Aquatic Design
Manufacturing & Integration

Installation and Maintenance Manual

For



Delta Star® In-Line Water Chiller
&



Cyclone® Water Chiller

Use Quick Install page for easy setup.

Aqua Logic, Inc.
2806 Gray Fox Rd.
Monroe, NC 28110
(704)774-1391
email: info@aqualogicinc.com ♦ website: www.aqualogicinc.com



Thank you for selecting an Aqua Logic Delta Star or Cyclone water chiller. We have endeavored to manufacture the most reliable and efficient water chiller available. Our highly trained technicians use premium quality components to assemble equipment that will operate faithfully for years. You can call us or visit us on the web for technical assistance before and after the sale. We are committed to making sure that you are satisfied with your Aqua Logic chiller now—and in the future.

Please take some time to familiarize yourself with the information in this manual so that you can get the most from your chiller. Don't hesitate to contact us if we can assist you further.

Contact Information for Aqua Logic, Inc.:

Address: 2806 Gray Fox Rd.
Monroe, NC 28110

Telephone: (704)774-1391

website: www.aqualogicinc.com
email: info@aqualogicinc.com

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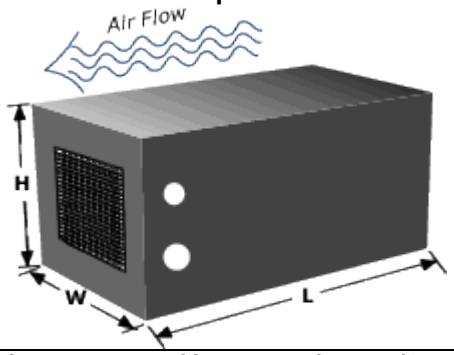
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Specifications

Aqua Logic Delta Star and Cyclone chillers features:

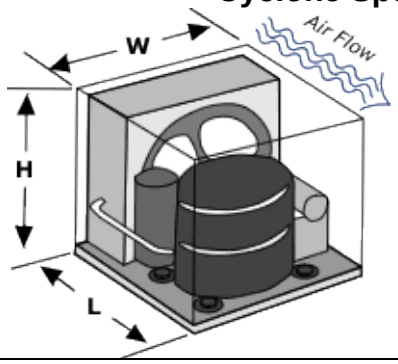
- Titanium heat exchanger for use in fresh and saltwater applications.
- Included Protective cover
- Made in the USA
- Limited 2-year warranty

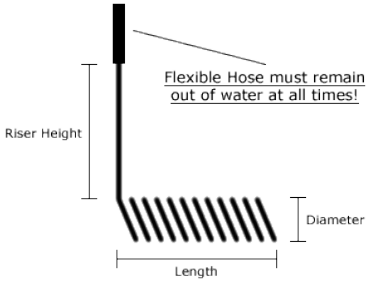
Delta Star Specifications:



Model	HP	BTU	Volts	AMP	Refrigerant	Flow (gpm)	I/O FIPT	Dimensions (LxWxH inches)	Weight (lbs)
DS-2	1/5	1810	115	3.4	R-134A	6-12	¾"	19 x 12 x 11	51
DS-3	1/4	3080	115	5.4	R-134A	8-15	¾"	19 x 12 x 11	65
DS-4	1/3	4050	115	7.2	R-134A	10-20	¾"	23 x 14 x 11	69
DS-5	1/2	6000	115	9.5	R-134A	12-25	1½"	24 x 16 x 13	119
DS-6	1/2	6000	230	4.8	R-134A	12-25	1½"	24 x 16 x 13	119
DS-7	3/4	9500	115	13.0	R-134A	15-30	1½"	25 x 21 x 15	150
DS-8	3/4	9500	230	7.0	R-134A	15-30	1½"	25 x 21 x 15	150
DS-9	1	12000	230	7.2	R-134A	20-35	1½"	27 x 24 x 15	160
DS-10	1.5	21000	230	10.5	R-422B	25-40	1½"	31 x 26 x 19	220

