



ALIGN

INSTRUCTION MANUAL 使用說明書

[RGG301XT]



For more detailed instruction,
please check our website.
<http://www.align.com.tw/?p=5832>

更詳細的組裝說明請上官網。

Congratulations on your purchase of Align professional aerial photography products! To ensure your success with this product, we would like to present the following information and important reminders.

承蒙閣下選用亞拓專業航拍系列產品，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 professional aerial photography products. To ensure your success with this product, we would like to present the following information and important reminders.

Align G3-GH 3 Axis Gimbal can interface with PC, as well as iOS and Android systems through the use of Bluetooth. Built in receiver interface to accept various receiver systems on the market. An internal HDMI/AV converter for live video output to you video transmitter. The G3-GH is capable of fixed FPV mode as well as panoramic photography. Quick removal feature for compatibility with hand held gimbal rig.

In order for you to thoroughly enjoy the G3-GH 3 Axis Gimbal, please read through this manual prior to assembly and setting up. Keep this manual handy for future reference.

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.

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亞拓G3-GH雲台組支援PC、iOS、Android系統裝置使用與藍牙功能；內建接收功能、可搭配多種系統使用。內建HDMI/AV模組並支援遙控拍照與攝影功能、快拆式手持雲台改裝設計。

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。

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。

WARNING LABEL LEGEND

標誌代表涵義

| | |
|--|--|
|  FORBIDDEN 禁止 | Do not attempt under any circumstances. 在任何禁止的環境下，請勿嘗試操作。 |
|  WARNING 警告 | Mishandling due to failure to follow these instructions may result in 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。 |
|  CAUTION 注意 | Mishandling due to failure to follow these instructions may result in danger. 因為疏忽這些操作說明，而使用錯誤可能造成危險。 |

SAFETY NOTES

安全注意事項

ALIGN



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。

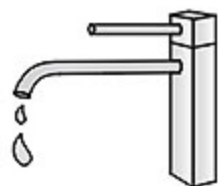


PREVENT MOISTURE

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.

遙控模型內部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！



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。



G3 GIMBAL FEATURES

G3雲台設計特色

ALIGN

Align G3-GH gimbal features an advanced control system with superior computational power. The highly integrated design allows for quick conversion between multicopter use and hand held use. Adjustable balance point on all 3 axis for greater camera compatibility, while the high precision brushless motors provide excellent agility and stability. Built in HDMI/AV converter and RC receiver connectivity. Supports programmability through PC interface, or connectivity to iOS/Android smartphones through Bluetooth. Equipped with automatic calibration function during power up. Supports single RC transmitter mode through APS-M, or independent remote control of the gimbal through a dedicated RC transmitter, as well as remote shutter trigger and video start/stop control to capture the optimal footage through precise framing.

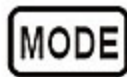
亞拓G3-GH雲台是具備優異演算能力的雲台控制系統，高整合性改裝設計，可結合多軸飛行機及快拆式手持雲台運作使用。精緻細膩的工藝設計，雲台三軸軸向中立點可調整，相容多元性相機規格，搭載高鎖定解析無刷馬達，反應靈敏穩定性高。內建HDMI/AV模組與接收功能；支援電腦操作界面設定，iOS、Android系統手機裝置設定與藍牙功能。具備開機檢測自動校正功能，支援APS-M單一遙控器模式及雲台獨立控制（外加一台遙控器），並提供遙控拍照與錄影功能，可精準使鏡頭鎖定拍攝目標物，讓您輕鬆獲得最佳的拍攝畫面。



Automatic 3-axis neutral calibration.
自動校正三軸中立定位點檢測。



Support single RC transmitter control of multicopter and gimbal, or a separate dedicated RC transmitter control for gimbal.
支援多軸機與雲台單一遙控器操作、以及雲台單獨遙控器操作使用。



Multi-function modes. Each of the 3-axis can be controlled through RC control.
多功能工作模式，三軸可使用遙控器操作控制。



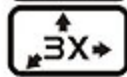
Shutter trigger and video start/stop control function
提供遙控拍照與錄影功能。



Built in HDMI/AV converter function
內建HDMI/AV模組。



Highly integrated convertible design to quickly switch to hand held use.
高整合性改裝設計，可結合快拆式手持雲台運作使用。



High stability, high precision 3 axis gimbal control system.
高穩定/高精度的三軸雲台控制系統。



Allowing precise lock on shooting objects, allowing capture of fantastic aerial footages with ease.
可精準鎖定拍攝目標物，能輕鬆拍攝出精彩的畫面。



Features gain adjustment for PAN/ROLL/TILT axis. Supports various DSLR cameras, with adjustability to achieve optimal compensation performance.
具有PAN軸、ROLL軸與TILT軸感度調整功能，支援市售多種單眼相機，可調整雲台的最佳修正效果。



Supports Spektrum and JR satellite receivers.
支援SPEKTRUM與JR衛星天線。



Supports Futaba S.BUS / JR X.BUS.
支援Futaba S.BUS / JR X.BUS功能。



Configuration changes through iOS APP.
支援iOS手機APP調整功能。



Configuration changes through Android APP.
支援Android手機APP調整功能。



Supports Bluetooth connectivity with smartphones.
支援藍牙功能，可透過手機設定調整。



RoHS certified.
符合RoHS限用規章。

STANDARD EQUIPMENT

標準配備

ALIGN



G3 Gimbal Assembly
G3雲台組



Gimbal Anti-Shock
雲台避震座

Camera differs between different make and models, the Mini HDMI signal wire [HEPG3002] comes as an optional extra.

因應各廠牌相機規格不同，可依需求另購 [HEPG3002] Mini HDMI訊號線搭配使用。



HDMI to AV Converter
HDMI轉AV模組



Micro HDMI Signal Wire
Micro HDMI訊號線 x1

Recommended for 1000g or heavier cameras.
適用重量1000g以上相機。



Gimbal Block Spacer 雲台墊圈
Black 黑 50° x12

Recommended for 800g cameras.
適用重量800g左右相機。



Gimbal Block Spacer 雲台墊圈
Gray 灰 40° x12

Recommended for 600g cameras.
適用重量600g左右相機。

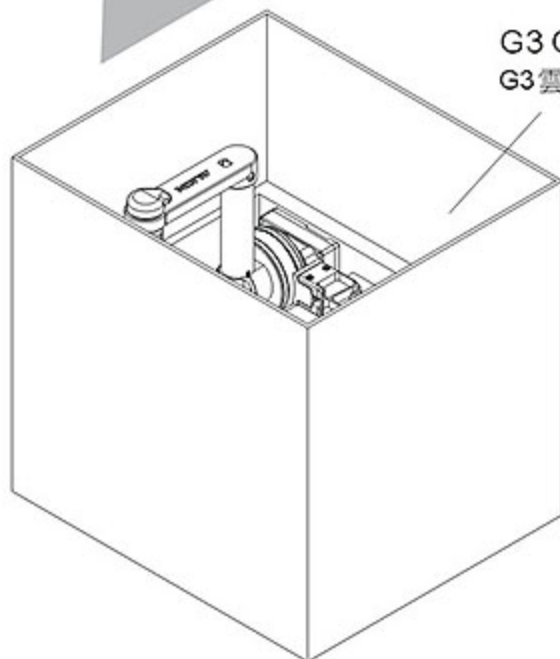


Gimbal Block Spacer 雲台墊圈
Red 紅 30° x12

PACKAGE CONTENTS

包裝說明

ALIGN



G3 Gimbal Assembly
G3雲台組



Gimbal Anti-Shock Assembly
雲台避震座組
S-BUS signal wire
S.BUS訊號線
AV signal wire
AV訊號線
Gimbal power wire
雲台電源線
Gimbal Parts Accessory
雲台零件包

1 GIMBAL ASSEMBLY

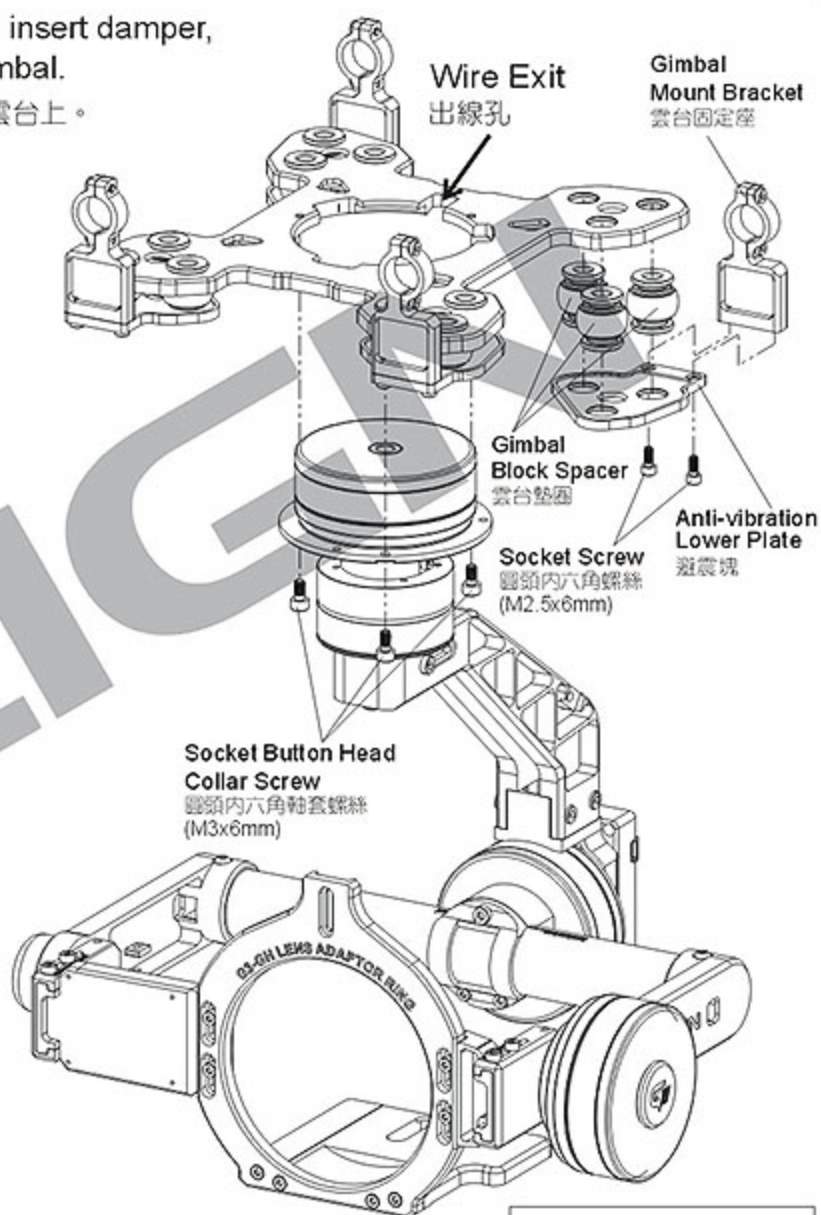
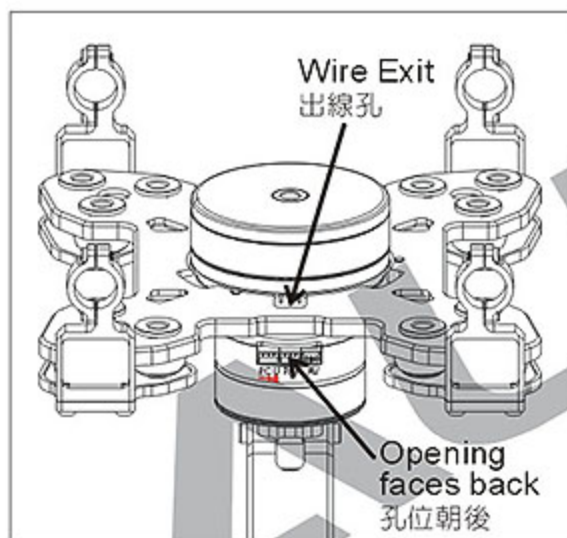
雲台組裝

1 ANTI-SHOCK ASSEMBLY

避震座組裝

Remove gimbal anti-shock assembly and insert damper, then re-install the assembly back onto gimbal.

取出雲台避震座裝入墊圈，再將避震座組裝於雲台上。



CAUTION
注意

Conductor Sleeve wire conduit need to line up with PAN motor wire exit on anti-shock mount.

導電環座接線孔應朝後對準避震座上PAN馬達的出線孔位置。

The lighter camera applies the softer dampers, the heavier one applies harder dampers. The dampers that are too soft will cause unstable video footage, while those too hard will introduce wavy lines (jello effect) into the video footage. The dampers can be mixed and matched to achieve the most optimal dampening effect.

