

INSTRUCTION MANUAL

使用說明書

RM48005XT



For more detailed instructions,
please check our website.
<http://www.align.com.tw/multicopter-en/m480/>

更詳細的組裝說明請上官網。

APS-M / GPS not included

Congratulations on your purchase of Align M480L multicopter! The M480L is a representation of the latest technology in rotary RC models. Please consult this manual carefully before assembling and flying the new M480L multicopter. We recommend that you keep this manual as a tuning and maintenance reference for future use.

承蒙閣下選用亞拓多軸航拍機系列產品，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，以確保您能夠在使用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。

INTRODUCTION

前言

ALIGN

We appreciate your patronage of Align products. To ensure your success with this product, we would like to present the following information and important reminders.

Align Multicopter represents the latest innovation in multi-rotor aircraft design.

Amongst its design features:

Innovative, streamlined splash resistant shape at the pinnacle of power and beauty, industrial and structural design. Encompass stability control system, features light weight, strong payload, and long flight time. Superior in both high speed agility and static stability, this multi-purposed professional multicopter exceeds in all areas such as aerial photography or as leisurely sports flyer; yet its light weight allows for easy transport anywhere.

In order for you to thoroughly enjoy the Multicopter experience, please read through this manual prior to assembly and setting up the M480L Multicopter. Please keep this manual handy for future reference.

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。

亞拓多軸飛行機的設計特點為：

前衛流線防潑水造型，極致力與美，工業與結構設計，搭配穩定控制系統，輕量載重力強、飛行時間長特點，其動/靜皆強的高速運動飛行與穩定特性，兼具航拍、娛樂、休閒、攜帶輕便多用途專業多軸飛行機。

為了讓您容易方便使用，在開始操作之前，請您詳細的閱讀完這本說明書之後再進行安裝與設定，同時請您妥善保存這本說明書，作為爾後調整的參考。

QR CODE LINKS TO INSTRUCTIONAL VIDEOS

QR CODE教學影片

While this manual provides instructional information and references for this product, Align also produced instructional videos covering various topics pertaining to this model. The videos are available at the following link:

<http://www.align.com.tw/m480lvid/>

說明書詳細介紹了本產品的使用說明，供您組裝時參考。另外，亞拓提供了各步驟的組裝教學影片，請利用下方連結處觀看，以確保您是安全且正確的使用本產品。

網頁瀏覽<http://www.align.com.tw/m480lvid/>

Assembly Tutorial 組裝教學	PC Interface Program Download Tutorial 介面下載教學	Configuration Tutorial 設定教學	Operation Tutorial 操作教學
			

IMPORTANT NOTES

重要聲明

ALIGN

Radio Control (R/C) multicopters are not toys. R/C multicopters utilize various high-tech components to achieve superior performance. Improper use of this product can result in serious injury or even death. Please read this manual carefully before operating, and make sure to be conscious of your own personal safety and the safety of others nearby when operating all ALIGN products. Manufacturer and seller assume no liability for the operation or the use of this product. This product is intended for use only by adults with experience flying remote control aircraft at legal flying fields. After the sale of this product we cannot be held liable over its operation or usage.

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. This product requires a certain degree of skill to operate, and is an expendable item. Any damage or dissatisfaction as a result of accidents or modifications are not covered by any warranty and cannot be returned for repair or replacement. Please contact our distributors for free technical consultation and parts at discounted rates when you experience problems during operation or maintenance. As Align Corporation Limited has no control over the use, setup, 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.

In addition, R/C multicopters and its components are precision electronics susceptible to interferences from external forces such as magnetic field and radio signal. Should the multicopter or any onboard photographic equipment suffers loss or crash damage as result of external magnetic or radio interferences, Align cannot be held liable as the cause is beyond our control.

As the user of this product, you are solely responsible for operating in a manner that does not endanger yourself and others or result in damage to the property of others.

遙控飛行機包括遙控直昇機與多軸飛行機（以下簡稱遙控飛行機）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！任何遙控飛行機的使用，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遙控飛行機經驗的成人或有相當技術的人員在旁指導，並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。

遙控飛行機屬於需高操作技術且為消耗性之商品，如經拆裝使用後，會造成不等情況零件損耗，任何使用情況所造成商品不良或不滿意，將無法於保固條件內更換新品或退貨，如遇有使用操作維修問題，本公司全省分公司或代理商將提供技術指導、特價零件供應服務。對使用者的不當使用、設定、組裝、修改、或操作不良所造成的破損或傷害，本公司無法控制及負責。且遙控飛行機與配件之精密電子產品，易受外力、磁場、訊號干擾，在使用過程中如外力、磁場、訊號干擾，導致飛行機本身、及其搭載之攝影設備、器材之損壞或滅失，本公司亦無法控制及負責。

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。

SAFETY NOTES




安全注意事項

ALIGN

- Fly only in safe areas, away from other people. Do not operate R/C aircraft indoors or 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 of a result of R/C aircraft models.
- Prior to every flight, carefully check all parts such as blades, screws, frame, arms, etc; ensure they are firmly secured and show no unusual wears, or unforeseen danger may happen.
- 遙控飛行機屬高危險性商品，飛行時務必遠離人群，禁止於室內飛行。人為組裝不當或未定期檢修造成的機件損壞、電子控制設備不良，以及操控上的不熟悉、都有可能導致飛行失控損傷等不可預期的意外，請飛行者務必注意飛行安全，並需了解自負疏忽所造成任何意外之責任。
- 每趟飛行前須仔細檢查機身各部位之零/配件/電子設備之性能是否正常，及無損耗老化現象，並確實將螺絲鎖緊才能升空飛行。並做好定期檢修，避免零件或電子產品異常所造成不可預期意外。

WARNING LABEL LEGEND

標誌代表涵義

	Do not attempt under any circumstances. 在任何禁止的環境下，請勿嘗試操作。
	Mishandling due to failure to follow these instructions may result in serious 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。
	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。



LOCATE AN APPROPRIATE LOCATION

遠離障礙物及人群

R/C aircraft can 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. Avoid location with magnetic and radio interferences. Please choose a legal flying field. Do not fly your model in inclement weather, such as rain, wind, snow or darkness.

遙控飛行機飛行時具有一定的速度，相對的也潛在著危險性，場地的選擇也相對的重要，請需遵守當地法規到合法遙控飛行場地飛行。必須注意周遭有沒有人、高樓、建築物、高壓電線、樹木等等，避免磁場干擾、外力訊號干擾及操控的不當造成自己與他人財產的損壞。請務必選擇在空曠合法專屬飛行場地。請勿在下雨、打雷、沙塵等惡劣天候下操作，以確保本身及機體的安全。



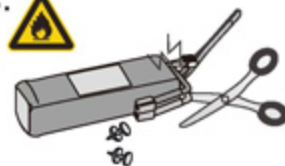


NOTE ON LITHIUM POLYMER BATTERIES

鋰聚電池注意事項

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

鋰聚電池跟一般在RC使用的鹼性電池、鎳鎘電池、鎳氫電池比較起來是相對危險的。請嚴格遵守鋰聚電池說明書之使用注意事項。不恰當使用鋰聚電池，可能造成火災並傷及生命財產安全，切勿大意！



PREVENT MOISTURE

遠離潮濕環境

R/C aircraft 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.

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



PROPER OPERATION

勿不當使用本產品

Do not attempt to modify the aircraft to alter its intended design. Please use only designated replacement parts listed in the manual to ensure its design structure integrity. Operate this product within its intended design parameters; do not overload it with excess cargo. This product is limited to personal hobby use, and pilot should be proficient with operation of this model. Follow all local law and ordinances when operating. Do not use this product for purposes which may violate others' personal privacy, and respect other's intellectual properties. Do not use this product for illegal purposes or beyond the bonds of common safety.

請勿自行改造加工，任何的升級改裝或維修，請使用亞拓產品目錄中的零件，以確保結構的安全。請確認於產品限界內操作，請勿過載使用，本產品為休閒娛樂專用之精密電子遙控飛行產品，僅限熟練遙控飛行器之個人使用，使用時請遵守當地法律規定，並嚴禁在任何違反公共安全區域操作，請勿利用本產品侵犯他人隱私/公開權、並尊重他人智慧財產權、著作權，且勿用於安全、法令外之其它非法用途。並充分了解您任何的使用與操作必須負完全的責任。



DO NOT FLY ALONE

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 experienced pilots or with computer-based flight simulator firstly.)

至飛行場飛行前，需確認是否有相同頻率的好手正進行飛行，因為開啓相同頻率的發射機將導致自己與他人立即干擾等意外危險。遙控飛行機操控技巧在學習初期有著一定的難度，要盡量避免獨自操作飛行，需有經驗的人士在旁指導，才可以操控飛行，否則將可能造成不可預期的意外發生。(勤練電腦模擬器及老手在場指導是入門必要的選擇)





WARNING
警告

SAFE OPERATION 安全操作

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

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



CAUTION
注意

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

During the operation of the multicopter, the rotor will be spinning at a high rate of speed. The blades are capable of inflicting serious bodily injury and damage to surrounding properties. 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.

遙控飛行機主旋翼/螺旋槳運轉時會以高轉速下進行，在高轉速下的主旋翼/螺旋槳會造成自己與他人在身體上或環境上的嚴重損傷，請勿觸摸運轉中的主旋翼/螺旋槳，並保持安全距離以避免造成危險及損壞。



CAUTION
注意

KEEP AWAY FROM HEAT 遠離熱源

R/C aircraft are made of various forms of plastics, such as carbon fiber and polyethylene. Plastics are very susceptible to damage or deformation from extreme heat and cold climate. Make sure not to store the model near any source of heat such as oven or heater. It is best to store the model indoors, in a climate-controlled, room temperature environment.

遙控模型多半是以碳纖維、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。









EQUIPMENT-REQUIRED

自備設備

ALIGN

1 RADIO TRANSMITTER AND ELECTRONIC EQUIPMENT REQUIRED

自備遙控及電子設備

 <p>R/C Transmitter (8-channel or more, aircraft / multicopter system) 發射機 (八動以上具飛機/多軸模式遙控器)</p>	 <p>Receiver (8 channel or more) 接收器 (八動作以上)</p>	 <p>Satellites Receiver 衛星天線</p> <p>or 或</p>
 <p>External Status LED 外掛用模式燈</p>	 <p>APS-M Multicopter Control Unit APS-M多軸飛控系統</p>	 <p>APS-M Multicopter GPS Sensor ASP-M多軸GPS感應器</p>

Suitable RC transmitter for multicopter use must have at least 8 channels, with two 2-position switches and two 3-position switches. Suitable RC transmitter for multicopter and gimbal use must have at least 10 channels, with two 2-position switches, two 3-position switches, and two slider controls.

