

打造装备旗舰 引领纺织发展
CREATING A FLAGSHIP IN MANUFACTURING,
LEADING THE DEVELOPMENT OF TEXTILE INDUSTRY



青岛宏大纺织机械有限责任公司
QINGDAO HONGDA TEXTILE MACHINERY CO., LTD.

VCRO-I 细络联型自动络筒机 AUTO-WINDER LINKED WITH SPINNING FRAME



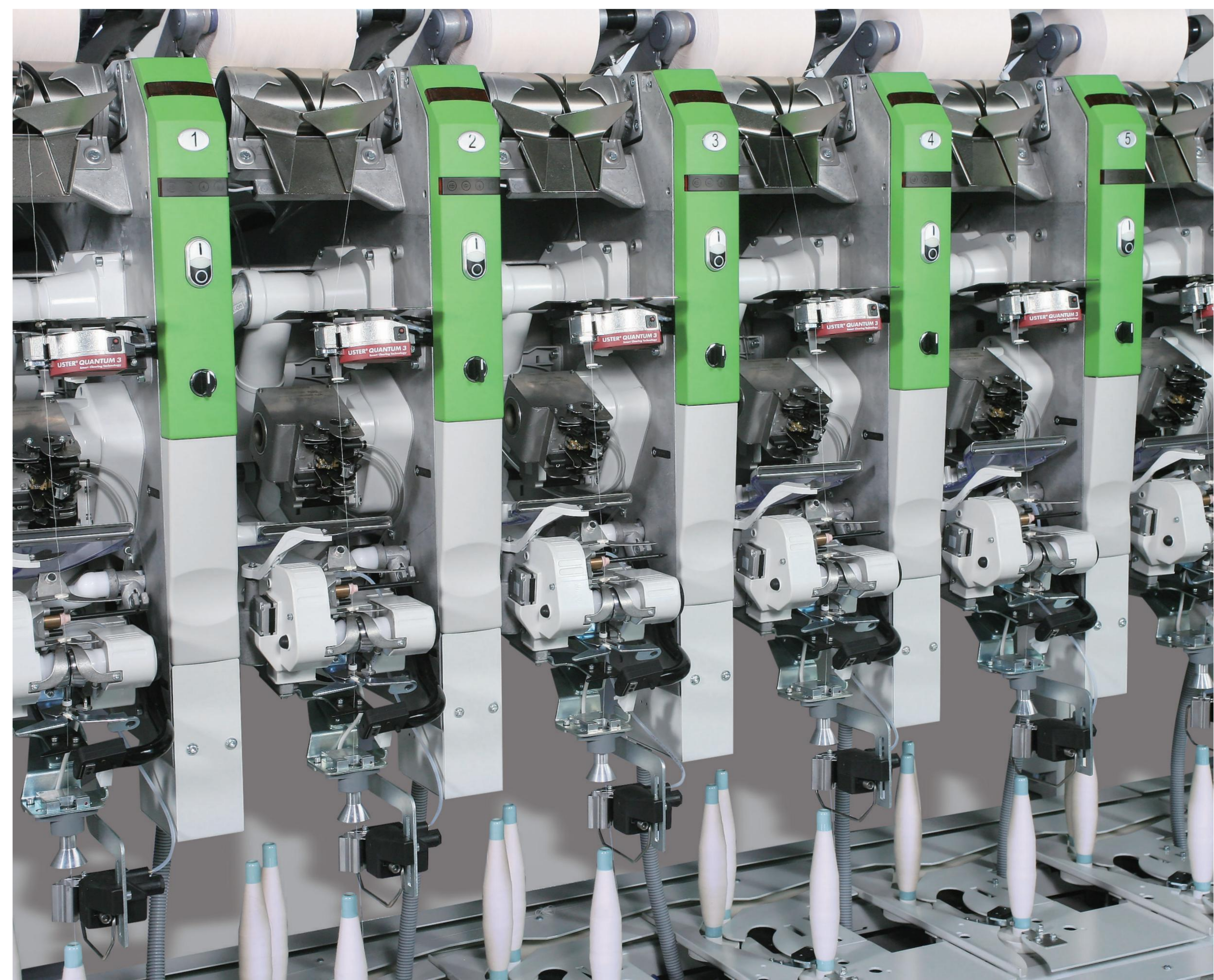
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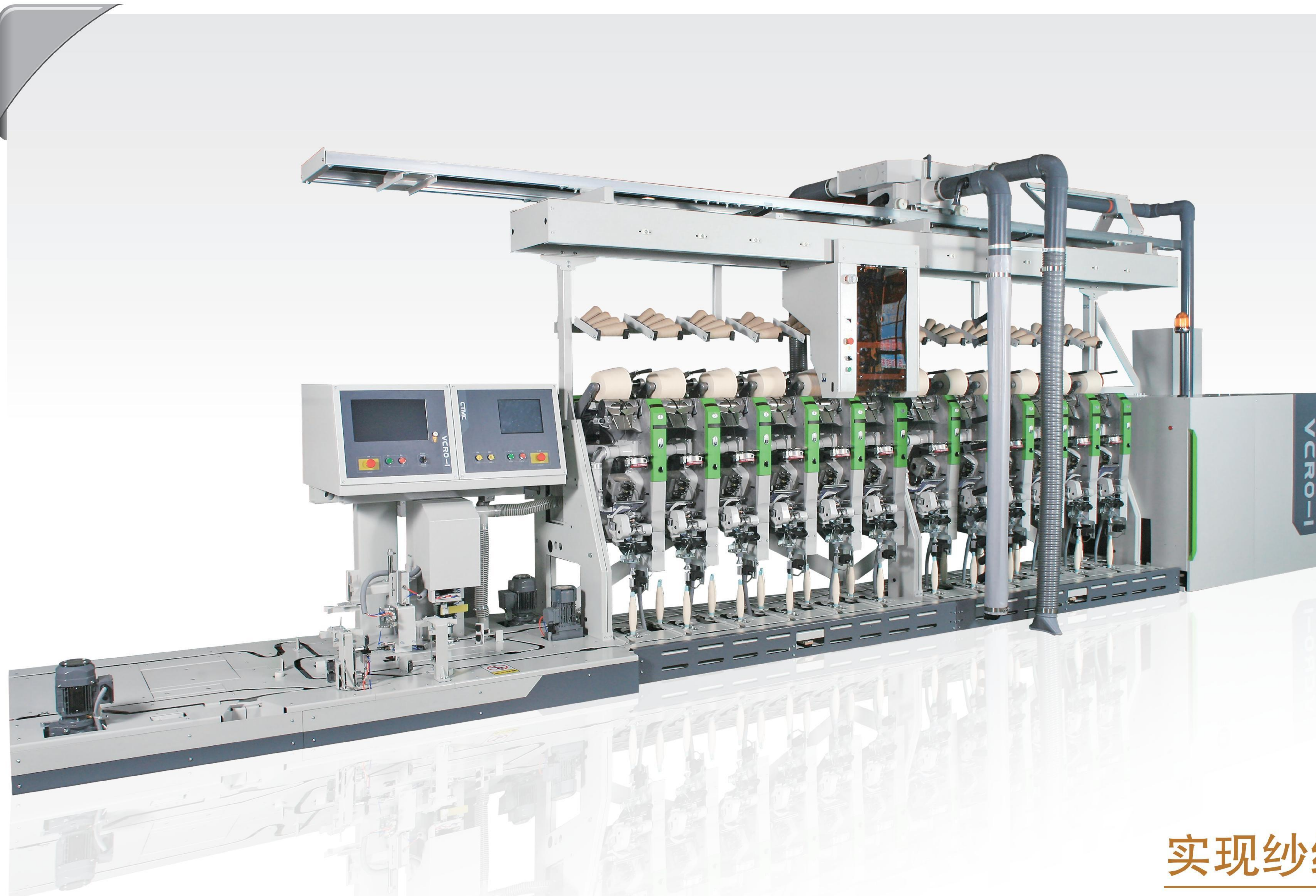
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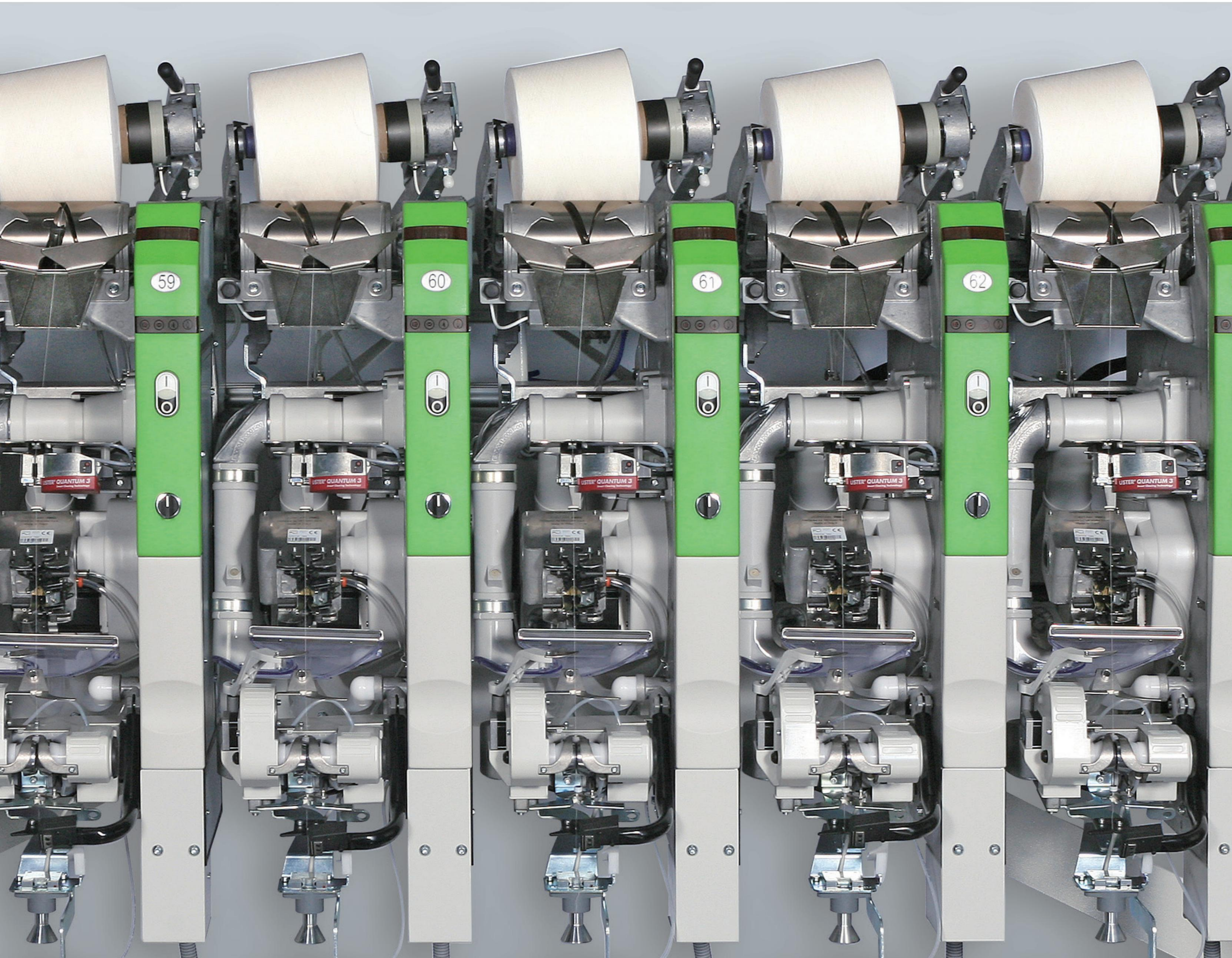
VCRO-I 细络联型自动络筒机 AUTO-WINDER LINKED WITH SPINNING FRAME



