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创新 | 专业 | 诚信

膜行业智能制造设备产品手册
Membrane Industry Intelligent Manufacturing System Product Catalog

上海福赛特技术股份有限公司
Shanghai Foresight Technology Co., Ltd.

功能高分子膜关键制造设备提供商

Leading Provider of Manufacturing Equipment in the Membrane Industry

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福赛特 Technology

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上海福赛特技术股份有限公司是一家基于复杂精密机械设计和精准运动控制，及人工智能等自动化智能化核心技术的高端专用智能设备供应商。公司融合对应用领域的深度理解，产品已应用于新材料、新能源、半导体和智能交通等战略性新兴产业。

在新材料行业,公司构建了一套完备的核心工艺设备矩阵，涵盖工业膜元件智能卷膜设备、民用膜元件智能卷膜设备、精密铸膜涂膜一体智能制造设备、一体化智能工厂解决方案等。通过自主研发和技术创新，公司成功打破了国外高端设备的市场垄断,实现了进口替代，成为推动行业自动化、智能化进程的领航者。

公司曾获上海领军人才专项、上海人才发展基金专项、上海创新资金专项等专项资金支持。此外，公司取得国家高新技术企业、上海市"专精特新"企业等称号。 截至2024年5月末，公司专利总数量为216项，其中发明专利为65项。

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Shanghai Foresight Technology Co, Ltd. is a supplier of high-end specialized intelligent systems, leveraging core technologies in sophisticated mechanical design, precise motion control, and artificial intelligence. The company's products are employed in strategic emerging industries such as new material, sustainable energy, semiconductors, and intelligent transportation.

In the membrane technology sector, Foresight Technology provides a comprehensive suite of core process systems, including the **Intelligent Industrial RO/NF Membrane Element Manufacturing System, Intelligent Domestic RO Membrane Element Manufacturing System, Intelligent Precise Membrane Coating Manufacturing System, and One-stop Intelligent Factory Solutions**, etc. Through independent research and development and technological innovation, the company has successfully broken the monopoly of foreign high-end equipment, achieved import substitution, and become a leader in promoting the automation and intellectualization of the industry.

By the end of May 2024, Foresight has 216 patents in total, including 65 for inventions.

成立日期
2015年3月27日

注册资本
1.185亿元

员工人数
197

专利数量
216项

About Us

Founded on
27 Mar. 2015

Registered capital:
118.50 Mn yuan

Employees:
197

Patents:
216

发展历程

2015
- 公司成立
- 团队组建完毕
- 智能设备启动研发
- 福赛特亮相工博会
- 首个专利提交申请

2016
- 上海大张江促进企业创新发展资助
- 上海领军人才专项
- 上海人才发展基金专项
- 上海创新资金专项

2017
- 取得国家高新技术企业称号智能系统业务取得突破
- 上海市产业转型发展专项公司软件产品完成备案
- 通过ISO9001、ISO14001、ISO18001认证

2018
- 上海市徐汇区技术中心称号
- 智能设备进入交付及商业化使用
- 上海市首台套突破和示范专项（智能设备）

2019
- 设立"人工智能研究中心"
- AiTC智能发卡系统亮相"2019WAIC"
- 智能设备进入批量生产和市场化阶段部分智能设备通过欧盟CE认证
- 首批智能设备出口至国际市场

2020
- 承担上海市战略性新兴产业重大专项
- 工业智能设备向系列化发展非工业智能系统实现交付

2021
- 工业智能设备形成半导体、功能高分子膜卷膜、功能高分子膜涂覆三大产品线
- 非工业智能系统形成高速公路发卡、收费、轮轴识别系列产品

2022
- 顺利完成股改，进入上市辅导期
- 锂电隔膜涂覆设备研制成功并首台交付
- 高分子功能膜设备形成全系列产品
- **MOCVD AMHS智能晶圆输送系统实现交付**

2023
- 锂电隔膜涂覆设备批量交付
- 启动总部基地建设
- 上海市第一批"智造空间"优质项目
- 上海市高端智能装备首台套专项
- 上海市"专精特新"企业认定
- 长三角数字干线青浦区高新技术研发中心认定

Milestone

2015
- Founded
- Exhibited at CIIF
- Intelligent Equipment R&D started
- First patent filed

2016
- Shanghai Dazhangjiang Enterprise Innovation and Development Fund
- Shanghai Talent Development Fund
- Shanghai Innovation Fund

2017
- National High-tech Enterprise
- Shanghai Industrial Development Special Fund
- ISO9001 , ISO14001 , ISO18001 certified

2018
- Shanghai Xuhui District Technology Center Award
- Mass Production Started
- Technology Breakthrough Award for the RO membrane element production system

2019
- AI center established
- AiTC Intelligent toll collection system unveiled at "2019WAIC"
- Some products EU CE certified
- Expanded overseas

2020
- Membrane Element Production System Upgraded
- Expanded into Semiconductor industry

2021
- Started R&D in Membrane Coating System
- Delivered 1st automatic wafer loading & unloading machine for LED semiconductors

2022
- IPO process for Shanghai S&T Innovation Board started
- First Lithium battery separator coating System delivered
- First MOCVD AMHS system delivered

2023
- Li-ion Battery Separator Coating System delivered in batches
- Launch of New HQ construction
- Shanghai Smart Manufacturing Factory
- Specialized and Sophisticated SMEs

Foresight
福赛特 **Technology**

新材料行业	新能源行业	半导体行业
功能高分子膜 智能设备	锂电池智能 制造设备	LED/GaN半导体 智能设备

智能化
工件自判别
故障自诊断
信息可追溯

柔性化
快速换型
工艺实现柔性
工作空间柔性

模块化
模块化设计
接口统一
维护便捷

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Membrane Technology
Intelligent Functional Polymer Membrane System

