

鼎泰盛技术

DTS Technologies

技术方案

Technical Proposal

产品描述 DTS-700 型, 侧喷式杀菌釜

Description: Sterilization System , Water Spray Retort Model DTS-700

杀菌方式: 侧喷静止式

Sterilization mode : Static Water Spray

客 户 _____ 公司

Client: _____ Company

供 应 商 山东鼎泰盛食品工业装备有限公司

Supplier: Shandong Dingtaisheng Food Industrial Equipment Co., Ltd.

案 号 20140223

Proposal number: 20140223

日 期 2014 年 2 月 23 日

Date Feb 23th, 2014

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一. 技术描述及供应范围

A. Technical Description & Supply Scope

1. 标准和规定

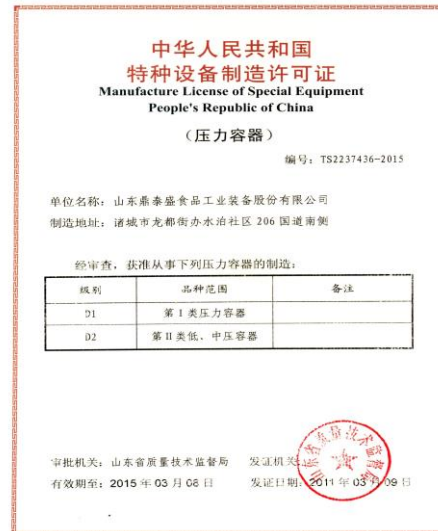
1. Standards and Regulations

1.1 质量保证体系和标准

1.1 QAS(Quality assurance system) and Standards

杀菌釜是按照GB150-2011《钢制压力容器制造标准》的要求设计和生产的。DTS 被鉴定通过ISO9001体系验证。

Retort is designed and produced according to the requirements of GB150-2011 <steel pressure vessel manufacturing standard>. DTS is identified and has passed through ISO9001 system authentication.



1.2 设备完全符合 GMP 标准和 FDA 要求

1.2 Equipment is in full compliance with GMP and FDA requirements

1.3 在工艺参数基于正确的最冷点位置及温度设置的条件下，在所有产品在同等的灭菌前状态条件下，设备确保低于百万分之一的染菌率。

- 1.3 If the cycle is based on the temperature data given by the cold spot location, if all products loaded have the same contamination level, we guarantee the less than 1/1,000,000 bags contamination.

2. 设备特点、工作原理、处理流程

2. Equipment characteristics, Working principle, Process flow

2.1 设备特点

2.1 Equipment characteristics

2.1.1 间接加热间接冷却，冷却用水与工艺用水不接触，避免了食品的二次污染，无需水处理化学制剂。高温短时间杀菌。

2.1.1 Indirect heating and cooling mode, the cooling water and process water does not contact to avoid the secondary pollution of the food. And you do not need to clear chemicals away with water. Thereby reach effect of high temperature sterilization in short time.

2.1.2 少量的工艺用水快速循环，快速达到预定杀菌温度。

2.1.2 A small amount of process water can rapidly cycle to warm fast to the setting sterilization temperature.

2.1.3 低噪音，创造安静、舒适的作业环境。

2.1.3 Low noise can create quiet and comfortable working environment.

2.1.4 完美的压力控制，整个生产过程压力在不断调节，以适应产品包装内部压力的变化，使产品包装的变形度达到最低，特别适合含气包装和玻璃瓶等的产品。

2.1.4 Perfect pressure control ensures the entire production process pressure is regulated to adapt to changes in the internal pressure of the product packaging, so that the degree of deformation of the product packaging to a minimum. It is particularly suitable for gas packaging and glass bottles.

2.1.5 工艺用水预热系统可确保热填充的产品得到持续的升温过程。

2.1.5 Process water preheating system can ensure the hot filling products get continuous heating process.

2.1.6 使用国内最优质的法兰和封头等零部件，封头采用一次性冷压成型，且经过时效振动，使用时不会产生应力变形。

2.1.6 Use flanges and shell covers of the superior quality at home. Shell covers are made of one-off cold-press moulding, and after vibratory stress relief they will be free from stress deformation when used.