Cyclone Specifications





Model	HP	BTU	Volts	AMP	Refrigerant	Flow (gpm)	Coil Dims. (LxRHxD ")	Dimensions (LxWxH inches)	Weight (lbs)
CY-2	1/5	1810	115	3.4	R-134A	6-12	7 x 7½ x 3	19 x 12 x 11	44
CY-3	1/4	3080	115	5.4	R-134A	8-15	9 x 7½ x 3	19 x 12 x 11	47
CY-4	1/3	4050	115	7.2	R-134A	10-20	10 x 7½ x 3	23 x 14 x 11	56
CY-5	1/2	6000	115	9.5	R-134A	12-25	11 x 9 x 4	24 x 16 x 13	91
CY-6	1/2	6000	230	4.8	R-134A	12-25	11 x 9 x 4	24 x 16 x 13	91

NOTE:
All DS and CY chillers have an operational air temperature range between 55 to 95F
CWCT option models: Water temperature range is between 50 to 65F.
TXV option models: Water temperature range is between 40 to 85F



When Disaster Strikes

You may have a lot of money invested in your aquarium at home or in the office. Or you may have valuable dollars invested in seafood for your store or restaurant. Unfortunately, equipment or electricity may fail at the most inopportune time. What can you do to minimize the risk in such an event? Based upon our years of experience in the aquatic life support industry, we recommend the following:

- Always have ALL of the electrical equipment connected to ground fault interrupt (GFI) circuits.
- Do not overload electrical circuits.
- Add the aquarium system and livestock to your homeowner's or renter's insurance policy if allowable.
- Turn off aquarium lights if the chiller fails. Livestock in the wild have periods of several days when they do not get intense light. There ARE typhoons that can cover an area for days at a time. Limited use of VHO and halide lamps to avoid heat build-up in the tank is far less harmful than extremely high water temperatures.
- Put a temperature controller on the lights to shut them off and to sound off an alarm if water temperature rises more than 5°F above the chiller set point.
- Keep a spare pump on hand in case your primary pump fails.
- Maintain a supply of ammonia-neutralizing chemicals such as Amquel®. You can use them to control ammonia in your system during a prolonged power outage. Be sure to follow manufacturer's dosage recommendations and compatibility with organisms in your tank.
- Stock your aquarium sparingly. Then when disaster strikes (and it usually will sooner or later), you have more time to fix the problem before you lose livestock.
- Oversize your filtration system. Water quality is the most critical element for maintaining healthy fish. On a reef tank, it is easy to invest thousands of dollars for livestock (not including how sentimental you may be attached to your livestock). Why not spend a little more up front for more life support reserve in case of a disaster?
- Have a battery-powered air pump on hand for extended power outages. It will provide aeration and move water in the absence of power.
- In most areas of the country, our electrical grid is subjected to surges, spikes, brownouts and blackouts caused by high peak usage, snowstorms, hurricanes, thunderstorms and more. A surge protector can help with the surges and spikes but they are not effective in brownouts. Furthermore, even the best surge protector can't protect against direct strikes of lightning. It takes an uninterruptible power supply (UPS) or backup generators to protect against low voltage and blackouts. And it takes a backup generator to adequately power a chiller—especially a ½-HP unit needed on a 300-gallon tank.

It is very unfortunate when equipment fails. However, a prudent aquarist should have a disaster plan and follow the motto, "Be prepared."

Troubleshooting Your Chiller



While your Aqua Logic chiller has been designed and manufactured to provide years of reliable service, there may be an occasion where the unit does not operate correctly. The following chart provides guidelines to restore the unit to service or to provide information in helping us to diagnose and repair the chiller.

Items marked with an asterisk (*) should be performed only by Aqua Logic or a qualified electrical or refrigeration technician upon authorization from Aqua Logic. Call Aqua Logic **BEFORE** calling in a technician (See notes on the next page).

