

Dry Cleaning Chiller

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Dry cleaning equipment requires chilled water to function properly. For years, many people just used tap water and poured it directly back into the sewer. The monthly water and sewer bills for this practice are very expensive. Many countries such some US States have banned dry cleaning companies from using this cooling method due to water shortages in some areas. For this reason, many dry cleaning companies rely on chillers to provide a closed loop of recirculated water to cool their dry cleaning machines.



Dry Cleaning Process

1.What is A Dry Cleaning Chiller?

A dry cleaning chiller is a specialized cooling chiller machine used in dry cleaning facilities. Its primary purpose is to control and maintain the temperature of the solvent used in the dry cleaning process. The use of a dry cleaning chiller is especially important when a solvent like perchloroethylene (perc) is employed, as it can be sensitive to temperature variations. By maintaining a consistent and controlled temperature, dry cleaning chillers can ensure that the cleaning process is effective and safe



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Dry Cleaning Chiller

2.Why Does Dry Cleaning Process Need A Water Chiller

Unit?

Dry cleaning is a method of cleaning textiles and fabrics without using water. Instead, it involves using a solvent, usually perchlorethylene (PERC), to remove stains and dirt from clothing. A chiller may be used during the dry cleaning process for below specific reasons:

Cooling solvents: Solvents used in dry cleaning, such as perchlorethylene, heat up during the cleaning process due to the mechanical action of the machine and the agitation of the clothes. The cooler helps keep the temperature of the solvent low and stable. This is important because excessive heat can cause the solvent to be less effective at removing stains and grime.

Prevent vapor loss: Some solvents, such as perchlorethylene, can evaporate at relatively low temperatures. A chiller helps keep the temperature of the solvent below its vaporization point, preventing excessive evaporation and loss of cleaning agent.

Maintain equipment efficiency: Dry cleaning machine components, such as pumps and



seals, can be temperature sensitive. Cooling solvents help maintain the efficiency and longevity of these components.

Environmental considerations: Cooling solvents helps reduce emissions of volatile organic compounds (VOCs) into the environment. Volatile organic compounds are harmful chemicals that can cause air pollution and negatively impact human health.

3.What's the Difference Between Air-cooled & Water-cooled Dry Cleaning Chillers?

There are two types of Dry Cleaning chiller: one is **air-cooled Dry Cleaning chiller** ,the other is **water-cooled Dry Cleaning chiller** ;

Air-cooled Dry Cleaning 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 Dry Cleaning 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 Dry Cleaning chiller.

Should you choose an air-cooled or water-cooled Dry Cleaning chiller? [Contact Us](#) for help determining the best solution for you.

4.What Are the Differences Between Dry Cleaning Scroll Chiller and Dry Cleaning Screw Chiller?

Dry Cleaning Scroll Chiller

▪1/2 HP-60HP(2KW-170KW)

▪Danfoss/Panasonic Scroll Compressor

▪Built with water tank and water pump

Dry Cleaning Screw Chiller

Above 60HP(Above 170KW)

Hanbell/Bitzer Screw compressor

Without water tank and water pump



Air-cooled Dry Cleaning Scroll Chiller



Air-cooled Dry Cleaning Screw Chiller



Water-cooled Dry Cleaning Scroll Chiller



Water-cooled Dry Cleaning Screw Chiller

5.What Are The Main Components of Dry Cleaning Chillers?

5.1 Compressor

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

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

Above 60HP Dry Cleaning chiller,which is with **Hanbell** or **Bitzer screw compressor**;



