

# FXR 700XN

## INSTRUCTION MANUAL

### 使用說明書

RH70N11XT  
RH70N12XT

勁



絕殺鋒芒! 說不可擋!

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**MICROBEAST PLUS**  
BEASTX™ 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，也請您妥善保管本說明書，以做為日後參考。本公司將不對此印刷物之異動負責，也無法主動通知消費者任何更新或異動。所有圖片僅用於展示目的。產品可能因改良而有些不同。本說明書內記載的材質、規格或零件包裝之內容物如有異動，請依亞拓官網公告為主。

Thank you for buying ALIGN Products. The T-REX 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，作為日後進行調校以及維修的參考。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

	<b>Do not attempt under any circumstances.</b> 在任何禁止的環境下，請勿嘗試操作。
	<b>Mishandling due to failure to follow these instructions may result in damage or injury.</b> 因為疏忽這些操作說明，而使用錯誤可能導致財產損失或嚴重傷害。
	<b>Mishandling due to failure to follow these instructions may result in danger.</b> 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，它還結合了許多高科技產品所設計出來的休閒用品，所以商品的使用不備或不熟悉都可能造成嚴重傷害甚至死亡，使用之前務必詳讀本說明書，勿輕取並注意自身安全。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，是並一對於您自己操作的運後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.

模型商品屬於高操作技術且為消耗性商品，已經拆裝使用後，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換，如適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壞或傷害，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壞、意外或傷害，使用者應承擔全部責任。

### 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，人為組裝不當或操作損壞、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，並瞭解自己負擔應承受任何意外之責任。
- 每組飛行前仔細檢查，主旋翼夾坐橫軸螺絲、尾旋翼夾坐螺絲，以及機身各部位球頭、螺絲，確實上膠膠泥才能升空飛行。



## 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.

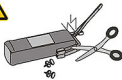
直昇機飛行時具有一定的速度，相對的也將在著危險性，場地的選擇也相對的重要，請嚴守當地法規到合法遙控飛行場地飛行。務必選擇在空曠合法專屬飛行場地，並必須注意周圍有行人、高樓、建築物、高壓電線、樹木等等，避免操控的不當造成自己與他人財產的損壞。請勿在下雨、打雷等惡劣天氣下操作，以確保本身及機體的安全。



## 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.

鋰聚電池跟一般用在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，請使用原廠產品目錄中的零件，以確保結構的安全。請謹記於產品說明書內操作，請勿過載使用，並勿用於安全、法令外其它非法用途。



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

Before turning on your model and transmitter, check to make sure no one else is operating on the same frequency. Frequency interference can cause your model, or other models to crash. The guidance provided by an experienced pilot will be invaluable for the assembly, tuning, trimming, and actual first flight or unforeseen danger may happen. (Recommend you to practice with computer-based flight simulator.)

至飛行場飛行前，需確認是否有相同頻率的同好正進行飛行，因為同頻相同功率的發射器將導致自己與他人立即墜于墜等意外危險。遙控飛機操控技巧在學習初期將有一定的難度，要盡量避免獨自操作飛行，應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。(動線電腦模擬器及老手指導是入門必要的選擇)



## SAFE OPERATION 安全操作

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

請隨時注意，無論在任何時候，都不能將運轉中的旋翼對準眼睛，嚴禁用手抓或運行中的直昇機，當主旋翼轉動後，或起飛/試飛時，務必遠離障礙物，站立位置必須距離10公尺以上，不可在視線範圍外進行飛行，降落在後馬上關閉遙控飛機及遙控電源，操作時會昇機機體有一定操控技巧及能力，避免個人對於不熟悉或零件裝錯，而引致不可預期的財物及人員損傷，並請儘量自身情況，過於疲勞、精神不佳或不當操作，都可能引致不可預期的意外發生。



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

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

直昇機主旋翼與尾旋翼運轉時會以高轉速下運行，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，請勿觸及運轉中的主旋翼與尾旋翼，並保持安全距離以避免造成危險及損壞。













## KEEP AWAY FROM HEAT 遠離熱源

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











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



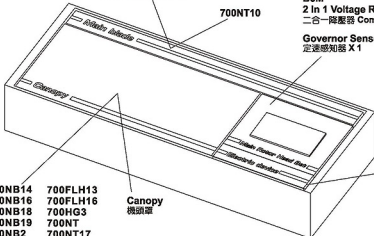

## RADIO TRANSMITTER AND ELECTRONIC EQUIPMENT REQUIRED FOR ASSEMBLY 自備遙控及電子設備

 <b>Transmitter</b> (7-channel or more, Helicopter system) 發射機 (七頻以上直昇機模式遙控器)	 <b>90-120 Muffler</b> 90-120 高效加速管	 <b>Engine Starter</b> 發動器	 <b>Fuel Pump</b> 加油器	 <b>Engine Fuel</b> 引擎燃油	 <b>2S1P 7.4V Li-Po 1900-2600mAh Battery x 1</b> <b>2S1P 7.4V Li-Po 1900-2600mAh 電池 x 1</b>
 <b>Microbeast PLUS Flybarless System x 1</b> 無平衡翼系統 x 1	 <b>Receiver (7-channel or more)</b> 接收機(七頻以上)	 <b>Remote Receiver</b> 衛星天線	 <b>ALIGN 91H Engine 91H 引擎</b> <b>ALIGN 91HP Engine 91HP 引擎</b> <b>105HP Engine 105HP 引擎</b>		

## ADDITIONAL TOOLS REQUIRED FOR ASSEMBLY 自備工具

 <b>[H70118] Swashplate Leveler</b> 十字盤校正器	 <b>[HET80001] AP800 Digital Pitch Gauge</b> AP800 數位傾角規	 <b>[HETMT901] Multi-function Tester</b> 多功能檢測計				
 <b>Phillips Screw Driver</b> 十字螺絲起子 ø3.0/e 1.8mm	 <b>Cutter Knife</b> 刀子	 <b>Hexagon Screw Driver</b> 六角螺絲起子 3mm/2.5mm/ 2mm/1.5mm	 <b>Needle Nose Pliers</b> 尖嘴鉗	 <b>Oil</b> 潤滑油	 <b>CA Glue</b> 瞬間膠	 <b>Grease</b> 潤滑油

## PACKAGE ILLUSTRATION 包裝說明

 <p><b>700 Carbon Fiber Blade X 1set</b> 700 碳纖維主旋翼 X 1組</p> <p><b>700NT10</b></p> <p><b>Canopy</b> 機頭罩</p> <p><b>700NB14</b>    <b>700FLH13</b>  <b>700NB16</b>    <b>700FLH16</b>  <b>700NB18</b>    <b>700HG3</b>  <b>700NB19</b>    <b>700NT</b>  <b>700NB2</b>    <b>700NT17</b>  <b>700NB20</b>    <b>700NZ</b>  <b>700NB21</b></p>	<p><b>B6M</b> 2 in 1 Voltage Regulator combo x 1 二合一降壓器 Combo x 1</p> <p><b>Governor Sensor X 1</b> 定速感知器 X 1</p> <p><b>Optional Equipment</b> 選購品</p> <p><b>DS830M High Voltage Brushless Servo x 3</b> DS830M 高壓無刷伺服器 x 3</p> <p><b>DS835M High Voltage Brushless Servo x 1</b> DS835M 高壓無刷伺服器 x 1</p> <p><b>DS530 Digital Servo x 1</b> DS530 數位伺服器 x 1</p>	<p><b>Quick Finder</b> 零件快速網</p> 
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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 碳纖維轻量化主旋翼	 DS630M 高壓無刷伺服器 x3	 DS635M 高壓無刷伺服器 x1	 數位伺服器 x1	 定速器感應器 x1	 二合一降壓器 x1	

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 碳纖維轻量化主旋翼	 定速器感應器 x1	 二合一降壓器 x1	

## 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，以確保自身與他人的安全。
- 每次飛行前請確定您發射器與接收器電池是在足夠飛行的狀態。
- 開機前請確認油门搖桿是否位於最低點，熄火降落開關，定速開關 (IDLE) 是否於關閉位置。
- 開機時必須遵守電源開關機器的程序，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。
- 開機前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磨損的情形，使用故障的伺服器將導致不可預期的危險。
- 飛行前請確認沒有缺少或鬆動的螺絲與螺帽，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。
- 檢查所有的選擇頭是否有鬆脫的情形，過鬆的選擇頭應先更新，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.

鎖附膠：使用適量鎖附膠固定

- R48 : Apply small amount of Anaerobic Retainer to fix.

