

# ALIGN



## TN70

INSTRUCTION MANUAL

### 輕量化・動力強

A brand-new lightweight body design with quick and continuous power response!

The tail drive transmission design makes flight movements more precise.

The high-speed and high-inertia autorotation landing performance is even more superior and impressive!

Shopping Cart



TN70 MANUAL



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Thank you for purchasing Align products. Please read the manual carefully before installing and be sure to retain the manual for future reference. All pictures shown are for illustration purpose only. Actual product may vary due to product enhancement. Specifications, contents of parts and availability are subject to change, ALIGN RC is not responsible for inadvertent errors in this publications.

承蒙閣下選用亞拓遙控世界系列產品，謹表謝意。

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

### !!Remind!! 提醒

**ALIGN**

自行拆改裝 保固失效  
The warranty could  
invalid if modified

Dear customers,  
For your consumer rights, please do not disassemble or modify Align products. If there is any unauthorized disassembly or modification, the warranty of the product will become invalid immediately! Hereby declare!




敬愛的客戶：

為了您的消費權益，本公司所售出之產品請勿自行拆裝、改裝，如果有任何私自拆改裝，產品的保修、保固責任即刻失效！特此聲明！

Thank you for buying ALIGN Products. The TN70 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 TN70 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亞拓遙控直昇機、請您詳細的閱讀完這本說明書之後再進行組裝以及操作這台直昇機，同時請您妥善的保存這本說明書、作為日後進行調整以及維修的參考。TN70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，都將是您最佳的选择。

### WARNING LABEL LEGEND 標誌代表涵義

	<b>FORBIDDEN 禁止</b>	Do not attempt under any circumstances. 在任何禁止的環境下，請勿嘗試操作。
	<b>WARNING 警告</b>	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。
	<b>CAUTION 注意</b>	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

**Important Declaration: It's prohibited to fly before passing legal flight certificate (training certificate) of local laws and regulations. Please adhere to local regulation and management policy and pass test to get legal flight certificate (training certificate). Strictly forbid to operate flight by anyone who is unfamiliar with flight experience.**

在尚未通過考取該國法規之合格飛行執照(訓練合格證)前，嚴禁實機飛行。請依循該國相關法規及管理辦法，通過考取合法之飛行執照(訓練合格證)，嚴禁無熟練操控飛行經驗者操控飛行。

R/C helicopters, including the TN70 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. 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.**

TN70 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造成嚴重傷害甚至死亡，使用之前請務必詳讀本說明書，勿輕忽並注意自身安全。注意！任何遙控直昇機的使用，製造商和經銷商是無法對使用者於零件使用的損耗異常或組裝不當所發生之意外負任何責任，本產品是提供給有操作過模型直昇機經驗的成人或有相當技術的人員在旁指導於當地合法遙控飛行場飛行，以確保安全無虞下操作使用，產品售出後本公司將不負任何操作和使用控制上的任何性能與安全責任。

做為本產品的使用者，您，是唯一對於您自己操作的環境及行為負全部的責任之人。

We recommend that you obtain the assistance of an experienced pilot before attempting to fly our products for the first time. A local expert is the best way to properly assemble, setup, and fly your model for the first time. TN70 Helicopter requires a certain degree of skill to operate, and is a consumer item. Any damage or dissatisfaction as a result of accidents or modifications are not covered by any warrantee and cannot be returned for repair or replacement. Please contact our distributors for free technical consultation and parts at discounted rates when you experience problems during operation or maintenance.

As Align Corporation Limited has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.

模型商品屬於需高操作技術且為消耗性之商品，如經拆裝使用後，會造成不等情況零件損耗，任何使用情況所造成商品不良或不滿意，將無法於原包裝件內更換新品或退貨，如還有使用操作疑慮問題，本公司全售分公司或代運商將提供技術指導、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損壞或傷害，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損壞、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，並需了解自負該款所造成任何意外之責任。
- 每趟飛行前須仔細檢查，主旋翼夾座橫軸螺絲、尾旋翼夾座螺絲，以及機身各部位球頭、螺絲，確實上膠紙繫才能升空飛行。

**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.

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

**NOTE ON LITHIUM POLYMER BATTERIES 鋰聚電池注意事項**

Lithium Polymer batteries are significantly more volatile than alkaline or Ni-Cd/Ni-MH batteries used in RC applications. All manufacturer's instructions and warnings must be followed closely. Mishandling of Li-Po batteries can result in fire. Always follow the manufacturer's instructions when disposing of Lithium Polymer batteries.

鋰聚電池跟一般在RC使用的鹼性電池、鎳氫電池、鎳錳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，可能造成火災及備傷及生命財產安全，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.

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。請確認於產品限內操作，請勿過載使用，並勿用於安全、法令外其它非法用途。

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

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

至飛行場飛行前，請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器將導致自己與他人立即墜機等意外危險。操控飛機操作技巧在學業初期尚需有一定的程度，要盡量避免獨自操作飛行，需有經驗的人士在旁指導，才可以操控飛行。否則將可能造成不可預期的意外發生。(動線電腦模擬器及老手指導進入內必有的選擇)

**SAFE OPERATION 安全操作**

Fly only in safe areas, away from crowds of people. do not hold helicopters in front of eyes. 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. 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.

嚴禁手去抓取運行中的真昇機，務必遠離人群，並嚴禁真昇機對準眼睛；當主旋翼轉動後，或起飛/試飛時，務必遠離障礙物，站立位置必須距離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。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、精神不佳或不慎操作，意外發生風險將可能提高。不可在視線範圍外進行，降落后也請馬上關掉真昇機和遙控器電源。

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

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

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在身體上或環境上的嚴重損傷，請勿讓機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纖維或聚乙氧、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。





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



- Before flying, please check to make sure no one else is operating on the same frequency for the safety.
- Before flight, please check if the batteries of transmitter and receiver are enough for the flight.
- Before turn on the transmitter, please check if the throttle stick is in the lowest position. IDLE switch is OFF.
- When turn off the unit, please follow the power on/off procedure. Power ON- Please turn on the transmitter first, and then turn on receiver. Power OFF- Please turn off the receiver first and then turn off the transmitter. Improper procedure may cause out of control, so please to have this correct habit.
- Before operation, check every movement is smooth and directions are correct. Carefully inspect servos for interference and broken gear.
- Check for missing or loose screws and nuts. See if there is any cracked and incomplete assembly of parts. Carefully check main rotor blades and rotor holders. Broken and premature failures of parts possibly cause a dangerous situation.
- Check all ball links to avoid excess play and replace as needed. Failure to do so will result in poor flight stability.
- Check if the battery and power plug are fastened. Vibration and violent flight may cause the plug loose and result in out of control.
- 每次飛行前應先確認所使用的頻率是否會干擾他人，以確保您自身與他人的安全。
- 每次飛行前確定您發射器與接收器電池的電量是在足夠飛行的狀態。
- 開機前確認油門推桿是否位於最低點，熄火降速開關，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，再開接收器電源；開機時應先關閉接收器後，再開發射器電源。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，請養成正確的操作習慣。
- 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卡頓的情形，使用故障的伺服器將導致不可預期的危險。
- 飛行前確認沒有缺少或鬆脫的螺絲與螺帽，確認沒有組裝不完整或損壞的零件，仔細檢查主旋翼是否有損壞，特別是接近主旋翼夾座的部位。損壞或組裝不完整的零件不僅影響飛行，更會造成不可預期的危險。注意：每次飛行前的安全檢查、保養、及更換損耗零件，請確實嚴格執行以確保安全。
- 檢查所有的連接頭是否有鬆脫的情形，這些的連接頭應先更新，否則將造成直昇機無法操控的危險。
- 確認電池及電源線頭是否固定牢靠，飛行中的震動或激烈的飛行，可能造成電源線頭鬆脫而造成失控的危險。

## INTRODUCTION TO USE OF FUNCTIONAL GLUE/OIL/GREASE 各項功能性膠/油/脂的使用介紹



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。



OIL  
潤滑油



CA Glue  
瞬間膠



Grease  
潤滑油



Anaerobic Retainer  
管狀金屬強力結合膠



Thread Lock  
螺絲膠

- OIL : Add small amount of OIL.  
潤滑油：添加適量潤滑油
- CA : Apply small amount of CA Glue to fix.  
瞬間膠：使用適量瞬間膠固定
- Grease : Add small amount of Grease.  
潤滑油：添加適量潤滑油
- R48 : Apply small amount of Anaerobic Retainer to fix.  
管狀金屬強力結合膠：使用適量管狀金屬強力結合膠固定  
R48 is strictly forbidden to be used on screws.  
R48 嚴禁用於螺絲固定。
- T43 : Apply small amount of Thread Lock to fix.  
螺絲膠：使用適量螺絲膠



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



When assembling ball links, make sure the "A" character faces outside.  
各項膠膠製連桿頭扣接時，"A"字朝外。












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. 管狀金屬強力結合膠 (R48) 為綠色高強度快速固化的管狀金屬強力結合膠，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；使用於金屬內外腔或膠合螺絲時，請務必適量使用，必要時請用手去除多餘膠量，拆卸時可於金屬接合部位熱約 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。
- ◎上述各類功能膠(油)膠供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。

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

 Transmitter (7-channel or more, Helicopter system) 發射器 (七動以上直昇機模式遙控器)	 Receiver (7-channel or more) 接收器 (七動以上)	or  Remote Receiver 衛星天線
 Fuel Pump 加油器	 Engine Starter 啟動器	 Engine Fuel 引擎燃油
 [HET80001] AP800 Digital Pitch Gauge 數位螺距規	 [HETMT901] Multi-function Tester 多功能檢測計	 2S1P 7.4V Li-Po 1900~2600mAh Battery x 1 電池 x 1

## ADDITIONAL TOOLS REQUIRED FOR ASSEMBLY 自備工具

 Phillips Screw Driver 十字螺絲起子 φ 3.0/φ 1.8mm	 Hexagon Screw Driver 六角螺絲起子 3mm/2.5mm/2mm/1.5mm	 Needle Nose Pliers 尖嘴鉗	 Cutter 刀子	 [H70118] Swashplate Leveler 十字盤校正器	 OIL 潤滑油	 CA Glue 瞬間膠
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## PACKAGE ILLUSTRATION 包裝說明