操控多軸機飛行時，須搭配使用八動以上遙控器，具備2支兩段開關以及2支三段開關功能。

操控多軸機航拍時，須搭配使用十動以上遙控器，具備2支兩段開關以及2支三段開關，並且具備2動撥桿微調開關功能。

2 OPTIONAL EQUIPMENT

另購商品

 <p>5,000~12,000mAh Li-polymer Battery 6S 6S鋰電池</p>	 <p>Bluetooth Device 藍牙傳輸器</p> <p>[HERBT001]</p>	 <p>Clockwise x3 sets Counter Clockwise x3 sets</p> <p>7 Inch Carbon Main Rotor x6 sets 7吋碳纖主旋翼組 x6 sets</p>
--	---	---

AERIAL PHOTOGRAPHY EQUIPMENT 航拍設備

 <p>G3 3 Axis Gimbal G3雲台組</p> <p>G3-GH [RGG301X] G3-5D [RGG302X]</p>	 <p>OSD+FPV Video Transmitter OSD+FPV 影像發射器</p> <p>[HED00001]</p>	 <p>FPV Monitor 螢幕接收器</p> <p>[HEM00001]</p>
--	--	--

STANDARD EQUIPMENT

標準配備

ALIGN



M480L Multicopter
M480L 四軸飛行機

Quick finder
零件快速購



Multicopter Canopy
機身外殼



Clockwise x2 sets
Counter Clockwise x2 sets

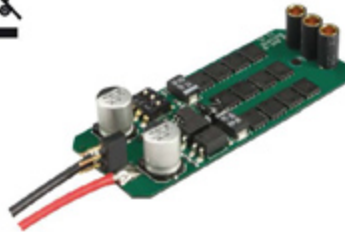
7.5 Inch Main Rotor x4 Sets
7.5吋主旋翼組 x4 Sets



Retract x2
多軸起落架伺服器 x2



RCM-BL4213(370KV)
Brushless Motor x4
RCM-BL4213(370KV)無刷馬達 x4



Multicopter
Brushless ESC x4
多軸無刷調速器 x4

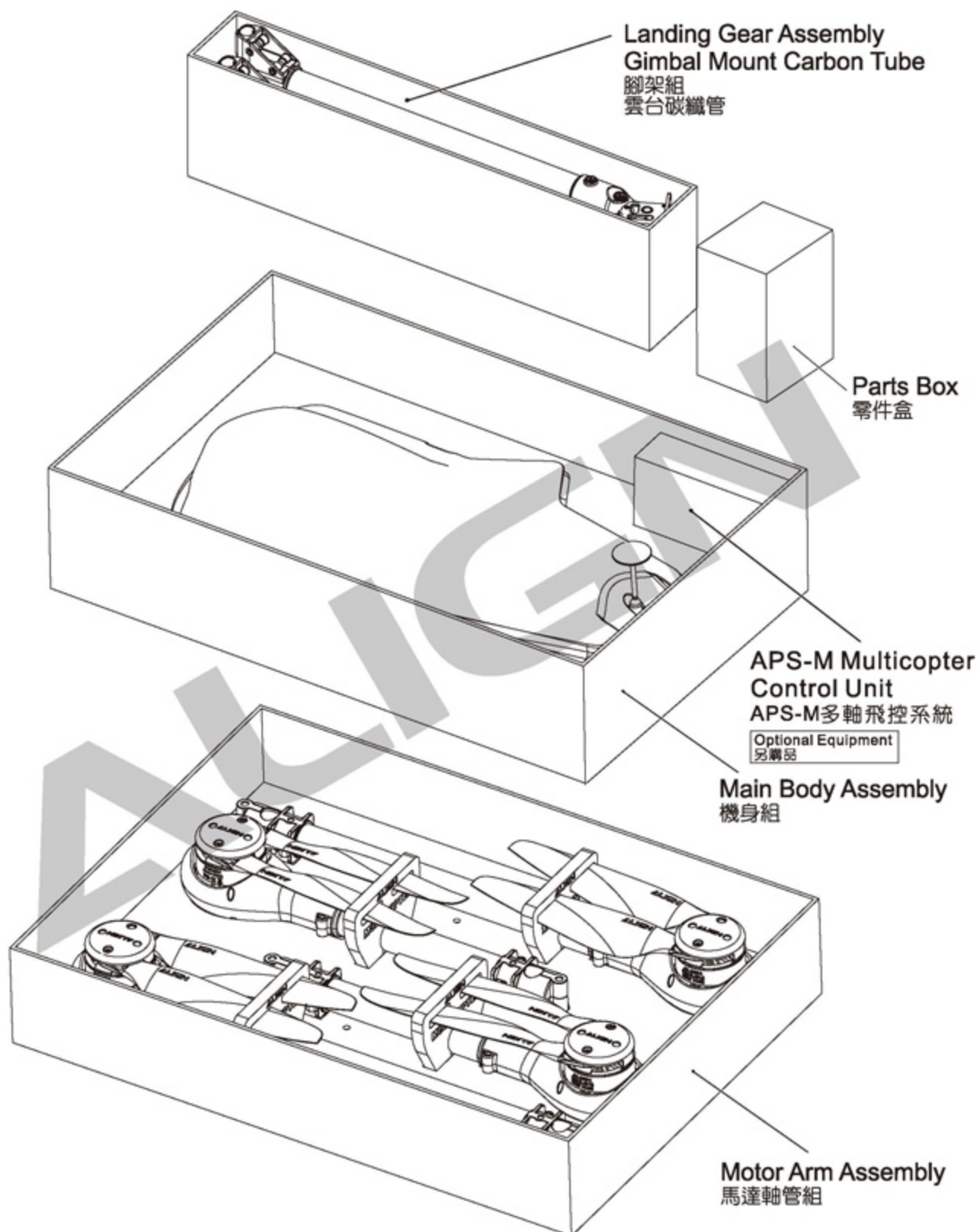


PCU Power Control Unit
PCU 電源控制組

PACKAGE CONTENTS

包裝說明

ALIGN



3K carbon fiber is used throughout multicopter frame, arms, and retracts.

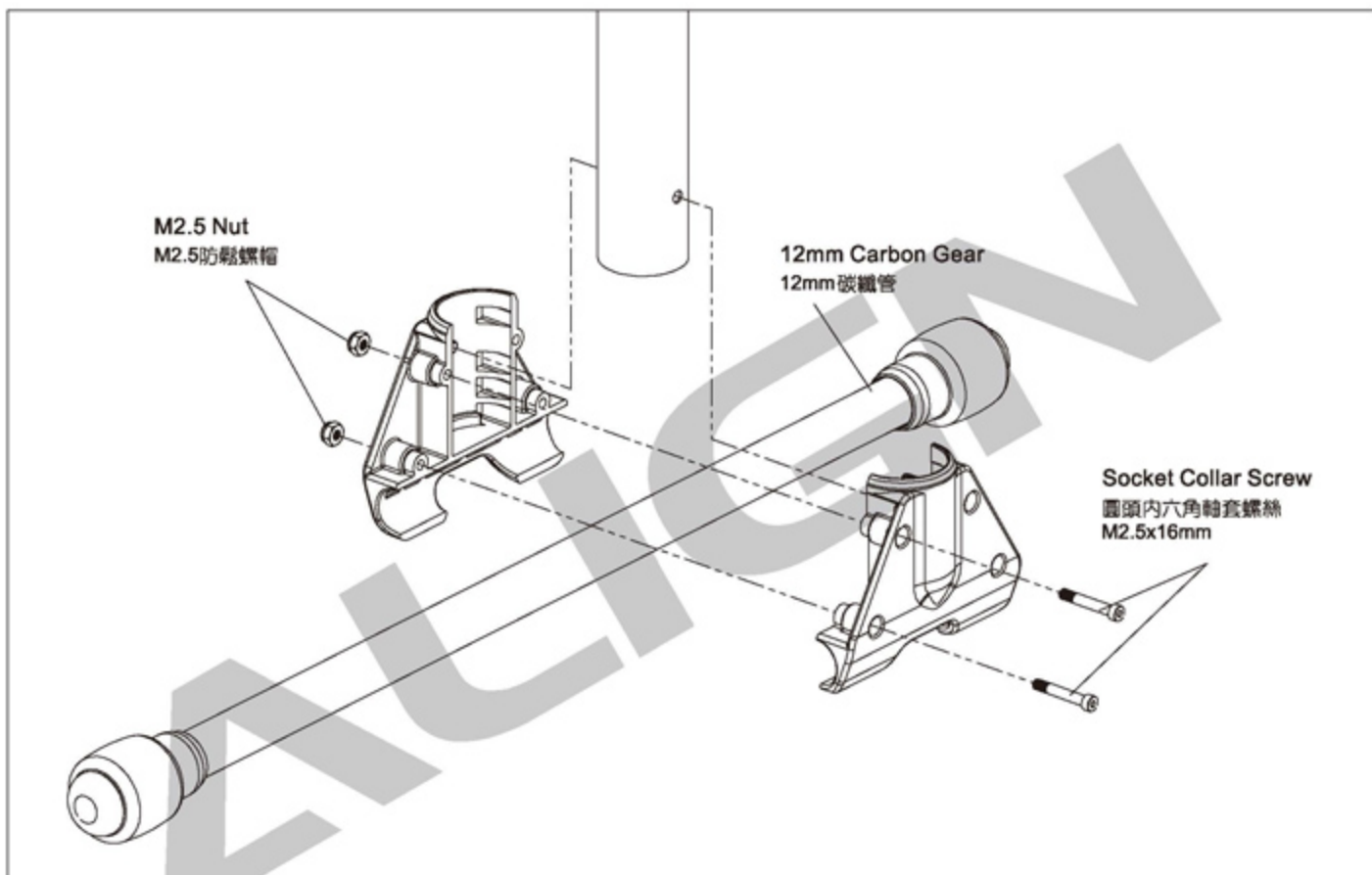
多軸機全機機體、軸管、腳架管均採用3K碳纖材質。

1 LANDING GEAR ASSEMBLY

腳架組裝

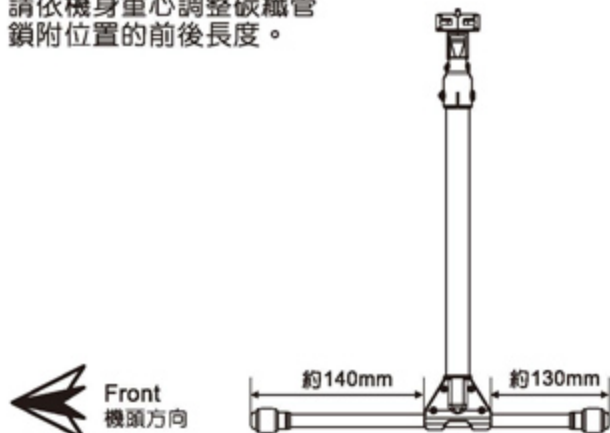
Remove landing gear assembly from box, loosen the 4 M2.5x16mm Socket Collar Screw from M2.5 nuts. Install the 12mm carbon landing gear into the T mount and re-tighten the screws.

