

DOMINATOR TREX 650X INSTRUCTION MANUAL

使用說明書

RH65E01XT
RH65E02XT

ALIGN



F3C
3D FLIGHT
DESIGN

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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 illustrative purpose only. Actual product may vary due to product enhancement. Specifications, contents of parts and availability are subject to change, ALIGN RC is not responsible for inadvertent errors in this publications.

承蒙閣下選用亞拓遙控世界系列產品，謹表謝意。使用前，請務必詳閱本說明書，相信一定能夠給您帶來相當大的幫助，也請您妥善保管這本說明書，以做為日後參考。本公司將不對此印刷物之異動負責，也無法主動通知消費者任何更新或異動。所有圖片僅用於展示目的。產品可能因改良而有些不同。本說明書內記載的材質、規格或零件包裝之內容物如有異動，請依亞拓官網公告為主。

Thank you for buying ALIGN Products. For further usage and assembling, please read T-REX 650X Dominator instruction manual carefully. Be sure to retain the manual for future reference, routine maintenance, and tuning. The T-REX 650X Dominator is a new product developed by ALIGN. It not only provides flying stability for beginners, but also full aerobatic capability for advanced fliers. T-REX 650X Dominator is the best helicopter and best choice for you.

感謝您選購亞拓產品，為了讓您容易方便的使用 T-REX 650X Dominator 直昇機，請您詳細的閱讀完這本說明書後再進行組裝以及操作，同時請您妥善保存作為日後進行調整以及維修的參考。T-REX 650X Dominator 是由亞拓自行研發的新產品，不論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 650X Dominator 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 650X Dominator 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 manufacturer and seller 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 650X Dominator 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和其他人安全，使用時也請留意周遭環境。注意！任何遙控直昇機的操作，製造商和經銷商是無法對使用者於零件使用的消耗異常或造成不當所發生之意外負任何責任，本產品是提供給有操作過模型直昇機經驗的成人或有相當技術的人員在旁指導於當地合法遙控飛行場飛行，以確保安全無虞下操作使用，產品售出後本公司將不負任何操作和使用控制上的任何性能與安全責任。

做為本產品的使用者，您，是單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 650X Dominator 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.

第一次嘗試飛本產品之前，建議您尋找有經驗的技術人員協助指導、組裝、設定和飛航。模型產品屬於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，將無法於保留條件內更換新品或退貨，如適用使用操作維修問題，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、或操作不良所造成之破損或傷害，本公司無法控制及負責。任何使用、設定、組裝、修改、或操作不良所造成之破損、意外或傷害，使用者應承擔全部責任。

SAFETY NOTES 安全注意事項



- R/C helicopters and airplanes require highly attention and cautions. 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 rotor head 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，並需了解自負風險所造成任何意外之責任。
- 每趟飛行前須仔細檢查，主旋翼次座槳軸螺絲、尾旋翼次座槳絲，以及機身各部位球頭、螺絲，確實上緊螺絲才能升空飛行。



LOCATE AN APPROPRIATE LOCATION 遠離障礙物及人群

R/C helicopters fly at high speed, thus posing a certain 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. Do not fly your model in inclement weather, such as rain, wind, snow or darkness.

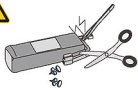
真昇機飛行時具有一定的速度，也潛在著危險性，場地的選擇非常重要。請遵守當地法規，並在空曠合法專屬飛行場地飛行。注意與還有沒有人、高樓、建築物、高壓電線、樹木等等，避免不當的操控造成自己與他人財產的損壞。請勿在下雨、打雷等惡劣天氣下操作，以確保本身及機體的安。



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. Always follow closely the manufacturer's instructions and warnings when disposing of Lithium Polymer batteries. Mishandling of Li-Po batteries can result in fire.

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. Do not operate

or expose to rain or moisture. The exposure to water or moisture in any form can cause the model to malfunction resulting in loss of use, or a crash.

真昇機內部也是由許多精密的電子零件組成，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，防止水氣滲入機身內部而導致機體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。請確認於產品限界內操作，請勿過載使用，並勿用於安全、合法外其它非法用途。



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.)

在飛行場飛行前，需確認是否有相同頻率的同好正進行飛行，因為開啟相同頻率的發射機將導致自己與他人立即墜機等意外危險。遙控飛機操控技巧在學習初期有著一定的難度，建議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。(建議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真昇機。過於疲勞、精神不佳或不當操作，意外發生風險將可能提高。不可在視線範圍外進行，降落後也請馬上關掉發射機和遙控器電源。



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.

真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或在環境上的嚴重損傷，請勿觸摸運轉中的主旋翼與尾旋翼，並保持安全距離以避免造成危險及損壞。



KEEP AWAY FROM HEAT 遠離熱源

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

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



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

Transmitter(6-channel or more, Helicopter system)
發射器 (六道以上直昇機模式遙控器)or
或Intelligent Balance Charger RCC-6CX
智慧型分配充電器 RCC-6CXRCC-300 Battery Charger
RCC-300 充電器or
或Receiver(6-channel or more)
接收器 (六道以上)Remote Receiver
遙控天線22.2V 6S-12S 3300-6000mAh Li-Po Battery x 2 pcs
22.2V 6S-12S 3300-6000mAh Li-Po 電池 x 2

ADDITIONAL TOOLS REQUIRED FOR ASSEMBLY 自備工具

[H70118]
Swashplate Leveler
十字盤校正器[HET80001]
AP800 Digital Pitch Gauge
AP800 數位量距規[HETMT901]
Multi-function Tester
多功能檢測計Phillips Screw Driver
十字螺絲起子
φ 3.0/φ 1.8mmCutter Knife
刀子Hexagon
Screw Driver
六角螺絲起子
3mm/2.5mm/
2mm/1.5mmNeedle Nose Pliers
尖嘴鉗Oil
潤滑油CA Glue
瞬間膠Grease
潤滑油





















PACKAGE ILLUSTRATION 包裝說明

650 Carbon Fiber Blades x 1set
650 碳纖維主翼 x 1 組650HT04
Carbon Fiber Tail Boom x 1
碳纖維尾管 x 1650HB06
650HT01
600NH17
650HH01
650HB03
650HB04
650HB05Option Equipment
選購品Microbeast PLUS
Flybarless System x 1
無平衡槓系統 x 1800MX (440KV/4530) Motor x 1
800MX (440KV/4530) 無刷馬達 x 1Option Equipment
選購品DS830M High Voltage Brushless Servo x 3
DS830M 高電壓無刷伺服馬達 x 3DS835M High Voltage Brushless Servo x 1
DS835M 高電壓無刷伺服馬達 x 1RCE-BL130A Brushless ESC x 1
RCE-BL130A 無刷調速器 x 1Quick Finder
零件快速冊Canopy
機頭罩650HB01 60HZ
650HB02 650HT02
650HG01 650HT03
650HT05












There are many versions of T-REX 650X Dominator for your choice. The Super Combo includes additional electronics and other equipment. The Instruction Manual will refer to the T-REX 650X Dominator Super Combo. You may purchase any additional items referenced in the instruction manual or any spare parts for other 650X Dominator version by referring to more product information in this manual.

