

# PRIME CHILLER™

## Modular Upgradable Chiller

Instructions for Models

Single Stage Thermostat #2604, 2606

Dual Stage Thermostat #2614, 2616

Single Stage Thermostat w/ TXV #2626, 2627

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[WWW.CURRENT-USA.COM](http://WWW.CURRENT-USA.COM)

02-2007-JEE

**PLEASE READ ALL INSTRUCTIONS CAREFULLY**

**DO NOT FORGET TO REGISTER YOUR  
PRODUCT AT [WWW.CURRENT-USA.COM](http://WWW.CURRENT-USA.COM)**

In the event that you are experiencing trouble running your chiller, please visit our website support section at [www.current-usa.com](http://www.current-usa.com) or contact Current-USA directly at 866-276-8872 for troubleshooting assistance.

Please have the following information available:

Model Number of Chiller  
Date and Place of Purchase



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# SAFETY INSTRUCTIONS

## WARNING

To guard against injury, basic safety precautions should be observed, including the following:

## READ AND FOLLOW ALL SAFETY INSTRUCTIONS

## DANGER

To avoid possible electric shock, special care should be taken since water is employed in the use of aquarium equipment. For each of the following situations, do not attempt repairs by yourself. Contact Current-USA or discard the appliance.

- If the appliance falls into the water, or water drips onto the unit, **DON'T** reach for it! First unplug it and then retrieve it. If electrical components of the appliance get wet, unplug the appliance immediately.
- Always unplug appliance from an outlet when not in use, before putting on or taking off parts, and before cleaning. Never yank cord to pull plug from outlet. Grasp the plug fully and pull out to disconnect.
- Carefully examine the appliance after replacement. It should not be plugged in if there is water on parts not intended to be wet.
- Do not operate any appliance if it has a damaged cord or plug, or if it is malfunctioning or has been dropped or damaged in any manner.
- If you are using the ultraviolet sterilizer or heater upgrade do not operate the unit without continual water flow.
- If you are using the heater option ensure that the heater is plugged into the thermostat that is supplied with the water chiller.
- Exposing chiller/power cords to water may cause electrical short and fire.
- Do not allow water or salt to come in contact with thermostat or power cords.
- Do not operate chiller without water flow to the unit. This may cause the evaporator housing to freeze up and result in damage to the unit.
- Failure to install the sensor into the sensor port may cause an inaccurate temperature reading and may cause damage to the chiller.