Sustainable Energy
Intelligent Lithium-ion Battery Manufacturing System

Semiconductors
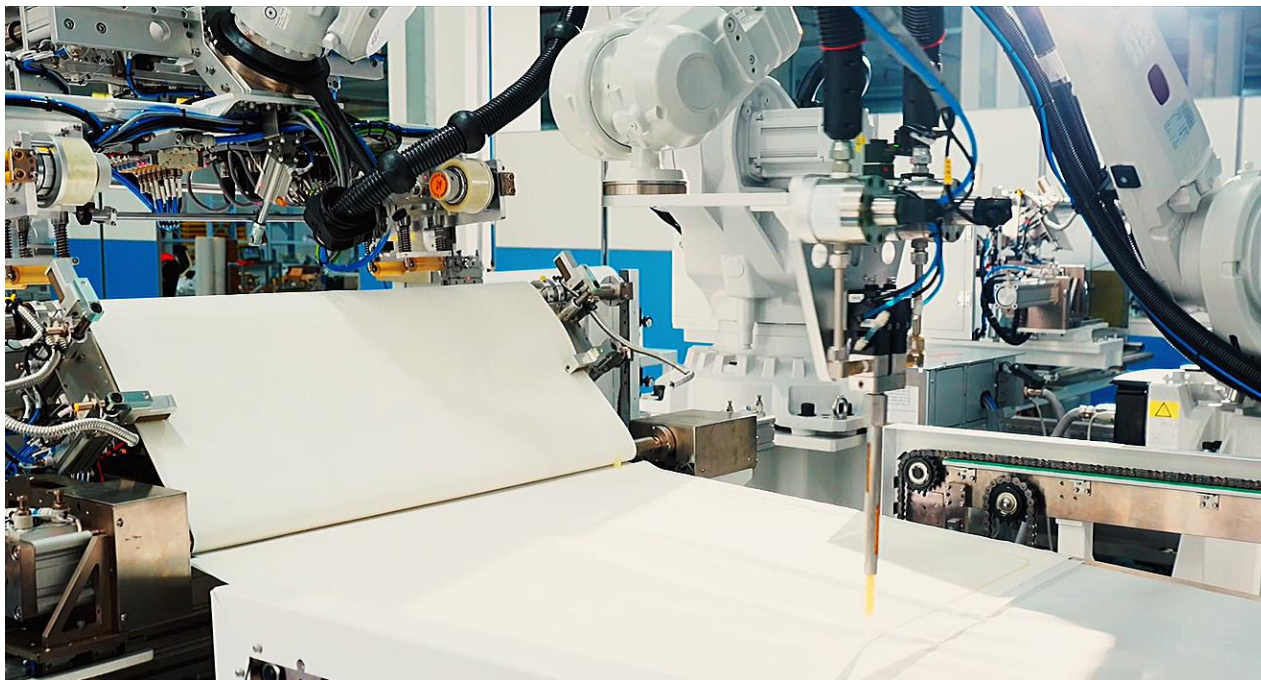Intelligent Semiconductors System for LED/GaN

Intelligent
Self-identification
Self-diagnosis
Information Traceability

Flexible
Quick Changeover
Process Flexibility
Workspace Flexibility

Modular
Modular Design
Unified Interface
Easy Maintenance

工业膜元件智能制造设备

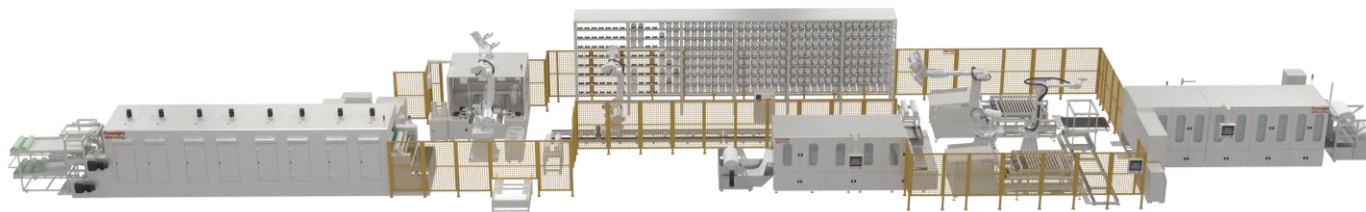Industrial Membrane Element Intelligent Manufacturing System

产品介绍
INTRODUCTION

FST-ME2000工业膜元件智能卷膜设备是上海福赛特技术股份有限公司为工业膜元件制造企业提供的全自动化智能制造整体解决方案，可生产低压膜元件、纳滤膜元件、苦咸水膜元件、抗污染膜元件、海水淡化膜元件、盐湖提锂膜元件等多种应用场景的工业及市政用膜元件。

FST-ME2000包含了膜处理单元、滤芯卷绕单元、导流布及管布焊接单元、机器人搬运单元1、下线单元、常温固化线、机器人搬运单元2、NG下料单元、滤芯处理单元、玻纤缠绕单元、高温固化线。

The FST-ME2000 Industrial Membrane Element Intelligent Manufacturing System is a fully automated solution for industrial membrane element manufacturers. This system can produce low-pressure, nanofiltration, brackish water, anti-pollution, seawater desalination, lithium extraction, and other industrial and municipal membrane elements.

The FST-ME2000 includes a membrane processing unit, membrane rolling unit, spacer and tube welding unit, robot transferring units, unloading unit, room temperature curing line, NG blanking unit, membrane element assembly unit, glass fiber winding unit, and high temperature curing line.

产品参数
PARAMETERS

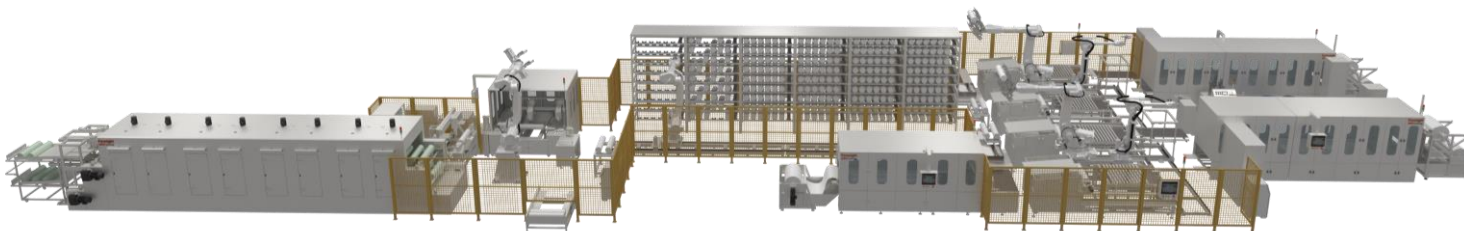| 类别 Item	内容 Contents
兼容范围 Compatibility	10040, 8040, 6040, 4040
膜片页数 Layers of Membrane	4040: 4-7 页/Layers 8040: 21-28 页/Layers
中心管端口 Port of Central Tube	圆形 Rounded
生产节拍 Cycle Time	8040-25页膜：9 分钟/支 4040-6页膜：4 分钟/支 9 min/pcs for 25-layer 8040 4 min/pcs for 6-layer 4040
产品切换时间 Product Changeover Time	软件一键切换程序，物料45分钟内调整完毕 Within 45 mins, one-click software switching program
设备组成 Components	折膜单元*1，卷膜单元*2，焊接单元*1，固化立库*1，后道装配*1，玻纤缠绕*1，高温固化炉*1 Folding Unit * 1, Rolling Unit * 2, Welding Unit * 1, Vertical Curing Storage * 1, Post-Processing Assembly * 1, Fiberglass Winding * 1, High-Temperature Curing Oven * 1
设备功率 Power	总功率258 kW，其中前段70 kW、固化立库16 kW、后段40 kW、高温固化炉132 kW Total 258 kW (Front-Processing Units 70 kW, Vertical Curing Storage 16 kW, Post-Processing Unit 40 kW, and High-Temperature Curing Oven 132 kW)
气源 Air Supply	0.5-0.7 mPa, 3 m³/min
设备占地 Dimensions	L46m*W9m*H4m