T-REX 650X Dominator 系列商品有多種版本可作為選擇，除標準配備會因您購買的商品版本而有些微不同，在組裝、設定上都是一致的，在此我們以 Super Combo 作為操作範例，您也可依照書面上的商品資訊來增添其他選購商品。


T-REX 650X DOMINATOR SUPER COMBO STANDARD EQUIPMENT T-REX 650X DOMINATOR SUPER COMBO 標準配備 [RH65E01XT]

 650HC01	 600NH17	 650HH01	 650HB01	 650HB02
 650HB03	 650HB05	 650HB06	 650HG01	 650HT03
 650HZ	 650HT04	 維修毛巾 X 1	 650 碳纖維主旋翼 x 1 組	 RCE-BL130A 無刷调速器 x 1
 Microbeast PLUS Flybarless System x 1 無平旋翼系統 x 1	 DS830M 高電壓無刷伺服器 x 3	 DS835M 高電壓無刷伺服器 x 1	 M4x4 止流螺絲 x 2 Motor Slant Thread Pinion Gear 16T x 1 馬達斜齒輪 16T x 1	 RCM-BL800MX 無刷馬達 (440KV/4530) x 1

T-REX 650X DOMINATOR KIT STANDARD EQUIPMENT
T-REX 650X DOMINATOR KIT 標準配備
[RH65E02XT]

 650HC01	 600NH17	 650HH01	 650HB01	 650HB02
 650HB03	 650HB05	 650HB06	 650HG01	 650HT03
 650HZ	 650HT04	 維修毛巾 X 1	 650 碳纖維主旋翼 x 1 組	 RCM-BL800MX 無刷馬達 (440KV/4530) x 1

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

- Before flying, please check to make sure no one else is operating on the same frequency for the safety.
- Before flight, please check if the battery capacity of transmitter and receiver are enough for the flight.
- Before turn on the transmitter, please check if the throttle stick is at the bottom position. Autorotation and 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 to prevent unexpected danger due to broken servos.
- Check for missing or loose screws and nuts. See if there is any cracked and incomplete assembly of parts. Carefully check main rotor blades and rotor holders. Broken and premature failures of parts possibly cause a dangerous situation.
- Check all ball links to avoid excess play and replace as needed. Failure to do so will result in poor flight stability.
- Check if the battery and power plug are fastened. Vibration and violent flight may cause the plug loose and result in out of control.
- 每次飛行前應先確認所使用的頻率是否會干擾他人，以確保您自身與他人的安全。
- 每次飛行前確定您發射器與接收器電池的電量是在足夠飛行的狀態。
- 開機前確認油門搖桿是否位於最低點，熄火降落開關、定速開關 (IDLE) 是否於關閉位置。
- 開機時必須遵守電源開關機器的程序，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。不正確的開機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，請嚴格執行以確保安全。
- 檢查所有的連接頭是否有鬆脫的情形，過鬆的連接頭應先更新，否則將造成直昇機無法操縱的危險。
- 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，請配合上膠或油，以確保黏附零件使用之可靠度。



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

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.
 塑膠件避免接近熱源。



CA Glue
 瞬間膠



Anaerobic Retainer
 厌氧膠



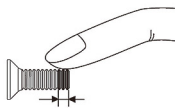
Thread Lock
 螺絲膠



Grease
 潤滑膏



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. 厌氧膠 (R48) 為綠色高強度快速固化的厌氧膠，適合於金屬管狀固定用，可耐高溫至 180°C。
2. 螺絲膠 (T43) 為藍色低強度螺絲膠，適合小型螺絲；使用於金屬內外徑或膠合螺絲時，請務必適量使用，必要時請用手去除去多餘膠量，欲拆卸時可於金屬接合部位加熱約 15 秒。
3. 潤滑膏 (Grease) 為膏狀潤滑膏，適用於單向軸承或止推軸承。

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

600NH17

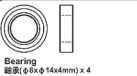
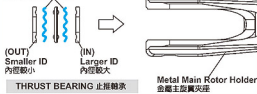
CAUTION
注意

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

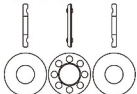
止推軸承及橫軸墊圈屬於飛行消耗品，建議每20趟定期檢查及更換，高主旋翼轉速飛行時，請縮短定期檢查之趟數，以確保飛行安全。

CAUTION
注意

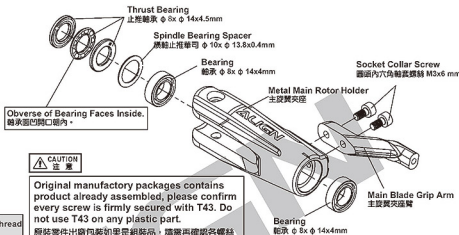
Apply Grease on Thrust Bearing.
止推軸承塗上潤滑油



Bearing 總長 (φ8xφ14x4mm) x 4
Socket Collar Screw 圓筒內六角鎖柱螺絲 (M3x6mm) X4



Thrust Bearing 止推軸承 (φ8xφ14x4.5mm) x 2
Spindle Bearing Spacer 橫軸止推墊片 (φ10xφ13.8x0.4mm) x 2



CAUTION
注意

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

原裝零件出廠包裝如果是組裝品，請確認再電鍍各螺絲是否鎖緊上膠。

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

CAUTION
注意

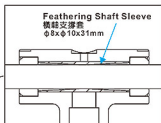
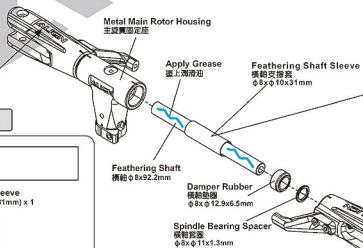
The feathering shaft and feathering shaft socket screws are wear items, and thus should be inspected for replacement after every 100 flights. For flights with high headspeed, the inspection interval should be reduced to ensure flight safety.

主旋翼橫軸組、橫軸和橫軸螺絲屬於飛行消耗品，建議每100趟定期檢查及更換，高主旋翼轉速飛行時，請縮短定期檢查之趟數，以確保飛行安全。

CAUTION
注意

ALIGN
Logo on The Top 字樣朝上

600NH17



CAUTION
注意

ALIGN
Logo on The Top 字樣朝上



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

600NH17



Bearing
軸承(φ3xφ7x3mm) x 4



Washer
華司(φ3xφ4.8x0.3mm) x 2



Socket Screw
圓頭內六角螺絲(M2x5mm) x 4



Bearing
軸承(φ2xφ5x2.3mm) x 4



Collar
接臂軸承襯套(φ3xφ4.8x1.5mm) x 2



Socket Screw
圓頭內六角螺絲(M3x12mm) x 2

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。

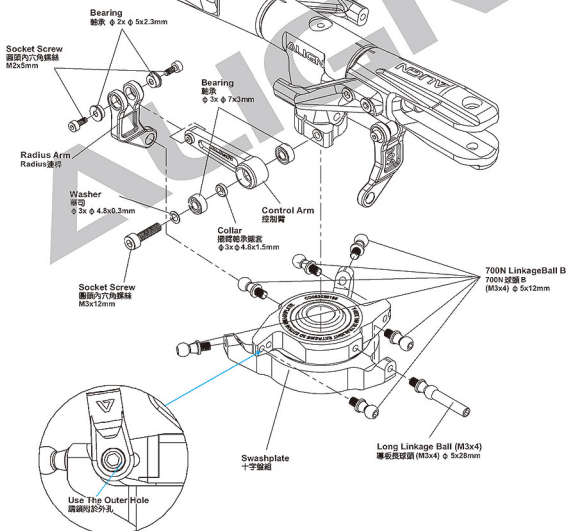
650HH01



700N Linkage Ball B(M3x4)
700N 球頭B(M3x4)(φ5x12mm) x 6



Long Linkage Ball (M3x4)
導板長球頭(M3x4)(φ5x28mm) x 1



600NH17A



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

Collar
連桿套 x 2

M3 Nut
M3 防鬆螺母 x 2

Elevator Ball Link
升降桿連桿頭 x 2

Socket Collar Screw
圓頭內六角鉸接螺絲 (M3x19mm) x 2

760X Linkage Rod(A)
760X 連桿 A (M3x35mm) x 2



1. Already assembled by Factory. Before flying, please check if the screws are fixed with glue.

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

3. 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.

4. 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.

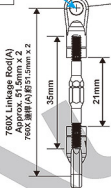
1. 原裝組裝完成品，每一次飛行前請先確認螺絲是否已上膠不會鬆動。
2. 原裝零件出廠包裝如果是組裝品，請需再確認各螺絲是否鎖緊上膠。請注意T43不可塗在任何塑膠材質上。
3. 旋翼頭組及主軸屬於飛行消耗品，建議每200趟定期檢查及更換，請縮短定期檢查之週數，並確實檢查您的直升機，以確保飛行安全。
4. 若發生人為組裝不當或零件損壞造成飛機商品損壞時，請務必詳細確實檢查，強烈建議更換損壞的部件，避免高主旋翼轉速飛行時，發生不可預期的意外。

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



You may adjust the length of ball link to adjust blade tracking.

