PREPARING FOR YOUR BREWERY'S GLYCOL CHILLER



INTRODUCTION

Selecting and ordering your brewery chiller is just one step in the process of establishing your brewery. Before your chiller is delivered, there is much that should be done to prepare your operation!

Through our extensive experience as a supplier and manufacturer of chillers, we know what factors need to be considered before your chiller arrives. To make sure you are not caught off guard by these considerations, we have developed this guide to help you prepare for the arrival of your glycol chiller.

We recommend reading through this guide once you have selected your chiller and are ready to order, or that you read it as you are evaluating your choices. The idea is to make sure that you are completely prepared when it arrives and you will be ready to launch your operation!



1.5 horsepower indoor glycol chiller



40 horsepower outdoor glycol chiller



10 horsepower indoor glycol chiller

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WHILE YOUR GLYCOL CHILLER IS BEING BUILT

Once you have selected your glycol chiller, you will likely be immersed in many other decisions as you prepare to set up your brewing operation. In the midst of all of this planning, it is not uncommon for new brewers to dismiss the chiller from their minds, thinking they no longer need to worry about it. While this is true to some extent, things can happen on both ends, such as manufacturer delays in shipping, or facility issues that might interfere with your ability to accept delivery.

Schedule Changes, Progress, and Payments

In a perfect world everything goes according to plan. But we all know that is usually not how things unfold. It is important to keep in touch with Advantage and remain up-to-date on any progress or setbacks relating to your purchase.

Advantage does its best to proactively keep you apprised of important milestones and changes that affect your order. However, if you don't hear from us it's always a good idea to check in occasionally to assure that there are no lurking surprises.

Conversely, let Advantage know if there are any changes on your end that will affect your ability to take delivery as scheduled. In the event that your chiller is ready but your facility is not, Advantage may not be able to store it until you are ready. Even if you have the space to store the chiller, but aren't ready to start using it, remember that the warranty clock starts ticking on the chiller components once it is completed. You do not want to waste warranty coverage time on a chiller that is not in use.

If there are to be delays on either side, make sure you fully understand how this will affect your payment schedule.



SHIPPING AND DELIVERY OF YOUR CHILLER

Advantage will always work out the shipping and delivery details at the time of your glycol chiller purchase so you will never be caught off guard. As discussed in the previous section, changes to the original plans may mean changes to what was initially agreed upon. We will make sure you are fully aware of who is responsible for the shipping charges and how those will be paid. New businesses without prior experience with shipping companies may be required to have payment available upon delivery.

Unloading and Inspecting Your Chiller

Your glycol chiller is a large and heavy piece of equipment, which must be handled with care. Before it arrives, have a plan for its unloading that is appropriate for the size chiller you ordered. Does your facility have a dock for unloading and receiving equipment? Will you need to arrange a liftgate delivery? Freight carriers often charge a small accessorial fee for liftgate service since not all of their trucks are equipped for this type of delivery, however, it can be very beneficial in making your delivery as quick and easy as possible when you don't have a loading dock.

Another important item in the unloading and moving process is a lift truck. Most glycol chillers require a lift truck for unloading. If you don't own one you you might be able to borrow one from a friend or neighbor or you'll need to arrange to rent one.

Once it is unloaded, take the time to inspect your chiller before the delivery truck leaves your facility. First, inspect the packaging for signs of damage. Next, unbox the chiller and look carefully for any hidden damage. If you do find any areas of concern, document them with photos and notes on the shipping documents, or if the damage is significant, refuse shipment. While it requires some extra time at delivery to do this, it is much easier than trying to resolve issues after the fact.



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PLACEMENT AND SET UP OF YOUR CHILLER

Ahead of delivery, give some careful time and consideration to the placement of your glycol chiller. Ideally, you want to place it at the time of delivery while you have the moving equipment available.

Inside or Outside

Unless your chiller has been designed for outdoor use, it must be placed inside of your facility. If your chiller will be located outside remember that most chillers contain copper in the condenser and piping. It is important to keep in mind that copper has significant value to thieves, and you want to avoid the temptation for vandalism. It is advisable to **install a fence around the chiller to protect your investment**. Make sure the fence isn't installed too close to the chiller and that it has openings to allow air to flow through to get to the chiller. Additionally, with outdoor chillers, you may need to plan for the installation of a pad or roof support structure.