Chiller doesn't run.

Chiller is not connected to power.	Connect chiller to electrical supply.
There is no power to the chiller.	Reset circuit breaker or replace fuse.
Neither fan nor compressor operates.	Repair any loose wiring in chiller.*
Possible controller failure.	Go to next section.

Chiller doesn't run with controller but runs if plugged directly into the outlet.

Sensor not properly immersed in water.	Place sensor in water according to controller instructions.
Controller not properly programmed	Program controller according to controller instructions.
Defective controller or sensor	Troubleshoot controller using controller instructions.

Chiller runs but doesn't shut off and water temperature drops below setpoint.

Sensor not properly immersed in water.	Place sensor in water according to controller instructions.
Controller not properly programmed	Program controller according to controller instructions.
Defective controller or sensor	Troubleshoot controller using controller instructions.

Chiller appears to be running properly but water is not chilled adequately.

Poor ventilation.	Review instructions adequate air flow around chiller.
Dirty condenser (radiator).	Clean condenser per instructions on page 4.
Inadequate water flow.	Make sure any filters ahead of chiller are clean. Make sure pump is rated to provide proper flow. Make sure there are no kinks in the flexible tubing. Make sure there are no obstructions in the plumbing. Make sure that ice hasn't built up in heat exchanger or coil.
Excessive organic (slime) accumulation in heat exchanger or coil.	Remove accumulated organics using procedure on page 5.
Excessive mineral accumulation in heat exchanger or coil.	Remove accumulated minerals using procedure on page 5.
Refrigerant levels may be low.	Have refrigeration technician take pressure readings and inspect for leaks and recharge system in necessary.*
Other	Call Aqua Logic, Inc. for assistance.*

Chiller runs for a few minutes and shuts off (short cycles).

Controller indicator shows that controller is cycling chiller on and off.	Make sure controller sensor is installed 'upstream' from the heat exchanger. If the sensor is installed 'downstream," the cold water from the chiller will fool the sensor into thinking that proper water temperature has been achieved.

Controller indicates chiller is "ON" but chiller is shutting off (short cycles)**.**

Water temperature too high.	Use blue or ice packs to lower water temperature within normal range.
Defective compressor overload relay.	Replace compressor high-temp overload relay.*
Compressor clunks and doesn't run.	Replace defective compressor.*
Refrigerant levels may be low or gone.	Have refrigeration technician take pressure readings and inspect for leaks and recharge system in necessary.*
Compressor very noisy.	Have technician inspect for correct refrigerant pressures.*

Fan operates but compressor does not.

	Repair wiring to compressor.* Replace compressor start relay, overload or start capacitor.*

Compressor operates but fan does not.

	Repair wiring to fan.* Replace defective fan.*

Notes:

We recommend that you call Aqua Logic **(858) 292-4773** for technical assistance **BEFORE** attempting any repairs on your chiller.

In accordance with our published warranty, Aqua Logic will not pay for repairs or service on any of our chillers (in or out of warranty) without prior approval in writing or a verbal Repair Authorization (RA) issued by Aqua Logic, Inc.

Aqua Logic may or may not authorize you to return your unit for inspection and service. You must pay all shipping charges unless Aqua Logic has made prior arrangements.



Maintenance and Cleaning

Your Aqua Logic chiller should provide years of efficient and reliable service with a minimum amount of maintenance. There is no scheduled maintenance and there are only two procedures that can be performed by the user.

Cleaning:

The condenser (radiator) should be cleaned occasionally to remove accumulated dust and lint. To test whether the condenser needs to be cleaned, shine a flashlight through your chiller. If you cannot see light from the other side or it is indistinct, it's time to clean it. To clean the condenser:

- Remove power from the chiller.
- Wear protective eyewear.
- Typically, use a vacuum cleaner with brush accessory to remove the accumulated dust from the condenser.
- If the condenser is extremely matted with dust and lint, you may use a soft nylon brush to dislodge the dust. Be sure to stroke the brush in the same direction as the condenser vanes (up and down) to avoid damage to the vanes.