若飛行中有雙邊情形，可適當調整連桿長度改善。



760X Linkage Rod(A)
Approx. 51.5mm x 2
760X 連桿(A)約51.5mm x 2

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

Elevator Ball Link
升降桿連桿頭

Collar
連桿套

760X Linkage Rod(A)
760X 連桿 A
M3x35mm

Elevator Ball Link
升降桿連桿頭

Left-hand
逆轉

Check Point
溝槽辨識

Right-hand
正轉

Socket Collar Screw
圓頭內六角鉸接螺絲
M3x19mm

Socket Collar Screw
圓頭內六角鉸接螺絲
M3x19mm



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.

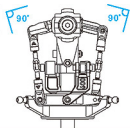
組裝時請將連桿中溝槽辨識端朝上。請使用尖嘴鉗或扳手轉動連桿中間六角柱部位調整適當長度，順時針轉動為調短連桿長度；逆時針轉動則為調長連桿長度。

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

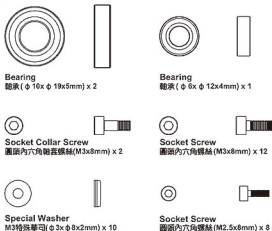
Main Rotor Grip Arm and Linkage Rod is at 90-degree angle symmetrically, allow to keep the best precise flight performance.

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



Main Shaft
主軸 φ 5 x φ 10x189.4mm

650HB03



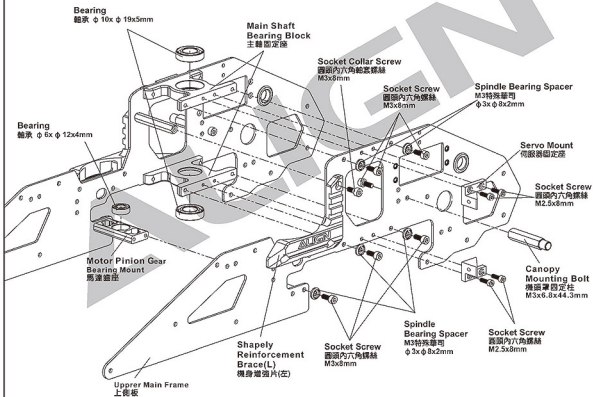
Apply a small amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件時使用適量 T43 (螺絲膠)。



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

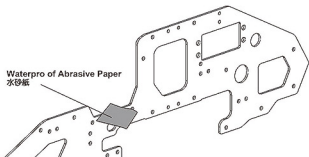
原廠零件出廠包裝如果是組裝品，請需再確認各螺絲是否鎖緊上膠。請注意 T43 不可塗在任何的塑膠材質上。

650HB05

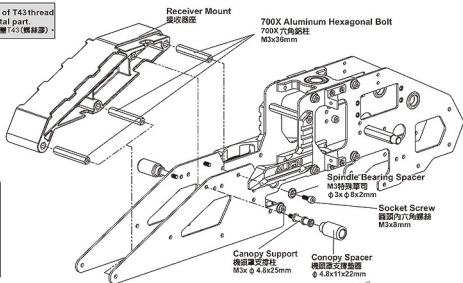


Recommend sanding the marked position as right illustration with a waterproof abrasive paper(#800-1000) to avoid the wires of electric parts to be cut.

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



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)。



650HB05



650HB03



650HB04



650HB05

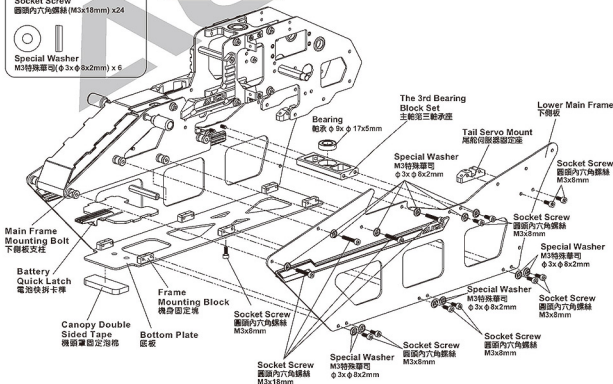


Apply a small amount of T43 thread lock when fixing a metal part.
螺絲鎖附於金屬件時使用適量 T43 (螺絲膠)。

CAUTION
注意

Original 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。



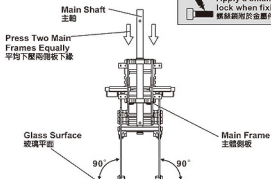


Main frame assembly key point :

First do not fully tighten the screws of main frames and put three 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：

鉸接螺絲先不完全鎖緊，放入主軸貫穿三顆軸承確認上下移動必須滑順，主軸底座必須與水平桌面（玻璃平面）確實緊貼；請保持主軸滑順與底座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。



650HG01



M3 Washer
M3 華司 ($\phi 3 \times \phi 8 \times 1 \text{mm}$) x 4



Socket Screw
圓頭內六角螺絲 (M3x12mm) x 4

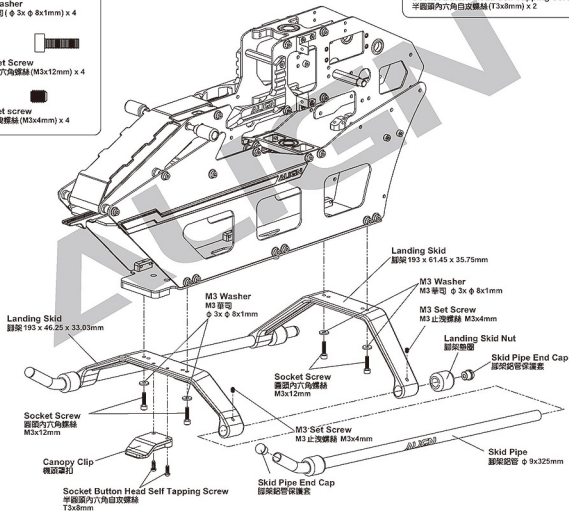


M3 Set screw
M3 止咬螺絲 (M3x4mm) x 4

650HB05



Socket Button Head Self Tapping Screw
半圓頭內六角白皮螺絲 (T3x8mm) x 2



PROGRESSIVE LIGHTWEIGHT LANDING SKID

前衛新型前傾輕量化設計的腳架

Landing skid is tilted 5 degree forward which improves crashworthiness.

新型腳架與輕耐撞擊，為前傾 5 度前衛設計。



650HZ01**650HB03**

Socket Button Head Screw
平頭圓內六角螺絲
M2.5x10mm

Apply a small amount of T43thread lock when fixing a metal part.
鎖絲鎖附的金屬件請使用適量 T43 (螺絲膠)。

CAUTION
注意

Original manufacturing 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成品，請需再確認各螺絲是否鎖緊上膠。

