

# 電子冷卻機

# ELECTRIC CHILLER

## CS056 DIRECTIONS/WARRANTY

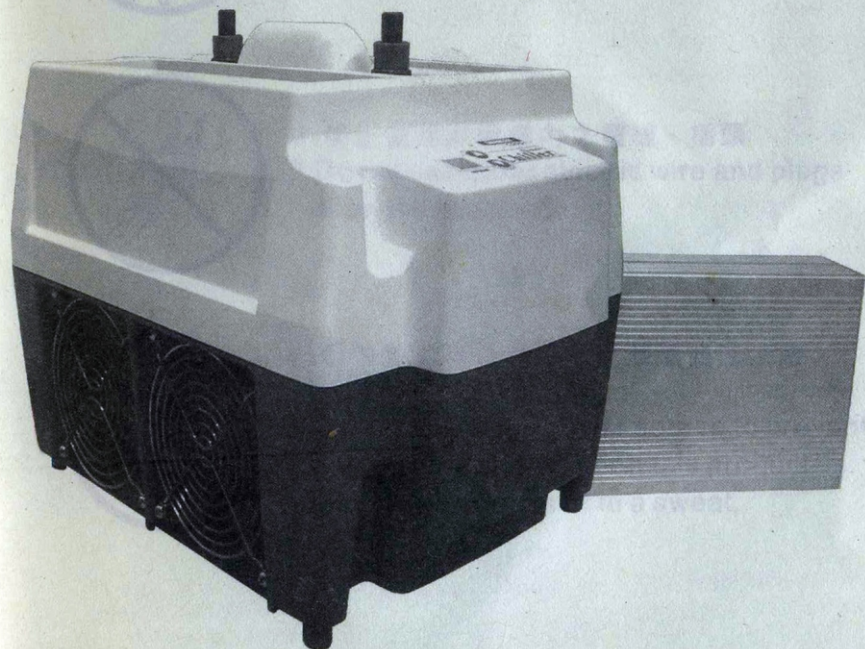
## 說明書/保證書

### 特點

1. 全世界最新極至技術，12片半導體制冷片。
2. 非使用壓縮機，安靜、無污染。
3. 微電腦數字顯示控溫，操作最簡便。
4. 排氣罩新設計，解決木架內部排氣。
5. 適用淡水及海水。
6. 360公升魚缸，溫度可降 $5^{\circ}\text{C}\sim 6^{\circ}\text{C}$ ( $9^{\circ}\text{F}\sim 11^{\circ}\text{F}$ )。

### Features

1. The culminant technology, 12 thermoelectric cooler used.
2. No refrigerant, No noisy and no refrigerant wasting.
3. Micom digital controller operated simply.
4. Exhausting air hood designed.
5. Suitable for Freshwater and Marine.
6. 360 liters tank, Pulldown  $5^{\circ}\text{C}\sim 6^{\circ}\text{C}$ ( $9^{\circ}\text{F}\sim 11^{\circ}\text{F}$ ).



本說明書採用再生紙印製

This Directions have been printed on reprocessed paper.

# 安全須知

## SAFETY PRECAUTIONS



1. 產品使用前，請先詳閱說明書
1. Read the directions carefully before use.



2. 本產品禁止拆解、改造，以防止火災觸電情形發生
2. In order to avoid any fire hazard or electric shock, any disassembly or modification of this product is prohibited.



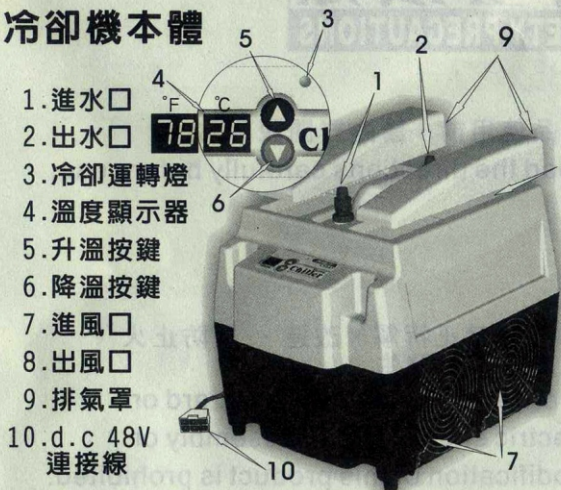
3. 禁止使用非配備內之電線、插頭
3. Do not use other electric wire and plugs than the attached.



