# ALIGN

# TREX 1005 HELICOPTER INSTRUCTION MANUAL

# 使用說明書

AT 100



Contents			
1	INTRODUCTION 前言		
1~2	SAFETY NOTES 安全注意事項		
3	PACKAGE ILLUSTRATION 包裝說明		
3	STANDARD EQUIPMENT 標準配件		
3	NOMENCLATURE 直昇機各部位名稱		
4	3 STEPS FOR HE∐COPTER ASSEMBLY 直升機組裝三步驟		
5	NOMENCLATURE 遙控器各部位名稱		
6	TRANSMITTER BATTERY INSTALLATION 遙控器電池安裝		
6~8	CHARGING BATTERIES 電池的充電		
8	BATTERY AND CHARGER SPECIFICATION 電池與充電器相關規格		
9~10	SWITCHING BETWEEN MODE1/MODE2/ MODE3 ON TRANSMITTER 遙控器MODE1/MODE2/MODE3 的切換		
10	FLIGHT SIMULATOR USAGE INSTRUCTION 飛行模擬器使用說明		
11	BINDING OF RADIO TRANSMITTER AND RECEIVER 遙控器與接收器的對頻		
11~13	USAGE INSTRUCTIONS AND CHECK LISTS 開機步驟與飛行前檢查		
14~15	FLIGHT ADJUSTMENT AND SETTING 飛行動作調整與設定		

TROUBLE SHOOTING DURING FLIGHT

如何排除飛行中的狀況

PART LIST

16~17

Thank you for buying ALIGN products. The *T-REX 100S* is the latest technology in Rotary RC models. Please read this manual carefully before assembling and flying the new *T-REX 100S* helicopter. We recommend that you keep this manual for future reference regarding tuning and maintenance.

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

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#### Specifications & Equipment/規格配備:

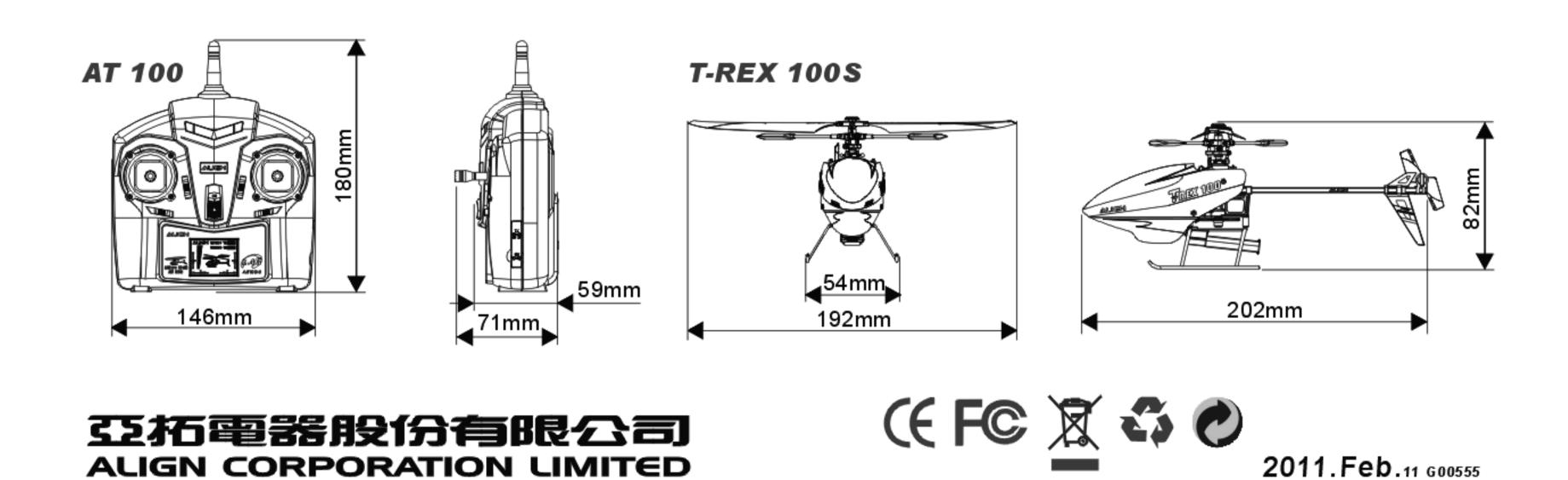
#### **T-REX 100S**

Length/機身長:202mm Height/機身高: 82mm

Main Blade Length/主旋翼長:192mm Tail Rotor Diameter/尾旋翼直徑:36mm

Weight(Without Power System)/空機重:27.8g

Flying Weight/全配重:Approx. 32g



#### 1.INTRODUCTION 前言



Thank you for your purchase of this Align product. T-REX 100S is a micro RC helicopter that is designed for smaller flight space. For a pleasant experience with your T-REX 100S, please read through this manual carefully prior to helicopter assembly and operation. Keep this manual handy as a future reference for adjustment and maintenance. 感謝您選購亞拓產品!T-REX 100S 是一台專為較小空間所設計的遙控直昇機,為了讓您更方便、更容易的使用 T-REX 100S,請您仔細閱讀完此說明書後,再進行組裝及操作這台直昇機,同時請您妥善的保存這本說明書,作為日後調整及維修的參考。

No matter when and where, Align T-REX series RC helicopter can always satisfy your flight desire.

亞拓 T-REX 系列直昇機,機種最齊全,不論何時何地,不管晴天雨天,都可以滿足您對飛行的渴望。

#### WARNING LABEL LEGEND 標誌代表涵義

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。

<u>↑ CAUTION</u> 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。

**Section FORBIDDEN** 禁止

Do not attempt under any circumstances.

在任何禁止的環境下,請勿嘗試操作。

#### IM PORTANT NOTES 重要聲明

T-Rex 100S is a sophisticated hobby product and not a toy. Although small, it still poses certain risk factors that should not be over looked. Please follow safety and operation recommendations to ensure correct operation of this helicopter. The use of this helicopter beyond its intended purposes and disassembly may cause unforeseen danger, and should be avoided.

T-REX 100S並非玩具,雖然是微型的遙控直升機,但是仍然有一定的危險性,請您依安全注意事項與操作說明來正確的使用該模型,任意的改裝拆解或使用不當以及對產品的不熟悉,都可能造成不可預期的危險或意外,請勿輕忽。

Manufacturer and dealer assume no liability for accidental damages caused by abnormal wear of parts, improper assembly, or operation in unsafe manners. **This product is intended for use by age 15 years or older.**Please ensure the product is operated under safe environment.

注意!任何遙控直升機的使用,製造商或經銷商是無法對使用者於零件使用的損耗異常、組裝不當或不安全的環境下操作所發生之意外負任何責任,**本產品適用年齡15歲以上**,請確保在安全無虞的環境下操作。產品售出後本公司將不負責因不當操作、拆卸、改裝所引起的財產損失與人身傷害。

We recommend that you seek 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 100S requires a certain degree of skill to operate, and is an item subject to normal wear and tear. Any damage or dissatisfaction as a result of accidents or modifications are not covered by any warrantee and cannot be returned for repair or eplacement. Please contact our distributors for free technical consultation and parts at discounted rates when you experience problems during operation or maintenance.

模型商品屬於需高操作技術且為消耗性之商品,如經拆裝使用後,會造成不等情況零件損耗,任何使用情況所造成商品不良或不滿意,將無法於保固條件內更換新品或退貨,如遇有使用操作維修問題,本公司全省分公司或代理商將提供技術指導、特價零件供應服務。

#### 2.SAFETY NOTES 安全注意事項

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▲ CAUTION 注意

Fly only in safe areas, away from other people. Do not operate R/C aircraft within the vicinity of 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 occurred during the operation or as of a result of R/C aircraft models.

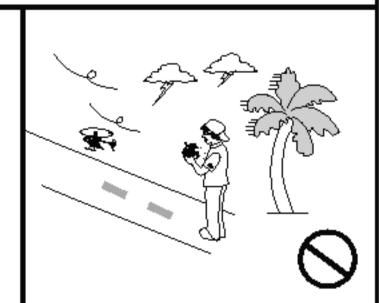
遙控模型飛機、直昇機屬高危險性商品,飛行時務必遠離人群,人為組裝不當或機件損壞、電子控制設備不良,以及操控上的不熟悉、都有可能 導致飛行失控損傷等不可預期的意外,請飛行者務必注意飛行安全,並需了解自負疏忽所造成任何意外之責任。

S FORBIDDEN 禁止

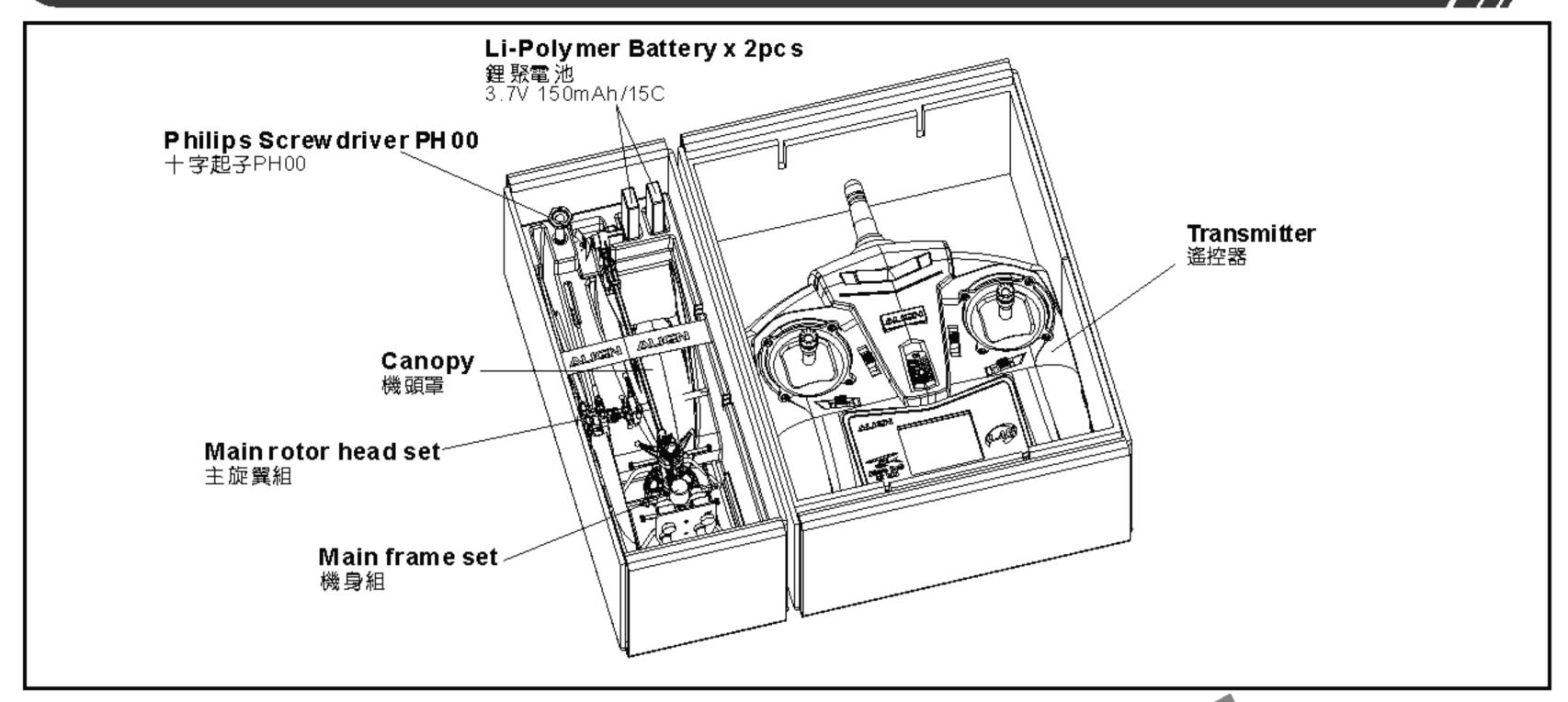
#### LOCATE AN APPROPRIATE LOCATION 室内專用機,請遠離障礙物

This product is for indoor use and only fly at the place without wind. Before flying, choose a legal flying field consisting of flat, smooth ground without obstacles, pets, and crowds. To ensure the safety of yourself, others and properties, do not fly in the vicinity of heat, high voltage wires, or power sources to avoid accidental fires and electrical shocks.

本產品為適合室内、無風環境飛行的電動直昇機,飛行時請妥善選擇無障礙物的室内場地,並與人群或 寵物等保持適當距離,切勿於不安全的環境下操作,如熱源、電線、電源等等,以発直昇機碰撞、迫降 、糾纏而引發火災、電擊等危險,造成生命財產損失。







