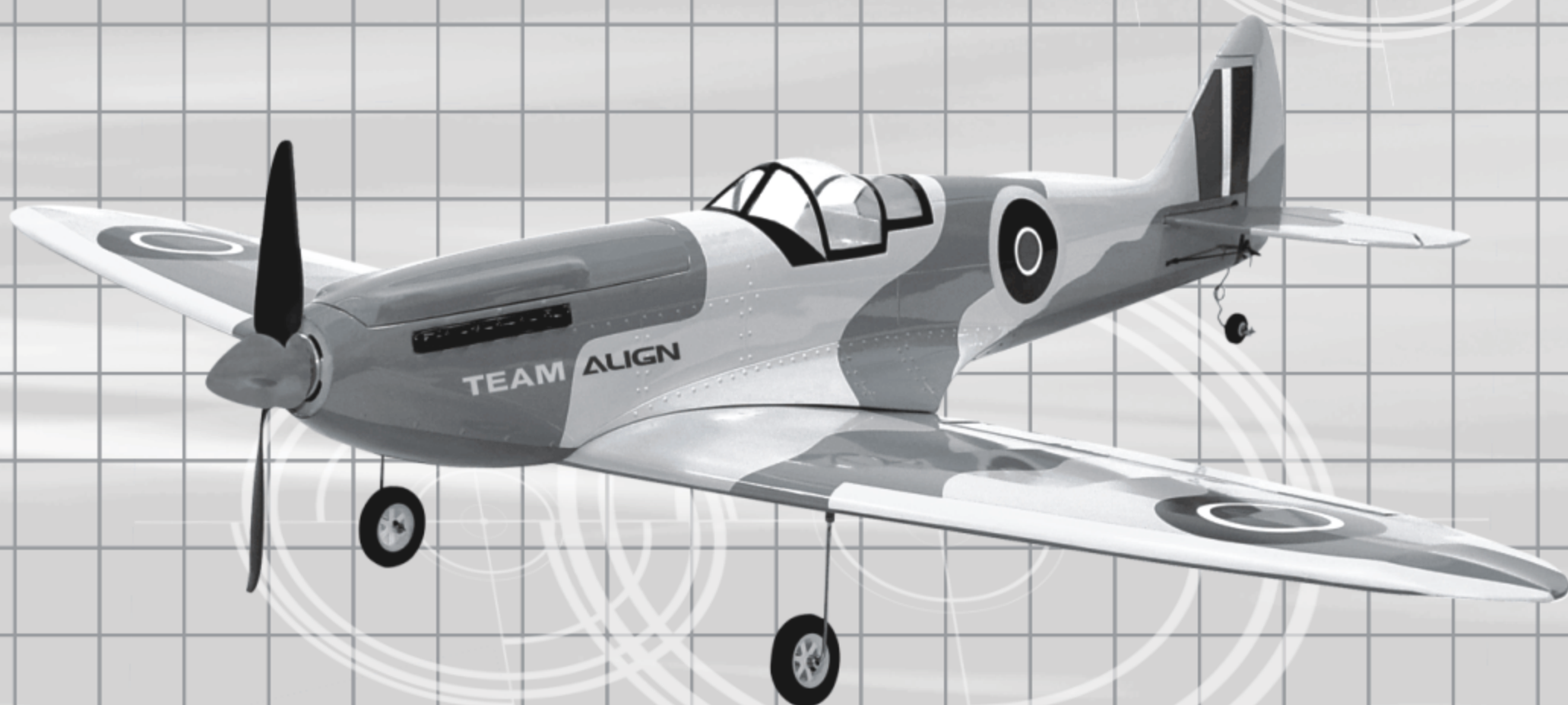


# ALIGN

# **SPITFIRE 400**

## **INSTRUCTION MANUAL**

## **使用說明書**



**Thank you for buying ALIGN products. Please read this manual carefully before assembling. 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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**Thank you for buying ALIGN Products. The SPITFIRE 400 AIRPLANE is designed as an easy to use, Please read the manual carefully before assembling the model, and follow all precautions and recommendations located within the manual. Be sure to retain the manual for future reference, routine maintenance, and tuning. The SPITFIRE 400 AIRPLANE is a new product developed by ALIGN. It provides flying stability for beginners, full aerobatic capability for advanced fliers, and unsurpassed reliability for customer support. SPITFIRE 400 AIRPLANE is your best choice.**

感謝您選購亞拓產品，為了讓您容易方便的使用 SPITFIRE 400飛機，請您詳細的閱讀完這本說明書之後再進行組裝以及操作這台飛機，同時請您妥善的保存這本說明書、作為日後進行調整以及維修的參考。SPITFIRE 400飛機是由亞拓自行研發的新產品，不論你是需求飛行穩定性的初學者或是追求性能的飛行愛好者，SPITFIRE 400飛機將是你最佳的選擇。

**THE MEANING OF SYMBOLS 標誌代表涵義**

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

**IMPORTANT NOTES 重要聲明**

**R/C models are not toys. R/C models utilize various high-tech products and technologies to provide superior performance. Improper use of this product can result in serious injury or even death. Please read this manual carefully before using and make sure to be conscious of your own personal safety and the safety of others and your environment when operating all ALIGN products.**

**Manufacturer and seller assume no liability for the operation or the use of this product.**

**Intended for use only by adults with experience flying remote control airplanes at a legal flying field. After the sale of this product we cannot maintain any control over its operation or usage.**

遙控模型並非玩具，它是結合了許多高科技產品所設計出來的休閒用品，所以商品的使用不當或不熟悉都可能會造成嚴重傷害甚至死亡，使用之前請務必詳讀本說明書，勿輕忽並注意自身安全。注意！任何遙控模型的使用，製造商和經銷商是無法對使用者於零件使用的損耗異常或組裝不當所發生之意外負任何責任，本產品是提供給有操作過模型飛機經驗的成人或有相當技術的人員在旁指導，於當地合法遙控飛行場飛行，以確保安全無虞下操作使用，產品售出後本公司將不負任何操作和使用控制上的任何性能與安全責任。

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

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。

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

 <p><b>Transmitter(5-Channel or more)</b> 發射機(五動以上)</p>	 <p><b>Receiver(5-Channel or more)</b> 接收機(五動以上)</p>	 <p><b>9g Servo x5pcs</b> 9g伺服器x5</p>
 <p><b>Li-Po Battery 11.1V(1800mAh or more)</b> Li-Po電池 11.1V(1800mAh以上)</p>	 <p><b>Brushless motor(Approx. 1400KV)</b> 無刷馬達(約1400KV)</p>	 <p><b>Brushless ESC(20A or more)</b> 無刷調速器(20A以上)</p>
 <p><b>Y type servo harness x1</b> 伺服Y型連接線x1</p>	 <p><b>Servo extension wire x2</b> 伺服延長線x2</p>	 <p><b>Propeller</b> 螺旋槳 8x5.5"</p>



**Caution for the use of batteries** 注意電池的使用

Please note the polarity of the battery. Avoid reverse polarity and shorting positive with negative terminals. It is critical not to over charge or over discharge lithium polymer batteries. Cells discharge voltage should not lower than 3.0v/cell. Cell temperature should also be monitored to avoid overheating. When cells are used, the amp draw should not exceed the maximum ratings of the cells. Cells will need to cool down after use before they can be recharged. Damages to the cell (such as swelling, fire, etc) may result if manufacturer's instructions are not followed. Lipo batteries should not exhibit rise in temperature during charge process. Should drastic temperature increase is detected during the charge process, the cells may be damaged and will need to be disposed properly. Please use only lipo compatible chargers to charge lipo batteries. Depleted batteries should be disposed at designated location to avoid environmental contamination.

安裝電池時請注意電池的極性切勿裝反，避免發生短路現象。  
 鋰聚合物電池使用時嚴禁過充、過放(截止電壓低於3.0V/cell)以及溫度過高產生，放電使用前確認已將電池充飽，使用時注意負載電流不可超過該電池所能承受的範圍，使用後的電池會有發熱的現象，請待電池冷卻檢查後，再進行充電。如未依原廠規定使用，都可能造成電池損壞、膨脹或意外危險發生。  
 正常鋰聚電池於充電時並不會發熱，所以充電中的電池有發熱情形時，表示該電池已損壞，請停止對該電池充電。  
 請使用鋰聚電池專用的充電器進行充電。  
 廢棄的電池請勿隨意丟棄，需依照環保單位的指示做好回收動作，以避免環境污染。



**Charging environment requirements** 充電環境的選擇

For safety, charging location should subject to proper airflow and within visual range. Avoid flammable material in the charger's vicinity, and keep out of reach of children. Do not charge batteries unattended. Stop the charging process should you need to attend to other tasks and unable to monitor the charger.

為確保安全，充電時請選擇通風良好安全的環境，並遠離熱源及易燃物品，務必在視線範圍內進行充電；若需離開時應將電池取出，也避開孩童可以拿取到的範圍，以免產生不可預期的危險及損失。



**Charger Storage** 充電器的收藏及保護

Care should be taken not to modify, damage, pull with excess force, twist, or tie knots with the wires on the charger. In addition, do not place heavy objects on the charger. To avoid electrocution or short, wires and plugs which are damaged should not be used.

電線的保存上請小心，請盡量避免自行加工、破壞、拉扯、任意扭曲或扎成束狀，還有，不要在電線上放置重物、剪破，如果電池及充電插頭有破損時，請勿使用，避免觸電、短路、損壞危險的產生。



**KEEP AWAY FROM HEAT** 遠離熱源

R/C models are made up various forms of plastic and wooden. Those are 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 PVC、木質或聚乙烯、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。



**LOCATE AN APPROPRIATE LOCATION** 遠離障礙物及人群

R/C models fly at high speed, thus posing a certain degree of potential danger. Choose an legal flying field consisting of flat, smooth ground without obstacles. Do not fly near buildings, high voltage cables, or trees to ensure the safety of yourself, others and your model. For the first practice, please choose a legal flying field and can use a training skid to fly for reducing the damage. Do not fly your model in inclement weather, such as rain, wind, snow or darkness.

遙控模型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。必須注意周邊有沒有人、高樓、建築物、高壓電線、樹木等等，避免操控的不當造成自己與他人財產的損壞。初次練習時，務必選擇在空曠合法專屬飛行場地，這對飛行失誤所造成的損傷將會大幅的降低。請勿在下雨、打雷等惡劣天候下操作，以確保本身及機體的安全。



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

Care should be taken to avoid contact with RC model's rotating parts, such as aircraft's propellers, car's tires, or servos.

當遙控產品在運轉時(螺旋槳、車輪、伺服機)，切勿觸摸並遠離任何物件，以避免造成危險及損壞。



**PREVENT MOISTURE** 遠離潮濕環境

R/C models are composed of many precision electrical components. It is critical to keep the model and associated equipment away from moisture and other contaminants. The introduction or exposure to water or moisture in any form can cause the model to malfunction resulting in loss of use, or a crash. Do not operate or expose to rain or moisture.

遙控飛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

Please use the replacement of parts on the manual to ensure the safety of instructors. This product is for R/C model, so do not use for other purpose.

請勿自行改造加工，任何的升級改裝或維修，請使用亞拓產品目錄中的零件，以確保結構的安全。請確認於產品限界內操作，請勿過載使用，並勿用於安全、法令外其它非法用途。

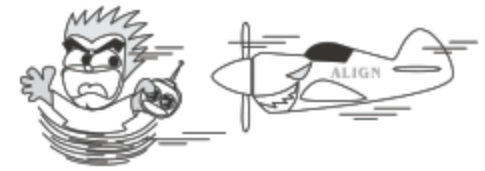




### OBtain the assistance of an experienced pilot 避免獨自操控

Before turning on your model and transmitter, check to make sure no one else is operating on the same frequency. Frequency interference can cause your model, or other models to tuning, trimming, and actual first flight. (Recommend you to practice with computer-based flight simulator.)

至飛行場飛行前，需確認是否有相同頻率的同好正進行飛行，因為開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。(動線電腦模擬器及老手指導是入門必要的選擇)



### SAFE OPERATION 安全操作

Operate this unit within your ability. Do not fly under tired condition and improper operation may cause in danger.

請於自己能力內及需要一定技術範圍內操作這台直昇機，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。



## 3.SAFETY CHECK BEFORE FLYING 飛行前安全檢查重要事項

### CAREFULLY INSPECT BEFORE REAL FLIGHT 實機飛行前請嚴格執行飛行前檢查義務

- ☆Before flying, please check to make sure no one else is operating on the same frequency for the safety.
- ☆Before flight, please check if the batteries of transmitter and airplane are enough for the flight.
- ☆Before turn on the transmitter, please check if the throttle stick is in the lowest position.
- ☆When turn off the unit, please follow the power on/off procedure. Power ON- Please turn on the transmitter first, and then turn on airplane. Power OFF- Please turn off the airplane first and then turn off the transmitter. Improper procedure may cause out of control, so please to have this correct habit.
- ☆Before operation, check every movement of the model is smooth and directions are correct. Carefully inspect servos for interference and broken gear.
- ☆Check for missing or loose screws and nuts. See if there is any cracked and incomplete assembly of parts. Carefully check main rotor blades, rotor holders and adapters. Broken, bent and premature failures of parts possibly cause resulting in a dangerous situation.
- ☆Check all ball links and servo horns to avoid excess play and replace as needed. Failure to do so will result in poor flight stability.
- ☆Check the battery and power plug are fastened. Vibration and violent flight may cause the plug loose and result out of control.
- ☆CG check: The location of the CG will determine the flying characteristics of an airplane. To check the proper balance of the airplane, hold the airplane with finger at the CG location of each wing, and observe the plane's balance. The balance can be changed by shifting battery location inside the airplane's fuselage, or adding weights to either the tail or nose of the airplane.

★每次飛行前應先確認所使用的頻率是否會干擾他人，以確保你自身與他人的安全。

★每次飛行前確定您發射機與飛機電池的電量是在足夠飛行的狀態。

★開機前確認油門搖桿是否位於最低點。

★務必遵守電源開關機的程序，開機時應先開啓發射機後，再開啓飛機電源；關機時應先關閉飛機後，再關閉發射機電源。不正確的開關程序可能會造成失控的現象，影響自身與他人的安全，請養成正確的習慣。

★開機前請先確定飛機的各個動作是否順暢，及方向是否正確，並檢查伺服器的動作是否有干涉或崩齒的情形，使用故障的伺服器將導致不可預期的危險。

★飛行前確認沒有缺少或鬆脫的螺絲與螺帽，確認沒有組裝不完整或損毀的零件，仔細檢查螺旋槳是否有確實固定或損壞，轉接頭是否彎曲變形。損壞或組裝不完整的零件不僅影響飛行，更會造成不可預期的危險。注意：對損耗、有裂痕零件更新及定期保養檢查具有相當的重要性。

★檢查所有的連桿與舵角片是否有鬆脫的情形，否則將造成飛機無法操控的危險。

★確認電池及電源接頭是否固定牢靠，飛行中的震動或激烈的飛行，可能造成電源接頭鬆脫而發生失控的危險。

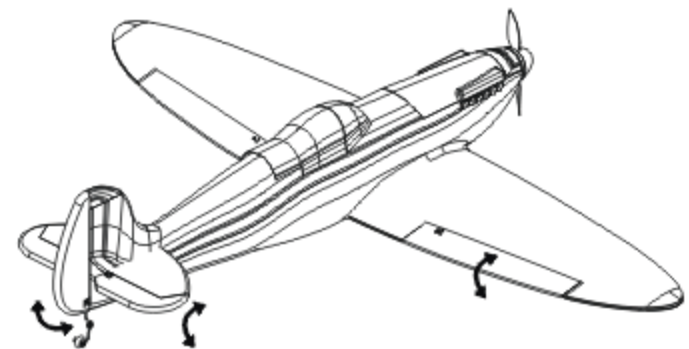
★重心檢查，重心位置決定了一架飛機的飛行特性，用手指頂在主翼的兩端重心處，檢查機身前後是否水平，如果有偏差可以藉由調整電池的位置或使用配重零件來修正重心。

### Radio Range Check 接收距離測試

Radio range check is an important preflight check to ensure proper function of the radio. First turn on the transmitter and check to ensure battery is within safe range. With the transmitter antenna retracted, turn on the receiver power inside the airplane. While wiggling the transmitter sticks, walk 10M from the airplane and observe any unusual movement which may indicate interference. Range check is complete if the plane does not exhibit any abnormal movements up to the 10M mark.

打開遙控器電源開關，先檢查電力是否充足；接著將飛機也接上電源後暫時放在地上，先將遙控器天線收起來，之後距離飛機約10公尺的地方撥動遙控器搖桿，觀察看看飛機是不是有正常反應，如果反應都正確，那代表遙控距離沒有問題，接著就可以安心的使用。

The antenna is retracted  
天線完全收起



Wiggling the transmitter sticks for observing any unusual movement?  
搖動搖桿確認動作是否確實?

**Training practice 教飛練習**

Some radio transmitters come equipped with trainer port. With the help of an experienced pilot, beginners can utilize this function during the training process to avoid unnecessary crashes. A pair of similar transmitter from same make is required. Transmitter A will be transmitting, which is used by the trainer. Transmitter B will not be powered up (not transmitting), which is used by the trainee.

