



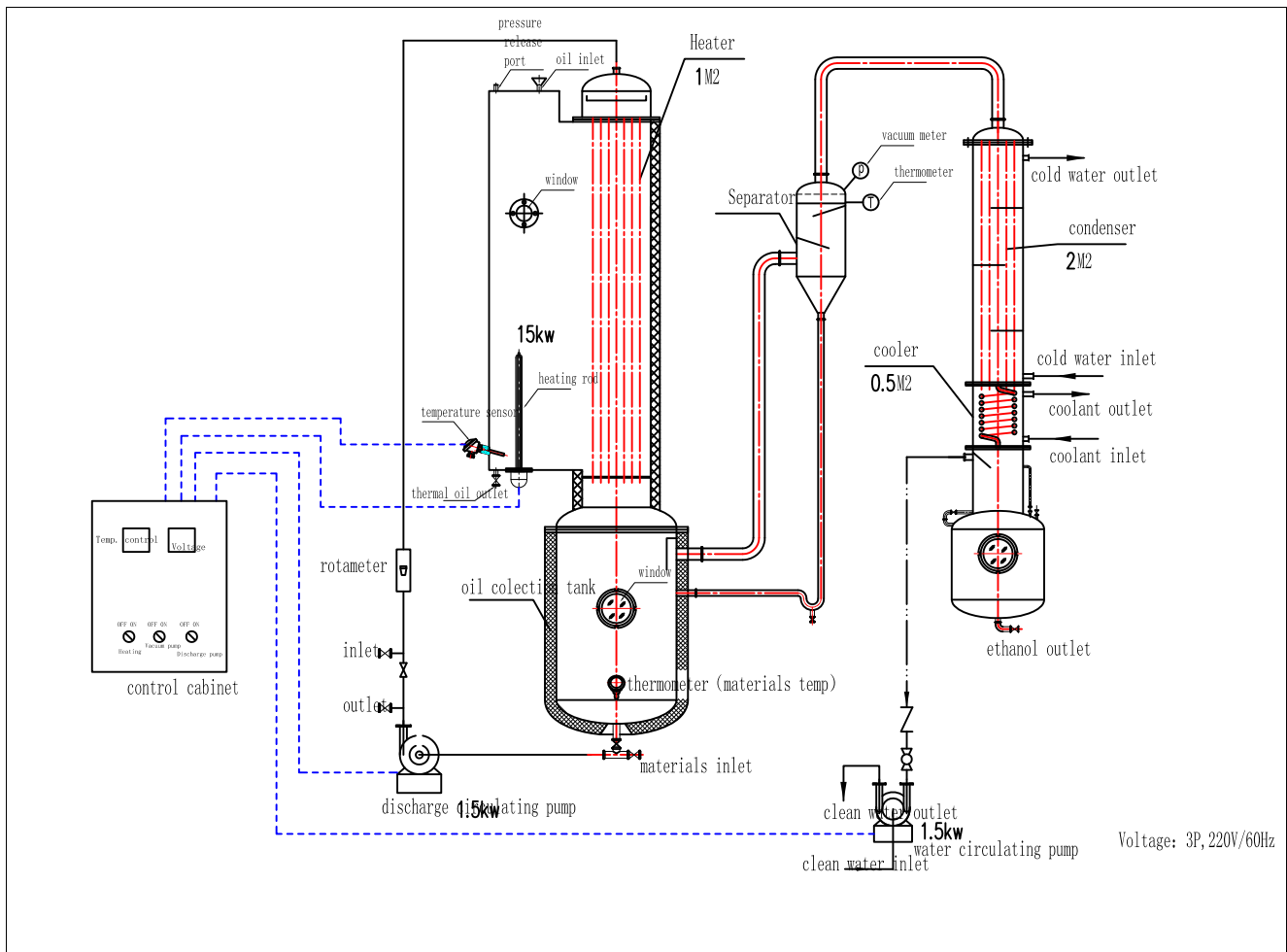
- ① High heat transfer rate and fast heating speed
- ② Large capacity and large processing capacity
- ③ Independent manufacturing, can accept product customization

# Falling film evaporator

[www.hempmachine.com](http://www.hempmachine.com)  
[hemp@hempmachine.com](mailto:hemp@hempmachine.com)



## 产品结构 Product structure



## 工作原理 Working principles

The falling film distillation belongs to a liquid film concentrating device, which has a high heat transfer rate and a short heating time. It is suitable for the production of chemicals, liquid medicines, juices and dairy products.