相機越輕適用越軟的墊圈、越重則適用越硬的墊圈。墊圈搭配太軟會造成拍攝畫面不安定晃動，太硬則會造成拍攝畫面水波紋，建議可利用不同硬度的墊圈混搭使用，以達到最佳的拍攝品質。

Assembly Tutorial
組裝教學

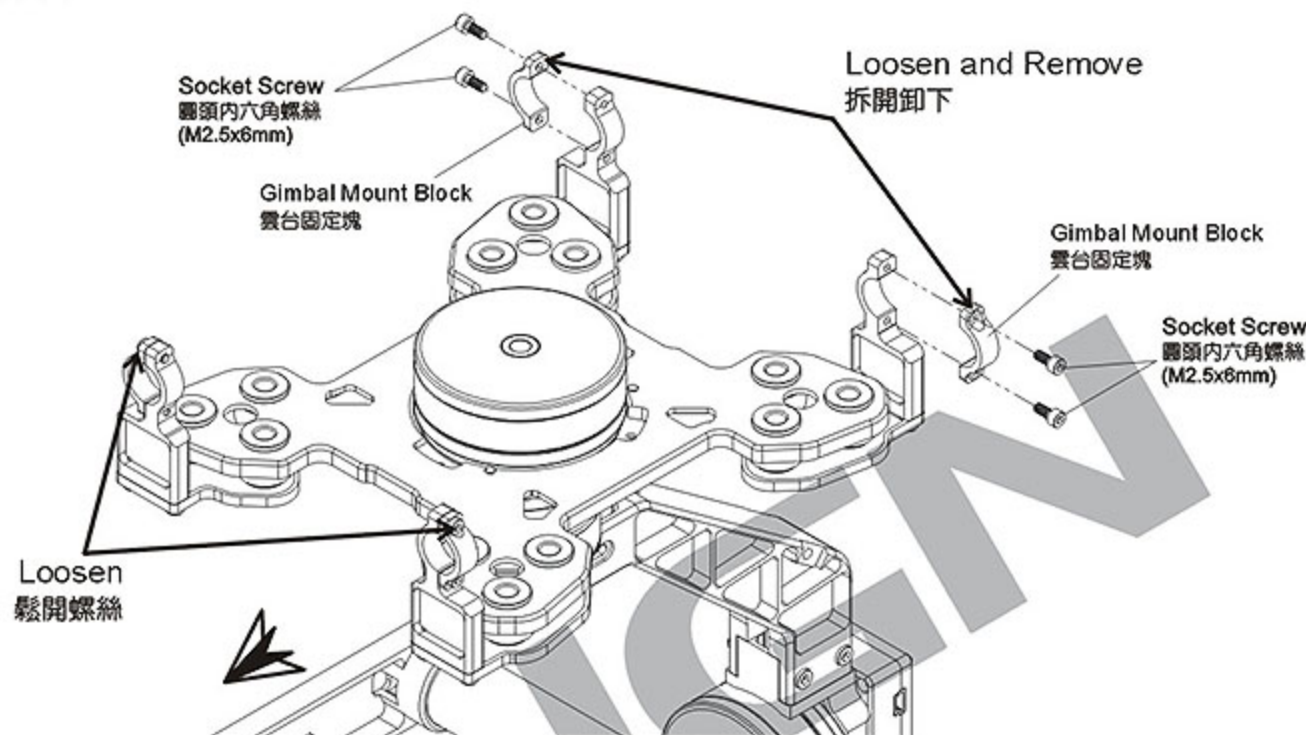


2 REMOVE GIMBAL MOUNT BLOCK

拆開雲台固定塊

Loosen the socket screw M2.5x6mm from the two front gimbal mount block only, then loosen and remove the two rear gimbal mount block.

鬆開圓頭內六角螺絲 (M2.5x6mm)，只要將避震座前方位置的兩個雲台固定塊鬆開，再將後方位置的兩個雲台固定塊拆開卸下。

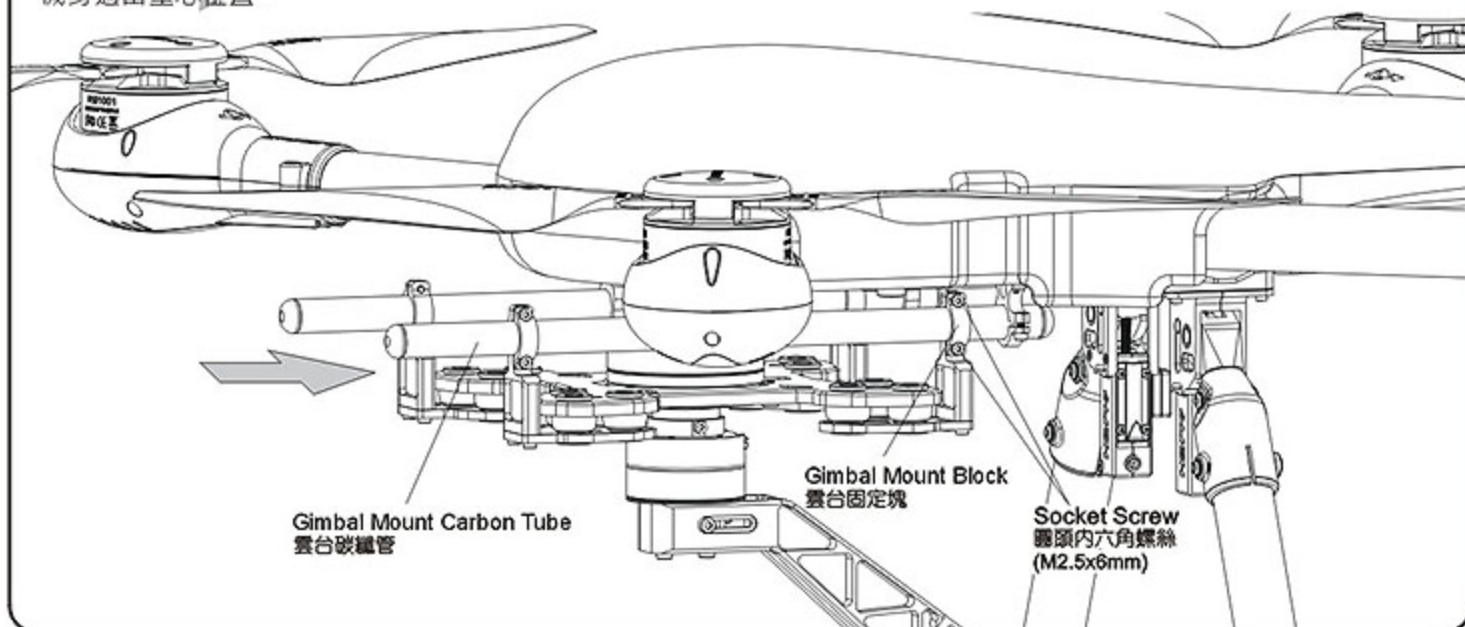


3 INSTALL THE GIMBAL ASSEMBLY ON MULTICOPTER FRAME

將雲台組裝於多軸飛行機機身

Slide the gimbal assembly over the gimbal mount carbon tube; install and tighten the gimbal mount block removed earlier; then tighten the forward gimbal mount block to completely secure the gimbal assembly to multicopter frame.

將雲台組穿過多軸機的雲台碳纖維管上，鎖回原拆下的雲台固定塊；再把前方位置的雲台固定塊鎖緊，將雲台組鎖固於機身適當重心位置。



2

CAMERA INSTALLATION AND POSITION ADJUSTMENT

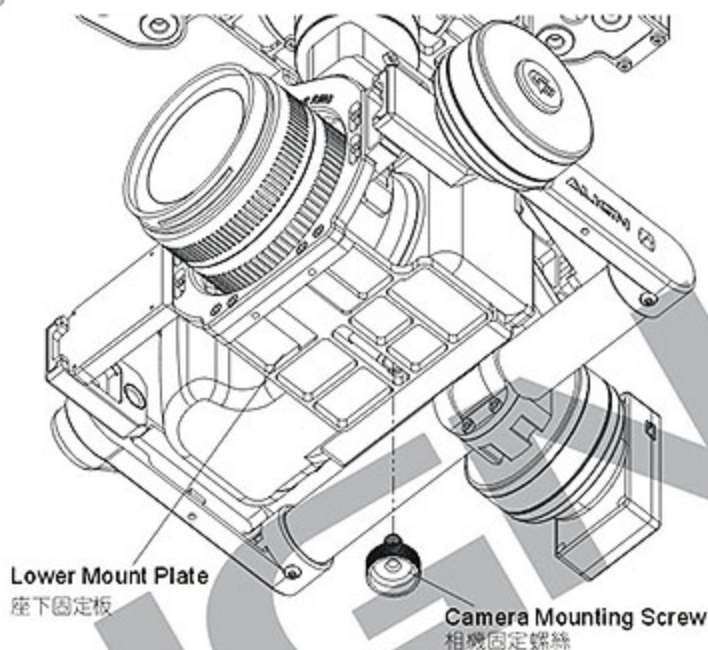
相機組裝與固定

1 CAMERA INSTALLATION

相機組裝

First, simply install the camera onto the gimbal mounting plate.

首先，將相機簡易固定於座下固定板。

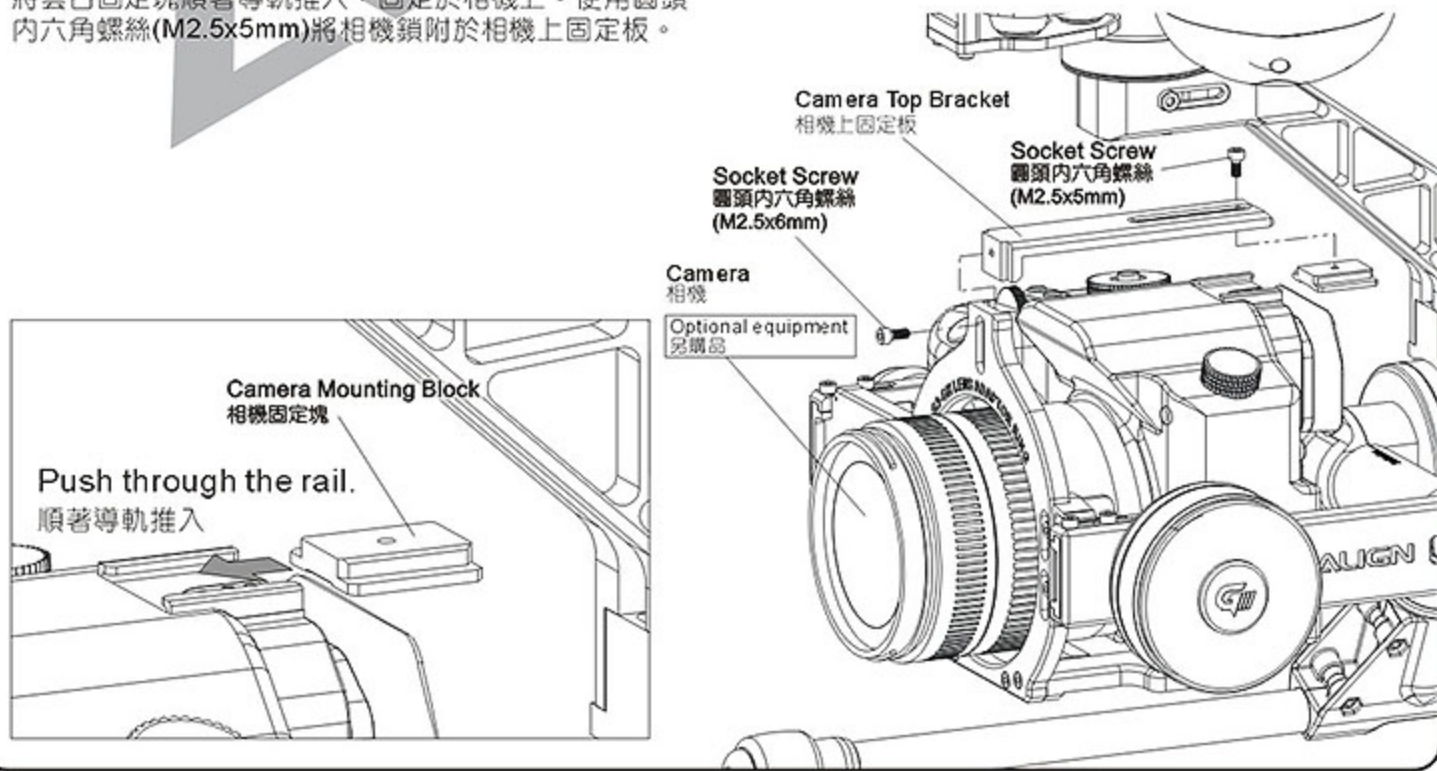


2 CAMERA POSITIONING

相機固定

Slide gimbal hotshoe block into the camera's hotshoe, and tighten to upper mounting bracket with a M2.5x5mm socket hex screw.

