

INSTRUCTION SHEET

FOR D-D MODEL DC 4000 CHILLER/HEATER

PLEASE READ THIS INSTRUCTION SHEET CAREFULLY BEFORE STARTING TO INSTALL AND OPERATE THIS CHILLER. IF YOU HAVE ANY DOUBTS ABOUT CORRECT INSTALLATION THEN PLEASE CONSULT WITH YOUR RETAILER OR A QUALIFIED INSTALLER.





FOR MORE HELP AND ADVICE PLEASE VISIT OUR WEBSITE:
WWW.THEAQUARIUMSOLUTION.COM

SUGGESTIONS FOR SAFE OPERATION

Several symbols are used in this manual and on the product itself which are aimed at proper and safe operation in order to prevent you from injury or others or damage to the chiller. The meanings of these symbols are explained below. Please be sure you understand their meanings before you read this manual.

EXPRESSIONS (TERMS AND SYMBOLS)

Hazard seriousness levels will be indicated by the terms or shown by pictures. The symbol on the left is a general emphasis but specific details of the action which must be taken will be shown by a picture or explanatory near to the symbol.

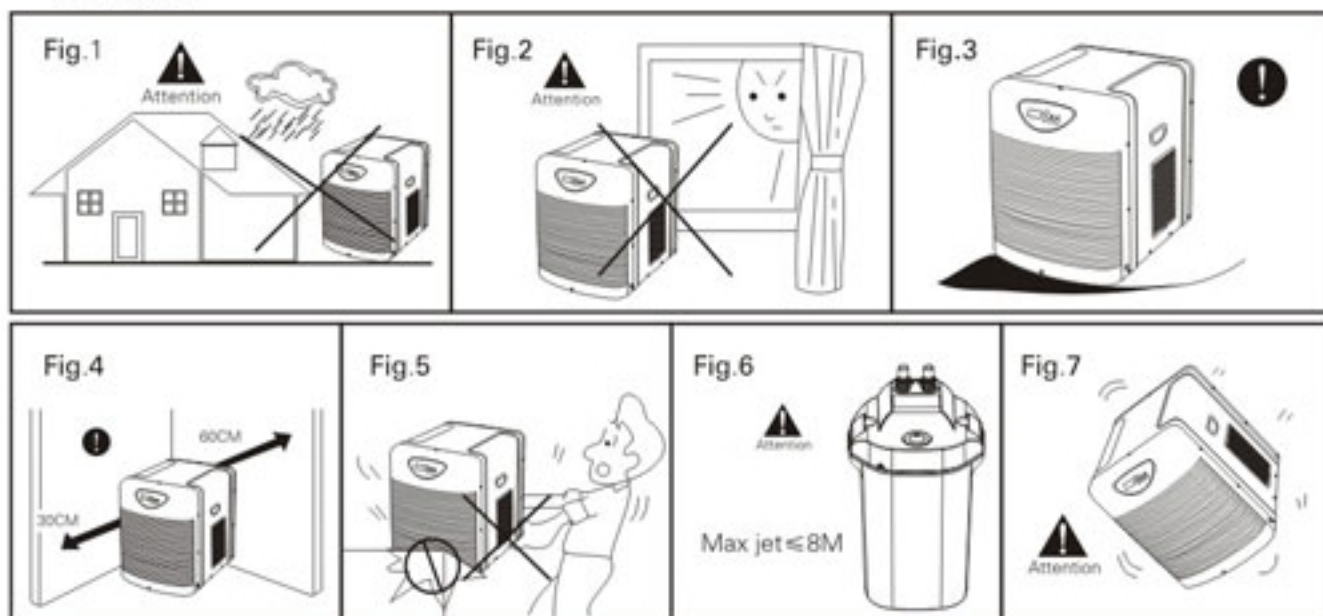
-  This symbol advises you of an item which should be noted (including danger and warning).
-  This term indicates the possibility that continuing to work while ignoring this attention, or working incorrectly without full understanding, may cause personal injury or equipment damage.
-  This symbol advises you of an action which must be taken (is mandatory) in order to avoid danger.
-  This symbol advises you of an action which must not be taken (is prohibited) in order to avoid danger.