With the two transmitter connected by a training cable, transmitter A is turned on to verify aircraft function, take off and land, just as during normal flight sessions. After the aircraft is airborne, the trainer can give control to trainee by holding the training switch (usually a momentary switch). In case the trainee gets into trouble with the aircraft, the trainer can regain control simply by releasing the training switch.

部分遙控器具有教練連接埠，利用此功能可藉由有經驗的老手來帶領飛行，避免不熟悉而造成損壞或意外。首先必須準備兩支相同的發射器，例如A遙控器為主要發射器，具有發射電波及操控的功能，B遙控器則給初學者使用，發射器本身不需要開啓電源。  
使用方式很簡單，使用教練連接線將A、B兩支發射機連線，A發射器依照正常程序開啓電源、飛機電源，檢查飛機各項動作無誤之後，將左方教練開關往自己方向推，此時控制權會轉換到B遙控器，但是依舊是由A遙控器發射電波，所以在教練連線的過程裡，連接線要確實連接不可鬆動。  
教練開關是使用彈跳開關，平時不開啓時會固定在主操控權位置，當開啓時會將搖桿的控制權轉移到B發射器，當放開開關後又會自動彈回主操控權。  
當正常使用時，若您所帶領的初學者在飛行上出現危險動作或操控錯誤時，趕緊將操控權奪回，來避免意外的發生。



**One by one online teaching is the best to practice and simulate flying condition.**

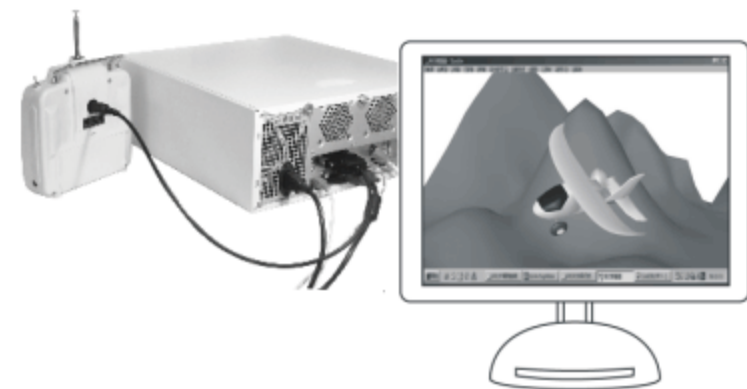
一對一連線教學是最可以體驗現場狀況的應變及練習。



**Flight Simulator Practice 模擬練習**

Computer RC flight simulators provide a safe way to learn the skills required to fly RC aircraft. Currently simulators such as FMS, Realflight G2, G3, XTR, etc, are confirmed to function with Align's products. Due to the different interface which connects the transmitter to computer, please follow the simulator's instruction for proper connectivity.

目前確定可使用的電腦模擬器有FMS、RealFlight G2、G3、XTR等，但這些都必須透過模擬介面才可以使用，而每一家的模擬軟體使用的介面都不一樣，必須依照您另外購買的模擬軟體來決定設定方式，但是基本連線方式都是相同的，僅需要將專屬介面的傳輸線連接至發射器背面的教練連接埠即可，其餘的設定請參考模擬軟體所提供的設定資訊。



This instruction manual is an assembling illustration for SPITFIRE 400 AIRPLANE. Some power and electric equipment are option parts:

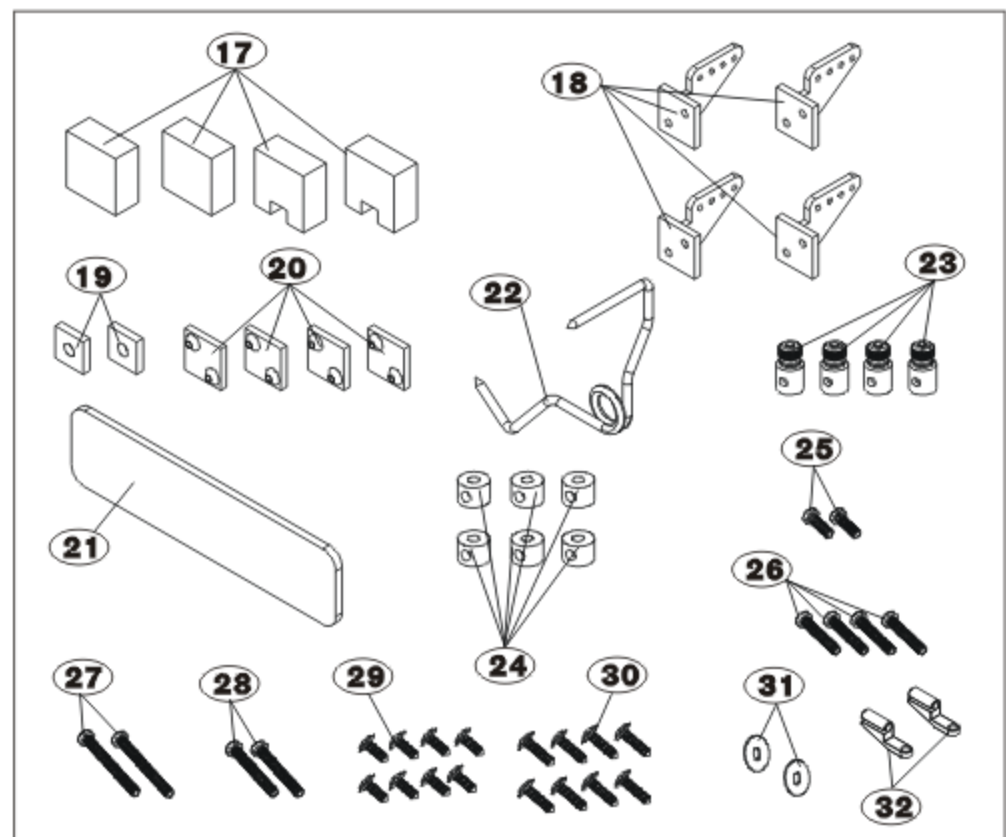
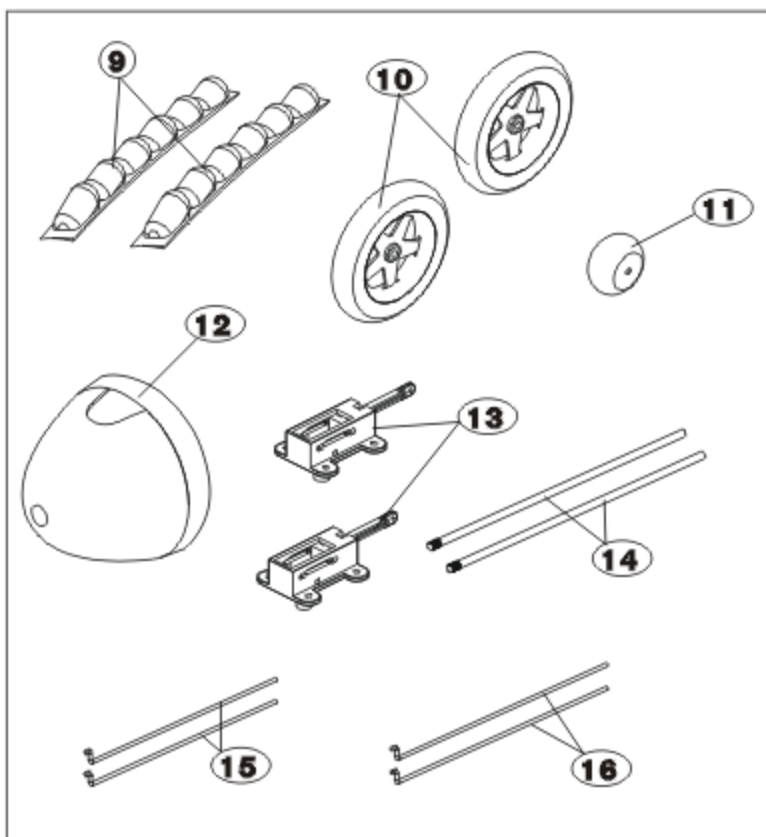
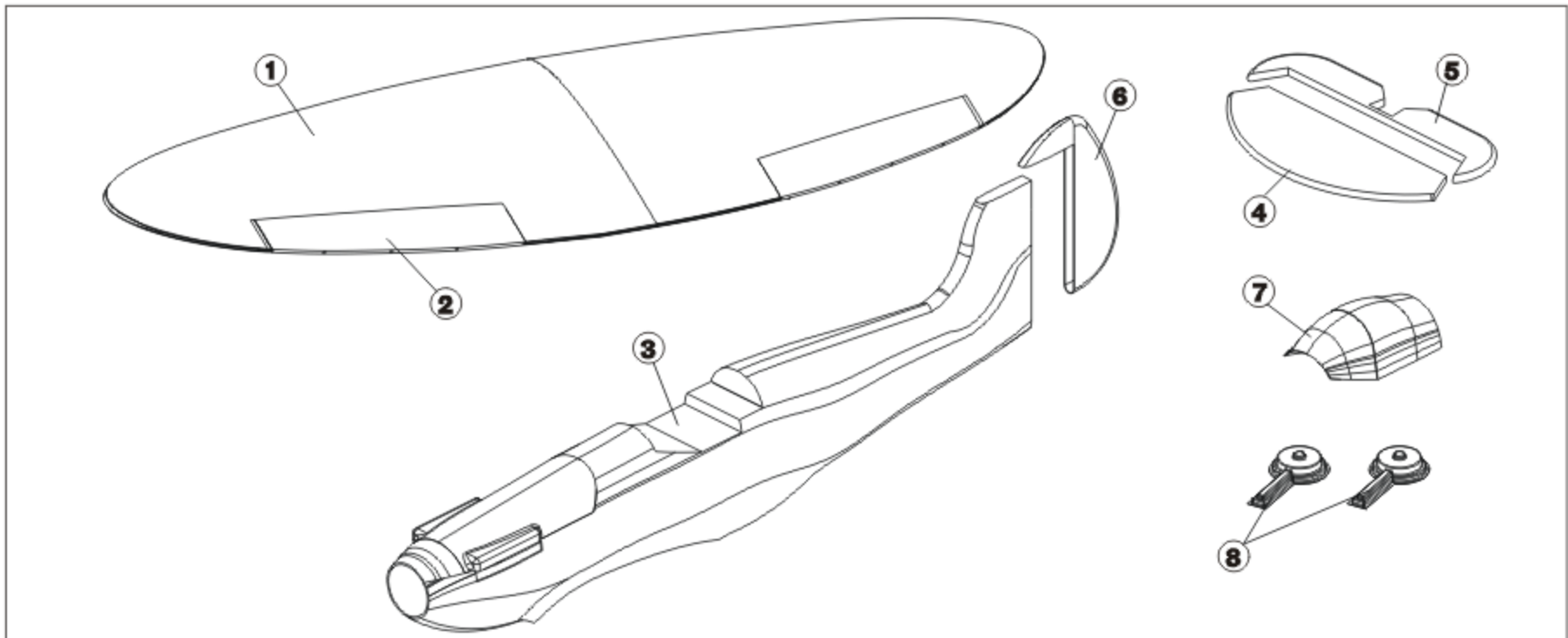
1. Check for all the parts in the list come with the manual.
2. Some basic tools are needed to help the assembly.

本說明書以SPITFIRE 400空機組作示範，其中動力及電子相關配件皆屬選購配備：

1. 組裝之前請先確認內容物是否缺失，仔細詳對後方可進行組裝。
2. 組裝過程裡需要一些簡單的工具協助組裝。

**ADDITIONAL TOOLS REQUIRED FOR ASSEMBLY 自備工具**

 <b>Scissors</b> 剪刀	 <b>Cutter Knife</b> 刀子	 <b>Diagonal Cutting Pliers</b> 斜口鉗	 <b>Needle Nose Pliers</b> 尖嘴鉗
 <b>AB Glue</b> AB膠	 <b>CA</b> 瞬間膠	 <b>Hexagon Screw Driver</b> 六角螺絲起子 2.5mm/1.5mm	 <b>Phillips Screw Driver</b> 十字螺絲起子 #1 (φ3.0mm)



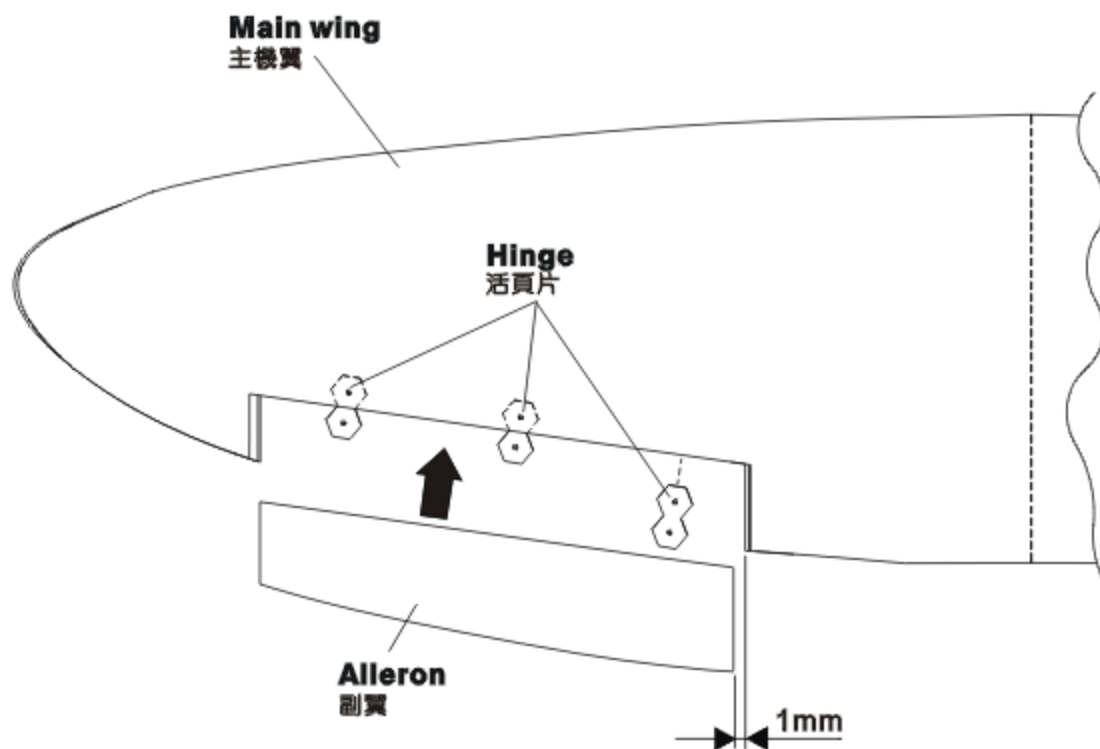
- 1. Main wing x1
- 2. Aileron x2
- 3. Fuselage x1
- 4. Horizontal stabilizer x1
- 5. Elevator x1
- 6. Rudder x1
- 7. Canopy x1
- 8. Wheel pants x2
- 9. Pipe x2
- 10. Front wheel  $\phi$  47mm x2
- 11. Rear wheel  $\phi$  20mm x2
- 12. Spinner (Including M5 propeller adapter) x1
- 13. Retractable landing skid x2
- 14. Skid pipe  $\phi$  25mm x2
- 15. Aileron linkage rod  $\phi$  1.2x120mm x2
- 16. Linkage rod of retractable landing skid  $\phi$  1.2x155mm x2
- 17. Servo mounting block x4
- 18. Helm support x4
- 19. Fixing piece of linkage tube x2
- 20. Helm support mount x4
- 21. Main wing pressure plate x1
- 22. Rear landing skid  $\phi$  1.8mm x1
- 23. Linkage rod controller x4
- 24. Wheel stop x6

- 25. Screw M2x8mm x3
- 26. Screw M2x12mm x6
- 27. Screw M2x16mm x2
- 28. Screw M2x20mm x3
- 29. Screw T2.3x6mm x6
- 30. Screw T2x10mm x8
- 31. Washer  $\phi$  3x $\phi$  8x0.8mm x2
- 32. Linkage rod lock x2

- 1. 主機翼 X1
- 2. 副翼 X2
- 3. 機身 X1
- 4. 水平尾翼 X1
- 5. 升降舵 X1
- 6. 方向舵 X1
- 7. 機艙罩 X1
- 8. 機輪罩 X2
- 9. 節條 X2
- 10. 前機輪  $\phi$ 47mm x2
- 11. 後機輪  $\phi$ 20mm x1
- 12. 機鼻罩 (含M5螺旋槳轉接座) x1
- 13. 收輪架 X2
- 14. 前機輪桿  $\phi$ 2.5mm x2
- 15. 副翼連桿  $\phi$ 1.2x120mm x2
- 16. 收輪架連桿  $\phi$ 1.2x155mm x2
- 17. 伺服器固定塊 X4
- 18. 舵角片x4
- 19. 連桿套管固定片x2
- 20. 舵角片下座x4
- 21. 主翼壓板x1
- 22. 後機輪架  $\phi$ 1.8mm x1
- 23. 連桿調節器x4
- 24. 輪擋 X6
- 25. 圓頭十字螺絲 M2x8mm x2
- 26. 圓頭十字螺絲 M2x12mm x4
- 27. 圓頭十字螺絲 M2x20mm x2
- 28. 圓頭十字螺絲 M3x16mm x2
- 29. 華司面鐵板螺絲 T2.3x6mm x8
- 30. 華司面鐵板螺絲 T2x10mm x8
- 31. 華司  $\phi$ 3x $\phi$ 8x0.8mm x2
- 32. 連桿壓扣 X2

Main wing/Aileron assembling 主機翼/副翼組裝

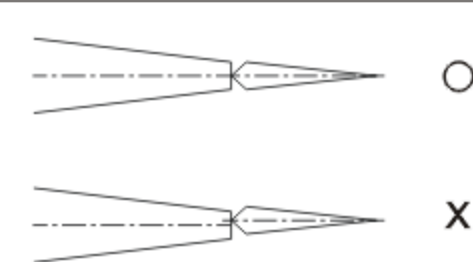
1-1



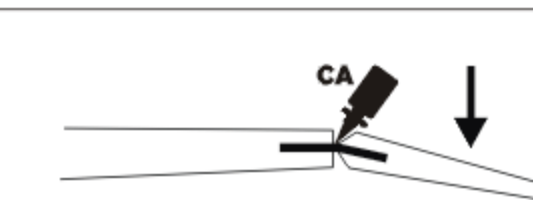
Insert half sides of three hinges into main wing and then insert the other half sides into the aileron for connecting main wing and the aileron.

