

# Film Blowing Chillers

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## 1.What is Film Blowing Machine ?

The film blowing machine, also known as the film blowing extruder, is a plastic processing equipment used to produce plastic films or sheets. It is a key component in the film blowing process and is widely used in the packaging industry to make materials such as plastic bags, shrink wrap and other flexible packaging solutions.

Film blowing machines are available in a variety of configurations, including single-layer and multi-layer extrusion lines, to accommodate different production requirements and the layered use of multiple materials. They can be used with a variety of plastic resins, including polyethylene, polypropylene, PVC, and more.



**Film Blowing Machine**

## 2.What Is Film Blowing Chiller?

A film blowing chiller is a specialized type of chiller machine designed for use in the film blowing process. It is a cooling system that provides controlled and precise cooling to the extrusion and forming components of a film blowing machine. It accomplishes this by circulating a chilled liquid (typically water or a water-glycol mixture) through the mold and other components of the Film Blowing machinery.

Maintaining the correct temperature is critical for achieving the desired product quality, consistency, and structural integrity. If the plastic material is too hot or too cold during the molding process, it can lead to defects in the final product. The Film Blowing chillers help ensure that the plastic material is at the optimal temperature for forming the desired shape.

A Film Blowing chiller is an essential part in the Film Blowing process, which helping to regulate temperatures and improve the quality of the final plastic products.



**Film Blowing Chiller**

### 3. Surface Air Cooler Used In Film Blowing Process

Surface air coolers (also known as cooling rollers or roller coolers) are usually used on film blowing machines as a cooling device to help quickly cool and solidify the molten plastic and ensure the formation and quality of the plastic film.

A surface air cooler is a roller with a special surface treatment that usually includes internal channels that can reduce the surface temperature of the roller by flowing a cooling medium (such as water or coolant) inside. The following are the main functions of the surface air cooler on the film blowing machine:

Rapid cooling: When the molten plastic passes through the mold to form a film, the role of the surface cooler is to quickly reduce the temperature of the plastic so that it solidifies quickly and maintains the desired shape and thickness.



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Controlling film thickness: By adjusting the working parameters of the surface cooler, the film thickness during the film blowing process can be accurately controlled to ensure compliance with specifications.

Improved production efficiency: Surface coolers enable film blowing machines to achieve faster production speeds because rapid cooling allows the film to move through the production line faster.

Reduce deformation and defects: By maintaining the correct cooling temperature and speed, surface coolers can reduce deformation, defects or surface unevenness that may occur in molten plastic during the cooling process.

The surface air cooler is an important component in the film blowing machine and plays a key role in ensuring the smooth progress of the film blowing process and high-quality film production. It provides the necessary cooling function to ensure that the film blowing machine can efficiently produce plastic film products that meet the requirements.



*Surface Air Cooler*

## 4.What's the Difference Between Air-cooled & Water-cooled Film Blowing Chillers?

There are two types of Film Blowingchiller: one is **air-cooled Film Blowing chiller** ,the other is **water-cooled Film Blowing chiller** ;

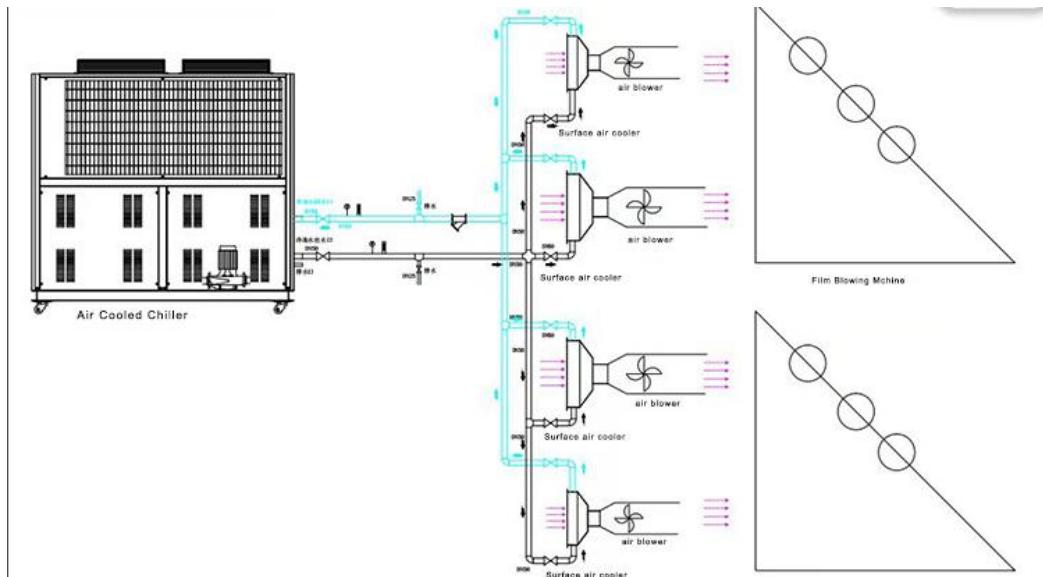
**Air-cooled Film Blowing chillers** use ambient air to dissipate heat from the brewing



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processes. They are energy-efficient, space-saving, and less maintenance that helps save money.