FEATURES

1. ONE UNIT, TWO DIFFERENT SYSTEMS — Both cooling & heating in high efficiency.
2. COMPRESSOR — Adopts energy-saving super silent revolving compressor from Mitsubishi/Panasonic/Hitachi in Japan, acquiring best effect with lowest power consumption.
3. REFRIGERATION CAPACITY — Large refrigeration capacity, aquarium water can be refrigerated to any degree above 3°C in a short period of time.
4. CONTROL SYSTEM — Microcomputer fully automatic digital control system for the convenience of user.
5. TEMPERATURE MEMORY SYSTEM—Temperature memory system that makes the unit refrigerate or heat continuously when the power is supplied again to protect the fish in the aquarium.
6. PROTECTION DEVICE — The compressor protection device system is built to shut off the circuit automatically to prevent the compressor from being burned out when it is overheated due to overload.
7. AUTO DEFROSTING SYSTEM — While heating, the internal heating exchanger is not frozen, acquiring high efficiency.

INSTALLATION PLACE SELECTION :

- (1) Don't install the unit outdoors. (Fig.1)
- (2) Place the unit in a ventilated place away from inflammability, high temperature, direct sunshine, moisture or dust. (Fig.2)
- (3) Place the unit on a horizontal stable surface. (Fig.3)
- (4) Install at least 30-60 cm away from the walls or other things for venting . (Fig.4)
- (5) Don't cover up the unit. While it is working, avoid shaking or colliding with other things directly. (Fig.5)
- (6) The circulation water flow for the unit is indicated in the technology data table. This unit doesn't have a water pump. So, it needs a pump with external filter available. Pump head is no more than 8m maximum. If other equipment out of specification is used, it can cause water leakage of the tank or other faults. (Fig.6)
- (7) Do not put the unit up side down, it will cause damage to the unit. If it is put side down due to draining water or other reason for a short period of time, put it straight and wait for 20 minutes before switching it on. (Fig.7)



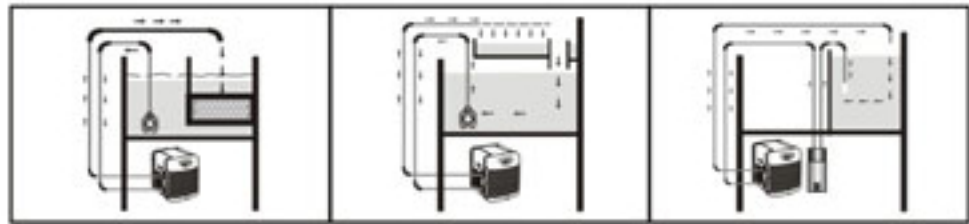
SUGGESTION FOR INSTALLATION :

1. Electrical work must be done by a qualified electrician.
2. Provide a separate power outlet to be used only for the unit.
3. Ensure that the power source to be utilized conforms to the power requirements specified on the product nameplate.
4. The power source should be fitted with earth leakage breaker.
5. Disconnect the power during installation.

INSTALLATION METHODS

Note: The chiller both cooling & heating must be operated with circulation & filtration systems. For optimum performance, the unit should be installed at a place where is drafty and away from direct sunlight. The unit

also can be installed under an open style aquarium cabinet. As you know, it should be installed at a minimum distance of at least 60 cm from each side of the cabinet, so as to allow fresh air to flow in the intake area. For fresh air circulation, it is suggested to install your unit out of the aquarium cabinet. If the unit is placed under an aquarium fitted with filtration system, a hose must be provided to connect the water pump and the input connector of the unit to ensure the intake water is pure. For sea water, it must be filtered before entering the unit, or the evaporator will be dirty and this will affect the refrigeration / heating.



BEFORE STARTING THE OPERATION OF THE CHILLER BOTH COOLING & HEATING, PLEASE CHECK THE FOLLOWING POINTS:

- (1) Check if the water level inside the aquarium is appropriate and the water temperature sensor, the valve on the pipes are in proper positions.
- (2) Make sure that no water leakage from the hose adaptors.
- (3) Insert the power plug with its full contact into the power outlet so that the plug itself does not wobble.
- (4) Make sure there is nothing wrong with the water circulation & filtration system, especially the circulating tube must not be clogged.

