

Superior Starter  
**STQ 100**

For Helicopter

**INSTRUCTION MANUAL**

**使用說明書**

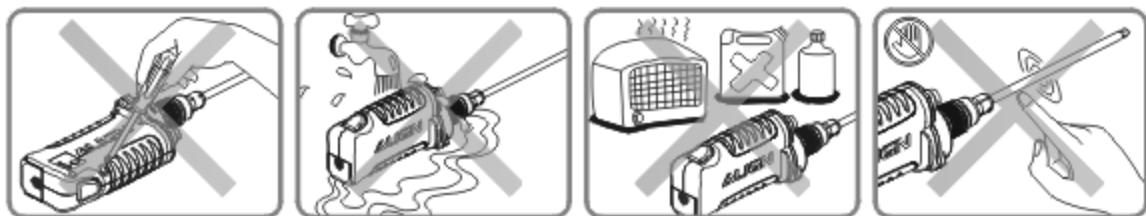
**ALIGN**



- *Multi-protections design.*
- *Battery voltage indicator.*
- *Starter shaft includes double one way bearing design.*
- *Ergonomically designed for optimal hand grip to prevent slippage.*
- *Suitable for up to 50cc gasoline engine or 300 class nitro engine.*
- *High efficiency motor providing high starting power, and low reacting force to your hand.*
- *Designed for user replaceable, common 450 heli sized 3s1p 1900~2300mAh/16c lipo batteries.*

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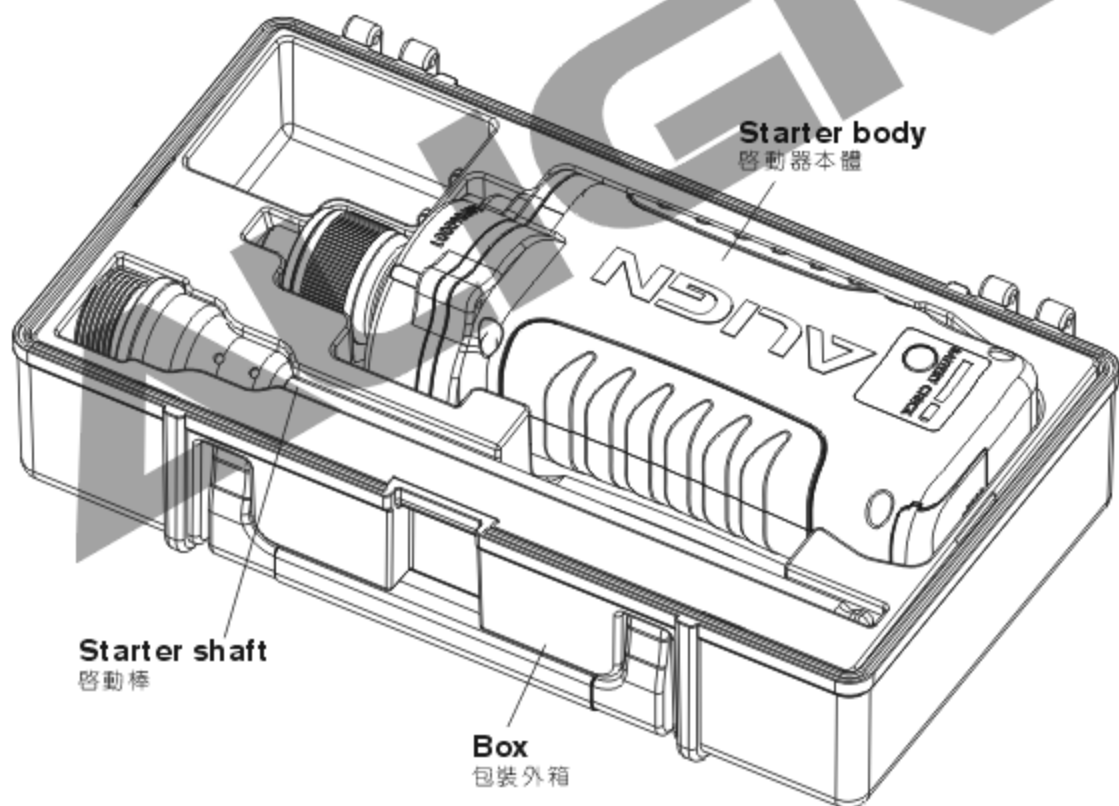
- Please review this instruction manual thoroughly before operating.
- Modifications or disassembly of the product may cause damages and void warranty.
- Avoid operating under dusty and humid condition to prevent short circuiting and unexpected danger.
- Keep it away from heat and inflammables.
- Do not touch the starter shaft or spinner cup while it is operating.
- 在開始操作之前，請務必詳閱本說明書
- 請勿自行將產品外殼拆開或改裝，以免造成產品損壞與影響消費者權益。
- 避免置於灰塵、濕氣和雨水等環境，以免造成短路損壞或不可預期的危險。
- 避免靠近火源與易燃物。
- 啓動器扭力甚大，運轉中請勿以手碰觸啓動棒或啓動頭，以免發生危險。