取出腳架組，先鬆開腳架T座上的圓頭內六角軸套螺絲M2.5x16mm，M2.5防鬆螺帽，將12mm碳纖維管鎖入腳架T座。



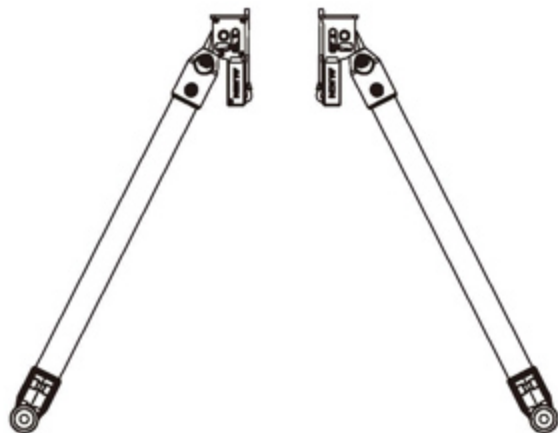
Please adjust the position of landing gear to accommodate the CG location of aircraft.

請依機身重心調整碳纖維管鎖附位置的前後長度。



Retractable Landing Gear Installation Orientation

腳架安裝方向示意圖



2 MAIN FRAME ASSEMBLY

機身組裝

1 REMOVE CANOPY

拆開機殼

Remove main frame assembly from box. Temporarily remove canopy from frame .

1. Firstly, pull on two latching sides outwards.
2. Then gently remove the canopy upward from frame.

取出機身組，先將機殼拆下。

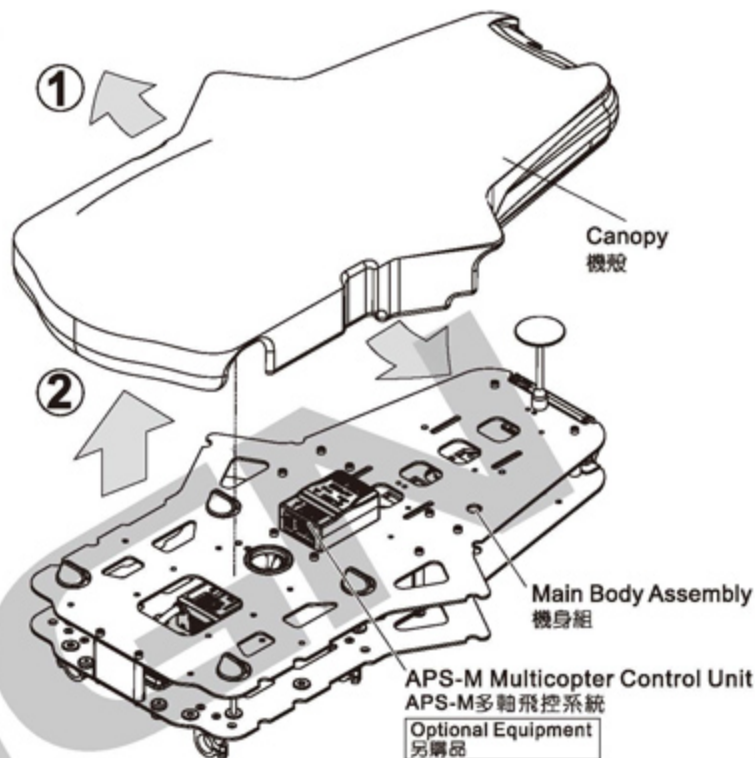
- 1.先扳開機殼側邊。
- 2.再往上提起機殼。



注意

Use suitable force when removing canopy. Gently pull on two latching sides outwards to remove from frame.

機殼拆卸時請使用適當力道，將機殼兩側卡槽向外側輕輕扳開取出機身，以免造成機殼破裂損壞。



2 GIMBAL MOUNT CARBON TUBE INSTALLATION

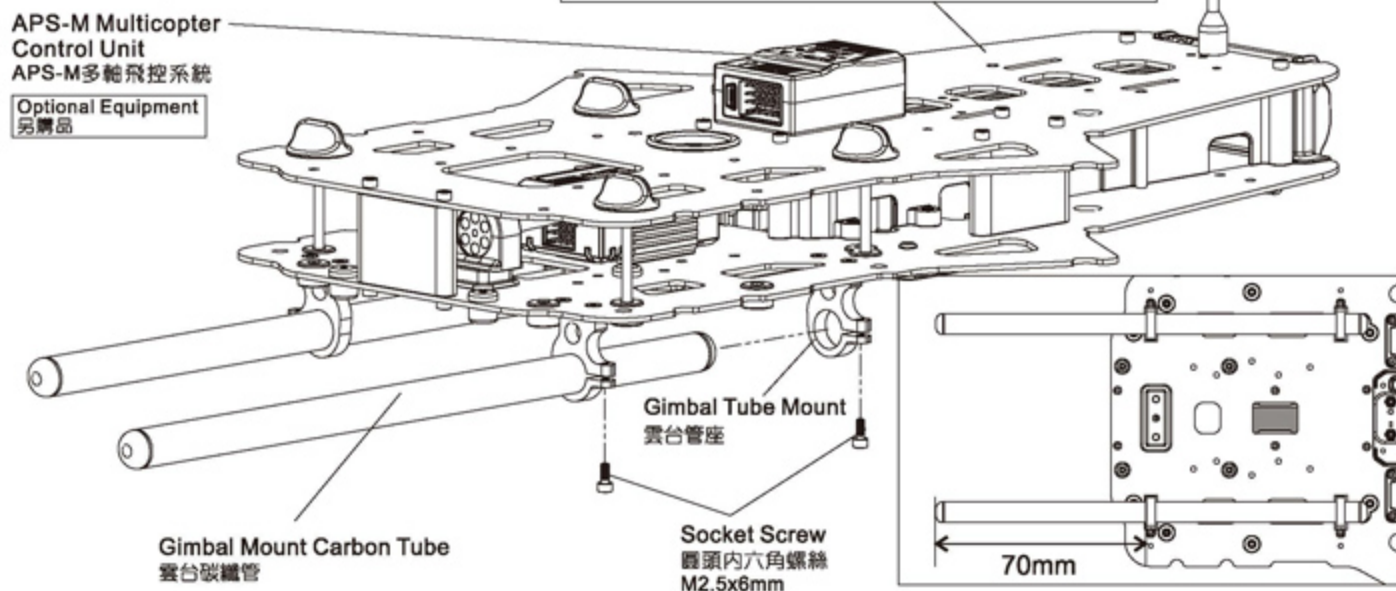
雲台碳纖管組裝

Install the gimbal mount carbon tube onto the tube mount.

將雲台碳纖管組裝於機身組上的雲台管座。

The high rigidity carbon fiber used on airframe are electrically conductive. Care should be taken not to expose any bare wires to the frame to reduce the chance of electrical shorts.

產品機架多半使用高強度碳纖維材料製成，其有高導電率特性，請注意避免電極碰觸。

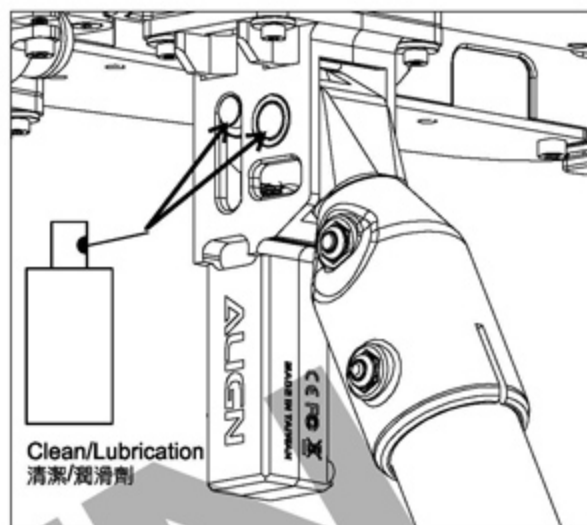
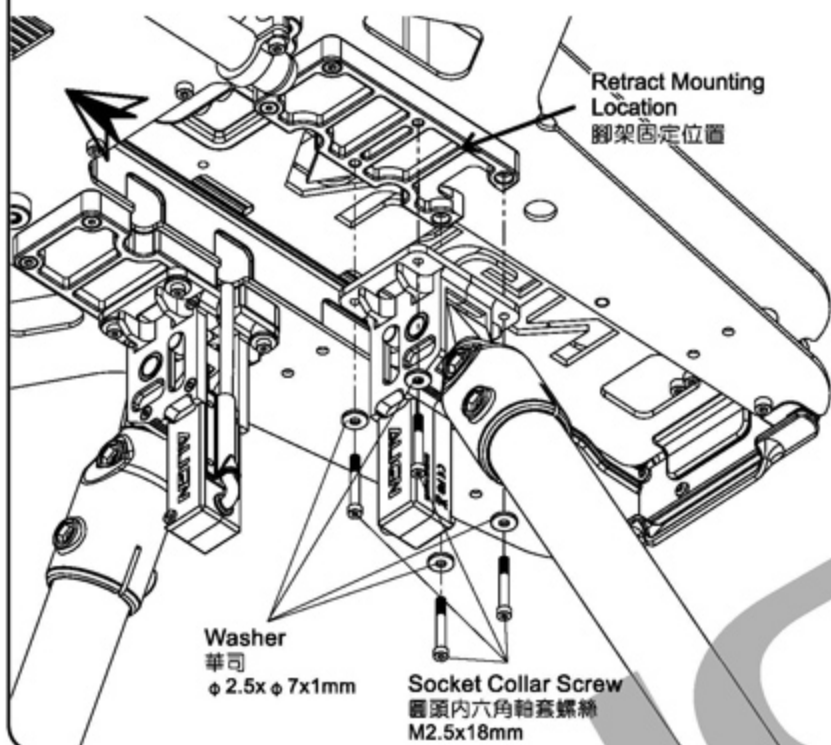


3 LANDING GEAR ASSEMBLY

腳架組裝

Retracts can be mounted in either front or rear 4 bolts pattern based on CG. Rear is recommended for this aircraft.

