

1 HP ♦ 80-700 GALLONS (300 TO 2500L)

CHILLER

AACH100 INSTRUCTION MANUAL

Before operating this appliance, please read this instruction manual thoroughly and keep on file for future reference.



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AACH100 CHILLER

INTRODUCTION

MODEL AACH100 – ACTIVEAQUA SERIES CHILLER – 1 HP

Thank you for purchasing the ActiveAqua Series Chiller. The Chiller represents a significant step forward in horticultural cooler engineering, offering state of the art technology at highly competitive prices. Temperatures for reservoirs ranging from 300 to 2500 liters (approx. 80 to 700 gallons) can now be quickly and economically maintained by selecting the correct model ActiveAqua Series Chiller. The super silent design results in significantly lower noise levels which are quieter than any other similar Chillers. The ActiveAqua Series Chillers have a strong chassis with an ABS plastic housing which is anti-rust and anti-corrosive, ensuring that the Chiller does not look out of place in any setting. For a complete understanding of this Chiller, we recommend reading this instruction manual thoroughly.

SUGGESTIONS FOR SAFE OPERATION

Several symbols are used in this manual and on the product itself which are aimed at promoting proper and safe operation in order to prevent personal injuries or damage to the Chiller. Please familiarize yourself with the symbols below before reading the manual or trying to operate the Chiller.

Terms And Symbols

Hazard levels will be indicated in writing or shown by pictures. The symbol on the left provides general emphasis of the hazard, but specific details of the action which must be taken will be shown by a picture or explanation near the symbol.



This term indicates the possibility that continuing to operate the Chiller while ignoring this warning or operating the Chiller incorrectly, may cause personal injury or equipment damage.



This symbol advises you of a potential hazard which should be noted (including danger and warning).



This symbol advises you of a mandatory action which must be taken in order to avoid danger.



This symbol advises you of an action which is prohibited in order to avoid danger.

FEATURES

1. Convenient microcomputer control system.
2. The high quality condenser is manufactured by American OAK production line.
3. Anti-corrosive pure titanium evaporator for fresh and salt water.
4. The compressor protection device system is built to shut off the circuit automatically to prevent the motor from burning out when the motor is overheating.
5. Temperature memory system that allows the Chiller to refrigerate continuously according to the previous temperature setting.

TECHNOLOGY DATA

Model	AACH100
Rated Voltage	110-120V
Rated Frequency	60Hz
Working Current	9.6A
Power	1HP
*BTU	12010 BTU/H
Water Temperature Before Refrigeration	86°F ± 1°F
Refrigeration Time	20h
Water Temperature After Refrigeration (Water Refrigerated 500L)	39°F ± 1°F
Water Temperature After Refrigeration (Water Refrigerated 1000L)	62°F ± 1°F
Water Temperature After Refrigeration (Water Refrigerated 2000L)	74°F ± 1°F
Refrigerant	R22
Refrigerant Weight	420 - 450g
Rate of Flow	1500 - 4000L/h
Reservoir Capacity	80 - 700 GAL (300-2500L)
Weight	69 lbs
Size	21" x 15" x 21"

1. The rate of flow is decided according to the max jet of the pump (immersible pump or other external power filter) and the circulation equipment.
2. The refrigeration performance test is indicated when the ambient temperature is 88°F (30°C), the water temperature before refrigeration is 86°F (28°C), the setting temperature is 54°F (12°C) and the aquarium capacity is 32 GAL to 528 GAL. When reservoir capacity falls, the water temperature will drop faster.
3. The refrigeration efficiency is determined according to the installation location, heating source, lighting, pump filter and other connecting parts.
4. When there is not enough circulation in a room, the refrigeration efficiency is reduced.

* The BTU is measured at an ambient temperature of 97°F (36°C) and the Chiller is working at 1100W/9.6A power.