## 2. FEATURES 產品特色

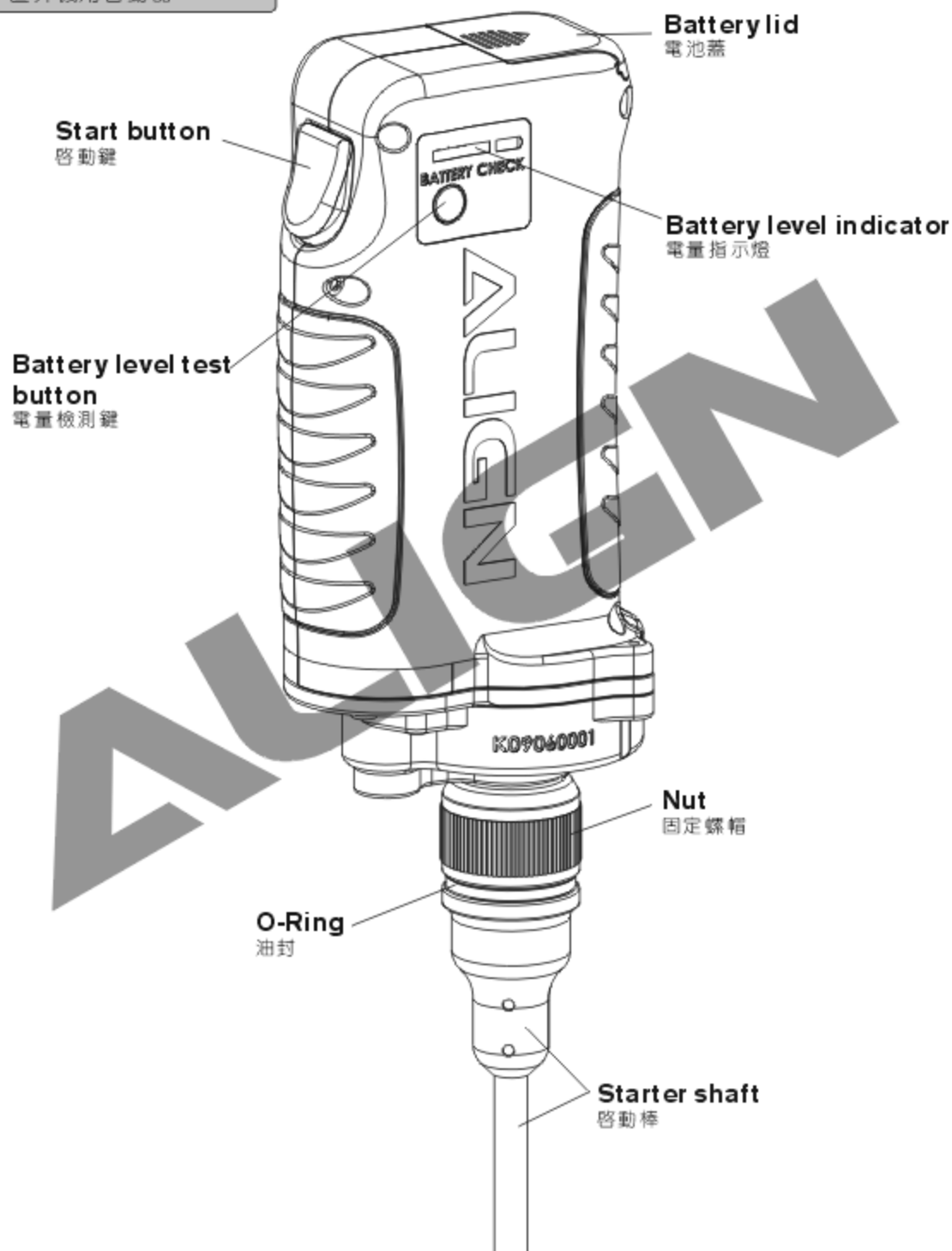
- Ergonomically designed for optimal hand grip to prevent slippage, light weight, and easy to assemble/disassemble for transport ease. Suitable for fixed wing airplanes or helicopters, engine can be started with a simple one hand press on the button.
- Suitable for up to 50cc gasoline engine or 300 class nitro engine.
- Designed for user replaceable, common 450 heli sized 3S1P 1900~2300mAh/16c lipo batteries. Battery packs are charged with any T-REX 450 battery chargers.
- Starter shaft includes double one way bearing design.
- High efficiency motor providing high starting power, and low reacting force.
- LED battery voltage indicator and over-discharge protection circuitry.
- Battery undervoltage protection.
- Overheating protection
- Protection against stalling by flooded torque overloading engine.
- 人體工學防滑省力握把，設計輕巧、拆裝簡易且攜帶方便。不論直昇機或飛機，只需單手按下啓動開關，就可輕鬆發動引擎。
- 適用50cc 以下汽油引擎，或300級以下木精引擎。

