HABOR®

哈伯精密工業有限公司
HABOR PRECISE INDUSTRIES CO., LTD.

空調冷卻機
HA系列

AIR CONDITIONER
HA Series

使用前請先詳閱
Ensure to read this instruction manual before use.

使用操作手冊 Instruction Manual

目　錄　CONTENTS

1. 安全注意事項

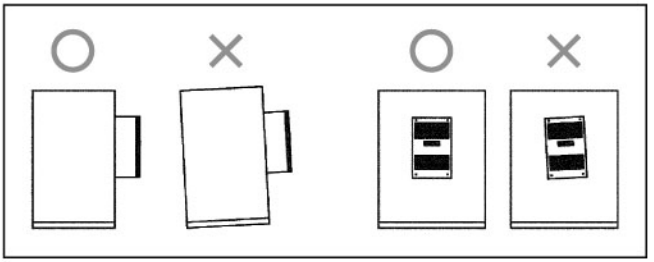
(1) 安裝或運轉前請先詳讀本使用手冊並注意本手冊所提出的注意事項以防止人員或冷卻機傷害。
(2) 請勿用濕手操作，以免引起觸電。
(3) 清掃或維修時，請將所有電源切除，以防觸電或受傷。
(4) 冷卻機上請勿放置物品，以免掉落造成人員受傷。
(5) 請勿以指、棒等伸入進、出風口，避免被內部之高速風扇或鰭片傷害。
(6) 請確實安裝好空氣濾網，以避免冷凝器鰭片外露割傷人員或遭破壞。
(7) 本冷卻機為工業用設備，請勿使用於動植物或食物等方面之特殊用途。
(8) 請勿在空調冷卻機附近擺放易燃性液、氣體噴霧器或以易燃性液、氣體直接噴灑在冷卻機體上以防火災。
(9) 冷卻機請防止被水噴灑或沖洗，以免引發觸電傷害事故或冷卻機故障。
(10) 絕對禁止自行改裝、修理、拆卸或移裝。欲進行上述動作前請先向專業人員洽詢，以防意外。

2. 安裝

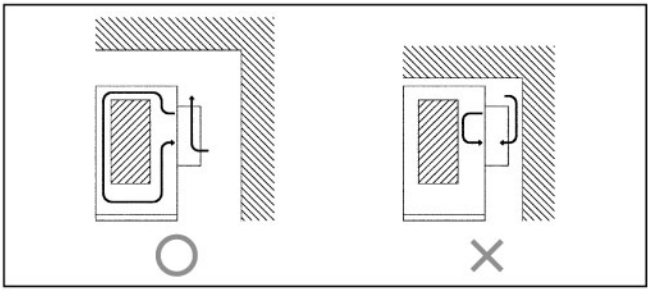
為提高本機之效率，在配電配管及安裝上請注意以下各要點：

2-1 安裝位置

(1) 請安裝本冷卻機於周圍溫度0°C以上至40°C以下的環境下。
(2) 冷卻機周圍請勿推放物品，使四周保持通暢；上方請勿放置含水之容器。
(3) 安裝在周圍空氣品質良好場所：請勿設置於有腐蝕性氣體、可燃性氣體、塵埃、油霧、導電性粉塵(碳粉、金屬粉)等空氣品質惡劣之場所。
(4) 安裝於通風良好且熱氣容易排放之場所：氣冷式的冷卻機需安裝於通風良好之場所，本冷卻機和周圍物之間請保持一段距離。因冷卻機在惡劣場所或密閉空間運轉時，將使周圍溫度上升。若冷凝器散熱不良，將引起安全開關動作而使冷卻機停止運轉。
(5) 勿將本冷卻機安裝於溼度高於85%以上的高濕場所。
(6) 避免安裝於會振動或易遭受衝擊的位置。
(7) 請勿將本冷卻機安裝於陽光直接照射之場所，避免因陽光照射而吸熱，影響冷卻效果。
(8) 請選擇一個易保養與清洗濾網的空間安裝。
(9) 本機安裝時請注意上下正確位，並注意左右、前後垂直，其傾斜角度必須在3° 以內。(圖1)
(10) 控制箱內零件請勿擋住冷風吹出口，因冷風直接吹襲零件易產生結露現象，恐造成機械故障的原因。若無法避免冷風直吹承受處，請貼以斷熱材料隔熱。請保持控制箱內冷風之通風阻力減少，保持通暢。(圖2)



(圖1)



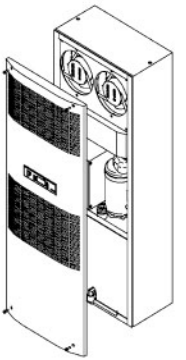
(圖2)