该机型是青岛宏大自主研发的新一代托盘型自动络筒机，可与任一型式的细纱机对接，细纱机最多可配置1800锭，能满足用户从6英支至最高支数纱线纺纱要求，设备稳定可靠性进一步提升，产品成纱质量优良，操作更为方便简单。其最大亮点是配置了细纱质量追踪系统，利用RFID射频技术，对问题管纱能追溯到细纱锭子，从而快速排除细纱问题，提高纱线质量。

This type is the new generation of auto-winder with tray is developed by QDHD's own research, The new auto-winder can meet the requirements of customers from Ne.6 to the highest count of yarn. It's featured with improvements in stable and reliable performance, winding into perfect package and easier to be operated. Its brightest spot is the spinning quality tracking system, by using RFID ie. radio-frequency technique, the faulty bobbins can be traced back to the spindle of the spinning machine, thereby to solve the spinning problem and improve the quality of yarn.

实现纱线质量 **全程** 监控
A SYMBOL OF EFFECTIVE YARN QUALITY CONTROL



高品质 HIGH QUALITY

实现了管纱自细纱机到自动络筒机的自动输送，改善了纱线的清洁情况，避免了纱线的接损伤。

Automatic bobbin feeding from spinning frame to auto-winder improves yarn cleanness and avoids yarn contact damage.

高效率 HIGH EFFICIENCY

解决了长期以来国际上一直难以解决的纺纱工艺中细纱卷装和速度的矛盾，大幅度提高了细纱机的锭速，提高了生产效率。

To solve the friction between package of spinning frame and speed so as to enhance the spindle speed of spinning frame and increase productivity.

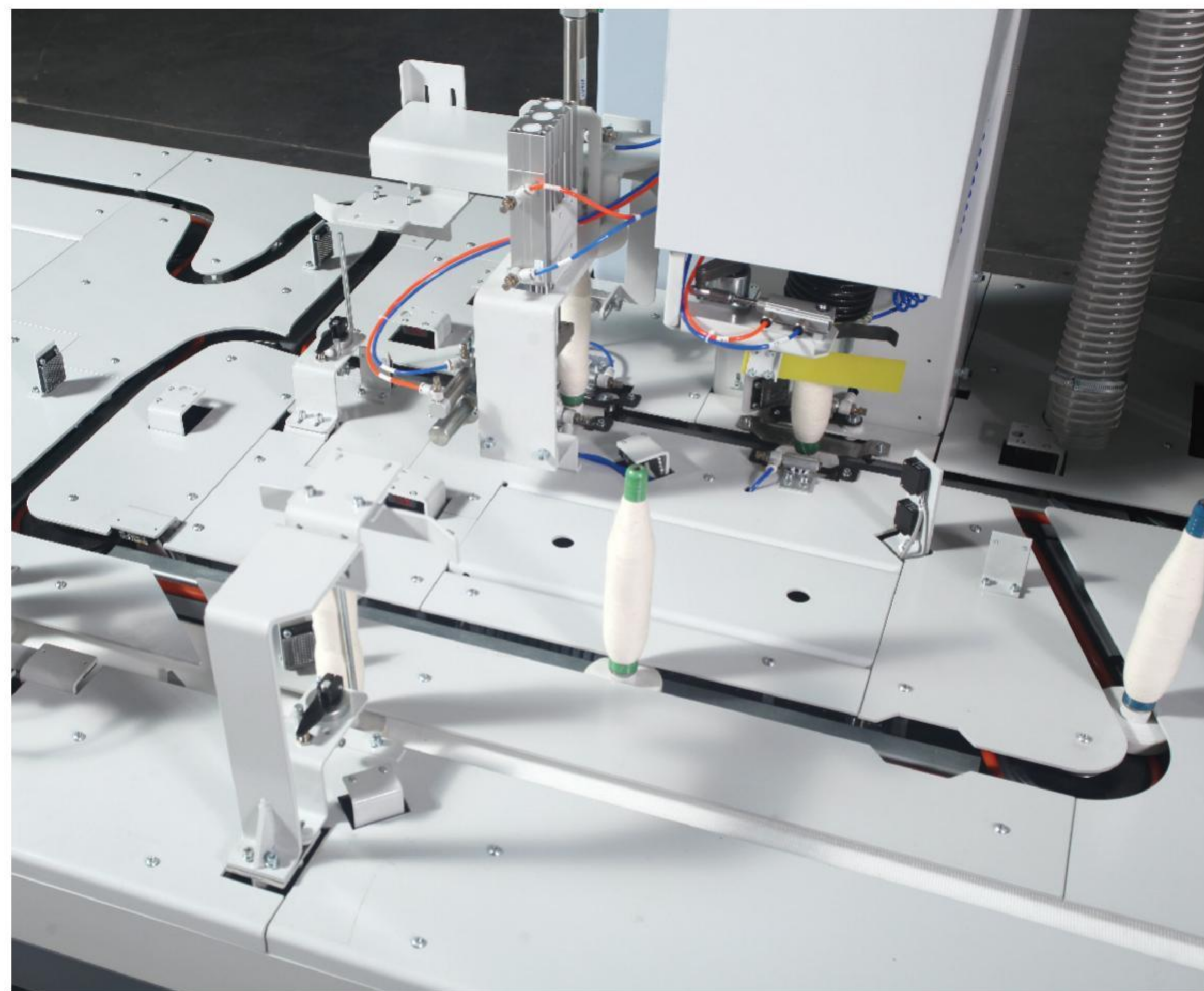
自动化水平提高 节省人工 ENHANCING AUTOMATIC LEVEL SAVING MANPOWER

不用人工落纱、插管，完全节省了人力，使棉纺厂用人多、劳动强度大的两个工序直接连接，实现自动化、连续化生产，提高了产品质量和劳动生产率。

To transport yarn package and feed bobbin automatically so as to save labor and connect the two labor-intensive procedures directly not only to realize automation and continuous production but also to improve quality and enhance productivity.