Recommended Pump: 400 - 1230 GPH, Hydrofarm AAPW1000

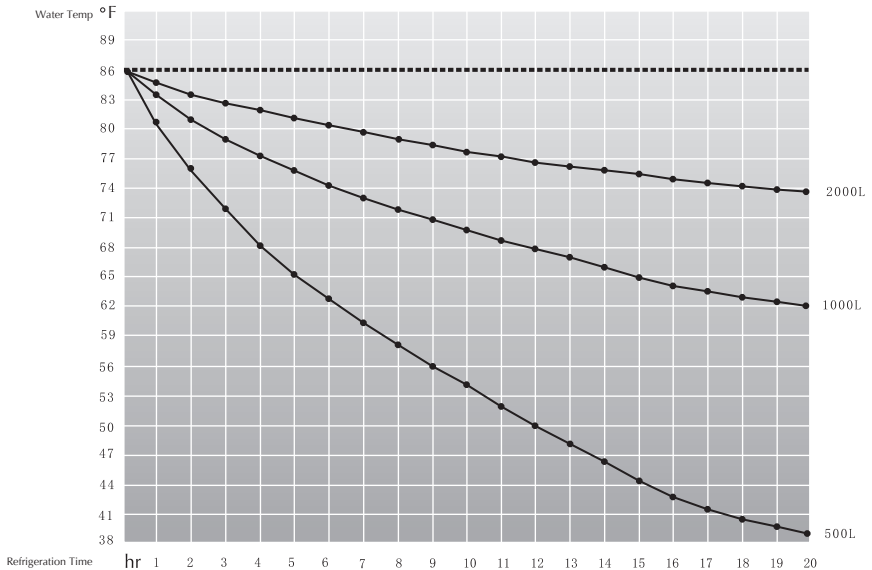
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PERFORMANCE CURVE

AACH100

AMBIENT TEMPERATURE: 88°F

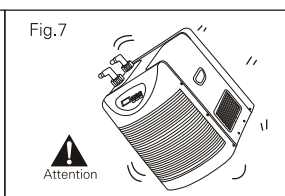
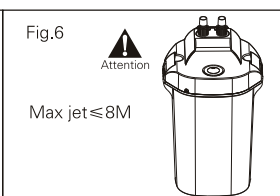
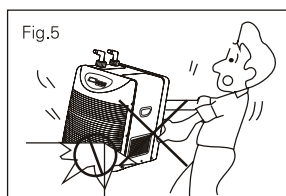
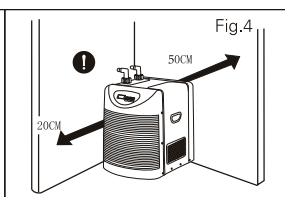
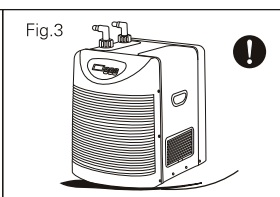
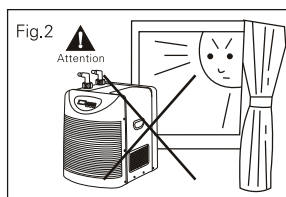
RESERVOIR CAPACITY: 300L-2500L



THE REFRIGERATION PERFORMANCE TEST IS INDICATED WHEN THE AMBIENT TEMPERATURE IS 88°F (31°C), THE WATER TEMPERATURE BEFORE REFRIGERATION IS 86°F (30°C), AND THE WATER REFRIGERATED IS 500L (132 GAL), 1000L (264 GAL) AND 2000 L (528 GAL).

WHERE TO INSTALL

1. Do not install the Chiller outdoors. (Fig.1)
2. Place the Chiller in a ventilated space away from inflammables, high temperatures, direct sunlight, moisture and dust. (Fig.2)
3. Place the unit on a horizontal stable surface. (Fig.3)
4. Install at least 30-40cm (12-16 inches) away from walls in order to give the Chiller adequate ventilated space. (Fig.4)
5. Do not cover or move the Chiller while it is operating.
6. The circulation water flow of the Chiller is indicated in the technology parameter table. This Chiller does not have a water pump, so it needs a pump with an available external filter. Using a pump without an external filter may cause a water leak or other damage. (Fig.6)
7. Do not put the Chiller on its side or upside down as this will cause damage to the Chiller. If the Chiller is placed on its side, readjust the unit to its correct upright position and wait 20 minutes before turning it on. (Fig.7)



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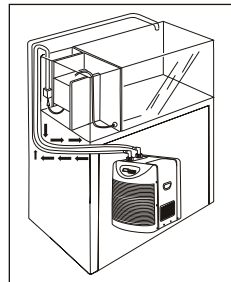
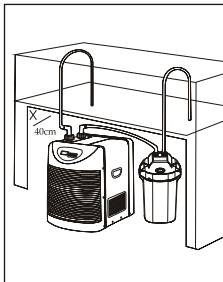
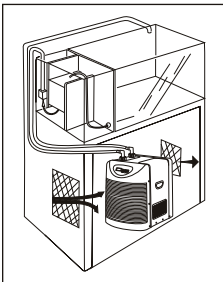
ASSEMBLY INSTRUCTIONS

1. Remove the Chiller unit and all of the contained hardware from the box and packaging material.
2. Set the Chiller unit upright in the desired area on a stable surface ensuring there is at least 1' of clearance around the body (sides, top and back) of the unit.
3. Install the inlet/outlet fittings onto the inflow and outflow threaded sites.