Parts Pack 配件包 7NH02 7NT03	Carbon Fiber Blades x 1set 碳纖維主旋翼 x 1組 Carbon Fiber Tail Boom x 1 碳纖維尾管 x 1	The Top Combo version includes the following items Top Combo版本包含以下商品 OS MAX-105HZ Engine x 1 OS 105引擎 x 1 Governor Sensor x 1 定速感應器 x 1 B6M 2 in 1 Voltage Regulator x 1 B6M 二合一降壓器 x 1 MICROBEAST Flybarless System x 1 MICROBEAST 無平衡翼系統 x 1 DS530 Digital Servo x 1 DS530 數位伺服器 x 1 DS830M High Voltage Brushless Servo x 3 DS830M 高電壓無刷伺服器 x 3 DS835M High Voltage Brushless Servo x 1 DS835M 高電壓無刷伺服器 x 1	
Parts Pack 配件包 7NH01 7NB01 7NB02 7NB06 7NF01 7NT01 7NT02 7NT03 7NZ	Lube Pack 潤滑油包 Thread Lock T43螺絲膠 x 1 One Way Bearing Grease 單向軸承潤滑油 x 1	Canopy 機頭罩 Repair Towel 維修毛巾 ALIGN 105 High Performance Pipe x 1 105加速管 x 1	The Super Combo version includes the following items Super Combo版本包含以下商品 Governor Sensor x 1 定速感應器 x 1 B6M 2 in 1 Voltage Regulator x 1 B6M 二合一降壓器 x 1 DS530 Digital Servo x 1 DS530 數位伺服器 x 1 DS830M High Voltage Brushless Servo x 3 DS830M 高電壓無刷伺服器 x 3 DS835M High Voltage Brushless Servo x 1 DS835M 高電壓無刷伺服器 x 1

There are many versions of TN70 for your choice. The Combo includes additional electronics and other equipment. The Instruction Manual will refer to the TN70 Top Combo. You may purchase any additional items referenced in the instruction manual or any spare parts for other TN70 version by referring to more product information in this manual.

TN70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Top 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。

Quick Finder  
零件快速碼



## TOP COMBO STANDARD EQUIPMENT TOP COMBO 標準配備 [RH70N31XT]



TN70 Kit x1 Set  
690 Carbon Fiber Blades x1 Set  
105 Carbon Fiber Tail Blades x1 Set  
ALIGN 105 High Performance Pipe x 1  
OS MAX-105HZ Engine x 1  
Governor Sensor x 1  
B6M 2 in 1 Voltage Regulator x 1  
MICROBEAST Flybarless System x 1  
DS530 Digital Servo x 1  
DS830M High Voltage Brushless Servo x 3  
DS835M High Voltage Brushless Servo x 1

TN70 空機件組 x1  
690碳纖維主旋翼組 x1  
105 碳纖維尾旋翼組 x1  
105 加速管 x 1  
OS 105引擎 x 1  
定速感應器 x 1  
B6M 二合一降壓器 x 1  
MICROBEAST GT 無平衡翼系統 x 1  
DS530 數位伺服器 x 1  
DS830M 高電壓無刷伺服器 x 3  
DS835M 高電壓無刷伺服器 x 1

## SUPER COMBO STANDARD EQUIPMENT SUPER COMBO 標準配備 [RH70N41XT]



TN70 Kit x1 Set  
690 Carbon Fiber Blades x1 Set  
105 Carbon Fiber Tail Blades x1 Set  
ALIGN 105 High Performance Pipe x 1  
Governor Sensor x 1  
B6M 2 in 1 Voltage Regulator x 1  
DS530 Digital Servo x 1  
DS830M High Voltage Brushless Servo x 3  
DS835M High Voltage Brushless Servo x 1

TN70 空機件組 x1  
690碳纖維主旋翼組 x1  
105 碳纖維尾旋翼組 x1  
105 加速管 x 1  
定速感應器 x 1  
B6M 二合一降壓器 x 1  
DS530 數位伺服器 x 1  
DS830M 高電壓無刷伺服器 x 3  
DS835M 高電壓無刷伺服器 x 1

## KIT STANDARD EQUIPMENT KIT 標準配備 [RH70N36XT]



TN70 Kit x1 Set  
690 Carbon Fiber Blades x1 Set  
105 Carbon Fiber Tail Blades x1 Set  
ALIGN 105 High Performance Pipe x 1

TN70 空機件組 x1  
690碳纖維主旋翼組 x1  
105 碳纖維尾旋翼組 x1  
105 加速管 x 1

## ELECTRONIC EQUIPMENT REQUIRED FOR ASSEMBLY 自備電子設備

<p>OS MAX-105HZ Engine x 1 OS 105引擎 x 1</p> 	<p>Governor Sensor x 1 定速感應器 x 1</p>  <p>B6M 2 in 1 Voltage Regulator x 1 B6M二合一降壓器 x 1</p> 	<p>MICROBEAST Flybarless System x 1 無平衡翼系統 x 1</p> 
<p>DS530 Digital Servo x 1 DS530 數位伺服器 x 1</p> 	<p>DS830M High Voltage Brushless Servo x 3 DS830M 高電壓無刷伺服器 x 3</p> 	<p>DS835M High Voltage Brushless Servo x 1 DS835M 高電壓無刷伺服器 x 1</p> 

## ROTORHEAD 主旋翼頭組

### 7NH

**THRUST BEARING 止推軸承**

Apply Grease. 止推軸承塗上潤滑油。

(OUT) Smaller ID 內徑較小  
(IN) Larger ID 內徑較大

Metal Main Rotor Holder 金屬主旋翼夾座

Thrust Bearing 止推軸承 (  $\phi 10.2 \times \phi 18 \times 5.5 \text{mm}$  ) x 2

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

Bearing 軸承 (  $\phi 10 \times \phi 19 \times 5 \text{mm}$  ) x 4

Spindle Bearing Spacer 橫軸止推華司 (  $\phi 13.2 \times \phi 19 \times 1 \text{mm}$  ) x 2

Reverse of Bearing Faces Inside. 軸承面凹開口朝內。

Spindle Bearing Spacer 橫軸止推華司  $\phi 13.2 \times \phi 19 \times 1 \text{mm}$

Bearing 軸承  $\phi 10 \times \phi 19 \times 5 \text{mm}$

Thrust Bearing 止推軸承  $\phi 10.2 \times \phi 18 \times 5.5 \text{mm}$

**CAUTION 注意**

**70H01**

Metal Main Rotor Holder 主旋翼夾座

Main Blade Grip Arm 主旋翼夾座臂

Socket Collar Screw 圓頭內六角軸套螺絲 M3x6 mm

Bearing 軸承  $\phi 10 \times \phi 19 \times 5 \text{mm}$

**WARNING 警告**

Please follow the instruction of Thrust Bearing: "IN" faces inward, "OUT" faces outward; Assembly in the wrong direction can cause interference, improper operation, and unpredictable danger.  
請依止推軸承字樣指示: "IN"朝內側、"OUT"朝外側; 組裝方向錯誤會造成干涉、運轉不順暢。

Thrust bearing and spindle damper for radial bearing are wear items; therefore, it is recommended to inspect after every 20 flights and replaced as necessary.  
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。

The spindle and spindle socket 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.  
主旋翼橫軸、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。主旋翼高速飛行時，請縮短定期檢查之週數，以確保飛行安全。

**CAUTION 注意**

Logo on the top 字樣朝上

Metal Main Rotor Housing 主旋翼固定座

Spindle 橫軸  $\phi 7 \times \phi 10 \times 97.5 \text{mm}$

Apply Grease. 塗上潤滑油。

Spindle Bearing Spacer 橫軸止推華司 (  $\phi 10 \times \phi 16 \times 1 \text{mm}$  ) x 2

Spindle Collar Screw 橫軸軸套螺絲 (M7x15mm) x 2

Spindle Sleeve 橫軸套管 (  $\phi 10.15 \times \phi 17 \times 16.5 \text{mm}$  ) x 2

Spindle Damper 橫軸墊圈 (  $\phi 10 \times \phi 17 \times 7 \text{mm}$  ) x 2

Original manufactory packages contains product already assembled, before flying, please check if the screws are fixed with T43.  
原裝零件出廠包裝如果是組裝品，每一次飛行前請先確認螺絲是否已上膠不會鬆動。

Apply a small amount of T43 thread lock when fixing a metal part. Do not use T43 on any plastic part.  
螺絲鎖附於金屬件請使用適量T43(螺絲膠)。請注意T43不可塗在任何的塑膠材質上。

Spindle Sleeve 橫軸套管  $\phi 10.15 \times \phi 17 \times 16.5 \text{mm}$

Spindle Damper 橫軸墊圈  $\phi 10 \times \phi 17 \times 7 \text{mm}$

Spindle Bearing Spacer 橫軸止推華司  $\phi 10 \times \phi 16 \times 1 \text{mm}$

**CAUTION 注意**

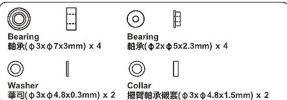
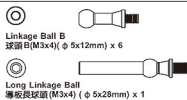
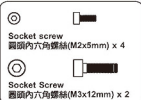
3D flight 100 times or serious crash may cause metal fatigue or damaged. Please check and replace the Collar Screw.  
暴力飛行100趟或有嚴重摔機，可能有金屬疲勞、破壞疑慮，請務必檢查更新橫軸螺絲。

Spindle Collar Screw 橫軸套螺絲 M7x15mm

T43

SWASHPLATE/MAIN SHAFT 十字盤組/主軸

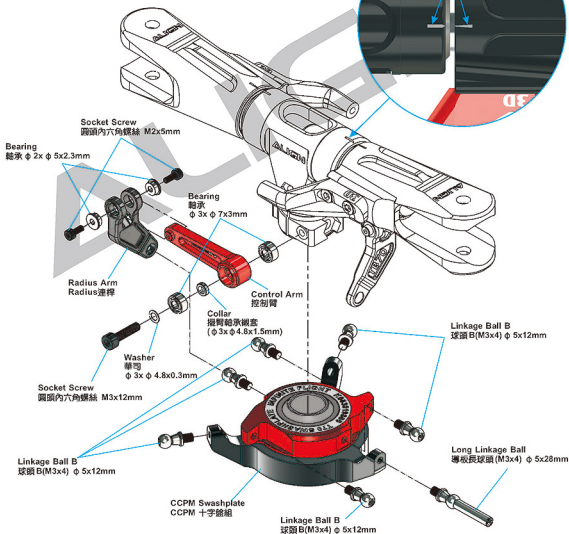
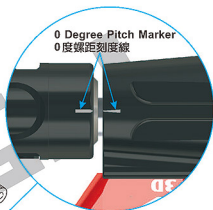
70NH02



Original factory packages contains product already assembled, before flying, please check if the screws are fixed with T43.