**Water-cooled Film Blowing 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 Film Blowing chiller.



**Air-Cooled Film Blowing Chiller installation**

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



**8HP Air Cooled Chiller Used In Film Bowing Industry**

## 5.What Are the Differences Between Film Blowing Scroll Chiller and Film Blowing Screw Chiller?

### Film Blowing Scroll Chiller

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

### Film Blowing Screw Chiller

- Above 60HP
- Hanbell/Bitzer Screw compressor
- Without water tank and water pump



Air-cooled Film Blowing Scroll Chiller



Air-cooled Film Blowing Screw Chiller



Water-cooled Film Blowing Scroll Chiller



Water-cooled Film Blowing Screw Chiller

## 6.What Are The Main Components of Film Blowing Chillers?

### 6.1 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) Film Blowing chiller , which is with **Panasonic or Danfoss brand Scroll compressor**,

Above 60HP Film Blowing chiller,which is with **Hanbell or Bitzer screw compressor**;



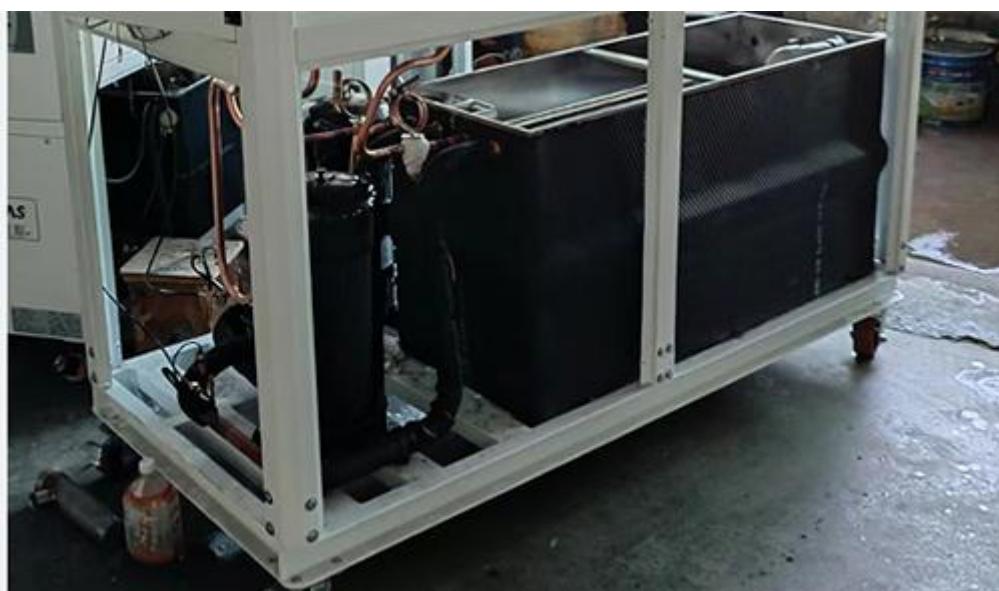
*Panasonic Compressor*

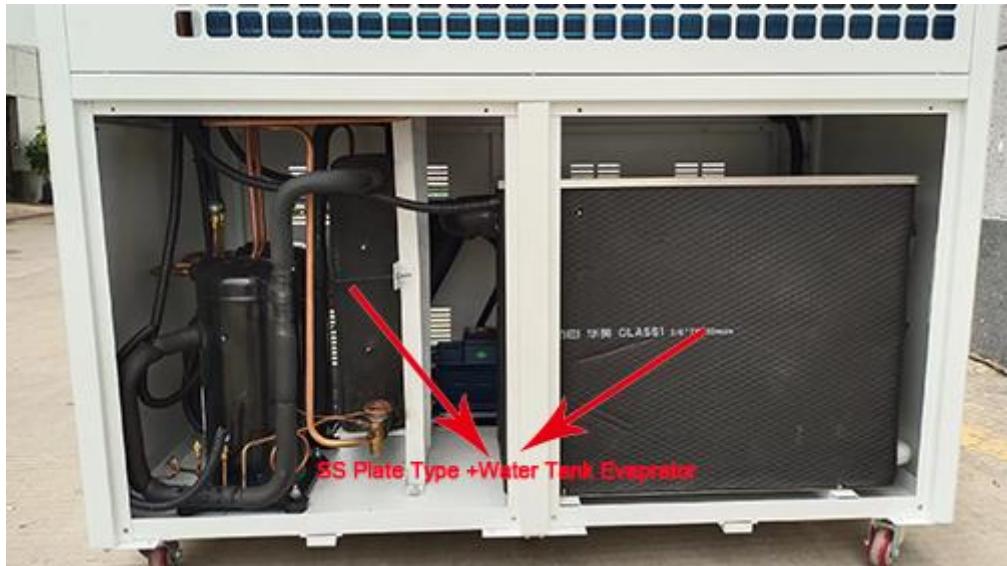


*Danfoss Compressor*

## 6.2 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.**





**SS Plate Type+ Water Tank Evaporator**

### 6.3 Water Pump

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

Film Blowing Chiller is used with 304 Stainless Steel Water pump.



*Water Pump*

#### 6.4 Condenser

The condenser for air-cooled Film Blowing 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 Film Blowing chiller*



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The condenser for water-cooled Film Blowing 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 Film Blowing chiller*

## 6.5 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*

## 7. What are the Key Features of a Film Blowing 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
- PID temperature controller
- Easy installation ,operation and low cost of maintenance
- 304 Stainless Steel Coil in SS water tank /Shell And tube as evaporator

## 8. How to Choose Right Film Blowing Chiller for Your Film Blowing Process?

### How to calculate right cooling capacity for your Film Blowing chillers?

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

- ▷ pls tell us the production for your film blowing machine;
- ▷ how many degree of outlet water temperature from the chiller you request ;
- ▷ what the material for product? PE or other material ?

### Types of Film Blowingchiller system?

There are two types of chiller :**Air Cooled Film Blowing Chiller** and **Water Cooled Film Blowing 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 ambient 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 Film Blowingchiller ,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.

But it has a limited capacity and is not suitable for applications with larger chilled water



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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;

## **9.Get a Quote on Industrial Film Blowing 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 Film Blowing water chillers or learn about the other *air-cooled chillers* and *water-cooled chillers*.