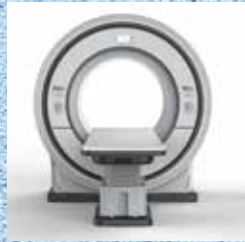
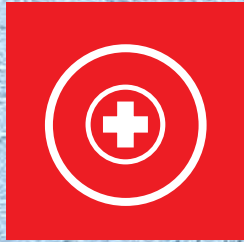




# Drake Chiller Applications

*Custom Designed Chiller Systems*



## About Drake....

Drake Refrigeration, Inc. has been manufacturing process chillers since 1972 and offers a complete line from 1/4 ton to 200 tons air-cooled and water-cooled chillers.

The industries served include industrial, medical, food and beverage industry, and more. Drake continues to lead in manufacturing custom designed process chillers to meet a customer's particular needs when standard chillers won't work. By maintaining a cost effective, rugged, dependable product line with many custom features, our client base has grown to include many more industries and applications.

Drake Chillers represent the most high-quality, durable, standard process chiller units on the market with cooling capacities ranging from 1/4 ton to 200 tons and are available for quick delivery. Our business is built on outstanding after-the-sale technical support and customer service. In other words...

***Our Customers' Satisfaction Is Our Number One Priority!***

## Where to Find Drake....

Drake is sold through most refrigeration wholesalers, so you are working with suppliers and contractors you know and trust. With representatives throughout the United States you can get the support you need for all stages of the process. Our engineers are available to discuss your cooling needs directly. Our team will support the process from quoting to start-up and we also offer technical support.

OEM customers work directly with Drake to build an integrated system that performance matched to OEM equipment. This assures the end product meets the quality, productivity and value expected from the OEM end equipment user.

Why settle for an off-the-shelf chiller?



## Why Drake Refrigeration?

### **Experience, Commitment and Exceptional Customer Service.**

At Drake Refrigeration, we provide high quality, engineered cooling solutions for a variety of end markets. Our many years of experience gives us the know how to solve even the most complex of cooling needs.

So whether you are crafting a private label brew or launching a rocket into space, Drake has a chiller for you. Contact us directly at 1-888-289-7299 and let us engineer a solution for you!

### Applications



**Brewery**



**Comfort Cooling**



**Dairy**



**Refrigeration**



**Food Production**



**Low Temperature**



**Medical**



**Industrial Process**

Custom chillers built by





## Brewery Features/Applications

### Low Temperature & Temperature Control:

Brewery chillers require lower temperatures and more accurate temperature controls than a standard comfort cooling chiller. Drake brewery chillers come with two loop recirculation tanks. These stainless steel tanks provide a consistent glycol temperature under varying conditions. This means a more controlled crash and more consistent process.

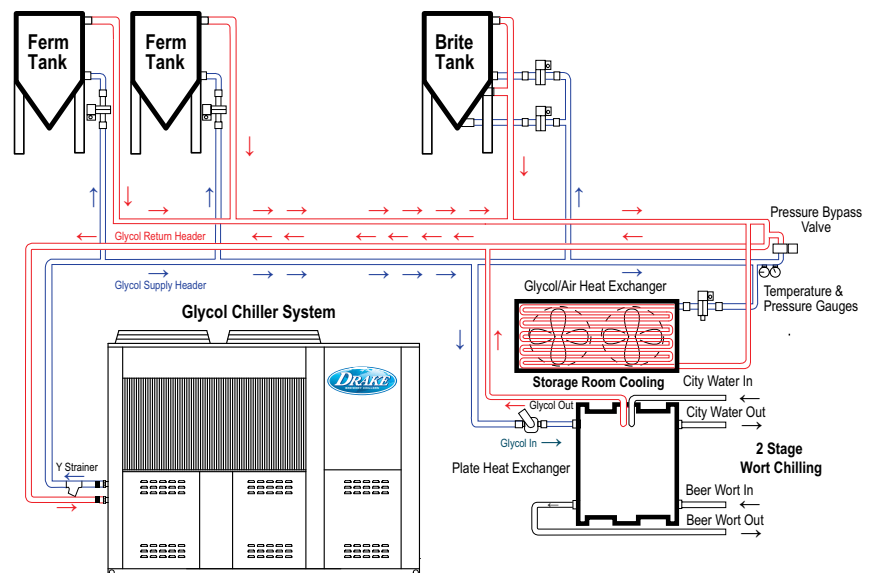
### Year Round Processing:

Most comfort cooling chillers are not designed to run in colder weather. Drake provides a variety of low temperature options including the ability to run in ambient temperatures down to -40°F.

### Capacity Control:

Most chillers have two levels of capacity, full on and full off. If your chiller can't modulate the capacity, the chiller will start and stop frequently. This short cycling will lead to short compressor life. Drake brewery chillers have a number of available capacity controls protecting you from short cycling.

## How a Chiller Integrates into a Brewing System



Why settle for an off-the-shelf chiller?





## Dairy Features/Applications

### On-Demand Chilling:

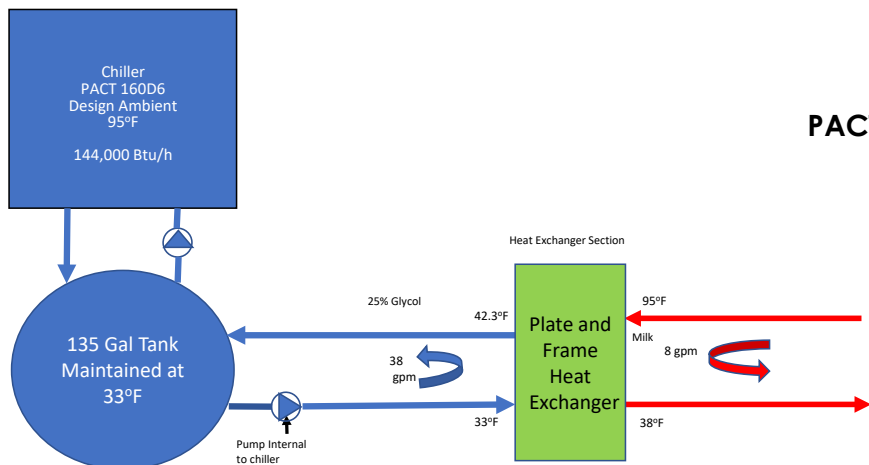
Large scale chillers designed to reach proper milk temperature in a single pass without the need of storage tanks. Single pass chilling reduces the cooling time and extends the shelf life of the milk. Cleanable, plate and frame heat exchangers combined with precision controlled glycol tanks make short work of even the biggest dairy job. Our experience in working with dairy farmers has given us the understanding of the tough conditions on a farm and allows us to design a chiller that can take the heat.

### Jacketed Milk Tank Cooling:

Glycol jacketed tanks eliminate the need for long runs of refrigerant piping, therefore reducing the risk and expense of losing refrigerant to the environment. Glycol chillers offer a variety of redundancy options to ensure that your milk is always chilled when you need it. From multiple refrigeration circuits with standard lead-lag control to auto-changeover pumps, our units are designed to ensure that your process is not halted.

### Energy Conservations:

Drake understands that the operating cost of the chiller is just as important as the initial expense. Our chillers provide economical solutions for energy conservation through the use of variable frequency drives (VFDs), EC fan motors, and heat reclamation to minimize the cost of operation. By using multiple refrigerant circuits or digital compressors our chillers can work less to get the job done. In the end, the more energy you save, the more money you earn.