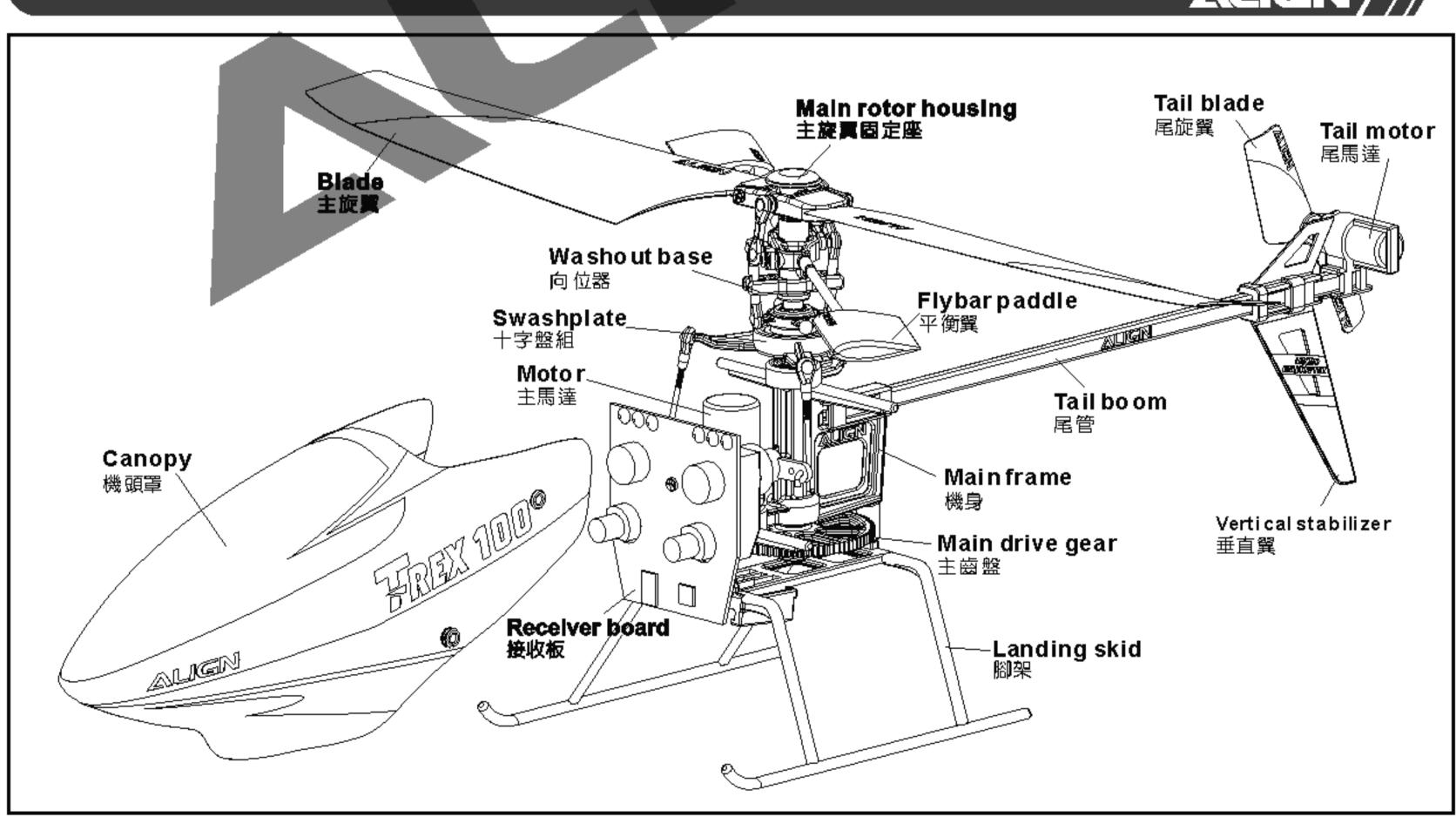
### 4.STANDARD EQUIPMENT 標準配件

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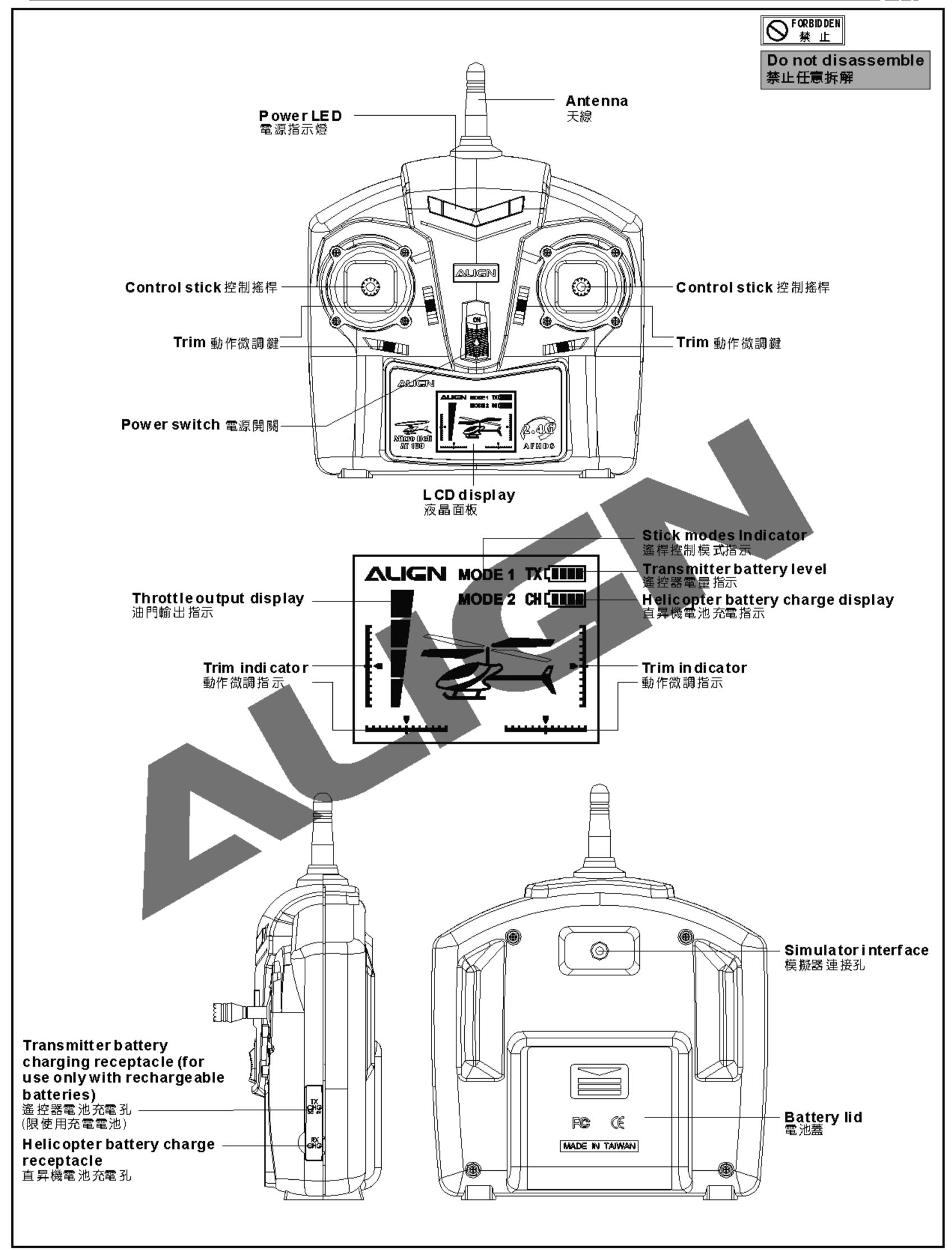


# 5.NOMENCLATURE 直昇機各部位名稱

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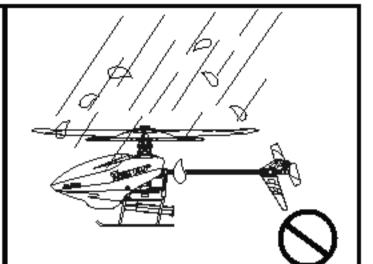
# O FORBIDDEN

#### 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 melfunction, or a crash. Do not operate or expose To rain or moisture.

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

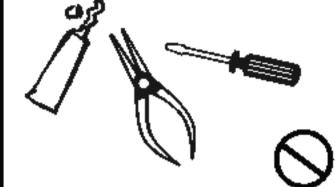


# ● FORBIDDEN 禁止

#### PROPER OPERATION 勿不當使用本產品

To avoid potential fire hazard from batteries, please do not short, reverse polarity, or puncture batteries. Battery charging must be done under supervision at all times, and at location out of reach by children. Double check the four AA batteries are rechargeable Ni-CD/Ni-MH batteries before charging. The manufacturer of this product will not be liable for accidental damages incurred by charging non-rechargeable batteries.

請勿任意拆卸或自行改造加工,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。請確認於產品限界内操作,請勿過載使用,並勿用於安全、法令外其它非法用途。



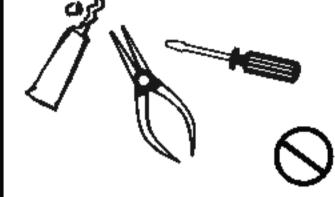
# FORBIDDEN

#### SAFETY NOTE FOR NI-MH BATTERIES 镍氫電池使用安全

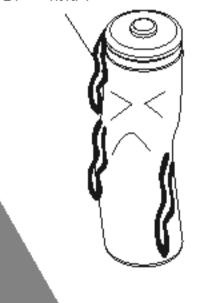
Make sure the batteries are installed based on polarity indicated in the case and do not mix batteries of different chemistry/spec. Please take out the batteries if you are not going to use for a long time to avoid potential leakage which may damage the transmitter. Please dispose depleted batteries according to local laws and ordinances. Do not dispose improperly.

The transmitter for the Trex 100 has built in charger for its AA batteries. Please make sure you are using rechargeable Ni-mh batteries before charging begins. Manufacturer and dealer assume no liability for accidental damages caused by charging of non-rechargeable batteries. 安裝時請確認正負極位置,新舊電池請勿同時混用以免影響電池壽命。若長時間不使用本產品,請取出電池, 以免造成電池漏液、故障。若電池有漏液狀況請勿再使用。廢棄的電池,請依照該使用國家或地區的廢棄物 清理法令回收,切勿任意丟棄以免污染環境。

本產品之遙控器具有 3號(AA) 電池充電功能,請確認遙控器上的4顆3號(AA)電池皆為可重複充電的鎳氫電池,才可對遙控器電池進行充電。使用非充電電池所造成的任何損壞與意外,本公司不負任何損害賠償責任。



#### **Battery leakage** 電池漏液



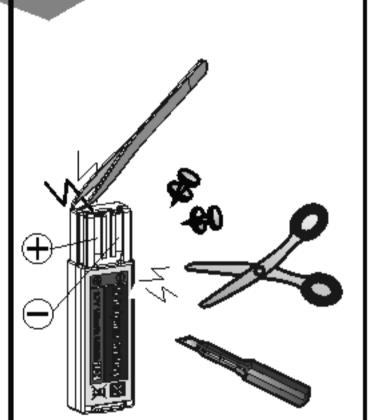
#### SAFETY NOTE ON LI-POLYMER BATTERIES 鋰聚電池使用安全

Li-Polymer batteries poses higher operational risks compared to other battery chemistry, thus it is imperative to follow its usage instructions. Manufacturer and dealer assume no liability for accidental damages caused by improper usage.

- $\bigstar$ Do not use charger other than the factory supplied unit to avoid potential fire and explosion.
- ★Do not crush, disassemble, burn, and reverse polarity. Avoid metallic materials to come into contact with battery's polarity and cause it short and never puncture batteries to avoid fire hazards.
- ★Battery charging must be done under supervision at all times, and at location out of reach by children.
- $\bigstar$ Please stop the use or charge of the battery should there be an unusual increase in battery temperature after use. Continue use of this battery may cause it to expand, deform, explode, or even result in fire hazards.
- ★Please dispose depleted batteries according to local laws and ordinances. Do not dispose improperly.

鋰聚電池較其他電池有更高的危險性,使用前請務必詳讀並遵照下列注意事項使用本電池,本公司將不對 任何不當使用所造成的損害負責

- ★嚴禁使用原廠以外的充電器進行充電,以免發生爆炸起火的危險。
- ★嚴禁撞擊、拆解、正負極反接、焚燒電池,避免金屬物品碰觸電池正負極造成短路。並請防止尖銳的物品刺穿電池, 以避免電池起火的危險
- ★充電時請謹慎小心,確保在您的視線範圍內進行充電。並遠離幼童可以接觸到的地方,以免發生危險。
- ★電池使用後如有發熱情況,嚴禁充電。否則會造成電池膨脹、變型、爆炸甚至起火燃燒,危害生命財產的安全。
- ★廢棄的電池,請嚴格依照該使用國家或地區的廢棄物清理法令回收,以免污染環境。







# A CAUTION 注意

#### KEEP AWAY FROM HEAT 遠離熱源

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

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



# **★**WARNING 警告

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

#### This product is intended for operators of age 15 years and older.

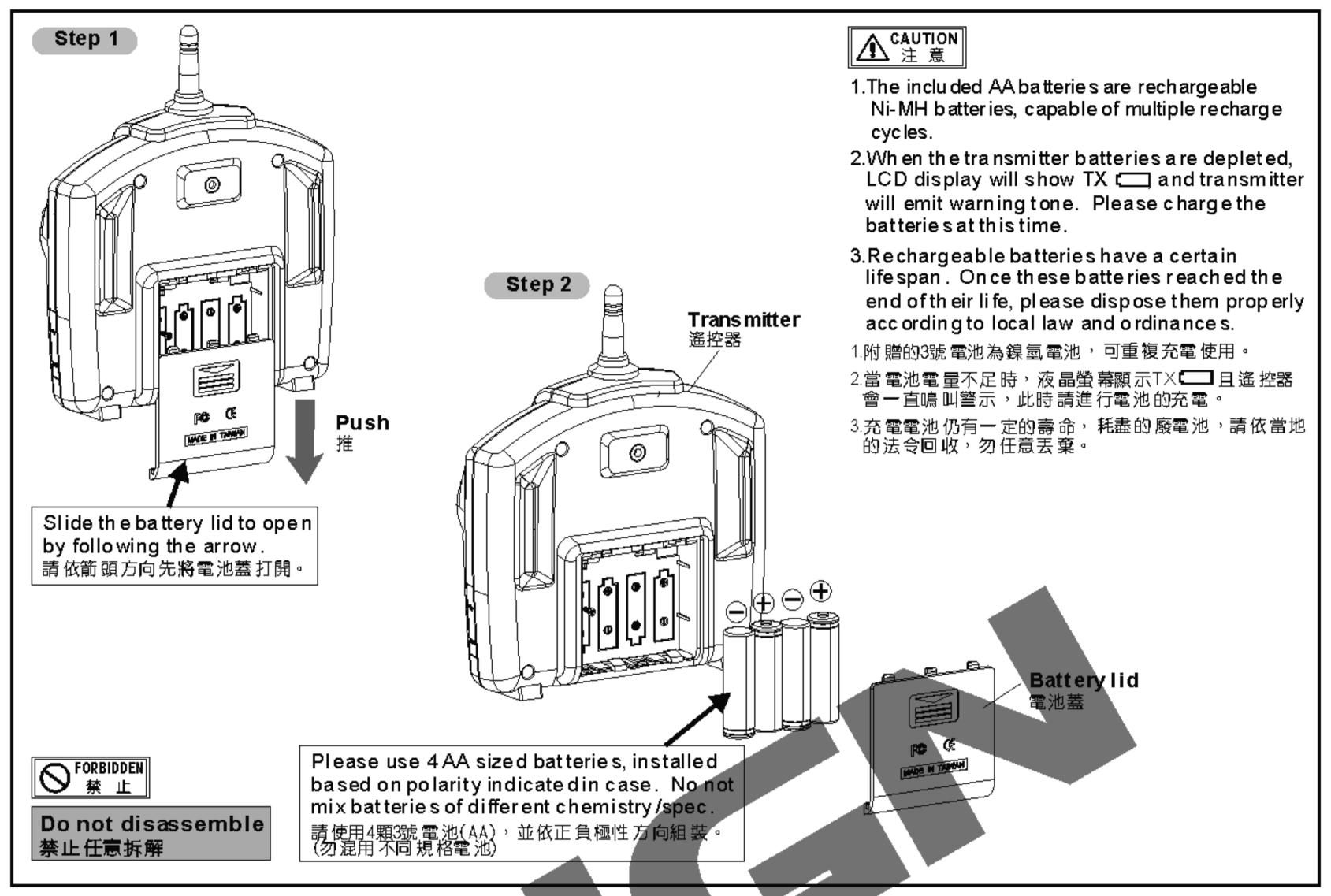
Due to the learning curve of RC helicopters, we recommend guidance by experienced flyers. The radio transmitter features computer simulator output which can be used with commercial or free simulator software to assist with the learning process.