M480L 可依配重調整腳架組固定位置，請安裝於機身後側。



Retracts are prone to dust contamination during use. Periodically clean with pressurized air, and apply lubrication to ensure smooth retract operation.

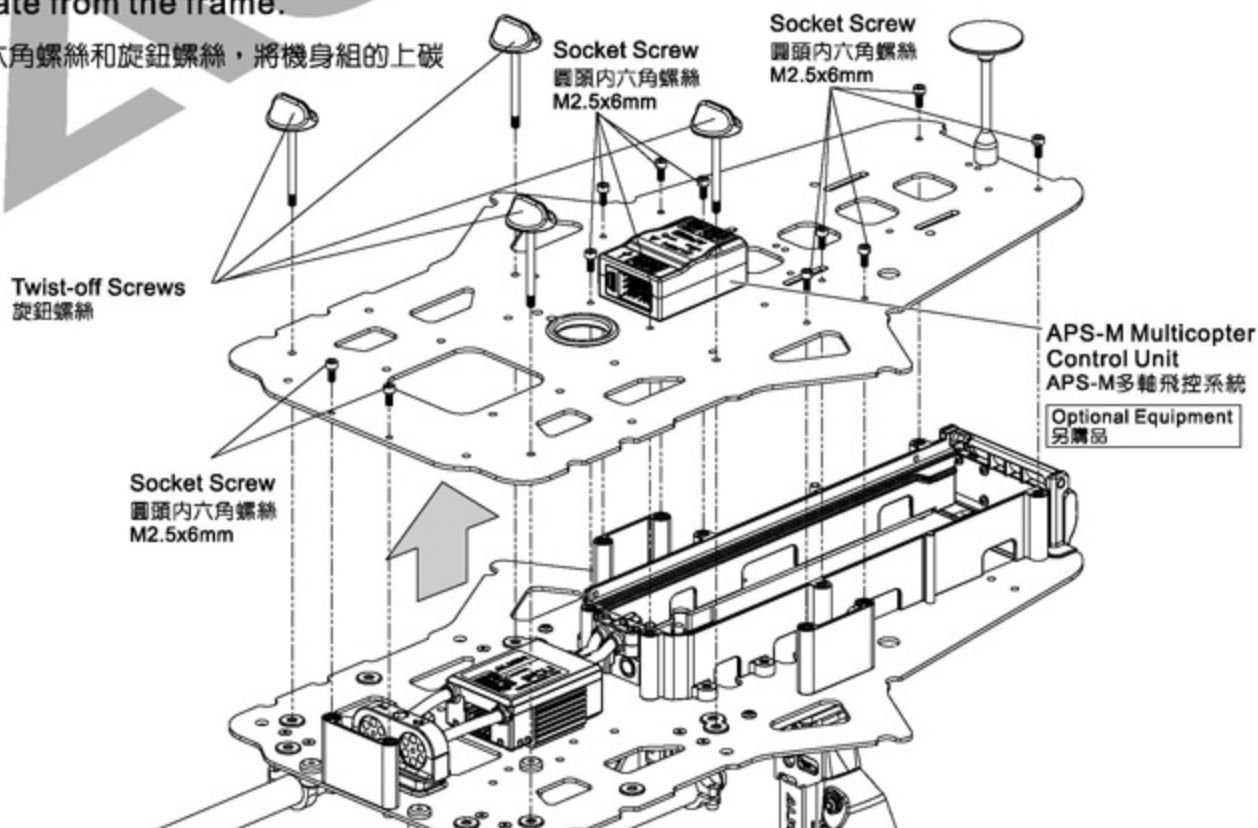
灰塵容易造成起落架囤積髒污，請定期使用噴霧劑清潔後，添加潤滑劑，確保收腳動作順暢。

4 REMOVE TOP CARBON PLATE

拆開機身上碳纖板

Temporarily remove all the twist-off screws and socket screws, and remove the upper carbon plate from the frame.

鬆開圓頭內六角螺絲和旋鈕螺絲，將機身組的上碳纖板拆開。



5 PCU POWER CONTROL UNIT WIRING DIAGRAM

PCU電源控制組接線示意圖

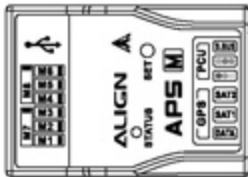


Any incorrect wiring or errors in electrode connection will cause electronic burn out.
訊號線誤插或極性錯誤將造成電子設備燒毀。



Make sure to install the wires with "UP" imprint facing up, and ensure the plug is inserted deep enough. Improper plug insertion may lead to poor connection or even malfunction of the APS-M unit.

插線時，請務必將刻有UP字樣端口朝上，對準插座後，確實將插頭完全插入到底，若無確實插入定位，將導致接觸不良、APS-M不動作問題產生！



APS-M Multicopter Control Unit
APS-M多軸飛控系統
Optional Equipment
另購品



OSD+FPV Video Transmitter
OSD+FPV影像發射器
(HED00001)
Optional Equipment
另購品

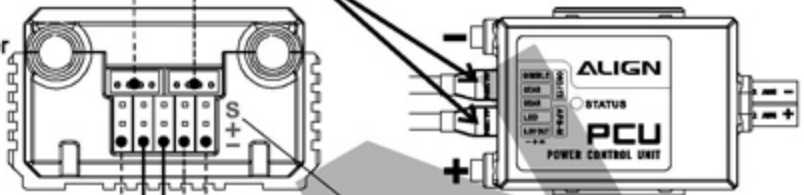


Gimbal
雲台
[RGG301]
[RGG302]
[RGG201]

Optional Equipment
另購品



Retract
多軸起落架伺服器



DC 5.8V Output Spare
DC 5.8V輸出 備用

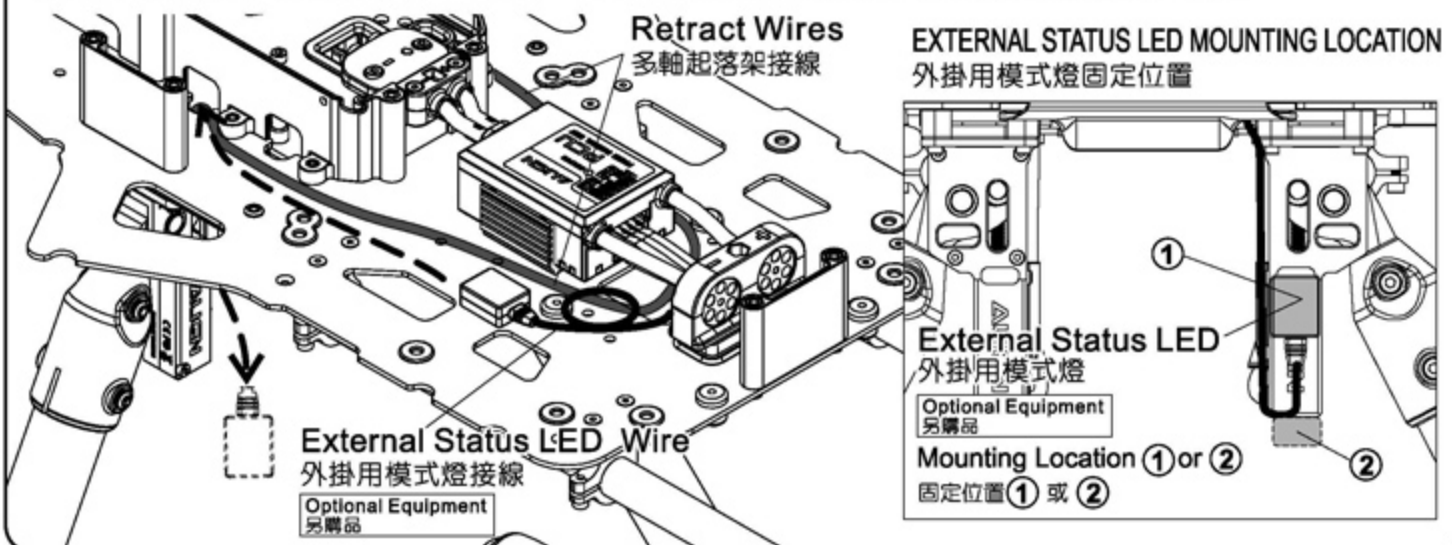
External Status LED
外掛用模式燈
Optional Equipment
另購品

RETRACT WIRES AND EXTERNAL STATUS LED CONNECTION

多軸起落架與外掛用模式燈接線

Route the retract wires up through opening in lower carbon plate. Route the external status LED down through opening in lower carbon plate. Using double sided tape, mount the external status LED module to the retract facing rear of frame. Insert all 3 plugs into the PCU according to PCU wiring diagram (labeled as ① ② ③).

