

# RT 系列蒸發器安裝與操作說明

## RT Series User's Manual



**1Cherng**®



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### 1. Check on delivery

When receive product, please check if there is any damage on packing or product due to shipping. And the content is the same as packing list. If there is any damage, please describe defect(s) on the delivery note. If possible, take photos on damaged part and send the photos and damage description to your local agent. In order to protect your right and interests, please inform your local agent within 3 days.

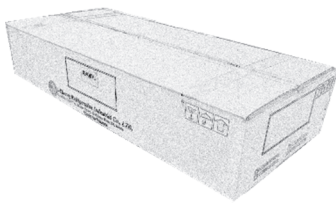
### 2. Storage

**Warning! Do not place drain pan or header side down. Incorrect storage way could lead to casing or tubes damage!**

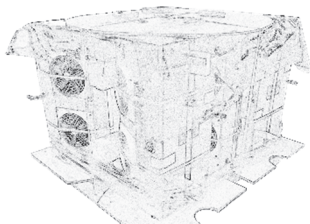
**Never place any heavy goods on this product!  
Never sit or stand on the container!  
Never overstock the containers!**

Store product in cool and dry place. If corrugated cardboard gets wet, please remove the wet corrugated cardboard as soon as possible! Wet corrugated cardboard might produce corrosive compounds which are aggressive to heat exchanger materials!

If this unit cooler has been run for a while, for some reason has to unload the unit or shut down the whole system for a long time, please dry fin surface and drain pan before storage. If the cooler is disconnected from system, please seal this unit cooler with dry nitrogen.



Single Pack  
單只包裝



Multi Pack (for Manufacturer only)  
多只包裝 (僅供製造廠使用包裝)

### 1. 收貨檢查

當收到產品時，請檢查產品包裝與產品本身是否有運輸損傷。並請核對產品與送貨單內容是否符合。如果任何損傷，請於送貨單上註明損害情形。可能的話請將受損的部分拍照，並將照片與損害說明傳送到當地經銷商。為了確保您的權益，務請於到貨 3 天內通知您的經銷商。

### 2. 儲存

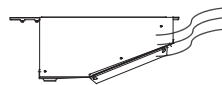
**警告！勿將產品水盤側或是回管側放置於地面，否則將造成板金或管件受損！**  
**請勿放置任何重物於本產品上！**  
**請勿坐或站立於本產品上！**  
**請勿過度堆疊本產品！**

請將產品放置於涼爽乾燥的位置。如果瓦楞紙包裝潮濕，請迅速將受潮的瓦楞紙板移除。潮濕的瓦楞紙可能會產生有腐蝕性的物質，對熱交換器的材質造成損壞。


如果蒸發器已經運轉過，在某些情形下必須要將蒸發器取下或是將系統關閉一段長時間，請在儲存前將鰭片與水盤乾燥。如果蒸發器由系統拆下，請將蒸發器以乾燥氮氣封存。




**Do NOT sit or stand or place any heavy goods on the container!**  
請勿坐或站立或放置任何重物於本產品上！




**Dry up unit cooler before storage or shut down for a long time if it has been run.**  
如系統已經運轉過，在儲存或要長時間停機前，請先乾燥！




**Sharp edges hazard !**  
Please wear protection gloves while unpacking and installing this product!



**銳利邊緣危害！**  
在取出本產品或安裝本產品請戴防護手套！



**Installation work must be executed by professional technician !**



**本產品的安裝作業僅能由專業作業人員執行！**

### 3. Installation

#### 3.1 Unpacking

Caution! Fins are very sharp, please be very careful while taking out the unit cooler. Do wear protection gloves through the installation work.

Unit cooler is packed with drain pan up. While take out the unit cooler, DO NOT put drain pan or header side directly on the ground. If need to put unit cooler on the ground, please keep it vertically. Please place a protection pad (ex. corrugated cardboard) under this unit cooler to protect casing.

Before shipping, all unit coolers have been pressurized inside to block moisture. While using copper tube cutter to cut inlet/outlet tubes before connection, do watch out the gas blowout.

All the packing materials disposal must meet local regulation.

