D1 & D1 plus

Yarn Guide Precision Winder with auto doffing

自动换管导纱钩精密络筒机

SINOCA
by TMART CORGHI TEXTILE

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沿革

秉承意大利科吉近70年的制造理念，2005年蒂玛特科吉纺织机械(上海)有限公司在上海开始生产各式纺织染整用络筒设备。近年来，蒂玛特科吉积极投入研发，先后推出了最先进的智能精密络筒、精密绞纱络筒、拨叉精密络筒等高端络筒机，并配备了自动换管、自动落纱等自动配置，满足各类市场的需求。目前的产品包括各式智能精密松式和紧式络筒机、智能精密绞纱络筒机、智能精密并纱机、槽筒式松式和紧式络筒机、并合加捻包覆花式捻线机、在线贴标机、智能码垛机等。以上机器适合于加工各类纱线，函盖了棉、毛、丝、麻天然纤维纱线和各式混纺纱线、花式纱线和合成纤维的长丝。多年来本公司产品遍及全球几十个国家，我们秉承欧洲设计和品质、中国成本和价格、快速响应的服务理念，为全球用户提供一流络筒及配套设备，不断进行技术创新，满足纺织行业当今智能化、自动化的强烈需求。

HISTORY and PHILOSOPHY

Adhering to the manufacturing philosophy of Italian Corghi for nearly 70 years, Tmart Corghi Textile Machinery(Shanghai) Co., Ltd. began to produce all kinds of winding equipment for yarn dyeing in Shanghai since 2005. In recent years, Tmart Corghi has actively invested in research and development, and has successively released the most advanced intelligent precision winder, precision hank winder, fork shifting precision winder and other advanced winding machines, equipped with automatic configuration as automatic tube loading and automatic doffing to meet various needs of markets. At present,our products include kinds of intelligent precision winding machine re-winding machines, intelligent precision hank to cone and assembly machines, groove drum soft winding and re-winding machines, assembly twisting and covering fancy winding machine, online labeling weighing machine, intelligent palletizing system,etc.Those machines are suitable for processing different kinds of yarns, including natural fiber spun yarns as cotton, wool, silk, flax and all kinds of blended yarns, fancy yarns and synthetic filament. Over the years, our products have spread to dozens of countries around the world, we uphold the Italian design and quality, Chinese cost and price and quick response service concept, to provide global users with first-class winding equipment, by continuous technical innovation, to meet the strong demand of intelligent, automation in textile industry nowadays.

技术特点 Characteristics

成品传送带
Conveyor Belt for Finised Package

筒纱自动传送。可配合自动换筒系统，实现产线自动化。

Conveyor belt combined with penumatic tube bank, realizing automatic doffing.

自动换管落纱
Automatic Doffing

纱管库、陶瓷剪刀、落纱气缸及各种机械装置

Tube bank,ceramic scissors, pneumatic cylinder and various mechianical devices.

气动摇架压力调节及气动开/合
Pneumatic Arm Pressure Regulating and Adapter Opening/Closing

整机气动控制及调节，控制筒纱的臂压力与张力控制系统一起保证筒纱成型质量。夹盘开/关也由气缸控制。

Pneumatic regulation and control on package arm pressure,combined with yarn tension control to ensure package forming. Adapter opening/closing is also pneumatic controlling.

智能人机界面
Intelligent HMI

10英寸彩色触摸屏，单锭工艺参数设定、工艺储存。

10' color touch screen, single spindle process parameter set up, recipe storage.

纱路配置
Yarn Path Configuration

预张力器、超喂轮、张力传感器，断纱传感器，门栅式纱线张力器、纱线上油装置、机械清纱器。

Pretensioner, overfeeding roller, yarn tension sensor, Yarn break sensor, gate style yarn tensioner, oiling device and mechnical yarn cleaner.

