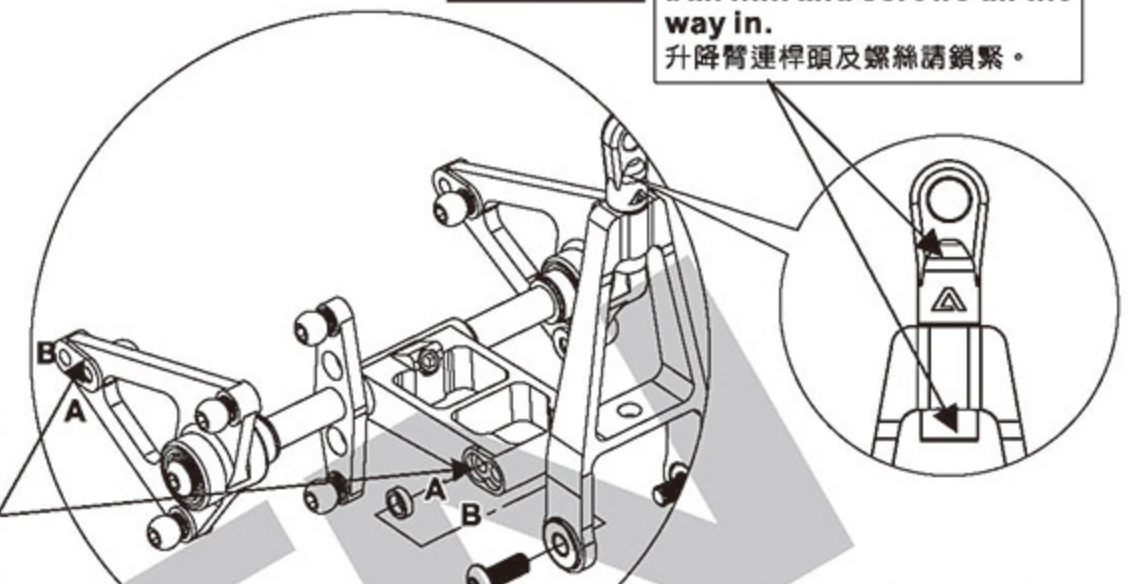
Linkage Rod(E)
連桿(E) φ1.96x72mm x 2

Linkage Rod(F)
連桿(F) φ1.96x87mm x 4

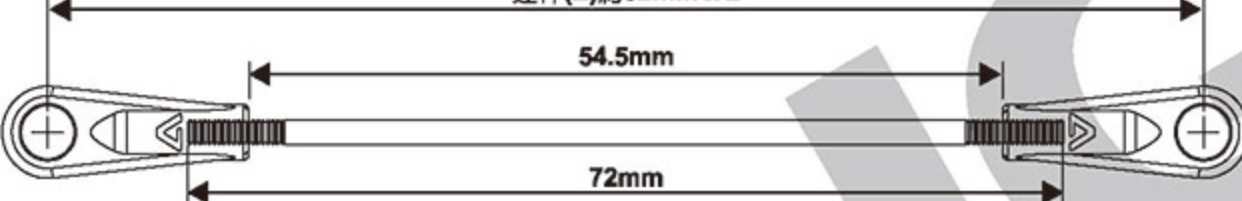
Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件請使用適量 T43(螺絲膠)



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。



Linkage Rod(E)
Approx. 92mm x 2
連桿(E)約92mm x 2



Elevator Ball Link
升降臂連桿頭

M4 Set Screw
M4止洩螺絲
M4x4mm

Elevator Lever
升降連動控制臂

Socket Screw
圓頭內六角螺絲
M3x12mm

Elevator Arm
升降控制臂

Linkage Ball C
球頭C(M3x3.5)
φ5x8.5mm

Bearing
軸承
φ3xφ7x3mm

Collar
升降連動控制臂軸套
φ3xφ4.5x1.5mm

Socket Button Head Screw
半圓頭內六角螺絲
M3x8mm

Control shaft
連動桿
φ4.7xφ5x84mm

Washer Spare For Gap Adjustment.
間隙調整用華司

Washer
華司
φ5xφ7x0.5mm

Linkage Ball C
球頭C(M3x3.5)
φ5x8.5mm

Aileron Lever
左右控制搖臂

Washer
華司
φ5xφ7x0.2mm

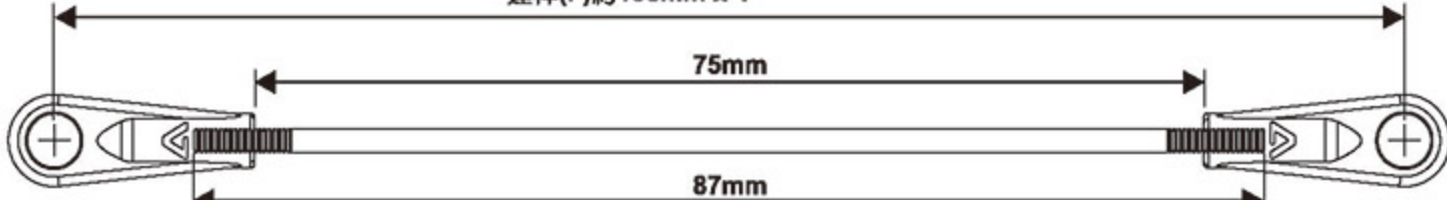
Control Shaft Collar
連動桿套圈
φ5xφ7.5x3mm

Bearing
軸承
φ5xφ9x3mm

Washer
華司
φ3xφ5.5x0.3mm

Socket Button Head Screw
半圓頭內六角螺絲
M3x6mm

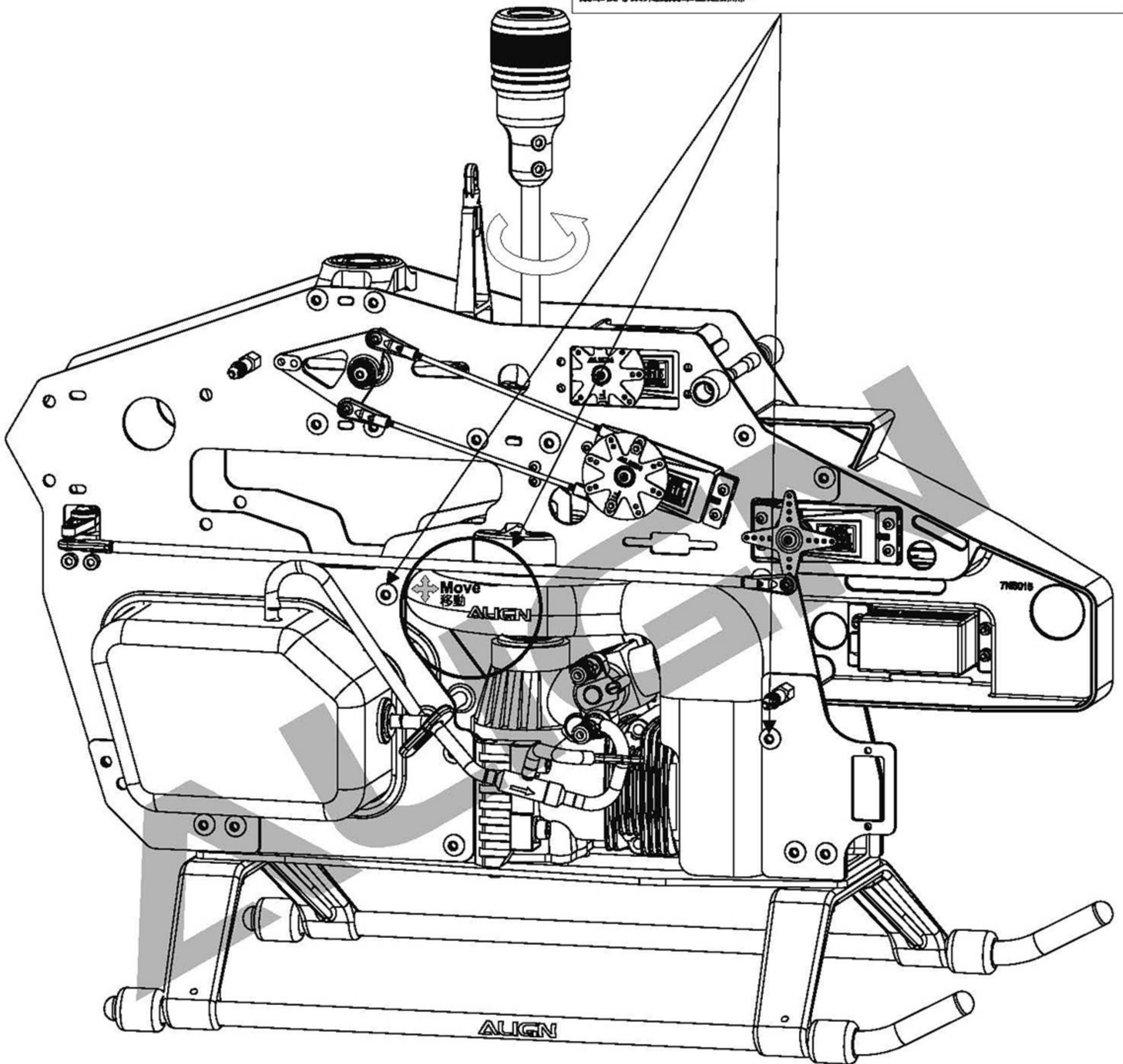
Linkage Rod(F) Approx. 108mm x 4
連桿(F)約108mm x 4



