

SAIL GLASS

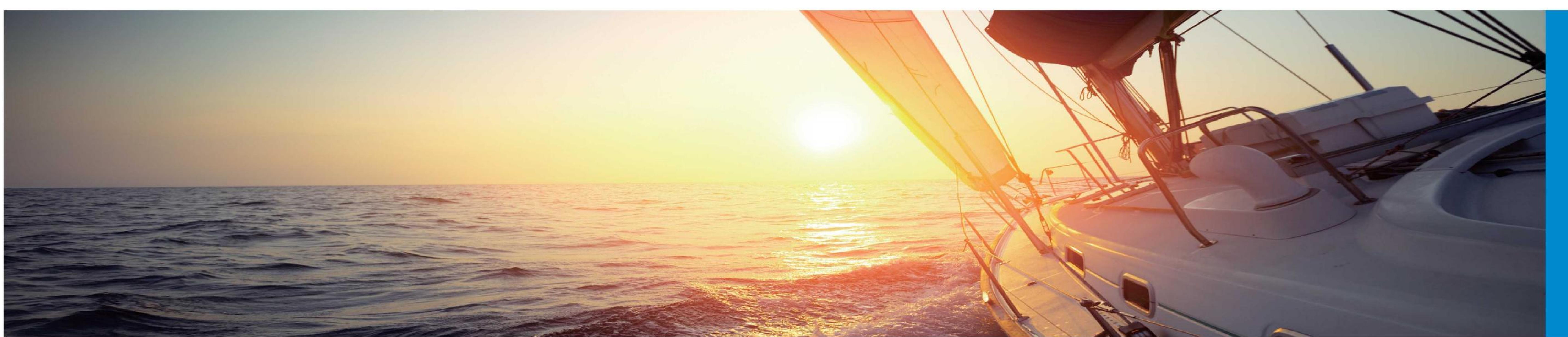
Qinhuangdao QiHang Glass Machinery

Equipment Manufacturing Co., Ltd
Address: Qinhuangdao City, China
E-mail: sales@sailglass.net
Website: www.sailglass.net



SailGlass 启航玻璃钢化创新解决方案 Innovative Tempering Solutions





2000

钢化炉累计产销量超2000台

The cumulative production and sales of tempering furnace have exceeded 2,000 units.

30

将近30年耕耘,积累专业经验

With nearly 30 years of dedication, we have accumulated professional experience.

40+

出口40多个国家和地区

Our machine has exported to over 40 countries and regions.

-ABOUT US

关于我们

秦皇岛启航玻璃机械设备制造有限公司创建于1997年。公司集创新开发、精工制造、营销服务于一体,专业提供玻璃钢化炉,专注于玻璃深加工设备的研发与制造。目前启航已成为行业品种全、产销量大、服务网点多的设备专业制造商。启航作为行业领先的知名品牌,连续多年引领行业技术进步,产品销往40多个国家和地区,在国内已装备了2000多家玻璃深加工生产企业,国内市场占有率连续多年位居前列。

启航立足玻璃深加工设备主业,着力推动行业技术升级,积极探索工业 4.0 与玻璃加工的深度融合,智能化,高精度,解决行业痛点,极大的提高生产效率,减少人工,降低劳动强度,满足不同用户的需求,努力开创智慧工厂新时代。

秦皇岛启航玻璃机械设备制造有限公司创建于1997年。公司集创新开发、精工 Qinhuangdao Sailglss Glass Machinery Equipment Manufacturing Co., Ltd. was founded in 1997. The company integrates innovation, precision manufacturing, and marketing services, specializing in the production of glass tempering furnaces and focusing on the R&D and manufacturing of glass deep-processing machine.

Today, Sailglss has become a leading professional manufacturer in the industry, offering the most comprehensive product range, highest production and sales volume, and an extensive service network

Sailglass, as a leading and renowned brand in the industry, has been driving technological advancements for many consecutive years. Its products are exported to over 40 countries and regions, while domestically, they have equipped more than 2,000 glass deep-processing enterprises. With a consistently top-tier market share in China, Sailglass continues to set the benchmark in the industry.

Sailglass, firmly rooted in its core business of glass deep-processing machine, is committed to driving technological advancements in the industry. By actively exploring the deep integration of Industry 4.0 with glass processing, the company focuses on intelligent and high-precision solutions to address industry challenges. These innovations significantly enhance production efficiency, reduce manual labor, and minimize operational intensity, while meeting diverse customer needs. Sailglass strives to pioneer a new era of smart factories, shaping the future of glass manufacturing.

创新

技术创新是企业发展的灵魂,公司注重自主研发能力的积累与提升,不断总结经验和探索新的领域,技术精湛,为客户提供最佳的解决方案。

品质

"精益生产,敏捷制造",高质量满足市场需求。公司持续推进精品工程,实行质量管理全员化,全过程质量控制。

服务

为客户创造更多价值,满意从解决问题开始,感动来自每个细节,公司坚持实施品牌战略,不断拓宽市场服务内涵,致力成为客户终身可信赖的合作伙伴。

INNOVATION

Innovation is the soul of enterprise development. At our core, we prioritize the cultivation and enhancement of independent R&D capabilities, continuously refining our expertise and exploring new frontiers. With technical mastery, we deliver optimal solutions tailored to our clients' needs.

QUALITY

"Lean production, agile manufacturing", providing high-quality products to meet market demands. Sailglass continuously advances in quality projects, implements quality management at all levels, and conducts quality control throughout the entire process.

SERVICE

Create more value for customers. Satisfaction begins from problem-solving. Touching emotions come from every detail. The company adheres to implementing the brand strategy, continuously expanding the market service scope, and strives to become a lifelong trustworthy partner for customers.





核心优势 CORE COMPETENCIES

保温棉 Insulation Material



硅酸铝毡瓷化板 耐高温1600℃

Silica-alumina felt porcelainized board with a high temperature resistance of 1600℃

加热炉丝 Heating Element



Cr20Ni80 耐高温1200℃

Cr20Ni80 with a high temperature resistance of 1200°C

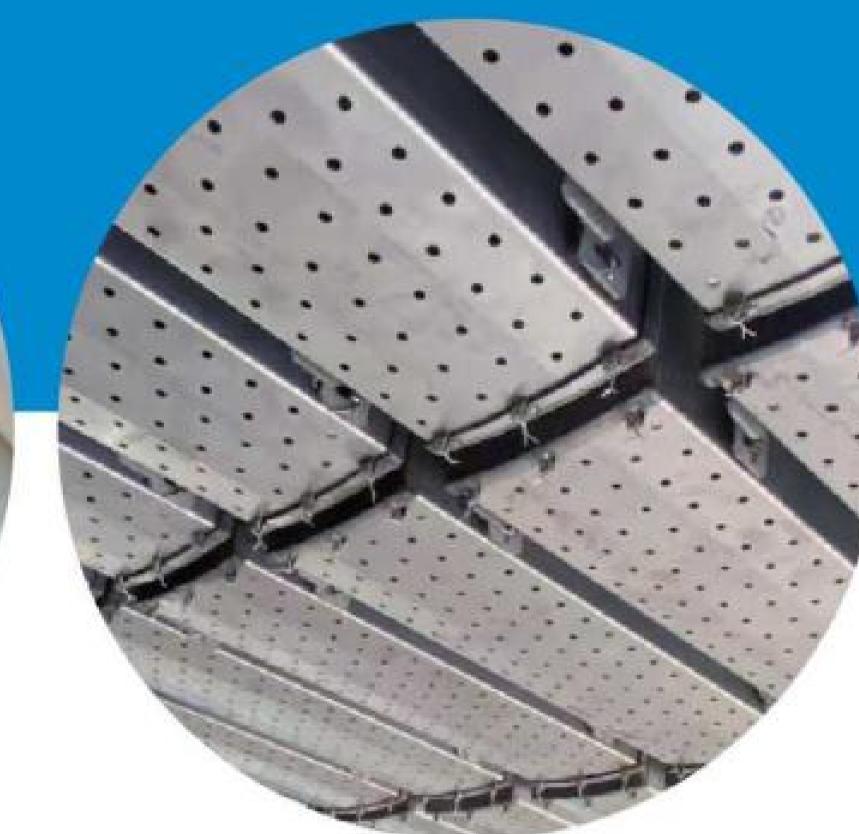
陶瓷管 Ceramic Tube



高铝白钢玉 耐高温1300℃

High-alumina white corundum with a high temperature resistance of 1300°C

不锈钢材料 Stainless Steel Material



310S材质 耐高温**1200℃**

310S material with a high temperature resistance of 1200°C

钢化炉均采用了顶级耐火材料,炉体上部和下部全部采用镍铬2080材质的加热丝,炉内所有不锈钢全部采用310S材质,耐高温,始终确保最佳品质。

The tempering furnaces all use top-level refractory materials. The top and bottom parts of the furnace body are both equipped with heating wires made of Cr20Ni80 material. All the stainless steel inside the furnace is made of 310S material, which is highly resistant to high temperatures and ensures the best quality at all times.