2-2 安裝方法

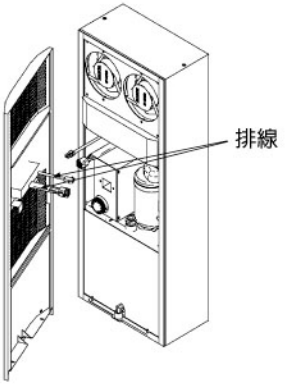
(1) 冷卻機搬運時請勿上下倒置、過度傾斜及碰撞。
(2) 移動冷卻機時，將電源拆下及排乾淨內部的水，以防餘水弄濕電氣零件
(3) 為達直接冷卻的效果，請將冷卻機安裝於電控箱壁。
(4) 電控箱壁需開孔以使冷卻風能進入電控箱內。
(5) 控制箱內需密閉，若不密閉讓外氣侵入，易造成結露。
(6) 箱體切割加工尺寸請參考規格表。
(7) 箱體切割加工產生之毛屑請清除，以防止塵埃或外氣侵入。
(8) 濕氣及油霧含量太高之場所，請用填塞原料將固定螺絲覆蓋以防滲透。
(9) 當將冷卻機裝置在密閉控制箱門上時，為避免人員的傷害及設備的損失，請確認加在門上的重量，其鉸鏈是否能承受。同時，當控制箱門開啓時，不會過於傾斜而使之失去平衡。
(10) 長期使用時，請注意安裝配備是否損壞，如有損壞而未加以處理將導致機器故障、掉落摔下而損傷。
(11) 安裝方式如下：

HA箱內型冷卻機

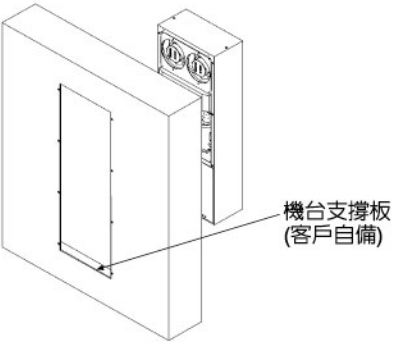
1.準備安裝HA箱內型冷卻機。



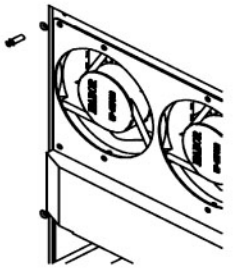
2.拆下冷卻機前蓋之4個固定螺絲。



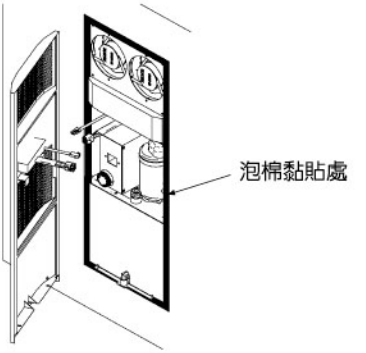
3.將冷卻機溫度控制器及感應器
排線拆卸



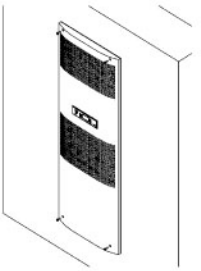
4.將冷卻機安裝於箱體內部。
(可利用機台支撐板支撐)



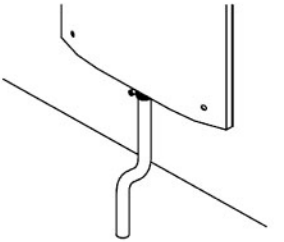
5.使用M6皿型螺絲固定冷卻機。



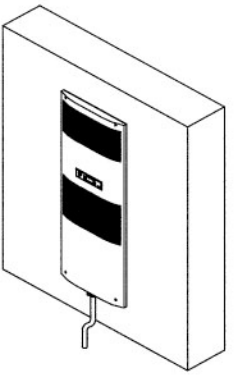
6.將泡棉貼於箱體外部，以避免前蓋組上後，機器運轉時產生震動之聲音；並接上冷卻機溫度控制器及感應器排線。



7.將前蓋蓋上並固定螺絲。

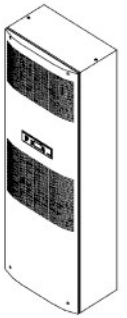


8.前蓋固定好之後，將銅直接頭、排水管及固定管夾一併固定於冷卻機上。

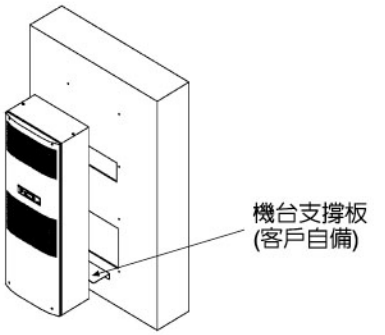


9.即可安裝完成冷卻機。

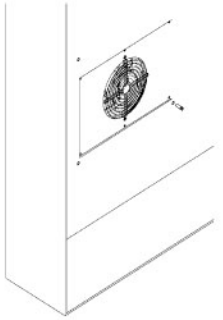
HA箱外型冷卻機



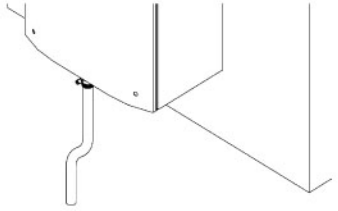
1.準備安裝HA箱外型冷卻機。



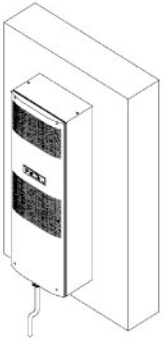
2.將冷卻機安裝於箱體外部。
(可利用機台支撐板支撐)