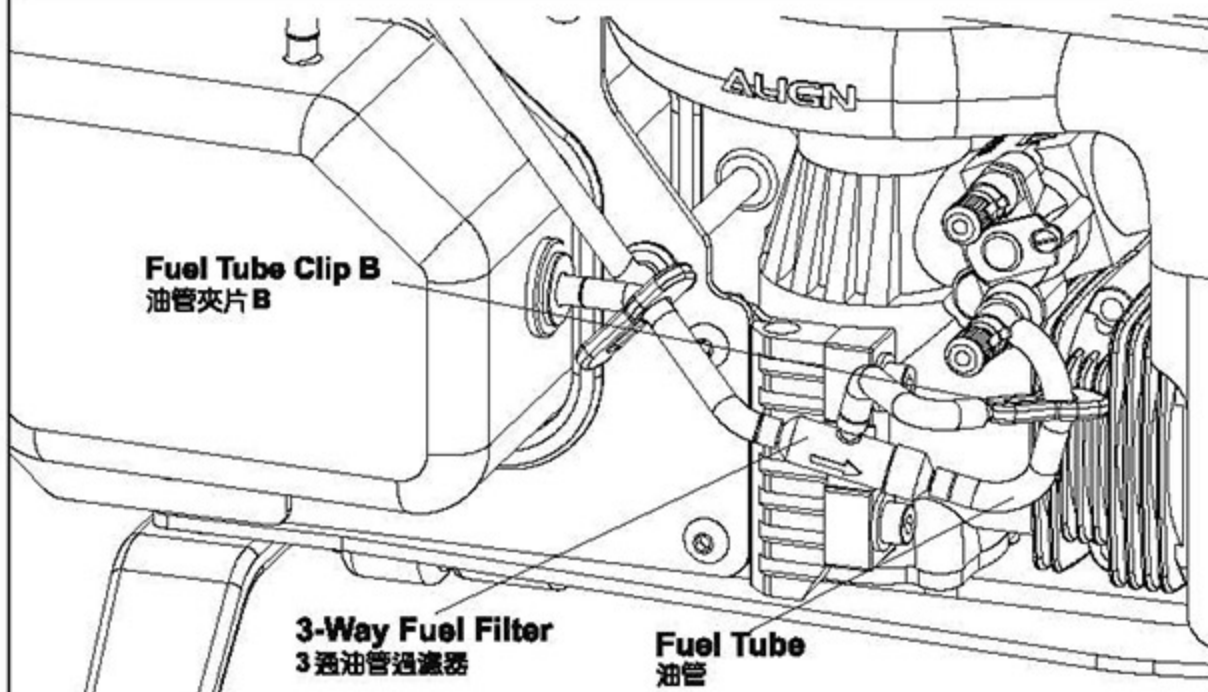
FAN COVER FIXING TIP 風扇罩固定要領

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

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



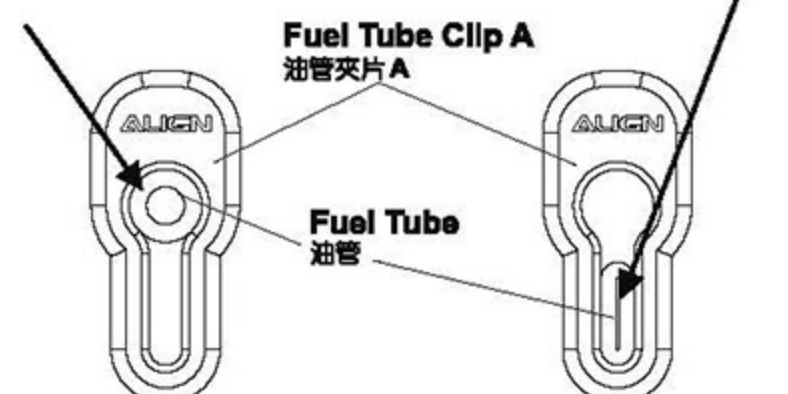
FUEL TUBE CLIP B ILLUSTRATION 油管夾片B使用說明



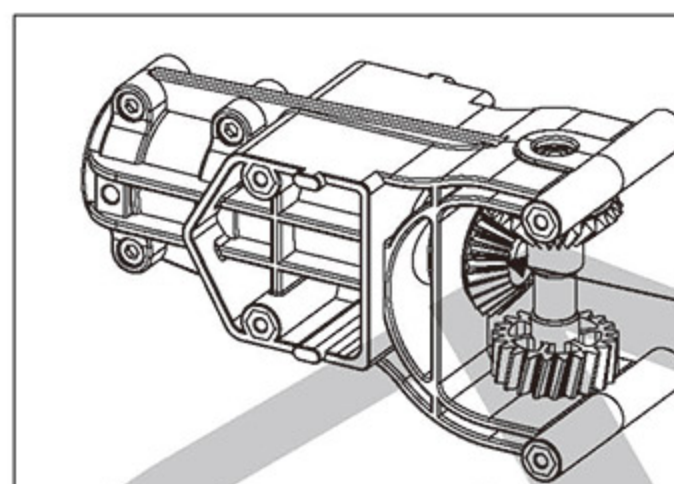
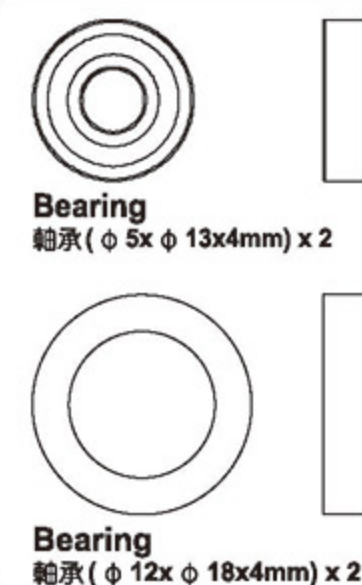
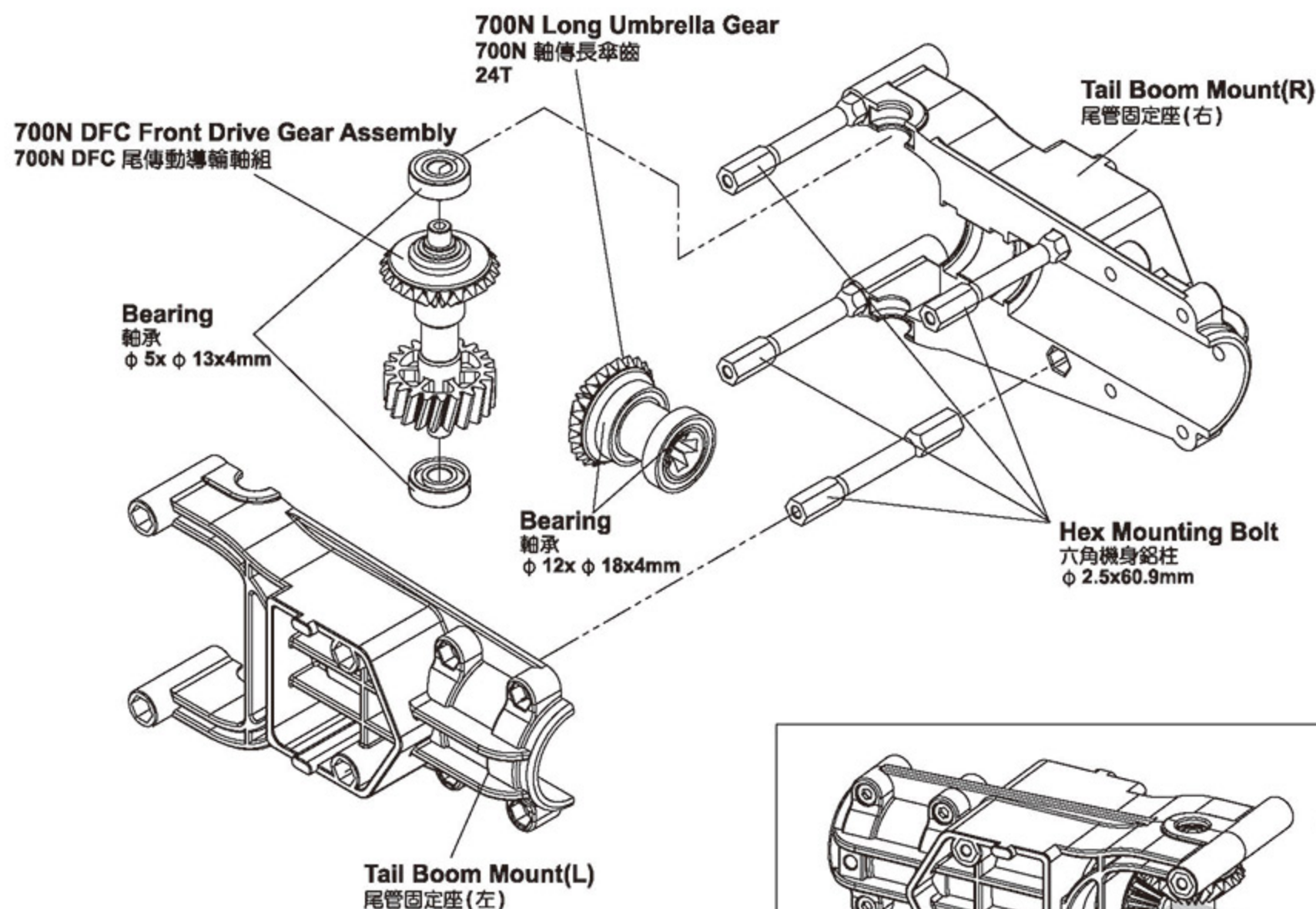
FUEL TUBE CLIP ILLUSTRATION 油管夾片使用方法

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

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



700NT4



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)

700NT6

Torque Tube Drive Tail Unit
尾軸傳尾齒箱
φ 21.6x φ 24x46mm

Collar
軸傳齒箱襯套
φ 12.4x φ 18x10mm

Bearing
軸承
φ 12x φ 18x4mm

Socket Screw
圓頭內六角螺絲
M3x6mm

Socket Collar Screw
圓頭內六角軸套螺絲
M3x22mm

Long Umbrella Gear
軸傳長傘齒
24T

Metal Plate (L)
尾齒箱左側板
φ 12x19x37.5mm

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

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

Socket Screw
圓頭內六角螺絲
M3x6mm

Metal Plate (R)
尾齒箱右側板
φ 12x19x37.5mm

Bearing
軸承
φ 6x φ 12x4mm

Tail Rotor Shaft Assembly
尾橫軸組

Socket Collar Screw
圓頭內六角軸套螺絲 (M3x6mm) x 4

Socket Button Head Screw
半圓頭內六角螺絲 (M2.5x6mm) x 1

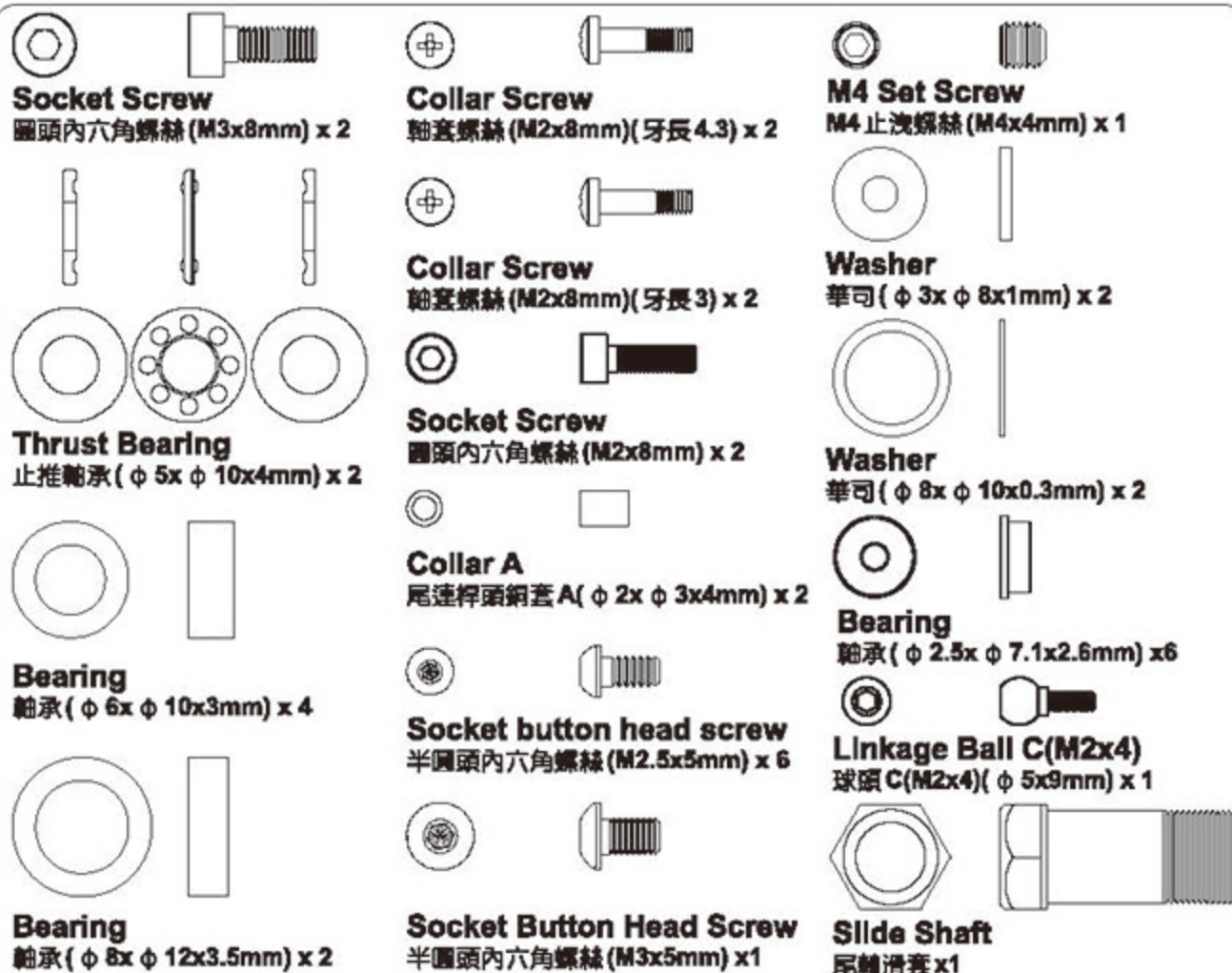
Socket Collar Screw
圓頭內六角軸套螺絲 (M3x22mm) x 1

Bearing
軸承 (φ 6x φ 12x4mm) x 2

Bearing
軸承 (φ 12x φ 18x4mm) x 2

Control Arm Mounting Bolt
尾控制臂固定座
13x13x6mm

700NT6



700NT21



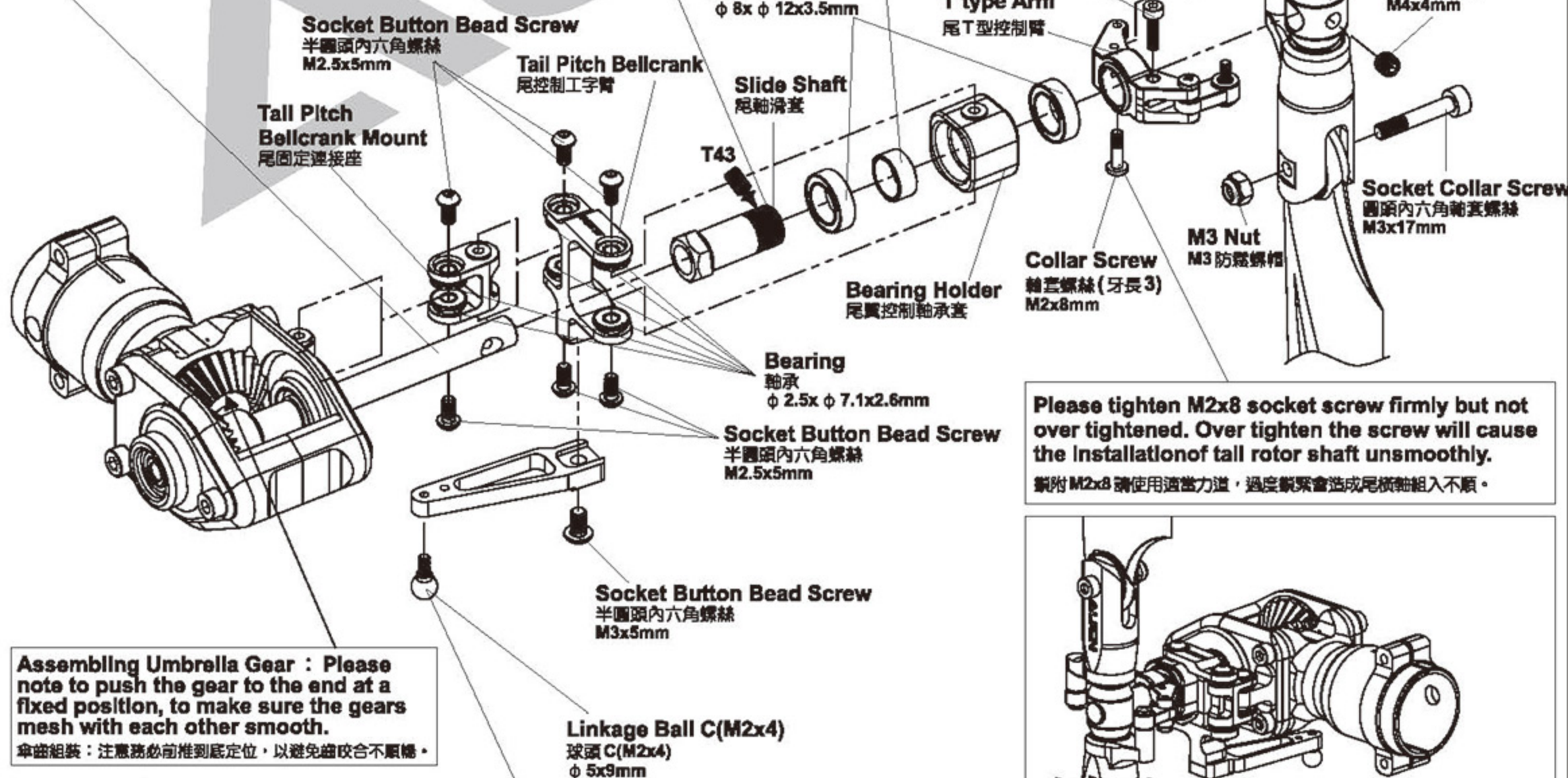
Apply a little amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件時使用適量 T43 (螺絲膠)



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



Aim tail rotor hub at the concave of tail rotor shaft and fix it, please apply a little glue on the set screw.
尾旋翼 T 型座瞄準尾旋翼軸的凹刻並鎖上，請確認止洩螺絲上膠。



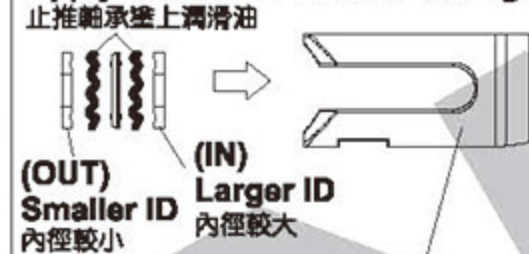
Assembling Umbrella Gear : Please note to push the gear to the end at a fixed position, to make sure the gears mesh with each other smooth.
傘齒組裝：注意務必前推到定位，以避免齒咬合不順暢。



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



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



3K CF Tall Blade
3K 碳纖維旋翼

Socket Collar Screw
圓頭內六角軸套螺絲 (M3x17mm)

M3 Nut
M3 防鬆螺帽

Socket Collar Screw
圓頭內六角軸套螺絲 (M3x8mm)

Washer
華司 (φ 3x φ 8x1mm)

Thrust Bearing
止推軸承 (φ 5x φ 10x4mm)

Washer
華司 (φ 8x φ 10x0.3mm)

Tall Rotor Holder
尾旋翼夾座

Bearing
軸承 (φ 6x φ 10x3mm)

Collar Screw
軸套螺絲 (牙長 4.3) (M2x8mm)

Collar A
尾連桿頭鋼套 A (φ 2x φ 3x4mm)

Control Link
尾控制連桿頭

Socket Screw
圓頭內六角螺絲 (M2x8mm)

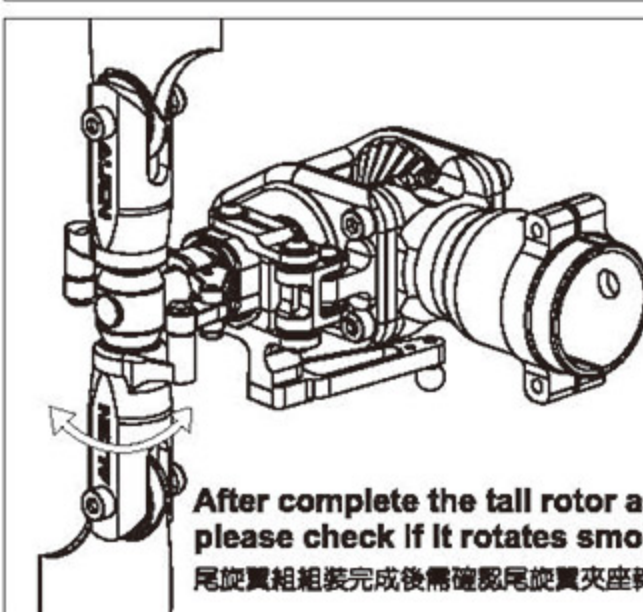
T type Arm
尾 T 型控制臂

Tall Rotor Hub
尾旋翼 T 型座 (φ 12x43.4mm)

M4 Set Screw
M4 止洩螺絲 (M4x4mm)

Socket Collar Screw
圓頭內六角軸套螺絲 (M3x17mm)