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D1&D1plus型智能精密络筒机

D1型智能精密络筒机采用蒂玛特科吉最新一代纱线卷绕技术,通过伺服马达控制导纱钩和纱线卷绕比例，保证纱线在筒管上均匀排布。筒纱卷绕采用直流无刷马达驱动，通过单锭数字控制器与导纱钩伺服马达同步。根据程序设定,通过分层使各层交叉角变化能够控制在±1°范围内，完全防止叠纱,并保证筒子纱内外密度均匀一致并成型稳定。

通过纱线张力传感器在线监测、超喂轮积极喂纱和纱线张力器跟踪调整，保证卷绕纱线的张力始终恒定并完全达到设定张力值，保证喂入纱线张力始终均匀一致。机器可以配置主动上蜡或上油装置，也通过单锭数字控制器控制，机器通讯由CAN总线控制。

导纱钩导纱动程可根据需要进行设定，在络纱过程中实现自动调节，生产直边或收边筒纱，可以保证用于筒纱染色纱线完美的圆角，避免硬边影响染纱品质。

机器适用于各类短纤和大多数长丝纱线的松式络筒或紧式络筒工序，可以提供6、8、10英寸导纱动程三种机型,可以生产各种锥度的或平行的筒纱。

全新的D1型络筒机采用了智能卷绕方式，结合槽筒式和精密式络筒两者的优点，根据控制交叉角变量的原则对筒纱进行分层控制，既达到精密络筒方式优秀的纱线排列、完全消除了叠纱，又有着槽筒式筒纱内外密度一致和筒子成型稳定性的优点。所以D1型智能卷绕络筒机具备目前市场上最先进的络筒技术，给予用户对各种纱线完美络筒的可能性。

机器配置了超喂装置、纱线张力传感器、全自动跟踪电子式纱线张力装置、断纱传感器、高精度霍尔计长传感器及伺服马达控制的导纱装置。

D1 & D1 plus intelligent Precision Winder Machine

D1 Intelliwinding is the latest generation of precision winding machine from TMART Corghi textile.Through servomotor to drive the yarn guide, to guarantee the perfect laying of yarn on winding tube. Winding motor drive right adapter of arm, synchronized by single head PC board. According to programing, the crossing angel is controlled in ±1° in order to avoid any patterning and to ensure the same density inside and outsideof package, and also the stability of the package. The yarn tension sensor is always checking on line in order to provide the value of yarn tension at the moment, single head PC board is checking with the setting tension value and positive yarn feeder will be following the necessity of adjustment, the final feeding tension of yarn can be always the same.Positive waxing and oiling device can be supplier, controlled by single head PC board as well.Communication is through can bus controlling. The travels of yarn guide can be set up according to the technical request, during winding processing,and can be realized automatically during the winding processing. The machine can produce cylindrical, conical and round edge on cylindrical package in order to avoid dyeing problem.

The machine is suitable to all kinds of spun yarn and most filament for soft winding and re-winding,different angle of conical package and cylindrical package.To provide three different models for 6,8 and 10 inch travels.

The latest development D1 Intelliwinding machine combined drum and precision technology, keep theadvantage of precision winding technology, avoid completely patterning problem. At the same time, control the similar crossing angle layers by layers in order to guarantee the same density of package insideand outside, and keep stable instruction of package. So the D1 intelliwinding is the most advantagewinding technology in the precent market, give to the clients the best possibility to wind all kinds of yarn.

The machine equipped with positive yarn feeder,yarn tension sensor, motorized yarn tensioner withclosing ring control, hall sensor for high precision meter counter, and yarn guide which driven by servomotor. According to the demand, the single spindle automatic doffing,and conveyor belt for package transfer can be supplied on machine model D1 plus.