智能温控:智能调功、远程检测

Intelligent temperature control: Intelligent temperature compensation, intelligent power regulation, remote monitoring

智能全闭环精准控温系统,温区采集点密集,运用PID计算,使多温区对玻璃整体受热进行高低温自动补偿,提供精准的温度反馈,加热效率更快。智能电脑控制,人性化,操作简单方便,支持远程控制、维护及检修等。

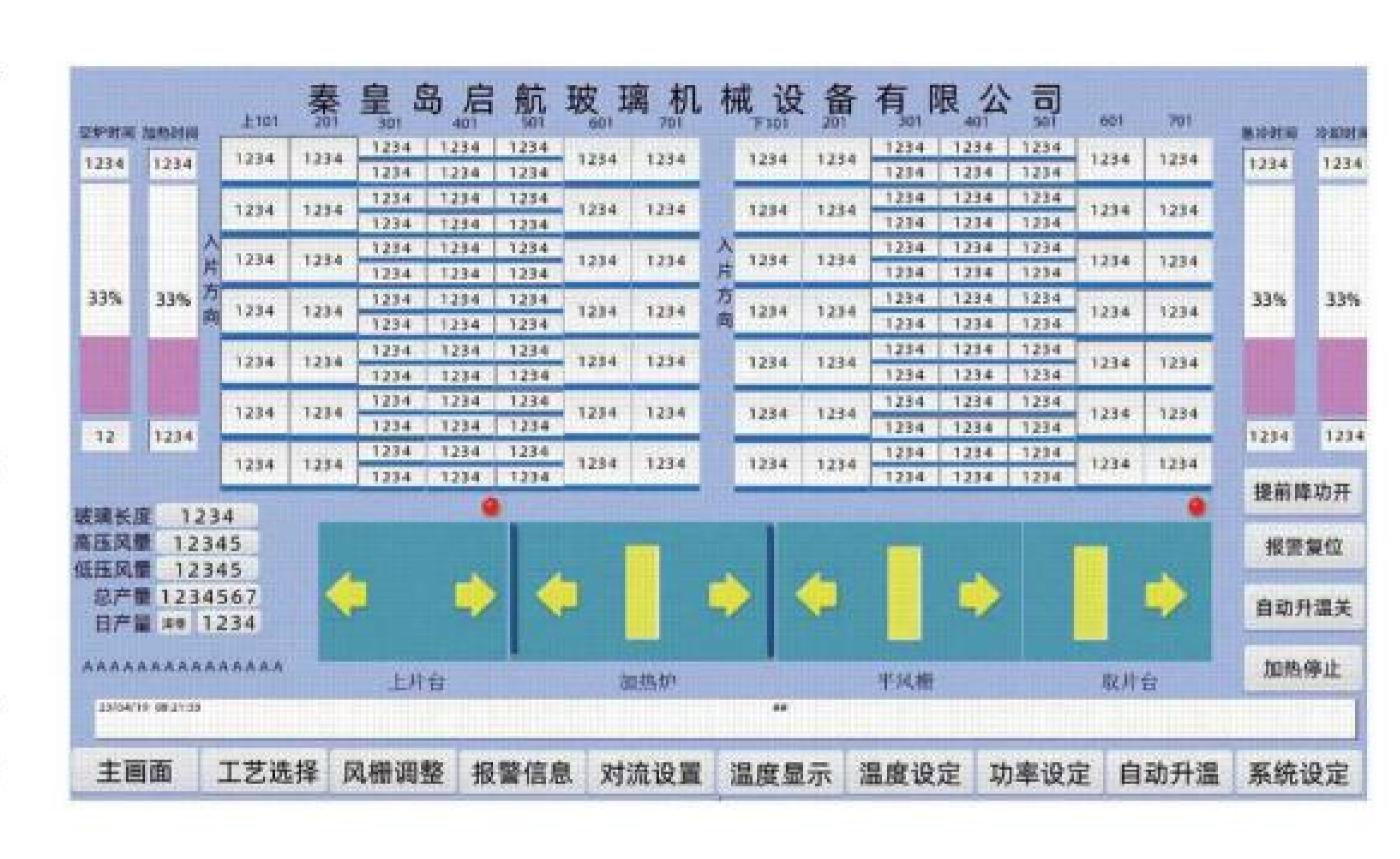
Intelligent Full Closed-Loop Precision Temperature Control System: With densely distributed temperature zone collection points and PID calculation, the multi-zone system automatically compensates for high and low temperatures to ensure uniform heating across the entire glass surface, providing precise temperature feedback and faster heating efficiency. The smart computer control is user-friendly and easy to operate, supporting remote control, maintenance, and troubleshooting.

