



標題 Title.	VRLA 電池安全注意事項 VRLA battery user safety instructions		
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VRLA 電池安全注意事項 VRLA battery user safety instructions

⚠ 危險 ⚠ Danger	表示若不當使用，可能造成人員傷亡的危險。 Means extreme danger. Improper usage will cause serious injury or even death.
⚠ 警告 ⚠ Warning	表示若不當使用，可能造成人員傷亡，並有可能造成輕傷或財物損害。 Means urgent danger. Improper usage will cause the possibility of death, serious injury and light injury or facility damage.
⚠ 注意 ⚠ Caution	表示若不當使用，可能造成人員受傷或財物損害。 Means ordinary danger. For improper usage, the possibility of serious injury is less, but may cause light injury or facility damage.

1. 使用環境及條件 Using environments and conditions

⚠ 危險 Danger
(1) 將蓄電池裝入機器內時，請勿使用密閉容器，若使用密閉容器可能造成機器爆裂或損傷人體。 Please do not store the battery in a closed environment, shall keep it away from fire sources. If not tend to cause an explosion, fire, facility damage and body injury. (2) 使用專用充電機或按本公司指定充電條件，若在其他條件下充電，會造成蓄電池溫度上升，產生氫氣導致蓄電池漏液、發熱、爆裂等。 Please use a specialized charger to charge the battery, and follow the specified charging terms. Charging under different conditions will cause the battery to leak fluid, heating and emit hydrogen even cause explosion.

⚠ 警告 Warning
(1) 蓄電池使用在醫療設備時，請附裝一個與本蓄電池系統獨立的備用電源系統，以防止蓄電池萬一不能運轉的情況下會損傷人體。 When battery is used for medical applications, please install extra standalone backup units, which can prevent human injury when battery fails. (2) 如果蓄電池裝置在金屬製的容器內時，請在蓄電池和容器中間放入耐酸、耐熱性的絕緣物，若不絕緣蓄電池漏液時，會造成漏電、冒煙、火災、爆裂。 When battery needs to set up inside the metal products. Please use insulated material that has acid-resist and heat-resist between battery and metal container. Not using insulated materials may cause fire or an explosion by leaking. (3) 請勿在有可能產生火花(開關、保險絲)的物體附近安裝蓄電池，另外請勿讓火靠近蓄電池，因為蓄電池在充電時有可能發生可燃性的氣體，有可能造成起火、爆裂等。 Do not install batteries close to fire or any objects (switch, fuse) what spark may occur. Battery may emit flammable gas, which may cause fire or explosion.

 注意 Caution

(1) 蓄電池的使用溫度範圍如下：

如在此溫度範圍以外使用，會造成蓄電池性能、壽命低減、破損、變形。

放電 (機器使用時) : -15°C~45°C 充電時 : -15°C~45°C 保存時 : -15°C~45°C。

The temperature ranges for batteries usage are listed as below :

Usage outside the following ranges will shorten battery life and lower its performance level, and may cause acid leakage, fire and explosion.

During discharging(Machine running) : -15°C~45°C During charging : -15°C~45°C

During storage : -15°C~45°C

(2) 請勿在變壓器等發熱處附近使用蓄電池，否則會導致蓄電池溫度上升，造成漏液、火災、爆裂。

Please do not use the batteries near transformers or heat resources, it will cause acid leakage, heating and explosion.

(3) 請勿將蓄電池放置在有可能浸水的地方，否則會引起漏電而觸電、火災。

Please do not use the battery in a moist environment or immerse it in water, doing this will cause battery acid leakage, electric shock and fire.

(4) 請勿在炎熱天氣及強烈陽光直射的高溫環境使用或保存蓄電池，否則會導致電池溫度上升，造成漏液、火災、爆裂。

Never use/store the batteries under direct sunlight, near heater, fire or in any other spaces of high temperature. All of these will cause acid leakage, heating and explosion.

(5) 請勿在灰塵多的地方使用蓄電池，否則可能造成短路，如有灰塵地方使用蓄電池，務必定期檢查並清理。

Do not use the battery in the place where is a lot of dust, or it may cause short circuit. Please always check and clean if it is necessary to place the battery in dust area.

(6) 同時使用多個電池時，請先把蓄電池正確連接後，才可連接充電機或負荷，此時將蓄電池的正極端子和充電機負荷的正極各自連接好，若蓄電池、充電機及負荷一旦極性連接錯誤，有可能引發爆裂、火災以及損傷蓄電池或機器，亦有可能損傷人體。

When using batteries in a series, connections should be made between the batteries before charging or underload. The positive terminal of the battery must connect to the positive side of the charger of the load. If connection error occurs, it may cause explosion, fire, personnel or equipment damage.

