

实验室设备及中试生产线专家 Professional Maker for Lab Equipments & Pilot Plants

打造中国实验设备第一品牌
Branding No.1 for Pilot Plants in China



实验室微型超高温/UHT生产线



TW-HC20型酸奶冷却机



TW-XJ10-100C发酵罐系统



SD-1500 微型喷雾干燥机



SE03V 型实验室离心机



RTC-20100 型物性分析仪



TE-MT 系列多功能提取罐



TW-OF01 碳酸饮料灌装线

变*渐进*学习力 | Invent*Improve*Evolve

Triowin **BRANDING NO.1**
沃迪装备 FOR PILOT PLANTS IN CHINA
打造中国实验设备第一品牌

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企业简介/Company Profile

上海沃迪自动化装备股份有限公司成立于1999年，现注册资本4160万元，在册员工近400人。金山工厂占地80.5亩，建筑面积33000平方米。沃迪装备先后承担国家科技部、863国家重点装备攻关课题、上海市科委、上海市机器人产业十二五规划纲要等重大项目。

沃迪装备由食品智能装备和机器人智能装备两大事业部构成，市场覆盖欧盟、美国、加拿大、新加坡、澳大利亚、日本、英国等发达国家和地区，力求打造和提升中国装备在世界舞台上的全新形象。

沃迪食品装备事业部又包含：果蔬装备、实验设备及乳品装备；其中，实验设备事业部致力于消化、吸收并掌握国际先进的饮料加工工艺与包装机械的前沿科技，推出实验室小试与中试生产线及先进的仪器设备，架设由实验室通向工业化生产的桥梁，加速科研成果转化为生产力。与POWERPOINT公司联合开发，建立了国内首条产能20-40升/小时的饮料

超高温杀菌（UHT）、在线均质及充填系统实验室微型移动生产线。与此同时沃迪装备提供各研究院所及企业研发中心成套中试生产线设备（50升/小时~500升/小时）及先进的实验室设备，广泛应用于牛奶、果汁、茶饮料、含乳饮料、奶酪、植物蛋白饮料、中草药提取液、保健口服液、果酒、果醋、番茄酱、调味品、啤酒、奶油、冰淇淋、蛋制品、固体粉末等产品的新品研发与样品制作。2014年6月，公司在新三板挂牌，股票代码：830843。

“变、渐进、学习力”，完美诠释了沃迪装备积极进取、锐意创新、“不以一日造罗马、矢志百年铸沃迪”的企业精神。“日本式管理、德国式技术、中国式人文”体现了沃迪人集众家之长，以人为本，力求在国际舞台发中国声音的匠心文化。全体沃迪人秉持精益求精造精机的理念，争做精品民族机械的领导者！

Established in 1999 Shanghai Triowin Automation has played an important role in several National Chinese Programs. Today, our company is a Public leading company having reached a high level of expertise, know-how and knowledge in processing technology and robotic systems.

1. Fruit & tomato processing technology
2. Dairy processing
3. Pilot lines & lab equipment

Each family is composed by a team of persons, supported by a team of engineers, devoted to find the most suitable solution which will fulfil the requirements of our customers. Our people and company use the most modern tools to design, manufacture every single machinery which will make the success of our customers' products.

Our Pilot Plants Division has been devoted in digestion and absorb the world-wide advanced packaging and processing technology for a long time. Developed lab. & pilot processing line and instrument. Build a bridge from lab. test to pilot running until to production to fast convert R&D result to production

Associating with POWERPOINT in Japan, Triowin Pilot Plant has developed a moveable beverage UHT Sterilizer with in-line homogeneity and back filling system, the first mini production line at the capacity of 20-40L/ H in China. Besides, we provide complete sets of pilot line (50-500L/H) and lab scale of equipment for the academic institutions and research centers, which can be widely applied to the Research & Development of the new products and sample preparation, such as milk, juice, tea, milk based beverage, vegetable protein beverage, tomato juice, spice, beer, cream, ice cream, egg products and powders.

Since our inception we have been increasing our market shares all around the world by taking part in some very important projects, such as National 863 Program, Intelligent manufacture equipment special projects of National Development and Reform Commission and robot's key technology research projects of Shanghai Scientific and Technological Committee. All has been possible because "Invention, Improvement & adaptation" are the key words which lead our company to the success.



变 · 渐进 · 学习力
INVENT · IMPROVE · EVOLVE

The lab team in Triowin is aiming at "Branding No. 1 pilot plants with advanced pilot & lab technology", and we are always happy to work with our clients and committed in fabricating top lab & pilot plants

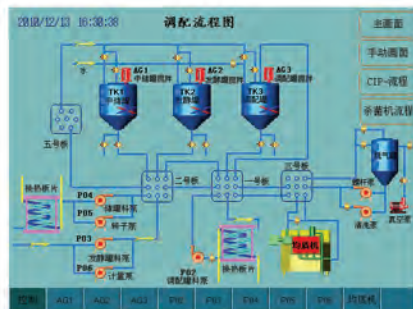
“倡导领先实验科技, 打造第一设备品牌”正是沃迪实验设备研发团队的奋斗目标
沃迪期愿与我们的客户一同为创造中国的实验设备精品而孜孜奋进



中小试生产线 Pilot Processing

全程模拟工业生产状态，数据在线生成记录，为新品研制、小批量生产、教学演示、数据采集之理想方案。

The functions of duplicating industrial process, inline data logging show the ideal aspect for new product development upon small batch, demonstration and data analyzing.



16:15:00 PREPARATION CIP PARAMETER (1)

STEP	TK1	TK2	TK3	CIP SYS.	TIME
01-Pre. CIP Ready	0	0	0	0	0
02-Water Wash	0	0	0	0	0
03-Hot Water Wash	0	0	0	0	0
04-Water Discharge	0	0	0	0	0
05-Automatic Alkali	0	0	0	0	0
06-Alkali Rinse Water	0	0	0	0	0
07-Alkali Circulation	0	0	0	0	0
08-Alkali Backwash	0	0	0	0	0
09-Water Wash	0	0	0	0	0
10-Hot Water Wash	0	0	0	0	0

Buttons: WHITE, BACK, NEXT, MAIN SCREEN

中试生产线交钥匙工程: (产能 50-500kg/h)

- 1、果蔬汁复合生产线 (清汁/油汁/浓缩汁)
苹果、柑橘类、梨、桃、杏、芒果、菠萝、石榴、番木瓜、西番莲、番茄、胡萝卜、黄瓜等果蔬汁生产。
- 2、乳制品生产线: 纯牛奶/乳饮料/发酵乳饮料/干酪线的生产。
- 3、茶饮料生产线 (茶叶/茶浓缩汁/茶饮料)。
- 4、口服液/中草药/保健品及保健饮料生产线。
- 5、果酒、果醋生产线。

Complete Pilot Processing Line: (Capacity 50-500 kg/h)

- 1) Comprehensive pilot line is specifically designed for fruit and vegetable processing (ClearJuice/ Raw juice/ Concentrate), it is suitable for apple, citrus, pear, peach, apricot, pine-apple, passionflower, guava, tomato, carrot etc.
- 2) Dairy product pilot line is designed for blank milk, blended milk drink, UHT milk, yogurt etc. Also, including R & D for by-products such as cream, butter, cheese, ice cream.
- 3) Drink tea pilot line is designed for tea extract, drink tea and drink tea mix.
- 4) Herbal pilot line is designed for nutritional and functional drinks, suitable for most of traditional Chinese medicine, oral liquid, ginseng, medlar etc.
- 5) Fruit wine /fruit vinegar pilot line.



• 洗果机 Fruit Washer



• 括板升运机 Scraper Elevator



• 检果机 Fruit Sorter



• 果蔬破碎机 Fruit/Vegetable crusher



• 打浆机 Pulping Machine

前处理部分 Section of Pre-Treatment

水果前处理设备 /Fruit Pre-Treatment Equipment

- 1 苹果、橘子、梨、山楂等水果的清洗。
Washing for apples oranges, pears, hawthorn etc.(50-500KG/H)
- 2 各类水果的提升输送。
Various elevators applicable for different fruits transferring and lifting.(50-500KG/H)
- 3 苹果、橘子、梨、山楂等水果的选择和输送，处理量（50-500KG/H, 可根据具体工艺要求定制）
Selection of apples, oranges, citrus, pears,hawthorn etc.(50-500KG/H)
- 4 果蔬类，如苹果、梨、猕猴桃、番茄、胡萝卜等的破碎（50-500KG/H, 可根据具体工艺要求定制）
Crushing of fruits such as apples, pears, kuiwei,tomatos, carrots etc.
- 5 番茄、山楂、杏子等果蔬类物料的打浆、去皮、去籽，以达到浆渣分离的目的
物料进入设备前要求预煮（50-500KG/H, 可根据具体工艺要求定制）
Pulping,peeling deseeding of tomato, apricot etc.
- 6 适用于：葡萄、石榴、桑葚、树莓、蓝莓等系列浆果的压榨。
Specialized in providing press for Grape, pomegranate, strawberry, blue-
berry, raspberry, mulberry etc.



• 实验型真空气囊榨汁机 Vacuum Press

前处理部分 Section of Pre-Treatment

茶饮料、中草药及保健饮料系列 Tea Herbal and Functional Drinks

萃取提汁系统是采用75℃至95℃（依据不同工艺技术而定）纯水浸泡茶叶，进而将茶叶中的有效成分萃取出来，并分离为茶汤的过程。本系统通过对热水制造设备、浸提吊篮与过滤分离程序的良好设计，保障了设备生产上的合理性和连续性。其中，热水温度的控制、茶水比例、浸提时间及次数与茶汤的分离澄清是本系统的关键。

75℃ to 95℃ RO pure water is applied for dipping tea leaf in this unit, tea solution is then filtered and clarified after most valuable components are extracted out. With logical design of hot-water generator, dipping vessels and separating sequence, rationality and continuity of realistic operation are guaranteed. Control of hot water's temperature, proportion of tea and water, dipping time and times, separation and clarification of tea solution are key points in this unit.



泡茶篮
Dipping Vessel



特点/Feature

- 最小有效容积为1000 毫升，最大为500升。
- 便携式操作，就地控制或集中控制。
- 强大数据采集功能，实时监测或记录工艺参数。
- 中央控制器控制，预留扩展槽，可以完成实验组批量同时工作。
- 在线试验数据监测、记录及曲线生成；根据用户要求可以对于如下参数实施监测与控制：
提取温度 工作时间 物料PH值 真空度 搅拌速度
高低液位 在线浓度 溶氧量
- Min. Size:1000ml;Max. Size: 500 Liter.
- Simple operation, local or remote control.
- Data logging, monitoring process status in-inline
- Central control available, expansion channel reserved,exams in batches flexible.
- Data as below can be logged in-line:
Temperature time PH Value Vacuum Degree
Mix Speed Mix Level Inspection Inline Brix BOD

调配部分 Section of Mixing

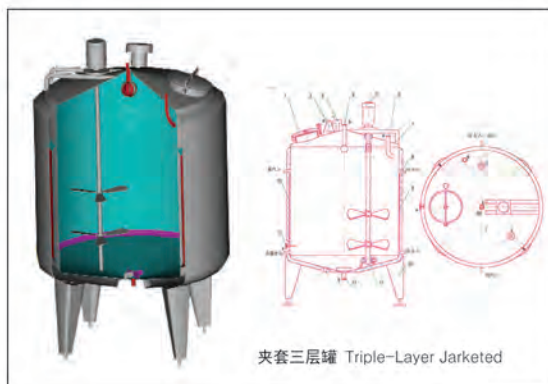
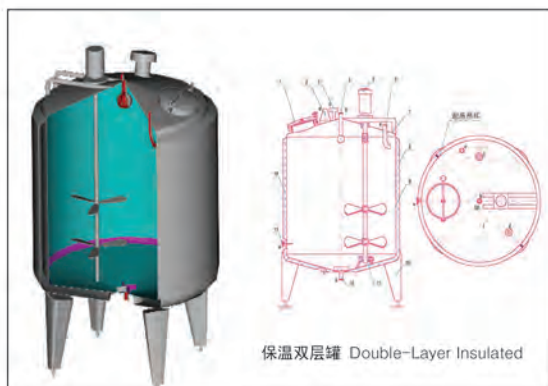
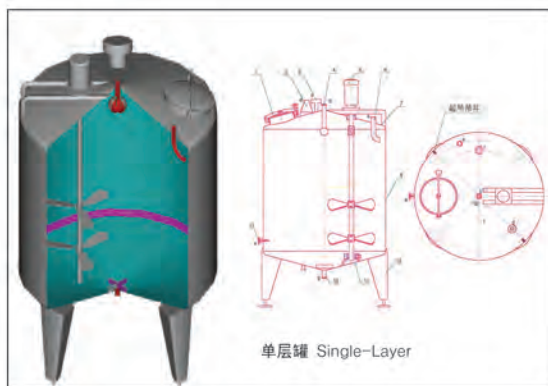
罐系列/Serial Tank

系列贮缸全部采用优质不锈钢板制造, 12°或 35°锥底出料口, 球形或T形清洗头, 全量程玻璃液位计或数显液位计, 配桨式或框式搅拌器, 有单层和双层、开式和封闭式等多种结构形式, 保温层为聚氨脂发泡, 适用于食品、饮料、制药、牛奶、果汁等物料的保温贮藏、缓冲。本公司工艺生产的贮缸有如下优点:

- 罐内外抛光度#350, 达到国际卫生级标准;
- 全封闭带人孔 $\phi 400-450\text{mm}$, 配取样阀;
- 封头、锥底加工成R角, 无卫生死角;
- 保温采用聚氨脂发泡工艺;
- 全封闭附防蝇、防尘透气孔;
- 可按用户要求配自动液位, 控制和显示装置;
- 内壁可按用户要求做镜面抛光处理。

All MZB vessels are made from S.S. with 12° or 35° conical outlet, spray ball or T-shape nozzle, digital or glass level indicator, impellers and mixers, single layer or double layer, open or sealed cover. All insulation material is sparkle polyesters which is suitable for food, beverage, pharmaceutical, dairy, fruit juice etc. In addition, all the vessels are featured as below:

- Finishing outside and inside 350#, meeting international standard;
- Total seal with man hole and sampling value.
- Top and bottom in R angle, no sanitary dead space.
- With insulation material of polyester.
- Total seal with dust-proof and air holes
- customized level indicators and detectors.
- Mirror polish available upon request



调配部分 Section of Mixing

果汁还原系统 Juice Recovery System

高速搅拌配料罐，采用优质不锈钢制造，360°清洗头，聚胺脂发泡工艺保温，有开启式和封闭式等多种结构。采用国外技术生产的高剪切搅拌头，工作时高速剪切物料，同时产生极强的湍流，能将稳定剂如CMC、明胶、卡拉胶等冷水（25 °C）化成均匀的胶体。

在生产超高温灭菌奶、凝固型（搅拌型）酸奶、调配型酸奶时，是溶解稳定剂、白糖以及标准化所需的奶油的强有力的工具。可实现冷配料，显著的提高生产效率、降低能耗。特别是生产调配型酸奶溶稳定剂和加酸酸化时，使用本设备的高剪切和强烈搅拌，可冷配料、快速加酸酸化，节约能源、避免酪蛋白沉淀。



High-speed mixing vessel is made of quality S.S. with 360 degree cleaning nozzle, polyester insulation, unseal or seal top. The cutting head is fabricated with advanced technique which creates extreme strong onflow while working. As a result, the stabilities such as CMC, Glutin, Kala Glutin with cold water can be mixed as an even colloid. While producing UHT milk, Hard Yogurt, Flavoring Yogurt etc, it can be the best tool for stabilities' solution and realize cold blending which enhances efficiency and energy consumption saving greatly. Especially in application of flavored yogurt, it accelerates acidification with the high cutting and strong mixing action.



高速溶糖系统 Sugar Dissolving System

主要用于溶解糖及其他添加物
Applied for solving sugar, flavor and other ingredients.

容积	罐体结构	罐顶形式	罐底形式	搅拌功率 (kw)	其他
50L	夹套加热保温	密封式开启	罐底式斜底	1.5	夹层蜂窝形
100L	夹套加热保温	密封式开启	罐底式斜底	2.2	夹层蜂窝形
200L	夹套加热保温	密封式开启	罐底式斜底	4.0	夹层蜂窝形
500L	夹套加热保温	密封式开启	罐底式斜底	7.5	夹层蜂窝形

Volume	Structure	Cover	Bottom	Power	Structure
50L	Jacked, insulated	Sealed, open	Sloping	1.5	Layed, honeycombe-like
100L	Jacked, insulated	Sealed, open	Sloping	2.2	Layed, honeycombe-like
200L	Jacked, insulated	Sealed, open	Sloping	4.0	Layed, honeycombe-like
500L	Jacked, insulated	Sealed, open	Sloping	7.5	Layed, honeycombe-like

过滤澄清部分 Section of Separator

真空转鼓过滤机

Vacuum drum filter

1. 适用物料特性：过滤前果汁固形物含量低于30% (v/v)
Ideal material properties: suitable for fruit juice with lower than 30% solids content
2. 过滤效果：固形物含量低于0.3%，浊度30~70 NTU
Filtration result: solid content less than 0.3%, Turbidity 30~70 NTU
3. 过滤后的果汁固形物颗粒直径小于65um.
After filtration, size of solid is less than 65um
4. 处理能力: 50-500kg
Capacity: 50-500kg
5. 过滤面积: 1m2-3m2
Filtering area : 1m2-3m2
6. 应用范围: 果汁清汁的澄清处理
Application: Fruit juice/Clear juice filtration



陶瓷膜实验设备

Porcelain membrane lab equipment

陶瓷膜实验设备可广泛应用于制药、生物工程、食品饮料等领域的实验，微滤膜的过滤孔径范围在0.05μm至1.4μm，过滤精度范围为在10KDa-50 KDa之间，可根据料液的粘度不同选择相应孔径的膜芯，以达到澄清、除杂、分离等目的。

Porcelain membrane lab equipment is widely used in pharmacy, biology engineering, food & beverage etc. The filtration aperture of tiny sieve membrane is from 0.05μm to 1.4μm, and the filtration precision is between 10KDa-50 KDa. The membrane core of suitable aperture can be chosen to clarify objects, remove miscellaneous, separate different materials etc according to the viscosity of the liquid.

应用领域

抗生素发酵液过滤（如青霉素、头孢菌素、红霉素等、硫酸粘杆菌素、赤霉素等）、植物提取过程浸提液的分离澄清、酒类的除菌澄清过滤、牛奶的除菌澄清过滤、果汁除菌澄清过滤、调味品（酱油、醋等）的除菌澄清过滤。

The application range of Porcelain membrane lab equipment is as below:

The filtration between antibiotic and zymolysis fluid (The antibiotic: penicillium, cephalosporin, gibberellin and etc),

The separation and clarification of steep in the plants distilling process.

The sterilization, clarification and filtration of wines.

The sterilization, clarification and filtration of milk.

The sterilization, clarification and filtration of juice.

The sterilization, clarification and filtration of flavoring such as sauce, vinegar.

过滤澄清部分 Section of Separator

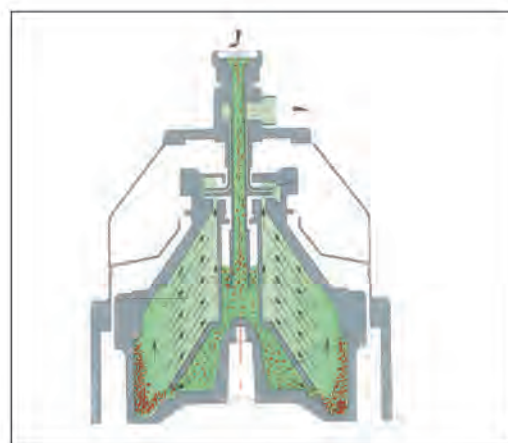
SE03V 型实验型连续流离心机

SE03V Lab Separator

SE03 系列试验型离心分离机主要特点

- 1) 连续式进料，完全模拟工业化生产。
- 2) 产能 50~200L/H 可调，既可实验室研发使用，也可进入中试连续生产。
- 3) 最低可分离固相颗粒 0.1 微米，噪音水平不超过 75 分贝。
- 4) HR 型为独立完整系统，配备进料储罐及清液储罐（25L/50L 两种规格）运行无需其他外设。
- 5) 独立不锈钢框式支架，水平自由调节，无需地基基础及地脚螺栓等。
- 6) 转鼓转速高达 11000 转 / 分钟，分离因素可达 10000 G 。
- 7) 转鼓主要部件采用新型优质高强度不锈钢制造，高度防腐蚀。
- 8) 转鼓具备极高动平衡性，将震动及噪音水平降低到最低。
- 9) 广泛应用于食品工程、生物制药、油脂工业、化工能源等。

- 1) Duplicating industrial production and continuous process.
- 2) Capacity ranging from 50l/h to 200l/h, suitable for lab use and pilot process as well.
- 3) The recovery of fine particles reaching 0.1um and noise level below 75dB.
- 4) HR series are of separated complete working unit, equipped with product feeding and receiving vessels(25l/50l), no other utilities required.
- 5) S.S. support frame, adjustable and no need for ground construction.
- 6) Bowl speed reaching 11000RPM and 10000 G force.
- 7) Bowl is of Duplex S.S and corrosion resistant.
- 8) High balance and vibration absorbing design for bowl and rotating parts.
- 9) Wide applications: Dairy, pharmaceutical, biotechnological, food, juice, wine, chemicals etc.



应用 / Application

制药和生物

Pharmaceutical & biotechnology

生物量的浓缩
Concentration of biomasses
动物血浆的分离
Separation of animal blood
维生素的提取和回收
Extraction and recovery of vitamins
发酵液的澄清
Clarification of fermentation broths

产品的洗涤

Washing of products

催化剂的还原
Recovery of catalysts
溶液的净化处理
Purification of solutions

乳制品

Dairy application

牛奶和乳清的脱脂
Skimming of milk and whey
牛奶和乳清的澄清
Clarification of milk and whey

化工

Chemical

终产品的澄清
Clarification of final products
溶剂的澄清
Clarification of solvents

食用油及脂肪

Edible oils and fats

脱胶、中和、洗涤处理
Degumming, neutralizing, washing of oils and fats
油脂的净化和澄清
Purification and clarification of fats
油脂浓缩脱水处理
Concentration and dehydration of fats

葡萄酒、饮料及果汁

Wines, beverages and juices

葡萄酒的澄清
Clarification of must and wine
苹果汁、橙汁及奇异果汁的澄清
Clarification of apple, citrus and exotic juices
精油的浓缩
Recovery and concentration of essential oils

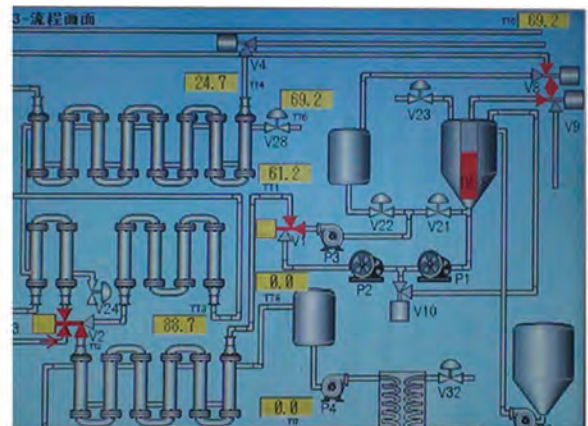


杀菌部分 Section of Sterilization

PT100型管式/板式杀菌机成套设备，适用于乳品、果汁、茶饮料、啤酒、保健饮料等液体物料的巴氏、超巴氏、超高温杀菌。物料通过本设备杀菌冷却达到延长保质期的目的。并可根据用户对物料杀菌、保温、冷却的不同工艺的要求，进行单段、双段、多段形式的组合系统设计。本设备具有很高的热回收率，设备结构紧凑，占地面积小，流程变化灵活，容易操作与维修。深得用户青睐。本公司也可根据客户的需要制造含CIP系统与无菌包装配套全自动（智能型）的超高温杀菌设备。

MODEL PT100 complete plate type pasteurizer is applied for pasteurizing, ultra-pasteurizing, UHT sterilizing of dairy, juices, tea drink, beef, function drink etc, to achieve long shelf life. Various designs of single stage, double stage and multi-stage or their combination can be customized accordingly for different demands of sterilization, insulation and cooling. With advantages of small space occupation, high heat recovery efficiency, compact construction, feasibility and easy operation and maintenance, this model is widely used in all aspects.

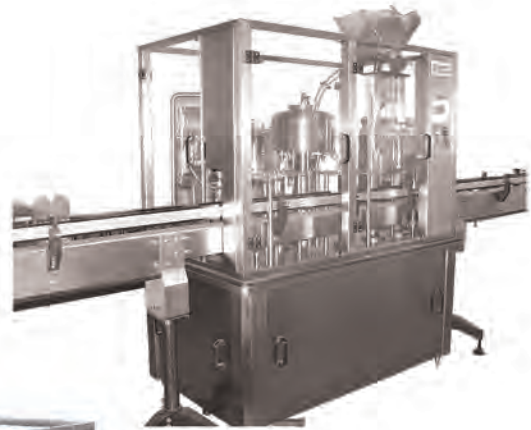
In addition, Triowin is capable of manufacturing Fully Automatic UHT sterilizer and CIP unit which are equipped to Aseptic Filling.



灌装部分 Section of Filler

TP-RFC-541型全自动洗瓶、灌装、旋盖三位一体机，灌装量50-500KG/H。完全模拟工业化设备。配备五个洗瓶头，四个灌装头，一个旋盖头。

Type:TP-RFC-541 Riser/Filler/Capper machine,
Capacity:50-500KG/H. Designed to replicate
industrial size process. Four riser head/four filler
head/one capper head.



特点/Feature

具备CIP清洗功能，在作业前后能有效清洗填充桶及所有卫生管件。

外壳及原料接触之零件部件皆为不锈钢制品，外表美观，容易清洗。

使用变频器控制主机马达，且具备人机界面控制面板，产能调整灵活，操作简便，且可检测控制信号。

采用悬吊式传动齿轮组，保养维修方便。



Providing with CIP washing function which can effectively wash filling and all sanitary pipes before and after the operation.

The machine case and the parts contacting with the materials are made of stainless steel which ensures the good external look and easy washing.

This function can make the productivity easily to adjust and operate by making the frequency changer to dominate the main engine motor, and containing the control face plant. This function also can monitor the control signal.

Adopting suspensory transmission gear can easily upkeep and be repaired.