### 3. 安裝

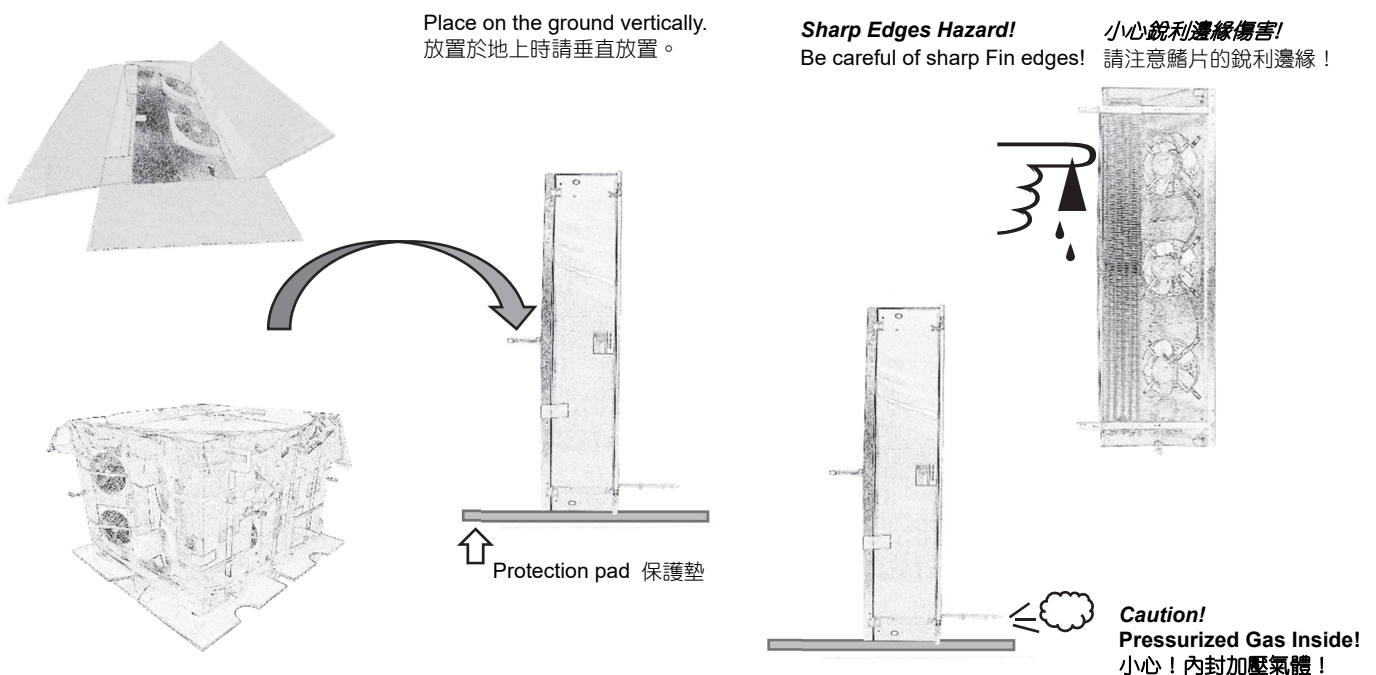
#### 3.1 取出產品

小心！蒸發器的鱗片相當銳利，在由包裝箱取出本產品時請特別小心。拆卸過程中請戴防護手套。

蒸發器是以水盤在上的方式包裝於紙箱中，取出蒸發器後，請勿將水盤側直接放置於地面上。如需要放置於地面上時，請維持垂直狀態。為保護本產品的箱體，放置時請於下方放置一個保護墊(如瓦楞紙板)。

所有的蒸發器在裝運前內部皆有充填氣體維持正壓，以避免水氣進入管路內部。在連接管路前以切管刀切割出入管時，請注意管內部氣體噴出。

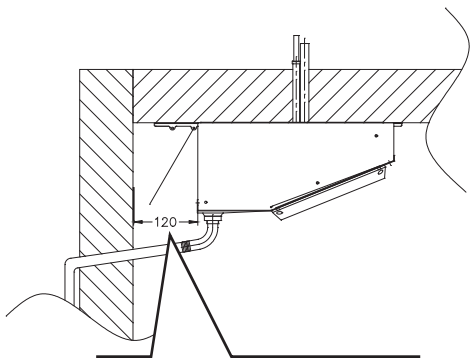
所有包裝素材的拋棄必須依照當地廢棄物處理法規辦理。



### 3.2 General rules for positioning unit cooler

In order to reach the best performance of your unit cooler, you must install unit cooler(s) in a correct place. The following general rules must be followed while selecting the position for unit cooler:

1. The distance between exhaust air side and wall of cabinet must be greater than 120mm. This will provide uniform air distribution inside cabinet. All unit coolers are equipped with a patented air guide blade, with this guide blade, air could be delivered to the bottom of cabinet. In low temperature application, this blade will close due to no air flow while defrosting. It will seal heat inside the unit cooler. Thus enhances defrosting efficiency and avoids room temperature raising during defrosting.
2. The suction side usually faces to door of cabinet, outdoor air flows into unit cooler directly while door opened. In low temperature application, it is very easy to accumulate heavy frost on coil surface. It's better to stop the fan(s) while door opened. Never place this kind of showcase in a non-air conditioned space.
3. Make sure there is no obstacle in front of fan(s). Must reserve space to build up better air circulation. If air flow channel is blocked, it could lead to a short circuit at air side or no air flow that will reduce system capacity.