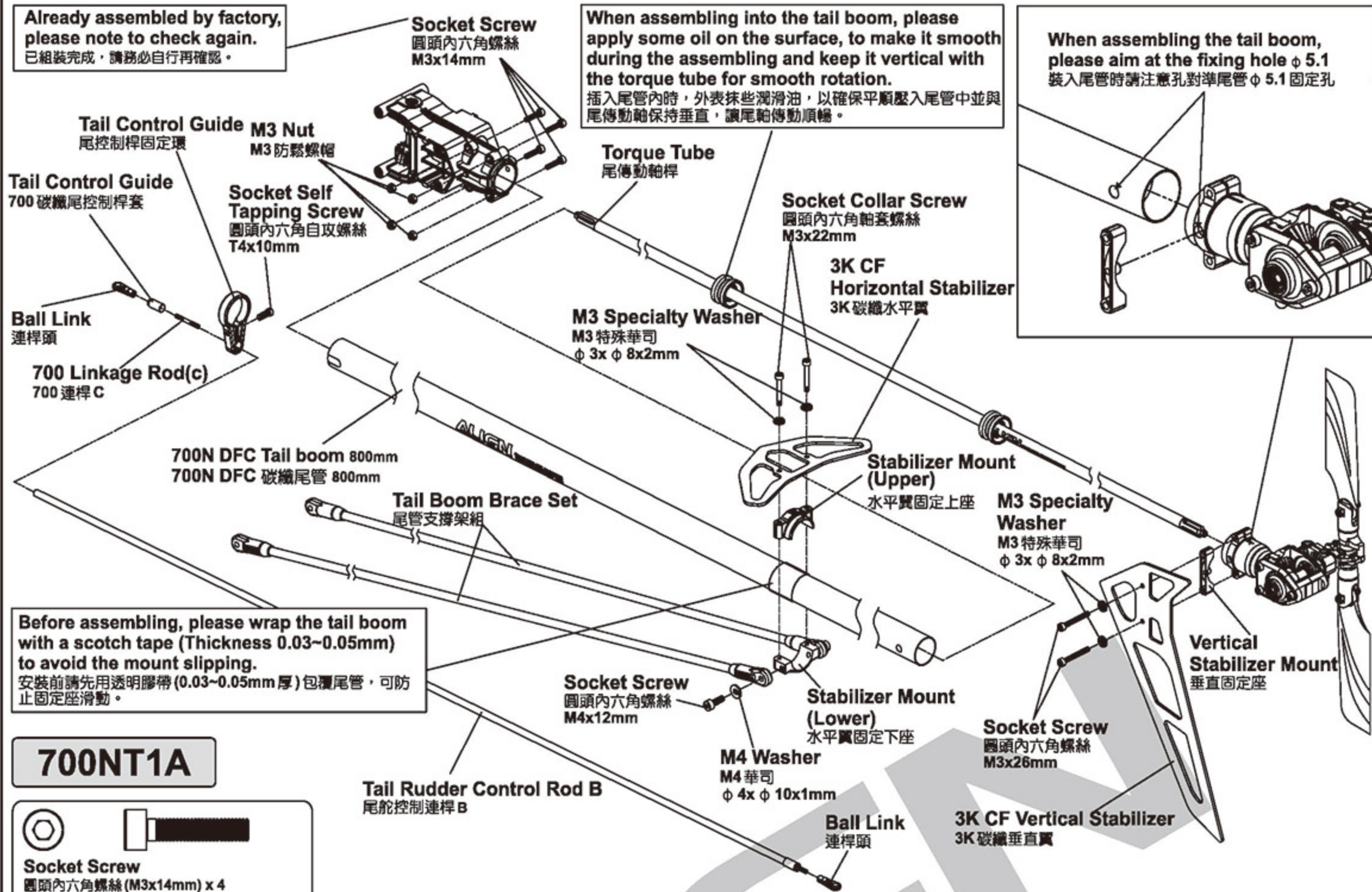
Please tighten M2x8 socket screw firmly but not over tightened. Over tighten the screw will cause the installation of tail rotor shaft unsmoothly.
鎖附 M2x8 請使用適量力道，過度緊緊會造成尾旋翼軸組入不順。



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

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，讓尾輪傳動順暢。

When assembling the tail boom,
please aim at the fixing hole $\phi 5.1$
裝入尾管時請注意孔對準尾管 $\phi 5.1$ 固定孔



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。

700NT1A



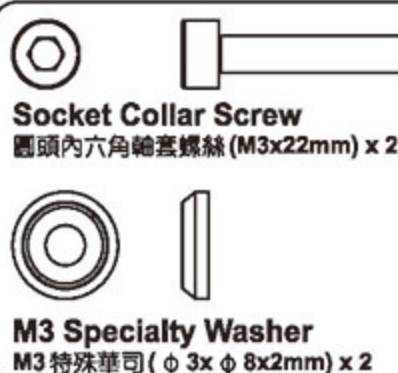
700NT2EA



700NT5



700NT2I

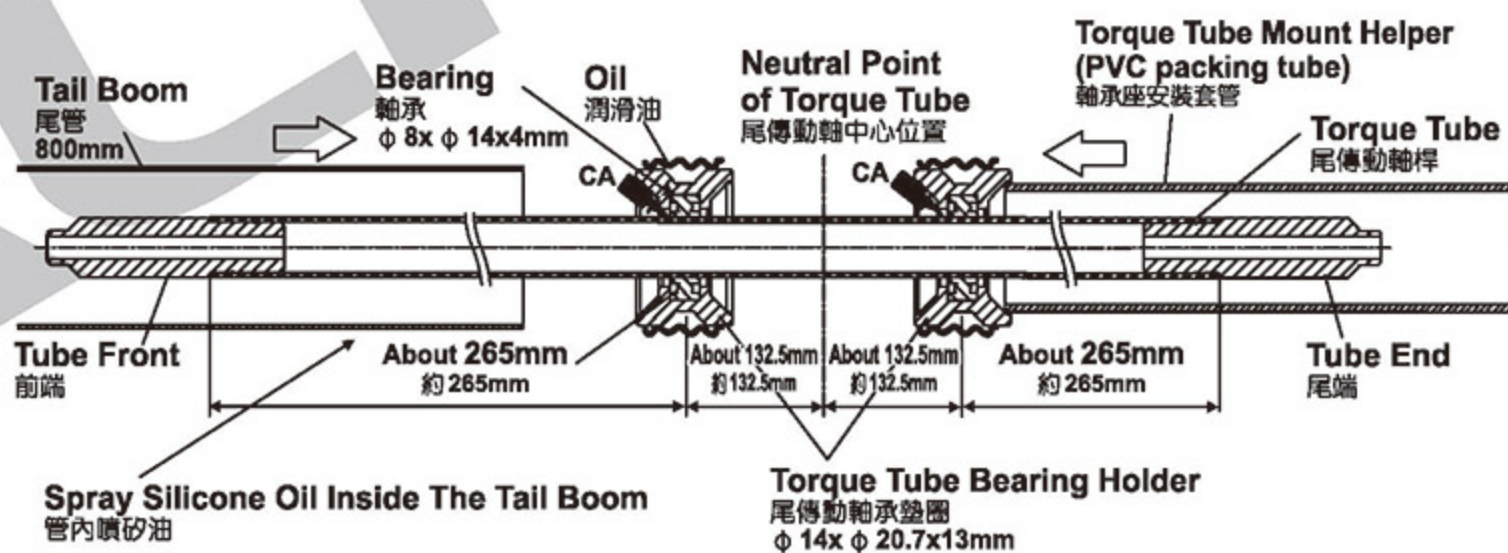


700NT6



TIP TO FIX THE TORQUE TUBE 傳動軸軸承固定位要領

Please apply some CA glue to fix bearing on the torque tube, avoid CA glue from the dust or may cause the bearing
stuck. When assembling into the tail boom, please apply some oil and use the attached torque tube mount helper to
press the bearing holder of the torque tube into the tail boom horizontally.
請以少量 CA 將軸承固定於尾傳動軸上，避免 CA 沾到軸承的防塵蓋而導致軸承卡死，插入尾管內時，尾傳動軸承座圈外表抹些潤滑油，利用隨附軸承座
安裝套管將尾傳動軸承座圈平行壓入尾管中不可歪斜。



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。



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。

700NT1A



700NB7



700NZ7

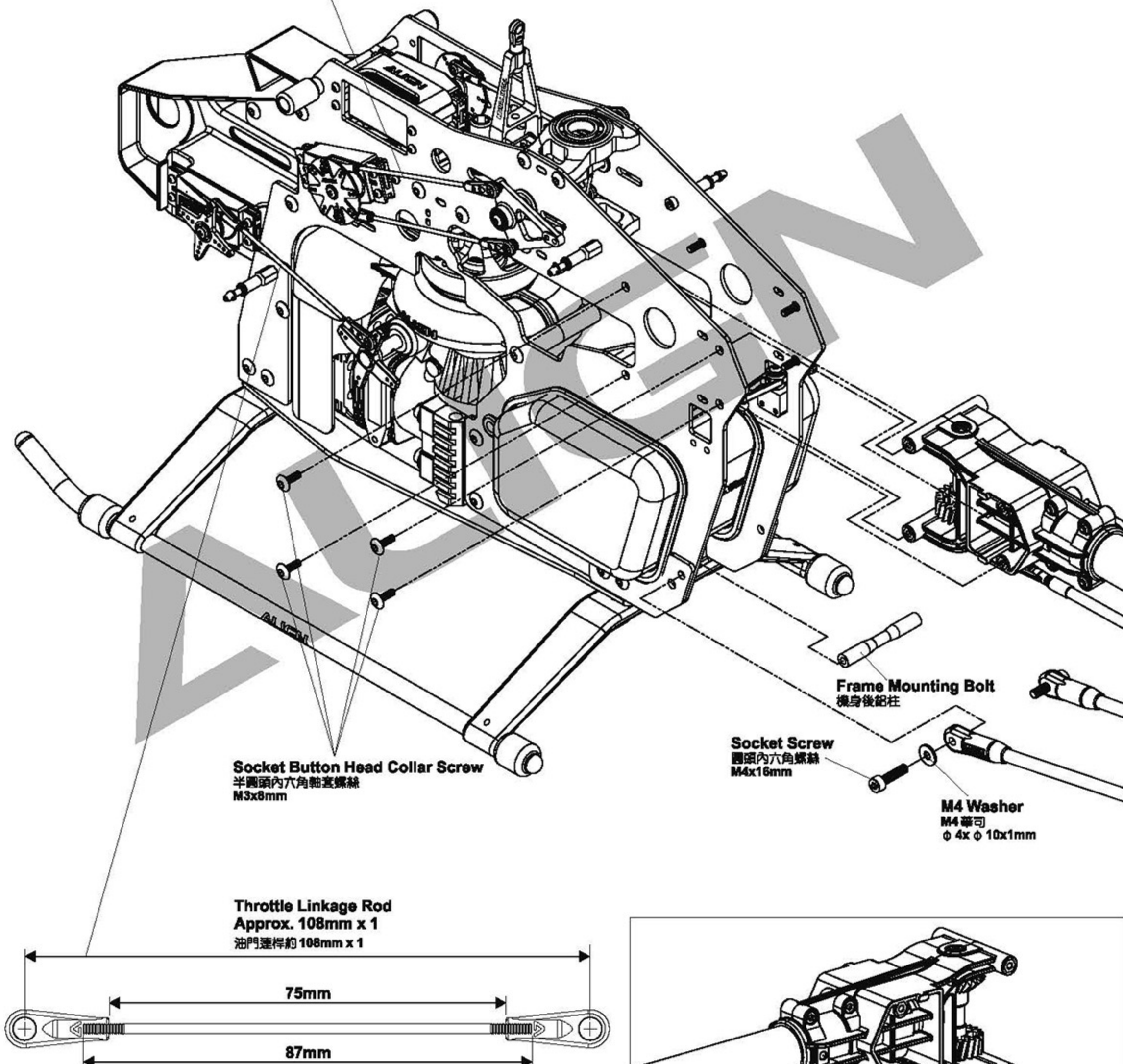


700NZ7A

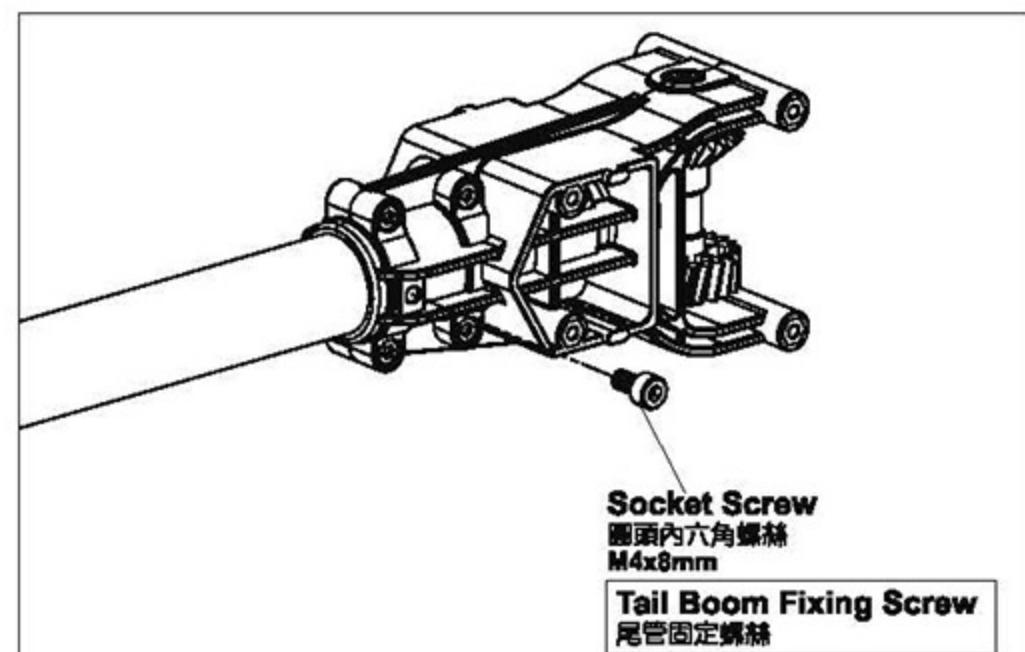


Please assemble the F linkage rods inside the servo horns to avoid any interference caused by the canopy.
F 連桿請裝於伺服臂內側確保動作時不碰觸機頭罩

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)



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。



700FLH8A



M5 Nut
M5 防鬆螺帽 x 2



Socket Collar Screw
圓頭內六角軸套螺絲 (M5x32mm) x 2

700NZ7A



Elevator Ball Link
升降臂連接頭 x 4



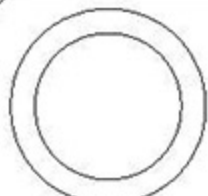
Collar
連桿套
($\phi 6 \times \phi 4.85 \times 3 \text{mm}$) x 4

700NZ7

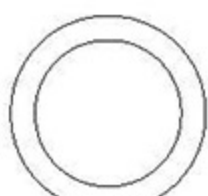


800E DFC Linkage Rod(b)
800E DFC 連桿 (B) (M3x47mm) x 2

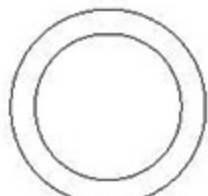
700NH10



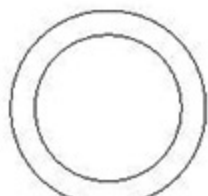
Main Shaft Spacer(1)
主軸墊片 (1) ($\phi 12 \times \phi 16 \times 1 \text{mm}$) x 1



Spare Part:
Main Shaft Spacer(1.2)
備品：主軸墊片 (1.2)
($\phi 12 \times \phi 16 \times 1.2 \text{mm}$) x 1



Spare Part:
Main Shaft Spacer(0.8)
備品：主軸墊片 (0.8)
($\phi 12 \times \phi 16 \times 0.8 \text{mm}$) x 1



Spare Part:
Main Shaft Spacer(0.5)
備品：主軸墊片 (0.5)
($\phi 12 \times \phi 16 \times 0.5 \text{mm}$) x 1

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。

Socket Collar Screw
圓頭內六角軸套螺絲
M5x32mm

700 Carbon
Fiber Blades
700 碳纖維主旋翼

M5 Nut
M5 防鬆螺帽

Standard Equipment :
Main shaft spacer(1)
標準品：主軸墊片 (1)
 $\phi 12 \times \phi 16 \times 1 \text{mm}$

