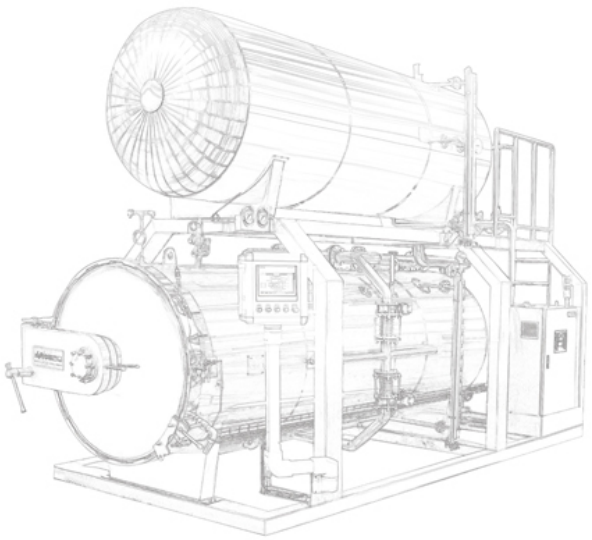
zlph 中联普惠

ONE-STOP MANUFACTURER
RETORT / LOADING
UNLOADING SYSTEM



ZLPH MACHINERY TECHNOLOGY CO.,LTD.



ABOUT ZLPH

ZLPH MACHINERY TECHNOLOGY Co., Ltd is a comprehensive enterprise specializing in mid-to-high-end sterilization equipment, integrating the design and manufacturing of automated loading and unloading production lines.

Adhering to the philosophy of "people-oriented, technological innovation," the company is committed to building a technology platform enterprise with depth, breadth, and a human touch.

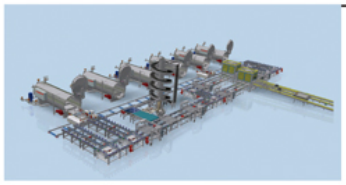
The company covers an area of 50 acres, with a current usable area of 23,000 m^3 in its first-phase production workshop. The second phase, covering 21,000 m^3, is scheduled to be completed and put into operation by the end of 2026. Located in Zhucheng, Shandong, near Qingdao and Rizhao, the company enjoys a superior location and convenient transportation. Currently, it has over 230 employees, including 36 mechanical design engineers and PLC programming engineers, 8 senior sterilization process R&D engineers, 32 senior after-sales engineers, 5 quality control engineers, 70 certified welders in special industries, and 6 certified X-ray inspection engineers. Many employees have received training and exchange opportunities at world-class sterilization equipment companies in the United States, France, Germany, and Japan.





ZERO-DISTANCE SERVICE

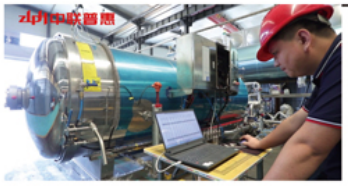
ZLPH more concentrates on user experience, and it is our eternal goal to provide satisfying products and services for customers.
Complete team structure, professional technology and service, provide you with 360-degree all-round support.



Professional design plan

Sophisticated production,
complete inspection records





FAT, HDT test

On-site installation/
debugging/FDA inspection





Free Training

Remote online diagnosis and service,
in time trouble-shooting



ZLPH QUALIFICATION

The perfect standard achieves the reputation.The selfless devotion accumulates Industry prestige .















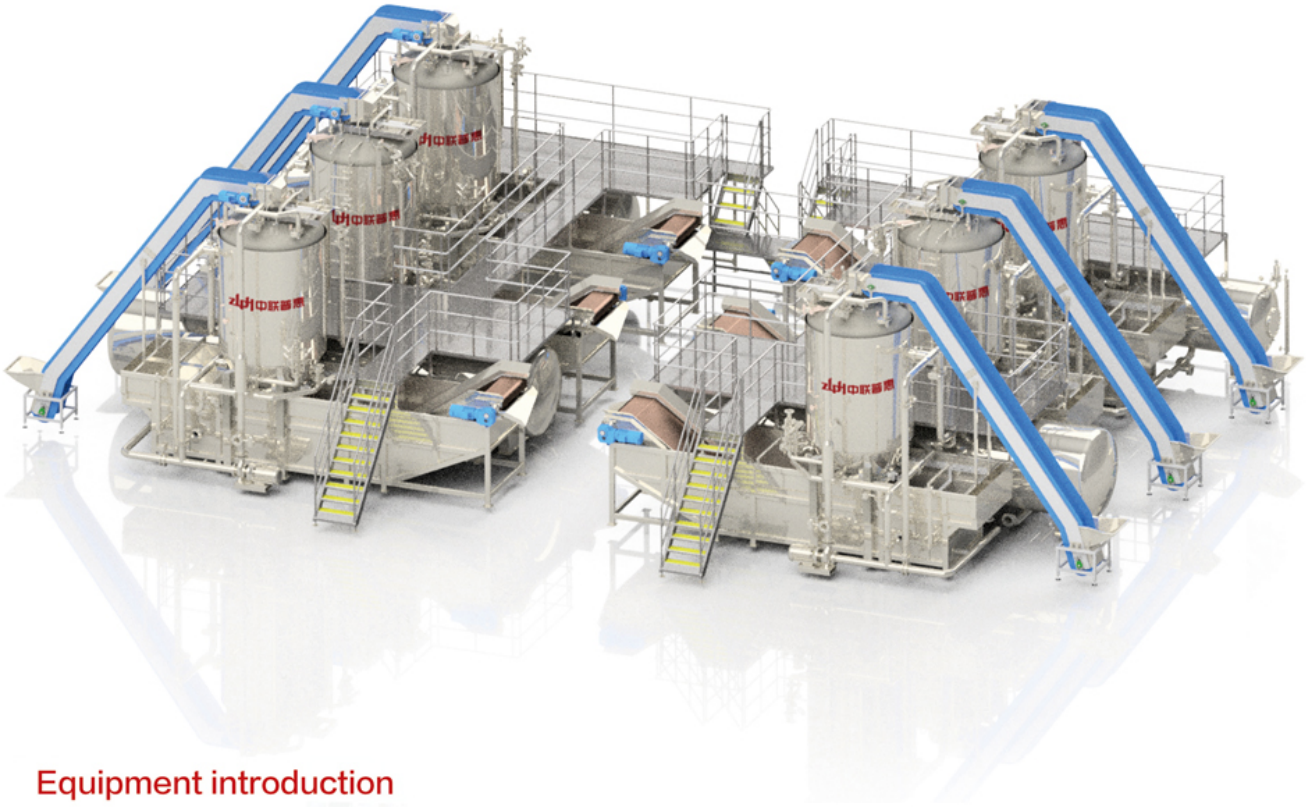




TYPICAL PARTNERS



CONTINUOUS CRATELESS RETORT LINE



Equipment introduction

This combination continuous sterilization production line absorbs advanced foreign sterilization technologies and is developed based on the needs of the food sterilization industry. It features high technological starting point, advanced processes, stable products, and strong practicality. The equipment has high sterilization efficiency, reduces steam and energy consumption, achieving environmental protection and energy saving. Unlike other sterilization equipment currently available in China, it eliminates the need for manual loading and unloading, significantly reducing labor intensity and energy consumption and floor space requirements for the same output.