OPERATION

During manufacture, the preset working mode is "cooling", the error margin of the temperature is 2°C, the set water temperature is 28°C, the temperature for starting defrost is -3°C & the temperature for stopping defrost is +5°C.

NOTE: While setting temperature for defrosting, the "temperature for starting defrost" must be lower at least 3°C than the "temperature for stopping defrost". (All the other functions fall on while defrosting.)

■ CONTROL & COMMAND PANEL

There are four keys on the control & command panel for function choice, water temperature indication, setting temperature indication and setting temperature adjustment.

1. After pressing "COLD" key for a short period of time, the refrigerating indicator will twinkle to indicate the former set temperature. After pressing "COLD" key again or just wait for 8 seconds, the aquarium water temperature will be indicated again.
2. After pressing "HEAT" key for a short period of time, the heating indicator will twinkle to indicate the former set temperature, after pressing "HEAT" key again or just wait for 8 seconds, the aquarium water temperature will be indicated again.

■ SETTING TEMPERATURE ADJUSTMENT

1. Refrigerating temperature setting: Press "COLD" key for 3 seconds till the digits on the display and the refrigerating indicator twinkle at the same time, the display twinkles to indicate the former set temperature function is enabled. Press "△" key for temperature increasing and "▽" key for temperature decreasing. Setting temperature ranges from 3°C to 46°C. When finish adjustment, press "COLD" key again or just wait for 8 seconds and the aquarium water temperature will appear on the display.
2. Heating temperature setting: Press "HEAT" key for 3 seconds till the digits on the display and the heating indicator twinkle at the same time, the "tP5" appears and twinkles on the display, press "HEAT" to indicate the former set temperature and the heating temperature setting function is enabled. Press "△" key for temperature increasing and "▽" key for temperature decreasing. Setting temperatures range from 3°C to 46°C. When finish adjustment, press "HEAT" key again or just wait for 8 seconds and the aquarium water temperature will appear on the display.

■ PROGRAMMING FUNCTION SETTING

Press "HEAT" key for 3 seconds till the digital letters appear and twinkle on the display to indicate that the programming function is enabled, press "△" or "▽" for setting:

- (1) Water temperature ("tP5" will appears);
- (2) Temperature for defrosting ("PSt" will appears);
- (3) Temperature for stopping defrost ("dFt" will appears).

Confirm the programming function by pressing "HEAT" key again, the former set value will appear on the display. Press "△" or "▽" key to choose the required value, then press "HEAT" again or just wait for 8 seconds, the set value will be recorded and the water temperature will appear on the display.

■ SETTING TEMPERATURE FOR STARTING DEFROST (dSt)

Choose start defrost function (dSt) by programming function setting, then press "HEAT" key and the defrost setting function is enabled, display the preset starting defrost temperature (-3°C). Press "△" or "▽" key to choose temperature for starting defrost (from -15°C to +3°C for your selection).

■ SETTING TEMPERATURE FOR STOP DEFROST (dFt)

Choose stop defrost function (dFt) by programming function setting, then press "HEAT" key and the stop defrost setting function is enabled, display the preset stopping defrost temperature (+5°C). Press "△" or "▽" key to choose temperature for stopping defrost (from -12°C to +15°C for your selection).

■ ERROR MARGIN SETTING (C 2/H2)

Press "▽" key for 3 seconds till the digits twinkle and display (C 2/H2) , then press "△" or "▽" key for value changing, the error margin value can be set from 1°C to 3°C.

■ TEMPERATURE ERROR ADJUSTMENT (□□)

The common setting is "□□", when the aquarium water temperature is different from the temperature value appear on the display of the chiller, you can adjust the error as following: Press "△" and "▽" keys at the same time for 6 seconds till the display twinkles, then press "△" or "▽" key separately for temperature error adjustment ranging from -1.5°C~+1.5°C. (Do not use this function frequently if it is not necessary.)

■ THE UNIT PROTECTION DEVICE TO BE RESPONDING

Protection device is provided with the unit. The refrigeration compressor needs three minutes to start after resetting, and for the first time, it needs about one minute.

