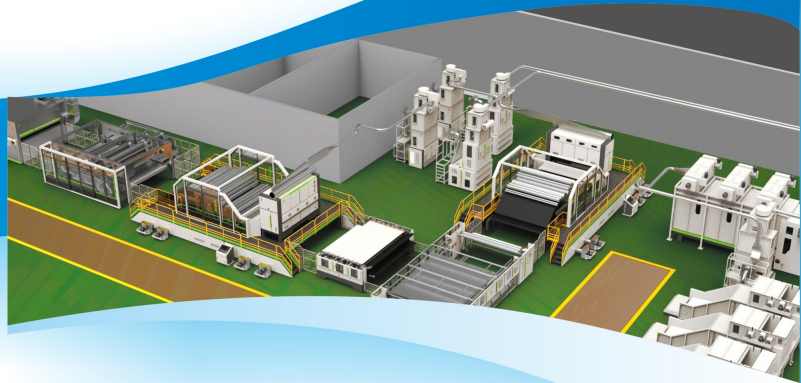


# 非织造布成套设备

COMPLETE NON-WOVEN EQUIPMENT



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恒天重工股份有限公司--前身为国营郑州纺织机械厂，始建于1949年，是国家纺织机械行业的大型骨干企业，主要从事化纤、非织造、织造成套设备的开发制造。

Hi Tech Heavy Industry Co.,Ltd. was founded in 1949, former Zhengzhou Textile Machinery Factory, which is a large state-owned backbone enterprise in the national textile machinery industry. The company is engaged in developing and manufacturing complete sets of man-made fiber equipment, non-woven equipment and weaving equipment.

20世纪90年代初公司进入非织造布行业，能够提供水利、湿法复合、可冲散、热风、热轧、纺粘、熔喷等不同工艺类型的成套非织造布设备和相应的工程工艺配套服务，实现“交钥匙工程”。

In the early 1990s, we began researching and developing nonwoven equipment. We can now provide complete sets of equipment such as Spunlace, Wet-laid, Wet-laid composite, Air-through bonding, Thermal calendering, Spunbond, Melt-blown. Additionally, we supply turnkey project services including engineering and utilities design.

# 交叉水刺线

## CROSS LAPPING SPUNLACE LINE

用途：干巾，压缩毛巾，一次性卫生用品，墙布，工业擦布等  
Application: Dry wipes, Compressed towel, Disposable hygiene products, Wall cloth, Industrial wipes, etc.

原料：棉，粘胶，天丝，涤纶  
Raw material: Polyester, Viscose, Cotton, Tencel

克重范围：40-120 gsm  
Product weight: 40-120 gsm

幅宽：2.5米、3.5米  
Width: 2.5 meters, 3.5 meters

产量：15-22 吨每天  
Capacity: 15-22 tons/ day

配置亮点：1.配套Autefra FOR铺网机，最具投资性价比的选择  
Configuration highlights: Matching with Autefra FOR crosslapper is the most cost-effective option for investment.

2.可以增加在线上浆印花功能，实现产品差异化  
The addition of online dipping and printing functions diversifies the products.

3.可以实现整线智能化升级  
Smart production line.



# 直铺水刺线

## DIRECT SPUNLACE PRODUCTION LINE

用途：湿巾，干巾，擦布  
Application: Wet wipe, Dry wipe, etc.

原料：涤纶、粘胶、天丝、棉花、竹纤维、丙纶等棉型纤维  
Raw Material: Polyester, Viscose, Lyocel, Cotton, Polypropylene, etc.