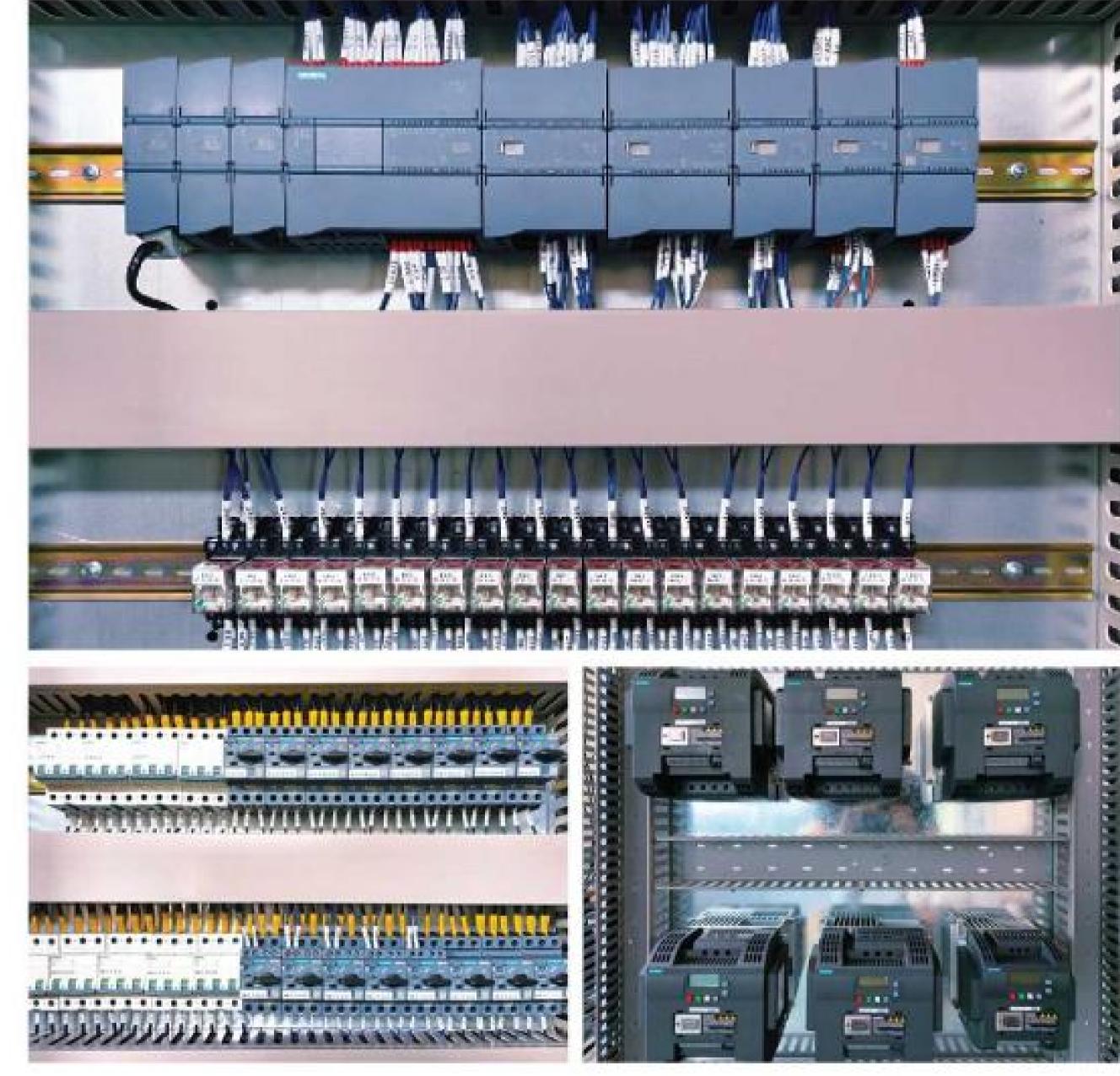
西门子控制系统:数字化、智能化、可靠稳定

Siemens Control System: Digital, Intelligent, Reliable, and Stable

西门子高性能控制系统,技术领先性、高可靠、可定制化,工业自动化领域的标杆。为启航钢化炉的高效、稳定和智能化提供了强有力的保障。

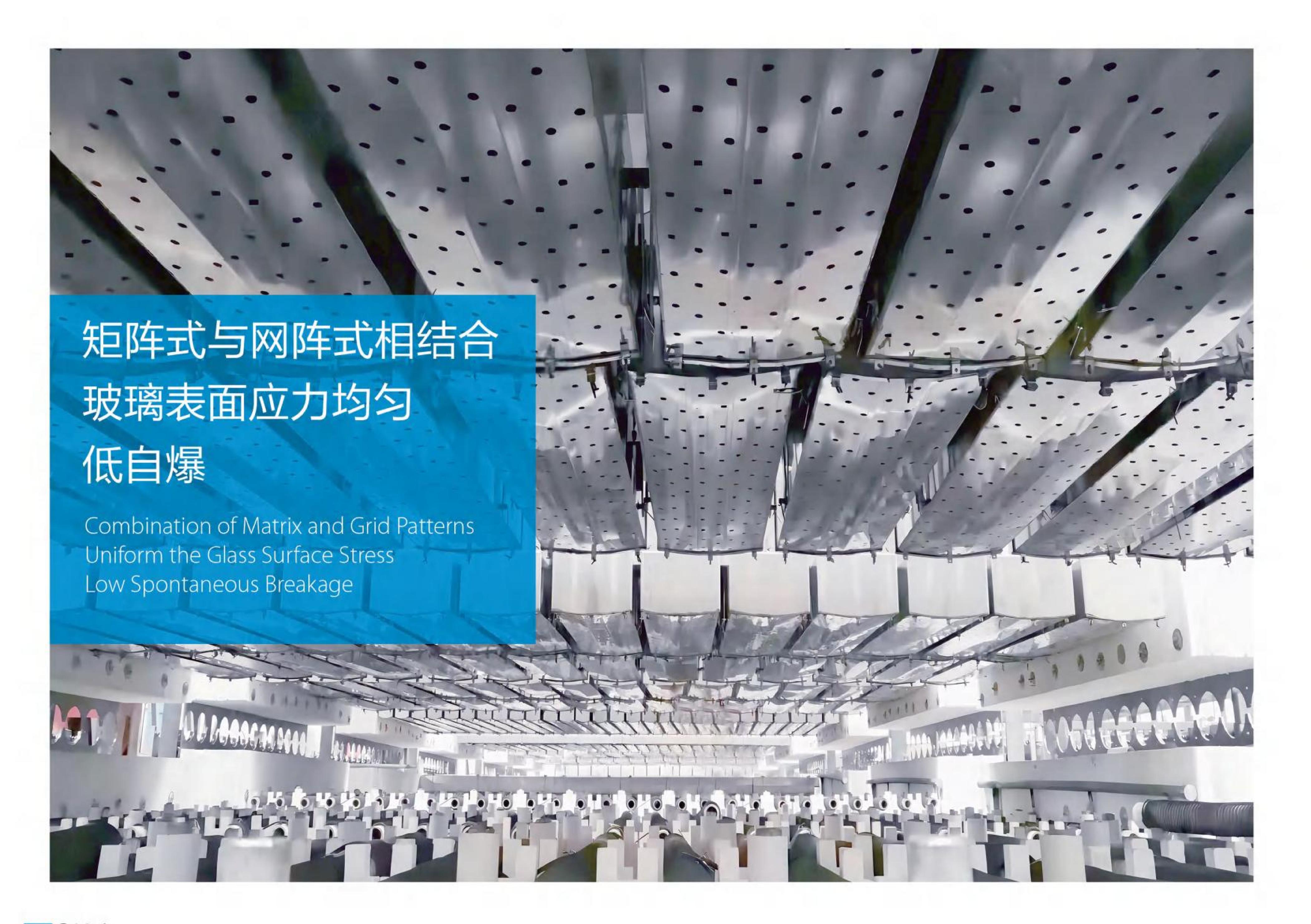
The high-performance Siemens control system leads in advanced technology, reliability, and customization, setting the benchmark in industrial automation. It provides a robust foundation for the efficiency, stability, and intelligence of Sailglass tempering furnaces.











技术亮点

TECHNICAL HIGHLIGHTS

采用矩阵式和网阵式相结合结构,交叉矩阵式排布对流风箱口,加热丝放置对流风箱内,使对流风机将炉丝的热温均匀吹到玻璃表面。

A hybrid structure integrating matrix and grid patterns is adopted, with cross-matrix arranged convection air ducts. Heating elements are placed inside the convection boxes, allowing the convection box to evenly distribute heat across the glass surface.

先进的热传导对流结构:加热速度快、均匀回风与热循环。

Advanced Heat Convection Structure: Fast and Uniform Heating with Recirculation.

加热炉内强制对流加热系统采用了特质耐高温不锈钢材料(310S),使其在长期高温中不变质、不变形、耐高温、高稳定。

上下炉体均采用电加热元件(电炉丝)"镍铬丝"加热均匀、稳定性强、寿命长、加热速度快等特点。

The forced convection heating system in the furnace utilizes specially treated high-temperatureresistant stainless steel (310S), ensuring long-term durability without deformation or degradation under extreme heat. Both the top and bottom furnace bodies employ electric heating elements (nickel-chromium heaters), known for uniform heating, high stability, long lifespan, and rapid heat-up performance.











热循环系统 THERMAL CIRCULATION SYSTEM

技术亮点

TECHNICAL HIGHLIGHTS

专注加热细节,确保质量稳定

Focus on heating details to ensure stable quality

可控硅

SCR

加热炉丝采用可控硅控制,实现真正的调功,炉丝功率可控,减小变压器容量,可控硅质保10年,避免因加热控制原件损坏导致的炉温不均匀,并支持远程监测,检修。

The heating element is controlled by SCR which enabling true power regulation. The power of the heating element can be adjusted, reducing the capacity of the transformer. The SCR has a 10-year warranty and prevents uneven heating caused by damage to the heating control components. It also supports remote monitoring and maintenance.

