

PENGUIN CHILLERS

WATER CHILLER

Owners Manual

WWW.PENGUINCHILLERS.COM



**PENGUIN
CHILLERS**
WE . KNOW . COLD .

Urgent Notice

When first receiving the chiller AND anytime the chiller is moved without keeping the unit level, you **MUST** let the chiller remain upright for at least 2 hours before plugging it in.

Failure to do so will result in chiller damage.



R32

THE LOW GWP ALTERNATIVE TO R410A

R32 refrigerant has a 68% lower GWP (Global Warming Potential) than R410. While neither refrigerant deteriorates the Ozone layer like R22 did, there is a clear winner when looking at potential to contribute to global warming via greenhouse gases. R32 is a much more environmentally friendly alternative to R410 and we expect to see it become the new environmentally friendly standard in the years to come.

THE LOW GWP ALTERNATIVE TO R410A

R32 is technically classified as a "mildly flammable" gas by the EPA. However R32 is extremely difficult to ignite, non-explosive, and the least toxic of all the Class A refrigerants. The regulatory warning labels on Penguin Chillers are EPA mandated for all refrigerants considered flammable which covers a wide range of refrigerants including mildly flammable refrigerants like R32 as well as highly flammable gasses such as butane (R600) and propane (R290). When it comes to label requirements there is no distinction made between mildly flammable and highly flammable. These regulatory warnings can be a bit intimidating, they are there to keep you informed, but they should not lead you to worry about the use of our chillers in normal operation. Our Chillers are intended for indoor use.

This information is based on reports prepared by the Air-conditioning and Refrigeration Equipment Manufacturers Association of Australia (AREMA) and the Consumer Electronics Supplier Association (CESA)

WATER CHILLER SETUP

Locating the Chiller

Chillers work on the principal of moving heat from one spot to another. In the case of a water chiller, its job is to move heat from the water out into the air. This means proper air flow is critical to the operation of a chiller. If the chiller is located in an overly hot or unventilated area, it cannot dissipate the heat efficiently therefore lowering the chiller's ability to cool. Unless properly modified, enclosed spaces like small cabinets or closets will heat up quickly and won't provide enough ventilation for the chiller to properly do its job. If the chiller's hot exhausted air is being recirculated back into its intake grills, then the chillers BTU/hr capacity is greatly reduced. It is recommended to have at least 6" of open space on the sides and top of the chiller and at least 12" of open space behind the chiller to allow for proper ventilation.

Power

Our standard water chillers (excluding our commercial line) have a GFI plug. Depending on the model, it's suitable to plug into a 110v - 120v 15a outlet (standard household outlet) OR a 208v - 240v 20a outlet (Nema 5-20R). Most of our models plug into standard 15a outlets. It is recommended to plug directly into a receptacle. Power strips should be avoided. If an extension cord is necessary we recommend using a 12 awg cord with single end (not a multi tap). Once plugged in, be sure the GFI is in the reset position and has a green light.

Connecting Your Chiller

The chiller features 1" female threaded PVC fittings. Follow the Inlet/Outlet flow pattern as marked to ensure the controller functions properly. When tightening a fitting into the chiller, always use pliers on the exposed chiller fitting to hold back the torque that would otherwise be transferred to the internal components. We recommend using Teflon tape and only finger tighten fittings. This is often more than enough to ensure that there are no leaks. Test the connection. If you need to use a wrench for tightening, only tighten 1/4 turn at a time before retesting the connection. We are not responsible for damage if you overtighten the connection.

Flow:

We recommend 500gph-1800gph pumps on all of our water chillers up to our commercial line. For commercial units, we recommend 2400-3600gph.

Minimum MEASURABLE flow should be at least 200gph. **Do not run the chiller without flow**

Chiller Maintenance

If you ever need to turn off your pump to clean a filter or for any other reason, **unplug the chiller first**. To clean the internals of the chiller, you can use white vinegar. Fill a bucket with 1-2 gallons of white vinegar and use a pump to recirculate it through the chiller for a couple hours.

The rear coil of the chiller can become dusty/dirty overtime. If it's dirty enough to reduce airflow, the cooling capacity of the chiller will be reduced. Occasionally using compressed air to blow the coils off will keep the chiller performing as efficiently as possible. The frequency of these cleanings highly depends on your operating environment. Yearly coil cleaning should be sufficient for most users, however, if you know you are operating in a particularly dusty/dirty environment then you'll want adjust your cleanings accordingly.

Our standard line of Penguin Chillers are not suited for outdoor use. Although our Commercial Units are ready to be used indoors or outdoors with no worries regarding the elements.