克重范围：35-80 gsm  
Grammage Range: 35-80 gsm

幅宽：2.5米、3.5米  
Working Width: 2.5 meters, 3.5 meters

速度：260m/min  
Speed: 260 m/min

梳理机出网形式：高速杂乱成网，凝聚成网  
Web Forming type: by condenser, by random roller



# 湿法可冲散

WET-LAID PRODUCTION LINE FOR FLUSHABLES

用途：湿厕纸

Application: Flushable wipes

原料：木浆、短切粘胶、短切天丝

Raw material: Wood pulp, Short-cut viscose, Short-cut tencel

克重范围：50-100gsm

Product weight: 50-100gsm

幅宽：2.5米、3.5米

Width: 2.5m, 3.5m

产量：30吨每天

Capacity: 30 tons/day

配置亮点：1.智能化制浆备浆系统，特别针对可冲散产品和原料特点研发的制浆系统

Configuration highlights: The intelligent pulping preparation system is specifically designed for flushable product and its raw materials.

2.原料适配范围广

Wide range of raw material adaptation.

3.在线压花，实现产品差异化

Online embossing for product differentiation.



# 木浆复合产品生产线

WET-LAID AND SPUNLACE  
COMPOSITE PRODUCTION LINE

用途：一次性卫生用品、擦布、厨房擦布、消毒湿巾、工业擦布等

Application: Disposable sanitary products, Kitchen wipes, Industrial wipes, Disinfectant wipes, etc.

原料：木浆、短切粘胶、短切天丝，涤纶、粘胶、棉

Raw material: Wood pulp, Short-cut viscose, Short-cut tencel, Polyester, Viscose, Cotton

克重范围：40-120 gsm

Product weight: 40-120 gsm

幅宽：2.5米、3.5米

Width: 2.5m, 3.5m

产量：30吨每天

Capacity: 30 tons/day

配置亮点：1.SP、CP或其他木浆复合产品定制化生产线

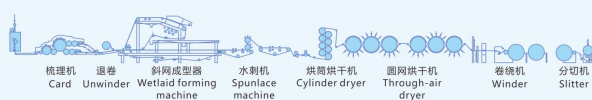
Configuration highlights: The production line can be customized for SP, CP or other wood pulp composite products.

2.可以增加在线上浆印花功能，实现产品差异化

The addition of online dipping and printing functions diversifies the products.

3.可以实现整线智能化升级

Smart production line.



# 热风线

AIR THROUGH BONDING LINE

用途：婴儿和女性卫生用品面层、底层，导流层

Application: Topsheet, Backsheet and ADL of baby and feminine hygiene materials

原料：ES纤维，双组分纤维

Raw material: ES fiber, Bi-Component fiber

克重范围：15-80gsm

Product weight: 15-80gsm

幅宽：2.5米、3.5米

Width: 2.5m, 3.5m

产量：8-15 吨每天

Capacity: 8-15 tons/day

配置亮点：1.配置在线自调匀整系统，确保产品克重稳定

Configuration highlights: The online auto-leveling system ensures product weight stability.

2.梳理机和气压棉箱结构升级，低克重产品质量更加可靠

Upgraded Card and Pneumatic Tuft Feeder structures enhance the reliability of low weight products' quality.

3.节能烘箱设计，幅宽方向温差小，产品质量稳定

The energy-saving dryer design ensures stable product quality with a small temperature difference in the breadth direction.



# 脱脂棉/染色棉生产线

COTTON DYEING/DEGREASING PRODUCTION LINE

用途：棉花脱脂、染色

Application: Cotton degreasing, Dyeing

原料：原棉、精梳落棉

Raw material: Raw cotton, Combed cotton

克重范围：不适用N/A

Product weight: N/A

幅宽：不适用N/A

Width: N/A

产量：20吨/天，或依据客户需求定制

Capacity: 20 tons/day, or customized

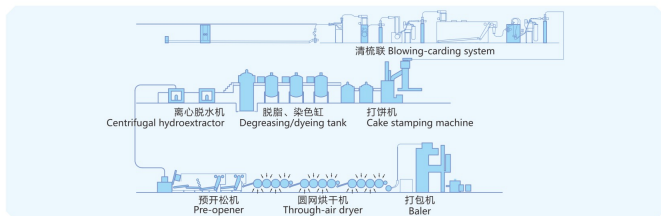
配置亮点：1.成熟可靠的清梳联系统，可以根据客户原料特点定制设备流程；  
Configuration highlights: The blowing-carding system can be customized according to the characteristics of raw materials.

