

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 PLUS 自动络筒机
AUTO-WINDER



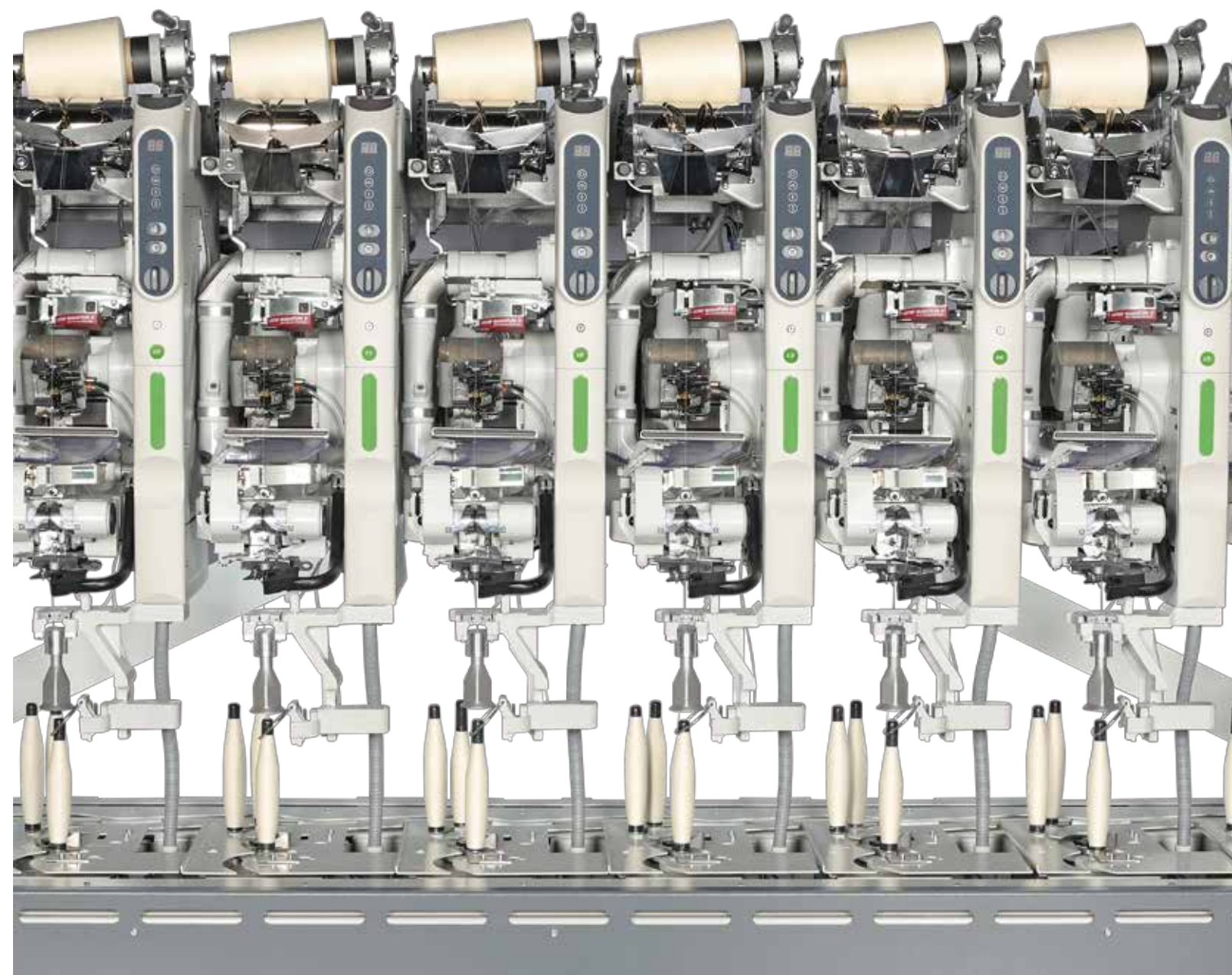
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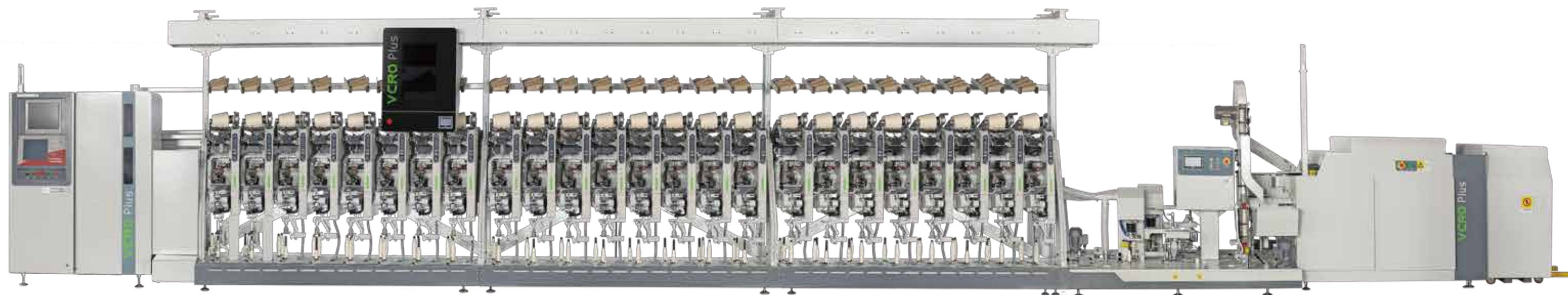
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The specifications and external appearance of this unit are subject to change without prior notice.