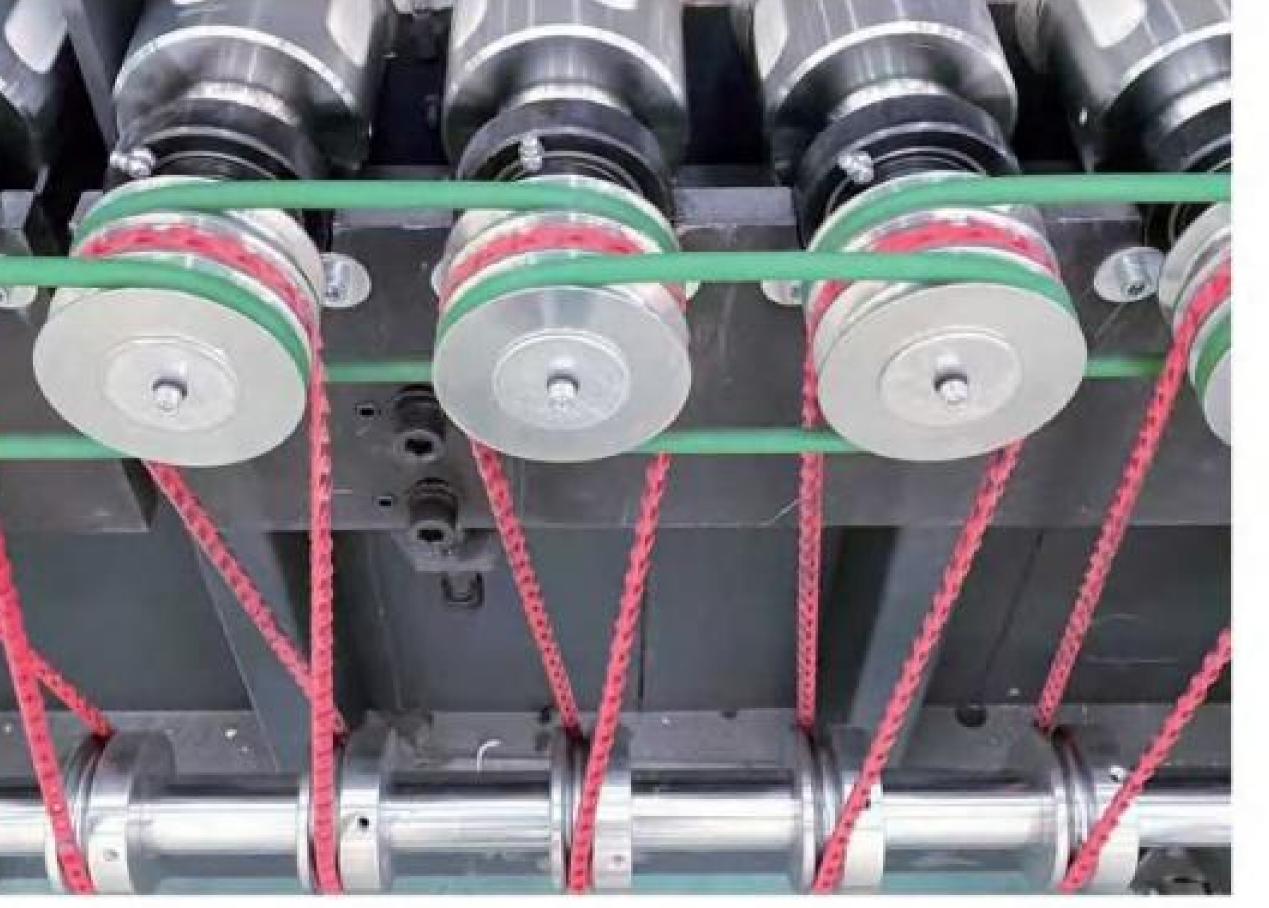
三槽联动

Three-slot interlocking

加热炉陶瓷辊道采用三槽联动的互锁结构,从根本上解决了辊道同步性能差所产生的玻璃窜片,划伤, Low-e玻璃白雾重(辊伤),边部掉角,开孔玻璃破损大等现象。

The ceramic roller in furnace adopts a three-slot interlocking structure, which fundamentally solves the problems such as poor synchronization performance of the roller resulting in glass misalignment, scratches, heavy white haze on Low-e glass (roller mark), edge deforming, and large breakage to the punched glass.









TECHNICAL HIGHLIGHTS

冷却风栅与风机

Quenching and blower

调取最佳定位高度,方便调平整度,更方便操控。由于有高压通过段,玻璃在风栅里的传送 距离更长,接受高压风时间较短,同时低压风栅距离玻璃高度可单独调整,极大的减轻玻璃

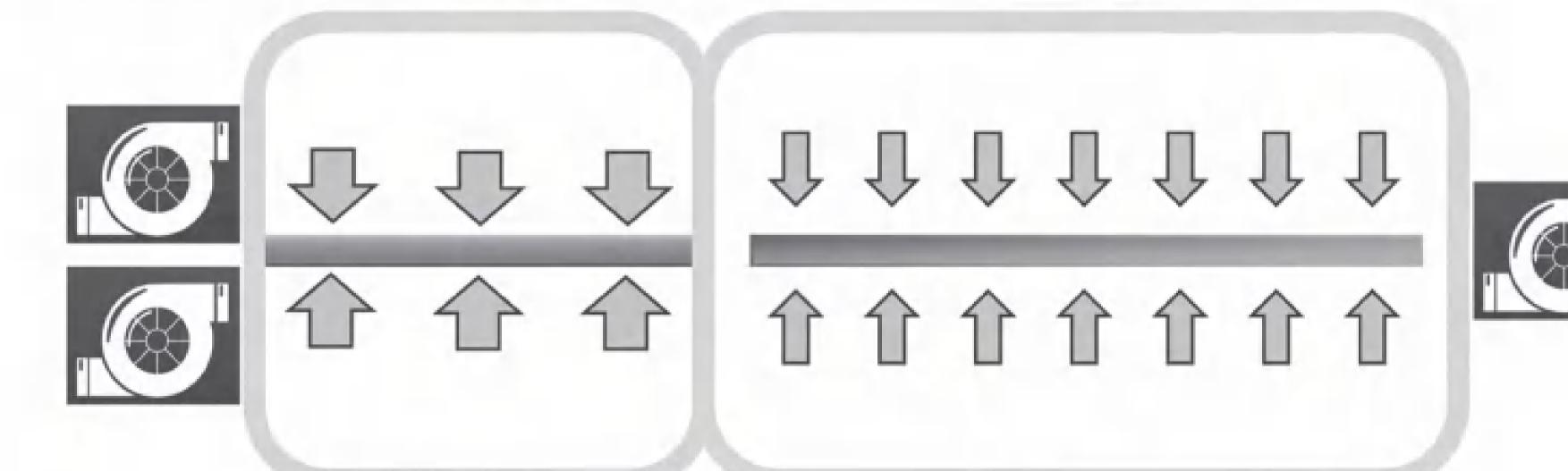
The high and low pressure sections of the quenching can open and close independently, and are respectively equipped with air volume balance and encoder memory height. Various glass parameters can be adjusted at any time to achieve the optimal positioning height, which is convenient for flatness and easy to operate. Due to the presence of the passing-through section, the transmission distance of the glass in quenching is longer, and the time it receives high-pressure air is shorter. Meanwhile, the height between the low-pressure air grid and the glass can be adjusted independently, which greatly reduces the cold air spots on the glass.