优质高效的生头装置 HIGH EFFICIENT AND HIGH QUALITY PIECING UNIT



- ★特制光电传感器，适时检测生头现状；
- ★上下风门控制，提高生头成功率，有效控制空气消耗量；
- ★垂直吸风采用直线气缸上下运动，提高运动精度；
- ★与管纱直径相配合合理的吸风夹头及涡流吹风系统，大大提高了生头率。
- ★Special photoelectric sensor for monitoring yarn picking status in real-time
- ★Upper and lower air door control to enhance picking rate and efficiently control air consumption efficiently;
- ★Vertical liner suction cylinder moves up and down to enhance motion precision;
- ★Reasonable suction clip and vertex blowing system can greatly enhance picking rate.

高效智能的落筒小车 HIGH EFFICIENT, INTELLECTUAL NEW TYPE OF DOFFING CARRIAGE



- ★高效自动换筒，落筒周期短；
- ★行走速度快（60m/min）；
- ★适应性强，可落筒纱直径最大 $\Phi 320\text{mm}$ ；
- ★智能化的单锭自动重启；
- ★简洁的自动生头动作，生头纱线位置可调；
- ★智能化判断筒管、筒纱存在，确保落筒顺利进行；
- ★设有手动和自动选项，便于进行落筒调节；
- ★自动筒纱输送；
- ★小车行走速度可达60m/min；
- ★高效自动换筒，换筒周期为13.5秒；
- ★预满筒等待功能，极大地提高小车运转效率。
- ★High efficient automatic doffing and doffing circle;
- ★Traverse speed 60m/min;
- ★Doffing package diameter max $\Phi 300\text{mm}$;
- ★Intellectualized single spindle automatic re-start;
- ★Brife automatic picking action and piecing yarn fixing position is adjustable;
- ★Smartjudgement of bobbin and package yarn in existence to ensure favoring doffing;
- ★Manual and automatic is optional for convenient doffing adjustment;
- ★Automatic package transportation;
- ★Trolley traverse speed up to 60m/min;
- ★Efficient and automatic package change with doffing cycle of 13.5s;
- ★Pre-full wait package function to enhance trolley efficiency greatly.



完全自动供纱 COMPLETELY AUTOMATIC YARN SUPPLY

- ★由细纱机到络筒机的络纱采用了全自动的喂给，完全脱离了人工供纱，单锭后留有备用管纱输送通道；
- ★管纱输送增强了逻辑判断，使得CBF处对满管、空管、生头、再生头、残纱处理、止动、放行等动作时，互不干扰，做到有序运行；
- ★换管采用自动监测，自动喂给的方式；
- ★空管在输送回路皮带的作用下自动返回到细纱机；
- ★管纱托盘输送，消除了对管纱表面的损坏，减少了毛羽增量。

- ★Bobbin supply from spinning frame to auto-winder is completely automatic, free of manual feed. Behind single spindle it is designed with spare bobbin convey channel;
- ★Bobbin conveyor increase logic judgment to make following actions such as full bobbin, empty bobbin, picking, re-piecing, waste yarn treatment, stop, pass in CBF not interfered with each other;
- ★Bobbin change is automatically detected and feed;
- ★Empty bobbin is automatically transported back to spinning frame by loop belt;
- ★Bobbin is transported by support disc that eliminate bobbin yarn surface damage and reduce pilling increment.





多种捻接装置可自由选择 保证不同品种纱线接头质量

CHOICE OF VARIOUS SPLICERS GUARANTEE OF FINE JOINT QUALITY

与世界领先空捻器制造商合作，保证接头质量紧跟世界潮流。捻接装置采用模块化设计，拆装维修方便。
Cooperation with the leading splicer manufacturers in the world guarantees fine joint quality and meets the trend of textile industry. Splicing system adopts modular-design for easy installation and maintenance. Different types of splicers can be interchanged according to different customer requirements.

4923Q型水雾捻接器 4923Q Aquasplicer

使用空气和水的捻接器，主要用于竹节纱、包芯纱、紧密纺等各种纤维的捻接。

Aquasplicer mainly suitable for the splicing of slub yarn, core spun yarn and compact ring spun yarn.



完美的接头
Perfect joint

798Q型空气捻接器 798Q JOINTAIR

通过更换不同型号的捻接腔和压盖，可适用棉、毛、化纤及其混纺纱的捻接。

Different chambers and covers can be adapted to suit the specific requirements of the material to be spliced, such as cotton, wool, manmade staple fiber and their blends.



798Q型空气捻接器
798Q JOINTAIR

纱线成型高品质 Superior package quality

优异的机械设计—全新的筒子握持机构

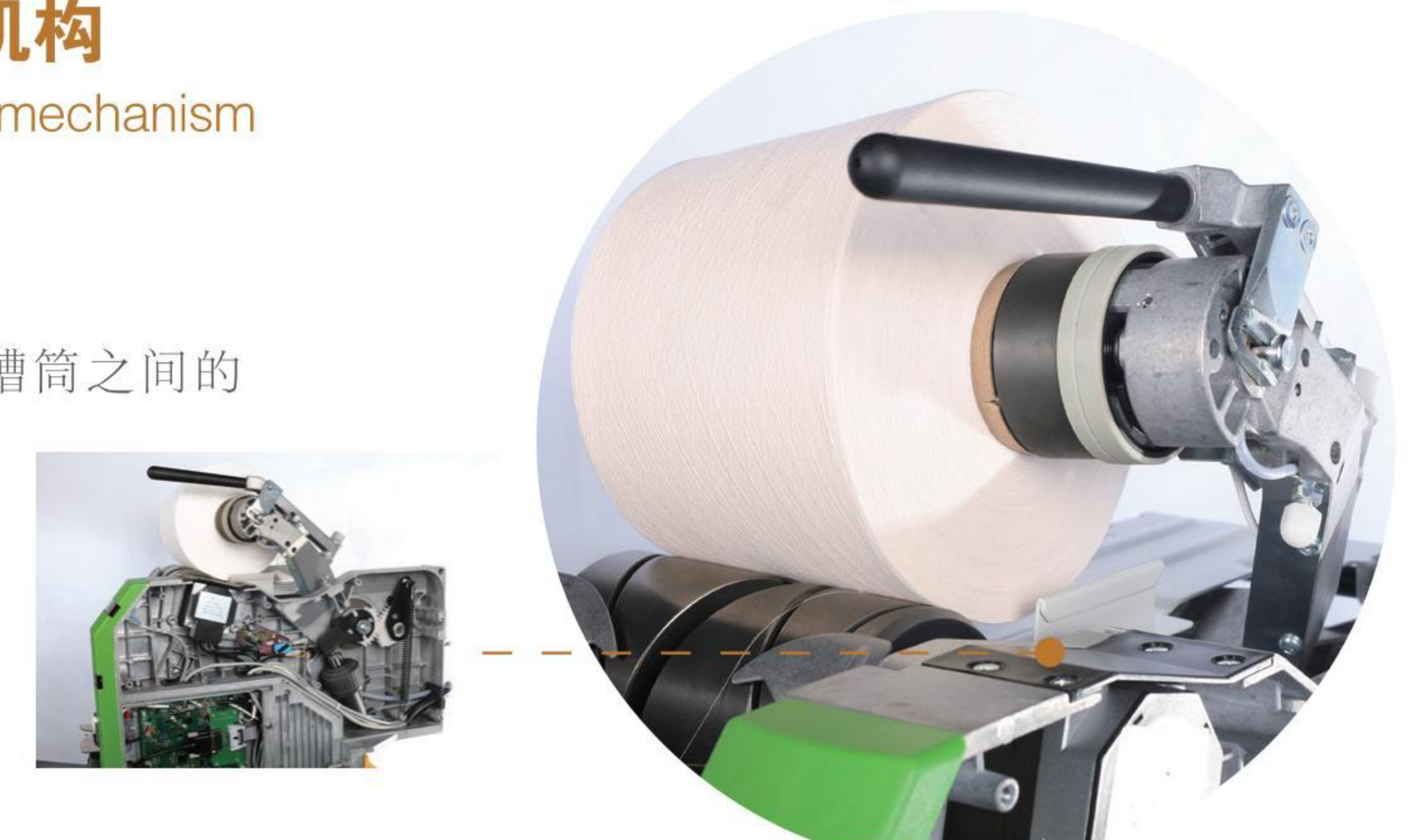
Excellent mechanical design – new package holding mechanism