(7) 注意請勿讓蓄電池壓到足部，可能會引起重大傷害。

Be care of the fallen of the battery, it may crush foot that cause severe damage.

(8) 蓄電池的最大放電電流，請勿超出規格書的最大值，若超出最大值有可能發生蓄電池漏液、發熱、爆裂等。

Do not use the battery out of its maximum current of the datasheet, or it may cause leaking, heat or fire.

(9) 下列用途機器及高可靠度要求之機器，禁止使用。

Do not use the battery in extremely high reliability applications listed as below or other applications.

(9-1) 海底機器 (海底中繼器、海中作業機器)。

Submarine Machines (Submarine repeater, Sea operation machines etc.)

(9-2) 可移動的控制機器 (汽車、飛機、鐵路、船舶等精密機器)。

Control machines for moveable objects (Precise control instrument for automobiles, Airplanes, Railroad, Vessels...etc.)

(9-3) 醫療機器 (生命維持裝置、人工透析器等機器)。

Medical machines (Life sustaining devices, Dialysis machine, etc.)

(9-4) 核能、國防產業用機器。

Machines for nuclear, or national defense.

(9-5) 風力發電系統轉子部分變槳控制的用途。

Purpose of the pitch control for the rotor part of wind power system.

⚠ 建議 Suggestions

- (1) 請勿讓蓄電池碰撞、掉落、強烈的衝擊。請勿在激烈震動的場所使用，因為有可能造成蓄電池破裂。
Do not let battery be crushed, fallen, and strong impact. Do not use the battery in strong vibrations environment, or it may cause crack of battery.
- (2) 請確認實際負荷條件下的壽命特性，依蓄電池充放電條件的不同，使用壽命有可能會隨之有大幅度變化。
Please make sure the lifespan of the actual loading. Lifespan may substantially change by different re/discharging conditions.

2.設置 Applications**⚠ 危險 Danger**

- (1) 活動板手、板手等金屬工具，請用 PVC 膠帶等進行絕緣處理後再單邊使用。如不絕緣處理就直接使用，會因短路而產生熱或火花，可能引起燙傷，蓄電池的破損和起火爆裂。
Metal tools like adjustable wrench or etc., please use PVC(insulation) tapes for insulation before application, or short circuit may be occurred, which would bring heat or sparks that cause battery crack, fire, even explosion.



- (2) 請勿將蓄電池放在密閉處及靠近火源處，否則從蓄電池內會產生的氫氣有可能造成爆裂、火災等。
Please do not store the battery in a closed environment and fire sources, or it may cause explosion, fire, facility damage and body injury. Besides, battery may emit hydrogen gas.
- (3) 請勿將蓄電池和 Ni-MH、Ni-Cd 等其他種類蓄電池一起使用，若將不同種類混用，會發生蓄電池漏液、發熱、爆裂、損傷人體的危險。
Do not mix different kinds of battery such like Ni-MH, Ni-Cd batteries, or it may cause battery such like Ni-MH, Ni-Cd batteries, or it may cause battery leakage, heat, explosion, and human damage.

⚠ 警告 Warning

- (1) 請勿將蓄電池接觸含有可塑劑的絕緣電線和軟質聚乙烯薄膜，另外請不要使用香蕉水、汽油、揮發油、潤滑油、油脂等有機溶劑和清洗劑，否則有可能使電槽破裂漏液造成火災。
Do not let the insulated wire or soft PE wrap which have plasticizer. Besides, do not use any organic solvent or detergent like gasoline, banana oil, white gas, lubricant, and etc., or it may crack the container that leads to acid leakage and fire.
- (2) 嚴禁醋酸接觸蓄電池，會引起立即破裂危險。
Do not let the acetic acid approach the battery, it may cause battery crack.
- (3) 蓄電池使用時，請戴橡膠手套、膠鞋等安全裝備後再作業，若沒有採取安全裝備就作業，有可能會引起觸電、燒傷、火災。
Before using the battery, please wear insulated gloves and boots, or it may cause electric shock, burn, or fire.
- (4) 請勿將蓄電池設置在可能浸水的地方，否則會引起漏電而觸電、火災。
Do not place the battery in the area where may be soaked by water, or it may cause fire and electric shock by electricity leakage.