节能省电

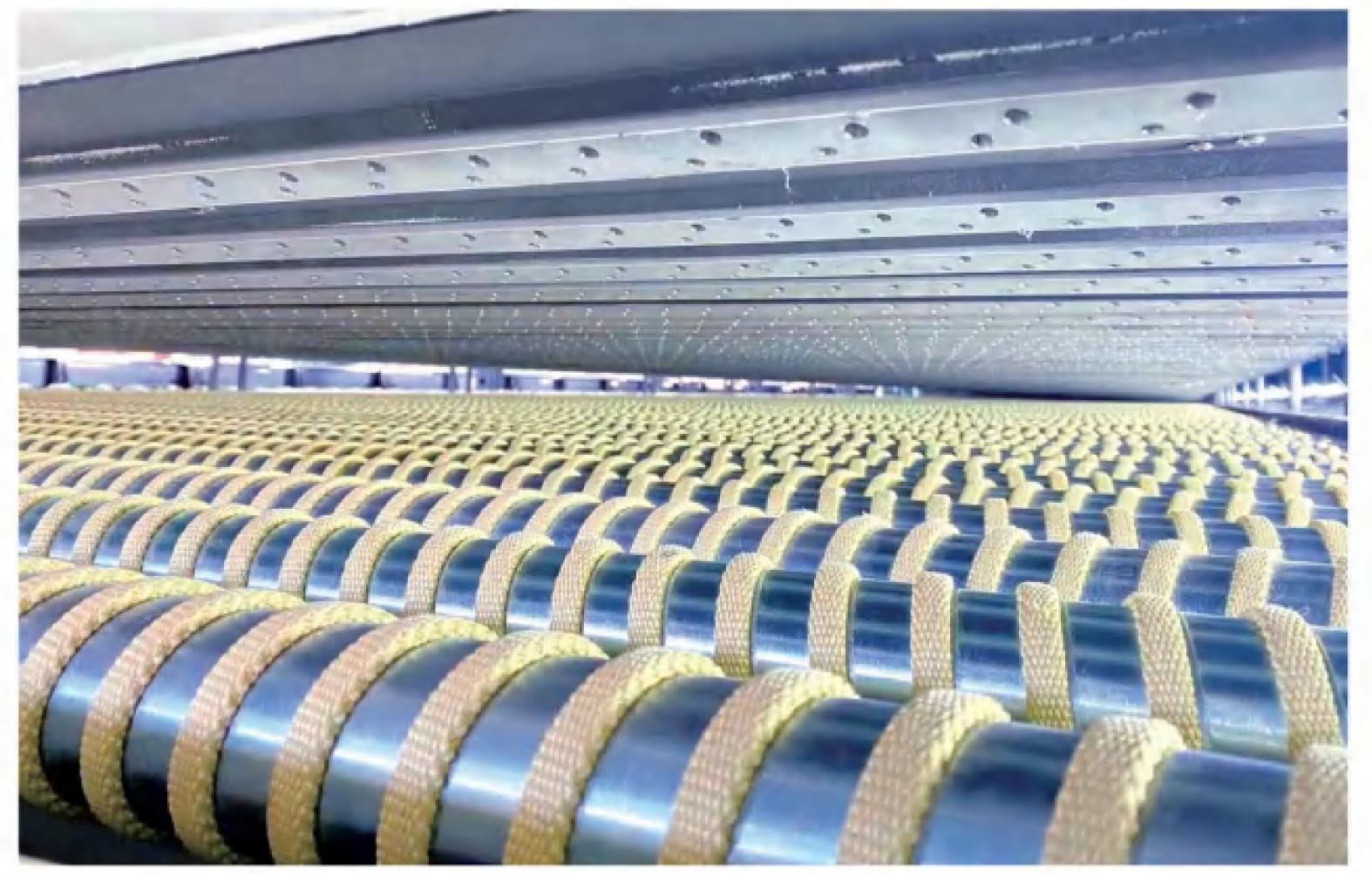
Energy saving and low power consumption

风机采用零待机控制模式,关闭高压段,风机停车,零耗电,直到下一炉玻璃出炉前,提前 运用转速追踪启动,提升品质的同时,可节省三分之一的冷却用电量,低能耗高品质。

The blower operates in a zero standby control mode. Once the high-pressure section is shut off, the blower stops, and there is no power consumption. This state persists until the next batch of glass. Then, the speed tracking start-up is applied in advance to enhance the quality while saving one-third











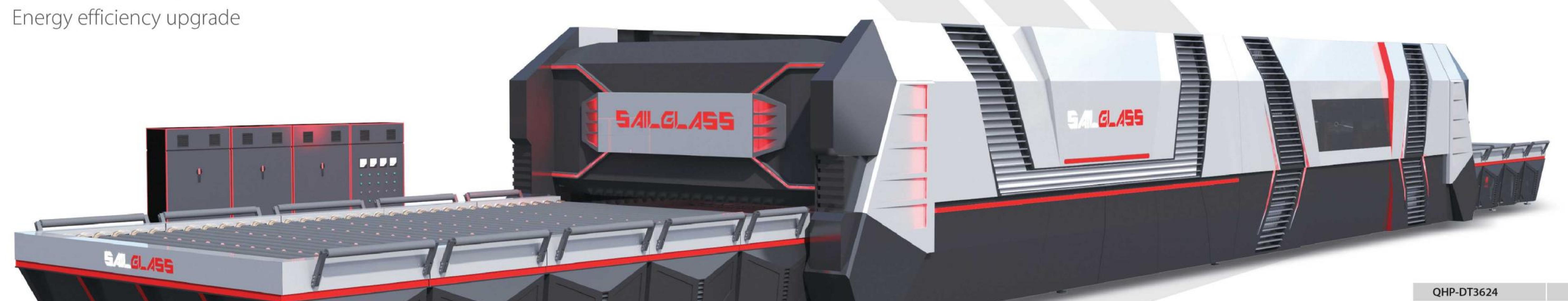
S-Series



防火系列 Fire-Resistant Series

智能温控,一炉多用,全能钢化

Smart Temperature Control, Multi-function Furnace, Universal Tempering, Upgraded energy efficiency and industry-leading innovation.



行业领先,业内非凡,新一代防火钢化炉在对流风栅结构核心组件选用**上升级单片物理防火**(不添加任何防火液),集多种功 能于一体。可完成**Low-E玻璃、浮法玻璃、高硼硅玻璃**等各种材质的加工,高效节能、高精度、多功能、一机多用。

The new-generation fire-resistant tempering furnace features enhanced single piece physical fire resistance (without fire-retardant additives) in core components like convection air grids. Capable of processing Low-E glass, float glass, borosilicate glass and ect, it integrates high efficiency, precision, and versatility.



50% power savings

产能提高2-3倍

2-3 times production





5-10% higher yield rate



风斑轻6-8块不清晰可见

可连续生产4.0高硼硅

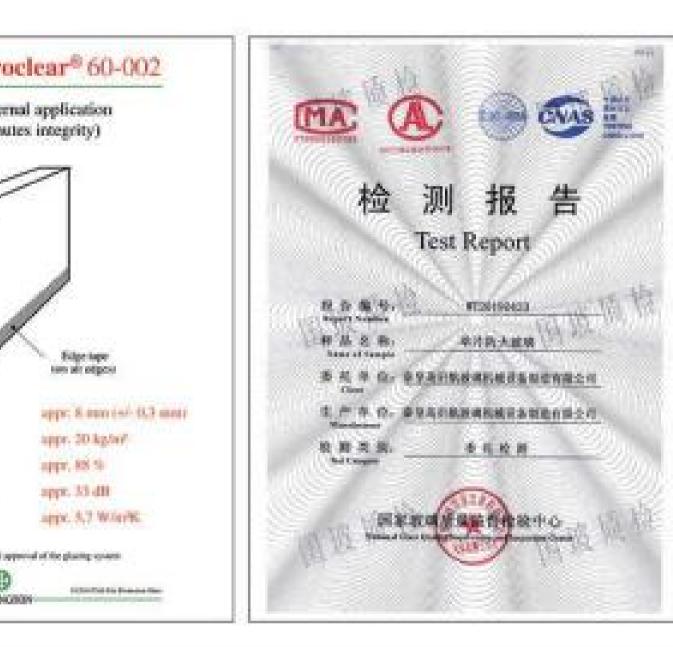
6-8 fewer visible air marks

Continuous production of 4.0mm borosilicate glass









防火检测报告 Fire Resistance Test Report

	■最大规格 Max.Size(mm)	■ 最小规格 Min.Size(mm)	■ 厚度 Thickness(mm)	■ 产量(米²/小时) Capacity(m²/h)	■ 供电功率 Installed Power(KVA)
QHP-DT3624	3600×2400	300×100	4-19	124	≥800
QHP-DT4224	4200×2400	300×100	4-19	145	≥800
QHP-DT5024	5000×2400	300×100	4-19	175	≥1000
QHP-DT6024	6000×2400	300×100	4-19	210	≥1000
QHP-DT5028	5000×2800	450×150	5-19	200	≥1000
QHP-DT6028	6000×2800	450×150	5-19	242	≥1250
QHP-DT5030	5000×3000	450×150	5-19	216	≥1250
QHP-DT6030	6000×3000	450×150	5-19	260	≥1600