2.1.7 锅体不锈钢表面采用磨砂处理，提高表面硬度和抗腐蚀能力，特别抵抗冷却水中添加的氯的腐蚀。

2.1.7 Stainless steel surface of retort body is frosted to improve the surface hardness and corrosion resistance, especially the resistance to corrosion of chlorine added in cooling water.

2.1.8 先进和稳定的西门子 SIEMENS 控制系统，确保客户在全球范围内及时找到供应链，减少故障停机时间。

2.1.8 Advanced and stable SIEMENS control system ensures that customers can timely find the supply chain in the world to reduce downtime.

2.1.9 业内少有的高尖端设备和严格的生产过程控制管理，确保整机质量一流。

2.1.9 Rarely highly sophisticated equipment and strict production process control and management in the industry ensure top quality of the whole machine.

2.2.1 试验釜特点

2.2.1 Pilot Retorts Features:

1. 适合任意类型的产品包装进行巴氏灭菌法试验、杀菌工艺试验。

1. Testing of pasteurization, sterilization and cooking of food products in any type of container.

2. 适合小产量的客户。

2. Small production.

3. 特别适合高温蒸煮袋和灵活性托盘。

3. Specially suited for pouches and flexible trays.

4. 工作方式：

- 水淋

4. Working methods:

- Water spray

2.20 技术参数 Technical Parameter

加热方式：蒸汽 Heating method: steam

设备功率：13KW Power Consumption : 13KW

设计压力：Design pressure 0.35Mpa

试验压力：Test pressure 0.44Mpa

2.3 处理流程

2.3 Process Flow

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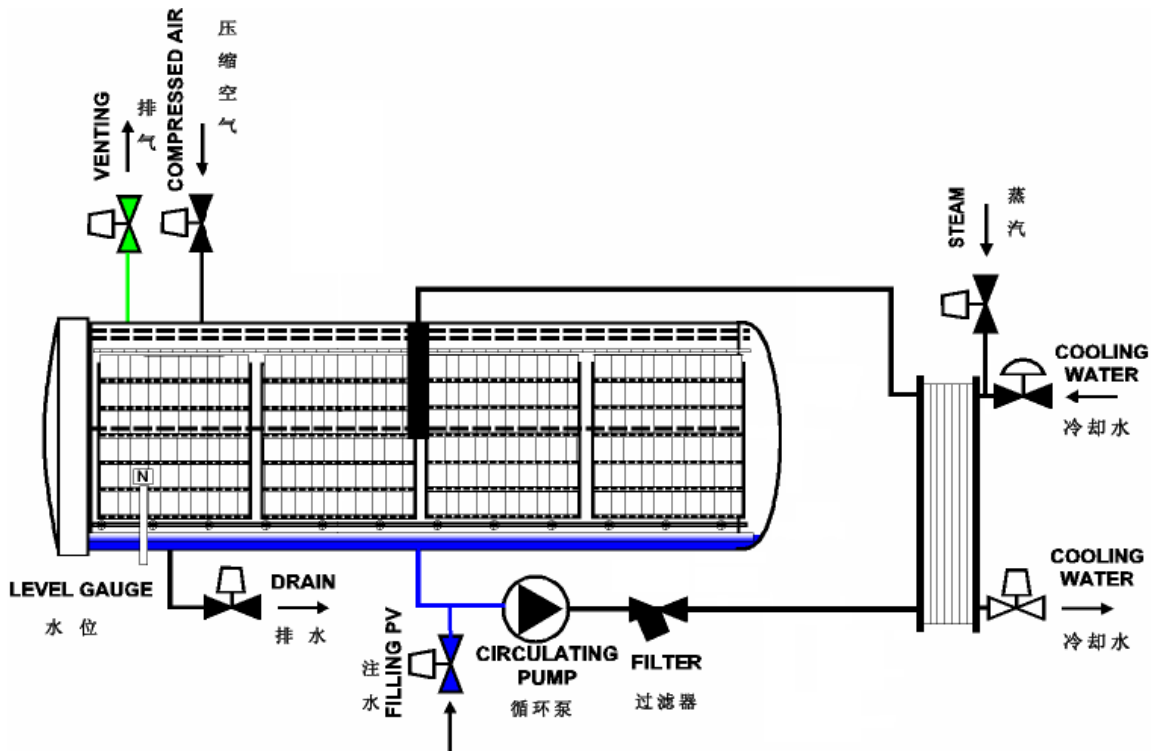
<http://www.dingtaishengzb.com>

当门被关闭和锁紧的时候，根据客户的杀菌参数可以开始循环。这种预先编程的过程循环有如下阶段组成：

When the door is closed and locked, start cycle according to customer's sterilization parameters. This pre-programmed process cycle consists of the following stages.