⚠ 注意 Caution

- (1) 打開包裝時，請小心搬運蓄電池，若不小心發生撞擊時有可能造成蓄電池損傷，另外請確認蓄電池有沒有破裂、漏液現象。
Please carry the battery carefully when opening the package. Otherwise, battery would damage by accident impact. Besides, please check the battery of crack or acid leakage.
- (2) 蓄電池裝在機器內部時，應放置在容易檢查、調整和更換的位置，最好盡可能裝在機器最下面的位置，請勿將蓄電池倒置超過 90° 以上的狀態下充電，因為有可能會從安全閥上有液體漏出，可能會導致爆裂、火災等。
The battery should be installed in easily check, configure, and replacement position to the facility. It is better to install in the bottom of facility because safety valves may leak liquid, which would cause explosion, fire, and etc.
蓄電池可以在正立和橫放、直立使用 (最大角度為正立放置 90°)。
Battery can be installed under 90 degrees like below.



倒立

Upside down



正立

Horizontal stand



橫放

Lie down



直立

Vertical stand

- (3) 請勿持拿端子或導線來搬運電池。這樣會導致蓄電池破損。
Do not grab the battery terminal or cable to shift its position, it would cause battery damage.
- (4) 搬運蓄電池時，請勿讓蓄電池受到碰撞或落地重放之撞擊，有時會導致蓄電池破損。
Do not let battery be collided or dropped to the ground when carrying them, which may crack the batteries.
- (5) 請把蓄電池當作重量物處理，否則有可能搬運中造成腰部受傷。
Batteries are heavy, please carry or transport them correctly to prevent waist injury.
- (6) 請勿用容易產生靜電的塑膠布包裝蓄電池，只因靜電有時會成為起火爆炸的原因。
Do not use plastic sheets to cover the batteries, which may generate static electricity to cause fire and explosion.
- (7) 螺絲、螺帽的固定，請勿於規定值外的轉矩下進行，否則可能會導致發生火花和端子破損。
Do not fasten the bolt out of specific torque range, or it may cause sparks and terminal crack.
固定螺絲、螺帽的扭緊扭矩如下表所示：
Bolts and nuts fasten torque range table is showed below :
- | 螺絲直徑
Bolt Diameter | 扭矩 Nm(kg f.cm)
Tightening Torque Nm(kgf.cm) |
|-----------------------|--|
| M 5 | 2.0~3.0 (20~30) |
| M 6 | 3.9~5.4 (40~55) |
| M 8 | 9.0~11.9 (92~122) |
| M 10 | 14.7~19.6 (150~200) |
- (8) 裝置蓄電池時，為防止萬一電槽破裂等引起漏液，形成漏電迴路，請設計迴路時要避免蓄電池與裝置箱及固定桿直接接觸，請在兩者間配置絕緣層或絕緣托盤。
Battery container may be cracked that cause acid leakage, which results in leakage circuit. When designing the circuit, please set insulating dividers or trays between batteries, facilities and mounting brackets.
- (9) 多個蓄電池串聯使用時，應確認蓄電池間連接正確，並保持距離 0.5cm 以上 散熱間隙。
Please make sure all the connections between each terminal are correct when using batteries in series, and keep each

battery heat dissipation distance at least 0.5cm.

 建議 Suggestions

- (1) 蓄電池的裝置、電氣的配線等工程，請委託專家進行，部分國家規定電氣工程專家必須是通過政府機關考試合格者。
Please contact well-trained and qualified experts to complete battery system installation. In some countries, electrical engineering experts must have qualification certificate from government.

3.使用前的準備 Preparation before use

 危險 Danger

- (1) 請在蓄電池端子的接續導體上裝上絕緣罩，若不按要求裝置，有可能導致觸電燙傷、火災、爆裂。
Please use insulated materials to cover the terminal and connector, or it may cause electric shock, burn, fire, and explosion.

