

连续灭菌系统

CONTINUOUS STERILIZATION SYSTEM

n7

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● 产品简介

连续灭菌系统适用于大型发酵过程中培养基的连续灭菌，就是将配制好的经预热的培养基在向发酵罐输送的同时进行加热、保温和冷却，以达到连续灭菌的目的。相对于实罐消毒灭菌，连续消毒灭菌是在有流速的状态下进行。灭菌温度较高，时间较短，对培养基原材料中的营养成分破坏较少，有利于发酵生产获得高产，又可以节约大量的蒸汽和冷凝水。同时，发酵周期中所利用的辅助时间缩短，发酵罐可以在较短时间内循环安排进罐，有利于大规模的发酵生产。

● Product Introduction

Continuous sterilization system is suitable for large-scale fermentation process of culture medium for continuous sterilization, which is ready-prepared preheated medium for heating, insulation and cooling at the same time of conveying to the fermentation tank, in order to achieve continuous sterilization. Relative to filled can disinfection and sterilization, continuous disinfection and sterilization are in the state of the flow rate. The temperature of sterilization is higher, the time is shorter, and the damage nutrients in the medium raw materials are less, which is very favorable in obtaining a high yield of fermentation production and also save a lot of steam and condensate water. At the same time, using the assistant time of incubation period is decreased, the fermentation tank can arrange into the tank calculatedly in a relatively short period, which is very conducive to mass fermentation production.

● 技术参数 Technical Parameters

技术参数 Technical parameter	型号 Model	LXM-1	LXM-5	LXM-10	LXM-20
生产能力 (t/h)	Production capacity	1	5	10	20
物料进口温度	Material inlet temperature	15	15	15	15
物料出口温度	Material outlet temperature	15	15	15	15
灭菌温度	Sterilizing temperature	135	135	135	135
冷却水压力MPa	MPa Cooling water pressure	0.4	0.4	0.4	0.4
蒸汽压力MPa	MPa Steam pressure	0.5	0.5	0.5	0.5
压缩空气压力MPa	MPa Compressed air pressure	0.4	0.4	0.4	0.4
接管尺寸mm	mm Pipe dimensions mm	φ38	φ38	φ51	φ63
外形尺寸mm	mm Outline dimensions mm	2000x1500x2000	2500x1500x2000	2500x2000x2500	3000x2500x3000

连续灭菌系统

Continuous sterilization system

● 主要特点

1. 在高温下持续较短的灭菌时间，在此条件下既杀灭了微生物，又不会破坏培养基的营养价值，物料高温时间短，每个颗粒在灭菌中的时间仅仅不到1分钟，如果是在罐体内消毒，则长达数小时。
2. 连续灭菌系统准备时间短，能够处理更多的物料。
3. 采用螺旋板换热器或板式加热器，单一通道设计可以最大限度减少结垢和腐蚀，并且甚至当物料含有一些较重的颗粒时，仍能够保证比较高的流速，流体连续不断地冲击传热表面，产生较高的剪切力能够防止颗粒物粘着在表面上。
4. 系统热回收率高，可达60%~80%，节约大量蒸汽和冷却水。
5. 操作方便，可以实现全自动控制。
6. 提供符合2010版GMP要求的全套技术文件(包括设备确认)，协助客户完成设备验证。

● Main Characteristics

1. Within the sterilizing time when high temperature lasts shortly, the microbes are killed without any damage to the nutrient value in the culture media. The high temperature time of materials is short, and the sterilizing time of every granule is within 1 minute. The sterilizing time will be as long as several hours if the sterilization is carried out in the tank.
2. The continuous sterilization system short conducts preparation time, and can handle more material.
3. Using a spiral plate heat exchanger or plate heater, a single channel design can be minimize scaling and corrosion, even when the material contains some of the heavier particles, and still be able to guarantee a relatively high flow rate, fluid continuous impact on heat transfer surface, resulting in a high shear force to prevent adhesion of particulate matters on the surface.
4. The system is high heat recovery, up 60 percent to 80 percent, saving a lot of steam and cooling water.
5. It is easy to operate, and can be achieve automatic control.
6. Compliance with the GMP requirements of the 2010 version of technical documentation(including equipment qualification)to assist customers to complete equipment validation.

● 连续灭菌工艺流程图 Continuous sterilization process flow diagram