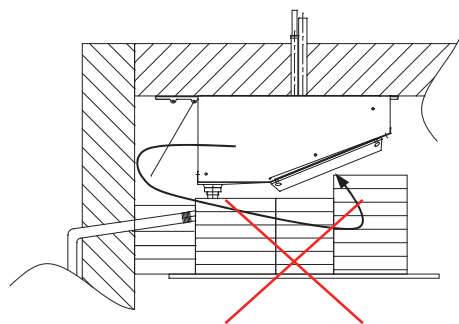


At least 120mm away from cabinet wall for better air circulation!  
至少與展示櫃箱體牆要有 120mm 的距離以獲得較佳的氣流循環！

### 3.2 安置蒸發器的通則

為了確保蒸發器能發揮最大的效能，必須要將蒸發器裝置在正確的位置。在選擇安裝位置時，必須要遵守以下的通則：

1. 蒸發器出風面與展示櫃的牆體間距離至少必須要大於 120mm。這樣才能確保箱體有較佳的氣流分佈。本系列所有的蒸發器都配置有專利的氣流導板，此導板可以將氣流導至箱體的底部。在低溫系統，當除霜時風車停止運轉，因無風通過，導板自然垂下，形成封閉狀態。如此將除霜熱封閉在箱體裡，提高除霜效能並避免庫溫上升。
2. 在此種蒸發器的應用中，吸氣面通常朝向箱體的門，當門打開時外氣直接流入蒸發器中。在低溫應用時，很容易在盤管面累積厚重的霜層。建議採取門開啟時風扇停止的控制策略。千萬不可以將此類型的展式櫃放置在無空調的環境。
3. 確保蒸發器在使用時風車的前方無任何障礙物，並確保有足夠的預留空間形成良好的氣流循環。如果氣流通道被阻擋，氣流很可能形成短循環或無法產生氣流，降低整體系統效能。



DO NOT block the air flow channel to avoid short circuit or no air flow.  
避免蒸發器的空氣通道受阻發生氣流短循環或無氣流吹出。



### Caution !

Aloft working must be executed by professional technician!



### 注意！

所有作業必須要由專業技術人員執行！

### 3.3 Locate

Before working, **MUST CHECK every related position and holes** are correct.

- Using two 4mm x 12mm long self-tapping screws, screw them into the back position on ceiling.
- Insert U notch of unit cooler back fixing bar into two fixing screws which are set at procedure (a). Be careful, do not damage the drain pan while installation.
- Using 4mm x 12mm long self-tapping screws to fasten the unit cooler in the front upper edge. Screw tightly all the screws.
- If the ceiling plate is too thin, please open cover of unit cooler, screw more self-tapping screws on the enforcement bar inside.

### 3.4 Drain Line

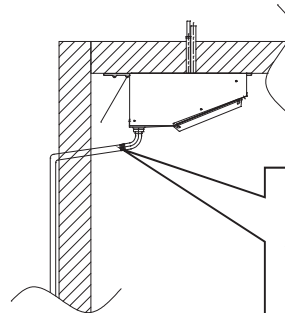
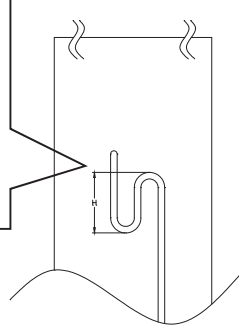
In order to drain water from drain pan, drain line should be pitched in adequate slope. If room temperature is below 2°C, drain line should be pitched at 100mm per 300mm. When room temperature is above 2°C, the drain line should be pitched at 25mm per 300mm.

For frozen condition, should install drain line heater (prepared by user) and insulate the drain line to prevent water frozen in pipe. Must turn on this heater all the time.

The drain line should be insulated and sealed where it passes through the wall.

In order to prevent outdoor air coming from drain line, must have a trap outside. The height of U trap must be greater than the negative fan pressure.

Must set up a U trap outside to prevent outdoor air flows into refrigerated space. The height(H) of U trap must greater than the negative fan pressure.  
室外必須裝設集水彎，以避免外氣進入冷凍庫內。集水彎高度 H 必須要大於風車所產生的負壓。



Drain line must be pitched at:  
100mm per 300mm for room temp. ≤ 2°C.  
25mm per 300mm for room temp. > 2°C.  
排水管必須有斜度:  
在室溫 ≤ 2°C 時，每 300mm 上升 100mm。  
在室溫 > 2°C 時，每 300mm 上升 25mm。

### 3.3 定位

在作業前**必須要檢查每一項安全措施**同時必須依照當地高空作業法規執行。

- 使用兩個 4mm x 12mm 長的自攻螺絲，鎖在箱體天花板後方的固定位置。
- 將蒸發器後方吊桿的 U 型缺口嵌入程序(a)所安置的設定螺絲。注意！安裝時請勿壓傷集水盤！
- 使用 4mm x 12mm 長的自攻螺絲由蒸發器上方前緣的固定孔將蒸發器固定。將所有的固定螺絲鎖緊。
- 如果箱體的天花板板金過薄，請打開蒸發器的箱體，於內部的加強板上鎖上更多的自攻螺絲。

### 3.4 排水管

為了確保水盤的水能順利排出，排水管配置時必須要有適當的斜度。如果排水管在低於 2°C 的室溫時，其傾斜度應為每 300mm 升高 100mm。反之，在高於 2°C 的環境中，其傾斜度應為每 300mm 升高 25mm。