◆Saves floor space ◆Saves labor ◆Saves energy ◆Diversifies production



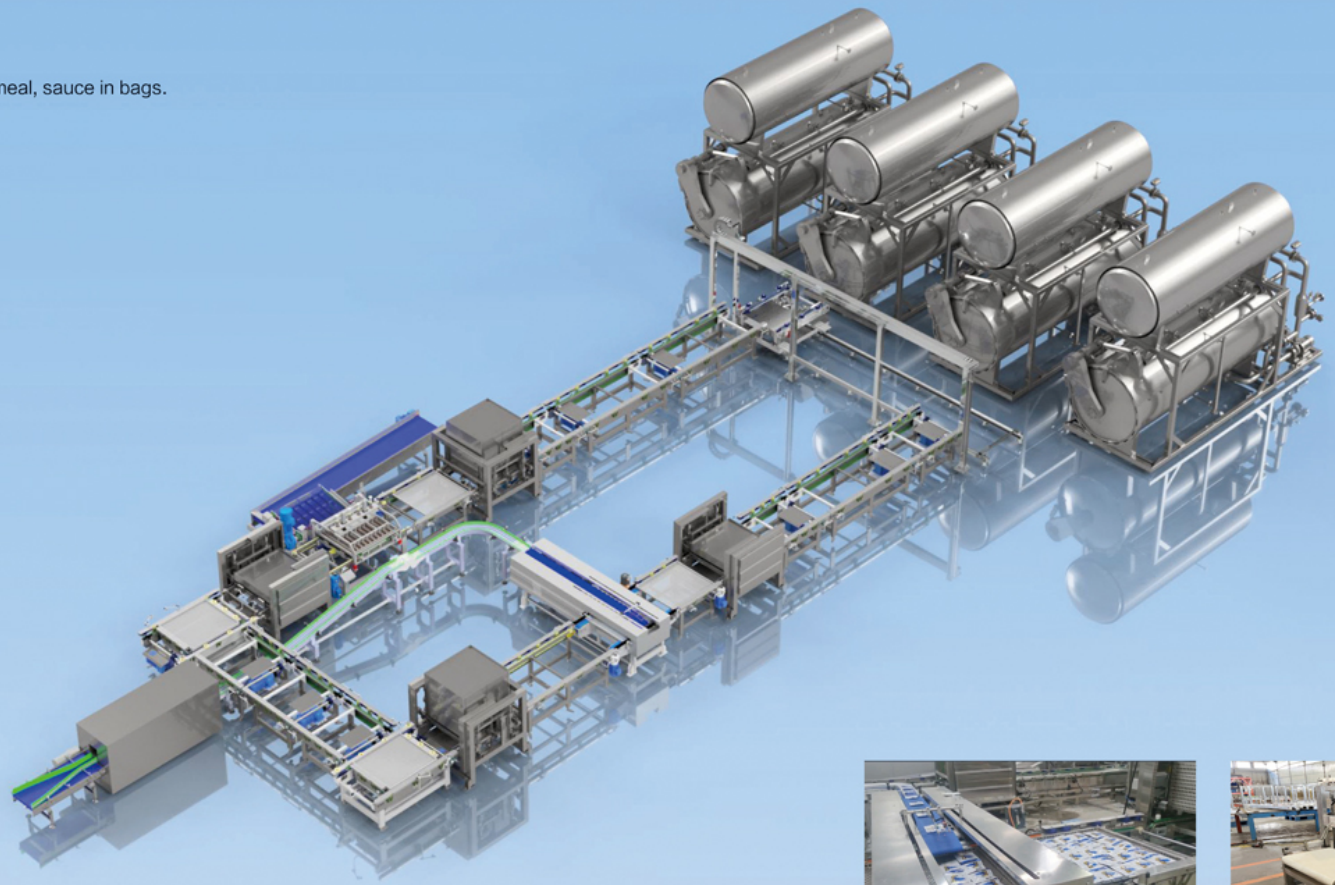




Prepared bag food automatic sterilization production line

产线参数 /Parameter

- Capacity: 100 bags/min
- Worker: 1–2
- Application: Precooked meal, sauce in bags.



This line is customized for the bagged precooked vegetable made by Fujian Zishan Group Co., Ltd., which is automatic loading unloading trays, sterilization, and automatic trays delivery by RGV trolley.

Retort Pouch Loading Belt



Retort Tray Turnover Unloading Device

Bottled / Canned Food Sterilization Line

产线参数 /Parameter

- Capacity：600-1400 cans/min
- Workers： 1-2
- Application：Tin cans, aluminum cans, HDPE/PP bottles, glass bottles



The customized automatic sterilization line for bottled/canned food and beverages, it realizes the automatic operation of the loading unloading of products, the baskets enter and exit out of retort, and the sterilization. It has been applied in many well-known domestic and foreign enterprises.

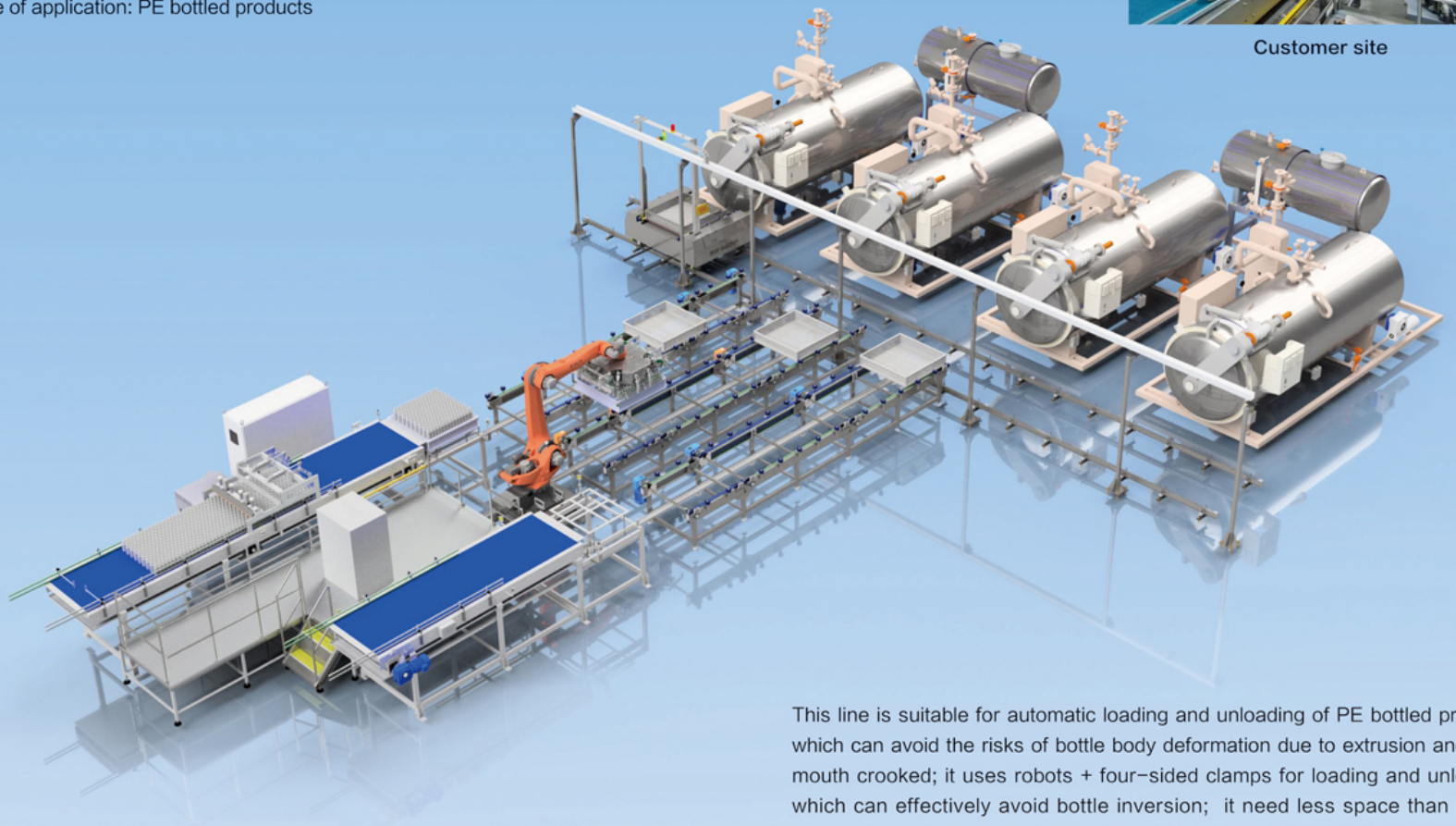
PE Bottle Automatic Sterilization Retorts Line