空瓶喷洗机

设计精良之夹瓶组能稳固地夹住瓶子颈部，配合同步运转的喷洗系统，能有效地喷洗瓶子内部。

Bottle in-feed screw shaft and star wheel set

The screw shaft evenly divides the distance between bottles through star wheel for fixed speed and fixed distance input and output. The operation is stable and accurate. This design contains the star-wheel-stuck safety mechanism, which could automatically stop operating when bottle was stuck.

封盖机

具备磁力无级扭力调节器，扭力调节简易，旋盖时噪音较小。特殊设计旋盖模头，能紧密夹住瓶盖并旋紧，不会损伤瓶盖外观。

The cap feeding star wheel set

It uses the star wheel which is in synchronous revolving with the axle of the capping machine to hook up the cap from the cap discharge tank. Additionally, it has a no-bottom no-capping function to substitute the old type method to take down the caps from bottom opening. This will avoid the disadvantage of the cap dropping and lift cap screwing.



CIP部分 Section of CIP

就地清洗系统（CIP）适用于乳品、饮料、啤酒、制药生产线的设备及管路班前、班后清洗消毒，以保证严格的卫生要求。就地清洗系统（CIP）一般由清洗液储罐、送液泵、管路及管件、清洗头、回液泵、程序控制装置联同待清洗的设备组成一个清洗循环系统。

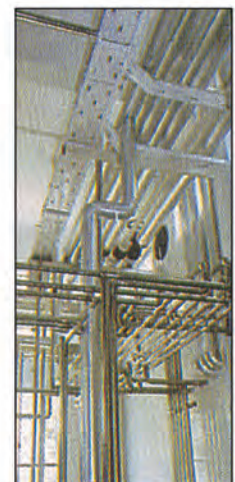
就地清洗系统（CIP）具有工作效率高、清洗效果可靠重现性好的特点，操作过程均在密闭的管路内进行卫生要求高，操作方便、降低工人的劳动强度。

CIP (Cleaning in place) applies in process lines of dairy .Beverage Brewery . Pharmaceuticals production to guarenty the sanitar requirements. The CIP unit is composed of detergents storage tanks. Pumps ,pipeline,fitting , return pumps . Control device etc .

This unit featured with high efficiency and reliability . The exection is operated in the closed pipeline and lower the cost .



型号/Model	CIP-A	CIP-B	CIP-C
控制方式/Contorl	PLC控制/PLC	电器控制/E. C	手动控制/M. C
温度控制及加热方式 Temp control & heating	自动控制双重加热 Auto . Dual	自动控制双重加热 Auto . Dual	人工控制/Maunal
浓度控制及添加方式 Concentration control & Accession	自动控制自动添加 Auto . Auto	自动控制自动添加 Auto . Auto	人工控制/Maunal
清洗程序/Rinsing Pro	自动控制/Auto	人工控制/Auto	人工控制/Maunal
结构形式/Construction (M)	分体式/Seperated	分体式/Seperated	连体式/United
规格说明/Description	0. 5~6 温度、浓度自动高精度控制	0. 5~6 温度、浓度自动高精度控制	0. 5~2 温度手动控制
	清洗时间等触摸屏 PLC自动控制 High control accuracy of temp & concentration . Rinsing time etc . Touch screen . Atou PLC .	清洗时间人工控制 High control accuracy of temp & concentration . Manual control of rinsing time	浓度、清洗时间 人工控制 Concentration & cleaning time manually



■ 微型生产线 Lab Mini-Processing Line

特点/Feature

- 1) 完全模拟工业化的生产状态，连续生产。
- 2) 实验数据与结论准确，重复性好，可直接放大到工业化生产。
- 3) 多样性/重复性小批量实验：标准机型额定产能为20L/H,最小投料量3L 外设仅需自来水和电。
- 4) 系统结构紧凑，整条微型生产线占地仅10个平米左右。
- 5) 内置有效的CIP和SIP功能。
- 6) 可达无菌状态的卫生设计与制造。
- 7) PLC控制，自动化程度高。
- 8) 操作界面人性化设计，操作简单、方便。
- 9) 试验过程中物料参数可监测，便于分析试验数据。

Designed to replicate industrial size process. Continuous processing with minimize product.

With high accuracy and good reproducibility, the trial result can be scale up to the industrial production.

Rated capacity 20l/h, the minimum batch size is 3l, dramatically saving materials, energy and time for new product development.

The whole process line only occupies 2-3m² space, the uht sterilizer, homogenizer and the filling system can be used in line or separately. Built-in cip,sip function, completely duplication the industrial production.

Hydientic design and manufacture capable of providing aseptic condition.

Only electricity and water supply required, built-in steam generator and refrigerator. Plc controlled.

Designed for simple operation.

Easy for observation and analyzing of the product processed.



软件功能/Function of software

随机软件可以实现各温度的同步显示，实时设定及控制。各数据可在设定时间内采集，自动生成在线杀菌曲线图表，保存并打印。

Software enclosed is allowed to set up, display and adjust various T, collect data, create curves or tables in real time during the whole process, which can be also saved or printed out at the user's wish.

PT-20 SERIES LAB UHT STERILIZERS

PT-20 系列实验型杀菌机

PT-20T TUBE IN TUBE HEAT EXCHANGER

PT-20T 管式杀菌机

PT-20P PLATE HEAT EXCHANGER

PT-20P 板式杀菌机

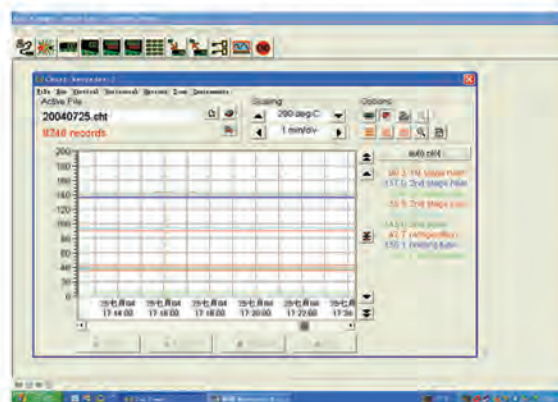
PT-20C COMBINES HEATING MODULES OF PLATES AND TUBES

PT-20C 管板组合式杀菌机

PT-SS SCRAPED SURFACE HEAT EXCHANGER

PT-SS 刮板式杀菌机

SOFTWARE FOR DATA-LOGGING ONLINE
在线数据采集软件



控制/Controls

产品通过PID控制热水循环系统加热，过热水循环系统配备有安全控制阀。我们还可提供精确控制的冷却系统，温度可预先设定。产品泵变频控制流量大小。持温管可根据客户要求定制。

Cooling temperatures are controlled by a PID electronic temperature indicator/control unit. The product pump speed is controlled by a frequency inverter. Holding tubes are manufactured to individual requirements to provide fixed holding times at fixed throughputs.

清洗/Cleaning

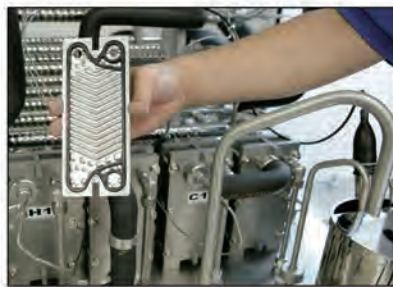
系统可实现快速、方便、安全地就地清洗，操作简单，只要切换管路走向仪把开关转向CIP状态，产品泵即作为清洗泵，以大于400L/H的流量运行。

The system has been designed to allow quick, easy and safe in-line flushing of product and cleaning. The product pump also serves as the CIP pump and operates at 400 liters/hour by turning a CIP key switch.

系统外设/Service Connections

系统只需三相电源和自来水即可，系统内置加热及冷却系统。

Only a 3 phase electrical supply is required. A supply of water for cleaning and system set up IS needed along with a drain outlet for CIP dump.



桌面式杀菌机 Bench Top Mini UHT Heat Exchanger

特性/Features

- 可选择板式或管式热交换器。
- 市场上最小的UHT、设备容积体积小于1升；
- 设备产能每小时10到20升时，最大温度145℃；
- 可选择任意杀菌时间、最高压力10bar；
- 可热灌装使用；
- 符合最新的欧洲安全标准和CE认证；
- 彩色触控面板控制和操作界面；
- 设备尺寸（不含底座）：625(H)x865(W)x700(L)
- Available with either Plates or Tubular Heat Exchangers.
- Smallest UHT on the market.Total dead volume less than 1 litre.
- Throughputs of 10 to 20 litre per hour at max 145 Deg C.
- Holding tubes of any time available.Pressure up to 10 bar possible.
- Hot fill available.
- Conforms to the latest European safety standards and carries the CE mark.
- Full colour Touch Panel control and operator interface.
- Dimensions : 625(H)x865(W)x700(L)



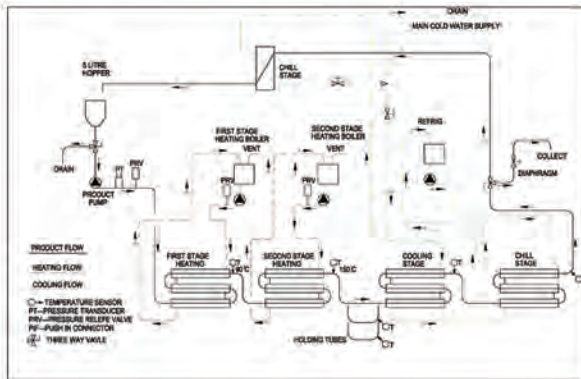
PT-20T管式杀菌机

PT-20T tube in tube heat exchanger

设备描述/Description

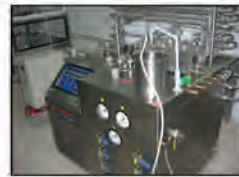
PT-20T系列管式杀菌机完全模拟工业化生产状态，设计结构包括预热段、加热段及冷却段等。可根据客户要求配备在线均质及无菌充填。设备结构紧凑并自成系统，外设仅需自来水和电。控制面板集中控制，并可连接电脑通过软件对主机控制。管组件是根据企业特制标准制造，使物料形成一定的湍流，换热效率更高。

PT-20T series tube in tube heat exchanger is designed to replicate industrial scale heat exchanger on a lab plant scale. the standard design incorporates a preheating, heating and cooling section. Homogenizer in line and filling system can be equipped. Individual tubes are utilized to give a variety of duties: Pre heating, heating, tap water cooling, chilling water cooling etc. Control can be realized by setting control panel or just through computer which can be easily connected. All data can be printed, recorded, downloaded, saved forever and displayed as analytic curve line. Individual tubes are utilized to give a variety of heating and cooling duties. The tubes are manufactured to our own specification and are profiled to give a degree of turbulence similar to full scale installations.



Technical Data:

Rated capacity: 20L/H (variable from 5 to 40L),
other requirement can be meet by customization
Tube size: 860mm X Φ 14mm/8mm
Particles allowed: Max. 2mm
Max Temperature: 150°C, adjustable
Holding time: to be determined by clients
Max. Pressure: 10.0 bar
SIP (steam in place): Available
CIP (clean in place): Available
Filling inline: Optional
Hom. Inline: Optional (up stream/downstream homogenization)
Outlet temperature: Adjustable
Holding tube: 5S / 10S / 30S standard equipped
Material: SUS316 stainless steel
Software: Available
Power: 3 phases, Neutral & earth, 380V, 13 KW
Tap Water: outlet Pressure $\geq$ 2KG, Consumption $\geq$ 500L/H
Cabinet Dimensions: 1700 (H) $\times$ 960 (W) $\times$ 1200 (L) mm



产品范围/Typical uses

具有一定粘度的液态物料，带有颗粒的果汁和果汁饮料、牛奶和牛奶制品(包括布丁)、有颗粒的沙司(调味品)、汤汁等。

High viscosity liquid products, products with particulates
fruit juices with cells, soups, sauces etc.



技术参数:

标准产能: 20L/H (流量5-40L可调),
其他产能根据客户要求定制
加热管尺寸: 860mm $\times$ Φ 14mm/8mm
容通颗粒: 最大2 mm 软颗粒
杀菌温度: 最高150°C, 可调
杀菌时间: 根据客户要求配置
最高压力: 10.0 bar
SIP功能: 具备
CIP功能: 具备
在线灌装: 可选配
在线均质: 可选配 (前均质/后均质)
出口温度: 可调
持温管: 标配5S / 10S / 30S
材质: SUS 316不锈钢
数据软件: 具备
电源: 3相电源, 380伏特, 接零、地线
设计功率: 13KW
自来水要求: 压力 $\geq$ 2KG, 耗量 $\geq$ 500L/H
整机尺寸: 1700 (H) $\times$ 960 (W) $\times$ 1200 (L) mm

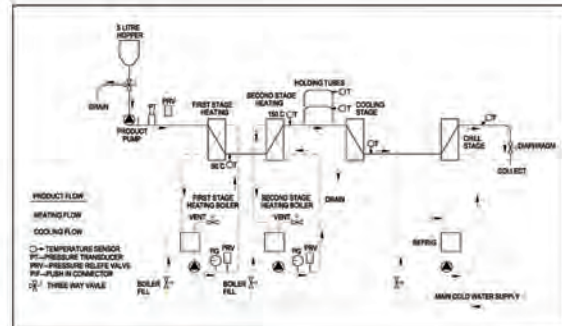
PT-20P型板式杀菌机 PT-20P plate heat exchanger



设备描述/Description

PT-20P系列板式杀菌机完全模拟工业化生产状态，设计结构包括预热段、加热段及冷却段等。可根据客户要求配备在线均质及无菌充填。设备结构紧凑并自成系统，外设仅需自来水和电。控制面板集中控制，并可连接电脑通过软件对主机控制。

PT-20P series plate heat exchanger is designed to replicate industrial scale heat exchanger on a lab plant scale. the standard design incorporates a preheating, heating and cooling section. Homogenizer in line and filling system can be equipped. Individual plates are utilized to give a variety of duties: Preheating, heating, tap water cooling, chilling water cooling etc. Control can be realized by setting control panel or just through computer which can be easily connected. All data can be printed, recorded, downloaded, saved forever and displayed as analytic curve line.