鎖氣膠：使用適量鎖氣膠固定

- 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.

各項塑膠製連桿扣接時，"A"字請朝外。



Keep plastic parts away from heat.

塑膠件避免靠近熱源。



CA Glue  
鎖附膠



Anaerobic  
Retainer  
鎖氣膠



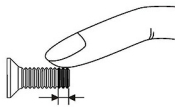
Thread Lock  
螺絲膠



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. 鎖氣膠 (R48) 為綠色高強度快速固化的鎖氣膠，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；使用於金屬內外件或膠合螺絲時，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加熱約 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。

以上各類功能膠(油)請依零件屬性需求自行準確量取附其用量，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



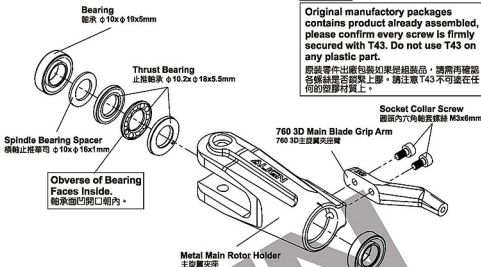
Bearing  
軸承(φ10xφ18x5mm) X 4



Spindle Bearing Spacer  
橫軸止推墊圈(φ10xφ16x1mm) X 2



Socket Collar Screw  
圓頭內六角軸承鎖絲(M3x6mm)x4



Apply a small amount of T43 thread lock when fixing a metal part.  
鎖絲鎖緊時於金屬件請使用適量T43(鎖絲膠)。



Original manufacturer 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，請需再確認各鎖絲是否鎖緊上膠，請注意T43不可塗在任何的塑膠材質上。

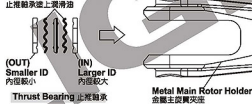


Thrust bearing and washer for radial bearing are wear items; therefore, it is recommended to inspect after every 20 flights and replaced as necessary. For flights with high headspeed, the inspection interval should be reduced to ensure flight safety.

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，請縮短定期檢查之週數，以確保飛行安全。



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



## 700FLH16



Spindle Bearing Spacer  
橫軸止推墊圈(φ10xφ16x1mm) X 2



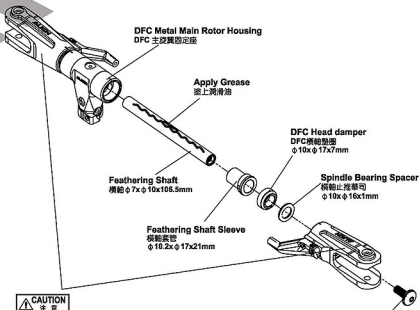
Collar Screw  
橫軸軸承鎖絲(M6x16mm) X 2



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



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



ALIGN Logo on The Top  
字樣朝上

## 700FLH16



**Bearing**  
轴承 (φ 3x φ 7x3mm) x 4



**Washer**  
垫片 (φ 3x φ 4.8x0.3mm) x 2



**Bearing**  
轴承 (φ 2x φ 5x2.3mm) x 4



**Collar**  
摆臂轴承衬套 (φ 3x φ 4.8x1.5mm) x 2

## 700FLH16A



**Socket Screw**  
圆头内六角螺丝 (M2x5mm) x 4



**Socket Screw**  
圆头内六角螺丝 (M3x12mm) x 2

Apply a small amount of T43  
lock when fixing a metal part.  
紧固零件时请在零件接触面薄层 T43 (防锈剂)。

## 700FLH13

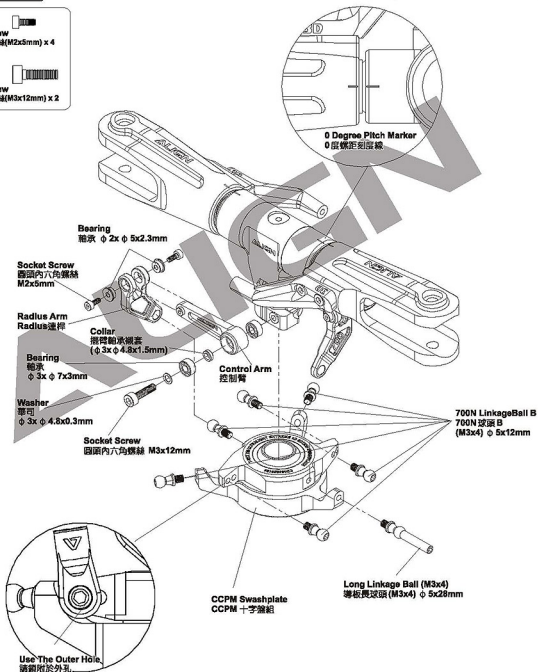


**700N Linkage Ball B (M3x4)**

**700N 球头 B (M3x4) (φ 5x12mm) x 6**

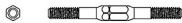


**Long Linkage Ball (M3x4)**  
薄板球头 (M3x4) (φ 5x28mm) x 1





# 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**  
圓頭內六角鎖緊螺絲 (M4x24mm) x 2



**M4 Nut**  
M4 防鬆螺帽 x 2



**Washer**  
華司 (φ 4x φ 8x1mm) x 2



**Collar**  
連桿套 x 2

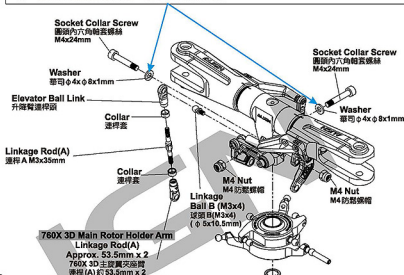


**Elevator Ball Link**  
升降桿連桿頭 x 2

**CAUTION**  
注意

1. While assembling T-REX 700X/700L V2 FL Rotor Housing, please be sure to include a φ 4x φ 8x1 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 flight 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，請於主旋翼固定座兩側的軸套螺絲及防鬆螺帽之間墊上一片 φ 4x φ 8x1mm 華司，可確保主旋翼固定座能確實鎖緊於主軸上，請試用上下左右搖動，不可有鬆動或搖晃的情形發生。
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，請縮短定期檢查之週數，並確實檢查直昇機，以確保飛行安全。
3. 若發生人為組裝不當或機件損壞造成模型高低停機慘劇，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，發生不可預料的意外。



**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。

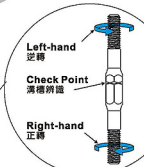
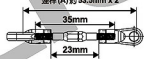
**CAUTION**  
注意

You may adjust the length of ball link when tracking is off while flight.  
若飛行中有變焦情形，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箭頭上。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，旋轉時請為縮短長度時，逆時針轉動則為增長連桿長度。



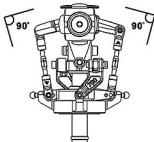
Apply a small amount of T43 thread lock when fixing a metal part.  
螺絲鎖附於金屬件請使用適量 T43 (螺絲膠)。

## 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.

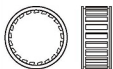
主旋翼連桿與夾座臂 90 度設計，使螺距動作成對稱比例，讓直昇機動作更精準無變差。



## 700NB21



Bearing  
轴承 (φ 15x φ 21x4mm) x 2



One-way Bearing  
单向轴承 (φ 15x φ 23x11mm) x 1

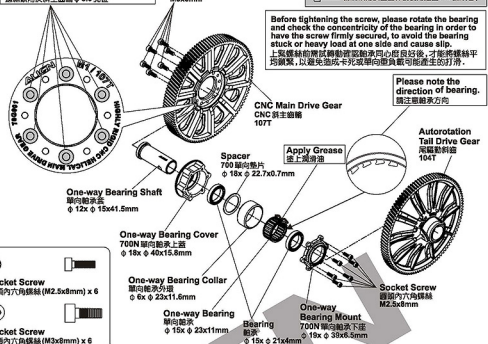


Spacer  
700 隔向垫片  
φ 18x φ 22.7x0.7mm x 1

Please fasten the screws to the φ 3.0 holes of the slant main gear.  
请紧固斜主齿轮φ 3.0孔位。

Socket Screw  
圆筒内六角螺丝  
M3x8mm

Apply a small amount of T43 thread lock when fixing a metal part.  
螺丝固定金属件请使用适量T43(锁丝露)。



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.  
上紧螺丝前请转动轴承使其同心度良好后,才能将螺丝水平拧紧,以避免造成卡死或偏向造成可能产生的打滑。