將多軸起落架上的訊號線，向上穿過下碳纖板孔洞；外掛用模式燈，由上往下穿過下碳纖板孔洞，沿腳架內側，黏貼於多軸起落架上（朝機尾方向）。再依PUC電源管理系統面板指示位置依序將①②③插入接線。



Retract Wires
多軸起落架接線

EXTERNAL STATUS LED MOUNTING LOCATION
外掛用模式燈固定位置

External Status LED Wire
外掛用模式燈接線
Optional Equipment
另購品

External Status LED
外掛用模式燈
Optional Equipment
另購品
Mounting Location ① or ②
固定位置①或②

3

MOTOR ARM ASSEMBLY INSTALLATION

馬達軸管組組裝

1

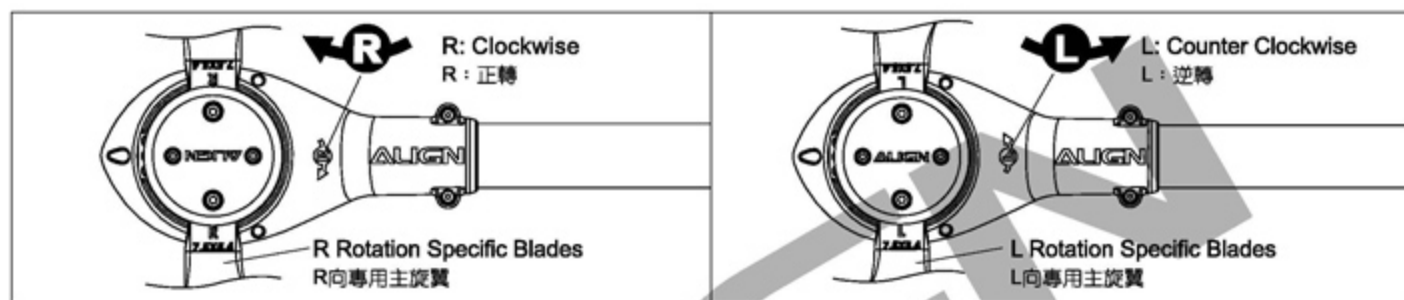
MOTOR ROTATION DIRECTION

馬達正逆轉方向



Identify the direction identifier on each motor mounts: R (clockwise) rotation motor must match R rotation blades; L (counter-clockwise) rotation motor must match L rotation blades.

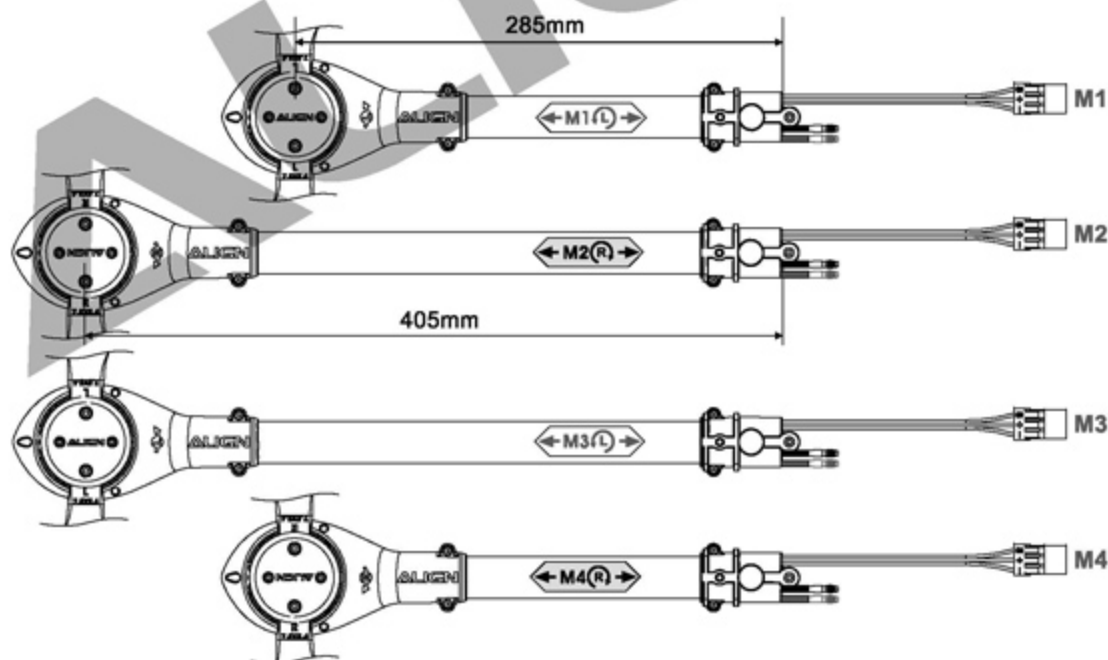
組裝前請確定馬達固定座上所標示的正、逆轉方向符號：R向馬達組必須搭配R向主旋翼；L向馬達組必須搭配L向主旋翼。



2

MOTOR ARM ASSEMBLY LENGTH

馬達軸管組前後長度



Incorrect sequence of motor tube assembly or changes made to rotational directions of motor / blades may cause immediate flip-over on takeoff, and result in unforeseen dangerous situation.

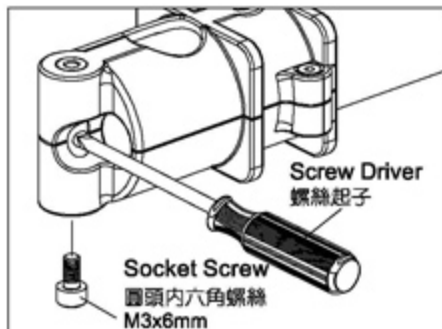
馬達軸管順序組裝錯誤或自行更改馬達、主旋翼R/L轉向，將會造成機體升空後翻滾、撞毀，嚴重的將導致不可預期的意外發生。

3 MOTOR ARM ASSEMBLY INSTALLATION

馬達軸管組裝

Temporarily remove the socket hex screws M3x6mm from motor arm assembly. Based on the motor direction identifier label, attach the motor tube assemblies to the correct positions on the frame.

取出軸管組時，先將圓頭內六角螺絲M3x6mm鬆開，依照馬達固定座上所標示的正、逆轉方向符號，將軸管組鎖上，固定於機身下碳纖板的正確位置。



Insert a small screw driver into threaded sleeve to fix it in place while tightening the hex screws back.

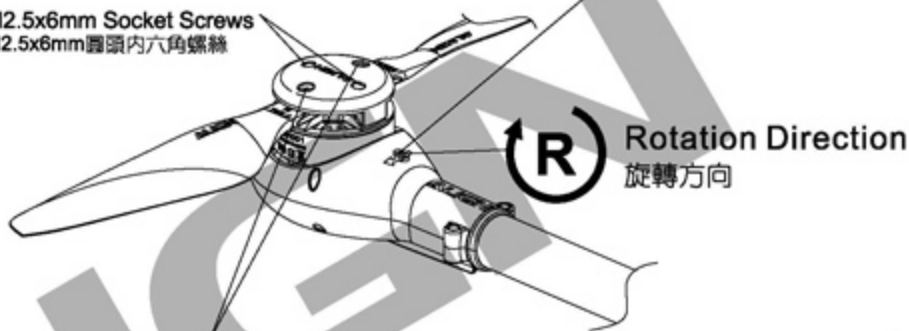
可利用螺絲起子來固定鋁柱，將圓頭內六角螺絲鎖回。



Double check the sequence and blades R/L rotation direction during motor tube assembly, ensure the install matches exactly with the instruction manual. Incorrect assembly or modifications may cause unexpected result or bodily injuries.

組裝馬達軸管時，務必再次檢查及確認，馬達組編號順序及主旋翼R/L轉向是否與說明書標示一致，錯誤或任意變動機體，將會導致不可預期嚴重的意外或人員傷害。

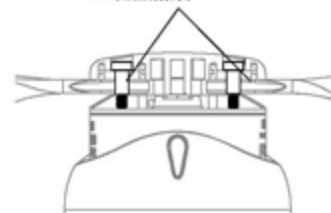
M2.5x6mm Socket Screws
M2.5x6mm圓頭內六角螺絲



Use suitable force to tighten the M3 Socket Collar Screw and M2.5x6mm socket screws when adjusting the main rotor tightness and fixing main rotor upper cover to avoid motor winding failure.

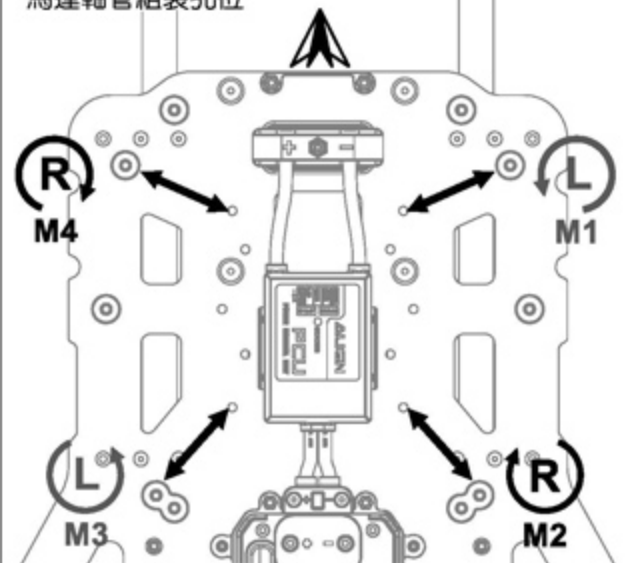
調整主旋翼緊度及固定主旋翼上蓋時，請以適當力道鎖附M3軸套螺絲和M2.5x6mm圓頭內六角螺絲，避免鎖過緊造成馬達線圈損壞。