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) $\phi 12 \times \phi 16 \times 1.2 \text{mm}$
主軸墊片 (0.8) $\phi 12 \times \phi 16 \times 0.8 \text{mm}$
主軸墊片 (0.5) $\phi 12 \times \phi 16 \times 0.5 \text{mm}$

DFC Linkage Rod(B)
Approx. 67.2mm x 2
DFC 連桿 (B) 約 67.2mm x 2

700 CNC
Main Drive Gear Set
700 CNC 斜主齒輪

Socket Screw
圓頭內六角軸套螺絲
M4x27mm

M4 Nut
M4 防鬆螺帽

700NB9



M4 Nut
M4 防鬆螺帽 x 1



Socket Collar Screw
圓頭內六角軸套螺絲 (M4x27mm) x 1

Main shaft
主軸

Swashplate Leveler
十字盤調整器

Horizontally Level
水平

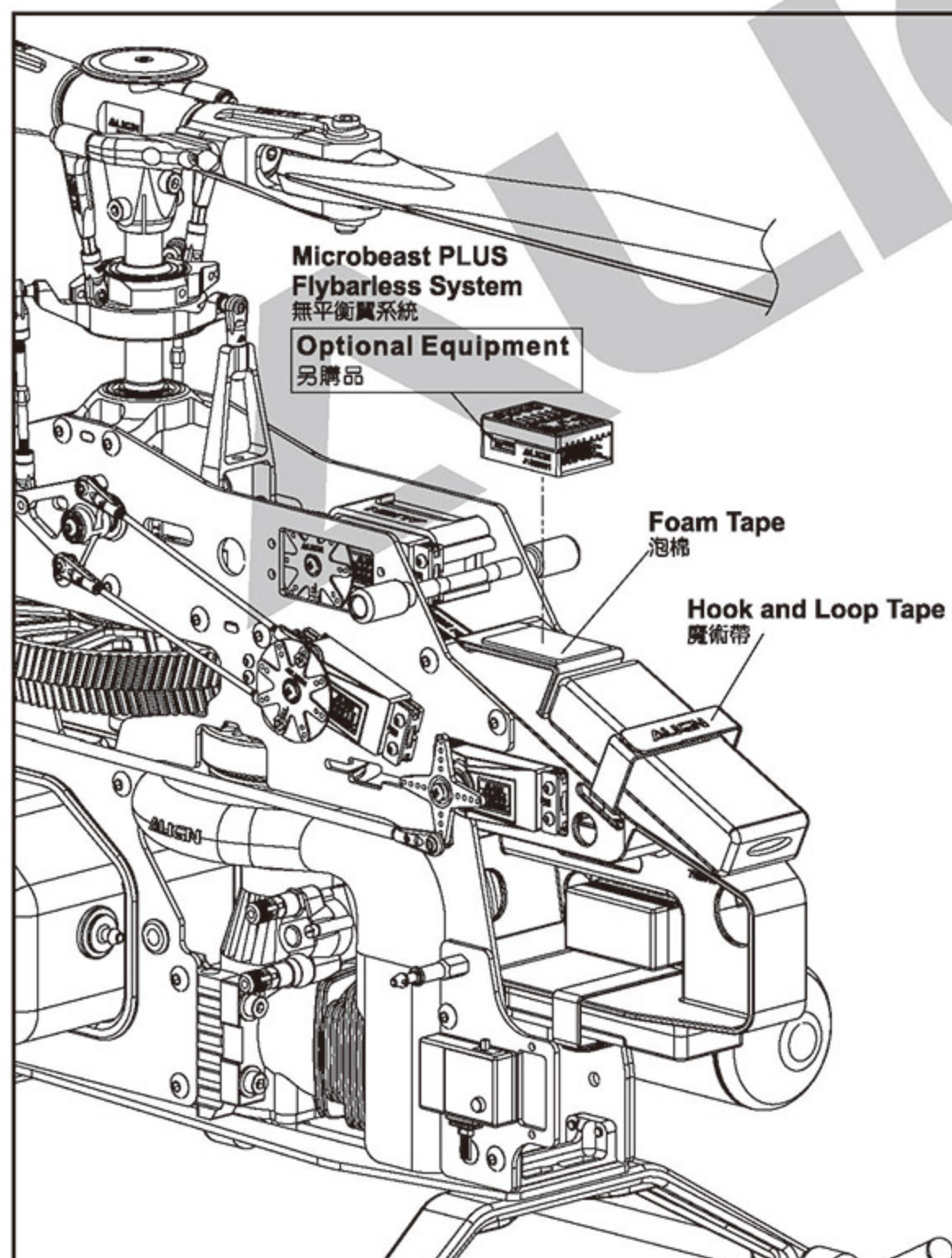
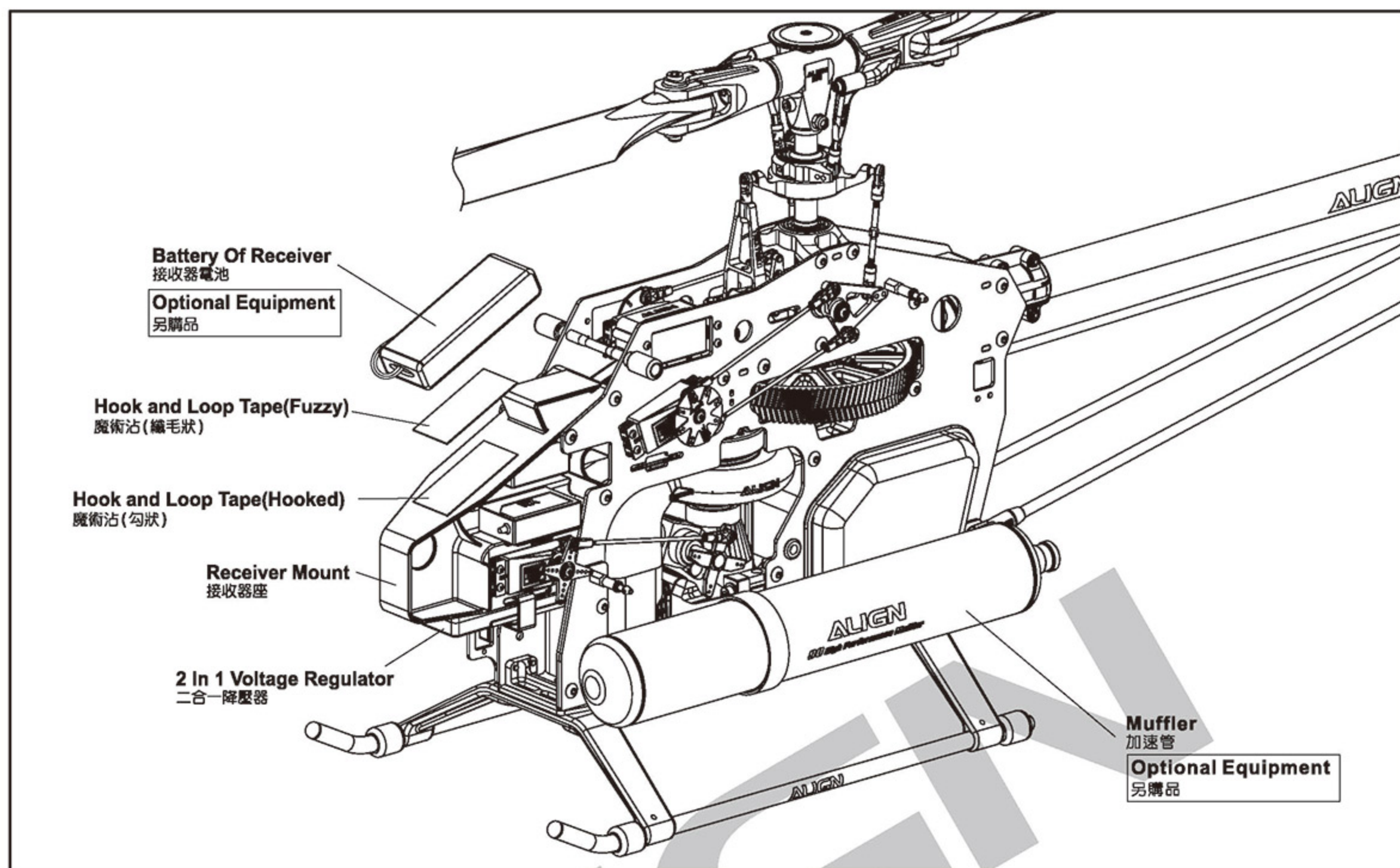
Swashplate
十字盤



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。

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)



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

The Microbeast PLUS unit can be mounted in nearly all possible orientations. The only restriction is that the plug connectors have to point in or against flying direction and the edges of the unit must be parallel to the rotation axis.

You have to choose whether MICROBEAST PLUS is mounted horizontally (printed surface 90 degrees to the main shaft) or vertically (printed surface in parallel with the main shaft).

Microbeast PLUS可以安裝在機體的任何位置。唯一的限制是接線口必須和飛行方向一致。

您可以選擇水平安裝（印刷面與主軸呈垂直90度）、或垂直安裝（印刷面與主軸呈平行）。

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

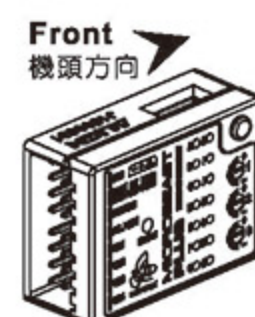
LED指示燈狀態顯示安裝方向：

Status-LED Status-LED燈	Mounting orientation 安裝方向
Blue 藍色	Horizontal (Flat) * 水平(平) *
Red 紅色	Vertical (on The Side) 垂直(側面)

* Factory Setting * 出廠預設值



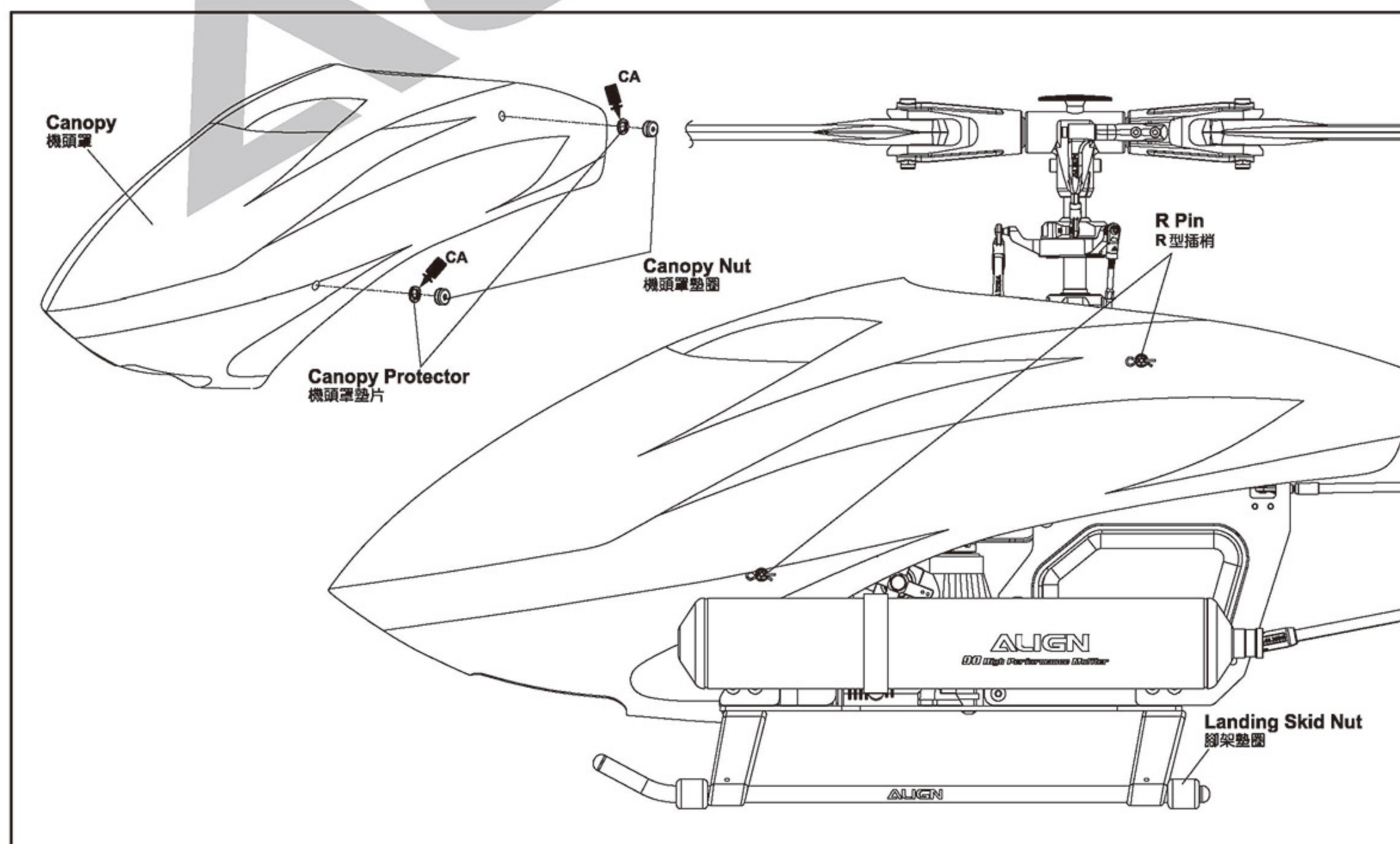
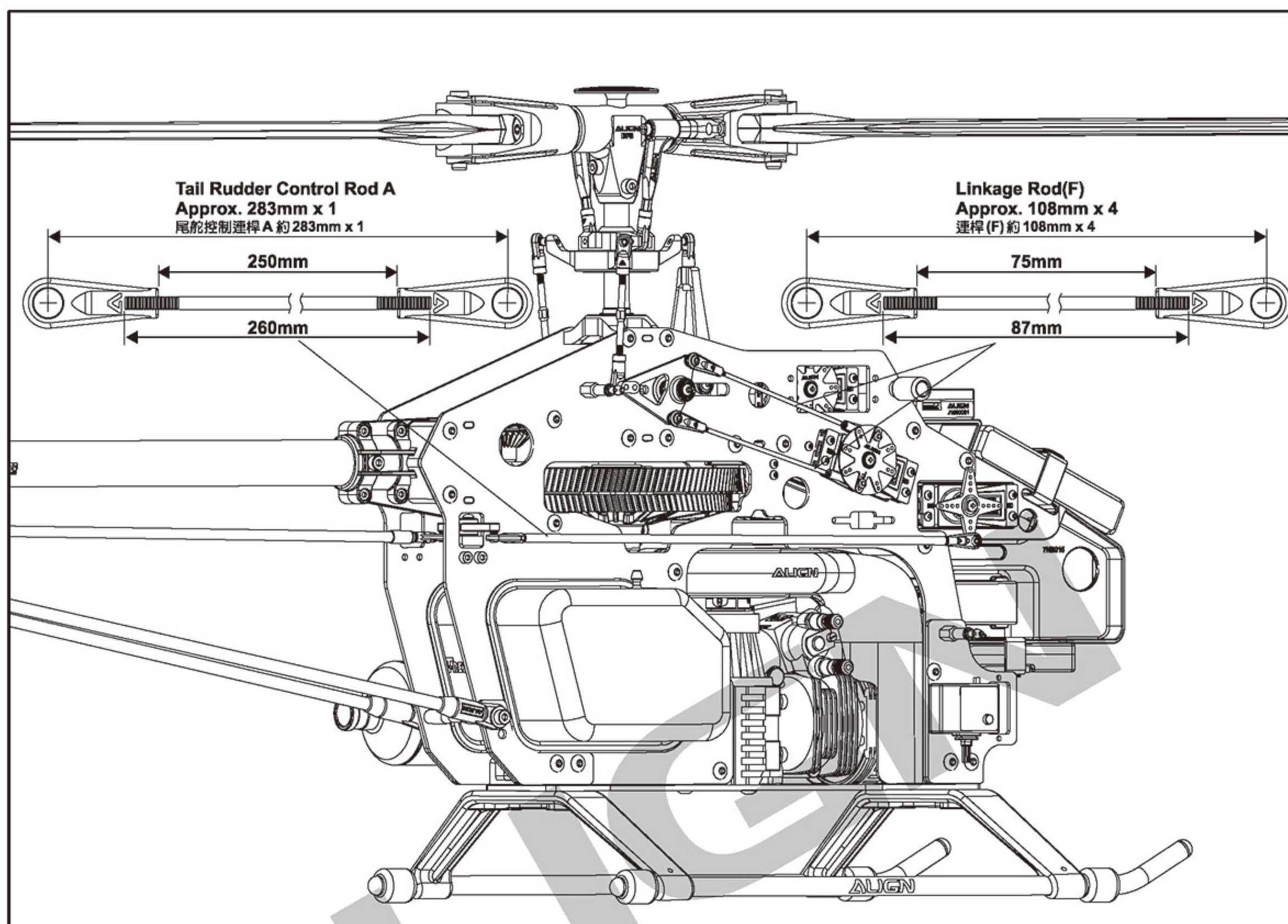
Status-LED: Blue
Status-LED燈：藍色