在有凍結的狀況時，必須要裝設排水管電熱(使用者自備)並予以保溫，避免發生管路結冰的情形。且必須保持該電熱在常開。

穿過庫體的排水管應做保溫及密封。

為避免外氣經由排水管進入，在外側的排水管應做適當的集水彎。集水彎高度必須高於風車所產生的負壓。



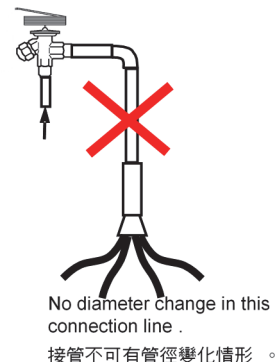
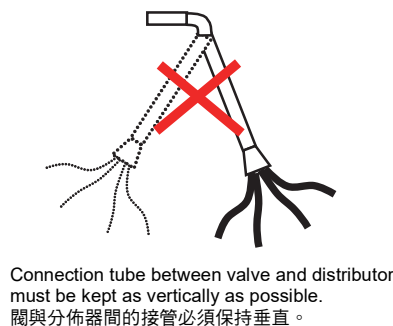
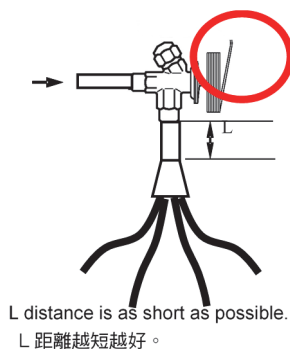
### 3.5 Expansion valve installation

Please follow the instruction from expansion valve maker to select a suitable expansion valve.

In order to make sure expansion valve function well and to get smooth refrigerant flow, please do follow the rules described below:

- The distance (L) between expansion valve and distributor is as short as possible.
- Usually straight distance between expansion valve and distributor, there should be longer than 7 times of tube diameter after a turn. But for this kind of unit cooler, there is no enough space for such a long distance. But should keep it as long as possible.
- Keep connection tube between expansion valve and distributor as vertically as possible. Do not incline the tube to avoid the separation of vapor and liquid refrigerant that will cause bad flow distribution in coil.
- Don't change tube from small to a bigger diameter one suddenly before entering distributor. Any sudden enlargement in this connection tube will cause refrigerant flash. It will reduce capacity because of the flash gas blocks refrigerant flow.
- The thermal bulb of thermal expansion valve must be placed at upstream of external equalizer line connection on suction line. This will avert liquid refrigerant drops from equalizer line affecting function of the thermal bulb. Thermal bulb must have a good contact with refrigerant line for a quick response.
- If the valve is brazing type, please use the wet clothing to protect valve from overheating during brazing.