产品介绍
INTRODUCTION

FST-ME2000PLUS工业膜元件智能卷膜设备是上海福赛特技术股份有限公司为工业膜元件制造企业提供的全自动化智能制造整体解决方案，可生产低压膜元件、纳滤膜元件、苦咸水膜元件、抗污染膜元件、海水淡化膜元件、盐湖提锂膜元件等多种应用场景的工业及市政用膜元件。

FST-ME2000包含了膜处理单元、滤芯卷绕单元、导流布及管布焊接单元、机器人搬运单元1、下线单元、常温固化线、机器人搬运单元2、 NG下料单元、滤芯处理单元、玻纤缠绕单元、高温固化线。

The FST-ME2000PLUS Industrial Membrane Element Intelligent Manufacturing System is a fully automated solution for industrial membrane element manufacturers. It can produce low-pressure, nanofiltration, brackish water, anti-pollution, seawater desalination, lithium extraction, and other industrial and municipal membrane elements for various applications.

The FST-ME2000PLUS system includes a membrane processing unit, membrane rolling unit, spacer and tube welding unit, robot transferring units, unloading unit, room temperature curing line, NG blanking unit, membrane element assembly unit, glass fiber winding unit, and high temperature curing line.

产品参数
PARAMETERS

类别 Item	内容 Contents
兼容范围 Compatibility	10040, 8040, 6040, 4040
膜片页数 Layers of Membrane	4040: 4-7 页/Layers 8040: 21-28 页/Layers
中心管端口 Port of Central Tube	圆形 Rounded
生产节拍 Cycle Time	8040-25页膜：4.5 分钟/支； 4040-6页膜：3 分钟/支 4.5 min/pcs for 25-layer 8040 3 min/pcs for 6-layer 4040
产品切换时间 Product Changeover Time	软件一键切换程序，物料45分钟内调整完毕 Within 45 mins, one-click software switching program
设备组成 Components	折膜单元*2，卷膜单元*4，焊接单元*2，固化立库*1，后道装配*1，玻纤缠绕(双工位)*1，高温固化炉*1 Folding Unit * 2, Rolling Unit * 4, Welding Unit * 2, Vertical Curing Storage * 1, Post-Processing Assembly * 1, Fiberglass Winding (Doubt Units) * 1, High-Temperature Curing Oven * 1
设备功率 Power	总功率328 kW，其中前段70*2 kW、固化立库16 kW、后段40 kW、高温固化炉132 kW Total 328 kW (Front-Processing Units 70*2 kW, Vertical Curing Storage 16 kW, Post-Processing Unit 40 kW, and High-Temperature Curing Oven 132 kW)
气源 Air Supply	0.5-0.7 mPa, 4 m³/min
设备占地 Dimensions	L46m * W14m * H4m

兼容范围
COMPATIBILITY

类别 Item	内容 Contents
膜片基材 Substrate	无纺布 Non-woven
膜片宽度 Membrane Width	40-42寸 40-42 inch
膜片页数 Layers of Membrane	8040: 21-28页/Layers 4040: 4-7页/Layers
中心管 Central Tube	10寸/inch 8 寸/inch 6寸/inch 4寸/inch

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工艺流程
PROCESS

膜片与粗网切割
Cutting of Membrane Sheet and Mesh
→
折膜处理
Membrane Folding
→
导流布焊接
Spacer Welding
→
中心管处理
Central Tube Processing
→
折膜处理
Membrane Folding Processing
→
涂胶
Gluing

贴标
Labelling
←
气密测试
Vacuum Test
←
剥边
Off-cut Stripping
←
切边
Trimming
←
常温固化
Room Temp. Curing
←
卷制过程
Rolling Process

端盖焊接End Cup Welding
→
玻纤缠绕
Fiberglass Wrapping
→
高温固化High Temp. Curing
→
下料到物料车
Unloading to Final Product Cart
→
AGV运载到包装区（可选）
Transfer to Packaging Area (Optional)

产品介绍
INTRODUCTION

工业膜智能工厂是上海福赛特技术股份有限公司为工业膜元件制造企业提供的全自动化智能制造整体解决方案，可生产低压膜元件、纳滤膜元件、苦咸水膜元件、抗污染膜元件、海水淡化膜元件、盐湖提锂膜元件等多种应用场景的工业及市政用膜元件。该方案包含了前端卷膜线、固化立库、后端滤芯处理线、机器人搬运AGV、原料立库、成品立库、信息化系统及中央控制系统等。

