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Triowin
沃迪装备

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变 * 渐进 * 学习力 | Invent * Improve * Evolve



精益求精造精机
Precision* Rigorism* Perfection



T 公司简介 Company Profile

上海沃迪自动化装备股份有限公司成立于1999年，在册员工近400人。金山工厂占地80.5亩，建筑面积44340平方米，总投资超过2.3亿元人民币。沃迪装备在立足自主创新的基础上，同时整合、吸收欧美先进的机械设计理念以及自动化控制技术，专注&创新，引领生产、包装、搬运、仓储智能系统前沿技术，通过智能化工厂建设打造现代化新企业。拥有一支以硕士、博士和高级工程师为核心的研发团队，并积极联合上海交通大学、同济大学、上海理工大学、上海海洋大学、江南大学、华中农业大学等多所国内著名高校共建硕博研究生培养点及博士后工作流动站。经过多年累积，沃迪已拥有各类专利271项，先后承担了国家科技部、工信部的多项国家重点装备攻关课题项目及上海市科委、上海市机器人产业十二五规划纲要的多个重大项目。强大的技术实力和丰富的现场经验，具备根据客户的不同需求提供个性化精准解决方案的能力。沃迪现在已成为机器人智能搬运包装领域以及智能食品装备领域世界范围内的行业领导者之一。

沃迪装备由机器人智能装备和食品智能装备两大事业部构成。其中，食品装备事业部又包含三大块：果蔬装备事业部、实验设备事业部、乳品装备事业部。

果蔬装备事业部专业从事果蔬浓缩及非浓缩汁/浆，热灌装茶饮料、果汁饮料设备生产制作及整厂安装工程交钥匙系列服务，具备整体项目的开发

设计、生产制作、安装调试、技术培训、售后服务诸多方面的综合能力。以“融合世界现金科技、造福民族饮料工业”为己任，致力于消化、吸收并掌握国际先进的果蔬深加工及饮料加工工艺的前沿科技，曾先后与德国、意大利、美国、英国等诸多公司联手合作，并代理国外著名的加工机械品牌，对番茄、芒果、菠萝、橙、葡萄、蓝莓、草莓、桃、杏、枣、胡萝卜等果蔬品种的加工有着丰富的认识和深刻了解，具备根据客户的不同要求提供个性化的精辟解决方案的能力。

实验设备事业部致力于消化、吸收并掌握国际新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。与日本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种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、植物蛋白饮料、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。

乳品装备事业部致力于乳品生产设备的制造和乳品生产交钥匙工程的实施。通过消化吸收世界最新的乳品技术，我们能生产现代的乳品加工设

备，并能提供个性化的乳品项目的整体方案；包括设计、安装、调试、培训以及售后服务等。提供的生产线项目包括消毒奶(保险奶)，ESL奶(延长保质期牛奶)，UHT(常温奶)，酸奶和发酵奶，含乳饮料，再制奶，豆奶，植物蛋白奶，炼乳，稀奶油，植物奶油，奶油，无水奶油，奶粉，婴儿奶粉，奶酪，冰淇淋等。

沃迪机器人智能装备事业部源于智能食品装备发展趋势的推动，专注于国产工业搬运机器人的研发及产业化。沃迪金山新厂搬运机器人设计年产能2000台套，为目前拥有自主知识产权的、国内最具规模的国产码垛机器人工业化生产企业，主要竞争对手为日本、德国及瑞典等国际行业巨头。

沃迪装备于2014年4月引进了中国装备制造巨头上海电气集团为战略投资者，2014年7月在全国中小企业股份转让系统挂牌。沃迪装备产品远销欧、美、亚、非等各大洲，倡导提升打造中国装备在世界舞台上的全新形象。

“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。全体沃迪人秉持尽心尽力、尽善尽美，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 Machinery Co., Ltd. has registered capital of 41.6 million Yuan and staff of 400 people. The Jinshan factory covers an area of 13.3 acres, building area of 44340 square meters. Triowin Automation sees "technology innovation" as its core competitiveness, esteems and practices independent innovation while tracing and integrating the western advanced automation technology. Triowin possesses a work team consisting of personnel with Masters, PhDs and Senior Engineers. Triowin owns all kinds of patents more than 272 pieces, and has undertaken a number of major national key equipment projects sponsored by government entities such as National Science and Technology Division, National Industry and Information Technology Division and as well some other projects launched by Shanghai Municipal Science and Technology Commission.

Triowin has now become one of the global leading vendors providing intelligent palletizing robot and food packaging solutions.

Triowin consists of two divisions, namely, Food equipment division and Robots division, among which the Food equipment division includes the large industrial projects like concentrated juice, jam and small packaging processing line of food beverage as well as the pilot lab equipment. Owning more than 130 processing lines in the past 30 years, we have accumulated rich technologies and experiences in the turn key areas of juice, jam and food beverage. Our main processing products include tomatoes, mangos, pineapples, oranges, lemons, dates, bananas, passion fruits, apples, pears, peaches, strawberries, mulberries, grapes, carrots, pomegranates and apricots, etc.

Triowin's Intelligent Robot Department focuses on robot R&D activity and as well its industrialization. Triowin robot R&D center consists of a number of functional divisions, such as Mechanical System and Simulation Division, Motion Control and Software Division, Electronic and Electrical Design Division, Experiment Lab and Engineering Prototyping Division. The Robot Department has taken on plenty of national research projects of key robotics technology, system integration technology. More than 2000 square meters, the new lab is capable of simulating various environmental conditions and is equipped with state-of-the-art testing platform and experiment facilities. All has been possible because "Invention, Improvement & adaptation" are the key words which lead our company to the success.

T 资质及证书 Credential





Part1 沃迪果蔬装备
Triowin Agro Propack

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变·渐进·学习力

INVENT · IMPROVE · ADAPT

在立足自主创新的基础上，通过整合吸收欧美先进的机械设计理念及自动化控制技术，沃迪装备在食品加工特别是果蔬加工包装整厂装备交钥匙工程输出以及机器人自动化搬运包装系统领域已成为世界范围内的行业领导者之一。

On the basis of independent innovation, Triowin absorbs advanced mechanical design and automation control technology from European countries, especially in food processing equipment. In the area of fruit and vegetable processing machinery and intelligent robots, Triowin has become one of the world leaders in the industry.



沃迪果蔬装备
Triowin Agro Propack

■ 前处理设备 | Pre-treatment Machine

提升机 Elevator

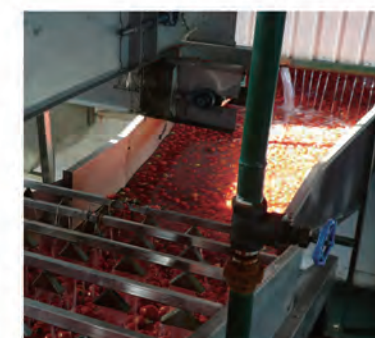
适用于各类水果的提升输送
Suitable for lifting and conveying kinds of fruit



型号 MOD	TW3A5	TW3A10	TW3A15	TW3A25
产能 吨/小时 Capacity t/h	5	10	15	25
功率 千瓦 Power kw	1.5	2.2	2.2	4

鼓泡清洗机 Air-Blowing & Washing Channel

适用于果蔬原料的清洗。
鼓风起泡式清洗，使原果翻滚除去污泥。
冲洗水可循环使用
Used for washing fruit and vegetable.
To remove the sludge, fruit will roll by blistering
Waste water can be recycled



型号 MOD	TW3A5	TW3A10	TW3A15	TW3A25
产能 吨/小时 Capacity t/h	5	10	15	25
功率 千瓦 Power kw	3	4	4	5.5
设备尺寸 毫米 Dimension mm	2500*1000	3000*1200	3500*1200	3500*1500

拣果机 Sorting Machine

适宜水果的拣选和输送。
Suitable for fruit conveying and sorting out of leaves,grass,gree or rotten fruit.



型号 MOD	TW1B5	TW1B10	TW1B15	TW1B25
产能 吨/小时 Capacity t/h	5	10	15	25
功率 千瓦 Power kw	3	4	4	5.5
设备尺寸 毫米 Dimension mm	3000*1000*1400	3500*1200*1400	4000*1400*1400	5000*1600*1400

毛刷洗果机 Fruit Brusher

适用于刷洗水果（桃，苹果，梨等）表面，以达到清洗水果的目的
Applicable for brushing & cleaning fruit peels (peaches, apples, pears etc.)

型号 MOD	TW3D5	TW3D10	TW3D15	TW3D25
产能 吨/小时 Capacity t/h	5	10	15	25
功率 千瓦 Power kw	1.5	2.2	3	4
设备尺寸 毫米 Dimension mm	2000*1000*1200	2200*1200*1200	2500*1400*1200	3500*1600*1200



除梗破碎机 De-stalking/Crushing Machine

本机用于葡萄的除梗破碎。按处理量的不同（5-60T/H）提供不同型号的设备，适用不同产能要求
设备主体均采用304不锈钢材质
破碎辊轮采用食品级橡胶，可在外部直接调节。
送料螺旋实现物料在设备内均匀分布。
可根据实际需求对设备进行无级调速。
可与转子泵，单级螺杆泵等实现完美整合



Specialized for de-stalking and crushing of grape.
Horizontal de-stalking/crushing machines for different capacities from 5 to 60 tons per hour.
Made entirely in AISI 304 stainless steel
crushing unit equipped with external adjustment, in food-compatible rubber.
The feed auger located inside the hopper gives ideal product distribution towards the cage-beater assembly.

型号 MOD	ALFA5	ALFA12	ALFA16	ALFA25	ALFA30	ALFA60
产能 吨/小时 Capacity t/h	4-5	7-9	12-16	20-25	25-30	55-65
功率 千瓦 Power kw	1.87	1.87	2.62	5.62	4	7.5
重量 公斤 Weight kg	200	285	390	650	800	1000

锤式破碎机 鼠笼式破碎机 Crusher

用于果蔬类如苹果、梨、猕猴桃、番茄、胡萝卜等的破碎。
Used for crushing of fruits such as apples,pears,kuiwei,tomatos,carrots etc



型号 MOD	TW4A5	TW4A10	TW4A20	TW4A30
产能 吨/小时 Capacity t/h	5	10	20	30
功率 千瓦 Power kw	7.5	11	18	35
设备尺寸 毫米 Dimension mm	1000*540*730	1200*640*750	1500*660*760	1800*680*770



干果复水去核单元 | Infusion & Destone Process

Part1



去核机 Destine Machine

用于红枣、橄榄、杨梅、杏、李等水果的去核。
Applicable for infusing and destoning of dried fruit.

型号 MOD	TW4A5	TW4A10	TW4A15
产能 吨/小时 Capacity t/h	5	10	15
功率 千瓦 Power kw	5.5	7.5	11
设备尺寸 毫米 Dimension mm	1640*780*1440	1640*800*1600	1652*880*1790

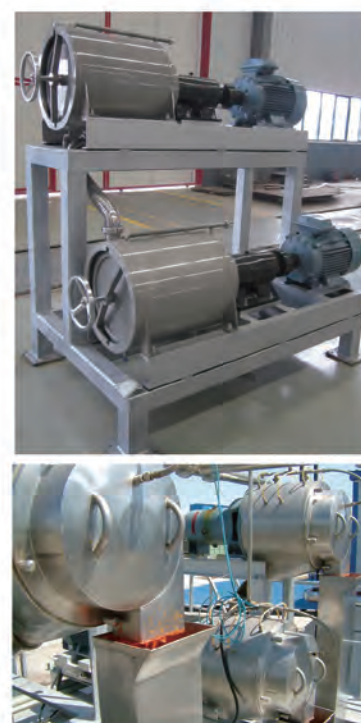


打浆精制设备 | Pulp & Refine Machine

打浆机 Pulping Machine

主要用于番茄、枸杞、蓝莓、草莓、猕猴桃等果蔬类物料的打浆，去皮，去籽，以达到浆渣分离的目的。
Used for pulping, peeling and deseeding of tomatoes, plums, haws to refine the pulp.

型号 MOD	TW5A5	TW5A10	TW5A15	TW5A20	TW5A50
产能 吨/小时 Capacity t/h	5	10	15	20	50
功率 千瓦 Power kw	1.5	11	18.5	22	100
浆叶转速 转数/分 Blade speed rpm	1450	1450	1450	1450	1450
设备尺寸 毫米 Dimension mm	2000*1400*1800	2000*1700*1800	2200*1700*2300	2500*1800*2300	2600*1450*2400



打浆精制设备 | Pulp & Refine Machine

Part1



精制机 Refiner

果汁精制机是将高固形物含量的果汁中的粗大颗粒离心分离的过程。所有易于产生沉淀的颗粒都被分离出来，只将少量稳定的絮状物留在果汁中。从而大大降低了沉淀产生的可能性。

The refining of the juice permits the production of juice with a high degree of cloud stability since centrifuges classify true particles according to particle size. All coarse true particles which have a strong tendency to sediment can be separated off. Only the extremely cloud stable fine particles remain in the juice. The risk of deposit forming is therefore reduced to a minimum.

刮板精制机 Scraper Refiner



螺旋精制机 Screw Refiner



TBP系列带式榨汁机 TBP Series Belt Press

TBP系列带式榨汁机充分吸收欧洲技术，制造精良。广泛用于仁果（苹果，梨等），浆果（树莓，桑葚等）和各种蔬菜的榨汁作业，具有出汁率高，可连续生产，通用性强，操作维修方便等特点。
可配套洗带水回收系统，降低水耗。关键部件均采用国外知名品牌，确保产品一流品质。
As a effective juice extractor,the model TBP series Belt Press is widely used in the juice extracting of bacca.drupe,and various of vegetable.The Belt Press is high juice rate,widely application,and easy for maintenance.Matched with the washing water recycle system,it is water savage.

型号 MOD	TBP-05	TBP-10	TBP-20
产能 吨/小时 Capacity t/h	5	10	20
功率 千瓦 Power kw	4.0	5.0	7.5
滤带宽度 毫米 Width of belt mm	1200	1750	2500
设备尺寸 毫米 Dimension mm	4500*1800*2200	4600*2300*2350	5000*3280*2450
重量 公斤 Weight kg	4200	5800	7500
压缩空气 Consumption of compress air	0.8Mpa 0.6M3/Min		



真空式气囊压榨机 Vacuum System Presses

真空式气囊榨汁机主要用于浆果类（如葡萄，蓝莓，草莓等）水果的榨汁。可装配惰性气体保护装置，压榨过程完全与氧隔绝，杜绝氧化，是获取高品质果汁的最佳设备。主机部分全部采用304不锈钢，整机可由PLC智能控制系统控制，可实现自动和人工模式的自由切换。

Applicable for extracting juice of bacca such as grape, blueberries, strawberries , etc. To prevent oxidation, press process is completely isolated with oxygen by deploying inert gas protection, Vacuum System Presses is the best choice for high- quality juce.The main part of the machine is made of 304 stainless

The automatic pressing programs are operated by a PLC system and can select any type of working cycle. The press is also equipped with an “intelligent” pressing programme which, according to the variety of grapes being fed into the machine, automatically choose the best working parameters. The press can also be switched to manual use.

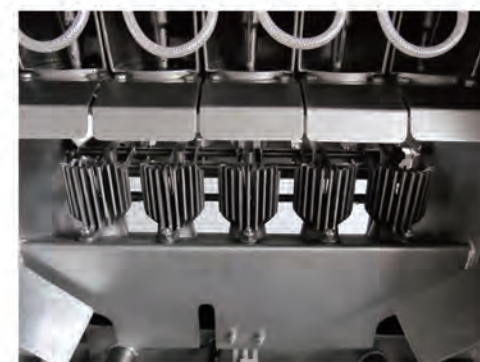
型号 MOD	VS35	VS50	VS80	VS150	VS250	VS360	VS405	VS505
榨枪容积 百升 Tank hl	35	49	76	150	250	360	405	505
破碎后产能 吨/次 Crushed grape t/c	7-8	9-11	15-18	30-34	55-60	70-80	80-90	95-110
整串产能 吨/次 Grape bunch t/c	2.5	3.5	5.5	10.5	17.5	25.2	28.3	36
皮渣产能 吨/次 Fermented grape t/c	12-16	13-19	19-28	40-52	60-85	87-122	100-140	127-177
最大电机功率 千瓦 Max power kw	3.0	3.5	6.0	10.0	14.0	22.0	25.0	25.0



TCE系列全果杯式榨汁机 Juice Extractor for Citrus Whole Fruit

全果杯式榨汁机专用于柑橘类水果的榨汁。橙果先落入榨杯中，同时半球形上榨杯落下准备压榨。在榨汁过程中，先由圆盘状切刀在橙果的顶部和底部各切出一个洞，然后上杯持续施压将果肉延底部切出的洞挤入带孔圆筒内。接下来由活塞装置对果肉施压使果汁和果粒从圆筒的空中排出。

TCE series juice extractors is used in the citrus.extracting .In this process,the fruit roll into cup-shape holders.An overhead hemispherical counter press is lowered for pressing.During the pressing process,circular cutter cut holes in the peel at the top and bottom of the fruits.The pressing process is continued until the inner portion of the fruit discharges through the lower hole into a perforated cylinder.A plunger then exerts pressure on the frut flesh in the cylinder until the juice and cells discharge through the hole in the cylinder.