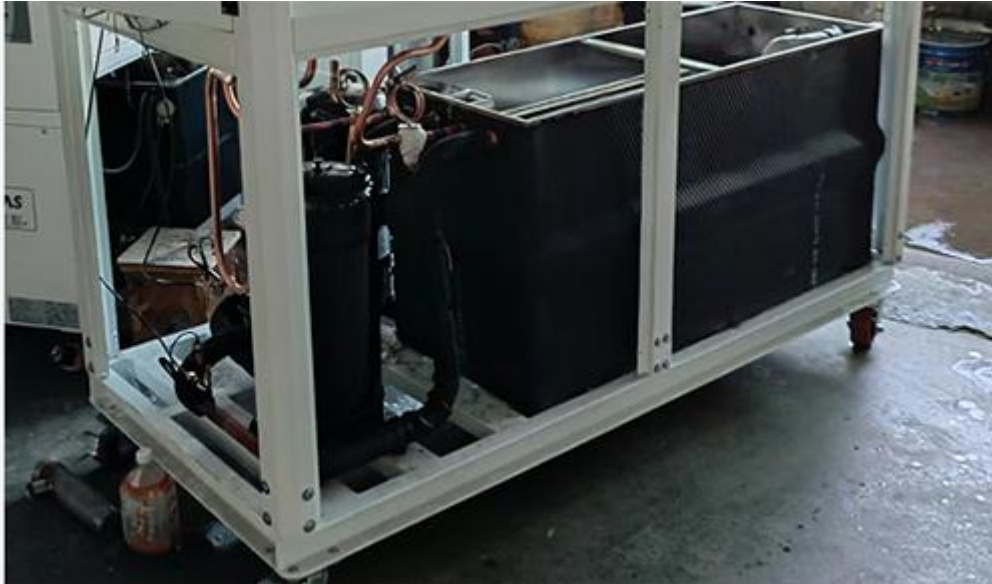
Panasonic Compressor



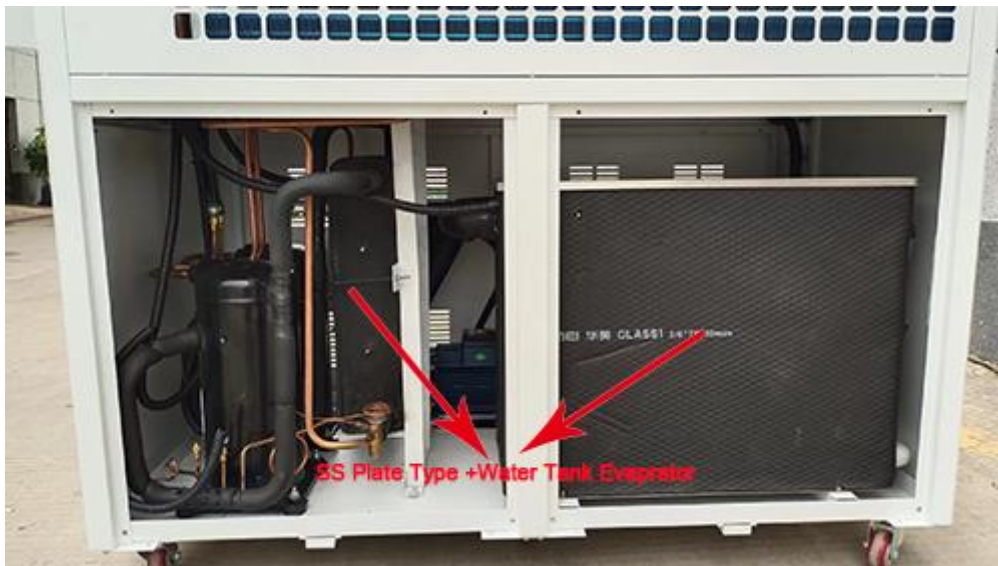
Danfoss Compressor

5.2 Evaporator

The evaporator is a crucial component of air-cooled water 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**.



Coil in SS Water Tank Evaporator



SS Plate Type+ Water Tank 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.

Dry Cleaning Chiller is used with 304 Stainless Steel Water pump.



Water Pump

5.4 Condenser

The condenser for air-cooled Dry Cleaning cooler 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 Dry Cleaning chiller

The condenser for water-cooled Dry Cleaning cooler 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 Dry Cleaning chiller

5.5 Controller Panel

Water 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. What are the Key Features of a Dry Cleaning Chiller?

- Energy-efficient Panasonic/Danfoss/Hanbell/Bitzer compressor
- Chilled Outlet water temperature control 7°C to 25°C
- Precise temperature controller
- Environment-friendly refrigerant R407c/r410a

- Easy installation ,operation and low cost of maintenance
- 304 Stainless Steel Coil in SS water tank /Shell And tube as evaporator

7.How to Choose Right Dry Cleaning Chiller for Your Dry Cleaning Process?

How to calculate right cooling capacity for your Dry Cleaning chillers?

Choosing the right size of an printer chiller is crucial for ensuring optimal performance and efficiency in your Dry Cleaning process. How to calculate the correct cooling capacity for your Dry Cleaning chiller,pls see below:

- The Power of your dry cleaning Machine;
- how many degree of outlet water temperature from the chiller you request ;

Types of Dry Cleaningchiller system?

There are two types of chiller :**Air Cooled Dry Cleaning Chiller** and **Water Cooled Dry Cleaning 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.

But Most customers use air cooled Dry Cleaningchiller ,which is more easily install and save space.

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.



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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. Get a Quote on Industrial Dry Cleaning Chillers Now

As a leading *industrial chiller manufacturer*, we engineer and produce high-quality process chillers compatible with a broad range of industrial processes.

Depending on your needs, we also offer *custom chillers* to ensure that each client receives the industrial chiller best suited to their unique process.

Request a quote now on our Dry Cleaning water chillers or learn about the other *air-cooled chillers* and *water-cooled chillers*.