- 可抽換式電池設計，適用T-REX 450相同規格電池：3S1P 1900-2300mAh/16C以上。充電器可共用自備T-REX 450電池專用充電器。
- 雙單向軸承啟動頭設計。
- 配備高啟動力，低反扭力超效能馬達。
- LED電池電量指示。
- 電池低電壓斷電保護。
- 馬達過熱斷電保護。
- 扭力過載斷電保護。

## 3.PACKAGE ILLUSTRATION 包裝說明



**The battery is optional**  
電池需另購

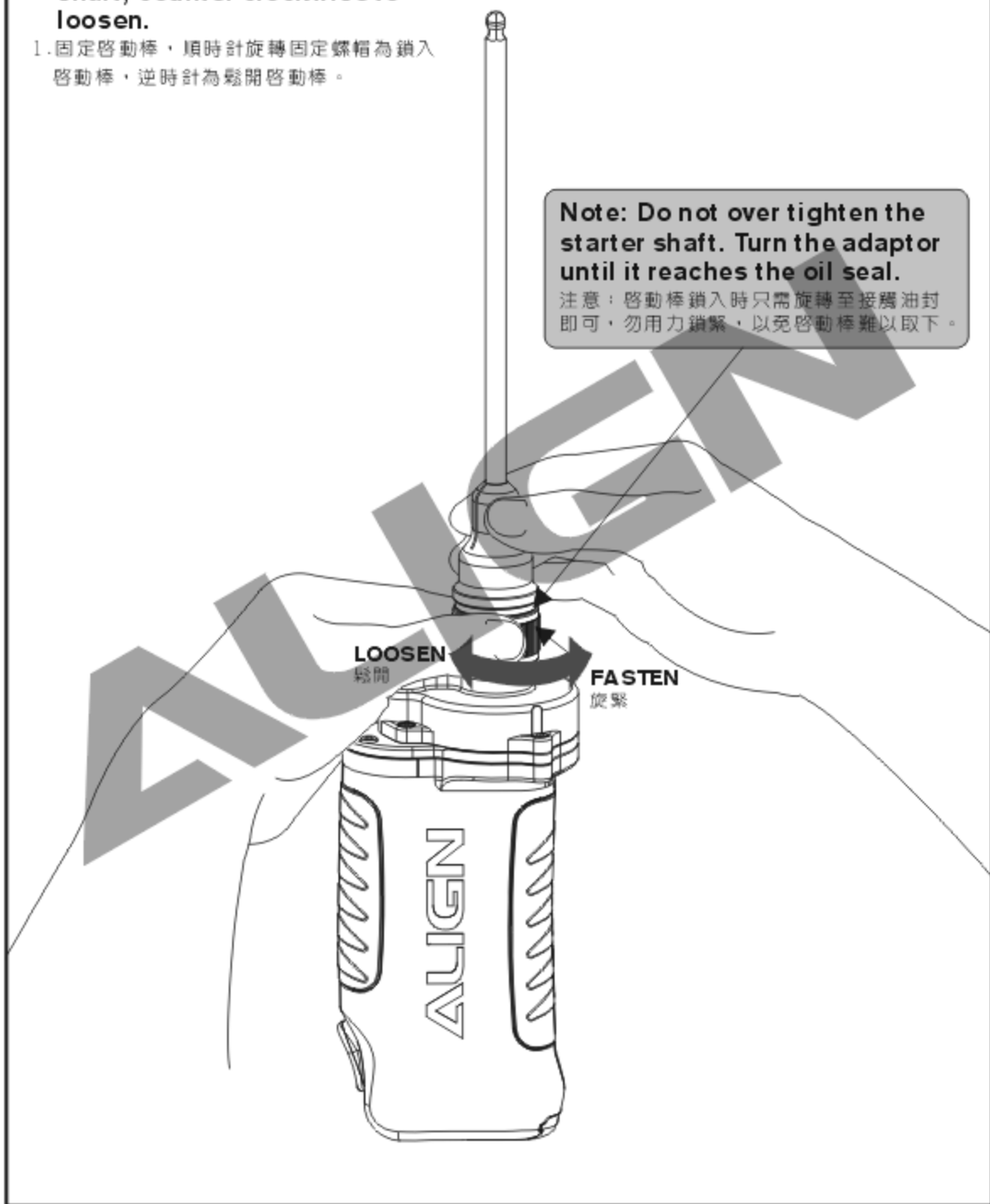
**Helicopter starter**  
直昇機用啟動器