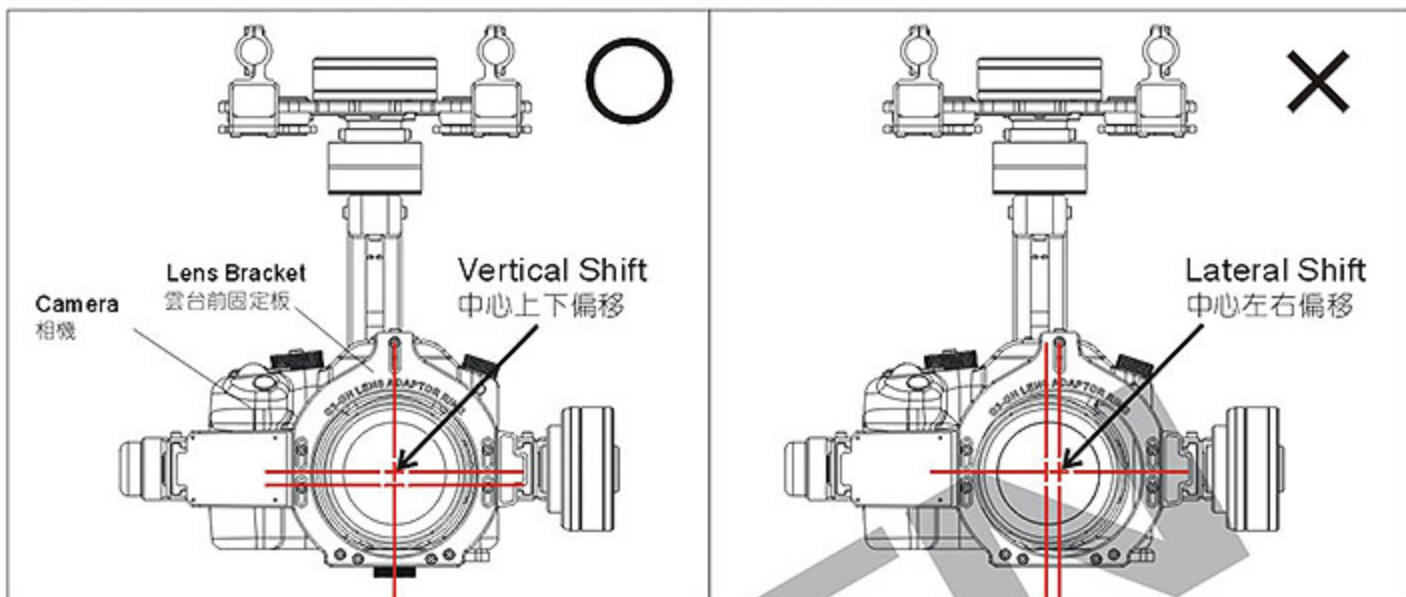
將雲台固定塊順著導軌推入，固定於相機上。使用圓頭內六角螺絲(M2.5x5mm)將相機鎖附於相機上固定板。



3 LINE UP CAMERA LENS CENTER LOCATION 對準相機鏡頭中心位置

While mounting the camera to gimbal, the center location of camera lens need to be inline with lens bracket

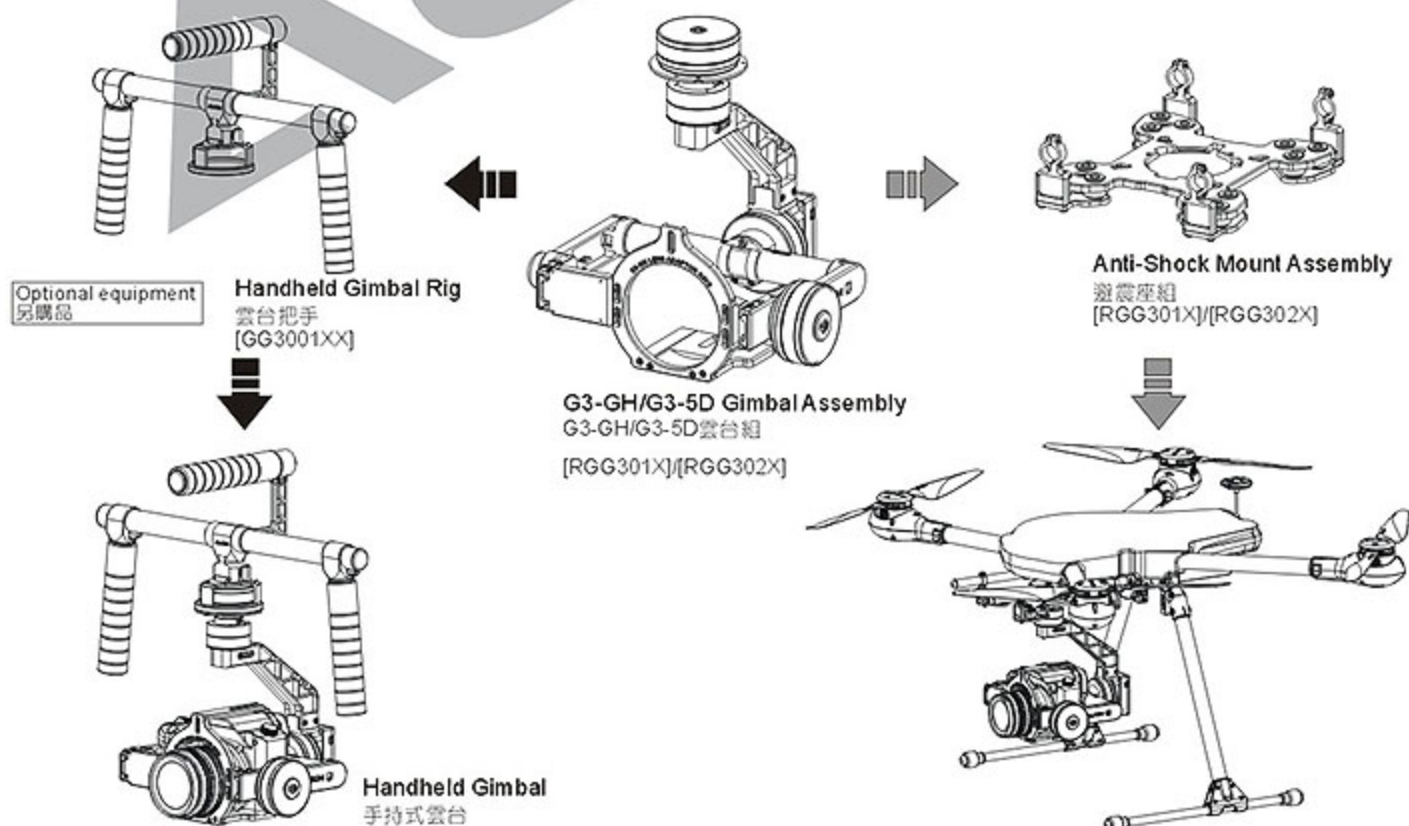
安裝相機到雲台時，相機鏡頭中心位置要與雲台前固定板中心位置同心。



3 MULTI PURPOSE GIMBAL MODIFICATION FEATURE 多功能雲台改裝用途

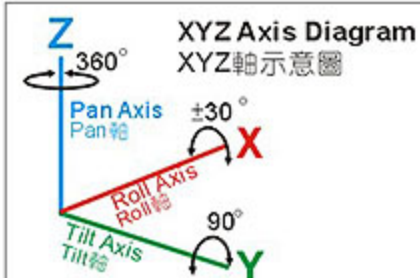
Multifunctional quick release gimbal mount design which can be quickly transferred between handheld rig and multicopter platform.

多功能快拆式雲台改裝設計，可依須求快速改裝成為手持式雲台或多軸空拍機。



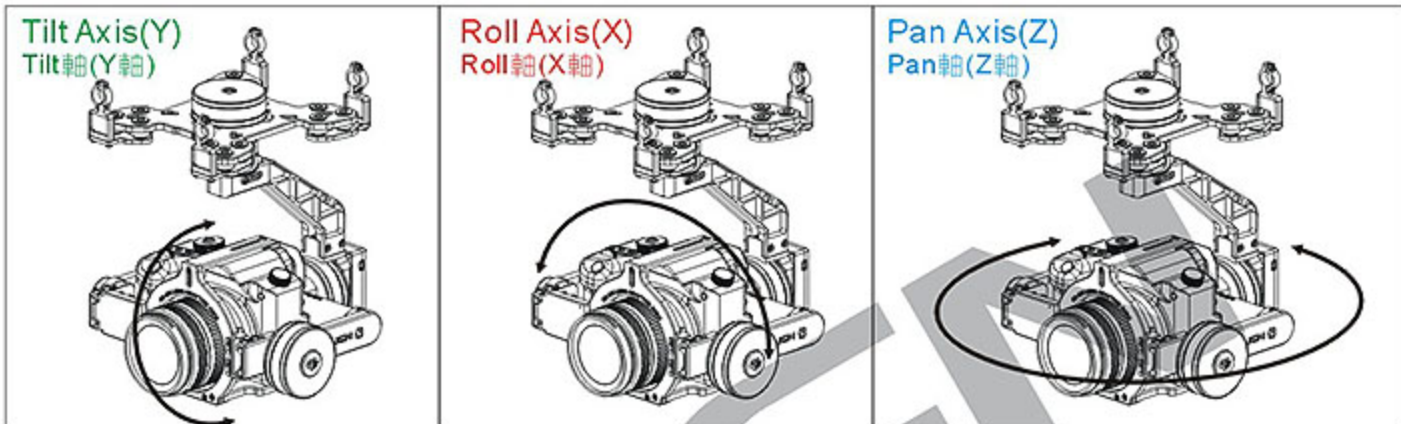
4 GIMBAL BALANCE ADJUSTMENT

雲台重心調整



Proper gimbal balance is critical to the quality of resulting video footage. Please follow instruction and ensure proper balance of gimbal on all X, Y, Z axis.

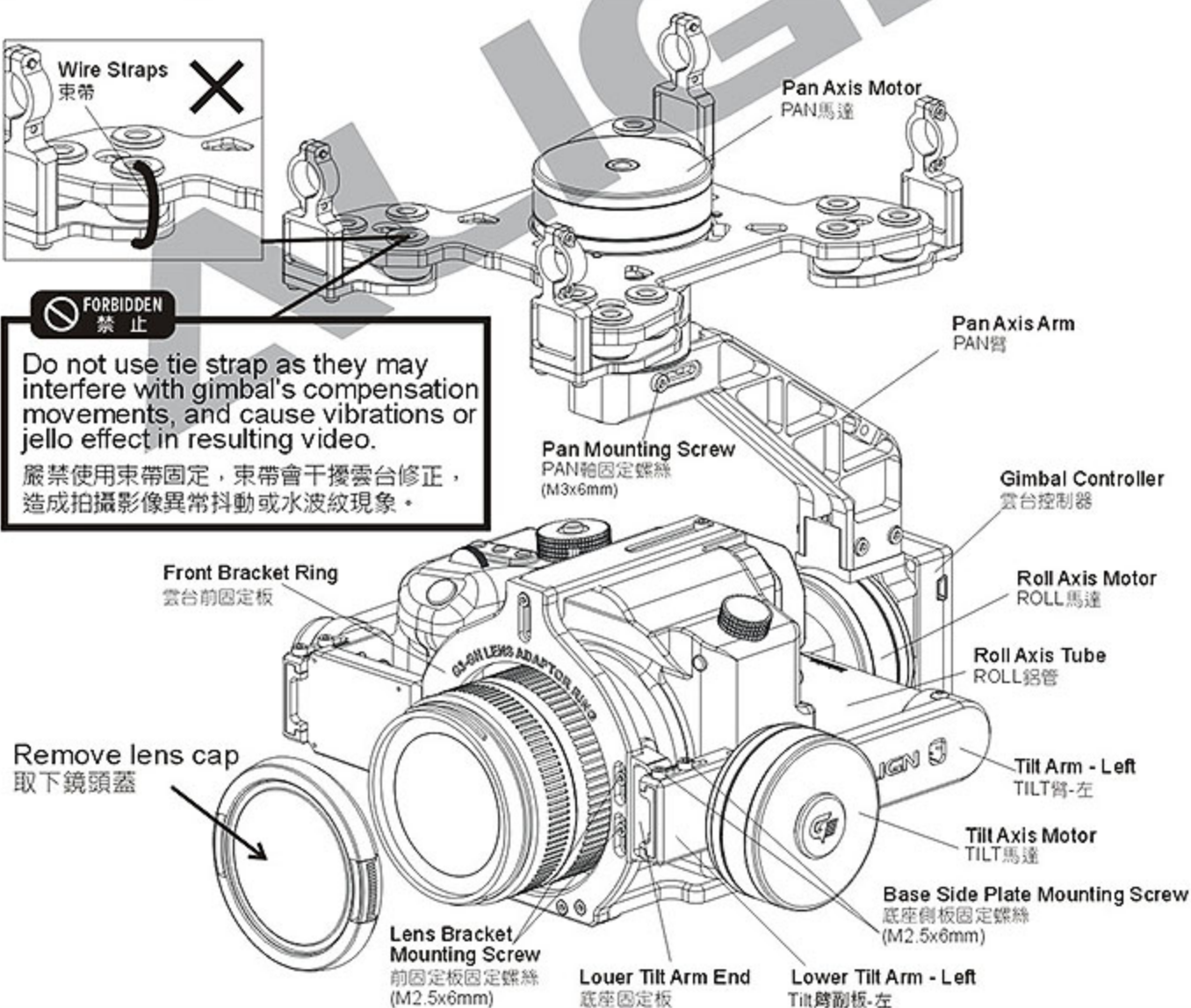
雲台重心調整的完美與否，對於拍攝影像品質有密不可分的關係，所以請依說明指導，確實調整好雲台X、Y、Z軸三軸重心平衡。



FORBIDDEN
禁止

Do not use tie strap as they may interfere with gimbal's compensation movements, and cause vibrations or jello effect in resulting video.