Please note the direction of bearing.  
请注意轴承方向。

CNC Main Drive Gear  
CNC 斜主齿轮  
10T7

Autoration Tail Drive Gear  
尾驱动斜齿  
104T

Apply Grease  
涂上润滑油

Spacer  
700 隔向垫片  
φ 18x φ 22.7x0.7mm

One-way Bearing Shaft  
单向轴承轴  
φ 12x φ 15x41.5mm

One-way Bearing Cover  
700N 单向轴承上盖  
φ 18x φ 40x15.8mm

One-way Bearing Collar  
单向轴承外环  
φ 6x φ 23x11.6mm

One-way Bearing  
单向轴承  
φ 15x φ 23x11mm

Bearing  
轴承  
φ 15x φ 21x4mm

One-way Bearing Mount  
700N 单向轴承下座  
φ 18x φ 38x6.5mm

Socket Screw  
圆筒内六角螺丝(M2.5x8mm) x 6

Socket Screw  
圆筒内六角螺丝(M3x8mm) x 6

## 700NB18A



Socket Screw  
圆筒内六角螺丝(M3x12mm) x 2



M3 Nut  
M3 防松螺母 x 2



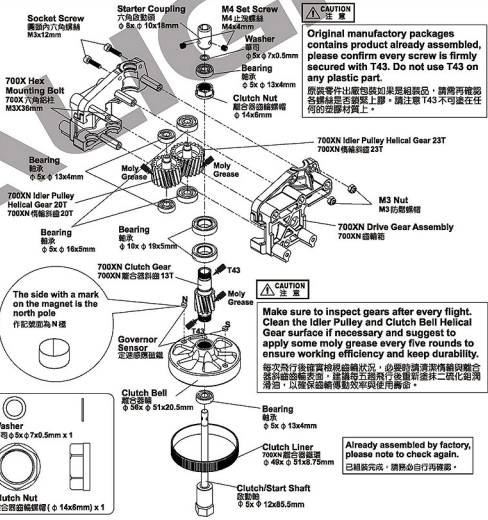
Bearing  
轴承 (φ 5x φ 13x4mm) x 3



Bearing  
轴承 (φ 5x φ 16x5mm) x 2



Bearing  
轴承 (φ 10x φ 19x5mm) x 2



700X Hex Mounting Bolt  
700X 六角螺栓  
M3X36mm

700XN Idler Pulley Helical Gear 20T  
700XN 惰轮斜齿 20T

Bearing  
轴承  
φ 5x φ 16x5mm

700XN Clutch Gear  
700XN 离合斜齿 13T

Governor Sensor  
定速感应磁

Clutch Bell  
离合壳  
φ 56x φ 51x20.5mm

Clutch Liner  
离合衬  
φ 48x φ 51x8.75mm

Clutch/Start Shaft  
离合轴  
φ 5x φ 12x85.5mm

Starter Coupling  
六角联轴器  
φ 8x φ 10x18mm

M4 Set Screw  
M4 止动螺丝  
M4x4mm

Washer  
垫圈  
φ 5x φ 7x0.5mm

Bearing  
轴承  
φ 5x φ 13x4mm

Clutch Nut  
离合器端盖螺母  
φ 14x6mm

Moly Grease  
钼基润滑脂

Moly Grease  
钼基润滑脂

Bearing  
轴承  
φ 10x φ 19x5mm

T43  
T43

Moly Grease  
钼基润滑脂

T43  
T43

Moly Grease  
钼基润滑脂

Bearing  
轴承  
φ 5x φ 13x4mm

Clutch Liner  
离合衬  
φ 48x φ 51x8.75mm

Clutch/Start Shaft  
离合轴  
φ 5x φ 12x85.5mm

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.  
原装零件外包装如果是组装品, 请再次确认各螺丝是否拧紧上紧。请注意 T43 不可涂在任何的塑膠材質上。

700XN Idler Pulley Helical Gear 23T  
700XN 惰轮斜齿 23T

M3 Nut  
M3 防松螺母

700XN Drive Gear Assembly  
700XN 驱动齿轮

M3 Nut  
M3 防松螺母

700XN Drive Gear Assembly  
700XN 驱动齿轮

M3 Nut  
M3 防松螺母

700XN Drive Gear Assembly  
700XN 驱动齿轮

M3 Nut  
M3 防松螺母

700XN Drive Gear Assembly  
700XN 驱动齿轮

M3 Nut  
M3 防松螺母

700XN Drive Gear Assembly  
700XN 驱动齿轮

M3 Nut  
M3 防松螺母

700XN Drive Gear Assembly  
700XN 驱动齿轮

M3 Nut  
M3 防松螺母

700XN Drive Gear Assembly  
700XN 驱动齿轮

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.  
每次飞行后请检查齿轮啮合状况, 必要时请清理惰轮与离合壳斜齿啮合表面, 建议每五圈飞行后重新涂抹二硫化钼润滑脂, 以确保齿轮传动效率及使用寿命。

700XN Idler Pulley Helical Gear 23T  
700XN 惰轮斜齿 23T

M3 Nut  
M3 防松螺母

700XN Drive Gear Assembly  
700XN 驱动齿轮

M3 Nut  
M3 防松螺母

700XN Drive Gear Assembly  
700XN 驱动齿轮

M3 Nut  
M3 防松螺母

700XN Drive Gear Assembly  
700XN 驱动齿轮

Already assembled by factory, please note to check again.  
已组装完成, 请务必自行再确认。

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

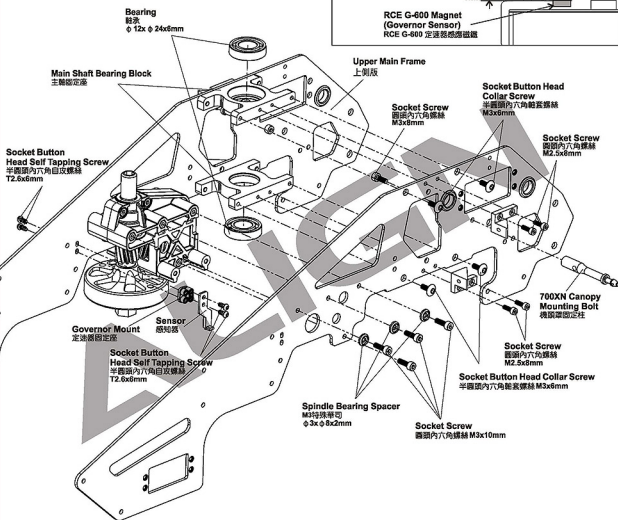
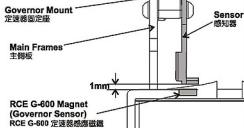
**CAUTION**  
 注意

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

原廠零件出廠包裝如果是組裝品，請確認每顆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 ( $\phi 12x \phi 24x6mm$ ) x 2



Socket Button Head Collar Screw 半圓頭內六角鉸蓋螺絲 (M3x6mm) x 8



Socket Screw 圓頭內六角螺絲 (M2.5x6mm) 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特珠華司 ( $\phi 3x \phi 8x2mm$ ) x 6

## 700NB15



**Socket Button Head Screw**  
半圓頭內六角螺絲 (M3x6mm) x 12



**Socket Screw**  
圓頭內六角螺絲 (M4x6mm) x 4

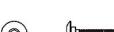


**M3 Specialty Washer**  
M3 特殊墊圈 (φ 3x φ 8x2mm) x 4

## 700NB16



**Socket Screw**  
圓頭內六角螺絲 (M3x10mm) x 2



**Socket Screw**  
圓頭內六角螺絲 (M3x20mm) x 2



**Special Washer**  
M3 特殊墊圈 (φ 3x φ 8x2mm) x 2



**Bearing**  
軸承 (φ 12x φ 24x6mm) x 1

## 700NB20



**Socket Button Head Self Tapping Screw**  
半圓頭內六角白攻螺絲 (T3x8mm) x 2



**Socket Screw**  
圓頭內六角螺絲 (M3x20mm) x 4



**M3 Specialty Washer**  
M3 特殊墊圈 (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**  
半圓頭內六角白攻螺絲 (T3x8mm) x 4

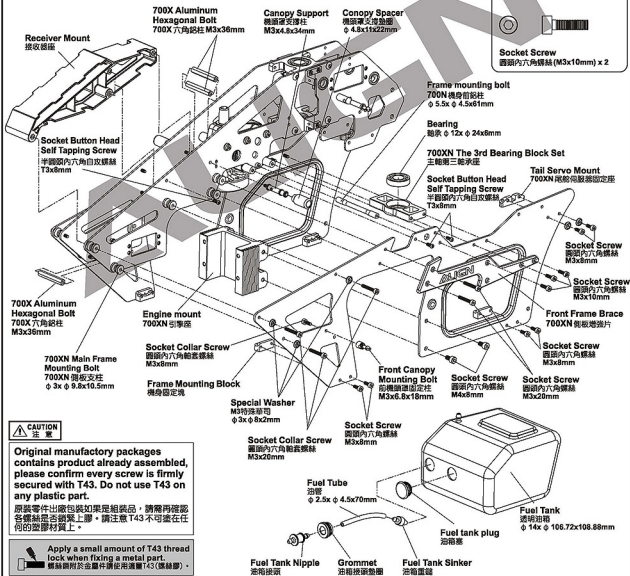
## 700NB14



**Socket Screw**  
圓頭內六角螺絲 (M3x20mm) x 4



**Socket Screw**  
圓頭內六角螺絲 (M3x10mm) x 2



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

原廠零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。請注意 T43 不可用在任何的塑膠材質上。

Apply a small amount of T43 thread lock when fixing a metal part.  
螺絲鎖附於金屬件鎖緊後用 T43 (螺絲膠)。