D1及D1 Plus精密卷绕技术

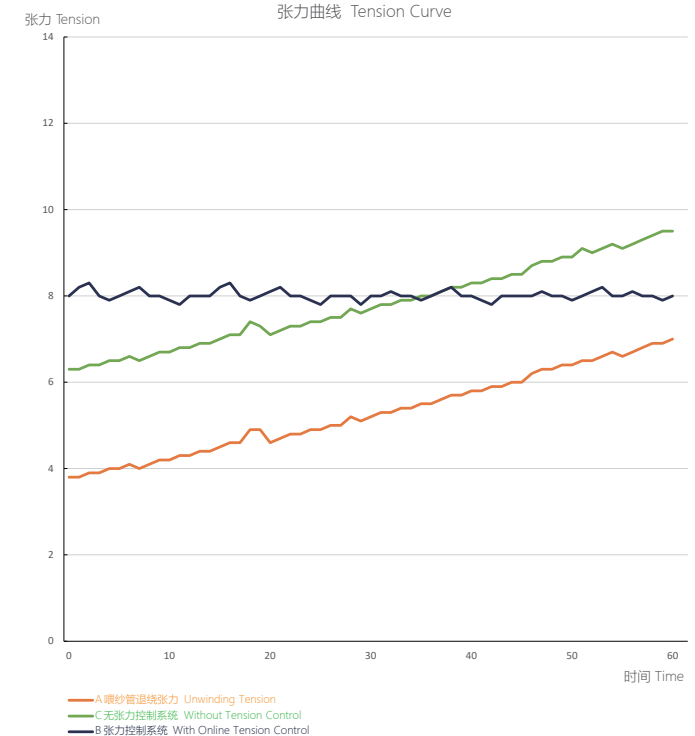D1及D1plus智能精密导纱钩是目前市场上最先进的精密交叉角络筒技术，通过导纱钩伺服马达和直流无刷筒纱卷绕马达的速比，精确控制纱线交叉角，生产完美的筒子纱。可以生产平行或各种锥形筒纱。

品质： 保证筒纱内外密度一致、纱线无分层、叠纱，筒纱成型完美。
产量： 机械车速高达1400米/分以上，生产速度根据纱线品质决定。
能耗： 单锭装机功率300瓦，生产能耗控制在150瓦以内。
适用性： 适合加工各种短纤及长丝纱线，满足目前市场的所有需求。
占地： 每锭之间锭距设计充分考虑了尽量减小占地面积。
用工： D1机型配备一键式落纱系统，保证最少的用工量。以生产32支棉纱为例，每个工人可以挡车2台面对面安装的192锭以上的机器。
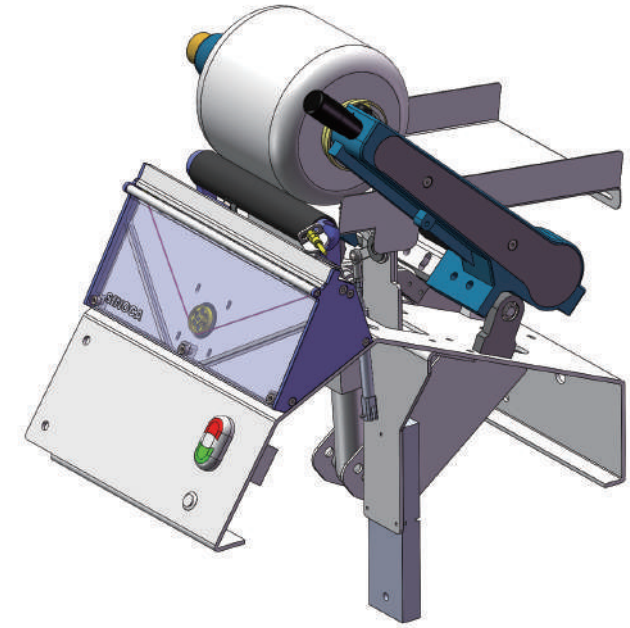
D1 Precision Winding Technology