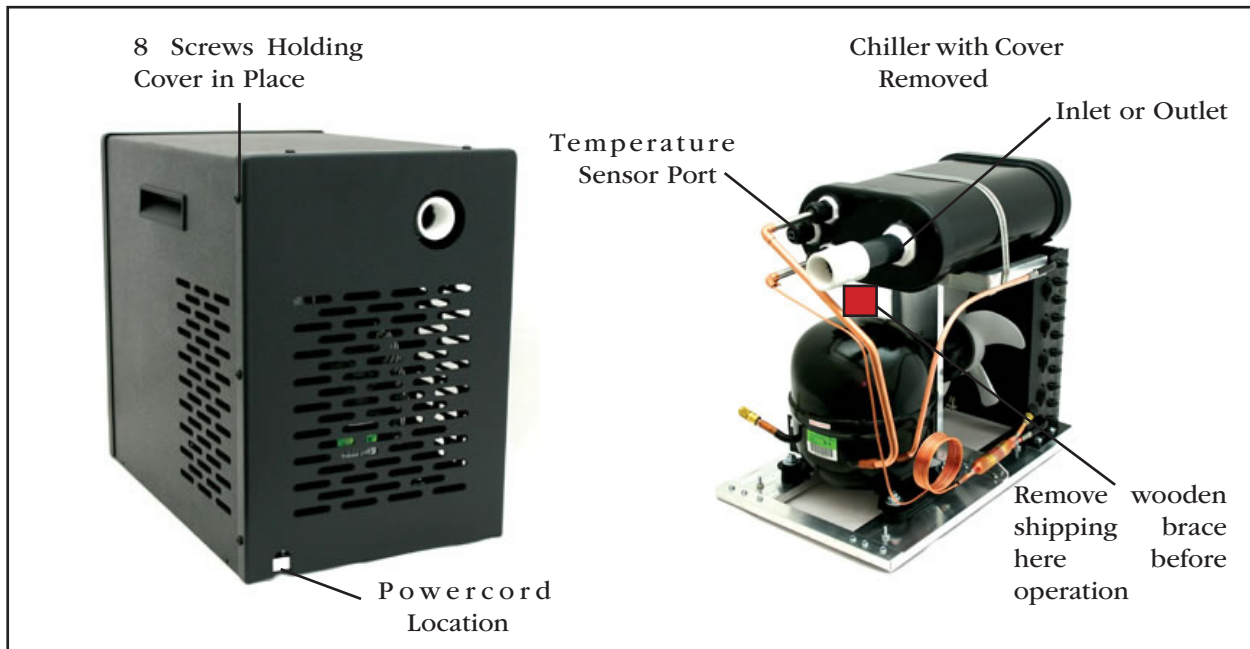
## SAVE THESE INSTRUCTIONS

### GROUND FAULT CIRCUIT INTERRUPTER PROTECTION

To comply with the National Electrical Code (NFPA 70), and to provide additional protection from the risk of shock, this unit **MUST** be connected to a ground fault circuit interrupter (GFCI) outlet at all times. Do not use extension cords. **WARNING** – To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch plug with wet hands.

# CHILLER INSTALLATION

1. Before removing your Prime Chiller from the box, please note any exterior shipping damage to the box. It is strongly recommended to keep the box and packaging material in the unlikely event there is shipping damage or service is required.
2. Remove the chiller and controller from the box and inspect thoroughly for any signs of damage, even if the box does not show damage. If you notice any damage (cracked or bent cover, damaged condenser, fins, etc...) please stop and contact your dealer immediately.
3. Remove the 8 screws that hold the front cover in place and tilt the chiller up to remove the wooden brace from underneath. The wooden brace is used to secure the motor during shipping. Keep wooden brace with other packaging materials.



## WITH THE FRONT PANEL STILL REMOVED

1. Plug the chiller's power cord (not the controller) into 120V wall outlet and check to make sure that both the fan and compressor come on. Do not leave chiller plugged in for more than 2 minutes.
2. The temperature sensor for the controller **MUST** be installed inside the sensor port of the chillers evaporator housing. Failure to install the sensor into this port may cause an inaccurate temperature reading and, in the event of low or no water flow, may cause damage to the chiller. Locate and install the temperature sensor for the controller. Insert sensor completely into the sensor port. It is not necessary to remove the compression fitting holding the sensor port in place. Use the supplied piece of cork tape to hold the sensor in place by wrapping the tape around the entrance to the sensor port. This will isolate the temperature sensor from ambient heat.

# CHILLER INSTALLATION

1. Make sure the chiller is placed on a firm, level surface in a location that has plenty of ventilation and will not be exposed to salt or saltwater. Do not use an extension cord for the chiller or the thermostat.

## THE REQUIREMENTS FOR VENTILATION ARE

- a) Back portion: Condenser (radiator) requires at least 10" clearance to allow air into the chiller.
- b) Front portion: Requires at least 15" clearance to allow for proper air flow.
- c) Chiller must not be placed in a closed closet or cabinet.
- d) The warm air from the chiller must be completely evacuated from the chiller location. A fan may be necessary to draw warm air away from the chiller. The maximum operating temperature is 95° F.

2. The Prime chiller can be plumbed with either rigid PVC or vinyl tubing connected to an external or submersible pump (not included). Use  $\frac{3}{4}$ " ID (inside diameter) or larger pipe/tubing for all plumbing connections.