3.使用M6皿型螺絲固定冷卻機。



4.冷卻機固定好之後，將銅直接頭、排水管及固定管夾一併固定於冷卻機上。



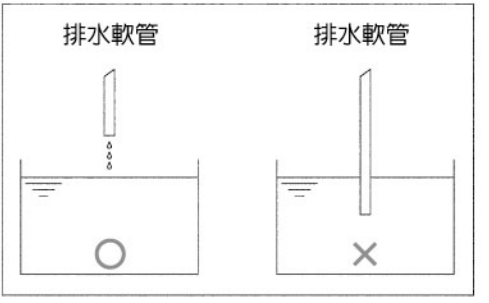
5.即可安裝完成冷卻機。

2-3 電氣配線

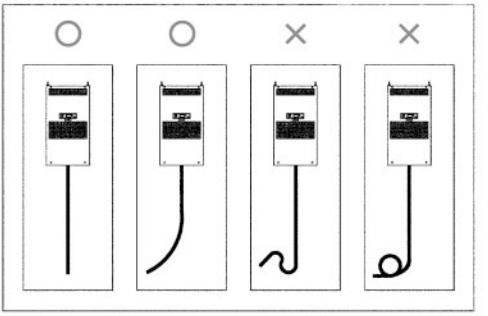
(1) 電源電壓值請保持在容許額定值內，請避免異常電壓過高或太低，造成冷卻機故障。若所提供之電壓在額定±10%內，本機仍可正常運轉。
(2) 電源請接近本冷卻機，且避免電源線過長(若在電源線過長的場合，請使用容量足夠的電線)。
(3) 請務必使用接地線，本機在配電盤皆有接地線接點，請務必按電氣工事規則接線。
(4) 電源線/接地線請勿小於指定線徑。勿重壓，拉扯或加熱以防火災，觸電等災害。
(5) 請自行安裝漏電斷路器。
(6) 送到冷卻機之電源回路上務必安裝斷路器或保護裝置。
(7) 若同時使用多種電器裝置，需先確定電源容量可否足夠。
(8) 請準備本機專用電源插座，不要在同一個插座使用過多電器裝置，否則極易使電源超出其負載。

2-4 排水

(1) 排水管請確實接在排水口上，並予以固定，以利排水。
(2) 排水軟管之管徑需適當，不可管徑和接頭大小不一，否則將產生漏水現象。
(3) 排水軟管之長度適當即可，過長之部分請切除，同時軟管前端不可阻塞，請保持暢通無水狀態。
(4) 排水軟管請勿折彎、重壓、阻塞、繞環圈或高於冷卻機，以免使排水盤積水，導致冷卻機漏水，將會浸濕控制箱內部零件而引起短路、漏電等故障。
(5) 配管位置場合需以排水流暢為目的來安裝。



(圖3)



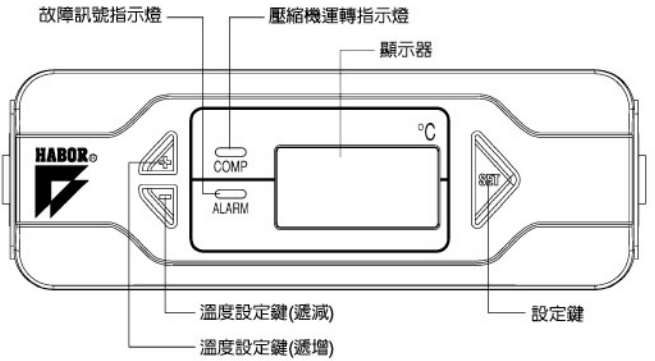
(圖4)

3. 運轉啓動

3-1 啓動前注意事項

(1) 本機安裝完成時，須等15分鐘後再啓動，以確保壓縮機之運轉安全。
(2) 運轉中欲重新開啓冷卻機時，請間隔3分鐘後再開啓。若啓動次數頻繁且間隔時間太短易造成冷卻機損傷。
(3) 冷卻機嚴禁傾斜使用，避免引起受傷、漏水或觸電情形。
(4) 啓動前做好配電和接地工事，並做好排水管之管路架設。
(5) 控制箱門打開時請勿運轉，以免結露。同時在運轉中時亦請勿打開控制箱門。
(6) 萬一蒸發器有結霜情形發生時，請停止冷卻機，待結霜排除確認後再啓動。若結霜後繼續運轉，易縮短壓縮機壽命及造成故障。
(7) 有異常情形或異味(焦臭)時，請立即停止運轉檢查，以防觸電或火災。

3-2 操作說明



(圖5: 控制面版圖)