嚴禁使用束帶固定，束帶會干擾雲台修正，造成拍攝影像異常抖動或水波紋現象。



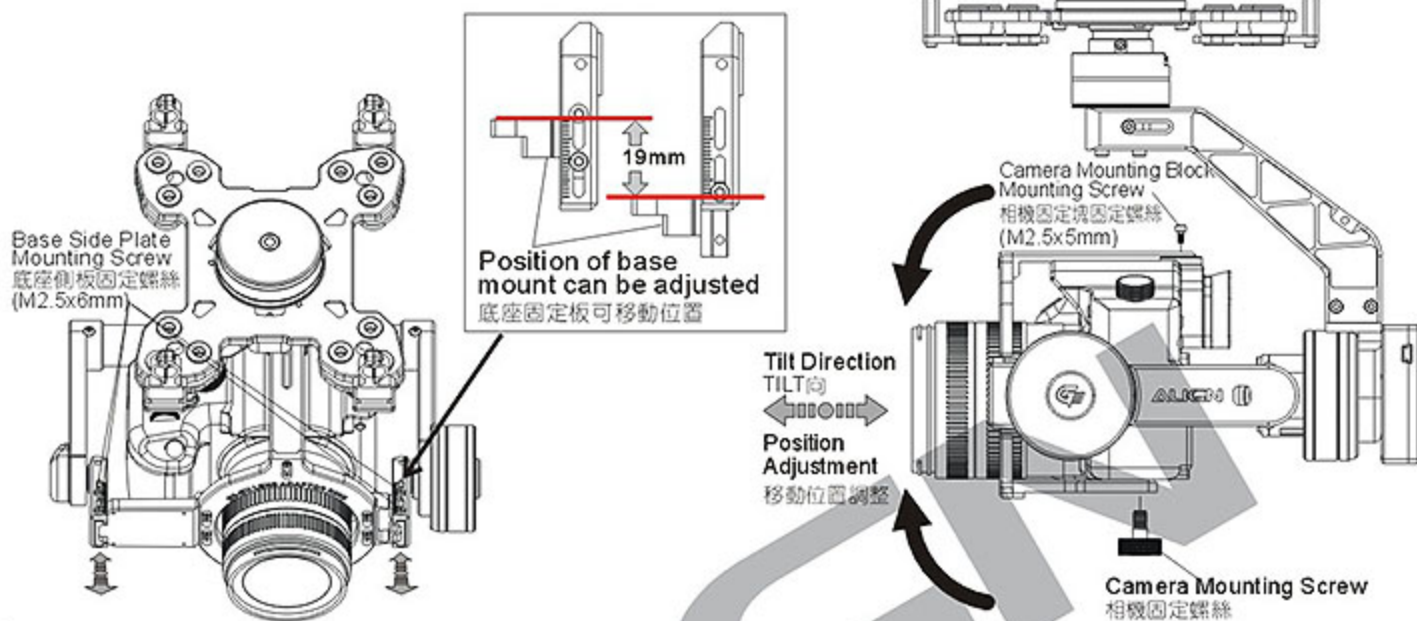
1 Y-AXIS (TILT) BALANCE ADJUSTMENT

Y軸(俯仰)平衡調整

Y

After camera is properly mounted to gimbal, remove the lens cap. Check the tilt (Y) axis, adjust tilt gimbal position to achieve balance.

固定相機於雲台座後，請取下相機鏡頭蓋；首先檢測TILT軸(Y軸)，調整相機及雲台TILT向的前後位置，以校正Y軸重心平衡。



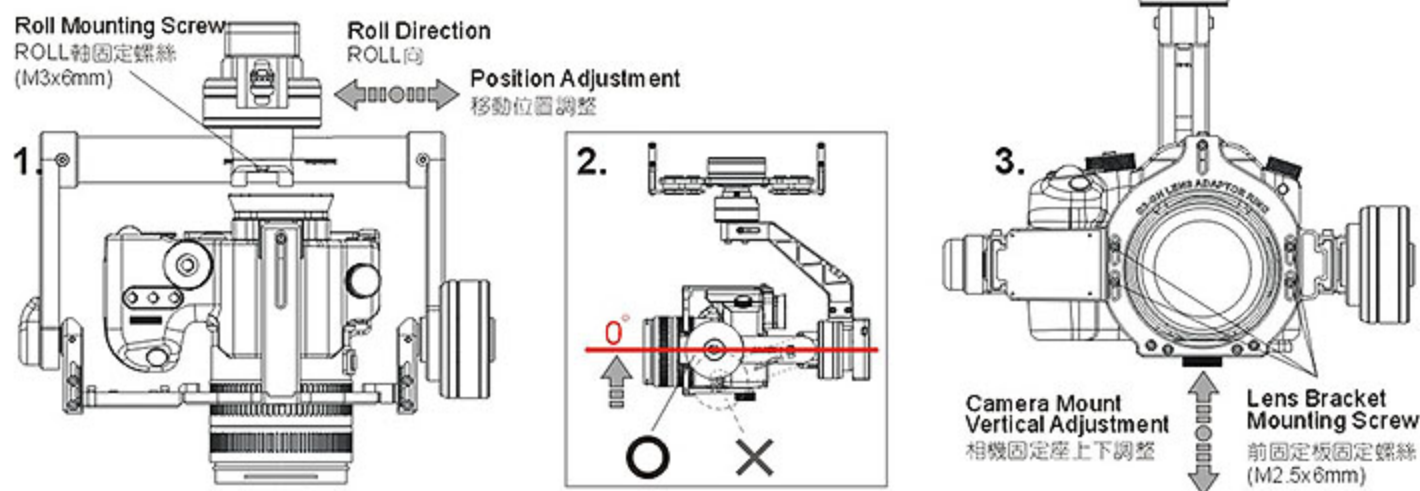
2 X-AXIS (ROLL) BALANCE ADJUSTMENT

X軸(滾轉)重心調整

X

1. Check the Roll (X) axis. If imbalance is observed, loosen the M3x6mm Roll mounting screw, shift the Roll aluminum tube to achieve lateral balance, then check if camera's vertical balance is centered.
2. When tightening Roll mounting screw, lift up the Tilt arm slightly then tighten to ensure tilt arm doesn't droop down. Too high or too low of tilt arm will both cause left/right swaying of the roll axis.
3. If vertical balance is not centered, loosen the 4 (M2.5x6mm) screws on gimbal lens bracket, and shift the bracket up or down to achieve proper vertical balance.

1. 檢測ROLL軸(X軸)，如果有重心不平衡的狀況，先鬆開ROLL軸固定螺絲(M3x6mm)，以移動ROLL鋁管調整ROLL軸左右平衡，再檢測相機上下重心是否置中？
2. 當鎖附ROLL軸固定螺絲時，請將Tilt臂向上提再鎖緊，否則會產生Tilt臂下垂現象。偏高或偏低都會讓ROLL軸呈左右偏擺。
3. 然後，再鬆開雲台前固定板四支螺絲(M2.5x6mm)，以移動調整前固定板上下位置；調整至相機左右重心完全保持平衡。



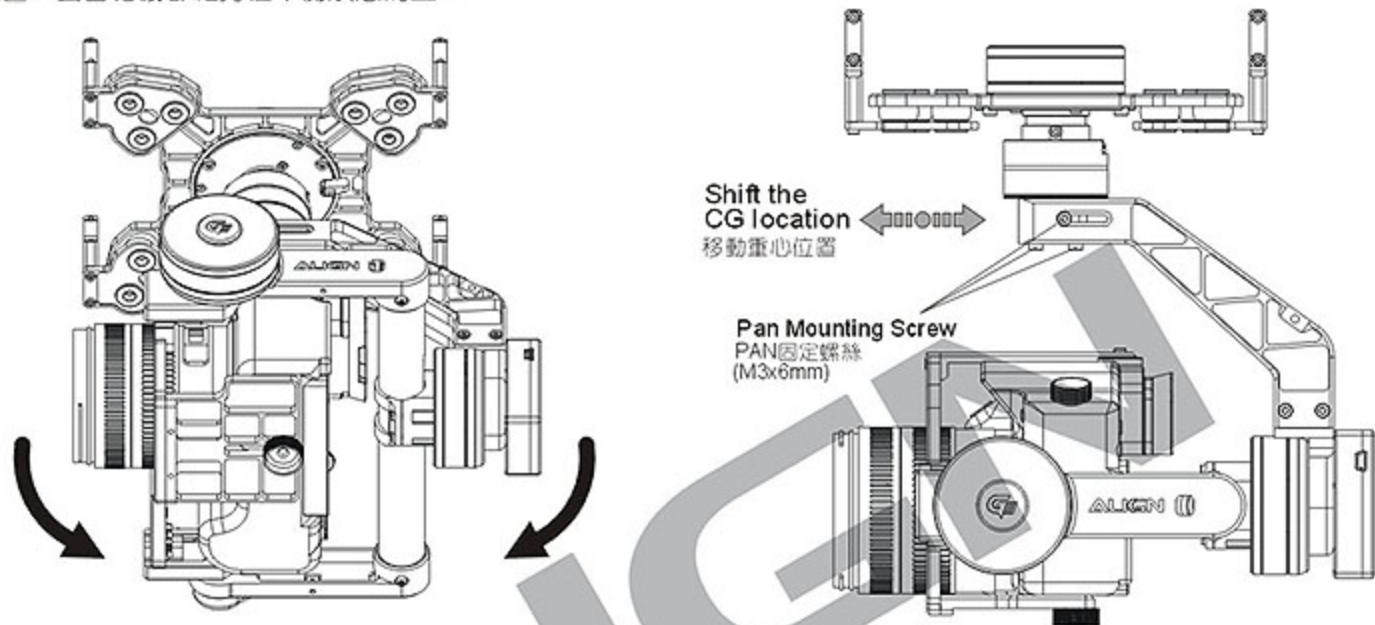
3 Z-AXIS (YAW) BALANCE ADJUSTMENT

Z軸(指向)重心調整

Z

After TILT (Y) and ROLL (X) axis are balanced, tilt the gimbal at least 45 degrees, and move the Pan arm with your hands to observe imbalance on the PAN axis. Loosen the 4 Pan mounting screws, softly move the heavier side toward lighter side, until gimbal achieve perfect balance regardless of position in the whole 360 degrees rotation.

當調整好雲台TILT軸(Y軸)、ROLL軸(X軸)重心平衡後，將雲台傾斜至少45度，手撥旋轉雲台相機，此時若發現PAN軸(Z軸)不平衡，請鬆開PAN軸4支固定螺絲，將重心較重的一邊往輕的一邊慢慢移動調整，直到PAN軸360度旋轉至任何位置，雲台相機都維持在平衡狀態為止。