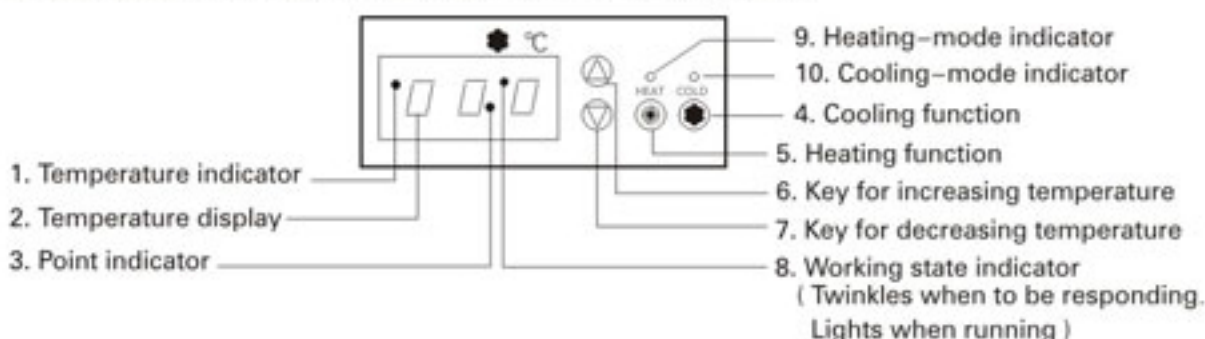
■ COMPRESSOR ON & OFF AUTOMATICALLY

When the refrigeration compressor stops working for over three minutes & the water temperatures is 1-3°C above the set temperature, the compressor will start working again automatically. The compressor will stop working automatically when the aquarium water temperature reaches or is below the set temperature.

The indicator "8" appears to indicate that the unit is working. The light turns off to indicate that the aquarium water temperature reaches or is below the set temperature. The light twinkles to indicate the protection device to be responding for three minutes.

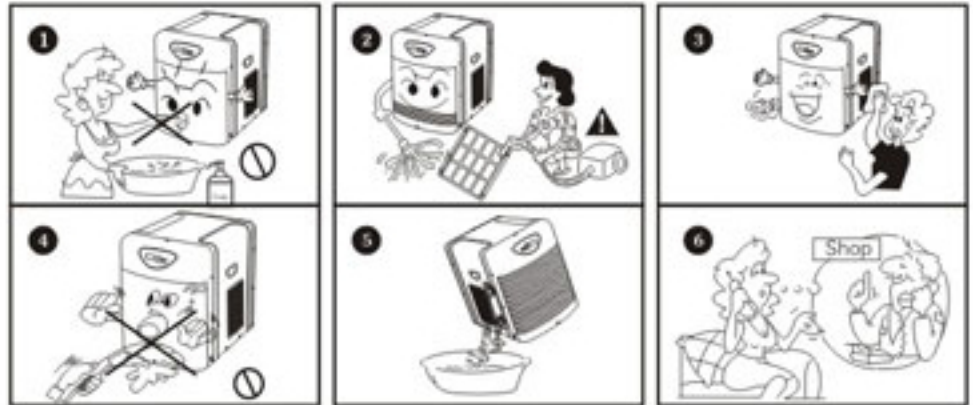
■ ERROR AUTOMATICALLY INDICATE SYSTEM

Some errors automatically indicate system is also provided with the unit. When the water temperature sensor is broken, the letter "E1" will appear on the display and twinkles, the protection device will be responding to stop the unit. When the defrost sensor is broken, the unit can cool or heat but can't defrost in heating mode, the water temperature & the letter "E2" will appear on the display by turns.