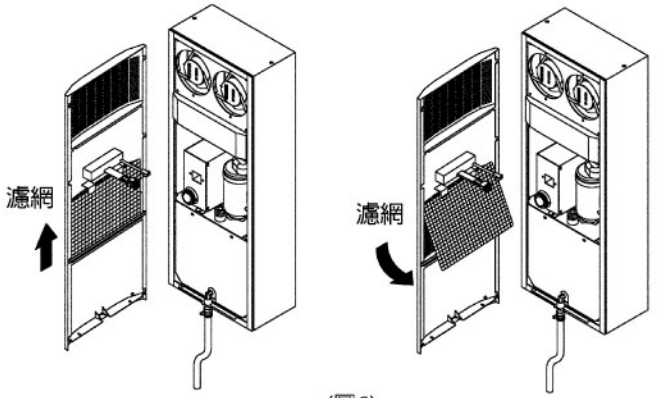
(1) 電源輸入，顯示器閃爍"888"三次後，顯示現在箱內溫度值，系統開始運轉。
(2) 按壓「SET」鍵，顯示器閃爍"888"三次後會顯示"t5"即進入設定值模式，再按壓「SET」鍵會進入設定值，利用「▲」「▼」鍵調整所欲設定的溫度數值。
(3) 再按壓「SET」鍵，顯示器閃爍"God"後則返回顯示現在箱內溫度值，即設定完成。
(4) 在設定值模式下，若「SET」、「▲」或「▼」鍵在30秒內皆未被按壓，系統將自動結束設定值模式讓顯示器恢復顯示現在箱內溫度值。
(5) 綠色LED指示燈 亮時表示壓縮機(冷卻功能)在運轉中，指示燈閃爍時表示壓縮機(冷卻功能)在延遲啓動中。

4. 維修保養

請定期檢查排水管是否確實排水，若排水不良易造成控制箱內漏水。請定期清洗空氣濾網和冷凝器。

4-1 清潔

(1) 請依圖6取下濾網，用噴氣槍或清水清洗，並使濾網乾燥。
(2) 然後請用噴氣槍將冷凝散熱器鰭片之塵垢除去，再將濾網放回原位。
(3) 請依周圍空氣潔淨程度定期清洗，以防冷卻效果不彰或使冷卻機產生故障。
(4) 油氣易損害電控系統，請務必鎖緊電控箱門。
(5) 請用中性洗劑清潔擦拭機體。
(6) 請勿用水沖洗冷卻機，以防觸電。
(7) 請勿使用熱水、汽油或有機溶劑清洗。



(圖6)

4-2 長時間停止運轉

(1) 本冷卻機若長時間停止使用，請使用隔離灰塵措施。
(2) 請清理易堆積灰塵污垢之部位，如濾網和冷凝器散熱片。
(3) 請切斷電源，以防意外。

5. 狀況排除

顯示符號	可能原因	處置方式
AH 箱內溫度高於上限警報值	* 冷媒系統洩漏或故障。 * 冷卻能力太小。 * 溫控器故障。	* 檢查冷媒系統修理之。 * 更換較大能力冷卻機。 * 更換溫控器。
AL 箱內溫度低於下限警報值	* 壓縮機無法停止。 * 溫度控制器或感測器故障。	* 檢查壓縮機控制迴路是否正常。 * 檢查溫度感測器是否正常。 * 若以上正常，則溫度控制器故障。
E IH 感溫棒短路	* 感溫棒或溫控器故障。	* 更換感溫棒或溫控器。
E IL 感溫棒斷路	* 感溫棒接線不良或溫控器故障。	* 檢查感溫棒接線或更換溫控器。

顯示符號	說明	處置方法
Eb 冷卻系統壓力異常	* 吸風或排風口不良或阻塞。 * 周圍溫度太高。 * 空氣過濾網及冷凝器塵埃阻塞。 * 負載過大。 * 散熱風扇脫落或馬達故障。	* 請排除障礙物。 * 改善周圍溫度並保持通風良好。 * 清除過濾網及冷凝器塵埃。 * 更換較大冷卻能力之冷卻機。 * 請檢查散熱風扇或更換馬達。
	* 冷媒不足。 * 冷媒系統有阻塞。 * 泵浦故障或循環液流量太少。 * 管路破裂。 * 負載太小。 * 周圍溫度太低。	* 檢查冷凍系統。 * 檢查冷凍系統。 * 檢查泵浦或循環液管路。 * 檢查冷凍系統管路或循環液管路。 * 檢查工作機械是否動作。 * 改善周圍溫度。
E8 壓縮機過載	* 電壓不正常。 * 壓縮機燒毀。 * 散熱風扇脫落或馬達故障。 * 散熱不良。 * 負載太大。 * 冷卻系統不正常。	* 檢查電壓。 * 更換壓縮機。 * 檢查散熱風扇或更換馬達。 * 改善散熱環境。 * 更換較大冷卻能力之冷卻機。 * 檢查冷卻系統。
EA 電源相性異常	* 電源逆相。 * 電源為單相。	* 切掉電源後，將RST相線任兩線互換。 * 檢查電源。
EF 壓縮機過熱	* 壓縮機機殼溫度過高。	* 檢查散熱通風系統。 * 檢查電源電壓是否符合規定。 * 檢查壓縮機是否啓動不良更換之。