4. 嚴禁當本產品潮濕、手潮濕或流汗時，接觸電源，以防觸電
4. Do not touch the power source to prevent any electric shock when this product is wet, or with hands or in a sweat.

# Name of Parts 各部名稱

## 冷卻機本體

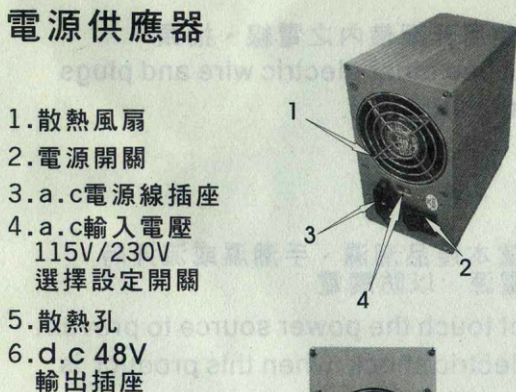


1. 進水口
2. 出水口
3. 冷卻運轉燈
4. 溫度顯示器
5. 升溫按鍵
6. 降溫按鍵
7. 進風口
8. 出風口
9. 排氣罩
10. d.c 48V  
連接線

## Chiller Body

1. Water inlet.
2. Water outlet.
3. Cooling light.
4. Temp indicator
5. Up-Temp Buttons.
6. Down-Temp Buttons.
7. Air inlet.
8. Air outlet.
9. Exhausting air hood.
10. d.c 48V connecting wire set.

## 電源供應器



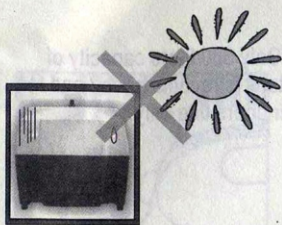
1. 散熱風扇
2. 電源開關
3. a.c 電源線插座
4. a.c 輸入電壓  
115V/230V  
選擇設定開關
5. 散熱孔
6. d.c 48V  
輸出插座

## Switching Power Supply

1. Cooling fan.
2. Power source switch.
3. a.c socket.
4. a.c power source  
115V/230V  
selector switch.
5. Radiator hole.
6. d.c 48V socket.

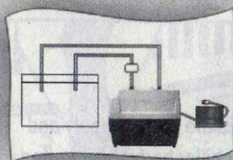
# Cautions

## 注意事項



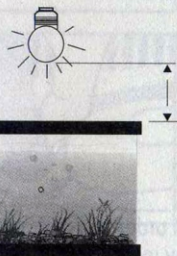
1. 本體必須放置於通風處，避免太陽直接照射，嚴禁放置在狹小密閉空間，以免效率下降。

1. This chiller must be placed in a place of good ventilation and to avoid exposed to direct sunshine. In order to prevent the efficiency from dropping, put it in a tiny and closed space is prohibited.



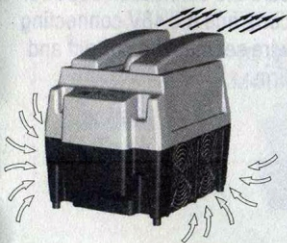
2. 本體必需配合馬達使用，其放置位置請參照安裝配置圖。

2. The chiller is operated with motor, the installation is shown on the layout drawing.



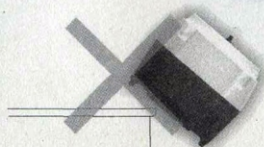
3. 使用照明器具，其照明器具發熱體會使本體效率下降，建議將照明器具發熱體，略離魚缸稍遠處，以減少影響。

3. The lighting equipment to be used will produce heat while in using, and will lower the efficiency of the chiller. To minimize the effect of the lighting equipment, place the heating body of the lighting equipment away from the tank.