■ 预热器 | Preheater

由蒸汽加热提高物料的温度，以达到软化灭酶的目的。
Specialized for softening the pulp and deactivate the enzymes.

型号 MOD	TW10B5	TW10B10	TW10B20
产能 吨/小时 Capacity t/h	5	10	20
蒸汽 吨/小时 Steam consumption t/h	0.9	1.4	2.1

列管式预热器 Tubeler-Preheater



高粘度套管预热器 High-Viscosity TIT preheater



■ 酶解系统 | Enzymolysis

广泛应用于食品，饮料，制药，生物等行业作为酶解，发酵等应用。
三层结构，具有加热，冷却，保温和搅拌等功能
Widely used in food, drinks, pharmaceutical, biotechnology and other industries as enzymolysis, fermentation.
trilayer structure, with heating, cooling, insulation, agitation and other functions



■ 过滤澄清系统 | Filtration & Clarification

卧式螺旋离心分离机 Decanter

在果汁打浆或榨汁之后，配置不同型号的卧式螺旋离心机，可准确控制果汁中果肉含量的百分比。
To control the solids percentage in final product, some suitable models of decanter equipment will be incorporated.

型号 MOD	GHT12P	GHT32P
内径 nt.diameter(d)mm	250	357
长度 Int.Lenght(l)mm	863	1597
螺杆直径 ScroLL Max diameter mm	248	355
转鼓转速 Bowl rotation rpm	0-7000	0-4300
水通量 Hydraulic capacity m³/h	6	20



碟式离心分离机 Disk Centrifuge Clarifier

碟式离心分离机采用的是机械分离原理，具备分离效率高，连续操作，稳定性好，不带任何外来介质等优点。主要用于果汁的分离和澄清。
Thanks to high separating efficiency, continuous operation, high stability and no foreign intervention with principles of mechanic and physical separation, our centrifugal are able to separate and clarify of fruit juices

型号 MOD	SE111	SE201	SE301	SE401	SE501	SE601
转鼓转速 转数/分 Bowl rotation rpm	11000	8600	6500	6500	5000	5000
水通量 立方米/小时 Hydraulic capacity m³/h	5	13	25	30	50	90
渣腔容积 升 SLudge chamber capacity l	2	5	10.5	10.5	20	28
功率 千瓦 Power kw	4+5.5	9+11	18.5+30	22+30	30+45	45+75



真空转鼓过滤机 Rotary Precoat Vacuum Drum Filter

旋转预真空转鼓过滤机，用于过滤浓稠的泥和果汁。自动刮滤饼刀片获得欧洲专利。
vacuum drum filter allows the heavy filtration of musts and juices, as well as the filtration of lease and of residual bottoms. Automatic cake cutting blade displacement combined with trough movement patented.

型号 MOD		TAYLO-LUX10	TAYLO-LUX15
直径 diameter(d)mm		1335	1669
	长度 Lenght(l)mm	2500	2900
过滤面积 Area of filtering surface m²		10.5	15.2
转鼓转速 Bowl rotation rpm		0.3-5.2	0.3-5.2
转筒浸入部分 Drum submergence	max 最大	42%	42%
	mix 最小	20%	20%



硅藻土过滤机 Greenfilter

硅藻土圆盘过滤机是目前世界上公认的功能最为完备的硅藻土过滤机
Padovan过滤机整机由304不锈钢制成，有过滤面积为2m2到42m2的各种规格的设备
带残液过滤器
可安装移动轮
送料离心泵为316材质
Green filter represents the most versatile and known diatomaceous earth filtration unit.
on wheels or fixed base mounted
cylindrical vertical filtration chamber in AISI 304,
AISI 316 stainless steel centrifugal feed pump (in AISI 304 for mod. G 6),

型号 MOD	G4TOP	G5TOP
标准过滤面积 平方米 Nominal filtering surface m²	3.4	4.5
最大工作压力 Max.operating pressure Bar	6	6
功率 千瓦 Power kw	1.75	1.75



超滤设备 Ultrafiltration

超滤是以压力为推动力的膜分离技术之一。
主要对果蔬汁，牛奶，饮料等进行澄清，浓缩，分离和标准化，污水处理等。
Ultrafiltration is a pressure-driven membrane-based separation technologies.
Concentration/clarification/fractionation and standardisation of juice,vegetable juice,milk,etc.



■ 浓缩设备 | Evaporator

Part1

Triowin
沃迪装备

逆流式外循环蒸发器 Multi-effect Forced Circulation Evaporator

旋转预真空转鼓过滤器，用于过滤浓稠的泥和果汁。自动刮滤饼刀片获得欧洲专利。
vacuum drum filter allows the heavy filtration of musts and juices, as well as the filtration of lease and of residual bottoms. Automatic cake cutting blade displacement combined with trough movement patented.



强制外循环逆流式蒸发器专为番茄酱的浓缩工业而设计，同时也用于一些高粘度或高固形物含量，且不适于在高温条件下浓缩的物料如果酱，糖浆，食用胶等。该设备由加热器，蒸发室和循环系统组成，得益于其独特的设计。此蒸发器具有极高稳定性，并能保证最终产品浓度高，色泽好，品质优。根据产量要求及产品的特性，可选用单效，双效，三效或多效蒸发器。

All of the Triowin's technologies bring us the worldwide praise, the most typical example is the reorganization of our Forced Circulation Evaporator, which turns out to be a perfect express of competitiveness and reliability. Designed originally for tomato paste, the evaporators are also widely utilized in viscous liquid concentrating such as peach, plum etc, and can guarantee a final product with high concentration values as well as ideal organoleptic characteristics. Single effect, twin effects, triple effects or multi-effect forced circulation evaporators are delivered to fulfill the capacity and energy saving requirements for the different products.

■ 浓缩设备 | Evaporator

Part1

Triowin
沃迪装备

降膜式蒸发器 Falling Evaporator

降膜式蒸发器适用于热敏性物质(如牛奶、果汁、淀粉等)，在真空条件下进行低温连续浓缩，具有保证成品质量、节能、稳定性好等优点
Suitable for evaporation of heat-sensitive product(milk, juice, starch ect.) in continuous process with high performance for end product quality control, energy saving and high stability.



套管式杀菌机 Tube-in-Tube Sterilizer



型号 MOD	TW10D1000	TW10D3000	TW10D5000	TW10D800
产能 吨/小时 Capacity t/h	1	3	5	8
功率 千瓦 Power kw	15	48	63	75
蒸汽压力 兆帕 Steam pressure Mpa	6	12	12	12
蒸汽消耗量 吨/小时 Steam consumption t/h	0.15	0.4	0.65	0.8
塔水 吨/小时 Cooling water consumption t/h	35	40	40	60

套管式杀菌机以蒸汽，过热水，冷却水作为传热介质，尤其适合果酱，浓缩果汁等高粘度物料的杀菌。该机主体部分采用四层套管式结构：热交换介质在外层和里面两层中流动，物料在中间层中反向流动。

可拆卸套管便于检修: 配备CIP和SIP

Take steam,superheated water and cooling water as a diathermanous medium ,it is applicable to various liquid material such as paste,juice concentrate,milk,and evan high-viscosity material.It is made of four-layer tube-in-tube structure:the material is forced to a thermal cycle by means of the single pipe indirect heat exchangers,placed one inside the other.Product flows in the second layer of the pipe,while super-heated water and steam circulate in counter-current to the product,inside the external layer's space and inner two layer's space.This fully automatic process allows the product heating at certain temperature over a long period.it is equipped with automatic CIP and SIP system

管式杀菌机 Tube-type Sterilizer

管式杀菌机广泛应用于果汁饮料，牛奶，带颗粒的果汁，沙司，汤汁等中低粘度物料的杀菌。

物料通过本设备杀菌冷却达到延长保质期的目的。可根据用户对物料杀菌，保温，冷却的不同工艺要求，进行单段，双段，多段形式的组合系统设计。

Tube-type sterilizer is applied for pasteurization of juice,milk,juice with particles and evan low-viscosity material,to achieve long shelf-life.

Various designs of single stage,double stage and multistage or their combination can be customized accordingly for different demands of sterilization.

处理能力 吨/小时 Capacity t/h	1-20	杀菌温度 (摄氏度) Sterilization Temp (°C)	80-138
蒸汽压力 兆帕 Steam pressure Mpa	>0.6	持温时间 (秒) Holding time(s)	根据客户要求
蒸汽耗量 吨/小时 Steam consumption t/h	100-2500	功率 (千瓦) Power (kw)	3-11



板式杀菌机 Plate-type Sterilizer

板式杀菌机适用于果汁，茶饮料，乳品，啤酒，保健饮料等液体物料的巴氏，超巴氏，超高温杀菌。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，深得客户青睐。

Plate-type sterilizer is applied for pasteurizing,ultra-pasteurizing, UHT sterilizing of juices,tea drink,dairy,beer, function drink etc.

With advantages of small space occupation,high heat recovery efficiency,compact constrution,feasibility and easy operation and maintenance,this model is widely used in all aspects.



■ 无菌灌装机 | Aseptic Filler

Part1

无菌灌装机 Aseptic Filler

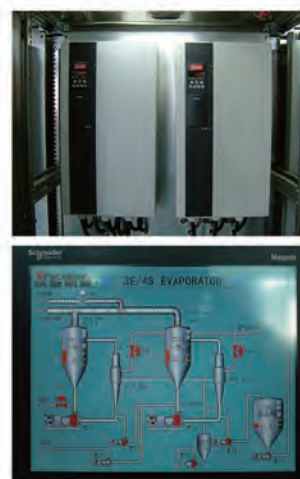
型号 MOD	TW8FS单头	TW8FS双头
最大产能 吨/小时 Capacity t/h	4	8
功率 千瓦 Power kw	0.5	1
蒸汽消耗量 公斤/小时(0.1兆帕) Steam consumption kg/H(0.1mpa)	50	100
压缩空气耗量 立方米/小时(8kg/cm²) Compresses air con.m³/H(8kg/cm²)	20	20
外形尺寸 毫米 Dimensions mm	1600*1100*218	4072*4400*3838



无菌灌装机使用蒸汽对袋口、灌装头和灌装室进行三点喷射杀菌，以确保灌装过程的无菌要求。包装袋采用铝塑复合无菌袋，无菌袋口杀菌、开启、灌装和封口都在无菌环境下完成。特别适合于果蔬汁，饮料，原浆，乳制品及制药行业的无菌大袋灌装。栈板式双头无菌灌装机为国内首套全自动4桶旋转式无菌大袋灌装系统。主要由无菌灌装头（两套），栈板进出系统，称重计量，工作台和控制系统组成。Steam is utilized to sterilize the bags and filling heads to make sure the whole filling process like cappers removing, product filling and steaming is under aseptic condition. The machine is specially designed for filling of fruit & vegetable juice, paste, jams, fruit pure, milk and pulp. Triowin developed the first twin-head aseptic filler with automatic rotary pallet feeding system in China market. It is mainly composed of aseptic filling heads, pallets in and out conveying system, weighting, operation & PLC control system and operation platform etc.



■ 控制系统 Control System



沃迪自动化装备具备整体项目的开发设计、生产制作、安装调试、技术培训、售后服务诸多方面的综合能力。对番茄、芒果、菠萝、橙、葡萄、蓝莓、草莓、桃、杏、枣、胡萝卜等果蔬品种的加工有着丰富的认识和深刻了解，具备根据客户的不同要求提供个性化的精辟解决方案的能力。

Triowin automation machinery with the overall project development and design, production production, installation commissioning, technical training, after-sales service in many aspects of the comprehensive ability. It has a wealth of knowledge and a deep understanding of the processing of fruit and vegetable varieties such as tomatoes, mango, pineapple, orange, grapes, blueberries, strawberries, peaches, apricots, dates and carrots, and has the ability to provide individualized and incisive solutions according to the different requirements of customers

各种果蔬加工成套生产线设备交钥匙工程
Turn-key solution for various fruits & vegetables processing line



适用生产线 | Applicable Processing Line

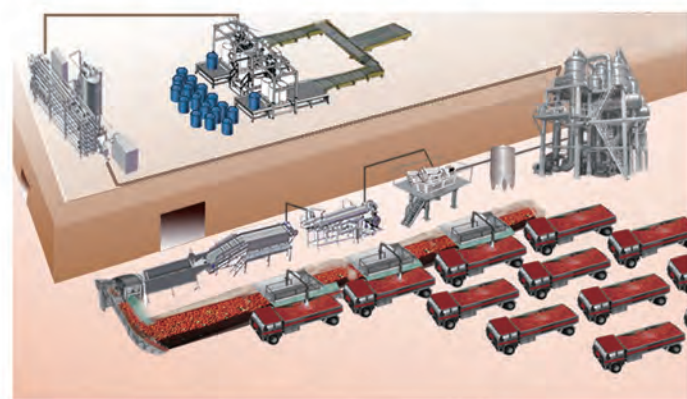
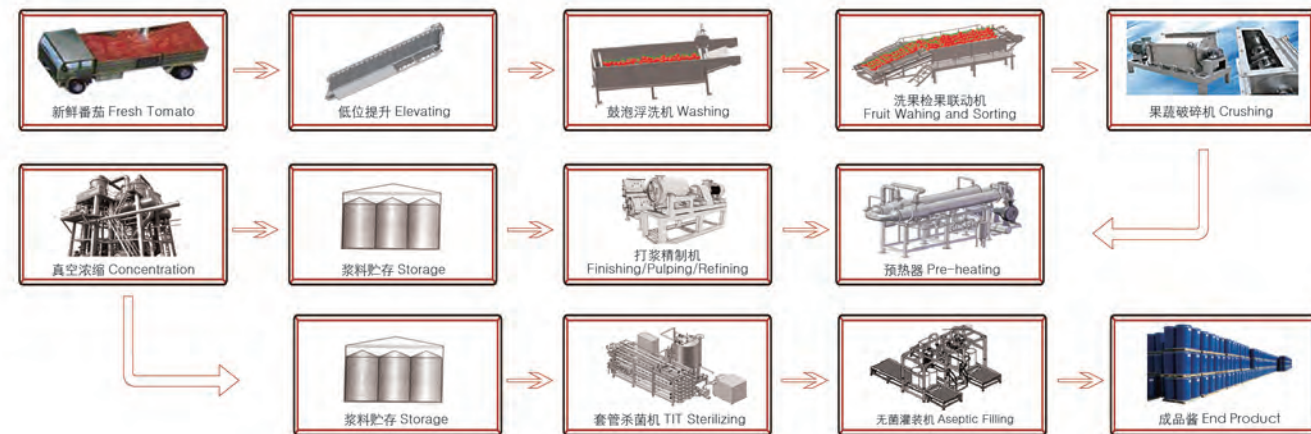
番茄酱
Tomato Paste
柑橘
Citrus
苹果
Apple
葡萄
Grape
椰枣红枣
Palm Date/Date
芒果菠萝
Mango/Pineapple
蓝莓树莓草莓
Berry

果酒果醋
Fruit Wine/Fruit Vinegar
胡萝卜
Carrot
枸杞
Wolfberry
杏子李子桃
Apricot/Plum/Peach
核桃乳饮料
Nut
西番莲番石榴
Passion/Guava
草本植物饮料/茶饮料
Herb/Tea Drink

番茄酱调配
Tomato Dilution
洋葱大蒜泥
Onion Garlic Paste
果蔬干
Dried Vegetable & Fruit
椰子饮料
Coconut Drink Juice
果蔬罐头
Vegetable & Fruit Can