D1 intelliwinding is the most advanced precision cross-angle winding technology on market at present, through the speed ratio control between the yarn guide servo and package winding DC brushless motor, relazing precise winding cross angle, to produce the perfect package. Suit for cylindrical or various conical yarns tube.
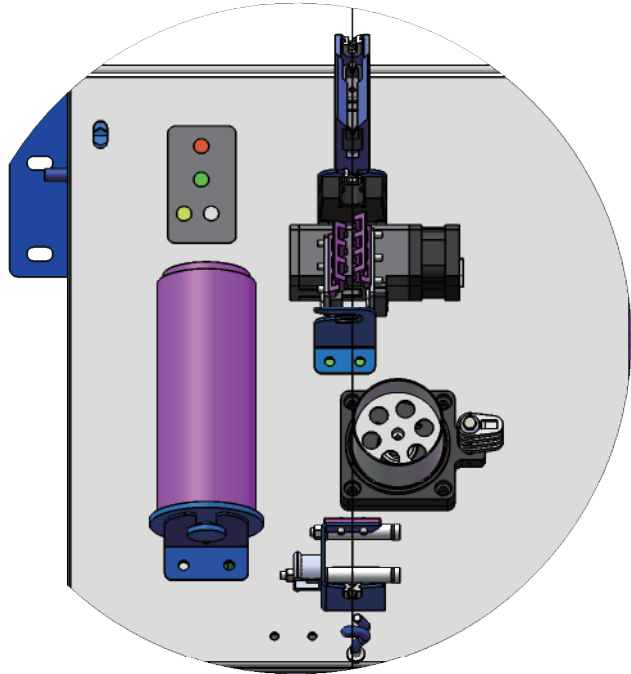
Quality: Ensure that the inner and outer density of the yarn is consistent, with no layering and patterning, and perfectly shape.
Production: Speed can be up to 1400 m/min above, and determined by yarn character.
Energy consumption: The installed power is 300 watts/spindle, and the production energy consumption is within 150 watts.
Applicability: Suitable for processing all kinds of spun yarn and filament yarns, meeting all the needs of the current market.
Occupied area: Design of each spindle fully considers minimum floor space.
Labor: D1 model is equipped with a one-button doffing system to ensure the least labor. Taking the production of 32 cotton yarns as an example, each worker can operate 2 machines with more than 192 spindles installed face to face.

张力 Tension

张力曲线 Tension Curve

时间 Time

A 喂纱管退绕张力 Unwinding Tension
C 无张力控制系统 Without Tension Control
B 张力控制系统 With Online Tension Control

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主动式筒纱卷绕、气动臂压控制、纱线张力在线闭环控制
Winding-Arm-Yarn Control Loop

做到筒纱的无分层与叠纱是生产完美筒纱的关键。H1智能精密绞纱络筒通过对筒子纱主动卷绕驱动，配合导纱钩精确的位置横移控制，获得了对纱线每一次卷绕的位置控制，完美控制纱线卷绕过程的交叉角，避免了筒纱的分层和叠纱问题，获得了完美的筒纱成型。筒纱内外层密度是由臂压力和纱线张力两个参数决定的。D1智能精密络筒机的臂压力调节控制精度达到0.01bar，纱线张力精度达到0.1g。由此可以保证筒子纱内外密度的高度一致以及各锭位之间筒纱的密度一致性。

根据纱线品种，可以决定是否配置积极式超喂装置。配置超喂装置的优点是可以均衡退绕张力的变化，降低断纱率。

It is the key to produce perfect yarns to make the yarns without layering and patterning. D1 Intelliwinding can control the position of each winding of the yarn by driving the cone actively and controlling the position of the yarn guide accurately, which can perfectly control the intersection angle of the winding process of the yarn, anti-layering and anti-patterning, and obtain the perfect formation of the yarn.The density of the inner and outer layers of the yarn is determined by two parameters: arm pressure and yarn tension. The arm pressure adjustment and control precision of H1 intelliwinding machine reaches 0.01bar, and the yarn tension precision reaches 0.1g.Thus, the uniformity of yarn density of each spindle can be guaranteed.
According to the yarn type, you can decide whether to configure the active overfeeding device. The advantage of configuring the overfeeding device is that it can balance the unwinding tension changes, and reduce yarn breakage rate.