**1. Fix the starter shaft. Turning clockwise to tighten the starter shaft, counter clockwise to loosen.**

1. 固定啓動棒，順時針旋轉固定螺帽為鎖入啓動棒，逆時針為鬆開啓動棒。

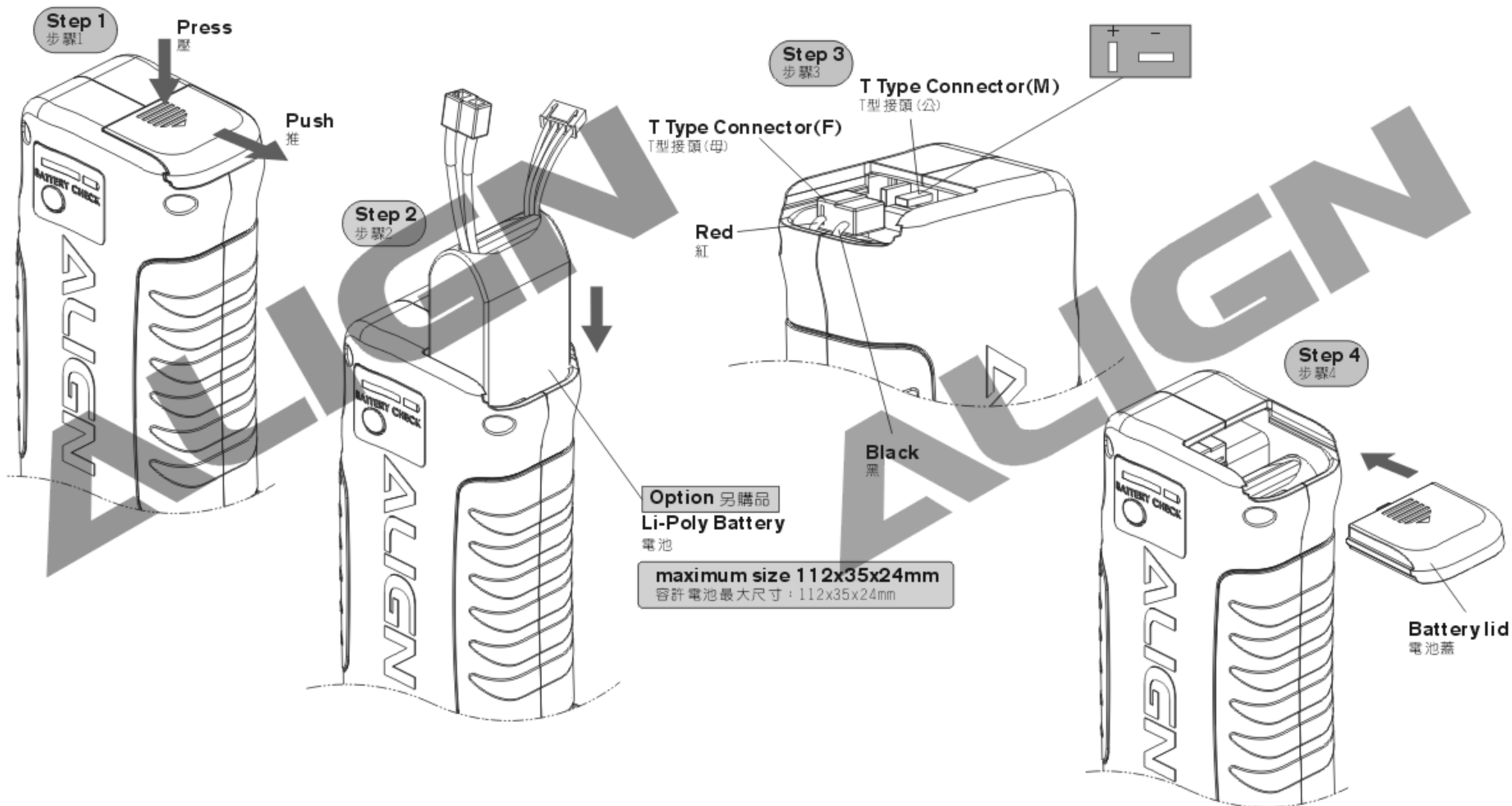
**Note: Do not over tighten the starter shaft. Turn the adaptor until it reaches the oil seal.**