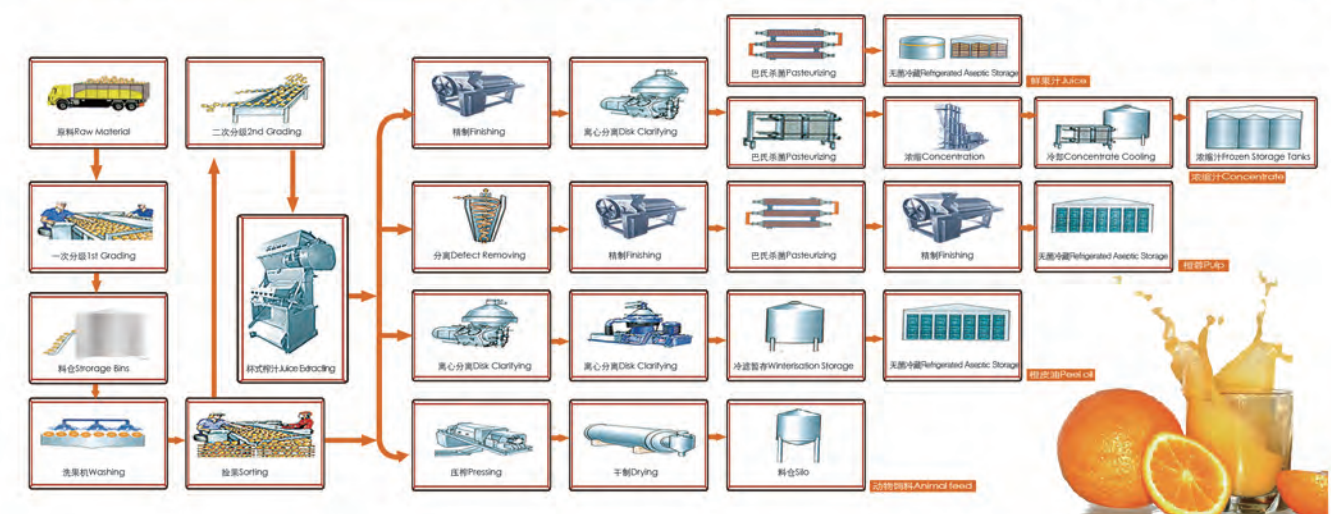
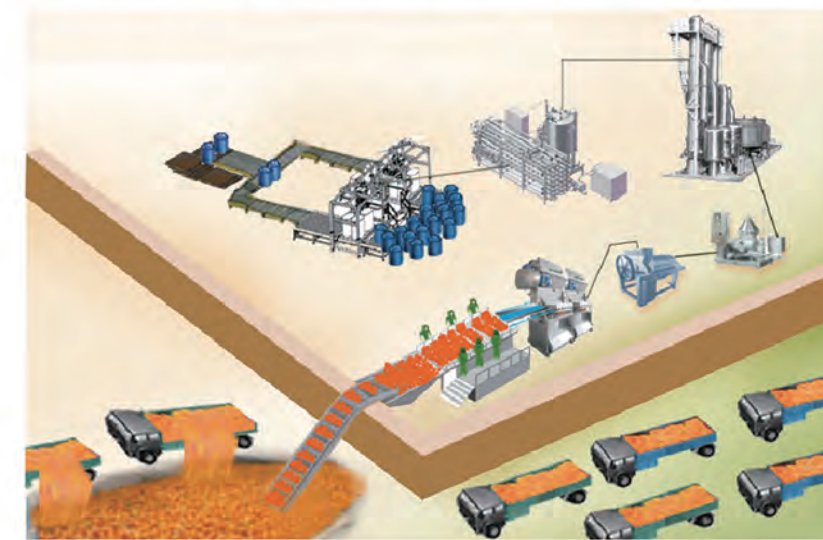
■ 番茄酱加工成套生产线
Turn-Key Solution for Tomato Paste Processing Line

Triowin
沃迪装备
Part2



■ 柑橘加工成套生产线
Turn-Key Solution for Citrus Processing Line

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Part2



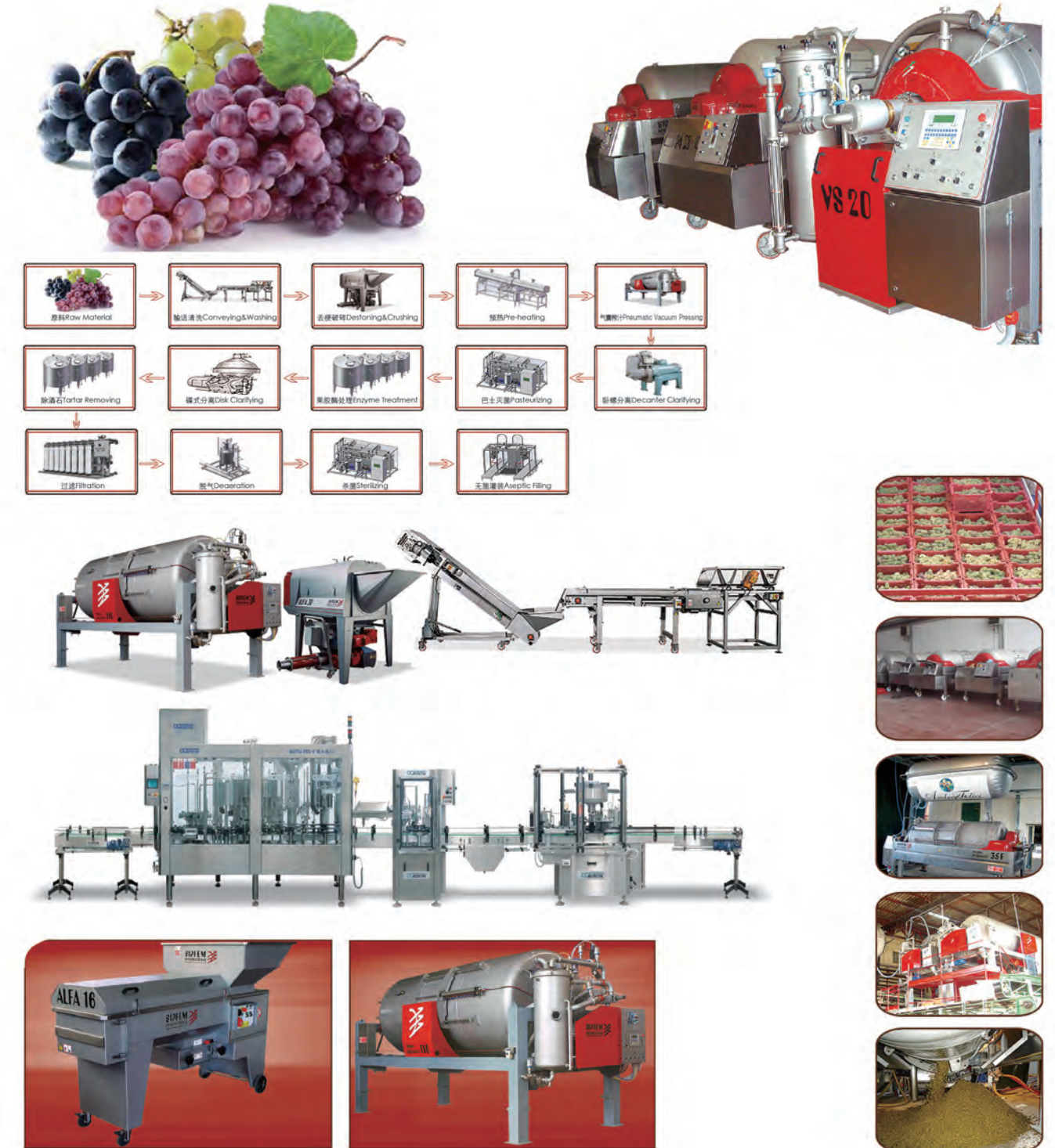
■ 苹果加工成套生产线
Turn-Key Solution for Apple Processing Line

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Part2



■ 葡萄加工成套生产线
Turn-Key Solution for Grape Processing Line

Triowin
沃迪装备
Part2



■ 蓝莓树莓草莓加工成套生产线
Turn-Key Solution for Berry Processing Line

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沃迪装备
Part2



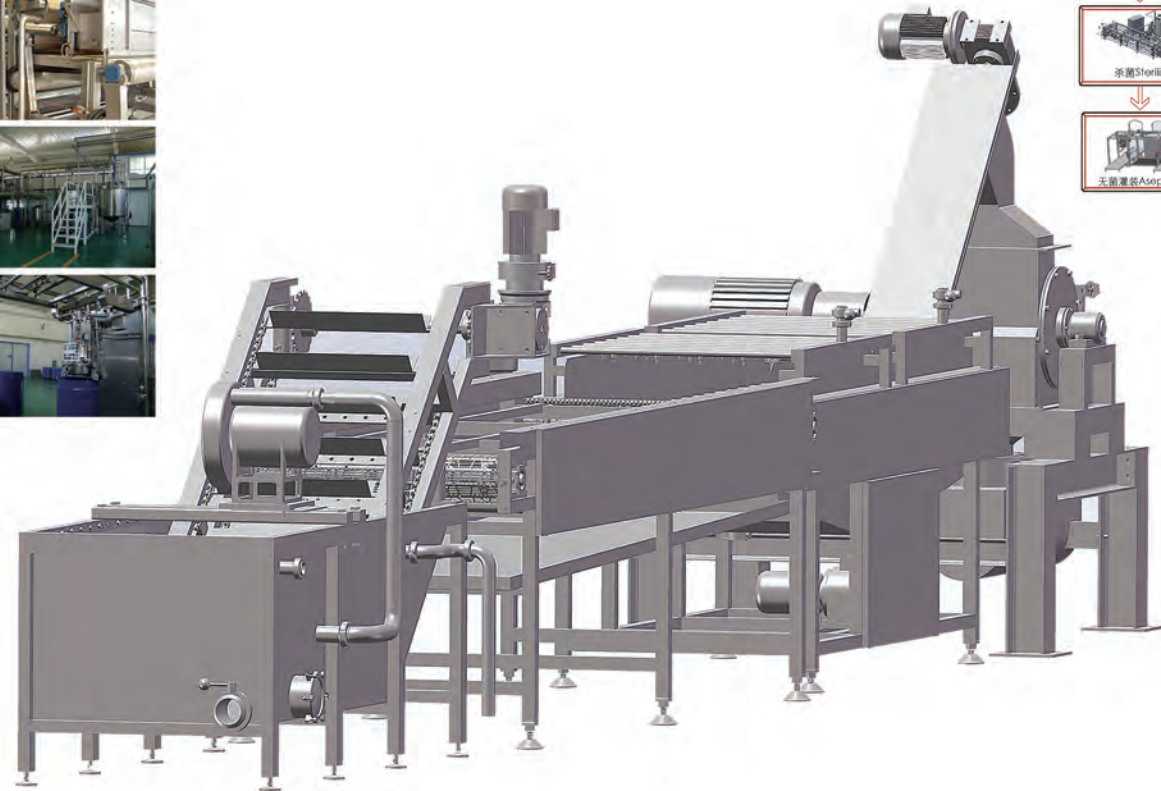
■ 果酒果醋加工成套生产线
Turn-Key Solution for Fruit Wine, Fruit Vinegar Processing Line

Triowin
沃迪装备
Part2



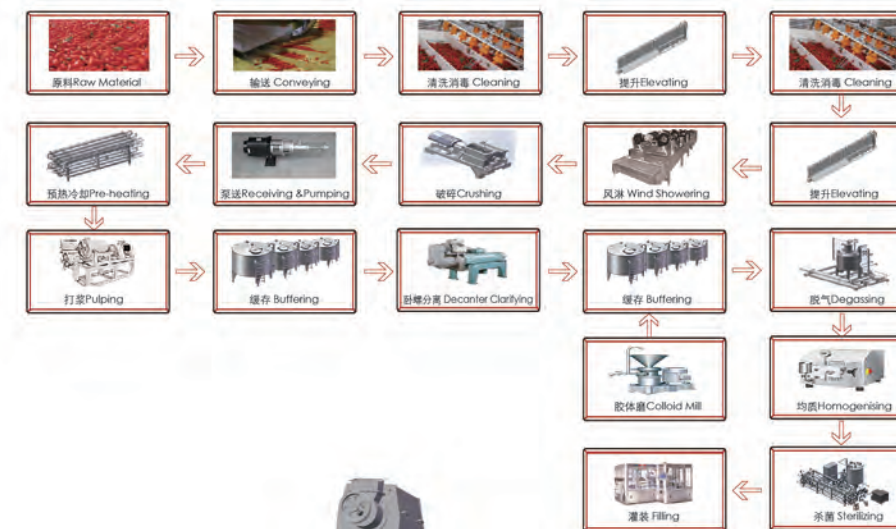
胡萝卜加工成套生产线
Turn-Key Solution for Carrot Processing Line

Triowin
沃迪装备
Part2



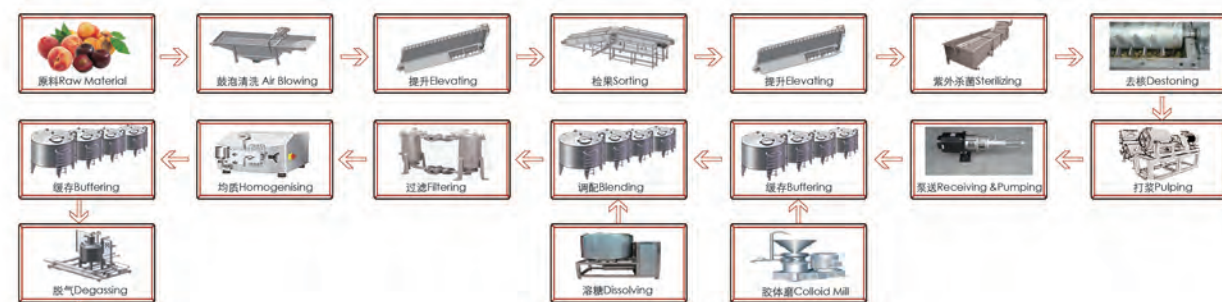
枸杞加工成套生产线
Turn-Key Solution for Wolfberry Processing Line

Triowin
沃迪装备
Part2



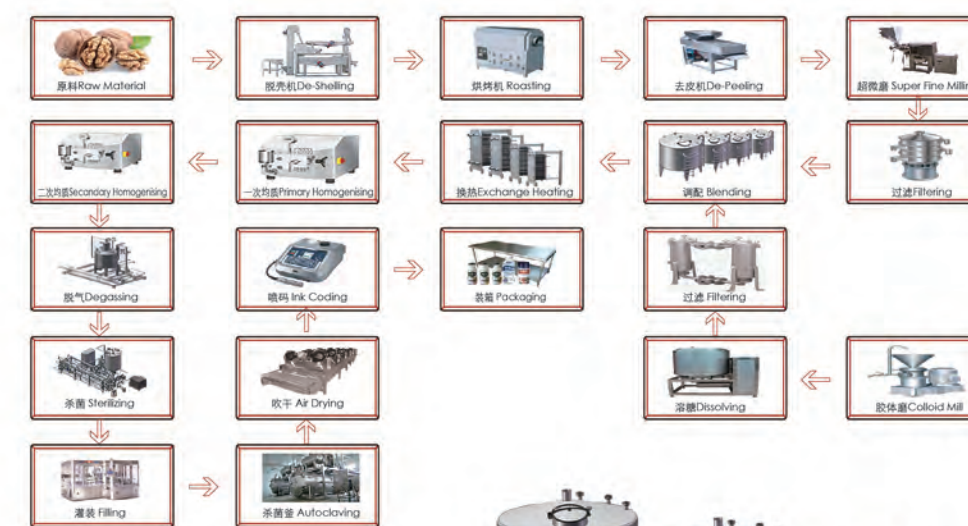
■ 杏子李子桃加工成套生产线
Turn-Key Solution for Apricot, Plum, Peach Processing Line

Triowin
沃迪装备
Part2



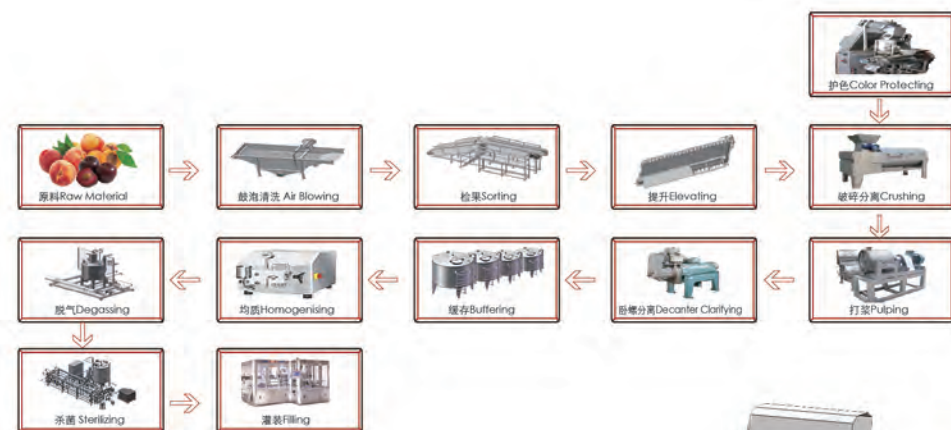
■ 核桃乳饮料加工成套生产线
Turn-Key Solution for Nut Processing Line

Triowin
沃迪装备
Part2



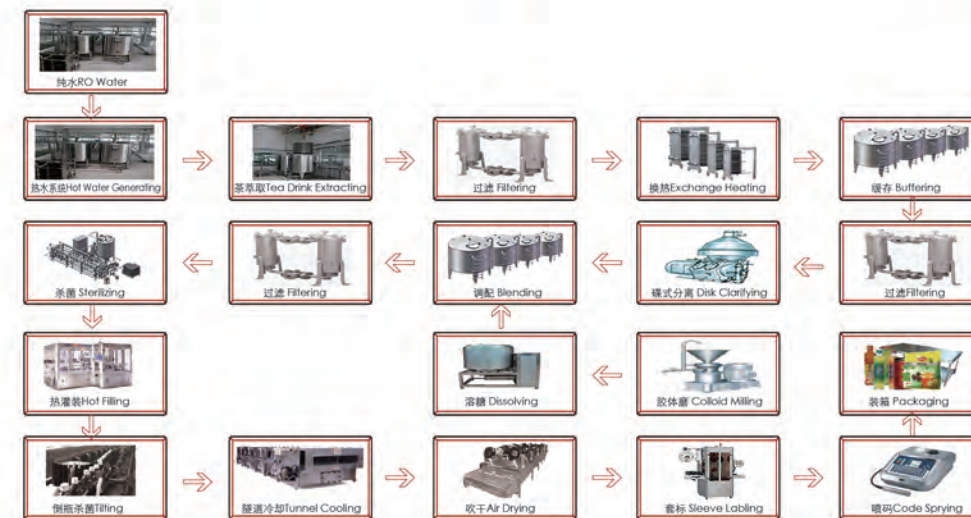
■ 西番莲番石榴加工成套生产线
Turn-Key Solution for Passion,Guava Processing Line