M3 Socket Collar Screw
M3軸套螺絲



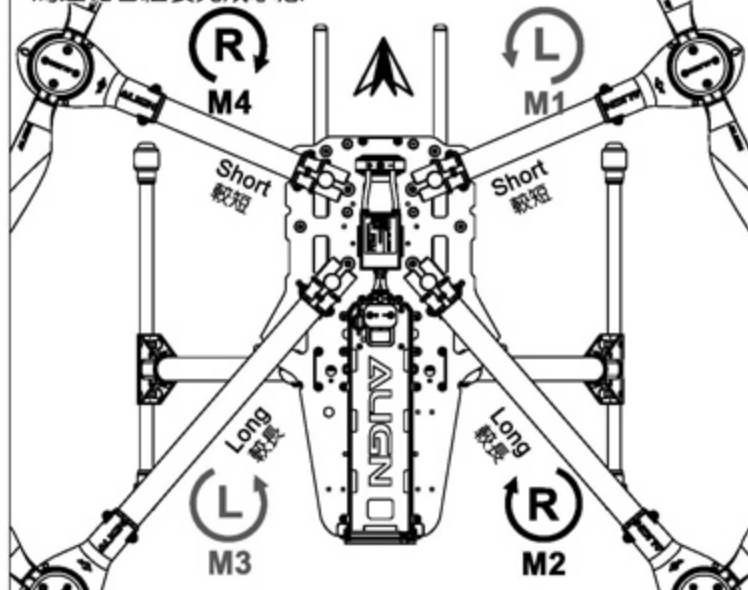
MOTOR ARM ASSEMBLY MOUNTING LOCATION

馬達軸管組裝孔位



COMPLETED MOTOR ARM ASSEMBLY INSTALL

馬達軸管組裝完成示意

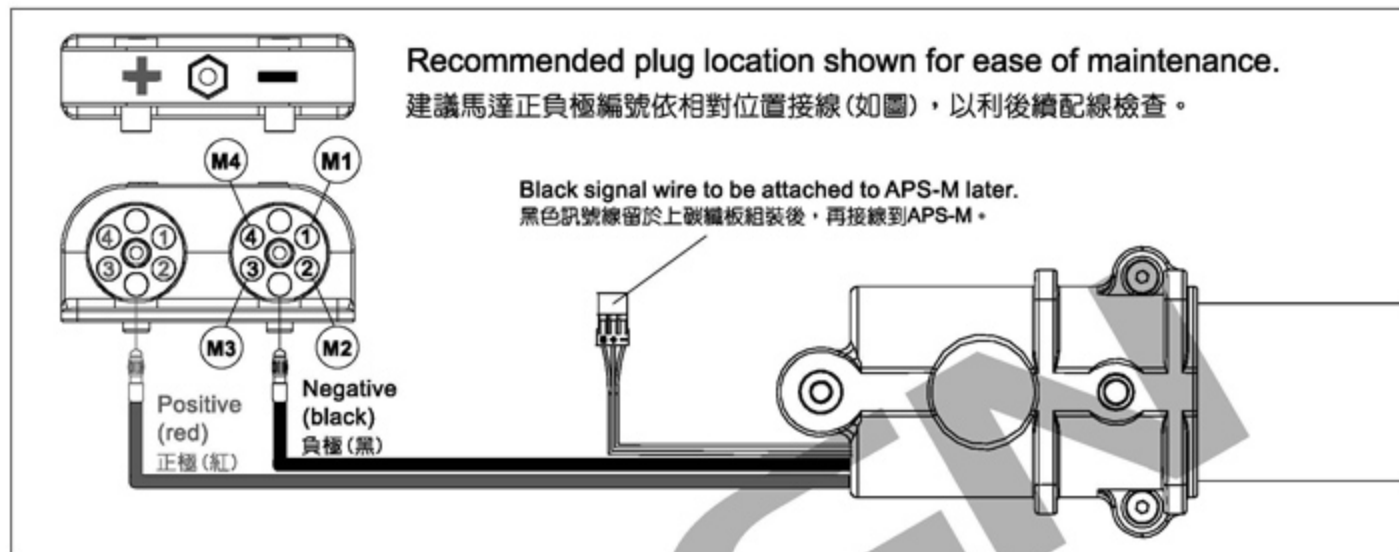


4 MOTOR ARM ASSEMBLY WIRING

馬達軸管組接線

There are 3 wires coming out of the motor arm assembly: red (+), black(-), and signal(APS-M). Connect the red(+) wire to positive power distribution cylinder, black(-) wire to negative power distribution cylinder. The signal wire will be connected to APS-M later.

每支馬達軸管組有三條出線，分別接至：紅色電源線－正極；黑色電源線－負極；黑色訊號線－APS-M。先將紅色電源線依序插入分電盤正極／黑色電源線接至分電盤負極。（黑色訊號線留於上側板組裝後再接線到APS-M）。



CAUTION 注意

Avoid pulling wires with excess force during wire management. Pulling the wires too hard may cause them to detach from ESC, resulting in problems with motor startup and navigation lights. 整線時請勿過度拉扯，以免ESC訊號線脫落，造成馬達啟動及飛行指示燈燈號異常。

WIRING OF MOTOR ARM ASSEMBLY

馬達軸管組接線示意圖

Wire straps can be used to fix the wires to the frame.

可利用束帶由下往上穿過機身下碳纖維板，將電源線束緊固定。

Wire Straps
束帶(2.5x100mm)

Carbon Plate
下碳纖維板

5 INSTALLATION OF TOP CARBON PLATE

機身上碳纖板組裝

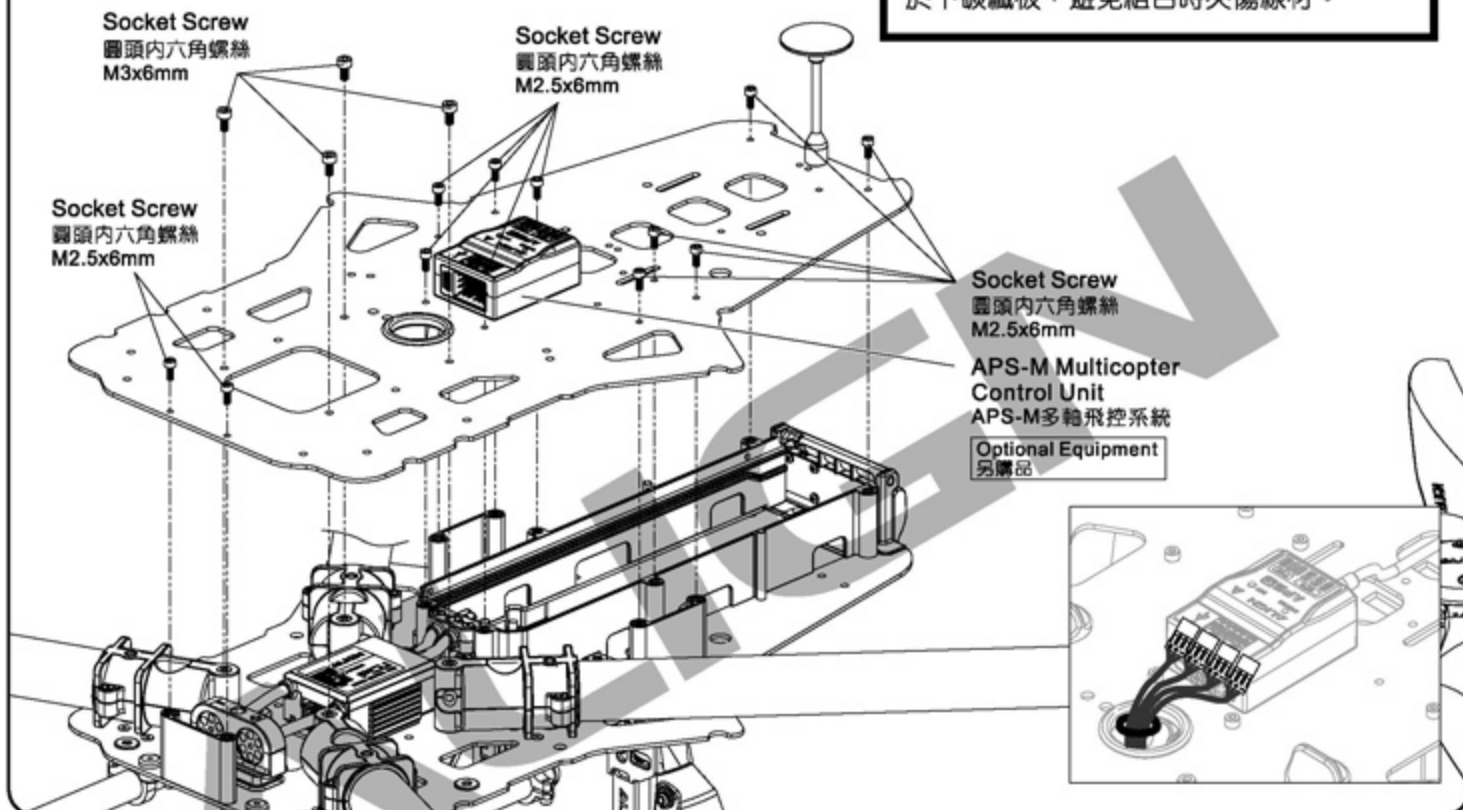
Route the black signal wires from motor tubes through upper carbon plate. Re-install the upper carbon plate using the M2.5x6mm screws removed from earlier step. Then install the M3x6mm socket screw removed earlier from motor arm assembly.

將馬達軸管中的黑色訊號線穿過機身上碳纖板，使用原拆下的圓頭內六角螺絲M2.5x6mm將上碳纖板鎖回機身；再以圓頭內六角螺絲M3x6mm固定軸管組。



Prior to re-assembly, ensure upper carbon plate can lay flat onto the frame, and that all wires are neatly tucked underneath without any pinching.

組合前，請確認上碳纖板是否能平整置於機體組合的位置，所有線材已經整線固定於下碳纖板，避免組合時夾傷線材。

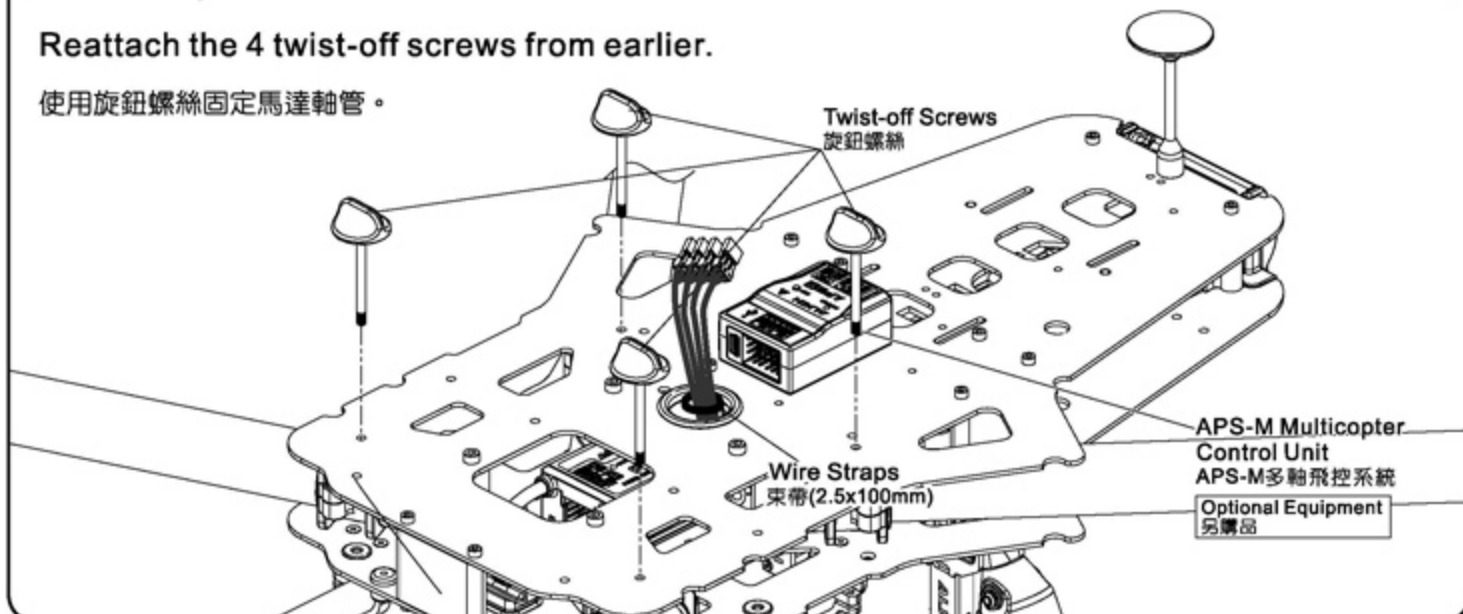


6 SECURING THE MOTOR ARM ASSEMBLIES

馬達軸管組固定

Reattach the 4 twist-off screws from earlier.