Apply a small amount of T43 thread lock when fixing a metal part.  
Do not use T43 on any plastic part.





M4 Nut  
M4 防鬆螺帽 x 2



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



Linkage Ball B  
球頭B (M3x4) (φ 5x12mm) x 2



Original manufactory packages contains product already assembled, before flying, please check if the screws are fixed with T43.

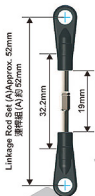


Apply a small amount of T43 thread lock when fixing a metal part. Do not use T43 on any plastic part.

Socket Collar Screw  
圓頭內六角軸套螺絲  
M4x24mm

Linkage Rod Set(A)  
連桿組 (A)

Linkage Rod Set (A) Approx. 52mm  
連桿組 (A) 約 52mm



7NH01-1

Socket Collar Screw  
圓頭內六角軸套螺絲  
M4x24mm

M4 Nut  
M4 防鬆螺帽

M4 Nut  
M4 防鬆螺帽

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

Main Shaft  
主軸 φ 8x φ 12x188.7mm



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.

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

組裝時請將連桿中附有薄標辨識面朝上。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。

若飛行中有雙槳情形，可適當調整連桿長度改善。



Optional Equipment  
選購品

Swashplate Leveler  
十字槳校正器  
[H70118]

Horizontally Level  
水平



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.

使用無平槳系統，請務必使用十字槳調整器校正十字槳，調整合適者連桿長度，確保十字槳達到水平狀態，再進行基本構建設定，這樣才能確保飛行性能達到最佳效果。

1. 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.
2. 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. 旋翼頭組及主軸屬於飛行消耗品，建議每200圈定期檢查及更換，請縮短定期檢查之週數，並確實檢查您的直昇機，以確保飛行安全。

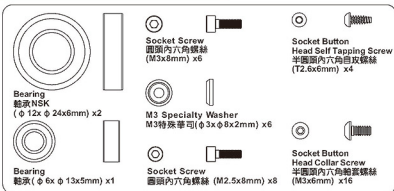
2. 若發生人為組裝不當或機件損壞造成模型商品掉機時，請務必詳細確實檢查，強烈建議更換損壞的部件，避免高主旋翼轉速飛行時，發生不可預期的意外。



## BODY 機身組

7NB

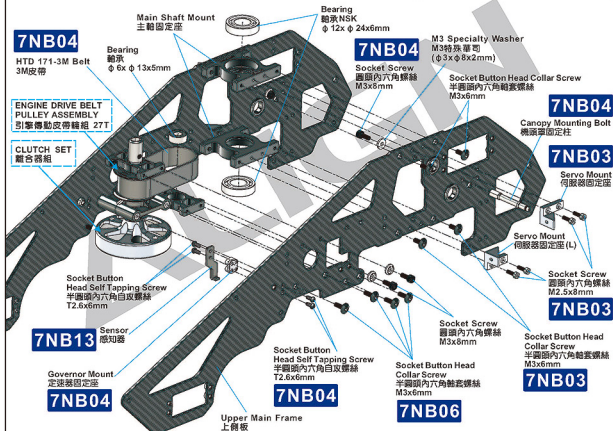
7NB01



Original manufacturing packages contains product already assembled, before flying, please check if the screws are fixed with T43.



Apply a small amount of T43 thread lock when fixing a metal part. Do not use T43 on any plastic part.



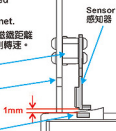
To ensure proper sensor detection of rotating speed, adjust the speed governor sensor so that it is approximately 1mm from magnet.

調整定速感知器高度，使感知器與磁鐵距離約1mm，以確保感知器正確的偵測轉速。

**Governor Mount**  
定速器固定座

**Main Frames**  
主機板

**Governor Sensor**  
定速器感應磁鐵



It is recommended to use # 800-1000 water sandpaper to polish the edge of the cutting part of the fuselage board. This way could prevent the wires of electronic equipment from being cut.

建議於機身板切割處的邊緣，使用#800-1000水砂紙打磨，可防止電子設備電線被割破。



## DRIVE GEAR SET 齒輪組

## CLUTCH SET 離合器組

Already assembled  
已組裝完成

Starter Coupling  
六角啟動軸  $\phi 8 \times \phi 10 \times 18 \text{mm}$



7NB05

7NB06

M4 Set Screw  
M4止洩螺絲 M4x4mm

Washer  
華司  $\phi 5 \times \phi 7 \times 0.5 \text{mm}$

Starter Shaft Bearing Housing  
啟動軸軸承座

7NB03

## Engine Drive Belt Pulley Assembly 引擎傳動皮帶輪組 27T

Flat Head Socket Screw  
扁頭內六角螺絲  
M2.5x5mm

Belt Pulley cover  
皮帶輪蓋

Belt Pulley  
皮帶輪27T

Belt Pulley cover A  
皮帶輪蓋 A

Flat Head Socket Screw  
扁頭內六角螺絲  
M2.5x5mm

Clutch Shaft Bearing Housing  
離合器軸承座

Bearing  
軸承  $\phi 5 \times \phi 13 \times 4 \text{mm}$

7NB03

Aluminum Hex Frame Bolts  
六角鋁柱

Bearing  
軸承 ( $\phi 10 \times \phi 19 \times 5 \text{mm}$ )

Clutch Shaft  
離合器軸

Governor Sensor  
定速感應磁鐵

7NB13

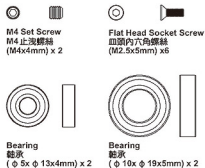
The side with a mark on the magnet is the north pole  
作記號面為N極

Clutch Bell  
離合器鐘  
 $\phi 54.5 \times \phi 51 \times 20.5 \text{mm}$

Bearing  
軸承  
 $\phi 5 \times \phi 13 \times 4 \text{mm}$

Clutch/Start Shaft  
啟動軸  $\phi 5 \times \phi 12 \times 24 \text{mm}$

Clutch Liner  
合金離合器環  
 $\phi 48.8 \times \phi 51 \times 9.3 \text{mm}$



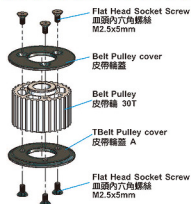
Original factory packages contains product already assembled, before flying, please check if the screws are fixed with T43.

Apply a small amount of T43 thread lock when fixing a metal part.  
Do not use T43 on any plastic part.

**BELT PULLEY SET 皮帶輪組**

**7NB05**

**Engine Drive Belt Pulley Assembly  
引擎傳動皮帶輪組 30T**



Front Drive Shaft  
Bearing Housing  
前傳動曲軸承座

Bearing  
軸承  
φ 6x φ 13x5mm



16T Helical Gear  
惰輪斜齒 16T

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

Canopy Support Damper  
機頭罩支撐彈簧

Canopy Support Bolt  
機頭罩支撐柱

**7NB04**

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

Socket Screw  
圓頭內六角螺絲 M3x8mm

Socket Screw  
圓頭內六角螺絲 M2.5x6mm

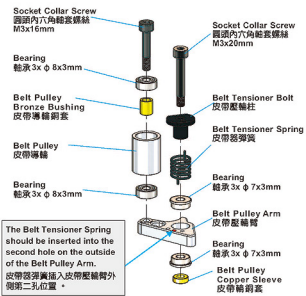
Tensioner pad  
壓輪墊塊

Belt Pulley Set  
皮帶導輪組

**Belt Pulley Set 皮帶導輪組**

**7NB08**

Socket Screw 圓頭內六角螺絲 (M3x8mm) x4	Flat Head Socket Screw 血頭內六角螺絲 (M2.5x5mm) x6
Socket Screw 圓頭內六角螺絲 (M2.5x6mm) x2	M3 Specialty Washer M3特殊華司 (φ 3x φ 8x2mm) x6
Socket Collar Screw 圓頭內六角鎖套螺絲(M3x16mm) x 1	Bearing 軸承 (φ 3x φ 7x3mm) x2
Socket Collar Screw 圓頭內六角鎖套螺絲(M3x20mm) x 1	Bearing 軸承 (3x φ 6x3mm) x2

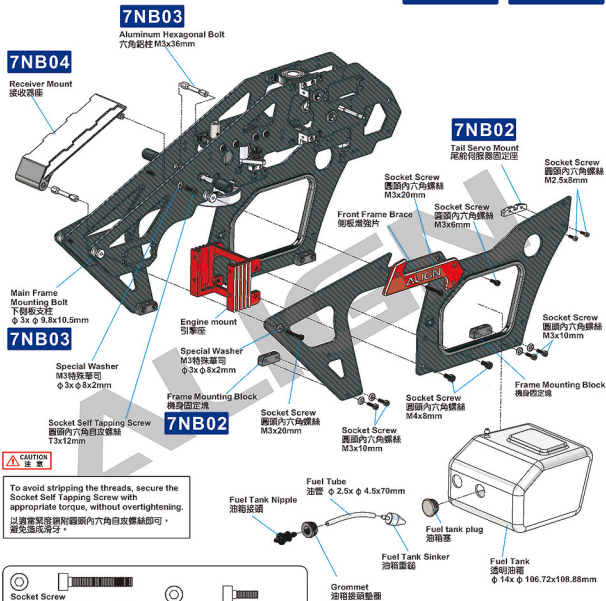


700NB2

7NB03

7NB02

7NB04



**CAUTION 注意**

To avoid stripping the threads, secure the Socket Self Tapping Screw with appropriate torque, without overtightening.  
以適當緊度鎖附圓頭內六角自攻螺絲即可，避免造成滑牙。

- |                                      |   |
|--------------------------------------|---|
| Socket Screw<br>圓頭內六角螺絲 (M3x20mm) x4 | Socket Screw<br>圓頭內六角螺絲 (M2.5x8mm) x4               |
| Socket Screw<br>圓頭內六角螺絲 (M3x10mm) x8 | Socket Self Tapping Screw<br>圓頭內六角自攻螺絲 (T3x12mm) x2 |
| Socket Screw<br>圓頭內六角螺絲 (M3x6mm) x2  | Special Washer<br>M3特殊華司 (φ3xφ8x2mm) x12            |
| Socket Screw<br>圓頭內六角螺絲 (M4x8mm) x4  |   |

Original manufacturing packages contains product already assembled, before flying, please check if the screws are fixed with T43.