DS830M High Voltage Brushless Servo
DS830M 高電壓無刷伺服馬達
Option Equipment
選購品

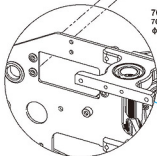
D6FF Metal Servo Arm
D6FF 金屬伺服臂

Collar
鎖套

700E Linkage Ball C(M2.5x3.5)
700E 球頭 C(M2.5x3.5)
φ 5x8.5mm

Socket Button Head Screw
平頭圓內六角螺絲
M2.5x10mm

CF Servo Plate
破藕伺服板壓片



DS830M High Voltage Brushless Servo
DS830M 高電壓無刷伺服馬達
Option Equipment
選購品

Collar
鎖套

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

21mm

Use The Outer Hole
鎖頭附於外孔

D6FF Metal Servo Arm
D6FF 金屬伺服臂

CF Servo Plate
破藕伺服板壓片

Collar
鎖套

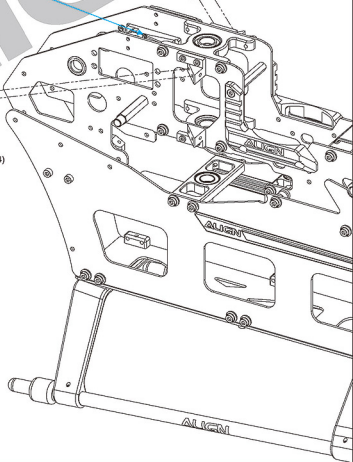
D6FF Metal Servo Arm
D6FF 金屬伺服臂

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

Socket Button Head Screw
平頭圓內六角螺絲
M2.5x10mm

DS830M High Voltage Brushless Servo
DS830M 高電壓無刷伺服馬達
Option Equipment
選購品

- DS830M High Voltage Brushless Servo :
- 1.1520 μ s Standard Band /1520 μ s 寬頻系統
 - 2.Stall Torque/輸出扭力 : 22.0kg.cm (7.4V)
23.0kg.cm (8.4V)
 - 3.Motion Speed/動作速度 : 0.060sec/60° (7.4V)
0.055sec/60° (8.4V)
 - 4.Dimension/尺寸 : 40 x 20 x 39mm
 - 5.Weight/重量 : 80g

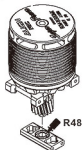
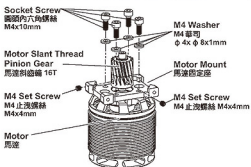


55HZ8



Make sure the motor mount is fully fastened before fasten the motor pinion gear mount.
先將馬達固定座鎖緊固定後，再將馬達齒座鎖緊。

When assembling, apply R48 on the inner diameter of the motor mount bearing, the motor shaft and the bearing are tightly fixed. For disassembly, heat it with a lighter for about 15 seconds; please be aware that the source of ignition must be kept away from plastic and electronic parts.



組裝時，於馬達齒座軸承的內徑貼上R48，使馬達心軸與軸承緊密固定。如需拆卸時，以打火機火烤約15秒即可；請注意，火源務必遠離塑膠及電子零件。

650HB03



While assembling the motor mount, please make sure to properly loose M4 Set screw on 16T motor gear first, after fully fasten the motor mount with the motor pinion, then fasten back the M4 Set screw completely.

安裝馬達座時，請先將16T馬達齒座的M4止鎖螺絲適當放鬆，當馬達固定座和馬達齒座固定鎖好後，再將馬達止鎖螺絲鎖緊。

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)。



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好，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。

650HB04



Rudder Servo Mount
舵舵伺服器固定板



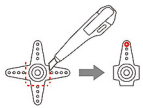
DS835M High Voltage Brushless Servo :
1.1520 μ s Standard Band / 1520 μ s 寬頻系統
2. Stall Torque/輸出扭力: 10.0kg.cm (7.4V)
12.5kg.cm (8.4V)
3. Motion Speed/動作速度: 0.03sec/60° (7.4V)
0.028sec/60° (8.4V)
4. Dimension/尺寸: 40 x 20 x 39mm
5. Weight/重量: 72g

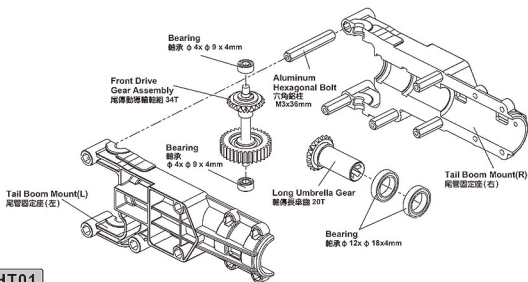


Please trim away the other servo horns, and fasten linkage ball on the outer hole.

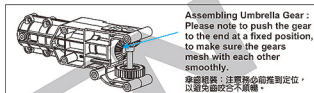
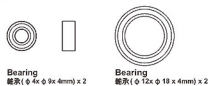
請先將原附十字形舵角片切除多餘的另三邊，並將球頭鎖附於最外孔。

650HZ01

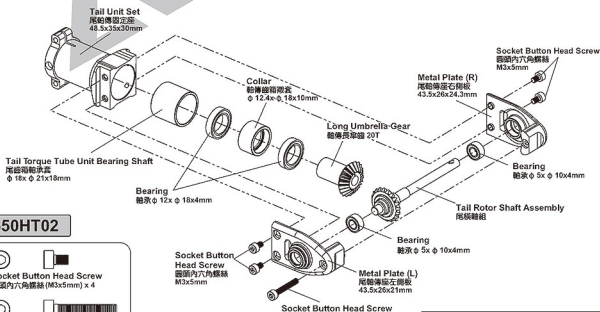




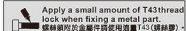
650HT01



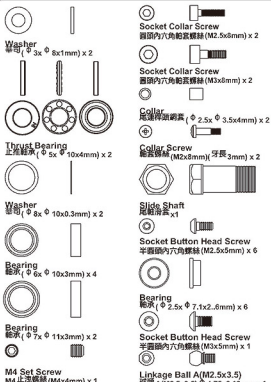
650HT02



650HT02



650HT02



CAUTION 注意

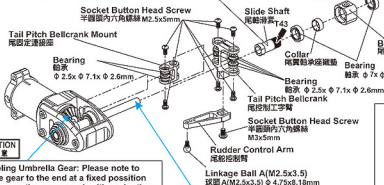
- The Metal Tail Rotor Holder is assembled at the factory, make sure to apply little thread lock on screws and tighten them back appropriately before starting to fly. Suggest to use torque wrench or torque lock for tightening screws with the torque value 5.0kg.cm.
- Make sure to tighten the screws on each side with average strength, but do not unilaterally tighten, or it may causes interference during rotation.
- 尾座翼尖彈簧鋼套為預組裝，螺絲必須採用適量螺絲重新鎖附，鎖附時注意適當力度即可，建議搭配扭力或扭力鎖附器，扭力值為5.0kg.cm。
- 組裝尾座控制組時，上、下螺絲必須平均力度鎖附，不可單邊過緊，否則會造成干涉滑動不順暢。

Please tighten M2x8mm collar screw firmly but not over tightened. Over tighten the screw will cause the operation of control link to be fight.

鎖附 M2x8mm 鉸接螺絲時請使用適力適力，過緊螺絲會造成尾座控制桿滑動不順。

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.

組裝尾座滑桿時，請使用適量的T43螺絲鎖附在螺桿上，嚴禁使用R48高強度鎖附劑，以免在維修或保養時造成損傷。



CAUTION 注意

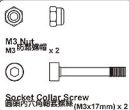
Assembling Umbrella Gear: Please note to push the gear to the end at a fixed position, to make sure the gears mesh with each other smoothly.

傘齒組裝：注意務必前推到底定位，以免出現啮合不順暢。

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.

尾座翼下型座齒輪尾旋軸的凹型並緊上，請從鎖止螺絲螺絲上膠，尾座翼T型座和螺絲屬於飛行消耗品，建議每100次定期檢查及更換，高頭速飛行時，請縮短定期檢查之週數，以確保飛行安全。

650HT05



CAUTION 注意

THRUST BEARING 止推軸承

Apply Grease on Thrust Bearing.

止推軸承塗上潤滑脂



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

尾旋翼夾座彈簧鋼套為預組裝，螺絲必須採用適量螺絲重新鎖附，鎖附時注意適當力度即可，建議搭配扭力或扭力鎖附器，扭力值為5.0kg.cm。

Apply a small amount of T43 thread lock when fixing a metal part.