筒纱平衡加压机构

Package balance pressurization mechanism

随着筒纱直径加大，平衡力逐渐增加，保持筒纱和槽筒之间的接触压力基本不变，确保筒纱密度均匀，成型良好。

As the increase of the package diameter, the balance force increases gradually to make the contact pressure between the drum and the package basically unchanged, so as to ensure uniform package density and perfect package profile.



筒纱握持机构

Package holding mechanism

采用双端握持后置式机构：

1. 机构稳定可靠，减少筒子的抖动，有利于获得成形良好的筒子。
2. 间歇式防叠效果得到保证，筒纱无重叠。

Adoption of double end holding and postposition mechanism:

1. the stable and reliable mechanism reduces package tremble in the greatest extent, favorable for obtaining a well profiling package.
2. The intermittent anti-patterning effect is guaranteed, and there is no overlap of the yarn.



798Q新型集中控制空气捻接器 798Q jointair

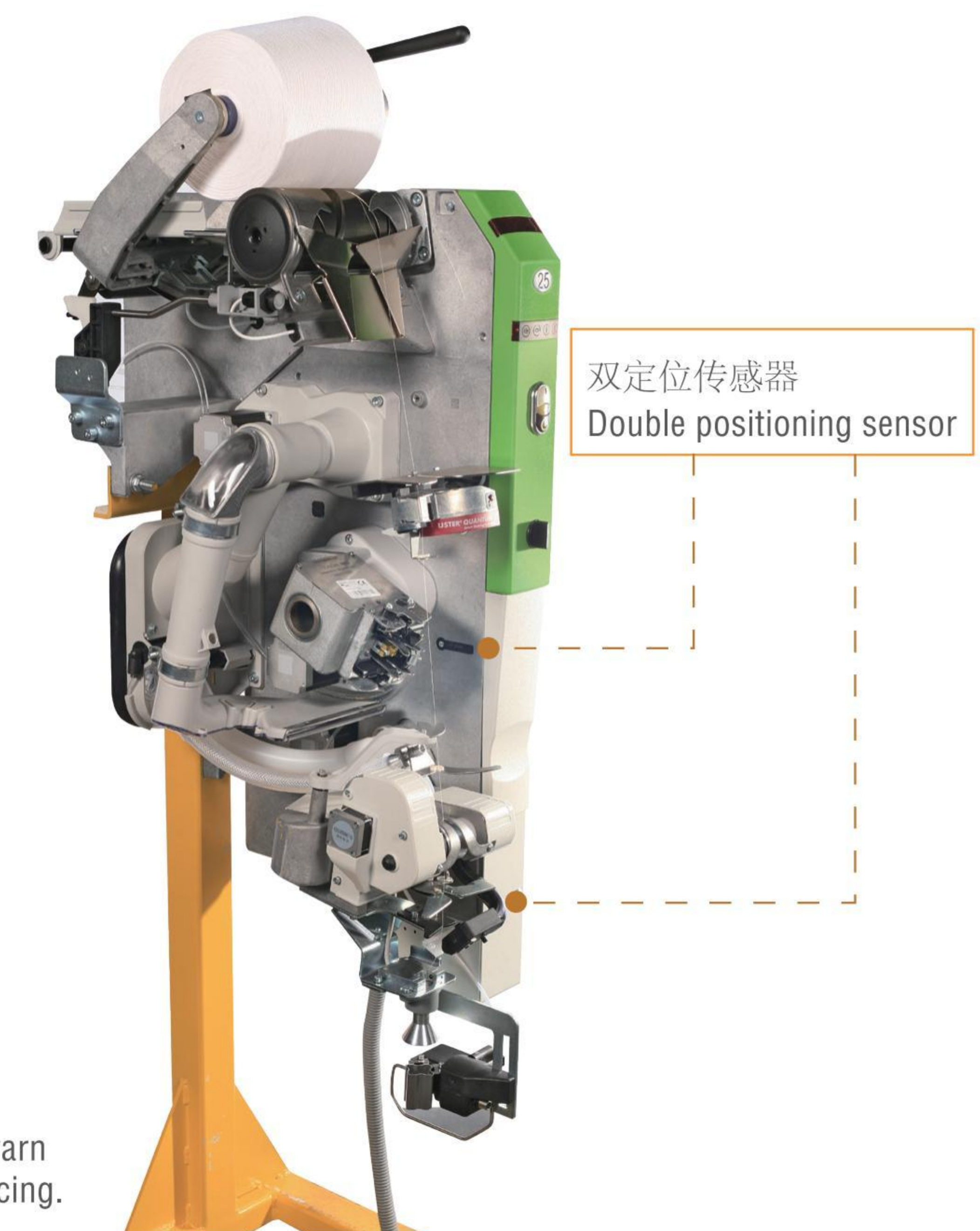
捻接参数可在上位机集中设定，提高单锭捻接质量一致性，使特殊品种纱线同样获得外观完美的接头。

Twisting parameters can be centralized set in ICS to enhance the uniformity of spindle twisting quality. optional to make special yarn get perfect joint.

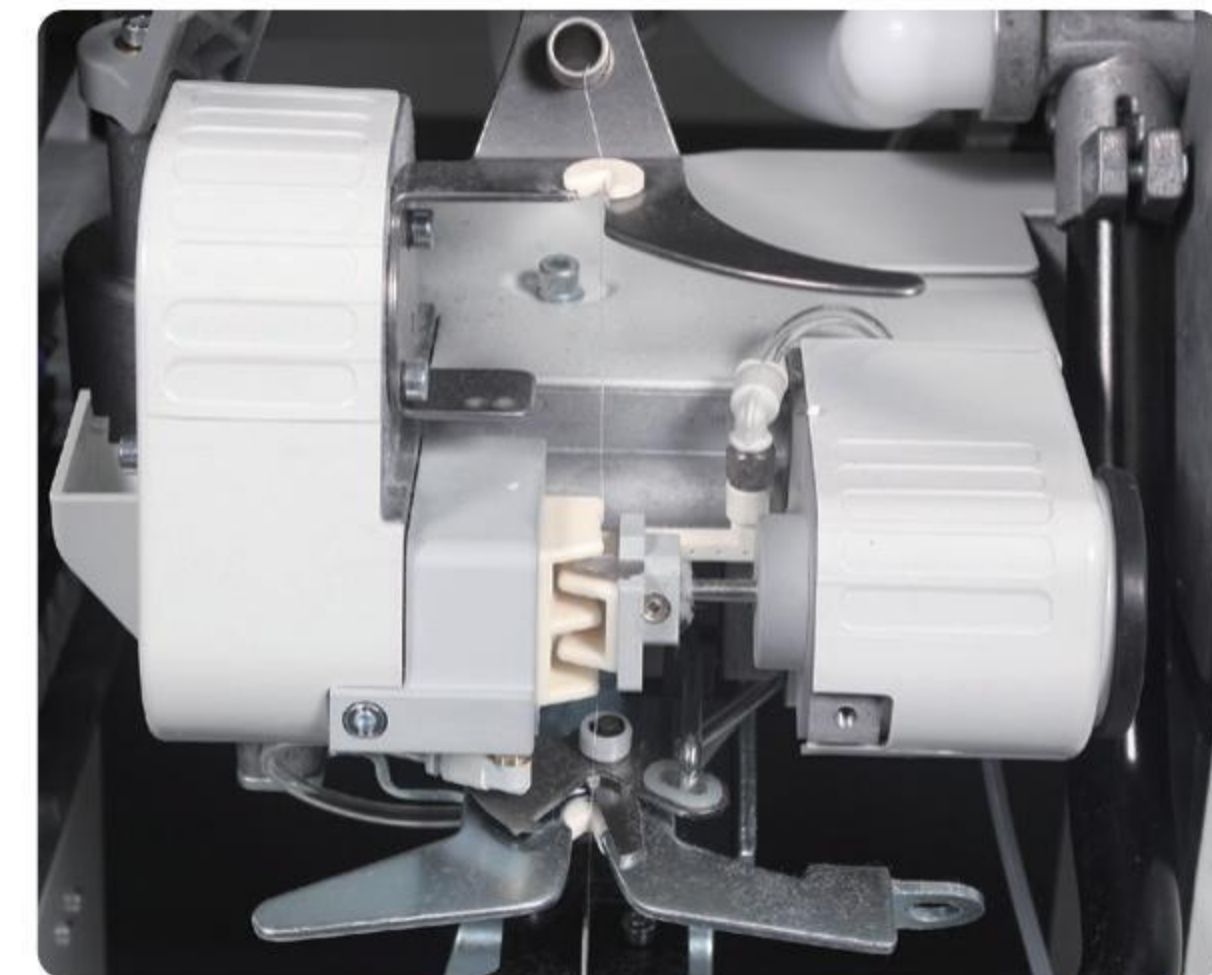
管纱吸嘴双定位 Twin positioning on suction nozzle