將3片活頁片一半插入主翼，另一半插入副翼，使主翼和副翼結合。

CAUTION 注意

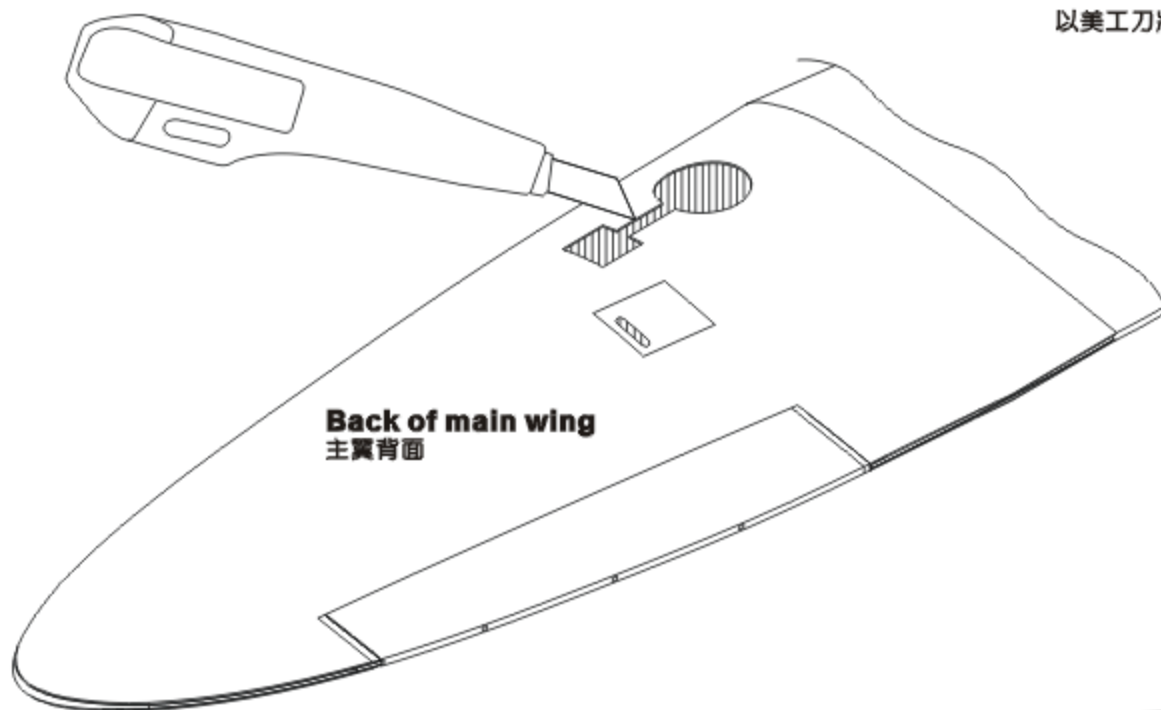


When attaching the hinges to the main wing and the aileron, please make sure to the hinge placed in the central position of both sides.  
主機翼與副翼結合須位於兩者的中心線上。



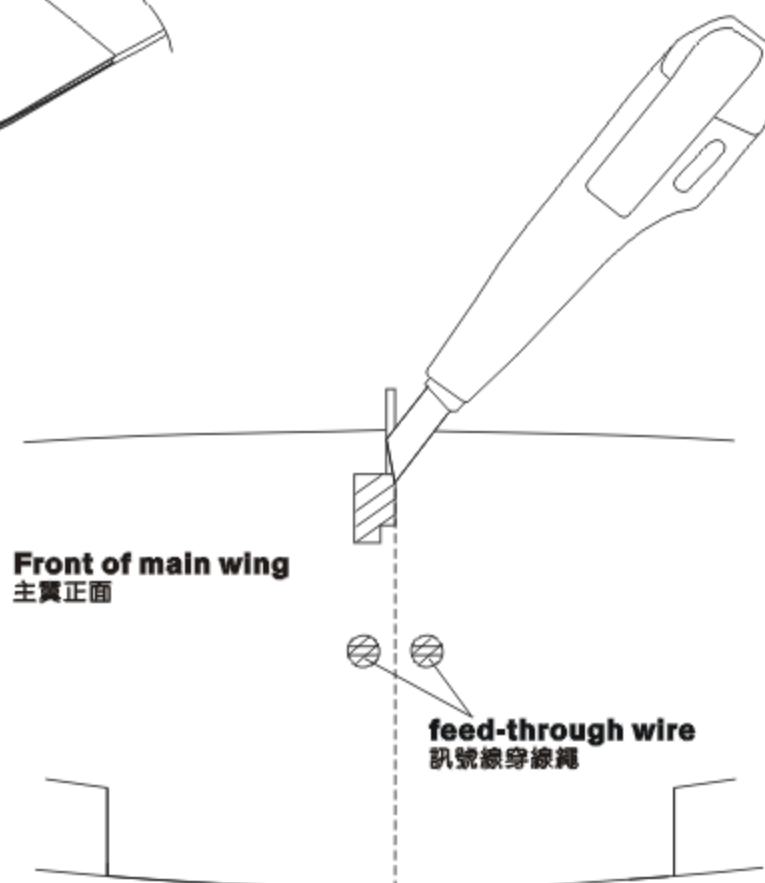
Then fold down the aileron and apply a drop of CA glue on both sides of hinges for fixing.  
將副翼向下翻折，並以CA膠於活頁片兩面各滴一滴即可固定。

1-2



Carefully use a cutter knife to cut the coatings of the reserved landing skid hole and servo hole on the back of the main wing.

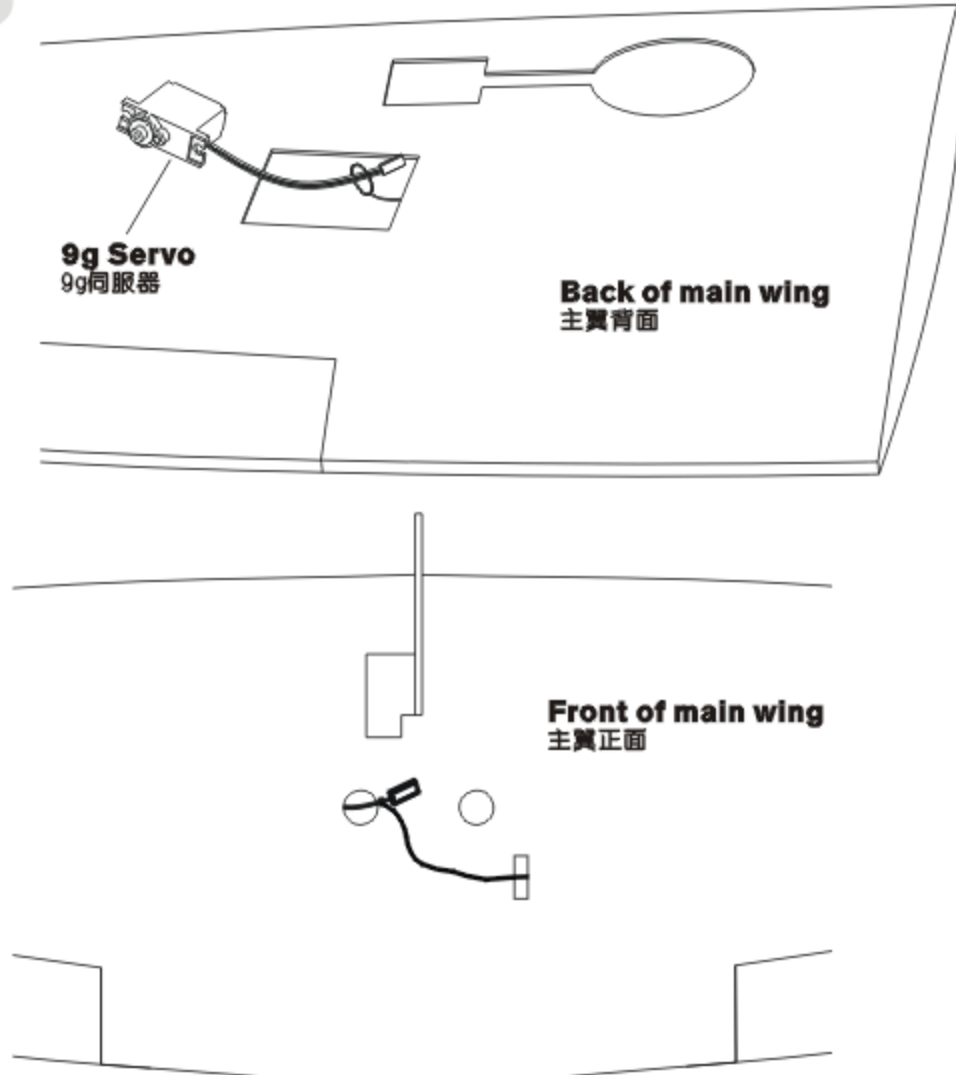
以美工刀將主機翼背面預留機輪架孔與伺服器孔的披覆膜小心割開。



Carefully use a cutter knife to cut the coatings of the reserved servo mounting hole and signal wire hole on the front of the main wing.

以美工刀將主機翼正面預留伺服器孔與訊號線出線孔的披覆膜小心割開。

1-3



Remove the servo mounting plate of aileron and use the reserved feed-through wire inside of the fuselage to tie the signal wire of 9g servo for helping it across to the other exit.

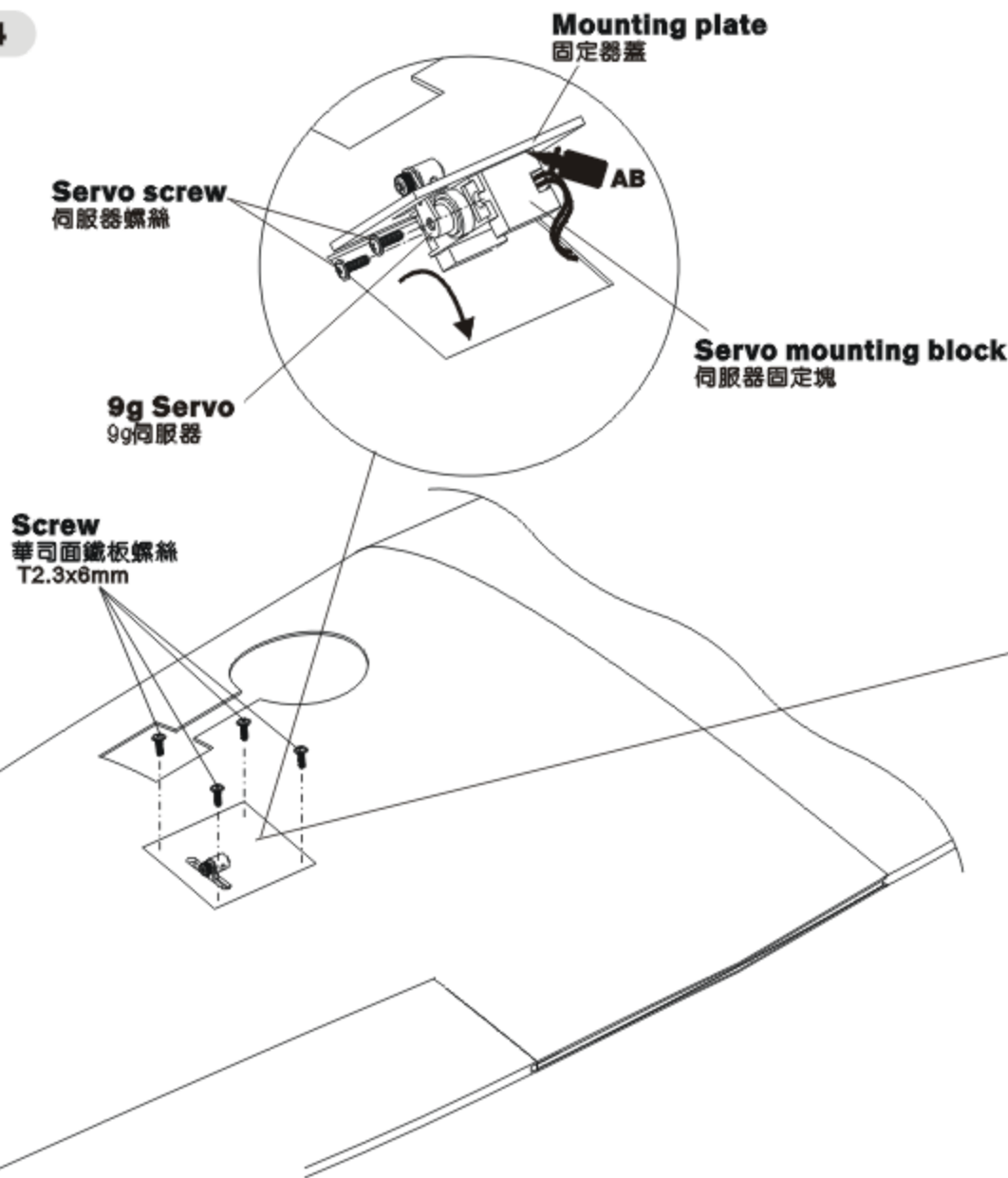
**NOTE: If the signal wire is not enough, please add one more servo extension wire.**

取下副翼伺服器蓋，以預留在機翼內部的穿線繩綁住 9g 伺服器的訊號線，便於訊號線穿另一側出口。  
註：若訊號線的長度不足時，須另加一條伺服器延長線。

Use the feed-through wire to help the signal wire across to the upper hole from the wing.

藉由穿線繩的協助，可將訊號線輕鬆的穿出機翼上方的出線孔。

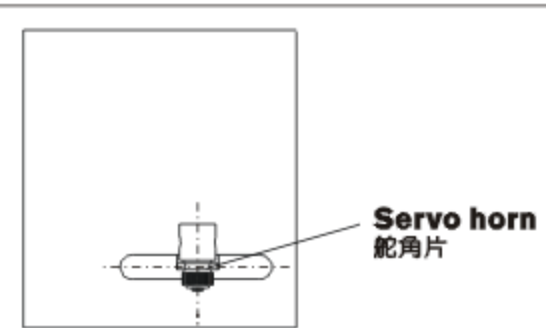
1-4



Fix the servo mounting block on the servo mounting plate with AB glue and fix the servo on the block with screws as left illustration.

依照左圖所標示的位置先將伺服器固定塊以AB膠固定於伺服器蓋，接著將伺服器鎖附在固定塊上。

CAUTION 注意

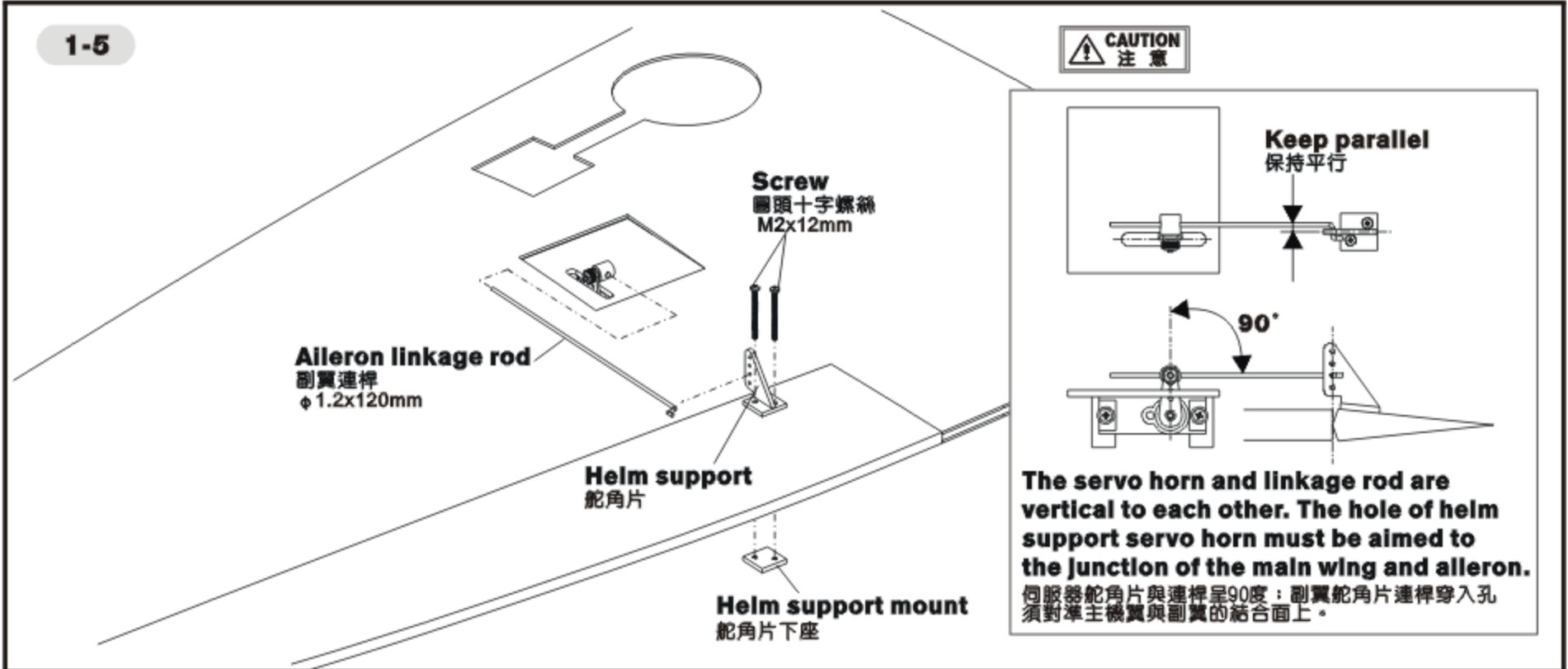


When fixing the servo, the servo horn must be placed in the center of ellipse and then fix the linkage rod controller on.