1. General Safety Precaution

(1) Please study this user manual and take note on the safety precaution before installing or operating of this cooler to prevent operating personnel injuries or even damage to the cooler.
(2) Please do not operate the cooler with wet hands to avoid electrical shock.
(3) Please disconnect all the electrical source during maintenance or cleaning of the cooler.
(4) Please do not stack items on top of the cooler to prevent personnel injure when item falls.
(5) Please do not put fingers or items of stick form into the air exhaust or inlet vent, due to the high speed fan and the fins of the heat exchanger will be damaged or cause injuries to personnel.
(6) Ensure the air filter is installed properly, to prevent damaging the fins of heat exchanger.
(7) This air conditioner is for industrial purposes ONLY. Please do not apply it on foodstuff or any living creatures.
(8) Please keep away of inflammable.
(9) Please avoid water spray or rinse, to prevent electrical shock injuries or damage of the cooler.
(10) Please contact certified professionals for any refit, disassemble, repairing or dismount to avoid accidents.

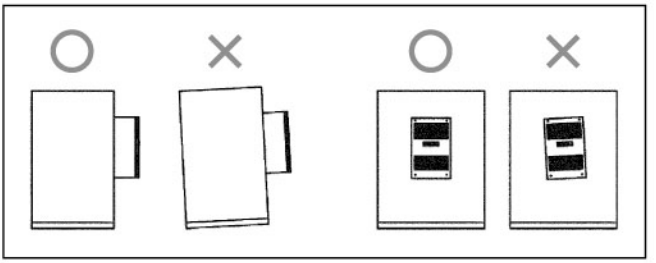
2. Installation

For the efficiency of this air conditioner, please take note on the list below.

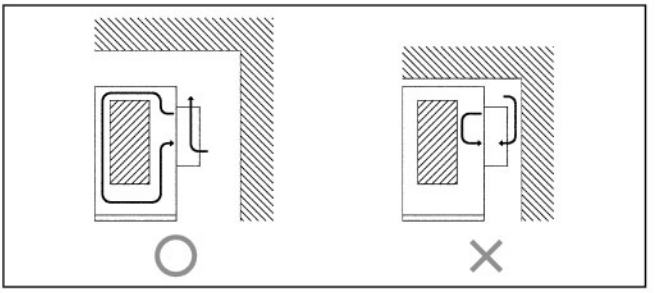
2-1 Position

(1) Please install the air conditioner at the environment of ambient temperature range of 0℃~40℃.
(2) Please keep ambient environment unhindered and do not put any container filler with liquid on top of the cooler.
(3) Please avoid environment with poor air conditions like corrosive or inflammable, places filled with dusts, oil mist or conductive powders (such as carbon or metal).
(4) Please locate the air conditioner at well ventilated places where the hot air can be easily exhausted. As the air conditioner is an air cooled unit which required being able to exhaust heats into the ambient environment. If the air conditioner is located at a sealed environment or a polluted location, it will heat up the ambient environment and cause the safety switch to trigger and stop the cooler due to bad exhaustion of the heat exchanger.

(5) Please do not install the cooler at location where the humidity of the air is over 85%.
(6) Avoid installing at positions where it will be easily vibrated or collided.
(7) Please avoid direct sunshine towards the air conditioner. The heat from it will affect the cooling capacity.
(8) Please choose a space where it can be easily maintain and cleaned.
(9) Do not put the air conditioner at upside down position, and avoid leaning the cooler for more than 3° . (fig.1)
(10) Please avoid the internal components blocking the cooled air exhaust, due to moist will be created on the components and cause component failure. If there are chances of the situation, please apply heat insulated material on the components. (fig. 2)



(fig. 1)



(fig. 2)

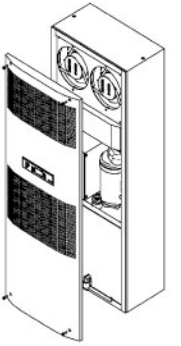
2-2 Installing Method

(1) Please avoid collision, leaning or upside down while transporting.
(2) Please disconnect the electrical wires and remove the water within the cooler before moving the air conditioner to prevent the water wet the electrical components within the cabinet.
(3) To get the best cooling result, install the air conditioner at the panel of the cabinet.
(4) The panel of the electrical cabinet has to be cut open for the cooled air to go into the cabinet.