**本產品適用年齡15歲以上**,遙控直升機在學習初期有著一定的難度,建議有經驗的人士在旁指導才可以飛行,本產品的遙控器具備電腦模擬器輸出的功能,可透過隨附的飛行模擬軟體或市售的飛行軟體練習飛行,提升熟練度。



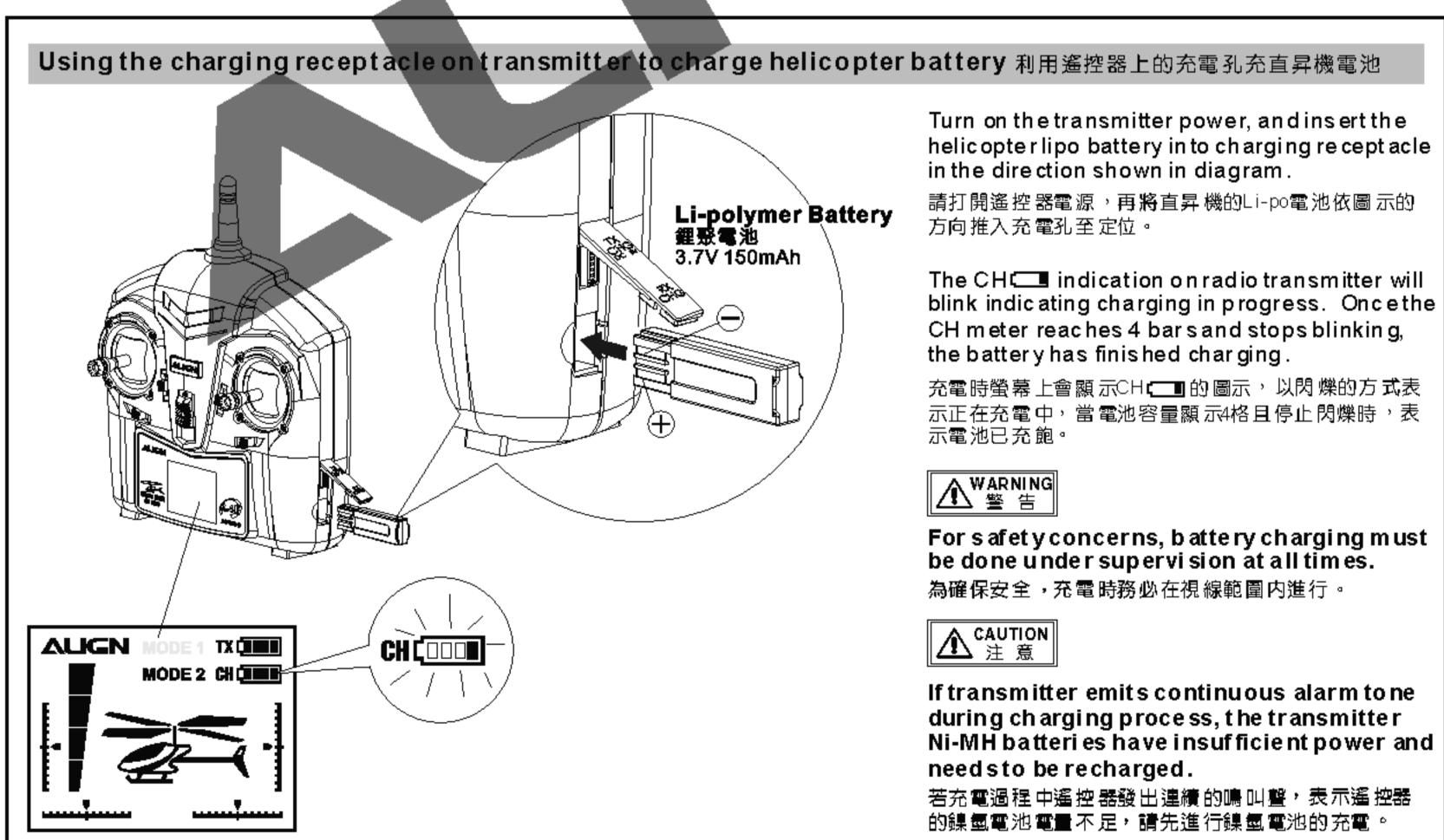
#### 8.TRANSMITTER BATTERY INSTALLATION 遙控器電池安裝



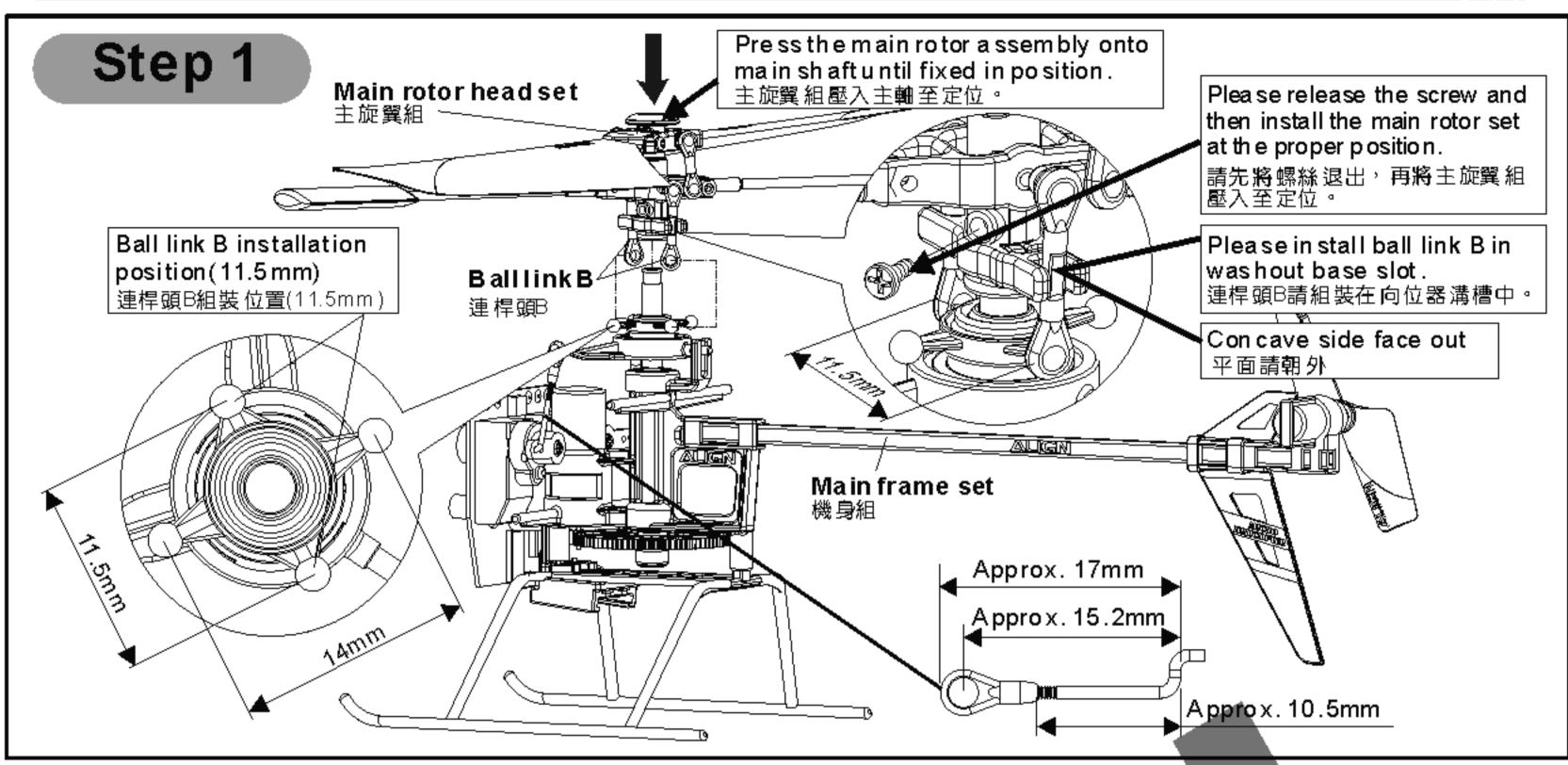


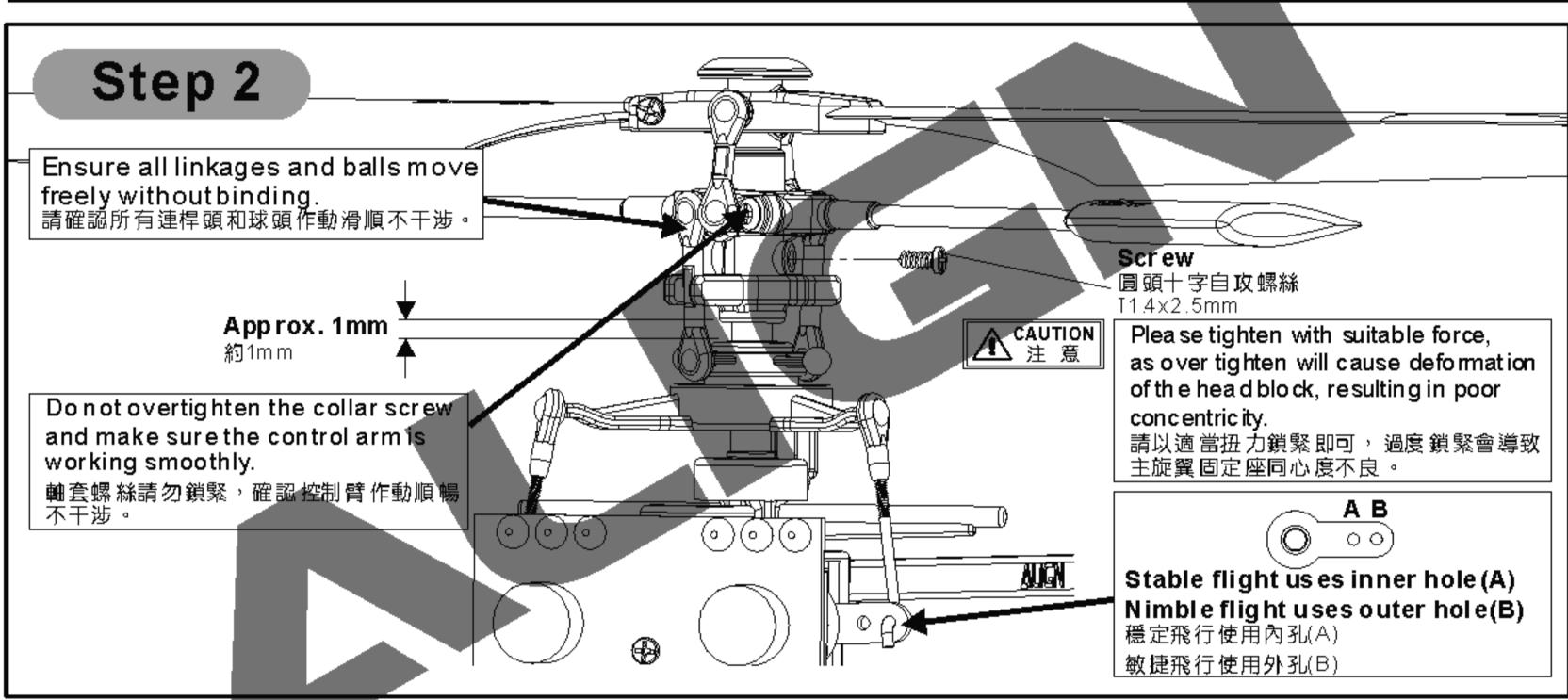
#### 9.CHARGING BATTERIES 電池的充電

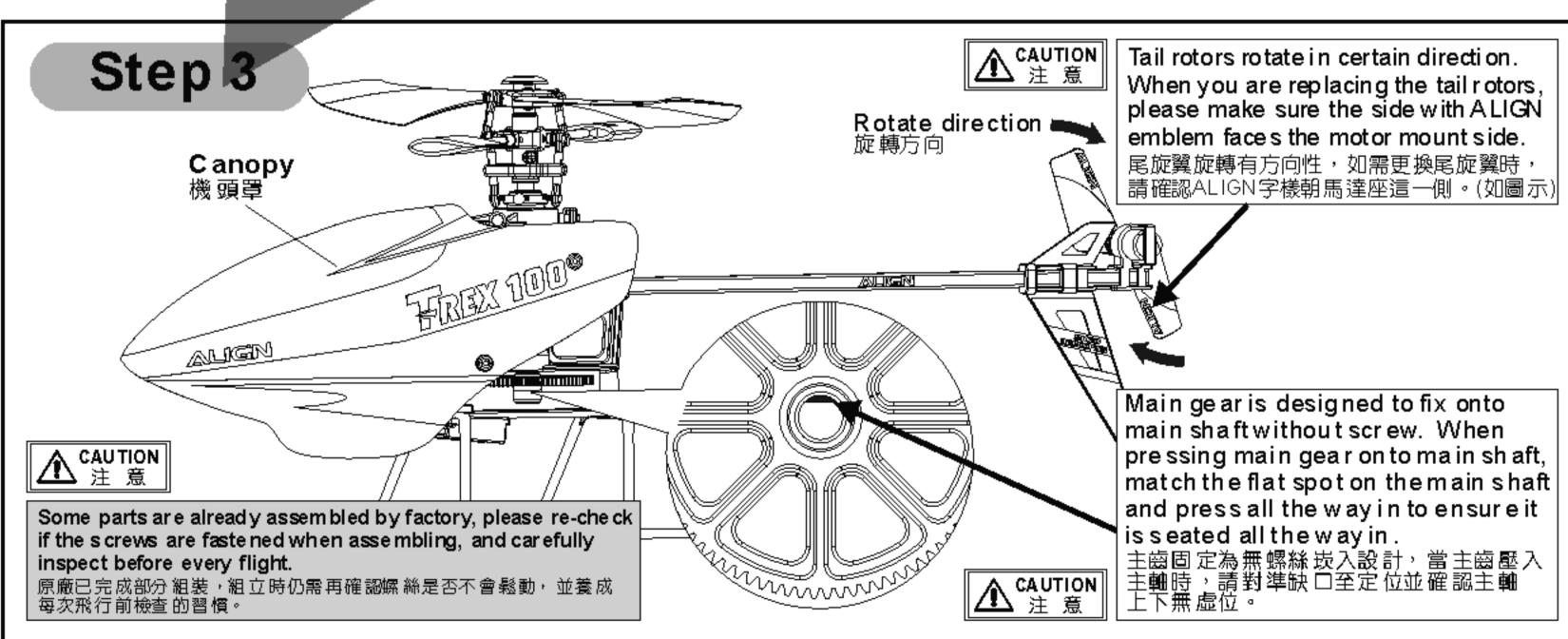
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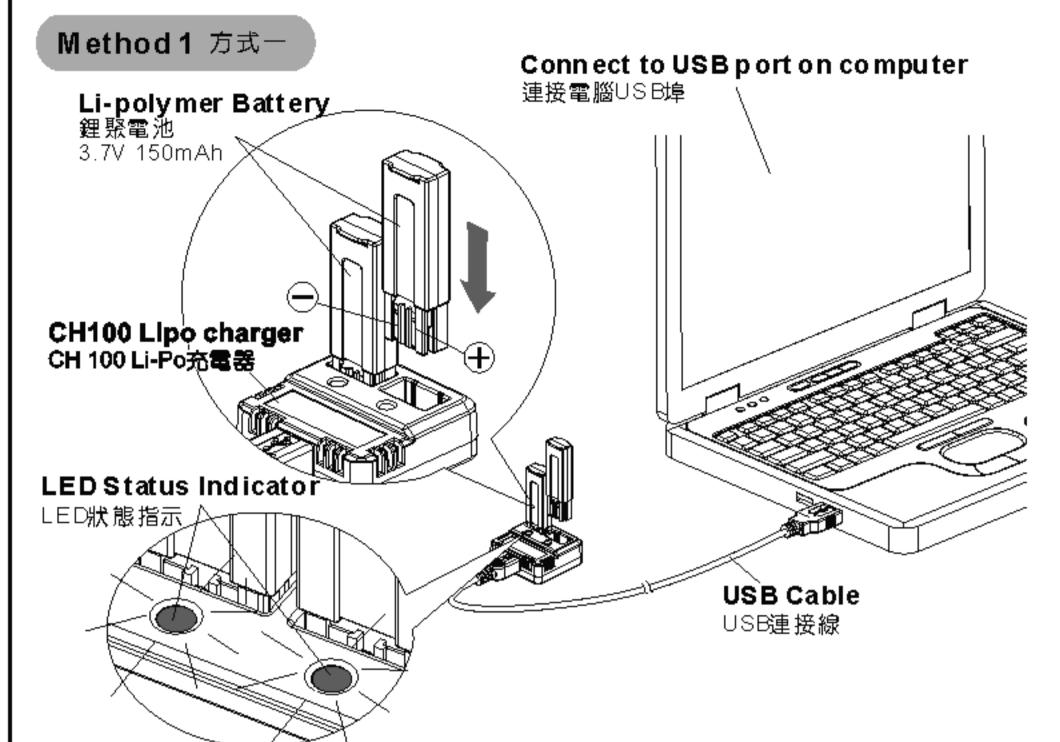








#### Using the CH100 Lipo battery charger to charge heli copter battery 使用CH100 Li-Po充電器充直昇機電池



CH100 provides two independent charging receptacles to enable charge of lipo batteries individually or concurrently. The charger can be powered via two power source; eith er connecting to the USB port on a computer, or connecting to a third party USB power supply from a cell phone.