You may also need to remove accumulated organic material or minerals from the coil (heat exchanger). Organic material may be removed by using a mild chlorine bleach solution while minerals may be removed by using a dilute muriatic acid solution, Lime-A-Way® or other hard water deposit remover.

Warning:

- Do **NOT** perform both procedures at the same time since the combination of chlorine and acid may cause serious injury or death.
- Be sure to wear appropriate protective gear.
- Use extreme caution when using caustic chemicals around your system.

To remove accumulated organics (slime):

- Remove power from the chiller.
- Wear protective eyewear, clothing and gloves.
- Mix a solution of 1 part unscented chlorine bleach to 4 parts water.
- For a Delta Star chiller, use a small pump, pail and hoses to run the solution through the heat exchanger for about 10 minutes to flush the organic materials out.
- For a Cyclone chiller, dip the coil into the solution and use a bottle brush to remove accumulated organic materials.
- Rinse the heat exchanger with clear unchlorinated water until you can no longer smell chlorine.
- Allow the heat exchanger to dry and then return the chiller to service.

To remove accumulated minerals:

- Remove power from the chiller.
- Wear protective eyewear, clothing and gloves.
- Prepare a solution according to cleaning product instructions.
- For a Delta Star chiller, use a small pump, pail and hoses to run the solution through the heat exchanger for about 10 minutes to flush the minerals out.
- For a Cyclone chiller, dip the coil into the solution and use a bottle brush to remove accumulated minerals.
- Rinse the heat exchanger with clear unchlorinated water for at least 30 minutes.
- Allow the heat exchanger to dry and then return the chiller to service.

NOTES:

If you have any questions or concerns about maintaining your Aqua Logic chiller, please call us at (858) 292-4773.

TWO YEAR LIMITED WARRANTY

All Aqua Logic Delta Star® and Cyclone® chillers are warranted against defects in parts and workmanship for a period of two years from the date of original enduser purchase. The limited warranty covers only parts and labor based upon Aqua Logic service cost and Aqua Logic is not liable for field repair work without prior written or verbal agreement with a Repair Authorization (RA) number with a fixed maximum charge.

The warranty applies only to the original purchaser and is not transferable.

The warranty covers only the repair or replacement of Aqua Logic products and is limited to Aqua Logic's cost of defective parts.

Once Aqua Logic determines that the defect is due to parts or workmanship and that the product is under warranty, Aqua Logic will repair or replace the product solely at their discretion.

Our warranty does not include the following:

- Damage caused by freezing, inadequate or no water flow.
- Damage caused by improper installation or maintenance by user or their agent.
- Damage caused due to misapplication of product.
- Damage caused by corrosion, abuse, accident, alteration or improper use.
- Damage caused by flood, fire, earthquake, tornado or other acts of God.
- Damage caused by electrical spikes, surges, brownouts or improper voltage or amperage.
- Damage caused by failure of any third-party equipment (ie., controller, pump, etc.)
- Incidental damage to other equipment, property or livestock.

In the event of a defect or failure of the product, immediately contact Aqua Logic for assistance. Aqua Logic will at their discretion:

- Provide user-replaceable parts to restore the unit to proper operation.
- Provide a Repair Authorization (RA) number with a specified dollar limit for a qualified technician to provide a field repair.
- Provide a Return Authorization (RA) number to return the chiller with original packaging to Aqua Logic, Inc., 9558 Camino Ruiz, San Diego, CA 92126 by prepaid freight. You need to include the serial number as well as proof of purchase and/or a copy of the original bill of sale along with the RA number. COD shipments will be refused.

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Cyclone is a registered trademark of Aqua Logic, Inc.