**Warning! If use a interchangeable orifice type, make sure the correct orifice before install.**



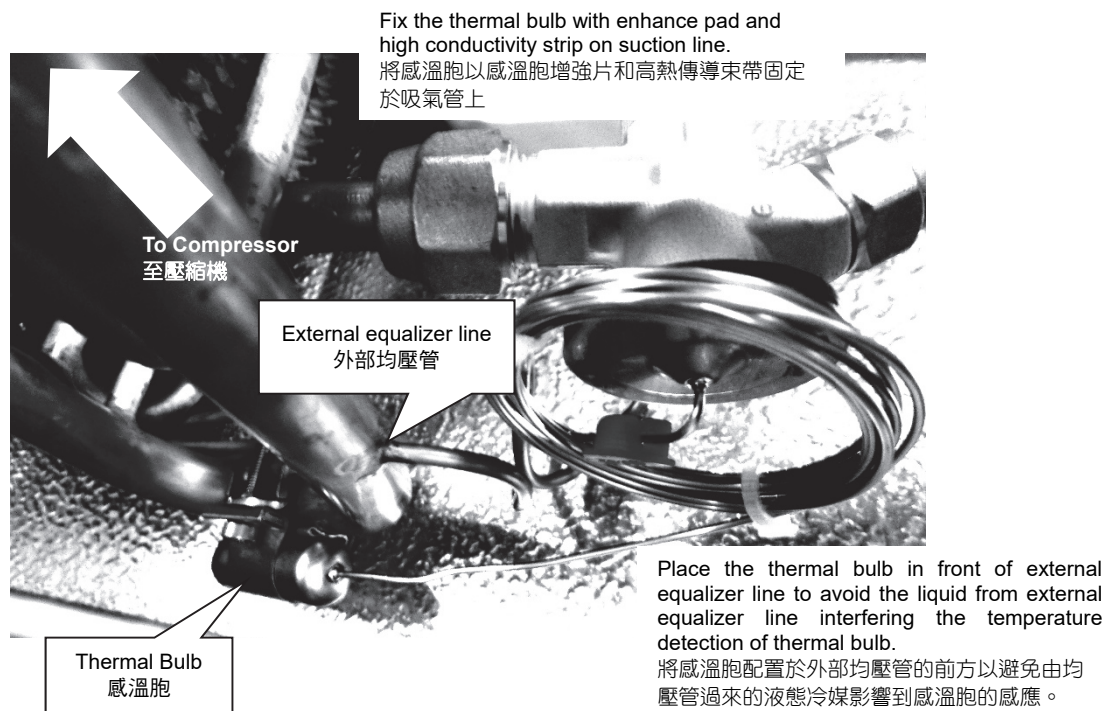
### 3.5 膨脹閥的安裝

請依照膨脹閥製造商的說明選擇合用的膨脹閥。

為了確保膨脹閥正常動作並獲得平穩的冷媒流量，請依照以下準則裝配膨脹閥。

- 膨脹閥與分佈器間的距離(L)越短越好。
- 通常在膨脹閥與分佈器間於轉彎以後的直線距離至少要有 7 倍的管徑長度。這類型的蒸發器空間通常不足容納 7 倍管徑長度的直管，但儘可能在轉彎後保持空間容許的最長直管。
- 確保膨脹閥與分佈器間的管路要垂直於蒸發器的上板，不要將管路傾斜以避免冷媒液氣分離造成分佈不平均。
- 在進入分佈器前的配管管徑不可突然由小變大，否則將發生冷媒閃變。一旦發生閃變將會阻擋冷媒流量造成系統能力下降。
- 使用感溫式膨脹閥時，感溫泡必須位於外均壓管的上游處。如此才能避免由外均壓管流過來的冷媒液滴影響到感溫泡的溫度感應。為了獲得迅速的反應，感溫泡必須與冷媒管有良好的接觸，利用高熱傳導材質將感溫泡與冷媒管固定。
- 如果膨脹閥屬於焊接式，焊接時請以濕布保護膨脹閥避免過熱。

**注意：如使用可更換芯號的膨脹閥，在安裝前要確認膨脹閥的芯號與冷媒種類對應是否正確！**



When installation job is done, the expansion should be set to correct super heat in test running. For the best performance of unit cooler and preventing liquid compressed in compressor, super heat adjustment must be executed at the lowest evaporating temperature of system design value. For temperature difference between evaporating and room temperature at 6~7°C, adjust the super heat around 2.8~3.5 °C. For temperature difference between evaporating and room temperature at 8°C, adjust the super heat around 5°C.

### 3.6 Refrigerant Piping

- \* Refrigerant piping must be done by professional technician and follow the national codes.
- \* If the suction line has to raise up over the unit cooler, the raising tube must connect an oil trap to make sure good oil return
- \* Horizontal suction line should pitch down from unit cooler to compressor. Suction line should be insulated to prevent condensate water.
- \* Refrigerant line should be as short as possible to reduce pressure drop.

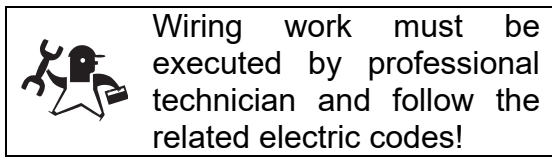
在安裝完成後，膨脹閥必需要調整達到系統所要的過熱度。為獲得完整的蒸發器能力，在系統操作的最低蒸發溫度下將膨脹閥調整適當的過熱度。建議在 6~7°C T.D. 的系統調整到 2.8~3.3°C 的過熱，在 8°C T.D. 的系統調整到 5°C 的過熱。

### 3.6 冷媒配管

- ※配管必須符合國家相關法規與系統實際操作需求。並由專業技術人員執行。
- ※如果吸氣管必須要拉高超過蒸發器組的連接位置時，升管的底部必須要接一個集油彎，解決回油問題。
- ※水平的吸氣回管應由蒸發器斜向壓縮機。吸氣管應做適當的保溫，避免產生冷凝水。
- ※冷媒管路盡可能保持短，以降低管路壓損。

- In order to prevent moisture entering unit cooler, the unit cooler is sealed with pressurized dry gas. Before brazing the tube, use copper tube cutter to cut a slit for exhausting sealed gas. **Be careful for ejected gas or tube scraps. Take personal safety protecting equipment while working.**
- When the unit cooler reaches to the zero pressure status, deburr tube ends and expand tube for brazing. For good cleanness inside system, use dry nitrogen to purge oxygen out. This will prevent forming oxide inside during brazing.
- When finish connecting all the components, perform leak test and vacuuming. Make sure there is no leak and reach the vacuum level required. It's important for steady system operating.

### 3.7 Wiring

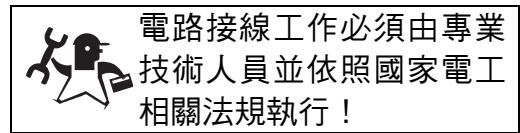


- Use the correct tool for wiring.
- Please select correct electrical wire based on the rating current specified on the Appendix 1.
- Connect the fan motor to power source, check if running is correct.
- If model comes with defrosting heaters, wire heaters as illustrated on wiring diagram.
- For safety reason, be sure to ground unit cooler.