CH100提供2組獨立的充電插槽,可同時或個別進行鋰 聚電池的充電,充電器的電源供應有2種方式,一種為 透過USB線由電腦USB埠供應電源,另一種為使用一般 市售的USB埠手機旅充供電。

# AWARNING 整告

For safety concerns, battery charging must be done under supervision at all times. 為確保安全,充電時務必在視線範圍内進行。

Avoid shortening the metal contacts in charger receptacles, a sit may lead to internal damage of charger.

勿使金屬物 品碰觸 到充電器内的電極彈片,以免造成 充電器的損壞。

#### LED Indicator LED表示

Green 綠燈	Red 紅燈
Idle and Charge Completion	Charging
待機狀態與充電完成	充電中

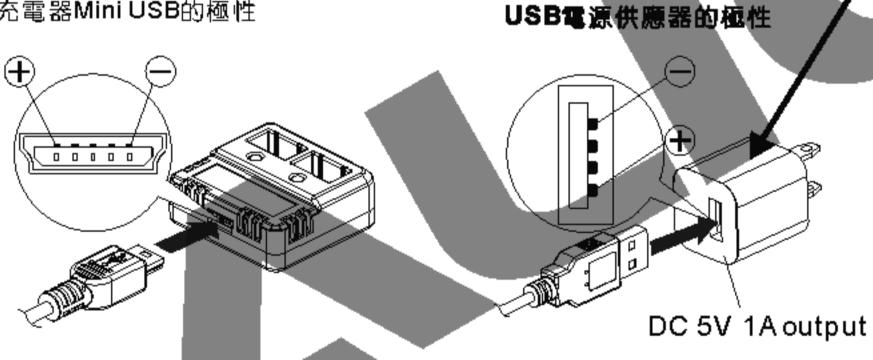
#### Charger Specifications CH100充電器規格

In put	Charging Current	Full Voltage
輸入	充電電流	充飽電壓
DC 5V 1A	500mAx2sets組	4.2±0.03V

#### Method 2 方式二

#### Polarity of Mini USB of the charger

充電器Mini USB的極性



Polarity of the

**USB** power supply

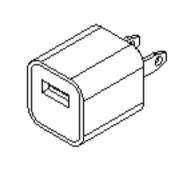
#### Self provided USB power supply 請自備USB埠的電源供應器

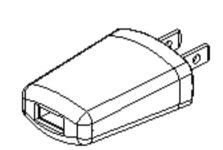
# A CAUTION 注意

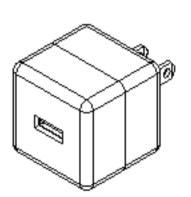
Specification of the USB power supply: Output voltage DV 5V, Output current 1A or high er. 關於電源供應器的規格需求:電壓輸出DC5V 電流輸出1A以上。

Examples of suitable power supply include: iPhone, travel charger for HTC phones, or commonly a vailable USB power supply for cell phones, MP3 players, or PDA.

可使用的電源供應器例如:iPhone、HTC的手機旅充、或一般 市售提供給手機、MP3、PDA等產品用的電源供應器。







iPhone

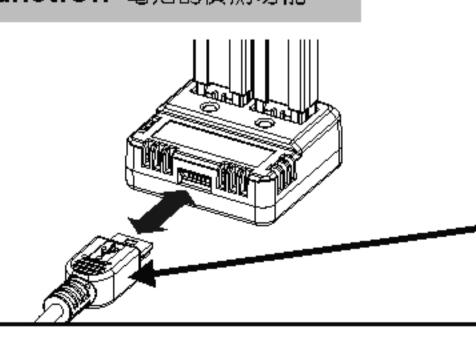
HTC Model 型號 TC U 250

Commonly available products 一般市售品 (DC 5V 1A output)

#### Battery Detection Function 電池的偵測功能

**USB C able** 

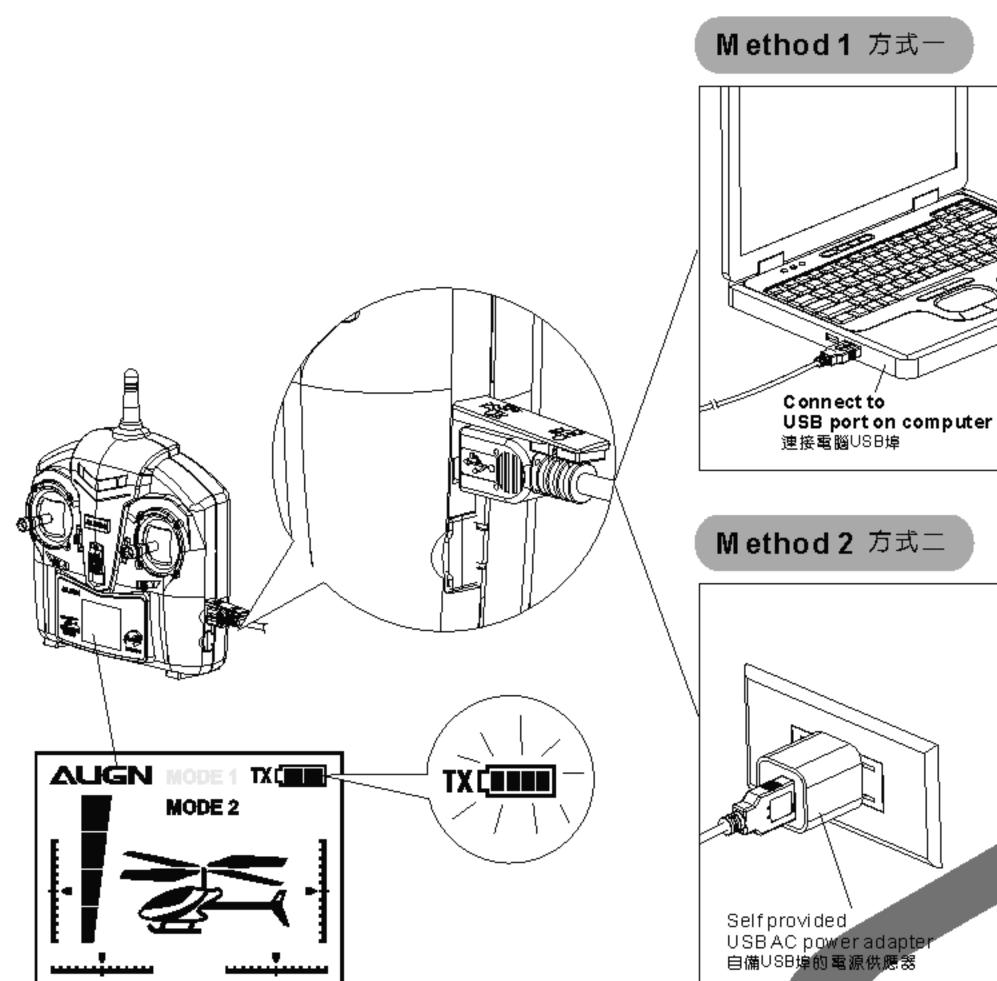
USB連接線



After battery is inserted into receptable, the charger can beforced to re-detect the battery's voltage by pulling /re-inserting the USB plug, allowing the battery to be re-peaked.

電池 插 入後 , 重新 插拔U \$B插頭 , 可 使 充電 器 重新 偵 測電 池電 壓 。 並將電池補充至完全充飽的狀態。

#### Charging method for transmitter's Ni-MH batteries 遙控器鎳氫電池的充電方式



T-Rex 100 transmitter is capable of charging its internal AANi-MH batteries. Please ensure the AA batteries in the transmitter are rechargeable before attempting to charge.

After connecting the transmitter as shown in diagram, power up transmitter, TX 🖼 will be flashing on the display indicating charging is in progress. Once charging is complete, the TX battery indicator will stop flashing and display 4 bars.

In order to reduce power consumption, charging process can be done with transmitter powered off. To check for charging status display, the transmitter can be powered back on.

T-REX100遙控器提供3號鎳氫電池充電功能,充電前 請務必再確認遙控器內的3號(AA)電池為可重複充電的 電池。

依圖示的方式連接後,開啟遙控器電源,螢幕上會顯 示TXCOO的圖示,以閃爍方式表示正在充電中,當電 池容量顯示4格且停止閃爍時,表示已充飽電。 可在電源開關關閉減少耗電的狀態下進行充電,若要 確認電池是否充飽時,可開啟電源檢視螢幕的電量指 示。

#### 10.BATTERY AND CHARGER SPECIFICATION 電池與充電器相關規格

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#### Battery usage and charge duration reference 電池使用時間與充電時間參考表

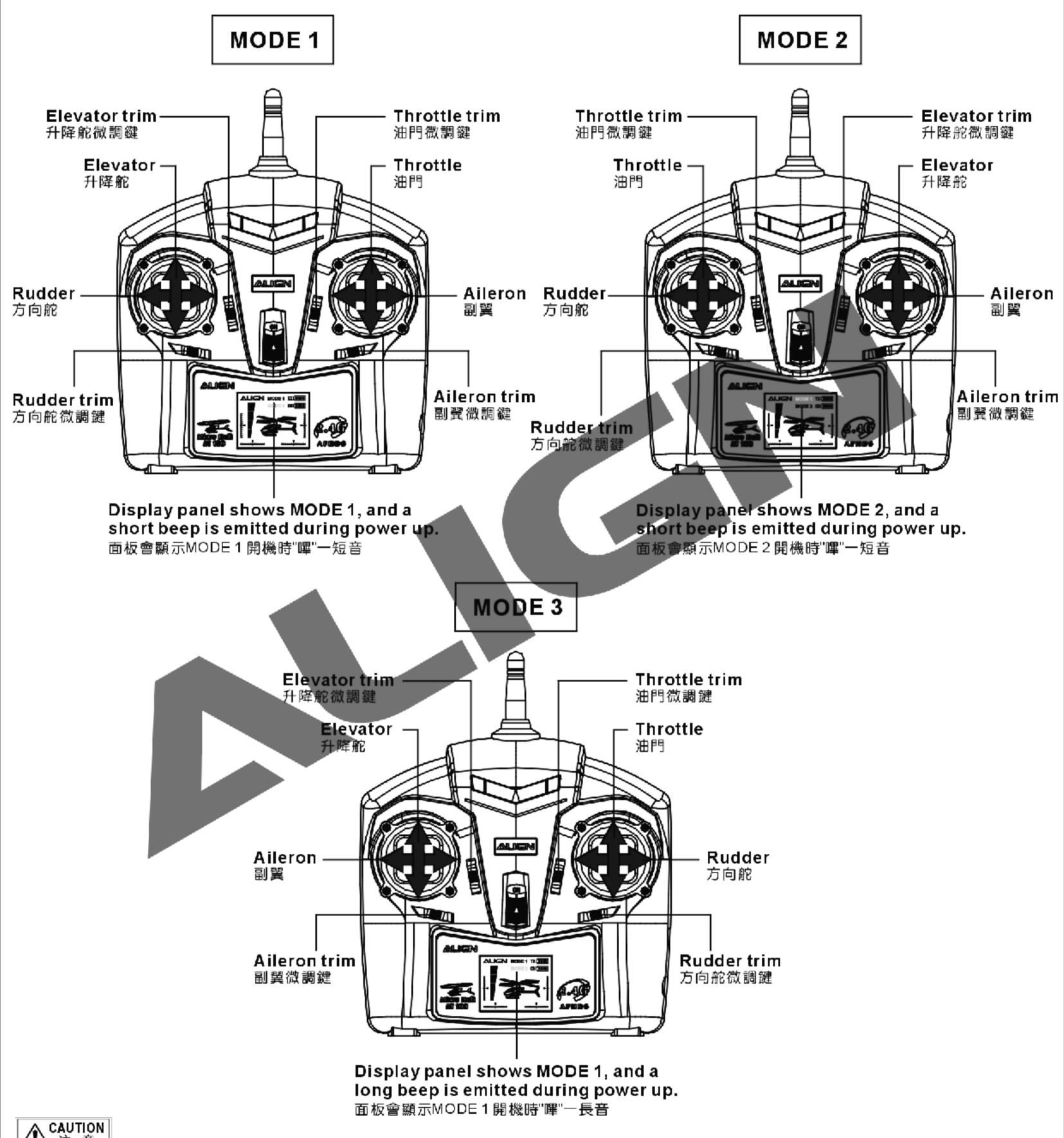
Battery type 電池種類	Battery Specification 電池規格	<b>—</b> +- co c+ co		Charge Time 充電所需時間	
Li-Po battery 鋰聚電池	3.7 V 150mAh	Helicopter Flight Time 直昇機飛行時間	Approx. 6.5 Minutes 約6.5分鐘	Approx. 19 Minutes (Charging current approx. 0.5A) 約19分鐘(充電電流約0.5A)	
Carbon-Zinc (Non Rechargeable) 碳鋅電池(不可充電)	1.5 V (GP 15G R6P)	Transmitter Operation Time 供遙控器開機 時間 Used for Lithium Polymer Charging 用於鋰聚電池充電	18 Hours 18小時 Approx. 2 times 約2次	Non Rechargeable 不可充電	
Ni-MH chargeable battery 鎳氫充電電池	1.2 V 1600mAh	Transmitter Operation Time 供遙控器開機 時間 Used for Lithium Polymer Charging 用於鋰聚電池充電	53 Hours 53小時 Approx. 9 times 約9次	Charged through transmitter, approx. 7 hours (Charging current approx. 0.3A) 以遙控器充電約7小時 (充電電流約0.3A)	



MODE1 is commonly used in Asia where throttle stick is on the right hand side, where MODE2 (throttle stick on left side) is more common amongst western countries. MODE 3 is same as MODE 1 with throttle stick on the right hand side but the position of AIL and RUD are reversed. Please set the transmitter MODE based on your preference.

亞洲地區大部分使用 MODE 1 的操控模式,即油門搖桿位於右手邊的位置,歐美地區則偏好 MODE 2 操控模式,即油門搖桿位於左手邊,而 MODE 3 油門搖桿與MODE1同樣位於右手邊,但方向舵與副翼搖桿位置與 MODE1 相反,請您選擇自己習慣或容易學習與操控的模式來操作直昇機。

Note: Amongst the 4 axis of the transmitter control sticks, the axis that does not spring back to center is the throttle stick. 註:搖桿的四個方向中,不會自動彈回中間位置就是控制油門的搖桿



CAUTION 注意

The control stick mode has been set at the factory. For switching to other modes, please follow instructions below.