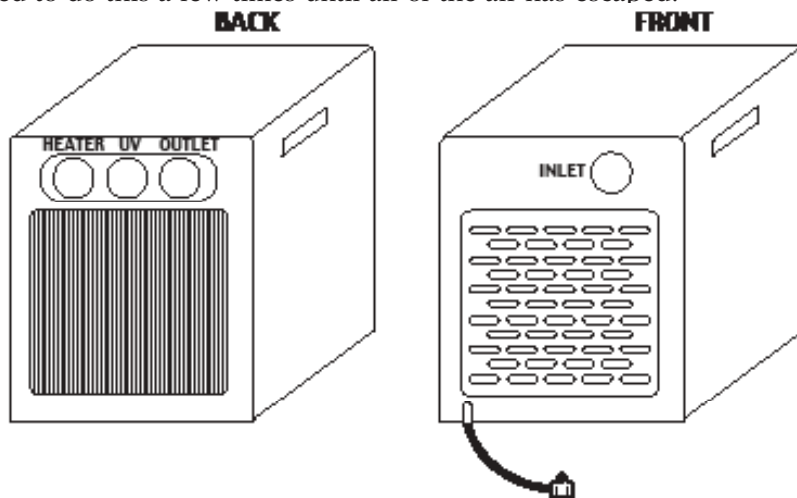
3. The inlet and outlet are located on opposite sides of one another (See diagram below). Either port can be used as the inlet or outlet depending upon the location of the chiller and plumbing configuration. The ports will accept 1" male pipe thread (MPT) fittings for plumbing with rigid PVC. You may also use the enclosed barbed fittings for plumbing with vinyl tubing. Use Teflon tape for all threaded fittings.

4. It is strongly recommended to use unions and ballvalves connected to the inlet and outlet for maintenance and servicing.

5. For the most efficient control over the aquarium's temperature, it is recommended that the chiller be plumbed so that it is the last component before water returns back to the tank. If other devices, such as a mechanical filter, precede the chiller, make sure the flow rate going through the chiller still meets the minimum flow rate requirement.

6. Once you have finished plumbing the chiller it is recommended that you circulate water through the chiller and plumbing for at least 30 minutes to ensure adequate water flow and no leaks.

7. Tilt the chiller from the back to allow any trapped air to escape from the evaporator housing. You may need to do this a few times until all of the air has escaped.



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WHAT'S NEXT

# TEMPERATURE CONTROLLER SPECIFICATIONS/INSTALLATION

## PRIME CHILLER TEMPERATURE CONTROLLER

This microprocessor based electronic temperature controller is designed to provide on/off control of heating and cooling. It is equipped with an easy to read Liquid Crystal Display (LCD) that displays a constant readout of actual temperature, control settings, relay status and system diagnostics. The simple keypad allows programming of set point temperature, selectable Fahrenheit/Celsius scale, temperature differential and cooling/heating mode of operation. Lockout feature prevents tempering from unauthorized personnel. Controller is housed in water tight Nema type 4X housing rated for outdoor use.

## SPECIFICATIONS

Set point Temperature	
Range	-30° F to 220° F
Differential Adjustment	1° F to 30° F
Sensor	Thermister, 2" L x 0.25" dia., 8 ft. cable
Display	LCD
Enclosure	Nema Rated
Environment	-20° F to 140° F, RH 0-95%
Dimensions	175 x 41 x 23 mm (7.9"x1.8"x1")