传感器的设计可确保下纱准确地送入捻接器内，进一步提高捻接接头的质量。

The design of twin positioning sensors on suction nozzle can ensure the yarn could be introduced accurately into splicer and improve the quality of splicing.



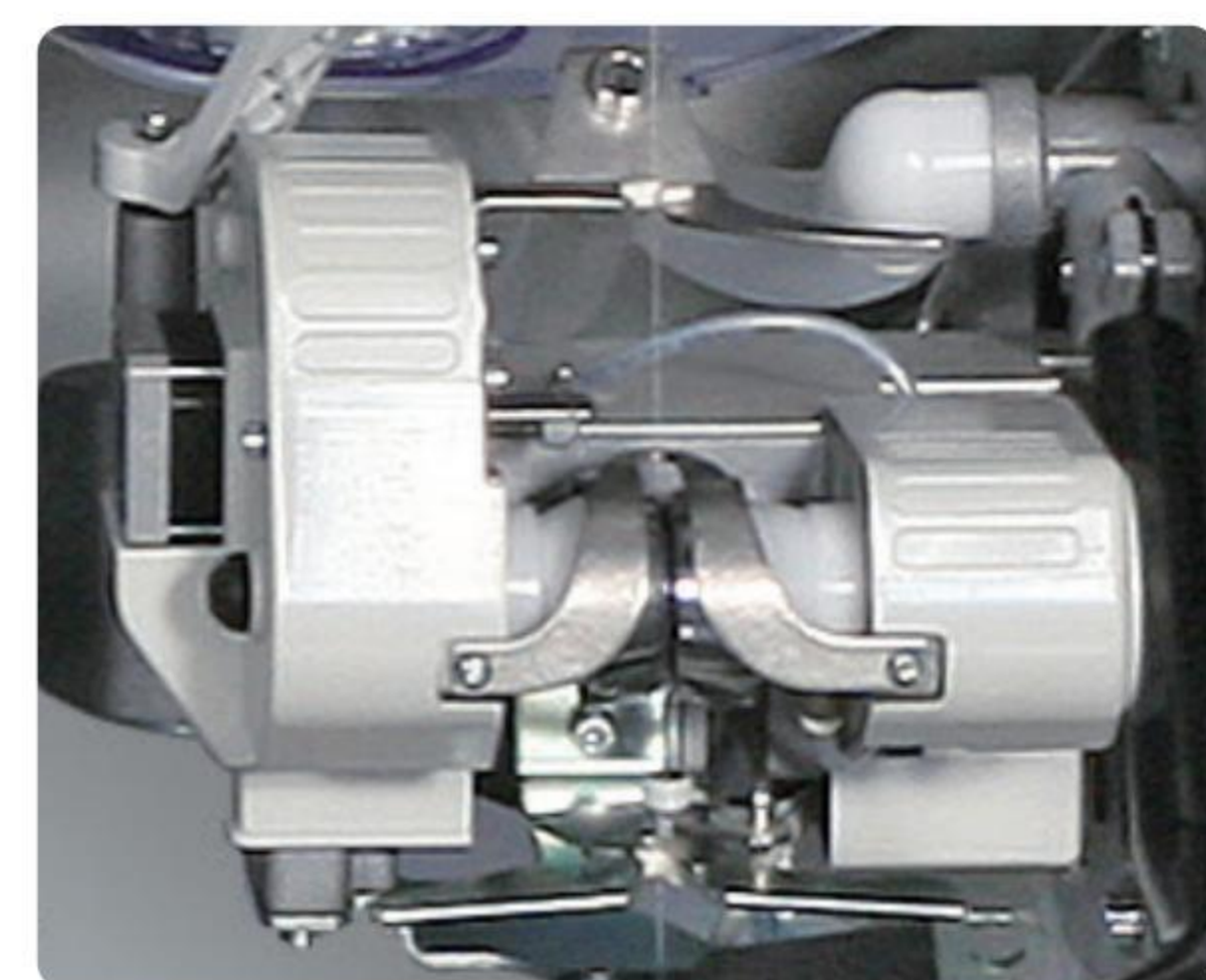
双定位传感器
Double positioning sensor



栅式张力 Grid type tension

多点式加压有效吸收突发张力波动
纱线稳定适用于特殊品种纱线检测。

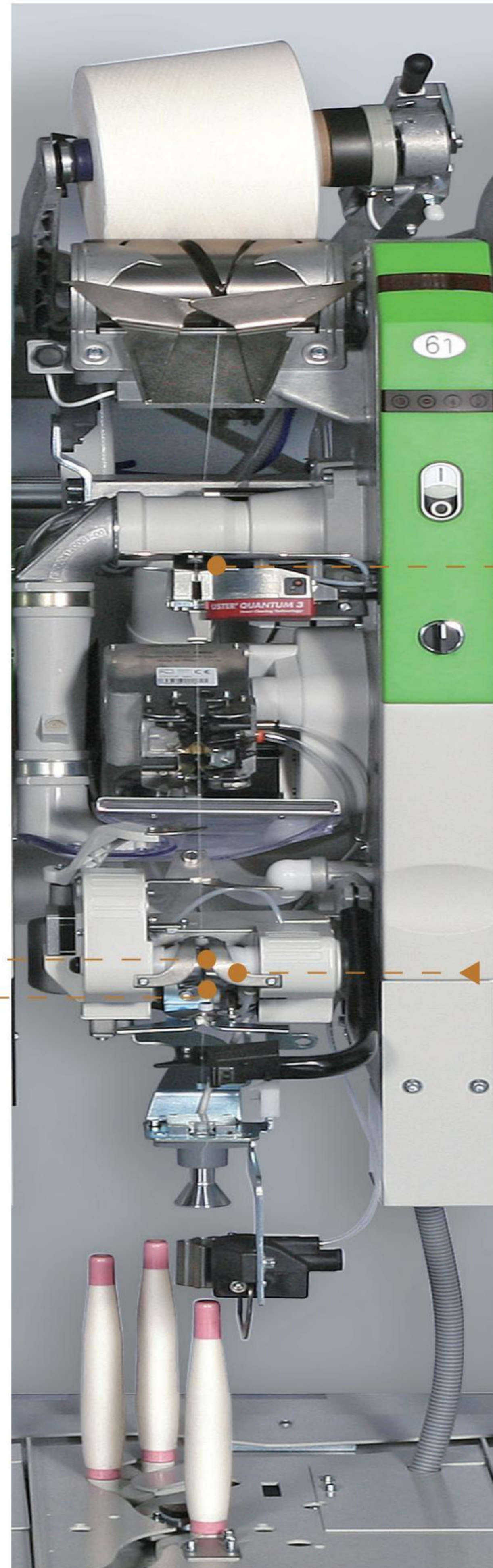
Multi point pressurization finitely absorbs
burst tension fluctuation, favorable for yarn
stability and abnormal fiber detection.