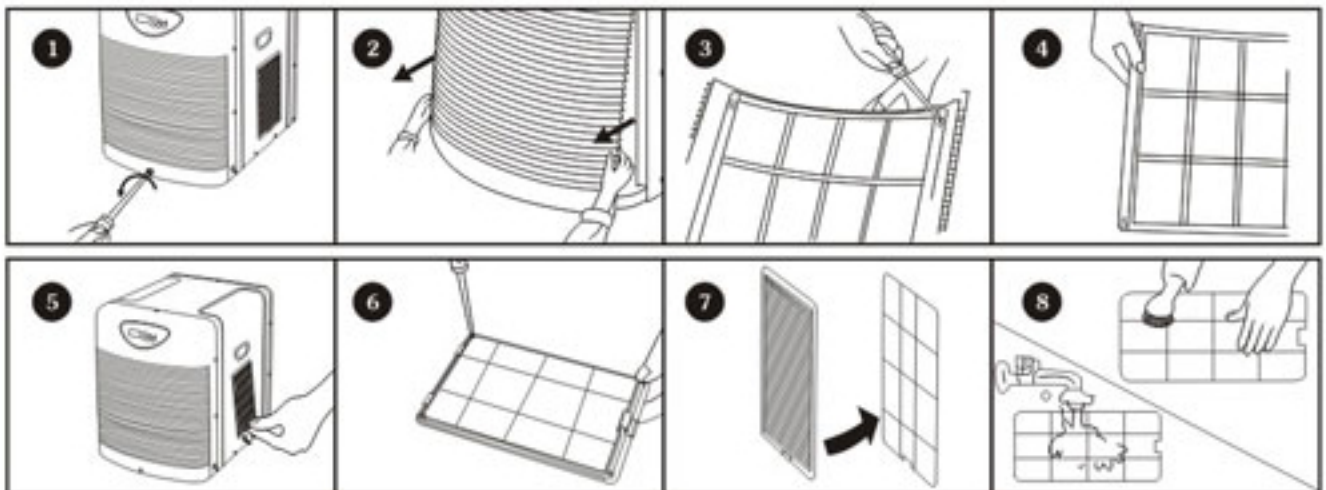
CLEANING AND MAINTENANCE

1. Cleaning of the circulation system and the filtration system is recommended once a month or once two months for optimum refrigeration performance operation and efficiency, unplug the cord from the outlet before cleaning. Rinse collected debris from the filter media, inlet & outlet pipe, flow diverter, impeller and chamber cover with clear lukewarm tap water. Soap or detergents are not recommended for filter maintenance because they are bad for the fish's health. (Fig.1)
2. Remove the dust at the air inlet and outlet with a brush or vacuum cleaner. To avoid electric shock, during operation, do not insert wire into the exhaust outlet or the air inlet. (Fig.2)
3. The electric supply switch and temperature adjuster must be cleaned with dry soft cloth. (Fig.3)
4. Neither immerse the unit into water nor flush it with water directly to avoid damage the electric insulation of the chiller both cooling & heating. (Fig.4)
5. Disconnect the power supply plug if the unit will not be used for a long time, remove the inlet & outlet pipes, then lift the back of the chiller both cooling & heating a bit to remove water in the unit, clean all the parts with a soft cloth and cover it with a seal bag, put it into the color box , then store it in a safe and dry place. (Fig.5)
6. If the supply cord is damaged, it must be replaced by its service agent or similarly qualified person in order to avoid a hazard.
7. If you still have any other questions, please contact with our dealer or an Authorized Service Center near your home. (Fig.6)