应用范围/Typical uses

牛奶、含乳饮料、果汁、啤酒、蛋糕奶油、沙司（调味品）、蛋制品等。

Milk, milk drinks/shakes, beverages, beer, fruit drinks (no cells), pouring custards, sauces and egg products.

技术参数:

标准产能: 20L/H (流量5-40L可调),
 其他产能根据客户要求定制
 板片尺寸: 70×190 mm
 杀菌温度: 最高150℃, 可调
 杀菌时间: 根据客户要求配置
 最高压力: 10.0 bar
 SIP功能: 具备
 CIP功能: 具备
 在线灌装: 可选配
 在线均质: 可选配 (前均质/后均质)
 出口温度: 可调
 持温管: 标配5S / 10S / 30S
 材质: SUS 316不锈钢
 数据软件: 具备
 电源: 3相电源, 380伏特, 接零、地线
 设计功率: 13KW
 自来水要求: 压力≥2KG, 耗量≥500L/H
 整机尺寸: 1650 (H) × 960 (W) × 1200 (L) mm

Technical Data

Rated capacity: 20L/H (variable from 5 to 40L), other requirement can be met by customization
 Plate size: 70mm x 190mm
 Max Temperature: 150℃, adjustable
 Holding time: to be determined by clients
 Max. Pressure: 10.0 bar
 SIP (steam in place): Available
 CIP (clean in place): Available
 Filling inline: Optional
 Hom. Inline: Optional (up stream/downstream homogenization)
 Outlet temperature: Adjustable
 Holding tube: 5S / 10S / 30S standard equipped
 Material: SUS316 stainless steel
 Software: Available
 Power: 3 phases, Neutral & earth, 380V, 13 KW
 Tap Water: outlet Pressure ≥ 2KG, Consumption ≥ 500L/H
 Cabinet Dimensions: 1700 (H) × 1200 (L) × 960 (W) mm

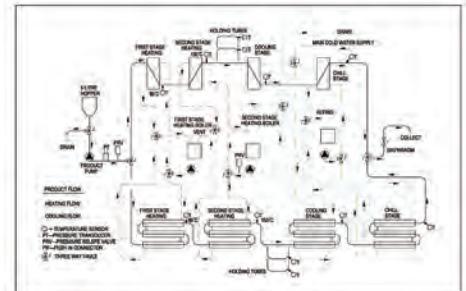
PT-20C 管板组合式杀菌机

PT-20C combines heating modules of plates and tubes

设备描述/Description

PT-20C管板组合式杀菌机将板式加热模块与管式加热模块并联安装。本机同时具备板式杀菌与管式杀菌的双重功能。使用时可方便切换使用，因此，广泛适用于各类流体产品、具有一定粘度物料及含有细微颗粒的物料等。

Model PT-20C combines heating modules of plates and tubes, reserves one as an alternative. It is quite easy to shift before any new test. Therefore, it is widely applicable for various fluids, materials with a certain viscosity and feed containing small particles.



TECHNICAL DATA

Rated capacity: 20L/H(variable from 5 to 40L),
other requirement can be meet by customization
Max Temperature: 150°C, adjustable
Holding time: to be determined by clients
Max. Pressure: 10.0 bar
SIP(steam in place): Available
CIP(clean in place): Available
Filling inline: Optional
Hom. Inline: Optional (up stream/downstream homogenization)
Outlet Temperature: Adjustable
Holding Tube: 5S / 10S / 30S standard equipped
Material: SUS316 stainless steel
Software: Available
Power: 3 phases, Neutral & earth, 380V, 13 KW
Tap Water: outlet Pressure ≥ 2 KG, Consumption ≥ 500 L/H
Cabinet Dimension: 1700 (H) $\times$ 960 (W) $\times$ 1250 (L) mm

技术参数

标准产能: 20L/H (流量5-40L可调),
其他产能根据客户要求定制
杀菌温度: 最高150°C, 可调
杀菌时间: 根据客户要求配置
最高压力: 10.0 bar
SIP功能: 具备
CIP功能: 具备
在线灌装: 可选配
在线均质: 可选配 (前均质/后均质)
出口温度: 可调
持温管: 标配5S / 10S / 30S
材质: SUS 316不锈钢
数据软件: 具备
电源: 3相电源, 380伏特, 接零、地线
设计功率: 13KW
自来水要求: 压力 ≥ 2 KG, 耗量 ≥ 500 L/H
整机尺寸: 1700 (H) $\times$ 960 (W) $\times$ 1250 (L) mm

PT-SS刮板式杀菌机 PT-SS Scraped Surface Heat Exchanger



设备描述/Description

PT-SS型实验型刮板式换热器完全模拟工业刮板式换热器的生产。设备包括一个加热腔和一个冷却腔，可为单腔或多腔结构。加热产品最高温度可达150℃。系统可提供过热水对灌装回路进行灭菌。刮腔和刮板表面度铬处理，和产品接触的部件材质为316不锈钢，板片垫圈和密封件材质为氟橡胶。管路连接采用DIN卫生连接件。

The PT-SS SCRAPED SURFACE HEAT EXCHANGER is designed to replicate industrial scale. The basic design incorporates a heating barrel and cooling barrel but single barrels or multiple base units are available. Heating is by the use of a pressured hot water recirculation unit with PID control, which with use of a back pressure control valve, permits product temperatures of up to 150C to be achieved—the unit is consequently capable of supplying pressurized hot water when sterilizing aseptic filling loops. The scraped surface barrels and scraper blades are chrome plated with all other product contact parts manufactured in 316 stainless steel. Hygienic DIN fittings are used in the product pipeline with “viton” seals.

产品范围/Typical uses

高粘度物料：人造黄油、冰淇淋、软性敷料、蛋黄酱、色拉调料、液体油脂、番茄酱/酸辣酱、沙司。

High viscosity products, vegetable butter, ice cream, soft spreads, mayonnaise, salad dressings, liquid fats chuneys, sauces etc.

控制/Controls

产品通过PID温控过热水循环系统加热，。过热水循环系统配备有安全控制阀。我们还可提供精确控制的冷却系统，温度可预先设定。产品泵变频控制流量大小。持温管可根据客户要求定制。

Cooling temperatures are controlled by a PID electronic temperature indicator/control unit. The product pump speed is controlled by a frequency inverter. Holding tubes are manufactured to individual requirements to provide fixed holding times at fixed throughputs.

清洗/Cleaning

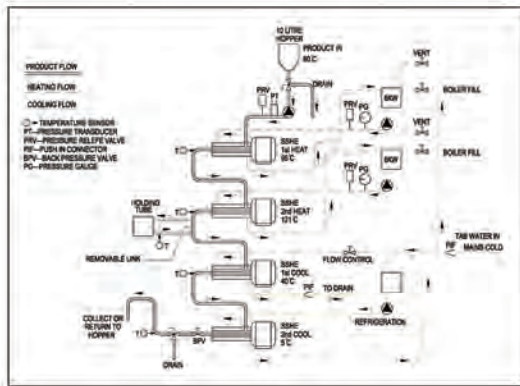
系统可实现快速、方便、安全地就地清洗，操作简单，只要把开关转向CIP状态，产品泵即作为清洗泵，以400L/H的流量运行。CIP循环和排放动作通过三通阀转换。料斗和泵进口之间的三通阀可完成水和产品或不同样品之间的快速切换。

The system has been designed to allow quick, easy and safe in-line flushing of product and cleaning. The product pump also serves as the CIP pump and operates at 400 liters/hour by turning a CIP key switch. A 3 way valve has been fitted to permit a CIP loop or dump operation to be performed. A 3 way valve between the hopper and pump inlet allows quick changeover between water and product on start up and subsequent sample changes.

PT-SS刮板式杀菌机 PT-SS Scraped Surface Heat Exchanger

特点

模块化设计满足不同客户需求。
无需蒸气，仅需自来水和电即可。
最小产能为5 L/H，最大可根据客户要求定制。
内置CIP和SIP功能。
加热温度最高可达150℃，冷却可到5℃以下。
可进行在线均质。



Features

Designed for continuous processing of high viscosity products.
No steam required only electricity and water.
Throughput: Minimum flow rate 5 liters per hour, maximum to customer requirement.
Built in CIP with SIP an option.
Heating to 152 deg C cooling to below -5 deg C.
Capable of in line homogenization.

应用范畴/Application Range

初期成分/配方的研究、口味的甄别、颜色的评估、稳定剂/乳化剂性能的鉴定
赠送客户样品的准备。

Initial formulation/recipe development, flavour screening, colour evaluation, stabilizer/emulsifier systems, preparation of samples for customer presentations.

系统外设/Service Connections

系统只需三相电源和自来水即可，系统内置加热及冷却系统。

Only a 3 phase electrical supply is required. A supply of water for cleaning and system set up IS needed along with a drain outlet for CIP dump.



技术参数/Technical data

Barrel 单腔尺寸	41.5mm × ×496mm long
Max. product temperature 物料最高温度	150℃
Max. operating pressure 最大操作压力	20bar
Dimensions 尺寸	
Cabinet-Height 箱体尺寸	1650mm
Width	800mm
Depth	1100mm
Overall-Height 外形尺寸	1650mm
Width	1080mm
Depth	1260mm
Feed Hopper 料斗容积	10litre
Power 电源	
3 phase,380volt,50hertz	16amp max



实验型蒸汽直注式杀菌机（直接加热模式）
 Lab Dsi UHT Machine (Direct Heating)



实验型DSI杀菌机（直接和间接加热两种模式）
 Lab Dsi UHT Machine (Direct and Indirect Heating)

Technical Data

Rated capacity: 20L/H (variable from 5 to 40L),
 other requirement can be meet by customization
 Max Temperature: 150°C, adjustable
 Holding time: to be determined by clients
 Max. Pressure: 10.0 bar
 Vacuum: 400mbar
 SIP (steam in place): Available
 CIP (clean in place): Available
 Filling inline: Optional
 Hom. Inline: Optional (up stream/downstream homogenization)
 Outlet Temperature: Adjustable
 Holding Tube: 5S / 10S / 30S standard equipped
 Material: SUS316 stainless steel
 Software: Available
 Power: 3 phases, Neutral & earth, 380V, 12 KW
 Tap Water: outlet Pressure ≥ 2 KG, Consumption ≥ 500 L/H
 Cabinet Dimension: 1750 (H) $\times$ 1000 (W) $\times$ 1200 (L) mm

PT-20DT 蒸汽注入式杀菌机 (DSI) Direct Stream Injection Machine

设备描述/Description

DSI蒸汽直注式杀菌机有直接加热和间接加热两种热处理模式。高杀菌温度可达152°C。面板控制两种模式切换，方便快捷。间接加热模式有管式、板式和管板组合式可选。因此，该设备广泛适用于各类流体产品、具有一定粘度物料及含有细微颗粒的物料等。

Direct stream injection machine is designed for comparisons of heat treatment with either direct heating or indirect heating at temperatures to 152°C. Just select which system is to be used from the touch panel menu and the machine is ready to use. The machine can be supplied with tubes, plates or both. Therefore, it is widely applicable for various fluids, materials with a certain viscosity and feed containing small particles.



技术参数

标准产能: 20L/H (流量5-40L可调),
 其他产能根据客户要求定制
 杀菌温度: 最高150°C, 可调
 杀菌时间: 根据客户要求配置
 最高压力: 10.0 bar
 真空度: 400毫巴
 SIP功能: 具备
 CIP功能: 具备
 在线灌装: 可选配
 在线均质: 可选配 (前均质/后均质)
 出口温度: 可调
 持温管: 标配5S / 10S / 30S
 材质: SUS 316不锈钢
 数据软件: 具备
 电源: 3相电源, 380伏特, 接零、地线
 设计功率: 12KW
 自来水要求: 压力 ≥ 2 KG, 耗量 ≥ 500 L/H
 整机尺寸: 1750 (H) $\times$ 1000 (W) $\times$ 1200 (L) mm

在线均系统 Homo in-Line

无菌均质主机部分配备于超高温杀菌段之前或之后，形成在线密闭系统。
Homo unit is employed in the sys. And amounted before or after uht section.

流量实时控制。
Flow rate control unit.

Cip清洁卫生型设计。
Sanitary design for cleaning in place (cip) .

均质机卫生级安全阀设计，安全可靠。
Hygienic pressure relief valve after the homogenizer.

均质机cip旁通阀。
Cip by-pass valve.

独特高剪切双重效果均质和超微细化阀使乳化均质更彻底。
Unique, knife-edge dual function homogenising and cell disruption valve helps deliver superior emulsions , dispersions or harvest of intracellular products.

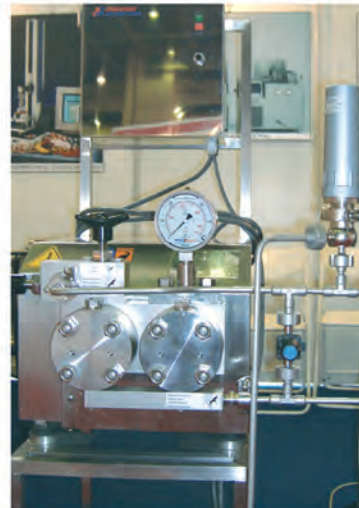
两级均质阀配置，手轮调节均质压力。
2nd stage homogenising arrangement, hand wheel operated.