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VCRO Plus



VCRO Plus系列自动络筒机

★ 该系列机型是VCRO系列自动络筒机的全新升级产品，采用全新的工业设计，筒纱品质更优、生产效率更高、维护更加简便。包含大纱库型（单纱库、双纱库）、细络联型（单联式、多联式）、人工喂管型自动络筒机。

VCRO Plus series Auto-Winder

★ This model is a new upgraded product of VCRO auto-winder, it adopts a new industrial design, with better yarn quality, higher production efficiency, and easier maintenance. It has a big magazine type (single magazine, double magazine), a linked-with-spinning frame type (single-linked, multi-linked), and a manual feeding type.



■ 高品质 Superior package quality

- ★筒纱疵点精准吸取系统
- ★张力实时检测闭环控制系统
- ★筒纱精密定长系统
- ★筒纱防腰带纱系统
- ★全新筒纱后握持结构
- ★管纱吸嘴双定位设计
- ★Precise package yarn defect sucking system
- ★Tension real - time detection closed - loop control system
- ★Precise package yarn length fixing system
- ★Bobbin anti - girdle yarn system
- ★Newly designed package back holding mechanism
- ★Double positioning for package suction nozzle

■ 高效率 High efficiency

- ★全新的管纱更换机构
- ★单锭气圈跟踪系统
- ★稳定可靠的输送系统
- ★差异化挑头机构
- ★高速的插管装置
- ★优质高效的生头装置
- ★灵活的管纱处理系统

■ 高智能 Super Intelligent

- ★智能卷绕单元
- ★高效智能的落筒小车
- ★全新的智能电气控制系统
- ★Smart winding unit
- ★High efficient and smart doffing trolley
- ★Newly designed intelligent electrical control system