Shanghai Foresight Technology Co., Ltd. offers an Intelligent Factory solution for manufacturing various industrial and municipal membrane elements. This fully automated system can produce low-pressure, nanofiltration, brackish water, anti-pollution, seawater desalination, and lithium extraction membrane elements. Key components include a Pre-Processing Rolling Line, Vertical Curing Storage, Post-Processing Assembly Line, AGVs, Vertical Raw Material Storage, Vertical Final Products Storage, an Informatization System, and a Central Control System.
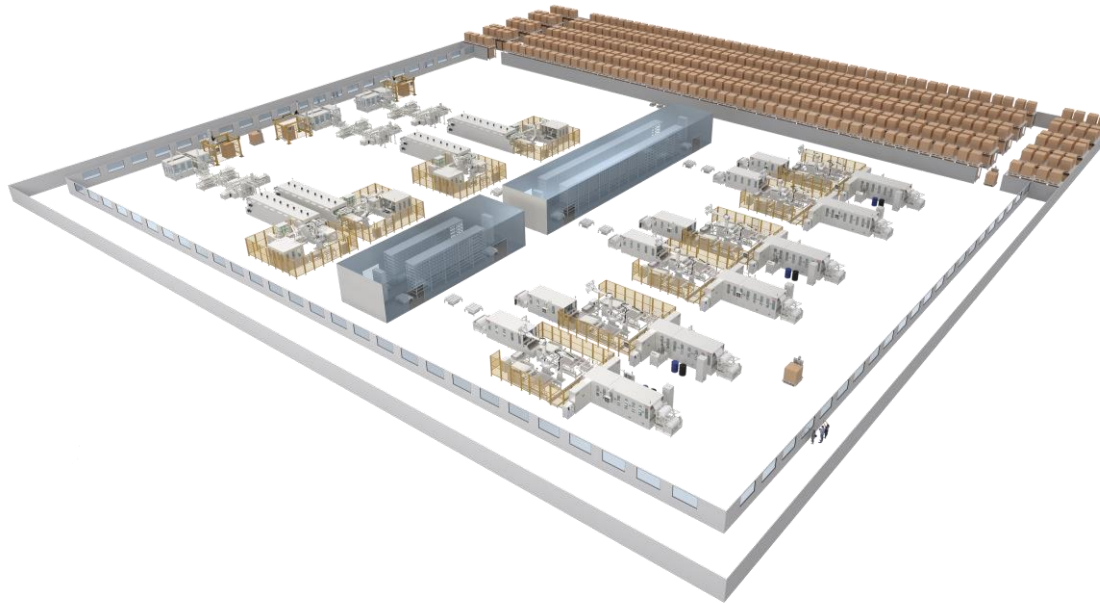
产品参数
PARAMETERS

工艺 Process	类别 Option	配置（N数值按照产能配置） Configuration (N configured as per production capacity)
前段卷膜线 Pre-Processing Rolling Line	标配	折膜站*N、焊接站*N、卷膜站*2N、中心管供料*N Folding Unit*N, Welding Unit*N, Rolling Unit*2N,Tube Feeding*N
固化立库 Vertical Curing Storage	标配	固化立库容量按产能配置，可做常温或恒温 Capacity configured according to the production requirements, and room temperature or constant temperature available.
后段滤芯处理线 Post-Processing Assembly Line	标配	滤芯处理站*N、缠丝站*N、固化炉*N、NG料架*N、外形检测*N、装袋*N、装支架*N、装箱*N、码垛*N Element Processing Unit*N, Wrapping Unit*N, Curing Oven*N, NG Shelf*N, Profile Inspection*N, Bagging*N, Racking*N, Cartoning*N, Palletizing*N
AGV	标配	叉取式AGV、潜伏式AGV、潜伏叉取式AGV,数量按产能需求配置 Forklift AGVs, Towing AGVs. AGV quantity configured according to production requirements
原料立库 Vertical Raw Material Storage	选配	固化立库容量按产能需求配置，膜片库恒温恒湿 Capacity configured according to production requirements; Membrane sheets warehouse constant temperature and humidity
成品立库 Vertical Final Products Storage	选配	成品立库容量按产能需求配置 Capacity configured according to production requirements
中央控制系统 Central Control System	选配	数据中心，可监控所有产线生产数据 Data center monitoring all line production data
信息化 Informatization	标配	全车间智能化生产、信息化管理 Intelligent production and information management of the whole workshop.

工艺流程
PROCESS

```
AGV*B将相应物料搬运到
仓库对接点
AGV*B moves the corresponding
materials to the warehouse
docking point.
```
→
```
AGV*C从对接点把物料运
输到产线对应上料点
AGV*C transports materials from
the docking point to the
corresponding loading point on
the production line.
```
→
```
卷膜线自动生产
Automatic production in
membrane rolling lines
```
↓
```
AGV*A将自然固化后的半
成品运输到绕丝站
AGV*A transports naturally cured
semi-finished products to the
wrapping units
```
←
```
半成品进行
自然固化
Semi-finished products
undergoing natural curing
```
←
```
AGV*A将卷膜后半成品运
输到自然固化仓
Rolled semi-finished products
transported to the room tempt
curing storage by AGV*A.
```

↓
```
产品绕丝、
高温固化、包装
Wrapping, high tempt. curing
and packaging
```
→
```
AGV*C将栈板上包装好的成
品运输到成品仓库对接点
AGV*C transports packaged
products on pallets to the final
products warehouse docking
point
```
→
```
AGV*B从成品库对接点将
成品搬运到成品库货架上
AGV*B transports finished
products from docking point to
the final products storage
shelves.
```

民用膜元件智能制造设备

Domestic Membrane Element Intelligent Manufacturing System

 www.foresight.com.cn

产品介绍
INTRODUCTION

FST-ME300民用膜元件智能卷膜设备是上海福赛特技术股份有限公司为民用膜元件制造企业提供的民用滤芯全自动化生产制造整体解决方案。

FST-ME300包含了滤芯制造的前段工艺(即叠膜、卷膜、中心管处理到固化)和后段工艺(即切边剥边、滤芯转运、O型圈装配、气密性检测、挡水圈装配、端盖装配、贴标、缠止水胶带、扫码)，具备信息系统、故障报警处理系统、安防系统、控制系统。

The FST-ME300 Domestic Membrane Element Intelligent Manufacturing System is a fully automated manufacturing solution for domestic membrane elements manufacturers.
The FST-ME300 includes the front-end process of element manufacturing (membrane folding & rolling, central tube processing, curing) and the back-end process (trimming, element transfer, O-ring assembly, vacuum inspection, Y-ring assembly, end cup installation labeling, white tape wrapping, code scanning), equipped with information system, fault alarm processing system, security system, and control system.

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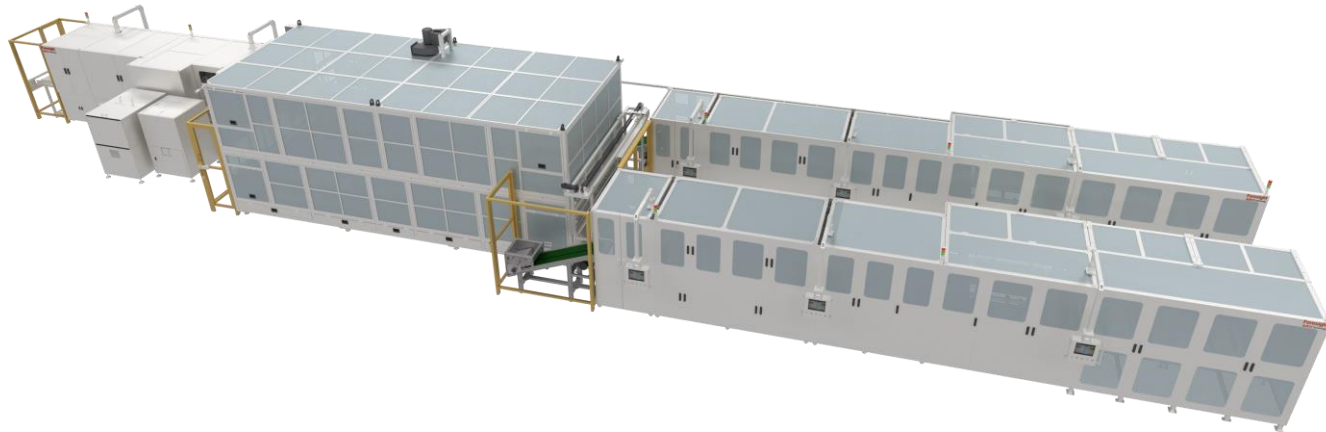
产品参数
PARAMETERS