均质机原进料斗切除，增加进口接管及出口接管组件。
The original feed hopper of homogenizer is cut off, new inlet and outlet tubes are added.

数显压力表
Features an easy-to-read digital pressure display and electronic pressure safety system.

独立控制电控柜。
The control panel for homogenizer.

不锈钢可移动支架。
A stainless steel stand for homogenizer.



控制及软件 Control & Software

本系统采用PID自动控制，并配有计算机接口，随机附带软件一套。各实验参数可以在控制面板上自行设定并调整，亦可在计算机上直接设置。可同时对于以下多个参数进行实时显示、设定、调整、记录、打印等。

This system uses PID automatic control and has a PC output with special software. All parameters can be easily set and adjusted on the control panel or through the software installed on PC, and be displayed, logged simultaneously or printed as well.

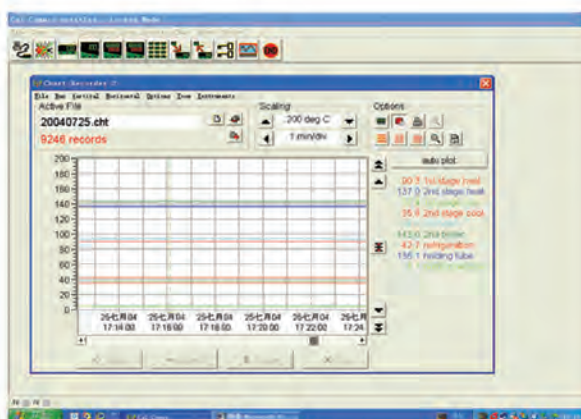
- | | |
|-----------------|-----------------------|
| 1. 预热段出口温度 | 1. 1st Heat T |
| 2. 加热段出口温度 | 2. 2nd Heat T |
| 3. 水冷段出口温度 | 3. 1st Cool T |
| 4. 冰冷段出口温度 | 4. 2nd Cool T |
| 5. 过热水第一段出口温度 | 5. 1st Boiler T |
| 6. 过热水第二段出口温度 | 6. 2nd Boiler T |
| 7. 持温段出口温度 | 7. Holding T |
| 8. 灌装温度 | 8. Filling T |
| 9. 物料泵出口压力 | 9. Product Outlet P |
| 10. 均质机出口压力 | 10. Hom. Outlet P |
| 11. 在线流量控制 | 11. Flow Rate Control |
| 12. 系统流量显示 (选配) | 12. Flow Rate Display |
| 13. SIP控制 | 13. SIP Function |
| 14. CIP控制 | 14. CIP Function |
| 15. 低液位保护 | 15. Low Level Switch |



软件功能/Function of software

随机软件可以实现各温度的同步显示，实时设定及控制。各数据可在设定时间内采集，自动生成在线杀菌曲线图表，保存并打印。

Software enclosed is allowed to set up, display and adjust various T, collect data, create curves or tables in real time during the whole process, which can be also saved or printed out at the user's wish.



系统温度平衡
Balance



升温
Heating



降温
Colling



重点单机 Key Individual Machines



SD-1500 实验型喷雾干燥机 SD-1500 Laboratory Scale Spray Dryer

概述

SD-1500喷雾干燥机是我司及日本POWERPOINT国际公司致力于喷雾干燥领域30余年，不断探索与改进的结晶。

本机自成系统，不需要其他附属设施，可随时启动，整机设计紧凑，带有可移动脚轮。

外设仅需要连接220/240V,50Hz,13amp的电源和把蒸发的湿气排到大气，另可接到废气回收系统。

INTRODUCTION

The SD-1500 Laboratory Spray Dryer is the result of 30 years of continuous development in the field of laboratory scale spray drying systems.

The unit is self contained and supplied complete and ready for immediate operation. All major components are housed within a stainless steel cabinet and the unit can be used on a bench top or with an optional stainless steel stand.

The SD-1500 only requires connection to 220/240 V, 50Hz power supply (Other Power Requirements Available) and provision for exhausting the evaporates moisture to atmosphere or to an existing extraction system.



技术参数:

额定水份蒸发率: 1500ml/hour (250°C时)
进风温度范围: 40°C-250°C
出风温度控制: 40°C-120°C
样品进量: 蠕动泵可调最大为1500ml/hour
喷雾系统: 标准0.75mm两流体喷嘴(0.5mm, 0.7mm, 0.75mm, 1.0mm, 1.5mm)
电源: 220/250V-50/60Hz-13amps, 单相+地, 约4.0KW
主机尺寸: 750×650×1600 (mm)
重量: 120kg

TECH. DATA

Evaporation capacity	1500~2000ml/hour (250°C)
Temperature inlet	40°C-250°C
Temperature outlet	40°C-120°C
Capacity	1500ml/hour
Spray system	0.5mm, 0.7mm, 0.75mm, 1.0mm, 1.5mm
Power supply	220/250V-50/60Hz-13amps, 4.0KW
Dimension	750×650×1600 (mm)
Drying chamber dimension	160mmOD X 600mm
Weight	120kg



TP-140 实验型压片机 TP 140 Lab Tablet Press

目前世界上最小型单压轮压片机,引进日本技术,桌上型设计。自带驱动电机,容量可调整,既可少量制作,也可连续小批量生产。

操作简单方便设计,主体结构采用不锈钢制造,和产品接触的部件为 316L 不锈钢。可通过更换底部成型器 / 排出器就可改变压片的直径和体积,两个钢凸轮控制机器的步进,不需要调整。

Smallest single-wheel tablet press machine, desk-top design, Selfinstalled drive motor, capacity adjustable, small batches processing, additional filler optional. The machine is designed for ease of operation. The main frame is made from Stainless Steel 304 steel, and all product contact surface are Stainless Steel 316L. Tablets of varying diameter and volume are easily achieved by removing and replacing the bottom former/ejector, punch and die with minimal setting time. Two hardened steel profile cams control the timing of the unit and need no adjustment.

压片的原料放在一个振动的鞋状容器内,当批量生产时,可以外接一个料斗(可选配置),冲压好的成品从一个斜槽排出,这里可放个收集容器。

The tablet formula is held in a vibrating shoe, which can be fitted with an external feed hop (optional) for larger quantities. The finished tablets are ejected down a shut, where a suitable collecting can be situated.

特征 / Features

每分钟 10-140 片,可无极调速
 3-15mm 可更换冲模
 压片厚度可调整
 可选外加漏斗
 机体可方便移动
 自带驱动电机
 口味评估的理想设备

10-140 tablets per minute, adjustable
 Interchangeable dies from 3-15mm
 Adjustable tablet thickness
 Additional filler optional
 Easy to move
 Self contained driver motor
 Ideal for flavor evaluation

技术参数 / Tech Datas

Tablet size: 3mm, 5mm, 8mm, 11mm, 15mm
 (Free for two sets of punch and die)
 Speed: max 140p/min 10 p/m
 Dimension (L*W*H): 700*350*600 mm
 Weight: 150kg
 Punch pressure: 4000KG
 Supplier Power: 220/240v 50/60Hz 8amp

压片尺寸: 3mm, 5mm, 8mm, 11mm, 15mm
 (标配任选两组冲头 / 冲模)
 压机速度: 10~140 片 / 分, 可调
 机体 (L*W*H): 700*350*600 mm
 重量: 150kg
 冲头压力: 4000KG
 电源: 220/240v 50/60Hz 8amp



本机集产品的冷却碳酸化与灌装压盖于一体。是我公司在引进、消化、吸收国外先进技术的基础上，根据含气饮料灌装工艺要求，创新研制而成的一种先进水平的灌装设备。它主要用于汽水、可乐、啤酒等含气饮料的灌装和封盖。该设备结构紧凑，操作安全，工作可靠，维护方便。

The ability to establish precise and reproducible parameters when carbonating in the laboratory can dramatically improve the speed with which new products can be developed. The TW-CF01 miniature-scale carbonator enables precise and flexible carbonation.

TW-CF01 碳酸饮料灌装机

TW-CF01 Combined Carbonator/Filler

优点/Benfits

- 简单重复性的批测试。
- 非常灵活和准确。
- 由于采用双级冷却，使得充填过程中CO₂的损失非常稀少。
- 简单易用：许多功能自动化。
- 节省成本：小批量测试，不需生产线。
- 附加灌装/带灌装头与压盖装置，可选配旋盖机。
- 可以灌装不同大小的容器，同样产品可以运行多种参数。

Easily reproducible test batches.

Very flexible and accurate.

No CO₂ loss during filling due to double stage cooling is very low.

Easy to use: many functions automated.

Cost saving: for small test batches no production line is required.

Additional filling/capping head can be added at a later date.

With TW-CF01 different container styles can be filled and capped to individual parameters on the same product run.

技术参数/Tech Datas

精确控制充二氧化碳含量及灌装量

可选择皇冠盖或螺旋盖

15L 加工缸，批次式，可以最少加工5L

快速测试

生产能力达30 升/时

可适用于容量在0.2—2.0 升的瓶子

CO₂ 含量可达到8g/L

彩色触摸屏式控制

系统可自动设定/运行系列参数

可碳酸化易起泡产品

碳酸化温度范围:4—20℃

预混合及后混合两种方式

可添加保护气体 (N₂)

可进行CIP清洗

与物料接触的部分为SUS304材质

Accurate control of filling and carbonating variables

Option of filling and crown seal capping and/or screw top capping at a single station

15L process vessel, positioned at a convenient height.

Throughputs up to 30lph achievable

Wide range of cans or bottles can be used from 0.15l to in excess of 2.0l

CO₂ content in excess of 8g/l can be realised

Enhanced colour touch screen control with Help facility as standard

Many parameters can be automated

Carbonates foaming products

Carbonates at any temperature between 4°C and 20°C

Premix and postmix capability

Adds protective gases (N₂ connection now standard)

Clean in place

The material contact with product is SUS 304

TW-RF10 升膜式浓缩蒸发器 TW-RF10 Risen film evaporator



设备介绍

升膜蒸发器是一种实验室试验生产设备。它是大型蒸发器设备现代化工业生产的依据，同时也是大中专院校师生理论与实践研究的理想设备。该设备实际上是液体物料在垂直管内以膜水状态连续上升继而分离浓缩的蒸发器。根据设备特点可做以下研究：

适用于多种热敏性液体物料在蒸发器内连续操作作业；研究改变参数（真空度、物料流量、影响结果的温度、再循环量）的试验；热交换器换热量的计算；了解CIP（就地清洗）程序的重要性。

Introduction

The Risen Film Concentrate Evaporator is one of the Laboratory equipment. It is not only the foundation for large evaporators in modernization Industries, but also the ideal equipment for the research centers in Higher Education Institutions. The equipment formula is based on separating and concentrating liquid materials, which are ascending continuously in a standing tube. According to the characteristics of the device, the researches can be applied as follows.

Various heated sensitive liquids working continuously in evaporators; Researches on various parameters (vacuum, flow for solid materials, temperature, recycling); Researches on the importance on the procedure of CIP (Cleaning in Place).

应用范围

本设备可以用于中药、食品、化工行业的真空浓缩操作。包括：果汁饮料、乳饮料、中草药、西药、葡萄糖、动物蛋白、植物蛋白、酿酒、淀粉、口服液、化工、保健食品、色素、添加剂、味精等。

Applications

Pharmaceutical, Food, Chemistry, Concentration of biomasses, including herbs, medicines, glucose, animal protein, plant protein, wine, starch, chemicals, healthy food, pigment, additives, dairy, etc.

技术参数/Tech Datas

加器管长：1.48m
 加热面积：0.23m²
 最大蒸发量：10L/h
 最大蒸汽消耗量：15kg/h
 最大蒸汽压力：1.7bar
 冷凝管长：0.55m
 换热面积：0.18m²
 冷却水量：0.5t/h
 原料罐：25L
 浓缩液罐：4L
 冷凝液罐：4L
 真空度：750mmHg
 总功率：1.5kw

Length of tubular heater: 1.48m
 Area of heating: 0.23m²
 The maxing evaporation capacity: 10L/h
 Vapour requirement: 15kg/h
 The max press of steam: 1.7bar
 Length of tubular cooler: 0.55m
 Area of heating exchanger: 0.18m²
 Cooling water: 0.5t/h
 Material tank : 25L
 Concentration tank: 4L
 Cooling tank: 4L
 Vacuity : 750mmHg
 Total power : 1.5kw;



TW-TEC50三效降膜蒸发器 TW-TEC50Triple effect falling evaporator

技术参数/Tech Datas

额定蒸发量: 50L/h
 装机功率: 8KW
 入料温度: 常温, 出料温度 < 48℃
 蒸汽耗量: 22KG/h, 蒸汽进气压力: 不小于7bar
 冷却水耗量: 1000Kg/h 25℃入, 39℃出
 入水压力: 不低于2bar
 一效蒸发温度: 最高75℃, 可调
 二效蒸发温度: 62℃
 三效蒸发温度: 48℃

Three-effect falling film evaporator
 Rated evaporation: 50L / h
 Installed power: 8KW
 feed temperature: room temperature, the material temperature <48℃
 Steam consumption: 22KG / h. pressure of the steam inlet: not less than 7bar
 Cooling water consumption: ~ 1000Kg / h 25 °C income, 39 °C out.
 Pressure of inlet water :not less than 2bar
 First-effect evaporation temperature: ≤75 °C
 Second-effect evaporation temperature: 62 °C
 Third-effect evaporation temperature: 48 °C

适用范围/Applications

适用于牛奶、果汁、葡萄糖、淀粉、木糖、制药、化工、生物工程、环保工程、废液回收等行业进行低温浓缩。

The machine widely used for concentration in dairy, juice, dextrose, starch, xylose, pharmaceutical, chemicals, bio-engineering, environmental engineering and waste liquor etc.

