



Space & Time Associates

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大雅 TAYA



數字式漿紗機

DIGITAL CONTROL
SIZING MACHINE



縲布準備設備：整經機、漿紗機、併紗機、染漿機
Weaving Preparation: Winding-Sizing-Beaming-Inside Dyeing with Sizing



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數字式漿紗機 DIGITAL CONTROL SIZING MACHINE

Professionalism TAYA's sizing machine is the result of 40 years' accumulated experience in manufacturing technology and suggestions from machine design experts. Features of the machine are high precision, easy operation, reliability, and the advantage of being suitable for all kinds of requirements.

Technology It is the sizing machine that combines best technology and parts from all over the world.

Innovation Applicable for many yarn types and counts, high density 100% cotton as well as manmade fibers, providing global competitiveness in the weaving field.

專業 累積四十年製造技術，集結海內外龐大用戶寶貴建議、各種機型優點及機械設計專家，生產出性能優越、可靠性好、精度高、操作簡便、滿足各種工藝要求的漿紗機。

科技 採用海內外世界先進科技軟硬體結合的漿紗機。

創新 適應多品種、各種支數、高密度的純棉、化纖織物的上漿，為織造領域創造國際競爭優勢。

DIGITAL CONTROL SIZING MACHINE



■ Beam Creel

- Suitable for producing high density fabrics.
- The electric measuring mechanism executes rewinding tension. It regulates cylinder pressure through E/P transmitting system.
- Equipped with low-friction air cylinder for precision control. Applicable for exclusive yarn types and fabrics.
- Full pressure driven system on machine stop to prevent loose yarn.

■ 經軸架

- 經軸架適合高密度織物生產。
- 由電子式感測器精確檢測經紗退繞張力，透過E/P（電/氣）轉換系統自動調節氣缸壓力。
- 採用低啟動壓力氣缸，控制精度較高，適應於高檔品種的生產。
- 停車全壓力制動系統，防止鬆紗。



■ 漿槽

- 採用機械壓漿，保證片紗壓力平均。
- 主壓漿最大壓漿力可達40KN，副壓漿最大壓漿力30KN。主壓漿設有壓力自動調節系統，根據漿紗速度快慢無段線性調節壓力，防止輕漿。
- 採用高速比例電空閥控制，提高精度及穩定性。
- 漿槽漿液溫度由溫度感測器在0-100°C間精確檢測，並由數位式溫度控制器（PID）根據設定溫度自動定溫控制。

■ Size Box

- The special designed oval shape squeeze roller ensures pressing force is even.
- The max pressing force of main roller is up to 40KN, and auxiliary roller is up to 30KN. Auto regulation system for main pressing roller, step-less linear control according to sizing speed to prevent light starching.
- Equipped with high ratio E/P valve control. Ensures precision and stability.
- The temperature of size level is measured by sensor. With the help of a PID regulator, the temperature is automatically controlled and adjusted.



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■ Drying Chamber

- Pre-separates yarn drying before combination.
- Pre-drying chamber and main chamber are driven by one motor. Thanks to PLC, the tension measuring system controls cylinder speed and elongation precisely.
- Cylinder steam temperature is automatically regulated by PID, which connects to sensor and electric valve.
- Oil bath type bearing design.
- German made digital control moisture retention device with history recording function.

■ 烘乾區

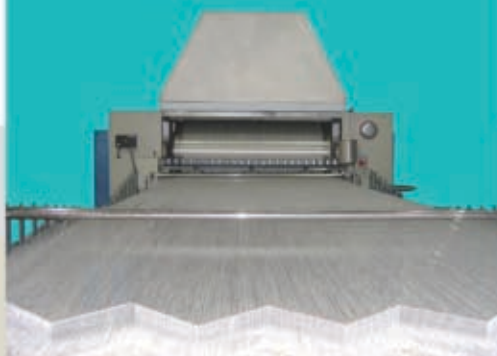
- 採用分層預烘再併合烘乾的全烘筒烘燥方式。
- 預烘烘筒和併合烘乾烘筒的傳動由電機控制，張力檢測系統感應經PLC控制程式處理後通過電機控制烘筒轉速，精確控制烘乾區伸長。
- 烘筒溫度由電子感知器自動感應，通過電子閥門控制，自動PID調節烘燥溫度。
- 採用德製回潮控制，數字化顯示，歷史記錄可尋。

■ Yarn Dividing

- The yarn dividing section is composed of one set of waxing devices, which includes wax-melting tank, yarn guiding roller, waxing roller, yarn dividing rods.
- Equipped with stainless steel made yarn dividing device. An extra creel of pattern-picking is optional.

■ 分紗區

- 分紗區由一組上蠟裝置組成，含化蠟桶、引紗羅拉、上蠟輾、分紗輾等。
- 含不銹鋼分紗裝置，不銹鋼小分紗棒，另可因需要選配精花架裝置。



■ Headstock

- Touch display: The Man-Machinery-Interface (MMI) shows the working condition in each part. Users can set and modify data from the MMI monitor, which features record and memorization. Inter-network connection, remote control and maintenance function are optional.
- The movement of yarn dividing reed reduces abrasion. The switch is controlled by motor for expansion, vertical and horizontal directions.
- The marking device is connected to length setting and can be operated on the MMI monitor.
- The beam sliding seat is driven by motors on both sides. It can be aligned with signal side or synchronically. Equipped with safety interlocking device, applicable for many types of weaving beams.