类别 Item	内容 Contents
产品兼容 Compatibility	50G-1000G
膜片页数 Layer of Membrane	PE基材RO膜：5-25页 无纺布基材RO膜：2-13页 PE based: 5-25 layers Non-woven based: 2-13 layers
膜片裁切方式 Membrane Cutting Mode	PE基材RO膜：纵切 无纺布基材RO膜：纵切，横切 PE based: Vertical cutting Non-woven based: Vertical cutting, Horizontal cutting
设备生产节拍 Cycle time	25秒/支（两页膜）；52秒/支（八页膜） 25 sec/pcs (2 layers) 52 sec/pcs (8 layers)
产品切换时间 Product Changeover Time	软件一键切换程序，物料35分钟内调整完毕 Within 35 mins, one-click software switching program
设备组成 Component	前道卷膜设备*2，固化炉*1，后道装配设备*1 Pre-Processing Rolling Unit*2, Curing Oven*1, Post-Processing Assembly Unit*1
设备功率 Power	总功率64KW，其中前道46KW、固化炉2KW、后道16KW Total 64 kW (Pre-Processing Rolling Unit 46 kW, Curing Oven 2 kW and Post-processing Assembly Unit 16 kW)
设备占地 Dimensions	L26m*W5m*H3m

Foresight 福赛特 **Technology**

兼容范围

类别 Item	内容 Contents
膜片基材 Substrate	无纺布/Non-woven PE
膜片裁切方式 Membrane Cutting Mode	纵切/Vertical cutting 横切（仅适应于无纺布基材） Horizontal cutting (ONLY Non- woven applicable)
膜片页数 Layers of Membrane	无纺布基材（2-13页）/ Non-woven (2-13 layers) PE基材（5-25页）/ PE (5-25 layers)
中心管 Central Tube	长度：280mm、298mm、334mm 端口类型：U型卡槽，内六角 Length: 280 mm, 298 mm, 334 mm Tube Port Shape: U- shaped, Hexagon

工艺流程
PROCESS

膜片、粗网、导流布上料
Raw Material Feeding

→

膜片、粗、导流布裁切
Cutting of Membrane Sheet, Mesh & Spacer

→

折膜处理
Membrane Folding

→

导流布放置并裁切
Spacer Placement & Cutting

→

涂胶
Gluing

→

卷制过程
Rolling Process

↓

套O型圈
O-ring Installation

←

滤芯转运
Element Transferring

←

剥边
Off-cut Stripping

←

切边
Trimming

←

高温固化High Temp. Curing

←

中心管处理
Central Tube Processing

↓

气密测试
Vacuum Test

→

套Y型端盖
End Cup Installation

→

贴标
Labelling

→

缠止水胶带
White Tape Wrapping

→

扫码
Code Scanning

→

下料到物料车
Unloading to Final Product Cart

产品介绍
INTRODUCTION

民用膜智能工厂是上海福赛特技术股份有限公司为民用膜元件制造企业提供的全自动化生产制造整体解决方案。该方案包含了前端卷膜线、固化立库、后道装配线、机器人搬运AGV、信息化系统等。