圆角/软边-完美的筒纱成型
## Round and soft edges - perfect for molding

通过对卷绕马达、导纱钩马达、纱线张力及臂压力的完美控制，配合收边程序的运用，可以对不同纱支的纱线生产完美的圆角/软边、内外密度一致的筒纱，满足筒纱染色的所有需求及用户对完美筒纱成型的希望。

Round and soft edges-perfect molding through the perfect control of winding motor, yarn guide, yarn tension arm pressure and in conjunction with the application of the trimming program, it can make perfect round and soft edges, consistent inner and outer densities of different yarn count to meet all the requirements of cone dyeing, also the user's hope for perfect molding.

技术参数

|	
控制柜	工业触摸屏、主开关、 电源、 变压器、气动控制、通讯电路
锭位	导纱钩驱动、筒纱驱动、臂压力气动控制、筒纱落纱气缸、陶瓷剪刀*、纱管库*
卷绕类型	1.固定交叉角精密式、2.可变交叉角智能数码式、3.分层式
导纱速度	每分钟往复最高1000（根据动程长度）
机械速度	1400 m/min
卷绕速度	最高1400 m/min（根据纱线品质和种类）
纱管类型	平行管或锥形管（3 30 ', 4 20 ', 5 57 ')最小直径75mm, 最大直径200mm
导纱动程	25-250 mm
每节锭数	6寸机型：6锭，8寸机型：5锭，10寸机型：5锭
最多锭位	6寸机型：98锭，8寸机型和10寸机型：60锭
最大筒子直径	200mm
适合纱线支数	5-2500Dtex 或 1-200Ne
每锭装机功率	6英寸机型：390W，8英寸机型：390W，10英寸机型450W，超喂装置50W
每锭消耗功率	6英寸机型： 车速600 m/min时 60W， 车速1400 m/min时 最大150W 10英寸机型： 车速600 m/min时 70W， 车速1400 m/min时 最大175W
每节机器的重量	6寸机型650kg，10寸机型750kg
控制柜重量	200kg
压缩空气要求	最低 6 Bar
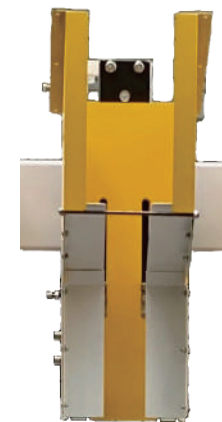
Specification

Control Cabinet	Industry HMI, Main Switch, Power, Transformer, Pneumatic control, Communication circuit
Spindle	Yarn Guide Drive,Cone Yarn Drive,Arm pressure pneumatic control,cone doffing cylinder,Ceramic scissors,Tube bank
Winding Type	1. Fixed cross Angle precision type; 2. Variable cross Angle intelligent digital type; 3. Layered type
Yarn Guide Speed	Travers frequency up to 1000 times per minute (according to motion monitor)
Machanical Speed	1400 m/min
Winding Speed	Up to 1400 m/min (According to yarn charactor and type)
Type of Winding Tube	Cylindrical or conical tube (3 30 ', 4 20 ', 5 57 '), Diameter 75mm - 200mm Spindle spacing is 404mm for 6' Model and 500mm for 10' Model
Traverse	25-250 mm
Spindles per Section	6 spindles for 6' Model, 5 spindles for 8' Model, 5 spindles for 10' Model
Max. Spindles	98 spindles for 6' Model, 60 spindles for 8' and 10' Model
Max. Diametre	200mm
Suitable Yarn Count	5-2500Dtex or 1-200Ne
Installation Power/Spindle	6' Model:390W, 8' Model:390W, 10' Model:350W, Overfeed wheel:50W
Power Consumption per Spindle	6' Model：60W@600 m/min, 150W@1400 m/min 10' Model: 70W@600 m/min, 175W@1400 m/min
Weight of per Section	650kg for 6' Model, 750kg for 10' Model
Weight of Control Cabinet	200kg
Compressed Air requirment	Mini. 6 Bar