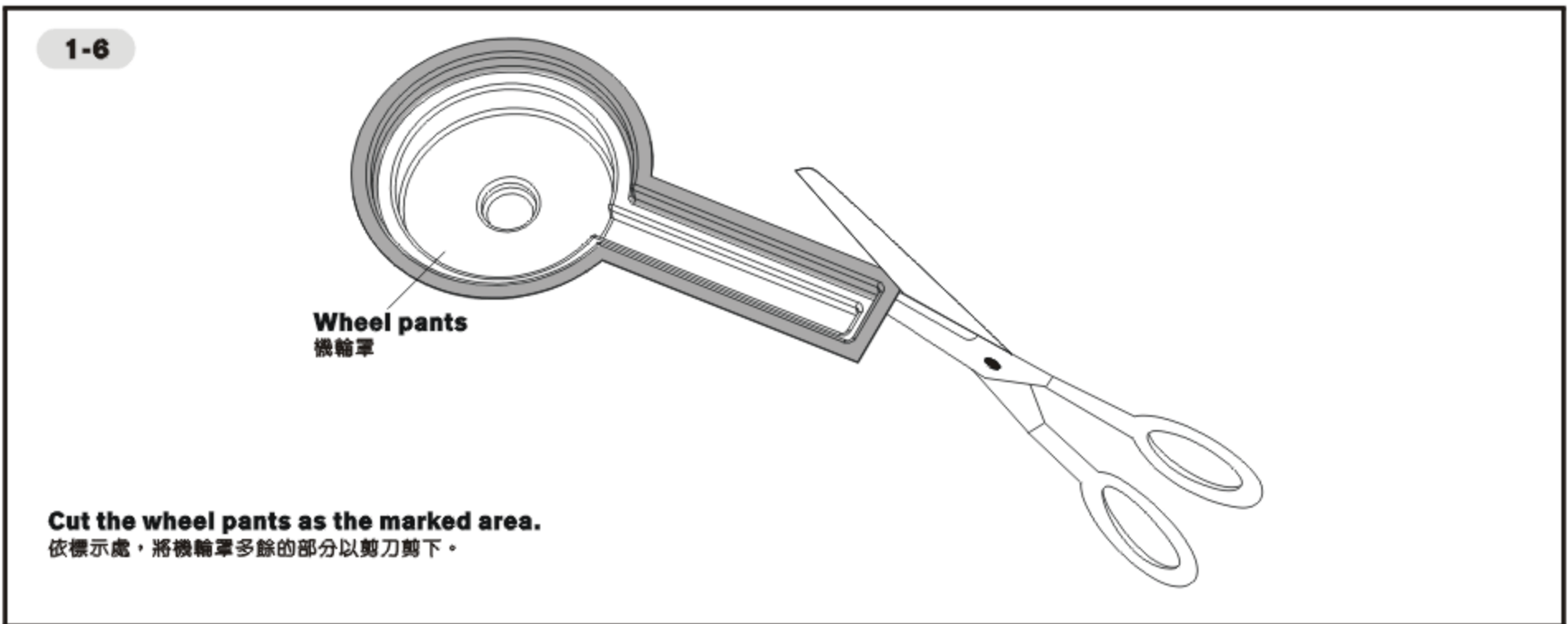
固定伺服器時，須使舵角片位於橢圓孔的中心位置，接著鎖上連桿調節器。



1-5



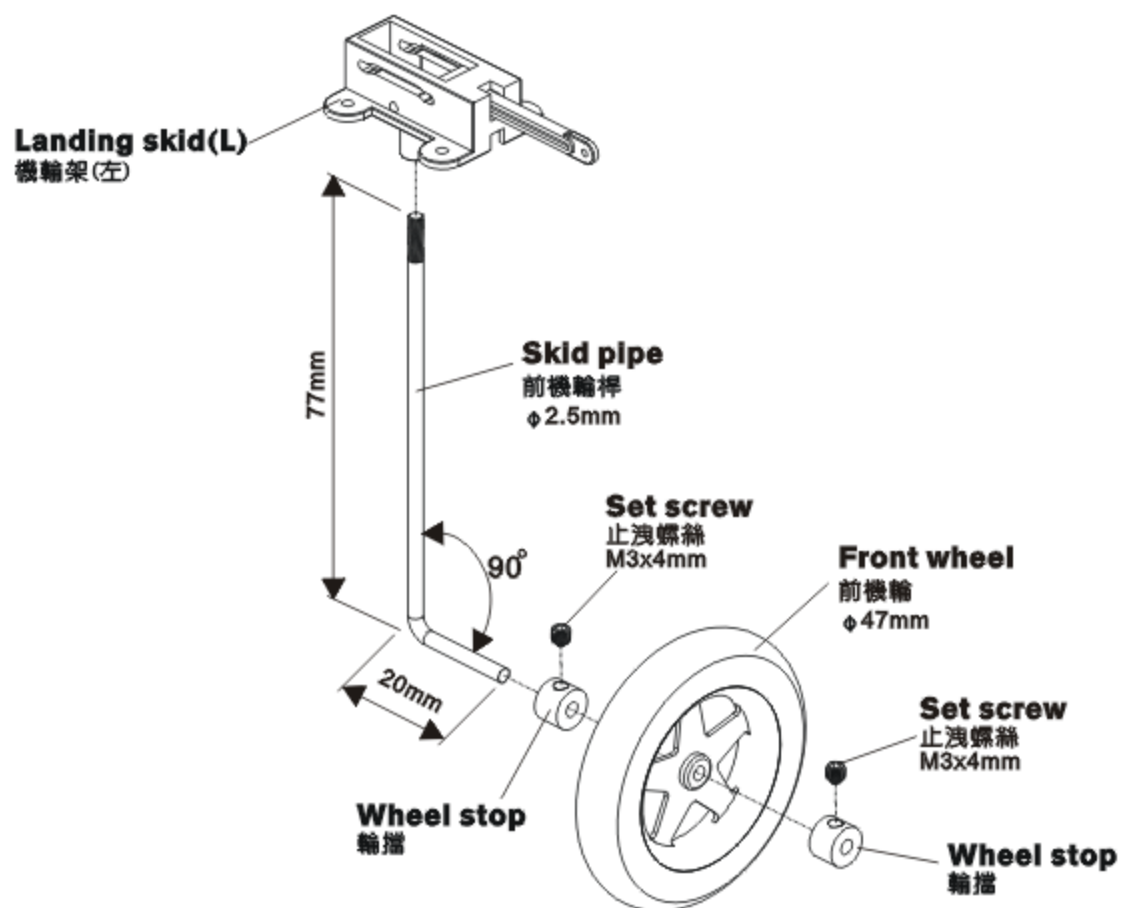
1-6



1-7

**Bend the skid pipe at a 90-degree angle as the specification illustrated and cut the excess length. Then assemble the left / right landing skid sets as illustration.**

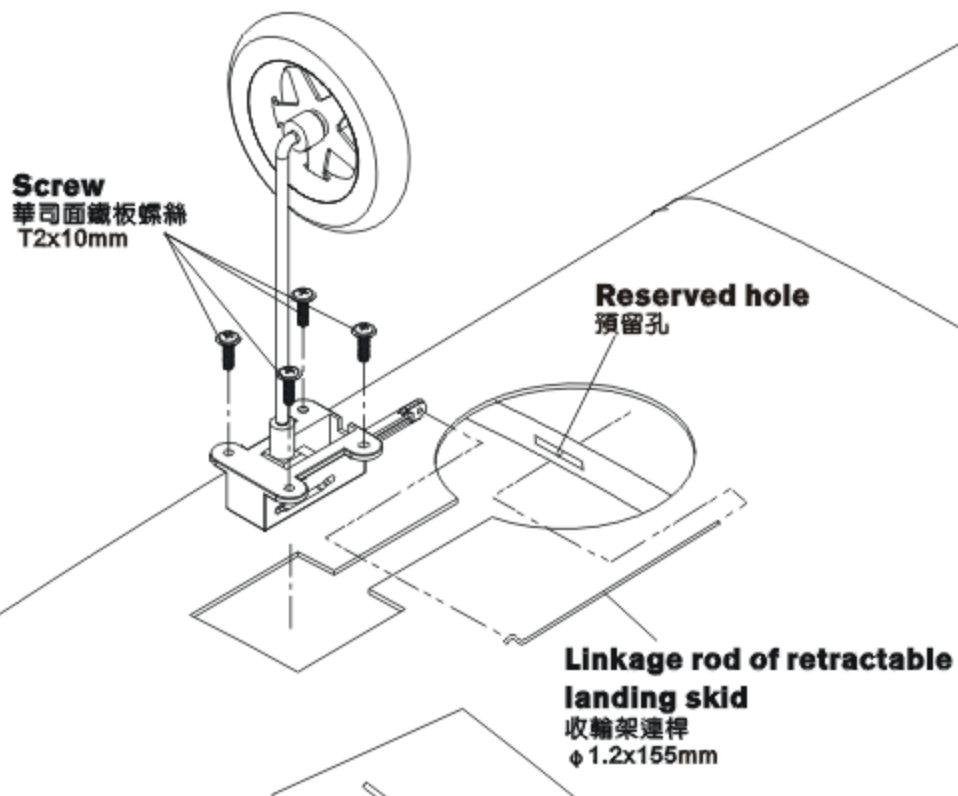
依圖標示尺寸，將前機輪桿折彎90度，並以斜口鉗將多餘的長度剪掉，接著依圖將左右機輪架組相立。



1-8

First put  $\phi 1.2 \times 155\text{mm}$  linkage rod into retractable landing skid. Then put the other side of the linkage rod into the reserved hole on the main wing. After that, fix the landing skid on the main wing with screws.

先將  $\phi 1.2 \times 155\text{mm}$  收輪架連桿一端穿入收輪架，另一端穿入機翼內的預留孔，接著把機輪架組鎖附在機翼上。

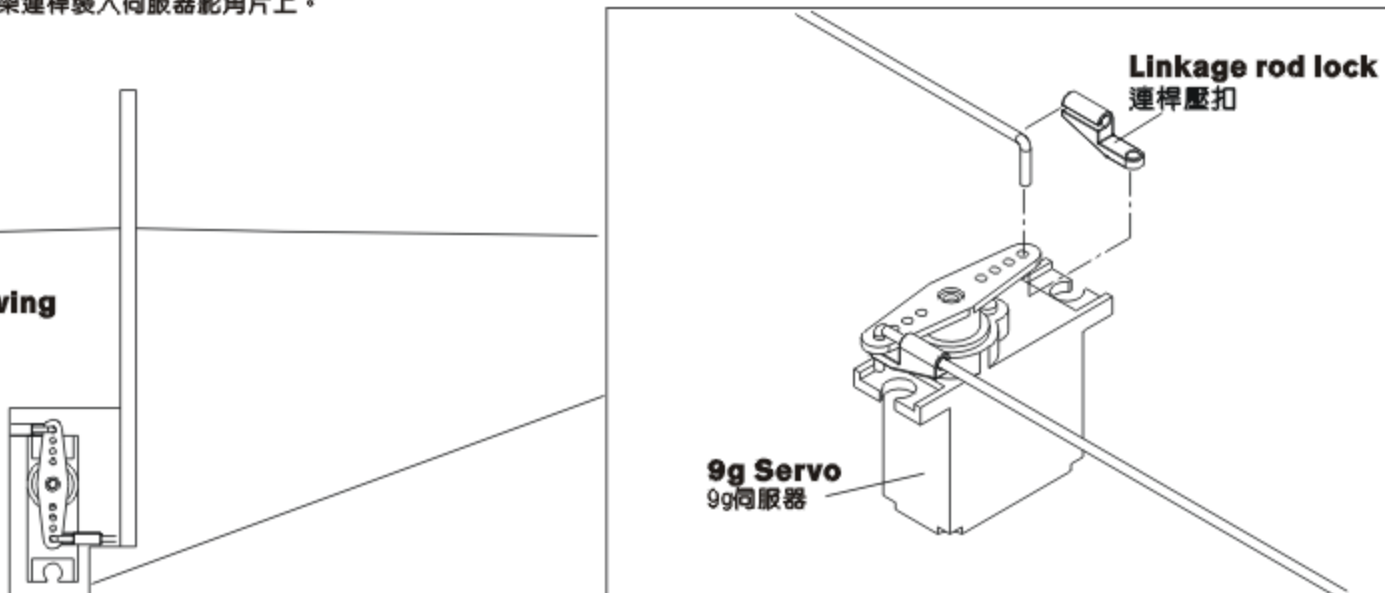


1-9

Assemble a servo for the retractable landing skid and insert the linkage rod of retractable landing skid into the servo horn.