注意：啓動棒鎖入時只需旋轉至接觸油封即可，勿用力鎖緊，以免啓動棒難以取下。



2. Please refer to diagram below for battery installation. This starter is suitable for 3S1P 1900~2300mAh/16c lipo battery with maximum size 112x35x24mm. Note the polarity when attaching the T-connectors.

2. 電池的安裝：參考下圖，本產品適用Li-Po 3S1P 1900-2300mAh 16C以上的Li-Poly電池(容許電池最大尺寸：112x35x24mm)，安裝電池時請注意T型接頭的極性。



**3. Battery level test: Press the battery level test button. Full charge is indicated with all 5 LED lighting up. If only red LED is lit, remove the battery and charge.**

**In addition, the red LED will flash when starter motor or over-discharge circuit is tripped from starting with a near depleted battery.**

3. 電池電量檢測：如下圖，按下電量檢測鍵可檢測電池電量，若五顆指示燈全亮，表示電池之電量充足。反之，當指示燈僅剩紅燈亮時，表示電池電壓不足。請更換電池，或取出電池以 Li-Poly 充電器進行充電。

當電池電壓不足時，啟動器將啟動低電壓保護限制馬達運轉，同時紅燈會開始閃爍警示。

**Orange light :**  
**Approx. 11.1V**

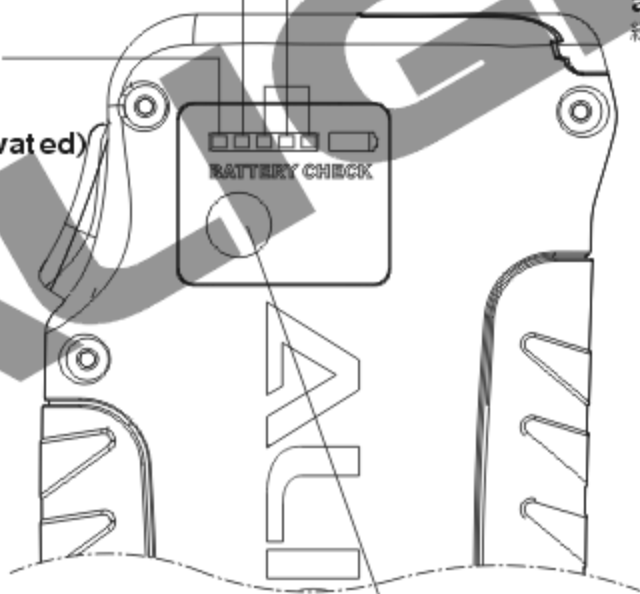
橘燈：約11.1V

**Red light :**  
**Approx. 10.8V**  
**(undervoltage protection activated)**

紅燈：約10.8V  
(低電壓保護啟動)