Note: If the inflow and outflow fittings are different sizes, typically the larger one is used on the inflow and the smaller one on the outflow.

4. Attach the desired length of tubing onto each inflow and outflow fitting adapter with the worm drive hose clamps. The inflow should connect the Chiller to the appropriate sized submersible water pump, such as an ActiveAqua Water Pump, in the proper sized reservoir (**see attached performance chart**). The outflow tube should hang freely in the reservoir to re-introduce the chilled water back into the holding tank.

Please note that the filter (with the pump) must be located below the reservoir water level. If you wish to place the unit at the side of the reservoir, you must fill the filtration system with water before turning it on.



IF YOU WISH TO PLACE THE UNIT AT THE SIDE OF THE REERVOIR, YOU MUST FILL THE FILTRATION SYSTEM WITH WATER BEFORE TURNING IT ON.

OPERATION

1. Do NOT power on the Chiller unit yet. Fully submerge the water pump to be used, plug it in, and ensure that water is moving freely between the holding reservoir and the Chiller unit.
2. Plug the Chiller into a grounded outlet and ensure the power switch located on the back of the unit is in the "ON" (I) position.

WARNINGS:

- Do NOT cover the Chiller unit with anything during operation.
- Place the Chiller in the upright position ONLY for operation and storage purposes.
- Avoid direct contact with liquids to the external body of the Chiller unit. Failure to do so may result in damage to the unit or electric shock.
- Keep power cord free of obstructions, such as heavy or sharp objects sitting directly on it.
- This Chiller is approved for indoor use ONLY.
- Keep the unit away from flammable vapors, direct sunlight, high temperature exposure, and high humidity.
- Do NOT submerge the Chiller. Doing so will damage the unit and may inflict electric shock.

SETTING THE TEMPERATURE:

1. Press and hold the SET button down for approximately 3 seconds to enter the water temperature programming mode. The previous water temperature setting will display.
2. Use the \wedge or \vee buttons on the control panel to increase or decrease the desired water temperature. Press the SET button once more, or wait approximately 8 seconds to select the desired temperature.

TEMPERATURE DISPLAY:

Press the SET button once to display the current set temperature value of the Chiller unit, press the SET button again to display the actual temperature value of the water. The blinking display indicates the set temperature.

TEMPERATURE ERROR ADJUSTMENT:

1. When the reservoir water temperature differs from the set temperature value, an "II" indication should appear in the display.
2. Press and hold the \wedge and \vee buttons at the same time for approximately 6 seconds to enter the error adjustment programming mode. The display will blink once this status is active.
3. By pressing either the \wedge or \vee buttons, the error adjustment range can be modified +/- 1.5 degrees Celsius. ***DO NOT USE THIS FUNCTION UNLESS IT IS NECESSARY***

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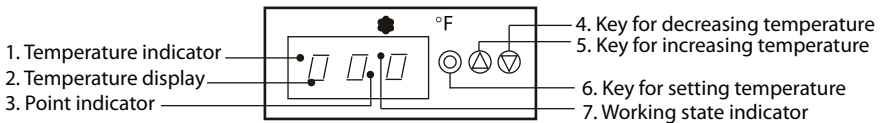
COMPRESSOR OPERATION:

The refrigeration compressor will automatically turn off when the water reaches, or is below the set temperature. When the compressor turns off, it will stay off for approximately 3 minutes or until the water is 1 degree above the set temperature.

An indicator light in the top right portion of the display will appear when the compressor is active. The indicator light will disappear when the water temperature has been reached, and will blink when the compressor is in the 3 minute protection mode.

ERROR CODE:

Certain text will appear on the display panel in the event of an error. "P1" is an example that means there is a defect in the temperature sensor. If error codes are appearing on the display, return the unit to the original place of purchase for a warranty assessment.