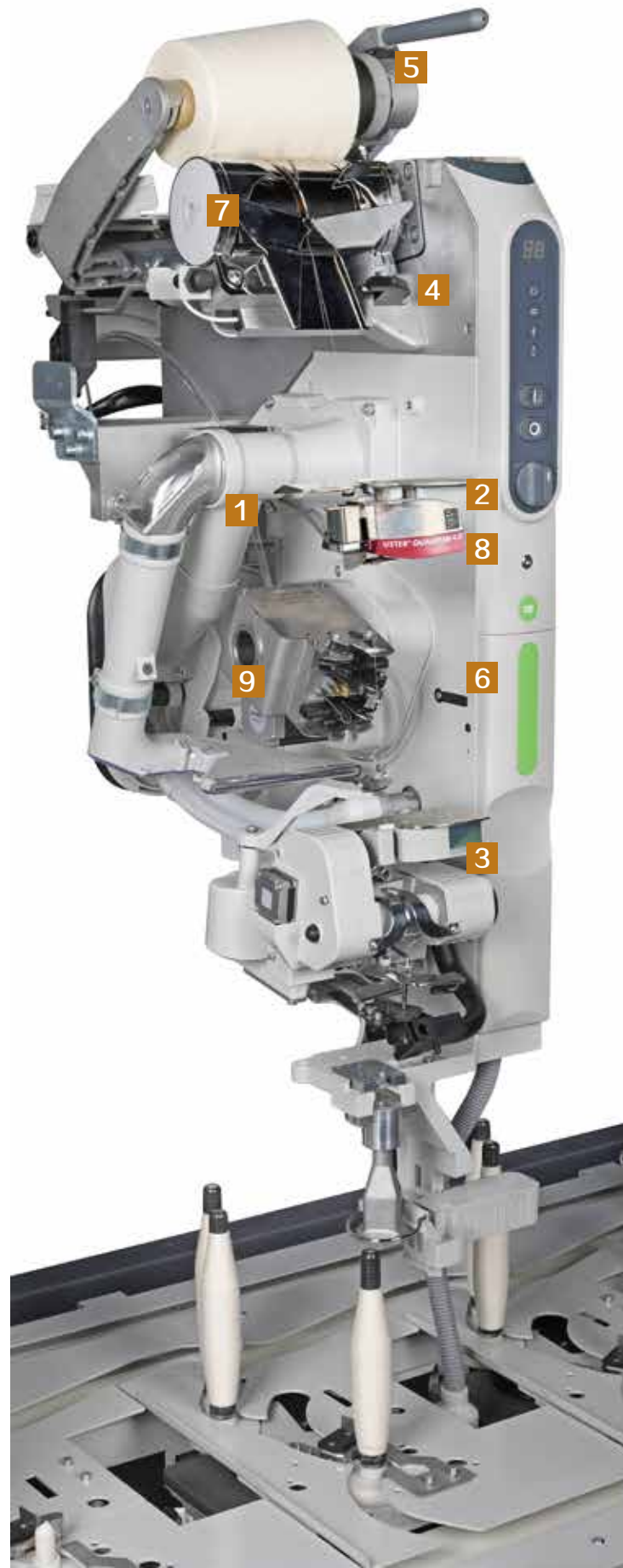


实现纱线质量全程监控

A SYMBOL OF EFFECTIVE YARN QUALITY CONTROL



筒纱成型高品质 / HIGH QUALITY PACKAGE SHAPING



★筒纱纱疵精准吸取系统 Precise package yarn defect sucking system

系统配置筒纱探测传感器，精准测量纱线吸疵长度，确保纱疵被吸走。

The package yarn detecting sensor mounted in the system can precisely measure yarn defect length to ensure it being sucked away.



★张力实时检测闭环控制系统 Tension real-time detection closed-loop control system

保证筒纱张力均匀，筒纱品质更优。

Ensure even package yarn tension and superior package quality.



★筒纱精密定长系统（选配） Equipment is fit with precise package yarn length fixing system(optional)

采用红外探测技术和环境补偿算法，筒纱定长精度可控制在 $\pm 0.3\%$ 以内。

With the help of infrared detection technology and environment compensation algorithm, the accuracy of package yarn length can be controlled within $\pm 0.3\%$.



4

★筒纱防腰带纱系统

Bobbin anti- girdle yarn system

配置探纱传感器，可实时检测纱线的动态，及时反馈，防止腰带纱和缠槽筒现象发生。

The yarn detecting sensor mounted can detect and feedback yarn status in real-time to prevent anti-girdle yarn and yarn wound on the drum.



5

★全新筒纱后握持结构

New package back holding mechanism

筒纱握持机构采用后端握持，结构稳定可靠免维护，最大程度减少了筒子的抖动，有利于获得成形良好的筒子。间歇式防叠效果得到保证，筒纱无重叠。

The package yarn adopts the rear end holding mechanism, which has a stable and reliable structure and requires no maintenance, reduces the bobbin shaking to the greatest extent, and is conducive to obtaining well-formed package yarn. The effect of intermittence-type anti-stacking is guaranteed, and there is no overlap in the yarn.



6

★管纱吸嘴双定位设计

Double positioning on suction nozzle

抓纱零位、送纱零位采用传感器控制，为捻接带来更为精准的送纱效果，获得稳定的接头质量，同时提升生产效率。

The sensor controls the zero-position grasping and the zero-position feeding, which is better for yarn feeding to have more accurate splicing, to get the stable joint quality and improves the production efficiency.