2.专利设计的打饼机和喷湿喂棉系统，可有效保证棉饼密度均匀；  
Patent designed cake stamping machine and wet-spray feeding system ensure the uniform density of cotton cake.

3.烘干机采用热风穿透式圆网烘干机，圆网数量可根据产量需求灵活调节，并配置中间开松，烘干效率高、占地面积少、纤维损失少；

Through Air Drying system, the number of drum can be adjusted according to the production demand, offering high drying efficiency, compact space occupation, and minimal fiber loss with middle opening.

4.从纤维开清梳理除杂，到打饼脱脂以及烘干打包，可以根据客户需求定制设备，并提供交钥匙工程。  
The whole process line, including fiber opening, carding and impurity removing, stamping, degreasing, drying and baling, can be customized according to requirements and provided as a turnkey project.



# 化学粘合生产线

CHEMICAL BONDING PRODUCTION LINE

用途：絮片、服装衬布、填充材料

Application: Wadding, Cloth interlinings, Filling materials

原料：涤纶、粘胶等

Raw material: Polyester, Viscose, etc.

克重范围：根据产品种类和生产线配置而变化

Product weight: Varies according to product type and equipment configuration

幅宽：2.5米，3.5米

Width: 2.5 m, 3.5 m

产量：6-10吨（根据原料和产品需求不同）

Capacity: 6-10 tons/day (Depending on raw materials and product needs)

配置亮点：

Configuration highlights:

1. 专门设计的开清和梳理设备配置射线自调匀整功能，出网均匀、克重稳定  
X-ray device with the function of auto-leveling is specially designed for opening and carding system, ensures uniform web-forming and stable weight.

2. 可根据用户需求配置喷粉法、浸渍法、泡沫浸渍法等生产工艺

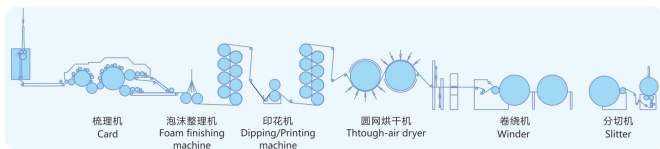
Different production processes can be configured according to user needs, such as powder injection, dipping, foamed impregnation and etc.

3. 配置在线上色、印花设备，印花辊可按用户需求定制花型和图案，实现产品差异化

Embossing rollers of online dipping and printing machine can be customized with different patterns, diversifies the products.

4. 烘干机采用表面烘干+热风穿透式，多种热源可选，根据用户产品需求定制烘干方式

The dryer utilizes surface and hot air penetration drying methods, which can be customized for different heat sources according to user requirements.



# 化妆棉片生产线

SPUNLACE PRODUCTION LINE FOR COTTON PADS

用途：化妆棉片，吸液棉片

Application: Cotton pads, Liquid absorbent pads

原料：脱脂棉

Raw material: Degreasing cotton

克重范围：150-200 gsm

Product weight: 150-200 gsm

幅宽：1.5米，2.5米，3.5米

Width: 1.5m, 2.5m, 3.5m

产量：8-20吨（根据原料不同，和配置不同）

Capacity: 8-20 tons (depends on different raw materials and configurations)

配置亮点：1. 根据原料和产品特点可选多种成网方式

Configuration highlights: The web forming process varies according to different raw materials and products.

2. 烘箱加热方式灵活可选，根据用户现场条件进行灵活调整

The dryer's heating source can be flexibly selected and adjusted based on the user's site conditions.

3. 烘箱热风循环经过优化设计，热风效率高，节能效果好

Optimized performance of hot air circulation of dryer, with high efficiency and good energy-saving effect.