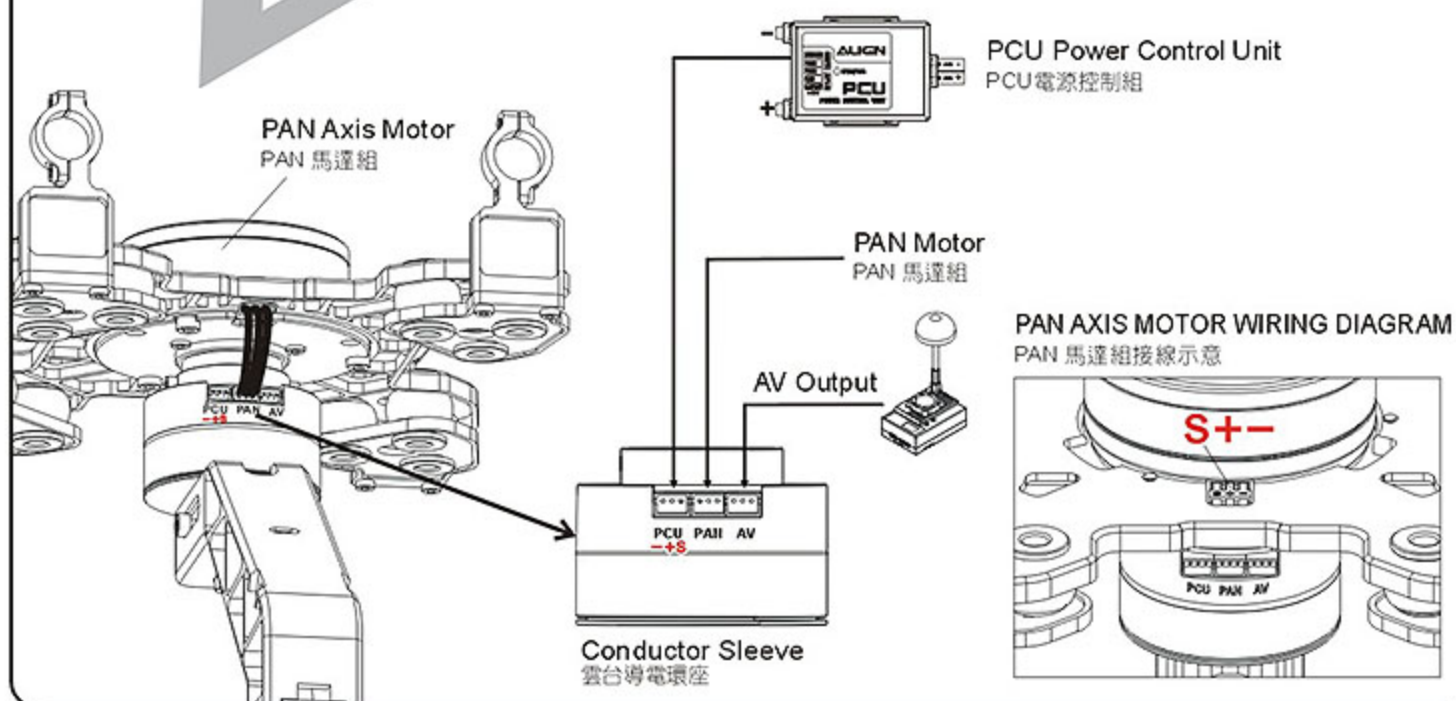


5 GIMBAL WIRING DIAGRAM

雲台接線示意圖

1 GIMBAL WIRING DIAGRAM

雲台接線示意圖



2 HDMI TO AV WIRING DIAGRAM

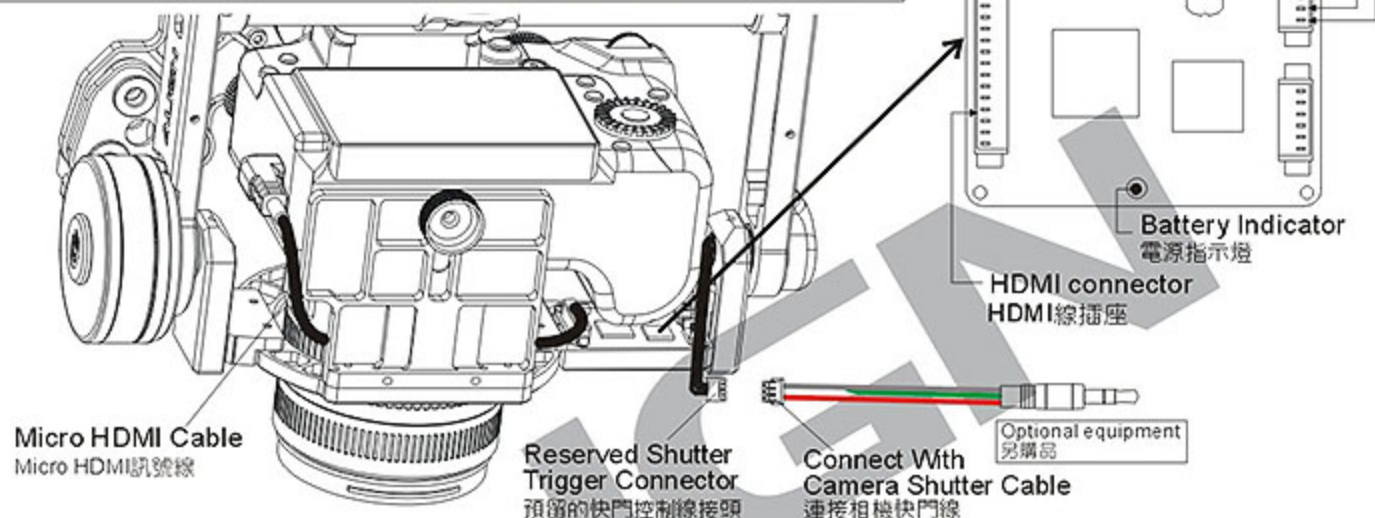
HDMI轉AV接線示意圖

G3-GH/G3-5D Gimbal contains a HDMI to AV converter. Securely connect the camera signal wire to the converter to ensure proper video transmission. Caution: HDMI-AV converter output is in NTSC format. Please set your LCD display to NTSC.

G3-GH/G3-5D雲台內建HDMI轉AV模組，將相機訊號線確實插在控制面板上，以確保即時回傳正常運作。注意：HDMI轉AV模組輸出為NTSC格式，請將您的顯示器設定為NTSC格式。

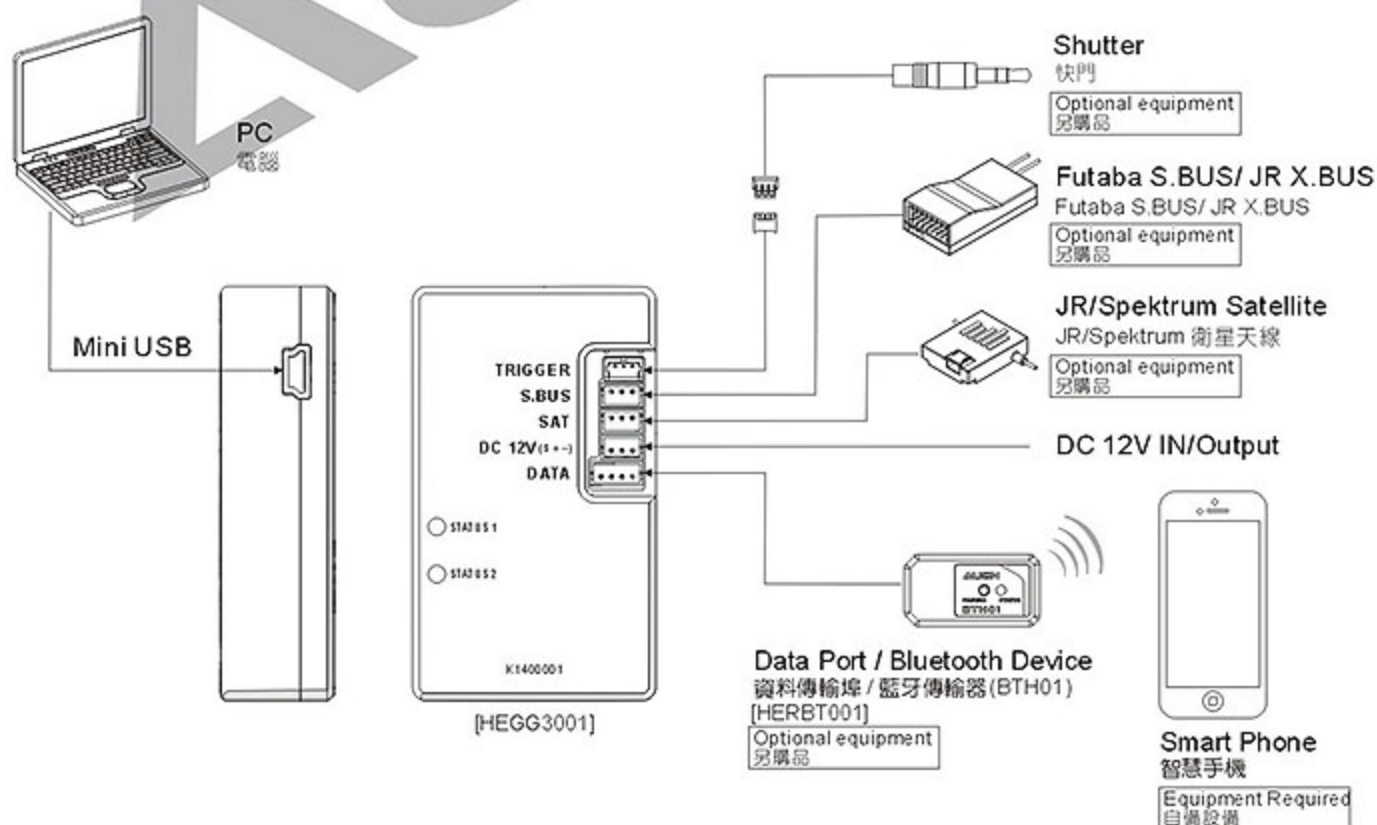
Camera differs between different make and models, the Mini HDMI signal wire [HEPG3002] comes as an optional extra.

因應各廠牌相機規格不同，可依需求另購 [HEPG3002] Mini HDMI訊號線搭配使用。



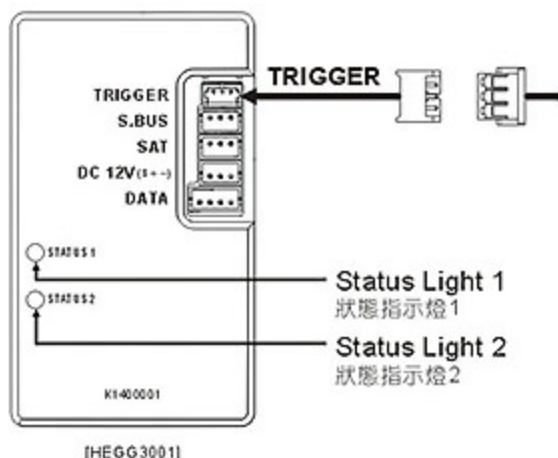
3 GIMBAL CONTROL WIRING DIAGRAM

雲台控制器接線示意圖



4 CUSTOM SHUTTER WIRING EXAMPLE

快門線改裝接線示意圖



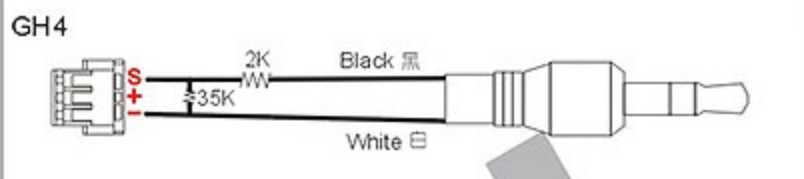
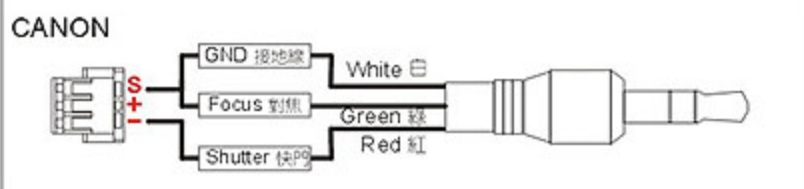
Status Light 1
狀態指示燈 1

Status Light 2
狀態指示燈 2

[HEGG3001]

Camera trigger cable differs between different make and models. Please check with camera manufacturer for proper cable.

各廠牌相機使用的快門線規格不同，請洽原廠相機配備。



CAMERA PHOTO/VIDEO REMOTE CONTROL FUNCTION

拍照/錄影遙控功能

Take GH4 Camera for example: (以GH4為例)



Photo mode: Switch camera to photo mode, and configure RC trigger switch to enable remote photo taking function.

拍照模式，相機切換此模式設遙控器TRIGGER開關，即有遙控拍照功能。



Video mode: Switch camera to video mode, and configure RC trigger switch to enable remote video start/stop function.

錄影模式，相機切換此模式設遙控器TRIGGER開關，即有開啟/關閉錄影功能。

Due to differences in camera models, the start/stop functionality is dependent on camera specification. 此功能是否能正常啟動，需依各廠牌規格而定。

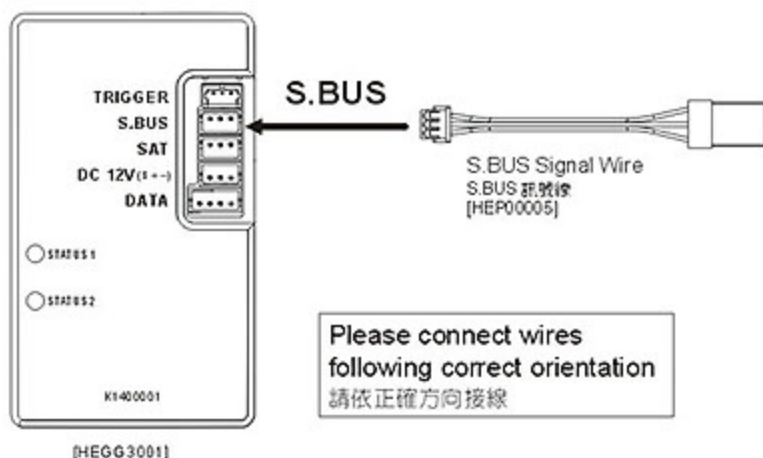
STATUS LIGHT INSTRUCTION

狀態指示燈說明

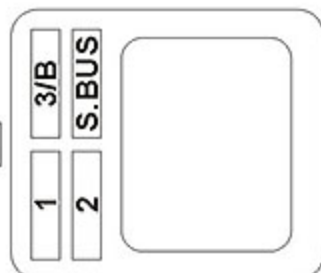
| | Status Light 1 狀態指示燈 1 | Status Light 2 狀態指示燈 2 |
|--------------------------------|---------------------------|---------------------------|
| Initializing 開機中 | — | ● Red 紅燈 |
| Power ON 開機完成 | — | ● Green 綠燈 |
| Heading is centered 頭向在中間位置 | ● Green 綠燈 | — |

5 FUTABA S-BUS / JR X.BUS WIRING DIAGRAM

FUTABA S.BUS/ JR X.BUS接線示意圖



Please connect wires following correct orientation
請依正確方向接線

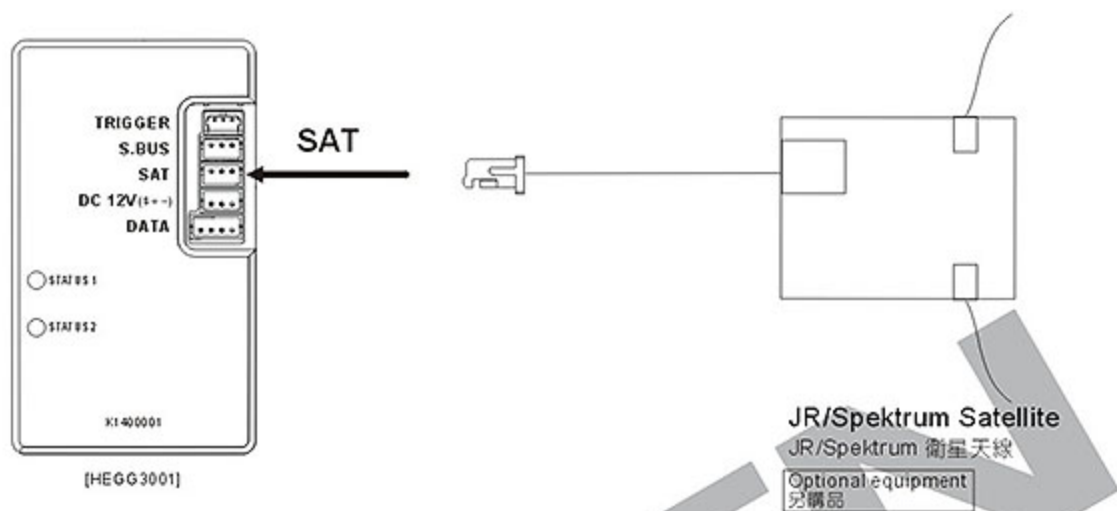


Futaba S.BUS/ JR X.BUS

Optional equipment
另購品

6 JR/SPEKTRUM SATELLITE ANTENNA WIRING DIAGRAM

JR/Spektrum 衛星天線接線示意圖



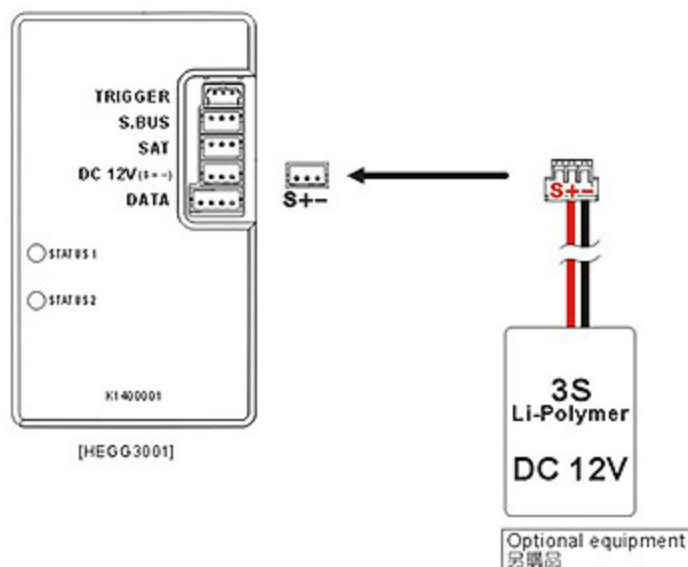
7 DC 12V INPUT / OUTPUT WIRING DIAGRAM

DC12V IN/OUTPUT 接線示意圖

Gimbal controller DC 12V input / output. This is a bi-directional port for voltage input or output. When gimbal is installed on an Align multicopter and connected to PCU, this port provides DV 12V output; if the gimbal is converted to hand held rig mount, this port becomes DC 12V power input port.