**Green light :**  
**Approx. 11.4V**  
**and above**

綠燈：約11.4V以上



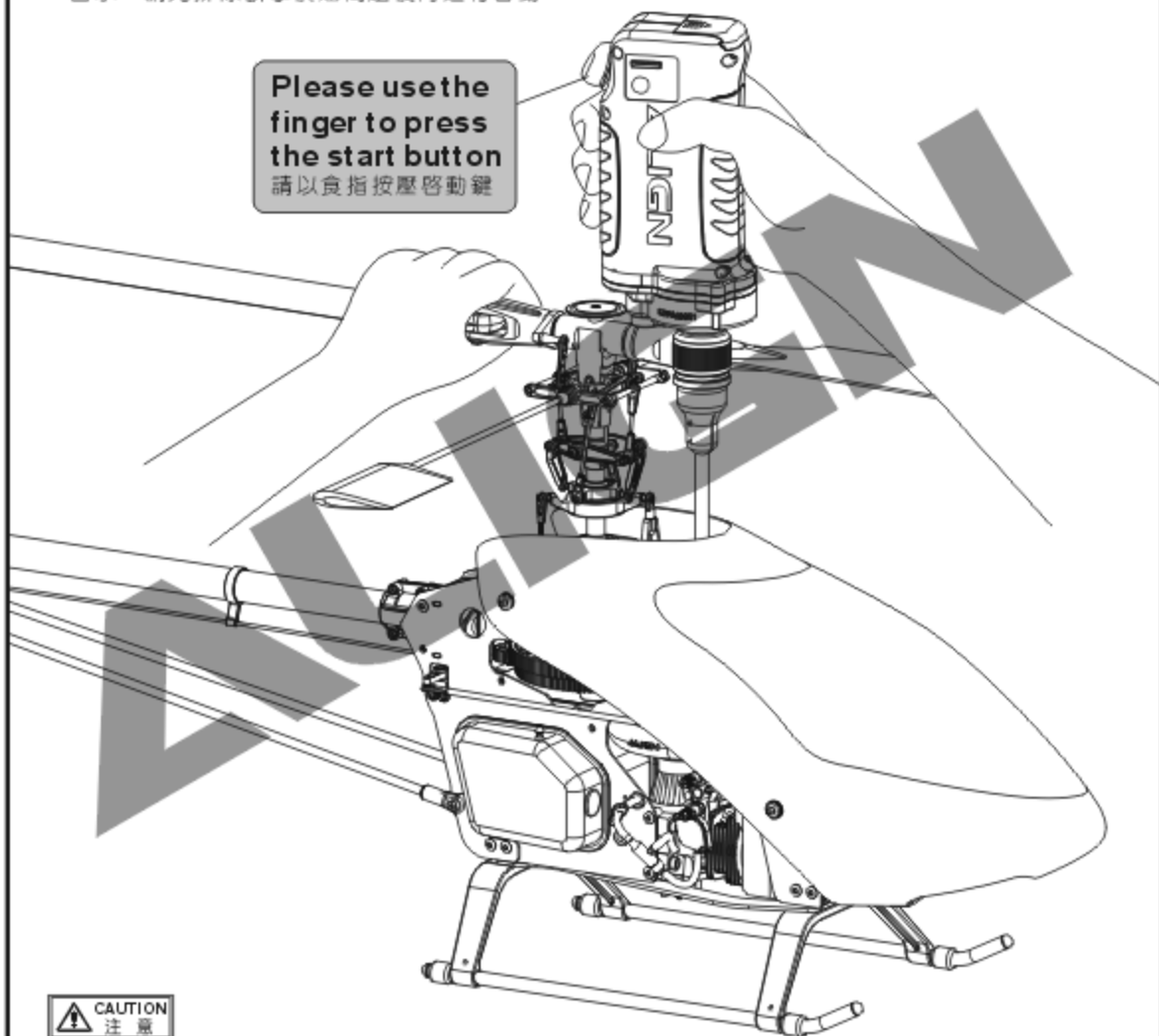
**Battery level test button**

電量檢測鍵

4. **Starting of Engine:** Grab the starter firmly in hand, apply the starter to helicopter, and press the start button.
5. The build in cutoff circuit will kick in when torque is overloading. This is indicated with all 5 LEDs flashing. Clear the engine combustion chamber of any fuel and restart to avoid damages.