原廠出廠時,已為您將模式設定好了,如果您需要更換其他模式請依照下列方式進行更換。

# Switching between MODE1 and MODE2 MODE 1與MODE 2的切換方式 CAUTION 注意

Loosen up the 8 screws holding the two control sticks, and swap the control sticks to change between MODE1 and MODE2.

請將控制桿的8顆螺絲鬆開,並交換控制桿模組,可切換 MODE 1及 MODE 2 的操作模式。

This transmitter has trim memory capability. When the control stick modes are changed, all trims are retained so there is no need to re-trim.

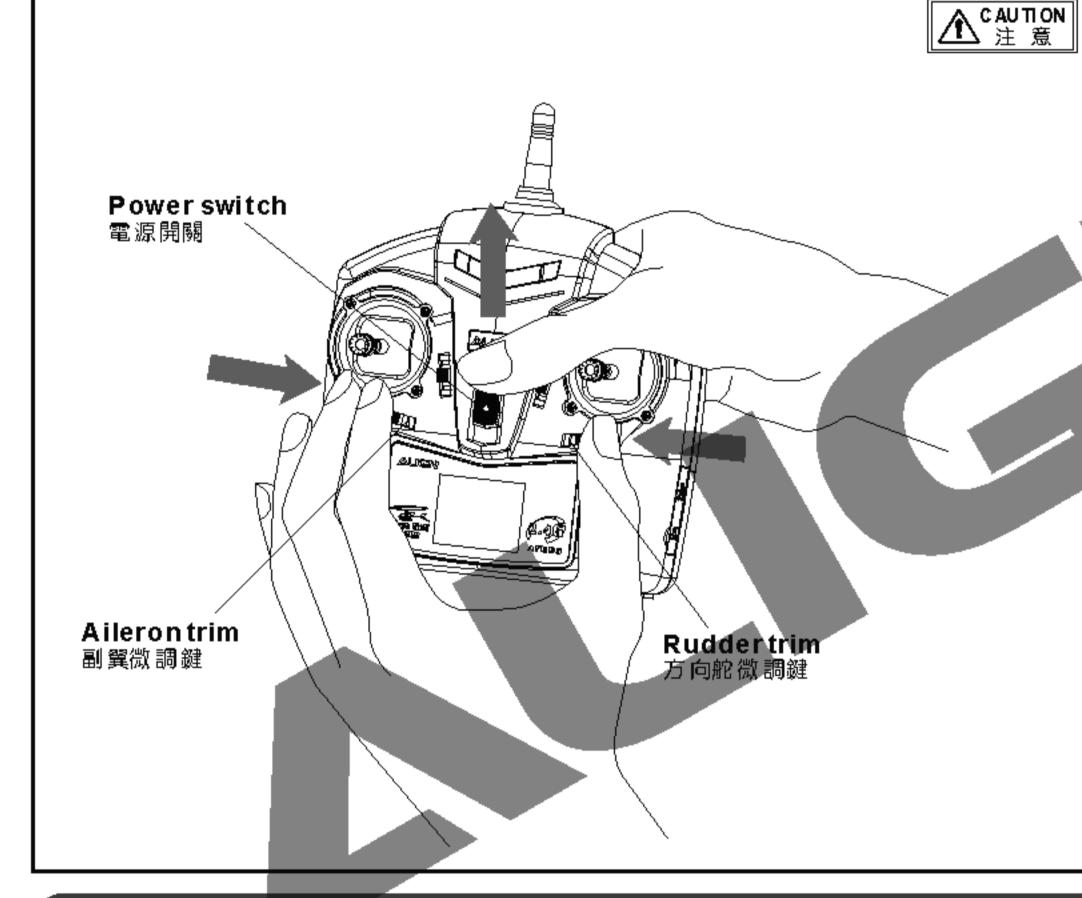
本遙控器具備記憶功能,當您切換操控模式時,遙控器 會自動將您原本的微調數據保留並切換,不需重新調機

Pay attention to the rails when installing the control sticks. 安裝時,請注意導軌方向,對準導軌才可以順利裝入。

#### Switching between MODE 3 MODE 3的切換方式

Control sticks

控制桿模組



MODE3 setting needs to be set with the control sticks in MODE1 position, which means throttle is on the right hand side.

MODE 3必須在MODE 1 模式下才能切換設定,MODE 3 的油門搖桿同樣是在右手邊的位置。

Using thumb and pointer fingers, hold the aileron and rudder trim tabs toward the middle while turning on the transmitter power.

Transmitter will emit a long beep indicating MODE3 has been set. However, MODE 1 will be still indicate on the transmitter screen.

After transmitter is switched to mode 3, the mode will be retained every time when powered up, as indicated by a long beep.

To change MODE setting back to MODE1, just repeat the above procedure. Transmitter will emit a short beep indicating MODE1 has been set.

After transmitter is switched to MODE 1, the mode will be retained every time when powered up, as indicated by a short beep.

以單手食、拇指將副翼、方向舵的微調鍵往中間推著不放,接著另一手將電源開關往上推開電源,此時遙控器會發出"嗶"一長音,表示進入MODE 3 功能,但面板仍顯示MODE 1。

切換MODE 3 成功後,遙控器會記憶為MODE 3,每次

開機都會"嗶"一長音。 若要切换回MODE 1,只要再重複一次上述的動作,遙 控器會發出"罩"一短音,表示返回MODE 1功能。

切換MODE 1 成功後,遙控器會記憶為MODE 1,每次開機都會"嗶"一短音。

#### 12.FLIGHT SIMULATOR USAGE INSTRUCTION 飛行模擬器使用說明

ALIGN /

If you are not familiar with the controls, please practice on the PC flight simulator before you fly an actual RC helicopter. We have including the flight simulator cable and installation CD ROM in the package. Please follow the instructions to connect the transmitter with PC. Please refer to the installation in structions in the CD ROM for other settings. 當您尚未熟悉直昇機各動作的操控方式前,切勿實機飛行,請先進行電腦模擬

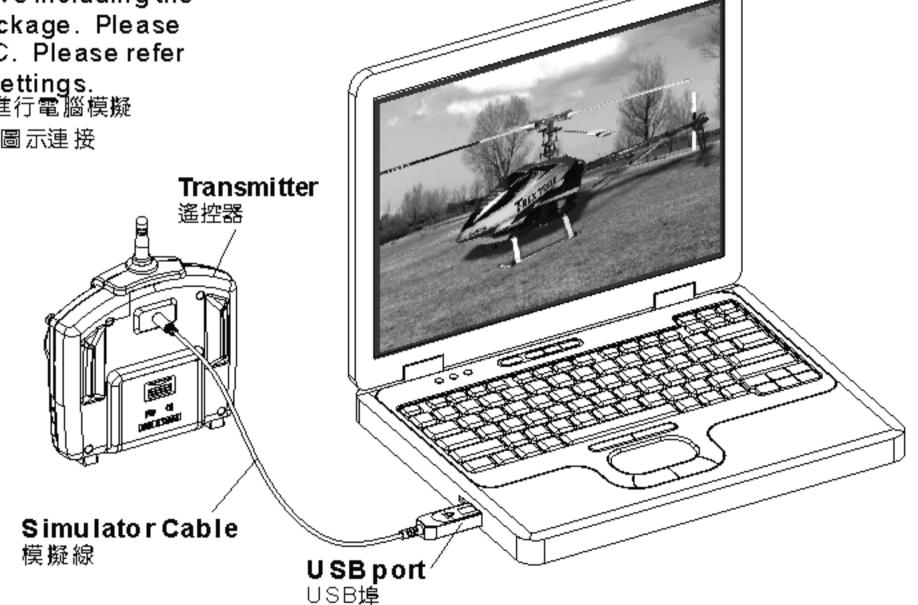
飛行的練習。本產品隨附飛行模擬器(USB埠)與安裝光碟,請依照圖示連接 遙控器與電腦,其餘設定請參照光碟的安裝說明。

The installaion instruction is including

- 1.Disc installation procedure
- 2.Lan gua ge Setting
- 3.Connect with your transmitter to PC
- 4.Controller Settings
- 5.Controller mapping and Calibration
- 6.Model and scenery import

安裝說明的內容包括:

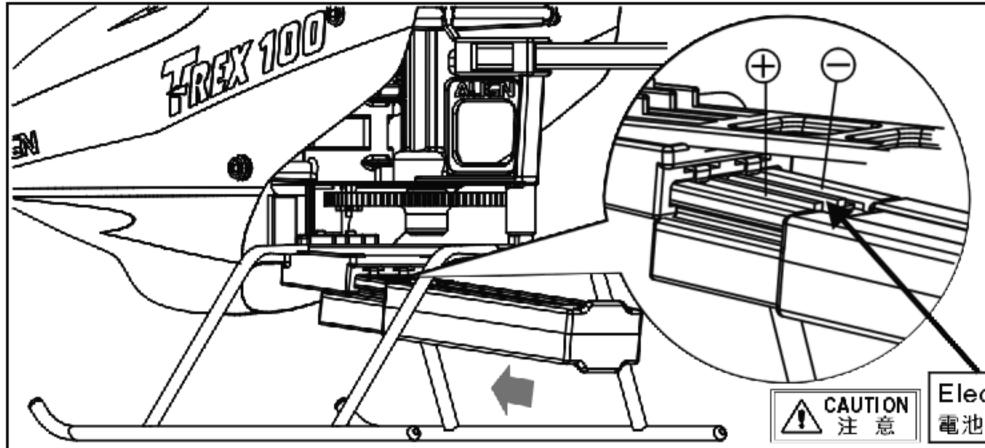
- 1光碟安裝步驟
- 2.顯示語言設定
- 3.模擬線連接方式
- 4.設定控制搖桿
- 5.搖桿通道對映及校準
- 6.載入模型及場景





If there are frequency interference preventing completion of radio binding, please re-binding the radio of transmitter and receiver.

首次使用或當頻率受到干擾而無法對頻時,必須重新對頻。

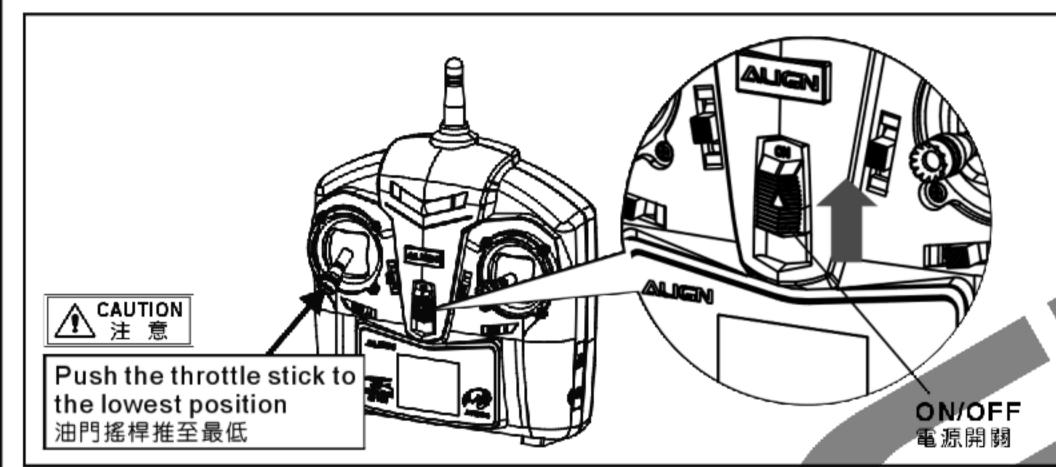


#### Step 1 步驟1

With the helicopter placed on level surface, push the lipo battery pack in the direction shown in diagram until fixed into position. At this time avoid moving the helicopter so the radio and gyro system can initialize and the red LED on the receiver borad will be start flashing.

將直昇機置於平坦位置,依圖示方向插入Li-Po電池 至定位,不要再移動機身,使陀螺儀讀取中立點, 此時接收板上紅色LED燈會閃爍。

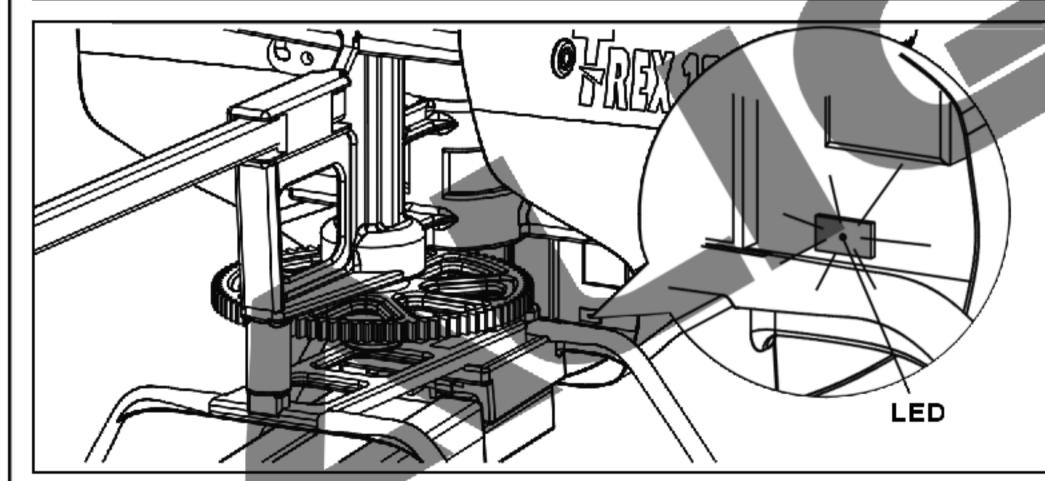
Electrode surface of battery face up. 電池的電極面朝上。



#### Step 2 步驟2

With throttle control stick at lowest position, turn on radio transmitter to start the binding process.

接著將油門搖桿推至最低,打開遙控器電源進行對頻。



#### Step 3 步驟3

The red LED on receiver board will blink during radio initialization, and becomes steady after 4 seconds, indicating successful radio binding. If it continues to blink, radio binding has failed and needs to be restarted. After the radio binding is done, you don't need to re-bind it anymore.

對頻中接收板的紅色LED會閃爍,約4秒後LED恆亮表示對頻成功,若LED仍持續閃爍表示對頻失敗,必須再次執行步驟1至步驟2。**只要對頻成功,每次飛行即不須再重新對頻了**。

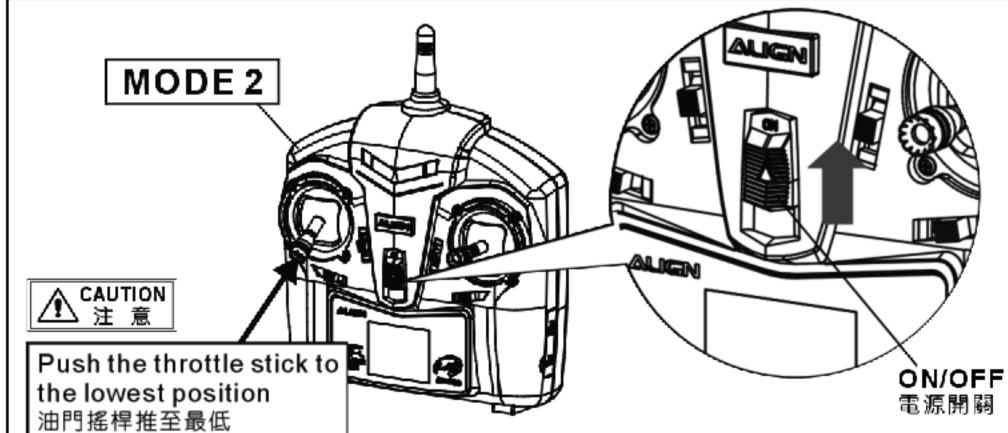
#### 14.USAGE INSTRUCTIONS AND CHECK LISTS 開機步驟與飛行前檢查

ALIGN //

ACAUTION 注意

Motor should not be run without loading main or tail rotor blades to avoid motor burnout.