Apply a small amount of T43 thread lock when fixing a metal part.  
Do not use T43 on any plastic part.

## OS MAX-105HZ ENGINE OS 105引擎

7NE1

7NB06

Original factory packages contains product already assembled, before flying, please check if the screws are fixed with T43.

Apply a small amount of T43 thread lock when fixing a metal part. Do not use T43 on any plastic part.

Socket Screw  
圓頭內六角螺絲  
M3x10mm

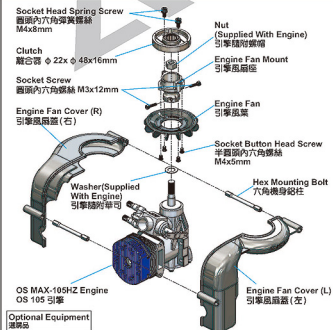
Special Washer  
M3特殊華司  
φ3xφ8x2mm

Socket Screw  
圓頭內六角螺絲  
M3x10mm

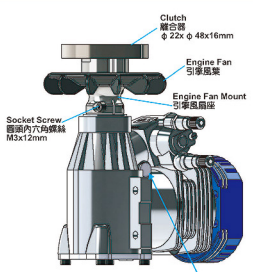


M4 Washer  
M4華司 φ 4x φ 8x1mm

Socket Screw  
圓頭內六角螺絲  
M4x16mm



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。

## CNC MAIN DRIVE GEAR SET 斜主齒輪組

7NB07

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

上緊螺絲前請試轉動裡的軸承向心徑良好後，才能將螺絲平均鎖緊，以免造成卡死或單向重負載可能產生的打滑。



Original manufactory packages contains product already assembled, before flying, please check if the screws are fixed with T43.

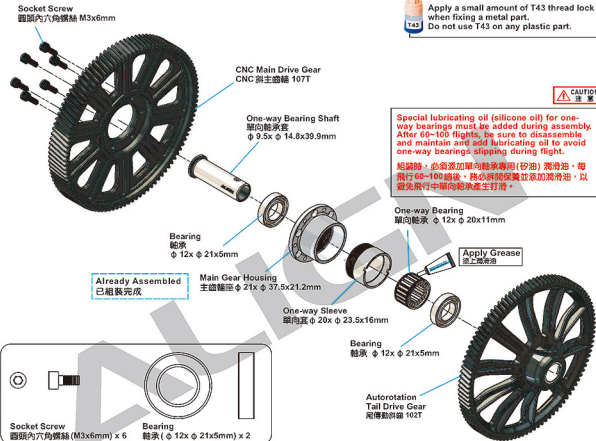


Apply a small amount of T43 thread lock when fixing a metal part. Do not use T43 on any plastic part.

CAUTION 注意

Special lubricating oil (silicone oil) for one-way bearings must be added during assembly. After 60-100 flights, be sure to disassemble and maintain and add lubricating oil to avoid one-way bearings slipping during flight.

組裝時，必須添加單向軸承專用(矽油)潤滑油，每飛行60-100趟後，務必拆機保養並添加潤滑油，以避免飛行中單向軸承產生打滑。



Already Assembled 已組裝完成

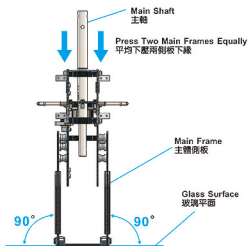
CAUTION 注意

Main frame assembly key point :

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

機身側板組立重點：

側板螺絲先不完全鎖緊，放入主軸貫穿兩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。





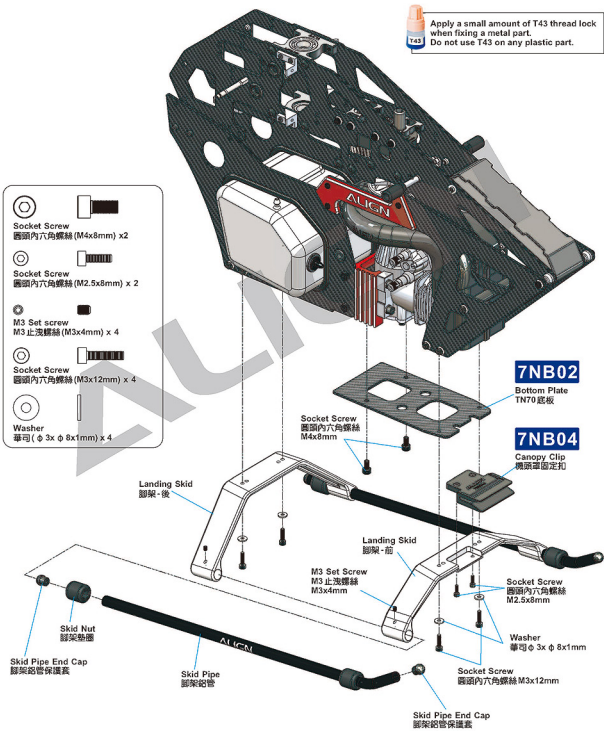
## LANDING SET 腳架組

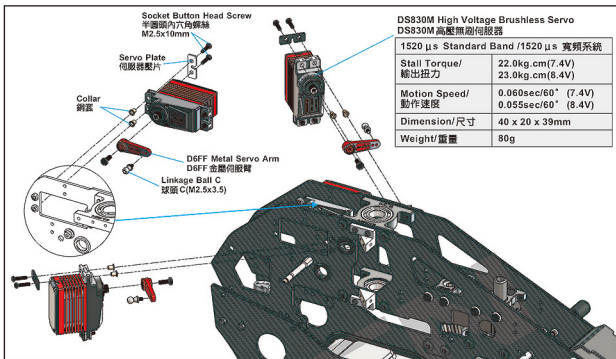
### 7NF01

Original manufactory packages contains product already assembled, before flying, please check if the screws are fixed with T43.

Apply a small amount of T43 thread lock when fixing a metal part.  
Do not use T43 on any plastic part.

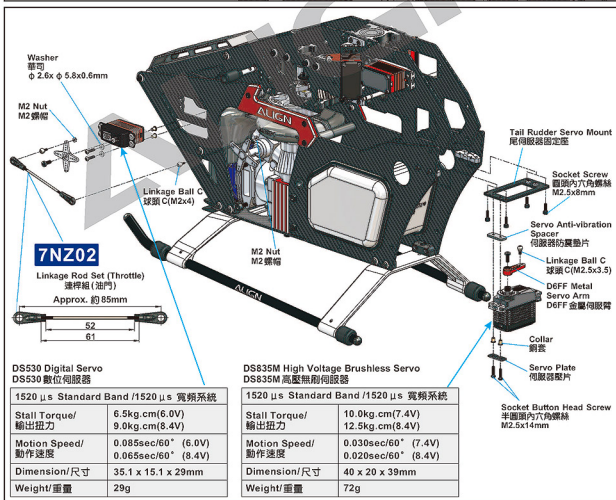
- Socket Screw  
圓頭內六角螺絲 (M4x8mm) x2
- Socket Screw  
圓頭內六角螺絲 (M2.5x8mm) x 2
- M3 Set screw  
M3 止洩螺絲 (M3x4mm) x 4
- Socket Screw  
圓頭內六角螺絲 (M3x12mm) x 4
- Washer  
華可 (φ 3x φ 8x1mm) x 4





**DS830M High Voltage Brushless Servo**  
DS830M 高壓無刷伺服器

1520 $\mu$ s Standard Band / 1520 $\mu$ s 寬頻系統	
Stall Torque/ 輸出扭力	22.0kg.cm(7.4V) 23.0kg.cm(8.4V)
Motion Speed/ 動作速度	0.060sec/60° (7.4V) 0.055sec/60° (8.4V)
Dimension/尺寸	40 x 20 x 39mm
Weight/重量	80g



**DS530 Digital Servo**  
DS530 數位伺服器

1520 $\mu$ s Standard Band / 1520 $\mu$ s 寬頻系統	
Stall Torque/ 輸出扭力	6.5kg.cm(6.0V) 9.0kg.cm(8.4V)
Motion Speed/ 動作速度	0.085sec/60° (6.0V) 0.065sec/60° (8.4V)
Dimension/尺寸	35.1 x 15.1 x 29mm
Weight/重量	29g

**DS835M High Voltage Brushless Servo**  
DS835M 高壓無刷伺服器

1520 $\mu$ s Standard Band / 1520 $\mu$ s 寬頻系統	
Stall Torque/ 輸出扭力	10.0kg.cm(7.4V) 12.5kg.cm(8.4V)
Motion Speed/ 動作速度	0.030sec/60° (7.4V) 0.020sec/60° (8.4V)
Dimension/尺寸	40 x 20 x 39mm
Weight/重量	72g

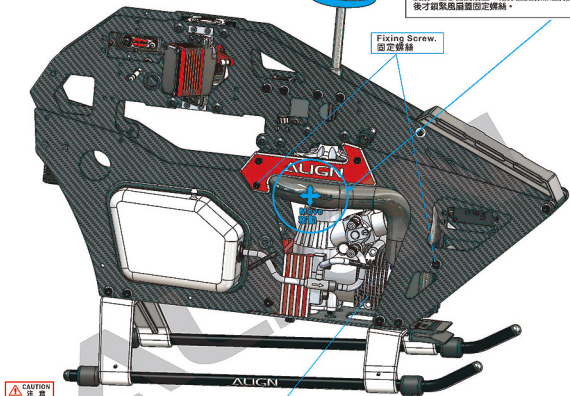
Original manufactory packages contains product already assembled, before flying, please check if the screws are fixed with T43.

Apply a small amount of T43 thread lock when fixing a metal part. Do not use T43 on any plastic part.