There is a big temperature difference between the electric heating and the feed liquid, so the heat transfer effect is better. The steam enters the evaporation separation chamber for separation. The secondary steam is discharged from the top of the chamber and the concentrate is discharged from the bottom.

The theory is that the feed liquid is added into the evaporation chamber. Under the action of vacuum and gravity, the accelerating head of the liquid is smaller than the accelerating head of the ascending film type, and the boiling point is also small.

该降膜蒸馏属于液膜浓缩设备，具有较高的传热率和较短的加热时间。它适用于化学，液体药物，果汁和乳制品生产。理论是进料液体被添加到蒸发室的中间。在真空和重力的作用下，液体的加速压头小于上升膜型的加速压头，沸点也较小。电加热与进料液体之间的温差很大，因此传热效果更好。蒸汽进入蒸发分离室进行分离。二级蒸汽从室顶排出，浓缩物从底部排出。离心力作用下固液分离，就像洗衣机。



## 操作流程

Operating procedures

The first step is to remove the gas from the equipment to create a vacuum environment, replacing the material with water after the vacuum is sufficient.

When the water flow runs smoothly (the water in the evaporator increases with the increase of walking, the material in the surface evaporation chamber is not higher than the sight glass), the circulation pump is turned on, the cooling water is input through the pipeline, the heating pipe is started, and the discharge pump is started. After the device is running well, adjust the throttling components at each location according to the random process flow diagram of the device. Then replace the material with water to run.

When the vacuum and temperature difference meet the requirements, the material is replaced with water for more than 4 hours. If the evaporation amount meets the requirements, it is qualified; otherwise, it is unqualified.

Start the vacuum pump first. In the case of a water ring vacuum pump, the water ring vacuum pump should be started at no load. After the water ring vacuum pump is in normal operation, the working water valve of the water ring pump is opened. When the vacuum and temperature difference for each effect reaches the required level, water should be used instead of the material to start the operation and start the condensate. After cutting off the water, place the material in the material tank. The sampling valve is initially opened, water is drained, and materials that do not meet the concentration requirements are placed in the tank. When the discharge concentration requirement is reached, open the discharge valve and close the sampling valve on the material tank to make the equipment operate normally. During the operation of the pump and before starting, it should be observed that the cooling water of the mechanical seal of the pump must not be interrupted to avoid damaging the mechanical seal of the pump.

When it is time to stop working, use water instead of material to replace the material in the equipment and its piping to prevent the material from crystallizing or solidifying in the equipment and its piping. When the ambient temperature of the equipment is below 0 °C, the water in the equipment and its piping should be drained to avoid freezing or clogging the pipeline.

When stopping due to an accident such as a sudden power failure, immediately close the valve, release the material stored in the equipment and its piping as soon as possible, or dilute the heated water until it does not crystallize or solidify.

When there is material in the equipment and its piping, the material pump should be started first, so that the material runs smoothly when the vehicle is started, and then the vacuum pump is started.



## 操作流程

Operating procedures

During operation, if the degree of vacuum is low, especially after restarting after an unexpected shutdown such as a power outage, immediately find out if there are any leaks in the flanges and joints, and block the leak in time.

**Equipment cleaning:** After the equipment is completed, rinse the equipment and piping with water, 1-2%  $\text{HNO}_3$  aqueous solution, clean water, 1-2%  $\text{HNO}_3$  aqueous solution and clean water. The pump is pumped with the above washing liquid, and each washing liquid should not be less than 10 minutes. During the flushing or cleaning process, the equipment should not be cleaned with an aqueous solution containing hydrochloric acid or hydrochloric acid chloride to avoid intergranular corrosion of the stainless steel equipment and affect the service life of the equipment.