★高品质槽筒

High-quality drum

优良筒纱的质量保证，与设备等寿命。

Guarantee of excellent package quality, same life with machine.



7

★全新的电子清纱器

New electronic yarn clearer

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 yarn clearer controls yarn quality during the whole winding process including yarn joint quality; Two different yarn clearer settings are adopted for normal winding and yarn joint respectively.



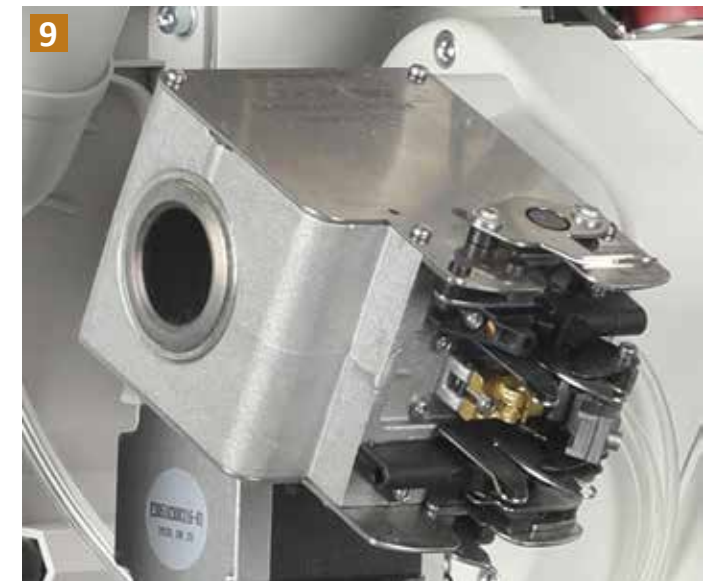
8

★新型集中控制空气捻接器

New type of centralized controlled air splicer

新型集中控制空气捻接器，参数调整一致准确，提高了单锭捻接质量一致性，适纺纱线品种覆盖更广泛，捻接质量及外观得到大幅度优化，使特殊品种纱线同样获得外观完美的接头。

The new air splicer with centralized control can adjust the parameters uniformly and accurately, improve the quality consistency of single spindle splicing, cover a wider range of suitable spinning yarn varieties, greatly optimize the splicing quality and appearance, and the special varieties of yarn also can get perfect appearance joints.