Water Pressure

The chillers are not designed for pressurized use. (Excluding our 316 Stainless Steel Line). The pump used needs to be rated at or below 10psi max pressure, or 23' of max head height.

There will be cases where customers can successfully use a higher rated pump and properly manage the flow, but please talk with our tech support first. There is typically a simple work around that allows our chillers to provide cooling to systems which operate at higher pressures. We would be more than happy to help you determine the best method of installation for your system. Be sure and visit our "Accessories" web page to view our selection of pumps and accessory packages available.

Digital Controller

The controller constantly monitors your systems incoming water temperature, therefore, water flow is needed at all times in order for it to successfully read current temperatures. When your systems water temperature moves above your desired set point, the controller tells the compressor and fan to turn on and begin cooling the water. Once your desired set point temperature is reached, the compressor and fan will turn off.

High Efficiency Explanation (If applicable)

HE models utilize a larger titanium coil compared to the standard version. The larger coil offers more contact surface area and contact time to provide more cooling. Both models run the same compressor, which means their power draw is the same. The high efficiency model is providing more cooling without any extra power consumption.

Troubleshooting

My Chiller isn't cooling:

- Does the chiller LCD have power? (check GFI plug if not)
- Is there a green snowflake symbol that is lit up on the controller? (prior controllers have a red dot by “work” or “cool”) If there is no light indicating the controller is calling for cooling – check controller settings.
- Does the Fan and Compressor come on?
- Is the controller readout steady or does it jump around?
- Is there a noticeable amount of air coming out the back / air is not blocked/ coil not clogged?
- Is the air coming out the back warm/hot OR room temp?

If warm air is coming out the back, the chiller is cooling, at least partially. The question becomes why is it not working to your expectations / it's full potential.

Troubleshooting Cont'd

- Check the water temperature with an external thermometer (not an IR gun). It is possible that the water is cold and the controller is providing an incorrect reading.
- What is the heat load?

When referring to a Temperature, please clearly identify what the specific sources are.

- Ambient air temperature.
- Chiller set point or chiller reading.
- External thermometer to measure the waters actual temperature.

There are many sources of temperature, clearly identifying which temperature you are referring to is critical to an accurate and speedy assessment of the issue.

Send any questions to: support@penguinchillers.com



All chillers come with a 1 year warranty. Certain chillers are offered with an optional extended warranty for an additional charge. The length of warranty will be determined by your purchase, minimum of 1 year.

Penguin Chillers warrants the Chiller to be free from defects in materials and workmanship. The warranty term begins on the date of purchase. This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. Penguin Chillers' warranty liability extends only to the replacement cost of the product. Penguin Chillers will not be liable for any consequential, indirect, or incidental damages of any kind, including lost revenues, lost profits, or other losses in connection with the product. Some states do not allow limitation on how long an implied warranty lasts or the exclusion of incidental or consequential damages, so the above limitations or exclusions may not apply to you. Penguin Chillers will, at our discretion, repair or replace the Chiller covered under this warranty. To request warranty service, please contact our technical support via email: support@penguinchillers.com.

If this product is returned to Penguin Chillers for repair the customer is responsible for shipping charges to get the chiller to Penguin Chillers. The chiller needs to be properly packaged for safe transport. This product must be insured during shipment. Customer assumes all risks of loss or damage during shipment. After receiving the package Penguin Chillers will repair or replace the chiller at our discretion. Penguin Chillers will repackage and ship the chiller back to you at no additional cost within the continental 48 states, surcharges may apply outside of the continental 48 states. Penguin Chillers will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Penguin Chillers will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any installation cost of this product.

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. TO THE MAXIMUM EXTENT PERMITTED BY LAW, PENGUIN CHILLERS SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF PENGUIN CHILLERS CANNOT LAWFULLY DISCLAIM OR EXCLUDE IMPLIED WARRANTIES UNDER APPLICABLE LAW, THEN ALL IMPLIED WARRANTIES COVERING THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO PRODUCT AS PROVIDED UNDER APPLICABLE LAW.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Penguin Chillers or (iii) this product is not purchased from an authorized Penguin Chillers reseller. If you are unsure whether a reseller is an authorized or not, contact us.



(865) 214 - 6509



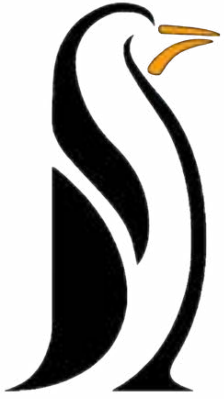
www.PenguinChillers.com



Support@PenguinChillers.com

A Controller Guide was included with your chiller. Please see the FAQ Page on our website to view a copy of the controller guide and other helpful information.





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