产线参数 /Parameter

- Capacity : 500 cans/min
- Worker: 2
- Scope of application: PE bottled products



Customer site



This line is suitable for automatic loading and unloading of PE bottled products, which can avoid the risks of bottle body deformation due to extrusion and bottle mouth crooked; it uses robots + four-sided clamps for loading and unloading, which can effectively avoid bottle inversion; it need less space than regular loading and unloading system, and its loading and unloading operation area is unobstructed, which is convenient for personnel to observe and maintain.

Smart Pouch Retort Line with Orderly Loading-Unloading

产线参数 /Parameter

- Capacity : 80 bags/min
- Worker: 2
- Application: Orderly arrangement of bagged products





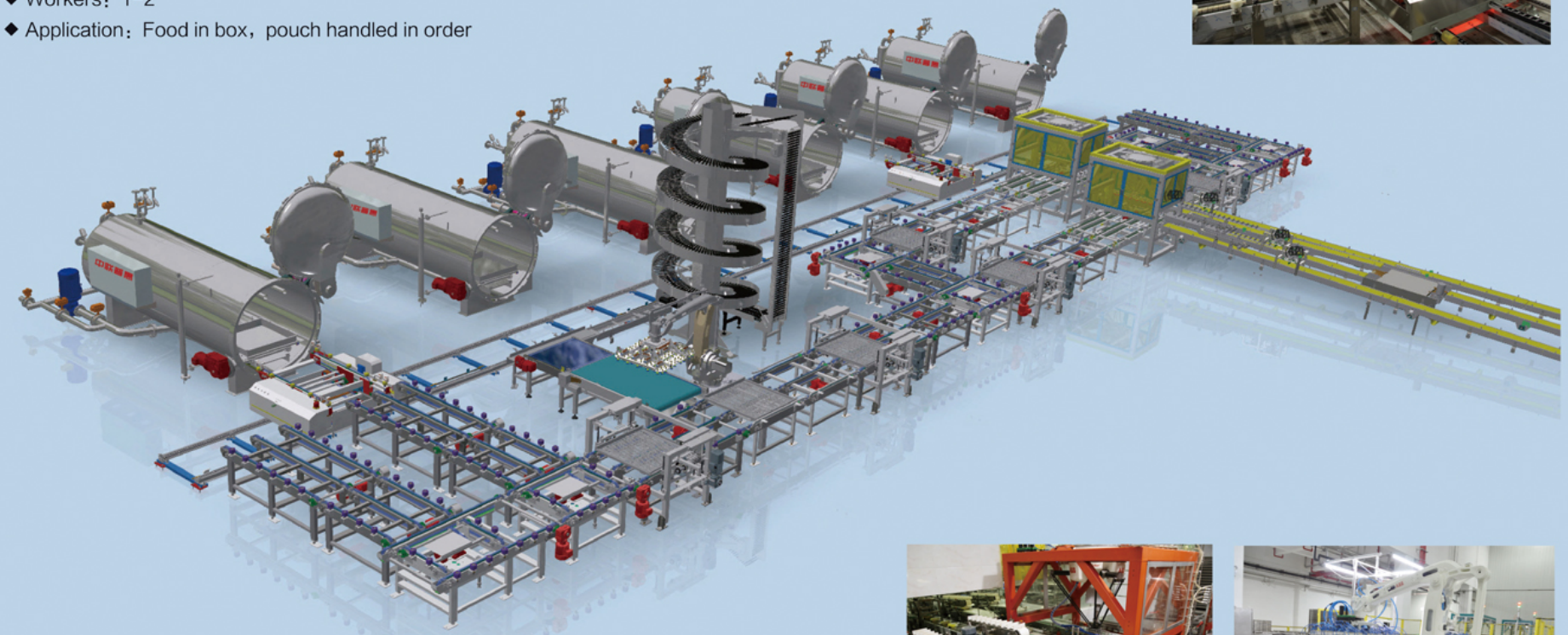
This line is suitable for the orderly loading and unloading of bagged products. It utilizes a bagging machine for orderly tray loading and a robot with suction cups for orderly tray unloading, avoiding risks such as product drops, wrinkles, and compression. It also facilitates automation of subsequent packaging processes. The entire line operates fully automatically, with centralized control via a human-machine interface at the central control station.

Bag / Cup Food Sterilization Line

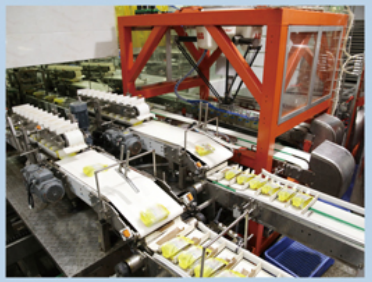


产线参数 /Parameter

- Capacity：225 pcs / min
- Workers：1-2
- Application：Food in box，pouch handled in order



First automatic retort line, customized for flexible container, tray and cups; with robot for loading and unloading in order, automatic stacking and destacking of retort trays, automatic sterilization, 1-2 workers required for whole line.