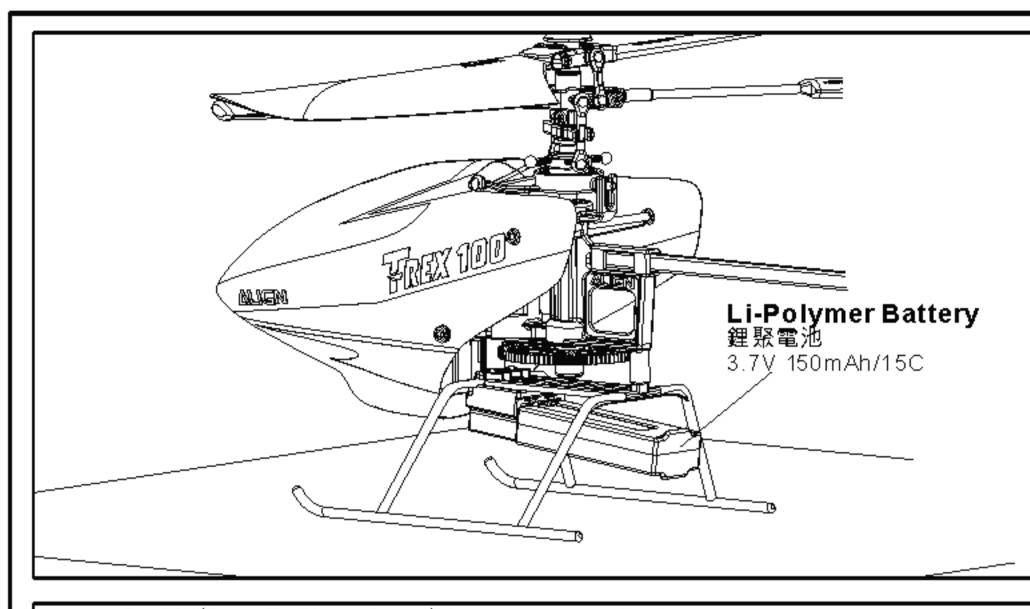
馬達不可在沒有帶動主旋翼或尾旋翼的狀態下單獨通電運轉,以避免馬達燒毀。



#### Step 1 步驟1

With the throttle control stick all the way down, turn on transmitter power.

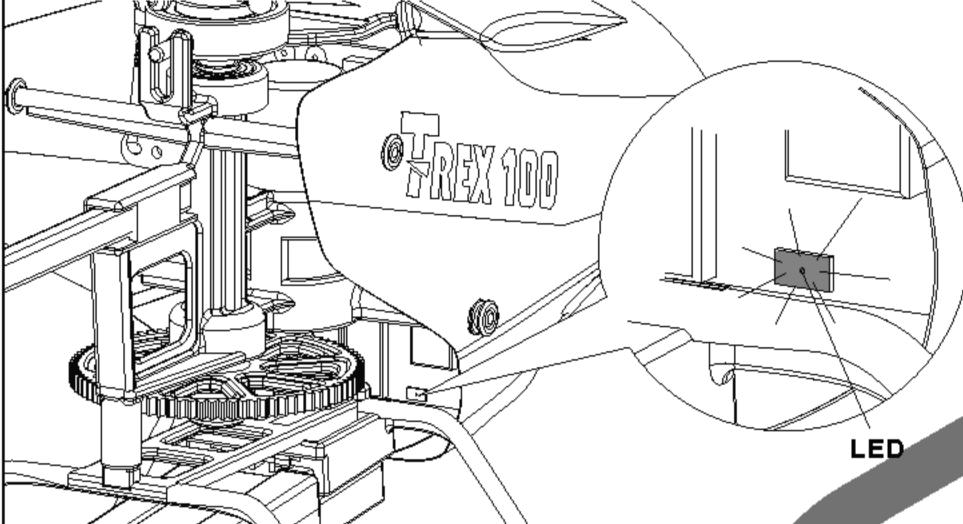
將油門搖桿推至最低後,打開遙控器電源。



#### Step 2 步驟2

With the helicopter placed on level surface, push the lipo battery pack in the direction shown in diagram until fixed into position. At this time avoid moving the helicopter so the radio and gyro system can initialize, as indicated by the flashing red LED on receiver board.

請將直昇機置於平坦的位置後,將Li-po電池依圖示的方向推入電池座至定位,此時不要再移動機身,使遙控器對頻與陀螺儀讀取中立點。



#### Step 3 步驟3

The red LED on receiver board will blink during radio initialization, and becomes steady after 4 seconds, indicating successful radio binding If it continues to blink, radio binding has failed and needs to be restarted.(Refer to P.11:Binding of radio transmitter and receiver)

radio transmitter and receiver) 對頻中接收板的紅色LED會閃爍,約4秒後LED恆亮表示對頻成功,若LED仍持續閃爍表示對頻失敗,必須重新對頻。(參閱P11 遙控器與接收器的對頻)

#### ▲ CAUTION 注意

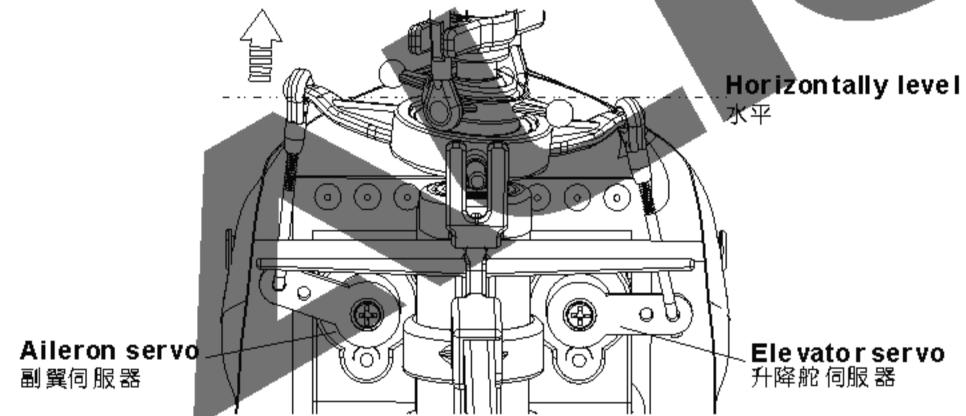
If helicopter is moved during initializing process, the gyro will not center properly causing helicopter rudder to yaw excessively. When this happens please go back and perform step 2 again.

對頻過程中若移動機身會導致陀螺儀中立點錯誤,飛行時直昇機尾部會嚴重偏移,請重新執行步驟2。



Check the control directions with throttle off prior to flight.

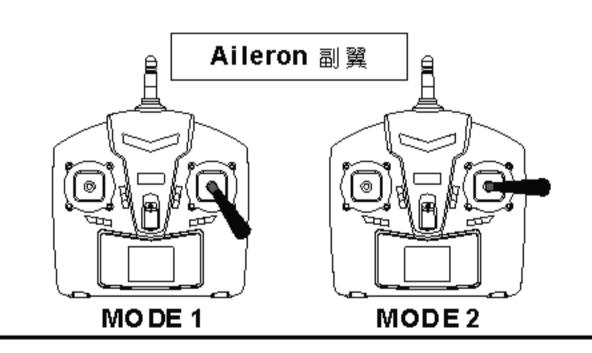
請在油門關閉的狀態下測試控制系統各動作是否正常後,才可以飛行。

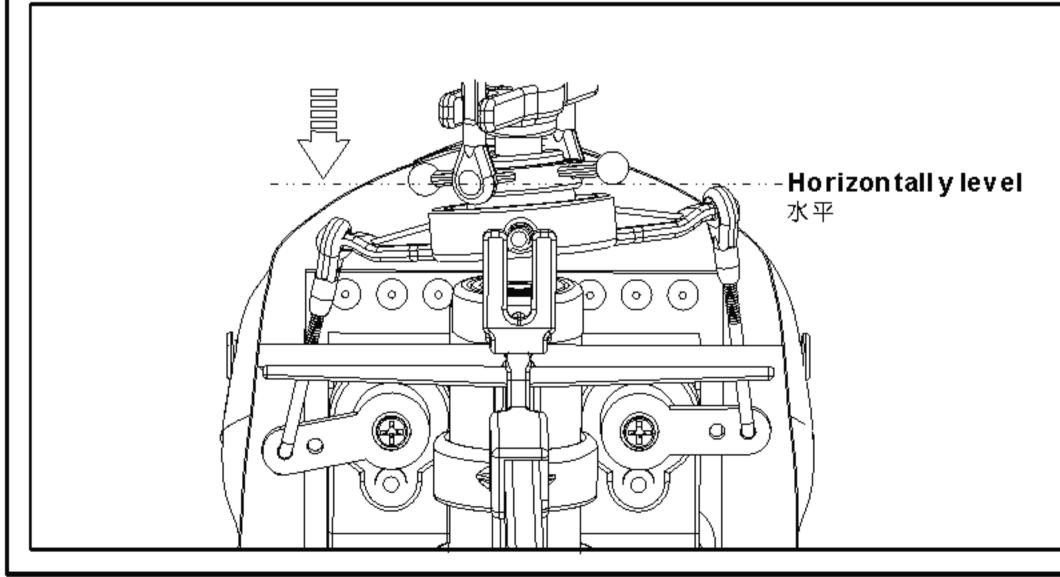


#### Step 4-1 步驟4-1

Push right on aileron control, aileron servo will push the left side of swashplate up.

副翼摇桿往右推時,副翼伺服器將十字盤的左側上推。

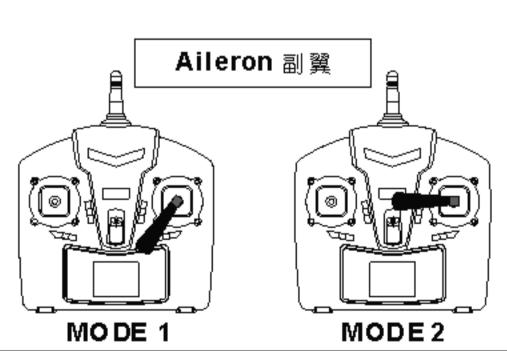


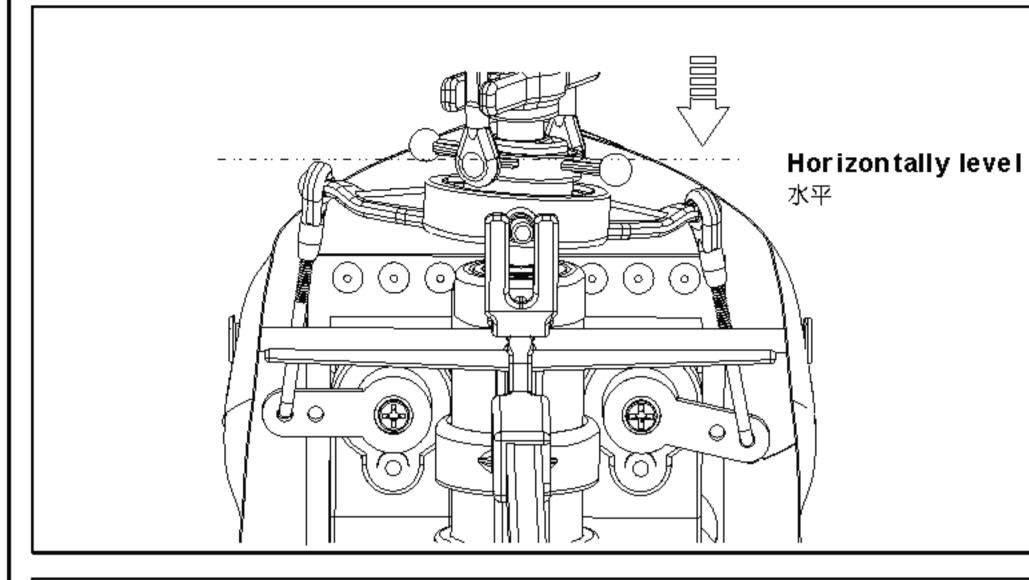


#### Step 4-2 步驟4-2

Push left on ailer on control, aileron servo will push the left side of swashplate down.

副翼搖桿往左推時,副翼伺服器將十字盤的左側下拉。

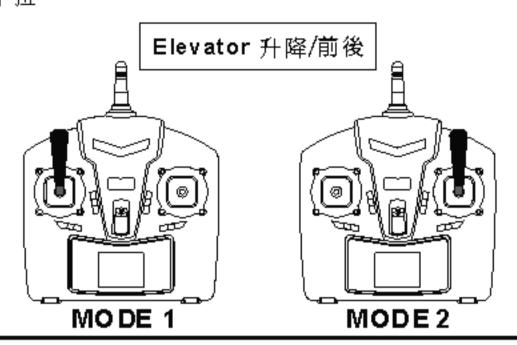


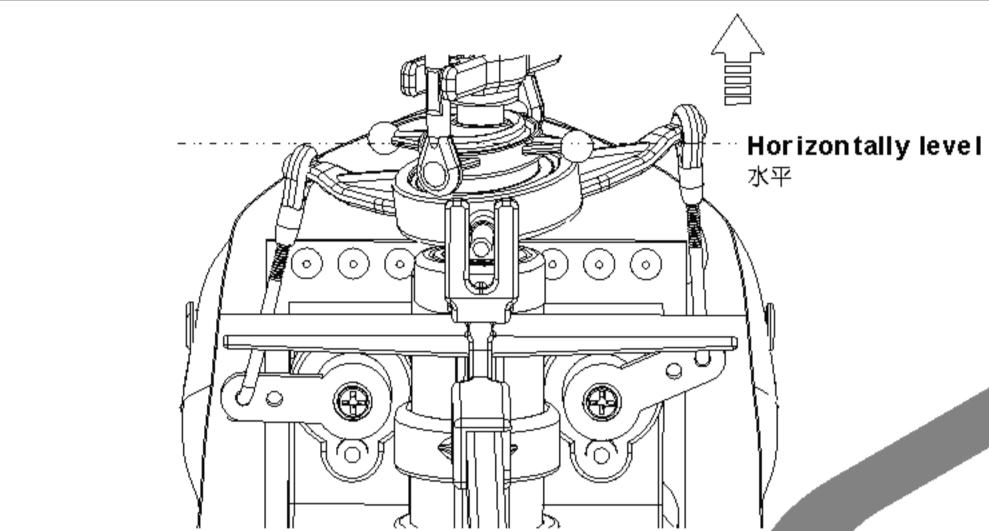


#### Step 4-3 步驟4-3

Push up on elevator control, elevator servo will push the right side of swashplate down.