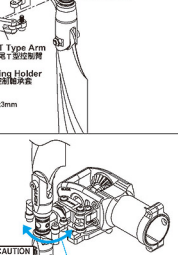
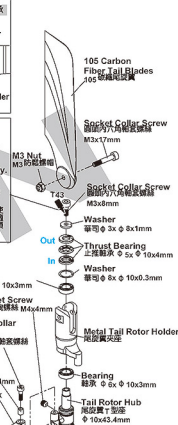
螺絲鎖附於金屬件時請使用適量T43(螺絲膠)。

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.

原廠零件出廠包裝如果是組裝品，請再用確認每顆螺絲是否鎖緊上膠。

CAUTION 注意



CAUTION 注意

After complete the tail rotor assembly, please check if it rotates smoothly.

尾旋翼組裝組裝完成後常從側面尾旋翼夾座旋轉動滑順。

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

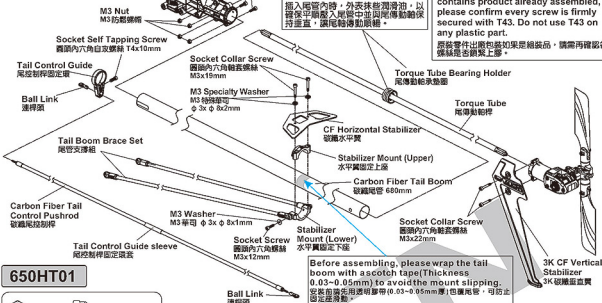
Socket Screw
圓頭內六角螺絲
M3x10mm

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，以保持平衡並與尾管導軌保持垂直，讓尾輪滑動順暢。

Apply a small amount of T43 thread lock when fixing a metal part.
螺絲鎖附的金屬件請使用適量 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.
原廠零件出廠包裝如果是組成品，請再次確認每顆螺絲是否鎖緊上膠。



650HT01



M3 Nut
M3 防鬆螺帽 x 4



Socket Screw
圓頭內六角螺絲 (M3x10mm) x 4

650HT03



M3 Washer
M3 碟形墊圈 (φ 3x φ 8x1mm) x 2



Socket Screw
圓頭內六角螺絲 (M3x12mm) x 2



M3 Specialty Washer
M3 特殊碟形墊圈 (φ 3x φ 8x2mm) x 2



Socket Collar Screw
圓頭內六角套螺絲 (M3x19mm) x 2



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

650HT04



Bearing
軸承 (φ 8x φ 14x4mm) x 1



Socket Self Tapping Screw
圓頭內六角自攻螺絲 (T4x10mm) x 1



Ball Link
連接環 x 2

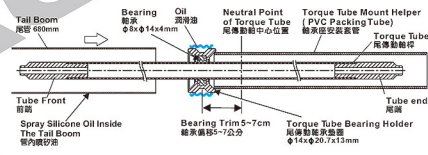
TIP TO FIX THE TORQUE TUBE 傳動軸承固定位置須

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 將軸承固定於尾管導軌上，避免 CA 達到軸承的防塵層而導致軸承卡死，插入尾管內時，尾管導軌承蓋應外表抹些潤滑油，利用附贈軸承安裝套將尾管導軌承蓋壓入尾管中不可歪斜。

CAUTION 注意

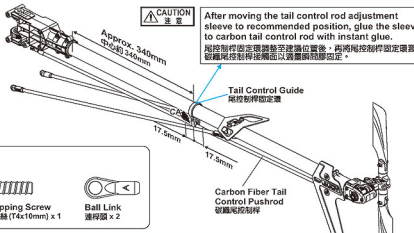
Skewed Torque tube bearing holder will interfere with torque tube rotation and cause unusual vibration.
尾管導軌承蓋安裝歪斜會造成傳動軸運轉不順及尾部異常震動等問題。



CAUTION 注意

After moving the tail control rod adjustment sleeve to recommended position, glue the sleeve to carbon tail control rod with instant glue.

尾控制桿固定環調整至建議位置後，再將尾控制桿固定環與碳纖維尾控制桿接觸面以適量瞬間膠固定。





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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。

Tail Boom Fixing Screw 尾管固定螺絲

650HT01



Socket Button Head Screw
半圓頭內六角螺絲 (M3x6mm) x 1

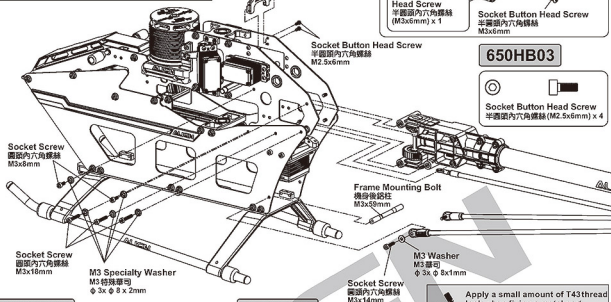


Socket Button Head Screw
半圓頭內六角螺絲 M3x6mm

650HB03



Socket Button Head Screw
半圓頭內六角螺絲 (M2.5x6mm) x 4



650HB04



Socket Screw
圓頭內六角螺絲 (M3x14mm) x 2



M3 Washer
M3 墊圈 (φ 3x φ 8x1mm) x 2

650HT01



Socket Screw
圓頭內六角螺絲 (M3x8mm) x 4



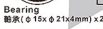
Socket Screw
圓頭內六角螺絲 (M3x18mm) x 6

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

650HB06



Socket Screw
圓頭內六角螺絲 M3x6mm



Bearing
軸承 (φ 15x φ 21x4mm) x 2



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



Spacer
700 墊向墊片
(φ 15x φ 22.7x0.7mm) x 1

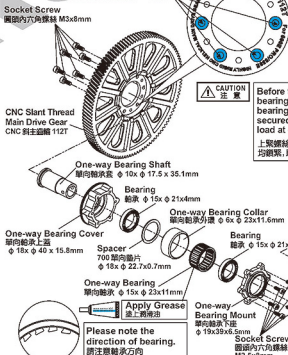


Socket Screw
圓頭內六角螺絲 (M2.5x8mm) x 6



Socket Screw
圓頭內六角螺絲 (M3x8mm) x 6

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



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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。



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.

上緊螺絲前需旋轉軸承並檢查同心度良好後，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。

Apply a small amount of T43 thread lock when fixing a metal part.
鎖絲款用於金屬件鎖使用適量 T43 (螺絲膠)。

CAUTION
注意

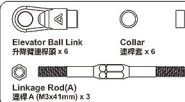
Original manufactory packages contains product already assembled, please confirm every screw is firmly secured with T43. Do not use T43 on any plastic part.

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。

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鎖緊即可，過緊可能導致主旋翼夾座受損，飛行意外發生。

700HZ18



600NH17A

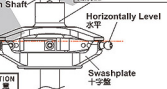
Main Blade Fixing Screw



650HB06



[H70118] Swashplate Leveler 十字盤校正器



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，再進行不機體設定，這樣才能確保飛行性能達到最佳效果。

650 Carbon Fiber Blades
650 碳纖維主翼

Linkage Rod(A)
連桿 A M3x41mm

Collar
連桿蓋

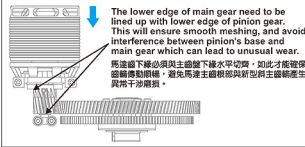
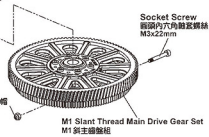
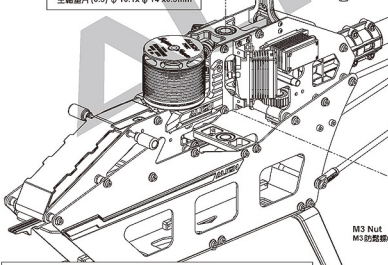
Elevator Ball Link
升降桿連桿頭

Standard Equipment :

Main shaft spacer(0.5)
標準片(0.5)
主軸墊片(0.5) ϕ 10.1x ϕ 14 x 0.5mm
主軸墊片(0.3) ϕ 10.1x ϕ 14 x 0.3mm



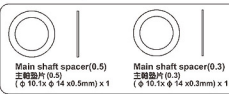
Linkage Rod(A)
連桿 A 約 59.5mm x 3



The lower edge of main gear need to be lined up with lower edge of pinion gear. This will ensure smooth meshing, and avoid interference between pinion's base and main gear which can lead to unusual wear.