 注意 Caution

- (1) 蓄電池須經過充電器，不可直接與電源插座或汽車中的點煙座直接連接，若直接連接有可能導致蓄電池漏液、發熱、爆裂。
Battery charging must connect specific charger only, do not directly connect AC power sockets or cigarette lighter socket. If connected, it may cause battery acid leakage, heat, and explosion.
- (2) 蓄電池與充電器或負荷連接的時候，請關掉開關。
Please turn off power before connecting battery to charger or load
- (3) 購入蓄電池初次使用時，若發現生鏽、裂痕、變形、發熱等異常情況時，請勿使用。若異常情況下繼續使用，有可能發生蓄電池漏液、火災、爆裂等情形。
If there is any corrosion, cracking, deformation, heat generation, or other abnormalities to the VRLA battery upon its first use after purchase, do not use it. Using the battery with an abnormality may cause acid leakage, heat or explosion.
- (4) 空氣中的水分可能會與端子接觸並產生白色反應物質，但這不會影響電池性能（如果初期放置區域較潮濕或安裝時端子有潮濕）。因此如果發現任何白色物質，請用黃銅鋼絲刷將其清除，全部螺絲組與接續線、匯流排等皆鎖付完成後，才可塗抹薄薄的白色凡士林或防鏽劑(NO-OX-ID)，以抵抗受潮、氧化。
Exposure to airborne moisture may cause white residue to form on the terminals; however, this does not compromise battery performance. If any white substance is detected, remove it using a brass wire brush. Only after all screws, connectors, and busbars are fully tightened should a thin layer of white Vaseline or NO-OX-ID anti-corrosion grease be applied to protect against moisture and oxidation.
如果白色凡士林或防鏽劑(NO-OX-ID)附著在蓋子、電槽或其他零件上，可能會導致變質。如果沾到表面，請立即使用潮濕的棉布擦拭。
If white Vaseline or NO-OX-ID anti-corrosion grease adheres to the battery cover, container, or other components, it may cause material deterioration. Should any contact occur, immediately wipe the affected surfaces clean with a damp cotton cloth.

 建議 Suggestions

- (1) 購入蓄電池初次使用或長期放置後，要使用前一定要實施補充電，因為蓄電池在保管中也會自行放電漸漸損失容量，因此未實施補充電有可能會導致性能達不到規格。
For the initial use or if the battery has been stored for a long time, please recharge the battery full before using. The battery capacity would reduce by self-discharge and cannot approach the specific performance.
- (2) 保管溫度及補充電時機及充電方法（如下表舉例說明）由於溫度越高自行放電越大，所以蓄電池應盡量避免放置在陽光照射的高溫場所中保管。
Stored temperature, recharging period, and recharging method are shown below. Due to higher temperature makes higher self-discharging, batteries should be stored that evade from high temperature and sunlight.

保管溫度及補充電的時機 Here is stored temperature and recharging period :

保管溫度 Stored temperature	補充電時機 Recharging period	補充電方法 Recharging method
25°C以下 Lower than 25°C	6 個月一次 Every 6 months	1. 以 0.25C(A) ; 2.275V / Cell · 限電流定電壓充電 2~3 天 Limited current constant voltage recharge at the rate of 0.25C(A);2.275V / Cell for 2 to 3 days 2. 以 0.25C(A) ; 2.4V / Cell · 限電流定電壓充電 10~16 小時 Limited current constant voltage recharge at the rate of 0.25C(A);2.4V / Cell for 10 to 16 hours. 3. 以 0.1C(A)的定電流充電 8~10 小時 Constant current recharge at the rate of 0.1C(A) for 8 to 10 hours
30°C以下 Lower than 30°C	4 個月一次 Every 4 months	
35°C以下 Lower than 35°C	3 個月一次 Every 3 months	
40°C以下 Lower than 40°C	2 個月一次 Every 2 months	
40°C以上 Higher than 40°C	請避免保管 Shall not keep it	

※1. 電流值 : "C"表示額定容量。C=7AH 時 ; $0.25 \times 7 = 1.75$ (A)。

Current : "C" means rated capacity. When C=7AH ; $0.25 \times 7 = 1.75$ (A) .

※2. 12V 蓄電池 $2.275V/Cell \times 6 = 13.65V$ 。

12V battery $2.275V/Cell \times 6 = 13.65V$.

4.指定用途以外使用 Out of application usage range

注意 Caution

(1) 請勿在指定的用途以外使用蓄電池，否則會導致漏液、火災、爆裂等。

Do not use the battery out of its application usage range, or it may cause leaking, heat or fire.

(2) 請勿讓蓄電池正、負端子接觸短路，若短路會發生蓄電池漏液、火災、爆裂等。

Do not let battery get short circuit, which would cause battery leakage, fire, even explosion.

5.使用方法 In use

危險 Danger

(1) 請勿將蓄電池(+)端子和(-)端子用金屬絲等金屬類物連接。否則會造成蓄電池溫度上升，從蓄電池處產生氫氣，會導致蓄電池漏液、火災、爆裂。

Do not use any metal such as steel wire to connect positive and negative terminals on the battery, or it may cause heat, hydrogen gas that leads to battery leakage, fire, or explosion.