盘式柔性张力 Disc flexible tension

无固定支点，自动优化张力。

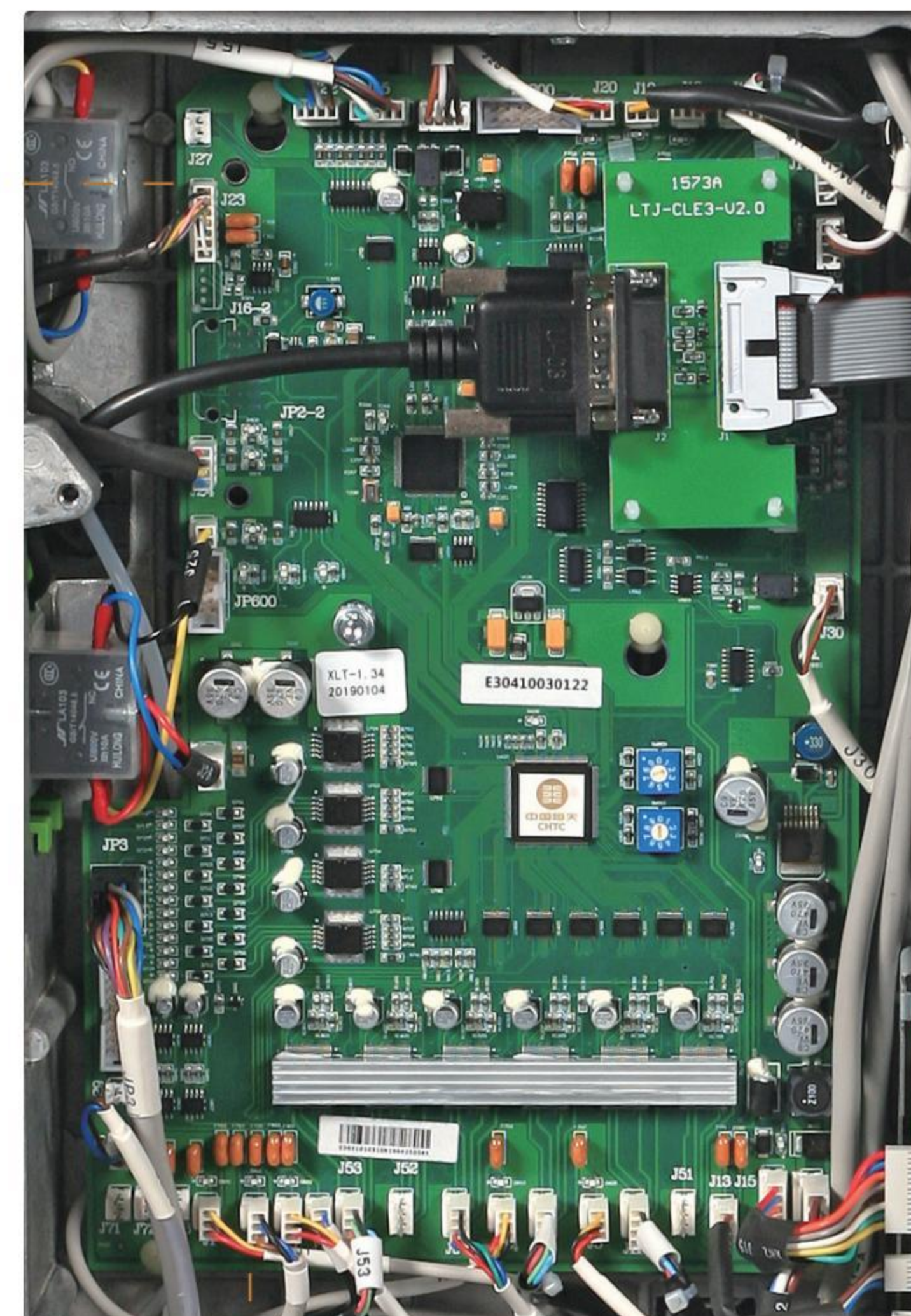
No fixed fulcrum, automatically optimizing tension.



恒张力控制系统

Constant tension control system

张力传感器实时检测张力值反馈。
Tension sensor monitors tension value
feedback in real-time.



单锭控制板实时调整张力输出。

Spindle control board adjusting tension output in real time.



高质量清纱 全程控制纱线质量

TOP LEVEL ELECTRONIC YARN CLEARER, WHOLE PROCESS CONTROL OF YARN QUALITY

电子清纱器,对纱线质量进行全程控制,包括对接头质量的控制;对于正常卷绕段和接头处采用两种不同清纱设置。

Electronic clearers control yarn quality, including yarn joint quality, during the complete winding process. Two different yarn clearer settings are adopted for normal yarn winding and yarn joint respectively. The most advanced electronic yarn clearer models can be equipped. Foreign fiber detecting function can be chosen as optional.



USTER QUANTUM4.0



LOEPFE YARNMASTER PRISMA



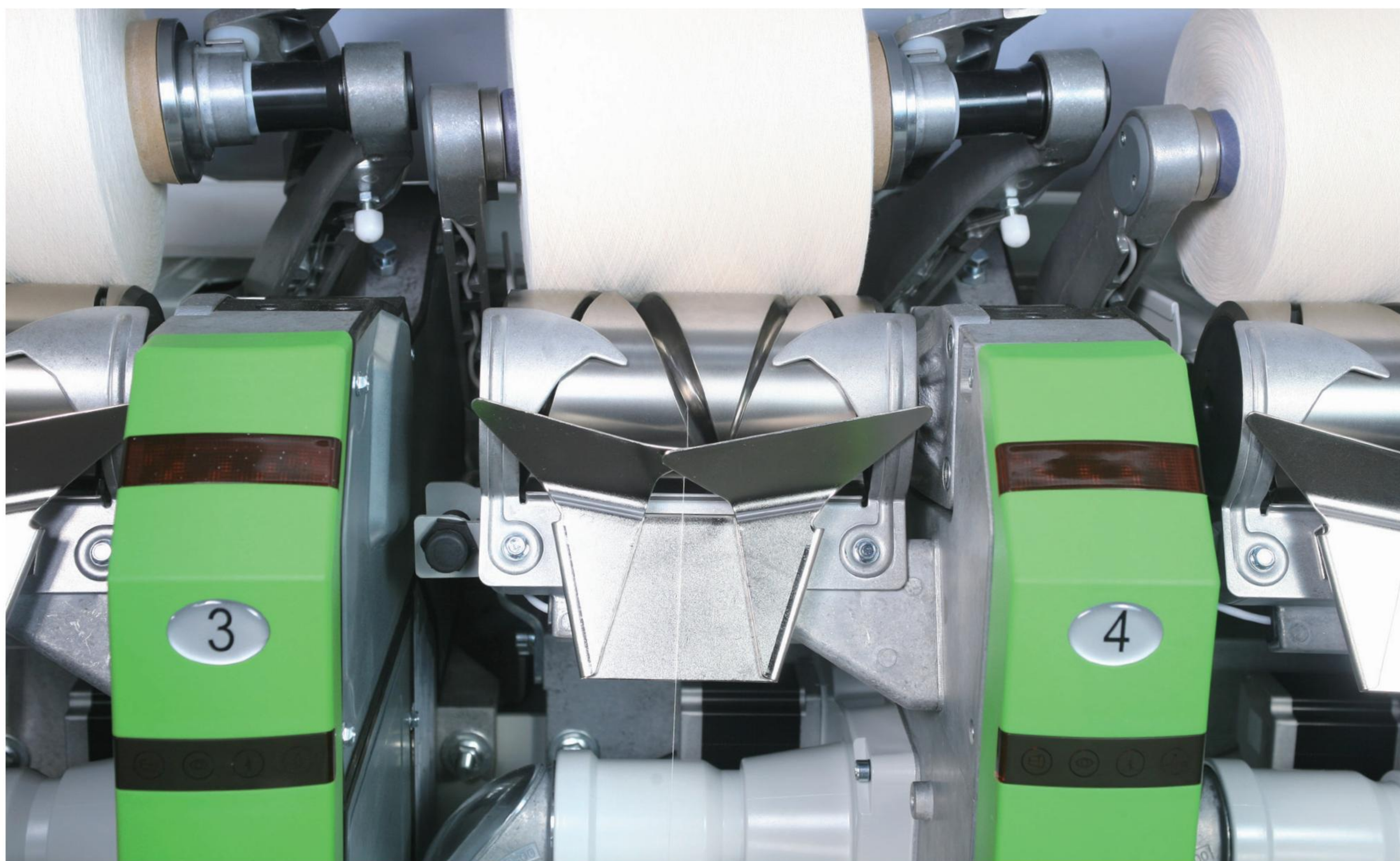
配置了细纱质量追踪系统,利用RFID射频技术,对问题管纱能追溯到细纱锭子,从而快速排除细纱问题,提高纱线质量。

Equipped with spinning quality tracking system, using RFID radio frequency technology, the problematic tube yarn can be traced back to the spinning spindle, so as to quickly eliminate spinning problems and improve yarn quality.