雲台控制器 DC 12V In/Output，可由此埠提供電源輸入或輸出。

當雲台組裝於亞拓多軸飛行機連接 PCU 時，此埠可提供 DC 12V 電源輸出；若將雲台改裝為手持式雲台時，此埠為 DC 12V 電源輸入孔。



WARNING
警告

Please connect wires following correct orientation or it may cause irreversible damage to the gimbal controller's PCB.

請依正確方向接線，正負極錯誤將導致控制PC板燒毀。

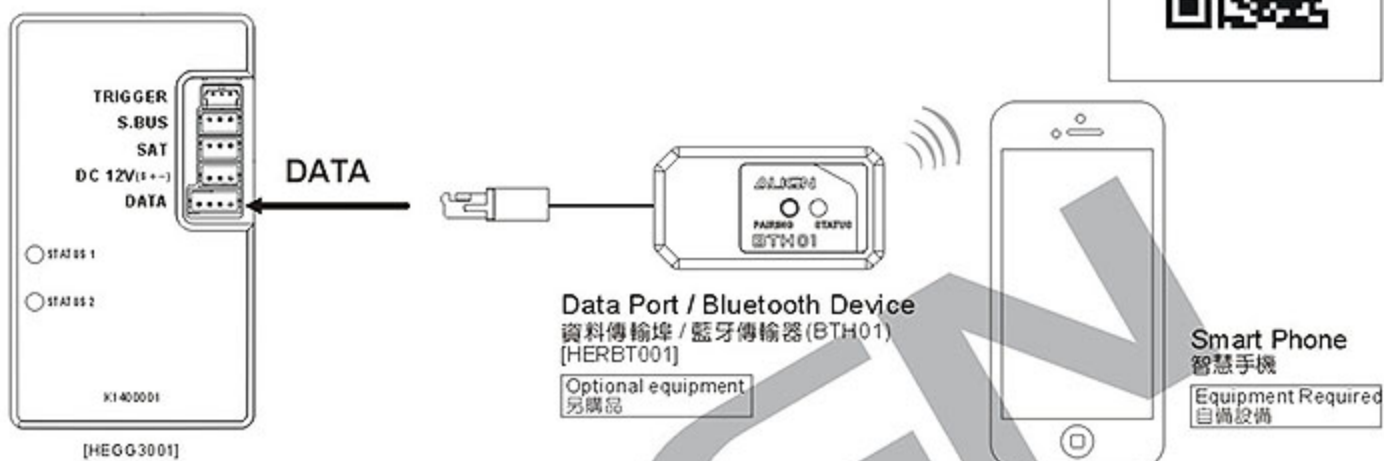
8 DATA PORT / BLUETOOTH DEVICE WIRING DIAGRAM

資料傳輸埠 / 藍牙傳輸器接線示意圖

Gimbal can be connected through smartphone App through Bluetooth Device, perform gimbal setting on various parameters.

藉由藍牙傳輸器與手機連線 Gimbal 操作介面(App)，進行雲台各項參數調整設定連接埠。

Smart Phone
Setup Interface
手機設定介面

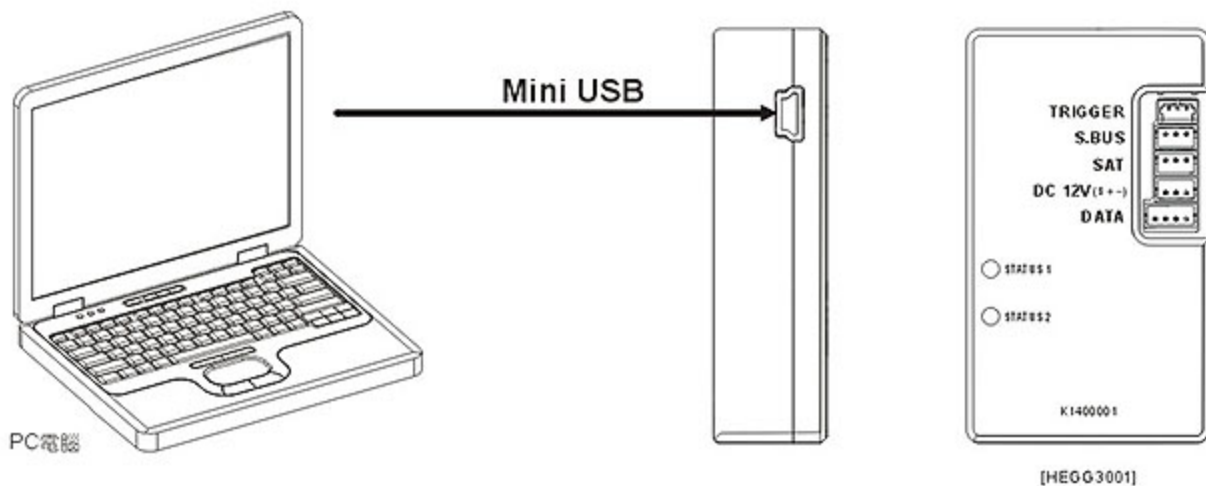


9 MINI USB WIRING DIAGRAM

MINI USB 接線示意圖

Gimbal can be connected to PC through Mini USB cable for configuration changes or firmware updates.

可利用Mini USB連結電腦，更新Gimbal主軟體或進行雲台各項參數調整設定連接埠。



GIMBAL POWER ON AND SELF TEST

雲台供電啟動與開機自行檢測

ALIGN

1. POWER UP PROCEDURE WHEN MOUNTED TO ALIGN MULTICOPTERS

Connect the 12V output from Align's PCU/MBEC with the PCU port on gimbal.

1. 搭配亞拓多軸機開機步驟

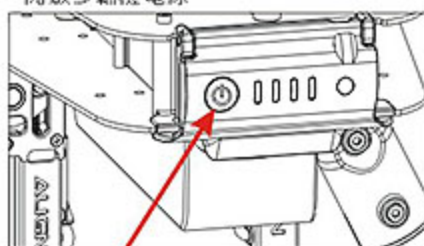
由亞拓多軸機PCU/MBEC輸出DC12V電壓與雲台PCU埠連接。

Turn on RC transmitter power
開啟遙控器電源



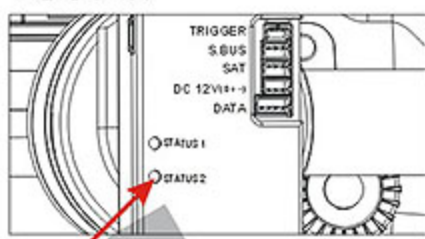
Power ON
電源開啟

Turn on gimbal power
開啟多軸機電源



Press and hold for 3 seconds to power up
長按3秒開機

Gimbal power up
雲台電源啟動



Successful power up is indicated by gimbal controller 2nd status LED shows green.
雲台控制器狀態指示燈2顯示綠燈，代表開機完成。

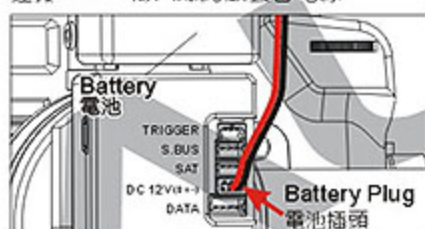
2. POWER UP PROCEDURE WHEN USED AS HAND HELD UNIT

Connect the 12V port of gimbal control to a 12V power source.
(Please refer to page 14 for wiring method.)

2. 搭配手持雲台開機步驟

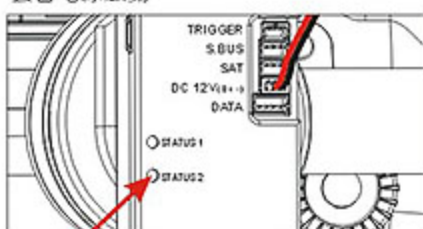
由雲台控制器DC12V輸入埠供給DC12V電壓（接線方式請參考第14頁）。

Turn on gimbal power
連接DC12V輸入埠開啟雲台電源



Connect a 3S lipo to gimbal controller's DC 12V input port.
外接一個3Cell電池，將電池插頭連接至雲台控制器上的DC 12V輸入埠。

Gimbal power up
雲台電源啟動



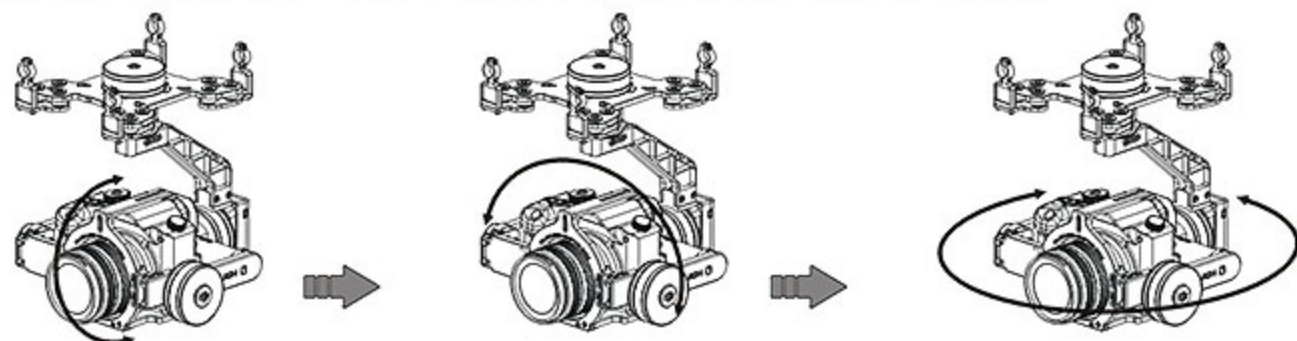
Successful power up is indicated by gimbal controller 2nd status LED shows green.
雲台控制器狀態指示燈2顯示綠燈，代表開機完成。

3. GIMBAL AUTOMATIC POWER ON TEST.

After power is applied, gimbal will automatically perform 3-axis neutral point calibration. The process takes about 10 seconds, and ends with the gimbal locking its heading direction.

3. 雲台開機自行檢測回中立點

開啟電源後，雲台會自動校正三軸中立定位點檢測，過程約10秒鐘自檢完成，鎖定頭向朝前。



1 SOFTWARE DOWNLOAD AND INSTALLATION

操作介面下載安裝

1. PC Software Install: Please go to the following website to download the software and install on your PC.

電腦安裝操作介面：下載安裝雲台電腦操作介面請至下列網址
<http://www.align.com.tw/download-en/gimbal/>



If you are having difficulties installing Windows version of the Gimbal software, please check whether you have Microsoft .NET Framework 4 installed.

<http://www.microsoft.com/en-US/download/details.aspx?id=17851>

無法安裝 Gimbal Windows 版本時，請檢查電腦是否有安裝 Microsoft .NET Framework 4。
<http://www.microsoft.com/zhTW/download/details.aspx?id=17851>

2. Please scan QR Code link ALIGN website to find related software, or search "ALIGN Gimbal" in iOS / Android app store. Optional Bluetooth module [HERBT001] is required for connectivity between iOS/Android app and Gimbal.