第一步是去除设备中的气体以创造真空环境，在真空度足够后，用水替换材料。当水流平稳运行时（蒸发器中的水随着行走的增加而增加，表面蒸发室内材料不高于视镜），打开循环泵，冷却水通过管道输入，启动加热管并启动排放泵。设备运行良好后，根据设备的随机过程流程图调整每个位置的节流组件。然后用水替换材料以便运行。当真空度和温差满足要求时，用水替换材料运行4小时以上。如果蒸发量符合要求，则合格；除此以外，则不合格。

首先启动真空泵。如果是水环真空泵，水环真空泵应在空载时启动。水环真空泵正常运行后，水环泵的工作水阀打开。当每种效果的真空和温差达到要求的水平时，应使用水代替材料开始操作并启动冷凝水。切断水后，将材料放入材料罐中。最初打开取样阀，排出水，并将不满足浓度要求的材料放入罐中。达到排放浓度要求时，打开排放阀，关闭物料罐上的取样阀，使设备正常运行。在泵运行期间和启动前，应观察到泵的机械密封的冷却水不得中断，以免损坏泵的机械密封。

当要停止工作时，使用水代替材料来更换设备及其管道中的材料，以防止材料在设备及其管道中结晶或凝固。当设备的环境温度低于 $0^{\circ}\text{C}$ 时，应排空设备及其管道中的水，以避免冻结或堵塞管道。

由于突然断电等事故停车时，请立即关闭阀门，尽快释放存放在设备及其管道中的物料，或稀释加热的水直至其不结晶或凝固。当设备及其管道中有物料时，应首先启动物料泵，使物料在启动车辆时运行平稳，然后启动真空泵。

在运行过程中，如果真空度较低，特别是在停电等意外停车后重新启动后，立即查明法兰和接头是否有泄漏，及时堵塞泄漏。

少于10分钟。在冲刷或清洗过程中，不应使用含盐酸或含盐酸氯化物的水溶液清洗设备，以免不锈设备清洗：设备完成后，用水，1-2%  $\text{NaOH}$  水溶液，清水，1-2%  $\text{HNO}_3$  水溶液和清水冲洗设备及管道。泵用上述洗涤液泵送，每种洗涤液不应钢设备发生晶间腐蚀，影响设备的使用寿命。





产品详情  
Product Details





配套产品  
Package product



降膜蒸发器

Falling Film Evaporator



储液罐

Liquid storage tank



冷水机

Chiller



冷却塔

Cooling Tower

Ps : 冷却塔组合仅用于废水处理，储液罐冷水机组合可用于大麻提取。

Ps: Cooling tower assembly can only be used on the disposal of waste water, while the combination of storage tank and chiller can be used on the extraction of hemp.



运输

transport



名称 Name	降膜蒸发器 Falling film evaporator
包装大小 Package size	1600mm×900mm×2200mm
重量 Weight	600kg

#### PACKAGING:

1. Cartons + wooden cases
2. Custom packaging is available.

#### 打包:

1. 纸箱+木箱。
2. 可以提供定制包装

#### SHIPMENT:

1. We can deliver the goods to you by international express, such as DHL, UPS, TNT, EMS and so on.
2. You can also choose the right one according to the schedule and budget.
3. You may choose to use your own shipping agent.

#### 运输：

1. 我们可以通过国际快递将货物运送给您，如DHL、UPS、TNT、EMS等
2. 您还可以根据时间表和预算选择一个合适的
3. 您可以选择使用自己的运输代理商



## 常见问题 FAQ

1.Question: How to choose suitable equipment ?

Answer: You tell us your requirements (or example: capacity, temperature range, pressure, etc ), we will recommend you the best suitable equipment.

2. Question: What's the minimum order quantity?

Answer: One set at present.

3. Question: What kind of payment term do you accept?

Answer: Normally we accept TT, Paypal, Western Union, Alibaba Escrow, and L/C. The exactly term with be discussed during the deal.

4. Question: How will you delivery these goods?

Answer: It will be decided according to your quantity. Normally we will choose International Express, Air and sea.Packaging & Shipping

1.问题：如何选择合适的设备？

答：您告诉我们您的要求（或示例：容量，温度范围，压力等）、我们将为您推荐最合适的设备。

2.问题：最低订购量是多少？

答：目前是一套。

3.问题：您接受什么样的付款条件？

答：通常我们接受TT，Paypal、西联汇款、阿里巴巴托管和信用证。在交易期间将讨论的确切术语。

4.问题：您将如何交付这些货物？

答：将根据您的数量来决定。通常我们会选择国际快递、空运和海运、包装和运输



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