G-Series

对流系列

Convection Series



强制对流循环系统

Forced Convection Circulation System



高效热传导 High-efficiency heat

transfer



玻璃受热均匀

Uniform glass heating



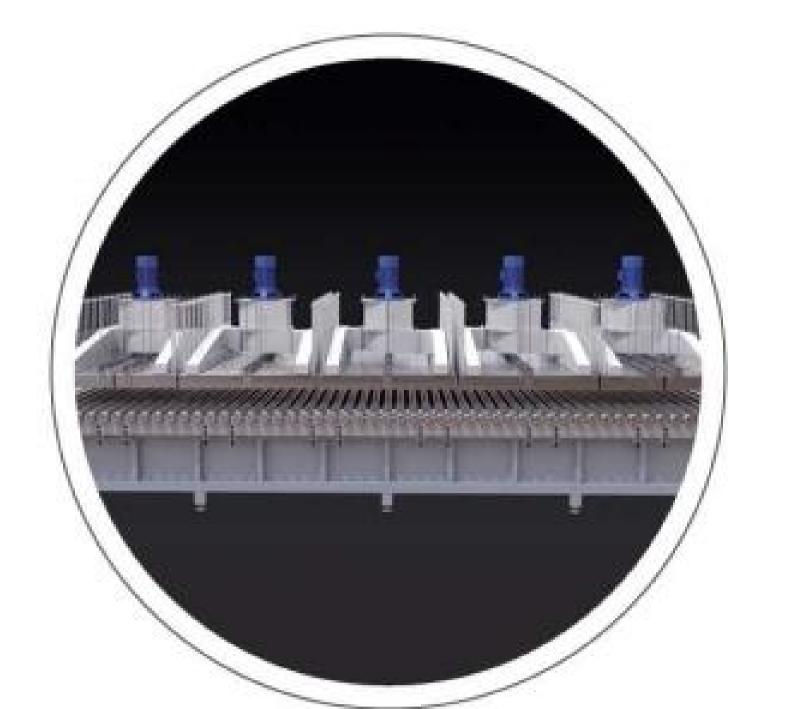
创新设计,节能增效 Innovative design for energy



钢化玻璃强度高、自爆率低

Innovative design for energy Tempered glass exhibits superior savings and performance strength and low self-explosion rates enhancement

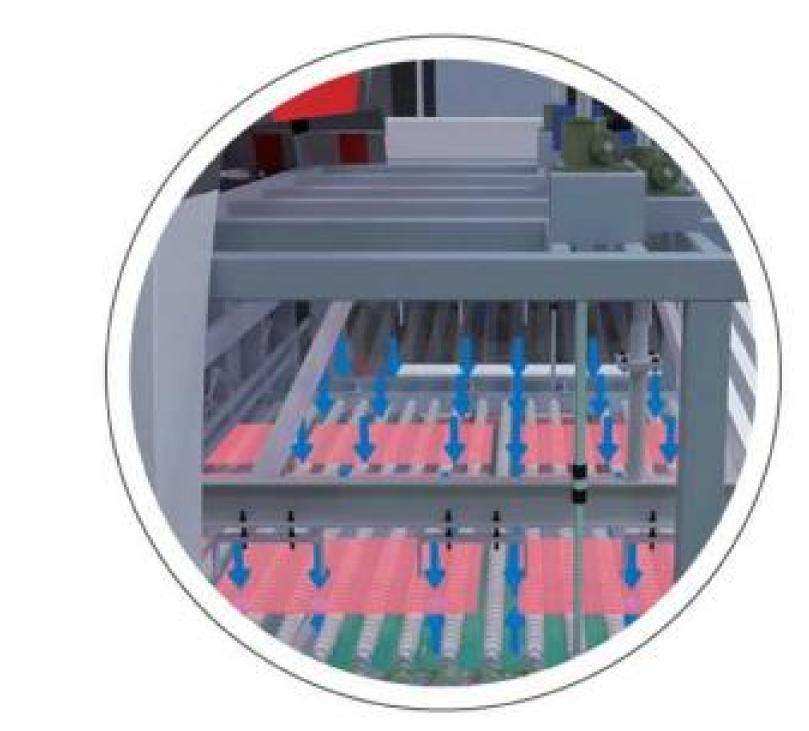




创新强制对流风机系统设计,智能精准精准控温,先进热循环对流。

Innovative Forced Convection Fan System: Intelligent temperature control and advanced thermal circulation technology.

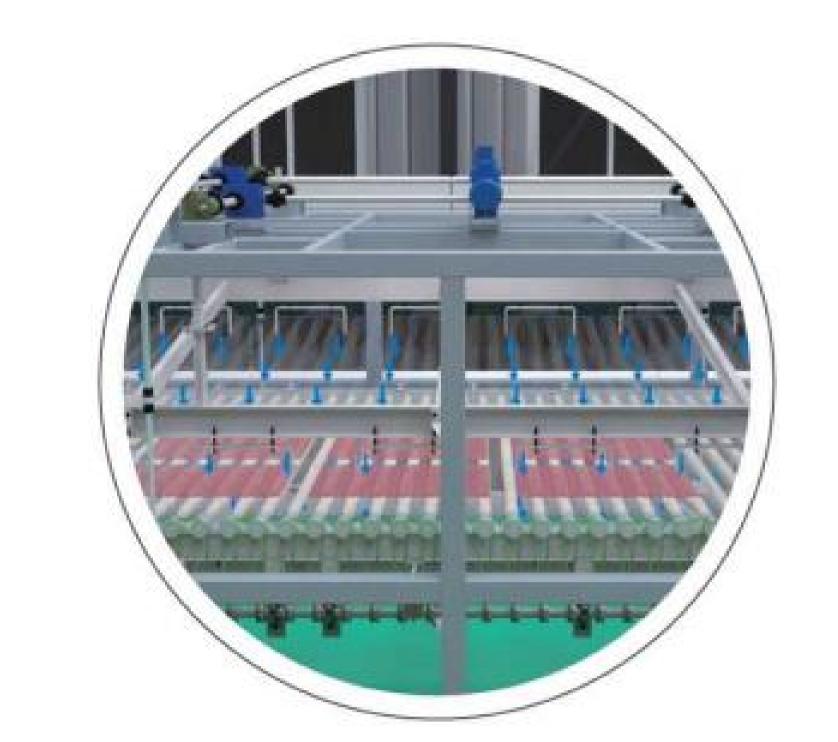
Product Features



高压通过段风栅,玻璃接受高压风时间较短,可有效的减轻玻璃冷风斑。

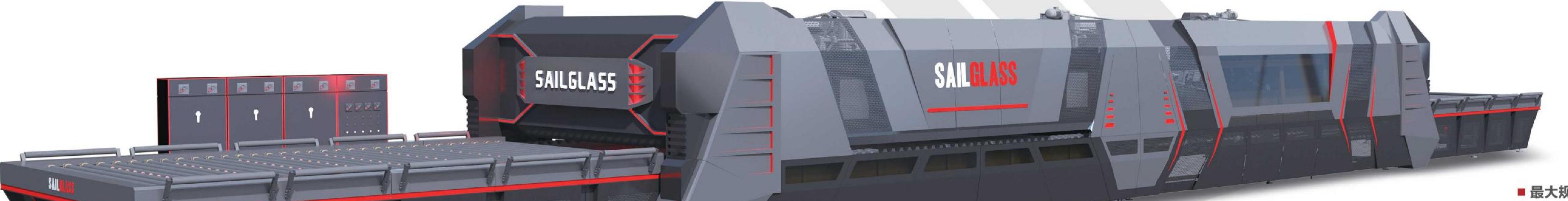
High-pressure passing-through chiller, Shortens high-pressure air exposure on glass, effectively reducing cold air marks.

SAIL GLASS Machine



低压冷却段风栅,距离玻璃高度可单独调整,进一步减少冷风斑的形成。

Low-pressure cooling chiller, Height adjustable individually relative to the glass, further minimizing cold air marks.



	■最大规格 Max.Size(mm)	■ 最小规格 Min.Size(mm)	■ 厚度 Thickness(mm)	■产量(米²/小时) Capacity(m²/h)	■ 供电功率 Installed Power(KVA)
QHP-DT3624	3600×2400	300×100	4-19	124	≥630
QHP-DT4224	4200×2400	300×100	4-19	145	≥800
QHP-DT5024	5000×2400	300×100	4-19	175	≥1000
QHP-DT6024	6000×2400	300×100	4-19	210	≥1000
QHP-DT5028	5000×2800	450×150	5-19	200	≥1000
QHP-DT6028	6000×2800	450×150	5-19	242	≥1250
QHP-DT5030	5000×3000	450×150	5-19	216	≥1250
QHP-DT6030	6000×3000	450×150	5-19	260	≥1600
QHP-DT7033	7000×3300	450×150	6-19	333	≥1600



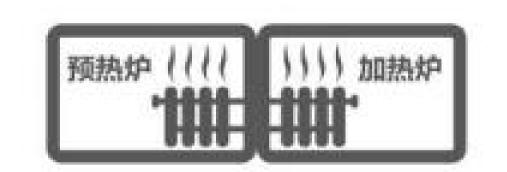


J-Series

双室系列 Double-Chamber Series

以创新之力,将 13 米长单片玻璃应力误差控制到 8MPa 之内。

Innovative Technology: Controls stress variation in 13-meter single-panel glass within 8MPa.