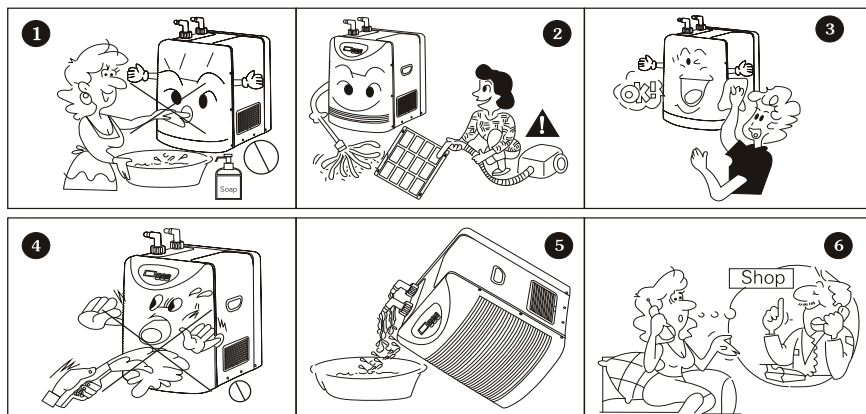
CLEANING AND MAINTENANCE

Flushing of the internal Chiller components is recommended at least once every 1-2 months to ensure optimum performance and efficiency. Over time, nutrient deposits and other debris may accumulate inside the Chiller reducing its effectivity. (see pg 10)

Note: Do NOT use soap or detergents for cleaning the internal components of the Chiller system.

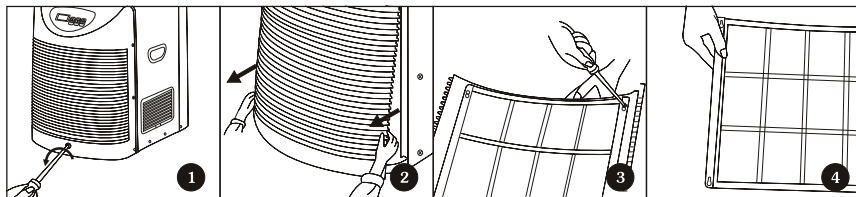
1. Disconnect the Chiller and submersible water pump from the power supply.
2. Clean off the pump with a high powered hose or sprayer to remove debris and dirt from the pre-filter and housing. Clean the pre-filter as well if one is used.
3. Reconnect the pump to the Chiller inflow tubing and place it in a clean reservoir.
4. Fill the reservoir with clean water and a flushing agent formulated to remove salt deposits and excess nutrients from the plant system and grow medium (**available at most indoor gardening and hydroponic retailers**). **Note: Using a flushing agent is completely optional as stated in step 4.**
5. Plug in the pump and allow it to run for at least 1 hour so that the projected solution contacts all of the internal components used in the Chiller during operation. Unplug the pump and empty the reservoir solution.

ACTIVEAQUA

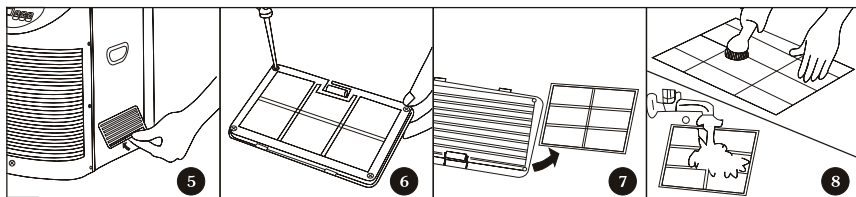


6. Repeat steps 4 and 5 with clean water ONLY.
7. Remove front grill from unit so the air inlet filter is accessible. Vacuum or brush both.
8. Replace the air inlet filter and grill to the front.

WE RECOMMEND THE FOLLOWING AIR FILTER MAINTENANCE PROCEDURE ON A REGULAR BASIS:



1. LOOSEN SCREW ON FRONT PANEL
2. GENTLY REMOVE FRONT PANEL
- 3-4. LOOSEN FILTER SCREWS AND REMOVE FILTER
5. LIFT AND REMOVE SIDE PANEL
- 6-7. LOOSEN SCREW ON SIDE PANEL AND REMOVE FILTER
8. REMOVE DUST WITH BRUSH, VACUUM, OR RINSE WELL WITH WATER. DRY THOROUGHLY BEFORE REINSTALLING THE PARTS IN REVERSE ORDER.