2.3.1 开始阶段

2.3.1 Come-up phase



对于热灌装的产品：首先已经预热好的工艺水注入锅内底部。

For hot filling products: first of all inject the preheated process water to the bottom of retort.

开启循环泵：工艺水通过灭菌釜两侧的分布盘均匀地喷淋在整个产品的表面。

Open the circulation pump: through distribution plate which is at two sides of the retort, process water sprays on the products surface evenly.

工艺水通过热交换器的一个回路，使用高流量泵反复循环，对产品进行喷淋加热，蒸汽通过热交换器的另一个回路，根据温度设定值，对温度进行调整。

Process water goes through one circuit of the heat exchanger, cycles repeatedly with a high flow pump, and sprays the product to heat them.

蒸汽通过热交换器的另一个回路，根据温度设定值，对温度进行调整。

Steam goes through the other circuit of the heat exchanger to adjust the temperature, according to the temperature set value.

杀菌锅内压力的控制（通过自动调节阀来控制压缩空气与释放压力），使电脑中出现一个压力的分布曲线。

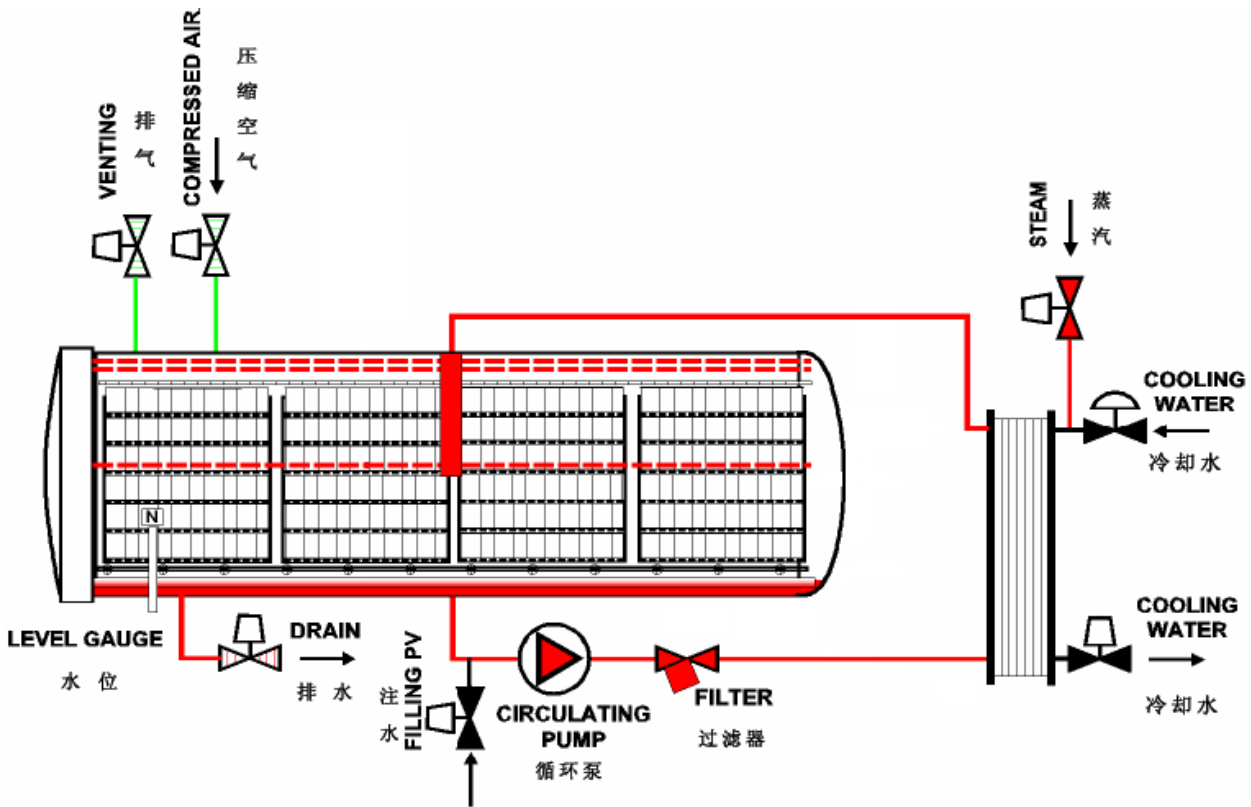
Pressure control of the retort (control compressed air and pressure relief by automatic regulating valve) , results in a pressure distribution curve appearing in the computer.