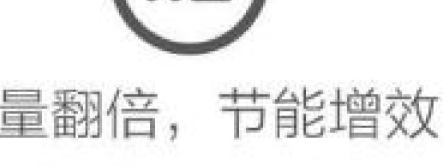


Dual-chamber heating for shorter cycles









SAILGLASS

Doubled output with less energy consumption



| SAIL GLASS | Double Chamber Series

SKILGLASS

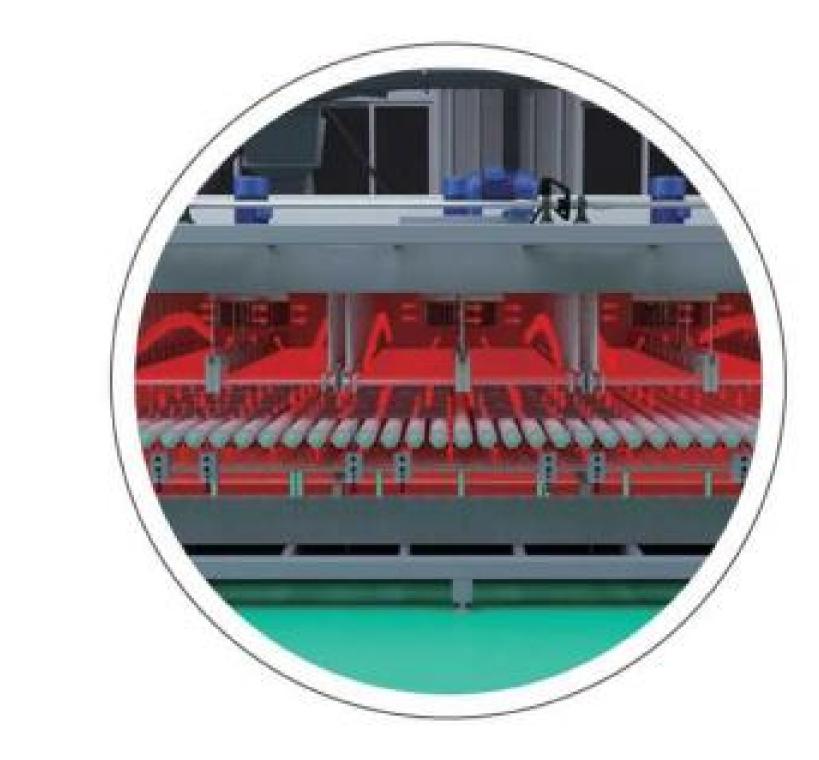


以上超大板玻璃中出现S弯,过渡弯等问

Advanced heating chamber and convection compensation design eliminates S-bending and transitional bending in ultra-large glass panels (>10m).

SHOP SHOW SHOWING THE OWNER, THE

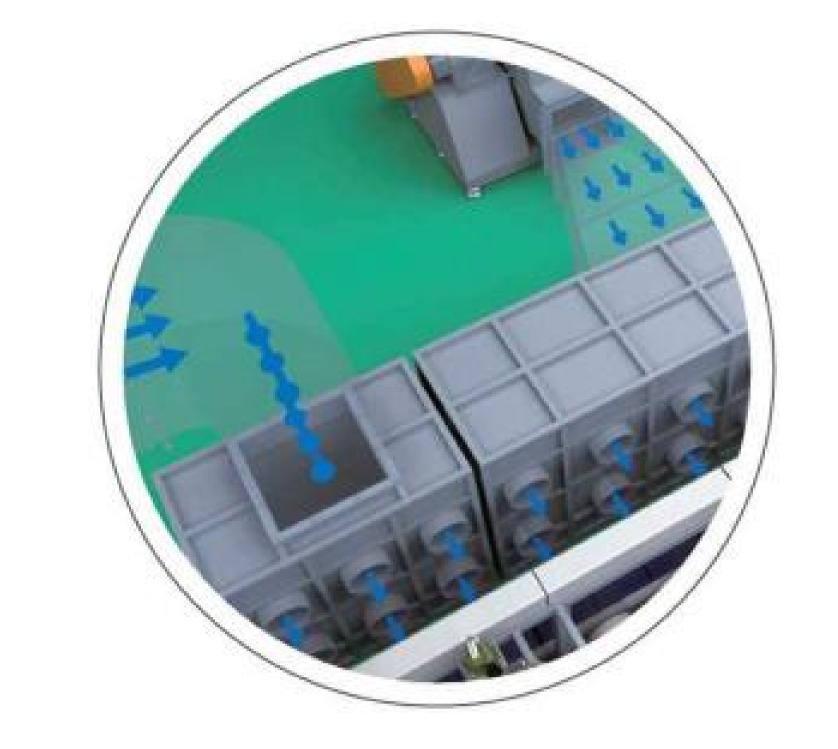
Product Features



布,玻璃受热均匀,极大降低破损率和自 爆率。

Variable frequency thermal circulation system ensures uniform heat distribution, minimizing breakage and self-explosion rates.

SAIL GLASS Machine



Cutting tool cooling spray system to ensure reliable operation and accuracy of machine

		■最大规格 Max.Size(mm)	■ 最小规格 Min.Size(mm)	■ 厚度 Thickness(mm)	■产量(米²/小时) Capacity(m²/h)	■ 供电功率 Installed Power(KVA)
	QHP-DTS5024	10000×2400	300×200	4-19	280	≥360
	QHP-DTS6024	12000×2400	300×200	4-19	336	≥600
	QHP-DTS5028	10000×2800	450×300	5-19	320	≥900
	QHP-DTS6028	12000×2800	450×300	5-19	387	≥1200
	QHP-DTS5030	10000×3000	500×300	5-19	346	≥1500
	QHP-DTS6030	12000×3000	500×300	5-19	416	≥2000
	QHP-DTS7033	14000×3300	500×400	6-19	533	≥2500





B-bending Series

横弯系列

Cross Bending Series



创新结构, 弯曲效果好 Innovative Structure, Superior

Curving Performance

智能温控,精准稳定



Intelligent temperature control for precision and stability









SAIL GLASS

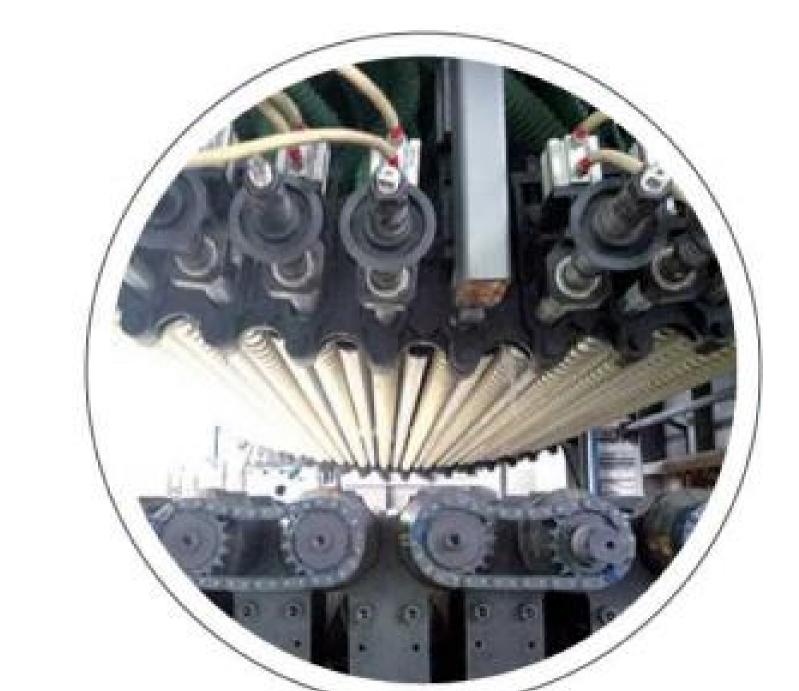


- 启航横弯系列

SAIL GLASS

Cross Bending Series

SXIIBLISS



创新弯钢化结构,自动调弧,智能精准。

Automated arc adjustment for intelligent bending.

Product Features



受多余外力,弯曲吻合度超高。

Curved roller channels guide glass formation without external force, achieving ultra-high curvature accuracy.

SAIL GLASS Machine



独特压轮式设计,钢化横弯效果更加完美。

Unique pressure wheel design delivers flawless cross bending results.