STEPS OF FILTER CLEANING

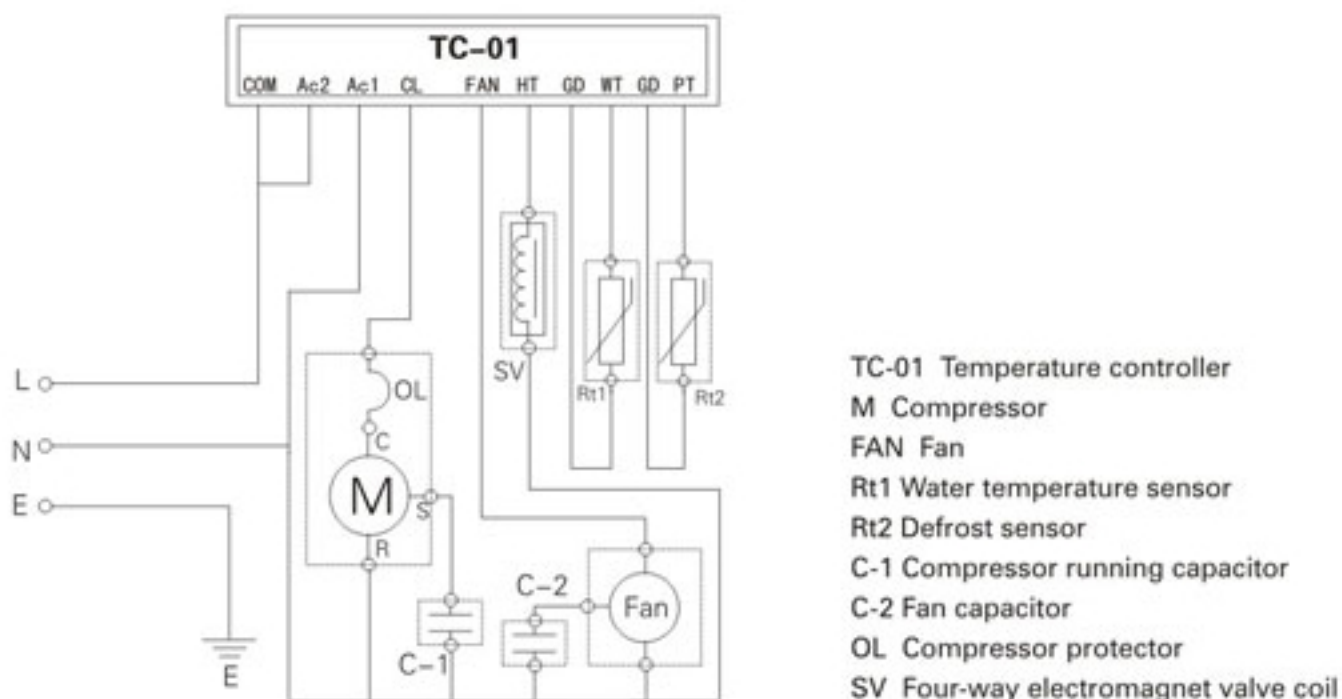
1. Loosen screws of front draft hood, turn counterclockwise (Fig.1).
2. Draw front draft hood out lightly by hands (Fig.2).
3. Loosen screws of unit and remove the filter (Fig.3.4).
4. Lift and remove side draft hood (Fig.5).
5. Loosen screws of side draft hood & take off the filter (Fig.6.7).
6. Remove the dust with brush or vacuum cleaner, or rinse it well with water and dry it completely before reinstallation. (Fig.8).
7. Install all the parts back by counter steps.