蒸汽冷凝水通过疏水阀排放可回收利用。

Steam condensate discharges through trap and can be recycled.

2. 3. 2 杀菌阶段

2.3.2 Sterilizing phase



温度和压力是通过自动阀门来控制来控制蒸气，压缩空气与减压，这样能达到最高的杀菌温度。

Through the automatic valve to control the steam, compressed air and reduced pressure to control the temperature and pressure, so that it can reach the highest sterilization temperature.

工艺水通过高流量泵经过灭菌釜两侧分布盘均匀地喷淋在整个产品的表面。这样就保证了热量的均匀分布。蒸汽冷凝水通过疏水阀排放可回收利用。

Process water goes through the high flow pump and the distribution plate at two sides of sterilization retort, then sprays over the entire surface of the products evenly to ensure the uniform distribution of heat. Steam condensate can be recycled through steam trap.

在杀菌阶段

温度通过自动的蒸气调节阀被控制在 $\pm 0.5^{\circ}\text{C}$

压力通过压缩空气进气阀与排气阀被控制在 $\pm 0.01\text{Mpa}$

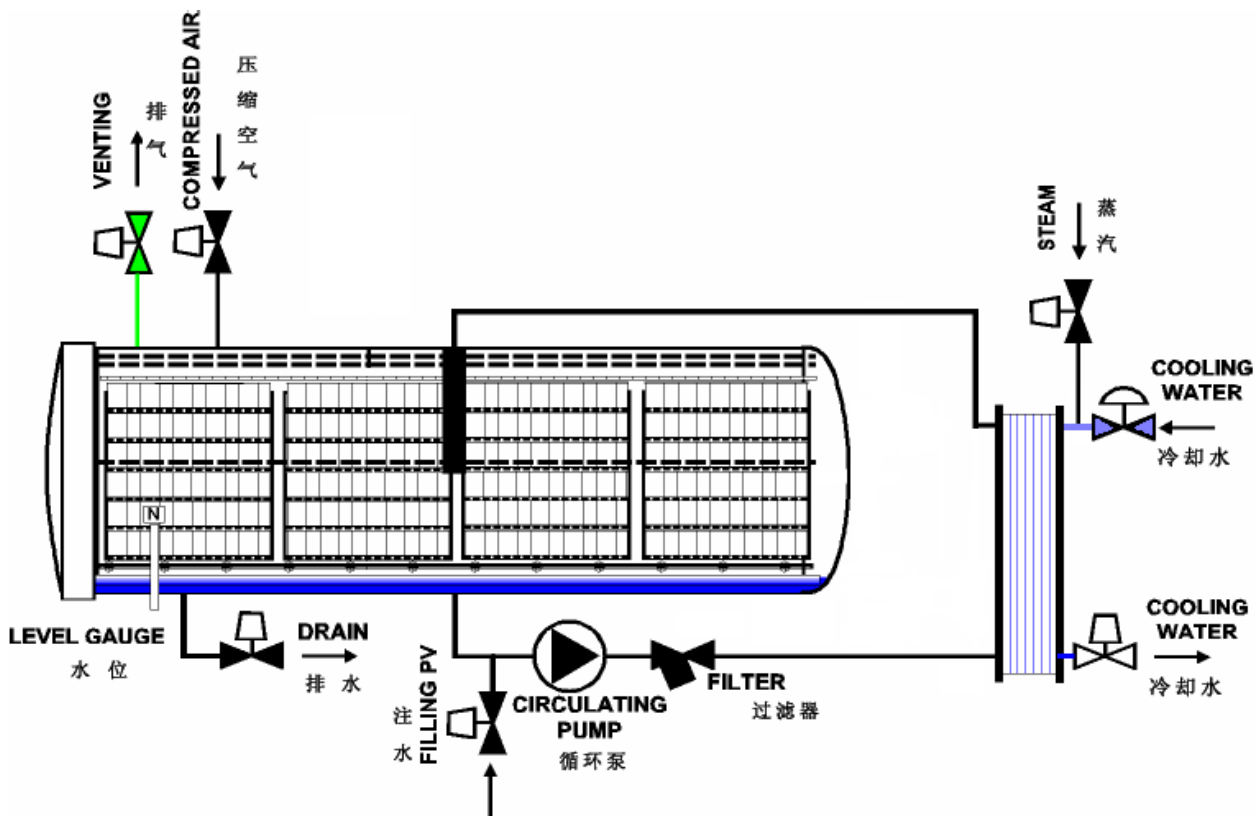
In sterilizing phase

Temperature is controlled by automatic steam regulating valve in $+ / - 0.5^{\circ}\text{C}$

Pressure is controlled by compressed air intake valve and exhaust valve in $+ / - 0.01\text{Mpa}$

2.3.3 冷却阶段（通过热交换器间接的，无菌的冷却）

2.3.3 Cooling phase (sterile cooling indirectly through the heat exchanger)



冷却为全部冷却。整个冷却过程是间接的：工艺用水通过热交换器一边，而冷却水通过另一边。
Cooling is full cooling. The whole cooling process is indirect: process water goes through the heat exchanger one side, and the cooling water goes through the other side.

压缩空气通过预先设定的压力分布来进行控制。

Compressed air is controlled through the pre-set pressure distribution.