Triowin
沃迪装备
Part2



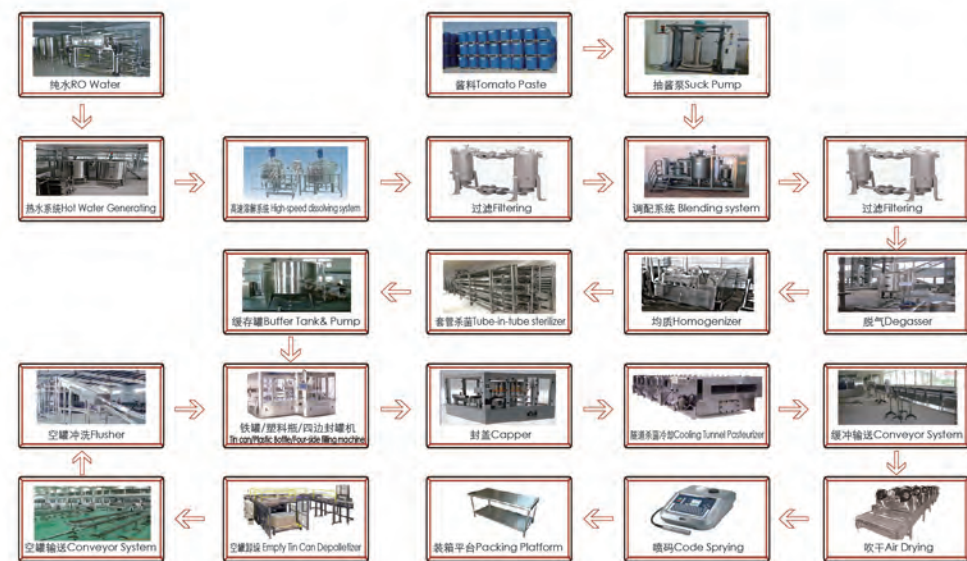
■ 草本植物/茶饮料加工成套生产线
Turn-Key Solution for Herb/Tea Drink Processing Line

Triowin
沃迪装备
Part2



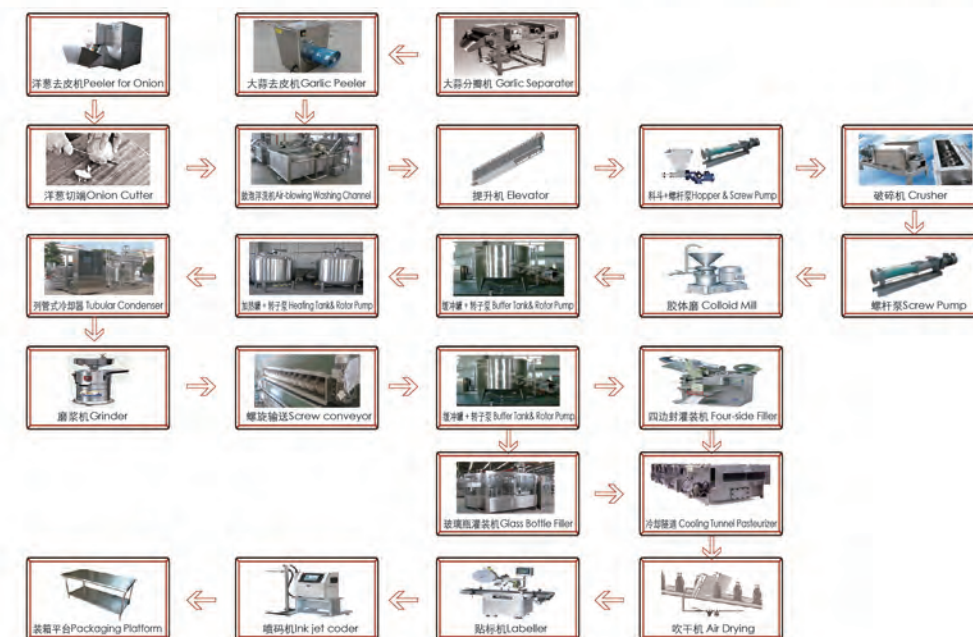
■ 番茄酱调配生产线
Turn-Key Solution for Tomato Dilution Line

Triowin
沃迪装备
Part2



■ 洋葱大蒜泥加工生产线
Turn-Key Solution for Onion Garlic Paste Processing Line

Triowin
沃迪装备
Part2



果蔬干加工生产线 Turn-Key Solution for Dried Vegetable&Fruit Processing Line

Part2

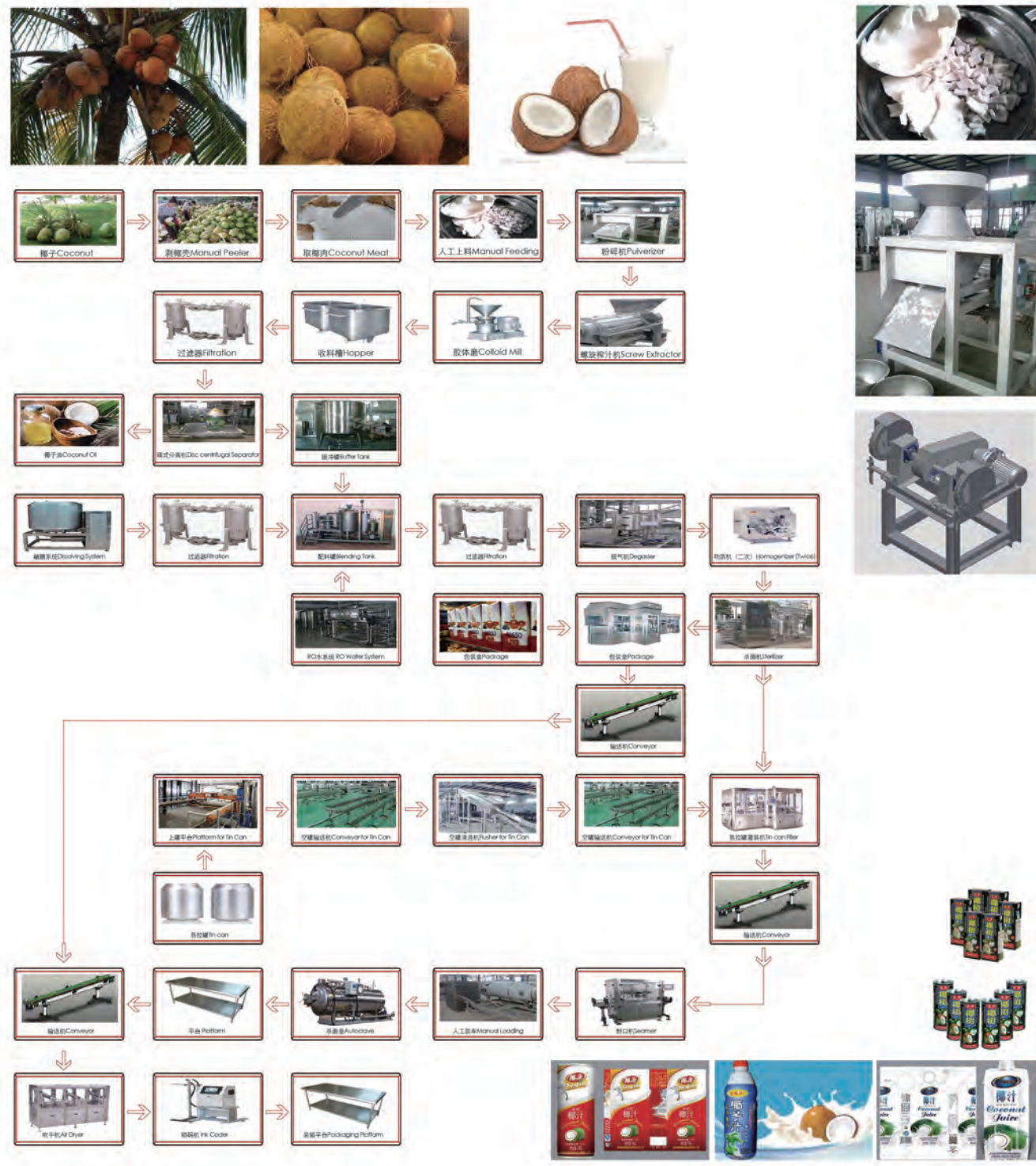
Triowin
沃迪装备



椰子饮料加工生产线 Turn-Key Solution for Coconut Drink Juice Processing Line

Part2

Triowin
沃迪装备



■ 果蔬罐头加工生产线
Turn-Key Solution for Vegetable&Fruit Can Processing Line

Triowin
沃迪装备
Part2



沃迪生产的高速自动化液态小包装生产线其产品涵盖水处理、饮料前处理、吹灌旋一体、注塑、吹瓶、灌装、输送、贴标、包装等系列。生产线可对各个产品进行全面控制，可根据整线各部分现时状态随时调整系统的动态均衡，减少容器破损、增加整线效率、减少人工消耗。

Triowin production of high-speed automated liquid small packaging production line of its products cover water treatment, beverage pre-treatment, blowing hyun one, injection, blowing, filling, transportation, labeling, packaging and other series. The production line can be fully controlled by each product, and the dynamic balance of the system can be adjusted according to the current state of each part of the whole line to reduce the damage of the container, increase the whole line efficiency and reduce the manual consumption.



液态小包装生产线
Fruits Processing & Bottling Line





调味品 Condiments



日化产品 Household&Daily Care Liquids



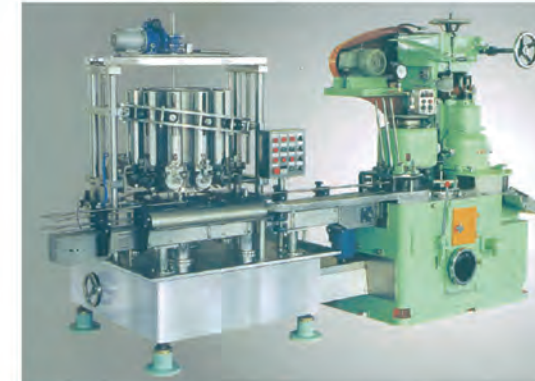
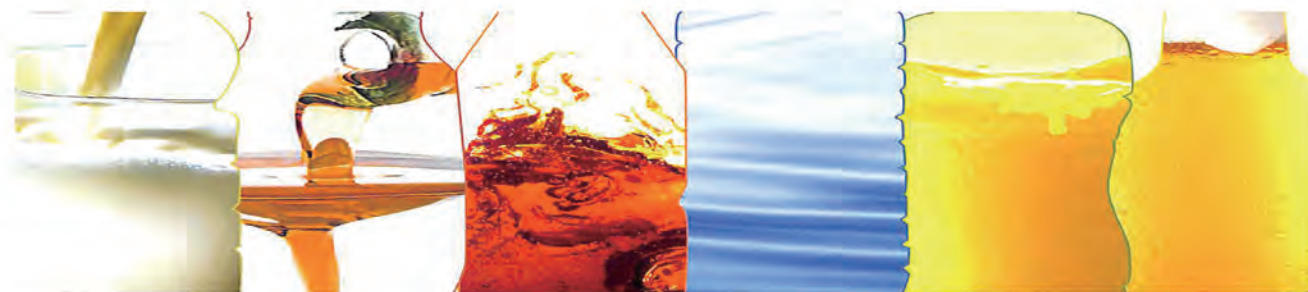
热灌装饮料 Hot Fill Beverages



碳酸饮料 Carbonated Beverages



水产品 Water Products



浓酱灌装封盖一体机 Paste Filling&Seaming Monobloc



浓酱灌装机 Paste Filler



三位一体机 Riser/Filler



沃迪装备可以提供番茄沙司、果汁果酱调配产线到马口铁罐、玻璃瓶、塑料瓶及小袋灌装交钥匙工程，产能1吨/时到10吨/时。根据客户要求，番茄酱，果汁果酱通过加盐、糖、醋、香精等调料进行调配、稀释及混合，然后预热、脱气、均质、杀菌灌装、后巴氏杀菌、包装成最终成品。

Triowin can provide turn-key solution for tomato sauce, ketchup, fruit juice, jam production and filling line with tin cans, glass bottles, PET bottles, pouches packing etc. Capacity is from 1ton/hour to 10tons/hour. Tomato paste or juice is mixed with salt, sugar, vinegar, spices and aromas according to customers requirements through dilution, mixing and blending at first, then through pre-heating, deaeration, homogenizing, filling& seaming, post-pasteurization and packaging system.





萃取单元 Extraction Unit



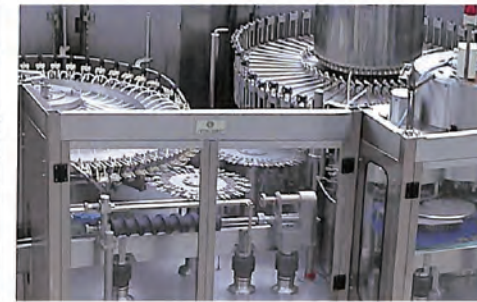
板式杀菌机 Plate-type Sterilizer



全自动裹包机 Automatic Wrapping Machine



管式杀菌机 Tube-type Sterilizer

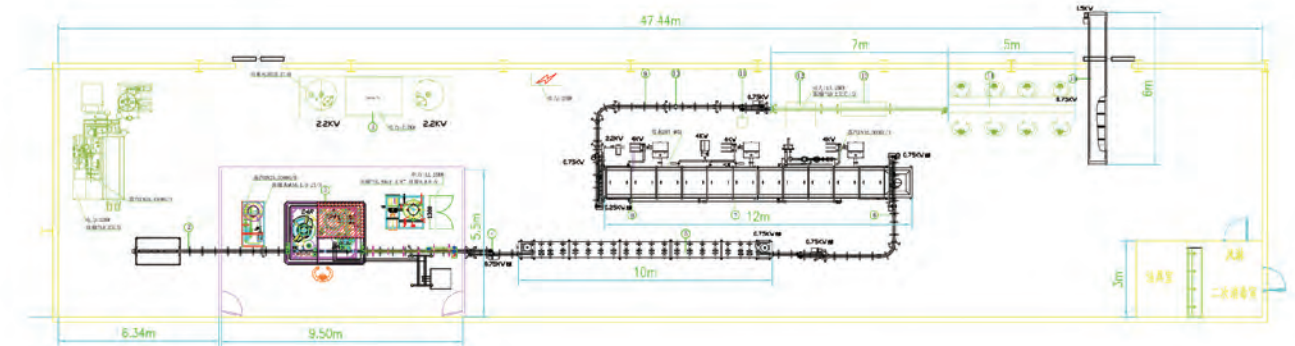


活塞式充填封罐机
Piston Filling Capping Machine



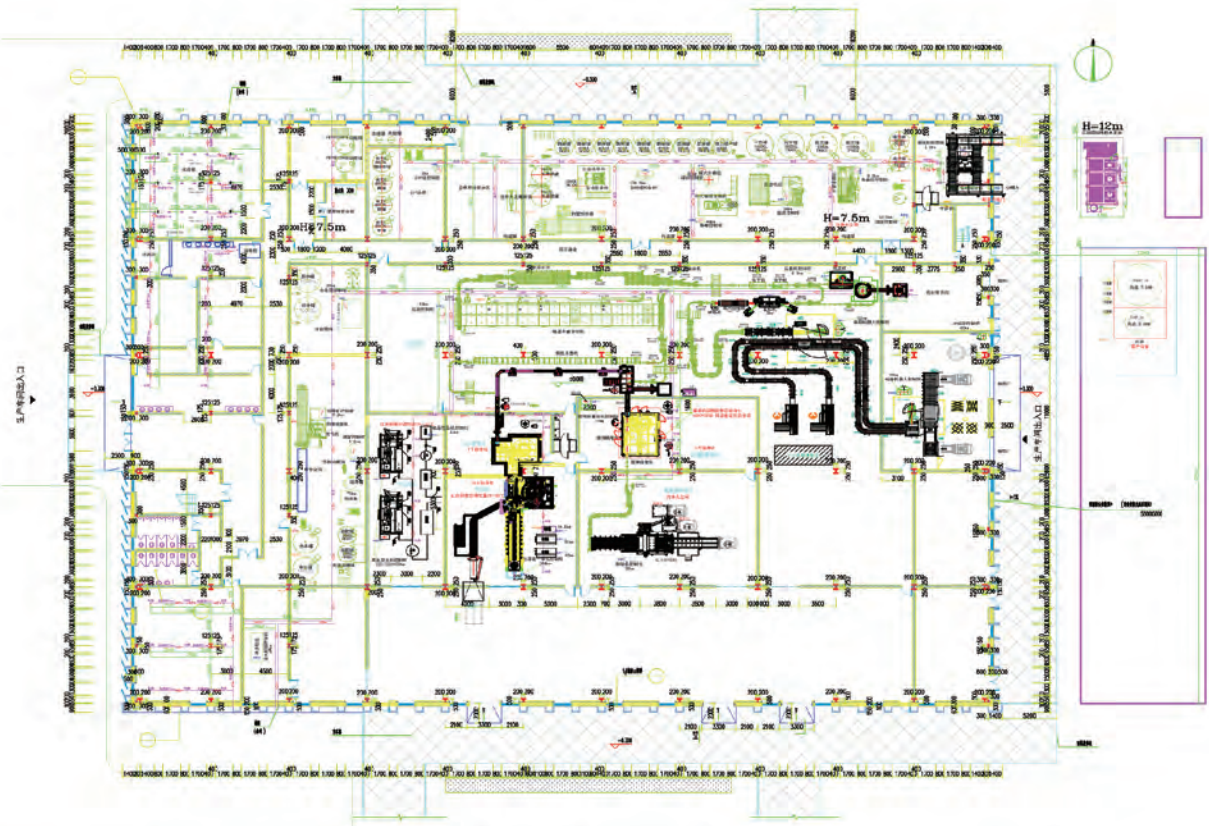
重力式自动充填封罐机
Gravity Auto Filling Capping Machine