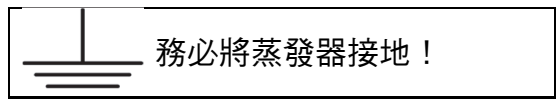


- 為確保蒸發器管路內部保持乾燥，出廠前內部會充填乾燥氣體。焊接前，請用切管刀小心將銅管切開一個小縫，讓蒸發器內部氣體排出。注意！切管時應注意噴出氣體或銅管碎屑，工作時請穿戴個人安全防護裝備。
- 當蒸發器達到零壓力後，開始進行銅管切口去毛邊與擴口準備焊接。為維持管內的潔淨，焊接前請先以氮氣掃除原管內的氧氣，焊接時請以微量氮氣充入管內進行焊接，以避免管內氧化！
- 當連接完成所有的管路後，進行測漏與抽真空。確認系統無洩漏且達到所需要的真空度。此對於日後系統穩定運轉是十分重要。

### 3.7 電路接線



- 請使用正確的工具進行接線。
- 請依照附表 1 所標示的額定運轉電流選擇適當的電線規格。
- 將馬達與電源接妥，並測試馬達運轉是否正確。
- 如果為除霜電熱機種，請依照接線圖確實接線。
- 為了安全起見，務必將蒸發器接地。



### 4. Test running and adjustment

#### 4.1 Before start up

Before setting system into working, the following check list must be examined very carefully:

- Check fan support(s) is/are fastened firmly. All the screws are fixed. There is no loose part before running.
- Check the level of unit cooler is correct.
- Check all the electric wirings are correctly connected and fastened tightly.
- Check the power source is correct. And the fan is in right rotation direction.
- Check the refrigerant piping is connected and all valves are in their positions. System is filled up suitable refrigerant quantity.
- If use the thermal expansion valve, please make sure the thermal bulb is well strapped. Insulate the thermal bulb from being affected by surrounding temperature.
- Make sure the tape of air guide blade has been removed that the air guide blade function well.

#### 4.2 Check and adjust while running

In order to keep system in steady running, must adjust well in test running, the following check list must be examined and adjusted with patience.

- \*Check if expansion valve functions well, if superheat is too high, that will reduce the refrigerant circulated quantity. The system capacity will be constrained. Low or no super heat will have risk of liquid compressing in compressor. If the expansion valve is hunting, check installation of thermal bulb and insulate thermal bulb.
- \*Check sight glass of liquid line. The liquid must be full at the rating operation.
- \*Check drain line, make sure condensate water could be drained out from drain pan.
- \*For low temperature application, check the distribution of frost. Frost must be very uniform on suction face of unit cooler. If frost distribution is uneven, make sure the distance between wall and suction face is enough and also check the entering refrigerant line is vertical. Do prevent outdoor air coming from the drain line.
- \*Check defrosting control is OK. Optimum defrosting time must clear all the frost on unit cooler. Also check fail safe action works normally. Check the current of heaters, it should match with the value on label.

### 4. 試車與調整

#### 4.1 啟動前檢查

在啟動系統之前，請仔細確認以下相關事項：

- 確認風車支架是否被牢固鎖定，所有的螺絲已被旋緊。運轉前確認無其他鬆動零件。
- 檢查蒸發器的水平是否正確。
- 檢查所有電線是否正確連接且已鎖緊。
- 檢查供電電源是否正常，確認風扇轉向正確。
- 確認冷媒管路已連接妥當，所有的閥都在正確的位置。系統已充填適當的冷媒量。
- 如使用感溫膨脹閥，檢查感溫泡是否正確固定。感溫泡需進行保溫以免周圍的溫度影響到感溫泡的感應。
- 確認導風板的固定膠帶已經移除，確認導風板能正常開啟閉合運作。

#### 4.2 運轉時的檢查與調整

為確保系統能穩定運轉，試車時必須要仔細調校，以下的檢查項目在試車過程中必須要耐心觀察與調整。

- \*檢查膨脹閥的動作是否正常，如果過熱度太大，則將降低冷媒的流量導致系統能力受限。如果過熱度太小將造成液壓縮的危險。如果膨脹閥不斷的開關關，檢查感溫泡的安裝是否正確，並將感溫泡予以保溫。
- \*檢查液管的視窗，在額定運轉時視窗必須呈現滿溢情形。
- \*檢查排水管是否順暢，冷凝水必須很容易由排水盤排出。
- \*低溫機種必須檢查結霜是否正常。霜必須要均勻分佈在蒸發器的回風面，如果分佈不均，請檢查牆壁與回風面的距離是否足夠，進入蒸發器的冷媒管是否垂直。避免外氣由排水管進入。
- \*檢查除霜控制是否正常，最佳的除霜時間必須要確保蒸發器的盤面上無霜殘留。並檢查除霜異常中止動作是否正常。檢查除霜電流是否與標示相符。

## 5. Maintenance

In order to keep unit cooler in a good condition, you have to check the unit cooler periodically. The following items must be done for check.