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## Food Processing Features/Applications

### 42°F+ Potable Water:

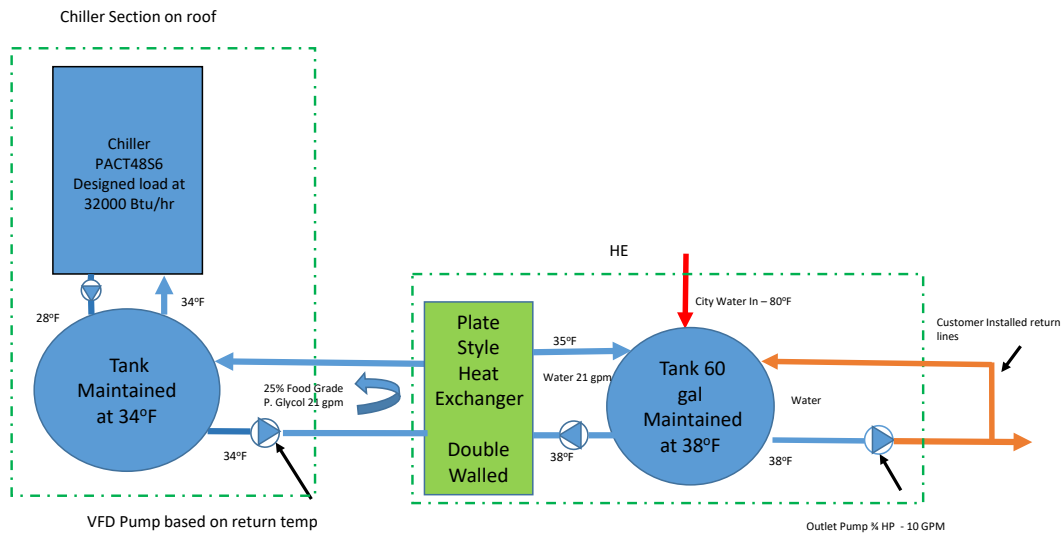
Potable water requires double-walled heat exchangers for its anti-contamination properties. Drake has experience with many medium temperature food processes such as cheese, meat and sauce production. Some other applications may require special component considerations. Drake offers a vast selection of specified components to meet the needs of your application.

### 35-41°F+ Ingredient Water:

Many food processors, including bakeries, need water between 41°F and 35°F. Through use of secondary heat exchangers and variable frequency drives (VFDs), our systems have the capability of chilling water to the brink of freezing with the precise controls to keep the process flowing.

### Glycol Systems:

Yogurt, ice cream, chocolate, cold tables and many other processes use food-safe glycol as a method of chilling. Our chillers produce consistent glycol temperatures to keep your product within its specified temperature range. This ensures zero product spoilage and improved quality to your consumer's table.



Tank must be open vented to change levels. Should be drained if off for an extended time

Why settle for an off-the-shelf chiller?





## Medical Features/Applications

### Temperature Accuracy:

Precision medical equipment requires accurate temperature control. The Drake Recirculation system maintains temperature at +/- 1 degree F. Capacity modulation options allow us to achieve this level of precision without high degrees of compressor cycling, which will cause short component life. Consistent temperature accuracy equals greater up-time for your medical equipment.

### Reliability:

Drake always has the end customer in mind when designing and fabricating our medical chillers. You can rest comfortably knowing that our medical chillers will maintain a high up-time because of our redundant circuits and other backup systems. Drake has designed these chillers to operate from 120°F ambient all the way down to -40°F without any customer interaction. After the initial set up, the chiller will do the rest. When you are saving lives, the chiller is the last thing you want to worry about.

### Green Options:

Drake takes environmental responsibility seriously. We use only EPA approved refrigerants and the latest in energy efficient compressors. Drake city water bypass operates with no glycol going down the drain. We also offer supplemental fluid coolers, with our medical chiller systems, for reduced energy consumption. We save our environment while you save our lives.



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## Comfort Cooling Features/Applications

### **Year Round Cooling:**

Low ambient protection for year-round cooling. Options include flooded condensers with head pressure control, heated flooded condensers with head pressure control, and evaporator heat tape. This consideration is important for areas that generate heat even in the winter, like data centers, casinos, gyms and warehouses.