Intelligent Factory of Domestic Membrane Elements is a fully automated manufacturing solution provided by Shanghai Foresight Technology Co., Ltd. for domestic water purification filter manufacturers, which includes Pre-Processing Rolling Line, Vertical Curing Storage, Post-Processing Assembly Line, AGVs, Informatization System.
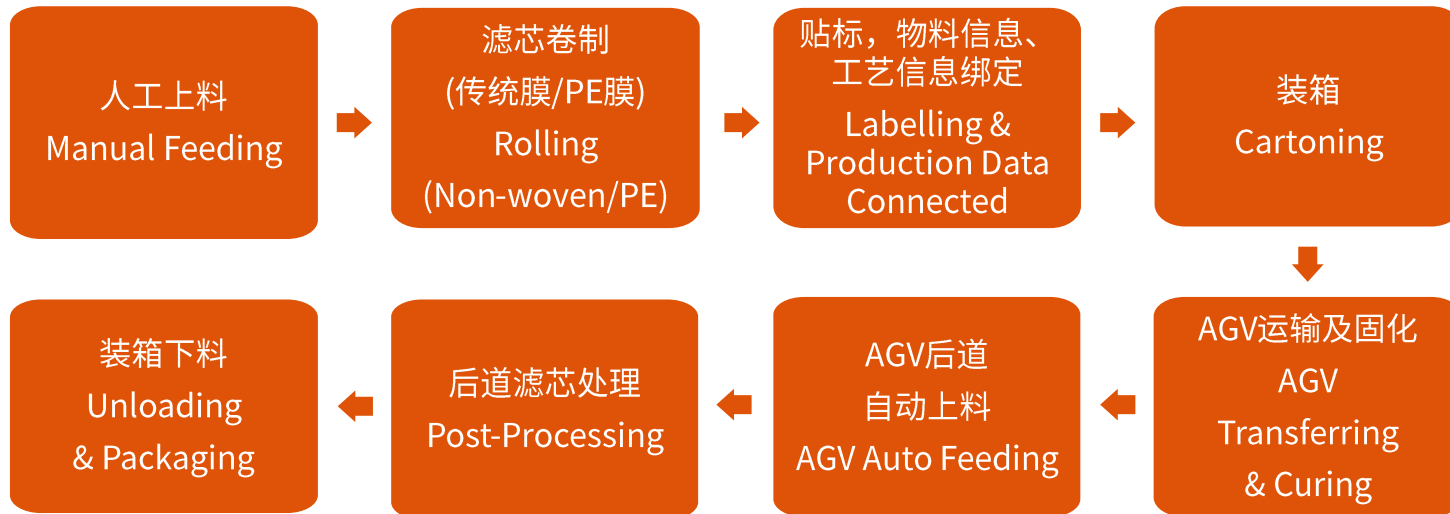
Foresight 福赛特 Technology
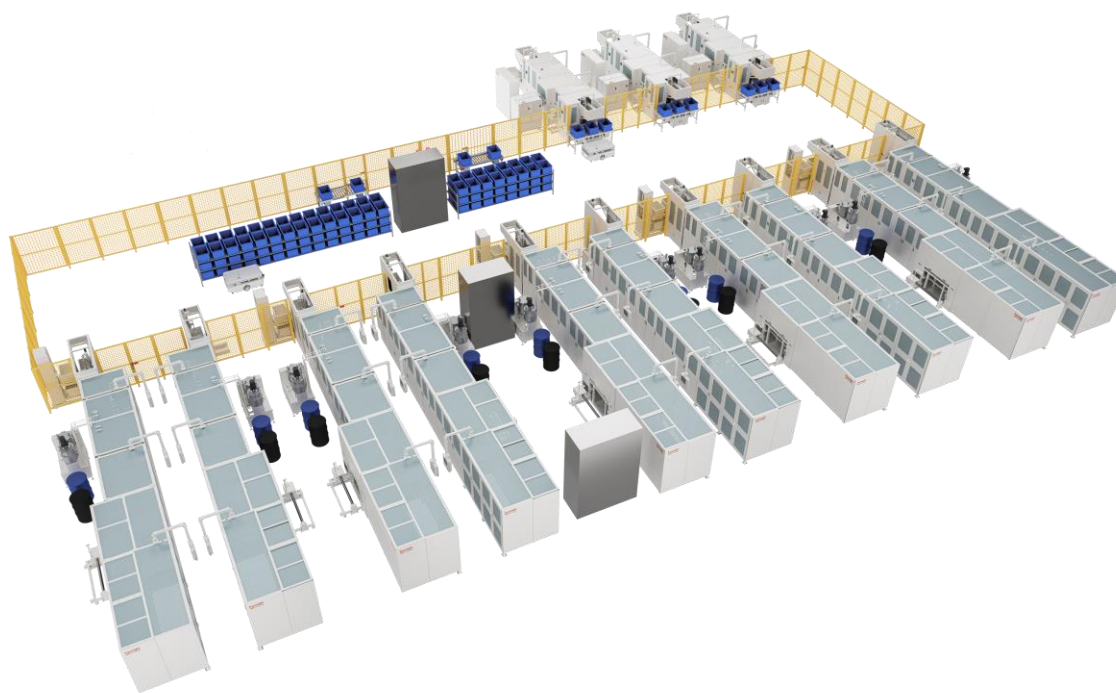
产品参数
PARAMETERS

工艺 Process	配置（N数值按照产能配置） Configuration (N configured as per production capacity)
前道卷膜 Pre-Processing Rolling Line	横切卷膜线*N、纵切卷膜线*N Horizontal-cutting Rolling Line *N, Vertical-cutting Rolling Line *N
固化单元 Curing Unit	AGV机器人数量及立库固化立库容量按产能配置 Quantity of AGVs and Vertical Curing Storage capacity configured as per the production requirements
后道装配 Post-Processing Assembly Line	自动装配线*N Fully Automatic Assembly Line*N
信息化 Informatization	整线信息管理系统、固化单元WMS系统、与MES及SCADA对接 Whole Line IMS, Curing Unit WMS, Connected with MES and SCADA

说明：
全车间智能化生产，信息化管理、可根据产能定制 。

Remark:
Intelligent manufacturing of the whole workshop, information management, with production capacity customized.

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工艺流程
PROCESS

人工上料
Manual Feeding

→

滤芯卷制
(传统膜/PE膜)
Rolling
(Non-woven/PE)

→

贴标，物料信息、
工艺信息绑定
Labelling &
Production Data
Connected

→

装箱
Cartoning

↓

装箱下料
Unloading
& Packaging

←

后道滤芯处理
Post-Processing

←

AGV后道
自动上料
AGV Auto Feeding

←

AGV运输及固化
AGV
Transferring
& Curing

精密铸膜涂膜一体智能制造设备

## Precise Membrane Casting and Coating Intelligent Manufacturing System

产品介绍
INTRODUCTION

FST-CM-WTM-101精密铸膜涂膜一体智能制造设备是上海福赛特技术股份有限公司为制膜企业提供的全自动化生产制造整体解决方案。

FST-MC100包含收/放卷单元、涂布单元、水槽单元、烘箱单元、膜片检测单元、纠偏系统、张力系统、控制系统、信息系统、故障报 警处理及安全防护系统。

FST-CM-WTM-101 Intelligent Precise Membrane Casting and Coating Manufacturing System is a fully automated manufacturing solution provided by Shanghai Foresight Technology Co., Ltd. for Membrane Enterprise.
FST-CM-WTM-101 includes rewinding/unwinding unit, coating unit, water tank unit, dryer unit, membrane sheet detection unit, correction system, tension system, control system, information system, error alarm processing and safety protection system.
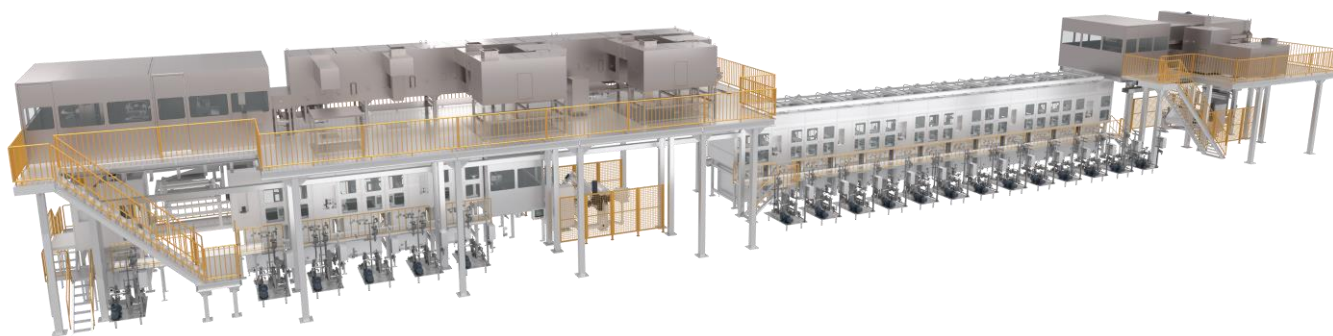
产品参数
PARAMETERS