大漠红生产线平面布置图
Equipment Layout of Red Magic Processing Line

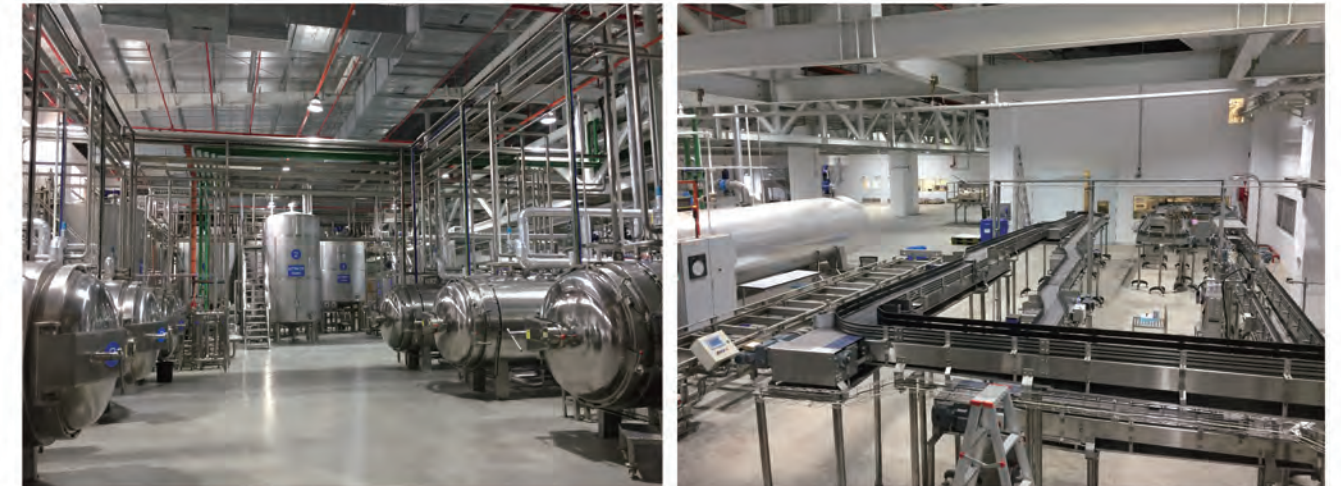
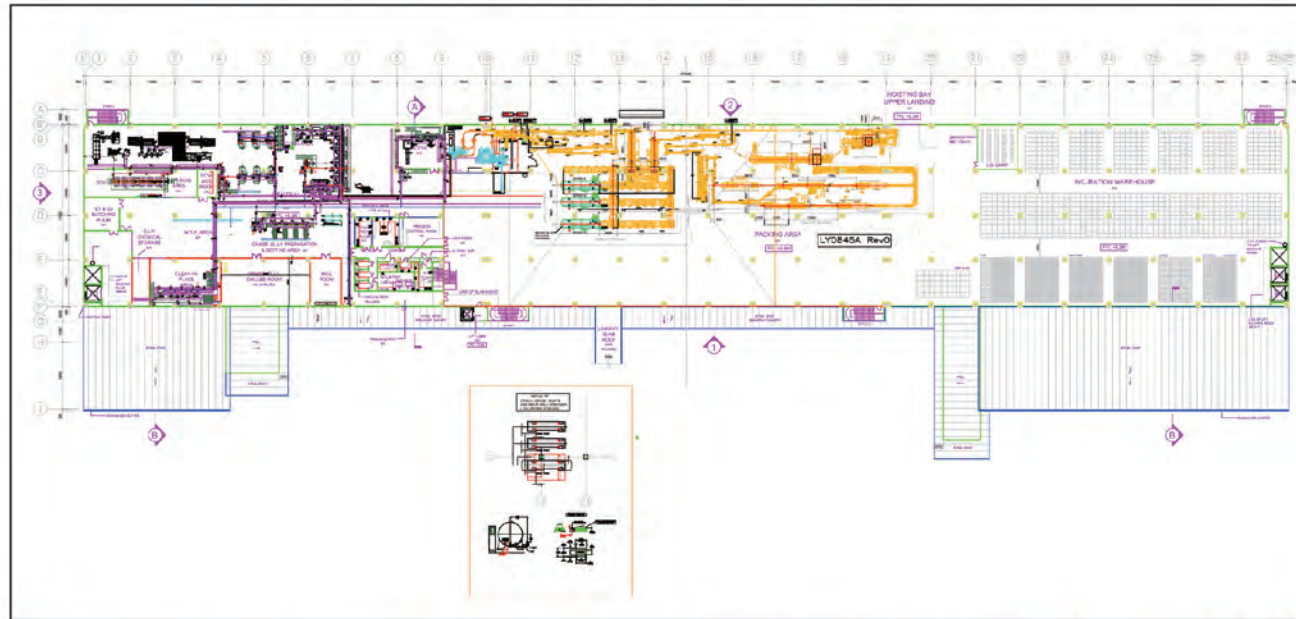


Triowin
沃迪装备

茅台生产线平面布置图展示
Equipment Layout of Moutai Processing Line



杨协成生产线平面布置图
Equipment Layout of Yeo Hiap Seng Processing Line



中控室设置数据采集服务器一台(工程师站),作为SCADA服务器(监视控制和数据采集)系统以Windows2003Server为操作平台,运行控制软件完成生产线各控制软件编制及上下载、故障诊断,运行组态监控软件,完成设备控制信息和生产数据的采集工作,经过程序处理,生成各种文件,显示各生产区域的动态画面及图形,对该区域的生产设备状态、生产状况、物流状态进行动态模拟、实时监控,并实现实时反映生产环节中各部接口和设备的情况。

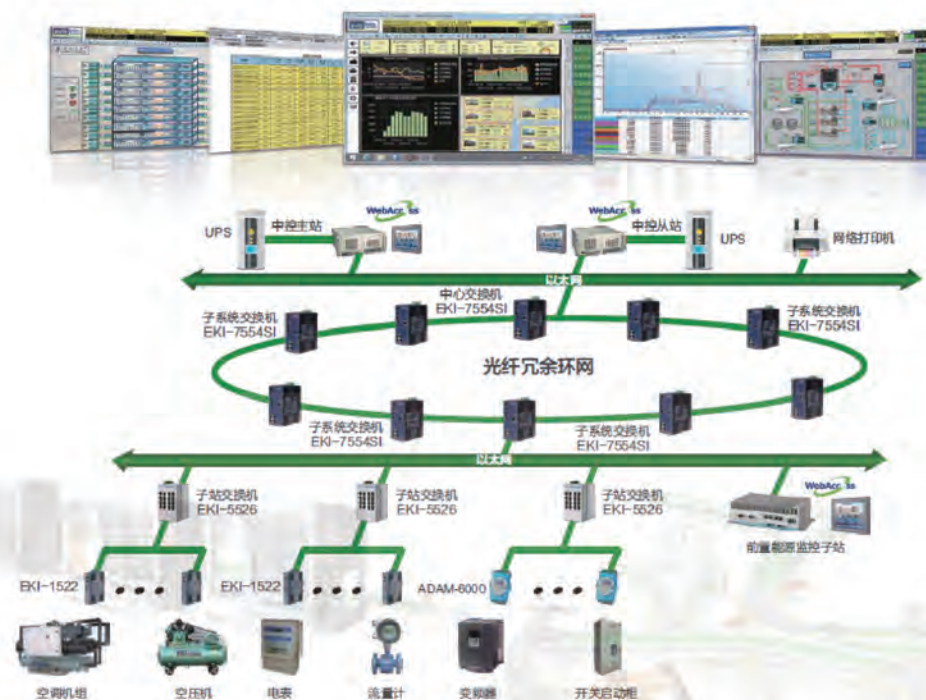
The central control room, is equipped with a serve as its supervisory control and data acquisition system(SCADA) .It is based on the operating platform-Windows2003Server to control software to complete the production line,diagnose failures, and sample state parameter of manufacturing system in real time .Through the process of program,the files can be generated that show the motion graphics of produce area. The dynamic simulation and real time monitoring of production state ,equipment state and logistic status can be achieved.

基于手机APP的PLC远程监控系统的优势和特点:

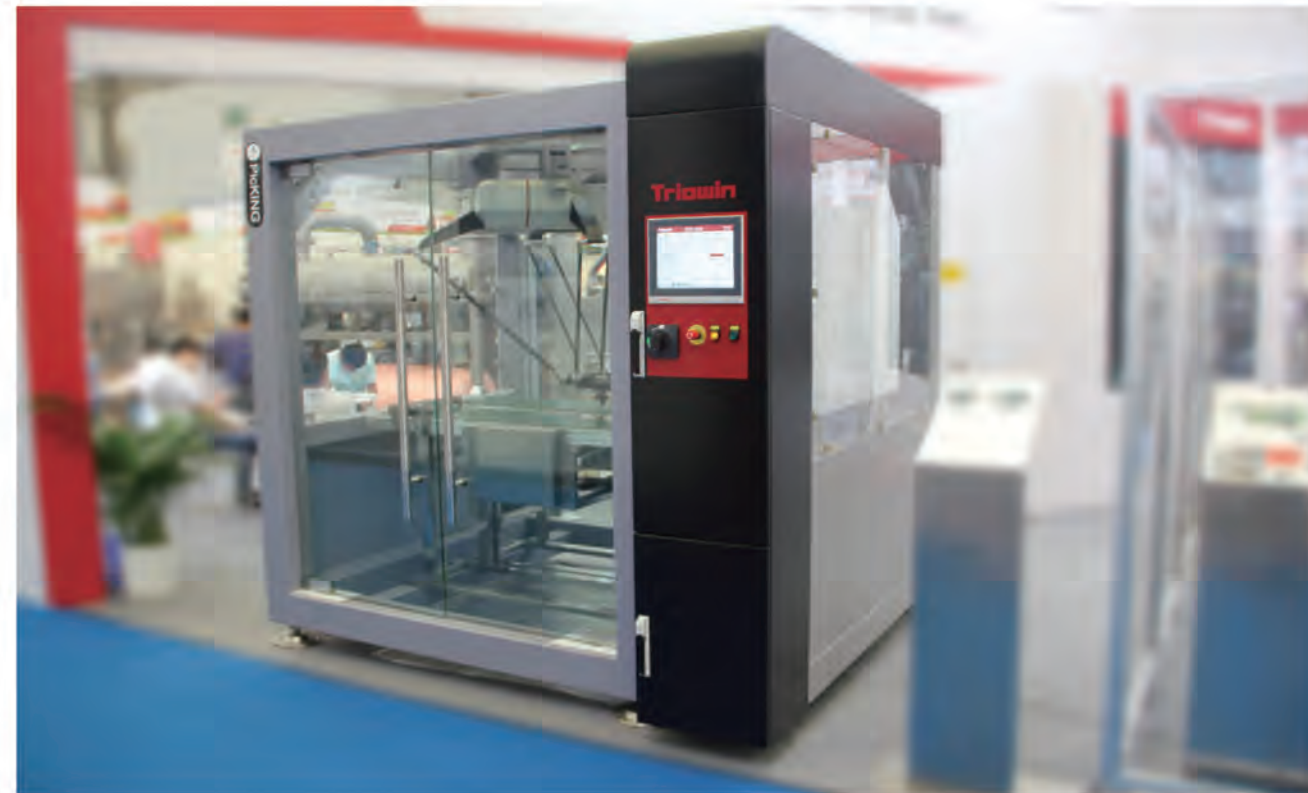
- 可以使异地的智力之源得到充分利用
- 可以使异地的物质资源得到充分利用
- 可以不必亲临恶劣的现场环境就可以对现场的工作情况进行监视,完成对参数的设置与调整,修复故障等
- 可以实现现场运行数据的快速集中和实时采集,获得现场的监控数据,提供了远程故障诊断技术物质基础

The advantages of PLC remote monitoring system based on mobile apps :

- Take advantage of the remote supplies and intelligence resource;
- Can monitor and control through the internet at the scene;
- Sample various parameters of on-site equipment which can provide the technical basis for long-range fault diagnosis.



沃迪智能数字化生产车间解决方案
Solution for Intelligent Digital Factory



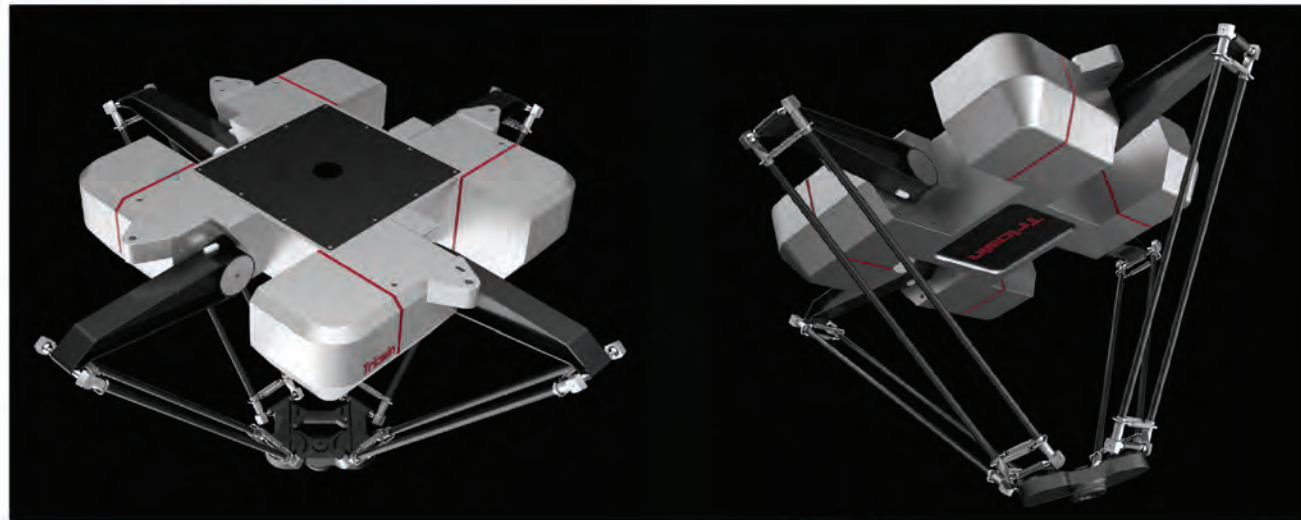
PicKING 型拾捡机器人是一款用于快速拾捡应用的高速拾捡机器人。结构上它采用四支链对称的欧洲专利设计、运用高级控制算法,使其相比于传统的Delta并联机器人,具有更大的工作空间,更大的负载能力,更好的结构刚性,更可靠地稳定性和更快的运动性能。其机械本体采用最大程度上减少卫生污染风险的设计方案、选用抗腐蚀耐磨材料,方便机器冲洗,满足食品、药品行业的卫生规范要求。

PicKING robot is a high-speed parallel robot, dedicatedly designed for pick-and-place applications. It features innovative structure design of quadruple linkages, distributed symmetrically 90 degrees to each other in space. European technology patent origin and proprietary refined control algorithm commonly ensure that the PicKING robot stands out from its kind. In comparison with traditional design of Delta robot, PicKING robot is identified as a pick-and-place robot with larger working envelop, better structural rigidity, greater load capacity, more reliable robustness and best motion performance. To comply with the hygienic requirements of food and pharmaceutical industry, PicKING robot is designed with special ideology and approaches to reduce any potentially possible pollution risk, for instances, sealing design, and use of abrasion resistant and anti-corrosion materials.



PickKING 型拾捡机器人集成高速传送带跟踪视觉系统，能进行高速连续的平滑抓取运动。其在标准行程测试条件下，抓取速度可达200次/分钟以上，重复定位精度可达正负0.1毫米以内，是高速物流生产线上散乱物料的分拣、搬运和包装等操作应用的理想之选。

Integrated with machine vision system and conveyor tracking capabilities, PickKING robot is capable of operating high speed with smooth and jerk-free motion. Under the standard test condition, its pick-and-place cycle times can be up to 200 times per minute while able to ensure of less than 0.1 mm repeatability. PickKING robot is the ideal selection of a robot to work with high-speed conveyors for applications, such as material sorting, packaging, and handling.