4. 啓動引擎：將啓動器與直昇機偶合後握住啓動器，接著按下啓動鍵即可啓動引擎。
5. 本產品具有扭力過載斷電保護，可避免損壞引擎與啓動馬達，當啓動保護時5顆指示燈會同時閃爍警示，請先排除引擎積油問題後再進行啓動。

Please use the  
finger to press  
the start button  
請以食指按壓啓動鍵



**Caution:** Please make sure the engine rotates smoothly, unflooded, part consuming condition before start. Ignore this may cause torque overloading protection activated or cause the engine damaged.

注意：啓動前務必確認引擎運轉結構順暢，無內部積油、機件損耗等情況，若強行啓動，可能導致啓動器啓動扭力過載斷電保護或引擎故障受損。



You can also purchase spinner cup and starter rubber for airplane use.

1. The reversible starter rubber design is for different sized spinners. Bigger internal diameter side is for diameter with 3 inch and above spinners. Smaller internal diameter side is for diameter with less than 2.5 inch spinners. Please find the illustration below:

您可以另購飛機用啟動頭及啟動器橡膠套給飛機使用。

1. 啟動器橡膠套雙面設計給不同等級的機鼻罩使用，內徑較大的面適用直徑3吋以上機鼻罩，內徑較小的面適用直徑2.5吋以下機鼻罩，如下圖所示：

Option 另購品

Spinner cup  
飛機用啟動頭

Option 另購品

Starter rubber  
啟動器橡膠套

Bigger internal diameter side is suitable for diameter with 3 inch and above spinners

內徑較大的面適用直徑3吋以上機鼻罩

Smaller internal diameter side is suitable for diameter with less than 2.5 inch spinners.

內徑較小的面適用直徑2.5吋以下機鼻罩

2. Choose the suitable starter rubber side according to the size of airplane spinners.

3. Push and make the starter rubber contact to the spinners with suitable force. Then press the start button to start the engine.

2. 依飛機引擎機鼻罩的尺寸選擇適合的內徑。

3. 將啟動頭橡膠套以適當的力道抵住機鼻罩，接著按下啟動鍵即可發動引擎。

Spinners  
機鼻罩

Spinner cup  
飛機用啟動頭

Please use little finger or ring finger to press the start button.

請以小指或無名指按壓啟動鍵

## BATTERY電池：Li-Poly 3S1P 2100mAh 16C (Reference battery)

Engine type 引擎類別	Loading rotation speed 負載轉速	Loading voltage 負載電流	Numbers of starts for a battery (approximately) 一顆電池可啟動次數 (大約值)
90 Nitro engine 90木精引擎	2000rpm	Approx. 8A 約8A	Approx. 500 約500次
50 Nitro engine 50木精引擎	2200rpm	Approx. 6A 約6A	Approx. 850 約850次
50cc Gasoline engine 50cc汽油引擎	1550rpm	Approx. 16A 約16A	Approx. 220 約220次
28cc Gasoline engine 28cc汽油引擎	1950rpm	Approx. 9.8A 約9.8A	Approx. 300 約300次

## 7. SPECIFICATIONS 規格表

Suitable battery 適用電池	Li-PO 3S1P 11.1V 1900~ 2300mAh 16C and above(maximum size 112 x 35 x 24mm) Li-Po 3S1P 1900~2300mAh 16C以上的Li-Poly電池 (容許電池最大尺寸：112x35x24mm)
No load rotation speed 空載轉速	2300rpm
Battery undervoltage protection 電池低電壓斷電保護	10.8V
Quiescent current 待機電流	0 mA
Motor overheat protection 馬達過熱保護	80C
Decelerate gear ratio 減速齒比	5.3:1
Weight 重量	700g(w/o battery) 700g(不含電池)

# ALIGN