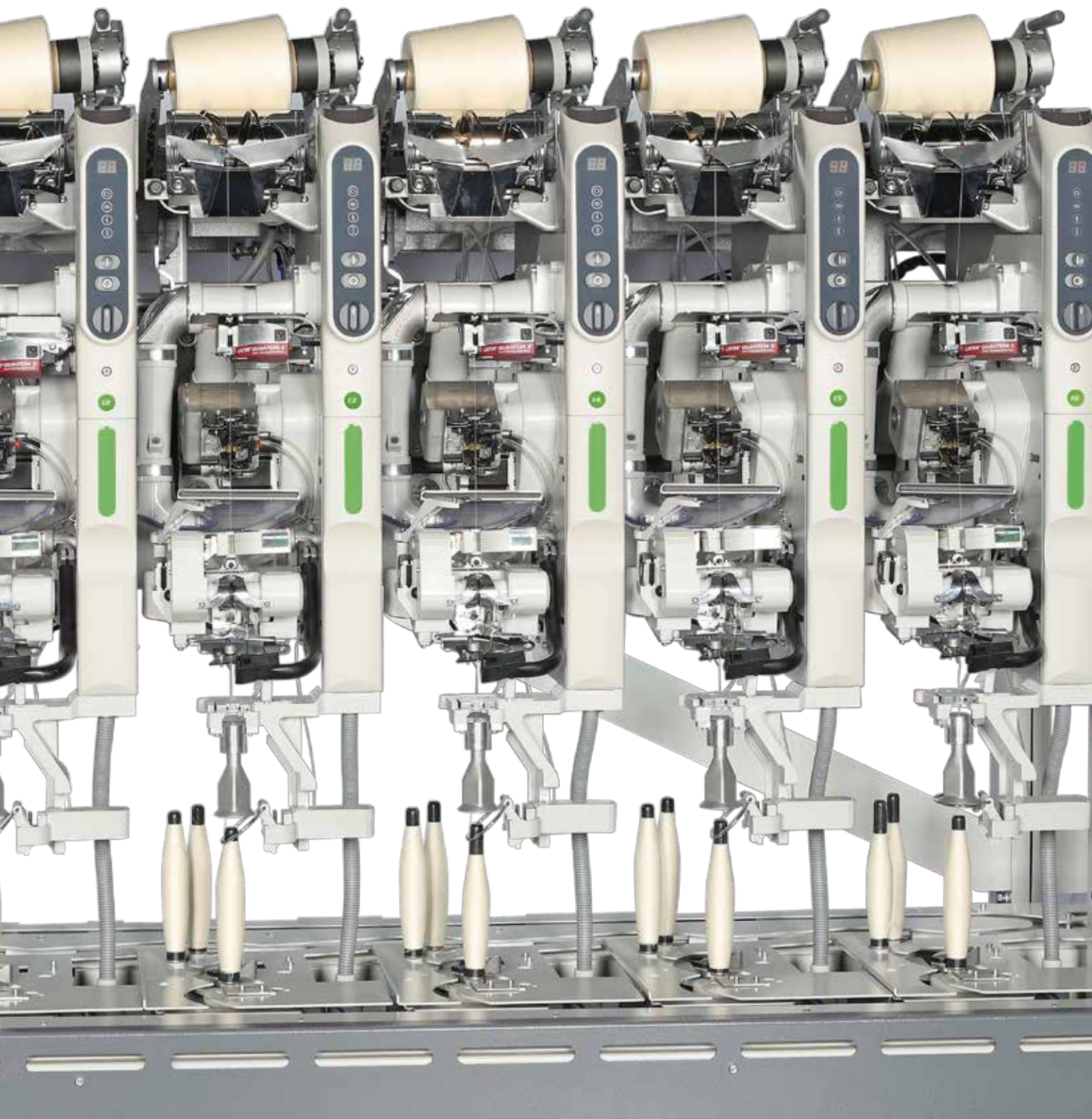


9





管纱处理高效率 / HIGH EFFICIENT BOBBIN PROCESSING



★单锭高效循环系统

High efficient single spindle circulation system

单锭面板增加报警显示功能，及七段码的形式显示报警信息，实现挡车工快速处理。单锭打结循环时间快至6~8秒，提高生产效率。

The alarm display function is added to the single spindle panel, and the alarm information is displayed in the form of a seven-segment code, to realize the rapid processing of the car stopper. The knotting cycle time of a single spindle is as fast as 6~8 seconds, which improve production efficiency.



★高效管纱输送系统

High efficient bobbin conveyor

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。等待位的筒纱输送系统，可提供更多筒纱存储位置，减少收纱工作量。空管输送采用前二输送带装置，独立电机驱动，有倒转、停转功能，实现高效顺畅排空管的同时节约能源。

The empty and full bobbins are driven by a single motor and single conveyor belt. The motor end and tension end have belt deviation adjustment function, so the transmission is stable, reliable, and convenient to adjust. The package yarn conveying system of waiting position can provide more storage positions for package yarn and reduce the workload of yarn collection. Driven by an independent motor, with reverse and stop functions, the empty bobbin conveying adopts the Front-2 conveyor belt device to realize efficient and smooth emptying of bobbins and save energy.



★全新管纱更换机构（选配）

The new bobbin changing mechanism (optional)

管纱喂给更稳定，为管纱退绕提供更为稳定的退绕张力，获得成形更为优良的筒纱。

Bobbin feeding is more stable, provide more stable unwinding tension for bobbin yarn unwinding, and get excellent package yarn.



★单锭气圈跟踪系统（选配）

Single Spindle balloon tracking system (optional)

筒纱卷绕张力更加均匀，降低管纱尾纱断头率。

The winding tension of package yarn being more uniform, the number of broken yarn tails being significantly reduced.