Apply a small amount of T43 thread lock when fixing a metal part.  
 請絲旋於金屬零件使用適量T43(螺絲膠)。

CAUTION  
 注意

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

原裝零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。請注意T43不可塗在任何的塑膠材質上。

### 700NB18A



M3 Specialty Washer  
 M3 特珠華司 (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



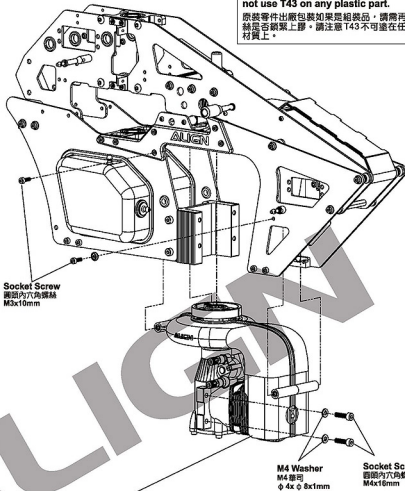
Socket Screw  
 圓頭內六角螺絲 (M3x12mm) x 2



Socket Head Spring Screw  
 圓頭內六角彈簧螺絲 (M4x9mm) x 2



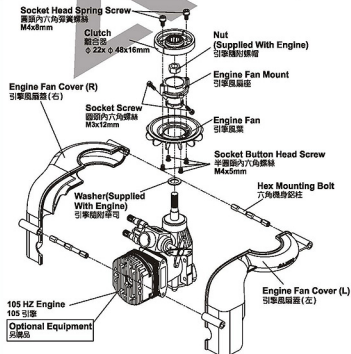
Socket Button Head Screw  
 半圓頭內六角螺絲 (M4x5mm) X 4



Socket Screw  
 圓頭內六角螺絲  
 M3x10mm

M4 Washer  
 M4 華司  
 φ 4x φ 8x1mm

Socket Screw  
 圓頭內六角螺絲  
 M4x16mm



Socket Head Spring Screw  
 圓頭內六角彈簧螺絲  
 M4x9mm

Clutch  
 離合器  
 φ 22x φ 48x16mm

Nut  
 (Supplied With Engine)  
 引擎輔助螺帽

Engine Fan Mount  
 引擎風扇座

Engine Fan  
 引擎風扇

Socket Button Head Screw  
 半圓頭內六角螺絲  
 M4x9mm

Hex Mounting Bolt  
 六角機身螺栓

Engine Fan Cover (R)  
 引擎風扇蓋 (右)

Socket Screw  
 圓頭內六角螺絲  
 M3x12mm

Washer (Supplied With Engine)  
 引擎輔助華司

105 HZ Engine  
 105 引擎  
 選購品

Engine Fan Cover (L)  
 引擎風扇蓋 (左)

Clutch  
 離合器  
 φ 22x φ 48x16mm

Socket Screw  
 圓頭內六角螺絲  
 M3x12mm

Engine Fan Mount  
 引擎風扇座

Engine Fan  
 引擎風扇

105 HZ Engine  
 105 引擎  
 選購品

Optional Equipment  
 選購品

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

引擎裝入機體後請鬆開固定螺絲將化油器調成與引擎垂直。

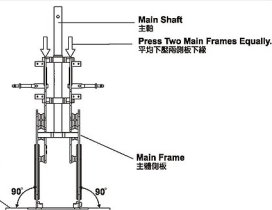


### Main frame assembly point :

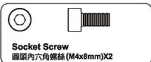
First do not fully tighten the screws of main frames and put two bearings through the main shaft to check if the movements are smooth. The bottom bracket must be firmly touched the level table top(glass surface); please keep the smooth movements on main shaft and level bottom bracket, then slowly tighten 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

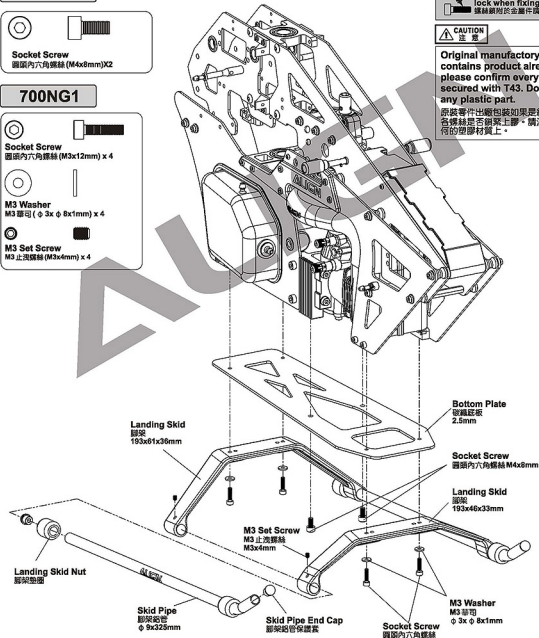


## 700NG1



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

**CAUTION**  
Original manufactory packages contains plastic 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



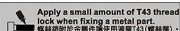
Linkage Ball C (M2.5x4)  
球頭 C (M2.5x4) (φ 5x12mm) x 3

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



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

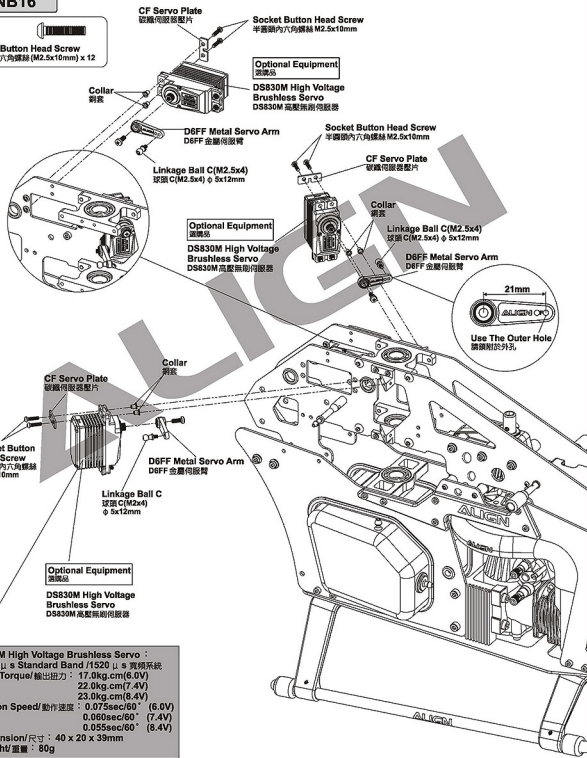
原裝零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠，請注意 T43 不可塗在任何的塑膠材質上。



## 700NB16



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

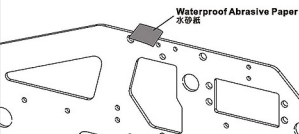


**DS830M High Voltage Brushless Servo :**

- 1. 1520 μs Standard Band / 1520 μs 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 parts to be cut.**

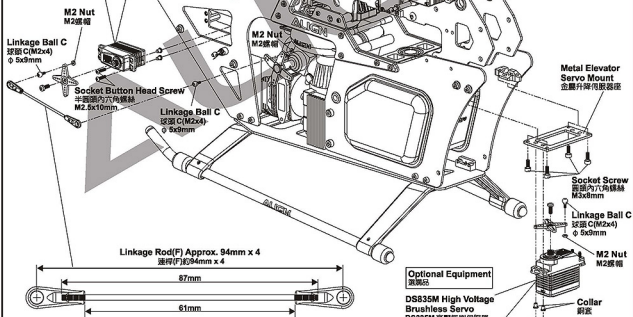
建議於下圖色塊標示處，使用#800-1000水砂紙打磨，可防止電子設備電線被磨破。