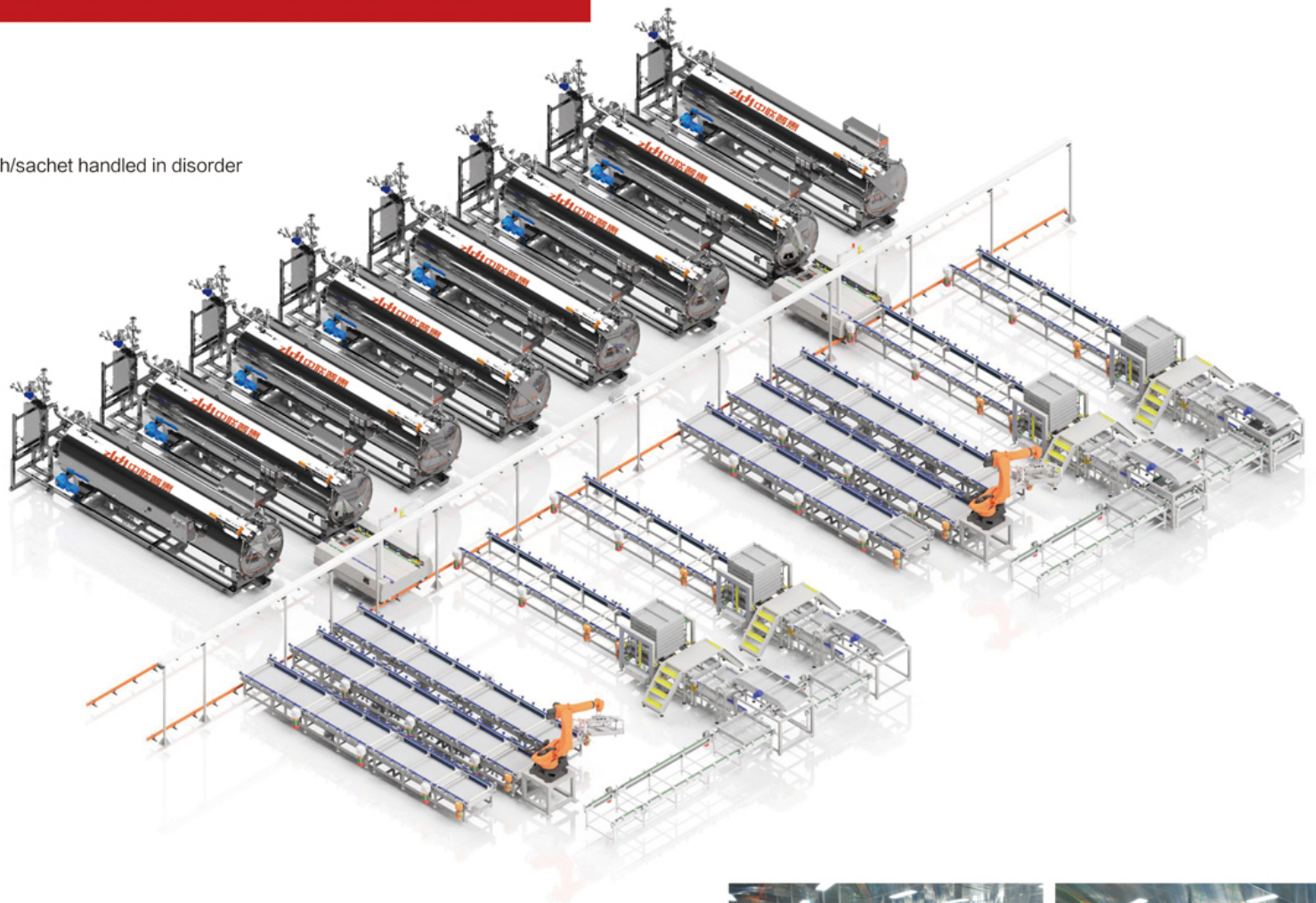




Snack food automatic sterilization retorts line

产线参数 /Parameter

- Capacity : 80 tons /day
- Worker: 1-2
- Application:Food in small pouch/sachet handled in disorder



This is a smart sterilization production line for bulk food, tailor-made for Zhejiang Quansheng Group. It integrates automatic quantitative loading, RGV smart trolley transport, automatic sterilization, and robotic unloading.

This design has successfully served many leading food enterprises, covering production scenarios across multiple categories, including: Daoxiangcun Group (rice products), Feihe Group (vacuum bagged corn products), Yuwang Group (hand-tear meat), Emblem Food (bags of tofu), Zhangzhou Hongxiangji (bulk leisure) and other companies.

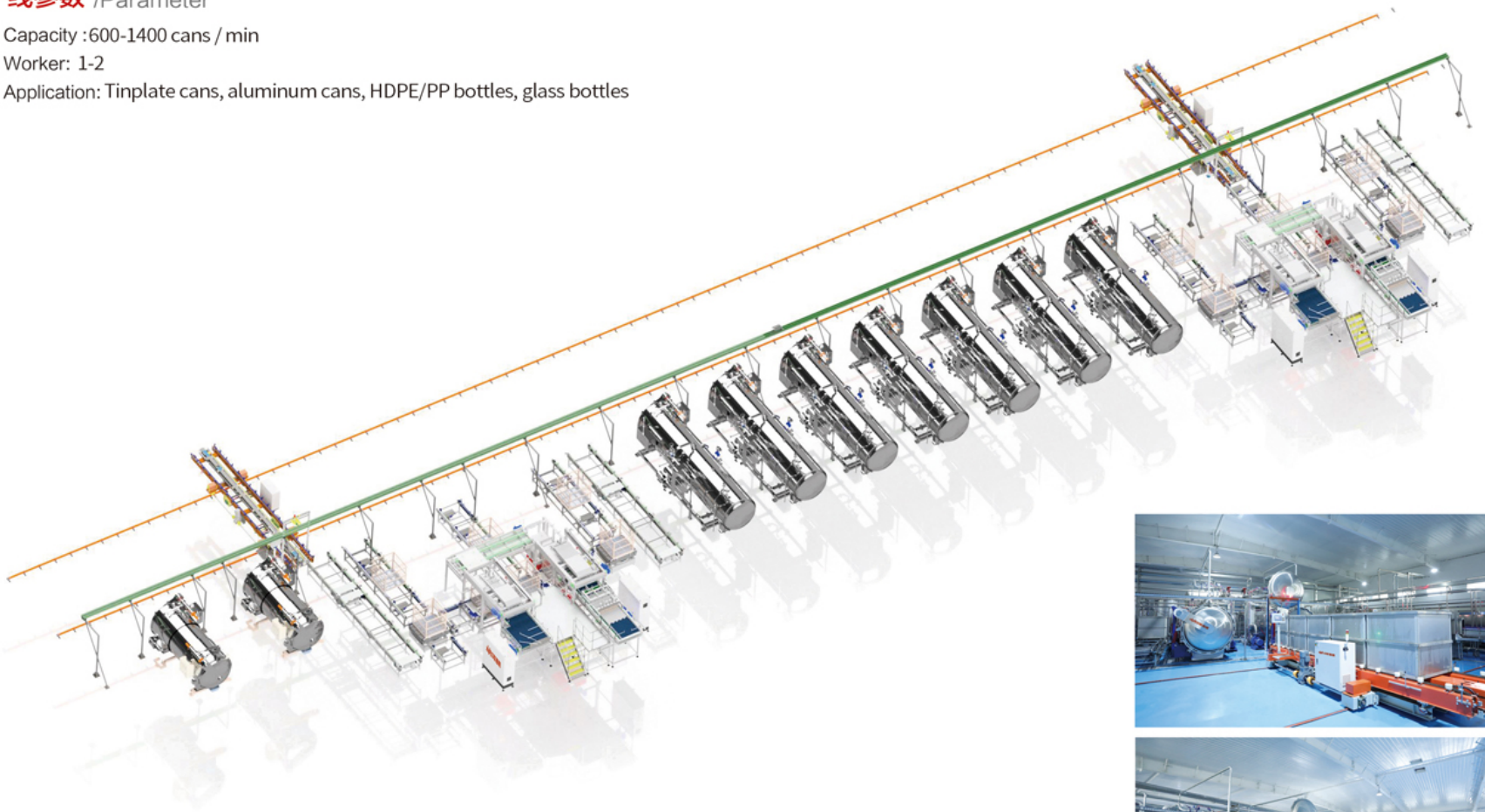


Customer site

Automatic Sterilization Line for Canned Food

产线参数 /Parameter

- Capacity :600-1400 cans / min
- Worker: 1-2
- Application: Tinplate cans, aluminum cans, HDPE/PP bottles, glass bottles