安裝收輪架伺服器，並將收輪架連桿裝入伺服器舵角片上。

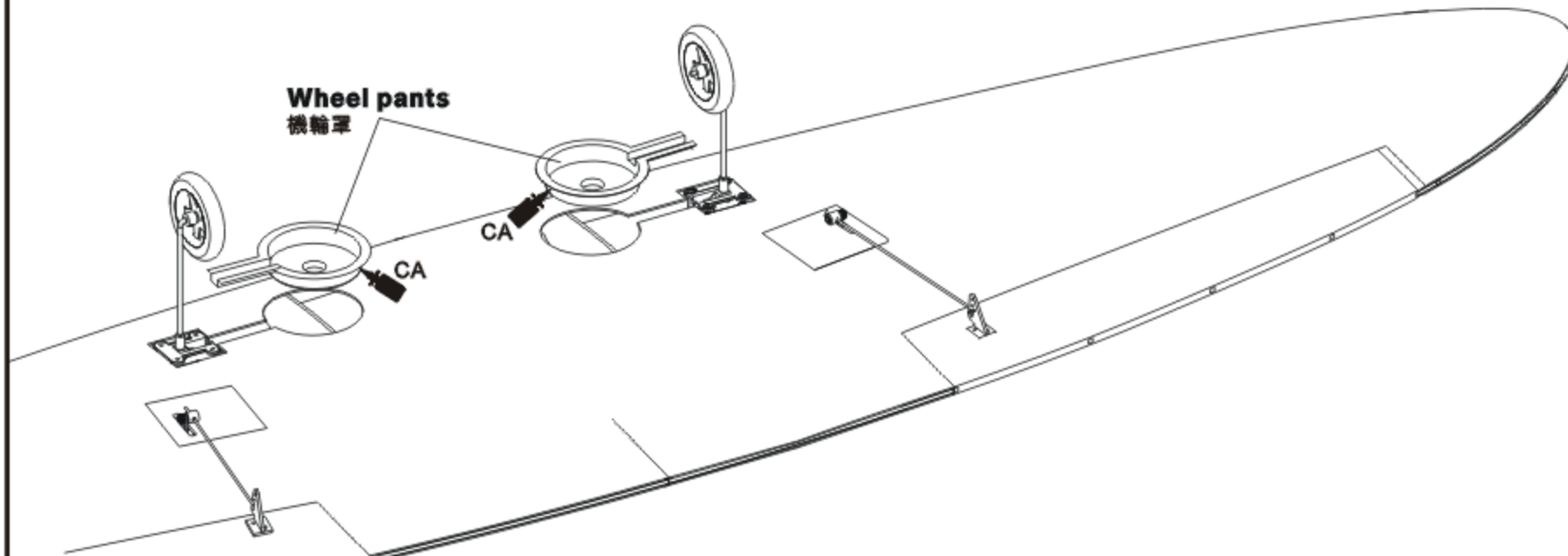
Front of main wing  
主翼正面



1-10

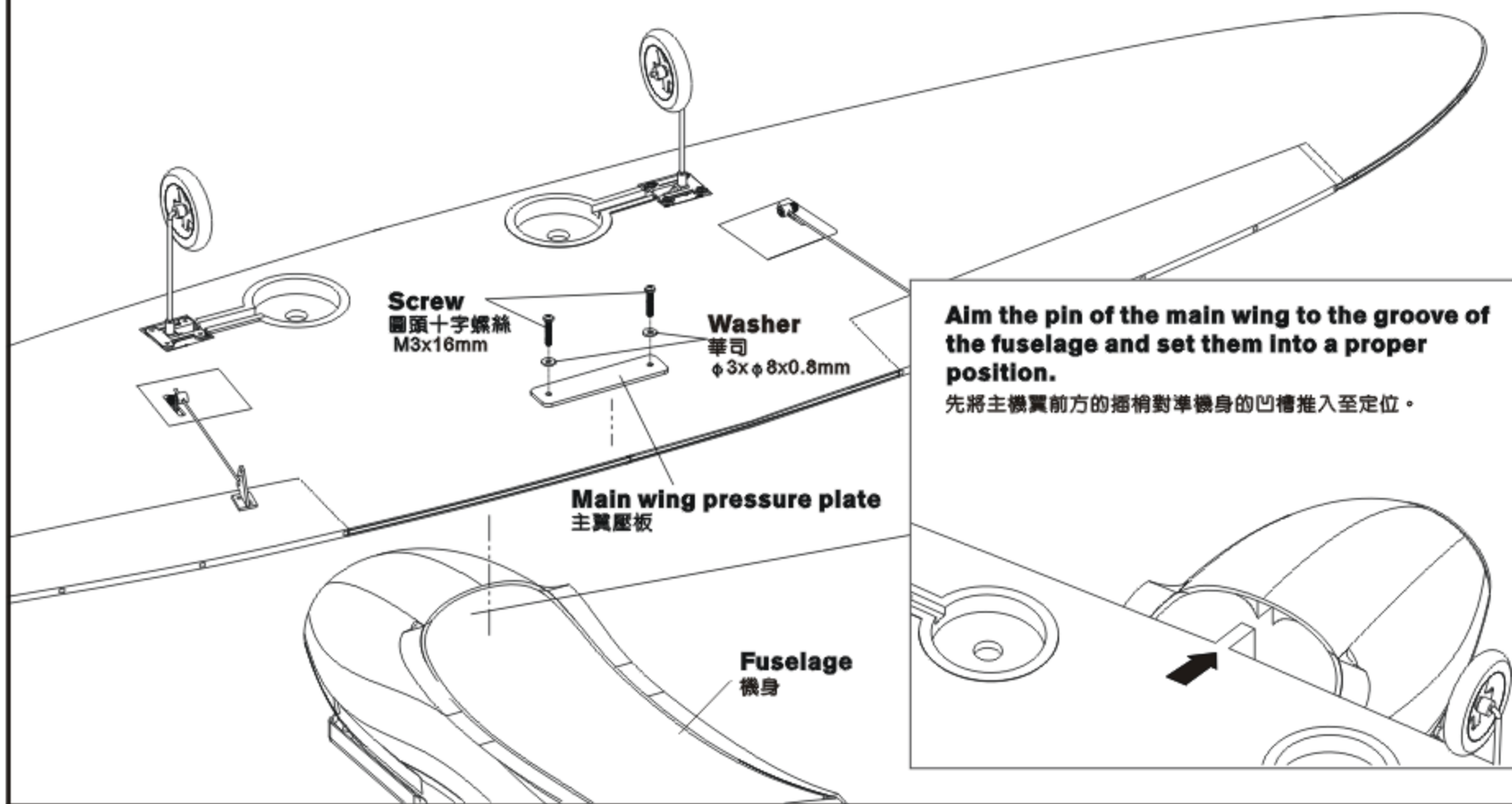
Assemble the cut wheel pants and fix them on the main wing with CA glue.

裝上已裁剪好的機輪罩，並於機輪罩與機翼的接合面以CA黏合。

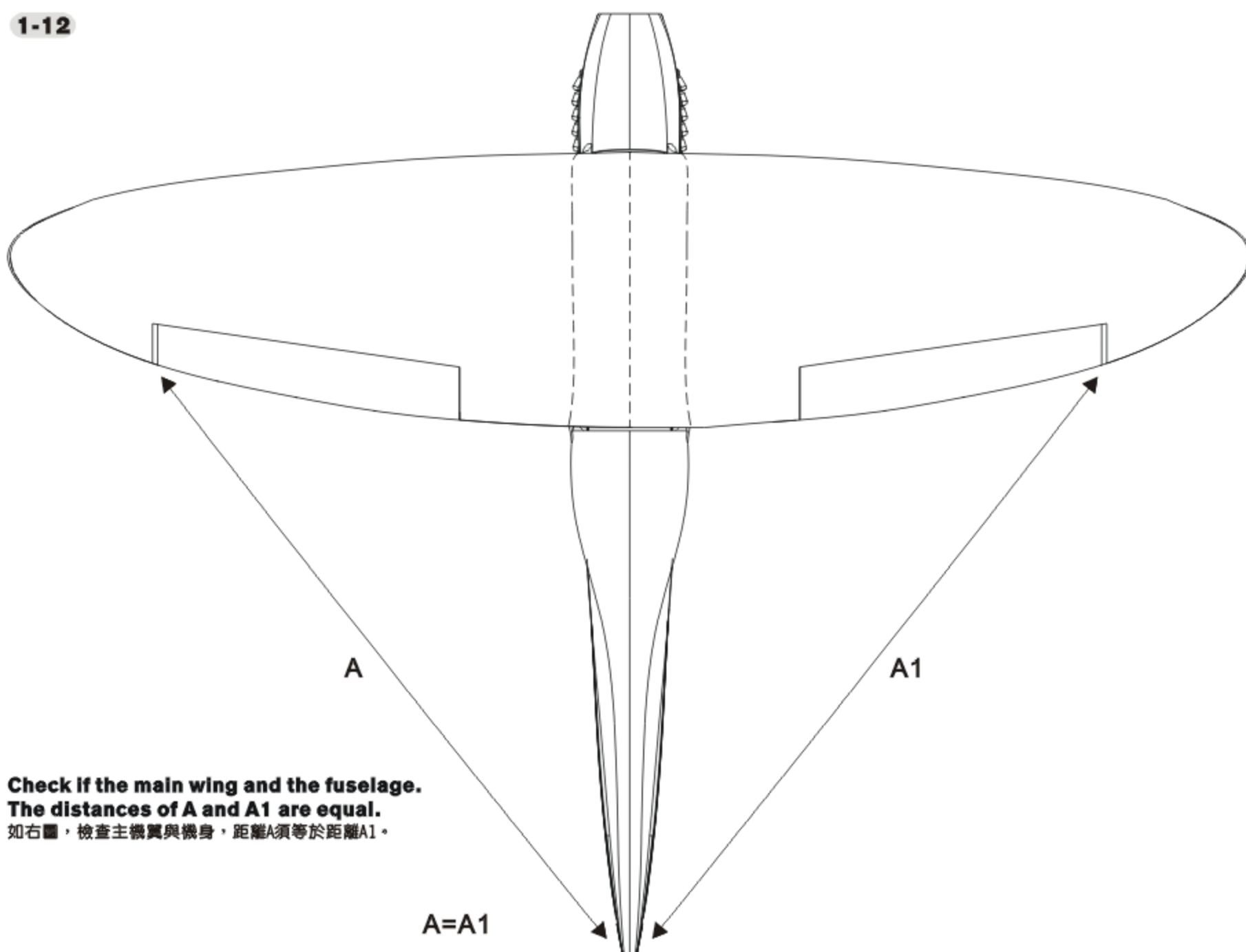


1-11

Then fix the main wing pressure plate on the back of the main wing with screws.  
以機翼壓板將主機翼後方鎖緊固定。



1-12

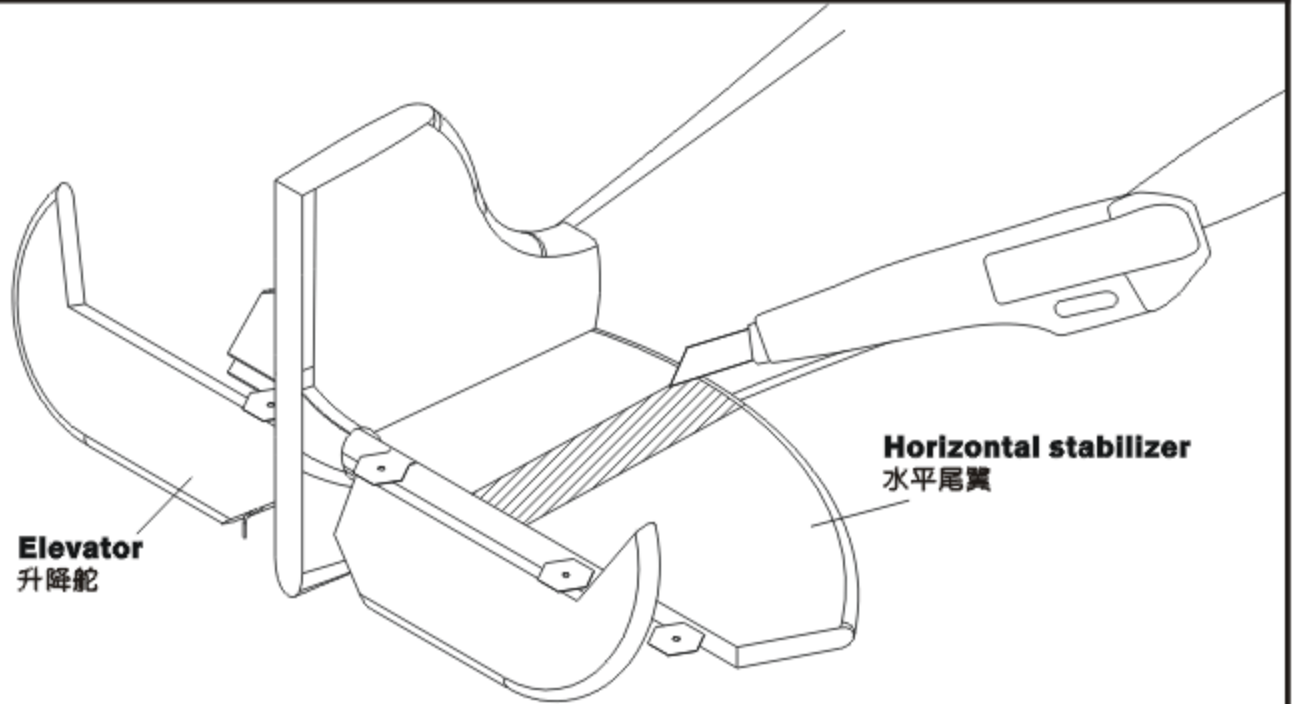


Tail assembling 尾翼組裝

2-1

Temporarily assemble the elevator and horizontal stabilizers into the fuselage. Then use a color pen to mark on the junctions on both sides (top/bottom). After that cut the coatings of the junctions.

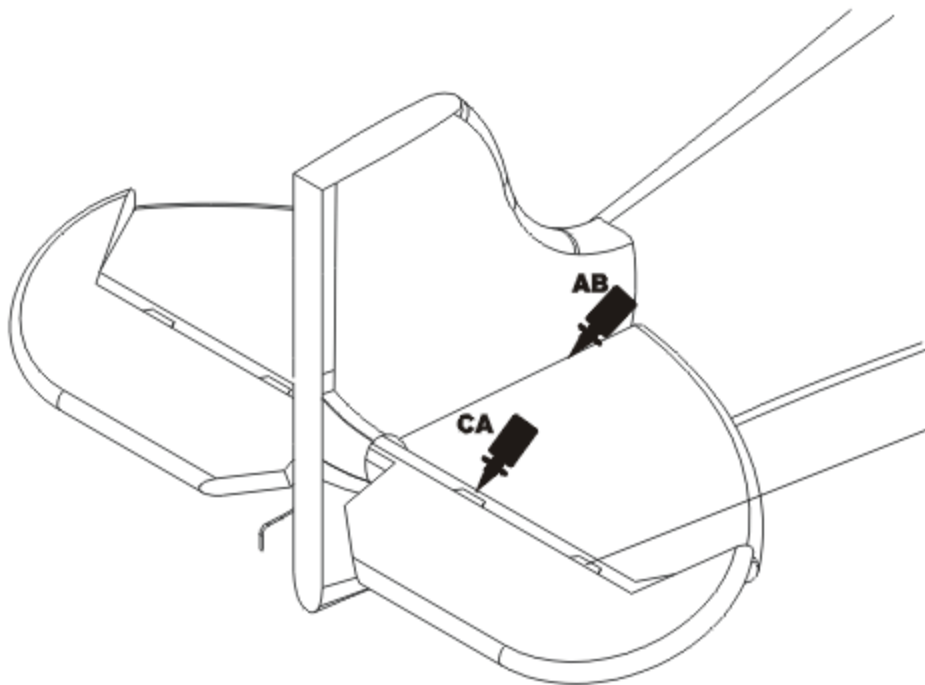
暫時將升降舵與水平尾翼穿入機身尾部，以奇異筆在上下兩側結合面劃上記號，之後以美工刀將結合面的披覆膜割開。



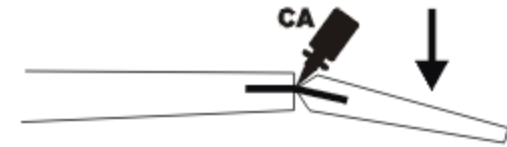
2-2

Apply some AB glue on the surfaces, which are been cut off the coatings, and fix it on the tail of the fuselage. Next attach 4 pieces of hinges to the elevator and horizontal stabilizers.

將水平尾翼披覆膜割開的位置均勻塗上AB膠後，固定於機身尾部，接著將升降舵與水平尾翼以4片活頁片結合。



CAUTION 注意



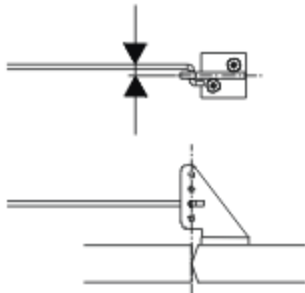
Then fold down the elevator and apply a drop of CA glue on both sides of hinges for fixing.

向下翻折升降舵，於活頁片的兩面各滴一滴CA膠固定。

2-3

CAUTION 注意

Keep parallel 舵角片須與連桿平行

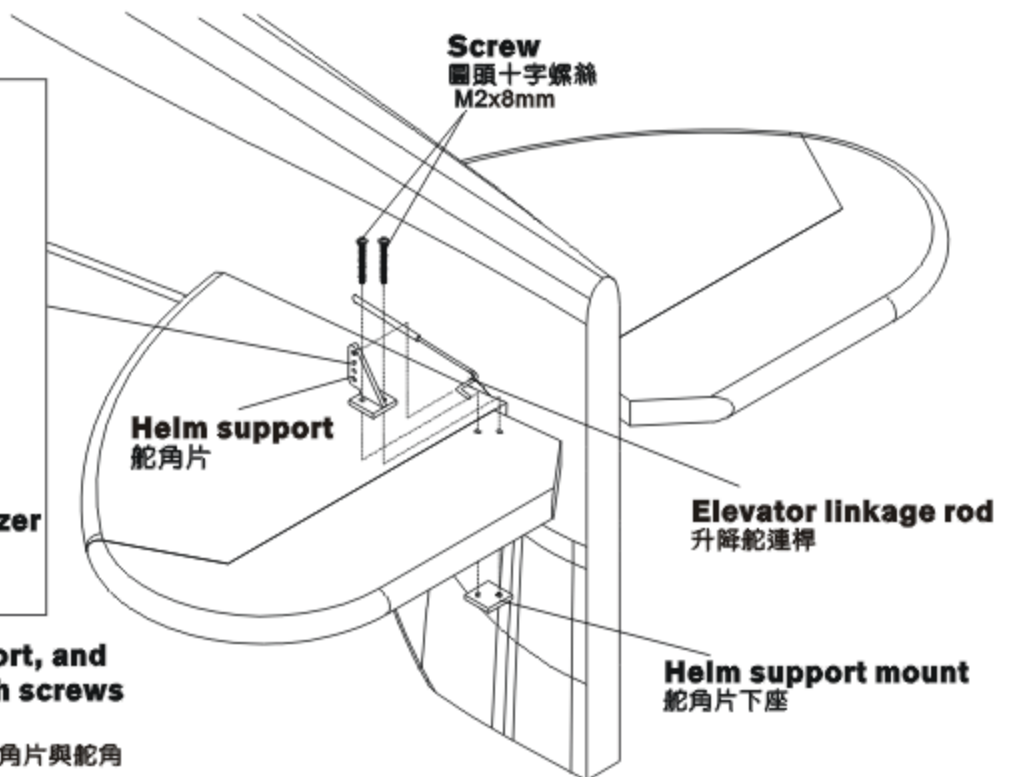


The mounting hole of the horn support must be aimed to the junction of horizontal stabilizer and elevator.