(2) 請勿用金屬製的工具等搬運蓄電池及一起保管，否則會導致燒傷蓄電池，造成漏液、發熱、爆裂。

Do not keep and carry battery with metal tools, or it might damage the battery that cause acid leakage, heat, or explosion.

警告 Warning

(1) 請勿將蓄電池投入火中進行加熱。否則會引發蓄電池漏液、火災、爆裂。

Do not burn the battery or throw it into a fire, which may cause acid leakage, fire, or explosion.

(2) 請勿將蓄電池分解、改造、破壞等。否則會導致蓄電池漏液、火災、爆裂。

Please do not decompose, reconstruct or destroy battery that will cause acid leakage, heating and explosion.

注意 Caution

- (1) 蓄電池檢查外觀時，如發現電槽、蓋等有龜裂、變形等損傷及漏液現象，應以新品更換。如繼續使用外觀異常蓄電池，可能會導致達不到容量，漏電、發煙、火災等現象。

If there is any cracking, deformation, acid leakage or other damages on the appearance of the battery, please replace the new one. Using the battery with abnormal appearance may cause capacity decrease, electric leakage, smoke, or explosion.

- (2) 如發現蓄電池的充電電壓或放電特性異常時，請更換此蓄電池。

If there is an observed unusual situation of charging voltage or discharge situations, please replace the battery.

- (3) 為確保安全必須遵守下列事項，如不遵守下列條件，可能會導致蓄電池漏液、火災、爆裂、損傷人體危險。

Please follow the list below to ensure proper battery safety. Otherwise, it could cause a battery leakage, fire or cause an explosion and injury.

- (3-1) 請勿將蓄電池 (+) 端子及 (-) 端子和充電器的 (+) 端子及 (-) 逆接充電。

Do not reverse the terminal connection between batteries to recharge.

- (3-2) 請勿直接在蓄電池端子上點焊錫，若不得已需直接焊接時，事前請與本公司商量。

Do not weld directly on terminals, or please contact us if necessary.

- (3-3) 請勿將不同類別蓄電池、型式、新舊品蓄電池一起使用，否則會導致蓄電池漏液、火災、爆裂。

Do not mix different kinds, models, or date codes of batteries, or it may cause acid leakage, fire or explosion.

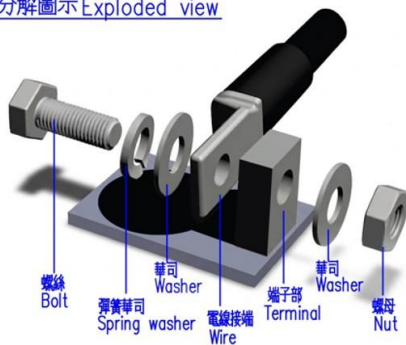
- (4) 螺絲、墊片正確鎖附方式(如下圖)

Appropriate bolts and washers screwing method is shown below.

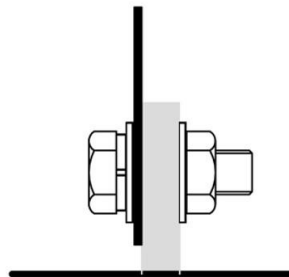
螺絲組裝配位置示意圖 Bolt nut set installation

型態 Type	裝配順位 Installing priority
標準型 Standard	螺絲+彈簧華司+華司+電線接端+(穿過 端子部)+華司+螺母 Bolt+Spring washer+Washer+Wire +Terminal +Washer+Nut

分解圖示 Exploded view



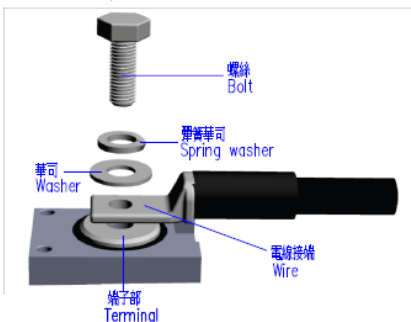
組合圖示 Assembly view



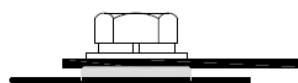
螺絲組裝配位置示意圖 Bolt nut set installation

型態 Type	裝配順位 Installing priority
埋入式 Embedded	螺絲+彈簧華司+華司+電線接端+端子部 Bolt+Spring washer+Washer+Wire+Terminal