請掃描QR Code連結亞拓網站下載相關軟體，或是在iOS/Android App store搜尋"ALIGN G3"。
使用手機下載APP請另購藍牙傳輸器[HERBT001]才能與雲台搭配使用。



Compatible with



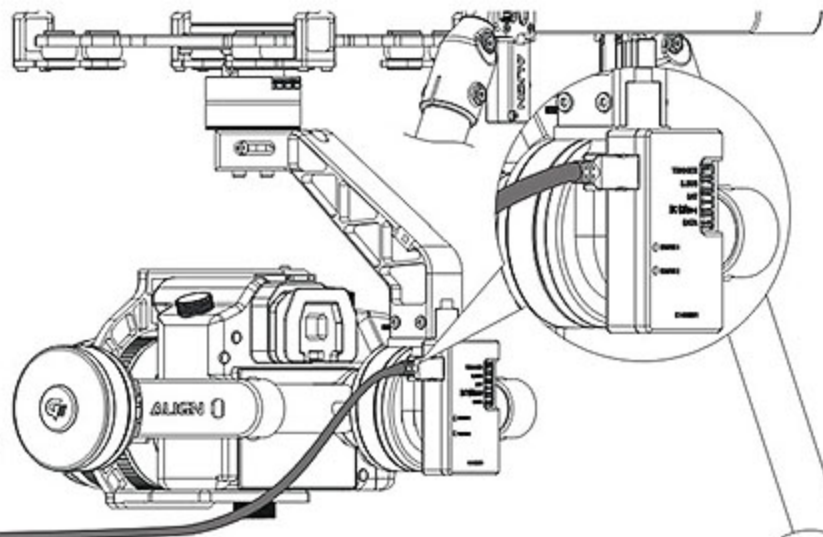
3. Apply power to gimbal. After gimbal's initialization routine is completed, connect to PC with a USB cable to perform setup.

開啟雲台電源，確認雲台自檢開機完成後，使用USB線連結電腦與雲台，進行連線設定。

Connect to gimbal setup interface
與雲台設定介面連線



USB CABLE
USB線



2 GIMBAL SETUP

雲台設定

When using smartphone app to make configuration changes, a Bluetooth password must be set for pairing with the smartphone. The factory default password is "0000". We strongly recommend you to change your password to avoid interference with others during Bluetooth transmission.

Connection Status:

Green: Connected ; Red: Disconnected.

使用手機軟體介面(app)調整時，須設定藍牙連線密碼，提供手機連線時使用。預設密碼為"0000"，強力建議使用者先更改密碼後再使用，以免對其他藍牙裝置造成干擾。

連線狀態燈號說明：

綠燈為正常連線；紅燈為未連線。

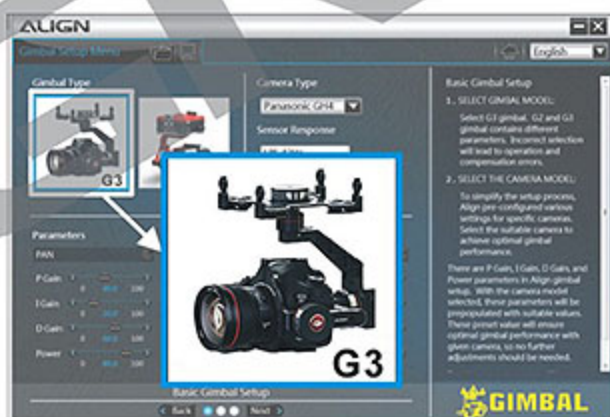


1. SELECT GIMBAL MODEL:

Select G3 gimbal. G2 and G3 gimbal contains different parameters. Incorrect selection will lead to operation and compensation errors.

1. 選擇雲台型號：

使用G3雲台選項。G2與G3雲台內建參數不同，選擇錯誤會導致雲台運作與修正錯誤。



2. SELECT THE CAMERA MODEL:

To simplify the setup process, Align pre-configured various settings for specific cameras. Select the suitable camera to achieve optimal gimbal performance.

2. 選擇使用相機類型：

為了提供更方便、更簡易的使用方式，亞拓針對各類型相機，內建各種相機最佳使用參數，只要選擇所使用的相機選項，雲台就能有最佳的修正效果。



If the camera used is not listed, select one with closest weight.

如果選項中無所使用相機選項，請選擇重量相近類型的相機選項。

GIMBAL PARAMETER ADJUSTMENT

雲台感度調整

There are P Gain, I Gain, D Gain, and Power parameters in Align gimbal setup. With the camera model selected, these parameters will be prepopulated with suitable values. These preset value will ensure optimal gimbal performance with given camera, so no further adjustments should be needed.

But the parameters can still be tweaked as required.

亞拓雲台提供 P Gain、I Gain、D Gain、Power 參數調整，在上一個步驟中選擇所使用相機類型後，系統就會輸入內建參數值（不同相機類型，有不同內建參數值），雲台即能正確運作且具有最佳的修正效果，基本上並不需要再進行參數設定。

如有其它相關需求，玩家也可以依雲台情況，進行參數調整。



GAIN ADJUSTMENT INSTRUCTION

感度調整說明

P Gain: Used to adjust compensation velocity of gimbal. (Default value 20~40 is recommended)

I Gain: Used to adjust relocation velocity of gimbal. Over-sensitive gain may cause momentary pauses of gimbal while relocating. (Default value 4~10 is recommended)

D Gain: Used to adjust gimbal compensation reaction. Over-sensitive gain may cause oscillation of gimbal motors. Insufficient gain may cause stuttering compensating action. Firstly suggest to put higher D Gain till the motor oscillation, then gradually adjust the value down to perfect situation. (Default value 50~80 is recommended)

Power: Used to adjust the holding power of gimbal. Adjust to a suitable value based on needs; excessive power may cause oscillation of gimbal motors. Firstly suggest to put higher Power Gain till the motor oscillation, then gradually adjust the value down to perfect situation. (Default value 60~90 is recommended)

P Gain: 是指雲台動作的增穩修正速度。請使用原廠預設值(建議 P Gain 為 20~40)

I Gain: 是指雲台的復位速度，I Gain 值過高會造成雲台動作有定格現象。請使用原廠預設值(建議 I Gain 值為 4~10)

D Gain: 是指抑制雲台的修正反應，D Gain 值太低會造成雲台各軸控制臂修正抖動現象，太高則會造成雲台馬達高頻震動。建議將 D Gain 值調高到雲台馬達出現高頻震動現象後，再將值調小一點，即可得到最佳的 D Gain 值。(建議 D Gain 值為 50~80)

Power: 是指雲台馬達的鎖附力，請依實際情況調整 Power 值，過大的 Power 值會造成雲台馬達高頻震動。建議將 Power 值調高雲台馬達出現高頻震動現象後，再將 Power 值調小一點，即可得到最佳的 Power 值。(建議 Power 值為 60~90)

| | Gain too low 感度過小 | Gain too high 感度過大 |
|---------------|--|---|
| P Gain | Slow compensation, lagging reaction 修正速度慢，反應跟不上 | Over-compensate 修正過頭 |
| I Gain | Slow relocation of gimbal 復位速度太慢 | Lagging reaction 雲台動作有定格現象 |
| D Gain | Cause oscillation of gimbal motors 會造成雲台各軸控制臂修正抖動現象 | Motor oscillates or vibrates 馬達抖動、震動 |
| Power 鎖附力量 | Insufficient holding power, unable to lock 鎖附力不足，無法鎖定 | Motor oscillates or vibrates 馬達抖動、震動 |

3 RC TRANSMITTER SETUP

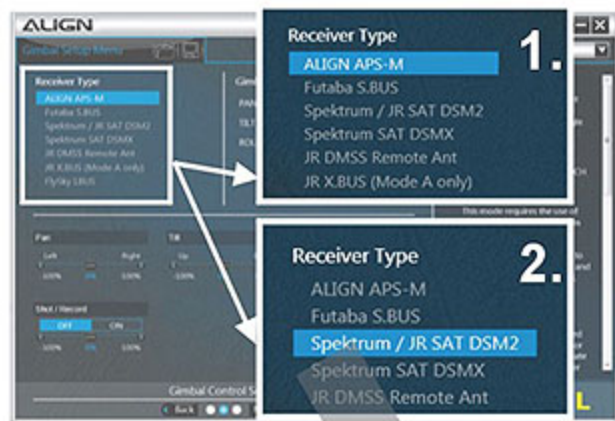
遙控器設定

1 RC TRANSMITTER SETUP

遙控器設定

Gimbal RC operator modes is set here. Align gimbals feature two type of RC operator modes: single RC transmitter and dual RC transmitters controlling modes.

此功能是設定雲台遙控器使用方式，亞拓雲台具備單一遙控器、雙遙控器，兩種遙控器使用方式。



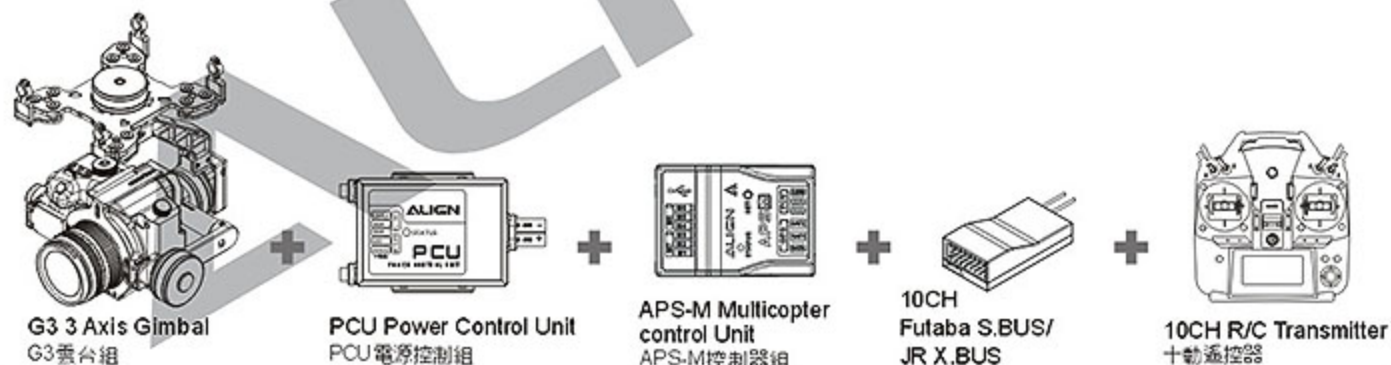
1. APS-M SINGLE RC TRANSMITTER

(Dedicated 10CH or higher RC transmitter for gimbal and multicopter)

This mode requires the use of Align APS-M. Select APS-M in the receiver selection menu. Map an appropriate dial or switch on the RC transmitter to CH9 for gimbal PAN control, and CH10 for gimbal TILT control.

1. APS-M 單一遙控器 (飛行機與雲台共用同一台10CH以上遙控器)

使用此模式需搭配亞拓APS-M使用，在接收器選單裡，請選擇APS-M選項，遙控器的CH9為控制雲台PAN動作，CH10為控制雲台TILT動作。請選擇遙控器旋鈕開關或滑桿開關對應CH9與CH10的動作控制。



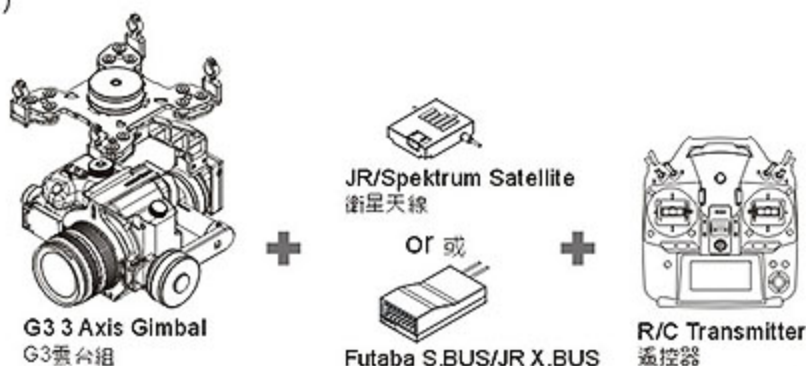
2. DUAL RC TRANSMITTER

(Dedicated 6CH or higher RC transmitter for gimbal)

Gimbal needs to be connected with a S.BUS/X.BUS receiver, or satellite receivers (please refer to page 13~14 of manual). Please create a new model in RC transmitter and set the model type to airplane.

2. 雙遙控器 (雲台獨立使用一台六動以上遙控器)

雲台需接上S.BUS/X.BUS接收機或衛星天線 (接線方式請參考說明書第13~14頁)，遙控器請開啟新模型，模型類型選擇飛機類型。



2 RC TRANSMITTER FUNCTION VERIFICATION 遙控器動作確認

Confirm each of the gimbal movement is correctly controlled by the RC transmitter. The control direction can be reversed on the RC transmitter as needed.

確認遙控器操控雲台各動作是否正確，玩家可以使用遙控器正反向功能，來調整雲台動作的正反向。



3 RC TRANSMITTER CONTROL MODES 遙控器操控模式

There are 2 control modes for each of the three axis on the gimbal: angular mode and velocity mode.

雲台3軸的動作具備兩種操控模式，角度模式與速度模式，玩家可以依使用需求選擇操控模式。



1. CONTROLS THE RETURN TO NEUTRAL MODE

RC transmitter stick movement is translated as angular command. Gimbal will remain centered when the sticks are at neutral position. When stick is moved a certain amount, gimbal will move proportionally the same amount. Larger stick movement equals to larger gimbal movement. When stick returns to neutral, gimbal will return to neutral.