4. 本體在冷卻時，會有熱量產生，注意本體進風口及排風口不得阻塞，並儘可能使風向流動順暢，可提高效能。

4. It will produce heat when the chiller is cooling, pay attention to the air inlet and outlet of the chiller which can not be blocked, make the air flow as smooth as possible to promote the efficiency.



5. 禁止傾倒、斜放、摔落等情形發生

5. No collapse, incline or fall down etc.

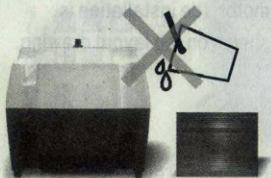
# Cautions

## 注意事項



6. 限360公升以下水族箱使用，限室內使用。

6. Only 360 liters capacity of tank is recommended and for indoors use only.



7. 電源供應器及冷卻機本體應避免被水淋濕。

7. Avoid the power supply and the chiller body to be wetted.

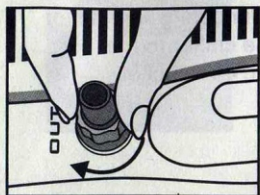


8. 電源線及d.c48V連接器務必確實連接正確，並確認是否牢靠，以免不正確插接造成接觸不良所產生之熱量，所造成的故障，及不可預期的危險。

8. In order to avoid heat caused by incorrect connection, or any trouble or unexpected dangers thereof, please make sure the connection of power cord and d.c 48V connecting wire set must be correct and firm.

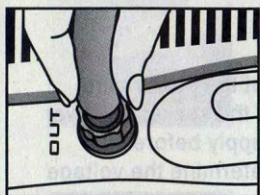
# 基本安裝

# 基本安裝



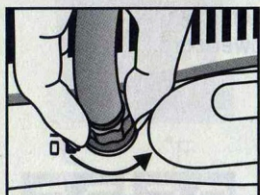
1. 將進/出水口螺帽放鬆。

1. Loosen the nuts of water inlet and outlet.



2. 將水管插入進/出水口到底部。

2. Insert the water pipe into the bottom of water inlet and outlet.



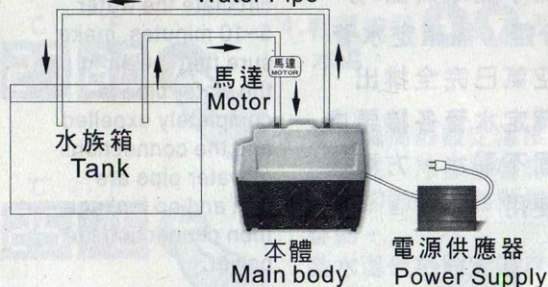
3. 螺帽鎖緊。

3. Tighten the nuts.

4. 配合適合馬達及水管  
請參照圖示組裝。

4. To match with the right motor and water pipe, please install it according to the attached drawing.

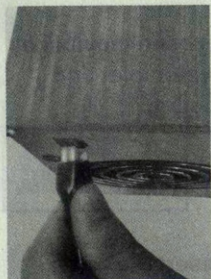
水管  
Water Pipe



注意：插座上供應之電壓需與電源供應器，所需電壓一致。

Remarks : the voltage on the wall outlet should be as same as of the power supply.

# Basic Installation 基本安裝



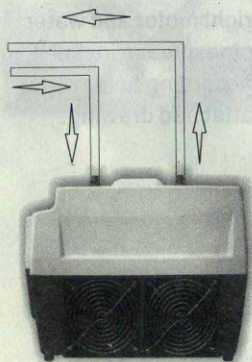
5. 冷卻機本體連接線接到電源供應器上的d.c 48V輸出插座

5. Connect the connecting wire set of the chiller to the d.c 48V socket.



6. 電源供應器接上a.c電源線，在未確定電壓之前，請勿接上a.c電源。

6. Put the power card to the socket of power supply before determine the voltage of a.c power, do not connect the a.c power cord.