槽筒采用无刷电机同轴驱动 提高了传动效率，改善卷装质量 Drum driven by a coaxial connected brushless DC motor

- ★槽筒采用无刷电机同轴驱动，提高了传动效率，降低了动力消耗，卷装质量得到改善。
- ★采用直流无刷电机同轴驱动槽筒，与传统的皮带传动相比，由于消除了皮带摩擦和滑动所造成的功率损失，因而降低了电力消耗，提高了生产效率。
- ★电子式防叠系统消除了条带纱的出现，防叠功能贯穿在槽筒运转的全过程；防叠周期和幅度在监控系统设置的基础上随筒子直径的增长自动调节。
- ★筒纱卷绕时，电子清纱器监控实际卷绕过程，发生断纱和纱疵时，支臂立即抬起，筒纱完成刹车，保证了筒纱在刹车瞬间不和槽筒产生摩擦。
- ★槽筒启动是逐渐加速的，保证了筒纱与槽筒间的同步，在卷绕过程中，筒纱和槽筒间无滑移，保证了筒纱定长的精确性。

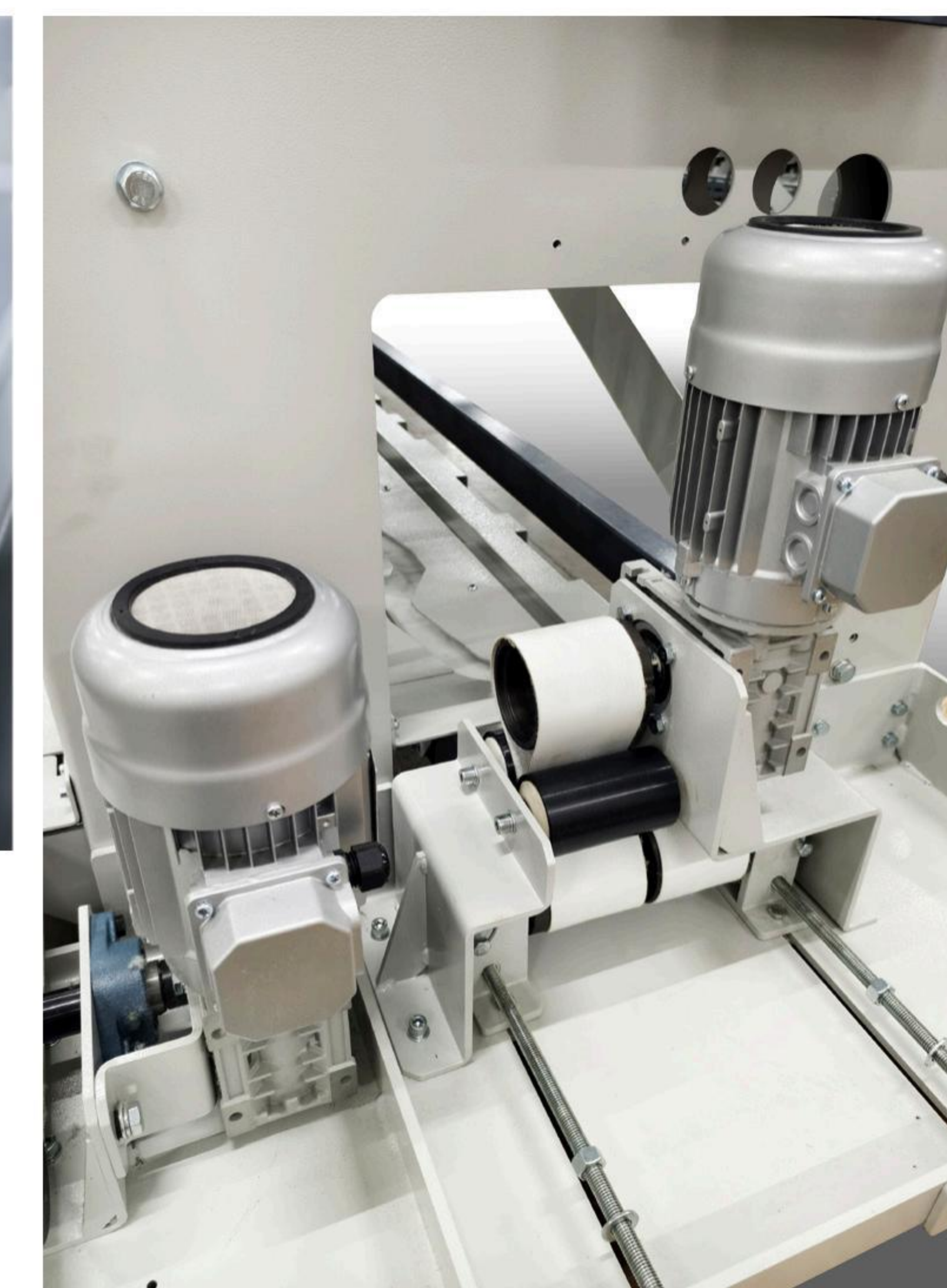
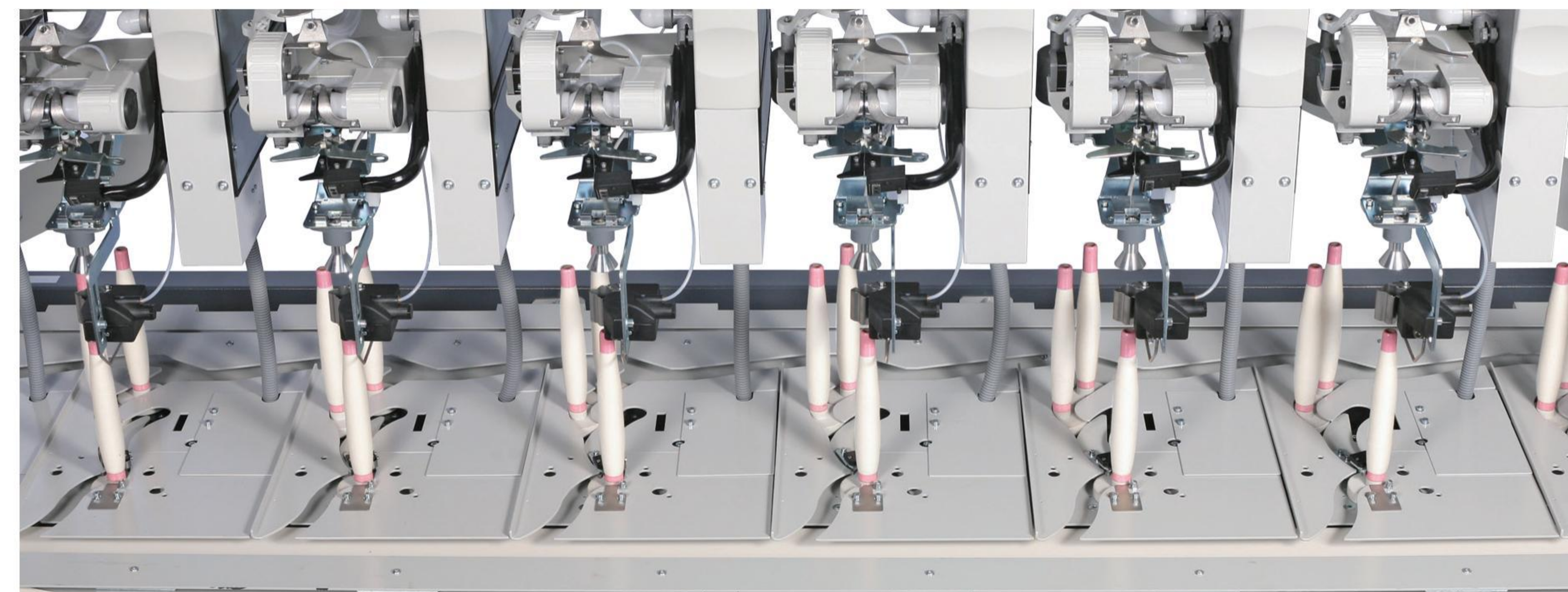
- ★Drum driven by a coaxial connected brushless DC motor, aiming at high driving efficiency, low power consumption and superior package quality
- ★Compared with the traditional belt drive, the coaxial drive eliminates the power loss caused by belt friction and sliding. Thereby the productivity is improved due to the lower power consumption.
- ★Electronic anti-patterning system functions during the whole winding process to eliminate the formation of critical patterned yarn. The anti-patterning cycle and range is pre-set in HMI and changed automatically according to the dynamic package diameter.
- ★Yarn clearer monitors whole winding process. When yarn breaks or defect occurs, package lifts instantaneously for package brake, which ensure no friction between package and drum during instantaneous brake.
- ★Drum speed is accelerated gradually which ensure synchronization and free of slippage between package and drum during winding process and ensure precise package yarn length.