### 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扇前，請先使用啟動棒轉動風扇，並移動風扇罩，確認在風扇無阻礙風扇罩後才鎖緊風扇罩固定螺絲。

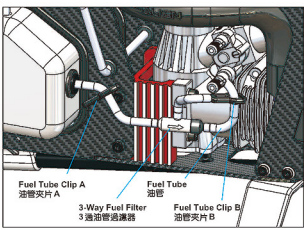


**CAUTION**  
注意

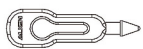
For engine adjustment and precautions, please refer to the factory manual for more instruction.  
引擎各項調整及注意事項，請參照原廠使用說明書。

### FUEL TUBE CLIP ILLUSTRATION 油管夾片使用說明

**700NB2A**



Fuel Tube Clip A  
油管夾片 A

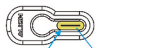


Fuel Tube Clip A  
油管夾片 B



Fuel Tube  
油管

Engine Start :  
Unlock to refuel.  
引擎啟動：開啟燃料供給



Fuel Tube  
油管

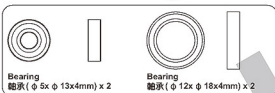
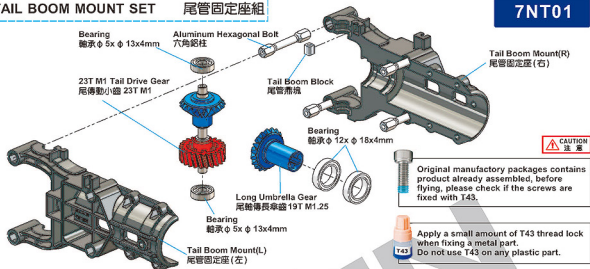
Engine Stop :  
Lock to stop refueling.  
引擎熄火：關閉燃料供給

## TAIL 尾部組

7NT

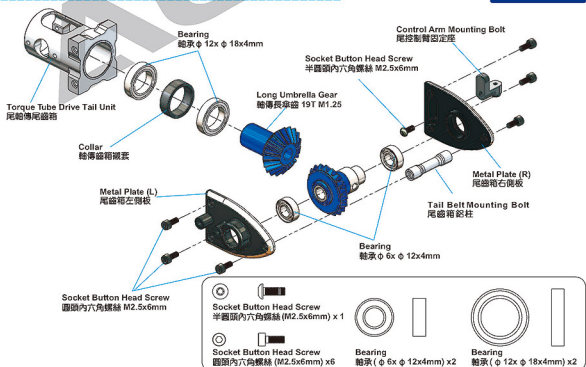
## TAIL BOOM MOUNT SET 尾管固定座組

7NT01



## DUAL PUSH TAIL GEARBOX UNIT 雙推尾軸傳齒箱組

7NT02



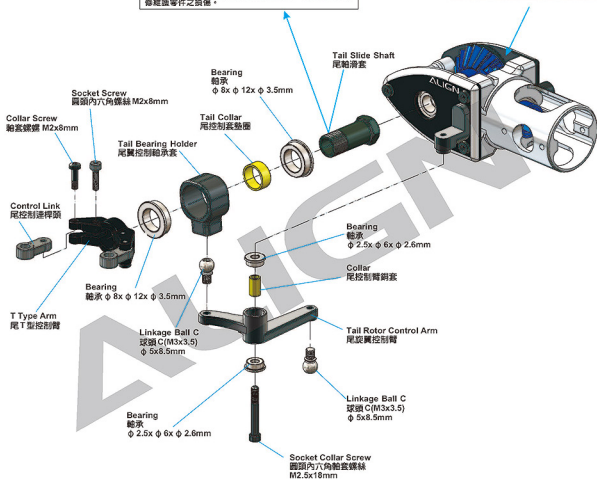
## Tail Pitch Control Set 尾控制組

7NT02



While assembly the slide shaft, please use suitable amount of T43 on the thread. Please do not use R46 or other high strength thread lock to avoid damages while maintenance or repairs.

組立尾輪滑套時，請使用適量的T43螺絲膠在螺牙上，嚴禁使用R46高強度鎖膠防止膠合過緊，以避免日後拆裝破壞零件之損傷。

DUAL PUSH TAIL GEARBOX UNIT  
雙推尾輪傳齒箱組

Original manufactory packages contains product already assembled, before flying, please check if the screws are fixed with T43.



Apply a small amount of T43 thread lock when fixing a metal part. Do not use T43 on any plastic part.



Collar Screw  
輪套螺絲  
(M2x8mm) x 1



Linkage Ball C  
球頭 C(M3x3.5)  
( $\phi 5x8.5mm$ ) x 2



Bearing  
軸承  
( $\phi 2.5x \phi 6x \phi 2.6mm$ ) x 2



Socket Screw  
圓頭內六角螺絲  
(M2x8mm) x 1

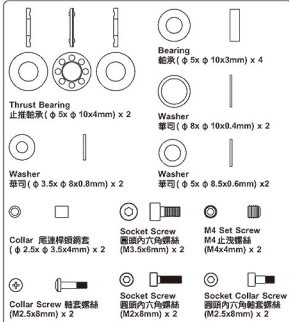


Socket Collar Screw  
圓頭內六角輪套螺絲  
(M2.5x18mm) x 1



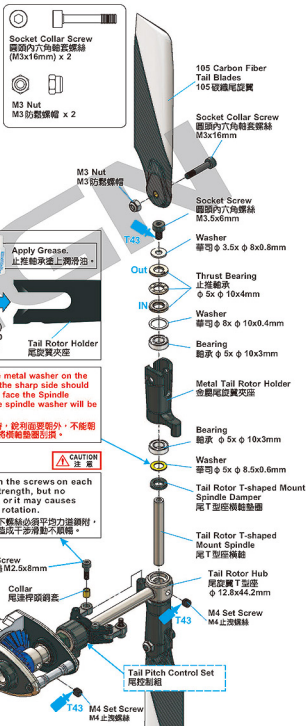
Bearing  
軸承  
( $\phi 8x \phi 12x \phi 3.5mm$ ) x 2

## 7NT02



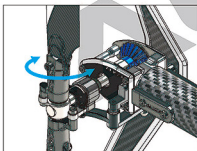
The Metal Tail Rotor Holder is assembled at the factory, make sure to apply little thread lock on screws and tighten them back appropriately before starting to fly. Suggest to use torque wrench or torque lock for tightening screws with the torque value 5.0kg.cm.

尾旋翼夾座出廠為預組裝，螺絲必須使用適量螺絲膠重新鎖附，鎖附時注意適量力度即可，建議搭配扭力或扭力鎖鎖附，扭力值為5.0kg.cm。

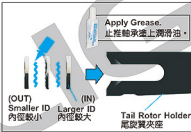


Original manufactory packages contain product already assembled, before flying, please check if the screws are fixed with T43.

Apply a small amount of T43 thread lock when fixing a metal part. Do not use T43 on any plastic part.



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



When assembling the metal washer on the tail T-shaped Mount, the sharp side should face outward and not face the Spindle washer, otherwise the spindle washer will be easily scratched. 尾 T 型座在組裝金屬華司時，銳利面要朝外，不能朝向橫軸墊圈，否則容易將橫軸墊圈刮損。



Make sure to tighten the screws on each side with average strength, but no unilaterally tighten, or it may causes interference during rotation. 組裝尾控制組時，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。



Aim tail rotor hub at the concave of the tail spindle and apply thread lock on the set screw. The tail rotor hub and screws are wear items, and thus should be inspected for replacement after every 100 flights. For flights with high head speed, the inspection interval should be reduced to ensure flight safety.

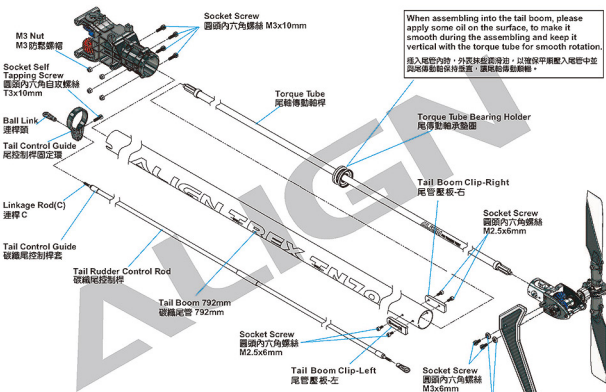
尾旋翼 T 型座應準確對準尾旋翼 T 型座凹面，請確認止鎖螺絲塗上膠。尾旋翼 T 型座和螺絲屬於飛行消耗品，建議每 100 趟定期檢查及更換，若主旋翼轉速飛行時，請縮短定期檢查之週數，以確保飛行安全。



## TAIL BOOM SET

## 尾管組

### 7NT03



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.  
匯入尾管內時，外表抹些潤滑油，以確保平滑匯入尾管中並與尾管軸保持垂直，讓尾管旋轉順暢。

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

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將軸承固定於尾傳動軸上，避免CA沾到軸承的防磨蓋而導致軸承卡死，匯入尾管內時，尾傳動軸承蓋面外表抹些潤滑油，利用隨附軸承安裝套將尾傳動軸承蓋面平行壓入尾管中不可歪斜。

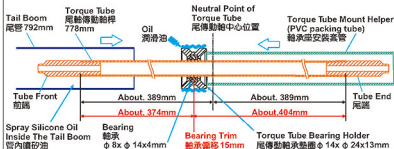
M3 Specialty Washer  
M3 特殊華司  
φ 3x φ 8x2mm

CF Vertical Stabilizer  
破繭垂直翼

**CAUTION 注意**

Original factory packages contains product already assembled, before flying, please check if the screws are fixed with T43.

Apply a small amount of T43 thread lock when fixing a metal part.  
Do not use T43 on any plastic part.



7NT01



Socket Screw  
圓頭內六角螺絲 (M2.5x6mm) x4

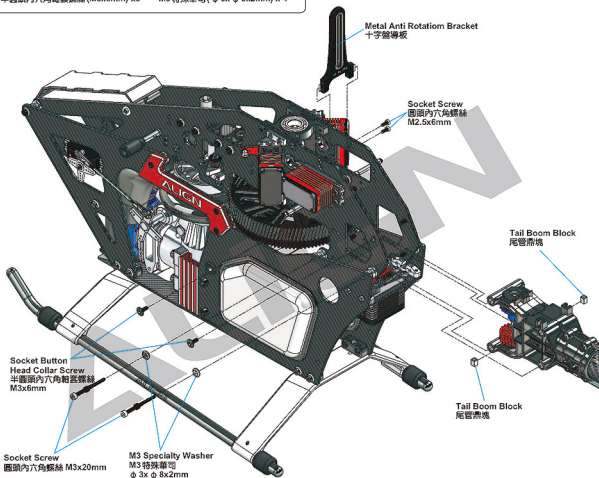
Socket Screw  
圓頭內六角螺絲 (M3x20mm) x 4



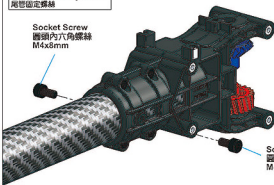
Socket Button Head Collar Screw  
半圓頭內六角帽蓋螺絲 (M3x6mm) x6



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



Tail Boom Fixing Screw  
尾管固定螺絲



Socket Screw  
圓頭內六角螺絲  
M4x8mm

Socket Screw  
圓頭內六角螺絲  
M4x8mm



Original manufactory packages contains product already assembled, before flying, please check if the screws are fixed with T43.



