

Food Processing Chiller

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Our chillers and cooling systems remove ice during food processing. Whether you are spending too much ice cooling your process, or ice is forming in your current chillers, our food processing chillers are a reliable and economical option to keep your products safe and delicious. We often design custom food processing cooling systems to meet the specific needs of an operation. With a wide range of capacities and system configurations, our food processing industry chillers are reliable and provide precise temperature control to meet your most demanding refrigeration and cooling needs.



Food Processing

1.What is A Food Processing Chiller?

A food processing chiller is a specialized chiller machine designed for use in the food industry. It's employed to cool, freeze, or maintain specific temperatures in various stages of food production and processing. Food processing chillers play a critical role in ensuring food safety, quality, and compliance with regulatory standards.



80 Ton AirCooled Screw Food Process Chiller

2.Food Processing Chiller Applications

Our industrial-grade food processing chiller use process cooling to remove heat from cooling equipment so they keep your food properly chilled.

Food processing chillers control temperature during cheese production.

Our robust range of custom systems are available for a variety of food processing applications, including:

- Cheese
- Meat
- Sauce
- Yogurt
- Ice cream
- Chocolate
- Cold tables
- Bakeries

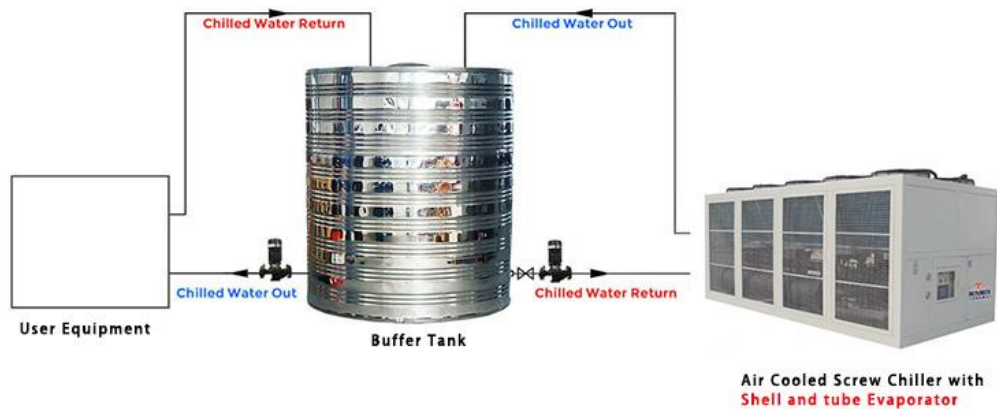
Do you need a food processing chiller for a different product or application? [Contact us](#) to know how we can help.

3.What's the Difference Between Air-cooled & Water-cooled Food Processing Chillers?

There are two types of brewery chiller: one is **air-cooled Food Processing chiller** ,the other is **water-cooled Food Processing chiller** ;

Air-cooled Food Processing chillers use ambient air to dissipate heat from the brewing processes. They are energy-efficient, space-saving, and less maintenance that helps save money.

Water-cooled Food Processing chillers use water from an external water cooling tower to dissipate heat from the brewing processes. These systems are longer lifespan, Relatively quiet, and more consistent cooling performance than the air-cooled Food Processing chiller.



Air-cooled Food Processing Chiller Installation Drawing



Water-cooled Food Processing Chiller Installation Drawing

Should you choose an air-cooled or water-cooled Food Processing chiller? Contact Us for help determining the best solution for you.

4.What is the Difference Between Food Processing Scroll Chiller and Food Processing Screw Chiller?

Food Processing Scroll Chiller

- 1/2HP-60HP(2KW-170KW)
- Danfoss/Panasonic Scroll Compressor
- Built with water tank and water pump



Air-cooled Food Processing Scroll Chiller

Food Processing Screw Chiller

- Above 60HP(Above 170KW)
- Hanbell/Bitzer Screw compressor
- Without water tank and water pump



Air-cooled Food Processing ScrewChiller



Water-cooled Food Processing Scroll Chiller



Water-cooled Food Processing Screw Chiller

5.What Are The Main Components of Food Processing Chillers?