7. 在基本安裝完成後先讓流水循環流動5分~10分鐘，需確定水管內空氣已完全排出，並確定水管各接頭處穩固不漏水，方可通電使用。

7. After completion of basic installation, circulate the water 5~10 minutes, make sure that the air in the water pipe is completely expelled and the connections of water pipe are firm and no leakage then connecting the power.

# Operation Setup 操作設定



1. 檢查電源供應器上 a.c 電源輸入電壓設定 115V/230V，請選擇正確電壓。

1. Inspect the voltage setup 115V/230V of the power supply, choose the right voltage.



2. 電源線插入插座

2. Power plug-in wall outlet.





3. 電源開關切入，溫度顯示 26°C (78°F)。

3. Put on the Power switch, indicates Temp 26°C (78°F).



4. 輕壓按鍵   設定水溫。

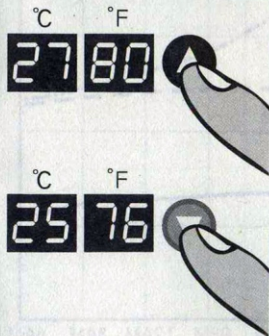
4. Press buttons  , setting the desired water temp.

當水溫高於設定溫度時橙燈亮，冷卻機啟動進行冷卻動作，散熱風扇啟動。

When water temperature is higher than the setting temperature, orange light on, the chiller start to cool down, and the cooling fan starts running.

當水溫低於設定溫度時橙燈暗，冷卻機停止動作，散熱風扇停止動作

When water temperature is lower than the setting temperature, orange light off, the chiller and the cooling fan stop running.





# Operation Setup 操作設定

360ℓ



水溫降5°C ~6°C  
(9°F ~11°F)  
Water temp pulldown  
5°C~6°C (9°F ~11°F)

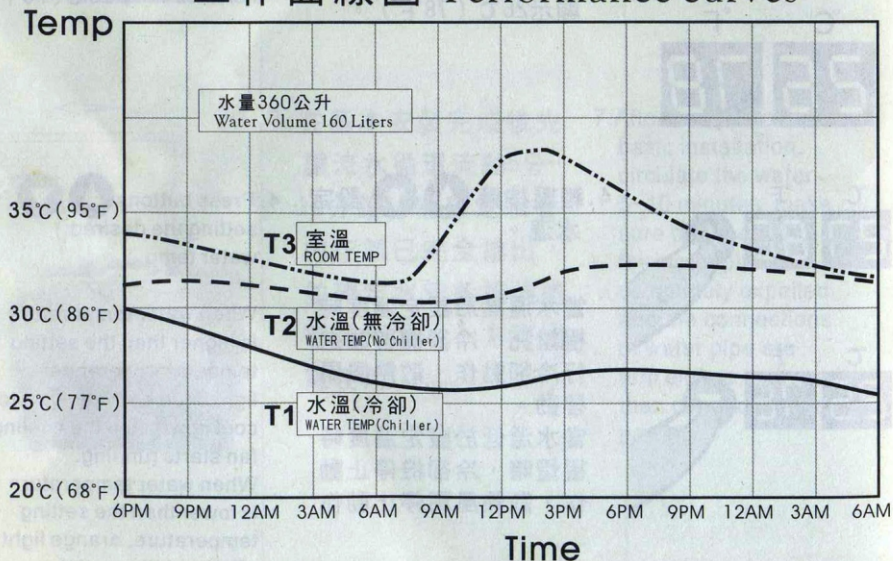
## 5. 冷卻能力

360公升水量，室溫32°C (90°F)~38°C (100°F)時，水溫從30°C (86°F)下降至25°C (77°F)時約需12小時(圖示僅供參考，實際效率需視水族箱周遭環境而定)