- DS530 High Voltage Brushless Servo :**  
 1. 1520  $\mu$ s Standard Band / 1520  $\mu$ 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

DS530 High Voltage  
Brushless Servo  
DS530 高壓無刷伺服器



CAUTION  
注意

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

原廠零件出廠包裝如果是組裝品，請確實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。

- DS835M High Voltage Brushless Servo :**  
 1. 1520  $\mu$ s Standard Band / 1520  $\mu$ 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

**700NZ11**



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

**700NZ9**



**700NB15**



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

Apply a small amount of T43 thread lock when fixing a metal part.  
螺絲鎖於金屬件時使用薄層T43(鎖絲膠)。



Apply a small amount of T43 thread lock when fixing a metal part.  
 鎖緊螺絲時少量塗抹使用施樂(T43(螺絲膠))。

**CAUTION**  
 注意

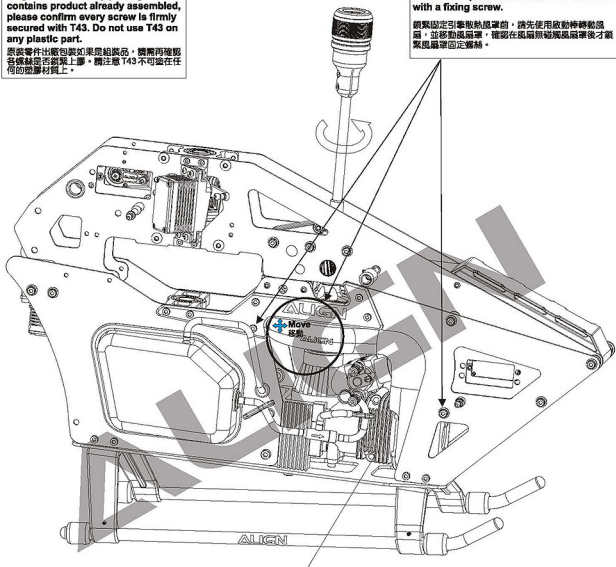
Original factory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

原廠零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。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.

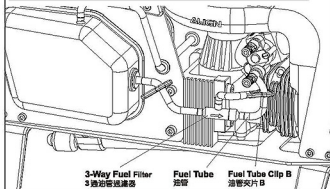
鎖緊固定引擎散熱風罩前，請先使用啟動機轉動風扇，並移動風扇罩，確認在風扇無碰觸風扇罩後才鎖緊風扇罩固定螺絲。



**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。

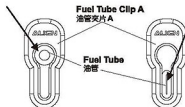
**FUEL TUBE CLIP B ILLUSTRATION 油管夾片 B 使用說明**



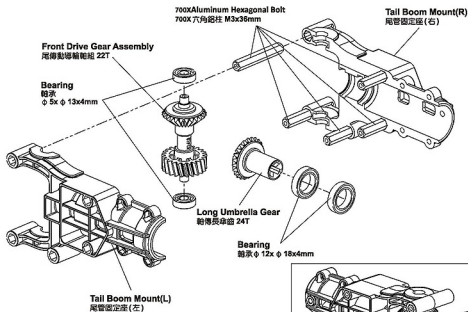
**FUEL TUBE CLIP ILLUSTRATION 油管夾片使用方法**

Engine Stop : Lock to stop refueling.  
 引擎熄火：鎖死油料供給

Engine Start : Unlock to refuel.  
 引擎啟動：解除油料供給



## 700HT11



Bearing

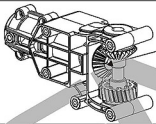
軸承 (φ 6x φ 13x4mm) x 2

Bearing

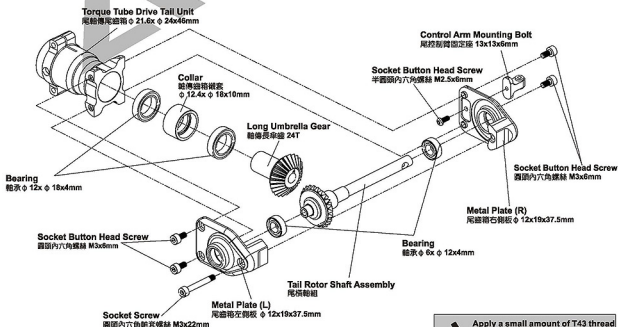
軸承 (φ 12x φ 18x4mm) x 2

**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.

組裝組裝：注意務必能推到定位，以免齒咬合不順暢。

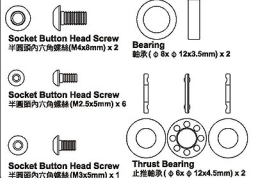
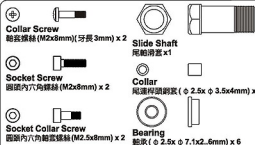


## 700NT8

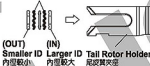


Apply a small amount of T43 thread lock when fixing a metal part.  
螺絲緊附於金屬件請使用適量T43(螺絲膠)。

## 700NT8

CAUTION  
注意

**THRUST BEARING 止推軸承**  
Apply Grease on Thrust Bearing.  
止推軸承塗上黃潤滑油



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.

組立尾舵滑莖時，請使用適量的T43螺絲膠在螺牙上，嚴禁使用R48或高強度鎖固膠，以免在維修時造成損傷。

**Assembling Umbrella Gear:**  
Please note to push the gear to the end at a fixed position, to make sure the gears mesh with one another smoothly.  
組裝傘齒時，注意務必將齒推至固定位置，以免齒咬合不順暢。

Socket Button Head Screw  
半圓頭內六角螺絲 M2.5x5mm

Tail Pitch Bellcrank Mount  
尾舵固定連接座

Bearing 軸承  
φ 2.5x φ 7.1x φ 2.6mm

Socket Button Head Screw  
半圓頭內六角螺絲 M2.5x5mm

Linkage Ball C (M3x3.5)  
球頭 C (M3x3.5) φ 5x8.5mm x1

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

Rudder Control Arm  
尾舵控制臂

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.

尾舵實 T 型座與尾舵尾夾座的凸凹對應上，請確認止推螺絲上膠，尾舵實 T 型座和螺絲屬於飛行消耗品，建議每 100 趟飛行檢查及更換，高主旋翼轉速飛行時，請縮短定期檢查之時間，以確保飛行安全。

CAUTION  
注意

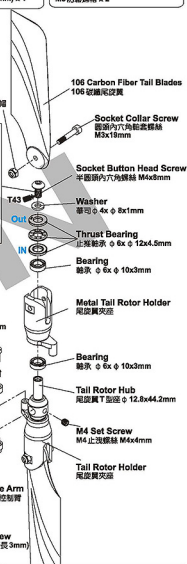
Please tighten M2x8mm collar screw firmly but not over tightened. Over tighten the screw will cause the operation of control link to be tight. Tighten M2x8mm collar screw using torque wrench, torque specification or torque wrench, torque specification is 5.0kg.cm.

## 700HT15

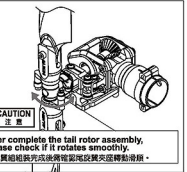
CAUTION  
注意

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.