高效、低能、精准
整理、分类、拾捡、装箱
智能化、无人化、绿色化
High-efficient, low-energy, precise,
arrange, sort, pick, package,
intelligent, unmanned, eco-friendly.

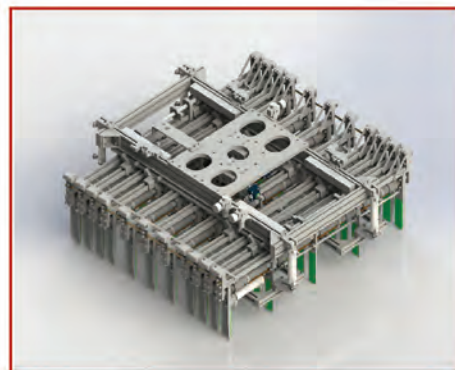
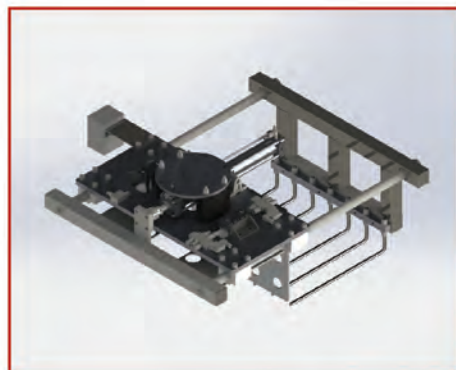
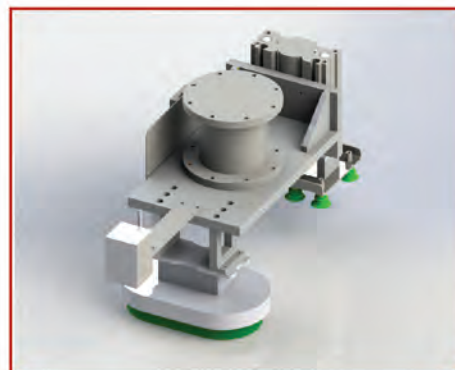


Triowin
Automation Machinery
Innovated Robot With Chinese Passport

Triowin Provide Intelligent Packaging Solution-Professional Cartoning Solution Supplier

■ 码垛搬运机器人物流输送系统
Triowin Palletizing Conveying Robot System

Triowin
沃迪装备
Part4



■ TPR系列码垛搬运机器人
TPR Series Of Palletizing Robot

Triowin
沃迪装备
Part4

沃迪装备码垛搬运机器人独特的线性执行机构、节能环保的手臂设计、简单的操作界面和首屈一指的定制化抓手，可为客户不同的生产线、物料量身定制专业的机器人系统解决方案，其卓越的精度和速度、高效稳定的性能使一台机器人能够同时完成多条生产线码垛要求。维护安全、方便，即提高企业效益又提升企业形象。

Triowin Palletizing Robots, applying special line-type executive device, low-energy and eco-friendly design, simple operating-screen, specialized hands, supply specialized Robot System Solution for customers with different lines and products. The outstanding speed, precision, stable performance, make the Robot achieve the requirement of multi-line palletization.

It is safe and convenient to maintain, good for customer's profit and impression.

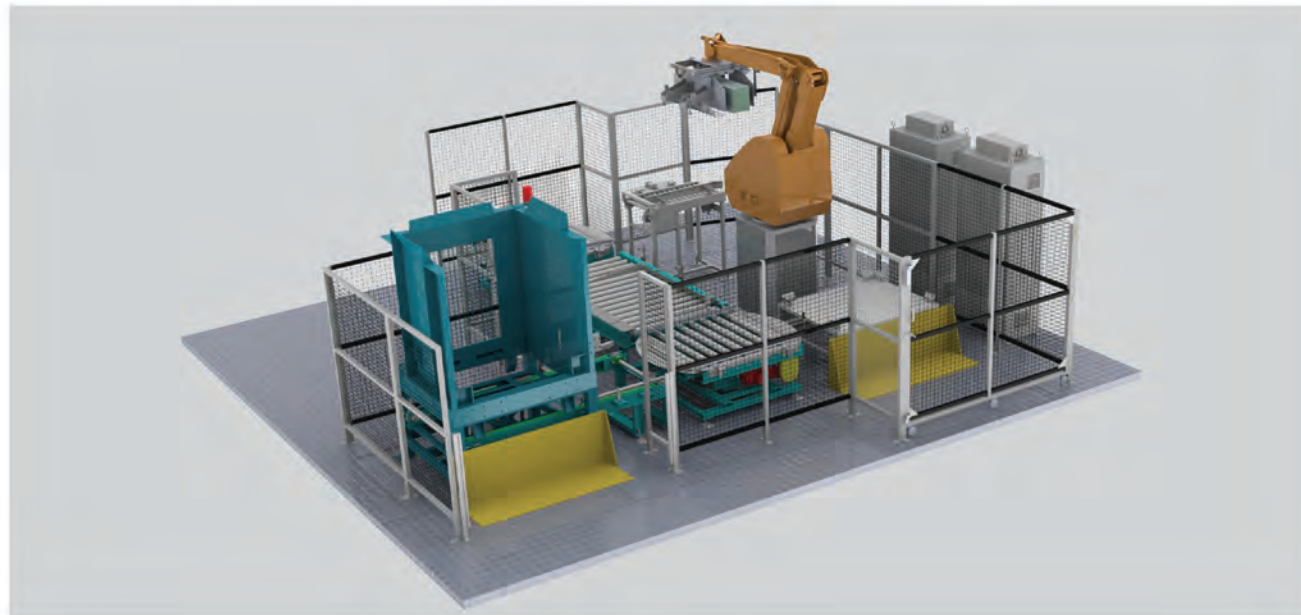


独特的线性执行机构
节能环保手臂设计
简单的示教作业和友善的图形操作界面
低成本维护，可通过网络监控维护
Unique linear executing mechanism
Energy-saving arm design.

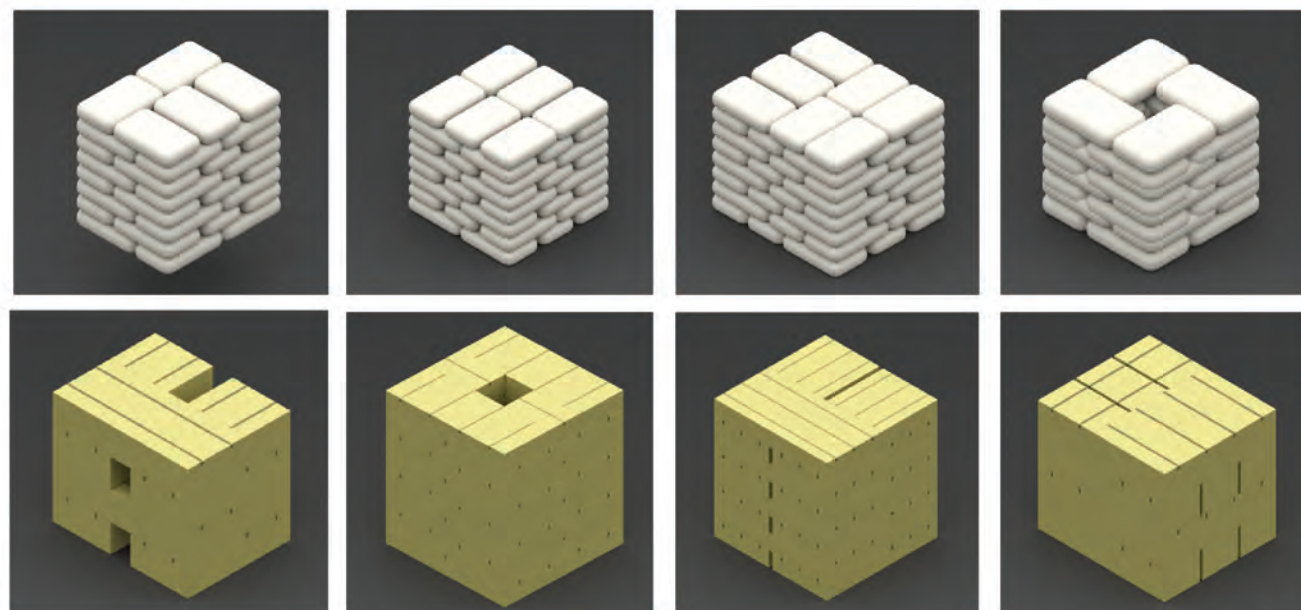
■ 码垛搬运机器人解决方案
Palletizing Solutions

Triowin
沃迪装备
Part4

我们提供完整的码垛解决方案。
We provide customized palletizing solutions to our world-wide customers.



■ 码垛搬运机器人各种垛型
The Shape Of The Stack



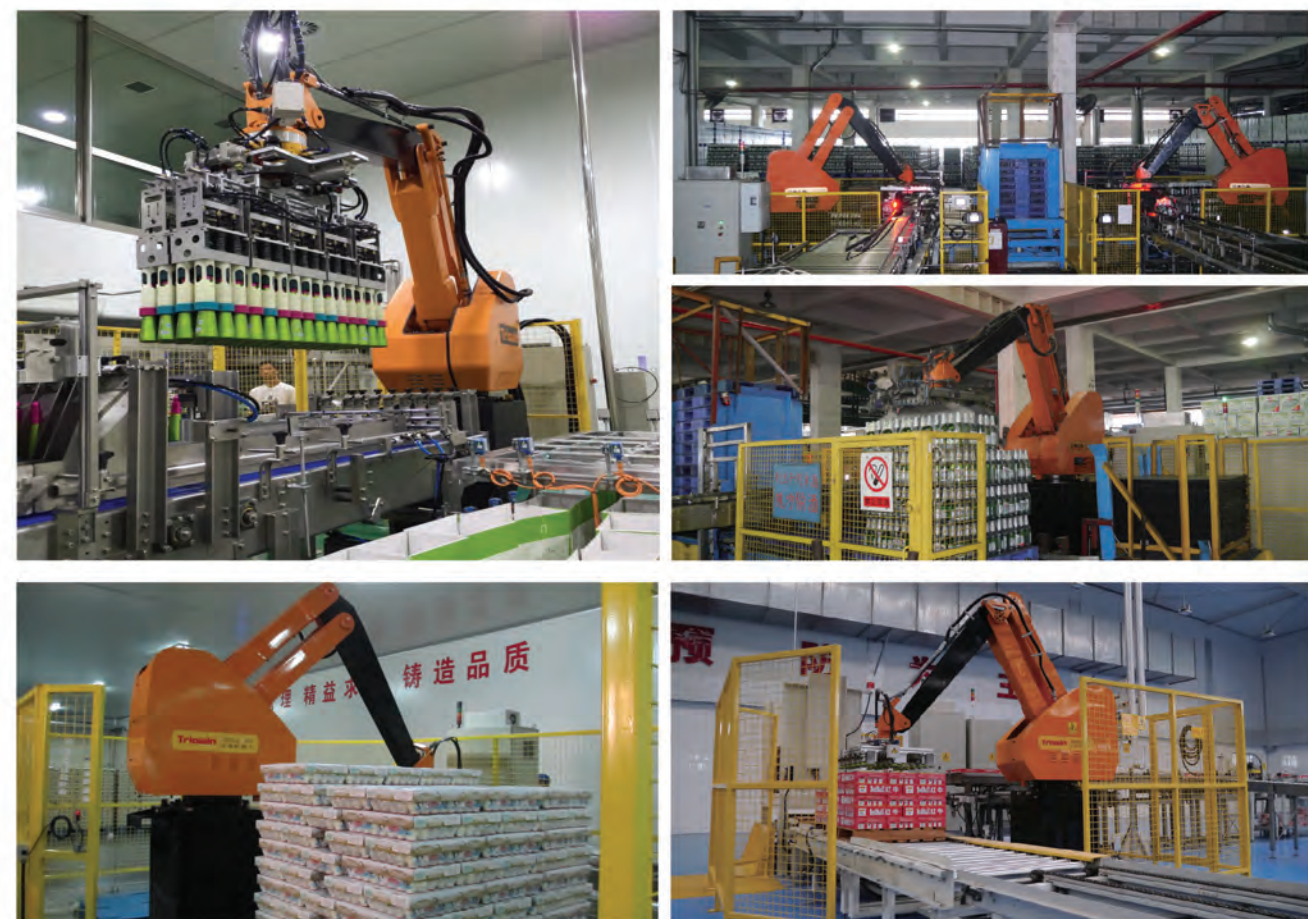
■ 应用行业 | Application

Triowin
沃迪装备
Part4

食品行业 Food



啤酒饮料行业 Beer & Beverag Industry



Food & Beverage
Automatic Packaging Line

食品饮料全自动数字化包装生产线



- | | |
|--------|-----------------------------|
| 饲料行业 | Animal Feed |
| 粮油行业 | Grain & Oil |
| 啤酒饮料行业 | Beer & Beverag Industry |
| 调味品行业 | Seasoning |
| 乳品行业 | Dairy |
| 食品行业 | Food |
| 化工行业 | Chemical |
| 建材行业 | Building Materials Industry |
| 日化行业 | Cosmetics |
| 医药行业 | Pharmaceutical |
| 3C电子行业 | 3C Electronic |
| 家电行业 | Household |
| 其它行业 | Others |

沃迪装备供应链管理解决方案 Solution For Supply Chain Management, Triowin

在今天的商业环境中，作为连接生产商和最终市场用户之间的桥梁，供应链（Supply Chain）已成为企业间竞争的关键领域，供应链不仅要面对多变的客户需求，全球化和电子商务市场，还要面对众多的商品供应商和快速更新换代的商品，在这样的环境下，企业的供应链如何提供更好的服务和获取适当利润，如何灵活的和有效的协调内部资源和外部资源、同步企业内部业务流程、共享信息，传统的ERP解决方案已经不能够回答这些问题。这些促使您的企业必须不断加快创新步伐，建立一个不仅能为客户提供确信的承诺、按时的交货的解决方案，更加需要一个能够迅速响应客户不断变化着的需求、爱好及外界的经济环境，对未来业务发展前瞻性具有综合管理能力的供应链整体解决方案。

沃迪装备供应链管理解决方案（S-SCMTM）帮助您应对供应链管理的复杂性，实现供应链的精细化管理，特别针对对供应链管理的复杂性，实现供应链的精细化管理，化管理，特别针对影响企业利润和客户满意度的环节设计优化方案，将业务流程与供应链系统有机整合从而降低企业内耗，提高供应链运转效率，增加盈利能力与竞争力。

为了帮助您公司创建协同化的供应链网络，我们提供了一个功能强大、全面集成的供应链管理解决方案，其所具备的完善功能可协助您管理整个供应链网络：从供应链规划到物料询价、从需求计划到产品配送，帮助您更有效地执行供应链策略和出色地进行销售和运营计划。

沃迪装备供应链管理解决方案（S-SCMTM）将专门针对您的行业和具体挑战，提供包含重要组件，如战略网络设计、需求计划、分销计划、仓库管理、运输车队管理、销售和运营计划及生产计划和排程的综合性整体解决方案，且易于实施，并可进行扩展，以满足成长型企业的未来需要。

As a bridge connecting producers and end-users, Supply Chain has been a key area for competition between enterprises. Variable customer demands, globalization, numerous suppliers and fast-changing commodities make it difficult to provide better service and coordinate resources for enterprises. Therefore, comprehensive supply chain solutions shall be needed to meet various requirements by accelerated innovation.

Triowin supply chain management (S-SCMTM) helps you with the complexity of the supply chain to achieve its refined management. High efficiency, profitability and competitiveness are realized through optimized solutions as well as the integration of business and supply chain system.

To help you establish a coordinated supply chain web, we provide a powerful and integrated solution for supply chain management, which can help you implement the supply chain strategies and sales plans more effectively.

To satisfy the future needs of growing enterprises, Triowin supply chain management (S-SCMTM) will provide the comprehensive solution according to your industry and specific challenges which is expandable and easy to be carried out, important components such as strategic web design and demand plan included.