馬達齒下緣必須與主齒盤下緣水平切齊，如此才能確保齒輪傳動順暢，避免馬達主齒盤與新型斜主齒盤產生異常干涉磨損。

650HH01




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/beast/>

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
紅色藍色同時閃爍

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.
 螺絲鎖對於金屬零件請使用適量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。

Option Equipment
選購品

Microbeast PLUS
Flybarless System
無平測翼系統

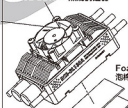


The ideal location to mount the ESC, if the gyro is mounted in suggested position 1, is as far forward as necessary to avoid any contact with gyro. The top of the ESC (fan) should be as close as possible to the opening located at the top of the canopy's front window. This allows air flow to pass over the ESC, improving the efficiency of heat dissipation. Failure to mount in this location may affect flight performance due to excessive heat by the ESC.

無刷調速器安裝時，建議儘量往上安裝固定，散熱效果較好；安裝位置過低可能導致因機殼溫度散熱不佳，導致無刷調速器過熱而影響飛行性能。

Option Equipment
選購品

RCE-BL130A Brushless ESC
RCE-BL130A 無刷調速器

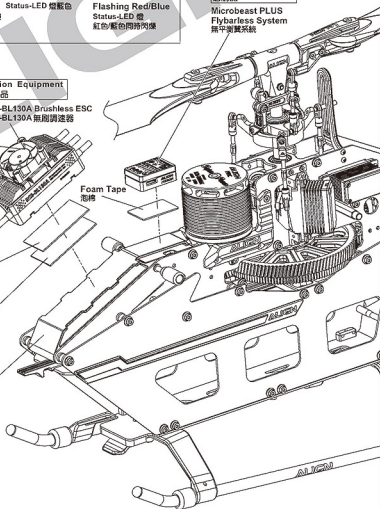


Foam Tape
泡棉

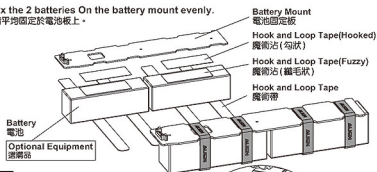
Hook and Loop Tape(Fuzzy)
魔術沾(黏毛狀)

Hook and Loop Tape(Hooked)
魔術沾(勾狀)

Receiver Mount
接收器座



Please fix the 2 batteries On the battery mount evenly.
2 顆電池請平均固定於電池板上。



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

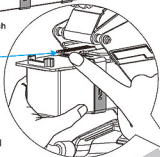
CAUTION 注意

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原廠零件包裝如果是組裝品, 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。

CAUTION 注意

Pull this latch to allow the battery to slide out along the rail.
電池抽出前請先將電池卡榫往上拉, 順著滑軌抽出。

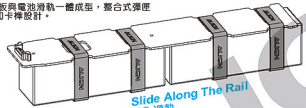
Battery Quick Latch 電池快拆卡榫



INSERT THE BATTERY FROM THE FRONT
電池從前方插入

New 3K Main frame embedded with battery mounting rails with patented spring loaded latching mechanism.

3K 副板與電池滑軌一體成型, 整合式彈匣結構加卡榫設計。



CAUTION 注意

Slide the battery mounting plate along the rail until a "click" is heard to make sure the battery mounting plate is latched.
將電池固定板順著電池滑軌裝入至發出 "喀嗒" 聲響, 使電池固定板卡入卡榫。

CANOPY ASSEMBLY

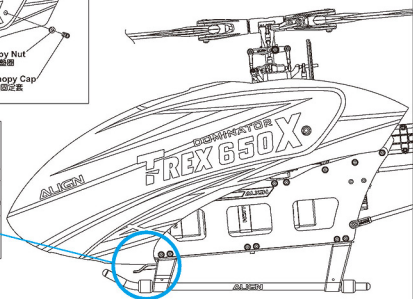
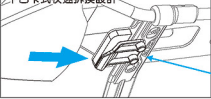
機頭罩安裝

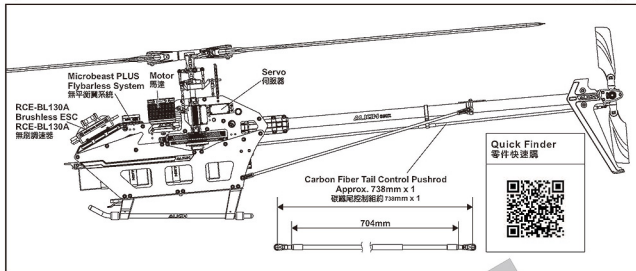
Advanced Lightweight Canopy
新款輕量化機頭罩



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)。

Quick release latch design for fast replacement
下巴卡式快速拆換設計





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 be 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，請參閱 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，每趟飛行前請注意仔細檢查，防止機件及電子零件故障而引發不可預期的意外。

MANUAL LINK 設定操作連結

MICROBEAST PLUS Flybarless System is the latest version out of the factory, please feel at ease using it. You can also link to BEASTX MICROBEAST PLUS/HD website to get the latest version and the latest news. MICROBEAST PLUS Flybarless System has available some different versions, each version has different programming and function, please make sure your Microbeast version and read its correct manual carefully before assembly or upgrading, especially you are upgrade from version V3.2.X to V.4.X.X by yourself, in order to avoid mistake or loss by any misunderstanding, please be sure that you have correct version and follow its setting method accordingly. And please refer to MICROBEAST PLUS V3.2.x and V4.2 Instruction manual for operating and setting.

MICROBEAST PLUS 無平衡翼系統，出廠時主程式已是最新版本，您也可以連結至 BEASTX MICROBEAST PLUS/HD 官網查詢，隨時更新最新版本及各項最新訊息。部分版本不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，尤其您是從 V3.2.x 升級至 V.4.x.x，請務必深入了解版本之間的設定功能，以免錯誤而造成損失。操作設定請同時參閱 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.

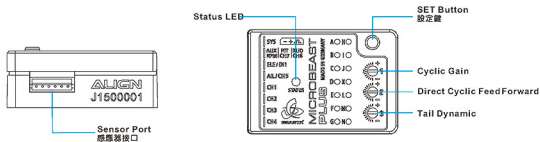
更多詳細的設定操作說明請至官網下載專區下載。
<http://www.align.com.tw/beastx/>



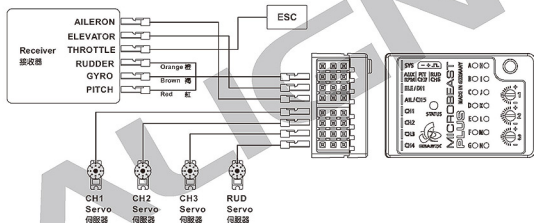
MICROBEAST PLUS
 3-AXIS MEMS SENSOR SYSTEM FOR RC HELICOPTER
 Option Equipment
 選購品

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。



Optional Equipment 選購品

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 backup. Please refer to BEASTX website for MICROBEAST PLUS HD assembly and setup instruction.

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

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

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

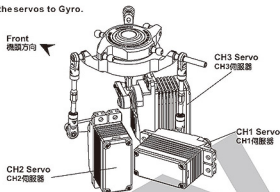
此項設定只要開啟發射器，接上BEC電源即可進行操作。

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

SERVO CONFIGURATION 伺服器配置

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

請依照右圖顯示的伺服器名稱，將伺服器接到陀螺儀。



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 halfway on the tail output shaft. This will be the standard rudder neutral point. After completing this setting, set the gain switch back to heading lock mode, with gain at around 70%.