高效管纱输送系统 High efficient bobbins delivery system

- ★空满管均采用单电机传动单根输送带，电机端及张紧端均带皮带调偏功能，传动稳定可靠，调节方便。

The empty and full bobbins are transported independently by single belt driven by single motor, and the motor end and tension end are equipped with belt deflection adjustment mechanism to ensure transmission stable and reliable.



- ★等待位的筒纱输送系统,可提供更多的筒纱存储位置,减少收纱工作量。
- The package conveying system with waiting position can provide more package storage positions and reduce the work load of yarn collector.

- ★空管输送采用前二输送带配置，独立电机驱动，有反转、停转功能，实现高效顺畅排空管的同时节约能源。
- The empty tube conveyor adopts the first two conveying belts, which are driven by independent motor and have the functions of reverse and stop to realize the efficient and smooth empty tube discharge and save energy at the same time.



单锭智能报警系统 GUARANTEE OF FINE JOINT QUALITY

智能化单锭-智能控制面板 Intelligent spindle - intelligent control panel

上纱部分 Top unit

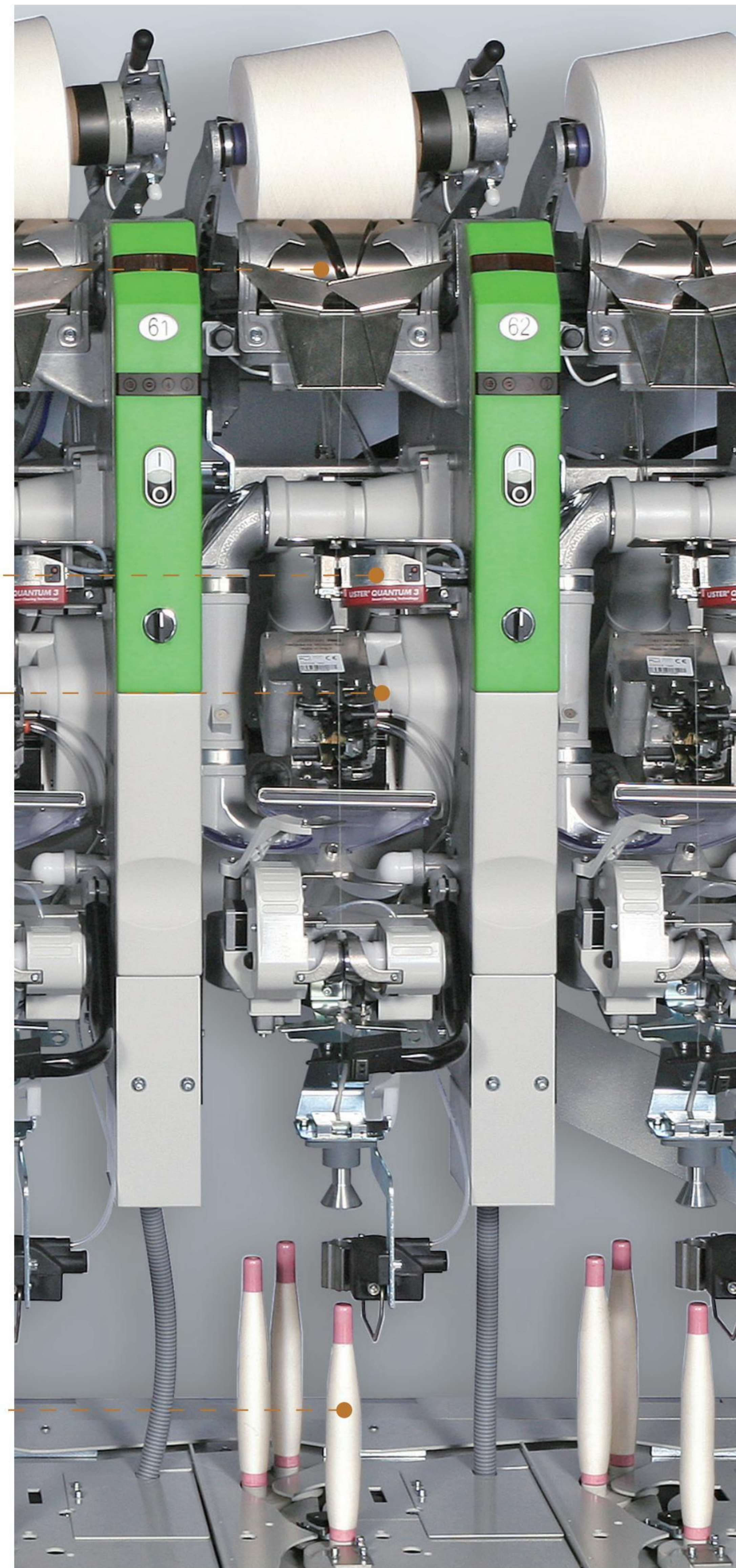
清纱器部分 Yarn clearer

捻接部分 Yarn clearer

下纱部分 Bottom unit

单锭显示具有故障类型指示功能，可指导操作工快速处理停锭，提高单锭运转效率。当由于没有管纱造成单锭红灯时，管纱到达时单锭自动启动，无需人工操作。

Spindle display has the function of indicating fault type for guiding the operator to deal with the stop spindle quickly and improve operation efficiency. When the red light of spindle occurs due to no bobbin yarn, the spindle will wait until bobbin arrival then start automatically, and need not manual operation.



主要技术规格 MAIN TECHNICAL SPECIFICATION

型式	单锭式，单面排列，左、右手车，可配置1-4纱库式单锭
适用范围	Nm3.5至最高支数的棉、毛、化纤和混纺的单纱或股线
卷绕速度(米/分)	400~2200，无级调速
卷绕头数	6~36锭，每隔2锭间隔递增
锭距(mm)	320
适用筒管锥度	4° 20'，5° 57'
喂入管纱规格(mm)	Φ=32~43，L=180~230mm
接头型式	空气捻接器,加湿捻接器
清纱型式	可配USTER、LOEPFE最新电子清纱器
槽筒	采用直流无刷电机同轴驱动槽筒，无级调速
筒子防叠	通过全程控制电机变速实现
接头循环	电器逻辑控制，智能循环
张力控制	电磁加压，闭环控制
上腊装置	选用
生头能力(只/分)	40（双生头，选用）
托盘直径(mm)	Φ 70
通道数量	送管2条，退管1条
总装机功率(KW)	28
机器外形尺寸(20锭)(LxWxH)(mm)	单生头10902x1680x2780 双生头为11302x1680x2780 锭距320

Type	Single-spindle, single-sided arrangement, left hand or right hand
Fields of application	Nm 3.5 to the highest count cotton, wool, synthetic and blended spinning yarn or plied yarn
Winding speed(m/min)	400~2200 , stepless speed regulation
Number of winding spindles	6 to 36, every two spacing increment
Spindles distance (mm)	320
Applicable bobbin taper	4 20', 5 57'
Feeding bobbin yarn specification (mm)	Φ =32~43, Length =180~230
Joint type	Air splicer, Aquasplicer
Electronic clearer	USTER, LOEPFE
The winding drum	DC motor coaxial transmission, step-less speed regulation
Anti-patterning	Electronic anti-patterning system
Joints circle	Electrical logic control, intelligent cycle
Tension control	Electromagnetic weighting, closed-loop control
Waxing	Optional
Picking ability	40/min(double Piecing Unit, option)
Support disc diameter(mm)	Φ 70
Channel No.	Two for bobbin forward, one for bobbin back
Total installation power (kw)	28
Dimension (20 spindles)(mm)	1 yarn picking 10902x1680x2780 2 yarn picking 11302x1680x2780 320