5.1 Compressor

The compressor is the key mover in Food Processing chiller because it produces pressure variations to stir the refrigerant around.

From 1/2HP(1/2 Ton) to 60HP(50Ton) Food Processing chiller , which is with **Panasonic** or **Danfoss brand Scroll compressor** ,

Above 80HP(70 Ton) Food Processing chiller , which is with **Hanbell** or **Bitzer brand Screw compressor** ,

These brand compressors are with high refrigeration efficiency,low noise ,energy saving,environmental protection and durability,safety and stability.



Panasonic Compressor

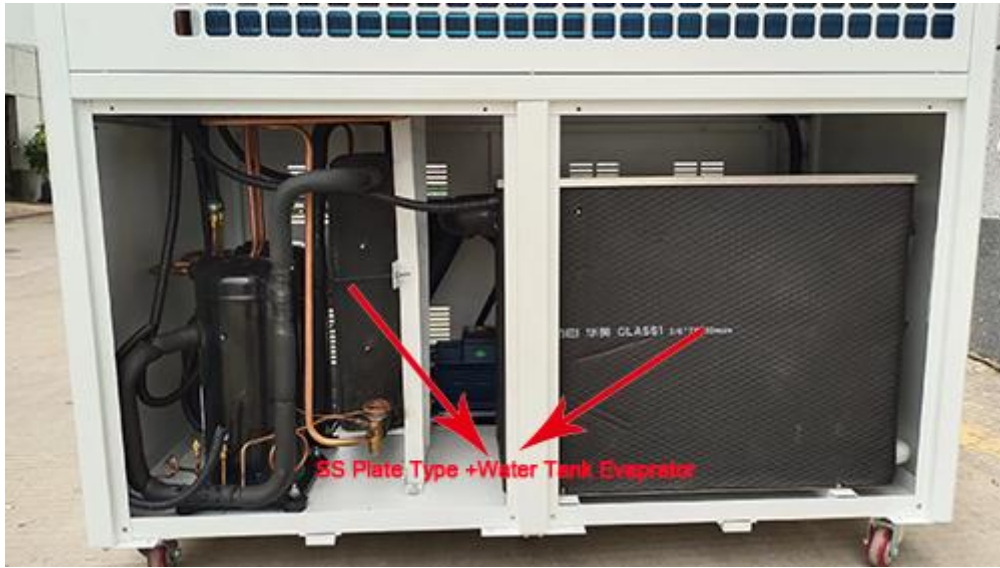


Danfoss Compressor

5.2 Evaporator

The evaporator is a crucial component of air-cooled Food Processing chiller, as it is responsible for extracting heat from the liquid being cooled, it is located between the compressor and the expansion valve. There are three types of evaporators : **coil in water tank evaporator** , **shell and tube evaporator** , **304SS stainless steel plate type evaporator**.





SS Plate Type+ Water Tank Evaporator



Shell and Tube Evaporator

5.3 Water Pump

The water pump is designed to increase the pressure and the flow of the chilled water in a closed space.



Water Pump



High Pressure Water Pump

5.4 Condenser

The condenser for air-cooled Food Processing chiller is equipped with efficient cross-seam fins and female threaded copper tubes for high heat exchange efficiency and good stability. Its function is to cool down the refrigerant steam released from the compressor into a liquid or gas-liquid mixture.



Aluminum fin+fan Condenser for air-cooled brewery chiller

The condenser for water-cooled Food Processing chiller is shell and tube, with the internal copper tubes employing an outer thread embossing process. This design effectively enhances the heat exchange efficiency between the refrigerant and water during the process. Compared to traditional smooth copper tubes, the outer thread embossing process increases the surface area of the copper tubes, thereby expanding the contact area for heat exchange and improving the thermal conductivity of the condenser. This optimization design allows the condenser of the water-cooled chiller to transfer heat from the refrigerant to the water more rapidly and consistently, enabling the water to carry away the heat.