升降舵摇桿往上推時,升降舵伺服器將十字盤的右側 下拉。

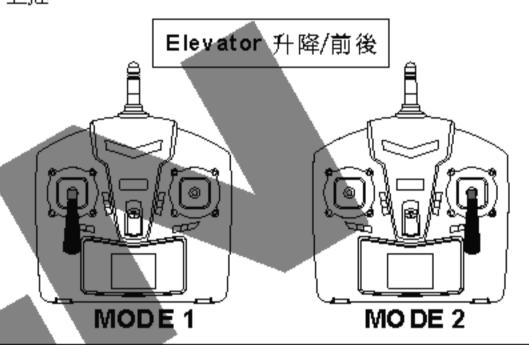


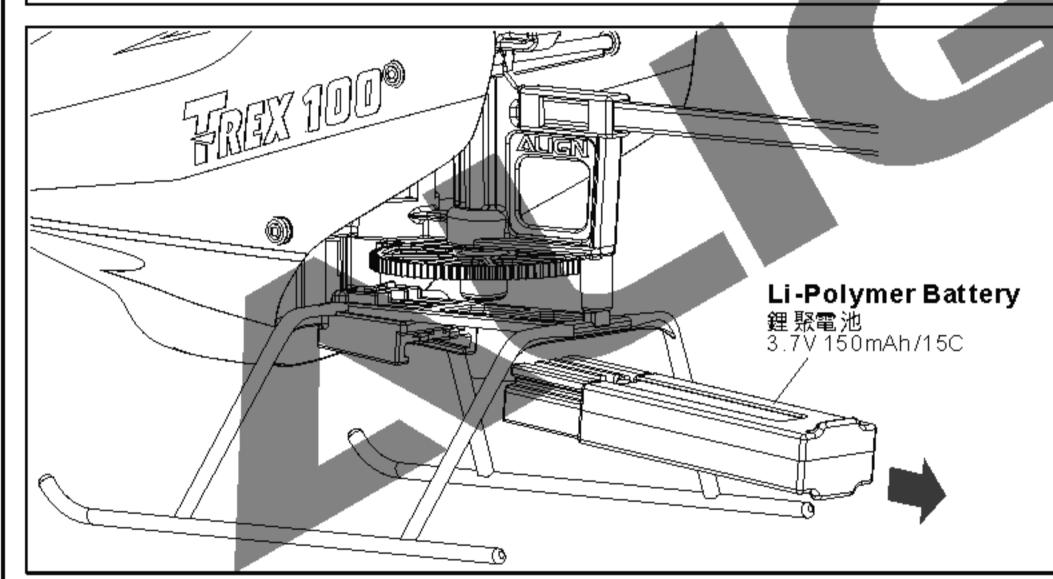


#### Step 4-4 步驟4-4

Push down on elevator control, elevator servo will push the right side of swashplate up.

升降 舵摇桿往下推時,升降舵 伺服器 将十字盤的右侧上推。





#### Step 5 步驟5

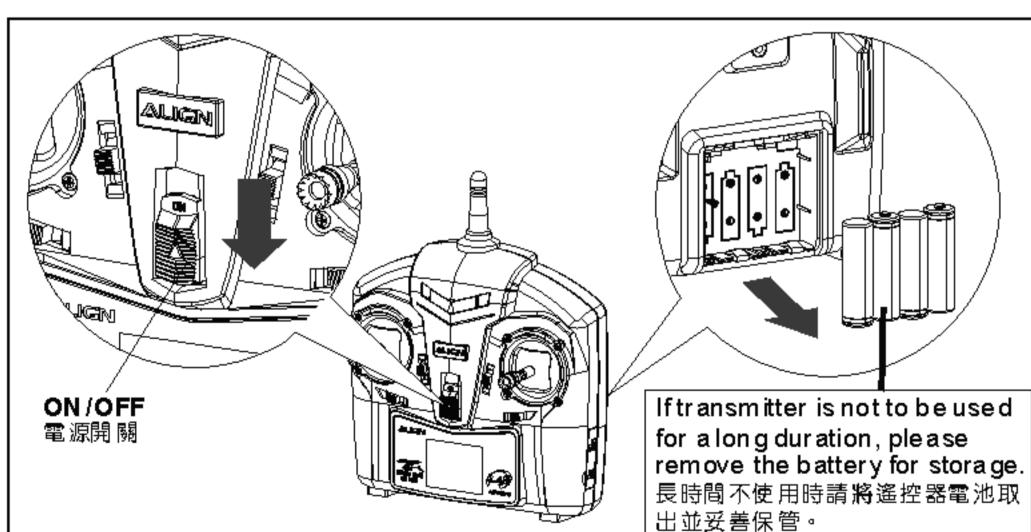
Remove the helicopter battery safely at the conclusion of flight. This should be made into a post flight habit to avoid unforeseeable problems.

結束飛行時,請將直昇機電池安全取下。請養成良好 習慣,以免造成遺憾。

# **▲WARNING** 響告

Warning: If left connected in the helicopter for long duration, the battery may be damaged due to over-discharge, or even become fire hazards.

電池未取下,將導致電池過放電而損壞,甚至造成 起火燃燒的危險。



#### Step 6 步驟6

Turn off the transmitter. If transmitter is not to be used for a long duration, please remove the battery for storage.

關閉發射器電源,長時間不使用時請將遙控器電池取出並妥善保管。

# A WARNING 響告

Warning: If the AA batteries are left in the transmitter, potential leakage could occur which may damage the transmitter, and create fire hazards.

電池未取下,將導致電池漏液而損壞遙控器,甚至造成起火燃燒的危險。

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

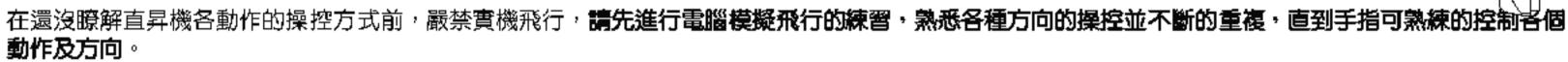


#### PLEASE PRACTICE SIMULATION FLIGHT BEFORE ACTUAL FLYING 飛行前請事先熟練模擬飛行

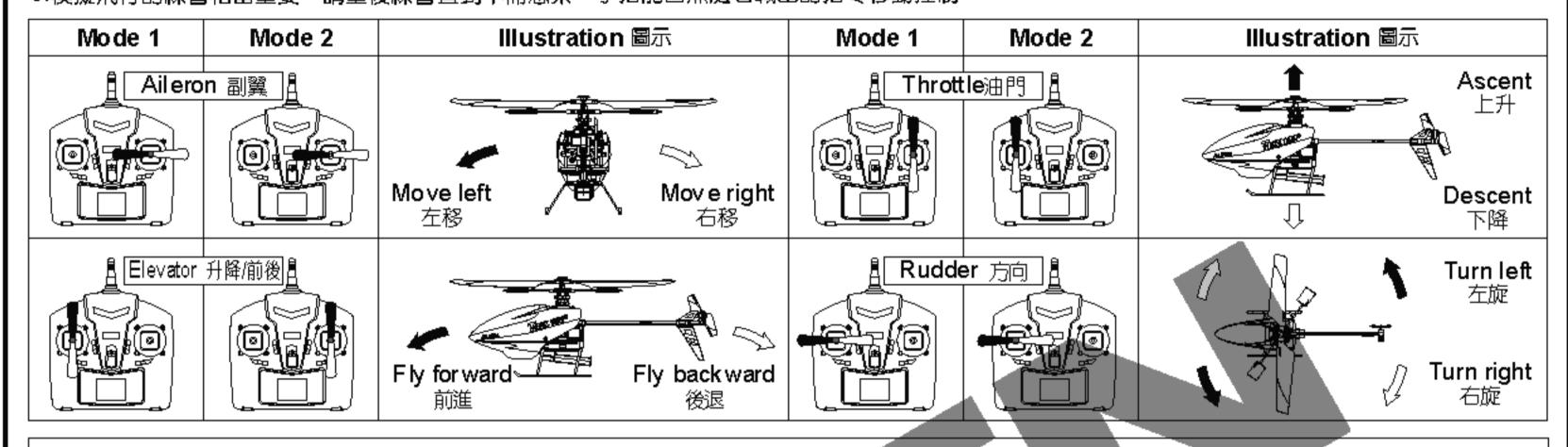


Do not attempt to fly the helicopter until control methods is fully understood. Please practice repetitively on computer flight simulators to familiarize with all directional controls.

- 1. Place the helicopter in a clear open field 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.



- 1.將直昇機放在空曠的地方,並將直昇機的機尾對準自己。
- 2.練習操作遙控器的各搖桿(各動作的操作方式如下圖),並反覆練習油門高/低、副翼左/右、 升降舵前/後及方向舵左/右操作方式。
- 3.模擬飛行的練習相當重要,請重複練習直到不需思索,手指能自然隨著喊出的指令移動控制。



#### FLIGHT ADJUSTMENT AND NOTICE FOR BEGINNERS 初學飛行調整與注意

#### ▲ CAUTION 注意

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

#### CAUTION 注意

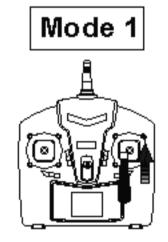
- ⊚Make sure that no people or obstructions in the vicinity.
- OYou must first practice hovering for flying safety. This is a basic flight action. (Hovering means keeping the helicopter in mid air in a fixed position)
- ◎確認鄰近地區沒有人和障礙物。
- ◎為了飛行安全,你必須先練習停懸,這是飛行動作的基礎(停懸:直昇機滯留空中並保持固定位置)。
- ◎練習時,請站在直昇機後方2公尺。

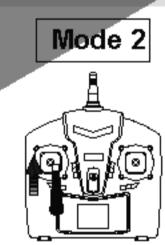
★When arriving at the flying field.

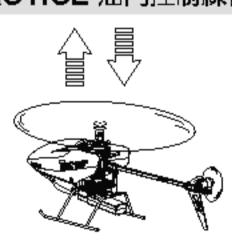
★請在沒有人及障礙物的空曠室内飛行



#### STEP1 THROTTLE CONTROL PRACTICE 油門控制練習





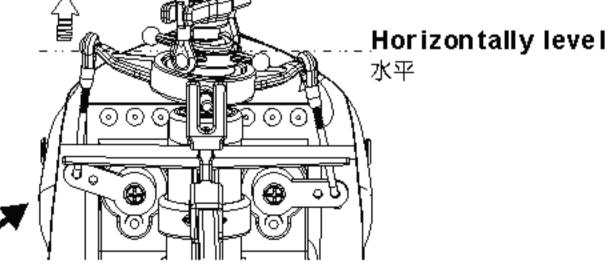


- When the helicopter begins to lift-off the ground, slowly reduce the throttle to bring the helicopter back down. Keep practicing this action until you control the throttle smoothly.
- ◎當直昇機離地後,慢慢降低油門將直昇機降下。 持續練習直昇機從地面上升和下降直到你覺得油門控制很順。

# ▲ CAUTION 注意

Due to tail rotor's counter-acting force, helicopter tends to naturally drift left during takeoff. To reduce this drifting phenomenon, Align incorporated aileron mixing to compensate for this left drift, improving take off stability.

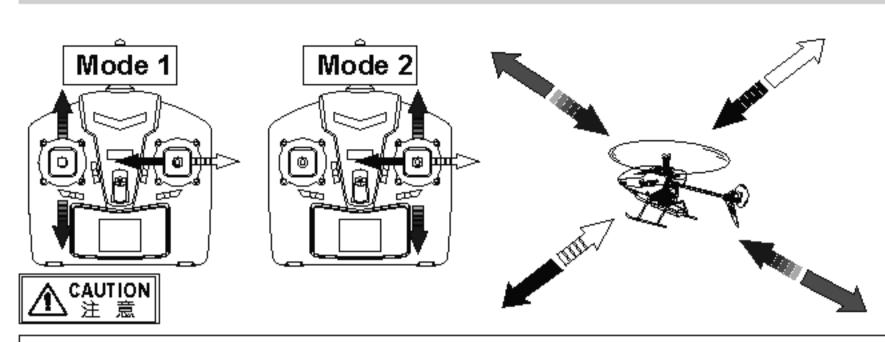
直昇機起飛時,機身會因尾旋翼的反作用力,導致向左偏移,為了改善這個問題, 亞拓特別在起飛程式裡加了混控功能,在起飛時副翼作動抵消機身向左偏移,讓直 昇機起飛更加容易。



When throttle stick is raised 10%, the mixing software will command the aileron servo to push up, compensating for the natural left drift of helicopter. Once the throttle stick is raised to the middle, the helicopter will lift straight up, and cancel the drift compensation routine. Two seconds after helicopter has landed, the compensation mixing routine will reset and remain active until next lift off. This feature makes taking off easier to learn for beginners.

當油門搖桿往上推約10%時,混控程式啟動使副翼伺服器往上推,藉以抵消機身往左偏移的力量,接著將油門搖桿順推至中間位置即可使直昇機順利離地 ,同時解除起飛混控功能,直昇機降落後約2秒即自動回復起飛混控模式。直昇機未離地起飛前,混控功能會一直持續,讓初學者起飛更加順利、容易。

#### 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 2m and continue practicing.
- ⊚If the helicopter flies too far away from you, please land the helicopter and move your position behind 2m 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2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2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,在地上畫圈圈並在這個圈圈的範圍內練習飛行,以增加你操控的準確度。

○You can reduce the size of the circle as you become familiarized with the control reflexes.

◎當你更加習慣操作動作,你可以畫更小的圈圈。

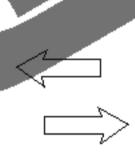
#### STEP 5 DIRECTION CHANGE AND HOVERING PRACTICE 改變直昇機方向和練習停懸

After you are familiar with Step 1 to 4, stand at side of the helicopter and continue practicing Step 1 to 4. Then repeat the Step 1 to 4 by standing 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,站在直昇機機頭前方重複步驟練習











Narrow the circle

#### ADJUSTMENT OF EACH TRIM 飛行動作微調

Slowly raise the throttle stick and just as the helicopter lift-off the ground, you can use the trim to correct the action if the helicopter leans in a different direction.

慢慢升起油門搖桿,當直昇機剛剛離開地面時,若直昇機傾向不同方向,可使用微調修正動作。

#### 1.Adjustment of rudder trim 調整方向舵微調

Just before the helicopter lift-off, the nose lean left/right...

When leans right, adjust the trim to left side.

When leans left, adjust the trim to right side.

在直昇機正要起飛時,機頭朝左/右方向偏移...

向右偏移時,微調向左調整。

向左偏移時,微調向右調整。

#### 2.Adjustment of elevator trim 調整升降舵微調

Just before the helicopter lift-off, the nose lean forward/backward...

When leans forward, adjust the trim down.

When leans backward, adjust the trim up.

在直昇機正要起飛時,機頭朝前/後方向偏移...

向前偏移時,微調向下調整。

向後偏移時,微調向上調整。

#### 3.Adjustment of ailer on trim 調整副翼微調

Just before the helicopter lift-off, the body lean left/right...

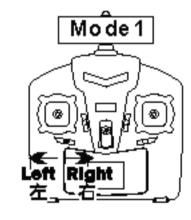
When leans right, adjust the trim to left side.

When leans left, adjust the trim to right side.

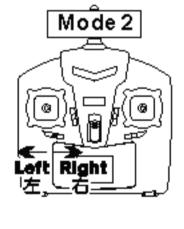
在直昇機正要起飛時,機身朝左/右方向偏移...