使用旋鈕螺絲固定馬達軸管。

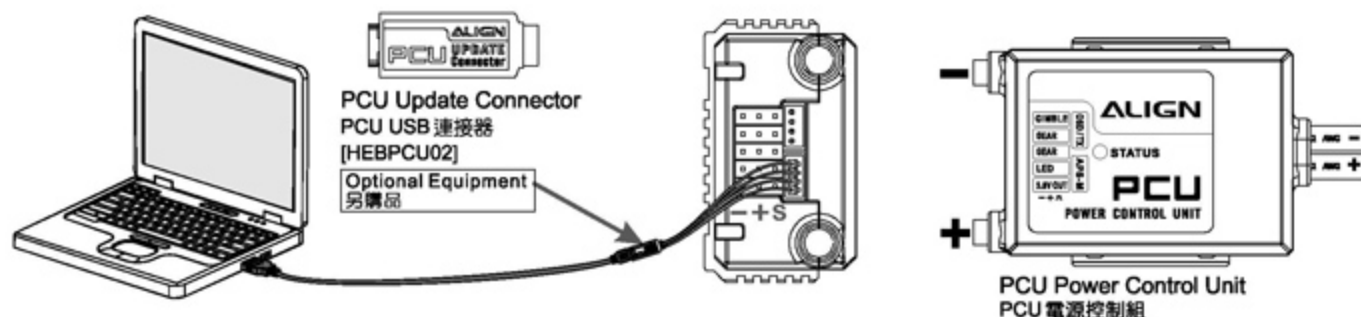


7 PCU UPGRADE CABLE WIRING DIAGRAM

PCU升級更新接線示意圖

Connect the PC to PCU's APS-M port with USB adapter to perform firmware updates through PC interface program.

使用轉接線將USB接頭接到電腦端，另一端接PCU的APS-M孔位，透過電腦介面做升級更新。

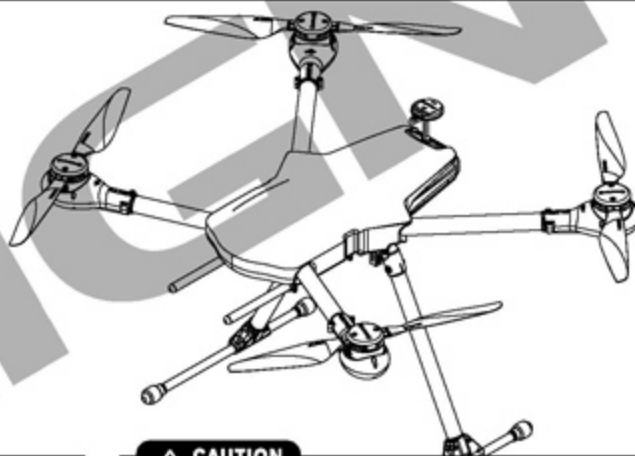


8 CANOPY INSTALLATION

機殼組裝

Re-attach canopy to complete installation.

將機殼裝於機身即完成組裝。



CAUTION
注意

Ensure canopy is latched to the lower carbon frame plate to prevent accidental separation during flight.

機殼裝上機身時，請務必確認機殼完全卡住機身下碳纖維板，避免飛行時脫落，而導致不可預期的意外。

CAUTION
注意

Canopy must be installed to avoid turbulence disturbance and ensure optimal flight performance.

飛行時必須蓋上機殼，以確保飛行機不受氣流干擾達到最佳的飛行效能。

4 BATTERY INSTALLATION ILLUSTRATION

電池安裝示意圖

Double-decker battery plate design for a single 6S 22.2V 16,000mAh (or less) battery (physical dimension permitting), or two batteries with 8,000mAh or less capacity. Battery selection is flexible, and can be used to adjust the CG location of aircraft. Battery plate feature patented anti-spark design, effectively minimize sparks during connection of battery, lowering problems such as damages to electronics and poor connection due to premature connector wear.

雙層設計的電池板，可選用單層電池使用，一顆6S 22.2V 16,000mAh以內；或是使用雙層電池板同時安裝兩顆8,000mAh容量以內電池，電池可彈性選擇使用與調整機體重心。電池板內搭載新型“防火花”專利設計，能有效防止電池快拆插入時所產生的火花，降低電子設備傷害及接頭耗損接觸不良問題。

1. FIXED BATTERY WIRING METHOD 電池固定式接線方式

Loosen battery plate terminal cover, solder the wires to the corresponding + - terminal, and re-install the battery plate terminal cover.

先鬆開電池板固定蓋，將電池電源線依+-指示焊接於接頭上再鎖回。

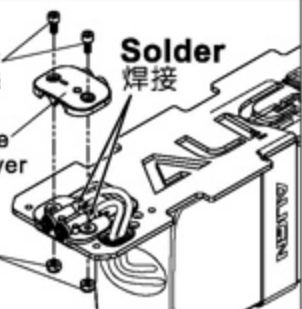
2. PLUG TO BATTERY WIRING METHOD 電池插頭接線方式

Step1. 步驟1.

Socket Screw
圓頭內六角螺絲
M2.5x6mm

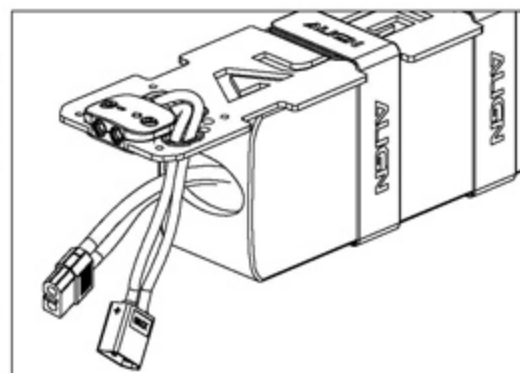
Battery Plate
Terminal Cover
電池板固定蓋

M2.5 Nut
M2.5防鬆螺帽



Step2. 步驟2.

Re-install
鎖回



3. BATTERY INSTALL EXAMPLE FOR M480L

M480L 電池使用示意圖

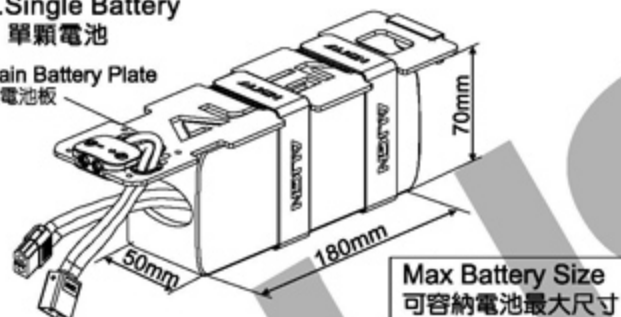
M480L with gimbal is suggested to fly using a single 5,200mAh (or more) battery, or two batteries with 5,200mAh to match perfect CG balance and reach longer flight time.

M480L搭載雲台建議使用單顆5,200mAh以上的電池，或是2顆5,200mAh電池重疊並聯使用，可以達到最佳的重心搭配，以及更長的飛行時間。

3-1. Single Battery

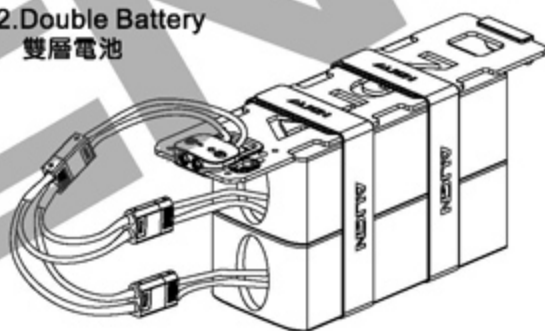
單顆電池

Main Battery Plate
主電池板



3-2. Double Battery

雙層電池

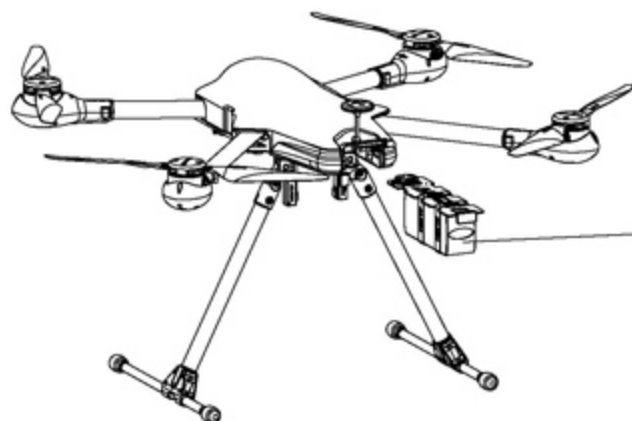


4. M480L BATTERY INSTALLATION ILLUSTRATION

M480L 電池安裝示意圖

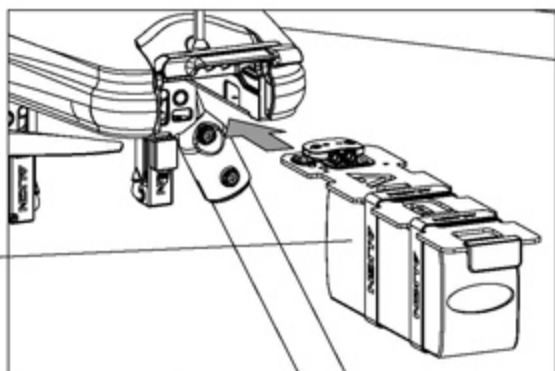
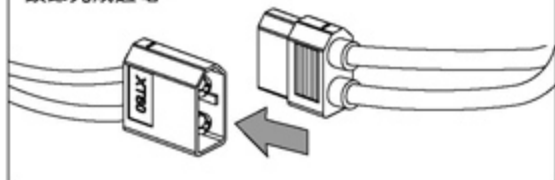
Lift open the multi-function battery hatch. With battery securely strapped to battery mounting plate, slide the whole plate assembly into the rail, push all the way in until a latching sound is heard. Then close the multi-function battery hatch.