类别 Item	内容 Contents
最大车速 Maximum Speed	20 米/分钟 20 m/min
基材材料 Substrate	无纺布 Non-woven
基材宽度 Substrate Width	1044/1070 mm (41/42英寸) 1044/1070 mm (41/42 inch)
放卷直径范围 Unwinding Diameter Range	200-500 mm
收卷直径范围 Unwinding Diameter Range	100-500 mm
收放卷张力范围 Unwinding/Rewinding Tension Range	50-250 N (< ±10%)
设备占地面积 Dimension	L60m*W11m*H8m

Foresight Technology
福赛特

产品特点
FEATURES

A 行业首创的铸膜涂布一体化技术
铸膜、涂膜功能模块化，根据需求可合并一体也可分开单独运行，通过解决节拍均衡及各类膜生产切换的平滑转换问题，可实现超滤、纳滤、反渗透膜的高效生产。

B 高精密涂布技术
设备穿膜长度可达280米，通过高效的张力控制实现涂布膜唇与基材之间微米及调控，最终保证各涂布层的厚度均匀一致性，减少膜片表面生产的瑕疵点，保证产品的品质。

C 创新的水槽设计
水槽内导辊可整体提升，生产时可停机举升维护，方便清洁；无需排放溶剂，节约生产物料；穿膜时可实现快速穿膜无需繁琐操作，便于操作维护。

D 智能化纠偏技术
采用智能纠偏系统，检测、控制、反馈、执行精准高效，使膜片在长距离传输中得以精准控制，提高膜片的平整度、均匀性等性能指标，提高设备的稳定性.

E 采用人工智能算法的膜片检测系统
通过由机器视觉、人工智能算法组成的自动检测系统对膜片瑕疵程度进行自学习并不断自我优化完善，准确检出瑕疵，并对膜片瑕疵处进行自动标记。有效保证了膜片质量。

F 自动化技术和智能技术的完美融合
设备通过精确的过程控制系统，全程PID调节，有效精准地实现了涂布功能；并加入了多项智能化技术，如产品质量智能监控，故障预警及排除指示，配单管理系统，设备一键启停，产品一键换型，使得设备更加易于操作维护。

Foresight
福赛特 Technology

产品特点
FEATURES

A — **First All-in-one Technology for Membrane Casting and Coating**

The casting and coating functions are modularized, which can be combined as a whole or operated separately according to the demand.. Through solving the problems of cycle time balancing and the smooth conversion of various types of membrane switching in production, UF, NF, and RO membrane can be produced efficiently.

B — **High-Precision Coating Technology**

The length of the membrane can reach 280 meters. Through efficient tension control to achieve micron-level regulation between the coated membrane lip and the substrate, the uniformity and consistency in thickness of each coated layer are ultimately ensured, which reduces the defects on the surface and ensures the quality of the product.

C — **Innovative Water Tank Design**

The guide roller in the tank can be lifted as a whole, therefore, during production, maintenance can be easily made, which is convenient for cleaning; No need to discharge solvents, to save production materials; when threading membranes, it can realize fast threading without other operations, convenient for operation and maintenance.

D — **Intelligent Deviation Correction Technology**

With this technology, the detection, control, feedback and execution are precise and efficient, which enables the film to be precisely controlled in long-distance transmission, improves the flatness, uniformity and other performance indexes of the film, and improves the stability of the equipment.

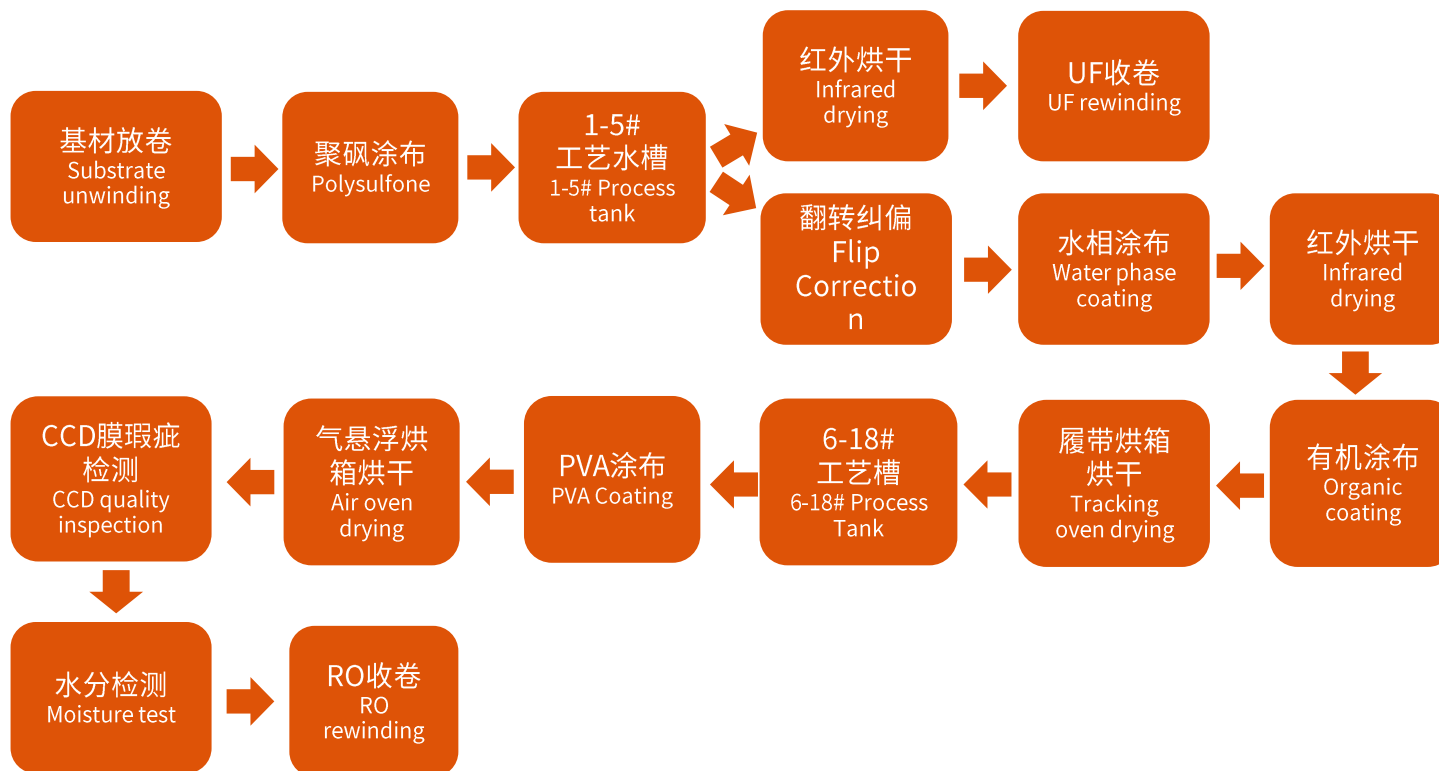**E** — **AI Membrane Inspection System**

Composed of machine vision and AI algorithms, the automatic inspection system learns and optimizes the degree of film defects, which can accurately detect the defects, and automatically mark the defects on the membrane, making its quality effectively guaranteed.