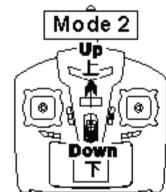
向右偏移時,微調向左調整。

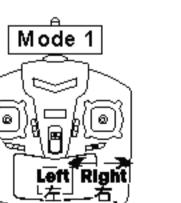
向左偏移時,微調向右調整。

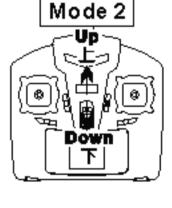


Mode 1

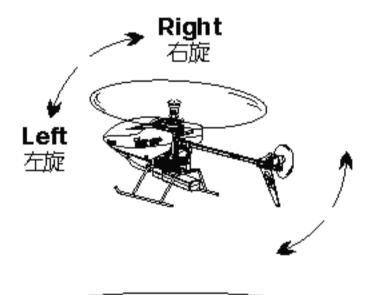


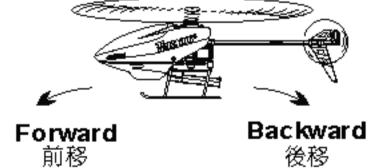


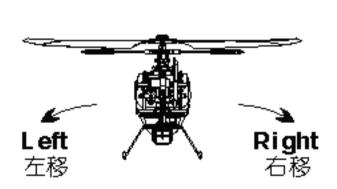














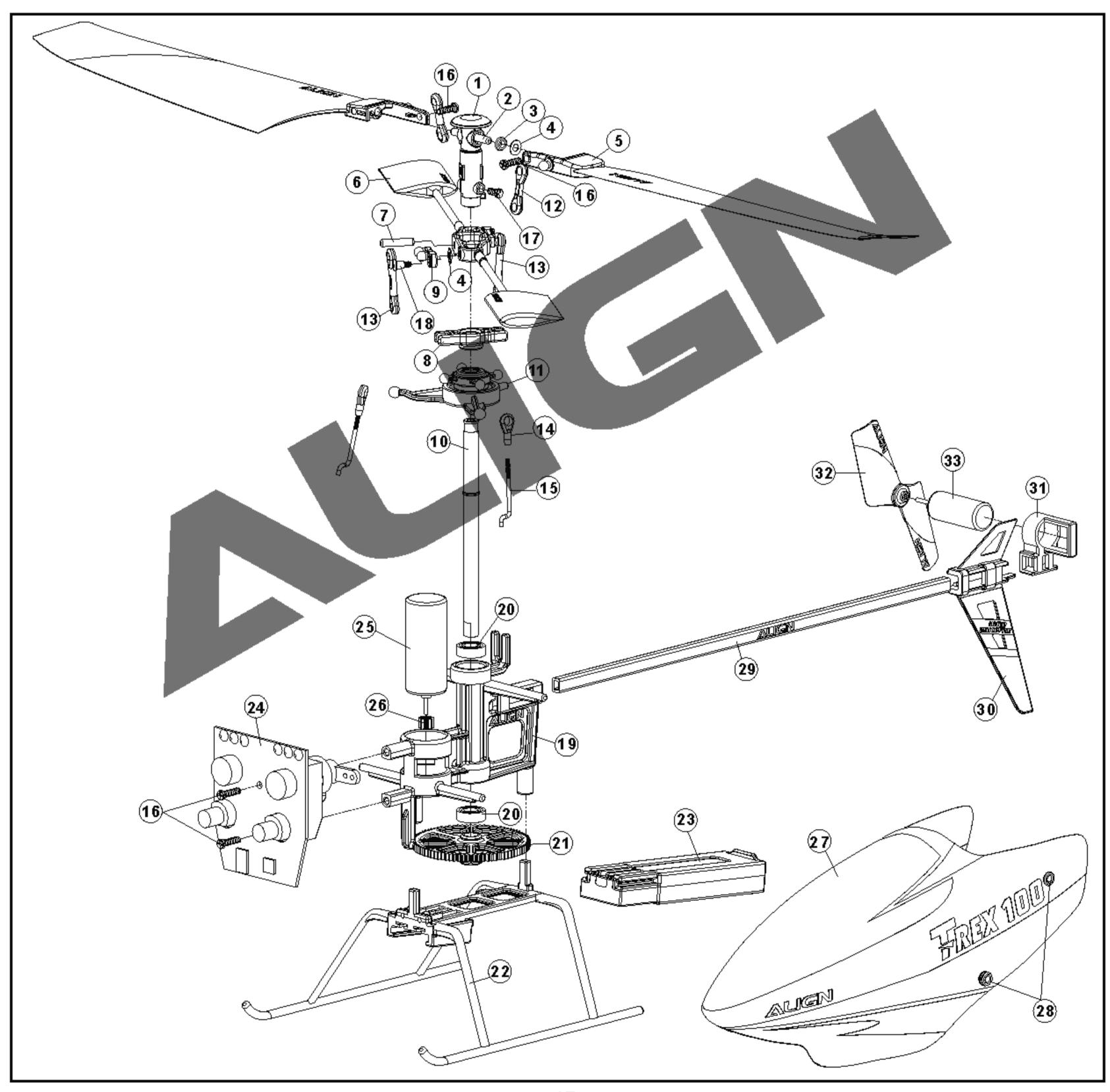
	Situation 狀況	Cause 原因	Way to deal 對策
1	Receiver status LED blinks continuously for more than 4 seconds after helicopter battery inserted. No response to control in put. 接上直昇機電池後接收器指示燈持續閃爍,操作無反應	Unable to bind to transmitter.	Repeat the power up initializing process. (Refer to P.11: Binding of radio transmitter and receiver) 請重新執行遙控器與接收機板的對頻動作 (請參閱P.11 遙控器與接收器的對頻)
2	No response a fter battery is connected to helicopter. 接上直昇機電池後,直昇機沒有任何反應	1.power to transmitter and receiver. 2.Check transmitter and receiver voltage. 3.Poor contact on battery terminals. 1.檢查遙控器和接收器是否接通電源 2.檢查遙控器和接收電池的電壓 3.電池極片接觸不良	1.Turn on transmitter and ensure helicopter battery is inserted properly. 2.U se fully charged batteries. 3.Re-seat the battery and ensure good contact between battery contacts. 1.打開發射器與確實插入直昇機電池至定位2.使用完全充電充飽的電池3.重新插入電池,確認電池和電池極片的接觸是否正常
3	Motor does not respond to throttle stick, receiver LED flashes. 推動油門搖桿時馬達不轉,且接收器指示燈開始閃爍。	Helicopter battery depleted. 直昇機鋰聚電池電量不足	Fully charge the battery, or replace with a fully charged battery. 將電池充電或更換另一個充飽的電池
4	Main rotor continue to spin after landing 降落之後,主旋翼仍在旋轉未停止	Throttle trim accidentally increased during flight. 飛行中誤將油門微調調高	Con firm throttle trim is in center or slightly below. 確認油門微調在中間位置或是稍微向下調
5	Motor fails to run, but servo moves. 馬達不轉,但伺服器仍有動作	<ul> <li>1.Th rottle trim is too high, triggering safety protection function.</li> <li>2.Th rottle was not all the way down during power up.</li> <li>3.Lo ose motor connection or damaged motor.</li> <li>1.油門微調偏高,啟動安全保護功能</li> <li>2.開機時,油門搖桿未置於最低點</li> <li>3.馬達接頭鬆脫或馬達損壞</li> </ul>	<ul> <li>1.Lower throttle trim and restart throttle.</li> <li>2.Lower throttle stick all the way down and restart throttle.</li> <li>3.Re-seat the motor plug or replace the motor.</li> <li>1.調低油門微調後重新啟動油門</li> <li>2.將油門搖桿推至最低點後,重新啟動油門</li> <li>3.將接頭插至定位或更換馬達</li> </ul>
6	Main rotor spins but unable to takeoff. 直昇機主旋翼有持續轉動但不能起飛	1.Deformed main blades. 2.Helicopter battery depleted 1.主旋翼變形 2.直昇機電池電量不足	1.Replace main blades 2.Charge or replace with a fully charged battery. 1.更換主旋翼 2.將電池充電或是更換另一個充飽的電池
7	Strong vibration of helicopter 直昇機震動的很厲害	1.De formed main blades 2.Bent main shaft 3.De formed tail rotor 4.Overtightening of main blade grips. 1.主旋翼變形 2.主軸彎曲 3.尾旋翼變形 4.主旋翼固定座螺絲鎖太緊,導致偏擺	1.Replace main blades 2.Replace main shaft 3.Replace tail rotor 4.Re-tighten main blade grips with suitable force 1.更換主旋翼 2.更換主軸 3.更換尾旋翼 4.依適當力道重新鎖附主旋翼固定座螺絲
8	Tail still off trim after trim tab a djustment, or in consistent speed during left/right pirouette. 已調整尾舵微調,但尾部仍會偏向一邊或左旋/右旋速度不一致	1.Damaged tail rotors 2.Damaged tail drive motor 3.Helicopter was not stationary during power up. 4.Vibration induced gyro interference, causing tail unable to lock. 1.尾旋翼變形 2.尾馬達不良 3.接上直昇機電源時機身未保持在靜止狀態 4.機身異常震動,陀螺儀受干擾,尾舵無法鎖定	1.Replace tail rotors 2.Replace tail drive motor 3.Re-power the helicopter while remaining stationary. 4.Refer to symptom 7. 1.更換尾旋翼 2.更換尾驅動馬達 3.重接電源並保持直昇機在靜止狀態 4.請參考問題7
9	Helicopter still wonders forward after trim adjustment during hover. 停懸時已調整微調,但是直昇機仍會往前或 往後偏移	1.Elevator servo not level during power up. 2.Elevator pushrod too long or too short. 1.開機時升降伺服器擺臂未置於水平位置 2.升降控制連桿過長或過短	1.Center elevator trim after power up, and re-install elevator servo horn at level position.  2.If helicopter drifts forward, adjust linkage longer. If it drifts backward, adjust linkage shorter.  1.開機後將升降微調歸中立點,重新裝上擺臂使擺臂水平。  2.往前偏移時連桿調長,往後偏移時連桿調短
10	Helicopter still wonders left/right after trim adjustment during hover. 停懸時已調整微調,但是直昇機仍會往左或 往右偏移	1.Aileron servo not level during power up. 2.Aileron pushrod too long or too short. 1.開機時副翼伺服器擺臂未置於水平位置 2.副翼控制連桿過長或過短	1.Center aileron trim after power up, and re-install aileron servo horn at level position.  2.If helicopter drifts left, adjust linkage longer. If it drifts right, adjust linkage shorter.  1.開機後將副翼微調歸中立點,重新裝上擺臂使擺臂水平。  2.往左偏移時連桿調長,往右偏移時連桿調短

	Situation 狀況	Cause 原因	Way to deal 對策
11	Helicopter unable to remain station ary during hover 停懸時機身無法定點	1.Binding caused by rough components 2.Overtightening of mixing arms. 1.機構干涉順暢度不足 2.控制臂鎖太緊干涉	1.Confirm smooth movements of components and ball links. 2.Losen up mixing arms axial screws. 1.確認機身每一個機構及連桿頭作動順暢 2.放鬆軸套螺絲讓控制臂作動順暢
12	Unusual vibration of helicopter during flights 直昇機飛行時機身異常抖動	1.Binding between main blades and blade grips. 2.Insufficient head speed due to depletion of helicopter battery. 1.主旋翼和主旋翼固定座干涉 2.直昇機電池電壓不足,主旋翼轉速太慢	1.Ensure all head components are smooth with no binding. 2.Replace with a fully charged battery. 1.確認主旋翼頭組的每個機構活動順暢不干涉 2.請更換一個充電完成的新電池

※If the problem is still there even after tried above, stop flying and contact with your seller. ※在做完以上調整後,仍然無法改善情況時,應立即停止飛行並連絡您的經銷商。

# 17.PARTS LIST 各部零件名稱





No.	Code No .		N am e	Specification	Quantity	Remarks
1	10H001	Main rotor housing	主旋翼固定座	18.8x6x4.4 mm	1	
2	10H011	Featherin g shaft	橫軸	φ 1.5x11mm	1	
3	10H013	Damperrubber	橫軸墊圈	φ 1.5x φ 2.8x1mm	2	
4	10H012	Collar	橫軸墊片	φ 1.6x φ 3.2x0.2mm	4	
5	10H009	Blade	主旋翼	102x20.8x6.7mm	2	
6	10H002	Flybarrod	平衡桿	126x13.4x3.2mm	1	
7	10H011	Pin	平衡桿插梢	φ 1.5x7mm	1	
8	10H003	Washout base	向位器	15x3.9x3.5 mm	1	
9	10H004	Washout control arm	控制臂	6.2x2.8mm	2	
10	10H005	Main shaft	主軸	φ 1.6x φ 3x 45.8mm	1	
11		Swashplate	十字盤組		1	
12	10Z001	Ball link A	連桿頭A	φ 2.1x7.6x1.3mm	2	
13	10Z002	Ball link B	連桿頭B	φ 2.1x11x1 .3mm	2	
14	10Z003	Ball link	連桿頭	φ 2.1x5x1.3mm	2	
15	10Z004	Linkage rod	機身連桿	φ 0.6x12.5mm	2	
16	S51404	Screw	圓頭十字自攻螺絲	T1.4x4mm	4	
17	S51425	Screw	圓頭十字自攻螺絲	T1.4x2.5mm	1	
18	T11232	Collar screw	圓頭十字軸套螺絲	M1.2x3.2mm	2	
19	10B001	Main frame	機身	33.7x36.1mm	1	
20	HH63	Bearing	軸承	φ 3x φ 6x2mm	2	
21	10BA00	Main drive gear	主齒輪		1	
22	10F001	Landing skid	腳架	52x29.6mm	1	
23	KV910015	Li-Polymer Battery	鋰聚電池	3.7V/150mAh/15C	2	
24	ER10021	Receiver board	接收板		1	
25	MB10001	Motor	主馬達		1	
26	10M001	Motor pinior gear	馬達齒輪		1	
27	10C001	Canopy	彩繪機頭罩		1	
28	10H014	Canopy nut	機頭罩墊圈	φ 1.4x φ 3x 1.5mm	4	
29	10T001	Tail boom	尾管	2.2x2.9x115mm	1	
30	10T002	Horizontal stabilizer	垂直翼	42.4x17.5x4.4mm	1	
31	10T003	Tail motor mount	尾馬達座	φ 7x φ 7.5x 11.7mm	1	
32	10T004	Tail blade	尾旋翼	φ 0.8x φ 2.2x39.1mm	1	
33	MB10021	Tail Motor	尾馬達		1	

Specific ations, contents of parts and availability are subject to change, Align RC is not responsible for inadvertent errors in this publication. 本說明書内的材質、規格或零件包裝之内容物僅供參考。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,請以亞拓網頁為主。

#### **FCC Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- -Reorient or relocate the receiving antenna.
- -Increase the separation between the equipment and receiver.
- -Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- -Consult the dealer or an experienced radio/TV technician for help. To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Caution! The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

#### **Declaration of Conformity**

Hereby, ALIGN COPRORATION LIMITED declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

# **C€**0560

#### NCC 警告語

根據交通部低功率管理辦法規定:

#### 第十二條

經形式認證合格之低功率射頻電機,非經許可,公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

#### 第十四條

低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應立即停用,并改善至無干擾時方的繼續使用。

前項合法通信,指依電信規定作業之無線電信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。