分解圖示 Exploded view



組合圖示 Assembly view



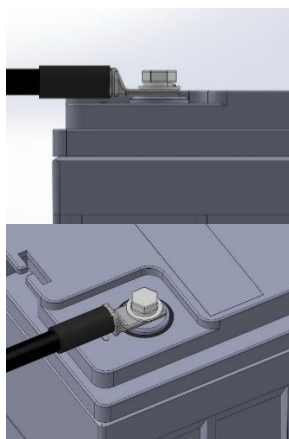
Ex. 段差形式埋入式端子（端子接續面內凹）：UXH140-12IFR 電池接續

Terminal connection flat surface is concave : UXH140-12IFR battery connection

Ex.1：標準接續：直 轉向接續線路

Standard connection :

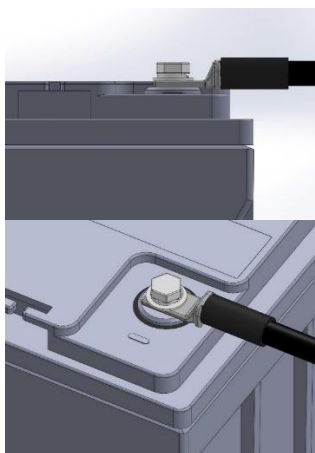
Direct : Turn to connection the line



Ex.2：標準接續：橫 轉向接續線路

Standard connection :

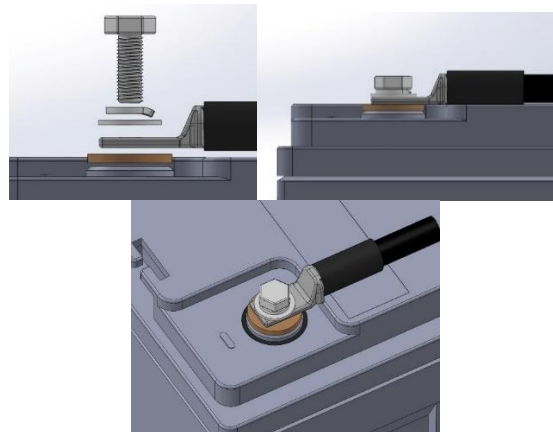
Horizontal : Turn to connection the line



Ex.3：非標準接續：增加一個 3mm 厚銅製墊片

Non-standard connection :

Add a 3mm thick copper spacer



⚠ 建議 Suggestions

- (1) 放電終止電壓是依據放電電流大小而不同，蓄電池的放電電流和放電終止電壓的規格，請依據規格書規定，請勿放電到比規格書的終止電壓還低的電壓。若放電到比規格書規定的終止電壓還低時，將蓄電池充電可能會引起蓄電池發熱、變形。

Final voltage is related to battery discharging current, which is written down in datasheet. Do not let battery discharge to a voltage lower than suggested final voltage, or it may cause heat, deformation when charging.

- (2) 循環用(充電和放電反覆使用)時，請使用控制時間或充電量的充電器，充電請在指定時間或顯示充電結束的指示燈顯示終了的時間進行，如充電途中中止，可能造成蓄電池壽命縮短。

Please use time or capacity controlling charger when battery in cycle (cyclic dis/recharging) use. Besides, please recharge in specified time or when charge finished indicator off. If charging terminates accidentally, it might shorten the battery lifespan.

- (3) 循環使用時請勿使用並聯充電，因為在並聯的情況下，因為失去充、放電平衡，可能造成蓄電池壽命縮短。

Do not charging in parallel when cycle use, which may lose discharging balance that shorten the lifespan.

- (4) 長期不使用機器時，把蓄電池從機器中取出，並充飽電後放置濕氣少的地方保管，如果保管條件不佳，有可能導致蓄電池性能和壽命低下，產生銹蝕。

If the equipment will not be in use for a long period, please remove and recharge the battery from the equipment then store in a dry area. If storage condition is poor, it may cause battery performance, lifespan decrease, and corrosion.

6.保養、點檢 Maintenance and checking

⚠ 警告 Warning

- (1) 蓄電池的清潔請用扭乾的濕抹布擦拭，請勿使用乾布或雞毛撢子。否則會產生靜電而導致蓄電池發火、爆裂。

Please use damp cloth with moisture to clean the battery, do not use any dry fabric, feather duster or other materials, or it may cause static electricity that leads battery on fire.

- (2) 請依據電池的使用說明書或機器上所標示的更換時間，到期前更換新電池。若過了更換時期還繼續使用會發生內部短路，電槽變形，導致蓄電池漏液、火災、爆裂。

Replace the battery at or before the time indicated on the battery or in the user's manual. Usage beyond the required time of service would cause short circuit, container deformation that leads acid leakage, fire, or explosion.