沃迪装备供应链系统解决方案（S-SCMTM）解决方案能为企业带来 | Benefits

- | | |
|--|-------------------------|
| · 高效的信息获取机制 | 为企业的管理层提供实时准确的信息获取保证 |
| · 流程的信息沟通渠道 | 为各业务环节之间信息流通渠道的通畅提供有效支持 |
| · 及时准确的财务数据 | 为企业健康发展提供关键的财务信息参考 |
| · 进、销、存协调一致 | 促进企业的运营效率 |
| · Effective mechanism for information acquisition to guarantee the accuracy of management. | |
| · Smooth channel for information exchange to provide effective support for various business links. | |
| · Accurate data for financial reference to enhance the sound development of enterprise. | |
| · Coordinated progress to boost the operation efficiency of enterprise. | |

沃迪装备供应链系统解决方案的不同之处在于 | Differences

- | | |
|---|-------------------------------|
| · 多维数据挖掘 | 促进预测与需求协调一致，挖掘潜在的利润增长点及成本削减环节 |
| · 关键性指标导向 | 管理信息高度可视化，提供有力的决策支持 |
| · 供应链协调管理 | 改善与全世界的供应商沟通和协作 |
| · 数据全生命周期动态跟踪 | 为企业发展提供关键的财务信息参考 |
| · 无障碍集成接口 | 支持多种集成接口，适应现有管理系统 |
| · 建立最佳的供应链网络 | 适应您的业务及市场的快速变化 |
| · 动态跟踪劳动活动 | 帮助促进实施必要的变革来优化劳动绩效 |
| · Multi-dimensional data mining to coordinate prediction and demand, explore potential profit growth point and reduce cost. | |
| · Critical index to guide the visualization of management information and to provide powerful decision support. | |
| · Coordinated management of supply chain to improve the communication and cooperation with suppliers worldwide. | |
| · Dynamic tracking for data lifecycle to provide financial information for enterprise development. | |
| · Barrier free integrated interface to adapt to the current management system. | |
| · Best supply chain web to adjust to the fast changing business and market. | |
| · Dynamic tracking of labor to optimize the performance through the implementation of necessary revolution. | |



沃迪装备仓库管理是整个物流供应链管理的关键环节，沃迪装备仓库管理解决方案（SWMS）融入最佳实践经验，优化货品从入库到最终离开的每一步移动操作，实现最为灵活、高效、精简的流通过程，提高对各个工作环节的掌控力度，从而帮助企业提高库存的准确性和仓库作业效率，更好的服务客户，既适用于大型集团的物流中心，也适用于复杂的零售类型单体仓库以及有多种自动化设备的仓库，更有针对中小企业的快速实施解决方案。

多货主仓库管理

S-WMSTM完全支持多仓库和多货主的管理要求，既支持多物理仓库的组织架构，也支持大型ERP对应多个法人公司的多货主构架；

基于规则的作业流程控制

S-WMSTM提供了送货规则、收货规则、上架规则、分配规则、拣选规则、波次与批次作业规则等。在通过这些规则满足不同客户的业务要求的前提下，优化仓库的运作，优化数据流，提高叉车和作业人员效率，消除作业瓶颈；

独特批属性管理

S-WMSTM提供了完善的批属性管理，这些批属性可以灵活定义，并参与到运作的规则中。通过批属性的管理，成功的将业务需求和仓库作业联系到一起；

支持复杂仓库设置及货位逻辑

S-WMSTM支持复杂的物理仓库设置逻辑，并且在仓库内部也分为作业点、分仓、区域以及货位等不同设定，这些完善的设定可以满足最复杂的仓库逻辑关系；

Triowin warehouse management is a key to logistic supply chain. Triowin warehouse management solutions (SWMS) help enterprises improve storage accuracy and working efficiency by increasing control over each link with the most flexible, efficient and simplest process. In this way, we provide better service to our customers. It is suitable for large logistic centers, the complicated warehouses and warehouses with multiple automatic equipment. Besides, we have fast solutions for small to medium enterprises.

Warehouse management for multi-owners

S-WMSTM supports the management requirements of multi-warehouses and multi-owners.

Workflow controlling based on rules

S-WMSTM provides rules including delivery, distribution, picking and batch working. Under the premise of satisfying customers' demands, these rules can optimize warehouse operation and data flow, improve efficiency of forklifts and labors as well as eliminate working bottlenecks.

Unique batch attribute management

S-WMSTM provides perfect batch attribute management to link the business demands and warehouse operation successfully by adding the flexibly-defined batch attribute to the operation rules.

Support for complicated warehouse and goods allocation

S-WMSTM supports complicated physical warehouse setting logic. It can meet the most complicated warehouse logical relationship by perfect set such as operation point, goods allocation, etc.

高位立体货架一般采用单元式货架结构，主要有横梁式、牛腿式货架。由片架、横梁（牛腿）、水平拉杆、垂直拉杆、天轨、天轨移出架等组成，是立体仓库重要的储存设备，一般由行、列、层组成。

片架采用50或75倍距的连接孔调整横梁（牛腿）的货格高度；

片架立柱采用13折面冷弯成型，重量轻强度高、刚度大；

横梁采用合抱式箱型梁焊接成型，重量轻强度高、载荷均布、挠度小；

所有材料全部采用宝钢、武钢、马钢、鞍钢的优质Q235钢材；

建立完善的力学模型并对货架系统进行有限元分析，确保安全；

表面喷丸除锈、清洗磷化、烘干喷涂、高温固化、降温处理等，寿命在10年以上。

High automatic rack adopts the unit rack structure with beams and brackets. It consists of racks, beams (brackets), top tie, cross stay, sky rail and sky rail remover, etc. It is an important storage equipment for Automated Storage/Retrieval Systems which is made up of rows, columns, and layers.

The racks adjust the height of beams (brackets) by 50 or 75 times connecting hole.

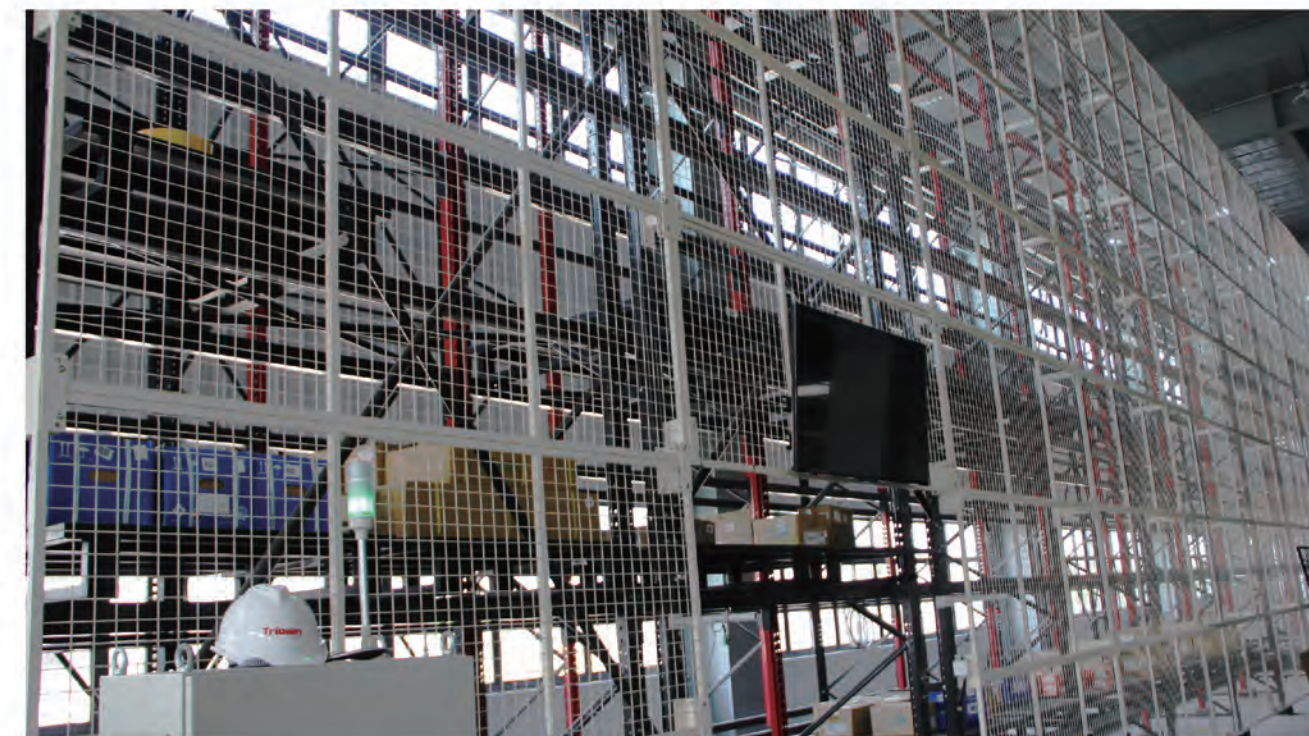
The columns are shaped by 13 folds with light weight, great strength and high stiffness.

The beams are welded by box beams with light weight, great strength, uniform load and minor deflection.

All the materials adopt the high quality Q235 steel of Baosteel, WISCO, Masteel and Ansteel.

Perfect mechanical model and finite element method of rack system are established to guarantee safety.

It has longevity of over ten years by shot peening of the surface, cleaning phosphating, spraying baking, high temperature solidification and cooling treatment.





标准型仓库笼 (接受非标定制)
Standard storage cart (non-standard customized accepted)
主要规格尺寸:
L 820* W620*H655、 荷重 500kg
L1020*W620*H655、 荷重1000kg
L1020*W820*H855、 荷重1200kg
L1220*W820*H855、 荷重1200kg
Specification:
L820*W620*H655 Load capacity: 500kg
L1020*W620*H655 Load capacity: 1000kg
L1020*W820*H855 Load capacity: 1200kg
L1220*W820*H855 Load capacity: 1200kg

钢制焊接托盘 (接受非标定制)
Steel welding pallet (non-standard customized accepted)



承载面主要规格尺寸:
L1200*W1000/ L1200*W800/L1100*W1100/L1000*W800
Specification:
L1200*W1000/L1200*W800/L1100*W1100/L1000*W800

可折叠金属网箱 (接受非标定制)
Foldable metal cage (non-standard customized accepted)



主要规格尺寸:
L1200*W800*H800、 荷重 1000kg
L1200*W1000*H800、 荷重 1000kg
Specification:
L1200*W800*H800 Load capacity: 1000kg
L1200*W1000*H800 Load capacity: 1000kg

可折叠金属网箱 (接受非标定制)
Foldable metal cage (non-standard customized accepted)



主要规格尺寸:
L1175*W820*H830、 荷重 800kg
L1175*W1175*H920、 荷重1000kg
Specification:
L1175*W820*H830 Load capacity: 800kg
L1175*W1175*H920 Load capacity:1000kg

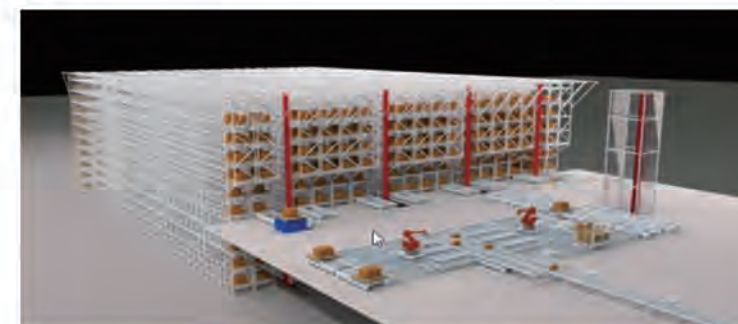
异形产品周转架
Turnover shelves for products of different shapes



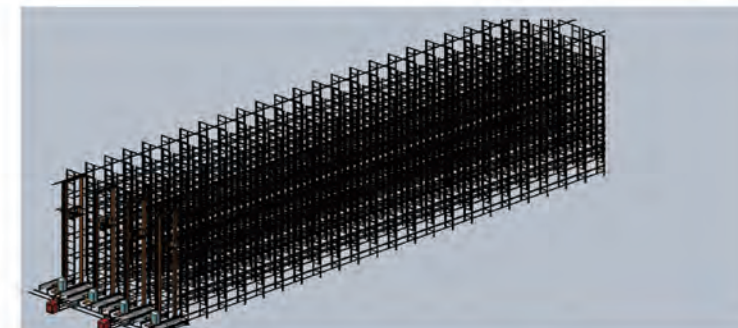
可承载堆叠, 空间利用率高; 空架折叠后可堆叠, 减少占地
接受非标定制
It has a high space utilization with non-standard customized accepted.

自动化立体仓库 (AS/RS) 是由立体货架、有轨巷道堆垛机、出入库输送机、WCS电气控制系统、WMS计算机管理系统等组成的自动化系统。系统采用先进的控制、总线、通讯和信息技术, 通过以上设备的协调动作进行出入库作业。通常情况下, ERP系统生成入库作业计划, WMS从ERP下载入库作业计划, 检录人员扫描入库单号、货物条形码、托盘条形码, 录入货品数量、品名等信息后完成组盘, 经托盘搬运系统、托盘输送系统、穿梭车 (RGV)、堆垛机等将货物放到指定的货格上。

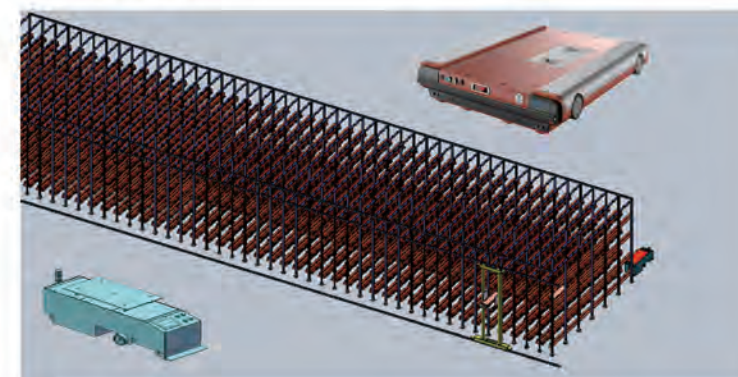
AS/RS is an automatic system consisting of three-dimensional rack, railroad aisle stacking crane, in and out conveyor, WCS electrical control system and WMS computer management system. It operates the storage and retrieval management coordinately by the above equipment through advanced controlling, communication and information technology. Generally, ERP system generates an input plan, WMS downloads it, the inspection personnel scan the stock-in, bar codes and record the goods information to finish the preparation work. Then the goods are delivered to the assigned racks by pallets handling system, pallets conveying system, RGV and stacker.



由机器人码垛、托盘输送、RGV调运、升降机调运、出入库输送、堆垛机、货架等组成的四巷道立体仓库
Four-roadway AS/RS made up of robot palletizer, pallet conveyor, RGV, lifter, in and out conveyor, stacker and racks.



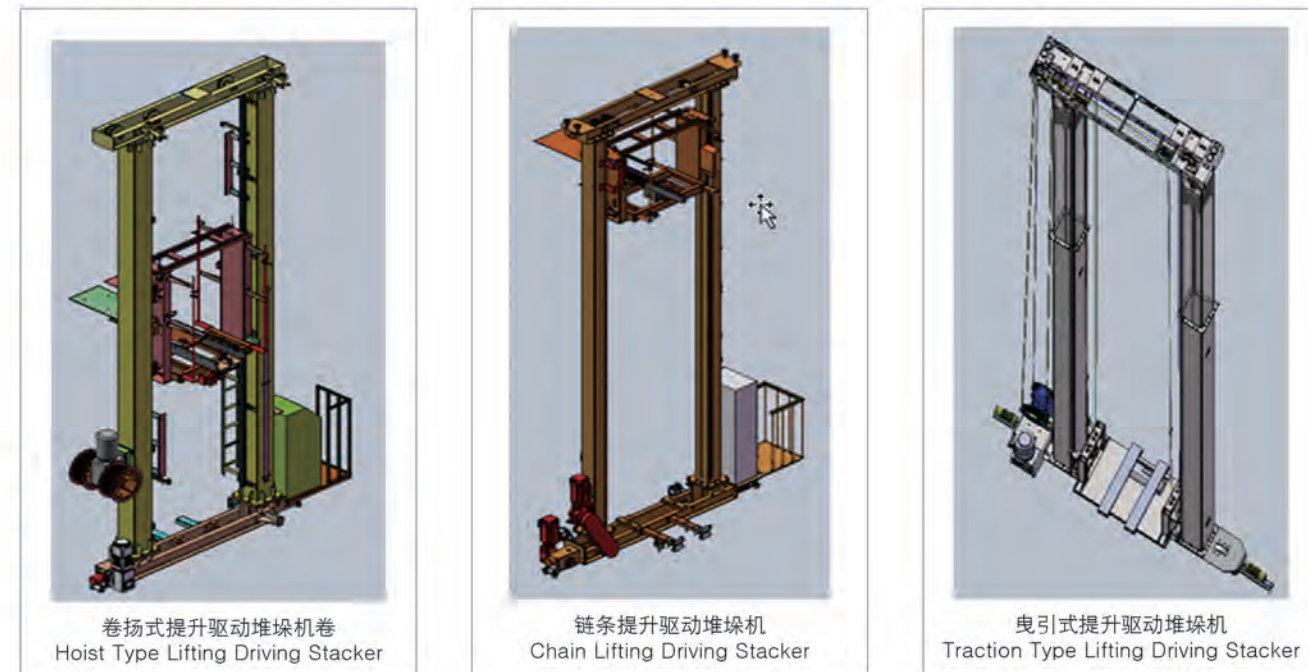
由激光导航堆垛式AGV、RGV调运、出入库链条输送机、堆垛机、货架等组成的四巷道立体仓库
Four-roadway AS/RS made up of laser-navigated AGV, RGV, in and out chain conveyor, stacker and racks.



由堆垛机、贯通式货架、穿梭板、潜入式AGV等组成的密集式存储自动化立体仓库
Intensive storage AS/RS made up of stacker, drive-in racking, shuttle pallet and embedded AGV.