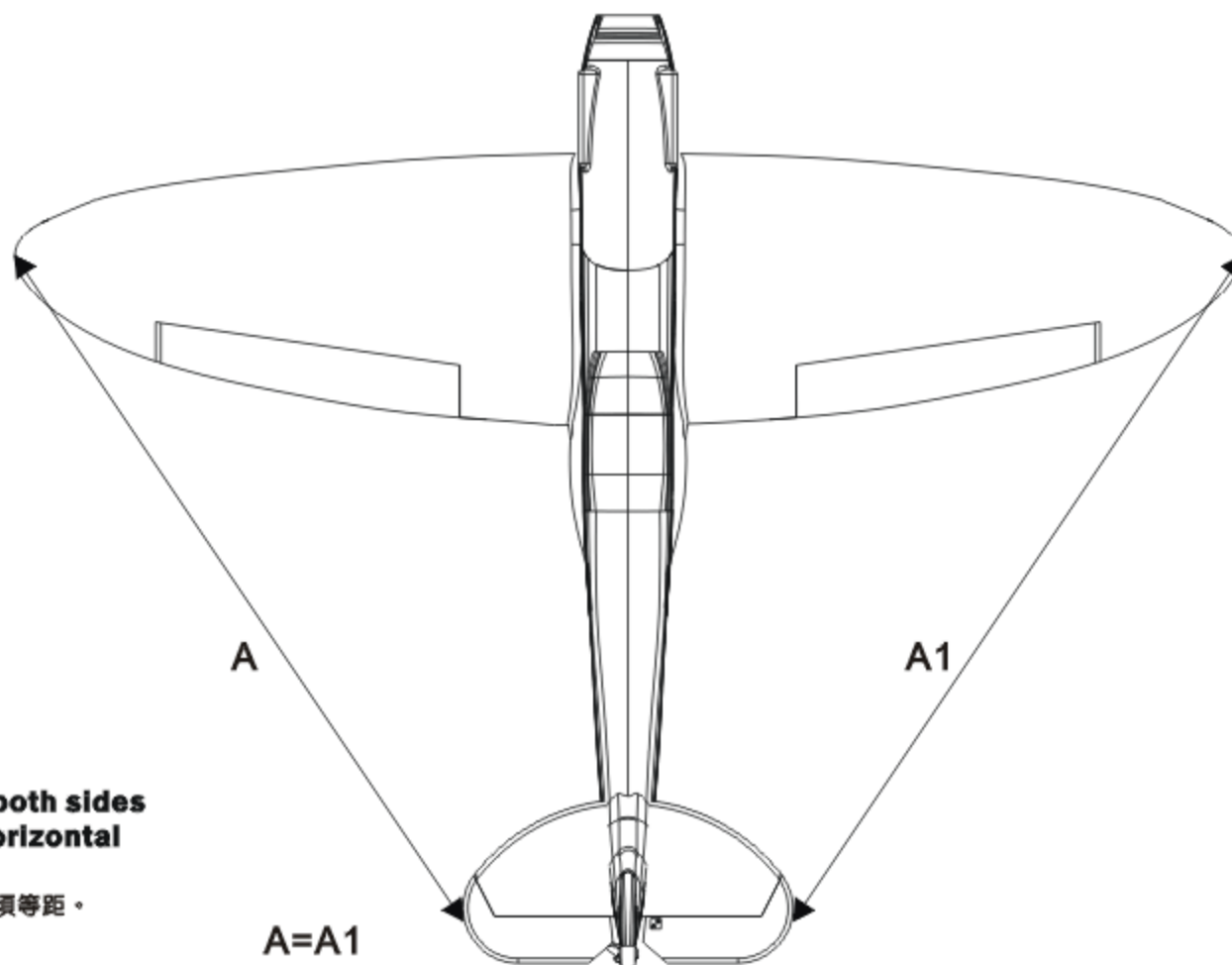
舵角片的連桿安裝孔須對準水平尾翼與升降舵的結合面上。

Insert the linkage rod of elevator into the horn support, and fix the horn support and the horn support mount with screws M2x8 as illustration.

如圖所示，先將升降舵連桿穿入舵角片，並以圓頭十字螺絲M2x8mm將舵角片與舵角片下座鎖緊固定。



2-4



Check if the distances of both sides from the main wing and horizontal stabilizer are equal.

確認主機翼兩側至水平尾翼的距離須等距。

A=A1

2-5

Rudder  
方向舵

Rear landing skid  
後機輪架  
φ1.8mm

Rear wheel  
後機輪  
φ20mm

Set screw  
止洩螺絲  
M3x4mm

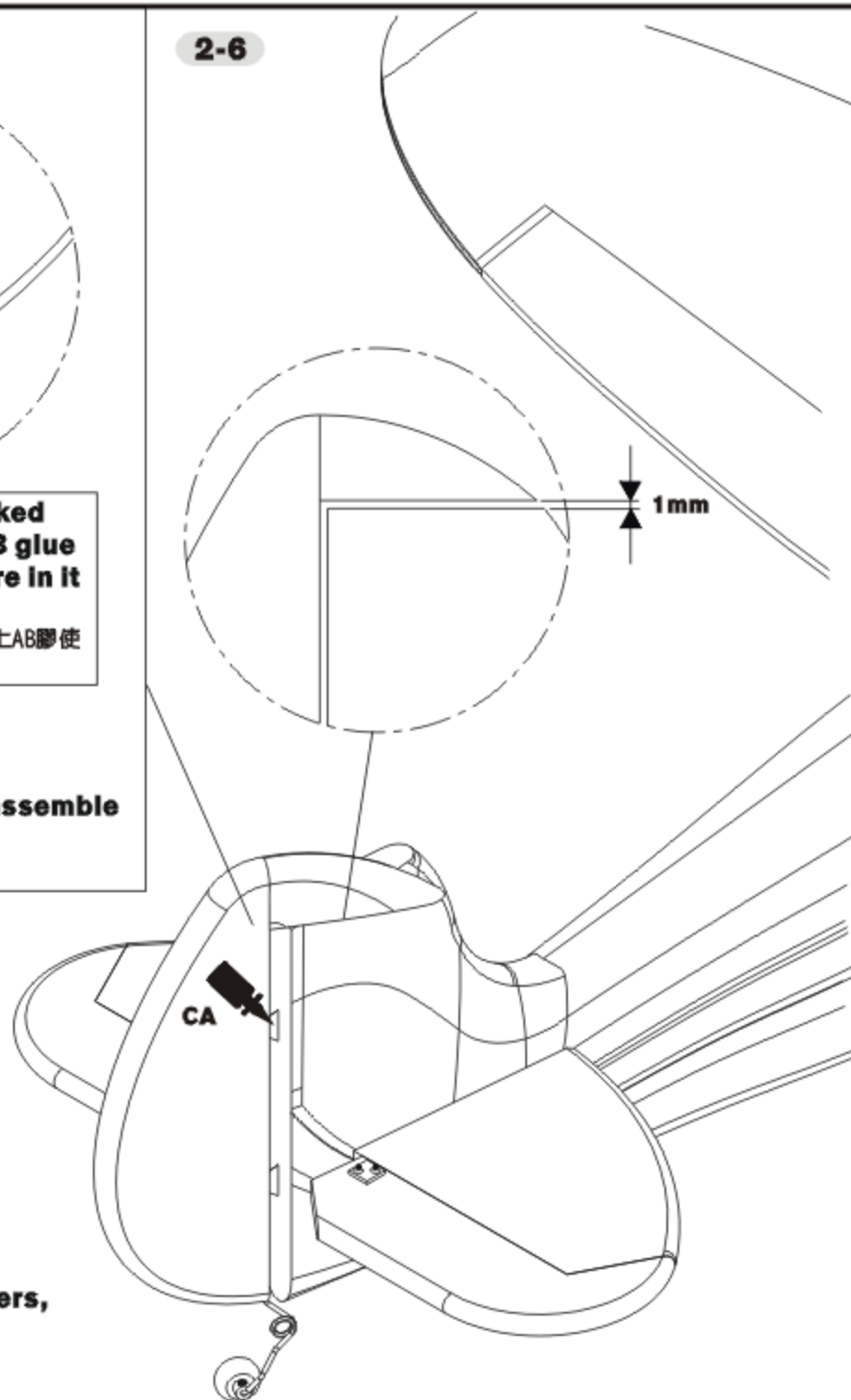
Wheel stop  
輪擋

Deep dig the marked area and apply AB glue to fix the steel wire in it completely.  
斜線標示處須挖深並塗上AB膠使鋼線完全埋入固定。

Fix the rear landing skid on the rudder with AB glue and then assemble the rear wheel as above illustration.

如上圖，使用AB膠將後輪起落架固定於方向舵，並裝上後機輪。

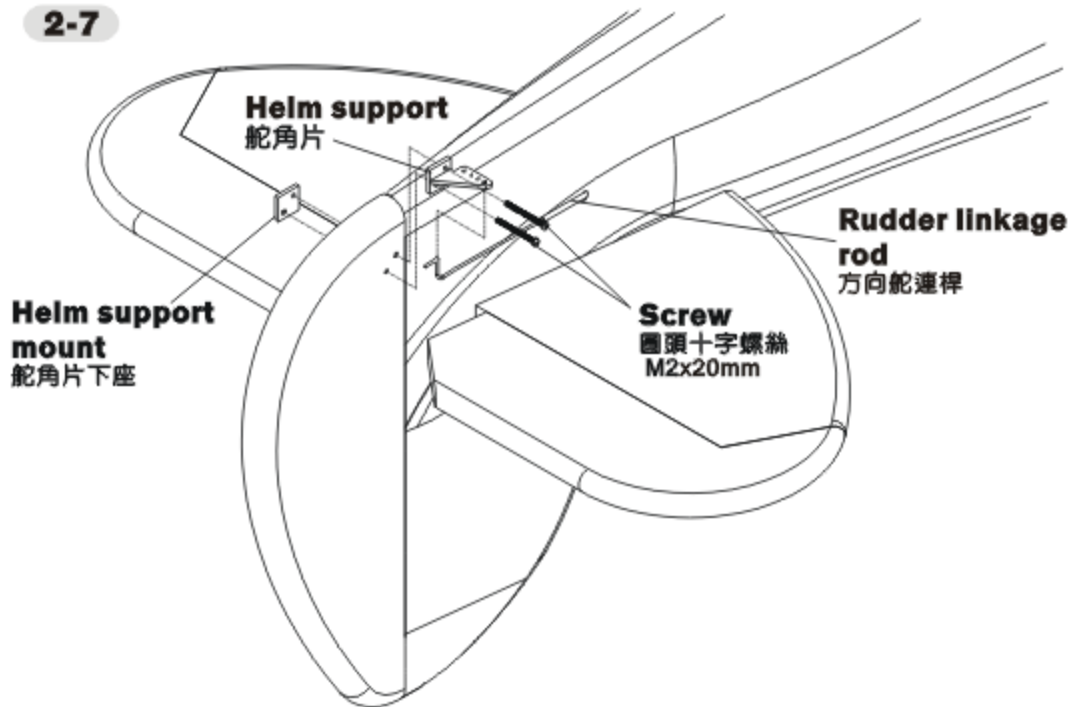
2-6



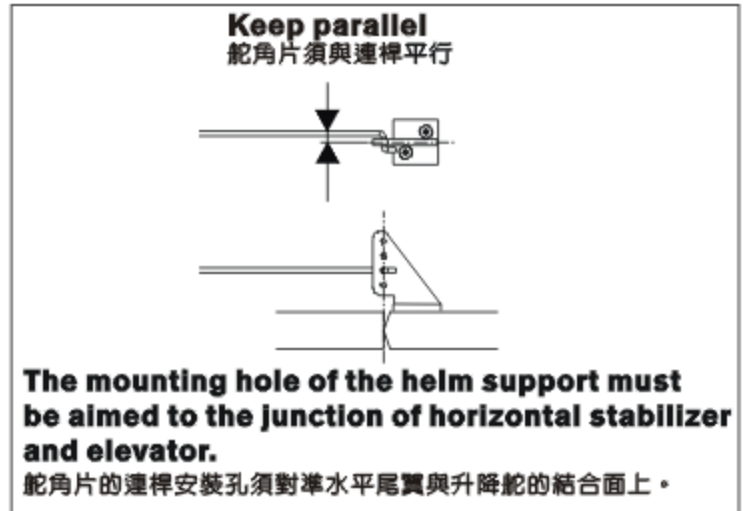
Attach two pieces of hinges to the rudder and vertical stabilizers, and apply a drop of CA glue on both sides of the hinges.

以2片活頁片將方向舵與垂直尾翼結合，並於活頁片兩側各滴一滴CA膠。

2-7

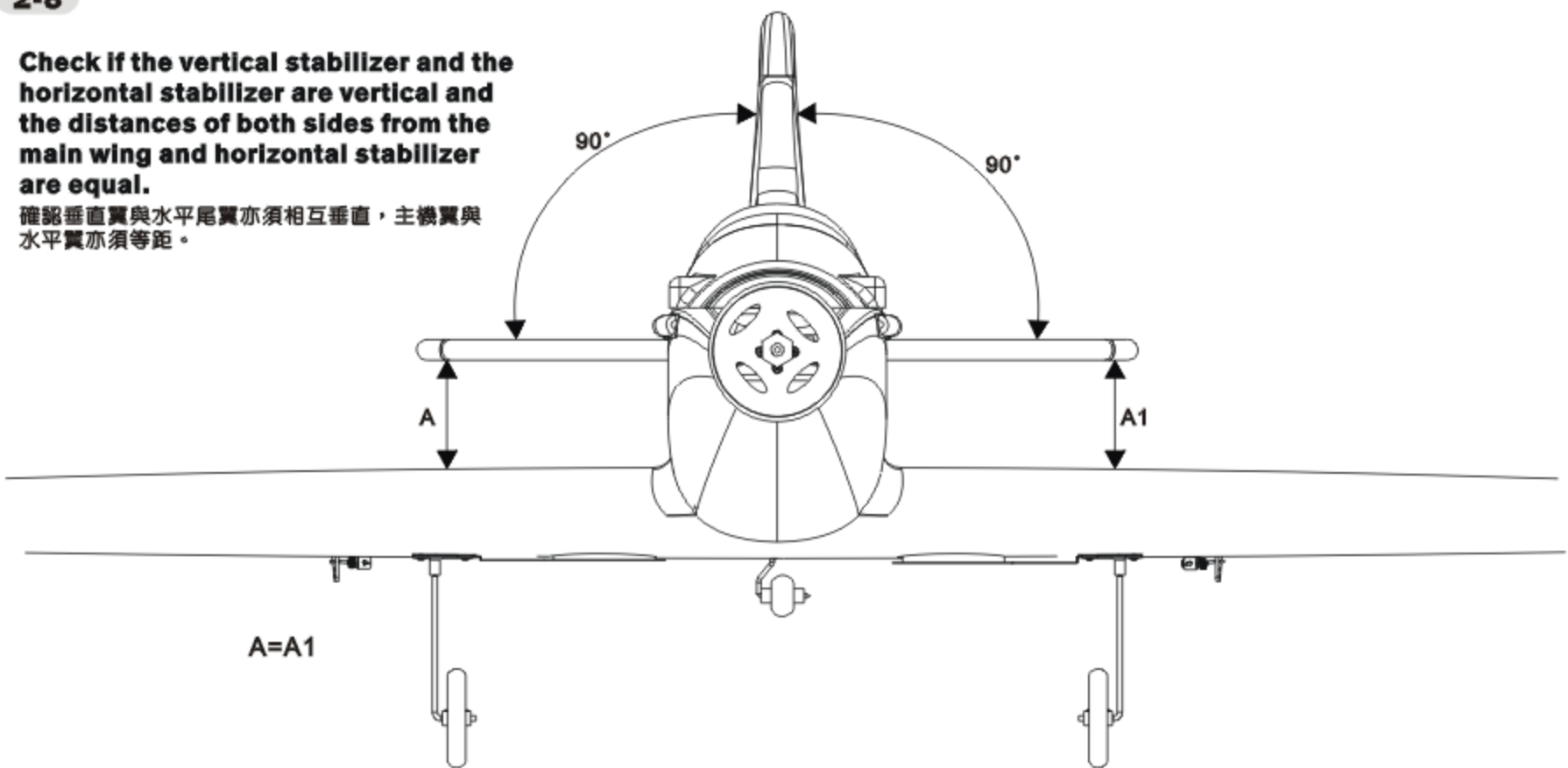


Insert the linkage rod of the rudder into the helm support and fix it on the rudder as illustration. 如圖標示的位置，先將方向舵連桿穿入舵角片，再將舵角片鎖附在方向舵上。