- a. Clean the fins periodically for retaining performance. If needed use clean water to wash fins. Water pressure must be lower than 4 bars. Be careful not to damage the fins, otherwise it will block air flow. Use fin comb to straighten the damaged fin. If needed, use neutral detergent to clean the coil. Must rinse the coil till no residue left. **Be sure to disconnect the power source before cleaning! And avoid the water come into fan motor!**

**\*\*If unit cooler is coated with EnergyGuard, please follow instruction of EnergyGuard!\*\***

- b. Clean drain pan and drain line to avoid clogging.
- c. Clean fan blades and fan guard. If fan blades are damaged or bent, replace with new ones.
- d. Check every electrical connection is fastened. Also check if there is any current leakage, find out the problem and fix it.
- e. Check fan motor if there is any noise. If so, fix it or replace it.
- f. Check every screw and bolt, if there is any loose part, fasten it.
- g. Check tubes and brazed parts of unit cooler if there is any stain or spot. If there is any corrosion happened, do remove the aggressive material(s), and check if there is any leak.



## 5. 保養

為確保蒸發器維持良好的運轉狀態，請定期檢查並保養蒸發器。

- a. 定期清潔鰭片確保熱傳效能的維持。如果必要時使用清水清潔鰭片，水的壓力必須要低於 4 bar。清潔時要注意不可以損壞鰭片，以免阻擋氣流通道。使用鰭片梳將傾倒的鰭片梳直。必要時使用中性的清潔劑清洗盤管，清洗後務必潤洗乾淨至無殘留物留在熱交換器上。**在清洗前務必先斷電！清洗時必須要避免水進入風扇馬達！**

**\*\*如果蒸發器已進行衛能防蝕處理，請依照衛能保養說明進行清潔！\*\***

- b. 清潔排水盤與排水管避免發生阻塞。
- c. 清潔扇葉與前網。如果扇葉受損或彎曲請更換新的扇葉。
- d. 檢查電氣接點是否鬆脫，鎖緊鬆脫的部分。同時檢查是否有漏電的情形，如有請找出原因並予以修復。
- e. 檢查風扇馬達是否有異音，如有請修復或是更換馬達。
- f. 檢查所有的螺絲與螺栓，如果有鬆脫的部分請鎖緊。
- g. 檢查蒸發器的管路與焊接點是否有銹點與污斑。如果發生鏽蝕情形，請將腐蝕性物質移離，並檢查系統是否洩漏。

Clean the coil to retain capacity.  
清潔盤管以確保性能!

\*EnergyGuard is a trade mark of Monopoly BV, Holland  
\*衛能為荷蘭 Monopoly BV 的註冊商標!

## 6. Trouble shooting

Symptoms	Possible causes	Correction
No condensate water or frost	<ol style="list-style-type: none"> <li>1. Super heat is too high.</li> <li>2. Insufficient refrigerant.</li> <li>3. Room humidity is too low.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust super heat to correct value.</li> <li>2. Add refrigerant.</li> <li>3. Check design point.</li> </ol>
Fan speed is too low	<ol style="list-style-type: none"> <li>1. Motor is out of order.</li> <li>2. Incorrect power source.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace a new one.</li> <li>2. Check the power source and fix it.</li> </ol>
Fan does not run	<ol style="list-style-type: none"> <li>1. Defrosting is on.</li> <li>2. Control component(s) broken.</li> <li>3. Motor is out of order.</li> <li>4. Stuck.</li> </ol>	<ol style="list-style-type: none"> <li>1. Wait till defrosting ends</li> <li>2. Check the control circuit, replace the broken component(s).</li> <li>3. Replace a new one.</li> <li>4. Remove obstacle(s).</li> </ol>
Ice built up at the bottom of coil	<ol style="list-style-type: none"> <li>1. Outdoor air from drain line.</li> <li>2. Drain line is blocked.</li> <li>3. Insufficient distance between wall and unit cooler.</li> <li>4. Heater is) broken.</li> <li>5. Drain line heater is off or out of order</li> <li>6. Defrosting time or cycle number is not enough.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check height of drain line U trap is enough.</li> <li>2. Clear the drain line.</li> <li>3. Change the position of unit cooler.</li> <li>4. Replace defected heater.</li> <li>5. Check the drain line heater, it should be always on. If broken, replace a new one.</li> <li>6. Extend the defrosting time or increase defrosting cycle number.</li> </ol>
Uneven frost distribution	<ol style="list-style-type: none"> <li>1. The entering refrigerant line after expansion valve is not vertical.</li> <li>2. Distributor is clogged.</li> <li>3. Defective heater.</li> <li>4. Defrosting time or cycle number is not enough.</li> </ol>	<ol style="list-style-type: none"> <li>1. Keep the line as vertical as possible.</li> <li>2. Clean or change the distributor.</li> <li>3. Replace a new one.</li> <li>4. Extend the defrosting time or increase defrosting cycle number.</li> </ol>
Frost accumulated on ceiling around the unit cooler	<ol style="list-style-type: none"> <li>1. Defrosting time is too long.</li> <li>2. Defrosting control is out of order.</li> <li>3. Incorrect power of heater.</li> <li>4. Air leaking.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce the defrosting time.</li> <li>2. Check the defrosting control.</li> <li>3. Change to correct heater.</li> <li>4. Seal the leakage.</li> </ol>