外形尺寸 Dimension

6寸机型
6'Model

VII

1945

800

2775

1872.5

1911.47

907

1200.52

598
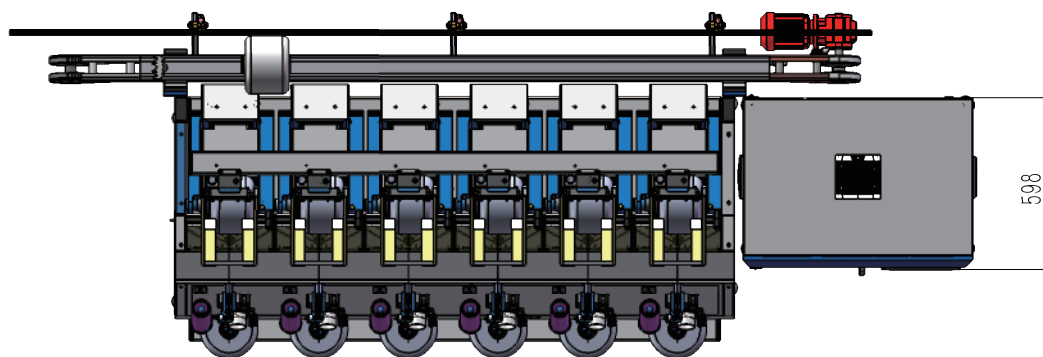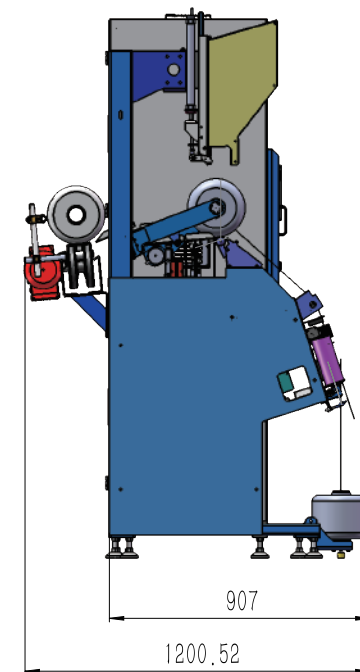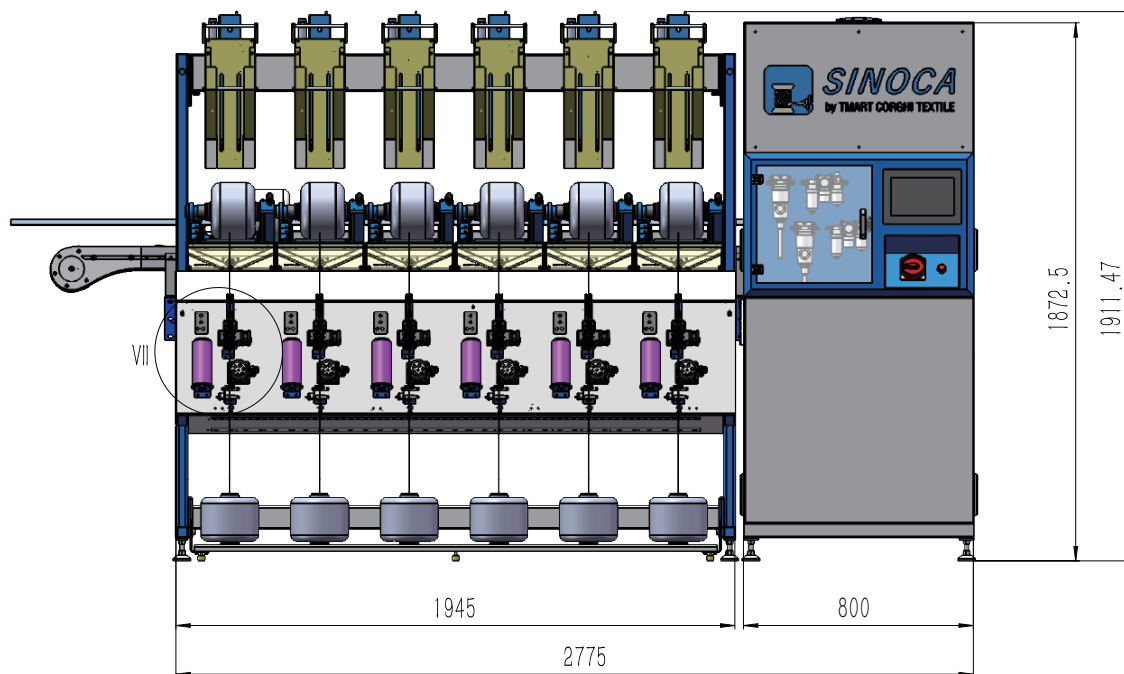
锭距:310mm
Spindle spaceing 310mm