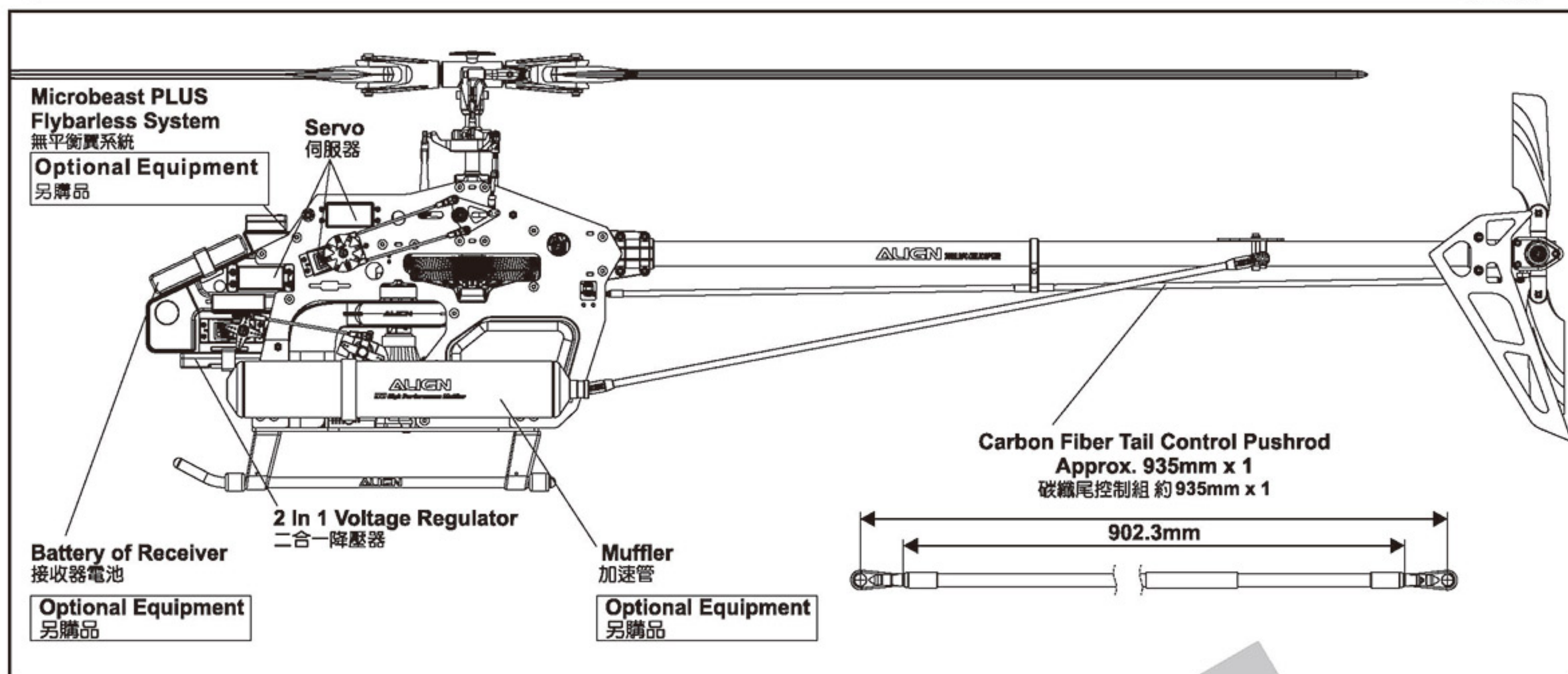


Status-LED: Red
Status-LED燈：紅色



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/>





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

ALIGN helicopter must equip with Flybarless System, please refer to ALIGN Helicopter standard equipment for flight and setup instruction in this manual.

ALIGN helicopter須搭配無平衡翼系統，請使用ALIGN直昇機標準配件與飛行操作、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 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, assembly, 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

If you use MICROBEAST PLUS Flybarless System for ALIGN helicopter, make sure to update to the latest version and news. Please refer to V3.2.x and V4.1.5 instruction manual for operating and setting. Or you can also link to BEASTX MICROBEAST PLUS/HD website for more information.

提醒您，若使用MICROBEAST PLUS無平衡翼系統時，請務必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V4.1.5版使用說明書。您也可以連結至BEASTX MICROBEAST PLUS/HD官網查詢。



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/>

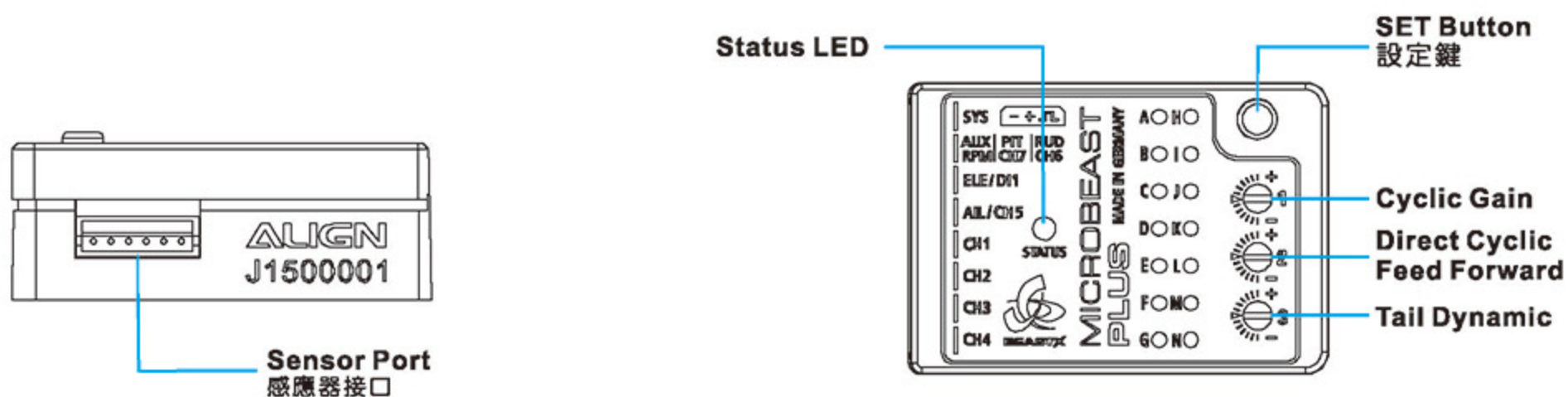


MICROBEAST PLUS
6-AXIS MEMS SENSOR SYSTEM FOR RC MODELS

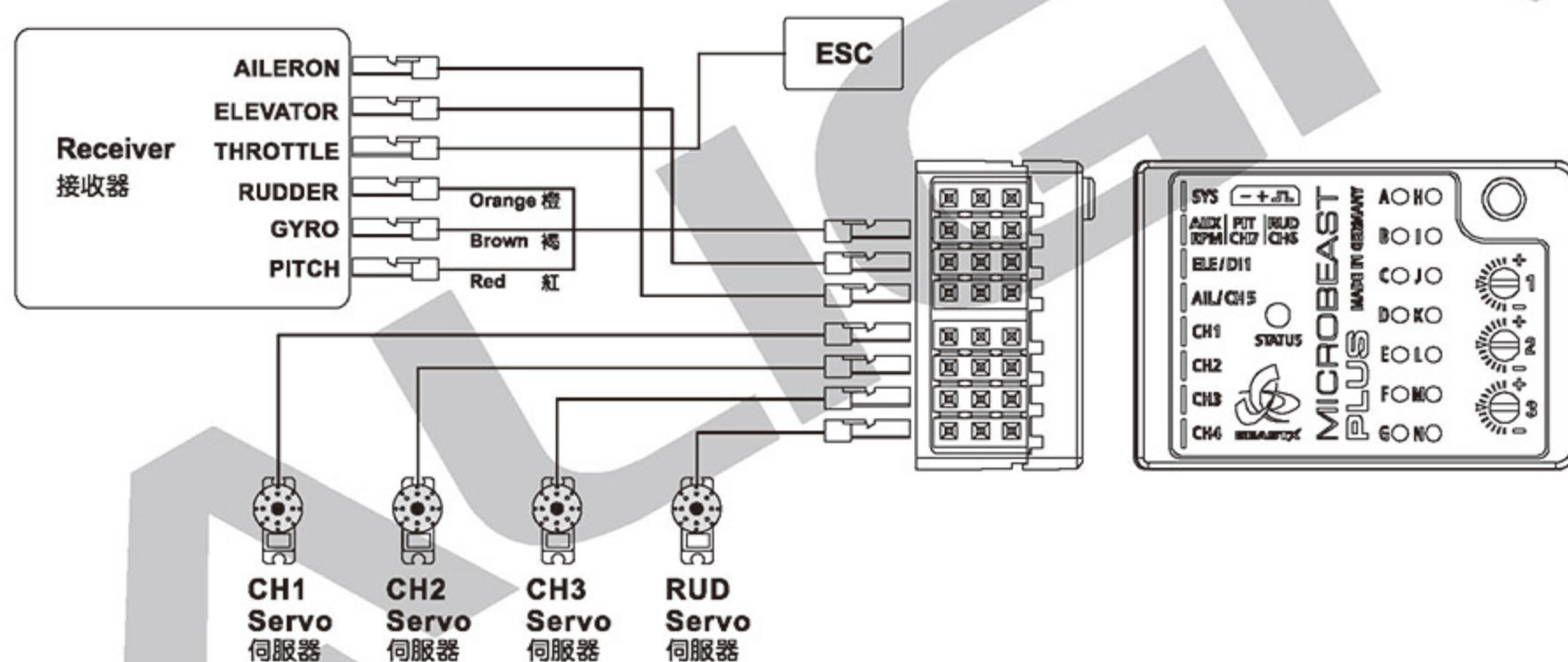
Optional Equipment
另購品

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。



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 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 before the setting in order to prevent any accident caused by the motor running during the setting.

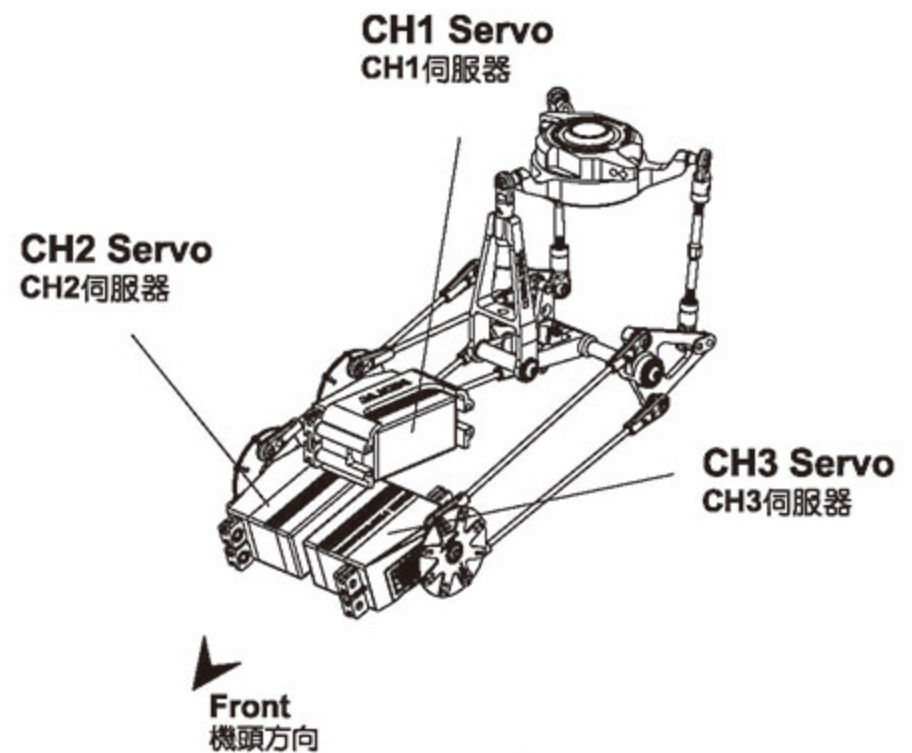
此項設定只要開啟發射器，接上BEC電源即可進行操作。

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。



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

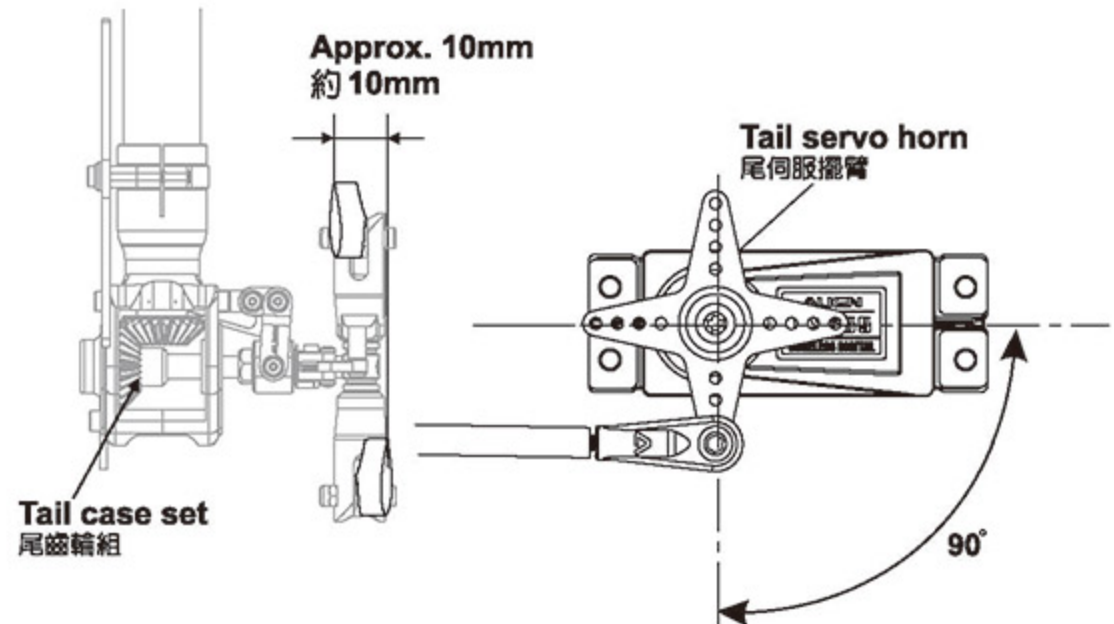
Turn off Revolution mixing(RVMX) mode on the transmitter, then set the gain switch on the transmitter and the gyro to non-Head lock mode, or disable gain completely. After setting the transmitter, connect the helicopter power and proceed with rudder neutral point setting. **Note:** When connecting to 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置。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，尾伺服器需與尾伺服器約成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.