■ 機頭

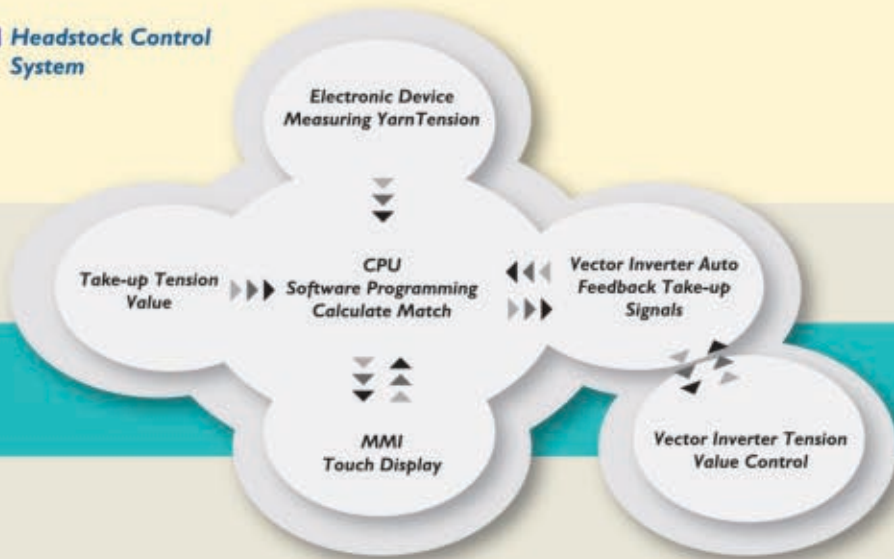
- 觸摸屏操控：人機介面(MMI)可顯示各區段使用情況，可在MMI上設定及修正各種使用資料，並有記憶、存取歷史記錄功能，亦可選配連接互聯網，遠距離監控與維修。
- 分紗鋼筘在運轉中不停地上下、左右微動，減少鋼筘磨損。變頻調節擺動大小，電動開關調整鋼筘上下、左右、開閉，操作便利。
- 打印裝置直接連接匹數及米數設定，在MMI設定，到達設定長度時，自動噴印記號。
- 盤頭滑動小車頭由左右兩側馬達驅動，可同時調整，亦可單獨調整，並設有安全互鎖，適合各式織機盤頭。



系統監控圖
monitoring system



Headstock Control System



Electric Tension Control System

機頭控制系統



機頭定張力卷取電控系統圖



Motor Control Features

- The machine is driven by inverters and motors. This controls defects associated with traditional machine control system. It saves energy up to 25%~32%.
- Precise torque control and fixed tension control.
- The 150% starting torque can overcome loose tension status.
- The precise motor control balances the running speed and promotes stability of yarns. Thanks to digital control, the frequency of changing spare parts is reduced greatly.
- PLC for main processing unit. Equipped with module design.
- Tension control by precision feedback system to ensure tension stability.
- Precision control with section-less adjustment. The parameters can be set and indicated on the MMI control screen.
- Overload system design, applicable for working 24 hours per day.

電機控制特性

- 所有傳動控制，採用高精度變頻器動態感應搭配電機馬達，大幅改善傳統機械控制缺點，提高效率、節約電力約25%~32%。
- 精確轉矩控制，高精度定張力控制。
- 150%啟動轉矩，克服啟動張力鬆弛現象。
- 電機馬達精確平衡運轉提高紗線穩定度，支持浮點運算，全數字化控制，避免零件老化需再度調整問題。
- 採用高速運算器程式控制器(PLC)做主控制單元，採模塊化設計。
- 張力控制：精密回饋系統，確保張力穩定。
- 採用高精度回饋控制，速度無段微調，各區段張力可設定，實際值顯示於機頭控制螢幕。
- 超載能力系統設計，適用全天候24小時運作，大幅提高產能。



DIGITAL CONTROL SIZING MACHINE

■ 規格

Specifications

ITEM	項目	TAYA-720S	TAYA-730S
Main Specification	主要規格	數字式觸控・高精度控制 Digital Control Touchpad, High precision	
Max. Width (mm)	最大幅寬 (mm)	2800/3200	
Max. Diameter (mm)	最大直徑 (mm)	Φ 1000	Φ 1250
Fast Speed (m/min)	快速速度 (m/min)	5-120	
Fast Speed (m/min)	慢速速度 (m/min)	1-5	
Speed (m/min)	爬行速度 (m/min)	0.6	
Max. Width Between Flanges (mm)	最大軸管長度 (mm)	3400	
Quantity of Cylinders (Dia. 800X2000mm)	烘筒數量 (直徑 800 x 2000mm)	12	
Max. Take-up Tension (N)	最大捲繞張力 (N)	6000	
Working Width (mm)	工作幅寬 (mm)	1800	
Max. Evaporation of Sizing (kg/hr)	最大蒸發量 (kg/hr)	1000	
Numbers of Size Trough	漿槽數量	1 or 2	
Size Trough Padder	漿槽壓輪	雙滾雙壓/三滾三壓 2dip 2nip/3dip 3nip	
Beam Diameter (mm)	控軸直徑 (mm)	800-1000	1000-1400
Beam Width (mm)	控軸幅寬 (mm)	1600-1800	
Quantity of Beams	控軸數量	12-16	
Installation Power (kw)	總功率 (kw)	55-60	

■ 工藝流程圖

Flow Chart