总锭数：最高112锭，可定制
Total up to 112 Spindles, customizable

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外形尺寸 Dimension

10寸机型
10'Model

2126.5

500

2664

3085.5

180

787

948
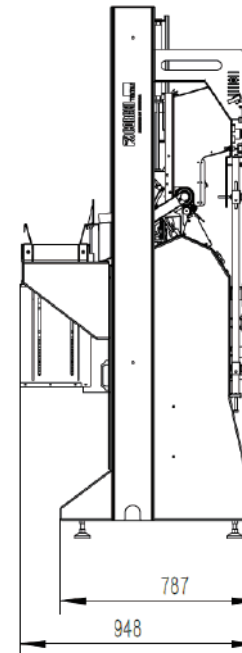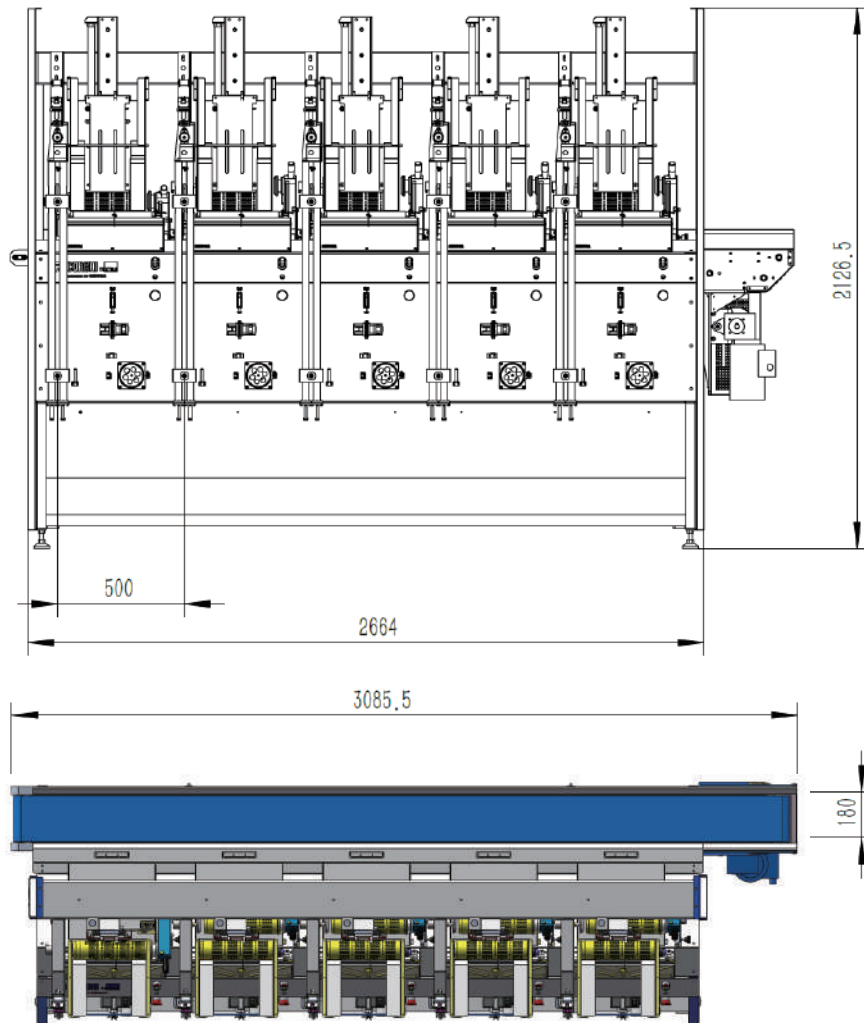
锭距:500mm
Spindle spaceing 500mm