尾舵實夾座出廠為預鎖緊，螺絲必須使用適量螺絲膠重新鎖附，鎖附時注意適量鎖緊即可，建議用扭力扳手或扭力鎖附器，扭力值為 5.0kg.cm。



Apply a small amount of T43 thread lock when fixing a metal part.  
螺絲鎖附於金屬零件請使用適量 T43 (螺絲膠)。

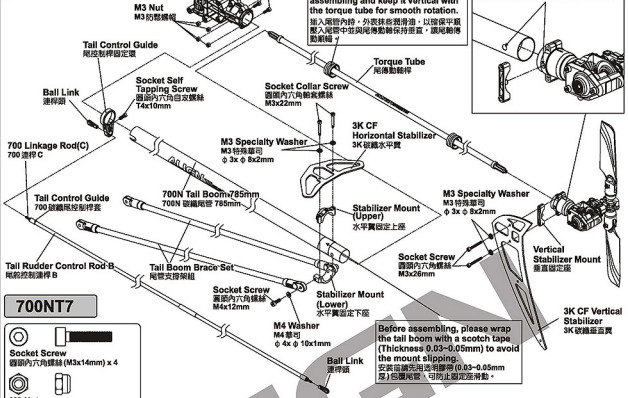


Already assembled by factory, please note to check again.  
已組裝完成，請務必再行確認。

Socket Screw  
圓頭內六角螺絲 M3x14mm

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，以確保平順裝入尾管中並與尾管軸保持垂直，讓尾管軸順轉。

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。



### 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 ( $\phi 4x \phi 10x11$ ) x 2

### 700NT10

700N FL Ball Links  
700N FL 球桿頭 x 2

Tail Control Guide  
700 尾管尾控制桿蓋  
( $\phi 2.6x \phi 6x11$ )

700 Linkage Rod(C)  
700 連桿 C ( $\phi 2.5x23$ )mm

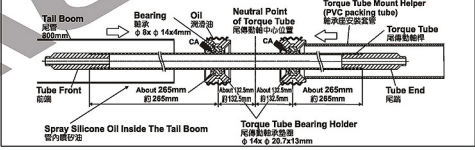
### 700NT9

Socket Collar Screw  
圓頭內六角軸套螺絲 (M3x22mm) x 2

M3 Specialty Washer  
M3 特殊華司 ( $\phi 3x \phi 8x2$ )mm x 2

### TIP TO FIX THE TORQUE TUBE 轉動軸承固定位置要領

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 將軸承固定於尾管轉軸上，避免 CA 沾到軸承的兩側而導致軸承卡死，插入尾管內時，尾管軸承座應與外表抹些潤滑油，利用隨附轉軸安裝裝置將尾管軸承座垂直壓入尾管中不可歪斜。



CAUTION 注意

Skewed torque tube bearing holder will interfere with torque tube rotation and cause unusual vibration.  
尾管轉軸承座安裝歪斜會造成轉動軸承運轉不順及尾管異常震動等問題。

### 700NT8

Socket Screw  
圓頭內六角螺絲 (M3x26mm) x 2

M3 Specialty Washer  
M3 特殊華司 ( $\phi 3x \phi 8x2$ )mm x 2



**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) x 4

**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**  
半圓頭內六角輪套螺絲 (M3x6mm) x 6

**700NZ9**

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

**700NZ9**

**Ball Link**  
定桿環 x 2

**700NT7**

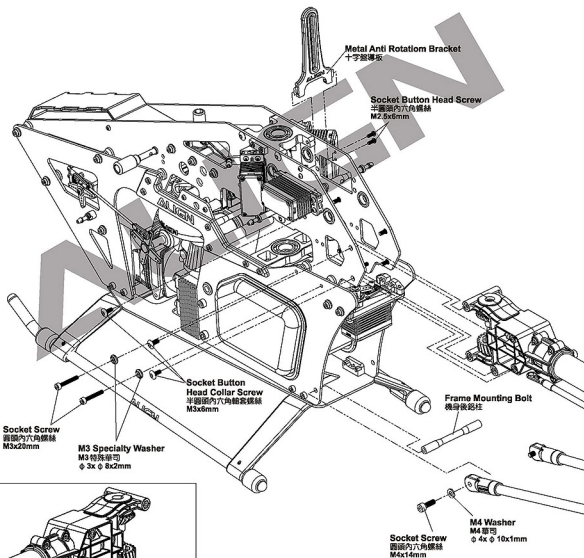
**Socket Screw**  
圓頭內六角螺絲 (M4x8mm) x 1

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

**CAUTION**  
注意

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

原裝零件出廠包裝如果是組裝品，請再確認各螺絲是否鎖緊上膠。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.

螺絲鎖入塑膠件務必注意，適者拉力鎖緊即可，而過緊的扭力可能會導致滑牙。

## 700FLH16A



M5 Nut  
M5 防鬆螺帽 x 2



Socket Collar Screw  
圓頭內六角鉸式螺絲 (M5x32mm) x 2

When tightening the main blade fixing screw, please tighten it firmly, but not over tighten, or it may cause the damage of main blade holder and result in danger.  
鎖緊主旋翼螺絲時注意適量緊度即可，過緊可能導致主旋翼夾座受損，飛行意外發生。

## 700NZ9

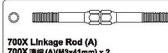


Elevator Ball Link  
升降臂定位彈頭 x 4



Collar  
鎖桿套  
( $\phi$  6x  $\phi$  4.85x3mm) x 4

## 700NZ9



700X Linkage Rod (A)  
700X 連桿 (A)(M3x41mm) x 2

Socket Collar Screw  
圓頭內六角鉸式螺絲  
M5x32mm

700 Carbon  
Fiber Blades  
700 碳纖維主旋翼

## 700FLH13



Main Shaft Spacer(1)  
主軸墊片(1)  
( $\phi$  12x  $\phi$  16x1mm) x 1



Spare Part:  
Main Shaft Spacer(1.2)  
備品：主軸墊片(1.2)  
( $\phi$  12x  $\phi$  16x1.2mm) x 1



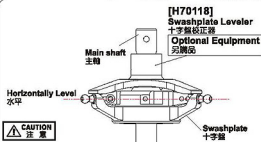
Spare Part:  
Main Shaft Spacer(0.8)  
備品：主軸墊片(0.8)  
( $\phi$  12x  $\phi$  16x0.8mm) x 1



Spare Part:  
Main Shaft Spacer(0.5)  
備品：主軸墊片(0.5)  
( $\phi$  12x  $\phi$  16x0.5mm) x 1

Standard Equipment :  
Main shaft spacer(1)  
標準品：主軸墊片(1)  
 $\phi$  12x  $\phi$  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)  $\phi$  12x  $\phi$  16x1.2mm  
主軸墊片(0.8)  $\phi$  12x  $\phi$  16x0.8mm  
主軸墊片(0.5)  $\phi$  12x  $\phi$  16x0.5mm



[H70118]  
Swashplate Leveler  
十字橫板正器  
Optional Equipment  
另購品

Horizontally Level  
水平

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，請務必使用十字橫板正器校正十字盤，調整伺服連桿長度，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 small amount of T43 thread lock when fixing a metal part.  
螺絲鎖附於金屬件時請使用適量T43(藍絲膠)。



700X Linkage Rod(A)  
Approx. 59mm x 2  
700X連桿(A)約59mm x 2



700 CNC  
Main Drive Gear Set  
700 CNC 主齒輪

M4 Nut  
M4 防鬆螺帽

Socket Screw  
圓頭內六角鉸式螺絲  
M4x27mm

## 700NB21



M4 Nut  
M4 防鬆螺帽 x 1



Socket Collar Screw  
圓頭內六角鉸式螺絲 (M4x27mm) x 1


**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 choices can 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/藍色閃爍

Front  
機頭方向

\* Factory Setting

\* 出廠預設值

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



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

原裝零件出廠包裝如果是組裝品，請再次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。

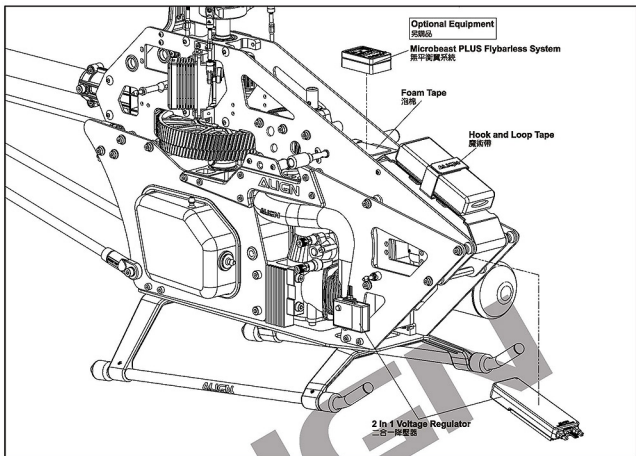
Optional Equipment  
另購品  
Battery of Receiver  
接收器電池  
Optional Choice : 2S1P 7.4V  
Li-Po 1900~2600mAh Battery  
可選用：2S1P 7.4V Li-Po  
1900~2600mAh 電池

Hook and Loop Tape(Fuzzy)  
魔鬼沾(絨毛款)

Hook and Loop Tape(Hooked)  
魔鬼沾(勾狀)