堆垛机是整个自动化立体仓库的核心设备，通过手动操作、半自动操作、全自动操作实现货物搬运；它由上横梁、下横梁、立柱、载货台、货叉、水平行走机构、提升机构、电气控制系统等构成；

Stacker is the core equipment of AS/RS. It transfers the goods by manual, semi-automatic and full-automatic operation. And it is made up of upper beam, bottom beam, columns, cage, shuttles, level moving machinery, lifter and electrical control system.



提升重量: 100kg/250kg/500kg/1000kg/1600kg/2000kg
行走速度: 25/31.5/40/50/63/80/100/125/160m/min
升降速度: 6.3/8/10/12.5/16/20/25/31.5/40m/min
货叉速度: 5/ 6.3/8/10/12.5/16/20m/min

Lifting weight: 100kg/250kg/500kg/1000kg/1600kg/2000kg
Walking speed: 25/31.5/40/50/63/80/100/125/160m/min
Lifting speed: 6.3/8/10/12.5/16/20/25/31.5/40m/min
Shuttle speed: 5/6.3/8/10/12.5/16/20m/min

货叉组件是堆垛机叉取托盘货物的关键部件，可左右伸缩叉取货架或入库输送机上的托盘货物。根据托盘插孔结构及货物载重的不同，主要有如下两种结构的货叉：

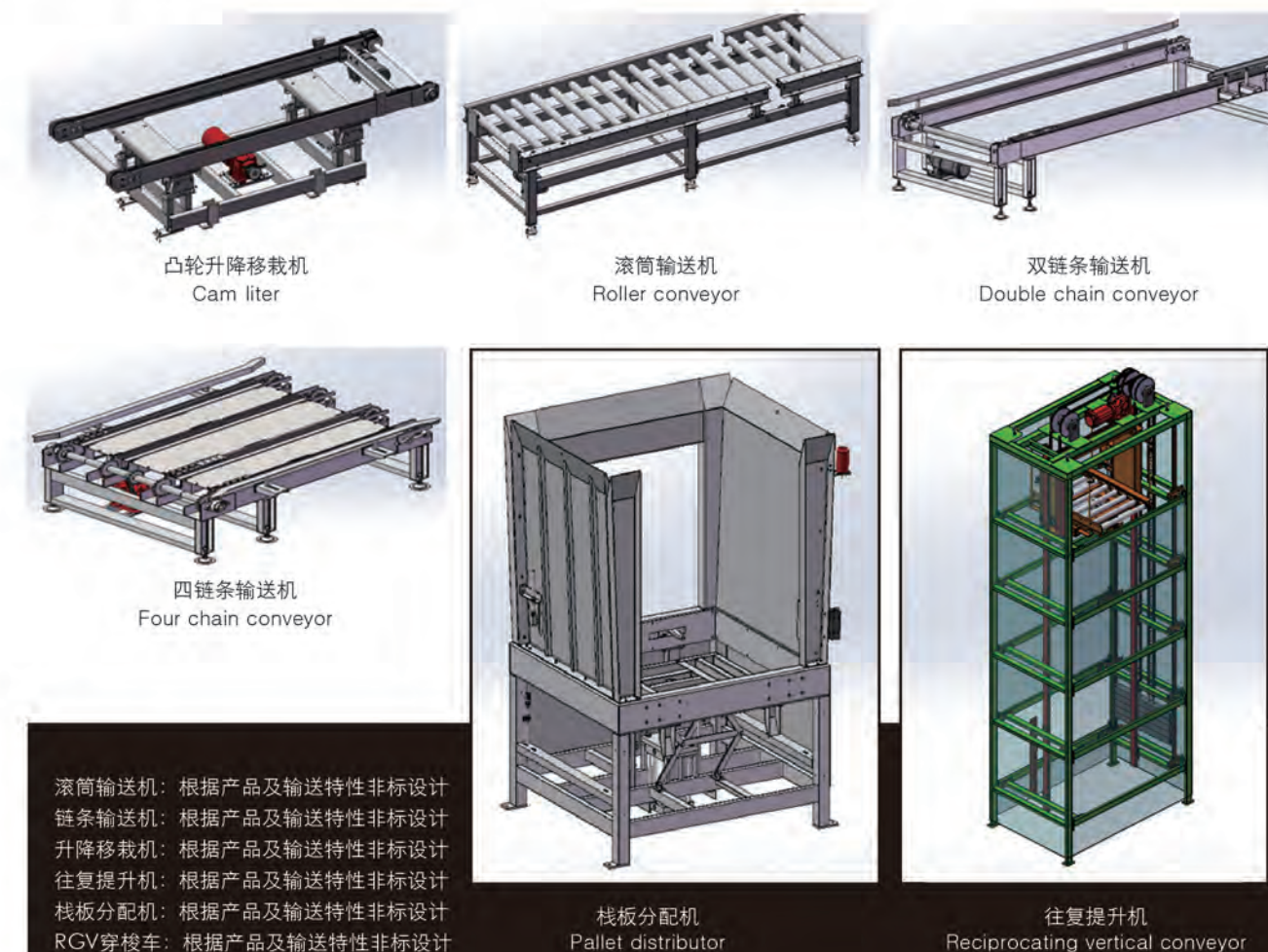
The shuttle is the key part of stacker which can grasp the racks or the goods on the conveyor. According to the different pallet structures and goods weight, there are mainly two kinds of shuttles:



输送系统是立体库的主要外围设备，负责将货物运送到堆垛机或从堆垛机将货物移走；常见的有滚筒输送机、链条输送机、升降移栽机、RGV穿梭小车、栈板分配机、往复提升机等。

Conveying system is the main peripheral equipment of AS/RS. It is in charge of conveying the goods to the stacker or moving the goods from the stacker.

Common types are roller conveyor, chain conveyor, lifting transfer machine, RGV shuttle car, pallet distributor and reciprocating vertical conveyor, etc.



滚筒输送机: 根据产品及输送特性非标设计
链条输送机: 根据产品及输送特性非标设计
升降移栽机: 根据产品及输送特性非标设计
往复提升机: 根据产品及输送特性非标设计
栈板分配机: 根据产品及输送特性非标设计
RGV穿梭车: 根据产品及输送特性非标设计

Roller conveyor: non-standard design according to products and conveying characteristics
Chain conveyor: non-standard design according to products and conveying characteristics
Lifting transfer machine: non-standard design according to products and conveying characteristics
Reciprocating vertical conveyor: non-standard design according to products and conveying characteristics
Pallet distributor: non-standard design according to products and conveying characteristics
RGV shuttle car: non-standard design according to products and conveying characteristics

RGV，是有轨引导车辆（Rail Guided Vehicle）的英文缩写，又叫有轨穿梭小车。RGV小车与穿梭板配合使用可用于各类高密度储存的立体仓库或是多巷道立体仓库输送系统的物流分配。根据托盘的结构型式，RGV车载输送系统可配置滚筒输送机、链条输送机、皮带输送机、升降货叉等。

RGV, the abbreviation of Rail Guided Vehicle, is called rail shuttle car as well. Used together, RGV and shuttle pallets can distribute the logistic of the conveying system for the high intensive AS/RS or the multi-lane AS/RS. Pallet structure considered, roller conveyor, chain conveyor, belt conveyor and lifting shuttles can be equipped for the RGV conveying system.



■ 堆垛式AGV设备简介 | Stacking AGV Equipment

序号NO.	电动式堆垛AGV技术参数 Electrical stacking AGV technical parameters	
2.1.1	驱动类型Drive type	单轮驱动Single steer unit
2.1.2	车身结构Body structure	高强度钢板焊接车身 High intensity steel welded
2.1.3	导航类型Navigation type	激光导航Laser navigated
2.1.4	行走方向Walking direction	前进/后退/转弯/原地转弯 Forward/backward/turning/spin on the spot
2.1.5	承载能力Loading capacity	1500kg
2.1.6	行走速度Walking speed	5-60m/min
2.1.7	提升高度Lifting height	1600mm
2.1.8	提升方式Lifting method	液压驱动Hydraulic drive
2.1.9	转弯半径Turning radius	不大于1500mm ≤1500mm
2.1.10	供电电池Power supply	DC24V/210AH/铅酸电池 DC24V/210AH/lead-acid batteries
2.1.11	电子安全防护 Electrical safety protection	激光防撞传感器Laser anti-collision sensor
2.1.12	机械安全防护 Mechanical safety protection	防撞安全触边Anti-collision safety edge
2.1.13	导航/停车精度 Navigation/stop accuracy	±10/±5
2.1.14	车身尺寸Body size	L1900*W950*H2100/接收定制 L1900*W950*H2100/customized accepted



供应链管理咨询
Consulting for supply chain management

作为领先的商务流程服务商及全球顶级供应链服务商之一，我们将积累多年的管理知识、行业经验和运营实践，转化为适用于不同行业和领域的供应链管理解决方案，真诚地与我们的客户分享，帮助我们的客户在通往成功的路上建立信任和信心，获得持续的竞争力。

我们为企业提供供应链管理方案方面的咨询，整合并优化供应商、制造商、零售商的业务效率，使企业保持竞争优势。其中包括为企业提供集成供应链管理概念的导入、供应链计划、组织架构再造、业务流程搭建等。为企业提供供应链管理战略制定指导、量化并协助企业规划供应链转型；帮助企业计划和管理供应链中的供求活动；将企业的供应链与现有或新的ERP解决方案集成；帮助企业改进采购操作和整个供应链的操作，改善现金流运转，降低运营成本，实现更高的效率。



As one of the leading service provider and chain supplier worldwide, Triowin will work out supply chain solutions and technology by our accumulated management knowledge, experience and practices. We would like to share those solutions and technology with our customers to establish trust and confidence on the road to success. We provide enterprises with consulting of supply chain management, and maintain their competence by integrating and optimizing the business efficiency of supplier, manufacturer and retailer. Those consulting include the concept of supply chain management, the supply chain plan, the reconstruction of organization and the built of business flowchart, etc. It is aimed at providing strategic guidance to help the enterprises transform the supply chain, plan and manage the supply and demand, integrate the supply chain with the current or the new ERP solutions, etc to achieve higher efficiency.

系统实施
System implementation

我们将全球最优秀的供应链系统软件引入中国，并提供高效和全面的系统实施服务，其中包括业务和流程咨询、IT规划、供应链信息系统实施、IT运营维护外包、管理及应用培训，以及相关硬件设备的全方位信息系统整合服务。凭借多年累积的专业信息系统服务经验，我们向客户提供从项目预算管理、时间管理、作业培训、采购支持、安装调试、试运行、绩效、监控等一站式服务。我们先进的项目实施方法对项目实施的各阶段进行精确的管理和监控并最终成功上线。

We have introduced the best supply chain software into China and provided efficient and comprehensive systematic services, including business and flowchart consulting, IT planning, etc. With accumulated experience we provide one-stop service to our customers. The accurate management and monitoring enable us to succeed finally.

系统集成 System integration

基于在供应链管理领域的专业经验，我们提供条码、RFID、工业打印和无线移动计算系统与企业信息系统的集成服务。在全面理解和掌握条码及RFID自动识别技术、工业打印技术、移动计算技术、无线网络通讯、软件和数据库技术的基础上，我们能够深入地理解各行业的应用特点和具体问题以及每个客户的实际需要，提出综合和具体的建议。对于ERP, WMS, TMS, MES, EAM系统，以及SAP, Oracle, Infor、QAD等系统，提供的解决方案和集成服务都可按照最佳流程进行集成、安装、推广和交付。

Based on the professional experience of the supply chain management, we provide integrated service of barcode, RFID, industrial printing, wireless mobile computing system and the information system. On the basis of grasping the technology thoroughly, we can understand the application characteristics and specific problems of every industry and the actual demand of customers. Then we can raise comprehensive and specific suggestions. For systems like ERP, WMS, TMS, MES, EAM, SPA, Oracle, Infor and QAD, solutions and services can be integrated, installed, promoted and delivered in the best way.

售后支持 After-sales support

我们在全中国主要地区均有经过厂商专业认证培训的技术支持人员，能够提供就近及时的专业售后服务，专门的测试工具和多年的服务经验保证服务质量。

We have technicians certified by the manufactures in the main areas of China. They can provide timely and qualified after-sales service by professional testing tools and rich experience.

- 现场安装调试 Start-up and commissioning on site
- 现场维修服务 Maintenance service on site
- 快速响应服务 Fast-response to services
- 集中维修服务 Centralized maintenance services
- 操作人员培训 Training of the operators
- 原厂原装耗材 Consumption of the original materials
- 远程支持与服务 Supports and services from long-distance
- 原厂原装配件 Spare parts from the original factory
- 常规保修服务 Regular maintenance service



业务流程外包 Business outsourcing

企业打印外包服务帮助客户从消耗品的采购和管理中解脱出来，使企业更加专注于自身核心业务，在保障需要的同时减少固定资产投入，降低总体拥有成本(TCO)，有效地进行预算控制，有效管理运营成本，提高企业整体竞争力。

The outsourcing business frees customers from the purchase and management of consumables, making them focus more on the core business to reduce the investment of fixed assets, lower TCO, control the budget and raise their competence.

- 业务流程分析 Business analysis
- 消耗品管理 Consumables management
- 安装调试 Start-up and commissioning
- 维修维护 Maintenance
- 系统集成 System integration
- 打印成品管理 Product printing management
- 系统选型和购买 System selection and purchase
- 打印质量管理 Printing quality management
- 运营管理 Operation management

此外，打印设备维修维护外包服务可帮助客户保障日常打印设备和系统正常运行，避免或减少故障引起的生产作业停顿。保障重要的设备始终正常工作，将设备故障引起的业务停顿降到最少，提高生产效率，有利于费用预算和计划。

Outsourcing of the printing equipment can guarantee the normal operation of the printers to increase the production efficiency, which is also beneficial for cost budget and planning.



■ MES 系统十大主要功能 | 10 Functions of MES

在西门子 WinCC 软件平台上，增加了 SFAE 自主开发的 add-on 生产管理模块，能为 OEM 大型设备和生产线，提供数字化生产管理系统（Automation MES）。Automation MES 既可以成为设备层和 MES 及 ERP 的连接纽带，也可以是基础自动化及 SCADA 系统，成为数字化工厂实施的基本条件，并可独立运行。

Self-developed by SFAE, the add-on production management is added to the WinCC platform of Siemens. It can provide Automation MES to large equipment and production line of OEM. Automation MES can not only be the connector to the equipment with MES and ERP, but can also be the Basic Automation and SCADA system, which lays a foundation for the digital factory and can operate independently.



MES 系统
MES System

适用范围和客户受益 | Application And Benefits

适用范围
Application

- ✓ 新设备或产线的信息化工程
Informatization of new equipment or production line
- ✓ 已出厂设备改造升级
Transformation and upgrading of equipment

客户受益
Benefits

- ✓ OEM 厂家设备更高的性价比
Higher cost performance for OEM equipment
- ✓ 通过生产管理系统提高设备的使用效率
Improvement of equipment efficiency by PMS
- ✓ 支持最终用户的精益生产和降低生产管理成本
Support for lean production of end-users and the decrease of production management cost

■ Automation MES 系统的总体结构
Structure Of Automation MES



特别鸣谢 | Acknowledgement

贵州茅台集团
新希望集团
青岛明月海藻集团有限公司
康师傅饮品投资（中国）有限公司
天喔食品（集团）有限公司
蒙牛集团
统一企业（中国）投资有限公司
北京汇源食品饮料有限公司
光明乳业股份有限公司
完美（中国）有限公司
东锦饮品（苏州）有限公司
椰树集团有限公司
今麦郎饮品股份有限公司
青海大漠红枸杞有限公司
呼伦贝尔蒙天源生物科技有限公司
新疆吐鲁番市天盛和食品饮料有限公司
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新疆天海绿洲农业科技有限公司
张家口市花园果品产业有限责任公司
广东聪明人集团有限公司
河北养元智汇饮品股份有限公司
娃哈哈集团
杭州味全食品有限公司
台湾佳格食品股份有限公司
静宁县金果实业有限公司
浙江茗皇天然食品开发股份有限公司
北京三元食品股份有限公司
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纽迪希亚制药（无锡）有限公司
安徽省黑牛食品工业有限公司
佛山市海天（高明）调味食品有限公司
辽宁辉山乳业集团有限公司
乐百氏(广东)食品饮料有限公司
大同市绿苑饮品有限责任公司
乐天（上海）食品有限公司
雅培贸易（上海）有限公司
中宁县职业教育培训中心
佛山市立高食品有限公司
广州甘蔗糖业研究所
伊利集团
马鞍山蒙牛研发中心
广东加多宝
达能集团
福建大闽国际
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特别鸣谢 | Acknowledgement

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广西美源生物科技食品有限公司
上海应用技术学院
鲜活果汁工业（昆山）有限公司
南充新百乐饮品有限公司
沙湾县家和番茄制品有限公司
黄山华绿园生物科技有限公司
新元素健康果汁(上海)有限公司
通化百泉参业集团股份有限公司
大连活尔生物科技有限公司
辽宁秀源果业科技发展有限公司
宁夏沃福百瑞生物食品工程有限公司
南京大旺食品有限公司
衢州正锐农业科技有限公司
嘉康利(中国)日用品有限公司
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