系统组成/System Compose

预热板片, 离心泵, 真空泵, 加热器, 蒸发室, 列管式冷凝器, 原料罐, 成品罐和机架以及连接管道

Warm-up plate, 4×Pump, Vacuum pump, Heater, Evaporation chamber, Tube condenser, Raw material tank

TW-VM6真空均质混合罐 TW-VM6Vaccum mixing tank

本设备是我公司通过多年与高校及研发机构合作，开发出适用于各类流体饮料制造、食品配料研发、香精香料配比、化学合成品以及其它具有流动性产品的加工；可以进行加热、冷却、常规搅拌、高剪切搅拌、均质等功能，物料可以维持在真空状态下进行加工，满足特殊工艺要求。操作简单、功能强，适用于食品企业及高校研究所的各种特殊研发需求。

As the result of many years of continuous development, the machine has been successfully applied for various food fields, such as beverage making, ingredients testing, flavor and fragrance weighting, chemical composing, and other liquids processing. The machine works in many functions, such as heating, cooling, normal stirring, high sheering stirring, and homogenizing, etc. It also can keep product being processed under aseptic condition. The machine not only has many functions, but is easily operated. It meets the great needs for R&D dept. in food enterprises and high institutions.



优 点/Advantage

批次式加工
 可用于各种粉体溶解
 可用于油/水/乳混合
 可CIP自动清洗 CIP
 产量可以少至仅2升

Process in series
 Suitable for dissolving powders
 Suitable for mixing oil, water and cream
 Minimum capacity 2 Liter

特 点/Characteristics

批次处理量2-6升
 PLC集成控制,可下载记录数据
 不锈钢罐体
 能在正压和负压条件下工作
 物料可加热至125℃
 底部配备高剪切乳化头,顶部配备框式搅拌器,速度可调
 罐顶可自动升降

Capacity 2-6 Liter
 PLC Integrated control system, data recorded for analysis
 made of stainless steel
 Able to work under positive or negative pressure
 125℃ heating up to 125℃
 Bottom with high sheering emulsification
 head, and top with plate-type stirrer. Adjustable speed
 Top lifts automatically

TW-PB3X5L 水浴槽

TW-PB3X5L Pasteurized bath

优点/Benefits

整机采用304不锈钢
 具有效率高，操作方便，自动化程度高等优点
 水浴罐容积可定制
 可以实现温度的控制及显示
 可根据用户要求配备不同的搅拌头
 水浴锅外包装保温材料
 热水循环泵
 温度传感器
 电加热器，功率8KW
 温度控制器4套
 进/排水阀。

Made of 304 Stainless Steel
 Easy operation, and automatically controlled
 Temperature control and display
 Volume customized
 Vustomized shearing heads
 Jacket layer
 Hot water circulation pump
 Temperature sensor
 Electrical heater, 8Kw
 Temperature controller,4 sets
 Feeding /Discharge pump



技术参数/Tech Datas

水浴锅体1式
 可移动支架1式
 电控箱1式
 5L水浴罐体3式
 电加热器1式,8KW
 温控器4式
 温度传感器4式
 热水循环泵1式
 锅体液位计1式
 排水阀1式

Whole made of SUS304 stainless steel
 Water bath I set
 Heater 1set
 Electromagnetic valve 1set
 Water inlet pipe 1 set
 8×6 liters vessels
 Cover for 5L vessel 3 set
 bath jacketed and insulated with polyester
 1 set of heater circulation pump
 With temperature sensor PT-100
 1 set of electrical heater 8kw ; 380V
 1 set of level sensors(high-low level monitoring)
 4 set of temperature controls and sensors 5 set
 Trestle 4 set



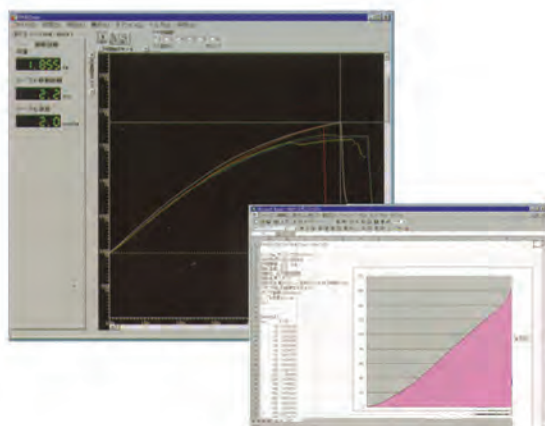
RTC-2010D.D-CW 型物性分析仪 RTC-2010D.D-CW Rheo Meter



应用范 /Area of applications

凝胶、果蔬、休闲食品、糖果、乳品、宠物食品、粮油食品、面制品、肉制品、米制品、药品、化妆品、工业材料及日常用品等等。

Jelly, fruit and vegetable, leisure food, candy, dairy, pet food, grain and oil food, flour pro-duct, meat product rice product, leechdom, cosmetic, industry material and daily things etc.



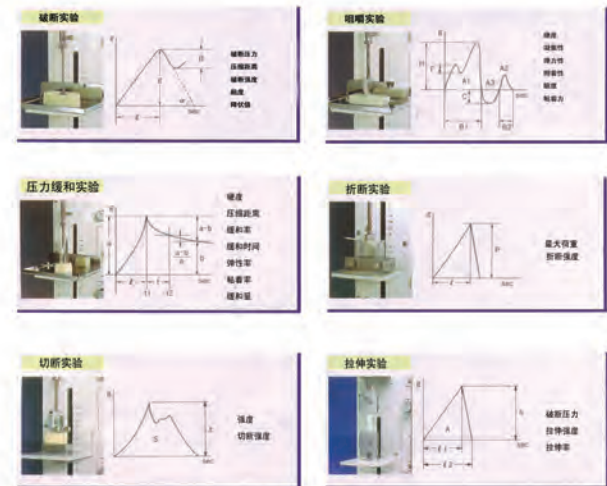
在线数据采集软件
 SOFTWARE FOR DATA-LOGGING INLINE

测定项目：

嫩度、硬度、压缩强度、凝胶强度、切断压力、渗入度、穿透力、剥离强度、弯曲度、挤压强度、引张强度、易磨性、碎性、咀嚼度、粘度、疲劳度、粘性和黏弹性等等。

Test items:

tenderness, rigidity, compression strength, jelly strength, cutting-off and rupture strength, creep, penetration, shear and cut-off, bending, extrusion strength, texture profile, grindability, tackiness, fatigue, viscosity and viscoelasticity, etc.



微处理器控制系统,轻松设置复杂的测量模式。

10 键操作介面,LCD 显示,操作简便。

设计简洁,易于携带,适用于现场分析。

利用分级马达和精巧的滚珠螺旋保证了操作的精确性和准确性。

初荷重自动较准功能,更换压力探头后,调零极为简便。

荷重和压力都可以在数字显示屏上直接显示

辅助的 RS232C 输入 / 输出连接器使得主机与数据存贮装置具有高度的连通性。

软件功能强大,可对数据进行计算,分析,输出和打印。

- 1)Inside micro-computer control offers easy to operation for setting complex measuring modes.
- 2)Ten-key allows easy operation with LCD display indications.
- 3)Designed compact and easy to hand-carry for site analysis.
- 4)Promises precise and accurate operation by use of a stepping motor and fine ball screws.
- 5)Automatic load initiation capabilities offers easy zero point reset during adapter replacement.
- 6)Load and strain are directly indicated by digital display.
- 7)An auxiliary RS-232C input/output connector offers high connectivity to Data storage devices, etc.



TW-MP20 多功能加工缸

TW-MP20 Multi-purpose processing vessel

精确的添加剂含量和正确的原料配比对产品起着至关重要的作用。通常加工过程都需要进行加热，以及随后的冷却、冷冻等延长保质期的处理。我公司多功能加工罐可使用少量原料进行混合、乳化、加热、高温杀菌、保温、冷却、冷冻、凝固等处理，为食品后加工做准备。批次产量为5-20L。

A vital stage in the preparation of a food product is the accurate addition and correct mixing of the various ingredients which make up the recipe. It is usual that heat will be required, subsequent cooling and chilling are often needed for preservation. The Triowin Multi-Purpose Processing Vessel is able to carry out these actions with very small quantities of ingredients. The facilities to mix, emulsify, heat, pasteurise, incubate, cool, chill and cure are all built in to this purpose-designed unit. As well as preparation of food products for further processing, the facilities allow production of finished products in batch sizes from 5– 20 litres.

优点/Benefits

一机多用
可添加多种粉剂
制备油水乳剂
最小处理量5L

Versatile batch processing
Used for a variety of powder incorporations
Used to make oil/water emulsions
Can make as little as 5 litres

应用/Applications

冰激凌制备和固化
制备人造奶油和糊状乳剂
制备酸奶和发酵奶制品
批次加热杀菌
一般加热、冷却和冷冻应用

Preparation and curing of ice cream mix
Preparation of margarine and soft spread emulsions
Production of yogurt and fermented milk products
Batch pasteurization
General heating, cooling and chilling utility

TW-RU15 反渗透/超滤系统

TW-RU15 Reverse osmosis/ ultrafiltration unit

RO/UF机组是目前世界上最小的工业膜处理系统，供实验室反渗透和超滤试验使用。

The Triowin RO/UF unit is the smallest known industrial membrane system of its type in the world. It is designed specifically for laboratory scale testing of both reverse osmosis and ultrafiltration techniques.



应用范围/Applications

对牛奶、乳清、蔬果汁、酒精饮料等进行浓缩、澄清、分离和标准化、污水处理，酶、抗生素和有机酸。

Concentration/clarification/fractionation and standardisation of:

Milk, whey, fruit juices, vegetable juices, alcoholic beverages. Treatment of effluent. Enzymes, antibiotics and organic acids.

反渗透和超滤两种功能。

就地清洗装置。

独立运作，可移动。

计算机连接，进行数据记录和分析。

Dual operation, RO/UF

Clean-in-place facility

Mobile and self-contained operation

Computer linked for data logging and analysis

技术参数/Tech Datas

泵流量: 5-8LPM (25bar)

压力: 25bar

膜直径: 3.0cm

单支膜面积: 0.094m²

加液罐容积: 10升

渗透罐容积: 8升

尺寸: 1.1*0.85m*0.8m

体积: 0.8m³

毛重: 250kg

Area of each membrane: 0.094m²

Pump flow rate: 5-8LPM @ 25bar

Pump works pressure: 25bar

Diameter of membrane: 3.0cm

Feed tank capacity :10liters

Permeate tank capacity :8 liters

Dimension: 1.1*0.85m*0.8m

Volume : 0.8m³

Weight: 250kg



TW-CS02 干酪拉伸机
TW-CS02 Cheese stretcher

应用范围/Application

该实用新型拉伸机具有结构合理、拆卸方便、便于清洗的优点，并能够对比萨饼干酪制作中的加热温度及搅拌程度进行实时控制。

The machine has many features, such as compact design, easy clean, and precise control on temperature and stirring process etc.

技术参数/Tech Datas

电源: 380v 50Hz

加热器功率: 6.0kw

热水循环泵: 流量50L/min 扬程30m 功率0.55kw

传动马达: 转速27RPM 功率0.37kw

传动马达可变频调速

PID方式温度控制

外形尺寸 (L*W*H): 1700mm*420mm*1600mm



TW-CM 干酪融化机
TW-CM Cheese melt machine

质量保持稳定; 因二次杀菌, 在卫生上安全可靠, 且保存性好; 因多种风味和不同成熟度的天然干酪配合加工, 所以风味及组织结构独特; 大小, 重量及包装式均可自由选择; 干酪废弃部分少, 对消费者经济实惠。

Good quality . It is hygienic, safe, and long life shelf, since double sterilization.Unique tastes, since processed by kinds of nature cheese; Sizes, weight, and packing can be customized. Maximized usage with little waste .

应用范围/Application

该设备用于生产再制干酪, 将一种或两种以上的不同风味和不同成熟度的天然干酪粉碎后, 添加乳化剂加热予以融化, 必要时再加入香辛料, 调味料最后冷却成型而制成。

This machine is used to reproduce cheese. Firstly, more than one nature cheeses are crushed. Then add emulsifier, and cheeses are heated to be melted. The final products are refrigerated after ingredients.