## 5. Cooling ability

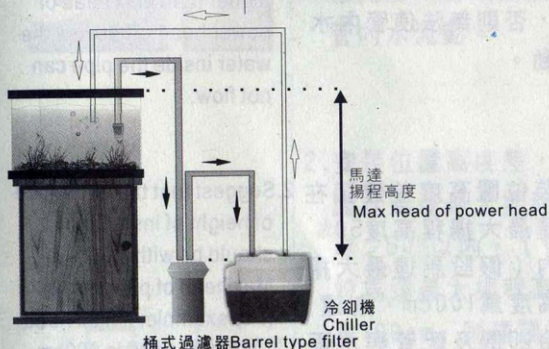
For 360 liters water volume at room temp 32°C (90°F)~38°C (100°F), water temp pulldown from 30°C (86°F)~25°C (77°F) it will take 12 hours (the charts is for reference only, actual efficiency will depend on the surroundings of the aquarium)

## 工作曲線圖 Performance curves



## 一.桶式過濾器水管配置圖 (冷卻效率較高)

冷卻機出水口至魚缸內之  
管路不宜過長，以免效率  
降低。



### 注意：

1. 配置過濾器及冷卻機位置不得低於馬達揚程高度，否則無法使管內水流動。
2. 安裝位置高度差建議在馬達最大揚程高度之50%以內，（假設馬達揚程最大高度為100cm，則建議冷卻機與魚缸最高處之最大高度差在50cm以內）。

## 1. Pipe Layout of Barrel Type Filter

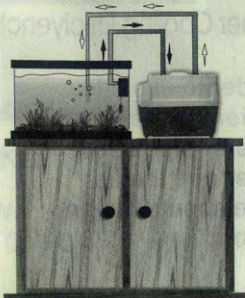
(Higher Cooling Efficiency)

In order to avoid low efficiency, the length of water pipe between chiller and the fish globe should not be too long.

### Warning:

1. The location of filter and chiller shall not be lower than the height of motor head, otherwise the water inside the pipe can not flow.
2. Suggest that the difference of height of installation should be within 50% of the height of the maximum Motor head. (For example, if the highest height of the head of the motor is 100cm, then the maximum difference of height on the highest position of the chiller and the fish globe should be within 50 cm).

## 二. 沉水式過濾器 水管配置圖



### 注意：

1. 冷卻機及配管位置，不得高於馬達最大揚程高度，否則無法使管內水流動。

2. 安裝位置高度差建議在馬達最大揚程高度50%以內（假設馬達最大揚程高度為100cm，則建議冷卻機及配管與水面最高之最大高度差在50cm以內）。

3. 如將本體位置放在低於魚缸適當的位置，可不需要考慮揚程高度。

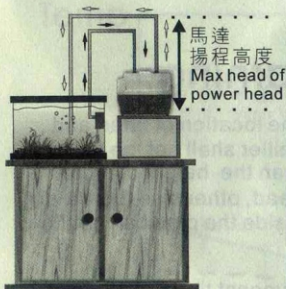
## 2. Pipe Layout of Sinking Type Filter

### Warning:

1. The location of chiller and pipe layout can not be higher than Max head of power head, otherwise the water inside the pipe can not flow.

2. Suggest that the difference of height of installation should be within 50% of Max head of power head (For example, if Max head of power head is 100cm, then the maximum height difference between chiller's pipe layout and the height point of water surface should be within 50cm.)

3. If put the chiller in a proper place lower than the location of the tank, then it is unnecessary to consider Max head of power head.