Apply a small amount of T43 thread lock when fixing a metal part.  
Do not use T43 on any plastic part.

## 7NT03

### Main Blade Fixing Screw

鎖主旋翼用螺絲



Socket Collar Screw  
圓頭內六角鉸蓋螺絲 (M5x32mm) x 2



M5 Nut  
M5 防鬆螺帽 x 2

Washer  
華可 (φ 5x φ 10x1mm) x 2

Socket Collar Screw  
圓頭內六角鉸蓋螺絲  
M5x32mm

Washer  
華可  
φ 5x φ 10x1mm

690 Carbon Fiber Blades  
690 碳纖維旋翼



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當緊度即可，過緊可能導致主旋翼夾受挫損，飛行意外發生。

M5 Nut  
M5 防鬆螺帽 x 2

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

Gyro Mount  
陀螺儀固定板

Standard Equipment :  
標準品：主軸墊片(1)  
φ 12x φ 16x1mm

Spare part : Main shaft spacer(0.8)  
Main shaft spacer(0.5)  
Main shaft spacer(0.3)  
備品：主軸墊片(0.8) φ 12x φ 16x0.8mm  
主軸墊片(0.5) φ 12x φ 16x0.5mm  
主軸墊片(0.3) φ 12x φ 16x0.3mm

Linkage Rod Set (B)  
原件組(B)  
Approx.約95mm

26  
36



General 3D sport flight recommended!  
The Main Gear is a consumable product, please check and replace the main gear after 100 flights.  
主齒輪屬消耗品，一般3D飛行，達100趟，建議！注意檢查並更換新齒輪。

MAIN DRIVE GEAR SET  
新主齒輪組

Socket Collar Screw  
圓頭內六角鉸蓋螺絲  
M4x27mm

M4 Nut  
M4 螺帽

Pipe Spacer  
洞管器墊片

M4 Spring Washer  
M4彈簧華可

Socket Screw  
圓頭內六角螺絲  
M4x22mm

ALIGN 105  
High Performance Pipe  
105加速管



Socket Collar Screw  
圓頭內六角鉸蓋螺絲 (M4x27mm) x 1



M4 Nut  
M4 防鬆螺帽 x 1

Socket Screw  
圓頭內六角螺絲  
(M2.5x6mm) x 3

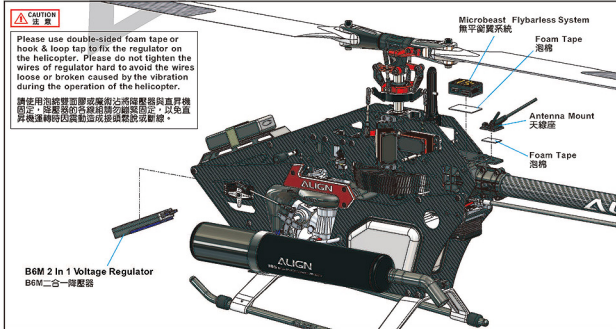
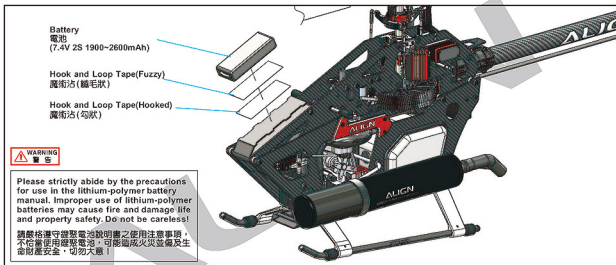
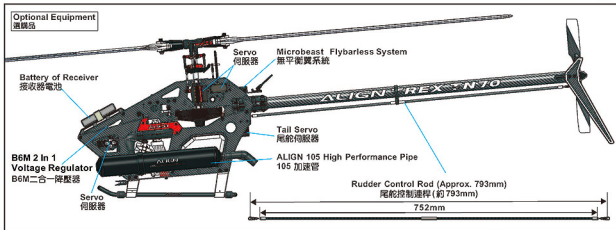
Original manufactory packages contains product already assembled, before flying, please check if the screws are fixed with T43.

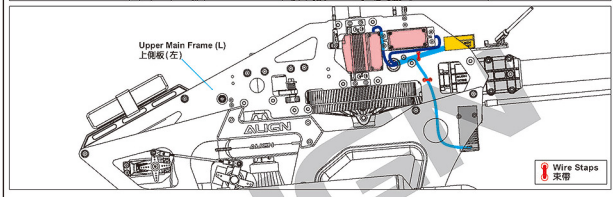
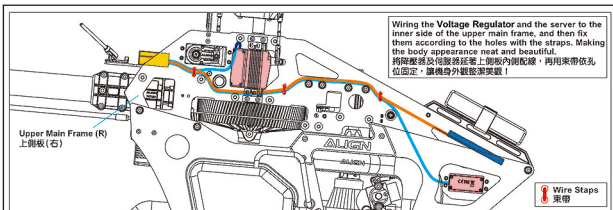


Apply a small amount of T43 thread lock when fixing a metal part.  
Do not use T43 on any plastic part.

# ELECTRONIC EQUIPMENT ILLUSTRATION

## 電子設備建議配置圖示

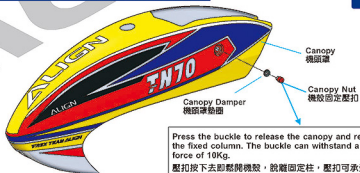




CANOPY ASSEMBLY 機頭罩安裝

Advanced Lightweight Canopy 高強度輕量化機頭罩

7NC01



Quick release latch design  
卡式快速拆換設計

Canopy Clip  
機頭罩扣



When assembling the canopy to the unit, please completely wedge into the groove of the bottom plate.  
機頭罩組裝於機體時，請完全卡入主體底板的溝槽內。



## SERVO CONFIGURATION 伺服器配置

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

請依照右面圖示的伺服器名稱，將伺服器接到陀螺儀。



## ADJUSTMENTS FOR GYRO AND TAIL NEUTRAL SETTING

## 陀螺儀與尾翼中立點設定調整

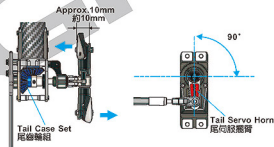
Turn off Revolution mixing (RVMX) mode on the transmitter, then set the gain switch on the transmitter and the gyro to non-head lock mode, or disable gain completely. After setting the transmitter, connect the helicopter power and proceed with rudder neutral point setting. Note: When connecting to the helicopter power, please do not touch tail rudder stick and the helicopter, wait for 3 seconds for gyro to enable, and the rudder servo horn should be 90 degrees to the tail servo. Tail pitch slider should be 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混合控制模式，並將發射器上的感度開關與陀螺儀切至“非鎖定模式”或將陀螺儀感度關閉。發射器設定完成後接上直昇機電源，即可進行尾舵中立點設定。注意：當接上直昇機電源時請勿觸動尾舵桿或磁鐵機體，待3秒陀螺儀開機完成後，尾舵旋轉臂與尾舵伺服器約成90度，尾翼調整組與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，尾舵伺服器與尾 Pitch 控制組正確擺置位置。右尾 Pitch 控制組未置中時請調整尾舵桿的長度來修正。



## 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，當手搖尾舵時請順時鐘，尾舵旋轉臂反時鐘修正。反向時請切換陀螺儀上“鎖定反向”開關修正。



## MAIN BLADES ROTATIONAL SPEED SETTING 主旋翼轉速設定



The maximum speed of TN70 helicopter is 2200RPM; 2150RPM is enough for hard 3D flight.

It is strictly forbidden to set the Main Blades speed to exceed 2200RPM during flight, over-rotation may cause damage to the body structure or unforeseen danger, even lives and property of others. Beginner are recommended the RPM/ speed setting should not exceed 1850RPM.

TN70 直昇機，最高轉速為2200RPM；飛行時轉速2150RPM，動力已足夠暴力飛行。

直昇機的主旋翼有安全使用轉速範圍，飛行時主旋翼轉速設定嚴禁超過2200RPM，超轉可能導致機體結構破壞及不可預期之意外，甚至危害他人生命財產。初學者建議轉速設定不超過1850RPM。

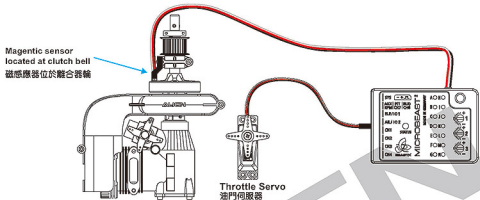


## INSTRUCTION 安裝使用說明



1. 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.
2. The safty RPM is up to 16000rpm for OS 105 engine.

1. 燃燒發動系統(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。
2. OS 105引擎安全轉速上限16000rpm。

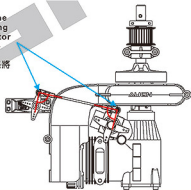


Throttle at midstick position  
油門搖桿在中間



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

引擎裝入機殼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 (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 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導區下載。  
<https://www.align.com.tw/index.php/manuals/flybarless/>

## B6M 2 IN 1 VOLTAGE REGULATOR INSTRUCTION MANUAL

## 2合1降壓器安裝使用說明

## FEATURES 功能說明

1. Due to the unique 2 in 1 design, the regulator's functions provide power to the receiver, servos, and the internal glow plug ignition system that does not require you to remove the clip lead.
2. The linear regulator design results in no interference to the receiver. The required input power may only consist of a 2 cell Li-ion or a Li-Poly battery.
3. When the integrated power switch is moved to the on position, the voltage indicating LED's and ignition indicating LED's will illuminate displaying the status of the battery voltage, and of the plug ignition function.