先將多功能電池蓋掀開，把固定好電池的電池板順著滑軌推入，確認發出"喀答"聲響完全裝入，再將電池蓋蓋回。



For traditional battery connection method, connect the battery to plug for power activation.

如果電池是使用傳統接線方式，必須再接上XT60插頭即完成通電。



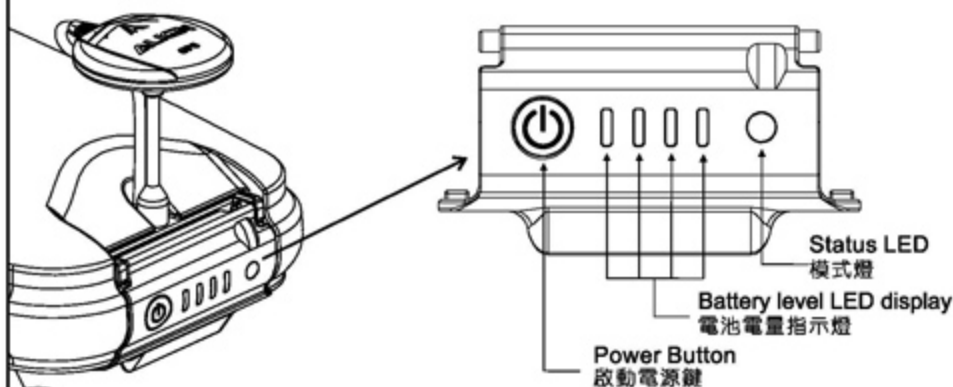
For optimal balance on the M480L, mount the battery on the main battery plate.

M480L 電池請安裝於主電池板位置，以達到最佳配重效果。

5

INTELLIGENT POWER MANAGEMENT

智慧型電源控制系統



BATTERY LEVEL INDICATOR DESCRIPTION 電池電量指示燈說明

Battery level LED display 電池燈號顯示	Battery level indicator 電量顯示
	75%~100%
	50%~75%
	25%~50%
	0%~25%

POWER ON 電源開啟

Battery level check: Momentary press of power button to check remaining power.

Power On: Press and hold power button for 3 seconds until battery indicator LEDs light up and Status LEDs flash.

Power Off: Press and hold power button for 3 seconds until all LEDs shut off.

檢查電量：短按電源鍵檢視剩餘電量。

開啟電源：長按電源鍵3秒，電池電量指示燈亮起與模式燈閃爍，即完成開機動作。

關閉電源：長按電源鍵3秒，所有燈號熄滅，即完成關機動作。

6

FLIGHT NAVIGATION LIGHTS

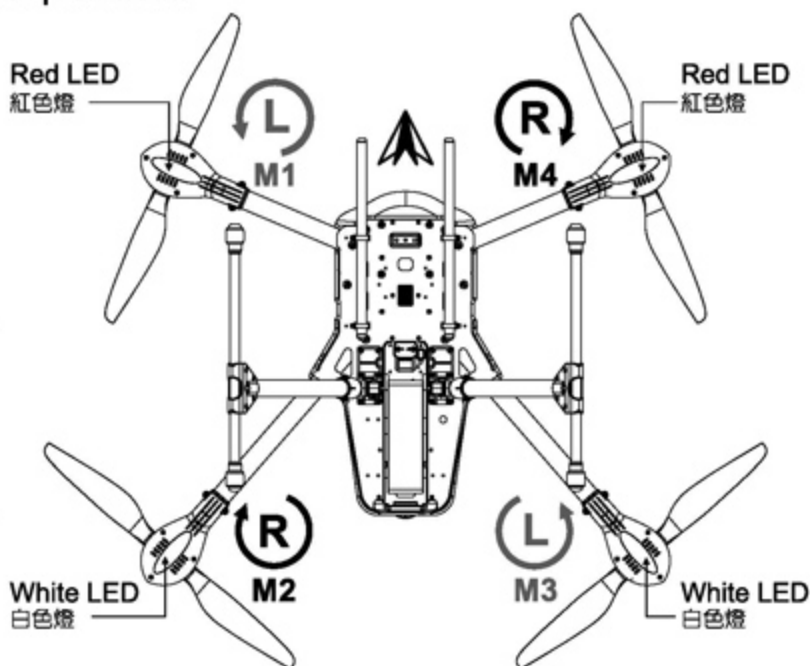
飛行指示燈

1. Flight navigation lights will light up when power on.

2. Flight navigation lights will shut off when power off.

1. 多軸機開機後指示燈隨之全部開啟。

2. 多軸機關機後指示燈隨之全部關閉。



Do not operate R/C aircraft if the flight navigation lights exhibit abnormal behavior during power up.

飛行指示燈開啟異常禁止飛行。

7

COLLAPSIBLE MOTOR ARMS

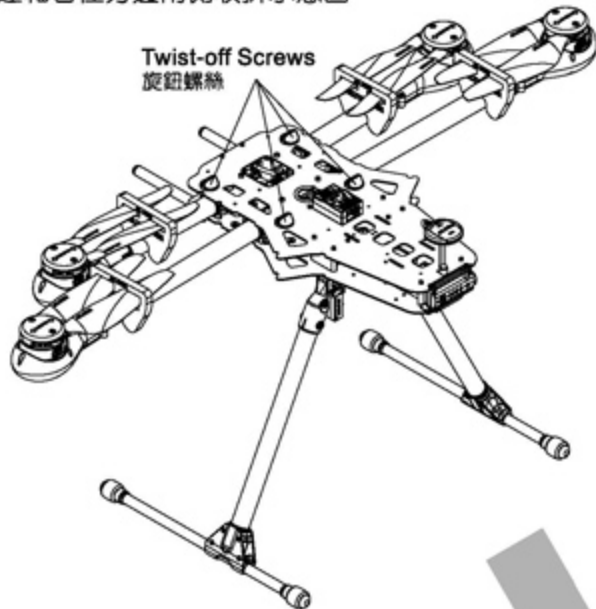
馬達軸管收納示意圖

The motor arm assemblies feature foldable design. Simply loosen the twist-off screws for the arms to swivel, reducing the footprint for ease of transport.

多軸飛行機軸管可快速收折設計，只要以手轉開旋鈕螺絲，就能輕鬆收折馬達軸管，調整軸管位置，減小體積方便攜帶，輕鬆收納不佔空間。

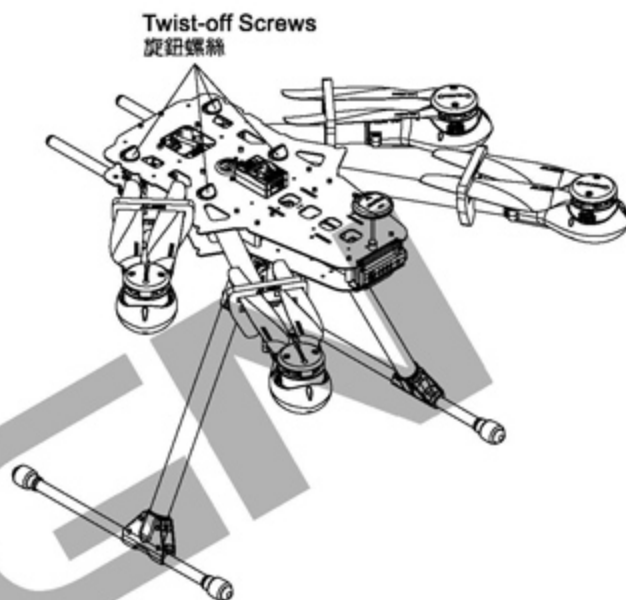
MOTOR ARMS FOLD TOWARD THE SIDES

馬達軸管往旁邊兩側收折示意圖



MOTOR ARMS FOLD TOWARD THE REAR

馬達軸管往後側收折示意圖



SPECIFICATIONS

產品規格

ALIGN

PCU Power Control Unit PCU電源控制組

Input Voltage 輸入電壓	13.2V~25.2V(4S~6S Li-Po)
Operating Frequency 工作頻率	500KHz
Dimension 尺寸	62x35x26mm
Operating Temperature 工作溫度	-5°C~ 45°C(23°F~ 113°F)

Multicopter Brushless ESC 多軸無刷調速器

Input Voltage 輸入電壓	13.2V~25.2V(4S~6S Li-Po)
Max Continuous Current 最大持續耐電流	40A
Dimension 尺寸	74.2x27x12.7mm
Operating Temperature 工作溫度	-5°C~ 45°C(23°F~ 113°F)

RCM-BL4213 Brushless Motor 370 KV (RPM/V) RCM-BL4213無刷馬達 370KV(RPM/V)

Input Voltage 輸入電壓	DC 22.2V	Stator Arms 矽鋼片槽數	12
Max Continuous Current 最大持續耐電流	25A	Magnet Poles 磁鐵極數	14
Max Continuous Power 最大持續功率	550W	Dimension/ Weight 尺寸/重量	φ 4x φ 52x33mm/ 185g

ALIGN

Specifications & Equipment/規格配備:

Airframe Diameter/軸距:800mm

Main Blade Length/主旋翼長:190mm

Main Rotor Diameter/主旋翼直徑:416mm

Height/機身高:430mm

Flying Weight(without battery)/全配重(不含電池): Approx. 2700g