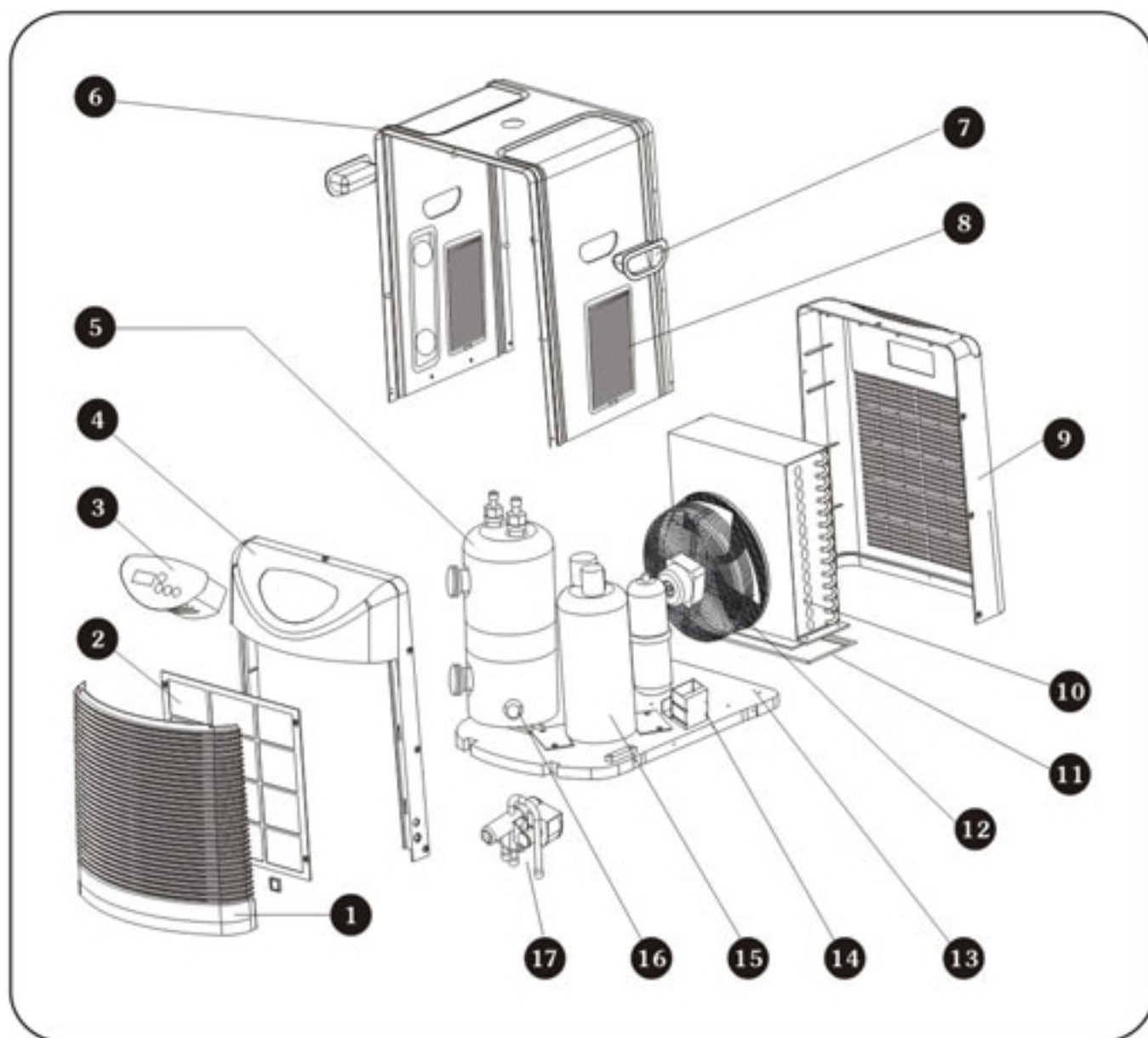
A GUIDE TO SIMPLE PROBLEM SOLVING

SYMPTOM	CAUSE	COUNTERMEASURE
No power source. The unit doesn't run & the display appears nothing	Power is not turned on	Turn on the power
	Plugged in insufficiently	Be sure the power cord is to be fully plugged on
The unit repeats on and off	Apply to wrong voltage and frequency	Apply to correct power source, according to the nameplate.
	The unit protection device to be responding	A. Check if the water circulation is normal B. If the fan and the chiller dissipate heat normally, wait for 3 minutes & the unit will turn on again automatically
Water refrigerated reduces or even no refrigeration	The compressor runs normally, the fan stops running, the unit can't dissipate heat	Replace with a new fan of the same specs
	The set temperature is higher than the aquarium water temperature	Reset refrigerate temperature
	The air inlet and outlet are clogged with dirt	Remove the dust at the air inlet/outlet with a brush or a vacuum cleaner
	Refrigerant is not enough	👉 Look at page 12, fill the unit with the same type of refrigerant by a qualified electrician
	Too much water in aquarium	Reduce the water
Running with shock & loud noise	The base is not flat	Mount it on a flat base

CIRCUIT DIAGRAM



PARTS LIST



- ① Front draft hood
- ② Filter (Front draft hood)
- ③ Control & command box
- ④ Front cover
- ⑤ Tank (With evaporator)
- ⑥ Middle cover
- ⑦ Handle
- ⑧ Side draft hood (Filter included)
- ⑨ Back cover
- ⑩ Condenser

- ⑪ Water tray
- ⑫ Fan (Motor)
- ⑬ Base
- ⑭ Junction box
- ⑮ Compressor
- ⑯ Water temperature sensor
- ⑰ Four ways valve