技术参数/Tech Datas

电源: 380v 50Hz

配蒸汽发生器功率: 9kw

传动马达: 转速83RPM 功率0.37kw

传动马达可变频调速

外形尺寸 (L*W*H): 1100mm*500mm*1200mm



TW-H1500 高压均质机

TW-H1500 High pressure homogenization



机器特点/Characteristics

2.2kw的大功率电机，保证高压下稳定工作。
可配置在位冷却系统，用于细胞破碎，直接吸收破碎热量，保证胞内物质活性。
特殊的进料阀设计，无需排气，直接进料。
高效破碎，大肠杆菌一遍可达95%以上。
可选配冷却盘管，以保证更高的生物活性。
所有接触物料管道均为316L材质。

2.2Kw motor ensures the stability when working.
It can be connected to the cooling system. Cells rupture to absorb energy directly, and keep cells active.
Special feed pump design to charge in direct, without exhausting
High efficiently smash, Backwoods coli per once can reach >95%
Cooling coil is optional, to keep cells more active.
Food touching material is all made of 316 Stainless Steel

本设备是我公司通过多年与高校及研发机构合作，开发出适用于各类流体饮料制造、食品配料研发、香精香料配比、化学合成品以及其它具有流动性产品的加工；可以进行加热、冷却、均质等功能，满足特殊工艺要求。操作简单、功能强，适用于食品企业及高校研究所的各种特殊研发需求。

As the result of many years of continuous development, the machine has been successfully applied for various food fields, such as beverage making, ingredients testing, flavor and fragrance weighting, chemical composing, and other liquids processing. The machine works in many functions, such as heating, cooling, and homogenizing, etc. The machine not only has many functions, but is easily operated. It meets the great needs for R&D dept. in food enterprises and high institutions.

设备参数/Parameters

最大进料颗粒尺寸: < 100微米
产量: 15升/小时
最大工作压力: 1500bar/22500psi
最小处理量: 50ml
马达功率: 2.2kW/380v/50hz
重量: 110kg
均质级数: 一级

Max Inlet parcel: <100um
Capacity: 15L/h
Level: 1 grade
Maximum pressure: 1500bar/22500psi
Minimum capacity: 50ml
Motor power: 2.2kW/380v/50hz
Weight: 110kg

TW-DR25 除臭机 TW-DR25 Deodorizing unit

描述/Description

主要部件有25L处理罐、高真空泵、控制台、排出泵和增压过滤器，均置于主框架内。电热器功率4.5kw，可将油最高加热至250° C。处理罐中有特殊蒸汽排管，对油气混合有重要作用。处理温度由控制台内的温控仪设定，温度变化通过图形记录器连续记录。处理完成后油液中浸没的旋管对其进行冷却。多级真空系统可以将处理罐内压强降至5mm Hg (ABS)以下。真空部件包括蒸汽喷射器、冷凝器和液环真空泵。控制台通过压力传感器感知罐内压力，低于1托时在数字显示器上显示。蒸发的脂肪酸等化合物随蒸汽进入喷雾冷凝器冷凝，和液环真空泵的密封水共同排出。除臭结束后油被导入“增压过滤器”去除残留杂质。除臭设备制造符合BS5500压力容器标准。所有接触物料部件均由不锈钢制造

The deodorising process vessel has a batch size of 25 litres and is mounted in a floor-standing stainless steel framework which also houses the high vacuum equipment, control console, discharge pump and polishing filter.

A 4.5kW electrical heating element is incorporated in the vessel to heat the oil to temperatures of up to 250° C. The vessel also contains a special steam distribution tube which allows the thorough steam/oil mixing required.

Operating temperature is selected on an electronic temperature controller and is recorded on a continuous chart recorder both of which are housed in the control console.

An immersed cooling water coil provides a means of reducing the oil temperature on completion of the process.

Fatty acids and other compounds carried over with the steam are condensed in a spray type condenser and they pass to drain with the sealing water of the liquid ring vacuum pump. On completion of the deodorising process, the oil is pumped out of the vessel through a 'polishing' filter which removes any remaining particles in the finished oil.

The deodoriser vessel is designed in accordance with the BS 5500 code for pressure vessels.

All materials in contact with process fluid are of stainless steel.

除臭/Deodorising

油液在真空环境下经直接蒸汽加热，由蒸汽的搅动作用促进热传递。达到要求的温度和压力后，直接蒸汽注入改为强烈涡流，使油液和蒸汽充分接触。杂质被蒸发后进入真空冷凝器，凝结后与液环真空泵的密封水共同排出。

The oil is heated under vacuum using direct steam to provide the agitation for good heat transfer. When the desired temperature and pressure are achieved, the direct steam injection is adjusted to impart a high degree of turbulence to the oil which ensures good physical contact of the steam with the oil. The impurities are carried over in the vapour and condensed in the vacuum condenser, the resulting condensate blending with the liquid ring vacuum pump sealant to be discharged to drain.



技术参数/Tech Datas

批处理量: 25升	Batch capacity: 25 liters
物料最高温度: 250° C	Product maximum temperature : 250°C
工作压力: 负压	Working pressure: minus pressure
加热器: 4.5kW	Heating element: 4.5kW
冷却面积: 0.15m²	Cooling area: 0.15m²
蒸汽耗量: 6kg/hr	Steam consume: 6kg/hr
蒸汽压力: 10bar	Motor power: 5.1kW
电机功率: 5.1kW	Power : 380V/3ph/50Hz, 13kW
电源: 380V/3ph/50Hz, 13kW	Volume: 2.1m³
尺寸1.3m*0.85m*1.65m	Gross weight: 480kg
体积: 2.1m³	
毛重: 480kg	

增压/Polishing

除臭后的食用油即符合生产标准，若对色泽有进一步要求则需进行增压过滤，去除6.0微米以上杂质，使其色泽明亮。

After deodorisation, the oil refining process is complete and the oil can be consumed or used in the manufacture of other products. It must therefore be free of any trace of contaminants and, to achieve this, it is pumped through a fine 'polishing' filter which removes particles down to 6.0 micron giving a bright oil as product.



TW-NW25 中和洗涤漂白罐 TW-NW25 Neutraliser/washer/bleacher unit

功能/Modes of Operation

TW-NW25落地式缓冲洗涤漂白罐用于精炼处理小批粗加工食用油，帮助实验室研发。

The Triowin TW-NW25 Neutraliser/Washer/Bleacher is a floor standing batch processing vessel capable of performing the pre-refining stages on small quantities of crude edible oils and facilitates practical research and development.

技术参数/Tech Datas

批处理量: 25L
罐体材质: SUS304
加热器功率: 4.5kW
冷却面积: 0.18m²
搅拌速度: 300-1450 rpm
过滤器材质: SUS304
过滤面积: 0.12 m²
电源: 380V/3ph/50Hz, 8kW
尺寸: 1.5m*0.8 m*1.95 m
体积: 2.5m³
重量: 560kg

Batch capacity: 25 liters
Tank material: SUS304
Heater: 4.5kW
Cooling area: 0.18m²
Agitator speed: 300-1450 rpm
Filter material: SUS304
Filter area: 0.12 m²
Power: 380V/3ph/50Hz, 8kW
Dimension: 1.5m*0.8 m*1.95 m
Volume: 2.5m³
Weight: 560kg

优点/Benefits

操作简单
接触物料部件全部使用不锈钢制造
变速平叶片搅动，最大速度1800rpm
使用液环式真空泵，工作真空度75mm Hg
叶片式压滤机符合BS5500标准
25L处理罐符合BS5500标准
结构紧凑独立
冷却旋管
排气泵
电热部件

Simple Controls
Surfaces in contact with the process fluid are stainless steel
Agitation by variable speed flat blade impeller (variable to 1800rpm)
Orking vacuum of 75mm Hg (ABS) with liquid ring vacuum pump
Pressure leaf filter designed to BS5500
25 litre vessel designed to BS5500
Compact and self contained
Cooling coil
Extraction pump
Electrical heating element

TW-BD25 分批提取脱溶剂机

TW-BD25 Batch solvent extraction and desolventing unit

TW-BD25是落地式分批处理机，可对多种固体或液体物料进行提取，尤其适合进行食用油的“沥滤”，并对提取的固体和油水混合物去溶剂处理。

The Triowin Solvent Extraction Unit is a floor standing, batch process capable of carrying out a variety of solid/liquid extractions. It is particularly suitable for 'leaching' edible oils from oil-bearing seeds and desolventising both the extracted solids and the miscella.



技术参数/Tech Datas

批处理量: 25kg
 Batch capacity: 25kg
 直接蒸汽: 8kg/hr
 Direct steam: 8kg/hr
 间接蒸汽: 4 bar
 Indirect steam: 4 bar
 最小提取量: 3升
 Minimum distill: 3 liters
 提取罐容积: 100 升
 Distill tank volume: 100 liters
 冷凝面积: 3m²
 Condensing area: 3m²
 冷却介质: 水
 Cooling medium :water
 蒸汽耗量: 15kg/hr, 10bar
 Steam consume: 15kg/hr, 10bar
 电源: 380V/3ph/50Hz, 15kW
 Power: 380V/3ph/50Hz, 15kW
 尺寸: 1.8m*1.95m*1.2m
 Dimension: 1.8m*1.95m*1.2m
 体积: 4.2m³
 Volume: 4.2m³
 重量: 760kg
 Weight: 760kg

特点/Character

独立系统/功能完备	Fully self contained system
落地式框架	Floor Mounted
单提取/去溶剂罐	Single extraction/desolventiser vessel
油水混合物槽	Miscella tank
顶部冷凝器	Tops condensor
溶剂/水回收罐	Solvent/water recovery tank
全防火制造	All flame proof construction

应用范围/Capabilities

固体物料预处理	Effect of degree of pretreatment of solid material on extraction efficiency.
多种溶剂	Effect of solvent type..
溶剂渗透率	Effect of solvent percolation rate.
过程温度和压力	Effect of process temperature and pressure.
提取和析水时间	Effect of extraction time and drain time.
溶剂回收	Method and degree of solvent recovery.

TW-BP50 混合、加工及缓冲系统

TW-BP50 Blending, processing and buffering unit

应用/Applications

分批巴氏杀菌器
发酵容器
混合搅拌系统
老化容器
溶解系统
脱气系统
无菌缓冲罐
充气系统等等

Batch Pasteuriser / Batch Cooker
Fermentation vessel
Mixing and Blending system
Aging vessel
Dissolving system
Deaeration / Degassing vessel
(Aseptic) Buffering vessel
Aeration system... etc.



特点/Features

可移动的单机，配齐所有的精选的控制器和仪表
复合卫生标准的设计
无菌设计（选件）
按用户指定规格而专门制作
接口开放
模块构造
搅拌器可以互换
搅拌器可调速
供货时配备仪表与控制器
可从环境温度加温到150℃

Stand-alone unit with all selected controls and instrumentations.
Hygienic design
Aseptic design (option)
Based on customer specification
Full access
Modular build
Agitators are interchangeable
Adjustable speed of the agitator
Supplied with instruments and controls
Heating up from Ambient up to 150°C [302° F]

优点/Benefits

采用即插即用式的设计原理
污染更少，因而清洁工作时间也更少
最大程度降低污染
对客户应用情况的真实模拟
易于灌装和清洁
技术经过实践验证，具备充分的适应能力
在应用方面灵活多样
产品范围广泛
易于集成到加工设备中
可以模拟多种加工工艺

Plug and play principle
Less contamination / less cleaning time
Minimise contamination
Real simulation of your applications
Easy to fill and clean
Proven technology with full flexibility
Flexible in applications
Broad range of products
Easy to integrate in a process plant
Wide range of processes can be simulated

TW-HD25落地式加氢机用于调整食用油的饱和度，处理量25L每批。

优点/Benefits

处理量小，节省原料
使用安全简单
滤网可重复利用

Only 25 litres of oil to be hydrogenated
Safe and easy to use
Reusable filter mesh

技术参数/Tech Datas

批处理量: 25升
 Batch capacity: 25 liters
 盘管换热面积: 0.12m²
 Coil tube surface area: 0.12m²
 产品最高温度: 180° C
 Maximum working temperature: 180° C
 搅拌器转速: 2900 rpm
 Maximum agitator speed: 2900 rpm
 蒸汽耗量: 12kg/hr, 10bar
 Steam consume: 12kg/hr, 10bar
 过滤器材质: SUS304
 Filter material: SUS304
 过滤面积: 0.12 m²
 Filter area: 0.12 m²
 电源: 380V/3ph/50Hz, 15kW
 Power: 380V/3ph/50Hz, 15kW
 尺寸: 1.5m*1.2 m*1.95 m
 Dimension: 1.5m*1.2 m*1.95 m
 体积: 3.5m³
 Volume: 3.5m³
 重量: 580kg
 Weight: 580kg

功能/Modes of Operation

改变食用油的物理性质需要在严格的加工环境下,在催化剂存在时加入氢气,提高其饱和度。反应结束后将催化剂滤出。加氢机通过涡流搅拌器和挡板进行高效油气混合,精确控制相关处理参数。油加热至反应温度后注入氢气,并填充处理罐的气体部分,加压至反应压力。对反应进行定期采样检测,直到其达到预期饱和度。

In order to increase the degree of saturation of edible oils to adjust their physical characteristics, the oil must be mixed with hydrogen gas in the presence of a catalyst under very precisely controlled process conditions. On completion of the reaction, the catalyst must be completely removed by an efficient filtration operation. The Hydrogenation unit achieves this by use of a variable speed turbine impeller and baffle arrangement which allows efficient gas-liquid mixing, and accurate control of the pertinent process parameters. Oil is heated to the desired reaction temperature then hydrogen gas is admitted and fills the vapour space to the pressure required. The progress of the reaction is monitored by regular sample taking and the process stopped when the desired degree of saturation has been obtained.

TW-HC20酸奶冷却机

TW-HC20 Yogurt Cooler

TW-HC20型酸奶冷却机采用套管式换热冷却，设计结构包括预冷段、冰冷段，设备结构紧凑，外设只需接冰水、自来水和电，冷却温度精确控制。

TW-HC20 Yogurt Cooler adopts the tube in tube heat exchange design; combined by the pre-cooling stage, cooling stage. Compact equipment structure, high accuracy cool temperature control; only need to connect the ice water, tap water and electric power to work.