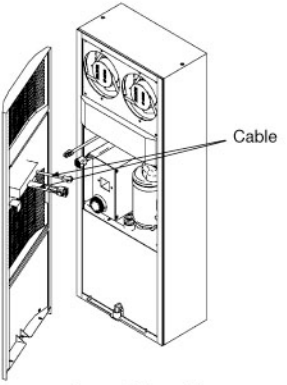
(5) The electrical cabinet has to be sealed from outer air to avoid the moisture formed within the cabinet.
(6) Please refer to the specification for the cutting size of the panel hole.
(7) Clean the shaving at the edge of panel hole to avoid intrusions of moist or outer air.
(8) For environment which contains high percentage of moist and oil, apply waterproof sealing materials around the fitting bolts of the air conditioner.
(9) To avoid personnel injuries and lose of equipments, please make sure the hinges of the cabinet door can handle the extra weight added on with the installation of the air conditioner. Please also make sure while the door is opened, the air conditioner will not lose its balanced position.
(10) Please check if the assembly device is still suitable to support the cooler unit after a long term usage.
(11) Below are the installation procedures:

(a) Inside mounting type

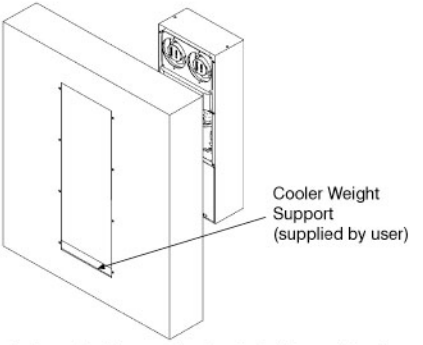
1. Prepare to install the air conditioner.



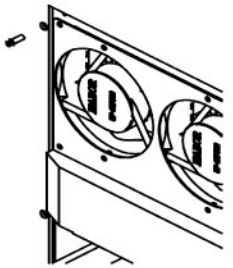
2. Dismount the four screws located in the four corners of the front panel of the cooler to remove the front panel of the air conditioner.



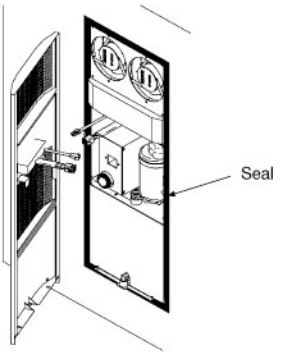
3. Disconnect the cable of the temperature controller and the sensor.



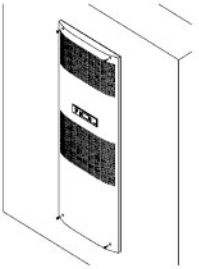
4. Locate the cooler inside the cabinet panel. (A cooler weight support is recommended.)



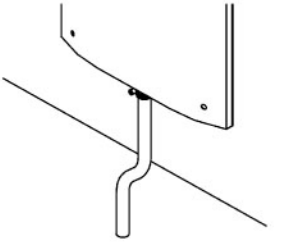
5. Use M6 screws to fix the position of the cooler.



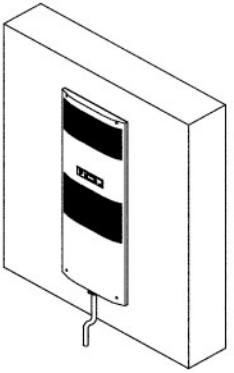
6. Apply the waterproof seal material on the edge of the panel hole to reduce the noise produced by vibration of the machine. Then connect the cable of the temperature controller and the sensor.



7. Put the front panel of the cooler back on and redo the screws. and the sensor.

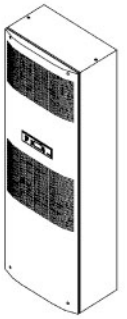


8. After the front panel is installed. Please also install the drain tubes.

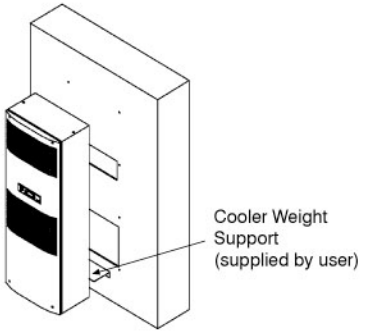


9. The installation of the air conditioner is complete.

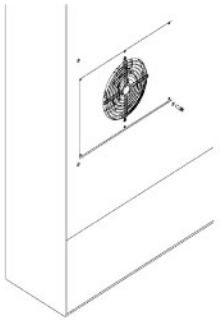
(b) Outside mounting type



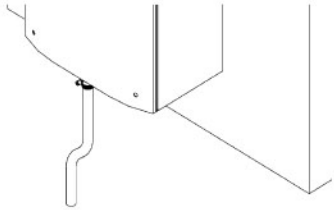
1. Prepare to install the air conditioner.



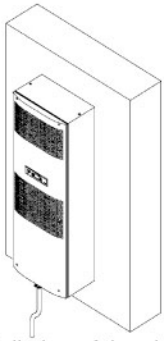
2. Locate the cooler outside the cabinet panel. (A cooler weight support is recommended.)



3. Use M6 screws to fix the position of the cooler.



4. After the front panel is installed. Please also install the drain tubes.



5. The installation of the air conditioner is complete.

2-3 Electrical Wiring

(1) Please keep the voltage of the power source within the acceptable range of the air conditioner. If abnormal power voltage is applied to the air conditioner, it will cause failure of the cooler.