## INSTALLATION

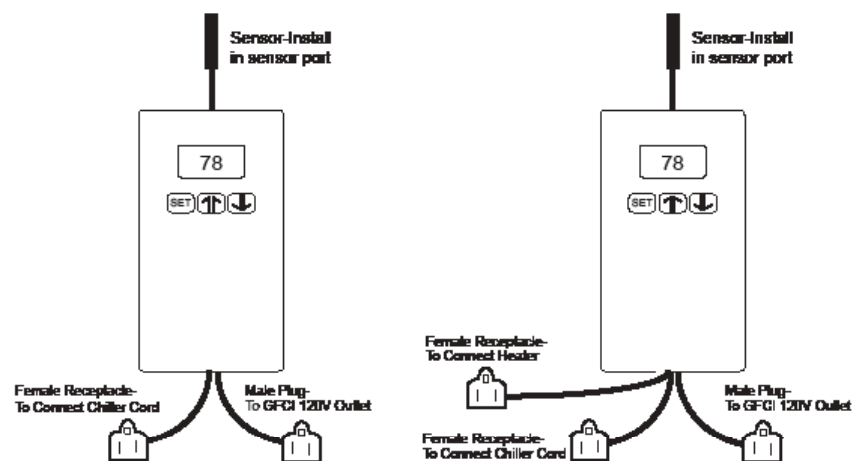
1. The temperature sensor for the controller **MUST** be installed inside the sensor port of the chillers evaporator housing. Failure to install the sensor into this port may cause an inaccurate temperature reading and, in the event of low or no water flow, may cause damage to the chiller. Locate and install the temperature sensor for the controller. Insert sensor completely into the sensor port. It is not necessary to remove the compression fitting holding the sensor port in place. Use the supplied piece of cork tape to hold the sensor in place by wrapping the tape around the entrance to the sensor port. This will isolate the temperature sensor from ambient heat. Chillers must use controllers supplied by Current-USA, Inc. Use of any other controller will void the chiller warranty.
2. Plug the power cord from the chiller into the female outlet on the temperature controller and plug the controller's power cord into a 120V GFCI protected wall outlet. Do **NOT** use an extension cord between the chiller and controller, or between the controller and wall outlet.
3. Set the controller to the desired temperature and differential (see Programming the Controller.) A differential of 2 degrees (2° F/C) is recommended with many heat load situations to allow the chiller to completely cycle and prevent damage to the start-up components and compressor.

# PROGRAMMING TEMPERATURE CONTROLLER

1. Press the SET key once to access the Fahrenheit/Celsius mode. Press the UP or DOWN arrow to modify the setting.
2. Press the SET key again to access the set point. The LCD displays the set point and S1 will be blinking on and off indicating it is in the set point mode. Press the UP or DOWN arrow to modify the set point.
3. Press the SET key again to access the differential. The LCD will display the differential and DIF1 will be blinking on and off indicating it is in the differential mode. Press the UP or DOWN arrow to modify the differential. Two degrees (2° F/C) is the optimum setting.
4. Press the SET key again to access the cooling or heating mode. The LCD will display either C1 for cooling or H1 for heating. Press the UP or DOWN arrow to change between C1 and H1. To operate a chiller thermostat must be set to C1. To operate a heater, thermostat must be set to H1. The factory setting is C1.

Proceed to #5 for Dual Thermostats or press the SET key again to view current temperature and resume the normal operating mode.

5. Press the SET key again to access the heater set point. The LCD displays the set point and S2 will be blinking on and off indicating it is in the heat set point mode. Press the UP or DOWN arrow to modify the set point.
6. Press the SET key again to access the heat stage differential. The LCD will display the differential and DIF2 will be blinking on and off indicating it is in the differential mode. Press the UP or DOWN arrow to modify the differential. Two degrees (2° F/C) is the optimum setting.
7. Press the SET key again to access the cooling or heating mode. The LCD will display either C2 for cooling or H2 for heating. The LCD will display either C2 for cooling or H2 for heating. Press the UP or DOWN arrow to change between C2 and H2. This mode should be set to H2. This means stage 2 is for the heater.
8. If your heater has a built-in thermostat it must be turned up above the heat set point on the LCD thermostat. Example: if you have set the heater set point on the LCD thermostat to 76°F, you must turn the thermostat on the heater to at least 78°F. The LCD thermostat will now control the chiller and the heater.



# TROUBLESHOOTING/ MAINTENANCE

DISPLAY	ERROR MESSAGE	TO CORRECT
E1	Appears when either the up or downkey is pressed when not in the programming mode.	If the E1 message appears even when no keys are being pressed, replace control.
E2	Appears if the control settings are not properly stored in memory.	Check all settings and correct if necessary.
EP	Appears when the probe is open, shorted or sensing a temperature that is out of range.	Check to see if the sensed temperature is out of range. If not, check for probe damage by comparing it to a known ambient temperature between -30°F and 220°F. Replace the probe if necessary.
EE	Appears if the EPROM data has been corrupted.	This condition cannot be field repaired. Replace the control.
CL	Appears if calibration mode has been entered.	Remove power to the control for at least five seconds. Reapply power. If the CL message still appeared, replace the control.

## MAINTENANCE

Your Prime Chiller, if installed correctly, should provide years of service with a minimal amount of maintenance.

