

# DOUBLE-EFFECT/MULTI-EFFECT FALLING FILM EVAPORATOR

## 双效~多效降膜蒸发器

奶粉系列  
Milk Powder  
Equipments

### 技术说明

本浓缩器适应于中药、西药、葡萄糖、淀粉、味精、乳品、化工等液料的浓缩，尤其适用于热敏性物类的低温真空浓缩。可连续进行杀菌、浓缩。我公司专业设计人员经过精心计算，周密设计改进后，比原来的特点效益更多。物料受热时间短，蒸发温度低，对产品的色泽、风味和营养成分影响小，特别适用于牛奶等热敏性物料的浓缩。

### 结构特点

- ◆ 多功能操作特点：单效、二效、三效可以反复并锅收料，可以间歇、连续进料。
- ◆ 本浓缩器与物料、二次蒸汽及冷凝水接触部位均采用不锈钢制作，符合GMP要求标准。外形美观。加热器、蒸发器外面均设有保温，保温外用不锈钢薄板制作外壳，表面做镜面或亚光处理。
- ◆ 加热室落地结构，外型美观大方、便于安装、操作和维修。
- ◆ 水环泵抽真空，真空度高、水电耗量低、占地面积小、工作环境好、噪音小。
- ◆ 先进的设计即可去掉大回流，避免物料重复受热，又可彻底解决焦管问题。
- ◆ 先进的热泵工作蒸汽表压 0.8 Mps, 抽气系数0.98，蒸汽耗量底，噪音小。
- ◆ 先进的结构使工作系统真空度非常稳定。
- ◆ 配有CIP 原位清洗系统，设备无须拆卸即可进行彻底清洗，操作维修方便。
- ◆ 根据用户要求可配置出料浓度、杀菌温度和平衡槽液位自控系统及冷水冷凝系统。
- ◆ 本浓缩器有特殊构造，浓缩出来的物料具有味道浓，质地均匀。使物料在密封中无泡沫状态下进行浓缩，不易跑料，减少污染，当天物料当天浓缩完毕，不易结焦，清洗方便，打开加热器上下盖即可清洗，并节约劳力，一人可以操作。

### Technical explanation:

The concentrator is applicable to concentration of traditional Chinese medicine, Western medicine, glucose, starch, monosodium glutamate, dairy and chemical industry etc. It is especially suitable for low temperature vacuum concentration of heat sensitive substances. It can carry out continuous sterilization and concentration. After carefully calculated and precisely designed and improved by professional designers of our company, it has more features and benefits than the original one. The period of being heated of materials is short and the evaporation temperature is low. It has small influence on the products' color, flavor and nutritious content, which is especially applicable to concentration of milk etc. heat sensitive substances.



### Structure features

- ◆ Multiple functions: Boiler can reclaim materials repetitively with the circulation of first effect, second effect and third effect. Materials can be fed into for concentration continuously and at intervals.
- ◆ All parts contacting materials, secondary steam and condensed water are made of high-quality stainless steel, which conforms to GMP standard requirements. The appearance is beautiful. The heater and evaporator are provided with heat preservation structure. The heat preservation adopts stainless steel sheet as the shell. The surface is carried out mirror polishing or matte treatment.
- ◆ The heating chamber adopts the structure of falling to the ground, so the device looks beautiful, and is easy to install, operate and repair.
- ◆ Water ring pump is used to pump vacuum. The pump is featured by high vacuum degree, low consumption of water and power supply, small space, sound working environment and low noise.
- ◆ Because of advanced design, external return flow can be removed, so as to avoid repeated heating of materials and completely resolve the problem of pipe clogging.
- ◆ Advanced hot pressure pump is used. Its steam pressure (gauge pressure) is 0.8MPa, and the extraction coefficient is 0.98. Therefore, the steam consumption and noise are low.
- ◆ Advanced structure makes the vacuum degree of working system very stable.
- ◆ CIP cleaning system is provided. Without the need of disassembly it, the device can be cleaned completely and is easy to operate and maintain.
- ◆ According to customer requirements, automatic control system of discharge concentration, sterilization temperature and level of balancing tank, as well as ice water refrigeration system can be configured.
- ◆ The concentrator has a special structure. The materials after concentration are thick and even. The materials can be concentrated in sealed status without any bubbles, so material loss and pollution are reduced greatly. The materials concentrated will not agglomerate, so it is easy to clean. You can open the top cover or bottom cover to clean. Therefore, one person is enough for cleaning.