★ 优质高效的生头装置 / High quality and efficient yarn head picking unit

创新尾纱检测装置，适时检测生头现状。	Innovated yarn tail monitoring device for timely detecting the current situation of yarn head picking.
上下风门控制，提高生头成功率，有效降低负压风消耗量。	Under the Upper/lower air door ' s control to enhance the success rate of yarn head picking and efficiently reduce air consumption.
垂直吸风采用直线导轨上下运动，提高运动精度。	The vertical suction device moves up and down along a straight rail to enhance motion precision.
与管纱直径相配的合理的吸风夹头或涡流吹风系统，大大提高了生头率。	Suction nip suited with tube diameter and vortex blowing system greatly increases yarn head picking rate.
可配置2或3个生头装置，生头能力最大达到50支/分，分别满足不同纱线品种、不同锭数的生头需求，最多可配置72个单锭。	It can be equipped with 2 or 3 head picking devices, and the maximum head picking capacity can reach 50 pieces/min, which can meet the head picking requirements of different yarn varieties and a different number of spindles respectively. It can be equipped with up to 72 single spindles.
CBF生头单刺辊尾纱去除装置，可提高生头成功率5-8%，对非集落纱适应性更强。	CBF single-roll yarn tail removing device in the picker can enhance yam head picking success rate by 5-8%, and more suitable to non-intensive doffing.

★ 差异化挑头机构(选配)

Differentiated yarn head hooking mechanism (optional)

配备差异化生头机构,提高了非集落纱管纱的生头成功率。

The differential yarn head picking mechanism configured improves the yarn picking success rate of non-centralized doffing package.

★灵活的管纱处理系统

Flexible bobbin treatment system

- 多通道逻辑判断，使得管纱处理对满管、空管、生头、再生头、拔管等动作时，互不干扰，做到有序进行。
- Multi-channel logic judgment ensure each bobbin treatment action, such as draw up of full bobbin, empty bobbin, bobbin reading, bobbin re-reading in order without interference.



★纱库集中供纱系统

Centralized yarn supplying system of magazine



★高效的插管系统

High efficient bobbin plug system

- 准确而高效的管纱大小头判断。
- 插管成功率 $\geq 99.99\%$ （失误万分之一）。
- 高效单插管：55支/分。
- 插管结构简单、维护工作量小。
- 低支纱生产效率提高近10%。
- Accurate and high efficient bobbin big/small end judgment.
- Bobbin plug success rate ≥ 99.99 (error 1/10000).
- High efficient single bobbin plug ; 55bobbins/min.
- Bobbin plug mechanism feature by simple structure and less maintenance.
- Low yarn production efficiency increased by 10%.



- 管纱由翻斗按需供给，完全取代了人工单个单锭供纱，每个单锭配有备用管纱输送通道。
- 根据管纱需求量自动调节振动频率，保证管纱供给连续性。
- Bobbin yarn is supplied by bucket instead of manual, each spindle is provided with spare bobbin transporting channel.
- Vibration Frequency is adjusted automatically according to bobbin requirement to ensure bobbin supply continuity.

- 通过CCD检测识别管纱形状，将成型不良管纱和空管排除，不进入插管和生头循环，特别对于空管较多的厂家，可提高生头效率。

- Bobbin shape is identified through CCD to exclude undesirable bobbins and empty bobbins out of intubation and yarn head ficking cycle, especially for customer with more empty bobbins.

整机运行高智能 / SUPER INTELLIGENT WORK OF WHOLE MACHINE

★智能卷绕单元 Smart winding unit

智能化单锭控制面板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。

The intelligent single spindle display panel has the function of fault type indication, which can guide the worker to deal with the stop spindle quickly and improve the operation efficiency of single spindle. When the red light occurs due to the absence of bobbins, the single spindle will start automatically when the bobbin yarn arrives without manual operation.



★全新的智能电气控制系统 New intelligent electric control system

全新的智能电气控制系统，功能强大，稳定可靠，可实现远程运维及自主诊断。

The new intelligent electric control system adopted is powerful, stable and reliable, which can realize remote operation and maintenance and self-diagnosis.