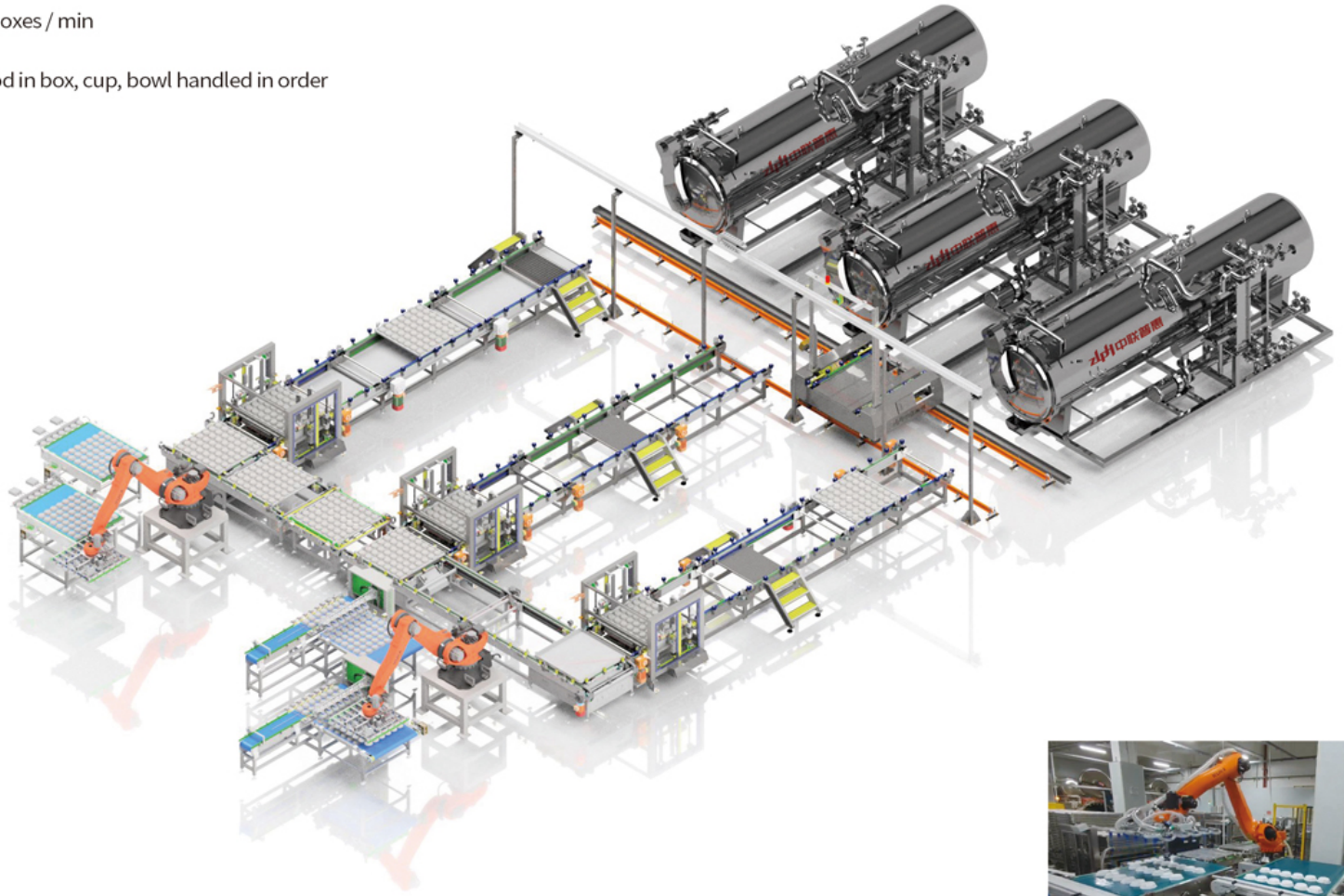
Customer site

This is a canned food production line tailor-made for Russian customers. Its layout is designed to fit narrow and long workshops and can be customized according to the client’s site. The intelligent trolley system enables automatic basket loading/unloading into the retort, while the basket handling machine ensures automated product loading/unloading. The entire line operates with automatic sterilization, requiring no manual intervention.

Box/Cup Food Sterilization Line

产线参数 /Parameter

- Capacity :200 boxes / min
- Worker: 1-2
- Application: Food in box, cup, bowl handled in order





Customer site

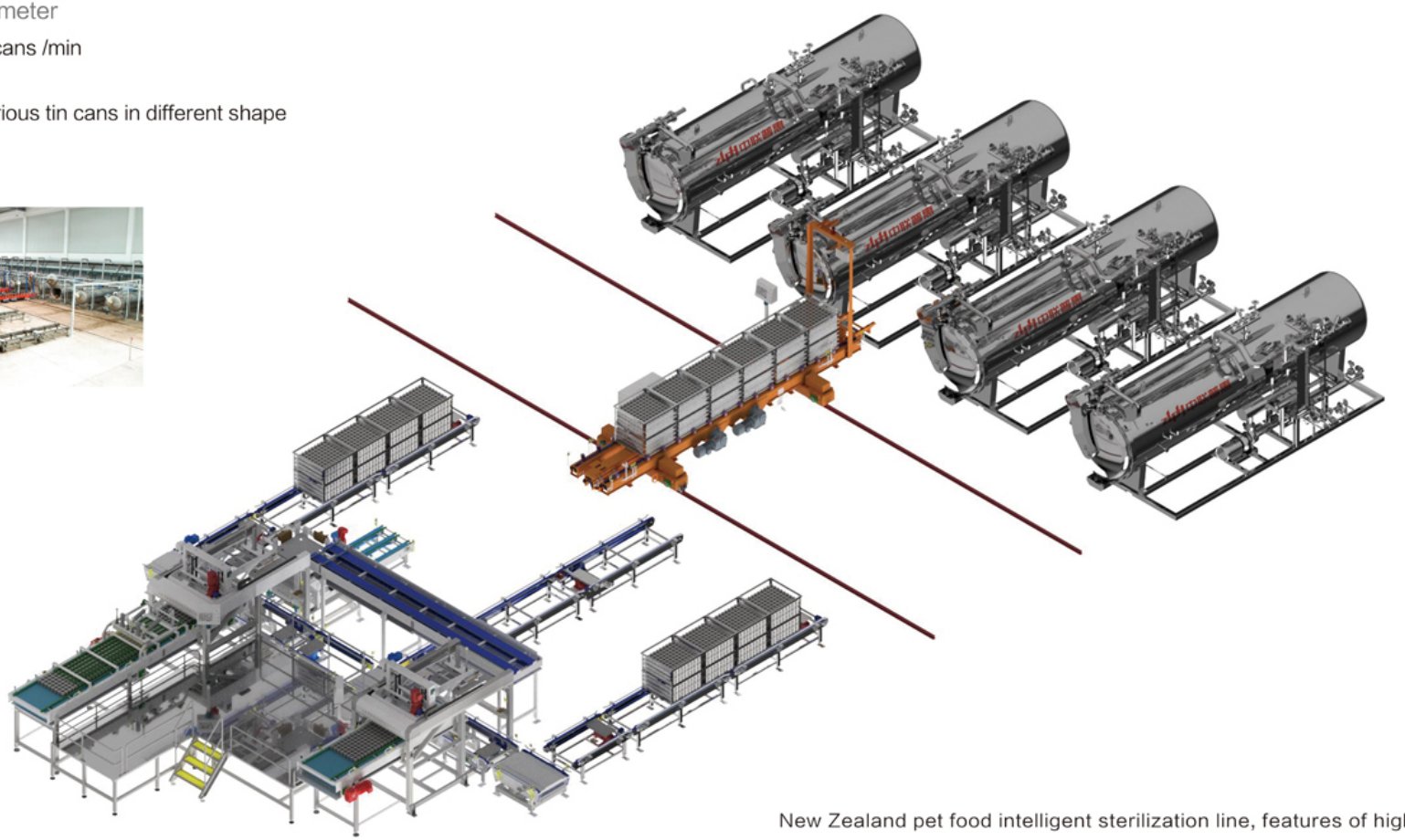
This is a smart sterilization production line for boxed rice, tailor-made for Nanning Yihe. It integrates robotic tray loading/unloading, RGV smart trolley transport for automatic retort entry/exit, and automated sterilization, enabling orderly tray loading and unloading of products. This production line has also been adopted by Shandong Anmu Dairy Co., Ltd. and Yili Group.