### 三.上部式過濾器 水管配置圖

注意：

1. 冷卻機及配管位置，不得高於馬達最大揚程高度，否則無法使管內水流動。

2. 安裝位置高度差，建議在馬達最大揚程高度之50%以內。（假設馬達最大揚程高度為100cm，則建議冷卻機配管位置與水面最高處之最大高度差在50cm以內）。

3. 如將本體位置放在低於魚缸適當的位置，可不需要考慮揚程高度。

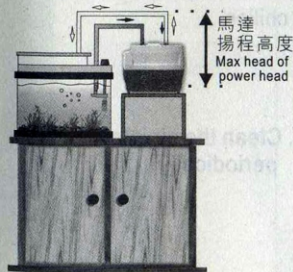
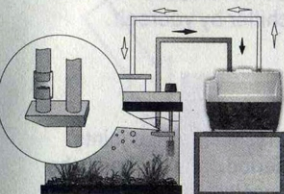
### 3. Pipe Layout of Upper Type Filter

Warning:

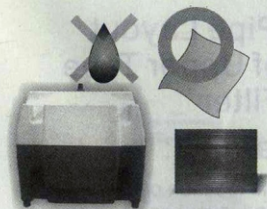
1. The location of chiller and pipe layout can not be higher than Max head of power head, otherwise the water inside the pipe can not flow.

2. Suggest that the difference of height of installation should be within 50% of Max head of power head (For example, if tMax head of power head is 100cm, then the maximum height difference between chiller's pipe layout and the height point of water surface should be within 50cm.)

3. If put the chiller in a proper place lower than the location of the tank, then it is unnecessary to consider Max head of power head.

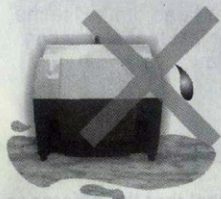


# Maintenance 保養



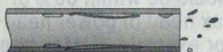
1. 本體外部，不得水洗，  
可用乾布擦拭，本機不  
得自行拆解。

1. Do not wash the chiller  
body with water, but wipe  
it with dry cloth instead.  
Do not disassemble the  
chiller by yourself.



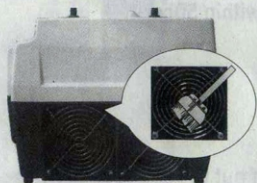
2. 水管各接頭處，需定期  
檢視，有無漏水。

2. Inspect the pipe joints  
periodically to check the  
possible leakage.



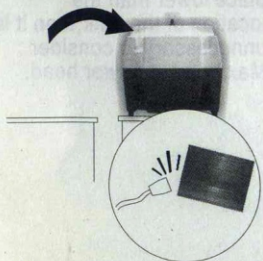
3. 水管內部有污穢時，需  
不定期清除或更新，可  
延長本體產品壽命。

3. Clean the interior of the  
water pipe or replace it  
with a new one if find some  
dirt inside the pipe, so it  
will extend the life of the  
chiller.



4. 進氣口定期清除灰塵雜  
物。

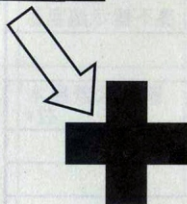
4. Clean the air inlet  
periodically.



5. 移動本體或電源供應器  
時，應先拔掉電源連接  
線。

5. When move the chiller or  
power supply, unplug the  
power cord first.

# Maintenance 保養



6. 定期檢視電源插頭，是否因受潮而有氧化之現象，尤其d.c48V電源連接線，有高達20A電流通過，更需注意保養，若發現因熱產生高溫使連接器有變形的現象發生時，請立即送修。

6. Inspect the plug periodically to see whether there is any phenomenon of oxidation due to wetness, especially the connecting wire set of d.c 48V which will load a current of 20A should pay more attention for maintenance, if there is any deform of the connector due to high temperature, repair it at once.