 注意 Caution

- (1) 請勿使用香蕉水、汽油、揮發油等的有機溶劑和洗淨劑，如果有機溶劑和洗淨劑接觸到電槽有可能造成電槽破裂、漏液、火災。
- Do not use any organic solvent or detergent like gasoline, banana oil, white gas, and etc., or it may crack the container that leads to acid leakage and fire.

 建議

- (1) 請定期點檢蓄電池，點檢結果不符合使用說明書所記載的規格時，請按說明書的要求處理，若繼續使用會導致蓄電池破損。
- Please make regular inspection on the battery. If inspection result does not meet the standard in user's manual, please follow the steps according to user's manual. Keep using under standard battery would cause cracked.
- (2) 蓄電池的端子請維持乾淨狀態下使用，如果蓄電池端子髒汙時，跟本體接觸不良，有時會因此而無法充電。
- Please keep terminals clean when using battery. If terminals are dirty, it would make poor connection that cannot recharge the battery.
- (3) 電池安裝於 UPS 等設備時，請確保設備之漣波電流 ≤ 0.05 CA (建議值為 ≤ 0.03 CA)。若超過此數值，將可能導致電池異常升溫、壽命縮短，以及容量與性能之衰減。
- Please ensure the ripple current of the UPS or similar equipment is ≤ 0.05 CA (optimally ≤ 0.03 CA) when installing the battery. Exceeding this limit may lead to abnormal temperature rise, reduced service life, and degradation of battery capacity and performance.

7.異常時的處置 Procedure when abnormality **危險 Danger**

- (1) 發現蓄電池端子腐蝕、漏液，電槽變形及其他異常現象時，請停止使用，若異常狀況下繼續使用，會導致蓄電池漏液、火災、爆裂。
- If there is any corrosion, cracking, deformation, or other abnormalities to the battery, please do not use it. Using abnormal battery may cause acid leakage, fire or explosion.
- (2) 天災地變以後的處置 Procedure after earthquake or disaster
- 發生地震等天災地變以後請將蓄電池全數的端子螺絲組再一次鎖附確認，假如不加以確認繼續使用可能發生火花的產生或是蓄電池的破損。
- After an earthquake or disaster, please check the tightness and each connection to avoid spark or crack of battery.
- 發生地震等天災地變以後請檢查蓄電池外觀是否有發生漏液電槽龜裂或是其他異常現象，假如發生異常而繼續使用有可能造成漏液、火災、爆裂等。
- After an earthquake or disaster, please inspect each battery container to make sure that there are no cracks or any abnormalities. If keep using abnormal battery, it would cause acid leakage, fire, or explosion.
- (3) 若蓄電池著火情況下，請勿使用清水滅火，以免火災災情擴大，務必使用乾粉滅火器或二氧化碳滅火器滅火。
- If the battery catches on fire, please use dry powder fire extinguisher or carbon dioxide fire extinguisher. Do not use water to fire fighting.

 警告 Warning

- (1) 蓄電池的內部裝有稀硫酸，如果蓄電池漏液沾到皮膚及衣服時，請馬上用大量自來水清洗，萬一噴入眼睛時，立即以大量自來水沖洗後，立即送醫治療。稀硫酸進入眼睛可能造成失明、沾到皮膚時也可能造成腐蝕燒傷。
- Battery contains diluted sulfuric acid. If the acid leaks out and gets onto your skin or clothing, please wash it off immediately with clean water. Additionally, if the acid splashes into your eyes, please wash them with large volume of clean water and get immediate medical retreatment. If acid splashes into your eyes, which may cause the loss of eyesight, and when it gets on your skin, it would cause burned on your skin.

 注意 Caution

- (1) 若發現蓄電池端子腐蝕、漏液、電槽變形等現象，請勿繼續使用，如果照常使用時，可能會導致蓄電池漏液、火災、爆裂等。
If there is any corrosion, cracking, deformation, or other abnormalities to the battery, please do not use it. Using abnormal battery may cause acid leakage, fire or explosion.
- (2) 如果初期放置區域或安裝位置的濕度較高，空氣中的水分可能會與端子接觸並凝結，生成白色反應物。
蓄電池接續前或定期保養時若發現有白色反應物質生成...請依照 3.使用前的準備：打磨端子並塗抹白色凡士林或防鏽劑(NO-OX-ID)。
High humidity in the storage or installation area may cause airborne moisture to condense on the terminals, resulting in the formation of a white reaction product. This substance does not impact battery performance.
If any white reaction product is observed prior to connection or during routine maintenance, please refer to Section 3, Preparation Before Use: Clean and polish the terminals with a brass wire brush, then apply a thin layer of white Vaseline or NO-OX-ID anti-corrosion grease after all connections are secured.