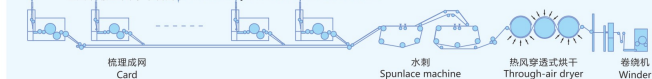
4. 可配套铺网机、针刺机或其他成网或固结方式，实现产品功能定制化

The product functions can be customized with various web forming and entanglement devices, such as crosslapper and needle punching machine.

The surface layer uses long fiber, with good strength, no flocks

面层采用长纤维，强力好，不掉屑

里层采用短纤维，节省成本 The inner layer uses short fiber to save cost



# 开清系统

## FIBER PREPARATION SYSTEM

### 产品特点：

Product features:

1. 模块式设计，根据产品和产量需求，进行定制化设备配置，从而实现精确配比、均匀混合的目的。  
The equipment configuration is customized based on the product and production requirements through modular design, enabling precise proportioning and mixing.

2. 纤维喂入后的输送、混合和开松工序全流程封闭；接触纤维的机件大量采用不锈钢、铝合金以及工程塑料等材料，减少对纤维原料的污染。

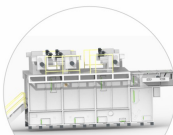
After fiber feeding, the conveyor, mixing, and opening processes are conducted in a closed space. Fiber contact parts are made of stainless steel, aluminum alloy, and engineering plastics to minimize raw material pollution.

3. 打手、辊子等断面密封经过优化提升，避免塞花；各单元机配置有活门和清洁窗口，便于清洁和维护。

The sealing of the beater and roller cross section is optimized to prevent fiber clogging. Each unit is equipped with a valve and cleaning window for easy maintenance.

4. 全流程光电传感器控制，自动化程度高，稳定性强。

The full process is controlled by photoelectric sensors, ensuring high automation and stability.



# 梳理成网

## CARDED WEB FORMATION

### 产品特点：

Product features:

1. 模块化设计：喂入、预梳理、中间转移、主梳理、成网、出网等各个部分均模块化设计，便于维护和清理。

1. Modular design: feeding, pre-carding, middle transfer, main carding, web forming, web out and other parts are modularly designed, and easy to maintain and clean.

2. 成网方式具备高速气流杂乱成网和凝聚成网：独立研发的弧板和漏底结构直线度更高，可以实现更小隔距调整，更易于控制气流，显著提高网面质量和纵横强力。

2. Web forming methods with high-speed airflow random process and condensing process: The independently developed arc plate and underscoring structure features higher straightness accuracy, smaller spacing adjustment, easier air flow control, significantly improving the fiber web quality and vertical and horizontal strength.

3. 使用负压抽吸压网装置以及网下抽吸装置，实现纤维网在罗拉与出网帘，以及前后出网帘之间转移时“零牵伸”，减少对网面结构的破坏。

3. Negative pressure suction web press device and under-web suction device are equipped to achieve "zero draft" when the fiber web is transferred between the roller and the web-out apron, and the front and back web-out apron, to reduce the damage to the fiber web structure.

4. 可选配X射线匀整装置，精准控制喂入定量，提高纤网和布面的均匀性；降低产品CV值；更换品种时，操作简单快捷、易上手，提高客户生产效率。

4. Optional X-ray auto-leveling device accurately controls the feeding quantity, improves the uniformity of fiber web and fabric, and reduces the product CV value. The product variety can be changed quickly and easily, improving production efficiency.