## 6. 故障排除

現象	可能原因	處理方法
沒有冷凝水或霜	<ol style="list-style-type: none"> <li>1. 過熱度太大</li> <li>2. 冷媒不足</li> <li>3. 庫內溼度過低</li> </ol>	<ol style="list-style-type: none"> <li>1. 調整過熱度到正確值。</li> <li>2. 添加冷媒。</li> <li>3. 檢查設計點。</li> </ol>
風扇轉速太慢	<ol style="list-style-type: none"> <li>1. 馬達故障</li> <li>2. 供應電源不正確</li> </ol>	<ol style="list-style-type: none"> <li>1. 更換新馬達。</li> <li>2. 檢查電源並予以修正。</li> </ol>
風扇不運轉	<ol style="list-style-type: none"> <li>1. 除霜中</li> <li>2. 控制元件故障</li> <li>3. 馬達故障</li> <li>4. 扇葉卡住</li> </ol>	<ol style="list-style-type: none"> <li>1. 等除霜終了。</li> <li>2. 檢查控制迴路並更換損壞零件。</li> <li>3. 更換新馬達。</li> <li>4. 移除障礙物。</li> </ol>
盤管底部結冰	<ol style="list-style-type: none"> <li>1. 外氣由排水管進入</li> <li>2. 排水管阻塞</li> <li>3. 回風面與牆壁間的空間不足</li> <li>4. 電熱故障</li> <li>5. 排水管電熱故障</li> <li>6. 除霜時間或次數不足.</li> </ol>	<ol style="list-style-type: none"> <li>1. 檢查排水管 U 集水彎高度是否足夠。</li> <li>2. 清潔排水管。</li> <li>3. 變更蒸發器安裝位置。</li> <li>4. 更換故障電熱。</li> <li>5. 檢查排水管電熱，此電熱必須永遠維持加熱狀態，如故障請換新。</li> <li>6. 延長除霜時間或增加次數。</li> </ol>
霜分佈不均	<ol style="list-style-type: none"> <li>1. 膨脹閥到蒸發器間管路歪斜</li> <li>2. 分佈器阻塞</li> <li>3. 電熱故障</li> <li>4. 除霜時間或次數不足</li> </ol>	<ol style="list-style-type: none"> <li>1. 儘可能將該管路保持垂直。</li> <li>2. 清潔或更換分佈器。</li> <li>3. 更換故障電熱。</li> <li>4. 延長除霜時間或增加次數。</li> </ol>
霜聚集在蒸發器週遭的天花板	<ol style="list-style-type: none"> <li>1. 除霜時間過久</li> <li>2. 除霜控制故障</li> <li>3. 電熱瓦數錯誤</li> <li>4. 外氣滲入</li> </ol>	<ol style="list-style-type: none"> <li>1. 減少除霜時間。</li> <li>2. 檢查除霜控制。</li> <li>3. 更換正確瓦數電熱。</li> <li>4. 密封洩漏處。</li> </ol>

Memo 備忘

# RT 系列蒸發器安裝與操作說明

## RT Series User's Manual

### 附錄 1

#### Appendix 1 Rating Current 額定電流表

Model No. 型號	Fan motor Current 風車電流 A @220V	Defrost Heater Current 除霜電熱 A@220V
RT□030M2	0.2	--
RT□036M2	0.2	--
RT□040M2	0.2	--
RT□048M2	0.2	--
RT□060M2	0.4	--
RT□087M2	0.4	--
RT□102M2	0.6	--
RT□105M2	0.6	--
RT□124M2	0.6	--
RT□030L2	0.2	3.5
RT□036L2	0.2	3.5
RT□040L2	0.2	3.9
RT□048L2	0.2	3.9
RT□060L2	0.4	5.2
RT□087L2	0.4	6.1
RT□102L2	0.6	6.1
RT□105L2	0.6	7.0
RT□124L2	0.6	7.0



附錄 2

Appendix 2 Replacement Parts 替換零件表

Fan Set 風車組-6608V

Fan Set Assembly 風車組

Fan Set 風車組	Motor 馬達	Fan Blade 扇葉	Motor Support 馬達網架
6608V	AAREB	AAHDF	AAREW

Defrosting Heater 除霜電熱

Model No. 型號	Defrosting Heater 除霜電熱
RT□030L2	AASHG
RT□036L2	AASHG
RT□040L2	AASHH
RT□048L2	AASHH
RT□060L2	AASHI
RT□087L2	AASHJ
RT□102L2	AASHJ
RT□105L	AASHK
RT□124L2	AASHK

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