### **Coastal/Harsh Environment:**

Custom condensers for protection against the harsh salt air. Stainless steel cabinets are also available for extreme conditions. Condenser options include Heresite coating, gold fins, and copper fins.

### **High Ambient/Altitude:**

Over-sized condensers designed for lower air density and higher ambient temperatures.



**15 Ton - single phase unit**

Why settle for an off-the-shelf chiller?







## Refrigeration Features/Applications

### Capacity Control:

Drake understands that refrigeration processes have intermittent heavy to low load operation. Therefore, it is imperative that the chiller is able to meet the changing demand of your application. Digital scrolls, cylinder unloading, and hot gas bypass are just some of the capacity control options that allow for our units to be capable of operating from 17%-100% of available cooling.

### Special Component Selection:

Certain processes may require special component considerations such as double-walled heat exchangers or PVC fluid piping. Drake offers a seemingly unlimited selection of specified components to meet the needs of your application.

### Redundancy Options:

Drake offers a variety of redundancy options to ensure that the refrigeration processes are always chilled when you need it. From multiple refrigeration circuits with standard lead-lag control to auto-changeover pumps, our units are designed to ensure that your process is not halted because of our systems.



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### Low Temp Features/Applications

**Rapid Pull-Down:**

Drake understands that many low temp applications have large pull-downs. Our systems are designed to be efficient through the entire temperature range to allow for quick and efficient pull-downs. Our EEVs maintain a constant superheat without the need for human interaction. Many competitors only design for the final temperature, causing highly inefficient chiller operation.

**Oil Management:**

Anyone with experience in low-temp refrigeration operation knows that lack of oil return plagues the operation of even the simplest system. We take all the necessary measures to ensure full oil return back to the compressor without the interaction of a service tech. Oil is the lifeblood of a chiller, this is why our chillers have incredible longevity.

**Vast Array of Fluid Types:**

At lower temperatures, many standard anti-freeze fluids become too viscous to pump economically. We design our chillers to meet your specific fluid. You never have to derate chiller performance with a Drake because we factor in fluid properties to ensure that our evaporators are sized to do the job.



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Why settle for an off-the-shelf chiller?





## Industrial Process/Applications

### Equipment Chiller:

Through our experience working with industrial processes we understand the importance of tight temperature control. Drake provides cost effective solutions through the use of variable frequency drives (VFDs) and recirculation tanks. Drake offer systems that are expandable for future growth and can support 1-100+ pieces of equipment.

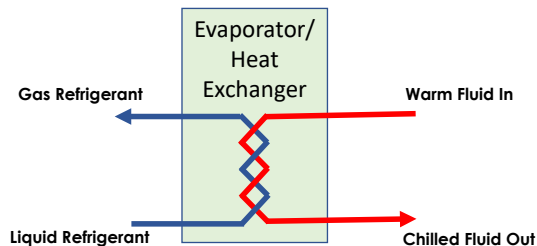
### Process Chiller:

Drake offers a variety of redundancy options to ensure that your processes are always chilled when you need it. From multiple refrigeration circuits with standard lead-lag control to auto-changeover pumps, our units are designed to ensure that your process is continuously running. It is imperative that the chiller is able to meet the changing demand of your application. Digital scrolls, cylinder unloading, and hot gas bypass are just some of the capacity control options that we offer.

### Oil Chiller:

The industrial environment is harsh on machine tools, which makes keeping oil cool imperative. An overheating machine tool can lead to premature failure and long periods of downtime. Drake's oil chillers are specifically designed for industrial machine tools to increase efficiency, reliability and lifetime.

The refrigeration circuit absorbs the heat from the fluid



**PWCL1600**

Under stable conditions, the parameters are easy to control and calculate.

Chiller Capacity = (Chilled Fluid In – Chilled Fluid Out)  
(Flow Rate) (500)

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