Canned Food Retort Line with Magnetic Loader Unloader

产线参数 /Parameter

- ◆ Capacity：240 cans /min
- ◆ Workers： 1-2
- ◆ Application：Various tin cans in different shape





Retort Line:

① Automatic loader

② Automatic unLoader

③ Auto RGV shuttle trolley

④ Automatic retort

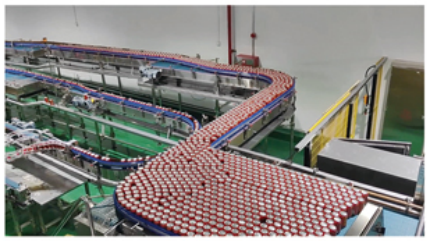
New Zealand pet food intelligent sterilization line, features of high professional customization, automatic loading and unloading, intelligent sterilization, automatic control of the whole line and saving time and effort. This line can be designed as magnetic loading and unloading to provide a highly customized loading unloading solution for special shaped tin cans. It is featured at stable performance, firmly holding cans and wide application.

Horizontal Continuous Sterilization Line

产线参数 /Parameter

- Capacity :720 can / min
- Worker: 1-2
- Application: Tinplate cans, aluminum cans, HDPE/PP bottles, glass bottles





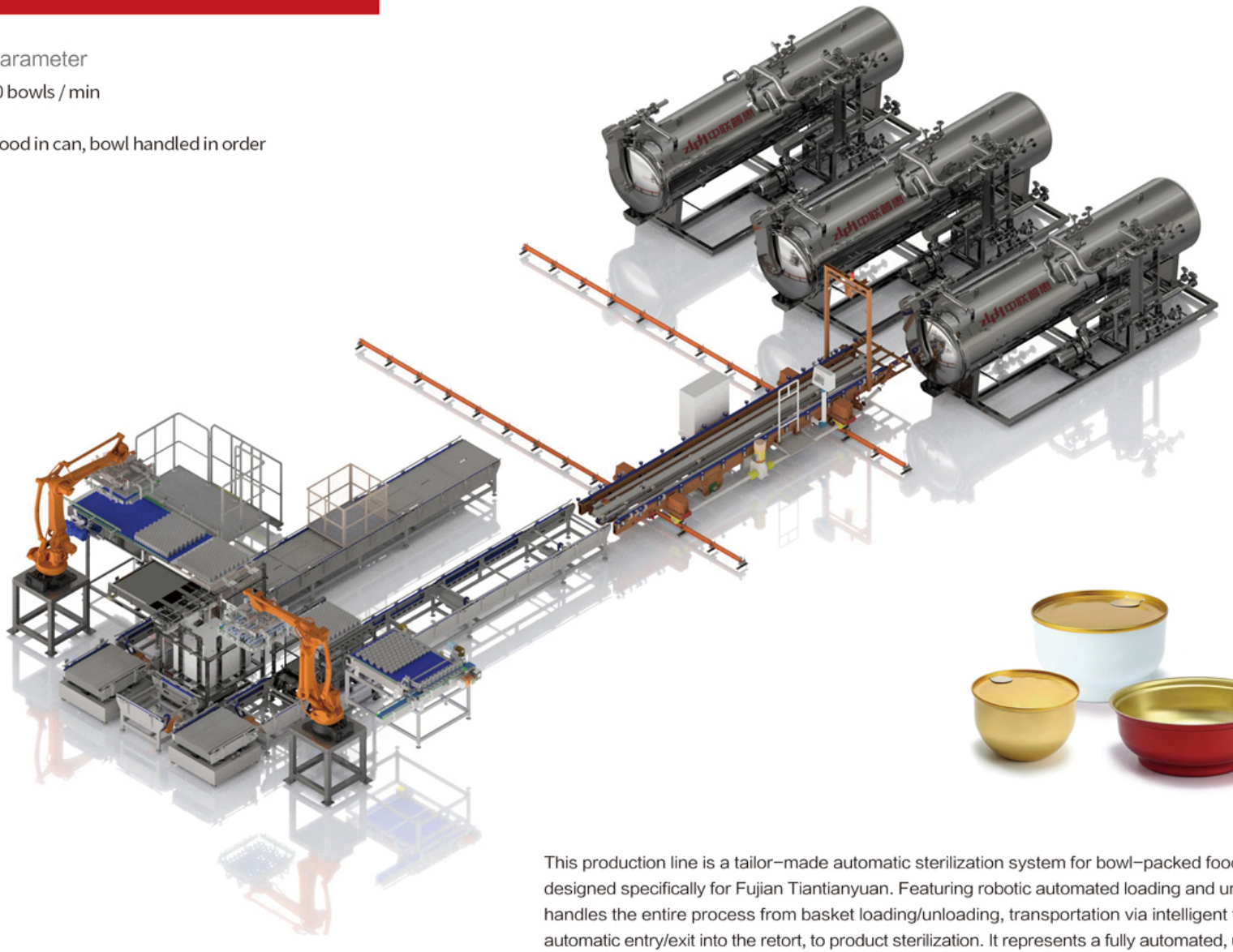
Customer site

This is a tailor-made sterilization production line for herbal tea cans for Wong Lo Kat. Equipped with a retort featuring dual doors (one for incoming products and one for outgoing products to ensure separation between raw and processed goods), the line integrates an RGV intelligent trolley system for automatic basket loading/unloading into the retort and an automated handling system for product loading/unloading. The entire process from sterilization to handling is fully automated, representing a completely unmanned production line.