总锭数：最高60锭，可定制
Total up to 60 Spindles,customizable

型号选择 Model

*D1 & D1 plus型	自动换管导纱钩精密络筒机
*H1型	导纱钩精密绞纱络筒机
*BR SOFT plus型	自动换管槽筒松式络筒机
*D1/AS型	精密导纱沟三线或两线并纱机
*BR/RW型	槽筒紧式络筒机
*T1型	在线称重贴标机
*E1型	在线压角机
*P1型	在线码垛机

可以提供导纱钩6、8、10英寸机型，及地毯纱专用绞纱络筒机、筒纱络筒机

*D1 & D1 plus	Yarn guide precision winder with auto doffing
*H1	Yarn guide precision hank to cone winder
*BR SOFT plus	Intelligent Auto Doffing Soft Winder
*D1/AS	Fork shifting precision doubling or tripling machine
*BR/RW	Grooved drum re-winding machine
*T1	Online weighing and lablling machine
*E1	On-line edge pressing machine
*P1	Automatic palletizing machine

Yarn guide are available for 6, 8 and 10 inches models,and special hank to cone and cone to cone winder for carpet yarn

全球客户 Worldwide
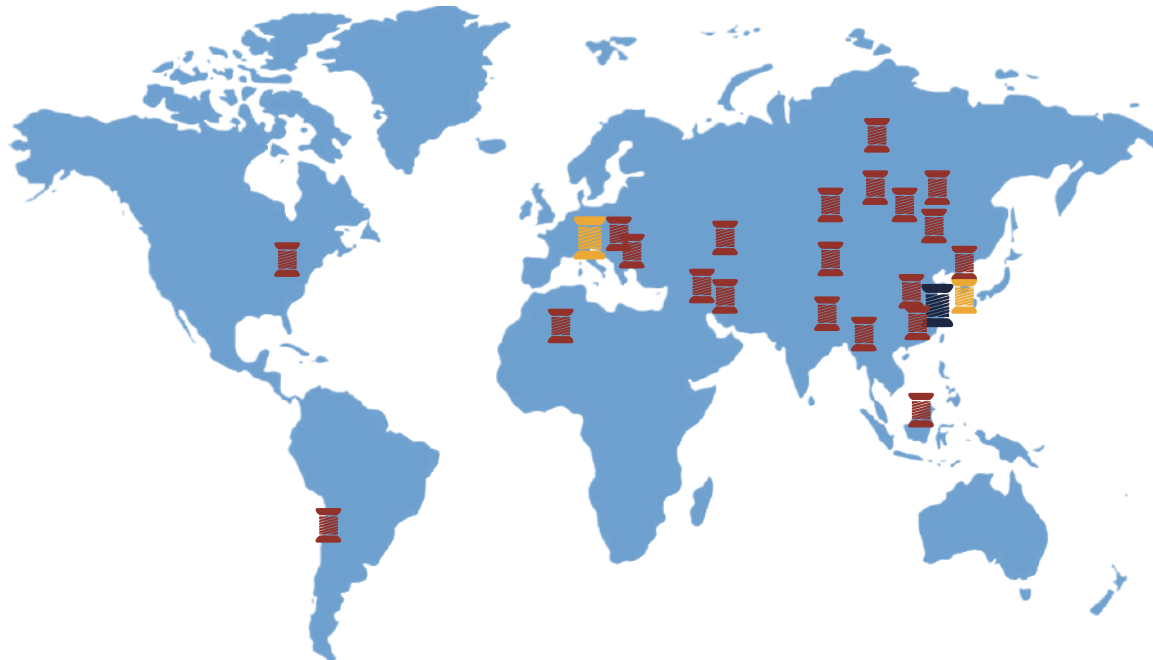
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技术总部: 意大利研发办公室
Technical R&D Italian office

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