设备全生命周期管理 / Product lifecycle management

★高效智能的落筒小车 High efficient&Intelligent doffing carriage

- 第三代自主开发的落筒小车，智能化程度更高。
- 落筒小车成功率≥98%，行走速度最快可达60m/min，落筒周期13.5秒。
- 可配置集中式筒管库，筒管容量145支，相比于单独式储管器，可大幅度减少挡车工放置筒管的工作量，操作更加便捷。

- The third generation of self-developed doffing carriage is more intelligent.
- The success rate of the doffing carriage can reach 98%, the fastest walking speed can reach 60m / min, and the falling cycle is 13.5 seconds.
- A centralized paper cone magazine can be configured, with a capacity of 145 paper cones. Compared with individual paper cone holders, it greatly reduces the operator's workload for paper cone placement and makes operation more convenient.



筒管库/paper cone magazine



可实现自动换批、自动借管、多次生头、单独落筒等功能，确保了自动络筒机更换品种后可实现连续生产。

It can realize the functions of automatic shift change, automatic bobbin borrowing, multiple head picking and independent dropping, which ensures the continuous production of auto-winder after variety change.



多联式细络联型自动络筒机

One auto-winder linking multi-sets of spinning frame



★ 国内自主研发的全新一代多联式自动络筒机，
可与多台生产不同品种的细纱机对接。

The domestic self-developed new generation of the multi-link auto-winder, It can be connected with many spinning frames of different varieties.



- 可配置4000锭细纱单锭，可以实现多种联接方式，可与细纱机并排或穿插布置，能满足用户从6英支至最高支数纱线纺纱要求。

It can be configured with 4000 spindles and connected in various ways : arranged side - by - side or interspersed with the spinning frame to meet the requirements of count yarn from 6 to the highest.

- 设备节能降耗，节省人工，占地面积小，可大幅降低客户投资成本，具有很高的投资回报率。

This equipment is energy - saving, labor - saving, space - saving, and can greatly reduce the customer ' s investment costs, with a high rate of return on investment.

- 产品成纱质量优良，操作更为方便快捷，配置了细纱质量追踪系统，可快速排除细纱问题，保证纱线质量。

The quality of the product is excellent, and the operation is more convenient and easier. The spinning quality tracking system configured is able to quickly eliminate spinning problems and ensure quality.

- 管纱全流程自动输送，节省工序，实现了“细纱落纱-管纱处理-络筒卷绕-空管回送”全流程的自动输送。

Bobbins are automatically transported in whole process from spinning bobbin yarn doffing - bobbin treatment - winding - to empty bobbin return to save process.





主要技术规格/MAIN TECHNICAL SPECIFICATION

机型	VCRO PLUS		VCRO - 双纱库	多联式细络联型自动络筒
锭数	6 - 72锭		6 - 72锭	6 - 72锭，每隔2锭间隔递增
型式	单锭式，单面排列，左、右手车			
加工产品范围	棉、毛、麻、化纤、混纺纱线及股线			
可加工纱支	Ne6到最高支			
工作负压	变频调速			
槽筒驱动	直流无刷电机直接驱动			
筒子防叠	通过全程控制电机变速实现			
筒纱握持	后弯弓			
张力型式	栅式			
管纱处理型式	单插管，双生头	单/双插管，双/三生头		单/双生头
纱管尺寸	长度180 - 230mm 直径32 - 43mm			
卷绕速度	400 - 2200m/min,无极调速			
纱库	单纱库	双纱库		
接头型式	Mesdan798Q空气捻接器，水雾捻接器			
清纱型式	USTER/LOEPFE电子清纱器			
生头能力	50支/分			
管纱存储量	2支			
筒管存储量	4支			
管纱输送速	25米/分			
通道数量	送管3条，退管2条			送管2条，退管1条
装机功率	35.95KW(72锭)	38.05kW(72锭)		35.35kW(72锭)
筒管锥度	3 ° 30 '，4 ° 20 '，5 ° 57 '			
外形尺寸	31080x1680x2780（72锭）	30890x2580x2780（72锭）		26480x6154x2780（60锭）