Bowl Food Sterilization Line

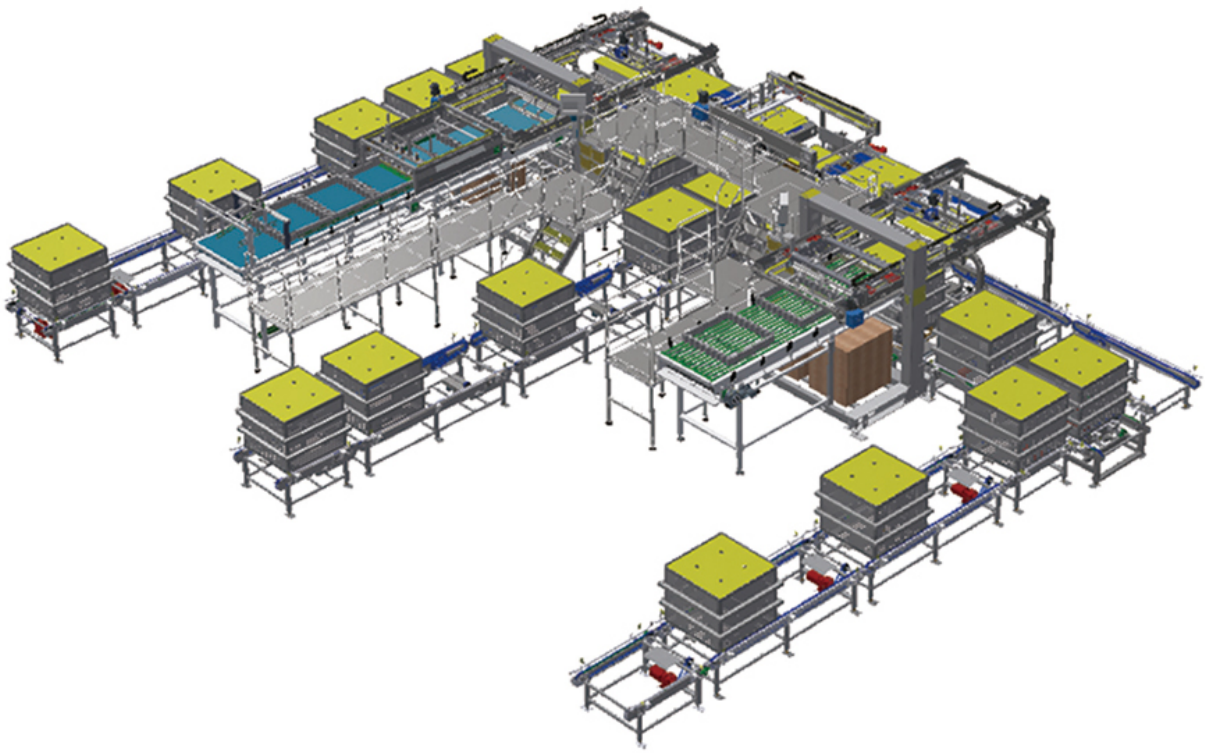
产线参数 /Parameter

- Capacity :200 bowls / min
- Worker: 1-2
- Application: Food in can, bowl handled in order



This production line is a tailor-made automatic sterilization system for bowl-packed food products designed specifically for Fujian Tiantianyuan. Featuring robotic automated loading and unloading, it handles the entire process from basket loading/unloading, transportation via intelligent trolleys for automatic entry/exit into the retort, to product sterilization. It represents a fully automated, unmanned sterilization production line.

AUTOMATIC LOADING AND UNLOADING SYSTEM



Equipment introduction

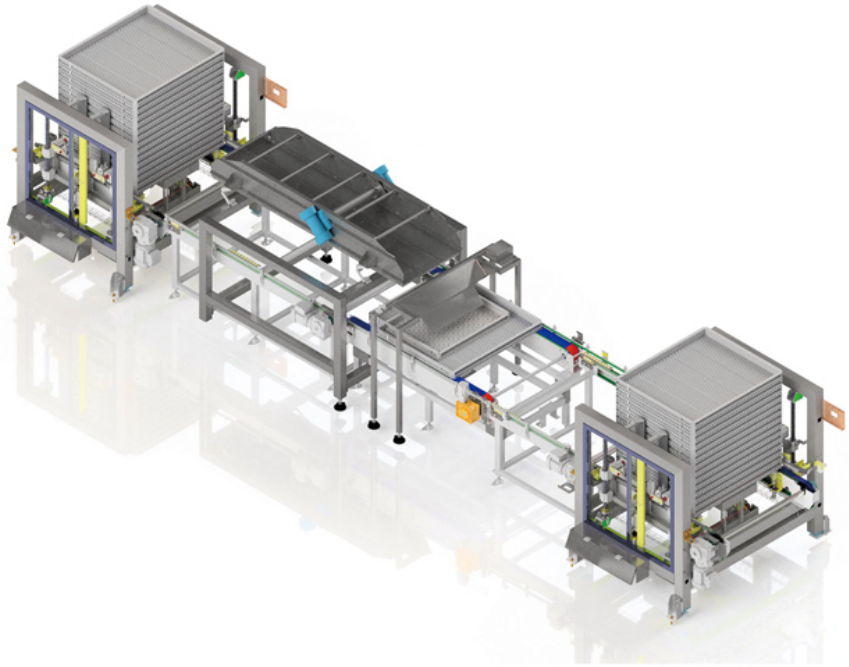
The fully automatic loading and unloading system is an important guarantee for the continuous and efficient work of the entire sterilization system.It is mainly composed of the automatic loading and unloading system, basket turnover and buffer system, layer pads circulation system, containers arrangement and conveying system.

The series of action is executed by PLC automatically, ensuring smooth operation, accurate positioning, cans layer is compact and arranged neatly, saving manpower and improving production efficiency. The loading and unloading speed reach up to 1400 cans/min. It is for loading unloading works of the beverage and foods in metal cans, glass bottle, and PE bottle etc.before and after sterilization .



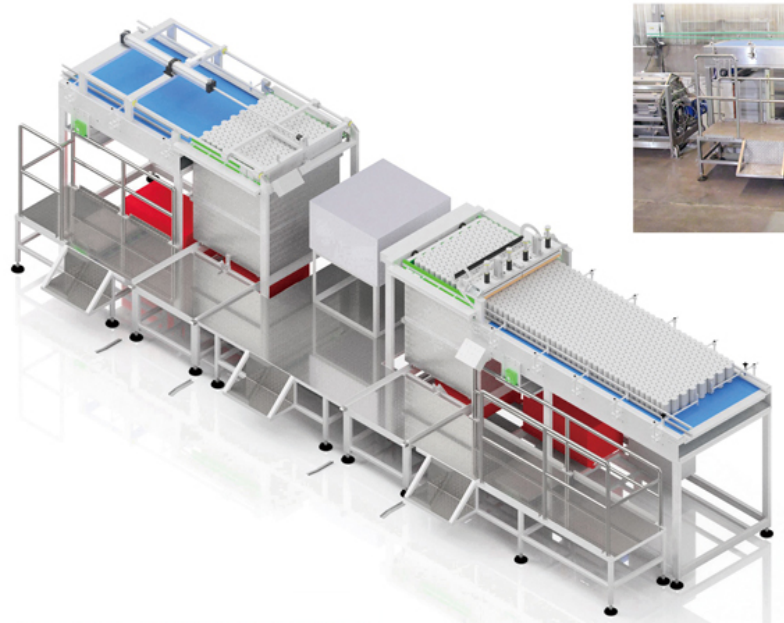


LOADING UNLOADING SYSTEMS











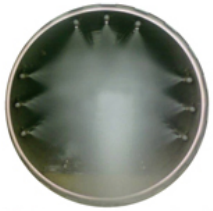
Equipment introduction

Semi-automatic loading and unloading cage machines adapt to multi-product, moderate-output scenarios with flexible operation, stable efficiency and customized configuration, widely applied in food factories.

The automatic weighing and palletizing system, composed of a vibratory spreader and weighing unit, realizes unpacking, weighing, palletizing and stacking for various packaged and bulk products via PLC and servo control, with an automatic material cut-off device ensuring stable operation.