Receiver Mount  
接收器座

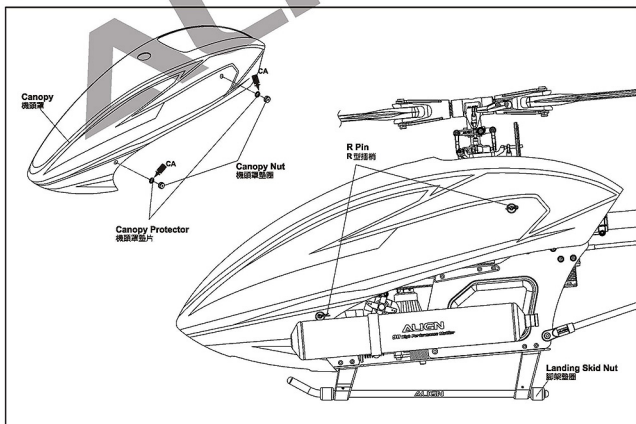
Muffler  
加速管  
Optional Equipment  
另購品



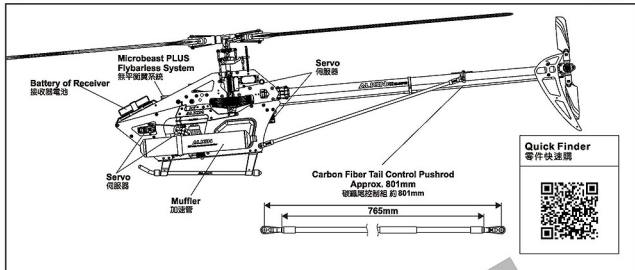
## CANOPY ASSEMBLY

機頭罩安裝

ALIGN







## 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



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 your V3.2.X to V4.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 V4.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。操作設定請同時參閱 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.

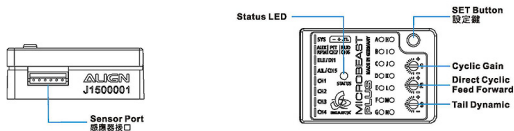
更多詳細的設定操作說明請至官網下載專區下載。  
<http://www.align.com.tw/beastx/>



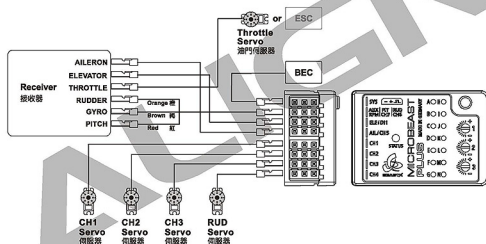
MICROBEAST PLUS  
 BEASTX MICROBEAST PLUS/HD SYSTEM FOR HD MODELS  
 Optional Equipment  
 選購品

## 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。



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

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

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

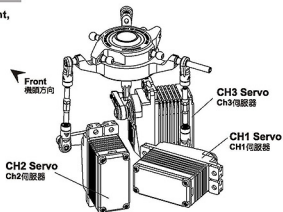
此項設定只要開啟發射器，接上BEC電源即可進行操作。

注意：為了安全起見，設定前請先不要將無刷馬達與無刷馬達三條線接上，以免調整時啟動馬達而發生危險。

## SERVO CONFIGURATION 伺服器配置

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

請依照右圖顯示的伺服器名稱，將伺服器接到陀螺儀。



## ADJUSTMENTS FOR GYRO AND TAIL NEUTRAL SETTING

陀螺儀與尾翼中立點設定調整

ALIGN

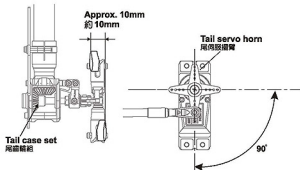
Turn off Revolution mixing (RVMX) mode on the transmitter, then set the gain switch on the transmitter and the gyro to non-head lock mode, or disable gain completely. After setting the transmitter, connect the helicopter power and proceed with rudder neutral point setting. **Note:** When connecting to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

發射器內陀螺儀設定請關閉橫滾混控模式，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升機電源，即可進行尾舵中立點設置。注意：當接上直升機電源時請勿撥動尾舵搖桿或碰觸機體，待3秒陀螺儀開機完成後，尾舵桿將需與尾伺服器約成90度，尾旋翼控制組須正確置於尾橫軸中間位置，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.

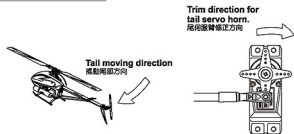
陀螺儀開機後，在非鎖定模式下，尾伺服器與尾 Pitch 控制組正確擺置位置。若尾 Pitch 控制組未處中時請調整尾控制連桿的長度來修正。



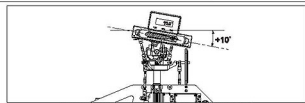
### HEAD LOCK DIRECTION SETTING OF GYRO 陀螺儀鎖定方向設定

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".

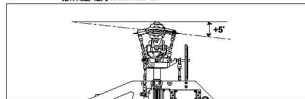
陀螺儀鎖定方向確認，當手搖尾舵順時鐘擺動，尾向旋翼應反時鐘修正，反方向時請切換陀螺儀上“鎖定反向”開關修正。



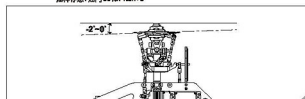
GENERAL FLIGHT 一般飛行模式



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

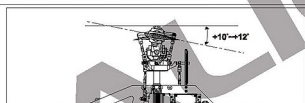


Stick Position at Hovering/Throttle 60%/Pitch+5°  
操桿停滯/油門60%/Pitch+5°

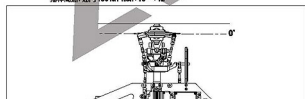


Stick Position at low/Throttle 0%/Pitch-2°~0°  
操桿低速/油門0%/Pitch-2°~0°

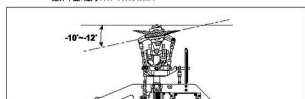
3D FLIGHT 3D特技飛行模式



Stick position at high/Throttle 100%/Pitch+10°~+12°  
操桿高速/油門100%/Pitch+10°~+12°



Stick position at middle/Throttle 60%~65%/Pitch 0°  
操桿中速/油門60%~65%/Pitch 0°



Stick position at low/Throttle 100%/Pitch-10°~-12°  
操桿低速/油門100%/Pitch-10°~-12°

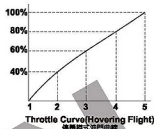


1. Pitch range : Approx ± 15 degrees.
2. Hint : Do not exceed ± 14 degrees pitch range. Doing so may cause motor overload and binding of certain head components.

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變異機艙干涉。

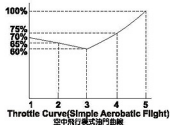
GENERAL FLIGHT 一般飛行模式

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



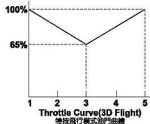
IDLE 1 : SPORT FLIGHT

Throttle 油門	Pitch 螺距
5 100%	+10°~+12°
4 75%	
3 80%	+5°
2 65%	
1 70%	-5°



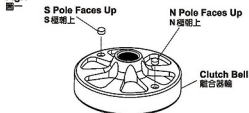
IDLE 2 : 3D FLIGHT

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°



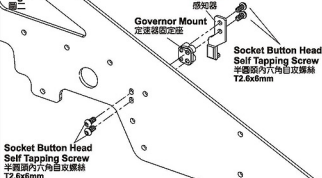
## INSTRUCTION 安裝使用說明

Fig.1



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

Fig.2



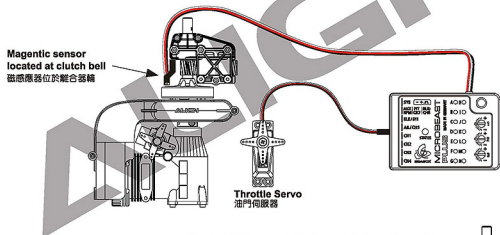
NOTE: The safty RPM is up to 16000rpm for OS90 engine.

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.

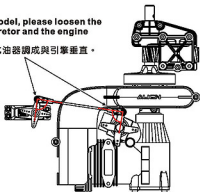
燃燒驅動系統(引擎)，當感應器使用在引擎直昇機時，請特別注意感應器電源供應與連接線的極性是否正確。



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尋網下載。  
[Http://www.align.com.tw/manuals/flybarless/](http://www.align.com.tw/manuals/flybarless/)

## FEATURES 功能說明

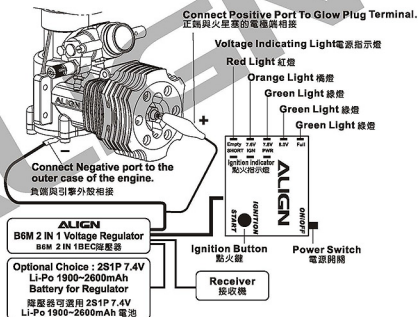
- Due to the unique 2 in 1 design, the regulator's functions provide power to the receiver, servos, and the internal glow plug ignition system that does not require you to remove the clip lead.
- The linear regulator design results in no interference to the receiver. The required input power may only consist of a 2 cell Li-Ion or a Li-Poly battery.
- 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.