For proper maintenance:

1. Clean the condenser (radiator) fins regularly. Using a vacuum and soft brush attachment, remove lint, dust and animal fur at least once a month to allow for optimal heat removal and to prevent the compressor and electrical components from overheating. It is also recommended once every 3 months to remove the cover and clean the condenser fins on the inside of the unit where the fan is located. Debris can migrate inside of the unit where it may not be able to be reached from the outside.
2. Periodically inspect all fittings for leakage. Although most aquarists typically do inspect all their fittings once in a while, it is important to inspect the fittings attached to the chiller as leaking water (particularly salt water) can damage the components of the chiller if not discovered.
3. Periodically flush the evaporator. The refrigerant coils inside the evaporator housing can trap organic debris as well as become coated with mineral deposits such as calcium (especially with saltwater reef systems). It is recommended that the chiller be removed from service once a year and the evaporator flushed with freshwater. In addition, circulating a diluted hard water stain remover through the evaporator will help remove deposits that can affect the chiller's performance. Be sure to rinse well with freshwater and let dry before re-installing the chiller on your system.



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WHAT'S NEXT



# SPECIFICATIONS/WARRANTY

## PRIME CHILLER SPECIFICATIONS

<u>Model #</u>	<u>HP</u>	<u>Volts</u>	<u>Amp</u>	<u>Refrigerant</u>	<u>Flow-GPM</u>	<u>I/O-FIPT</u>	<u>LxWxH</u>	<u>Lbs.</u>
2604	¼	115V	6.59	134A	9-16	1"	17.5" x 11" x 15.5"	50
2606	1/3	115V	7.41	134A	12-22	1"	17.5" x 11" x 15.5"	50
2614	¼	115V	6.59	134A	9-16	1"	17.5" x 11" x 15.5"	50
2616	1/3	115V	7.41	134A	12-22	1"	17.5" x 11" x 15.5"	50
2626	¼	115V	6.59	134A	9-16	1"	17.5" x 11" x 15.5"	50
2627	1/3	115V	7.41	134A	12-22	1"	17.5" x 11" x 15.5"	50

## CURRENT USA, INC. ONE-YEAR LIMITED WARRANTY

Current USA, Inc. warrants this product against defects in materials and workmanship of a period of ONE (1) YEAR from the date of original retail purchase and is not transferable.

Warranty on all Products, including Aquariums, is limited to replacement of the product and does not cover fish loss, personal injury, property loss or direct, incidental or consequential damage arising to the use of this product.

Note: Current-USA, Inc. One-Year Limited Warranty does not cover damage caused by the following: freezing of the evaporator, improper installation, saltwater corrosion, electrical surges, or thermostat failure or modifications.

If you discover a defect, please see your retail store or point of purchase. Current USA, Inc. will, at it's option, repair or replace the product at no charge to you, provided you return it during the warranty period. It is required that you present this warranty card and a copy of the bill of sale as proof of original purchase date, in the event the product needs repairs, within the warranty period. Please see your dealer for return options and warranty replacement parts. This warranty applies only to products by or for Current USA, Inc. that can be identified by trade name, or logo affixed to them. Current-USA, Inc. does not warrant any products that are not Current-USA, Inc. products.

This warranty does not apply if the product has been damaged by accident, abuse, misuse or misapplication or if the product has been modified without the written permission of Current-USA, Inc.; or if any Current-USA, Inc. logos have been removed or defaced.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALLOTHEERS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. Current USA, Inc. SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, DOWNTIME, GOODWILL, DAMAGE TO OR REPLACEMENT OF EQUIPMENT AND PROPERTY, AND ANY COSTS OF RECOVERING ANIMALS, PLANTS, TANKS OR OTHER AQUARIUM RELATED ITEMS AND/OR EQUIPMENT. Current USA, Inc. IS NOT RESPONSIBLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY, OR REPLACEMENT OF EQUIPMENT OR PROPERTY, OR ANY COSTS OF RECOVERING OR REPRODUCING ANY EQUIPMENT, ANIMALS OR PLANTS USED OR GROWN WITH Current USA, Inc. PRODUCTS. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages or exclusions of implied warranties, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from jurisdiction to jurisdiction.