Shell and tube Condenser for water-cooled brewery chiller

5.5 Controller Panel

Food Processing chillers use precision digital temperature controller, it RS485 communication port, which can do remote monitoring and control. Simple operation, low failure rate, high safety factor, easy installation.



Controller Panel

6. Food Processing Chiller Coolants

Our industrial food processing chiller systems are available in two types: potable water and glycol. The difference between the two depends on the type of coolant used in the chiller.

Portable Water Chiller

The coolant in portable water chillers is water-based. With a double-walled heat exchanger, these food processing chillers prevent contamination. Best suited for medium temperature food processing such as cheese, meat and sauce production, potable water chillers are often an economical solution providing excellent cooling efficiency.

- Water-based coolant
- economy
- Anti-contamination Properties
- Suitable for medium temperature food processing

Glycol Chillers

The coolant in a glycol chiller is a water-glycol mixture that acts as an antifreeze, helping achieve a lower freezing point than water. These chillers use non-toxic propylene glycol, as opposed to ethylene, to ensure food safety. Glycol chillers are often used in low-temperature storage applications for food products such as yogurt, ice cream, chocolate, and cold tables,

but are also suited for above-freezing applications.

- Propylene glycol- and water mixture as coolant
- Antifreeze properties
- Consistent temperatures
- Zero product spoilage and improved food quality

7.How to Choose Right Chiller for Your Food Processing Process?

How to calculate right cooling capacity for your Food Processing chillers?

One of the most frequently ask about how we can know the cooling capacity for chillers. Let's see the below formula.

Cooling Capacity(kw)= Flow Rate(m³/h)*Temp Change(T1-T2)/0.86

Heat Load= C(specific heat)* M(quantity output per hour)*Temp Change(T1-T2)

Oversize the chiller by 20% Ideal Size in KW = KW x 1.2

Noted : T1:Incoming Water Temperature (°C) T2:Required Chilled Water Temperature(°C)

For example, what size of chiller is required to cool 5m³ water from 25°C to 15 °c in 1 hour?

Temperature Differential = 25°C-15°C=10°C

Water Flow Rate = 5 m³/hour

Cooling Capacity in KW = 5 x 10 ÷ 0.86 = 58,14 KW

Oversize the chiller = 58.14 x 1.2 = 69.76 KW

69.96kw cooling capacity for chiller is required.

Types of Food Processing chiller system?

There are two types of chiller :**Air Cooled Food Processing Chiller** and **Water Cooled Food Processing Chiller**.

Water cooled chiller needs a separated water cooling tower and water cooling pump ,if you don't have exsiting water cooling tower,we suggest you use air cooled chiller; But if your ambiemt temperature is very high above 55°C ,we suggest you use water cooled chiller , as it is easier to dissipate heat for water cooled chiller with water cooling tower.

Whether chillers need built-in Tank or not?

In a chiller system, a tank is usually equipped to buffer the thermal load of the chiller.

But should we choose a built-in type of tank or an external type of tank?

A chiller with a built-in tank is easier to install and can be used simply by connecting a water pipe to your application.

But it has a limited capacity and is not suitable for applications with larger chilled water demands. External tank's capacity can be customized according to specific needs.

It can buffer a larger heat load, store more chilled water, but the installation will be more troublesome.

If you don't have external water tank, we suggest our chiller built-with water tank, which is easy for you to install.

Cooling capacity unit conversion?

1 KW=860 kcal/h ;

1 TON=3.517 KW;

1 KW=3412 Btu/h;

8.Contact us to Learn More About Our Food Processing

Chillers

Don't delay in making the best decision for your manufacturing business and your future by increasing your production capabilities with an Food Processing chiller. Contact us today for more information on a Food Processing chiller.

Our professional team will help you with any questions you have on our Food Processing chiller units. We look forward to hearing from you!