## 水刺 SPUNLACING

### 产品特点：

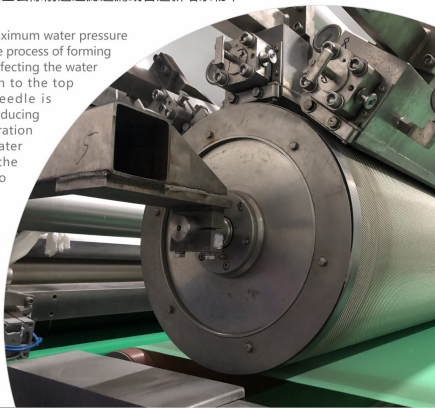
Product features:

1. 抽吸辊筒抽吸部分采用的大直径不锈钢抽吸圆管，以短距离导流通道，利用虚拟仿真和有限元技术对内部气液混合体的流动状态进行分析，针对流体粘滞力和紊流造成的能量损失优化设计，提高了抽吸风机的效率。

2. 高效节能的水刺头，最高水压可达50Mpa。采用FLUENT软件模拟水刺流道形成动力水针的过程以及影响水针射流的主要因素，可将水流平稳地输送到水针板上部，确保水针同水针板完全垂直，减少能量损失。过滤网对高压水在形成水针前做最终过滤，完全去除前道过滤遗漏或管道新增杂物，避免损坏水针板从而导致产品缺陷。

The energy-efficient water strip can achieve a maximum water pressure of 50Mpa. FLUENT software is used to simulate the process of forming the power water needle and the main factors affecting the water needle jet, ensuring smooth water transportation to the top of the strip. This guarantees the water needle is completely perpendicular to the water strip, reducing the energy loss. The filter performs the final filtration of high-pressure water before forming the water needle, completely removing the omission from the front filter or the new debris from the pipeline to avoid damaging the water strip and resulting in product defects.

3. 脱水抽吸箱采用铝合金一次控制成型，内壁光滑，阻力小，箱体内存水，回水流畅。  
The dewatering suction box is made of a single draw of aluminum alloy, resulting in a smooth inner wall, minimal resistance, and efficient water drainage without any stagnant water.



## 烘干系统 DRYING SYSTEM

### 产品特点：

Product features:

1. 多圆网水平依次排列，产品在烘房内呈水平S形路径前行，可实现对其两面进行交替烘干。

The cylinders are arranged horizontally, and the products move forward inside the chamber along an s-shaped path. This allows for alternating drying on both sides.

2. 每只圆网单独配置一套热风循环系统，循环风机功率可根据产量需求灵活配置，加热装置安装在循环风机叶轮的上游和下游。

The cylinders are each equipped with a hot air circulation system, and the power of the circulation fan can be flexibly configured according to production needs. The heating device is installed above and below the impeller of the circulation fan.

3. 用离心式、后倾多叶片大直径风机叶轮，风压高穿透力强、风量大大循环快，提高了热风穿透效率，实现节约能耗的效果。The high wind pressure and fast air circulation of the centrifugal/backward multi-blade fan impeller with a large diameter improve the efficiency of hot air flow, achieving energy savings.

4. 采用多组热风导流板均匀风结构，远端、中端和近端均风板采用不同开孔率，确保幅宽方向上热风均匀。

The hot air is evenly distributed in the width direction by adopting multiple sets of hot air and wind guide plate structure with different aperture ratios at the distal, middle, and proximal ends.

5. 排湿风道上配置温湿度检测仪，检测结果自动反馈给控制系统，自动调节排湿风机的转速，减少热量的无控制排放，降低能耗，减少生产成本。

The temperature and humidity detector is installed in the exhausted ducts, automatically feeding back detection results to the control system. The rotation speed can be adjusted automatically to reduce heat from uncontrolled emissions, as well as energy consumption and production costs.

6. 烘房内部温度采用PID模糊控制，根据铂热电阻测温结果与工艺设定温度的对比，自动调整PID参数，对燃烧系统的控制阀实行连续的控制和调节，结合燃烧器热输出调节，使烘房温度波动控制在 $\pm 1^{\circ}\text{C}$ 之内。

The chamber internal temperature adopts PID fuzzy control. The PID parameters are automatically adjusted based on the comparison between the platinum resistance temperature measurement and the set temperature. By continuously regulating the combustion system and adjusting the burner heat output, the chamber temperature fluctuation can be kept within  $\pm 1^{\circ}\text{C}$ .