8.產品保管 Battery storage **注意 Caution**

- (1) 為了使蓄電池端子不與金屬或導電性物質(含落物)接觸，請在安全的場所及正確放置方式保管。
Do not use any metal such as steel wire to connect terminals and avoid falling objects, please follow the storage methods to store the battery in safety area.
- (2) 請勿讓雨水淋到蓄電池，如果被淋到可能會導致端子腐蝕。
Do not let rain wet the battery, it would corrode the terminals.
- (3) 蓄電池的放置須正立放置為原則，請勿在蓄電池上給予異常激烈震動與衝擊。若蓄電池不正確的放置與搬運或給予異常的震動與衝擊時，有可能導致蓄電池破損及特性劣化。
Battery should be horizontal stand stored, and avoid vibration and impact on it, or which may be cracked or deteriorated.
- (4) 保管蓄電池時，從機器上取下電池或切斷充電器或負荷，在溫度低的地方保管，請勿在直射日光或高溫、多濕的環境下保管，如此可能造成電池性能或壽命低減及端子腐蝕。
When storing the battery, please take off battery from facility, cut down power or load. Then store the battery avoid direct sunlight and any other spaces of high temperature or moisture. All of these will cause less lifespan and terminal corrosion.

 建議 Suggestions

- (1) 保管中請在 6 個月內給蓄電池充電 1 次 (環境溫度在 25°C 以下時)，如果處於放電狀態下長期保管，即使充電也無法回復到原來的容量。
When storing the battery, please recharge it every 6 months (under 25°C). If keep discharging when storing for a long period, it cannot reverse full capacity even recharged.
- (2) 保管中蓄電池放置達 1 年以上未實施補充電，有可能造成壽命縮短。
If the battery is stored for more than a year without any recharging, its lifespan will be shortened.
- (3) 請充飽電後保管，若未充飽電保管，會造成蓄電池壽命縮短。
Please make full charge on battery before storing, or it would shorten the battery lifespan.
- (4) 蓄電池請盡早使用，蓄電池在保管中特性也會漸漸衰退，即使實施補充電也很難恢復容量。
Battery should be in use as fast as possible because battery performance would gradually decline, and hard to restore capacity even recharge it.

9.產品廢棄時的處置 Disposing the battery **注意 Caution**

(1) 對於蓄電池的回收，部分國家對含有蓄電池的裝置，在法律上有明確的規定必須遵守。

There has the policy about disposing battery or facilities in some countries, please obey the laws.

(2) 使用完的蓄電池回收運送時，請將端子貼上絕緣貼布，因為使用完的蓄電池也是有電能，如果端子不絕緣，有可能會造成爆裂或造成火災，有關回收問題請洽詢本公司或代理商。

When recycling the used battery, please insulate the tape on terminals because used battery still has electricity.

If terminals are not insulated, it may cause explosion and fire. Contact us or authorized resellers about recycling.

10.有毒有害物質或元素名稱及含量 Battery Toxic or hazardous substances and elements

 注意 Caution

(1) 產品中有害物質名稱及含量

Toxic or hazardous substances and elements

部品名稱 Part name		鉛(Pb) Lead	汞(Hg) Mercury	鎘(Cd) Cadmium	六價鉻(Cr(VI)) Hexavalent Chromium	多溴聯苯(PBB) Polybrominated Biphenyls	多溴二苯醚(PBDE) Polybrominated Diphenyl Ethers
端子 Terminals	插接式 Fastons	×	○	○	○	○	○
	鉛端子 Lead terminals	×	○	○	○	○	○
電池外殼 Container		○	○	○	○	○	○
電池內部物質 Internal elements		×	○	○	○	○	○

本表格依據 RoHS 項目編制

This table follows Restriction of Hazardous Substances Directive(RoHS) standard.

○：表示該有害物質在該部品所有均質材料中的含量均在 RoHS 規定的限量要求以下。

Indicates that this hazardous substance contained in all homogeneous materials of this part is below the limit requirement in RoHS.

×

Indicates that this hazardous substance contained in at least one of the homogeneous materials of this part is above the limit requirement in RoHS.