WATER SPRAY RETORT

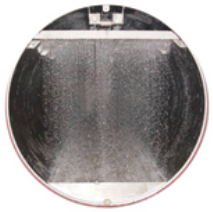




Water spray retort



Side spray retort



Water cascade retort

Equipment introduction

- Intelligent PLC control, one-button start;
- Large flow detachable filter, flow monitoring device to ensure a constant water flow during circulating;
- Linear control of temperature for heating, in line with FDA regulations (21CFR), control accuracy ± 0.4 ℃ ;
- The crucial sensing system (temperature, pressure) adopts design with double pieces



技术参数 /Parameter

Specifications	Tray size (mm)	Basket size (mm)	Power kW	Volume m^3	Floor area (length/width/height mm)
DN700x1200	1140x420x420	540x380x420	2.2	0.55	2700x1500x1700
DN900x1800	890x560x600	560x560x560	4	1.32	3000x1600x2100
DN1000x2400	790x630x650	700x605x620	4	2.12	4000x1800x2500
DN1200x3600	890x800x800	850x780x780	7.5	4.46	6000x2000x2800
DN1400x4500	1100x930x900	1050x900x900	11	7.23	7000x2500x3100
DN1500x5250	1030x970x970	1000x1000x970	15	10.02	7700x2700x3300
DN1600x6500	1220x1050x1050	1010x1050x1050	18	13.97	8500x3100x3000
DN1800x7500	1180x1180x1160	1180x1180x1160	22	19.72	9800x3100x3500

MULTI-RETORT PARALLEL STERILIZATION SYSTEM



Equipment introduction

- Two sterilization tanks share one hot water tank; the sterilization process water can be recycled to the upper tank for storage after sterilization.
- Both tanks can be used simultaneously, saving energy and improving production efficiency.
- Equipped with a negative pressure safety device to ensure equipment safety.
- The entire process is automatically controlled by PLC, and the formula has multi-level passwords.
- After a power outage, the program can automatically restore to the state before the power outage.



ROTARY RETORT





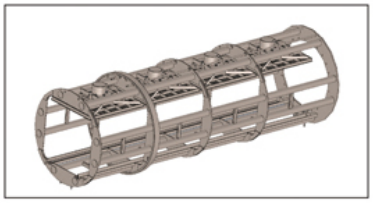


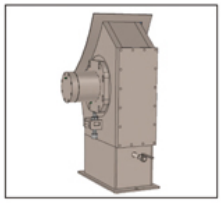
Rotary water immersion

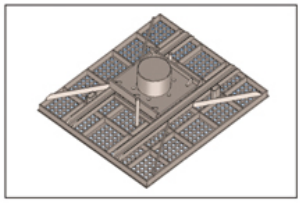


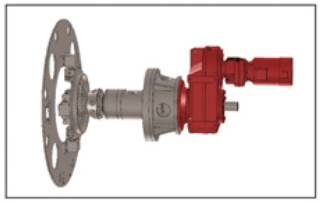
Rotary steam











Equipment introduction

Rotating body processed at one time, forged rolling ring and aging vibration treatment for longer service life and less maintenance;

External tug-wheel and the protecting plate for better wear resistance and simple repair;

Alloy cylinders for auto pressing eliminate the problems spring type without leakage ;

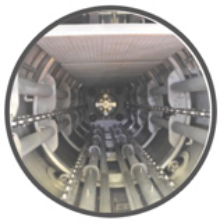
Dynamic balance treatment and brake reducer for auto positioning and easy docking with supporting equipment.







SPRAY ROTATING STERILIZATION





Equipment introduction

During sterilization, the cans rotate 360° driven by the rotating body, which makes the contents move slowly, accelerates heat penetration, enables uniform heating and cooling of products, and prevents layered precipitation of viscous products.

It is suitable for viscous products such as bowl porridge, cup porridge, bagged porridge (breakfast porridge), high-viscosity dairy drinks and condensed milk.



STEAM AIR RETORT



Save steam energy

30%



Equipment introduction

Steam-air retort, it doesn't requires exhaust period to drive cold air in retort before heating.It utilize the fan system to break the corresponding rules of temperature and pressure under saturated steam and achieve flexible pressure control under the steam sterilization process. Therefore, it can save energy by more than 23% compared with the steam retort.

STEAM RETORT





Equipment introduction

Metal containers: tin cans (Wangwang, six walnuts, etc.);

WATER IMMERSION RETORT

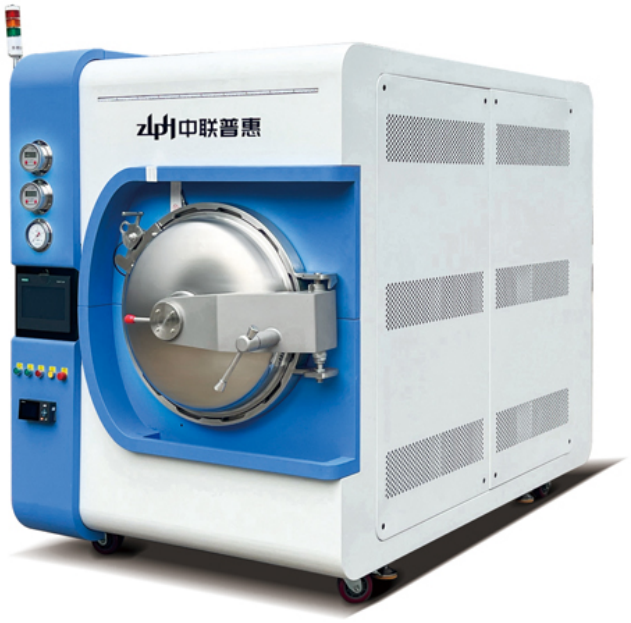


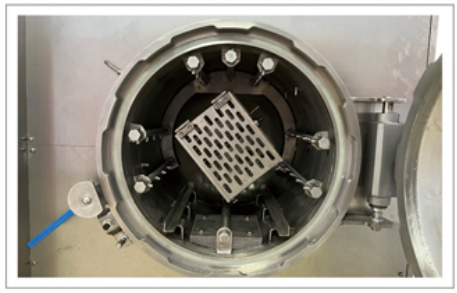


Equipment introduction

- The upper tank preheats the sterilization water, 2.5min come down to the retort tank during sterilization;
- With the function of remote housekeeper to realize zero-distance service by the cloud;
- Configure F0 monitoring equipment to prevent insufficient sterilization;
- The surface temperature of retort body lower than 40℃ , reducing heat loss by about 5%.

PILOT RETORT



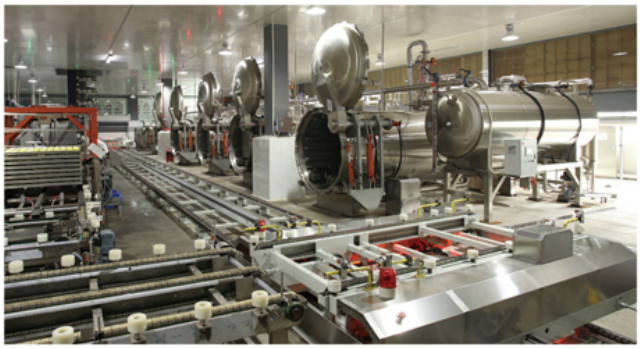


Equipment introduction

The multi-functional experimental autoclave is designed specifically for enterprises to develop new products and sterilization processes. It is suitable for sterilization operations on various packaged products and features multiple heating modes, including water bath, steam spray, and rotation.

- Meets the requirements of small-batch production and experimentation, offering diverse heating methods;
- Includes F0 value functionality and allows for the creation of product sterilization formulas;
- Simulates the actual production sterilization environment, facilitating the identification of sterilization processes for customers;
- Adaptable to all types of packaged foods.

ON-SITE CASES






CORPORATE CULTURE

ZLPH MACHINERY TECHNOLOGY CO., LTD.

"PEOPLE-ORIENTED, TECHNOLOGICAL INNOVATION" –
BUILDING A TECHNOLOGY-DRIVEN ENTERPRISE WITH DIMENSIONS, DEPTH, AND WARMTH.



We are always taking action to care for our employees, give back to society, engage in public welfare and charity, upgrade and innovate our products, and serve our customers!

Based on high-quality products, create top-level projects in the sterilization industry

Talent-oriented, Technological innovation,
Professionalism, Concentration

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