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TROUBLESHOOTING GUIDE

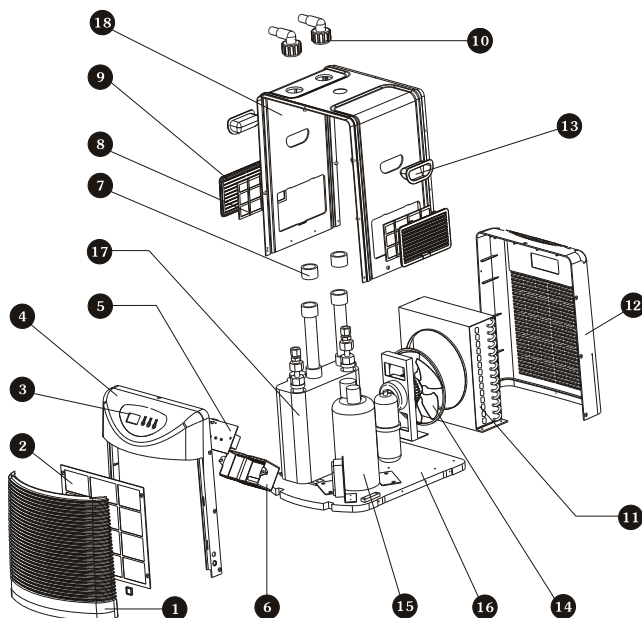
Before calling service personnel, please check the following chart for a possible cause to the trouble you are experiencing.

SYMPTOM	CAUSE	SOLUTION
The unit doesn't run and the display is blank	Power is not turned on	Turn on the power
	Plugged in incorrectly	Be sure the power cord is fully plugged in
The unit cycles on and off	Wrong voltage and/or frequency	Apply to correct power source
	Chiller is in protection mode	A. Check if the water circulation is normal B. If the fan and the Chiller dissipate heat normally, wait for 3 minutes and the unit will automatically turn on again
Performance is decreased or there is no refrigeration	Fan is not working	Return to place of purchase
	The set temperature is higher than the aquarium water temperature	Reset temperature
	The air inlet or outlet are clogged	Clean the air inlet/outlet with a brush or a vacuum cleaner
Loud operation	Not installed on a flat surface	Reinstall correctly

COMPLETE PARTS LIST

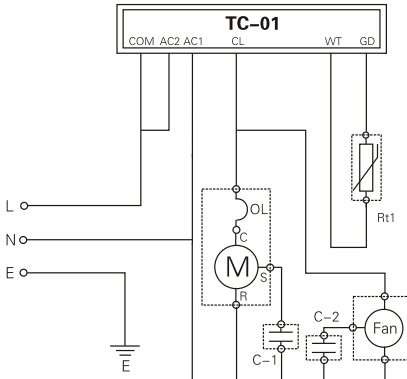
Chiller Unit	1ea.
Inflow/outflow fitting kit:	1ea.
a. Inlet/outlet fittings	2ea.
b. Worm drive hose clamps	2ea.
c. Rubber replacement collars (extras)	2ea.

1) Front panel	8) Side filter	15) Compressor
2) Filter (Front)	9) Side cover	16) Base
3) Control & command panel	10) Nut	17) Tank (with evaporator)
4) Front cover	11) Condenser	18) Top cover
5) Circuit board	12) Back cover	
6) Back cover of circuit board	13) Handle	
7) Bushing	14) Fan motor	



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CIRCUIT DIAGRAM



TC-01:	Temperature controller
M:	Compressor
Fan:	Fan
Rt1:	Water temperature sensor
C-1:	Compressor running capacitor
C-2:	Fan capacitor
OL:	Compressor protector

SPECIAL NOTES AND INSTRUCTIONS

- The cooling efficiency of this unit is relative to the surrounding environment, i.e., location of the Chiller, ambient air temperature, additional heat sources (grow lights, pumps, CO2 generators, air conditioners, dehumidifiers, etc.) and any other connecting parts that may impede the Chiller's operation. Insufficient air exchange of the room occupying the Chiller will reduce the operational efficiency if the ambient air temperature rises due to heat output from the Chiller and/or other equipment.
- Follow the GPH (gallon per hour) recommendations so that the appropriate size pump may be implemented. A pump that is either too weak or too powerful may impede the operation. Vertical distance between the pump and the Chiller will affect the size of the pump that is needed. I.E., If the pump only needs to project water 2' to get the Chiller unit compared to 10', a smaller pump can be used.
- We recommend that the power source support ONLY the Chiller unit and no additional appliances, in order to prevent a power surge or circuit overload.
- Remote operation of the Chiller unit outside of the grow space will reduce the amount of heat generated within the garden.

THE HYDROFARM GUARANTEE

ActiveAqua Water Chiller systems are guaranteed to the original owner for 1 full year from the date of purchase. Misuse, abuse, or failure to follow instructions is not covered. If you have a problem, recheck your system and pump. If this does not remedy the situation, contact the original place of purchase for a warranty assessment. Unauthorized returns will not be accepted. Save your receipt/invoice – a copy is required for all warranty work.



Please contact your place of purchase for warranty information.



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