	■最大规格	■最小规格	■曲率半径	厚度	■产量(炉(小时)
	Max.Size(mm)	Min.Size(mm)	Curvature Radius	Thickness(mm)	Capacity(Batch/hour)
QHP-DT3624H18	arc1800×2400	400×200	≥850	5-19	16
QHP-DT4224H20	arc2000×2400	400×200	≥900	5-19	16
QHP-DT5024H25	arc2500×2400	400×200	≥1200	5-19	16
QHP-DT6024H30	arc3000×2400	400×200	≥1400	5-19	16
QHP-DT5028H35	arc3500×2800	500×300	≥1600	5-19	16
QHP-DT6028H40	arc4000×2800	500×300	≥1800	5-19	16
QHP-DT5030H50	arc5000×3000	600×300	≥2000	6-19	16
OHP-DT6030H60	arc6000×3000	600×300	≥2500	6-19	16



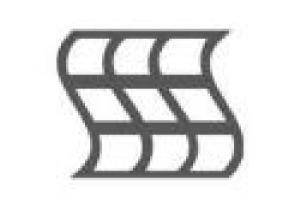


C-bending Series

纵弯系列 Vertical Bending Series

突破平面边界,重塑空间美学

A new paragon of energy conservation and consumption reduction, A new sharp tool for cost reduction and efficiency enhancement.



超大曲面玻璃加工 Large-Scale Curved Glass

Processing



智能温控,精准稳定 Intelligent temperature control for precision and stability



独特弯形风栅,成形效果好 Special curved air grids for optimal

SAIL GLASS



启航纵弯系列
SAIL GLASS
Vertical Bending Series

THE RESERVE TO LABOUR.



能化大型弯段结构,更适合超大型曲面 13部加工。

Intelligent large-curve bending structure ideal for oversized curved glass.

Product Features



独特弯形风栅设计,成型效果好,玻璃品 质卓越。

Unique curved air grids ensure exceptional glass quality.

SAIL GLASS Machine



能化散热循环系统,玻璃应力均匀,强度

Smart thermal circulation system guarantees uniform stress distribution and high strength.

	■最大规格 Max.Size(mm)	■ 最小规格 Min.Size(mm)	■ 曲率半径 Curvature Radius	■ 厚度 Thickness(mm)	■产量(炉(小时) Capacity(Batch/hour)
QHP-DT3624Z36	3600xarc2400	450×450	≥1200	6-12	16
QHP-DT4224Z36	3600xarc2400	450×450	≥1200	6-12	16
QHP-DT5024Z42	4200×arc2400	450×450	≥1200	6-12	16
QHP-DT6024Z50	5000×arc2400	450×450	≥1200	6-12	16
QHP-DT5028Z50	5000×arc2800	450×450	≥1400	6-12	16
QHP-DT6028Z50	5000×arc2800	450×450	≥1400	6-12	16
QHP-DT5030Z50	5000×arc3000	450×450	≥1600	6-12	16
QHP-DT6030Z60	6000×arc3000	450×450	≥1600	6-12	16







照统一标准的高品质服务与解决方案,成为您终身可信赖的伙伴。

现场服务及遍布全球的灵活服务网点。

On-site services and flexible service network worldwide.

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address urgent issues.

Comprehensive high-precision technology, 100% reliability and high quality.

with unified standards worldwide, and become your lifelong reliable partner.

We transform customer's demands into professional customized technical solutions.

Sailglass to provide you with high-quality services and solutions strictly in accordance

启航的全球专家服务网络能够对各地需求作出及时响应,卓越执行,同时将当地

市场和文化差异考虑在内,始终伴您左右,为您提供最快捷的解决方案,以解燃

The global expert service network that has Sailglass can respond promptly to local

demands, execute excellently, and take into account local market and cultural

differences. It will always be by your side, providing you with the fastest solutions to

YOUR DEMANDS ARE

我们始终透彻理解客户和市场的真正需求所在。

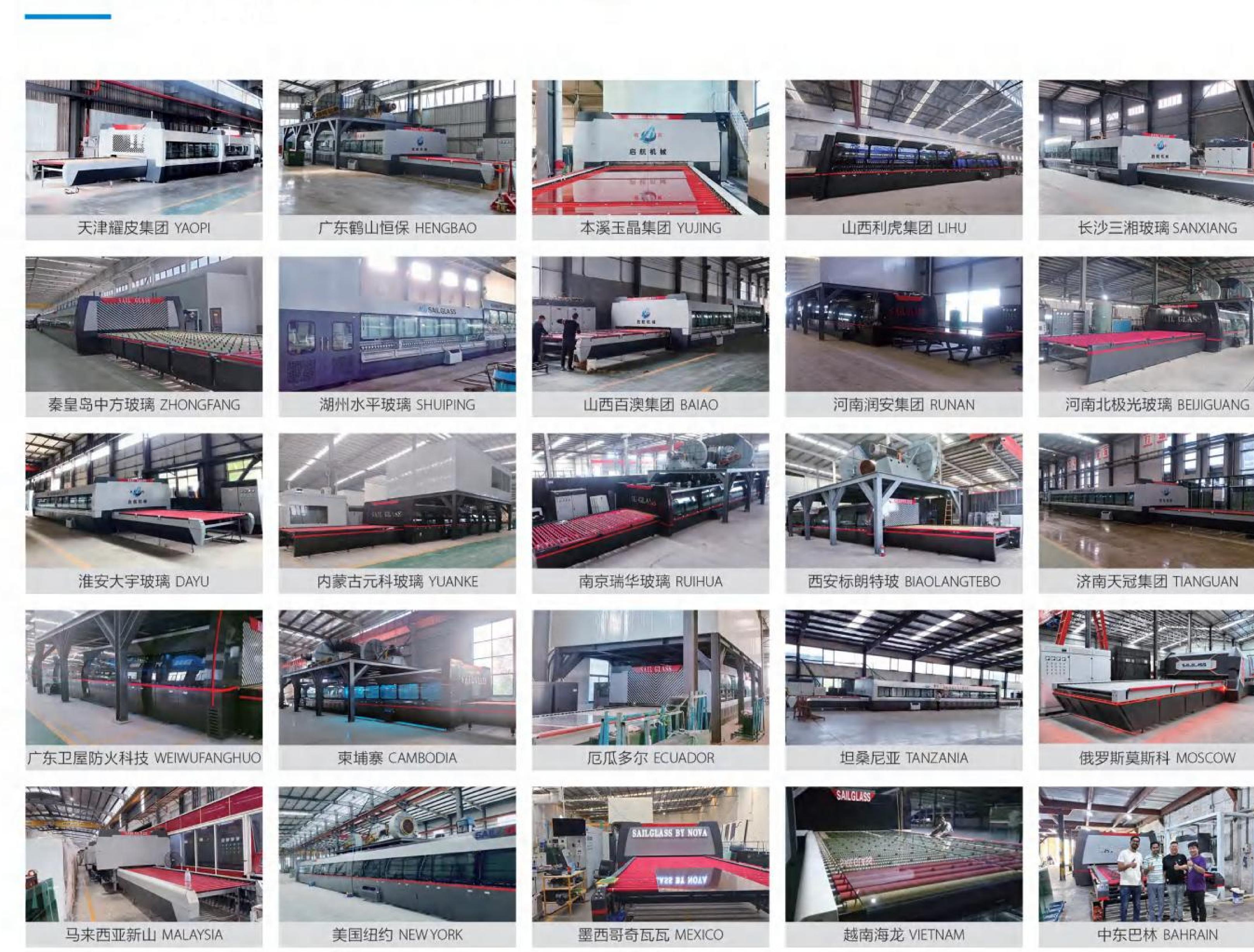
启航始终奉行"客户至上",在了解客户需求和市场需求的前提下,迎接每一个客户以及市场带来的挑战,协力寻求领先的解决方案,是我们开展业务活动的关键,也是我们与客户保持长久互信的伙伴关系的秘诀所在

We always thoroughly understand the true needs of customers and the market.

Sailglass has always adhered to the principle of "customer first". Based on a thorough understanding of customer and market demands, we meet the challenges brought by each customer and market, and jointly seek leading solutions. This is the key to our business activities and also the secret to maintaining a long-term mutually trusting partnership with our customers.

行业领跑以实力探索未来

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