1. 獨特的二合一設計, 除了具備(BEC)電/穩壓系統, 以提供接收器與伺服器電源的功外, 還內建一組火花塞的點火裝置, 省去傳統電夾插拔的麻煩。
2. 本產品採用線性設計, 輸入電源為2CELL的Li-Ion或Li-Poly電池, 其優點為不會像交換式設計的BEC會產生干擾接收器的情形, 免於掉機的高價。
3. 具備電源開關、電壓指示燈及點火指示燈功能, 可由燈號判定電池殘量與火花塞的點火狀態。

# B6M 2 IN 1 VOLTAGE REGULATOR INSTRUCTION MANUAL

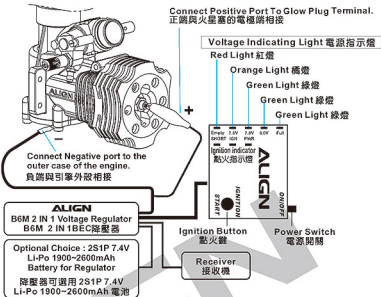
## 2合1降壓器安裝使用說明



### SPECIFICATIONS 產品規格/配件

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

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



### INSTRUCTION 安裝使用說明

#### Receiver and Servo Voltage Regulating Functions 接收器與伺服器電源部份

1. The Auto-detecting voltage LED's will display a series of lights when turned on. If the entire five-light array is illuminated then the battery is fully charged. When the voltage drops below 7.6V the three green lights will turn off.  
USE CAUTION : Once the green lights are no longer illuminated the battery can only be safely used for a single flight. When only the single red LED is lit, DO NOT ATTEMPT TO OPERATE THE MODEL. The battery voltage has been drained too low, and must be recharged before its next use.
2. 7.4V output 2 in 1 Voltage Regulator BEC must compatible with HV servos, make sure not to use 6V servos for it.
  1. 本產品具電壓指示功能，當接入充飽的電池時五顆指示燈全亮，表示電池在Full電量充足狀態下；使用中當電壓降低至7.6V時(3顆綠燈熄滅)，尚可完成單趟飛行即須對電池充電或更換新電池；而如果僅亮紅燈時表示Empty電量不足，不應該再使用囉！
  2. 二合一降壓器BEC輸出為7.4V，必須搭配高壓伺服器使用，嚴禁搭配使用一般6V輸出的伺服器。

#### Glow Plug Ignition System Functions 火星塞點火器部分

1. Start by connecting the wires using the included diagram as a reference. Once completed connect the battery and move the powerswitch to the on position. Depress the "START" button on the control board. The green and the orange lights will illuminate. When this happens the glowplug is being ignited for a period of 15 seconds. After 15 seconds, the controlboard will stopigniting the glowplug. If the engine has notyet been started, the process canbe repeated by simply repressing the "START" button. The Ignition system is designed to automatically shut off once the engine starts running. To ensure that the system is operating properly, check to make sure that the orange and green lights have shut off once the engine starts running. In the eventthat the lights are still illuminatedonce the engineis running, it may be necessary to remove the lead clip from the engine.
  2. If the orange light is notilluminated after pressing "START" then this means that the glowplug is notbeing ignited. Please check tosee if the element of the glow plug hasburned out, or if the lead clip is notproperly connected to the glow plug.
  3. If the Glowplug is short-circuitedor the leadclip has contacted the outer case of the engine, the red (SHORT) lightwill be illuminated approx. 1 second afterpressing the "START" button. If the "SHORT" lightilluminates the system will automatically shut off the power to the output leads.
1. 依接線示意圖完成接線後，開啓電源開關，接著按下控制電路板上的"START"鍵，此時點火指示燈的綠燈與構燈同時亮起，表示火星塞已正常點火，每次點火時間約為15秒，15秒後自動關閉，如屬再次點火時，則再按一次"START"鍵；由於點火裝置會自動關閉，所以引擎啓動後，確認構燈、綠色指示燈於15秒後熄滅，即不須將蠟魚夾移除。
  2. 若按下"START"鍵時，構燈不亮，表示火星塞未正常點火，請檢查火星塞加熱線圈是否開路損壞，或是蠟魚夾夾夾未確實夾在火星塞電極端上。
  3. 如果火星塞發生短路或是蠟魚夾(電源正端)與引擎外殼接觸時，當按下"START"鍵，紅色(SHORT)指示燈會亮起，約1秒後熄滅並隨即關閉電源輸出，請檢查火星塞是否損壞或檢查蠟魚夾是否接觸到引擎外殼。

## 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.

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

1. 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 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.
  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，並反覆練習油門高/低、副翼左/右、升降舵前/後及方向舵左/右操作方式。
  3. 模擬飛行的練習相當重要，請重複練習直到不需思索，手指能自然隨著喊出的指令移動控制。

## ENGINE START PREPARATION 引擎啟動前準備

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

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



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

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，並確認引擎油門速度於低速。

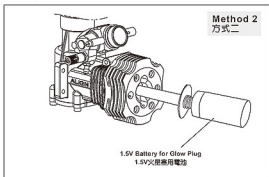
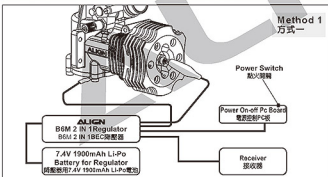


Mode 1



Mode 2

## GLOW PLUG IGNITION METHOD 火星塞點火方式



## ENGINE START AND STOP 引擎啟動和熄火

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

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

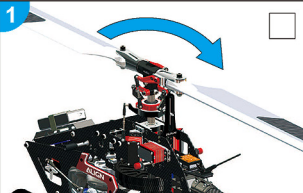




Maintenance and careful inspection before and after flights are the most important part of flight safety, pilots are responsible for every detail to implement. Negligence of these inspections and maintenance may lead to accidents and dangers during the flight, and even damage to life and property.



飛行前後的仔細檢查和維護保養是飛行安全最重要的一環，飛行員必須對每一個細節負責並落實到位。忽視這些檢查和維護，可能會導致飛行過程中發生事故和危險，甚至造成生命財產損失。



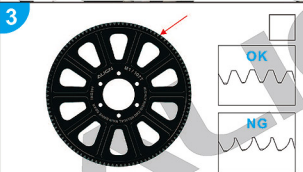
#### 1 Check the Main blades.

Visually inspect if the appearance of the Main Blades is good, and carefully check that there is no damage, crack or abnormality on the surface.



#### 2 Check the Tail Blades.

Visually inspect if the appearance of the Tail Blades is good, and carefully check that there is no damage, crack or abnormality on the surface.



Please check to the main gear regularly, and replace it if obvious wear is found. The main gear is a consumable.

Please pay attention to check and replace new gears every 100 times of 3D sport flight.



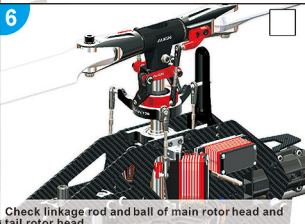
#### 4 Check All electronic equipment connection.

Plug, socket and cable appearance is good, correctly and firmly connected with each other.



#### 5 Check battery efficiency.

To prevent the plug from falling off and causing power failure, the plug and socket must be connected firmly.



#### 6 Check linkage rod and ball of main rotor head and tail rotor head.

Slightly shake linkage ball by hand. It's normal if you can't shake it; however, it's abnormal if it's shaken a lot and must be replaced the new linkage and linkage balls to prevent loose parts for any flight error and danger.

**7**

Obverse of Bearing Faces Inside.  
軸承面凹開口朝內。

Check thrust bearing and bearing of main rotor holder.  
Check if there is wear or damage of thrust and bearing. Bearing should be smooth enough. If anything is worn, it must be replaced immediately.  
Please follow the instructions for thrust bearing assembly. Any incorrect assembly will result in flight error.

**8**

Apply Grease  
塗上潤滑油

Check one-way bearing is rotated well and apply a little amount of grease on it for maintenance.  
Special lubricating oil (silicone oil) for one-way bearings must be added during assembly. After 60~100 flights, be sure to disassemble and maintain and add lubricating oil to avoid one-way bearings slipping during flight.

**9**

Main Shaft Bearing Block Maintenance.  
Gently rotate the motor bearing. If it works smoothly, then apply oil on it for maintenance.  
If it does not work smoothly, please change the new bearings.

**10**

Check the socket collar screws of Main Blades to ensure they are tightening.

**11**

Check the M4 nut screws to ensure they are tightening.

**12**

Check Tail assembly screws to ensure they are tightening.

**13**

Check the M4 set screw to ensure they are tightening.

**14**

Check socket screws to ensure they are tightening.

	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
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，或啟動方向舵並回復到中立點時，尾翼產生延遲，無法停頓在所控制位置上。	Rudder neutral point improperly set 尾中立點設定不當	Reset rudder neutral point 重設尾中立點
		Rudder gyro gain too low 尾舵陀螺儀感度偏低	Increase rudder gyro gain 增加尾舵陀螺儀感度
	Tail oscillates (hunting, or wags) at hover or full throttle 停懸或全油門時尾翼左右來回搖擺。	Rudder gyro gain too high 尾舵陀螺儀感度偏高	Reduce rudder gyro gain 降低尾舵陀螺儀感度

If above solution does not resolve your issues, please check with experienced pilots or contact your Align dealer.  
※在做完以上調整後，仍然無法改善情況時，應立即停止飛行並向有經驗的飛手諮詢或連絡您的經銷商。

## FLIGHT NOTE

- Helicopter and related equipments should be maintained on a regular schedule.
- Make sure to check flight and record it every time. This record would be helpful for your future reference of maintenance and repaired.
- Pre-flight and after flight, please deliberately check if every spare parts and electronic work well and no damage.
- Please strictly do every inspection and check the screws are locked well, not loose at all, before flight.
- Regular maintenance recommendations: Replace thrust bearings every 30 hours of flight. Replace the main shaft fixed bearing(6901ZZ) and main rotor clamp bearing(6800ZZ) every 60 hours of flight. When the number of flights exceeds 100, please carry out regular maintenance of the entire aircraft and replace parts (such as bearings and washers) to ensure flight safety.
- For more operation introduction, please read the instruction manual carefully and obey the local regulations.

## 飛行小叮嚀：

- 飛行機及相關設備都需要定期維護保養！
- 每次檢查保養應確實記錄，良好的保養檢查及飛行習慣，將會提供您日後維修或更換耗材的參考及幫助。
- 飛行前、及飛行後，務必詳細檢查機身各部位零配件／電子設備之性能是否正常，而且無損耗老化現象。
- 請嚴格執行檢查的義務，飛行前應檢查螺絲鎖緊沒有鬆動，才能升空飛行。
- 定期保養建議：每飛行30小時，更換止推軸承。每飛行60小時更換主軸固定軸承、主旋翼夾軸承。
- 飛行次數超過100趟時，請進行全機定期保養並更換零件(如軸承類及墊圈等消耗品)，以確保飛行安全。
- 更多詳細操作介紹，請參閱使用說明書，並且遵守當地法規。

Thank you for purchasing and supporting ALIGN products.