- 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。
- 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，免於掉機的恐懼。
- 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

- Input Voltage : DC 7.4V 2 cell Lithium or Li-Poly battery
- Output Voltage : DC 7.4V(BEC)/ 1.5V(Glow Plug)
- Max. Continuous Current : 6A
- Weight : 51.2g (Including wires)
- Regulator size : 73x32.5x13mm  
Control board size : 35x24x10mm

- 輸入電壓：DC 7.4V 2CELL 鋰電
- 輸出電壓：DC 7.4V(BEC)/ 1.5V(Glow Plug)
- 最大連續輸出電流：6安培
- 重量：51.2g (含線組)
- 尺寸：降壓器 73x32.5x13mm  
控制板 35x24x10mm



## INSTRUCTION 安裝使用說明

## Receiver and Servo Voltage Regulating Functions :

- 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.
- 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：

- 本產品具備電壓指示功能，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，不應該再使用盡！
- 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 depressing 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. 依按線示意图完成接線後，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，表示火星塞不正常點火，請檢查火星塞加熱線圈是否開路損壞，或是鱷魚夾夾不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（電線正露）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：請使用泡棉雙面膠或魔術貼將降壓器與直昇機固定，降壓器的各條線請勿纏繞固定，以免直昇機旋轉時因震動造成接觸點脫脫斷線。

## 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






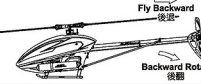






A safe and effective practice method is to use the transmitter flying on the computer through simulator software sold on the market. Do a simulation flight until you familiarize your fingers with the movements of the rudders, and keep practicing until the fingers move naturally.

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.

在這邊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，一樣最有效、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)，並反覆練習油门高/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
		 <p>Move Left 左移</p> <p>Move Right 右移</p> <p>Rotate Left 左翻</p> <p>Rotate Right 右翻</p>
		 <p>Fly Forward 前進</p> <p>Fly Backward 後退</p> <p>Forward Rotate 前翻</p> <p>Backward Rotate 後翻</p>
		 <p>Ascent 上升</p> <p>Descent 下降</p>
		 <p>Turn Right 右旋</p> <p>Turn Left 左旋</p>

## 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→螺絲是否鎖緊?
- ⊙ 發射器和接收器電池量是否足夠。

- 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。請小心避免灰塵顆粒進入管子內。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.

引擎各項調羹及注意事項，請參照原廠使用說明書。



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最低點。

### CAUTION 注意

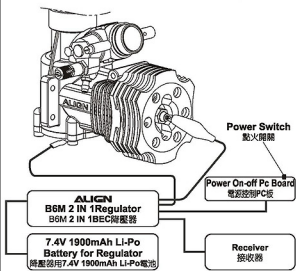
Check if the throttle stick is set at the lowest position and check if engine throttle is at low speed.

確認油門搖桿是在最低的位置，並確認引擎油門量於低速。

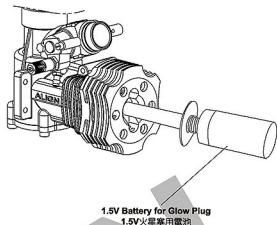


## GLOW PLUG IGNITION METHOD 火星塞點火方式

Method 1  
方式一

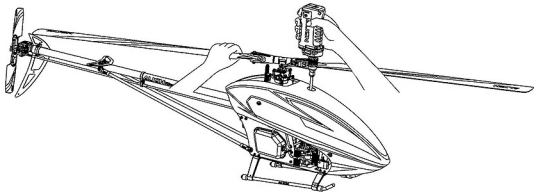


Method 2  
方式二



## 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被鎖調整至最低即可；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。避免升空前卸架與硬地的地面震動太大反饋至機身上的無平衡感應器，影響無平衡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.

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

## 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. 慢慢的推起油门桿停到高點並且停止，在飛機離地前，從飛機側邊觀察主旋翼轉動。
3. 仔細觀察雙旋翼軌跡(假如兩支旋翼軌跡都是相同軌跡，則不需要調整;可是如果一支旋翼較高或較低產生“雙葉”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 higher 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連桿調整。  
B. 旋翼轉動時較低軌跡的主旋翼表示螺距(PITCH)過小，請調DFC連桿調整。

CAUTION  
注意

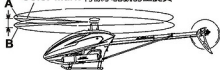
Tracking adjustment is very dangerous, so please keep away from the helicopter at a distance of at least 10m.

調整軌跡非常危險，請於距離飛機最少10公尺的距離。

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

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

Color Mark 有標示記號的主旋翼



## FLIGHT ADJUSTMENT AND NOTICE 飛行調整與注意

FORBIDDEN  
禁止



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

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

CAUTION  
注意

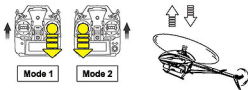
- Make sure that no one or obstructions in the vicinity.
- For flying safety, please carefully check if every movement and directions are correct when hovering.
- 確認鄰近地區沒有人和障礙物。
- 為了飛行安全，您必須先確認停懸時各項操控動作是否正常。

CAUTION  
注意

Do not attempt to fly until you have some experiences with the operation of helicopter.  
嚴禁無熟練操控飛行經驗者操控飛行。

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

- When the helicopter begins to lift-off the ground, slowly reduce the throttle to bring the helicopter back down. Keep practicing this action until you control the throttle smoothly.
- 當直昇機開始離地時，慢慢降低油門將飛機降下。持續練習飛機從地面上升和下降直到你覺得油門控制很順。



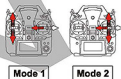
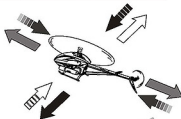
## STEP 2 AILERON AND ELEVATOR CONTROL PRACTICE 副翼和升降控制練習

- Raise the throttle stick slowly.
- 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.

- 慢慢升起油門搖桿。
- 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。



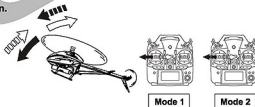
- If the nose of the helicopter moves, please lower the throttle stick and land the helicopter. Then move your position diagonally behind the helicopter 10m and continue practicing.
- If the helicopter flies too far away from you, please land the helicopter and move your position behind 10m and continue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

- Slowly raise the throttle stick.
- Move the nose of the helicopter to right or left, and then slowly move the rudder stick in the opposite direction to fly back to its original position.

- 慢慢升起油門搖桿。
- 將直昇機機頭移動左或右，然後慢慢反向移動方向舵搖桿並將直昇機飛回原本位置。



## STEP 4

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

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

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

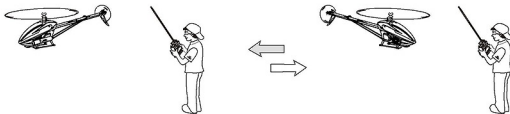
- 當您更加習慣操作動作，您可以畫更小的圓圈。



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

After you are familiar with STEP1 to 4, stand at side of the helicopter and continue practicing STEP1 to 4. Then repeat the STEP1 to 4 by standing in front of the helicopter.

當您覺得 STEP1~4 動作熟悉了，站在面對直昇機側邊並繼續練習 STEP1~4。之後，站在直昇機機頭前方重複步驟練習。



	Problem 狀況	Cause 原因	Solution 對策
Blade Tracking 雙槳平衡	Tracking is Off 雙槳	Pitch linkage rods are not even length PITCH連桿長度調整不平均	Adjust length of ball link. 調整連桿球長度
Hover 停懸	Headsped 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. 調整連桿球降低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%)
	Headsped 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. 調整連桿球調高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. 停懸時槳翼向某一邊偏移，或發動方向舵並回零到中立點時，尾翼產生延遲，無法停駐在所控制位置上。	Rudder neutral point improperly set 尾舵中立點設定不當	Reset rudder neutral point 重設尾舵中立點
	Tail oscillates (hunting, or wags) at hover or full throttle 停懸或全油門時尾翼左右來回搖擺。	Rudder gyro gain too low 尾舵陀螺儀敏感度偏低	Increase rudder gyro gain 增加尾舵陀螺儀敏感度
		Rudder gyro gain too high 尾舵陀螺儀敏感度偏高	Reduce rudder gyro gain 降低尾舵陀螺儀敏感度

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

## 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