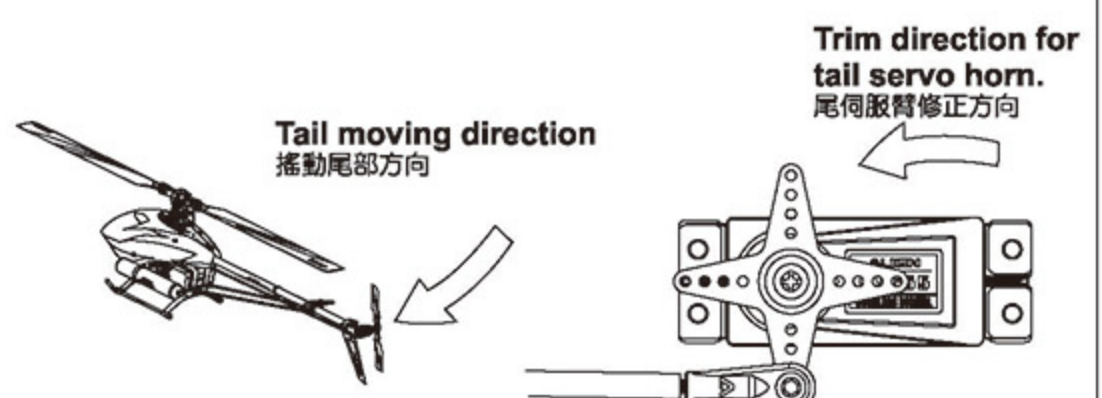
陀螺儀開機後，在非鎖定模式下，尾伺服器與尾Pitch控制組正確擺置位置。若尾Pitch控制組未置中時請調整尾控制連桿的長度來修正。



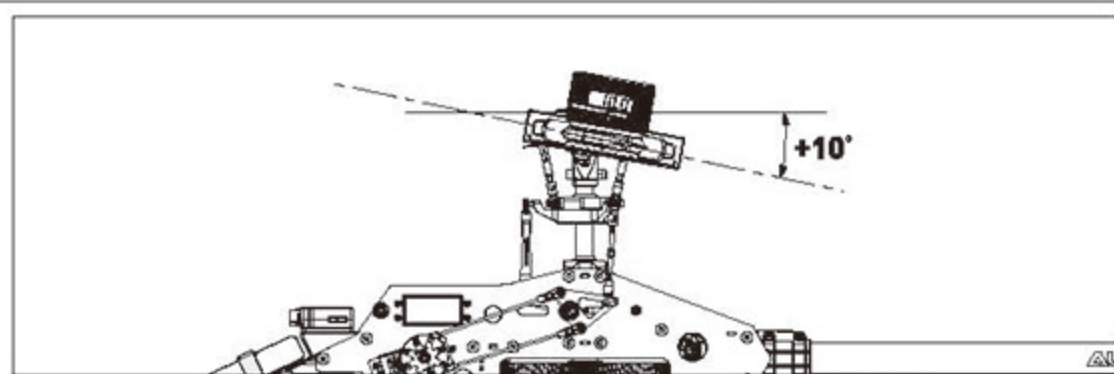
HEAD LOCK DIRECTION SETTING OF GYRO 陀螺儀鎖定方向設定

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".

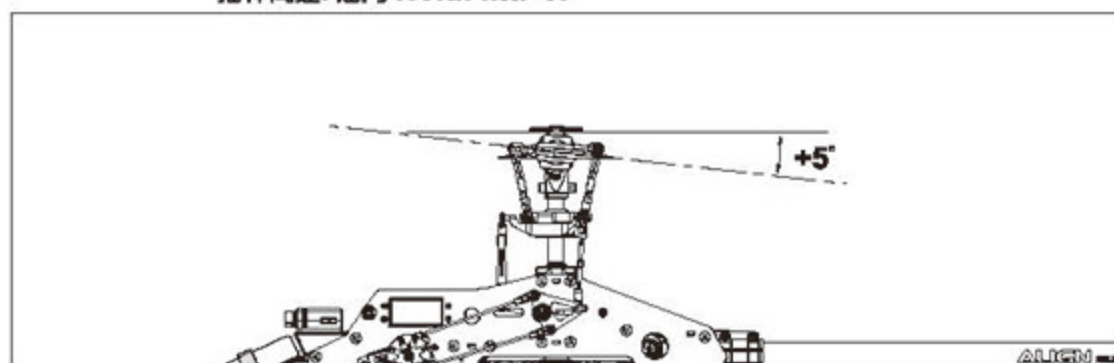
陀螺儀鎖定方向確認，當手搖尾部順時鐘擺動，尾伺服器應反時鐘修正，反向時請切換陀螺儀上“鎖定反向”開關修正。



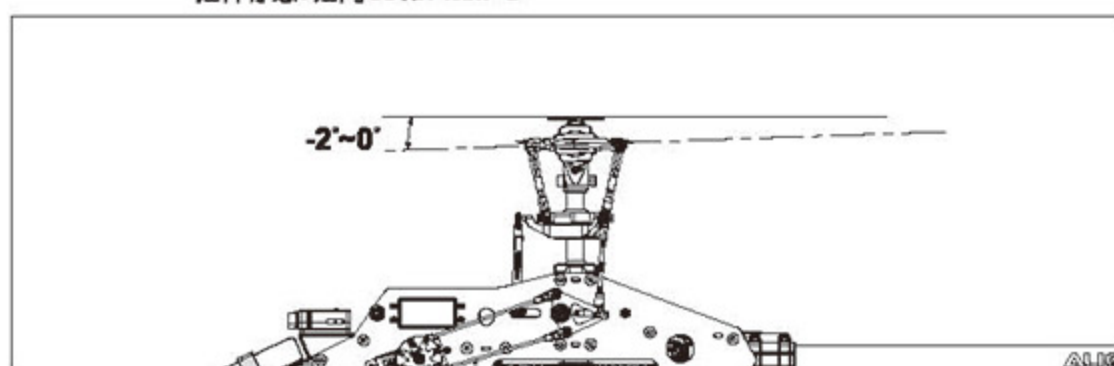
GENERAL FLIGHT 一般飛行模式



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

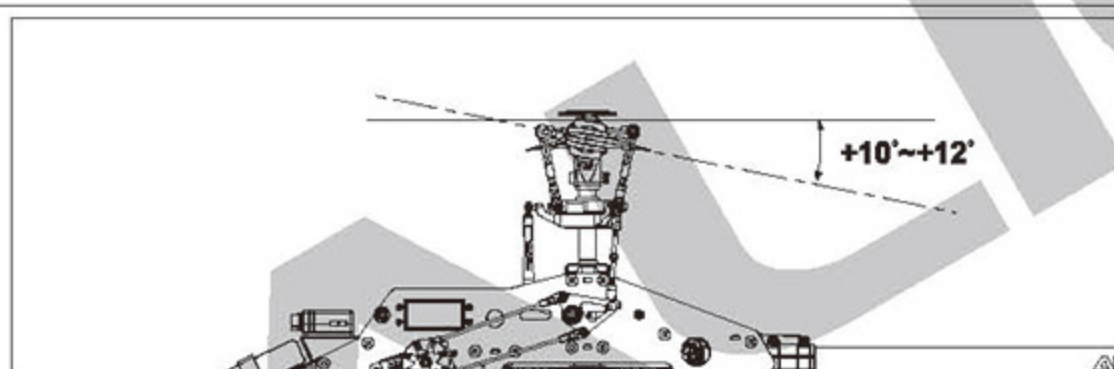


Stick Position at Hovering/Throttle 60%/Pitch +5°
搖桿停懸 / 油門 60%/Pitch +5°

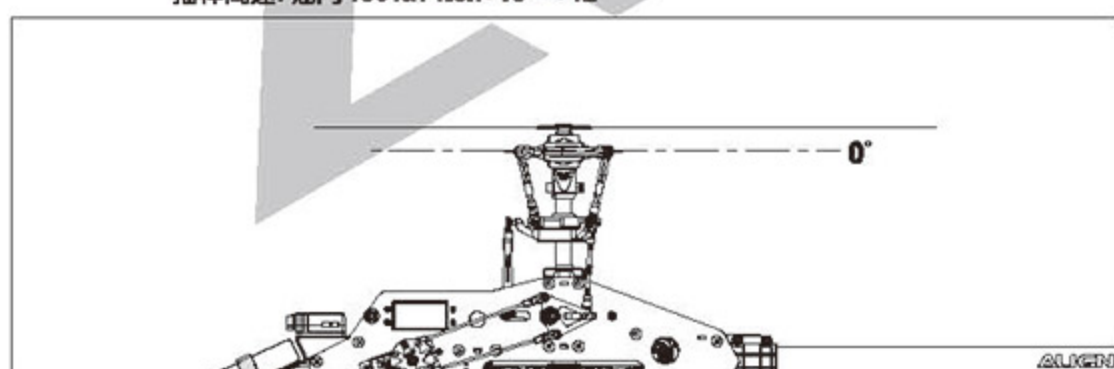


Stick Position at low/Throttle 0%/Pitch -2°~0°
搖桿低速 / 油門 0%/Pitch -2°~0°

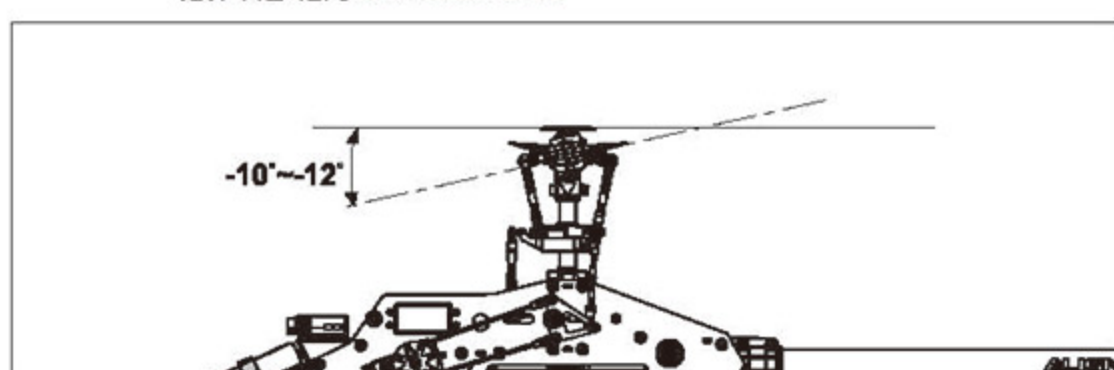
3D FLIGHT 3D特技飛行模式



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°

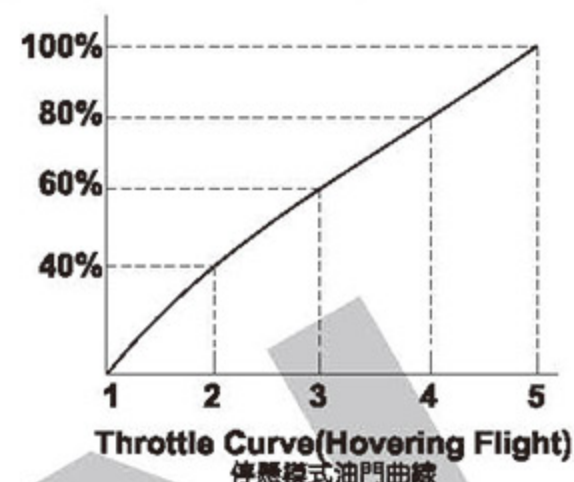


1. Pitch range : Approx ± 15 degrees.
2. Hint : Do not exceed ± 14 degrees pitch range. Doing so may cause motor overload and blinding of certain head components.

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

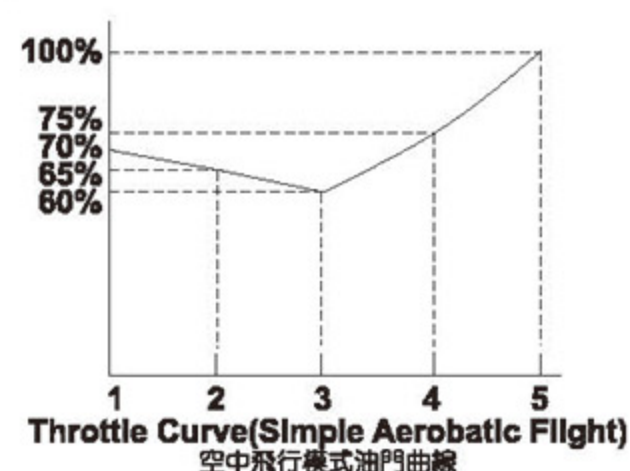
GENERAL FLIGHT 一般飛行模式

	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°



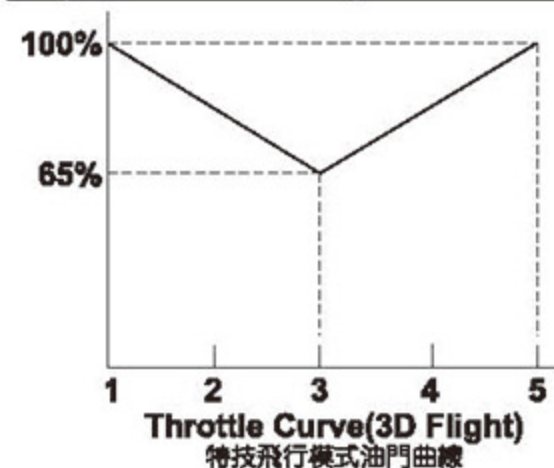
IDLE 1 : SPORT FLIGHT

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



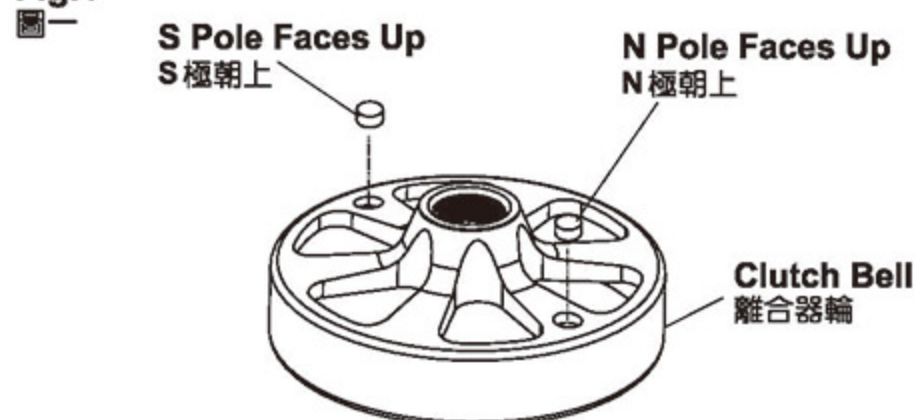
IDLE 2 : 3D FLIGHT

	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°



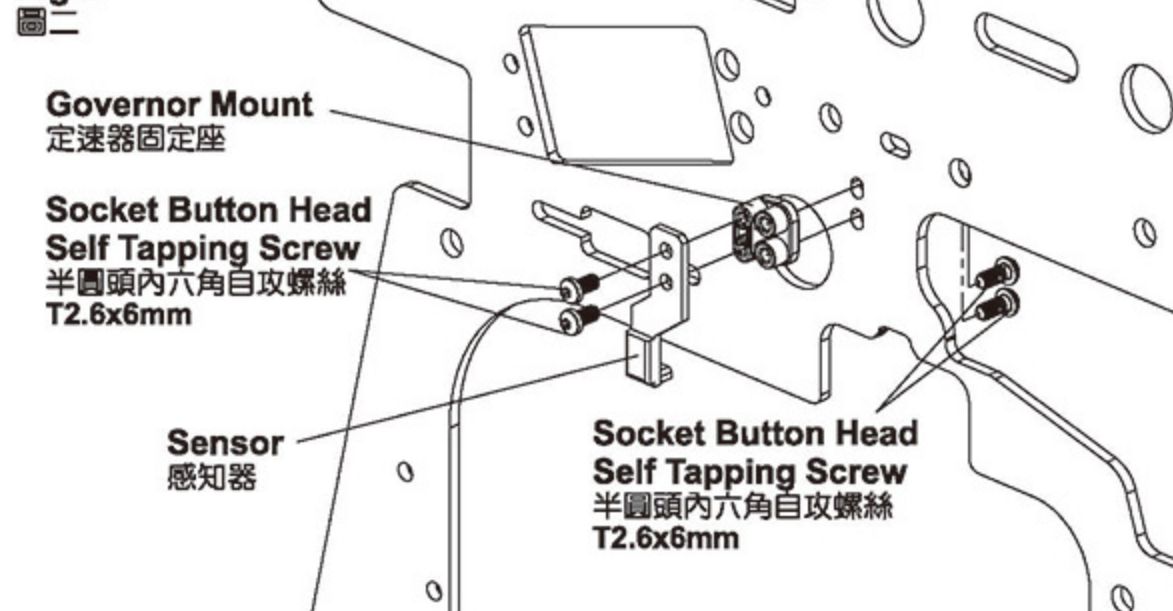
INSTRUCTION 安裝使用說明

Fig.1



※ 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



NOTE : The safty RPM is up to 16000rpm for OS90 engine.