發射器內陀螺儀設定請關閉根輪混控模式，並將發射器上的感度開關與陀螺儀切至「非鎖定模式」或將陀螺儀感度關閉。發射器設定完成後接上直昇機電源，即可進行尾舵中立點設置。

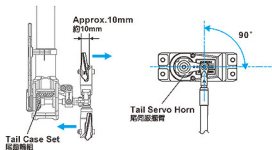
注意：當接上直昇機電源時請勿碰動尾舵搖桿或碰觸機體，待3秒陀螺儀開機完成後，尾尾舵桿需與尾尾舵器約成90度，尾翼翼控制組須正確置於尾橫軸的中間位置，即為標準尾舵中立點設定。設定完成後，切換至「鎖定模式」，感度設約70%左右。

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，尾尾舵器與尾 Pitch 控制組正確擺置位置。若尾 Pitch 控制組未置於中間時請調整尾控制桿的長度來修正。



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，當手搖尾節順時鐘擺動，尾尾舵桿應逆時鐘修正。反方向時請切換陀螺儀上「鎖定反方向」開關修正。



Tail Moving Direction
尾節擺動方向



Trim Direction For Tail Servo Horn.
尾尾舵桿修正方向



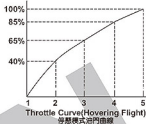
The rotational speed must set below 2,400RPM for safety to prevent any unexpected danger.

主旋翼機的主旋翼有安全使用轉速範圍，飛行時不可超過2,400 rpm，超轉會導致不可預期的危險，甚至危害他人生命財產。

GENERAL FLIGHT 一般飛行模式

GENERAL FLIGHT 一般飛行模式

Throttle 油門	Pitch 螺距
5 100% High Speed 100% 高速	+12°
4 85%	
3 60%~65% Hovering 60%~65% 停懸	+5°
2 40%	
1 0% Low Speed 0% 低速	-2° ~ 0°

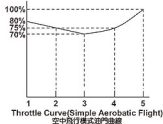


Pitch and Rotation Speed Pitch與轉速關係
TIP: It is recommended to use a lower pitch setting when using higher RPM/Head speed. This will allow for better power.

※配重時: 如果使用較高轉速或動力建議搭配較低 Pitch，將獲得較佳動力效能。

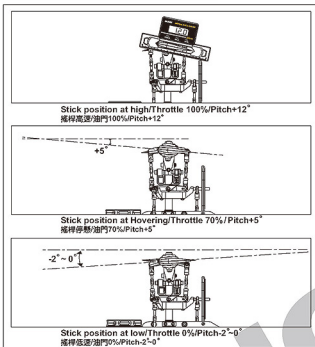
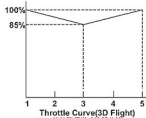
IDLE 1: SPORT FLIGHT

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

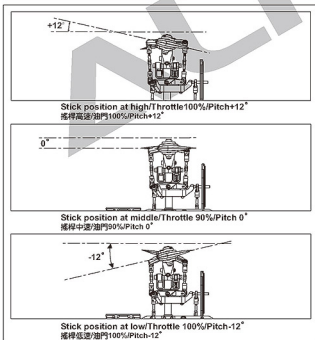


IDLE 2: 3D FLIGHT

Throttle 油門	Pitch 螺距
5 100% High 100% 高	+12°
3 85% Middle 85% 中	0°
1 100% Low 100% 低	-12°



3D FLIGHT 3D特技飛行模式



1. Pitch range : Approx. ±14°.
2. If the pitch is set too high, it will result in shorter flight duration and poor motor performance.
3. Setting the throttle to provide a higher speed is preferable to increasing the pitch too high.

1. 螺距(Pitch)總行程約 ±14°。
2. 過大螺距設定，會導致動力與飛行時間降低。
3. 動力提升以較高轉速的設定方式，優於螺距過大的設定。

SPECIFICATIONS 產品規格

Model 型號	Main Applications 應用範圍	Input Voltage 輸入電壓	Cont./Peak Current (10s) 持續/瞬間 (10秒) 電流	BEC Voltage BEC電壓
RCE-BL130A Brushless ESC	For 600-700 Class Helicopter (Propeller: 600-700mm) 600-700級電動直昇機 (葉長: 600-700mm)	6-12S LiPo Battery (22.2V-44.4V) 6-12S鋰電池 (22.2V-44.4V)	130A/200A	Switch-mode, 5V-8V Adjustable Voltage (Step: 0.1V), 10A/25A Cont./Peak Current 開關調整BEC, 輸出電壓5V-8V可調(調整幅度為0.1V/階), 輸出電流持續10A、瞬間25A
	Throttle Signal/BEC Output Wire/RPM Signal Transmission Wire 油門信號/BEC輸出線/RPM信號傳輸線	White: Throttle Signal Wire / Red/Black, Red/Brown: BEC Output Wire / Yellow: RPM Signal Transmission Wire 白色為油門信號線/紅黑和紅棕二色線為BEC輸出線/黃色為RPM信號傳輸線	Size/Weight 尺寸/重量	Separate Programming Port 獨立參數程式設計介面
			92x45.5x28.5mm/195g	For connecting ALIGN ASBOX Multifunction Programmer, WIFI module, or cooling fan. 用於連接多功能LCD專業程式設計設定盒/WIFI模組, 可為輔助散熱及風扇供電

USER GUIDE 使用說明書

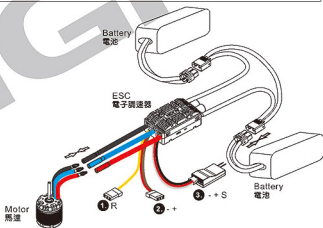


- The default throttle range of this ESC is from 1100 μ s to 1940 μ s, so you need to re-calibrate the throttle range when the first time you use this ESC or after you replace the transmitter.
- Using RCE-BL130A ESC for T-REX 700, suggest not to set pitch over 13 degree and keep RPM lower than 2100RPM to prevent ESC overload and causing any unexpected danger during flight.
- If ESC happen to occur overcurrent and overloading, please land the helicopter immediately or it will cause damage to ESC and unexpected loss.

- 電子调速器的油門行程輸出脈寬值為1100 μ s-1940 μ s, 當首次使用電子调速器或者更換其他遙控器使用時, 均應重新設定油門行程。
- T-REX 700搭配RCE-BL130A電子调速器使用時, 直昇機最大俯仰建議不超過13度, 主旋翼轉速應低於安全使用轉速範圍, 建議不超過2100RPM, 避免因飛行時, 電流過載造成電子调速器負荷, 造成不可預期的危險。
- 若電子调速器發生過電流、過載或溫度保護時, 請立即降落停止飛行, 不可無視電子调速器保護狀態持續飛行, 否則將會造成電子调速器故障甚至損壞。

I. Connections 接線示意圖

- RPM Signal Wire (Yellow): plug it into the RPM input channel on the flybarless system. (This wire can be used for providing RPM signal data when using external speed-governing device.)
- BEC Output Wire (Red/Brown): plug it into the battery channel or any unoccupied channel on the receiver. (For better BEC power supply, we recommend plugging this wire into the battery channel or any unoccupied channel on FBL system if the FBL system is permitted.)
- Throttle Signal Wire (White/Red/Black): plug it into the throttle channel on the receiver or the corresponding channel on the FBL system, such as RX-B channel on the VBAR system. For which channel you should plug it in, it depends on what kind of receiver and FBL system you use. The White wire is for transmitting throttle signals, the Red & Black cables are parallelly connected in the BEC output wire, which means BEC voltage output wire and ground cable.



- RPM信號線 (黃): 插入無平衡翼系統轉速輸入通道; (當使用外部定速時, 可使用RPM信號線提供轉速信號輸入。)
- BEC輸出線 (紅、棕): 這根線外的BEC輸出線插入接收機電池專用通道或任意空閒通道。(為獲得更好的BEC供電效果, 在無平衡翼系統允許的情況下, 建議將BEC線插入無平衡翼系統的電池專用通道或任意空閒通道。)
- 油門信號線 (白、紅、黑): 插入接收機油門通道或無平衡翼系統對應通道, 如VBAR系統的RX-B通道, 依接收機類型及無平衡翼系統類型而定, 其中白線用於傳送油門信號, 而紅線和黑線分別並聯在內部BEC的輸出端 (即BEC電壓輸出線和地線)。

II. Throttle Range Calibration 油門行程校準操作方法



During the ESC/Radio calibration, please set the throttle curve to NORMAL and ensure the corresponding throttle amounts to the maximum throttle endpoint and the minimum throttle endpoint on your transmitter are respectively 100% and 0%.

