

Working principle and process flow of pure steam generator

application area

A pure steam generator is a device that produces pure steam using water for injection or pure water. Widely used in medical and health, biological pharmaceutical industry, food industry sterilization disinfection and related equipment disinfection, effectively prevent heavy metals, hot source and other impurities recontamination.

Level 3 separation

Secondary steam converted from purified water is pure steam, During the transformation process, The soda after three times: after initially entering the evaporator, Raw material water flows down along the line pipe, The secondary steam evaporates simultaneously, This was the first separation of the soda water, That is, gravity separation; Concentrated water falls to the lower part of the evaporator under gravity, The volatile secondary vapor turns back at 180 degrees at the lower end of the evaporator, This is the second separation of the soda, That is, the reversion and separation; The secondary vapor being

evaporated, Continue spirals upward in the evaporator, The centrifugal force is generated during the rise, Water droplets containing a secondary vapor clamp (bacteria, Endotoxin) is thrown out, This is the third separation of the soda, That is, centrifugal separation. After the above three-stage separation, the saturated pure steam can be obtained.

design feature

The pure steam generator used in the online sterilization of the pharmaceutical water system can be adjusted within the 0-100% steam production range according to the production requirements. It can automatically adjust the water intake of the distillation unit and the pressure of the boiler steam, so that it is in a matching running state, to ensure that the pure steam generator achieves the set ability to remove pyrogen. The rising temperature and water storage in the distillation unit can meet the requirements of the pure steam generator in a very short time from the normal state. The operation process noise is small, the equipment maintenance is convenient, do not need a special space and height.