The Align Team is dedicated to you by innovating and developing new RC Helicopters, Multicopters, and FPV Racing Quads. We strive to provide a more diversified experience for our customers. Visit our website at [www.align.com.tw](http://www.align.com.tw) for latest news, information, and updates about our extensive line of products for the RC enthusiasts.

Good Flying!

再次感謝您對亞拓系列商品的喜愛與支持，您的肯定是對我們最大的認同。

亞拓團隊秉持創新研發的精神，開發遙控直昇機／多軸飛行機／穿越機系列商品，提供給您體驗更多樣化的飛行樂趣。您可以透過下列連結，隨時瞭解亞拓的最新動態，以及各項訊息分享。

祝福您有一個愉快的飛行體驗。



ALIGN Flight Safety  
亞拓飛行安全宣導



ALIGN Shopping Cart  
亞拓購物車



facebook  
ALIGN FaceBook



ALIGN Website  
亞拓官網



ALIGN Quick Finder  
亞拓零件快速購



YouTube  
ALIGN YouTube



## 一、遙控無人機產品標示

本產品最大起飛重量： <b>4.72公斤</b>	(1)
<input checked="" type="checkbox"/> 應 口免 依遙控無人機管理規則至民航局「遙控無人機規範管理系統」( <a href="https://drone.caa.gov.tw/">https://drone.caa.gov.tw/</a> ) 進行線上註冊，註冊號碼應標明於機身顯著處。	(2)
<input checked="" type="checkbox"/> 應 口免 具備航空站或飛行場圖資軟體功能。	(3)
<input type="checkbox"/> 具型式檢驗(認可)標章且應向民航局申請辦理實體檢驗。 <input checked="" type="checkbox"/> 免辦理檢驗或認可。	(4)(5)
操作人口免持操作證 口應持普通操作證 <input checked="" type="checkbox"/> 應持專業操作證。	(6)
操作本產品前，經檢查確保符合飛行安全條件後從事活動，並禁止飲酒或使用影響精神之藥物，亦不得於公告禁止或限制區域飛行，其餘請詳參見本產品所附操作手冊說明。	(7)(8)
違反上述規定者，中央及地方主管機關得依民航法禁止其活動，並處以新臺幣1萬至150萬元罰鍰，情節重大者沒收遙控無人機。	(9)(10)
本標示依據遙控無人機管理規則第17條第1項規定辦理。	(11)

## 二、遙控無人機相關法規說明：

- 遙控無人機管理規則(以下稱管理規則)第6條第1項：自然人所有之最大起飛重量250公克以上之遙控無人機及政府機關(構)、學校或法人所有之遙控無人機，應由其所有人向民航局申請註冊，並將註冊號碼標明於遙控無人機上顯著之處後，始得操作。
- 管理規則第8條：註冊號碼應依下列方式明顯於遙控無人機上顯著之處：一、以標機、鋼刻、噴漆或其他能辨識之方式標明，且應確保每次飛行活動時不至脫落並保持清潔、明顯使能辨識。二、標漆位置應為遙控無人機之固定結構外部。三、其顏色應與註冊號碼與背景明顯反差，且以內視即能視。
- 管理規則第12條第1項：最大起飛重量1公斤以上且裝置導航設備之遙控無人機，應具備防止遙控無人機進入禁航區、限航區及航空站或飛行場四周之一定距離範圍之圖資軟體系統，其實應符合本法第4條第4款規定及第99條之13第1項公告之範圍。
- 管理規則第13條：遙控無人機之設計、製造、改裝，應由設計者、製造者或改裝者檢附申請書向民航局申請型式檢驗，經型式檢驗合格者，發給型式檢驗合格證，並發給型式檢驗標章。自國外進口之遙控無人機，應由進口商依第一項規定向民航局申請型式檢驗，或檢附申請書向民航局申請認可。經認可者，發給認可證明文件及認可標章。前二項之遙控無人機，其型式構造簡單經民航局公告者，得免辦理檢驗或認可。
- 管理規則第15條第1項：最大起飛重量25公斤以上之遙控無人機，為確保遙控無人機符合設計、製造、改裝之性能詭元，應由其所有人檢附申請書向民航局申請實體檢驗，經檢驗合格者，發給實體檢驗合格證。
- 管理規則第20條：遙控無人機操作證分類、申請者年齡及其他規定如下：  
A. 學習操作證：申請者應年滿16歲，經申請後，由民航局發給。  
B. 普通操作證：申請者應年滿18歲，經學科測驗合格後，由民航局發給。  
C. 專業操作證：申請者應年滿18歲並符合相關學歷規定後，經體格檢查及學、術科測驗合格後，由民航局發給。  
前項各類操作證之操作權限如下：一、學習操作證：持有人得於持遙控無人機普通操作證或專業操作證之操作人在旁指導下，依其普通操作證或專業操作證所載之機種分組，學習操作最大起飛重量未達二十五公斤之遙控無人機。二、普通操作證：持有人得操作其所有最大起飛重量二公斤以上、未達十五公斤且裝置導航設備之遙控無人機。三、專業操作證：持有人得操作政府機關(構)、學校或法人所有之遙控無人機及自然人所有最大起飛重量十五公斤以上之遙控無人機。
- 管理規則第25條：操作人操作遙控無人機應遵守下列事項：一、血液酒精濃度不得超過百分之0.02或吐氣中酒精濃度不得超過每公升0.1毫克。二、不得受種種作用物質影響，導致行為能力受到損傷。三、不得對任何生命財產造成危險之操作行為。
- 管理規則第26條：操作人從事遙控無人機飛行活動前，應依遙控無人機製造者所提供之維修指引對遙控無人機系統進行檢查，符合安全飛行條件後始得活動。
- 民用航空法遙控無人機專章第119條之1：遙控無人機之所有人或操作人有下列情事之一者，由民航局處其操作證，並處新臺幣30萬元以上150萬元以下罰鍰，並得沒入遙控無人機：一、違反第99條之13第1項規定，於禁航區、限航區及航空站或飛行場四周之一定距離範圍內從事飛行活動。二、違反第99條之14第1項第1款規定，逾距地面或水面高度400呎從事飛行活動。
- 民用航空法遙控無人機專章第119條之2：遙控無人機之所有人或操作人有下列情事之一者，禁止其活動，並處新臺幣6萬元以上30萬元以下罰鍰；情節重大者，並得沒入遙控無人機：一、違反第99條之10第1項有關遙控無人機註冊或標明註冊號碼之規定。二、違反第99條之10第2項規定，未領有操作證而操作遙控無人機活動。遙控無人機之所有人或操作人有下列情事之一者，禁止其活動，並處新臺幣3萬元以上15萬元以下罰鍰；情節重大者，並得沒入遙控無人機：一、違反第99條之10第1項有關遙控無人機註冊或標明註冊號碼之規定。二、違反第99條之13第2項有關直轄市、縣(市)政府公告區域、控管及其他管理事項之規定。三、違反第99條之14第1項第2款至第10款遙控無人機飛行活動應遵守之規定。本條處罰之處罰，除同時違反第99條之13第1項或第99條之14第1項第1款由民航局處罰外，由直轄市、縣(市)政府處罰之。
- 民用航空法遙控無人機專章第119條之3：違反第99條之17所定規則有關射擊類別、檢驗、認可、維修與檢查、飛行活動之活動許可及內容、製造者與進口者之登載及責任、飛航安全相關事件之通報等事項規定者，禁止其活動，並處新臺幣1萬元以上150萬元以下罰鍰；情節重大者，並得沒入遙控無人機。

※有關後續遙控無人機法規最新資訊，請詳見：[\(https://drone.caa.gov.tw/\)](https://drone.caa.gov.tw/) 或掃碼右方QR Code連結。



### 感謝您購買亞拓系列商品，謹表謝意！

- 亞拓E1植保直昇機、M4/M6植保多旋機、M470L/M480XL/M690L多功能無人機、颯「衛星遙航無人機」，民航局已有預先登錄資料，操作者可直接在交通部民用航空局無人機專區註冊完竣，登錄系統下拉選擇型號即可快速完成註冊程序。
- 亞拓T-REX系列/E1空機翼/MR25XP穿越機/多旋空拍機系列商品，其屬於「自製無人機(含航空模型機)」，飛友應自行辦理型式檢驗登錄。
- 相關型號、構造、尺寸(長×寬×高)、飛機翼展/直昇機旋翼半徑/多旋翼軸距、使用動力、導航方式...等詳細資訊，請連結右側QR Code「亞拓無人機註冊資料」，或參考「亞拓無人機註冊教學」進行登錄註冊。





## STANDARD EQUIPMENT

Equipment \ Versions	Top Combo	Super Combo	Kit
Illustration			
Cyclic Servo	DS830M HV Brushless Servo x3	DS830M HV Brushless Servo x3	——
Tail Servo	DS835M HV Brushless Servo x1	DS835M HV Brushless Servo x1	——
Throttle Servo	DS530 Digital Servo x1	DS530 Digital Servo x1	——
Engine	OS MAX-105HZ Engine	——	——
Pipe	ALIGN 105 High Performance Pipe	ALIGN 105 High Performance Pipe	ALIGN 105 High Performance Pipe
Fuel Tank	630cc Fuel Tank	630cc Fuel Tank	6530cc Fuel Tank
Flybarless System	Microbeast Flybarless System	——	——
Voltage Regulator	B6M 2 In 1 Voltage Regulator	B6M 2 In 1 Voltage Regulator	——
Governor Sensor	Governor Sensor	Governor Sensor	Governor Sensor
Main Blade	690 Carbon Fiber Blades	690 Carbon Fiber Blades	690 Carbon Fiber Blades
Tail Blade	105 Carbon Fiber Tail Blades	105 Carbon Fiber Tail Blades	105 Carbon Fiber Tail Blades
Drive Gear Ratio	7.43 : 1 : 4.23	7.43 : 1 : 4.23	7.43 : 1 : 4.23

## SPECIFICATION

Equipment \ Versions	Top Combo	Super Combo	Kit
Length	1352mm	1352mm	1352mm
Width	202mm	202mm	202mm
Height	397mm	397mm	397mm
Main Blade Length	680-700mm	680-700mm	680-700mm
Main Rotor Diameter	1543mm	1543mm	1543mm
Tail Length	105-115mm	105-115mm	105-115mm
Tail Rotor Diameter	279mm	279mm	279mm
Fuel Tank Capacity	Approx. 630cc.	Approx. 630cc.	Approx. 630cc.
Flying Weight (Excluding Fuel).	Approx. 4110g	Approx. 4110kg	Approx. 4110kg