Machine type	VCRO PLUS		VCRO - double magazine	Auto - winder multi - linked with spinning frame
Spindles	6 - 72 spindles		6 - 72 spindles	6 - 72 spindle and increament in 2 spindles
Type	Spindle, single sided arrangement, left hand or right hand machine			
Application	Cotton , wool, linen,synthetic fiber or blended, or plied yarn			
Count of yarn processed	Ne6 to the highest			
Working negative pressure	speed adjusted by inverter			
Drum driven	driven by DC brushless motor			
Anti - pattering	To achieve through full control of motor speed			
Package holder	back bow style			
Tension type	grid			
Patterns of bobbin processing	single plug, double head picking	single/doublr plug, double/triple head picking	Single/double head picking	
Tube dimension	length 180 - 230mm, diameter32 - 43mm			
Windinf speed	400 - 2200m/min,stepless speed regulation			
Magazine	single magazine	double magazine		
Joining type	Mesdan798Q Jointair splicer, Aquasplicer			
Yarn clearer type	USTER/LOEPFE Electronic yarn clearer			
Yarn head finding	50 heads/min			
Bobbins storage	2 bobbins			
Package storage	4 packages			
Bobin delivery speed	25m/min			
Channels quantity	3 for bobbin delivery and 2 for return			3 for bobbin delivery and 2 for return
Power installed	35.95KW(72spindles)	38.05kW(72spindles)		35.35kW(72spindles)
Cone conicity	3 ° 30 ' , 4 ° 20 ' , 5 ° 57 '			
Overall dimension	31080x1680x2780 (72spindles)	30890x2580x2780 (72spindles)		26480x6154x2780 (60spindles)

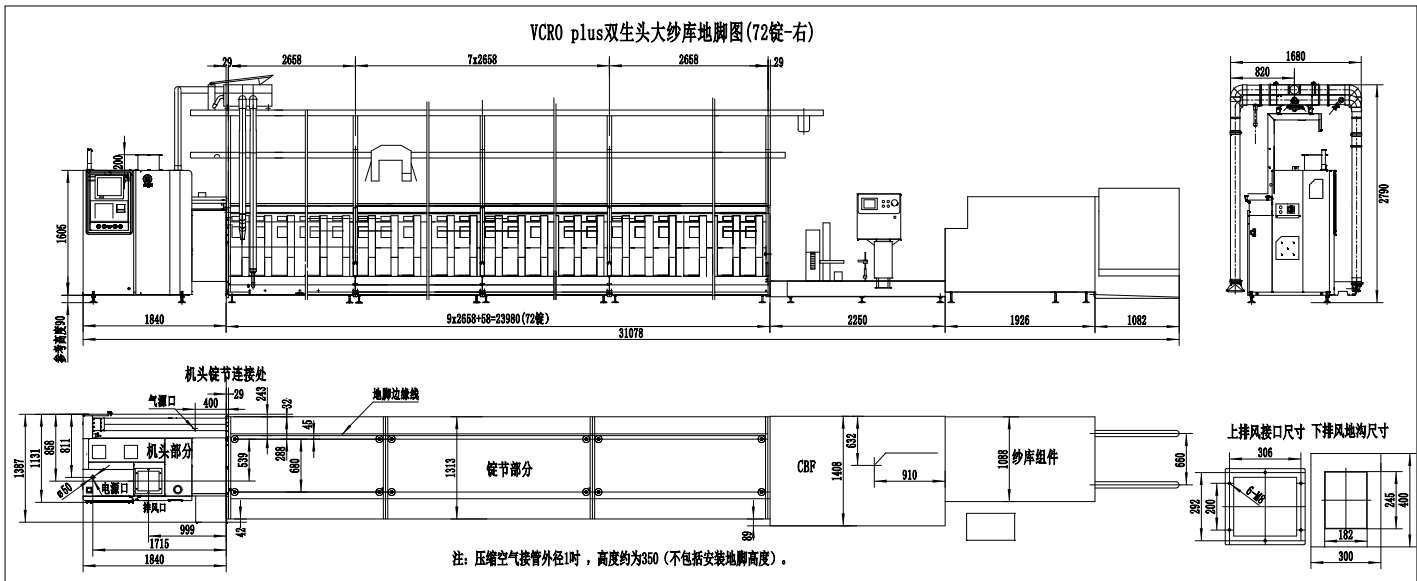


外形尺寸和安装尺寸/OVERALL DIMENSION AND INSTALLATION DIMENSION

锭数	60	62	64	66	68	70	72
机器长度 (mm)	27140	27780	28420	29158	29798	30438	31078

外形尺寸

OVERALL DIMENSION



安装尺寸

INSTALLATION DIMENSION

最小安装尺寸/MINIMUM INSTALLATION DIMENSION : mm