F — **Integration of Automation and Intelligence**

The equipment realizes the coating function effectively and accurately through the precise process control system and the whole PID adjustment, as well as number of intelligent technologies, such as intelligent monitoring of product quality, warning and troubleshooting instructions, order management system, one-key start/stop, and one-key changeover of the product, etc. added, which makes the equipment easier to be operated and maintained

工艺流程
PROCESS

基材放卷
Substrate
unwinding

→

聚砜涂布
Polysulfone

→

1-5#
工艺水槽
1-5# Process
tank

→

红外烘干
Infrared
drying

→

UF收卷
UF rewinding

翻转纠偏
Flip
Correction

→

水相涂布
Water phase
coating

→

红外烘干
Infrared
drying

↓

CCD膜瑕疵
检测
CCD quality
inspection

←

气悬浮烘
箱烘干
Air oven
drying

←

PVA涂布
PVA Coating

←

6-18#
工艺槽
6-18# Process
Tank

←

履带烘箱
烘干
Tracking
oven drying

←

有机涂布
Organic
coating

↓

水分检测
Moisture test

→

RO收卷
RO
rewinding

福赛特设备优势

控制系统
Control System

设备生产过程显示和控制
Equipment production process display and control
伺服、PLC、触摸屏
Servo, PLC, touch screen
产品一键切换
Product one-button changeover
产品一键清料
Product one-button clearing material
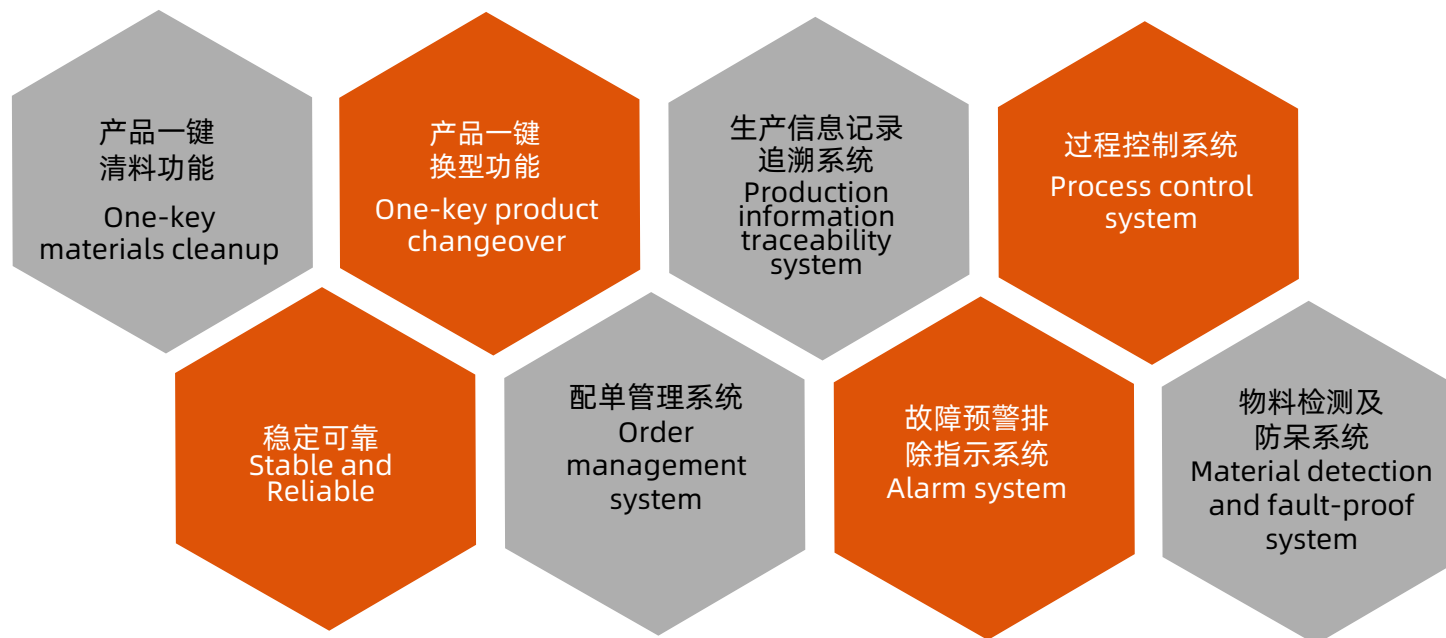
信息系统
Information

电气系统
Electrical system
产品追溯系统
Product traceability system
生产信息自动制表和可视化界面
Production data collection and visualization
MES、ERP 接口
MES, ERP interface
USB读取接口
USB reading port

故障报警
Fault Alarm
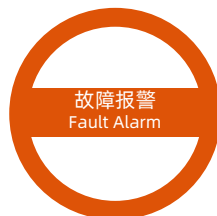
三色灯声光报警提示
Tri-color light and light alarm
触摸屏信息预警及处理办法显示
Touch screen information warning and processing method display

安防系统
Security System

生产过程人员防护系统和急停系统
Production safety protection system and emergency stop system

福赛特设备优势

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产品一键
清料功能
One-key
materials cleanup

产品一键
换型功能
One-key product
changeover

生产信息记录
追溯系统
Production
information
traceability
system

过程控制系统
Process control
system

稳定可靠
Stable and
Reliable

配单管理系统
Order
management
system

故障预警排
除指示系统
Alarm system

物料检测及
防呆系统
Material detection
and fault-proof
system

Foresight
福赛特 Technology

WANHUA

OriginWater
碧水源®

Wave Cyber

Haier

VIOMI

沁园 TRULIVA

OSPURA

NT FILM 恩泰科技

MURFILTEC®
华膜®

LONGMEM TECH

RN 苏州润膜
SU ZHOU RUN MO

KEMFLO

MOTIAN 膜天 招金膜天
ZHAO JIN MOTIAN

Canature

久琢成器　汇聚匠心

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