# Technical Specifications 技術規格

## 技術規格

名稱	電子冷卻機
型號	CS056
冷卻方式	半導體致冷片
電壓、頻率(電源供應器)	輸入：a.c 115V/230V(選用) 50Hz/60Hz 輸出：d.c 48V 20A
功率	平時：約18W以下 冷卻中：720W±5%
冷卻能力	360公升水量、水溫降低5°C~6°C(9°F~11°F)
控制溫度	15°C~30°C±1°C(59°F~86°F±2°F)
適用水量	360公升
使用環境溫度、濕度	10°C~40°C(50°F~104°F) 10RH~90RH
尺寸(寬×高×深)mm	冷 卻 機：286x287x367 電源供應器：86x150x194
重量 (Kg)	18
連接管尺寸(口徑)	內徑 12mm 外徑 16mm
附件	a.c電源線
選購品	排氣罩

## Technical Specifications

Name	Electric Chiller
Model	CS056
Cooling Method	Thermoelectric Cooler
Voltage Frequency (Power Supplier)	Input: a.c. 115V/230V (option) 50Hz/60Hz Output: d.c 48V 20A
Power	Ordinary time: < 18W Cooling time: 720W±5%
Cooling Ability	360liters tank, 5°C~6°C(9°F~11°F) Pulldown
Temperature Control	15°C~30°C±1°C(59°F~86°F±2°F)
Applicable Quantity of Water	360 liters
Temperature and Humidity of Surroundings	10°C~40°C(50°F~104°F) 10RH~90RH
Dimensions (Width X Height X Deep)mm	Chiller: 286x287x367 Power Supply: 86x150x194
Weight (Kg)	18
Dimensions of Connecting pipe (dia)	Inside dia 12 mm Outside dia 16mm
Attachment	Power Supply Cord
Purchase Demand	Exhausting air hood

# 故障排除

## 故障排除

項次	故障症狀	可能故障原因	排除
1	冷卻機無動作 溫度顯示器不亮	1. 無電源	1. 電源插頭未插上 a. c 插座，請插上。 2. 電源供應器ON/OFF開關ON 3. d. c 48V連接線接頭脫落或未接上，請接上。
		2. 電路故障	送修
2	水溫無法下降 *註	1. 進風口阻塞	清除進風口
		2. 冷卻機放置在密閉空間或通風不良處	請放在通風非密閉空間的位置
		3. 冷卻水管配置過長，影響冷卻效率	縮短水管長度
		4. 受其他熱源影響	改善其他熱源位置(如水族燈位置)
		5. 水族箱太大	建議水族箱360公升以下，因水量愈多，冷卻效果愈差。
		6. 冷卻水沒有循環	1. 冷卻機位置不當，超過馬達揚程高度。 2. 水管阻塞，請清除阻塞物，或更換水管。 3. 水管內有空氣，或沉水馬達內有空氣，使馬達空轉，請將空氣排除掉。 4. 冷卻機內部阻塞，送修。 5. 馬達故障，請自行更換馬達。
		7. 感溫體故障	送修
		8. 水箱內水沒有流動造成水族箱內冷熱不均勻	讓水族箱內部水流動
		9. 散熱風扇故障	送修
		10. 冷卻機放置位置室溫過高	請放在通風良好，室溫較低處。
3	冷卻運轉燈亮、散熱風扇沒轉動	散熱風扇故障	送修
4	循環出水量減少	水管或幫浦濾網阻塞	可用管路清洗劑(鋁潔劑)將幫浦放入，插電循環約10分鐘再用清水循環10分鐘即可。(管路清洗劑一般冷凍材料行可購買)
5	溫度顯示器顯示 -- 或 00，冷卻機停止運轉。	1. 水溫低於13°C (55°F) 或高於37°C (98°F)。	當水溫回復13°C (55°F) ~ 37°C (98°F) 時，冷卻機即會正常運轉。
		2. 感溫體損壞	感溫體損壞，請送修。

註：※ 冷卻水沒有循環之故障產生後，有可能會使冷卻機內部，有局部結冰現象造成阻塞，在故障排除後，若無法使水流循環流動，建議先切掉電源後，約30分鐘等冰塊溶解後，再行使用。