進行油門行程校準時, 請將油門曲線設置為NORMAL, 並確保遙控器油門最高點對應的油門值為100%, 油門最低點對應的油門值為0%

- Turn on the transmitter and move the throttle stick to the top position.
開啟遙控器, 將油門打到最高點
- Connect the ESC to a battery. The motor will emit '> 123' indicating the ESC is powered on normally.
電子调速器接電池, 馬達鳴叫 '>123' 提示音, 表示供電正常
- 5 seconds later, the motor will emit two short beeps indicating the maximum throttle position has been successfully calibrated and accepted.
等待5秒, 馬達發出「嗶嗶」雙短鳴音, 表示油門最高點校準成功
- Move the throttle stick to the bottom position. 1 second later, a short beep will emit indicating the minimum throttle position has been accepted.
將油門搖杆推到最低, 等待1秒, 油門最低點校準成功
- The ESC will keep beeping indicating the number of LiPo cells have been plugged in.
馬達發出N聲鳴音, 表示鋰電池Cell數
- A long beep represents system is well done, ready to fly.
馬達發出「嗶」一聲長音表示系統準備就緒, 可隨時起飛

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作方式前，嚴禁實際飛行，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(確認電源為關閉)，並將直昇機的機尾對準自己。
2. 練習操作遙控器的各搖桿(各動作的操作方式如下圖)，並反覆練習油门高/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	
		Move Left 左移 Rotate Left 左翻	Move Right 右移 Rotate Right 右翻
		Fly Forward 前進 Forward Rotate 前翻	Fly Backward 後退 Backward Rotate 後翻
			Ascent 上升 Descent 下降
		Turn Right 右旋 Turn Left 左旋	

FLIGHT ADJUSTMENT AND NOTICE 飛行調整與注意



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是否足額。



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，並告知他們您正在使用的頻率，相同的頻率會造成干擾導致失控和大大地增加風險。

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



STARTING AND STOPPING THE MOTOR 啟動和停止馬達



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機，然後打開發射器將油门搖桿推到底點。

- Check the movement.
- 動作確認



ON! Step1

First turn on the transmitter.
先開啟發射器

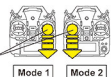


注意

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

確認油门搖桿是在最低的位置。

- ⊙ Are the rudders moving according to the controls?
- ⊙ Follow the transmitter's instruction manual to do a range test.
- ⊙ 方向舵是否隨著控制方向移動?
- ⊙ 根據發射器說明書進行距離測試。



ON! Step2

Connect to the helicopter power
接上直昇機電源

OFF! Step3

Reverse the above orders to turn off.
關閉電源時請逆上述操作動作反執行。



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 Gyro, 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。避免升空前腳架與硬地的地面震動太大反饋至機身上的陀螺儀，影響無平衡翼系繞升空前過度修正。

Rubber Skid Stoppers Installed
裝上避震墊圈



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 Gyro, and will disappear once helicopter lifts off the ground. If manual trim is applied, helicopter will tilt immediately after liftoff.

直升機離地前，十字盤可能因陀螺儀受震動的反應，使十字盤有傾斜的情形，此將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 主旋翼變換平衡調整

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，方便變換調整辨識。
2. 慢慢的推起油門搖桿到高點並且停止，在飛機離地前地面，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「變換」的情形時，則必須立刻調整軌跡）。

- a. When rotating, the blade with higher path means the pitch is too big. Please shorten ball link for regular trim.
- b. When rotating, the blade with lower path means the pitch is too small. Please lengthen 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，請調短連桿修正。
- b. 旋翼轉動時較低軌跡的主旋翼表示螺距(PITCH)過小，請調長連桿修正。



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. $+5\sim 6^\circ$ 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 $+5\sim 6^\circ$ 。

Color Mark 有標示記號的主旋翼



FLIGHT ADJUSTMENT AND NOTICE 飛行調整與注意



Ⓢ 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掉落，而引發不可預期的財物及人員損傷。



Ⓢ 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，您必須先確認停機時各項操作動作是否正常。



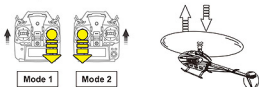
Do not attempt to fly until you have some experiences with the operation of helicopter.

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.

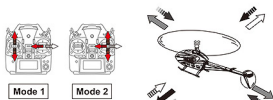
Ⓓ 當直昇機開始離地時，慢慢降低油門將飛機降下。持續練習飛機從地面上升和下降直到您覺得油門控制很順。



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.

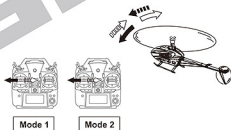
Ⓓ If the helicopter flies too far away from you, please land the helicopter and move your position behind 10M and continue practicing.

Ⓔ 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。
Ⓕ 假如直昇機飛離你太遠，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。

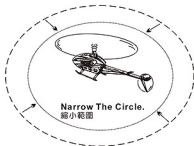


STEP 4

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.

當你覺得 STEP1~3 動作熟悉了，在地上畫個圈並在這個圓圈的範圍內練習飛行，以增加你操控的準確度。

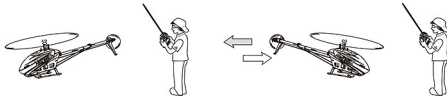
Ⓒ You can draw a smaller circle when you get more familiar with the actions.
Ⓓ 當你更加習慣操作動作，你可以畫更小的圓圈。



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

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

當你覺得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，站在直昇機機頭右邊重複步驟練習。



	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 Linkage rod A. 調整連桿A長度
Hover 停懸	Head speed too low 主旋翼轉速偏低	Excessive pitch 主旋翼的PITCH偏高	Adjust ball link to reduce pitch by 4 to 5 degrees. Hovering headspeed should be around 1700-1800RPM. 調整連桿球頭高低Pitch約+4-5度 (停懸時主旋翼轉速為約1700-1800RPM)
		Hovering throttle curve is too low 停懸點油門曲線過低	Increase throttle curve at hovering point on transmitter (around 60%) 調高停懸點油門曲線(約60%)
	Head speed too high 主旋翼轉速偏高	Not enough pitch 主旋翼的PITCH偏低	Adjust ball link to increase pitch by 4 to 5 degrees. Hovering headspeed should be around 1700-1800RPM. 調整連桿球頭高低Pitch約+4-5度 (停懸時主旋翼轉速為約1700-1800RPM)
		Hovering throttle curve is too high 停懸點油門曲線過高	Decrease throttle curve at hovering point on transmitter (around 60%) 調低停懸點油門曲線(約60%)
Rudder Response 尾舵反應	Drifting of tail occurs during hovering, or delay of rudder response when centering rudder stick. 停懸時尾翼向某一邊偏移，或撥動方向舵並回撥到中位點時，尾翼產生延遲，無法保持在所控制位置上。	Rudder neutral point improperly set 尾中位點設定不當	Reset rudder neutral point 重設尾中位點
	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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Specifications & Equipment/規格配備:

Length/機身長:1220mm

Height/機身高:356mm

Main Blade Length/主旋翼長:650mm

Main Rotor Diameter/主旋翼直徑:1455mm

Tail Rotor Diameter/尾旋翼直徑:280mm

Motor Drive Gear/馬達齒輪:16T

Main Drive Gear/主齒輪:112T

Autorotation Tail Drive Gear/尾驅動主齒:131T

Tail Drive Gear/尾翼傳動齒:34T

Drive Gear Ratio/齒輪傳動比: 7:1:3.85

Flying Weight(without battery)/全配重(不含電池): Approx. 3320g