註：OS90引擎安全轉速上限16000rpm。



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。

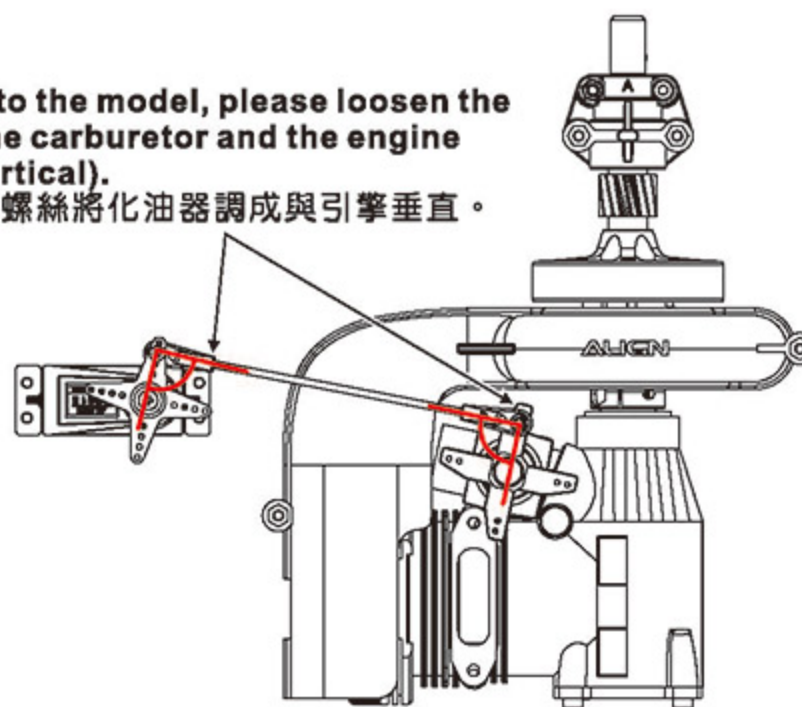
Magnetic sensor
located at clutch bell
磁感應器位於離合器輪

Throttle at mid stick position
油門遙桿在中間



Throttle Servo
油門伺服器

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 (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

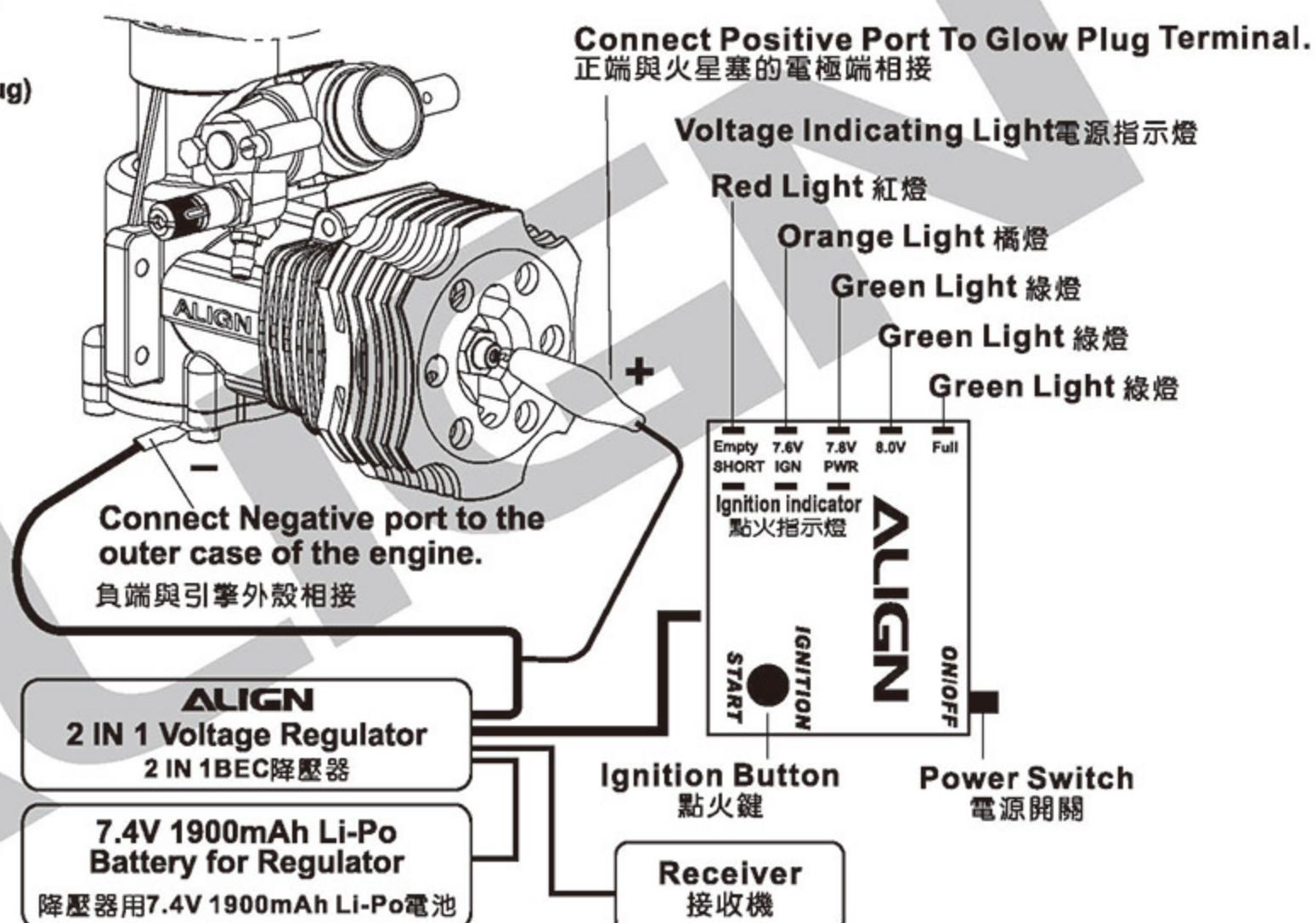
1. Due to the unique 2 in 1 design, the regulator's functions provide power to the receiver, servos, and the internal glow plug ignition system that does not require you to remove the clip lead.
2. The linear regulator design results in no interference to the receiver. The required input power may only 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，當接入充飽的電池時五顆指示燈全亮，表示電池在Full電量充足狀態下；使用中當電壓降低至7.6V時(3顆綠燈熄滅)，尚可完成單趟飛行即須對電池充電或更換新電池；而如果僅亮紅燈時表示Empty電量不足，不應該再使用喔！
2. 部份的伺服器如：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纏緊固定，以免直昇機運轉時因震動造成接頭鬆脫或斷線。

17.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





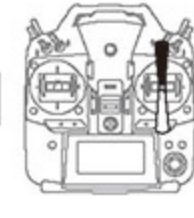



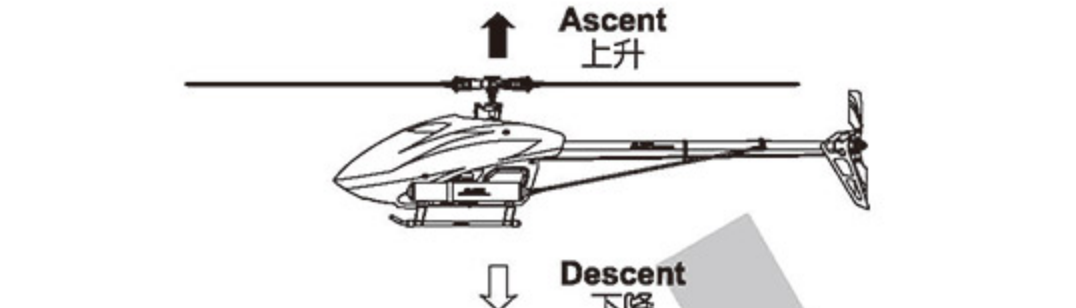

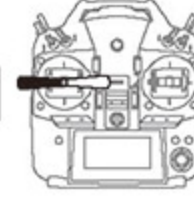
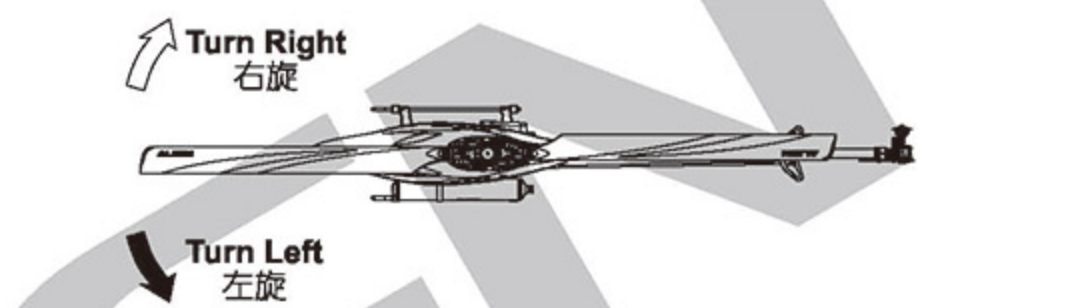
A safe and effective practice method is to use the transmitter flying on the computer through simulator software sold on the market. Do a simulation flight until you familiarize your fingers with the movements of the rudders, and keep practicing until the fingers move naturally.

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。



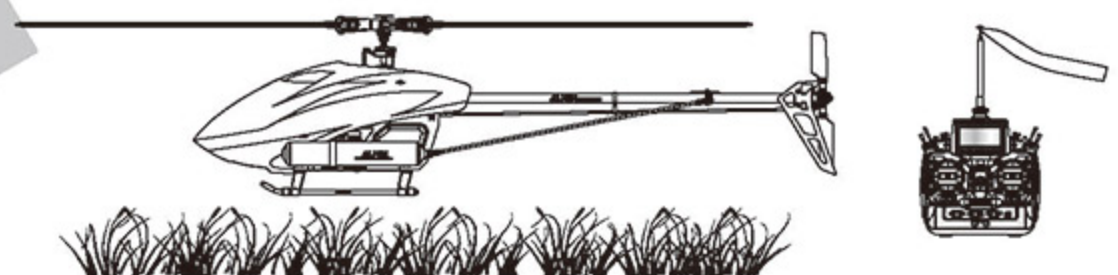
Mode 1	Mode 2	Illustration 圖示
		
		
		
		

FLIGHT ADJUSTMENT AND NOTICE 飛行調整與注意

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

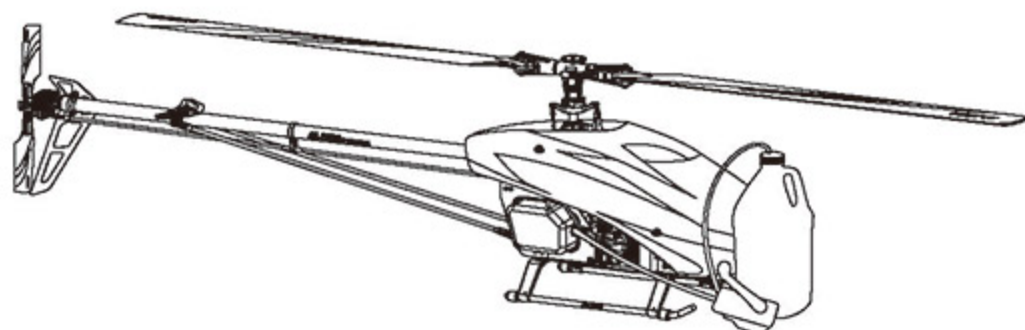
If there are other radio control aircraft at the field, make sure to check their frequencies and tell them what frequency you are using. Frequency interference can cause your model, or other models to crash and increase the risk of danger.