2-8

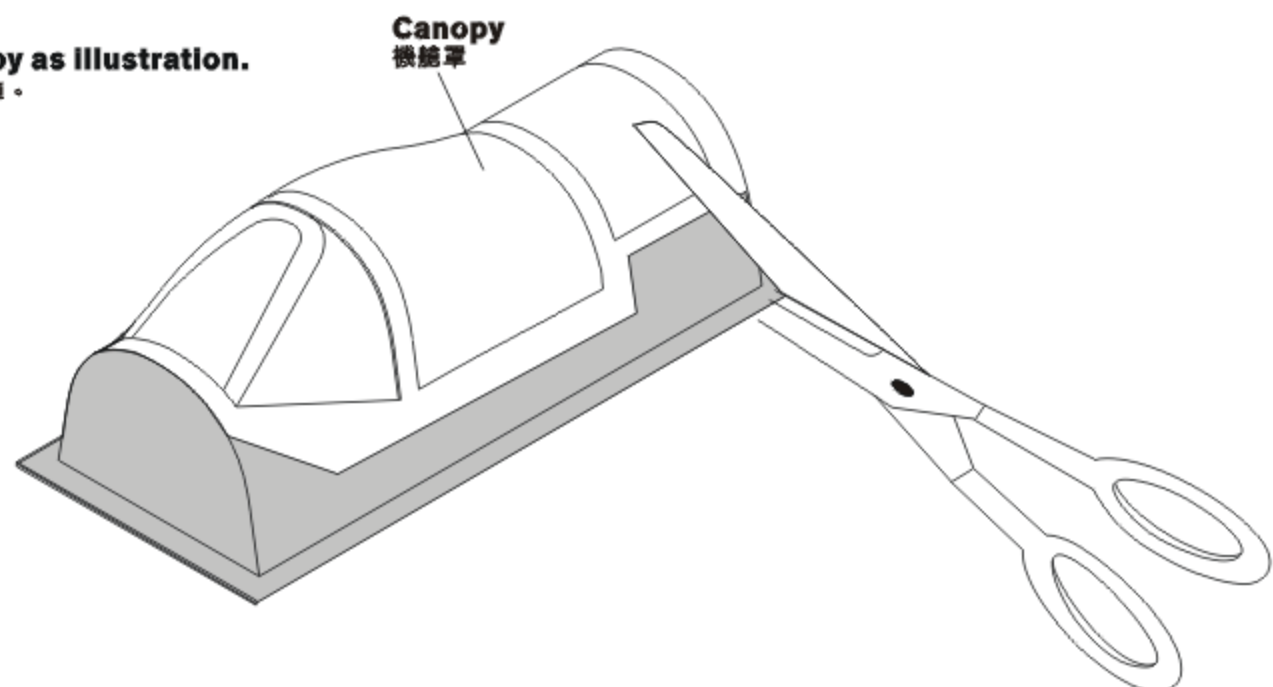
Check if the vertical stabilizer and the horizontal stabilizer are vertical and the distances of both sides from the main wing and horizontal stabilizer are equal. 確認垂直尾翼與水平尾翼亦須相互垂直，主機翼與水平翼亦須等距。



3、Assembling of accessories and electric parts 機身零配件與電子設備組裝

3-1

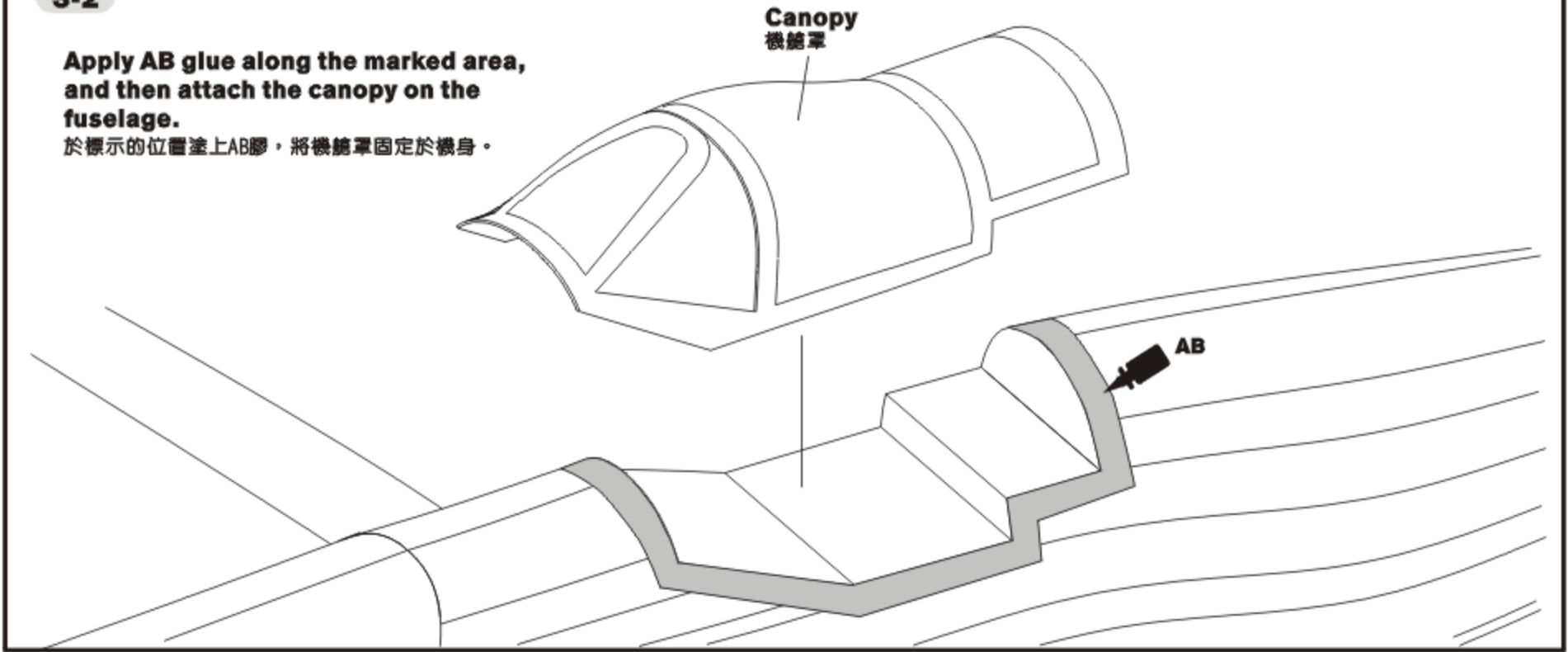
Cut the excess part of the canopy as illustration. 如圖標示，以剪刀將機艙罩多餘的部分剪掉。



3-2

Apply AB glue along the marked area, and then attach the canopy on the fuselage.

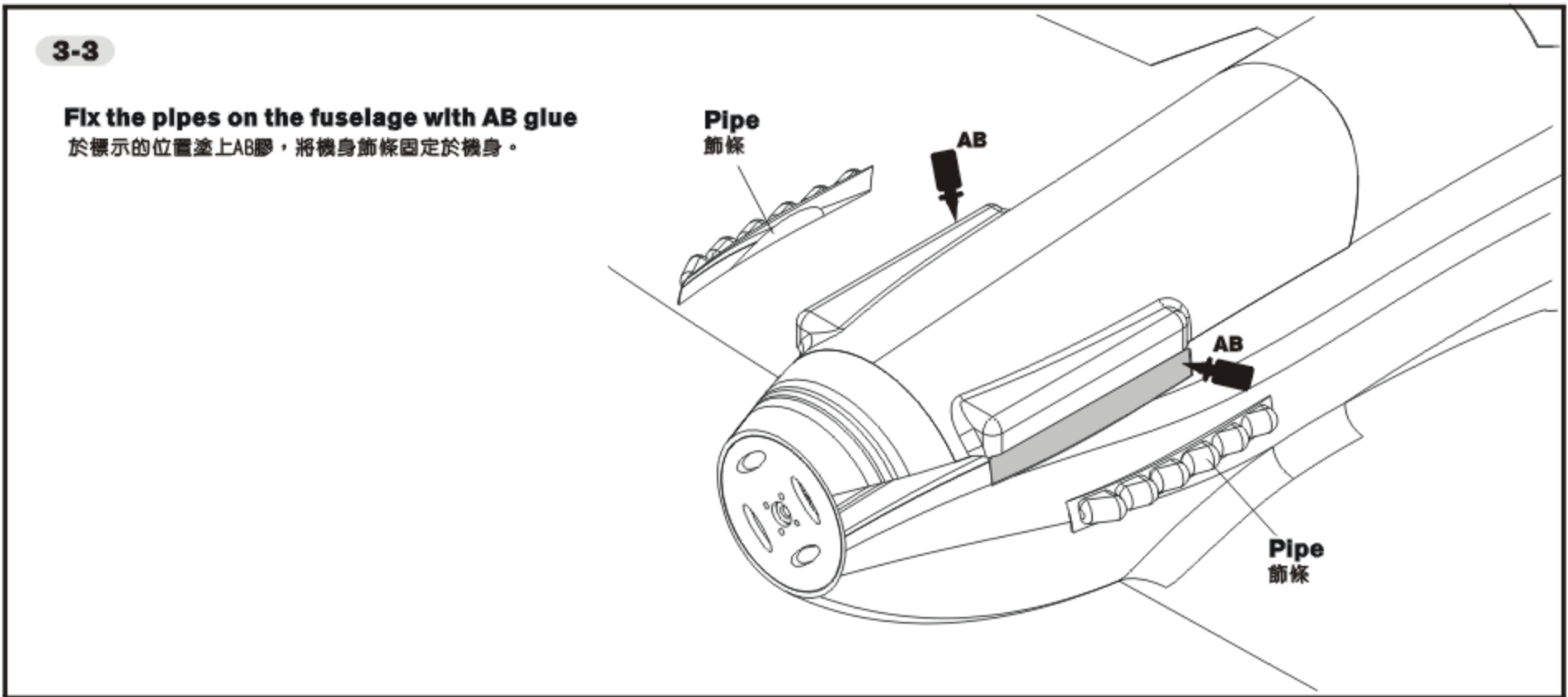
於標示的位置塗上AB膠，將機艙罩固定於機身。



3-3

Fix the pipes on the fuselage with AB glue

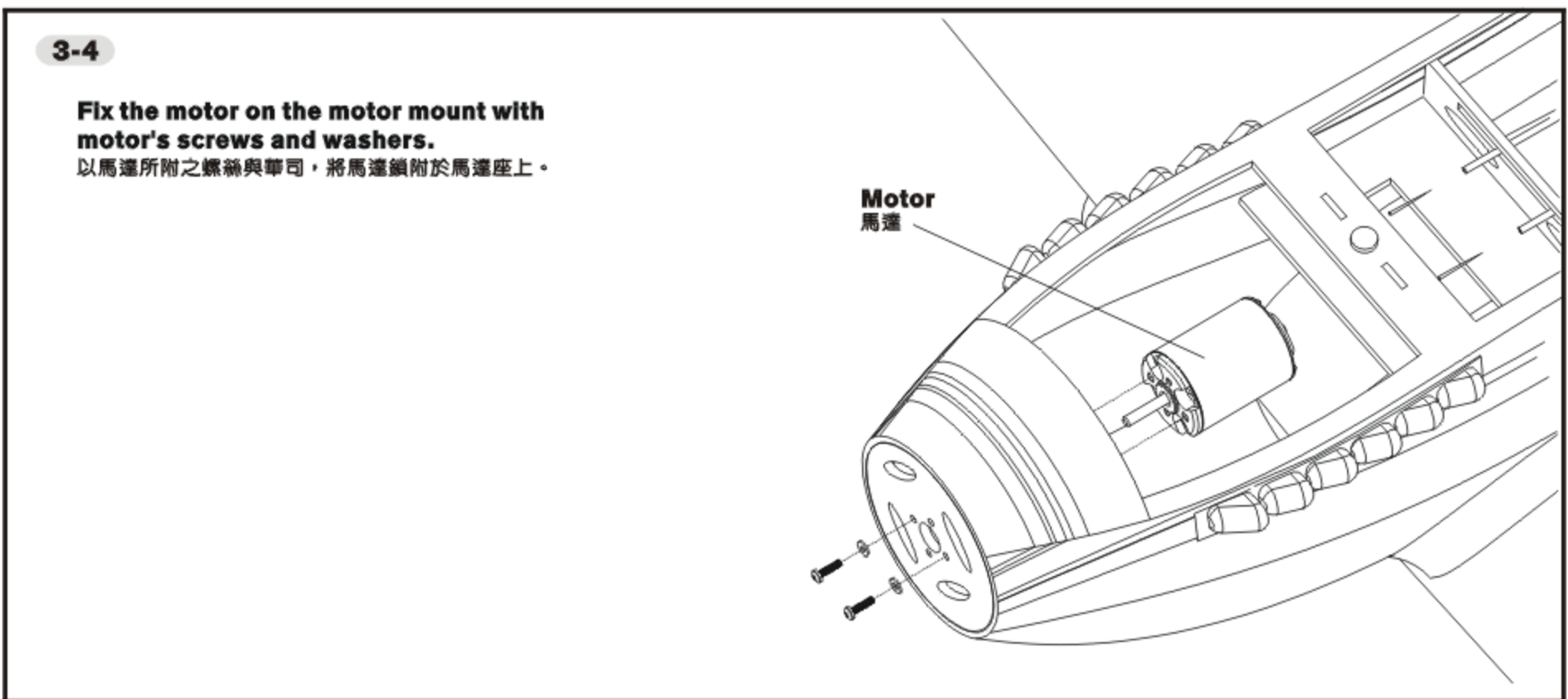
於標示的位置塗上AB膠，將機身飾條固定於機身。



3-4

Fix the motor on the motor mount with motor's screws and washers.

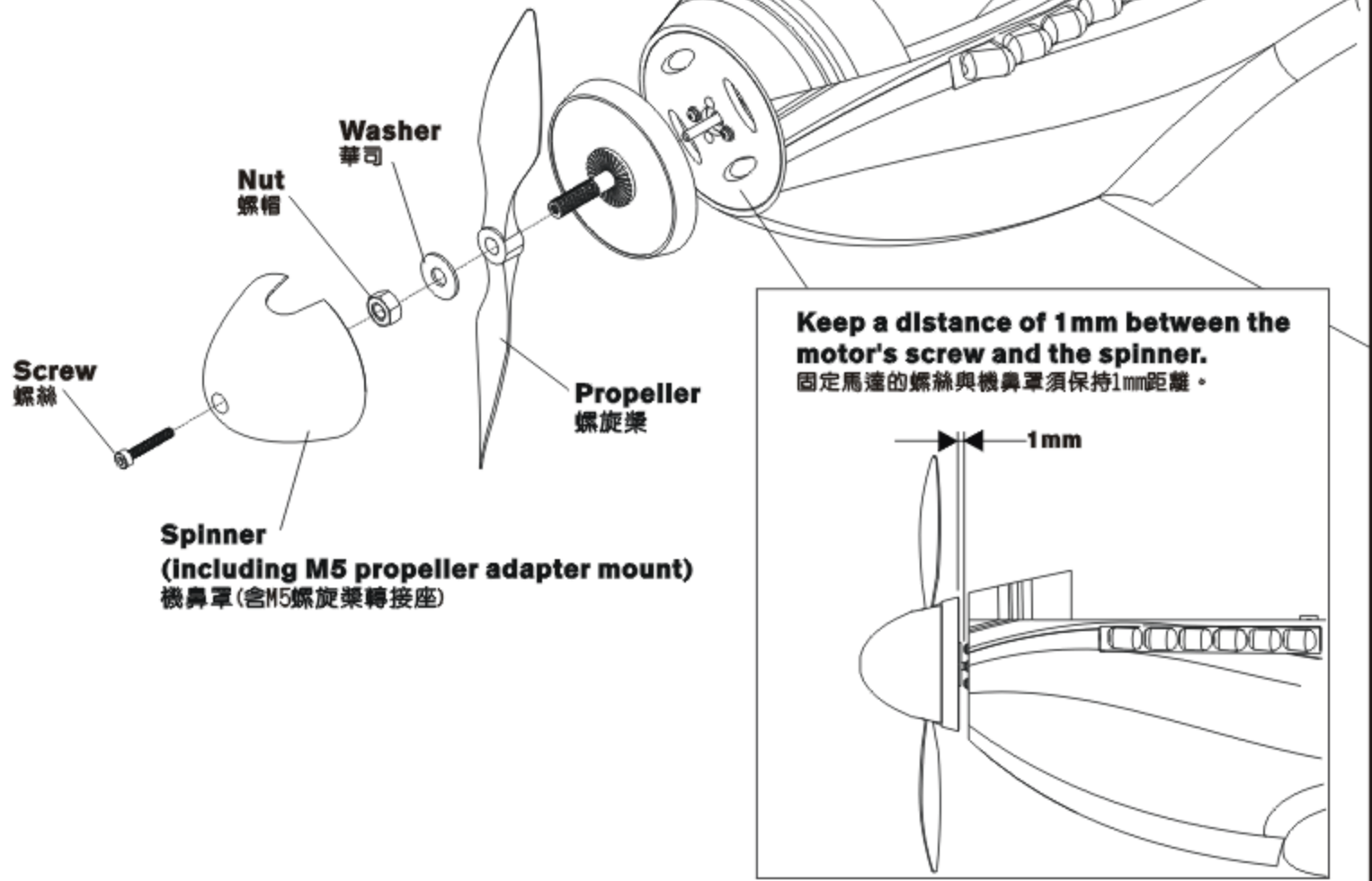
以馬達所附之螺絲與華司，將馬達鎖附於馬達座上。



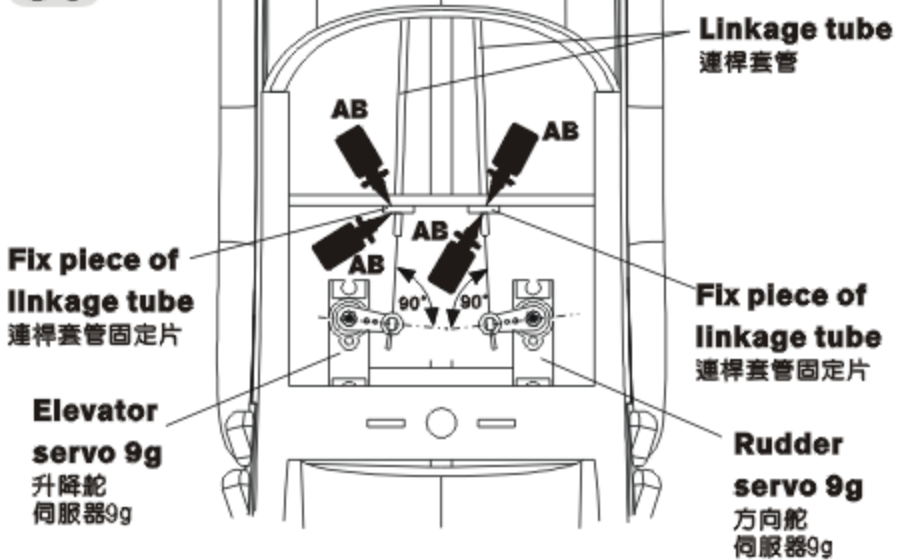
3-5

Remove the spinner and assemble the propeller (option part) on the adapter and motor shaft as illustration.  
**NOTE: Pull the adapter to make sure if the adapter is secured on the motor shaft.**