Whether your chiller will be located indoors or outdoors, keep in mind that **there must be plenty of air flow around it**. A glycol chiller requires space to get rid of heat - it cannot be tucked into a small room, corner or closet. Also, you will want to **avoid placing your chiller near your brewery seating area** as they make a noticeable amount of noise during operation.

PLACEMENT AND SET UP OF YOUR CHILLER (continued)

Glycol chiller installed too close to the wall which will restrict air flow. Allow at least 3 feet of clearance between the chiller and wall.



Solid wood fence restricts air to glycol chiller. Use a fence with at least 50% open space and the top of the chiller should at least as tall or taller than the fence.

Air inlet is too close to a wall to get air to the glycol chiller.. Allow at least 3 feet of clearance. (Glycol chiller shown with top removed) Glycol chiller moved to allow better air flow. No longer up against the wall. Would be better with a less restrictive fence and with the top of the chiller at least as tall as the fence.







PLACEMENT AND SET UP OF YOUR CHILLER (continued)

Piping & Electric

When designing your brewery layout, be sure to **place the chiller system as close to your tanks as possible**, using **generously sized piping** that minimizes restrictions between the two. Avoid having too many pipe fittings or undersized piping as that will result in increased glycol line pressure and could compromise the cooling jackets on the tanks. Many breweries prefer a **"First In / Last Out" piping system to balance the flow and assure even flow distribution** to each tank in the system.

Piping options for your chiller include copper, PVC, steel, Cool-fit, and more. While using PVC piping with a high concentration of glycol is not recommended by PVC piping manufacturers, many brewers and other industrial manufacturers have successfully used PVC in their installations. If you do choose PVC pipe, use the heavy wall schedule 80 not the lighter duty schedule 40. Your **piping system sizing will vary depending on the chiller size and system layout**. An end of run low flow bypass is highly recommended.

Make sure your planning includes contemplation of the electrical configuration. Ordering the right electrical configuration is imperative since most chillers cannot be converted in the field. We've seen chillers placed on a roof with no way to disconnect the power. This means the system will be difficult to service and likely in violation of code. Use an experienced electrician who has done brewery installations. Your local home electrician may be good at what they do, but not necessarily the best choice for an industrial project.

Piping and electrical considerations are things the Advantage Engineering team can advise you on during the chiller buying process.

START UP AND MAINTENANCE OF YOUR CHILLER

Once your chiller is in place the exciting part begins - start up! As experienced and knowledgeable equipment experts, the Advantage Engineering team will be available to assist you with start up and trouble-shooting if it is required. Most chillers purchased from companies that understand the market have fully tested the unit at their facility prior to shipping it. At the time of start up, having the piping installer or an HVAC service company onsite or available is also a good idea, in case of piping leaks or a chiller issue.

Glycol for Your Chiller

Glycol is a water-miscible coolant that is used in heat transfer and cooling applications when either the fluid temperature will be below the freezing point of water, or when using an outdoor chiller in a freezing climate. Most glycol chillers operate around 25-28 Fahrenheit degrees so glycol is required. A mixture of water and food grade inhibited propylene glycol is most often used in glycol chillers for brewery applications. Advantage provides a glycol concentration recommendation (usually 30-50%) for your particular installation.

In obtaining the glycol you will need for your chiller, **you have the option to mix your own glycol or buy a pre-mixed formula**. The choice will depend on your own situation, resources, and preference. You will want to **find a dependable supplier that will be able to meet your delivery needs and budget**. Adequate testing will assure you have the right glycol mixture. Make sure that you own a quality refractometer to test the concentration and freeze point of your glycol.

Maintenance for Your Chiller

Just as you perform regular maintenance on your car (oil changes, tire rotation and brakes) and home furnace (air filter and coil cleaning), **you will need to maintain your glycol chiller to assure peak performance and equipment longevity**. It is a good idea to keep a log of cleaning and maintenance you perform or have performed on your chiller.



Be prepared for the possibility of a chiller breakdown. If you can, have a pre-established relationship with a local HVAC repair company. Hire the company that will service your chiller during unit start-up to become familiar with your chiller. This may cost you a few hundred dollars, but in an emergency, that prior knowledge and understanding of your equipment could save you much more in unplanned expenses. You can also always call the factory for help.





QUESTIONS?

As an experienced expert in the area of glycol chiller technology, **Advantage Engineering is here to assist you during any phase of your chiller purchase** from sizing and selection to set-up and operation.

Please give us a call at 317-887-0729 or <u>contact us on our website</u> to learn more about how we can help you start and maintain a successful brewing operation.

Cheers!