全冷却

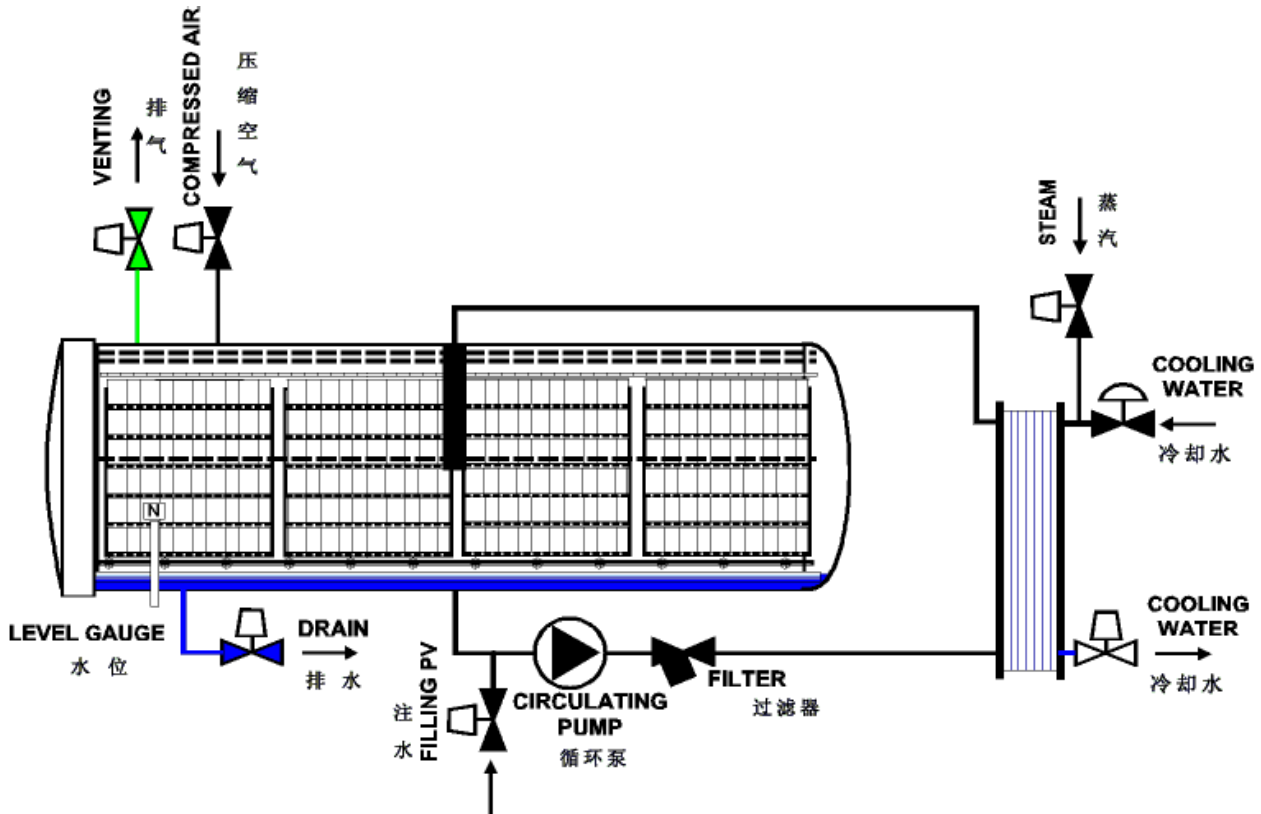
Full cooling

冷水阀可以按照预先设定好的温度曲线来快速的冷却产品。同时压缩空气会按照预定的压力曲线来自动的控制。

The automatic modulating cooling water valve according is now used to rapidly cool products according to pre-set temperature curve of the recipe. Meanwhile, compressed air is controlled automatically to follow the pre-set pressure curve.

2.3.4 循环结束

2.3.4 End of Cycle



当灭菌结束时，会发出报警信号。此时可开门并卸料。随后准备对下一批产品进行灭菌。

By the end of the sterilization, alarm signal will be displayed. It is time to open the door and unload. Then prepare the next batch products for sterilization.

3. 设备说明

3. Equipment Instructions

3.1 机械特性

3.1 Mechanical Features

所有与循环水接触的管道阀门由 S30408 (06Cr19Ni10) 不锈钢制造

All the pipe valves that contact with circulating water are made of S30408 (06 cr19ni10) stainless steel.

3.1.1 不锈钢卧式灭菌釜体

3.1.1 Stainless steel horizontal retort body

3.1.1.1 腔体结构