技术参数/Tech Datas

标准产能：20L/H(流量5-40L可调)

可根据客户要求定制

冷却管尺寸：内径14mm

容通颗粒：最大0.8mm

最低冷却温度：10℃

最高加热温度：110℃

最高压力：10bar

CIP功能：具备

进料斗：10L，带搅拌器

电源：3相电源，380V,接零、地线

设计功率：8KW

自来水要求：压力≥2KG,耗量≥250L/H

冰水要求：压力≥2KG,耗量≥150L/H 温度≥7℃

Production capacity : 20L/H(5-40L adjustable)
can provide custom ones according to special requirement

Size of tube : internal diameter 14mm

Max inlet particle size: 0.8mm

Min cooling temperature : 10℃

Max heating temperature : 110℃

Max pressure : 10bar

CIP function : available

Hopper : 10L, with stirrer

Power : 380V, three phases connect to neutral, earth wire

Design power : 8KW

Tap water : pressure ≥ 2KG, consumption ≥ 250L/H

Cooling water : Pressure ≥ 2KG,
Consumption ≥ 150L/H
Temperature ≥ 7℃



为搅拌型酸奶的开发提供稳定可重复的实验数据

Provide stable replicable testing data for stirred yogurt development:

1. 通过两段冷却系统将酸奶冷却至需要的灌装温度，同时完成破乳和冷却工序
2. 通过调节酸奶平滑器来给予产品不同的剪切力
3. 测试不同灌装温度以及不同剪切力对酸奶质构、粘度的影响和回复
4. 适合搅拌型酸奶、希腊酸奶和含乳甜点的重复比对试验。

1. Cooled to required filling temperature through two stage cooling system; complete the demulsification and cooling at the same time.
2. shear force can be adjusted by yogurt flat valve
3. Effect on the yogurt texture and viscosity at difference filling temperature or shearing force.
4. Applicable for the repeate comparison test for stirred type yogurt, greek yogurt and milk desserts

TW-XJD10 发酵罐

TW-XJD10 Mechanical Stirring Bio Fermentation

TW-XJD10发酵罐主体结构为不锈钢材质制造，一体化设计，多种功能，小巧美观，罐内无死角。特别适合实验室使用，可独立使用，也可作为种子罐，与其他发酵罐配合使用。可配置导流筒，扩展为气升式发酵罐。

TW-XJD10 fermentation tank structure is made by Stainless steel, integral design, multi-function, no dead space in tank. Specially applicable for laboratory,; can be used alone or as the seeding tank to be used with other fermentation tank; can equip guide shell expanding to airlift fermentation

技术参数/Tech Datas

全容积：5L/7L/10L/15L...
 装料系数：0.65~0.8 最佳0.7
 表面粗糙度：内表面抛光Ra0.4 μm （机械抛光或电解抛光）。
 外表面抛光Ra0.6~0.8 μm （亚光处理），或喷砂处理。
 工作罐压：0.01Mpa ~0.05 Mpa。带压力表，手动调节（标配）
 带压力传感器，比例调节阀及气动阀自动调节（可选项）
 材质：与物料接触的为SUS316L不锈钢，其他为SUS304。
 搅拌方式：上机械搅拌(或下磁力耦合搅拌)，采用单端面双机械密封。两组六片搅拌器，三块挡料板，带机械消泡浆。
 温度控制：PID数字化控制，循环泵强制水循环，电磁阀自动控制，PT100温度传感器检测。
 灭菌方式：在位灭菌，或离位高压灭菌锅灭菌。
 温度控制范围：5~65 $\pm$ 0.2 $^{\circ}\text{C}$ ，分辨率0.1 $^{\circ}\text{C}$
 灭菌温度：100 ~130 $^{\circ}\text{C}$
 搅拌转速：50~1000rpm $\pm$ 5%*最高转速，分辨率1rpm，变频器调节。根据罐的大小及物料要求决定转速。
 PH控制：2~12 $\pm$ 0.02PH，分辨率0.01PH。PH、酸与碱联动控制。蠕动泵自动调节以加酸、加碱，梅特勒PH传感器进行信号传输。
 DO控制：0~100% $\pm$ 5%，分辨率0.1%，DO与转速联动控制，梅



特勒DO传感器进行信号传输。
 泡沫控制：自动控制与报警，不锈钢电极在线监测，蠕动泵自动添加消泡剂。
 空气流量：质量流量计，气动阀自动调节。进气过滤器，尾气过滤器，带PALL滤芯，过滤精度0.02 μm
 罐体配置：接种采用酒精灯火焰接种口。取样阀、罐底阀可进行随时灭菌。
 配标准PH,DO电极侧边接口,配置泡沫液位、温度传感器接口，补料接口，侧面大视角观测视镜，配有安全照明视镜。

TW-XJ10 -100C发酵罐系统

TW-XJ10-100C Mechanical Stirring fermentation system



TW-XJ10-100C发酵罐系统主体结构为不锈钢材质制造，在位灭菌，安全可靠。

技术参数/Tech Datas

大视角纵向视镜观测清晰；
 落地式框架结构，结构紧凑美观大方，操作方便；
 种子罐与发酵罐既可作扩培用，又可作为独立发酵系统单独运行，尤其适用超长时间微生物发酵，小罐与大罐之间通过压差来进行移种。
 设计压力：0.35Mpa 使用压力：0.2 Mpa。带压力表，手动调节（标配）带压力传感器，比例调节阀及气动阀自动调节（可选项）
 材质：与物料接触的为SUS316L不锈钢，其他为SUS304。
 搅拌方式：上机械搅拌(或下磁力耦合搅拌)，采用博格曼单端面双机械密封。一组直叶轮，一组斜叶轮，四块挡料板，带机械消泡浆。机械密封可进行灭菌，避免搅拌过程染菌。
 温度控制：罐体设有保温夹套和控温夹套，PID数字化控制，循环泵强制水循环，电磁阀自动控制，PT100温度传感器检测。
 灭菌方式：在位灭菌，或离位高压灭菌锅灭菌。
 温度控制范围：5~65 $\pm$ 0.2 $^{\circ}\text{C}$ ，分辨率0.1 $^{\circ}\text{C}$
 灭菌温度：100 ~130 $^{\circ}\text{C}$
 搅拌转速：50~1000rpm $\pm$ 5%*最高转速，分辨率1rpm，变频器调节。根据罐的大小及物料要求决定转速。
 PH控制：2~12 $\pm$ 0.02PH，分辨率0.01PH。PH、酸与碱 联动控制。蠕动泵自动调节以加酸、加碱。梅特勒PH传感器进行信号传输。
 DO控制：0~100% $\pm$ 5%，分辨率0.1%，DO与转速联动控制，梅特勒DO传感器进行信号传输。
 泡沫控制：自动控制与报警，不锈钢电极在线监测，蠕动泵自动添加消泡剂。
 空气流量：质量流量计，气动阀自动调节。进气过滤器，尾气过滤器，带PALL滤芯，过滤精度0.02 μm
 罐体配置：小罐有火焰接种口，取样阀、罐底阀可进行随时灭菌。
 配标准PH,DO电极侧边接口,配置泡沫液位、温度传感器接口，侧面大视角观测视镜，配有安全照明视镜。

客户名单 Customer List

伊利集团
 蒙牛集团
 马鞍山蒙牛研发中心
 新希望集团
 上海光明
 上海旺旺集团
 原三鹿集团
 南京卫岗乳业
 天津康师傅集团
 广东加多宝
 杭州农夫山泉
 福建大闽国际
 达能集团
 广州美晨
 石家庄兄弟配料
 斯比凯可（上海）研发中心
 泰莱国际（上海）公司
 帝斯曼（中国）有限公司
 嘉吉亚太食品系统（北京）有限公司
 美国FMC（上海）研发中心
 杜邦（郑州）蛋白有限公司上海研发中心
 上海超级格致致贸易有限公司
 丹尼斯克（中国）有限公司
 百事（中国）有限公司
 完美（中国）有限公司
 南昌泰康食品科技有限公司
 芬美意香料（中国）有限公司
 北京威德香料 浙江绿品香料
 上海旭梅香精有限公司
 深圳冠利达波顿香料
 广州美益香料有限公司
 广州合诚实业有限公司
 杭州芬莱生物科技有限公司
 上海ISP国际特品
 德国BASF（上海）研发中心
 张家港不二油脂
 秦皇岛金海粮油
 贵阳三联乳业
 烟台安德利果胶有限公司
 无限极（中国）
 广东顺大食品调料有限公司
 大庆日月星有限公司
 四川恩威中医药研究所开发有限公司
 杭州澳医保灵药业
 秦皇岛福源淀粉股份有限公司
 甘肃圣大方舟马铃薯变性淀粉有限公司
 天津斯特兰能源有限公司
 艺康（中国）
 山东好当家海洋发展股份有限公司
 哈尔滨三乐生物工程有限公司
 云南云天化股份有限公司
 杭州第六人民医院
 汇通泰康生物科技（北京）有限公司
 广州雅道食品
 吉林集安益药股份有限公司
 上海白猫
 南京一夫新型建筑材料有限公司
 山东冠华蛋白有限公司
 上海赢创食品发展有限公司
 上海青浦现代农业园区生态农场有限公司
 浙江银河药业
 河北神威药业
 北京军区总医院
 第三军医大学附属西南医院
 广西皇氏甲天下乳业股份有限公司
 黑牛食品股份有限公司
 河南森雨饮品股份有限公司
 深圳安顺食品有限公司
 华南理工大学
 浙江大学
 浙江工商大学
 浙江科技学院
 江南大学

上海交大
 北京大学
 清华大学
 甘肃农业大学
 南京农业大学
 华中农业大学
 沈阳农业大学
 天津科技大学
 广东药学院
 集美大学
 厦门大学
 河北科技大学
 深圳职业技术学院
 新疆轻工职业技术学院
 江苏经贸职业技术学院
 黄河水利职业技术学院
 宁夏农林科学院
 肇庆技师学院
 广东食品药品学院
 上海应用技术学院
 合肥工业大学
 大连工业大学
 大连理工大学
 中南大学
 武汉大学
 南昌大学
 北京工商大学
 辽宁师范大学
 临沂师范学院
 湖南科技大学
 湖南农业大学
 武汉科技大学
 上海大学
 南开大学
 吉林大学
 西北民族大学
 合肥学院
 潍坊学院
 淮化学院
 南通大学
 青海师范大学
 信阳师范学院
 潮州师范学院
 山西运城学院
 河南科技学院
 吉林医药大学
 电子科技大学
 贺州学院
 浙江中医药大学
 宣武第三职业学校
 西北民族大学
 齐齐哈尔医学院
 广东轻工职业技术学院
 济南果品研究院
 北京农科院
 广东农科院
 中国农业科学院原子能研究所
 中国农业科学院饲料研究所
 沈阳万嘉生物研究所
 上海硅酸盐研究所
 上海长兴科技有限公司
 广西轻工研究所
 吉林工商学院
 中国电子科技集团第十二/十四研究所
 长春大学
 大连化学物理研究所
 上海粮食科学研究所
 上海市食品科学研究所
 中国石化北京化工研究院
 北京石油化工学校
 河南农科院
 福州市食品工业研究所
 奇瑞汽车研究院
 南化集团研究院
 石油化工研究所
 步长制药
 甘肃华羚生物科技有限公司

现场应用实例 Installation & Application

据不完全统计，截止到2010年，POWERPOINT联合上海沃迪科技共同在世界范围内推出了189套超高温UHT实验/试验生产线，其中中国大陆共有78套。其主要客户有伊利集团、光明集团、芬美意、杜邦、康师傅、旺旺集团、上海交大、江南大学、黄河水利职校、华中农业大学、深圳职业技术学院、蒙牛（马鞍山）研发中心等。部分现场应用图片如下：

Until 2010, under the close cooperation between Powerpoint Japan and Shanghai Triowin, it is estimated that over 189 sets of UHT have been sold in the worldwide, of which includes 78 sets in mainland China. The main clients, for instance, are YILI INDUSTRIAL GROUP CO., LTD., BRIGHT DAIRY GROUP, FMC, DUPONT, TING HSIN INTERNATIONAL GROUP, WANT-WANT etc.. Partial photos of installation & application are as below.



伊利集团
YILI INDUSTRIAL GROUP CO., LTD.



光明集团
BRIGHT DAIRY GROUP



上海富曼实
FMC



杜邦
DUPONT



天津康师傅
TING HSIN INTERNATIONAL GROUP



旺旺集团
WANT-WANT



上海交通大学
SHANGHAI JIAOTONG UNIVERSITY



江南大学
JIANGNAN UNIVERSITY



黄河水利职业技术学院
YELLOW RIVER CONSERVANCY TEC.



华中农业大学
HUAZHONG AGRICULTURAL UNIVERSITY



清华大学
TSINGHUA UNIVERSITY



蒙牛（马鞍山）研发中心
MENGNIU(MAANSHAN)R&D

打造中国实验设备第一品牌
Branding No.1 for Pilot Plants in China



上海沃迪自动化装备股份有限公司
Shanghai Triowin Automation Machinery Co., Ltd.

中国 上海 金山工业区亭卫公路5899号
No.5899 Tingwei Rd.Jinshan Industrial Zone,
Shanghai P.R.C.

邮编/POST No.:201506

电话/TEL:86-21-37901188

传真/FAX:86-21-54331011

电邮/E-MAIL:info@triowin.com

网站/http://www.triowin.com