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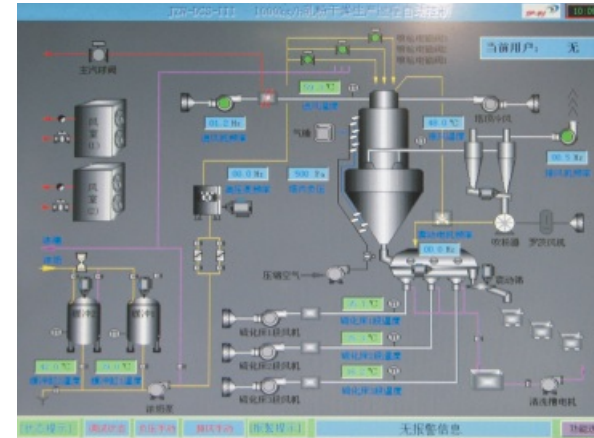
# MULTIPLE-NOZZLE VERTICAL PRESSURE SPRAY DRYING TOWER

## 多喷头立式压力喷雾干燥塔

### 技术说明

本设备使用于溶液、悬浮液等含干物质液体的喷雾干燥。物料在塔内受热时间短、蒸发迅速、热交换温度底，对产品的溶解度、色泽、风味及营养成分影响较小，特别适用于浓奶、豆奶、蛋液、血粉、药剂、酵母和食品添加剂等热敏性物料的喷雾干燥，广泛用于食品，医药和化工行业。

本公司在喷雾干燥方面进行了大量的试验研究。使其在乳粉加工上，采用了多支喷枪喷雾，旋风捕粉技术，微粉由风送系统送至塔顶，实现微粉与雾滴之间的附聚。还采用了振动流化床二次干燥、冷却，卵磷脂喷涂等技术。经过附聚后的乳粉形成中空颗粒，热物理状态和速溶性明显改善。振动流化床二次干燥、冷却，可使乳粉在降速干燥过程中延长干燥时间，节约能源。干燥后的乳粉迅速冷却，即可包装，避免了二次污染，大大提高了乳粉的质量。



### Technical explanation

This equipment is used to dry solid liquid such as solution and suspending liquid. In the tower, the materials can be heated in short time and evaporated quickly and the temperature of heat exchanger is lower so that it has little impact on the solubility, color, flavor and nutrition of the product. Therefore, this equipment is widely used in the industries of food, medicine and chemical products, especially suitable to dry the heat-sensitive materials by spraying such as thick milk, soy milk, egg liquid, blood meal, medicament, yeast and food additives.

JIADI company has made much experiment and research on spray drying. We adopt the multiple-gun spraying and cyclone powder collection technology to transport the powder to the tower top and make the powder attach with fog drop in milk production. We also adopt the second stage drying and cooling technologies by the vibration fluidized bed and the lecithin coating technologies. After attaching with the fog drop, the milk powder becomes the hollow granule and has its thermal physical property and solubility improved distinctly. The second stage drying and cooling technologies by vibration fluidized bed can prolong the drying time and save energy when the drying speed of the milk powder is lowered. The dried milk powder can be packed immediately after it cools down so that the second pollution is avoided and the quality of milk powder is improved greatly.

### 技术参数 Technical Parameter

型号 Model	参数 Parameter	水份蒸发量(kg/h) Moisture evaporation	蒸气表压(Mpa) Steam gauge pressure	加热面积(m²) Heating area	喷头(个) Spray head	蒸气耗量(kg/h) Steam consumption	压缩空气耗量 (0.7MPa,m³/min) Compressed air consumption	占用空间(m) Space
PLCGZ0-5		5	0.6~0.8	电加热 Electric heating	1			3.2 * 4 * 5.8
PLCGZ03-70		70	0.6~0.8	120	1	210	0.5	7 * 6 * 9
PLCGZ03-125		150	0.6~0.8	250	2~3	450	0.6	13 * 8.5 * 15
PLCGZ03-250		250	0.6~0.8	385	2~3	750	0.6	14 * 9 * 19
PLCGZ03-350		375	0.6~0.8	570	2~3	1125	0.8	15 * 10 * 21
PLCGZ03-500		500	0.6~0.8	780	3~4	1500	0.8	19 * 9 * 24
PLCGZ03-750		750	0.6~0.8	1150	3~4	2250	1	21 * 13 * 25.5
PLCGZ03-1000		1000	0.6~0.8	1550	3~4	3000	1	24 * 13 * 28.6
PLCGZ03-1500		1500	0.6~0.8	2300	3~4	4500	1	28 * 16 * 33
PLCGZ03-2000		2000	0.6~0.8	3110	6	6000	1.5	28 * 18 * 34
PLCGZ03-2500		2500	0.6~0.8	4100	6	7500	1.5	32 * 20 * 36
PLCGZ03-3000		3000	0.6~0.8	4950	8~12	9000	2.0	32 * 22 * 37
PLCGZ03-3500		3500	0.6~0.8	5710	8~12	10500	2.0	35 * 24 * 38
PLCGZ03-4000		4000	0.6~0.8	6610	8~12	12000	3.0	35 * 26 * 39
PLCGZ03-5000		5000	0.6~0.8	7980	8~12	15000	3.0	36 * 28 * 42
PLCGZ03-6000		6000	0.6~0.8	9110	8~12	18000	3.0	40 * 30 * 45