腔体由不锈钢 S30408 (06Cr19Ni10) 制成。焊接材料为 S30408 (06Cr19Ni10) 不锈钢。

3.1.1.1 Cavity Structure

Cavity is made of stainless steel S30408 (06 cr19ni10). Welding materials is S30408 (06 cr19ni10) stainless steel.

3.1.1.2 尺寸

-腔体:

内 径: 700mm

有效长度: 600mm

钢板厚度: 4mm

3.1.1.2 Size

-Cavity :

Inner Diameter : 700mm

Effective Length : 600mm

Steel thickness : 4mm

-食品盘

使用长度: 590mm

使用宽度: 400mm

使用高度: 60mm

-Tray

Use length : 590mm

Use width : 400mm

Use height : 60mm

4. 供货范围

4. Supply Scope

4.1 设备清单

4.1 Equipment list

名称 Name	型号 Model	单位 Unit	数量 Qty.	备注 Remark	总价 Total Price
杀菌釜 Retort	700×600	台 Set	1	带板式换热器 With plate heat exchanger	103000.00 CNY
食品盘 Food tray	700#	个 piece	14	304 不锈钢 Stainless steel 304	3200.00 CNY
托盘 Tray base	700#	个 Piece	2	304 不锈钢 Stainless steel 304	1000.00 CNY
周转车 4-wheels trolley to handle baskets	700#	台 set	2	304 不锈钢 Stainless steel 304	1800.00 CNY
合计 Total					109000.00 CNY