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。



Mode 1



Mode 2

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。

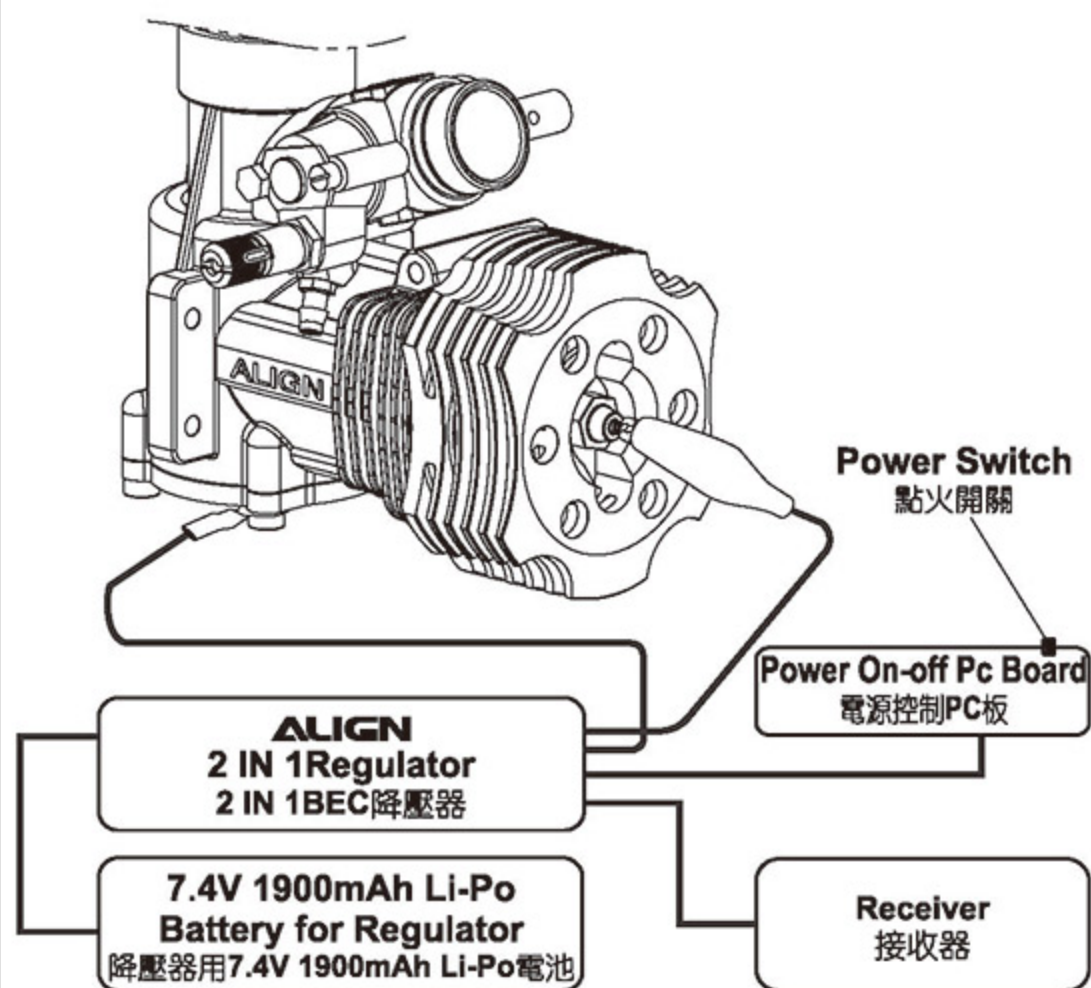
CAUTION 注意

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

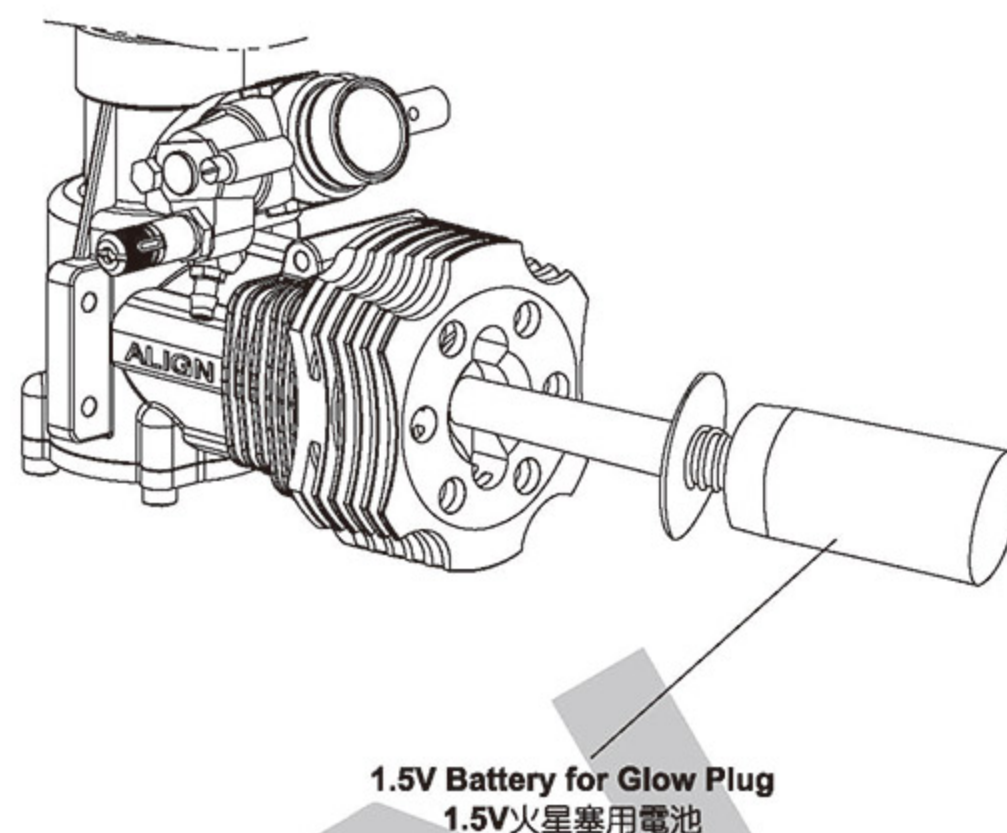
確認油門搖桿是在最低的位置，並確認引擎油門置於低速。

GLOW PLUG IGNITION METHOD 火星塞點火方式

Method 1
方式一



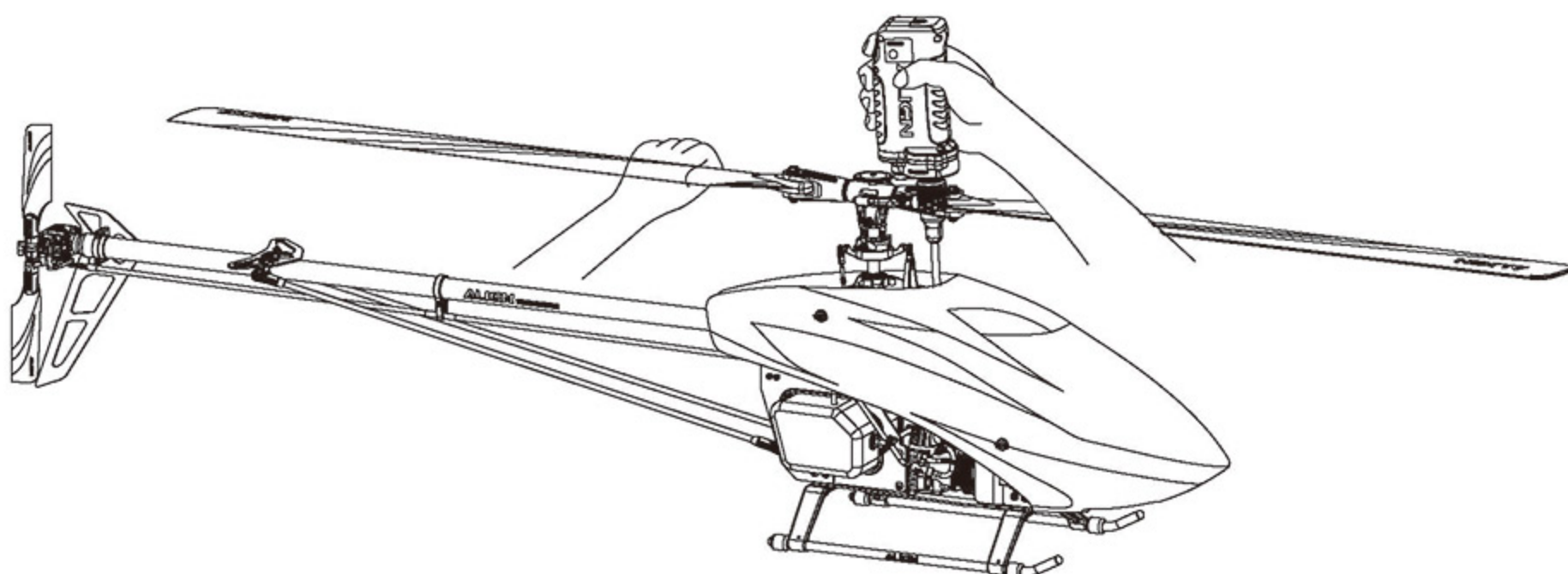
Method 2
方式二



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，關閉油料供給。

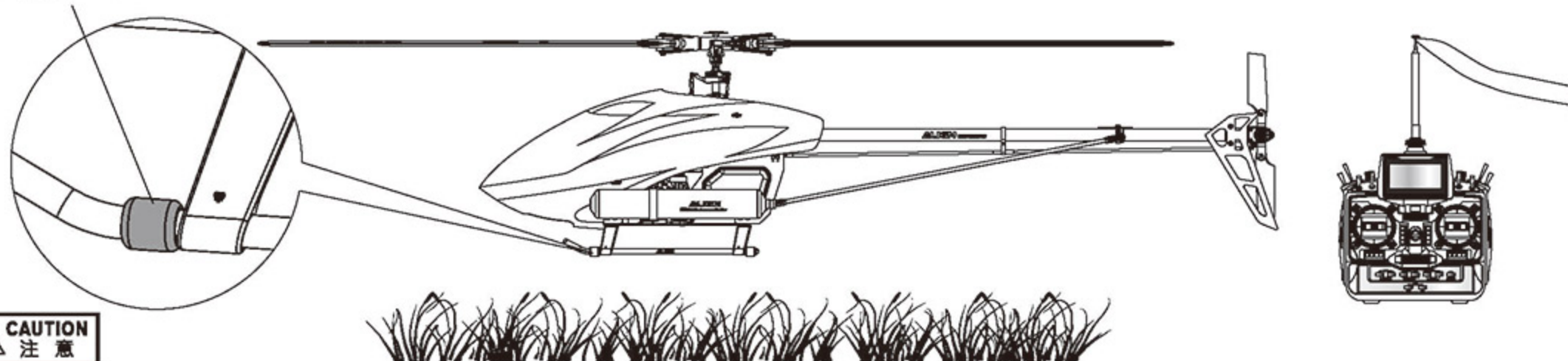


This procedure is best performed on soft surfaces such as grass. The use of rubber skid stopper is recommended on hard surface to prevent vibration feedback from the ground to flybarless sensors, resulting in over-corrections.

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

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

⊙ 飛行時，請站在直昇機後方10公尺。

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

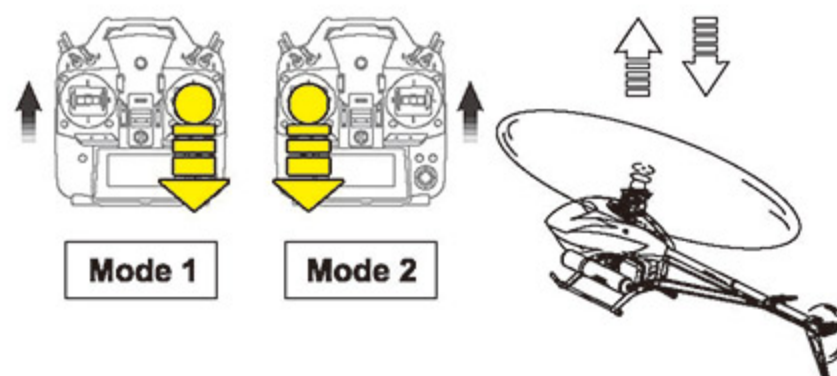
Do not attempt until you have some experiences with the operation of helicopter.

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.

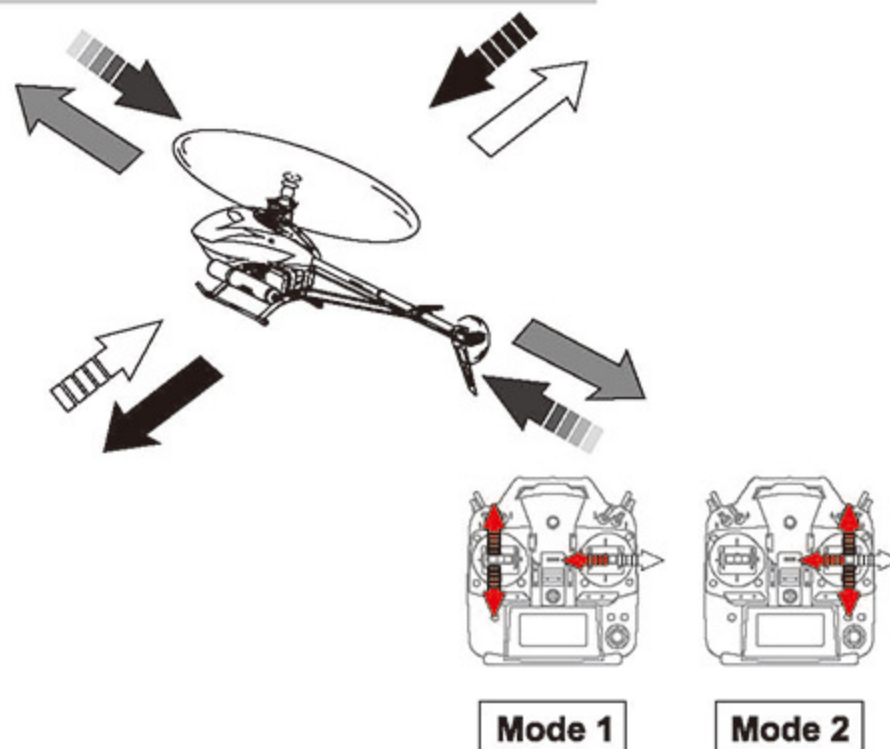
⊙ 當直昇機開始離地時，慢慢降低油門將飛機降下。持續練習飛機從地面上升和下降直到你覺得油門控制很順。



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。

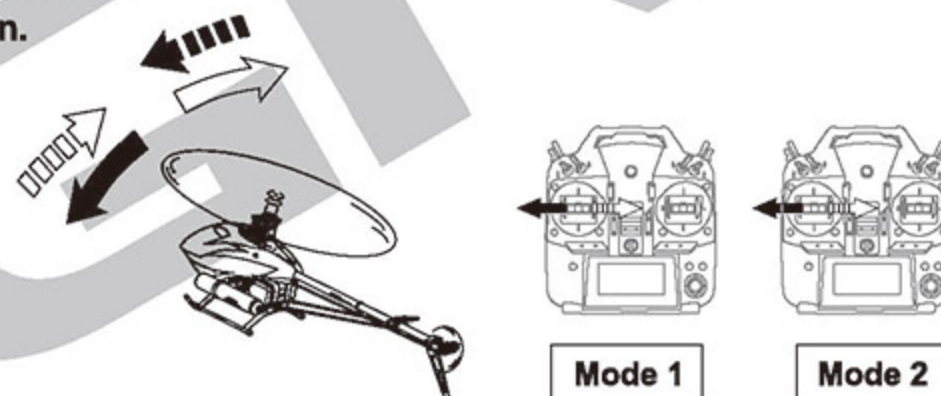


- ◎ If the nose of the helicopter moves, please lower the throttle stick and land the helicopter. Then move your position diagonally behind the helicopter 10m and continue practicing.
- ◎ If the helicopter flies too far away from you, please land the helicopter and move your position behind 10m and continue 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。

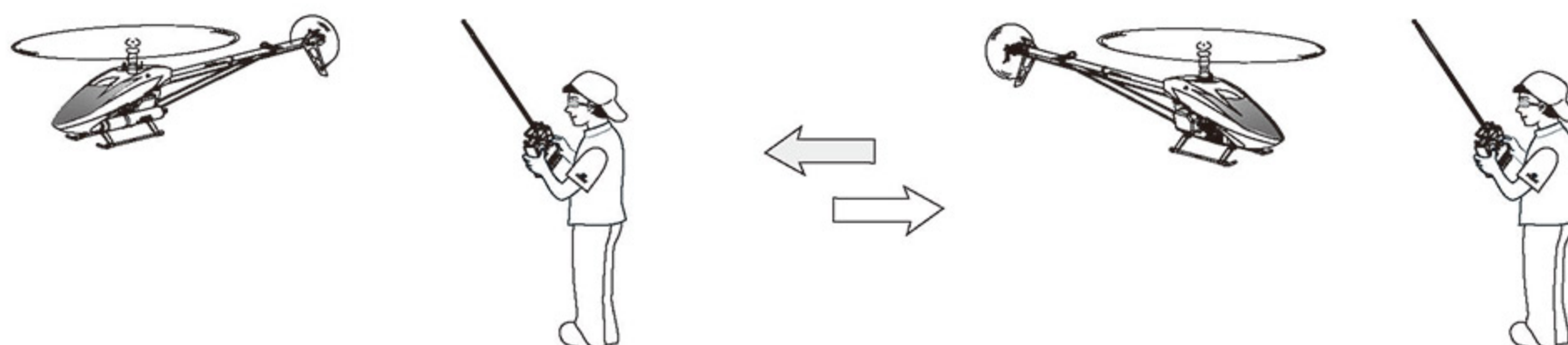
- ◎ 當您更加習慣操作動作，您可以畫更小的圈圈。



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 DFC ball link. 調整DFC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 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 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
		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。

ALIGN

Specifications & Equipment/規格配備:

Length/機身長:1361mm

Height/機身高:385mm

Main Blade Length/主旋翼長:700mm

Main Rotor Diameter/主旋翼直徑:1582mm

Tail Rotor Diameter/尾旋翼直徑:281mm

Engine Pinion Gear/引擎主齒:14T

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

Drive Gear Ratio/齒輪傳動比:8:1:4.95(E:M:T)

Fuel Tank Capacity /油箱容量:660cc.

Flying Weight/全配重:Approx. 4.2kg