(2) Please install the air conditioner near the power source in case the power cable is too long and lose it capacity.

(3) Please install earth cable. There is a reservation on the terminal of the air conditioner for earth, please install it according to the electrical rules.

(4) Please make sure the diameter of the electrical cable is within the acceptable range, do not apply pressure, pull or heat the cable to prevent accidents like fire or electric shock.

(5) It is recommended to install a circuit breaker.

(6) If a lot of electrical application is installed together, make sure the capacity of the power source is efficient.

(7) Prepare a power source plug specified for the air conditioner only. Apply too many electrical application to the same plug may cause the lack of power capacity for the power source.

2-4 Drain

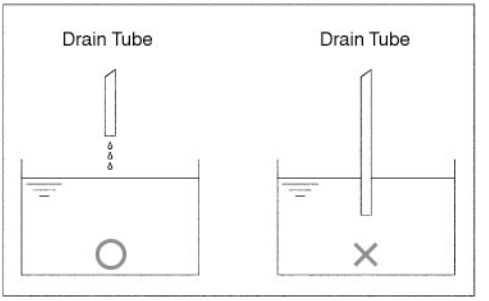
(1) Please make sure the drain tube is installed properly, and been fixed to the drain port.

(2) The diameter of the drain tube should be suitable for the drain port else leakage of water may be caused.

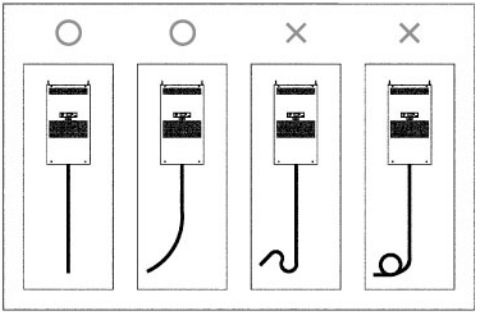
(3) The length of the drain tube should also be suitable, the extended length is recommended to be cut. Make sure there's no blockage at the end of the tube.

(4) Do not bend, press, block or place the tube higher than the air conditioner to prevent flooding of the water collector. Leakage of water from the cooler will damage the electrical components within the electrical cabinet.

(5) The main goal on drain tube position should be purposed on the smooth flow of the drained water.



(fig. 3)



(fig. 4)

3. Operation Control

3-1 Checklist before Start

(1) After the installation, please wait for at least 15 minutes before turn on the air conditioner to protect the compressor.

(2) Please wait for 3 minutes before restarting the cooler while operating, frequent restart of the cooler will damage to the air conditioner.

(3) Make sure the cooler is at its upright position when operating to prevent personnel injures, water leakage or electric shock.

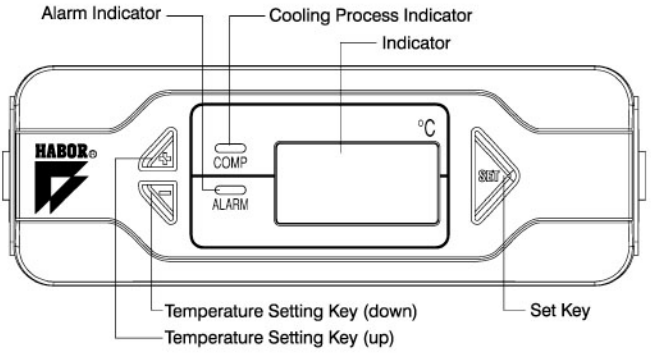
(4) Please make sure electrical wiring and draining are done properly before start.

(5) Make sure the door of the cabinet is sealed before starting to prevent forming of moisture within. Moreover, do not open the door of the electrical cabinet during operating.

(6) If frosting occurred on the heat exchanger, please turn off the air conditioner. Removing the frosting situation before turning it back on again. Continuing on the operating with frosting will damage the air conditioner.

(7) Please stop the operating and examine the air conditioner if abnormal or smell occurred to avoid the cause of fire or electric shock.

3-2 Control



(fig. 5 The Control Panel)

(1) The indicator will flash "888" three times after power input then display the temperature within the cabinet. The system will then start operating.

(2) Press「SET」and the indicator will flash "888" three times and flash "tS". The system will then enter the setting mode, use「▲」「▼」key to set the targeted value of the temperature required.

(3) Press「SET」again will cause the indicator to flash "God" and return to display the temperature within. That will conclude the setting.

(4) If either of the 「SET」、「▲」or「▼」is not pressed within 30 seconds under the setting mode, the system will automatically end the mode and return to the temperature display mode.

(5) The green LED indicates the cooling progress, when its flashing it means the cooling progress is delayed to start.

4. Maintenance

Please check the draining regularly; as the water leakage to the cabinet will occur if draining is blocked.

Please clean the air filter and the heat exchanger regularly.

4-1 Cleaning

(1) Please dismount the filter as shown in fig.6, use the air gun or water to clean the filter and let it dry.

(2) Please use the air gun to clean the fins of the heat exchanger, then mount back the filter.