1. 控制角度回中模式

遙控器搖桿控制的角度命令，搖桿在中立點時，雲台會保持在中立點水平位置，當搖桿輸出某動作量時（搖桿動作輸出越大雲台轉動角度越大），雲台動作就會轉動到該動作量的位置，且如果搖桿保持在該動作量，雲台就會保持在該位置，當搖桿回中，雲台就會回到中立點位置。

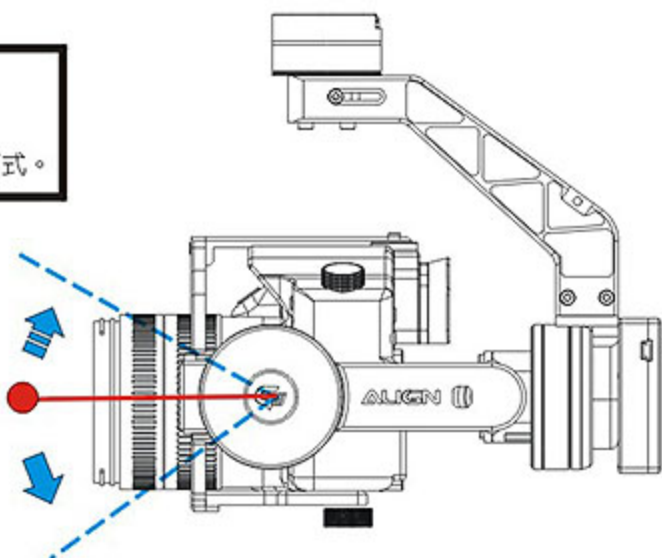
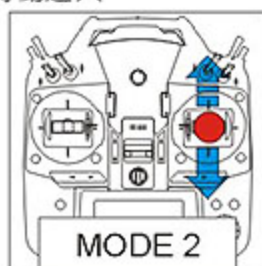
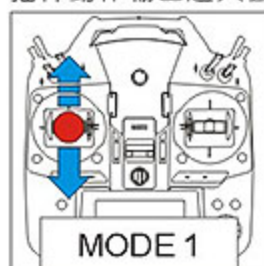


Angular mode is recommended if a dial or slider switch is used on RC transmitter.

使用遙控器旋鈕開關或滑軌開關控制雲台動作，建議使用角度模式。

The larger the stick movement, the more angle gimbal rotates.

搖桿動作輸出越大雲台轉動越大



2. CONTROLS THE ANGULAR LOCK MODE

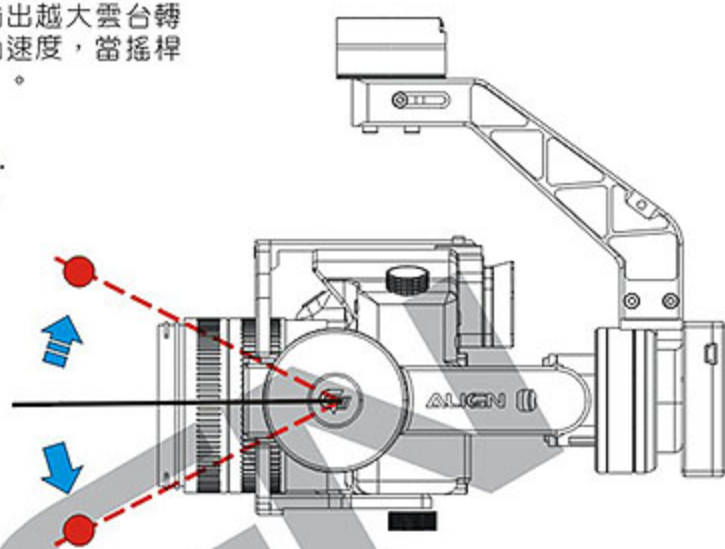
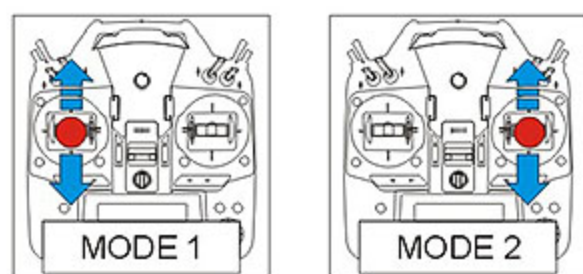
RC transmitter stick movement is translated as velocity command. When stick is at neutral position, movement command outputs zero, and gimbal remains stationary. When stick is moved a certain amount, gimbal will rotate at a speed determined by stick movement. Larger stick movement equals to faster gimbal movement. When stick returns to neutral, gimbal will remain at current position (does not return to neutral).

2. 控制角鎖定模式

遙控器搖桿控制為速度命令，搖桿在中立點時，動作為零輸出，雲台不轉動，當搖桿輸出某動作量時（搖桿動作輸出越大雲台轉動速度越快），雲台動作就為以該搖桿輸出量轉動速度，當搖桿回中立點，雲台就會停止在該轉動位置（不回中）。

The larger the stick movement, the faster gimbal rotates.
Stick returns to neutral, gimbal stops at current position.

搖桿動作輸出越大雲台轉動速度越快；
搖桿回中立點，雲台停止在該轉動位置。

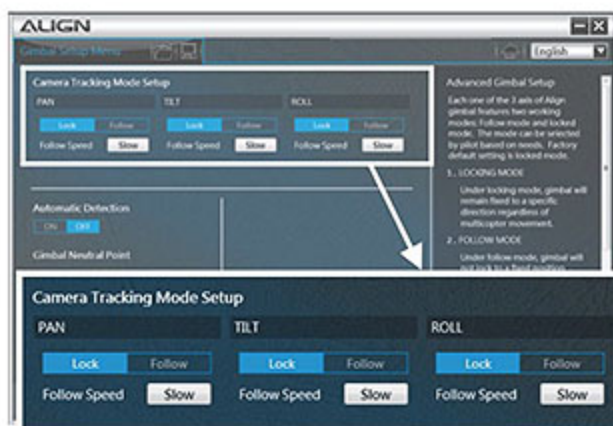


4 MULTI FUNCTION GIMBAL MODES

多功能雲台工作模式

Each one of the 3 axis of Align gimbal features two working modes: Follow mode and locked mode. The mode can be selected by pilot based on needs. Factory default setting is locked mode.

亞拓雲台3軸各具備跟隨與鎖定兩種工作模式，玩家可依需求選擇雲台的工作模式，出廠預設值為鎖定模式。



1. LOCKING MODE

Under locking mode, gimbal will remain fixed to a specific direction regardless of multicopter movement.

1. 鎖定模式

選擇鎖定模式，不管飛行機如何移動，雲台修正時頭向會鎖定在固定方向；遙控器可控制雲台動作。

2. FOLLOW MODE

Under follow mode, gimbal will not lock to a fixed position during compensation; instead it will slowly return to neutral position. For example: If PAN axis is set to follow mode and aircraft initiates a left yaw, gimbal will first compensate, and then slowly return the heading to neutral position.

The velocity in follow mode can be set to fast, medium, and slow.

2. 跟隨模式

選擇跟隨模式，修正時雲台指向會跟隨機體方向回復至原本位置。例如：PAN軸設定跟隨模式，當飛行機往左轉時，雲台PAN軸會先修正，然後頭向再慢慢跟隨左轉回中立點位置。使用跟隨模式也可以設定跟隨速度，有快、中、慢3種速度，可依使用情況調整。

5

GIMBAL CENTER POINT ADJUSTMENT

雲台中立點調整

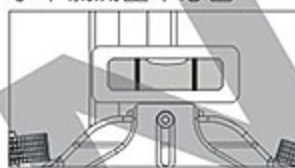
Adjust the center point of each axis on the gimbal. This adjustment can be used to trim the gimbal center point if any of the axis is off-centered.

調整雲台各軸中立點，當雲台中立點有偏移時，可以使用此功能各軸進行中立點微調。



All 3 axis on the gimbal must be leveled.

雲台三軸要保持水平。

LEVEL USAGE EXAMPLE
水平儀測量示意圖

Level
水平儀



6

TAKING PHOTOS OR VIDEOS

拍照與錄影

Align G3 gimbal features photo shutter control and video recording control capabilities. Select a 2 step spring switch on RC transmitter and map to channel 5 for photo trigger control. Please refer to shutter/video remote control function on page 13.

亞拓G3雲台具備遙控拍照與錄影功能，請使用遙控器的CH5對應拍照／錄影，選擇一個兩段回彈開關來控制。（請參考第13頁拍照／錄影遙控功能）



SPECIFICATIONS

產品規格

ALIGN

GIMBAL CONTROLLER

雲台控制器

| | |
|--|---|
| Input Voltage 輸入電壓 | DC 12V(3S) |
| Current Draw 消耗電流 | <500 mA@12V |
| Maximum Control Range 最大可控制範圍 | PAN 指向 360° ROLL 滾轉 ±30° TILT 俯仰 90° |
| Maximum Control Rotation Rate 最大可控制旋轉速度 | PAN 指向 60° /s ROLL 滾轉 60° /s TILT 俯仰 60° /s |
| Temperature Range 工作環境溫度 | -20~80°C |
| Voltage Output 接收器輸出 | 5V / 0.5A |
| Dimension 尺寸 | 59.5x35x16.4mm |

HDMI-AV (DIGITAL TO ANALOG) CONVERTER

HDMI轉AV(數位類比轉換器)

| | |
|------------------------------------|--|
| Input Voltage 輸入電壓 | DC 12V(3S) |
| Power Consumption 消耗功率 | 1800mW (12V/150mA) |
| Compatible Cameras 適用相機 | G3-GH: Panasonic GH3/GH4、Sony A6000 or equivalent. 或同等規格相機 |
| Supported Output Format 支援輸入格式 | 1800mW/ 50HZ/60HZ : 720P/ 50HZ/60HZ : 576P/ 50HZ/60HZ : 480P/ 50HZ/60HZ : 1080I/ 50HZ/60HZ : 576I/ 50HZ/60HZ : 480I/ 50HZ/60HZ : |
| Video Output Format 影像輸出格式 | NTSC(480I) |
| Signal Output Resistance 輸出信號阻抗 | 75 Ω |
| Temperature Range 工作環境溫度 | -20~65°C (-4 ~ 149°F) |
| Dimension 尺寸 | 42x32x7mm |

Camera differs between different make and models, the Mini HDMI signal wire [HEPG3002] comes as an optional extra.

因應各廠牌相機規格不同，可依需求另購 [HEPG3002] Mini HDMI訊號線搭配使用。

Q&A 1 Gimbal status LED does not light up, or gimbal does not have any movement.

Check power is connected to gimbal, and also ensure power cable between PCU and gimbal is properly connected.

雲台指示燈不亮或無動作反應。

檢查雲台是否有供電，PCU與雲台之間電源線是否有正確連接。

Q&A 2 HDMI converter does not provide AV output.

(1) Check for proper HDMI connection to camera, and all connections to HDMI converter are proper connected.

(2) Check if HDMI live output feature is enabled on camera.

雲台HDMI影像模組無AV影像輸出。

(1) 檢查HDMI接頭是否有確實接在相機上，與雲台HDMI影像模組接頭是否有確實接好。

(2) 檢查相機是否有開啓HDMI輸出功能。

Q&A 3 Recorded video are not in focus

Ensure camera is set to manual focus, and focus is set to infinity.

雲台拍攝畫面失焦模糊。

確認相機調整至手動對焦模式，且將焦距調整至無限遠。

Q&A 4 Recorded video has wavy lines (Jello Effect)

(1) Check for excessive vibration on airframe and eliminate the vibration source

(2) Use a different dampener. For lighter camera (such as Panasonic GH4) use 40° dampener; for heavier camera (such as Canon 5D) use 50° dampener.

(3) Gimbal support posts needs to be parallel, otherwise dampener position may be skewed.

(4) Check if gimbal motors are oscillating. Balanced of gimbal needs to be achieved, then the D gain and Power values decreased.

雲台拍攝畫面有水波影像。

(1) 檢查機體是否有過大震動，且排除震動源。

(2) 選擇正確雲台避震墊圈使用，較輕型相機（如Panasonic GH4）請使用40度墊圈，較重型相機（如Canon 5D）請使用50度墊圈。

(3) 雲台固定支架安裝需平行水平，不可有位置不一致導致避震墊圈歪斜情況。

(4) 檢查雲台馬達是否有抖動情況，先確認重心正確後，再降低該軸馬達D感度與Power。

Q&A 5 Recorded video has slight swaying movement

(1) Multicopter rudder gain is too low; increase the rudder gain in both Manual and Attitude modes.

(2) The D gain and Power value are too low for gimbal's PAN axis. Increase these values.

雲台拍攝畫面微幅左右晃動。

(1) 多軸飛行機尾舵感度偏低，請將手動模式與姿態模式的尾舵感度提高。

(2) 雲台PAN軸D感度與Power偏低，將感度提高。

Q&A 6 **Motor(s) exhibit high frequency oscillation after gimbal powers on.**

- (1) Ensure gimbal CG is balanced correctly.
- (2) Lower the oscillating motor's D gain and Power values. Lighter cameras requires lower values.

雲台開機後，馬達出現高頻振動。

- (1) 請先確認雲台重心是否調整正確。
- (2) 降低該震動馬達的D感度與Power，相機越輕感度要較低。

Q&A 7 **Gimbal exhibits momentary pauses while compensating.**
Adjust the gimbal heading of affecting axis, and increase the D gain and Power value for this specific axis

雲台修正時，有間斷停頓出現一格一格的現象。

調整會有該現象的雲台軸向，將該軸D感度與Power加大。

Q&A 8 **Oscillation when gimbal points the camera straight down.**

- (1) Ensure gimbal CG is balanced correctly.
- (2) Lower the D gain and Power values on gimbal's Roll axis.

將雲台相機朝下時，會出現抖動情況。

- (1) 請先確認雲台重心是否調整正確。
- (2) 將雲台ROLL軸的D感度與Power降低。



SPECIFICATIONS / 產品規格

Weight / 重量 : approx. 1180g

Dimension / 尺寸 : (Unit / 單位 :mm)