# Trouble Shooting

## Trouble Shooting

Item	Trouble	Possible Reason	Resolution
1.	Chiller no action Temp indicator off	1.No power	1.Be sure the plug is on 2.ON/OFF switch of power supply turn on "ON" position 3.d.c. 48V connecting wire set fallen down or unconnected, fit it.
		2.Circuit breakdown	Repair
2.	Water temperature can not pulldown. *Remarks	1.Air inlet blocked	Clean the air inlet
		2.The chiller is installed in a closed space or a place of bad ventilation.	Adjust the location of the chiller
		3.Cooling water pipe too long, minimize the cooling efficiency.	Shorten the length of water pipe
		4.Affected by other heat sources.	Adjust the position of other heat sources (as the position of aquarium lamp)
		5.Too big tank	Suggest the volume of tank be less than 360 liters, because the more the water, the less the efficiency.
		6.No circulation of the chilling water	1.Improper position of the chiller, higher than Max head of power head. 2.Water pipe blocked, clean and replace it. 3.Air in the water pipe or in the sinking motor, which makes the motor idle running, get rid of the air. 4.Chiller inside blocked, need repair. 5.Power head breakdown, repair or replace it

# Trouble Shooting

## Trouble Shooting

Item	Trouble	Possible Reason	Resolution
		7.Sensor breakdown	Needs repair
		8.No flow inside the water tank, which makes the inside temperature of the tank non- homogeneous.	Keep the water inside the tank flow
		9.Cooling fan breakdown	Needs repair
		10.Place the chiller in the high room temperature.	Place it in a place of good ventilation and lower room-temperature
3.	Cooling light is on, but the cooling fan does not run.	Cooling fan breakdown	Needs repair
4.	Small amount of circulation water	Water pipe or pump filter blocked	Put the pump into the tank with pipe clean agent(AI clean agent) and circulate 10 minutes, then circulate 10 minutes with clean water( pipe clean agent is available at refrigeration store)
5	Temp indicator show -- or  or  , Chiller stop action.	1.Water temp is under 13°C (55°F) or over 37°C (98°F)	When the water temp return to 13°C (55°F) ~37 °C (98°F) ,the chiller will operate again.
		2.Sensor breakdown	Sensor breakdown needs repair.

**Remarks:** If there is no circulation problem of the cooling water, it will be possible to have partial frozenness inside the chiller and will create blockage. So if there is no way to make the water circulate after the problem is solved. Suggest to unplug the power cord first, and operate it again after waiting about 30 minutes when the ice dissolved.

# 保證卡

1. 在正常使用下，如發生故障，自購買日起保證一年，換修材料免費。
2. 因使用錯誤，導致故障，需換零件時，應繳付材料費。
3. 如故障請送原經銷店。
4. 本卡無購買日期或未蓋經銷店章者無效。

## GUARANTEE

THIS PRODUCT IS WARRANTED FOR ONE YEAR FROM THE DATE OF PURCHASE AGAINST ELECTRICAL & MECHANICAL & DEFECTS IN MATERIAL & WORKMANSHIP.

IF FOR ANY REASON THIS APPLIANCE SHOULD NOT OPERATE SATISFACTORILY, TEST THE SOCKET WHICH THIS APPLIANCE HAS BEEN CONNECTED TO WITH ANOTHER APPLIANCE.

ALSO MAKE SURE THE PRONGS OF PLUG ON APPLIANCE ARE IN GOOD CONTACT WITH THE WALL OUTLET. IF YOU ARE SURE THE APPLIANCE IS DEFECTIVE. RETURN IT, TO APPLIANCE SERVICE STATION, FOR REPAIR OR REPLACEMENT WITHOUT CHARGE AT THE MANUFACTURER'S OPTION.

IF REPAIRS ARE NECESSARY AFTER GUARANTEE PERIOD A NOMINAL CHARGE WILL BE MADE.

DAMAGE TO APPLIANCE BY REASON OF ABUSE OR TAMPERING IS NOT COVERED BY THIS GUARANTEE. THIS GUARANTEE DOES NOT INCLUDE THE INSIDE OR OUTSIDE COVERING. WITH PROPER CARE THE COVERINGS SHOULD LAST INDEFINITELY.

購買日期 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Date of Purchase \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

經銷店章

Store of Purchase