打開機鼻罩，如右圖所示，將螺旋槳(選購)安裝於轉接頭與馬達心軸上。  
 註：拉動轉接頭，確認轉接頭已確實固定在馬達心軸上。



3-6



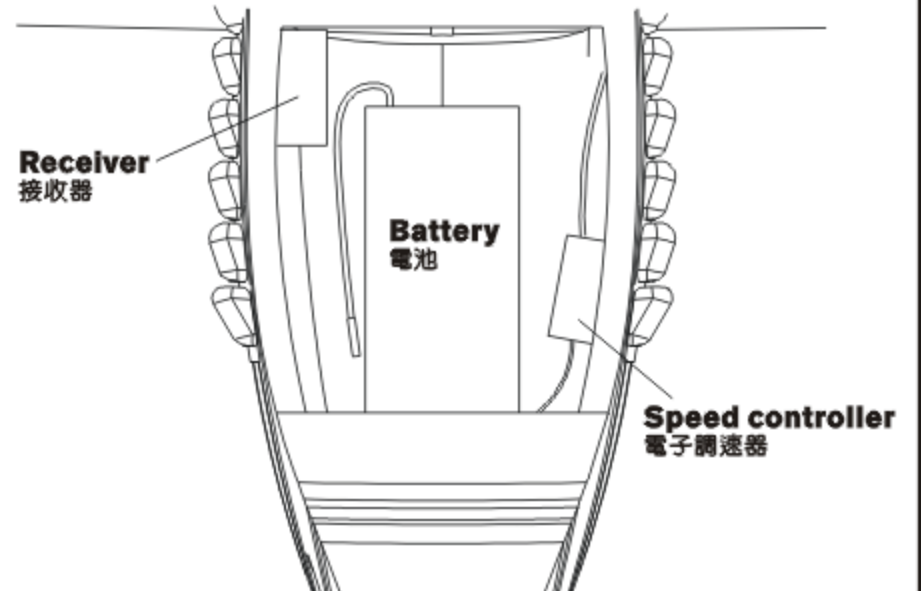
First cut the excess parts of the linkage tubes and put the fixing pieces of linkage tubes on. Next assemble the servos, servo horns and linkage rod controller. Finally fix the linkage tubes and fixing pieces with AB glue.

先將多餘的連桿套管剪下，並套入連桿套管固定片，接著依上圖的方式安裝伺服器、舵角片與連桿調節器，調整完成後再以AB膠固定連桿套管與固定片，防止套管移動。

3-7

Recommend installing the electric parts as below and fix the electric part with Velcro tap.

電子設備建議安裝位置如下，建議使用魔术沾來固定電池及電子設備。

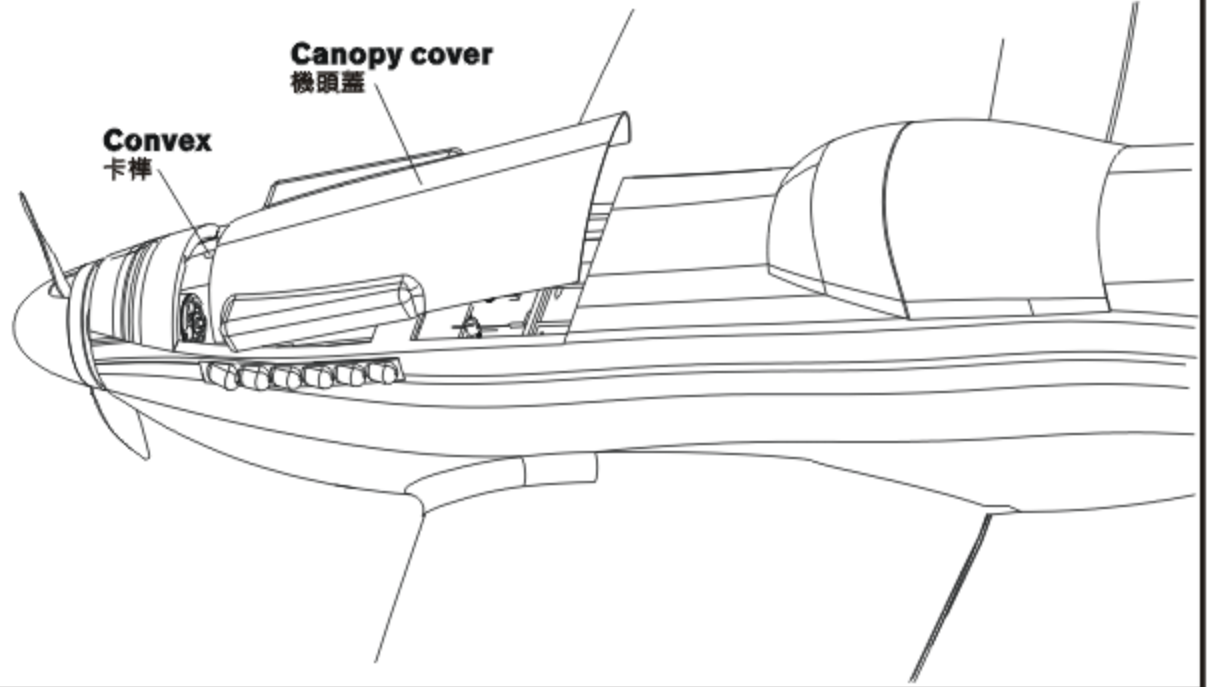




3-8

**Aim the convex of canopy cover to the fuselage hole and then put on the canopy cover.**

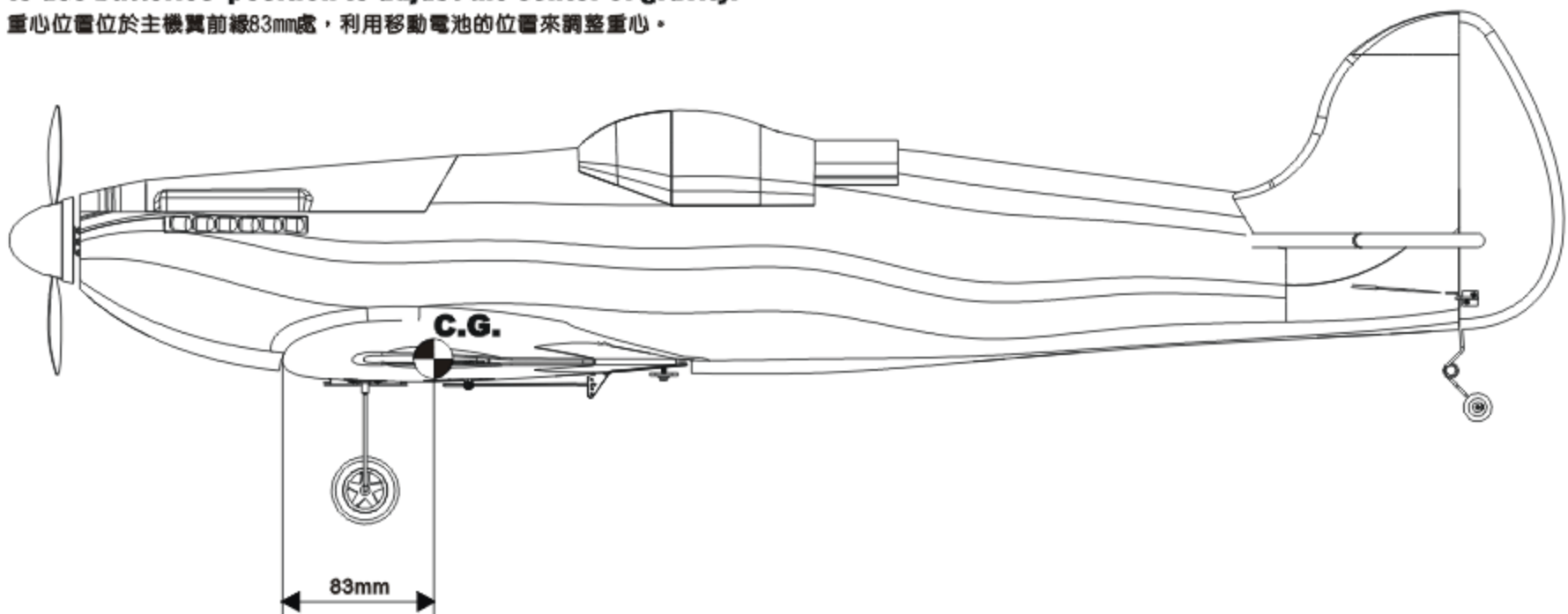
將機頭蓋的卡榫對準機身圓孔，最後蓋上機頭罩。



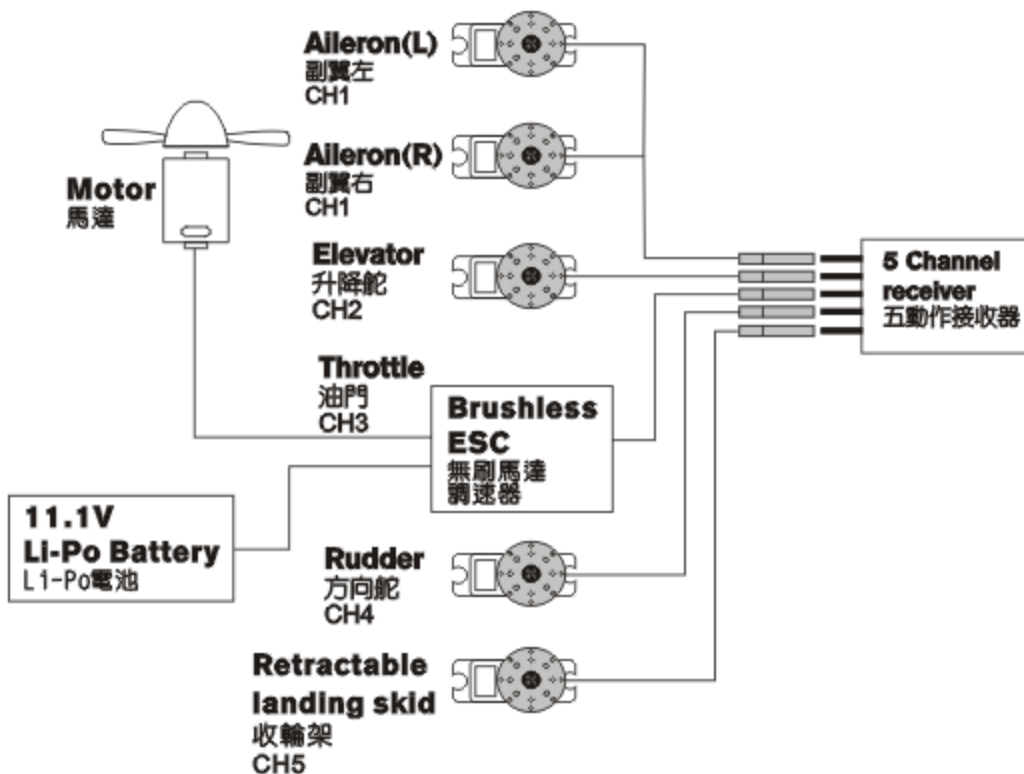
C.G. 重心

**The gravity is set center at about 83mm from main wing, to use batteries' position to adjust the center of gravity.**

重心位置位於主機翼前緣83mm處，利用移動電池的位置來調整重心。



5-Channel Operation Description (Using Electric Airplane as Example) 五動作接收器頻道說明 (電動飛機使用範例)



**Electric airplane usually utilize 4 channels to operate Throttle, Rudder, Elevator and Aileron. However, some additional channels allows for other task to be performed such as retractable landing skids, bomb drops, glider tow, etc. SPITFIRE utilize 5th channel to operate the servos of landing skids.**

一般正常的飛機最多使用到四個動作，也就是油門、方向舵、升降舵、副翼四個動作，但是遙控飛機的樂趣不只如此，以SPITFIRE來說具有收輪架的功能，將收輪架伺服器連接到第五動(CH5)，即可透過搖器第五動開關控制機輪，提高像真度。

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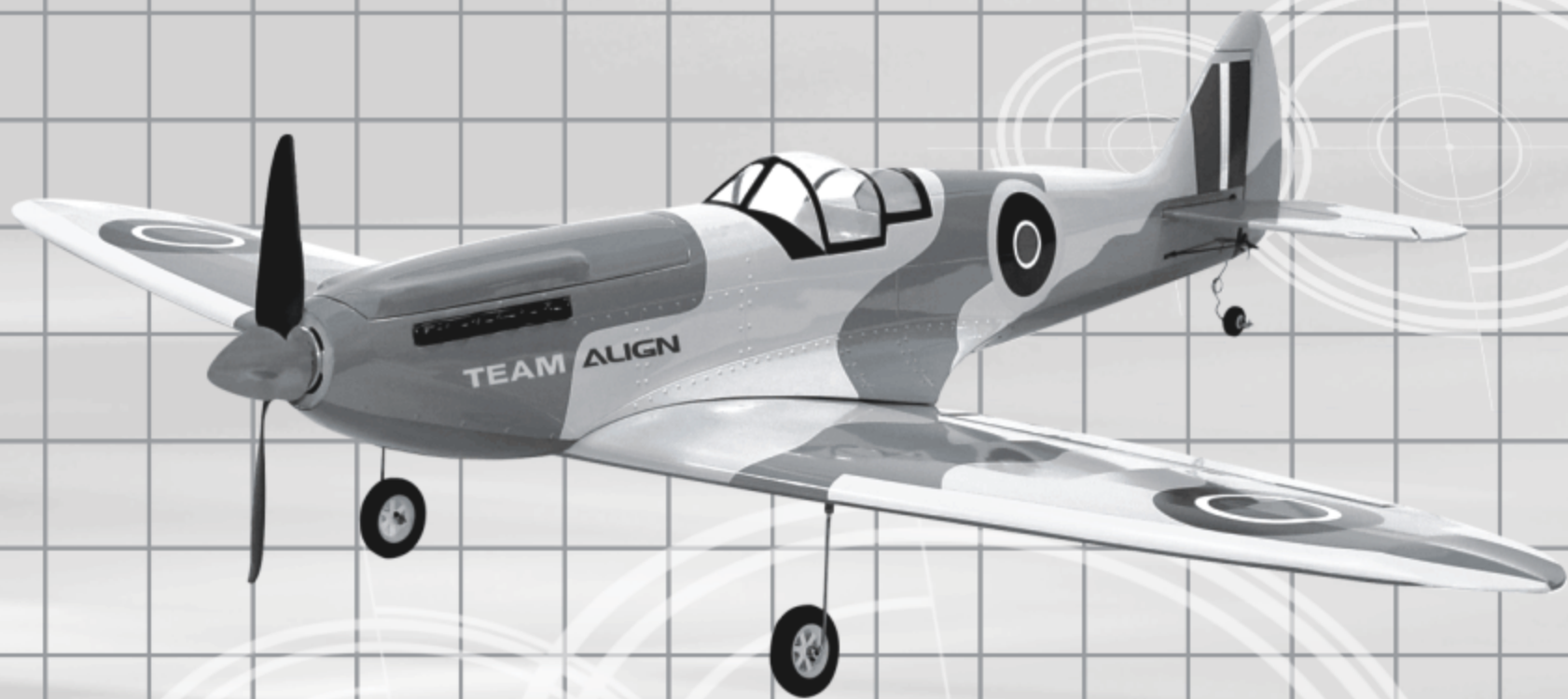
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**Specifications & Equipment/規格配備:**

**Length/機身長: 870mm**

**Height/機身高: 290mm**

**Wing span/主機翼長: 1082mm**

**Wing square/翼面積: 20.5dm<sup>2</sup>**

**Weight/空機重: 470g**

**Recommended Power and Electric Equipment (Not included):**

自備動力及電子設備規格:

**Transmitter/發射器: 5 Channel or more/5動以上**

**Receiver/接收器: 5 Channel or more/5動以上**

**Servo/伺服器: 9gx5pcs**

**Brushless ESC/無刷調速器: 20A or more/20A以上**

**Brushless motor/無刷馬達: Approx. 1400KV**

**Battery/電池: Li-Po 11.1V (1800mAh or more/以上)**

**Propeller/螺旋槳: 8x5.5"**