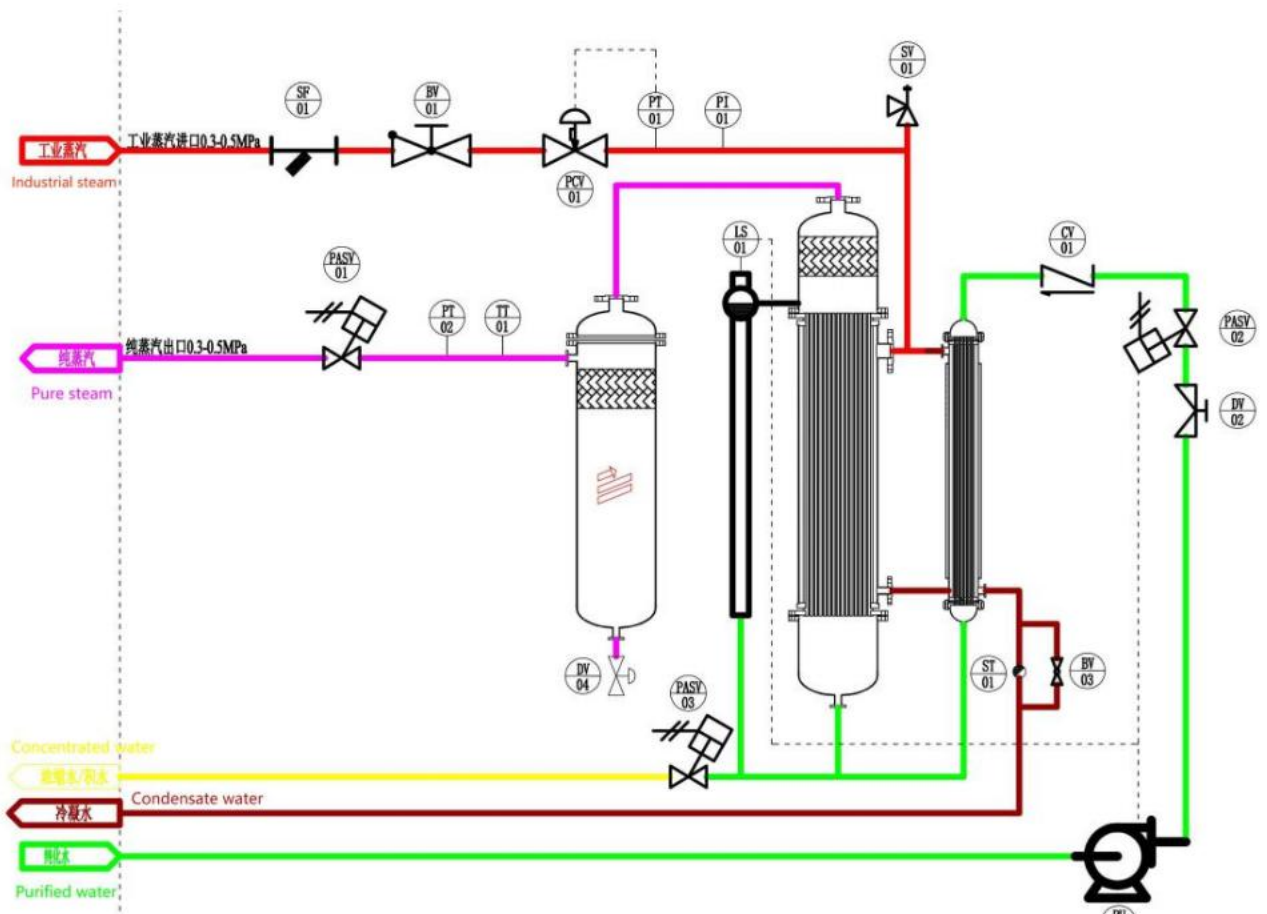
operational principle

The raw water enters the pipe process of the separator and the evaporator through the feed pump. The two are connected liquid levels, which are controlled by the liquid level sensor and the PLC connection. Industrial steam enters the shell process of the evaporator, and the raw water in the pipe is heated to the evaporation temperature, and the raw water is transformed into steam. In the low speed and the height travel, the separator separates the small droplets through gravity, and returns to the raw water to evaporate the steam into pure steam. After passing through a specially designed clean screen device, it enters the top of the separator and enters the distribution system and the service point.

The adjustment of industrial steam enables the pressure of pure steam to be set through the program, and can be stably maintained at the pressure value set by the user. In the process of raw water evaporation, the supply of raw water is controlled by liquid level, so that the liquid level of raw water is always maintained at a normal level. For concentrated water, intermittent discharge can be set in the program. The process can be summarized as: evaporator — separator — industrial steam — raw water — pure steam —

concentrated water discharge — condensate discharge
 evaporator — separator — industrial steam — raw
 water — pure steam — concentrated water discharge.

process flow



technical parameter

型号规格 Specification	蒸汽压力(Mpa) Steam Pressure	蒸汽产量(L/h) Steam Output	蒸汽耗量(L/h) Consumption of the Steam	纯化水耗量(L/h) Consumption of the Purified Water	纯蒸汽压力(Mpa) Pure Steam Pressure	外型尺寸长×宽×高 (mm) Dimension L×W×H
LCZ-100	0.3	100	130	125	0.3	700×900×2500
LCZ-200	0.3	200	260	250	0.3	700×1000×2700
LCZ-300	0.3	300	390	375	0.3	800×1100×2800
LCZ-400	0.3	400	520	500	0.3	800×1200×3000
LCZ-500	0.3	500	650	625	0.3	800×1300×3100
LCZ-600	0.3	600	780	750	0.3	900×1300×3100
LCZ-700	0.3	700	910	875	0.3	900×1300×3100
LCZ-800	0.3	800	1040	1000	0.3	1000×1300×3200
LCZ-900	0.3	900	1170	1125	0.3	1000×1300×3200
LCZ-1000	0.3	1000	1300	1250	0.3	1200×1300×3200
LCZ-1500	0.3	1500	1950	1875	0.3	1400×1300×3200
LCZ-2000	0.3	2000	2600	2500	0.3	1400×1300×3200

Typical role

Pure steam generator is one of the important equipment used in tank equipment, pipeline system and filter sterilization, and can also be used to drive the sterilizer. Our ultra-pure heat source-free pure steam generator meets the requirements for injection water in the current US Pharmacopoeia, European Pharmacopoeia, Japanese Pharmacopoeia and Chinese Pharmacopoeia. Design and manufacture in strict accordance with the pressure vessel specifications. Can be used in food, pharmaceutical and biological genetic engineering and other industries in the process production line.

Maintenance and precautions

1. During the operation of the machine, the drainage effect of the evaporator trap should be checked at any time, allowing

about 10% steam leakage, which is conducive to the discharge of non-condensate gas, otherwise affect heat transfer, and the trap should be cleaned or replaced according to the situation.

2. The maximum working pressure of the machine is 0.5MPa, and the safety valve is set at 0.55MPa. The safety valve handle should be pulled regularly to check the effect of the valve.
3. For the cleaning of the machine, after long-term operation of the equipment, if the production capacity drops or the water quality drops, it is believed that dirt is deposited on the surface of the heat exchange pipe (especially on the evaporator), the machine cleaning should be considered to make it back to normal conditions.