700 型全钢电脑全自动杀菌釜主要配置

Main configuration of 700# all stainless steel fully automatic retort

序号 No.	名称 Name	型号 Type	产地 Origin	材质 Material	备注 Remark
1.	工艺罐	DN700X600X4	鼎泰盛公司	AISI304	设计压力: 0.35Mpa 试验压力: 0.44MPa 工作压力: 0.3Mpa 设计温度: 145°C 工作温度: 125°C
2.	封头	DN700X4	中国第一品牌 威诺德	AISI304	一次冲压成型, 经过时效振动, 消除内应力, 使用不变形
3.	法兰	DN700	鼎泰盛公司	AISI304	整体碾压锻打成型
4.	水泵	50-125	上海东方 (中国名牌) (国家免检产品)	——	——
5.	气动角座阀	DN32	丹麦 DVC	AISI304	开启 300 万次
		DN25			
		DN20			
		DN15			
6.	气动蝶阀	DN50	北京埃克托德	AISI304	
7.	板式换热器	根据实际情况	上海南华	AISI304	
8.	过滤器	700#	鼎泰盛公司	——	大流量, 专为杀菌锅设计
9.	三通、弯头、法兰		鼎泰盛公司	AISI304	国标
10.	管道、螺栓		鼎泰盛公司	——	国标
11.	油水分离器	AC3010-031	台湾山耐斯	——	——
12.	液位计	400#	鼎泰盛专用	——	——
13.	压力表		东航仪表	——	——
14.	水银温度计		常州	——	国标
15.	安全阀		青岛汇丰	——	国标
16.	安全连锁装置		鼎泰盛公司	——	国家质检局认证产品、专利产品

电脑全自动单锅电器配置 Electrical Configuration			
序号	名称	品牌	备注
1	断路器	施耐德 Schneider	
2	接触器	施耐德 Schneider	
3	电动机保护器	施耐德 Schneider	
4	电源指示灯	施耐德 Schneider	
5	急停按钮	施耐德 Schneider	
6	电源滤波器	上海埃德	
7	直流稳压电源	施耐德 Schneider	
8	继电器	日本松下	
9	液位开关	日本山武	
10	人机界面	西门子 SIEMENS	
11	可编程控制器 (PLC)	西门子 SIEMENS S7-200CN 系列	
12	有纸记录仪	上海大华	
13	压力继电器	佛山玖恒	
14	压力传感器	瑞士 HUBA	精度等级: 0.3% (全量程 0.0005Mpa)
15	接近开关	德力西	
16	电磁阀	台湾亚德客	
17	温度传感器	德国久茂	精度等级: A 级 (全量程 0.3 摄氏度)
18	报警灯	上海方科	
19	控制柜	威图	

二、商业条款 D. Commercial conditions:

1. 交货时间：合同生效后，电汇合同总额 35%后开始生产，三个月内交货。

1. Delivery time: after the order in effect, T/T 35% Contract Grand Total deposit to start production, and delivery in 3 months.

2. 付款条件和期限：预付 35%订金，装船前支付 65%余款。

2. Payment terms and deadline: 35% down payment as deposit, 65% payment before shipment

3. 报价有效期：本次报价有效期 30 天，所报价格青岛离岸价。

3. Validity date: The price we quoted is on FOB Qingdao basis, and our offer is valid for 30 days.

4. 保修期限：设备保修期为设备最终验收合格之日起 12 个月或到达客户工厂之日起 15 个月计算（两者以先到为准）。

4. Warranty: Equipment warranty period is 12 months from the day of final acceptance or 15 months from the day of arrival of the goods at customer ' s factory (subject to first arrival).

5. 安装调试和培训条件：卖方负责指导安装、调试和培训；买方负责安装调试人员的出境往返机票、食宿、交通等费用，还需支付卖方安装调试员从到达买方工厂到机器安装完毕期间每人每天 50 美元的津贴费。如因买方原因超过安装调试天数，买方还应需负担卖方技术人员每人每日 USD300.00(1 天以 8 小时计算)的工资。

5. Conditions of installation, debugging and training: The seller is responsible for guiding the installation, commissioning and training for the customer's operators. The buyer should pay for the expenses of our technicians ' round-trip air tickets, accommodation, transportation expenses and the allowance of 50 dollars for each technician per day since the day they arrive buyer's factory till the end of installation. The buyer shall pay the seller's technicians' cost of salary 300.00 USD per day beyond the free period because of the buyer's reason.

6. 保密：本报价为机密，仅供内部使用。由于竞争原因任何技术及价格信息的对外传播需要获得我方书面批准。

6. Confidential: This quotation is confidential and is only meant for internal use. The transmission of technical and price information to person which are external for you require our written approval due to competition reasons.