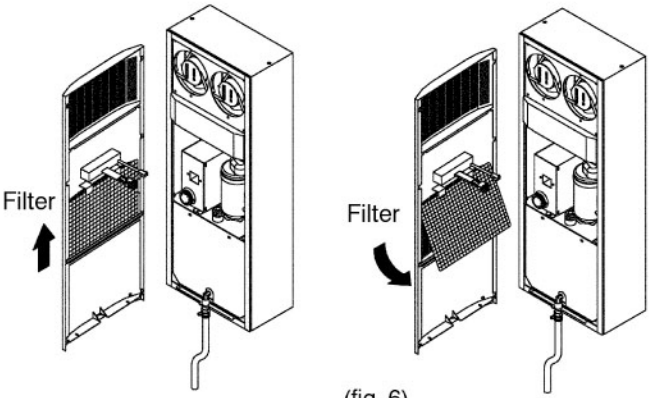
(3) Please clean regularly according to the ambient air condition to prevent the effect towards the cooling capacity or even damage to the air conditioner.

(4) The oil moist will damage the components, please make sure the door of the cabinet is sealed.

(5) Please clean the cooler body by wiping with neutral detergent.

(6) Do NOT spray the cooler with water to avoid electrical shock.

(7) Please do not use hot water, gasoline or organic solvent to clean the cooler.



(fig. 6)

4-2 Storing

(1) Please protect the air conditioner against dust during storing.

(2) Clean the area where dust is most likely to gather such as the filter and the fins before putting the air conditioner into storage.

(3) Please disconnect the power when storing to avoid accidents.

5. Trouble Shooting

Messoge Displayed	Possible Couse	Solution
AH Temperature within the control box is over the limitation to proceed.	* Leakage or fault with refrigeration system. * LProcess load excess the cooling capacity. * Thermostat failure.	* Check and repair the refrigeration system. * Change to a cooler with larger capacity. * Replace faulty thermostat.
AL Temperature within the control box is below the limitation to proceed.	* Compressor cannot be stopped. * Failure of temperature controller or the temperature sensor.	* Check the control circuit of the compressor. * Check if the temperature sensor is functioned properly. * If the above is function properly, then the temperature controller has failed.
E 1H Sensor failure	* Sensor or thermostat failure.	* Replace faulty sensor or thermostat.
E 1L Sensor connection failure	* Sensor or thermostat failure.	* Replace faulty sensor or thermostat.

Symbol	Explanation	Countermeasure
Eb abnormal pressure of refrigerant system	* Air suction or exhaustion is clogged. * Ambient temperature is too high. * Air filter or condenser dirty. * Not enough cooling capacity. * Failure of fan or fan motor.	* Remove the obstructor. * Improve working enviroment to keep good ventilation. * Clean air filter and condenser. * Replace a cooler with larger capacity. * Check fan or replace a new fan motor.
	* Not enough refrigerant. * Blockage in the refrigeration system. * Failuree of pump or not enough flow rate. * Broken pipes. * Working load is too low. * Ambient temperature is too low.	* Check refrigeration system. * Check refrigeration system. * Check the pump and the liquid pipe for the liquid flow. * Check refrigeration system. * Check if the machine tools generate heat. * Improve the working environment.
EB compressor overload	* Abnormal power voltage. * Burnt down compressor. * Fan comes off or failure of fan motor. * Poor enough cooling capacity. * Not enough cooling capacity. * Abnormality in refrigeration system.	* Check refrigeration system. * Check refrigeration system. * Check the pump and the liquid pipe for the liquid flow. * Check refrigeration system. * Check if the machine tools generate heat. * Improve the working environment.

EA power phase abnormal	* Power input reversed. * Power is single phase.	* Turn off power and change any two lines of R.S.T. * Check the power.
EF compressor overheated	* Compressor overheating protection actuate.	* Check the exhaustion of hot air. * Check if the power inputted meet the specification. * Replace compressor if abnormal starting condition.

ISO 9001

主要產品系列：

* 工具機專用油冷卻機系列
* 放電加工機專用油冷卻機系列
* 線切割加工機、印刷機、雷射加工切割機、專用精密溫度控制循環式液體用冷卻機系列
* 多用途冷凍式壓縮空氣乾燥機
* 多用途除溼乾燥機
* NC控制箱、電機、電力箱密閉式防塵、防濕、冷卻專用熱交換冷卻器系列
* NC控制箱密閉式空調冷卻機系列
* 油壓箱冷卻專用熱管熱交換器

MAIN PRODUCTS SERIES:

* Oil cooler series specific for machine tools
* Oil cooler series specific for E.D.M.
* The accurate temperature controller refrigerated recirculating liquid Chillers for wire cut E.D.M. printing machine & laser cutting machine
* Refrigerated compressor air dryer
* Dehumidifier
* Dust-proof, ash-proof enclosed heat exchanger series specific for NC control cabinet, & electric power cabinet etc.
* Enclosed air conditioner series for NC control cabinet
* Heat pipe heat exchanger for oil cooling

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